



# DELTAQ

for QUATTRO-G3D

DeltaQ 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.

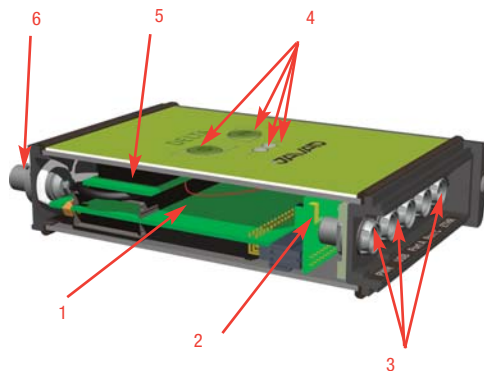
216 channels of single or dual frequency GPS, Galileo and GLONASS in a small attractive, sturdy, and watertight box, which contains Quattro-G3D board.

## Standard Configuration

- GPS L1/L2/L2C (all antennas)
- GLONASS L1/L2 (main antenna only)
- Update rate 1 Hz
- RAIM
- TriPad interface
- RS232 serial port (460.8 kbps)
- 4 External GNSS Antenna TNC Female connectors

## Optional Feature

- Galileo E1
- QZSS
- Compass B1
- Update rate 5Hz, 10Hz, 20Hz\*
- Attitude/RTK rate 1 Hz, 5Hz, 10Hz, 20Hz
- Data recording up to 2048MB
- Multi-Base Code Differential Rover
- Code Differential Base
- Advanced Multipath Reduction
- Two event markers
- Two 1 PPS timing strobes
- 1 PPS level converter
- CAN port
- External Reference Frequency Input/Output
- External Reference Output Frequency converter
- Up to 3 high-speed RS232 serial ports
- High-speed RS232/RS422 serial port
- USB port
- Ethernet
- WAAS/EGNOS/MSAS (SBAS)



1. GNSS Receiver with on-board Memory
2. GNSS Interconnect Board
3. Communication and Power Ports
4. On/Off and Function Buttons and LEDs
5. Reference Converter Board (optional)
6. External GNSS Antenna Connector

\* Up to 50 Hz with attitude engine turned off

\*\* The simultaneous signals tracking is limited by the number of the available channels. By the attitude determination GPS L1/L2/L2C and GLONASS L1/L2 tracking should be active only

Specifications are subject to change without notice

## Description

Total 216 channels: all-in-view (GPS L1/L2, Galileo E1, GLONASS L1/L2, QZSS, Compass B1, SBAS L1) integrated receiver, rugged aluminum housing with TriPad interface

## Tracking Specification

Signals Tracked**	GPS C/A, P1, P2, L2C (L+M) Galileo E1 (B+C) GLONASS C/A, L2C, P1, P2 (main antenna only) QZSS C/A, L1C (I+Q), L2C (L+M), SAIF Compass B1 SBAS L1
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## 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 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 + 1.5 ppm * base_line_length
RTK (OTF) Accuracy	Horizontal: 1 cm + 1 ppm * base_line_length Vertical: 1.5 cm + 1.5 ppm * base_line_length
DGPS Accuracy	< 0.25 m post processing; < 0.5 m real-time
Linear velocity accuracy	0.1 m/s
Cold start; warm start	<35 seconds; <5 seconds

## Power Specification

Battery	External
External Input Voltage	+6 to +35 volts (1 external power port)
Power Consumption	5.2 W

## I/O

GNSS Antenna Connector	Four 50 Ohm TNC, +5 VDC (100 mA) to power LNA
Communication Ports	Three serial RS232 ports (up to 460.8 kbps) High-speed RS232/RS422 serial port (up to 460.8 Kbps) High-speed USB 2.0 device port (480 Mbps) Full-duplex 10BASE-T/100BASE-TX Ethernet port Bluetooth V1.2 Class 2 supporting SPP Slave Profile CAN 2.0
Other I/O Signals	Two 1 PPS synchronized PPS level converter (0 to 4V on 500ohm load) Two Event Markers IRIG External Reference Frequency Input/Output External Reference Output Frequency Converter (5/10/20MHz, -2dBm to +13dBm, step 1dB)
Status Indicator	Two LEDs, two function keys (TriPad)

## Memory & Recording

Internal Memory	Up to 2048MB of on-board non-removable memory for data storage
Raw Data Recording	Up to 20 times per second (20Hz)*

## Real Time Data

Input/Output	JPS, RTCM SC104 v. 2.x and 3.x, CMR
Output	NMEA 0183 v. 2.x and 3.0, BINEX

## Environmental Specifications

Enclosure	Aluminum extrusion, waterproof IP67
Operating Temperature	-40° C to +75° C
Storage Temperature	-45° C to +85° C
Humidity	95%
Dimensions	109 x 35 x 141/max 160 with connectors
Weight	595 g

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

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



**JAVAD GNSS**  
[www.javad.com](http://www.javad.com)

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