We offer the multi-frequency satellite-based two-antenna system DELTAD in a small nice-looking durable watertight box. The system is based on our TRIUMPH Technology implemented in the TRIUMPH Chip and includes 216 channels of multi-frequency GPS, Galileo, and GLONASS. 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. DELTAD 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.
### Standard Configuration

- GPS L1 (G2)
- GPS L1/L2/L2C (G2D and G3D)
- GLONASS L1/L2 (G3D only)
- Update rate 1 Hz
- RAIM
- TriPad interface
- RS232 serial port (460.8 kbps)
- 2 External GNSS Antenna TNC Female connectors

### Optional Feature

- Galileo E1
- QZSS
- Compass B1
- WAAS/EGNOS/MSAS (SBAS)
- Update rate 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- Heading rate 1 Hz, 5Hz, 10Hz, 20Hz, 50Hz
- Data recording up to 2048MB
- Multi-Base Code Differential Rover
- Code Differential Base
- Advanced Multipath Reduction
- Two event markers
- Two 1 PPS timing strobes
- CAN port
- Up to 3 high-speed RS232 serial ports
- High-speed RS232/RS422 serial port
- USB port
- Ethernet
- WAAS/EGNOS/MSAS (SBAS)

### Features/Receiver Type

<table>
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<th>Channel Types</th>
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<tr>
<td>Channels</td>
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<td>GPS C/A, P1</td>
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<tr>
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<td>Galileo E1 (B+C)</td>
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<td>QZSS C/A, L1 (I+Q), SAIF</td>
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<tr>
<td>QZSS L2C (L+M)</td>
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<tr>
<td>Compass B1</td>
<td>√</td>
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<tr>
<td>SBAS L1</td>
<td>√</td>
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</table>

### Size, mm (WxHxD)

- 109 x 35 x 141/mm max 160 with connectors
- Weight, g
- 414
- 518

### Autonomous Accuracy

- Horizontal: 0.3 cm + 0.1 ppm * base_line_length*
- Vertical: 0.35 cm + 0.4 ppm * base_line_length*

### Static, Fast Static Accuracy

- Horizontal: 1 cm + 1 ppm * base_line_length*
- Vertical: 1.5 cm + 1.5 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*

### Real-time heading accuracy

- ~ 0.004/L [rad] RMS*

### DGPS Accuracy

- < 0.25 m Post Processing, < 0.5 m Real Time

### Pos/fix update rate

- <50 Hz RTK+heading

### Cold start, warm start

- <35 s, <5 s

### Reacquisition

- <1 s

### GNSS Antenna Connector

- 50 Ohm TNC, +5 VDC (100 mA) to power LNA

### RS232/RS422

- up to 460.8 kbps

### USB

- (480 Mbps)

### Ethernet port

- 1

### CAN 2.0

- 1

### IRIG

- 1

### Event Marker

- 2

### 1PPS

- 2

### Battery

- -

### Input Voltage

- +4.5 to +35 volts
- +6.0 to +35 volts

### Power consumption

- 2.2 W
- 3.9 W

### TriPad

- Two buttons, two LEDs

### On-board flash

- 2048 MB

### Enclosure

- Aluminum extrusion, waterproof IP66

### Operation temperature

- -40° C to +80° C

### Storage temperature

- -45° C to +85° C

### GNSS Antenna

- External

### Real-time Data Input/Output

- JPS, RTCM SC104 v. 2.x and 3.x, CMR

### Real-time Data Output

- NMEA 0183 v. 2.0 and 3.0, BINEX

* Specifications are subject to change without notice

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**Notes:**

* For good observation conditions and proper length of observation session

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