DELTA

for TRE-G2T, TRE-G3T, TRE-G3TAJ, Duo-G2, Duo-G2D, Quattro-G3D

DELTA receivers' family is based on our TRIUMPH Technology implemented in our TRIUMPH Chip and is designed to meet all the needs of today's high precision GNSS satellite receiver market.

For the first time in the GNSS history we offer up to 100 Hz RTK. 216 channels of single or dual frequency GPS, Galileo and GLONASS in a small attractive, sturdy, and watertight box. DELTA contains either TRE-G2T, TRE-G3T, or TRE-G3TAJ, DELTAD contains Duo-G2 or Duo-G2D, and DELTAQ contains Quattro-G3D board.

With the ability to process GPS, Galileo and GLONASS L1/L2, E1 signals as well as SBAS and L5, E5 if necessary, the DELTA receivers work with optimum signal available creating the most reliable results, saving your time and money.

DELTAD and DELTAQ receivers process the dual frequency code and carrier data from two, or four antennas to determine the three orientation angles and three dimensional position up to 100 times per second.

DELTA is very useful in the most of high accuracy applications, such as reference stations and CORS.

The on-board power supply on DELTA receiver accepts any voltage from +4.5 to +35 volts and delivers clean filtered voltage where needed. DELTA receiver also includes TriPad (two LEDs, ON/OFF and function button), GSM module, UHF modem, and batteries. In addition, the receiver comes with large amount of flash for data storage. The CAN interface in the DELTA receivers is provided complete with all associated hardware and firmware, not just the CAN bus. CANopen slave protocol is provided optionally. The same is true with all the serial RS232/RS422 ports in DELTA.

DELTA

Delta.
Universal standard GNSS receiver

The well-designed and implemented DELTA receiver will be very useful in your surveing applications, and work can begin within minutes of arriving at a site.

Multy-porpose DELTA receiver - joint venture for geophisical studies, dam operations, surveying,mapping,monitoring, etc.

DeltaD.
Real-Time Heading

Usually, one needs two receivers interconnected through the serial ports. One of them is a moving base and another is a rover. DELTAD combines both boards connected internally in one unit.

DeltaQ.
Real-Time Attitude and Position calculation

The dual frequency code and carrier frequency data are processed to determine the three orientation angles and three-dimensional position up to 20 times per second.

DELTAQ can also operate in the RTK or DGPS modes receiving differential corrections from an external base station to provide differentially corrected position and velocity.
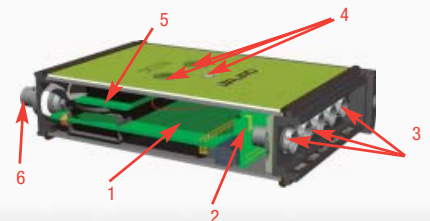
Standard Configuration
- GPS L1/L2/L2C, L5 (G2T, G3T, G3TAJ only)
- GLONASS L1/L2 (G3T, G-3TAJ, Q-G3D only)
- Galileo E1 (D-G2, D-G2D, Q-G3D only)
- RAIM
- TriPad Interface
- RS232 Serial Port (460.8 kbps)
- External GNSS Antenna TNC Female connector

Optional Feature
- Galileo E1/E5A (G2T, G3T, G3TAJ)
- Update Rate 1 Hz, 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- RTK Rate 1 Hz, 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- Data Recording up to 2048MB
- Multi-Base Code Differential Rover
- Code Differential Base
- Advanced Multipath Reduction
- In-Band Interference Rejection
- Two Event Markers
- Two 1 PPS timing strobes
- 1 PPS level converter (0 to 4V on 50Ohm load) (DELTA and DELTAQ)
- CAN 2.0 port
- External Reference Frequency Input/Output (DELTA and DELTAQ)
- External Reference Output Frequency Converter (5/10/20 MHz, -2dBm to +13dBm, step 1dB) (DELTA and DELTAQ)
- Up to 3 high Speed (460.8kbps) RS232 Serial Ports
- High speed RS422 serial port (up to 460.8kbps)
- USB port
- Ethernet
- KFK WAAS/EGNOS (SBAS)

Specifications are subject to change without notice.

Features/Receiver Type	DELTA			DELTAD		DELTAQ
	G2T	G3T	G3TAJ	G2	G2D	
Channels	216					
GPS L1	√	√	√	2	2	4
GPS L2/L2C	√	√	√	-	2	4
GPS L5	√	√	√	-	-	-
Galileo E1	√	√	√	2	2	4
Galileo E5	√	√	√	-	-	-
GLONASS L1	-	√	√	-	-	√
GLONASS L2	-	√	√	-	-	√
SBAS	√	√	√	√	√	√
Max no. satellites tracked	all in view					
Size, mm (WxHxD)	109 x 35 x 141/max 160 with connectors					
Weight, g	394	401		414		454
Autonomous Accuracy	<2m					
Static, Fast Static Accuracy	Horizontal: 0.3 cm + 0.5 ppm * base_line_length Vertical: 0.5 cm + 0.5 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 attitude accuracy	-			Heading ~ 0.004/L [rad] RMS, where L is the antenna separation in [m]		
DGPS Accuracy	< 0.25 m Post Processing, < 0.5 m Real Time					
Pos/ fix update rate	up to 100 Hz			up to 50 Hz RTK +heading		up tp 20 Hz RTK+attitude
Cold start	<35 s					
Warm start	<5 s					
Reacquisition	<1 s					
IBIR	-	√		-		-
External Reference Frequency	√			-		√
RS232	3					
RS422	1					
USB	1					
Ethernet	√					
CAN	1					
IRIG	√					
Event Marker	2					
1PPS	2					
Battery	-					
Input Voltage	+4.5 to +35 volts					
TriPad	Two buttons, two LEDs					
On-board flash, MB	2048					
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 outputs	RTCM SC104 versions 2.x and 3.x Input/Output					
ASCII Output	NMEA 0183 versions 2.x and 3.0 Output					

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

JAVAD GNSS
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Rev.1.4 October 12, 2009

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