GNSS RECEIVER

DELTA-3S

For the first time in the GNSS history, we offer a receiver with up to 200 Hz RTK.
The DELTA-3S receiver can track and decode the QZSS L6 (both L61 and L62) signal messages.
874 GNSS channels of this receiver allow tracking all current and future satellite signals. We offer highly stable digital filters (band characteristics do not change with age, input voltages, or temperature), improved GLONASS inter-channel bias performance (due to our flat digital filter shape), excellent new multipath rejection technique, the best. The embedded calibrator measures phase and code delays of each signal of each band. External calibration is not required.
DELTA-3S is a powerful and reliable receiver for high-precision navigation systems, including high dynamics systems, for machine and traffic control, and high-precision surveying and geodynamics and aerogeophysics applications.
DELTA-3S can operate as a receiver for post-processing, as a Continuously Operating Reference Station (CORS), or portable base station for Real-time Kinematic (RTK) applications scientific station collecting information for special studies, such as ionosphere monitoring and the like.

DATA SHEET

VERSION 1.3 SEPTEMBER 20, 2021

DELTA-3S

Options

- For all modifications, the front panel interfaces:
  PWR
  USB
  Serial Port A
  Serial Port C
  Ethernet

OPTION A - REFERENCE STATION

- Back panel: GNSS Antenna

OPTION B - GENERAL PURPOSE

- Back panel:
  GNSS Antenna
  Event
  1PPS
  Ext. Frequency I/O

OPTION C - MOBILE APPLICATIONS

- Back panel:
  GNSS Antenna
  Event
  1PPS
  Serial Port D / CAN

DELTA-3S

Main Characteristics

TRACKING FEATURES
- GPS C/A, L1C(P+D) including TMBOC(6,1,4/33) , P1, P2, L2C(L+M), L5(I+Q)
- GLONASS C/A, P1, P2, L2C, L3(I+Q)
- Gallileo E1(B+C) including CBOC(6,1,1/11), E5A(I+Q), E5B(I+Q), AltBoc, E6(B+C)
- QZSS C/A, L1C(P+D) including TMBOC(6,1,4/33) , L2C(L+M), L5(I+Q), L6(L61/L62), L1S, L1Sb, L5S
- BeiDou B1, B1C(P+D) including TMBOC(6,1,4/33) , B2B(I+Q), B2, B2A(I+Q), AltBoc, B3
- IRNSS L5, S
- L-band: 1525-1560 MHz
- SBAS* L1, L5(P+D)
- In-Band Interference Rejection
- Spoofing detection
- Advanced Multipath Reduction
- Fast acquisition channels
- High accuracy velocity measurement

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 200 Hz 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
- Hardware Reed-Solomon and LDPC decoders
- RTCM SC104 versions 2.x and 3.x Input/Output
- NMEA 0183 versions 2.x and 3.0 Output
- Spectrum data output
- In-built netBrowser
- RINEX / BINEX data output
- Code Differential Rover/Base
- Geoid and Magnetic Variation models
- RAIM
- Different DATUMs support
- Output of grid coordinates

DATA STORAGE
- Up to 64 GB of onboard non-removable memory for data storage

INPUT/OUTPUT
- High- speed RS232 serial port (up to 460.8 Kbps)
- Two-high speed configurable RS232/RS422 serial ports (up to 460.8 Kbps)
- High-speed USB 2.0 dual-role port (device or host)
- Full-duplex 10BASE-T/100BASE-TX Ethernet port
- CAN 2.0 port
- IRIG timecode output A134, A137, B124, B137
- 1 PPS output
  Synchronized to UTC or any selected satellite system time.
  Voltage level: Voh>1,8V at 50 Ohm load
  Output Impedance: 25 to 30 Ohm (typ)
- Event Marker input
- External Reference Frequency Input/Output
- Two LEDs, two function keys (TriPad)

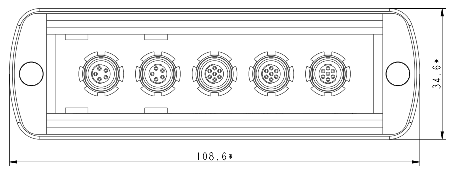
POWER SPECIFICATION
- External power input
- Power consumption: 4.5 Watt (typ.)
- Input voltage: +4.5 to +35 Volts

PHYSICAL & ENVIRONMENTAL
- Temperature:
  Operating: -40 °F to 176 °F (-40°C to +80°C)
  Storage: -40 °F to 185 °F (-40°C to +85°C)
- Humidity: 95%
- High shock and vibration resistance
- Dimensions:
  4.3x1.4x5.6/max 6.3 inches (109x35x141/ max 160 mm) with connectors
- Weight: 0.92 lbs (0.42 kg)

* 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

DELTA-3S

Dimensions



TRIPAD

TriPad is the receiver's minimum interface used to display and control data input and output.

The STAT (status) LED displays the number of tracked satellites.

- Green – eight and more satellites.
- Yellow – five to seven satellites.
- Red – less than five satellites.
- No light – no satellites.

Effective number of satellites are total number of satellites tracked minus the number of non-GPS systems tracked. E.g. if 8 GPS and 5 GLONASS are tracked the effective number of satellites is 12.

The REC (record) LED displays the data recording status and blinks on each recording.

- Green – recording data.
- Yellow – less than 10 min memory left.
- Red – memory is full.
- No light - not active.

The On/Off (power) button turns the receiver on and off.

The FN button starts/stops data recording.

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