SPECTRA PRECISION®

EPOCH® 50 GNSS SYSTEM

SPECSHEET

GENERAL

When connected to the data collector:

- 220 Channels for multi-constellation GNSS support
- Integrated Transmit and Receive data link
- Compact and lightweight design
- RTK real-time positions, Static and PPK
- Network RTK positioning
- Integrated wireless Bluetooth® 2.0 technology

TECHNICAL SPECIFICATIONS

Static GNSS surveying[1]

Horizontal . . . . . ±3 mm +0.1 ppm RMS
Vertical . . . . . ±5 mm +0.4 ppm RMS

Real-Time GNSS surveying[1]

Horizontal . . . . . ±10 mm + 1 ppm RMS
Vertical . . . . . ±20 mm + 1 ppm RMS
Initialization . . . . . Automatic OTF (on-the-fly) while moving
Initialization time . . . . . Typically <10 seconds
Initialization reliability[2] . . . . . Typically >99.9%
Start-up . . . . . <60 seconds from power on to positioning
<30 seconds with recent ephemeris

Code differential GPS positioning[1]

Horizontal . . . . . 0.25 m + 1 ppm RMS
Vertical . . . . . 0.50 m + 1 ppm RMS
SBAS (WAAS/EGNOS) differential
positioning accuracy . . . . . Typically <5 m 3DRMS[3]

Measurements

- Advanced, sixth generation, custom survey GNSS technology
- High-precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Proven Spectra Precision low-elevation tracking technology
- Satellite signals tracked simultaneously:
  - GPS: L1/L2/L2C/L5
  - GLONASS: L1/L2 signals

– SBAS (WAAS/EGNOS): L1C/A, L5
– Galileo[4]: GIOVE-A and GIOVE-B

1 Accuracy and reliability may be subject to anomalies such as multipath, obstructions, satellite geometry, and atmospheric conditions. Always follow recommended survey practices.
2 May be affected by atmospheric conditions, signal multimath,obstruction, and satellite geometry. Initialization reliabilityis continuously monitored to ensure the highest quality.
3 Depends on SBAS (WAAS/EGNOS) system performance.
4 Galileo Commercial Authorization: Receiver technology having Galileo capability to operate in the Galileo frequency bands and using information from the Galileo system for future operational satellites is restricted in the publicly available Galileo open Service Signal-In-Space Interface Control document (GAL OS SIS ICD) and is not currently authorized for commercial use. Receiver technology that tracks the GIOVE-A and GIOVE-B test satellites uses information that is unrestricted in the public domain in the GIOVE A + B Navigation Signals-In-Space Interface Control document. Receiver technology having developmental GIOVE-A and B capability is intended for signal evaluation and test purposes.
5 Three batteries supplied standard.
6 Not all protocols will work with all radio baud rates and channel spacing.

Specifications are subject to change without prior notice.

Physical

Dimensions (WxH x D) . . . . . 19.0 cm x 10.7 cm x 20.0 cm
(7.48 in x 4.21 in x 7.87 in)
Weight (with battery) . . . . . 1.34 kg (2.95 lb)
Ports
I/O . . . . . Two 7-pin Lemo, RS-232
Data Link (UHF radio) antenna . . . . . TNC

ENVIRONMENTAL

Operating temperature . . . . . –20 °C to +60 °C (–4 °F to +140 °F)
–20 °C to +55 °C (–4 °F to +131 °F)
with internal radio transmitting
Storage temperature . . . . . –40 °C to +75 °C (–40 °F to +167 °F)
Dust/Water . . . . . Sealed against dust and water
Vibration MIL-STD-810F

ELECTRICAL

- Power 10 V DC to 20 V DC external power input with over-voltage protection on Port 1 and Port 2 (7-pin)
- Rechargeable, 7.4 V 2400 mAh Li-Ion internal battery
- Average operating times on internal battery:
  – RTK/Static: 4.0 hours[5]

COMMUNICATIONS AND DATA STORAGE

- Internal post process data storage 64 MB (9 MB reserved)
- Supports external GSM/GPRS/CDMA modems for point to point RTK and NTRIP operations
- Internal UHF Transceiver. 1W or 0.5 W transmit power.
- Supports external UHF transmit data link for RTK base station operation.
- 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz positioning when configured.

Correction formats[6]**:**

- CMR, CMR+, RTCM 2.1, RTCM 2.2, RTCM 2.3, RTCM 3.0, RTCM 3.1
  – 25 KHz channel spacing, 4800–9600 bps
  – 12.5 KHz channel spacing, 4800bps
- NMEA-0183 output support

NOTICE TO OUR EUROPEAN UNION CUSTOMERS

For product recycling instructions and more information, please go to www.spectraprecision.com/ev.shtml.

Recycling in Europe:
To recycle Spectra Precision WEEE (Waste Electrical and Electronic Equipment products that run on electrical power),
call +31 497 53 24 30, and ask for the "WEEE Associate".
Or, mail a request for recycling instructions to: Spectra Precision,
c/o Menlo Worldwide Logistics, Meerheide 45, 5521 DZ Eersel, NL.

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