

EPOCH 50



- 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
- Spectra Precision Survey Pro application field software
- Support for all GNSS data with Spectra Precision Survey Office software

The Spectra Precision® EPOCH® 50 GNSS system, with its 220 channels, makes effective use of the GPS L1/L2/L2C/L5 and GLONASS L1/L2 signals for outstanding satellite coverage and precise positioning. The EPOCH 50 GNSS receiver and antenna, use proven technologies to provide both an extremely stable phase center and the tracking of the new stronger L2C and L5 signals. The overall combination of these new signals, multi-constellation support, and receiver processing power provides consistent accuracy and confidence in results.

The EPOCH 50 GNSS receiver has an internal Transmit and Receive radio modem so that any receiver may be used as a base or rover. Use the internal radio on a construction site for a quick and easy setup. Plug in an external battery for all-day operations. The EPOCH 50 GNSS also supports external radio and cellular modems for added flexibility and range. All receivers include Bluetooth® capability to communicate cable free with your choice of world class Spectra Precision data collectors.

The rover solution with the EPOCH 50 GNSS supports the numerous real time GNSS reference networks now installed all over the world. A real time network improves productivity while at the same time reduces costs, by eliminating the need to set up a base station. The networking process supported by Survey Pro field software and GSM/GPRS capable Spectra Precision data collectors ensures the best quality, location independent correction data.

Designed with greater than 99.9% reliability initializations, the EPOCH 50 GNSS provides fast, high quality results in all supported survey modes including RTK, Static and PPK. Consistent accurate results, quality construction, and affordable pricing make the EPOCH 50 GNSS the ideal choice for a productive business.

Spectra Precision Survey Office software provides a complete office solution for post-processing GNSS data and adjusting terrestrial survey data. Export your processed and completed results directly back to the field or design software packages using a variety of file formats.

The EPOCH 50 GNSS with Survey Pro provides field crews with the tools and capabilities to get the job done. With maximum stability, precision, quality and easy to use work flows, the EPOCH 50 GNSS is packed full of proven technologies that you can rely on day-to-day.

GNSS System

GENERAL

When connected to the data collector:

- GPS & GLONASS (GNSS) RTK dual frequency with centimeter accuracy
- Ergonomic, light weight and compact design
- Integrated Wireless Bluetooth® 2.0 technology
- Application programs, job, and data management
- Access Network RTK with GPRS

TECHNICAL SPECIFICATIONS

Static GNSS surveying¹

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

Real-Time surveying¹

Horizontal	±10 mm + 1 ppm RMS
Vertical	±20 mm + 1 ppm RMS

Initialization reliability ²	Typically >99 %
Initialization time	Typically <10 seconds
Start-up	<60 seconds from power on to positioning <30 seconds with recent ephemeris

Code differential GPS positioning¹

Horizontal	0.25 m + 1 ppm RMS
Vertical	0.50 m + 1 ppm RMS

SBAS differential positioning accuracy
Typically <5 m 3DRMS³

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

PHYSICAL

Dimensions (W×H 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)

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 hours⁴

COMMUNICATIONS AND DATA STORAGE

- Internal post process data storage 64 MB (5 MB reserved)
- Supports external GSM/GPRS/CDMA modems for point to point RTK and Network RTK
- Internal UHF Transceiver: 1 W or 0.5 W.
- 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 formats⁵:

- 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

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.

3 Depends on SBAS system performance.

4 Three batteries supplied standard.

5 Not all protocols will work with all radio baud rates and channel spacing.