

EPOCH 50 GNSS Receiver



Day after day, rugged and reliable







EPOCH.

EPOCH 50 GNSS Receiver

Spectra Precision[®] EPOCH[®] 50 GNSS, Survey Pro, and Survey Office make a complete, integrated system for precision fieldwork including cadastral, control, location, and construction stakeout.

Multi-Constellation GNSS Support

The Spectra Precision EPOCH 50 GNSS system, with its 220 channels, makes effective use of the GPS L1/L2/L2C/ L5, GLONASS L1/L2 and BeiDou B1/B2 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.





Integrated transmit/ receive UHF radio

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.

Proven Technology

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

Survey Pro Field Software

The key to getting the most out of your crews and your equipment is your field software. Spectra Precision Survey Pro[™] field software is specifically tailored for your new EPOCH 50 GNSS, as well as all other Spectra Precision survey equipment. Choose from three different data collectors, add the level of Survey Pro you need, and go to work. Survey Pro is easy to use, yet it still unlocks the full power of EPOCH 50 GNSS so you can concentrate on getting the work done.

Manage Your Data

Spectra Precision Survey Office software provides a complete office solution for postprocessing GNSS data and adjusting terrestrial survey data. Download or import field and reference data from a variety of sources including the entire family of EPOCH GNSS receivers, Survey Pro and permanent reference stations via the internet. Export your processed and completed results directly back to the field or design software packages using a variety of file formats.

Network Rover Capable

The EPOCH 50 GNSS rover solution 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 for Maximum Performance

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. Pair it with the most advanced and rugged field data collectors from Spectra Precision to provide maximum productivity and reliability for your everyday fieldwork.

Features

- 220 Channels for Multi-Constellation GNSS support
- Integrated transmit/receive UHF radio
- Compact and lightweight design
- RTK, Postprocessed Kinematic and Static
- Network RTK positioning
- Spectra Precision Survey Pro application field software
- Support for all GNSS data with Spectra Precision Survey Office software



EPOCH 50 GNSS System

GENERAL

- When connected to the data collector:
- 220 Channels for multi-constellation GNSS support
- Integrated transmit/receive UHF radio
- Compact and lightweight design
- RTK, Postprocessed, Kinematic, and Static
- Network RTK positioning Integrated wireless Bluetooth[®] 2.0 technology

TECHNICAL SPECIFICATIONS

Static GNSS surveying¹

High-accuracy static

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Horizontal	. 3 mm + 0.1 ppm RMS
Vertical	3.5 mm + 0.4 ppm RMS

Static & Fast Static

Horizontal..... 3 mm + 0.5 ppm RMS Vertical 5 mm + 0.5 ppm RMS

Real-Time Kinematic GNSS surveying¹

Initialization Automatic OTF (on-the-fly) while moving Start-up <60 seconds from power on to positioning <30 seconds with recent ephemeris

Code differential GPS positioning¹

Horizontal	0.25 m + 1 ppr	n RMS
Vertical	0.50 m + 1 ppr	n RMS
SBAS (WAAS/EGNOS/GAGAN/MS	SAS) differential	

positioning accuracy. Typically <5 m $3DRMS^3$

Physical

Dimensions (W×HxD)	19.0 cm x	10.7 cn	n 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 Bluetooth

Data Link (UHF radio) antenna TNC

Measurements

- Advanced, sixth generation, custom survey GNSS technology
- · High-precision multiple correlator for GNSS pseudorange measurements
- Unfiltered, unsmoothed pseudorange measurement 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
- BeiDou: B1/B2
- SBAS (WAAS/EGNOS/GAGAN/MSAS): L1C/A, L5
- Galileo: E1/E5A/E5B

ENVIRONMENTAL

Operating temperature	40 °C to +60 °C
	(-40 °F to +140 °F)
–40 °C	to +55 °C (-40 °F to +131 °F)
	with internal radio transmitting
Storage temperature	40 °C to +75 °C
	(-40 °F to +167 °F)
Dust/Water	IP66
Vibration	MIL-STD-810F
Shock/Drop	MIL-STD-810F Method 516.5

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-lon internal battery
- · Average operating times on internal battery: RTK/Static: 4.0 hours⁵

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. 1 W 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 configured⁶.

Correction formats7:

- sCMRx, CMR, CMR+, RTCM 2.1, RTCM 2.2, RTCM 2.3, RTCM 3.0, RTCM 3.1
- 25 KHz and 12.5 KHz channel spacing NMEA-0183 output support on COM2 during Network
- RTK or autonomous operations

RECYCLING INFORMATION

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



- 1 Accuracy and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environment, optimal GNSS constellation configurations, along with the use of survey practices that are generally accepted for performing the highest-order surveys for the applicable application including occupation times appropriate for baseline length. Baselines longer than 30 km require precise ephemeris and occupations up to 24 hr may be required to achieve the high accuracy static specification. May be affected by atmospheric conditions, signal
- multimath,obstruction, and satellite geometry.Initialization reliability is continuously monitored to ensure the highest quality.
- 3 Depends on SBAS (WAAS/EGNOS) system performance.
- 4 Below –20°C, external power must be used.
- 5 Three batteries supplied standard.
- 6 When used with Survey Pro, only 1 Hz and 5 Hz modes are supported.
- 7 Not all protocols will work with all radio baud rates and channel spacing.

Contact Information:

AMERICAS

Spectra Precision Division 10368 Westmoor Drive Westminster, CO 80021 • USA +1-720-587-4700 Phone 888-477-7516 (Toll Free in USA)

EUROPE, MIDDLE EAST AND AFRICA Spectra Precision Division Rue Thomas Edison ZAC de la Fleuriaye - CS 60433 44474 Carquefou (Nantes) • FRANCE +33-(0)2-28-09-38-00 Phone

ASIA-PACIFIC

Spectra Precision Division 80 Marine Parade Road #22-06, Parkway Parade Singapore 449269 • SINGAPORE +65-6348-2212 Phone

Please visit www.spectraprecision.com for the latest product information and to locate your nearest distributor. Specifications and descriptions are subject to change without notice.

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