



SP20 GNSS Handheld

Datasheet



Survey and GIS GNSS Handheld

Key Features:

- Integrated High Accuracy GNSS
- Ergonomic Design
- Android Operating System
- Handheld accuracy

High-performance, high-accuracy data collection in the palm of your hand.

The Spectra Precision SP20 handheld GNSS receiver combines innovative, camera-enabled data collection workflow with a high level of performance in an ergonomic, scalable solution (from meter to cm accuracy).

Rugged and lightweight, the SP20 is easy-to-use and highly accurate. It is the optimal tool not only for cadastral, construction, or topo surveys, but also for a range of GIS projects, including data collection, inspection and maintenance.

The 5.3-inch screen delivers vivid visuals of the workflow, which enables precise 2D handheld logging. And the system's high degree of accuracy can be enhanced with a monopole accessory to deliver solid, survey-grade 3D measurements.

Whatever type of geospatial work you're performing, turn to the easy-to-use SP20 handheld that consistently delivers highly accurate results.

SP20 GNSS Handheld

GNSS CHARACTERISTICS

- 240 GNSS channels
 - GPS L1C/A, L1P(Y), L2P(Y), L2C
 - GLONASS L1C/A, L2C/A
 - BeiDou B1 (phase 2), B2
 - Galileo E1, E5b
 - QZSS L1C/A, L2C, L1SAIF
 - SBAS L1C/A
 - L-band
- Scalable accuracy from meter to cm (meter, sub meter (30/30), dm (7/2), cm)
- Patented Z-Blade technology for optimal GNSS performance
 - Full utilization of signals from all 6 GNSS systems (GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS)
 - Enhanced GNSS-centric algorithm: fully-independent GNSS signal tracking and optimal data processing, including GPS-only, GLONASS-only or BeiDou-only solution (autonomous to full RTK)
 - Fast Search engine for quick acquisition and re-acquisition of GNSS signals
- Patented SBAS ranging for using SBAS code & carrier observations and orbits in RTK Processing
- Patented Strobe™ Correlator for reduced GNSS multi-path
- Supported data formats: ATOM, CMR, CMR+, RTCM 2.1, 2.3, 3.0, 3.1 and 3.2 (including MSM), CMRx and sCMRx

REAL-TIME ACCURACY (RMS) ⁽¹⁾⁽²⁾

SBAS (WAAS/EGNOS/MSAS/GAGAN)

- Horizontal: < 50 cm
- Vertical: < 85 cm

Real-Time DGPS position

- Horizontal: 25 cm + 1 ppm
- Vertical: 50 cm + 1 ppm

Real-Time Kinematic Position (RTK) ⁽³⁾

- Horizontal: 10 mm + 1 ppm
- Vertical: 15 mm + 1 ppm

CENTERPOINT RTX ⁽¹⁾⁽²⁾

- Horizontal 4 cm (0.13 ft)
- Vertical 9 cm (0.29 ft)
- Convergence time: 30 minutes or less ⁽⁶⁾

REAL-TIME PERFORMANCE

- Instant-RTK® Initialization
 - Typically 2 sec for baselines < 20 km
 - Up to 99.9% reliability
- RTK initialization range: over 40 km

POST-PROCESSING ACCURACY (RMS) ⁽¹⁾⁽²⁾

Static & Fast Static

- Horizontal: 3 mm + 0.5 ppm
- Vertical: 5 mm + 0.5 ppm

High-Precision Static ⁽⁴⁾

- Horizontal: 3 mm + 0.1 ppm
- Vertical: 3.5 mm + 0.4 ppm

DATA LOGGING CHARACTERISTICS

Recording interval

- 1 - 999 seconds

PROCESSOR

- Qualcomm Snapdragon 410
- Quad-core
- Clock frequency: 1.2 GHz

OPERATING SYSTEM

- Android® 6.0 (Google certified)
- Languages available: Afrikaans, German, English, Spanish, French, Italian, Portuguese (Portugal and Brazil), Japanese, Korean, Simplified Chinese, Greek, Russian, Azerbaijani, Czech, Danish, Lithuanian, Hungarian, Dutch, Norwegian (Bokmal), Romanian, Finnish, Swedish, Turkish, Bulgarian, Serbian (Cyrillic), Hindi, Polish
- Software package includes: Google Mobile Services, Sat-Look

MEMORY

- 2 GB SDRAM
- Storage: 16 GB (non volatile).
- MicroSDHC™ memory card (up to 64 GB, SanDisk®, KingstonR recommended)

COMMUNICATIONS

- Cellular
 - GSM (850,900,1800,1900), GPRS, EDGE, UMTS, WCDMA (B1, B2, B5, B8), HSPA, TDSCDMA (B34, B39), LTE-FDD(B1, B3, B4, B5, B7, B8, B20), LTE-TDD (B38/B39/B40/B41)
- Wi-Fi (IEEE) 802.11 b/g/n
- Bluetooth 4.0 dual mode
- USB (micro B USB connector)
- NFC

INTERFACE

- USB 2.0 (micro)
- External antenna connector (TNC)
- Audio jack 2.5 plug (CTIA/AHJ standards)

ENVIRONMENTAL CHARACTERISTICS

- Operating temperature: -20° to +60°C (-4 to 140°F)
- Storage temperature: -30° to +70°C without battery (-22 to 158°F) ⁽⁵⁾
- Humidity: 95% non condensing
- Water & dust proof: IP67
- Free drop: 1.2 m on concrete
- Shocks: MIL STD 810 (fig 516.5-10) (01/2000)
- Vibration: MIL-STD-810F (fig 514.5C-17) (01/2000)

POWER CHARACTERISTICS

- Battery Li-Ion, 6400mAh
- Battery life: > 8 hrs @ 20 °C with GNSS on
- Charging time: 4 hours
- Removable battery

PHYSICAL CHARACTERISTICS

Size

- 29.5 x 12 x 4.5 cm (11.6 x 4.7 x 1.8 in)

Weight

- 850 g (1.87 lb)

User interface

- 2 volume keys, on/off/reset key, 2 programmable keys, standard Android touch panel buttons
- On screen keyboard display
- Size: 5.3" capacitive multi touch
- Resolution: 1280x720 pixels
- Brightness: 450 Cd/m²
- Gorilla Glass damage-resistant
- Auto rotate between Portrait and Landscape

MULTIMEDIA & SENSORS

- Rear camera 13 M pixels with flash light
- Front camera 2 M pixels
- E-Compass
- G-sensor
- Speaker
- Microphone
- Light sensor

STANDARD ACCESSORIES

- Handstrap
- Screen protectors (x2)
- A/C charger
- USB cable
- Pouch
- Battery door opener
- Monopole adaptor

OPTIONAL ACCESSORIES

- External GNSS antenna
- Pole bracket
- Monopole

OPERATING MODES

- RTK rover: Direct IP, NTRIP (VRS,FKP,MAC networks)
- Post-processing
- Trimble RTX (IP and satellite)

FIELD SOFTWARE

- Survey Mobile (SPSM)
- MobileMapper Field
- or 3rd party Android applications

(1) Accuracy and TTFB specifications may be affected by atmospheric conditions, signal multipath, satellite geometry and corrections availability and quality.

(2) Performance values assume minimum of five satellites, following the procedures recommended in the product manual. High multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance. Real time accuracies depend on SP20 accuracy option. PP accuracy obtained with ATOM files processed by SPSO.

(3) SP20 cm used with Monopole accessory

(4) Long baselines, long occupations, precise ephemeris used

(5) Batteries can be stored up to +70°C.

(6) Receiver convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings. Convergence can be improved in RAM enabled regions.

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