

ProMark 220

- All-in-view, dual-frequency rover
- Fast fix with short initialization time
- Built-in wireless connectivity
- Minimal cost for maximum productivity
- Handheld real-time cm-level accuracy
- Versatile handheld for pre-surveys and GIS jobs
- Lightweight and rugged handheld design for comfortable use
- Powerful and complete Survey Pro and FAST Survey field software



The Spectra Precision ProMark™ 220 GNSS system is the most cost-effective dual-frequency network RTK rover. The ProMark 220 solution includes a rugged GNSS receiver running Windows Embedded Handheld® 6.5 operating system, the comprehensive Survey Pro™ or FAST Survey field software and the ASH-661 (L1/L2 GNSS) antenna.

ProMark 220: a dual-frequency, all-in-view network RTK rover with embedded Z-Blade technology, delivers long-range RTK performance, fast-initialization time, and high-precision. Thanks to the Z-Blade GNSS-centric technology, ProMark 220 makes optimal use of all GNSS signals to deliver fast and stable RTK positions even when GPS coverage is insufficient but other constellations like GLONASS are visible. For a wide range of survey applications it provides outstanding real-time centimeter-level accuracy even when used as a handheld.

Very lightweight, with a compact and rugged design, as well as large memory and autonomy, ProMark 220 has been designed for comfortable and productive field use. Its extended wireless communications (Bluetooth, Wi-Fi) and embedded GSM/GPRS modem make ProMark 220 a powerful solution suitable for any network RTK application.

The ProMark 220 is extremely cost-effective, meeting the most demanding

requirements for a high-end survey solution. Together with Survey Pro or FAST Survey field software, it enables interoperability with a wide range of survey instruments and accessories to run complete survey jobs, including site calibration, stake out, and optical surveying projects.

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- 1 Accuracy and initialization specifications may be affected by atmospheric conditions, signal multipath, satellite geometry and corrections availability and quality. Position accuracy specifications are for horizontal positioning. Vertical error is typically < 2 times horizontal error.
- 2 Performance values assume a minimum of five satellites and following the procedures recommended in the product manual. High multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.
- 3 Steady state value for baselines < 50 km after sufficient convergence time.
- 4 Each GNSS constellation is processed independently, and combined for optimal performance.
- 5 No BT or WLAN are used, backlight at default setting (50% brightness), varies with temperature.

GNSS System

GENERAL

- 45 all-in-view channels
- L1/L2 GPS & GLONASS network RTK rover
- RTK networks: VRS, FKP, MAC
- Ergonomic, light weight and compact design
- Integrated Bluetooth and GSM/GPRS technology

TECHNICAL SPECIFICATIONS

Postprocessing accuracy (RMS)^{1, 2, 3}

Static, Rapid Static

Horizontal	5 mm + 0.5 ppm
Vertical	10 mm + 0.5 ppm

Kinematic

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

Real-time GNSS surveying (RMS)^{1, 2, 3}

Real-time kinematic position

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

Initialization time

- < 1 min typical
- Initialization reliability 99.9% reliability

RTK initialization range

- Up to 40 km typical

SBAS (WAAS/EGNOS/MSAS/GAGAN)

PHYSICAL

Dimensions (W × H × D)

19.0 cm x 9.0 cm x 4.3 cm
(7.5 in x 3.5 in x 1.7 in)

Weight (with battery)

0.62 kg (1.43 lb)

User interface

Graphical LED display
Color TFT High resolution display sunlight readable with touch screen

Size

3.5" portrait

CPU

806 MHz Marvell PXA 320

ENVIRONMENTAL

Operating temperature

-20° to +60°C (-4° to +140°F)

Storage temperature

-25° to +70°C (-13° to +158°F)

Dust/Water

proof

Shock

free pole drop

ELECTRICAL

Horizontal <50 cm
Vertical <1 m

Real-time DGPS position

Horizontal 25 cm + 1 ppm
in typical conditions²
Vertical 50 cm + 1 ppm
in typical conditions²

MEASUREMENTS

Z-Blade technology for optimal GNSS performance

- GNSS-centric algorithm: fully independent GNSS satellites tracking and processing⁴
- Fully independent code and phase measurements
- Advanced multi-path mitigation

Satellite signals tracked simultaneously

- GPS L1C/A, L1/L2P, L2C
- GLONASS L1/L2 C/A
- SBAS: (WAAS/EGNOS/MSAS/GAGAN)

- Rechargeable, 6600 mAh Li-Ion internal battery
- Average operating time on internal battery: >8 hours (GNSS on)⁵
- Power 9 V DC to 28 V DC external power input

COMMUNICATIONS AND DATA STORAGE

Cellular

- Built-in GPRS, EDGE class 12 modem
- Quad-band 850/900MHz, 1800/1900 MHz

Bluetooth

- Bluetooth 2.1 (class 2) with DER
- Profiles: SPP, DUN, FTP, OPP, HSP, A2DP

Other

- Wireless LAN 802.11b/g (SDIO slot)

Memory

- 256 MB internal SDRAM memory
- 2 GB internal NAND flash memory
- SDHC memory card slot

Correction formats

- Supported data formats: ATOM (Ashtech Optimized Messaging), RTCM 2.3–3.1, CMR, CMR+, DBEN, LRK
- NMEA-0183 messages output