SPECTRA PRECISION

ProMark™ 220

powered by ashtech

All-in-one Rover Solution for Network RTK
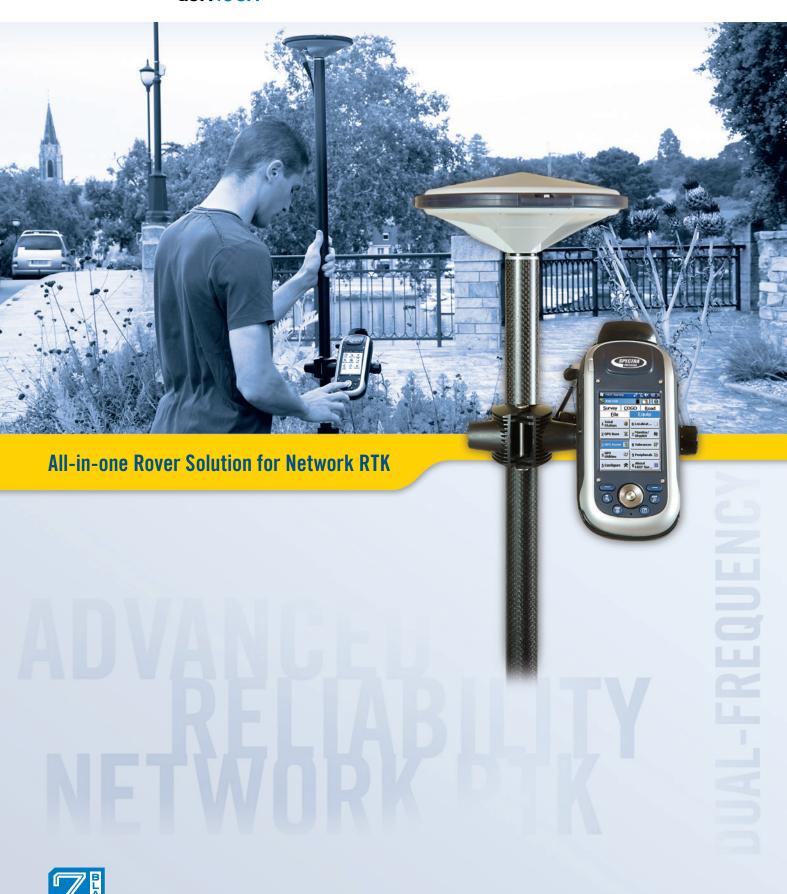
ADVANCED
RELIABILITY
NETWORK RTK

DUAL-FREQUENCY

Z BLADE
TECHNOLOGY INSIDE

ProMark 220

The Spectra Precision ProMark™ 220 GNSS system is the most cost-effective dual-frequency network RTK rover. 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.

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 and embedded GSM/GPRS modem make ProMark 220 a powerful solution suitable for any network RTK application.

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.

Advanced GNSS Solution

- Ashtech Z-Blade technology for precise RTK
- Dual-frequency and dual-constellation
- Handheld real-time cm-level accuracy

Designed For Efficient Network RTK

- Fast fix with short initialization time
- Built-in wireless connectivity
- Outstanding reliability in harsh environments
- Lightweight and rugged handheld design for comfortable use

Best Value For A High-End Survey Solution

- Minimal cost for maximum productivity
- Powerful and complete Survey Pro and FAST Survey field software
- Versatile handheld for pre-surveys and GIS jobs

Survey Pro Field Software

Spectra Precision Survey Pro field software provides you with a complete set of capabilities for all your survey projects. It's fast, reliable and easy to use. Survey Pro software provides unparalleled integration, data integrity, efficiency and ease-of-use. The features and functions of Survey Pro have been developed based on feedback from surveyors like you. Survey Pro makes things clear and efficient, freeing you up to do your job.

FAST Survey Field Software

Advanced FAST Survey field software meets the most demanding survey requirements. It includes topographic features typically associated with dual-frequency, and provides extensive data formats and local coordinate system support. Added options make it possible to interact with a wide range of survey instruments and accessories to run complete survey jobs, including site calibration, stake out, and survey projects where total stations are used.

GNSS Characteristics

- 45 parallel all-in-view channels
  - GPS L1 C/A, L1/L2 P-code, L2 C, L1/L2 full wavelength carrier
  - GLONASS L1 C/A and L2 C/A, L1/L2 full wavelength carrier
  - SBAS: WAAS/EGNOS/MSAS/GAGAN
- Fully independent code and phase measurements
- Advanced multipath mitigation
- Ashtech Z-Blade technology for optimal performance
- Ashtech GNSS centric algorithm: Fully independent GNSS satellites tracking and processing [4]
- Up to 20 Hz real-time GPS, GLONASS, SBAS raw data (code and carrier) and position output
- Supported data formats: ATOM (Ashtech Optimized Messaging), RTCM-2.3, RTCM-3.1, CMR, CMR+, DBEN, LRK
- NMEA 0183 messages output
- RTK Network: VRS, FKP, MAC

Accuracy Specifications (HRMS) [1] [2] [3]

Real-Time Kinematic (RTK)
- Horizontal: 10 mm + 1 ppm
- Vertical: 20 mm + 1 ppm

Static, Fast Static post-processing
- Horizontal: 5 mm + 0.5 ppm
- Vertical: 10 mm + 0.5 ppm

Kinematic post-processing
- Horizontal: 10 mm + 1 ppm
- Vertical: 20 mm + 1 ppm

DGPS
- < 25 cm + 1 ppm typical

SBAS
- < 50 cm

RTK Initialization (on-the-fly)

Initialization time
- < 1 min typical

Range
- Up to 40 km typical

Reliability
- Up to 99.9% typical

Processor
- Marvell® PXA 320
- Clock frequency: 806 MHz

Operating System

- Microsoft Windows® Embedded Handheld 6.5
- Languages available: English, French, German, Greek, Italian, Japanese, Korean, Portuguese, Spanish, Chinese
- Software package includes:
  - GNSS Toolbox for GNSS control
  - Internet Explorer
  - E-mail client
  - Microsoft Office Mobile
  - Transcriber (handwriting recognition)
  - ActiveSync

Communication

Cellular
- Built-in GPRS, EDGE class 12 modem Cinterion MC 75i
- 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)

Physical Characteristics

Size
- Receiver: 190x90x43 mm (7.5x3.5x1.7 in)

Weight
- Receiver only: 0.48 kg (1.06 lb)
- Receiver with battery: 0.62 kg (1.43 lb)

User Interface

Keyboard
- Alphanumeric virtual keyboard
- 4-way navigation, OK, menu, escape, zoom in/out, contextual keys

Display
- Color TFT High resolution sunlight readable display with touch screen
- Size: 3.5" portrait

Memory
- SDRAM: 256 MB
- User data storage: 2 GB NAND Flash (non volatile)
- SDHC memory card slot

Environmental Characteristics

- Operating temperature: -20° to +60°C (-4 to 140°F)
- Storage temperature: -25° to +70°C (-13 to 158°F)
- Waterproof and dust-proof
- Vibration and Shock: ETS300 019, MIL-STD-810 method 514.5
- Free pole drop

Power Characteristics

- Removable battery: Li-Ion, 6600mAh
- Battery life: > 8 hrs @ 20 °C with GNSS on [5]
- Charging time: 3 hours
- External power: 9-28 VDC

Multimedia & Sensors

- Camera 3M pixels
- E-Compass
- G-Sensor
- Microphone & Speaker

Software / Firmware Options

Firmware options
- Fast Output

Software options
- Survey Pro field software
- FAST Survey field software
- Spectra Precision Survey Office software

Standard Accessories

- Integrated stylus
- Docking station
  - Unit charging
  - RS232 Interface
  - USB Host and Device
  - Additional battery charging slot
- Universal A/C adapter
- USB data cable
- ASH-661, L1/L2 GNSS antenna
- Field bracket
- Antenna vertical extension
- HI tape
- Field soft bag

(*) Including all available options

(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 sever 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.

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