ProMark 700 Technical Specifications

GNSS Characteristics

- 220 GNSS channels
  - GPS L1 C/1, L2 P and L2 C
  - GLONASS L1 C/A and L2 C/A
  - SBAS: code and carrier (WAAS/EGNOS/MSAS/GAGAN)
- Very low noise GNSS carrier phase measurements
- Proven low elevation tracking technology
- Up to 5 Hz real-time position output
- Supported data formats: RTCM 2.0, 2.1, 2.3, 3.0 and 3.1, CMR, CMR+
- RTK networks: VRS, FKP, MAC

Real-Time Accuracy (RMS) [1] [2]

SBAS (WAAS/EGNOS/MSAS/GAGAN)

- Horizontal < 50 cm (1.64 ft)
- Vertical < 85 cm (2.79 ft)

Real-Time DGPS position

- Horizontal 25 cm (0.82 ft) + 1 ppm
- Vertical 50 cm (1.64 ft) + 1 ppm

Real-Time Kinematic position (fine mode) (< 30 km baseline)

- Horizontal 10 mm (0.033 ft) + 1 ppm
- Vertical 20 mm (0.065 ft) + 1 ppm

Real-Time Performance

- Initialization time: typically < 10 sec (for baselines < 20 km)
- Initialization reliability: > 99.9%

Post-Processing Accuracy (RMS) [1] [2]

Static, Rapid Static

- Horizontal 5 mm (0.016 ft) + 0.5 ppm
- Vertical 10 mm (0.033 ft) + 0.5 ppm

High-Precision Static[3]

- Horizontal 3 mm (0.009 ft) + 0.5 ppm
- Vertical 6 mm (0.019 ft) + 0.5 ppm

Post-Processed Kinematic

- Horizontal 10 mm (0.033 ft) + 1 ppm
- Vertical 20 mm (0.065 ft) + 1 ppm

Data logging Characteristics

Recording Interval

- 1 - 60 seconds

Physical Characteristics

Size

- Unit: 20.5x20.5x6.2 cm (8.1x8.1x2.4 in)

Weight

- GNSS receiver: 650 g (1.4 lb)

I/O Interface

- 9-16 V DC input power
- RS232 serial link
- Bluetooth 2.0 class 2 (SPP profile)

Memory

- 6 MB internal memory (expandable through data collector memory)
- Up to 100 hours of 15 sec. raw GNSS data from 18 satellites

Operation

- RTK network rover: VRS, FKP, MAC
- Point-to-point through Real-Time Data Server (RTDS) software
- NTRIP, Direct IP

Environmental Characteristics

- Operating temperature: -30° to +65°C (-22° to +149°F) [4]
- Storage temperature: -40° to +70°C (-40° to +158°F)
- Humidity: 100% condensing
- IP67 waterproof, sealed against sand and dust
- Shock: ETS300 019
- Drop: 2 m pole drop on concrete

Power Characteristics

- Li-Ion battery, 5000 mAh
- Battery life time: 10 hrs
- Nominal voltage: 3.7 V
- External DC power: 9-16 V with reverse polarity protection (ISO 7637)

Standard System Components

- ProMark 700 receiver
- Power cable
- AC/DC adaptor
- CLA adaptor
- Soft bag

Optional System Components

- RS232 to USB adaptor kit
- Data collectors
  - T41
  - MM10
  - Ranger 3
  - ProMark 120
  - Nomad
- Field software
  - Survey Pro
  - FAST Survey

FAST Survey Field Software

Key software functions include:

- Complete GPS/GNSS instrument support
- Volume computation
- Background raster images
- Network connectivity
- Coordinate system support: predefined grid systems, predefined datums, projections, geoids, local grid
- Map view with colored lines
- Geodetic geometry: intersection, azimuth/distance, offsetting, poly-line, curve, area
- Data Import/Export: DXF, SHP, RW5, LandXML
- Survey utilities: calculator, RW5 file viewing
- Optical surveying instruments (optional)
- Road construction (optional)
- Robotic total stations (optional)

Survey Pro Field Software

Key software functions include:

- Complete GPS/GNSS instrument support
- Complete mechanical instrument support
- All data collection features
- Basic point stakeout
- Basic COGO including inverses, intersections, manual traverse, area and much more
- Advanced COGO and curve solutions including station offsets
- Average points, and spiral tools
- Advanced stakeout including offset staking, slope staking and stake to a DTM
- Road Layout – Complete road layout and staking tool set
- Extensive data collection routines with easy to use, step-by-step setup features
- Survey Pro Robotic (optional)

[1] Accuracy and TTFF 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 multi-path areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.

[3] Depending on baselines, precise ephemeris and long occupations up to 24 hr may be required to achieve the high precision static specifications.

[4] At very low temperature, the unit will start, and will operate after short warm-up time.

Spectra Precision Authorized Dealer

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