i80

Survey & Engineering

- 220 channels multi-constellation receiver
- 128 × 64 dpi sunlight readable LCD panel
- 3.75G network modem
- Internal TRx UHF
- Built-in Bluetooth and WiFi communication
- RTK data forwarding
- Dual hot-swappable batteries
- 32 GB internal memory

i80 represents the pinnacle of productivity on today's jobsite. Leading technology with superior capabilities, i80 has tracked all GNSS constellations: GPS, GLONASS, Galileo, BDS, QZSS and SBAS.

i80 is the most smartest GNSS receiver on the market incorporating dual hot-swappable batteries, allowing continuous uninterrupted work. Integrated 3.75G network modem, TRx UHF module, E-bubble, Bluetooth and WiFi connectivity provides seamless solution in field. High resolution LCD panel also exploits new method for surveyors to check receiver working states. All these features integrated into a small but ruggedized package allows the most productive day of surveying possible.

CHC continues to build on its reputation of reliability. i80 is constructed for cast magnesium chassis with doubled sealed gaskets, protected connectors, and vibration dampened internal parts. This contributes to its outstanding field survivability of IP67 and ability to resist 2 m pole fall onto concrete and high vibration environment.

Technical Specifications

GNSS Characteristics

- 220 channels with all in view simultaneously tracked satellite signals
  - GPS: L1C/A, L2C, L2E, L5
  - GLONASS: L1C/A, L1P, L2C/A, L2P, L3
  - Galileo: E1, E5A, E5B
  - BDS: B1, B2
  - SBAS: L1C/A, L5 (QZSS, WAAS, EGNOS, GAGAN)

GNSS Accuracies (1)

- Real Time Kinematic (RTK):
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
  - Initialization Time: < 5 s
  - Initialization Reliability: > 99.9%
- Network RTK:
  - Horizontal: 8 mm + 0.5 ppm RMS
  - Vertical: 15 mm + 0.5 ppm RMS
  - Initialization Time: < 10 s
  - Initialization Reliability: > 99.9%
- Post-processed Kinematic (PPK):
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
- High-precision Static:
  - Horizontal: 2.5 mm + 0.1 ppm RMS
  - Vertical: 3.5 mm + 0.4 ppm RMS
  - Baseline Length: ≤ 300 km
- SBAS: 0.5 m RMS

Hardware

- Size (H × W): 14 cm × 12.4 cm (5.5 in x 4.9 in)
- Weight: 1.02 kg (2.2 lb)
  1.22 kg (2.7 lb) with batteries
- Environment:
  - Operating: -40°C to +75°C (-40°F to +167°F)
  - Storage: -55°C to +85°C (-67°F to +185°F)
- Humidity: 100% condensation
- Dust and Water Proof: IP67
- Shock and Vibration: 2 m (6.56 ft) fall onto concrete
- LCD: 128 x 64 dpi sunlight readable with function/accept buttons

Certifications and Calibrations

- FCC Part 15 (class B Device), FCC Part 22, 24, 90; CE Mark; C-Tick; Bluetooth EPL; IGS & NGS Antenna Calibration; MIL-STD-810G.

Communications and Data Recording

- Serial: 2 x 7-pin LEMO port (external power, USB data download, USB update, RS-232)
- Network Modem: Internally integrated 3.75G modem
  - HSPA+ 21 Mbps (download), 5.76 Mbps (upload)
  - WCDMA 850/900/1700/1900/2100
  - EDGE/GPRS/GSM 850/900/1800/1900
- Bluetooth®: Internally integrated multimode system compatible with Android, Windows Mobile and Windows desktop operating systems
- Wi-Fi: 802.11 b/g/n, access point mode
- UHF Radios(2): Protected TNC Female
  - Standard Internal Rx/Tx: 410 MHz to 470 MHz
    Transmit power: 0.5 W to 2 W
    Protocol: CHC, Trimble, Pacific Crest
    Range: 5 km optimal conditions
  - FCC Certified Internal Rx/Tx: 403 MHz to 473 MHz
    Transmit power: 0.1 W to 1 W
    Protocols Trimble, Satel, Pacific Crest
    Range: 5 km optimal conditions
- Protocols:
  - CMR, CMR+, SCMRX input and output
  - RTCM 2.x, RTCM 3.x input and output
  - NMEA 0183 output
  - HCN, HRC and RINEX static formats
  - NTRIP Client, NTRIP Caster
- Data Storage
  - 32 GB high-speed memory

Electrical

- Power Consumption: 3.2 W (depending on user settings)
- Li-ion Battery Capacity: 2 × 3400 mAh, 7.4 V
- Operating Time(3):
  - RTK UHF Base: 6 h
  - RTK Rover: 10 h
  - Static: 12 h
- External Power: 12 V DC to 36 V DC

(1) Accuracy and reliability specifications may be affected by multipath, satellite geometry and atmospheric conditions. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices. (2) UHF is an option and UHF type approvals are country specific. (3) Operating time varies based on temperature.

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