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

CHCNAV
Make your work more efficient

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

Incorporated with dual hot-swappable batteries, i80 is capable of working continuously without interruption and considered the smartest GNSS receiver in the market. Integrated 3.75G network modem, Rx/Tx UHF module, E-bubble, Bluetooth and WiFi connectivity provide a seamless solution in the field. High-resolution LCD panel also exploits new method for surveyors to check the working states of a receiver. All these features integrated into a small but ruggedized package can help to achieve the most productive day of surveying possible.

CHC continues to build on its reputation for reliability. i80 is constructed of cast magnesium chassis with double sealed gaskets, protected connectors, and vibration dampened internal parts. This contributes to the outstanding field survivability of IP67, the 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]

- Network RTK:
  - Horizontal: 8 mm + 0.5 ppm RMS
  - Vertical: 15 mm + 0.5 ppm RMS
  - Initialization Time: < 10 s
  - Initialization Reliability: > 99.9%
- Real Time Kinematic (RTK):
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
  - Initialization Time: < 5 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 + 0.5 ppm RMS
- 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 +65°C (-40°F to +149°F)
  - Storage: -40°C to +85°C (-40°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
- Tilt Sensor:
  - EBubble leveling
  - Tilt compensator[2]

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, Method 514.7

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[3]: 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[4]:
  - RTK UHF Base: Up to 6 h
  - RTK Rover: Up to 9 h
  - Static: Up to 10 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 the minimum of 5 satellites, follow up of recommended general GPS practices. (2) The accuracy of tilt compensator varies with operating environment and electromagnetic pollution. (3) UHF is an option and UHF type approvals are country specific. (4) Operating time varies based on temperature.

Specifications are subject to change without notice.

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