i80 GNSS

KEY FEATURES

- *Light & ultra-rugged eliminates user fatigue*
- *Tilt & azimuth allow for more shots to be collected using RTK*
- *Advanced connectivity integrates into any process with nearly any hardware*
- *Common work flows without a data collector*
- *Future proof design for years of productivity*

The i80 represents the pinnacle of productivity on today's jobsite. Leading technology with superior capabilities, the i80 has tracked all five constellations, ten frequencies, and uses every connectivity method available. The i80 is the smallest receiver on the market incorporating dual hot swappable batteries, allowing continuous uninterrupted work. All these features integrated into a small ergonomic package results in the most productive day of surveying possible.

Intelligent Connectivity

The CHC i80 provides numerous communication methods to support varied workflows and any peripheral device. The built-in modem provides RTK corrections and serves data via 802.11 Wi-Fi to nearby devices. The hotspot feature also allows for connectivity and configuration via any browser supported device which removes the classical limitation of expensive propriety data collection devices for hardware setup. CHC's superior UHF radio technology provides users with a 25% range increase- even when mixing and matching with non-CHC radios.

Out of Plumb Measurements

The internal MEMS measures and compensates for tilt in all axis and acceleration over 100x per second providing cm positions up to an unmatched 30 degree tilt. With the advanced MEMS, users no longer need to take their eyes off their software as the electronic bubble and orientation values are automatically displayed onscreen.

True Autonomous Operation

The user-friendly LCD interface allows for numerous receiver setup tasks to be performed without an external device. Operations such as: Static Logging, AutoBase, AutoRover, UHF configuration, and GSM setup can be easily done via the simple Function/Accept button pair. Unique to CHC receivers is its ability to be used with APIS which allows an AutoBase receiver to automatically join a pool of online bases that rovers can automatically connect to for quick and easy "1 to 1", or "1 to many" configurations.

Reliability

CHC continues to build on its' reputation of rugged and reliable. The i80 is constructed of a cast magnesium chassis, doubled sealed gaskets, protected connectors, and vibration dampened internals. This contributes to its' outstanding field survivability of IP67 and ability to resist extended periods of high vibration to MIL-STD-810F.

Future Proof

Never will you be locked into a fixed software & hardware solution. The CHC i80 receiver is supported by multiple third party software controller programs. The i80 supports common industry standards and proprietary protocols allowing you to easily migrate your inventory to our more productive and open platform.

Technical Specifications

GNSS Characteristics

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

GNSS Accuracies (1)

- SBAS differential positioning accuracy: 0.5 m RMS
- High-precision static
  - Horizontal: 2.5 mm + 0.5 ppm RMS
  - Vertical: 3.5 mm + 0.5 ppm RMS
- Post-Processed Kinematic (PPK)
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
- 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%

Hardware

- Dimensions (H×W): 14 cm × 12.4 cm (5.5 in x 4.9 in)
- Weight: 1.02 kg (2.2 lbs)
  1.22 kg (2.69 lbs) 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 Waterproof: IP67, protected from temporary immersion to depth of 1 m (unit floats)
- Shock and vibration: 2 m (6.56 ft) pole drop onto concrete, MIL-STD-810F
- LCD: 128x64dpi 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, NGS Antenna Calibration, MIL-STD-810F.

Communications and Data Recording

- Serial: 2 x 7pin LEMO port (external power, USB data download, USB update, RS-232)
- Cellular: 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
- WiFi: 802.11 b/g/n, access point mode
- UHF Radios (2): Protected TNC Female
  - Standard Internal Rx/Tx: 410 - 470 Mhz; Transmit power: 0.1 W to 2 W; Protocol CHC, Trimble, Pacific Crest; Range: 5 km optimal conditions
  - FCC Certified Internal Rx/Tx: 403- 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 2.1, 2.2, 2.3, 3.0, 3.1, 3.2 input and output
  - NMEA 0183 output
  - HCN and RINEX static formats
  - NTRIP Client, NTRIP Caster
- Data Storage
  - 32 GB high-speed memory (upgradable to 64 GB)

Electrical

- Power consumption: <3.2 W
- Li-ion battery capacity: 5200 mAh, 7.4 V
- Operating time: 12 hours in RTK rover mode
- External power: 12 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 type approvals are country specific.

Specifications are subject to change without notice.