CHCNAV

i50

Survey & Engineering

Make your work more efficient

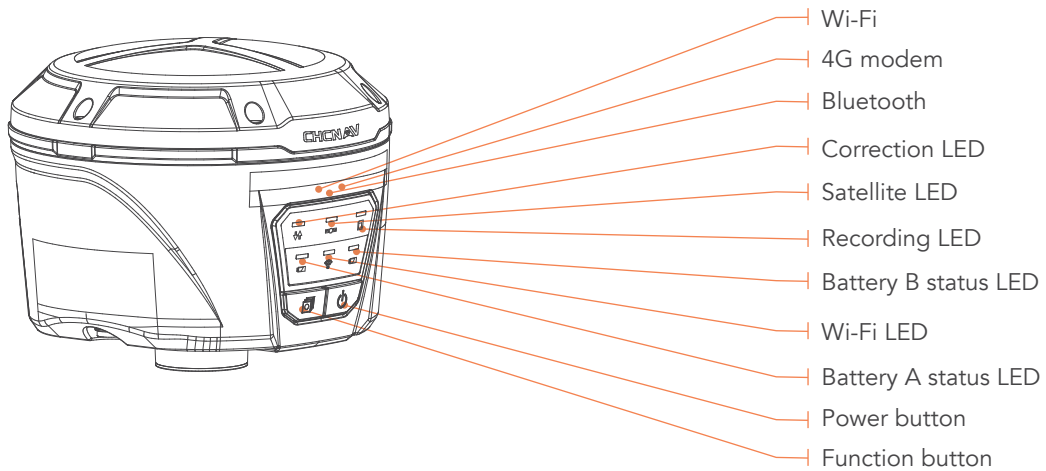
Hardware Description

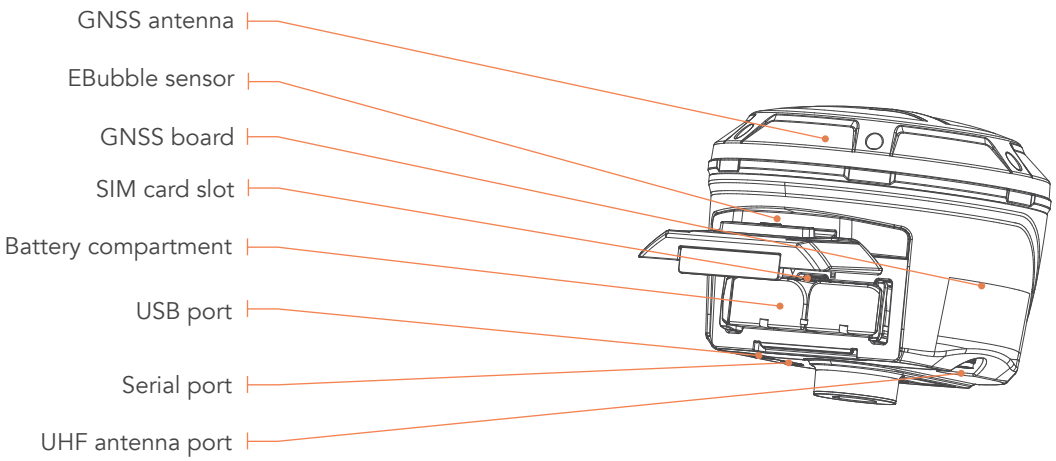
i50 GNSS RTK Receiver

Start Series

The CHCNAV i50 GNSS receiver brings speed and accuracy in one easy-to-use GNSS solution to complete your surveying and construction projects efficiently. Combined with CHCNAV LandStar 7 field software and HCE320 Android controller, the i50 is the perfect surveying solution for topographic and construction positioning tasks.

The i50 GNSS receiver integrates positioning and communication technologies in a rugged unit that is designed to provide work flexibility. When RTK networks are unavailable at your job sites, just easily set up one i50 GNSS UHF base and use your i50 GNSS UHF rover to conduct your RTK survey.

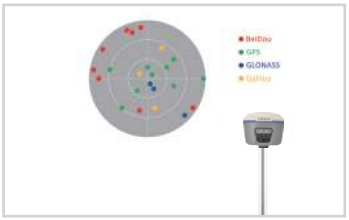




Core Technology

432 channels - Full GNSS

The Embedded 432-channel GNSS technology takes benefits from GPS, GLONASS, Galileo and BeiDou signals and provide robust data quality.



Extended connectivity

The i50 GNSS combines up-to-date connectivity modules: Bluetooth®, Wi-Fi, 4G and UHF radio modem. The 4G modem brings ease of use when RTK networks are available. The internal UHF radio modem allows long- distance field surveying up to 5 km.

Flexible work modes

Preset GNSS configurations enable quick setup with only few clicks on the front panel keyboard to match the requirements of the survey project to be completed.

Rugged and compact

The rugged and durable industrial design meets the stringent IP67 standard for environmental protection from water and dust.

Extra power

Its dual and hot-swappable batteries bring unprecedented autonomy in the field.

Applications

Specifications

GNSS Characteristics[1]	
Channels	432
GPS	L1, L2, L2C, L5
GLONASS	L1, L2
Galileo	E1, E5a, E5b
BeiDou	B1, B2, B3
SBAS	L1
QZSS	L1, L2, L5

GNSS Accuracies[2]	
Real time kinematics (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 10 s Initialization reliability: > 99.9%
Post-processing kinematics (PPK)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
Post-processing static	Horizontal: 3 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
Code differential	Horizontal: 0.4 m RMS Vertical: 0.8 m RMS
Autonomous	Horizontal: 1.5 m RMS Vertical: 3.0 m RMS
Positioning rate	Up to 10 Hz
Time to first fix[3]	Cold start: < 45 s Hot start: < 10 s Signal re-acquisition: < 1 s

Hardware	
Size (L × W × H)	140 mm x 130 mm x 106 mm (5.5 in × 5.1 in × 4.2 in)
Weight	1.29 kg (2.8 lb)
Environment	Operating: -40 °C to +65 °C (-40 °F to +149 °F) Storage: -40 °C to +75 °C (-40 °F to +167 °F)
Humidity	95%
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Shock	Survive a 2-meter pole drop
Tilt sensor	EBubble leveling
Front panel	6 status LED

Certifications
CE Mark

Communications And Data Storage	
Network modem	Integrated 4G modem LTE (FDD): B1, B2, B3, B4, B5, B7, B8, B20 DC-HSPA+/HSPA+/HSPA/UMTS: B1, B2, B5, B8 EDGE/GPRS/GSM 850/900/1800/1900 MHz
Wi-Fi	802.11 b/g/n, access point mode
Bluetooth®	v4.1
Ports	1 x 7-pin LEMO port (external power, RS-232) 1 x USB 2.0 port (data download, firmware update) 1 x UHF antenna port (TNC female)
UHF radio	Standard Internal Rx/Tx: 410 MHz to 470 MHz Transmit Power: 0.5 W to 2 W Protocol: CHC, Transparent, TT450 Link rate: 9600 bps to 19200 bps Range: Typical 3 km to 5 km
Data formats	RTCM 2.x, RTCM 3.x, CMR input and output HCN, HRC, RINEX 2.11, 3.02 NMEA 0183 output NTRIP Client, NTRIP Caster
Data storage	8 GB internal memory

Electrical	
Power consumption	4.2 W (depending on user settings)
Li-ion battery capacity	2 x 3400 mAh, 7.4 V
Operating time on internal battery[4]	UHF receive/transmit: 5 h to 7 h Cellular receive only: up to 10 h Static: up to 12 h
External power input	9 V DC to 36 V DC

*Specifications are subject to change without notice.

(1) Compliant, but subject to availability of BDS ICD and Galileo commercial service definition. GLONASS L3, BDS B3 and Galileo E6 will be provided through future firmware upgrade.
(2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices.
(3) Typical observed values.
(4) Battery life is subject to operating temperature.

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