

CHCNAV

i50

Survey & Engineering



Make your work more efficient

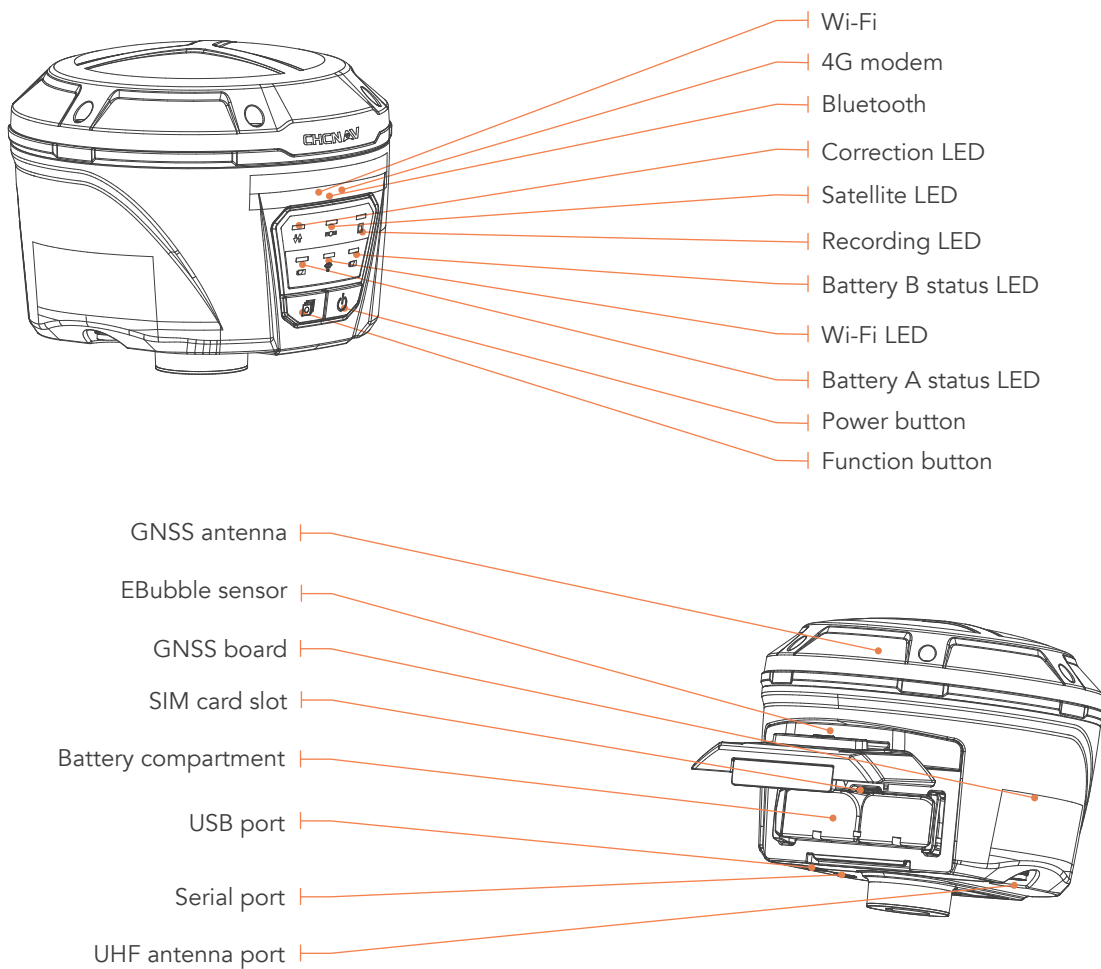
# Hardware Description

## 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 Android controller such as CHCNAV's HCE320, 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.

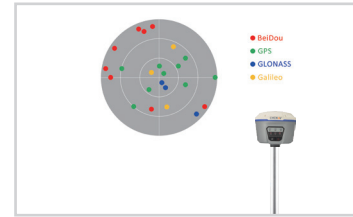


# Core Technology

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## Full GNSS RTK receiver

The Embedded full 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.



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## Applications



# Specifications

## GNSS Characteristics<sup>(1)</sup>

<b>Channels</b>	432 <sup>(2)</sup> and 624 channels optional
<b>GPS</b>	L1, L2, L2C, L5
<b>GLONASS</b>	L1, L2
<b>Galileo</b>	E1, E5a, E5b
<b>BeiDou</b>	B1, B2, B3
<b>SBAS</b>	L1
<b>QZSS</b>	L1, L2, L5

## GNSS Accuracies<sup>(3)</sup>

<b>Real time kinematics (RTK)</b>	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 10 s Initialization reliability: > 99.9%
<b>Post-processing kinematics (PPK)</b>	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
<b>Post-processing static</b>	Horizontal: 3 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
<b>Code differential</b>	Horizontal: 0.4 m RMS Vertical: 0.8 m RMS
<b>Autonomous</b>	Horizontal: 1.5 m RMS Vertical: 3.0 m RMS
<b>Positioning rate</b>	Up to 10 Hz
<b>Time to first fix<sup>(4)</sup></b>	Cold start: < 45 s Hot start: < 10 s Signal re-acquisition: < 1 s

## Hardware

<b>Size (L x W x H)</b>	140 mm x 130 mm x 106 mm (5.5 in x 5.1 in x 4.2 in)
<b>Weight</b>	1.29 kg (2.8 lb)
<b>Environment</b>	Operating: -40 °C to +65 °C (-40 °F to +149 °F) Storage: -40 °C to +75 °C (-40 °F to +167 °F)
<b>Humidity</b>	100%
<b>Ingress protection</b>	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
<b>Shock</b>	Survive a 2-meter pole drop
<b>Tilt sensor</b>	EBubble leveling
<b>Front panel</b>	6 status LED

## Certifications

CE Mark, MIL-STD-810G Vibration

## Communications And Data Storage

<b>Network modem</b>	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
<b>Wi-Fi</b>	802.11 b/g/n, access point mode
<b>Bluetooth®</b>	v4.1
<b>Ports</b>	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)
<b>UHF radio</b>	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
<b>Data formats</b>	RTCM 2.x, RTCM 3.x, CMR input and output HCN, HRC, RINEX 2.11, 3.02 NMEA 0183 output NTRIP Client, NTRIP Caster
<b>Data storage</b>	8 GB internal memory

## Electrical

<b>Power consumption</b>	4.2 W (depending on user settings)
<b>Li-ion battery capacity</b>	2 x 3400 mAh, 7.4 V
<b>Operating time on internal battery<sup>(5)</sup></b>	UHF receive/transmit (0.5 W): 5 h to 7 h Cellular receive only: up to 10 h Static: up to 12 h
<b>External power input</b>	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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