# High Performance IMU RTK GNSS Receiver <u>CHC i90</u> <u>Pro RTK GNSS</u>

The i90 Pro GNSS receiver combines the latest CHCNAV IMU-RTK technology with compatibility with L-BAND correction services to extend RTK positioning anywhere.

Unlike standard MEMS-based GNSS receivers, the i90 Pro GNSS IMU-RTK combines a state-of-the-art GNSS RTK engine, high-end calibration-free IMU sensors, and advanced GNSS tracking capabilities to provide RTK availability and reliability. It greatly improves sexuality.

i90 automatic pole tilt correction increases surveying and piling speeds by up to 20%. Construction and land surveying projects are realized with high productivity and reliability that pushes the limits of traditional GNSS RTK surveying.



Tracking multiple constellations Combine GPS, Gronus, Galileo, and Hokuto Powered by a 336-channel GNSS core engine, the i90 Pro offers robust and reliable RTK positioning for any surveying project or positioning application.

## L-band PPP modification Supports L-band and RTX<sup>™</sup> correction signals

Connected to a third-party L-band correction service, the i90 Pro GNSS offers accurate positioning below decimeter in almost any region where RTK networks, GSM coverage, or traditional GNSS base stations are not available.

### **Extended connectivity**

## Instant NFC Pairing for Controllers

The i90 Pro GNSS combines high-end connectivity modules such as Bluetooth, Wifi, NFC, 4G, and UHF wireless modems. 4G modems provide ease of use when working within an RTK network. Built-in UHF radio modem allows long-range surveys from bases up to 5km to spacecraft

### High accuracy. Anywhere

Increases investigation and piling speed by up to 30% The i90 GNSS integrated IMU guarantees real-time automatic polar tilt compensation without interference. Accuracy of 3 cm is achieved over a pole tilt range of up to 30 degrees.







## **CHC i90 Pro Specification**

GNSS Performance	
channel	336 ossuary
GPS	L1C, L1CIA, L2E, L2C, L5
GLONASS	L1C/A, L2 CIA, L3 CDMA
Galileo	E1, E5a,E5b, E5AltBOC, E6
BeiDou	B1, B2, B3
SBAS	L1C/A, L5
Quasi-Zenith Satellite	L1 CIA, L1 SAIF, L2C, L5, LEX

IRNSS	L5	
L-BAND	RTX	
GNSS A	Accuracy	
Real-Time Kinematics (RTK)	Horizontal: 8 mm 1 ppm RMS Vertical: 15 mm 1 ppm RMS Initialization time: < 10 seconds Initialization reliability: > 99.9%	
Post-processing kinematics (PPK)	Horizontal: 2.5 mm1 ppm RMS Vertical: 5mm 1 ppm RMS	
Post-processing static	Horizontal: 2.5 mm0.5 ppm RMS Vertical: 5mm0.5 ppm RMS	
Code Difference	Horizontal: 0.25m RMS	
Autonomous	Horizontal: 1 m RM Vertical: 1.5 m RMS	
Positioning speed Time until first correction 3) RTK Tilt Compensation	Up to 50Hz Cold Start: <45 seconds Hot Start: < 10 seconds Signal reacquisition: < 1 second	
Hardware		
Size (Length x Width x Height)	159mm x 150mm x 110mm (6.3" x 5.9" x 4.3")	
Weight	1.26kg (2.77lbs)	
environment	Operating: -40°C to 65°C (-40°F to 149°F) Storage: -40 °C to 85 °C (-40 °F to 185 °F)	
Humidity	1	
Intrusion protection	IP67 waterproof and dustproof, protection From temporary submersion to 1m deep	
shock	Survive from falling from a 2-meter pole	
Lilt Sensor	Ultra-slope compensation with no calibration required IMU. Resistance to magnetic disturbances. E-Bubble Leveling	
Front panel	4 Status LED 1.46 inch OLED display	
certifi	ication	
FCC Part 15 (Class B Devices), FCC Part 22, 24, 90, CE Mark, NGS antenna calibration;		
communication		
Network Modem	Integrated 4G modem LTE(FDD): B1, B2, B3, B4, B5, B7, B8, B20DC- HSPA/HSPA/HSPA/UMTS: B1, B2, B5, B8EDGE/GPRS/GSM 850/900/1800/1900 MHz	
Wi-Fi	802.11 b/g/n, access point mode	
BluetoothR	v4.1	
port	1x 7-pin LEMO port (external power supply, RS-232) 1x USB Type-C port (data download, firmware update) 1x 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: 5 km under optimal conditions
Data format	RTCM 2.x, RTCM 3.x, CMR, CMR, SCMRX I/O HCN, HRC, RINEX2.11, 3.02 NMEA 0183 Output NTRIP client, NTRIP caster
Data Storage	32GB internal memory
electricity	
Power consumption	5 W (depending on user settings)
Lithium-ion battery capacity	2x3400mAh, 7.4V