

iBase

Ultra Long Range, Full Day Runtime GNSS Station



► Highlights

Redefining Base Stations

The iBase base station simplifies field setup with a built in 5 W radio, eliminating the need for external radios and improving setup efficiency by 3 times. DistLink technology and data compression boost radio sensitivity by 30% for coverage up to 30 km. Its next generation radio reduces power consumption by 33%, delivering more than 13 hours of runtime. With Ultra Base one button startup and one tap rover matching, users can achieve fixed solutions faster with no parameter setup required.



► 13 H+ Worry-Free Work



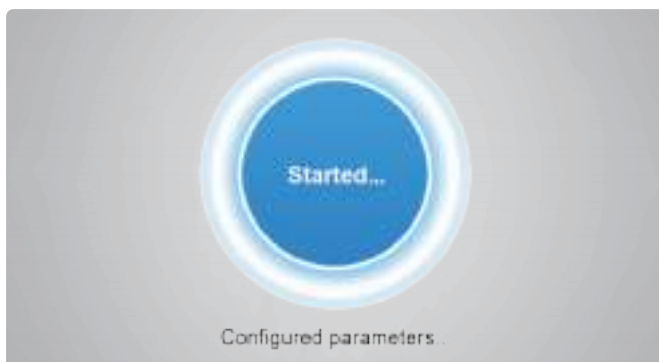
The iBase features an upgraded new generation radio with optimized transmission strategies that reduce power consumption by 33%. Base station runtime exceeds 13 hours, eliminating the need for mid-work battery changes or spare batteries.

► DistLink for 30 KM Full Range



The self-developed DistLink technology is deeply integrated with CHCNAV's proprietary GNSS differential data compression algorithm, significantly reducing airborne data transmission volume and enabling rovers to receive signals from base stations up to 30 km away.

► Auto-Switch & Instant Fix



Ultra Base mode transmits differential data through radio and network at the same time. AI powered auto pairing chooses the optimal channel or server at startup for fast fixed solutions. Automatic switching to network mode beyond radio range keeps surveying continuous and efficient.

► Comprehensive GNSS Tracking



Ensure superior accuracy with the iBase's 1408-channel GNSS technology. It supports GPS, GLONASS, Galileo, BeiDou, QZSS and SBAS constellations and PPP service, providing dependable RTK corrections and improving survey accuracy and efficiency.

► Key feature



13 H+ Runtime

13+ hours of continuous operation for worry free fieldwork.



DistLink Technology

Up to 30 km coverage, even in challenging terrain.



Ultra Base

Dual radio and network transmission with auto switching for instant fixes.



Premium GNSS

GPS, GLONASS, Galileo, BeiDou, QZSS, SBAS and PPP for reliable positioning.

► Advanced Multipath Mitigation



Improve positioning accuracy with advanced multipath mitigation algorithms. The iBase ensures that high-quality GNSS corrections are transmitted to rovers for optimal performance in challenging environments.

► Integrated and Rugged Design



Eliminate the need for external batteries and cables with the iBase's integrated design. Its industrial-grade build meets IP67 standards for dust and water resistance and has an IK08 shock rating for durability.

► Use Cases



Road Construction



Dense Forest



Suburb



Mining Sites

SPECIFICATIONS

► GNSS Performance⁽¹⁾

Channels	1408 channels
GPS	L1C/A, L2C, L2P(Y), L5
GLONASS	L1, L2, L3*
Galileo	E1, E5a, E5b, E6*
BeiDou	B1I, B2I, B3I, B1C, B2a, B2b*
QZSS	L1C/A, L1C, L2C, L5
NavIC/ IRNSS	L5
PPP	B2b-PPP*, E6B-HAS*
SBAS	L1, L5*

► GNSS Accuracies⁽²⁾

Real time kinematic (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: < 10 s Initialization reliability: > 99.9%
Post-processing kinematic (PPK)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
Post - processing static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
High-precision static	H: 2.5 mm + 0.1 ppm RMS V: 3.5 mm + 0.4 ppm RMS
Static and rapid static	H: 2.5 mm + 0.5 ppm RMS V: 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: 2.5 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
IMU update rate	200 Hz, AUTO-IMU
Tilt angle	0-60°
RTK tilt-compensated	Additional horizontal pole-tilt uncertainty typically less than 8 mm + 0.7 mm/° tilt down to 30°

► Hardware

Size (L x W x H)	Φ160.5 mm x 103 mm (Φ 6.32 in x 4.06 in)
Weight	1.73 kg (3.81 lb)
Temperature	Operating: -40°C to +65°C (-40°F to +149°F) Storage: -40°C to +85°C (-40°F to +185°F)
Humidity	100% non-condensation
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Shock	Survive a 2-meter pole drop
Tilt sensor	E-Bubble leveling
Front panel	2 LED; 0.96" OLED Display

► Communication

Network modem	Integrated 4G modem LTE (FDD): B1,B2,B3,B4,B5,B7,B8,B20 DC - HSPA+/HSPA/UMTS: B1, B2, B5, B8 EDGE/GPRS/ GSM850/900/1800/1900MHz
Wi-Fi	802.11/n, access point mode
Bluetooth®	v 5.0
Others	NFC
Ports	1 x 7-pin LEMO port (external power, RS-232) 1 x UHF antenna port (TNC female)
DistLink technology ⁽⁴⁾	The new-generation UHF radio data transmission mode of CHCNAV enables GNSS RTK Base all-day operation and long-distance range.
UHF radio ⁽⁵⁾	Standard Internal Rx/Tx: 410 - 470 MHz Transmit Power: up to 5 W Protocol: CHC, DistLink, Transparent, TT450, Satel Link rate: 9600 bps / 19200 bps Range: Typical 8 km to 12 km, optimal up to 30 km with DistLink. Typical 5 km to 8 km, optimal up to 25 km with other protocols.
Ultra Base ⁽⁶⁾	Simultaneous radio and network differential data transmission
Data formats	RTCM2.x, RTCM3.x, CMR input / output HCN, RINEX2.11, 3.02 NMEA 0183 output NTRIP Client, NTRIP Caster
Data storage	8 GB memory

► Electrical

Power consumption	12 W (depending on user settings)
Li-ion battery capacity	2 x 7000 mAh, 7.4 V
Operating time on internal battery ⁽⁷⁾	UHF base: up to 13 h (DistLink). 8 h to 10 h (other protocols) Static: up to 25 h
External power input	9 V DC to 28 V DC

► Compliance with Laws and Regulations

International standards	NGS Antenna Calibration, IEC 62133-2:2017+A1, IEC 62368-1: 2014, EN 62368-1:2014+A11:2017, UN Manual Section 38.3
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*All specifications are subject to change without notice.

(1) Compliant, but subject to availability of BDS ICD, GLONASS, Galileo, QZSS and IRNSS commercial service definition. GLONASS L3, Galileo E6, Galileo E6 High Accuracy Service (HAS), BDS B2b and SBAS L5 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) All test values above are from CHC Navigation internal labs under typical conditions. Actual results may vary due to product differences, software versions, usage, and environmental factors.

(5) The use of UHF datalink may be subject to local regulations. Users must ensure that the device is not operated without the permission of the local authorities on frequencies or power output other than those specifically reserved and intended for use without required permit.

(6) Will be enabled in a future firmware upgrade, dependent on existing server coverage availability.

(7) Battery life is subject to operating temperature, environment, and working mode.

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