CHCNAV

iBase
GNSS RECEIVER

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SURVEYING &
ENGINEERING

RUGGED
INTEGRATED GNSS
BASE RECEIVER

The iBase GNSS receiver is a fully integrated professional GNSS base station, specifically designed to meet 95% of surveyors' needs when working in UHF GNSS base and rover mode. The performance of the iBase UHF base station compared to a standard external UHF radio modem is almost perfect. But its unique design eliminates the need for a heavy external battery, cumbersome cables, external radio and radio antenna. Its 5-watt radio module provides operational GNSS RTK coverage up to 8 km and features a real-time UHF interference self-checking technique, allowing the operator to select the most appropriate frequency channel to use.

THE CONCEPT OF GNSS RTK STATION REDEFINED

Start your projects in fractions of seconds.

The iBase GNSS station is an all-in-one RTK GNSS station. No more cables or external batteries. No need to take many accessories, resulting in easier operation. The simplicity of the setup process improves work efficiency at least 3 times compared to conventional external radio solutions. Beyond a simple GNSS station, the iBase also includes a 4G modem for transmitting GNSS corrections via TCP/IP server. If connected to a RTK GNSS network, the iBase can be turned into a UHF repeater to broadcast RKT corrections to multiple rovers across a project site.

LOWER CONSUMPTION, LONGER AUTONOMY, BROADER COVERAGE!

Increased performance with 50% less power consumption.

The iBase GNSS electronics design significantly reduces power needs without sacrificing the UHF modem's performance. Its two high-capacity removable batteries provide up to 12 hours of continuous operation when transmitting RTK corrections at 5 watts power output. With UHF coverage of up to 8 km in typical survey operations, and up to 5 km in difficult conditions such as wooded and suburban areas.

INDUSTRIAL GRADE DESIGN

Rugged conception for uninterrupted work.

iBase is the GNSS base receiver that you can rely on regardless of your working environment. Its industrial design meets the stringent IP67 standard for water and dust ingress protection. The IK08 impact protection level further extends the life of the iBase GNSS receiver, allowing it to withstand accidental falls from the height of a tripod onto hard ground.

BEST GNSS SIGNAL TRACKING IN ITS CLASS

Full GNSS with 624 channels and advanced multipath mitigation.

The state-of-the-art 624-channel GNSS technology leverages GPS, GLONASS, Galileo and BeiDou. The iBase GNSS integrates cutting-edge GNSS antenna technology and multipath mitigation algorithms to ensure that the highest quality GNSS corrections are transmitted to the GNSS rovers. The iBase outputs standard DGNSS corrections in RTCM 3.x format for optimal performance. Internal 8 GB memory is available to store GNSS raw data for post-processing or quality control at a later stage.

BOOST PRODUCTIVITY OF
GNSS BASE+ROVER SURVEY

SPECIFICATIONS

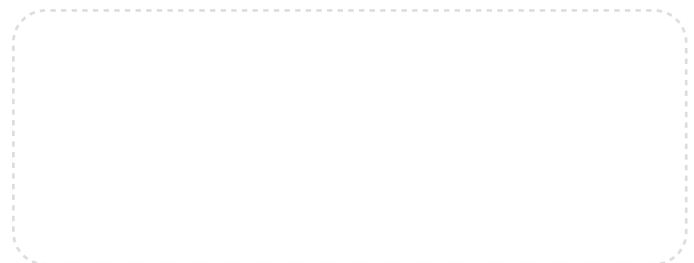| GNSS Performance [1]	
Channels	624 channels
GPS	L1, L2, L5
GLONASS	L1, L2
Galileo	E1, E5a, E5b
BeiDou	B1, B2, B3
SBAS	L1
QZSS	L1, L2, L5

GNSS Accuracies	
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: 2.5 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 m RMS Vertical: 1.5 m RMS
Positioning rate	Up to 10 Hz
Time to first fix	Cold start: < 45 s Hot start: < 30 s Signal re-acquisition: < 2 s

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)
Environment	Operating: -40°C to +65°C (-40°F to +149°F) Storage: -40°C to +85°C (-40°F to +185°F)
Humidity	100% 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

Certifications	
NGS Antenna Calibration	

Communication	
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/GSM850/900/1800/1900 MHz
Wi-Fi	802.11 b/g/n, access point mode
Bluetooth ®	BT4.1
Others	NFC
Ports	1 x 7-pin LEMO port (external power, RS-232) 1 x UHF antenna port (TNC female)
UHF radio [4]	Standard Internal Rx/Tx: 450 - 470 MHz Transmit Power: up to 5 W Protocol: CHC,Transparent, TT450, Link rate: 9600 bps / 19200 bps Range: Typical 5 km to 8 km
Data formats	RTCM2.x, RTCM3.x, CMR input / output HCN, HRC, 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 [5]	UHF receive / transmit (5 W): 8 h to 12 h Static: up to 15 h
External power input	9 V DC to 28 V DC

*All specifications are subject to change without notice.
(1) Compliant, but subject to availability of BDS ICD and Galileo commercial service definition. 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) 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. (5) Battery life is subject to operating temperature.

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