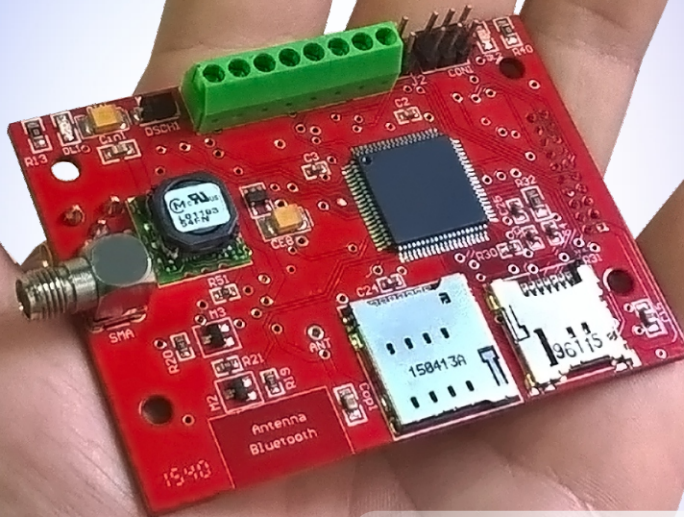


# GNSS RTK **RTKITE** RECEIVER

**MAXIMUM PERFORMANCE AND  
ACCURACY AT YOUR HANDS**



## **Powerful, Flexible and Compact 444 channel Double Frequency GNSS RTK**

- **Bluetooth** for Navigation and Configuration
- Integrated **SD Card**, **SIM Card** and **Mobile Modem**
- Lightweight and compact ready for **UAV** integration
- Ready for **Pixhawk**, **DJI A2** and other autopilots
- Rugged and precise for **Industrial** applications
- Works as **RTK Rover** by UHF or Mobile Network
- Transmits as **RTK Base** by UHF or Mobile Network
- Supports external **UHF** and **RF** communications
- Real time millimetric position at 1, 5 and **10Hz**
- Real time event logger at 20 and **150Hz**
- Compatible with any **NMEA** software for **Windows or Linux PC**, **Windows Mobile** or **Android**
- The **best Cost/Benefit** ratio of the market

**444 CHANNELS DOUBLE FREQUENCY**

**MILLIMETRIC ACCURACY**

# GNSS RTK **RTKITE** RECEIVER

## GPS, GLONASS, SBAS, RTK

### RTKite GNSS RTK Receiver Module

#### System Overview

- Dual-frequency GNSS RTK Receiver with 444 channels and communications.
- Receives Helix, Vehicular and Surveying patch GNSS Antennas
- Works as Network Rover with internal Cellular Modem or UHF radiomodem module.
- Works as RTK Base with Cellular Modem or external UHF radiomodem (2W- 45W)
- Integrated cellular modem with North Auto-Caster® P2P technology.
- Integrated Bluetooth® wireless technology
- Integrated SD Card slot for Memory expansion up to 16 GB
- Supports NMEA, NTRIP, RTCM, CRM, Transparent and more industrial protocols.
- Accepts UHF Transceiving Radiomodem compatible with most brands.
- Compatible with the North SmarTK GNSS line and RTKs of other brands.
- Compatible with standard CORS and VRS Reference Station networks.

#### North Software Options - Unique design to work Natively with NMEA drivers.

- North TopView™ for Android, Windows CE, Windows Mobile or Windows PC.
- Carlson SurvPC™ and SurvCE™
- North GIS Surveyor™
- Microsurvey Field Genius™
- Esri ArcPad™
- Compatible with Windows PC, Mobile, Linux, Android or Embedded NMEA Software.

#### Performance Specifications

##### Receiver

- North Stealth Survey GNSS chip board with 444 Channels
- North Stealth Multipath Shield technology, for maximum noise filtering.
- Multiple radio samplers gives the most accurate band tuning available.
- Patented SAW filtering method for Doppler signal sampling.
- Available as GPS or GNSS versions in both Single L1 and Double Frequency L1+L2
- High precision multicorrelating GNSS pseudorange measurements.
- GNSS carrier phase with low noise with <1 mm precision in a 1 Hz bandwidth
- North Low-Track Technology for increased reception of horizontal signals.
- Signal-to-Noise ratios reported in dB-Hz
- Satellite signals tracked:

**GPS:** L1C/A, L1C, L1E, L2C, L2E and L5

**GLONASS:** L1C/A, L1P and L2C/A

**COMPASS:** L1C/A and L2C (Available upon request)

**GALILEO:** L1, L2, (Available upon request)

**SBAS:** EGNOS, WAAS, MSAS, GAGAN

**Sampling Rate:** 1Hz, 5Hz, 10Hz on RTK, 20Hz Raw Logging and 150Hz event log.

**Code differential positioning (DGPS)**

Horizontal ± 0.25 m + 1 ppm RMS

Vertical ± 0.50 m + 1 ppm RMS

**Postprocessed static (PPS) fast static and kinematic (PPK) surveying (stop&go)**

Horizontal ± 3 mm + 0.5 ppm RMS

Vertical ± 5 mm + 0.5 ppm RMS

**Real Time Kinematic (RTK) surveying. UHF or Network, Single Baseline <30km**

Horizontal ± 8 mm + 1 ppm RMS

Vertical ± 15 mm + 1 ppm RMS

Initialization time typically <10 seconds

Initialization reliability typically >99.9%

**RTK Initialization Range:** Short, Mid and Long range up to 50 Kilometers

#### Communication Protocols and NTRIP compliance

RTCM 2.1, 2.2, 2.3, 3.0 and 3.1, CRM, CRM+ input and output / RINEX and Novatel 23 formats of NMEA Extended, includ. GGA, GGL, GSA, GSV, PPP, MARK-IN, etc.

#### Data Link Auto-Caster for Mobile Network

Direct Auto-Caster Base to Rover P2P communication

Protocols: Transparent / NTRIP

CORS and Auto-Caster support

#### Energy

Typical power consumption: 2.8W (UHF Rx) // 6.3-10.0 VDC Rx/Tx

External power input : 7-12 VDC

#### Communications

RS232 serial port / CMOS

SD Memory

Quad-Band Cell Modem: GSM 850, EGSM 900, DCS 1800, PCS 1900 / 85.6 kbps

Integrated Type II Bluetooth® communications port

### HARDWARE

#### Physical

Dimensions (L x H x W) 7.4 cm x 5.4 cm x 2.54 cm without antenna.

Helix Antenna Dimensions: (L x D) 5.9 cm x 2.75 cm

Weight 55 gr without antenna. Antenna Weight: 25gr.

Working Temperature: -40 °C to +85 °C / Storage Temperature: -55 °C to +85 °C

With 1GB SD Memory, records more than 1000hours @ 1 sec. (upgrades up to 16GB)

Humidity 95%, Non condensing, without enclosure.

Shock and vibration tested to meet the following environmental standards:

Operating: to 40 G, 10 msec, zigzag / MIL-STD-202 F 214 A / SAE J1211 4.7

#### Standard Helix GNSS Antenna (Removable)

Helical Dual Frequency GNSS Dual Helix Antenna with Coaxial Phase Center

Integrated Multi-Path rejection filter to eliminate noise from the source.

High Power impedance of 50 Ohm, with > 5dBi Zenithal gain.

Maximum Phase Center error of ± 1.00mm

RHCP Polarization and 360° Azimuthal Coverage with low-elevation boost

#### Optional Data Link UHF Radiomodem

Internal Transmitting Power: Switchable 0.5W / 2W

External Transmitting Power: 25W / 45W switchable, with external power supply.

Power draw: 0.3 Watts Rx // 3.8-8.0 VDC Rx/Tx

Antenna: External, TNC, 50 Ohm

Link Rate/Modulation: 19,200 bps, 9600 bps, 4800 bps

Link Protocols: Transparent, Packet Switched, Trintalk, Fast Asynchronous

64 UHF Channels on 3 Bands: 400-430KHz, 430-450KHz, 450-470KHz Included.

Frequency Control: Synthesized 12.5 kHz Resolution

Sensitivity: -110 dBm BER 10-5

Optional Modes: Transmitting and Receiving // Receiving only

#### STANDARD SET INCLUDES:

- 1 RTKite Receiver
- 1 Helix GNSS Antenna
- 1 Motherboard

#### OPTIONAL ACCESSORIES:

- Battery Charger
- 7.4v 2,400mAh Lithium battery
- UHF Tx/Rx 2W Transceiving Radiomodem
- UHF Tx/Rx 5W Transceiving Radiomodem
- UHF 450 Mhz Receiving Whip Antenna
- UHF 450 Mhz Transmitting Omni Antenna
- UHF 25W/45W Switchable UHF Amplifier
- UHF 15W/35W Switchable UHF Radiomodem
- Surveying Grade 4 Element GNSS Antenna
- Aeronautic Grade GNSS Antenna
- Military and Industrial Grade GNSS Antenna
- Choke Ring CORS Station GNSS Antenna
- L1 GNSS receiver Module
- GNSS RTK SmarTK Base Receiver
- Rugged Plastic Enclosure

Notes: - Accuracy, TTFF and reliability specifications may be affected by multipath, satellite geometry and atmospheric conditions. Specifications assume at least 5 satellites and follow up of recommended practices.

- UHF type approvals are country specific. -Specifications may change without previous notice.

