

# N5 GNSS Receiver

GNSS Surveying System

Ver.2020.6.24

## Signal Tracking

Channels: 574  
 GPS: L1 C/A, L2C, L2P, L5  
 BeiDou: B1, B2, B3  
 BeiDou Global Signal: B1C, B2a  
 GLONASS: L1 C/A, L1P, L2 C/A, L2P  
 Galileo: E1, E5a, E5b, AltBOC  
 QZSS, IRNSS<sup>1</sup>  
 SBAS: WAAS, EGNOS, MSAS, GAGAN  
 L-Band<sup>2</sup>

## Performance Specifications

Cold start: <50 s  
 Warm start: <30 s  
 Hot start: <15 s  
 Initialization time: <10 s  
 Singal re-acquisition: <1.5 s  
 Initialization reliability: >99.9%

## Positioning Specifications

Mode	Accuracy
Static and Fast Static	2.5 mm + 0.5 ppm Horizontal 5 mm + 0.5 ppm Vertical
Long Observations Static	3 mm + 0.1 ppm Horizontal 3.5 mm + 0.4 ppm Vertical
Real Time Kinematic	8 mm + 1 ppm Horizontal 15 mm + 1 ppm Vertical
E-RTK (<100 km) <sup>3</sup>	0.2m + 1 ppm Horizontal 0.4m + 1 ppm Vertical
DGPS	<0.4 m RMS
SBAS	1 m 3D RMS
Standalone	1.5 m 3D RMS
PPP	10cm Horizontal and 20cm Vertical

## Communications

1 Serial port (7 pin Lemo)  
 - Baud rates up to 921,600 bps  
 UHF modem<sup>4</sup>: Tx/Rx with full frequency range from 410-470 MHz<sup>5</sup>  
 - Transmit power: 0.5-2 W adjustable  
 - Range: 1-5 km<sup>6</sup>  
 WIFI/4G modem  
 - 4G Bands: 800/900/1800/2100/2600 MHz  
 - 3G Bands: 900/2100 MHz  
 - 2G Bands: 900/1800 MHz  
 - Support GSM, Point to Point/Points and NTRIP  
 Position data output rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz  
 2 LEDs (indicating Satellites Tracking and RTK Corrections data)  
 1 OLED Display and 2 Function buttons  
 Bluetooth<sup>®</sup>: V 4.0 protocol, compatible with Windows OS and Android OS  
 Calibration-free IMU integrated for Tilt Survey  
 Up to 60°tilt with 2.5 cm accuracy

## Data Format

Correction data I/O:  
 - RTCM 2.X, 3.X, CMR (GPS only), CMR+ (GPS only)  
 Position data output:  
 - ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST; PTNL, PJK; PTNL, AVR; PTNL, GGK  
 - ComNav Binary update to 20 Hz

## Physical

Size(W × H): Φ 15.5 cm × 7.3 cm  
 Weight: 1.2 kg with two batteries

## Environmental

Operating temperature: -40 °C to + 65 °C (-40 °F to 149 °F)  
 Storage temperature: -40 °C to + 85 °C (-40 °F to 185 °F)  
 Humidity: 100% non-condensing  
 Waterproof and dustproof: IP67, protected from temporary immersion to depth of 1 m  
 Shock: Designed to survive a 2 m drop onto concrete

## Electrical and Memory

Input voltage: 5-27 VDC  
 Power consumption: 2.7 W<sup>8</sup>  
 Li-ion battery capacity: 2 × 3400 mAh, up to 15 hours typically  
 Memory: 8 GB

## Software

Survey Master Android-based data collection software  
 Carlson SurvCE field data collection software (optional)  
 MicroSurvey FieldGenius field data collection software (optional)

1. QZSS and IRNSS are reserved for future upgrade.
2. PPP service is optional.
3. BeiDou B3 signal is used in RTK calculating engine to enlarge length of baseline, which is only available in Asia Pacific area.
4. UHF modem is default configuration and it can be removed according to your specific needs.
5. Integrated UHF ranges from 410 to 470 MHz with 12.5 KHz channel spacing.
6. Working distance of internal UHF is varies in different environments, the maximum distance is 5 Km in ideal situation.
7. Power consumption will increase if transmitting corrections via internal UHF.

Specifications subject to change without notice.



# N5 IMU GNSS RECEIVER

A reliable IMU RTK receiver you can really count on in the field!\*

# N5 IMU RTK

Up to 60° tilting compensation, no need to center the Bubble, enables to measure quickly and acquire the precise position easily.

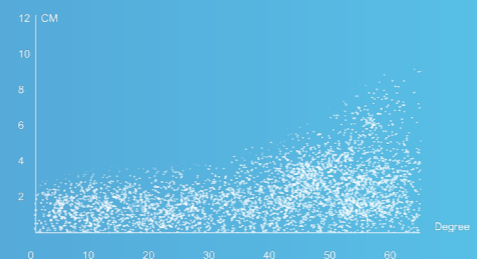
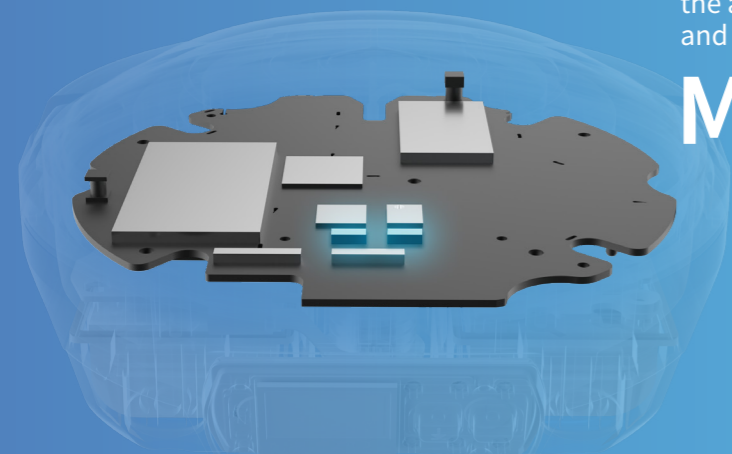
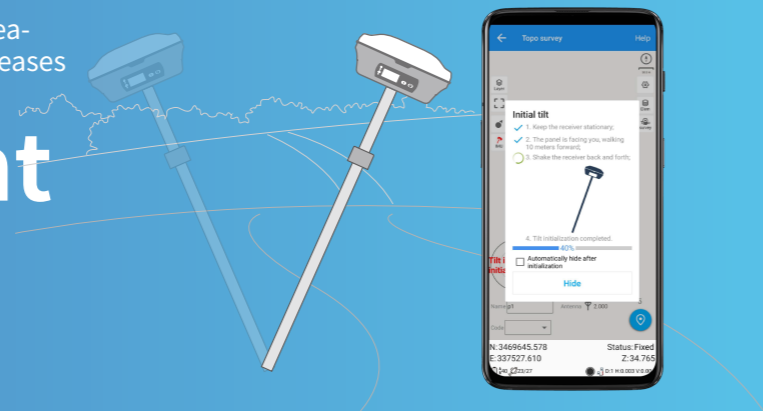
## More Convenient

In-built IMU and adopted self-developed core algorithm, with the accuracy less than 2.5cm, ensure the accuracy anywhere and anytime, without being effected by geomagnetic.

## More Reliable

One-time adjustment for successive tilting measurement with centimeter-level accuracy increases work efficiency.

## More Efficient



# Features



### Full constellations tracking

Powerful tracking capability with 574 Channels  
Support all current and future GNSS constellations  
Improved fixed rate by integrated with new anti-interference algorithm technology



### Enhanced OLED Display

Sunlight readability for a clear, easy-to-read viewing experience  
Handle all of surveying operations on screen freely



### 6800mAh Large Li-battery

Last over 15hrs' work time.  
Support mobile charging, no worry about power-off



### Support PPP

Easy installation, start survey work without base station.  
Achieve centimeter-level accuracy with PPP mode



### Rugged housing

IP 67 waterproof and dustproof  
Survive a 2m drop onto concrete



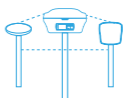
### Web-based UI

Available for users to check receiver status via the web UI.  
Easily download the static data without connecting cable



### Adjustable TX & RX Internal UHF\*

Integrated UHF ranges from 410 to 470 MHz with 12.5 KHz channel spacing



### Seamlessly Work with Network RTK Positioning

Perfectly work with all kinds of CORS world-wide with in-built 4G modem

\* UHF is removable according to specific regulation in different countries.

# R550 Data Collector

**IP67** waterproof and dustproof

In-built **7000mAh battery** supports at least 24hrs' work

**4GB+8GB** storage, expandable up to 128GB

**5"** capacitive touch screen with sunlight readability

Support of Bluetooth, WIFI and 4G

Typical **Type-C** interface

Less than **4 hours PE fast charging**

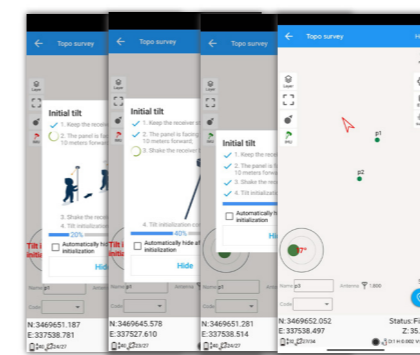
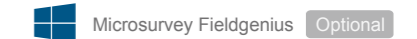
**Octacore 2.0GHz** processor



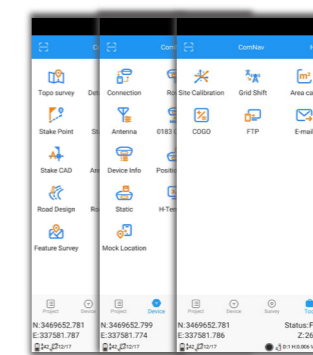
# Software

## Survey Master

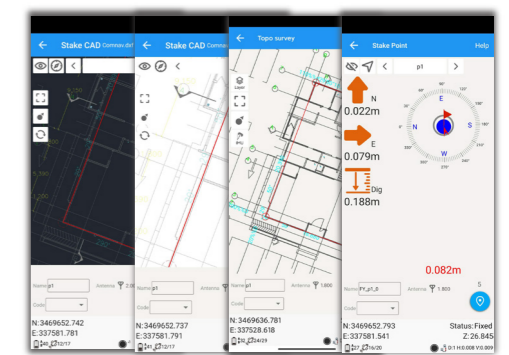
- Compatible with most of Android devices
- Easier survey workflow via Wizard function
- Support up to 60° IMU tilt compensation
- Support all survey modes, including Static, PPK and RTK
- Access to real-time open street maps
- Support CAD import and directly use for stake
- Collect users' feedback through Cloud Service



IMU Tilt Survey



New Interface



CAD Basemap and Stake

## Post-processing Software

# SinoGNSS Compass solution software

- Provide the complete GPS/GLONASS/BeiDou/GALILEO processing solution
- Support GNSS observation data in RINEX and ComNav Raw Binary Data formats
- Support different post-processing in static and kinematic modes
- Output analysis reports in various formats (web format, DXF, TXT, KML)

