SPECIFICATIONS

GNSS Performance

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<th>Channels</th>
<th>L1C/A, L2C, L2E, L5</th>
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<td>Trimble RTX</td>
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Positioning precision

- Code differential GNSS positioning
  - Horizontal: 0.25m ± 1ppm RMS
  - Vertical: 0.50m ± 1ppm RMS

Static ONS surveying

- Horizontal: 3mm ± 1ppm RMS
- Vertical: 5mm ± 4ppm RMS

Real-time kinematic surveying

- Horizontal: 8mm ± 1ppm RMS
- Vertical: 15mm ± 1ppm RMS

XTK

- Horizontal: 4-10cm
- Vertical: 8-20cm
- xFill
  - Horizontal RTK: 5 ± 10mm/min RMS
  - Vertical RTK: 5 ± 20mm/min RMS

SBAS positioning

- Typically ± 5m 3DRMS

Hardware performance

- Dimension: 152mm(¶) × 137mm(H)
- Weight: 1.44kg (including battery)
- Material: Magnesium alloy shell
- Operating temperature: -40°C ~ +65°C
- Storage temperature: -55°C ~ +85°C
- Humidity: 100% Non-condensing

Waterproof/Dustproof: IP67 standard, protected from long time immersion to depth of 1m

Shock/vibration: MIL-STD-810G standard vibration test certified

Electrical: 9-25V wide voltage DC design, with overvoltage protection

Battery: 7.4V, 6800mAh removable battery with the indicator displaying the power usage

Battery life: >30 hrs in static mode, >15 hrs in RTK mode, optional battery solution of 7~24 hrs

Communications

- I/O port: 5-pin LEMO port, 7-PIN USB port (OTG)
- Internal UHF: 1W/2W/3W radio receiver and transmitter
- Base station protocol: Trimtalk450S, SOUTH, SOUTH+, SOUTH
- External UHF: SW520 radio transmitter

Cellular mobile network: TDD-LTE, FDD-LTE 4G network modem, downward compatible with 3G network and 2G network

Bluetooth: BLE, Bluetooth 4.0 standard, Bluetooth 2.1+EDR

Data storage/transmission

- Data storage: 8GB internal storage, external USB storage supported, changeable sampling interval up to 50Hz

Data transmission: USB data transmission, FTP download, HTTP download

Differential data format: CMR, CMRx, RTCM 2.x, RTCM 3.x

GPS output data format: NMEA0183, P, P, P, P plane coordinates, binary code, Trimble GSOF

Network model support: VRS, FKP, MAC, supporting NTRIP protocol

Inertial sensing system

- Tilt survey: Built-in tilt sensor, correcting coordinates automatically according to the tilt direction and angle of the pole

Electronic bubble: Built-in E-Bubble sensor, controller software displays a bubble, correcting leveling status of the carbon pole real-time

Thermometer: Built-in thermometer sensors, adopting intelligent temperature control technology, monitoring and adjusting the receiver temp.

Operating system/User interface

- Operating system: Linux
- Buttons: 2 buttons and visual operation interface
- LCD: 0.96 inch HD OLED screen, 128 x 64 resolution
- Indicators: 4 LED indicators

Web interface

- Access the internal web interface management via WiFi or USB connection, users are able to monitor the receiver status and change the configuration freely

Voice guidance

- Voice intelligent voice technology supports use of various voice languages, supports Chinese, English, Korean, Russian, Portuguese, Spanish, Turkish, and allows to use defined local voice

Secondary development

- Provides secondary development package, and opens the OpenSIC observation data format and interaction interface definition

Cloud service

- The powerful cloud platform provides online services like remote manage, update firmware, online register and etc.

WiFi

- Standard: IEEE 802.11 b/g
- Receiver: 150Mbit/s communication rate
- External UHF: 403-473MHz
- Internal UHF: 1W/2W/3W
- Frequency: 433-478MHz
- Protocol: Trimtalk450S, SOUTH, SOUTH+

GPS output data format: NMEA0183, P, P, P plane coordinates, binary code, Trimble GSOF

Network model support: VRS, FKP, MAC, supporting NTRIP protocol

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[1] It requires a subscription to data service.
[2] It also requires a subscription to the data service, and precision is dependent on SBAS satellite availability. RTK positioning error after 1 minute of radio downtime.
[3] The RTK accuracies depend on correction service chosen. And 95% of the time with E5B satellite are around 0-5cm.
During the Multiple constellation age, SOUTH keep developing and optimizing the innovative products for customers. SOUTH Galaxy G6 RTK system adopts intelligent cloud platform as its new engine, to lead the development of smart RTK system.

**Key Features**

### Full satellite constellations support

Equipped with most advanced GNSS boards, SOUTH Galaxy G6 system can track most signals from all kinds of running satellite constellations, especially supports the signals from Beidou, also is able to get position result only with Beidou signal.

### Supports PPP services

Galaxy G6 is able to access the RTK services with tracking L-Band signals, really achieves the goal of precise single-point positioning without a reference, the positioning is no more constrained by terrain environment, such as mountain, wasteland, desert, island, fixed solution is generally available as long as the GNSS constellations are visible.

### Unlocked feature--xFill

Integrated with high-performance GNSS board, Galaxy G6 supports the new service that extends RTK positioning for several minutes when the RTK correction stream is not available.

### Tilt measurement

The internal tilt sensor helps receiver to survey without leveling the instrument, in order to improve survey efficiency, at the meantime, with the electronic bubble, the tilt angle of the instrument can be displayed in real time, that makes sure the accuracy and reliability of tilt measurement, and tilt angle can reach 30 degree maximum.

### Shake tilt measurement

It's a tilt measurement technology based on the patented core algorithm. No magnetic sensor use, calibration-free, anti-jitter, unlimited tilt angle.

### Web UI management platform

Embedded Linux operation system+SOUTH intelligent cloud platform. The receiver is no longer an independent hardware device, it's a complete intelligent operation system with web page cloud platform. Accessing to the internal Web UI of galaxy G6 supports WiFi or USB connection. Users can monitor the receiver status and configure it via the internal Web UI management platform.

### Intelligent data communication

**Built-in network module**

Equipped with standard 4G module which supports TDD-LTE/FDD-LTE 4G network, and downward compatible with WCDMA/CDMA2000 3G and GPRS/EDGE 2G network. Smart PPP dialing technology can auto dial which makes the Galaxy G6 keeping online continuously during the survey.

**Built-in functional digital radio**

SOUTH self-developed digital radio which can fully support the communications with the mainstream radio protocols: Trimtalk450s, SOUTH, SOUTH+, SOUTHx, huace, ZHD, Satel. Realize the random switching of the radio range 403MHz-473MHz and the power level as well.

**Radio repeater:** The rover can broadcast the corrections via internal radio to other rovers after receiving the radio differential signal from Base station.

**Internet repeater:** The rover can broadcast the corrections via internal radio to other rovers after received the network differential signal from CORS station.

### Intelligent storage technology

- Internal 8G storage supporting external U disk storage
- Supporting STH, Rinex format, sample frequency can reach to 50Hz
- Automatic circular storage, delete the primary data once the disk is full automatically
- On-key intelligent copy, supporting direct data copy by external U disk

### Intelligent power supply technology (Optional)

- Equipped with large capacity portable power source which supply the power continuously
- Long endurance removable lithium battery which can display the remaining power real time
- Adopting intelligent power saving mode, rising the endurance time 20% under the normal work mode

### HD LCD

0.96 inch HD OLED colorful LCD supporting multiple language display and it is suitable to field work with high brightness and low power consumption.

### Intelligent temperature control technology

Built-in several thermometer sensors, intelligent temperature control technology, monitor and adjust the receiver temperature real time and guarantee the best work status.