# SPECIFICATIONS

| Satellite Signals Tracked Simultaneously | |
|---|---|
| Signal tracking | 220 channels (standard),965 channels (optional), 555 channels (optional)[1] |
| | BeiDou (B1, B2, B3) |
| | GPS (L1C/A, L1C, L2E, L2C, L5), |
| | Galileo (E1, E5a, E5b, Alt-BOC, E6) |
| | Glonass (L1C/A, L1P, L2C/A, L2P, L3) |
| | SBAS (WAAS, EGNOS, MSAS, GAGAN), L-band, QZSS (L1 C/A, L1C, L2C, L5, LEX) |
| GNSS features | Positioning output rate:1Hz, 2Hz, 5Hz, 10Hz, 20Hz & 50Hz (depends on installed option) |
| | Initialization time:<10s |
| | Initialization reliability:>99.99% |

| Positioning precision | |
|---|---|
| Code differential DGPS/RTCM Typically | Horizontal: 25cm+1ppm        Vertical: 50cm+1ppm |
| SBAS positioning accuracy | Typically < 5m 3DRMS |
| Static (phase) with long observations | Horizontal: 2.5mm+0.5ppm       Vertical: 5mm+0.5ppm |
| Real-time Kinematic surveying | Horizontal: 8mm+1ppm        Vertical: 15mm+1ppm |
| Network RTK | Horizontal: 8mm+0.5ppm        Vertical: 15mm+0.5ppm |
| RTK initialization time | 2~8s |

| User interaction | |
|---|---|
| Operaing system | Linux |
| Buttons | Single button operation |
| Indicators | Three indicate lights |
| Web UI | Freely to configure and monitor the receiver by accessing to the web server via Wi-Fi and USB |
| Voice guide | iVoice intelligent voice technology provides status and voice guide |
| | Supporting Chinese, English, Korean, Russian, Portuguese, Spanish, Turkish and user define |

| Hardware performance | |
|---|---|
| Dimension | 129mm(Diameter)x112mm(Height) |
| Weight | 1kg(battery included) |
| Material | Magnesium aluminum alloy shell |
| Operating | -45°C~+60°C |
| Storag | -55°C~+85°C |
| Humidity | 100% Non-condensing |
| Waterproof/Dustproof | IP68 standard, protected from long time immersion to depth of 1m |
| | IP68 standard, fully protected against blowing dust |
| Shock and vibration | Withstand 2 meters pole drop onto the cement ground naturally |
| Power Supply | 9-25V DC, overvoltage protection |
| Battery | Rechargeable, removable Lithium-ion battery, 7.4V; standard four batteries power package(optional) |

| Communications | |
|---|---|
| I/O port | 5-PIN LEMO port, 7-PIN USB port (with OTG) |
| | 1 TNC radio antenna interface, SIM card slot |
| UHF modem | Built-in radio, 1W/2W/3W switchable, typically work range can be 8KM |
| | Radio and internet repeater switchable |
| Frequency Range | 410-470MHz |
| Communication Protocol | TrimTalk, SOUTH, SOUTH+, SOUTHx, huace, ZHD, Satel |
| Cellular Mobile Network | TDD-LTE/FDD-LTE 4G network modem, downward compatible with WCDMA/CDMA2000 3G and GPRS/EDGE 2G |
| Double Module Bluetooth | BLEBluetooth 4.0 standard, support for android, ios cellphone connection |
| | Bluetooth 2.1 + EDR standard |
| NFC Communication | Realizing close range (shorter than 10cm) automatic pair between receiver and controller |
| | (controller equipped NFC wireless communication module needed) |

| WIFI | |
|---|---|
| Standard | 802.11 b/g standard |
| WIFI Hotspot | The WIFI hotspot allows any mobile terminal to connect and access to the internal webserver for the control |
| | and moditor receiver |
| WIFI data link | To work as the datalink that receiver is able to broadcast and receive differential data via WIFI |

| Data storage/ Transmission | |
|---|---|
| Data Storage | 8GB SSD internal storage |
| | Support external USB storage and automatical cycle storage |
| | Changeable record interval, up to 50Hz raw data collection |
| Data Transmission | USB data transmission, supporting FTP/HTTP data download |
| Data Format | Differential data format: CMR+, SCMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 |
| | GPS output data format:  NMEA 0183, PJK plane coordinates, Binary code, Trimble GSOF |
| | Network model support:  VRS, FKP, MAC, fully support NTRIP protocol |

| Inertial sensing system | |
|---|---|
| Tilt survey (optional)[2] | Built-in tilt compensator, correcting coordinates automatically according to the tilt direction and angle |
| | of the centering rod |
| Electronic bubble (optional)[3] | Controller software display electronic bubble, checking leveling status of the centering rod real time |
| Thermometer | Built-in thermomter sensors, adopting intelligent temperature control technology which can mornitor and |
| | adjust the temperature of receiver in real time |

[1] The OEM board with 555 channels reserves the function of tracking L-Band from TerraStar, it requires a subscription to TerraStar data service.
[2] Tilt sensor is not the standard configuration on new Galaxy G1.
[3] Bonding with tilt sensor, electronic bubble also is an option for new Galaxy G1.



## New GALAXY G1
— Innovative GNSS Receiver —

I am back with upgrading...

Linux OS   All constellations   Tilt survey   AP hot spot   NFC   Radio Router   Bimodule bluetooth   Industrial 3-proofings   Cloud service   8G SSD storage   RINEX support

Behind every significant epoch-making change in human society, always accompanied by the birth of an important technology.

Computer and electronics make surveying and mapping industry achieve a span from the analog age to the digital age.

And the development of Internet technology further opens the prelude of surveying and mapping information age.

In the form of the ubiquitous, internet is penetrating and fusion in all corners of the surveying technology, and setting off an unprecedented reconstruction and transformation.

In the dawn of a new era, south is walking in front of it to craft new Galaxy 1 which opening a 'i' era of high-precision positioning applications.

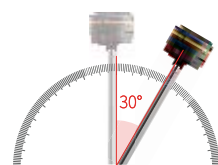## KEY FEATURES

### GNSS features
The new G1 has more options for GNSS board selection, and all of them own the ability of tracking most signals from all kinds of running satellite constellations. And this compact device is allowed to enable and disable tracking the constellations.

### Bluetooth
Equipped with dual-mode Bluetooth v4.0 standard which is able to connect the other smart devices and compatible with Bluetooth v2.1 standard. It not only enlarges the work range but also makes the data communication become more stable.

### NFC
A light touch can be successfully paired which makes the connection become faster and more convenient.
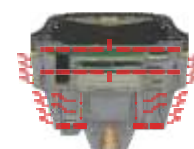
### Tilt survey
The internal tilt sensor helps receiver to survey without centering, in order to improve survey efficiency, and tilt angle can reach 30 degree maximum.

30°

Tilt survey

### Temperature control technology
Built-in sensitive thermometer sensors can monitor the temperature of each integrated modules in real time and then adjust it to make sure the receiver is in a best status.

## OPTIMIZING

### Easy-to-use of SIM slot
The new design of SIM card slot avoid inserting wrong place, and it is easy to insert and take out the SIM card.

### Stable TNC radio interface
The more stable TNC interface is adopted for radio antenna to instead the flimsy SMA interface.

## UPGRADES

### Intelligent platform
**Linux OS**
New generation of embedded Linux operating system platform improves RTK performance and work efficiency. Its operating efficiency is higher; a unique core processing mechanism which can respond to more than one command at one time; it starts faster and more responsive in real time.

Linux OS

**Web UI management platform**
Embedded Web UI management platform supports WIFI and USB mode connection. Users can monitor the receiver status and configure it via the internal Web UI management platform.

### Advanced WiFi technology
Adopting the advanced wifi technology as datalink which improves the measurement result, at the meantime, the wifi AP hotspot function makes any smart terminals can connect to the receiver to control it.

WiFi

**Excellent network modem**
The new G1 is equipped with the up-to-date 4G module which supports TDD-LTE/FDD-LTE 4G network, and is downward compatible with 3G like WCDMA/CDMA2000 and GPRS/EDGE 2G network, it brings high-speed of communication with reference station.

### Built-in functional digital radio
SOUTH self-developed digital radio which can fully support the communications with the mainstream radio protocols: Trimtalk450S, TrimMark3, PCC EOT, and SOUTH. Realize the random switching of the radio range 410MHZ-470MHZ and the power level as well. And the radio module achieved approval CE and FCC certifications.

radio repeater

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

**Internet repeater:** The rover can broadcast the corrections via internet to other rovers after received the network differential signal.

internet repeater

### Intelligent storage technology

8GB

Internal 8GB SSD and it supports external USB storage.
Supports STH, RINEX raw data storage and the sample rate can reach to 50Hz.
Supports automatic data storage cycle, the data will be automatically deleted when the space is not enough.