SPECIFICATIONS

GNSS Features

Channels……1598
GPS……L1C/A, L2C, L2P, L5
GLONASS……L1C/A,L1P,L2C/A,L2P,L3*
BDS…… BDS-2: B1I, B2I, B3I
BDS-3: B1I, B3I, B1C, B2a, B2b*
GALILEOS…… E1, E5A, E5B, E6C, AltBOC*
SBAS(WAAS/MSAS/EGNOS/GAGAN)…… L1C/A, L5*
IRNSS…… L5*
QZSS……L1, L2C, L5*
MSS L-Band…… BDS-PPP
Positioning output rate……1Hz~20Hz
Initialization time…… < 10s
Initialization reliability…… > 99.99%

Positioning Precision

Code differential GNSS…… Horizontal: 0.25 m + 1 ppm RMS
Vertical: 0.50 m + 1 ppm RMS
Static(long observations)……Horizontal: 2.5 mm + 0.1 ppm RMS
Vertical: 3 mm + 0.4 ppm RMS
Static……Horizontal: 2.5 mm + 0.5 ppm RMS
Vertical: 3.5 mm + 0.5 ppm RMS
Rapid static…… Horizontal: 2.5 mm + 0.5 ppm RMS
Vertical: 5 mm + 0.5 ppm RMS
PPK……Horizontal: 3 mm + 1 ppm RMS
Vertical: 5 mm + 1 ppm RMS
RTK(UHF)……Horizontal: 8 mm + 1 ppm RMS
Vertical: 15 mm + 1 ppm RMS
RTK(NTRIP)…… Horizontal: 8 mm + 0.5 ppm RMS
Vertical: 15 mm + 0.5 ppm RMS
RTK initialization time……2 ~ 8s
SBAS positioning…… Typically < 5m 3DRMS
IMU……Less than 10mm + 0.7 mm/° tilt to 30°
IMU tilt angle……0° ~ 60°

Hardware Performance

Dimension……154mm(ϕ)× 106mm(H)
Weight……1.3kg (battery included)
Material…… Magnesium aluminum alloy shell
Operating temperature…… -45℃ ~ +65℃
Storage temperature…… -45℃ ~ +85℃
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/Vibration…… Withstand 2 meters pole drop onto the cement ground naturally
Power consumption…… 2W
Power supply…… 6-28V DC, overvoltage protection
Battery……7.4V 3400mAh x 2 rechargeable, removable Li-ion battery
Battery life(Dual-battery)……15h(Rover Bluetooth mode)

WIFI

Modem…… 802.11 b/g standard
WIFI hotspot……AP mode, Receiver broadcasts its hotspot form web UI accessing with any mobile terminals
WIFI datalink…… Client mode, Receiver can transmit and receive correction data stream via WiFi datalink

Communications

I/O Port…… 5-PIN LEMO external power port + RS232
7-PIN LEMO(USB, OTG and Ethernet)
1 PPS data interface
SIM card slot(standard)
Internal UHF……Receiver and transmitter, 1/2/3W switchable,
Frequency range……410 - 470MHz
Communication protocol……Farlink, Trimtalk450s, SOUTH, HUACE, ZHD
Communication range……Typically 10km with Farlink protocol
Cellular mobile network…… 4G network communication module
Bluetooth……BLEBluetooth 4.0 standard, Bluetooth 2.1 + EDR
NFC Communication……Realizing close range (shorter than 10cm) automatic pair between receiver and controller (controller requires NFC wireless communication module else)

Data Storage/Transmission

Storage……16GB SSD
Automatic cycle storage (The earliest data files will be removed automatically while the memory is not enough)
Support external USB storage
Data transmission……Plug and play mode of USB data transmission
Supports FTP/HTTP data download
Data format……Static data format: STH, Rinex2.01, Rinex3.02, etc.
Differential format: CMR(GPS only), CMR+(GPS only), RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2
Navigation data format: NMEA 0183, PJK, Binary code
Network model support: VRS, FKP, MAC, fully support NTRIP protocol

Sensors

Electronic bubble……Controller software can display electronic bubble, checking leveling status of the carbon pole in real-time
IMU……Built-in IMU module, calibration-free and immune to magnetic interference
Thermometer…… Built-in thermometer sensor, adopting intelligent temperature control technology, monitoring and adjusting the receiver temperature

User Interaction

Operating system……Linux
Buttons…… Single button
Indicators…… 4 color LED indicators, Battery indicator
Web interaction…… With the access of the internal web interface management via WiFi or USB connection, users are able to monitor the receiver status and change the configurations freely
Voice guidance……It provides status and operation voice guidance, and supports Chinese/English/Korean/Spanish/Portuguese/Russian/Turkish
Secondary development……Provides secondary development kit, and opens the OpenSIC observation data format and interaction interface definition
Cloud service……The powerful cloud platform provides online services like remote manage, firmware update, online register and etc.

*Items marked with * will be upgraded along with the update of assigned firmware version*

The data comes from the SOUTH GNSS Product Laboratory, and the specific situation is subject to local actual usage.
The measurement accuracy, precision and reliability are associated to various factors, including number of satellite tracking, observation time, multi-path, etc.

CE FC MIL-STD 810G

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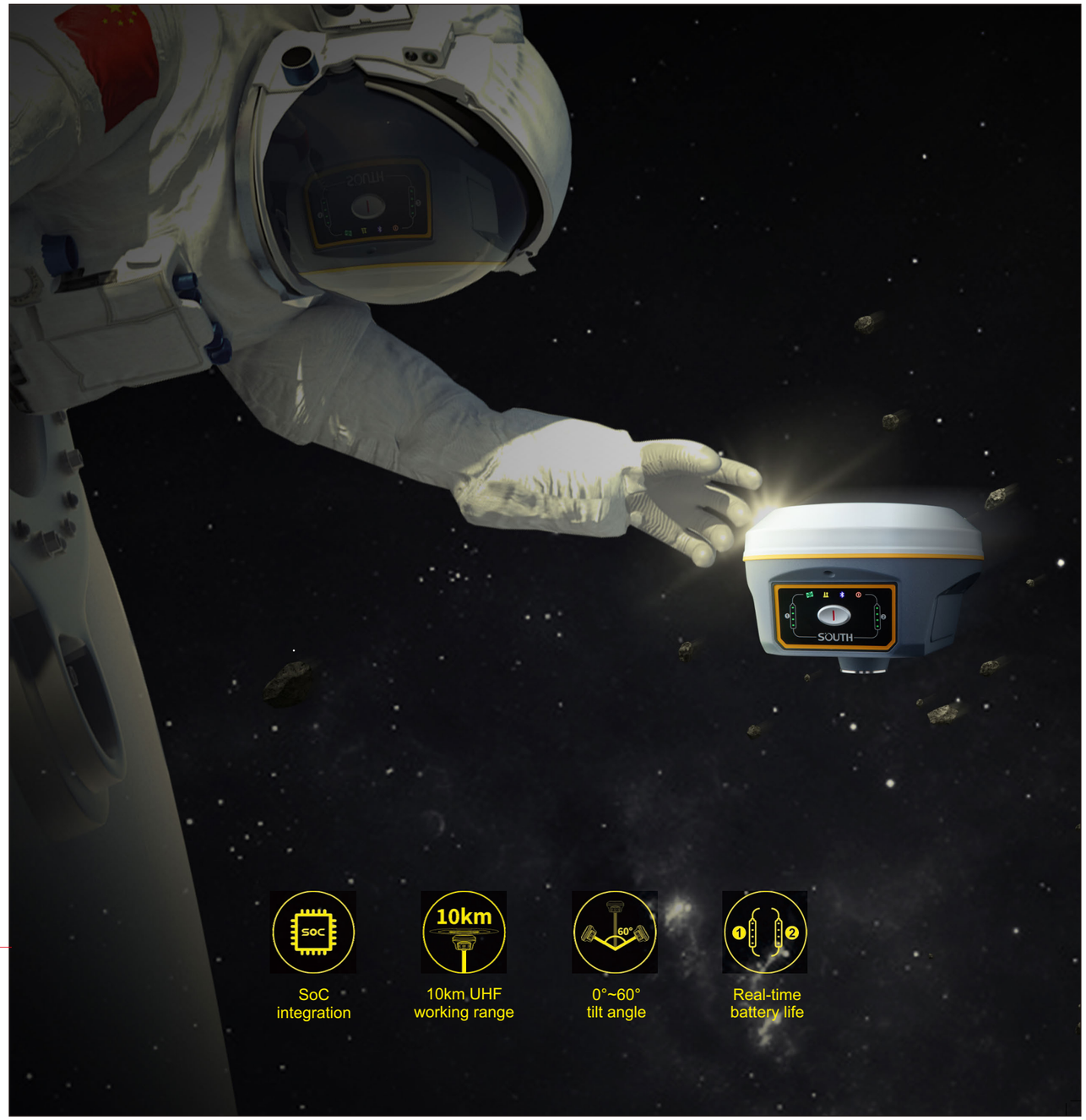
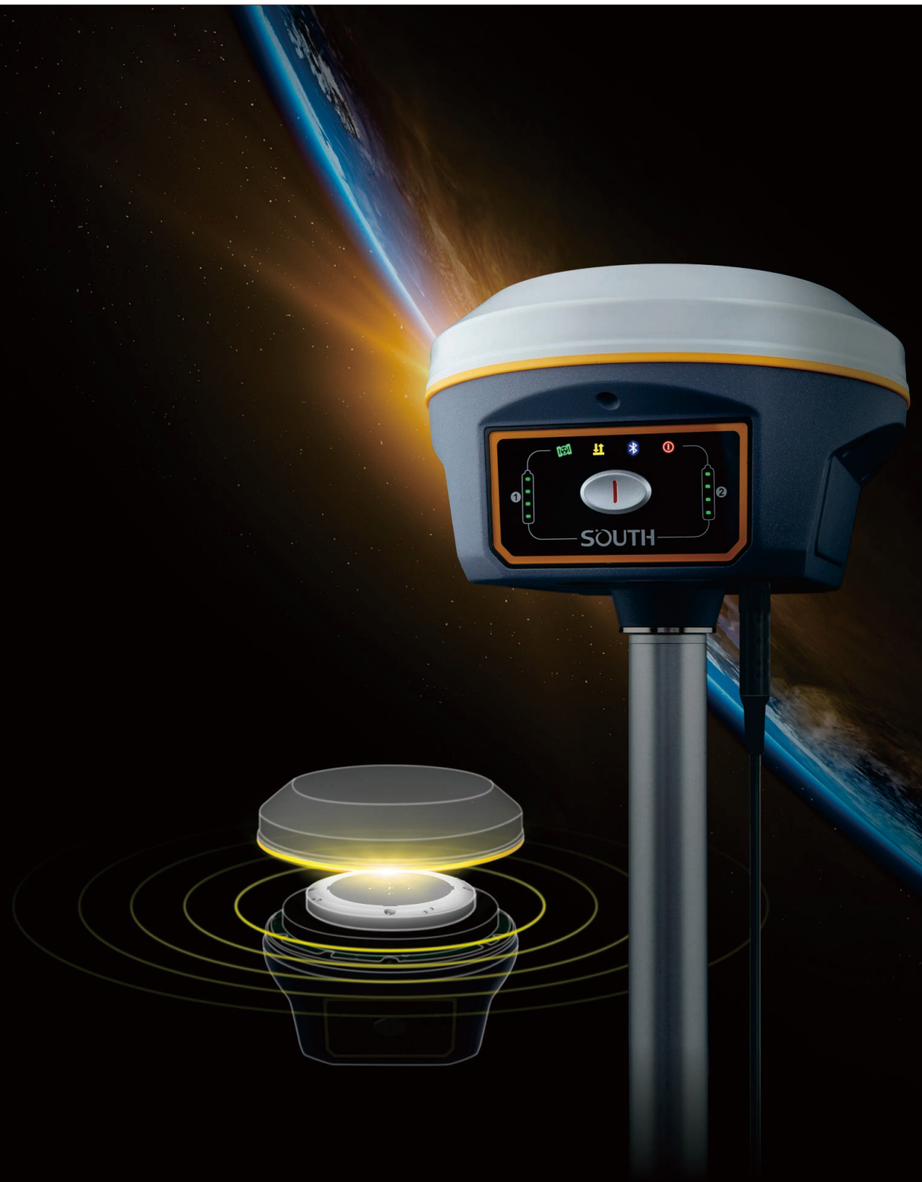
SOUTH
Target your success

G9

— Smart wireless RTK —





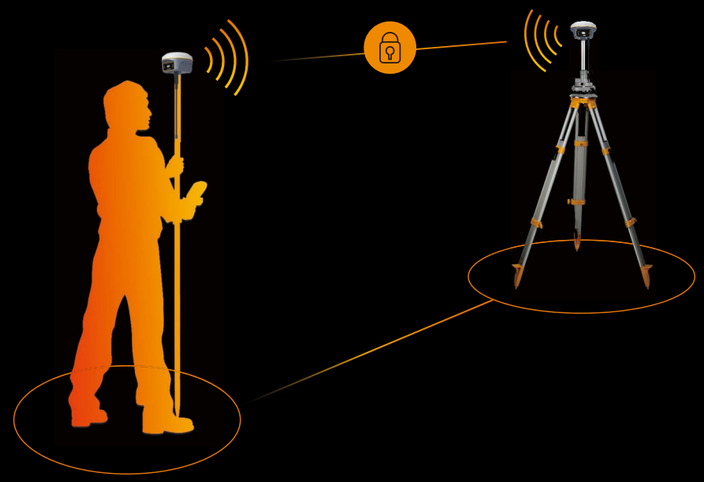
Bluetooth WiFi GNSS antenna Network antenna

High integration creates convenient field work

Carrying a new RTK integration technology, Bluetooth, WIFI, GSM antennas are highly integrated into GNSS antenna, that brings you an unprecedented experience of field surveying, making the field work more convenient and easier.

Intelligent Base signal locking technology

Using one-to-one signal tracking and locking technology, and the independent frequency under Farlink protocol, the G9 rover can continuously lock and capture the target base station signal to reduce cross-frequency interference even though other base stations are working nearby with the same channel.



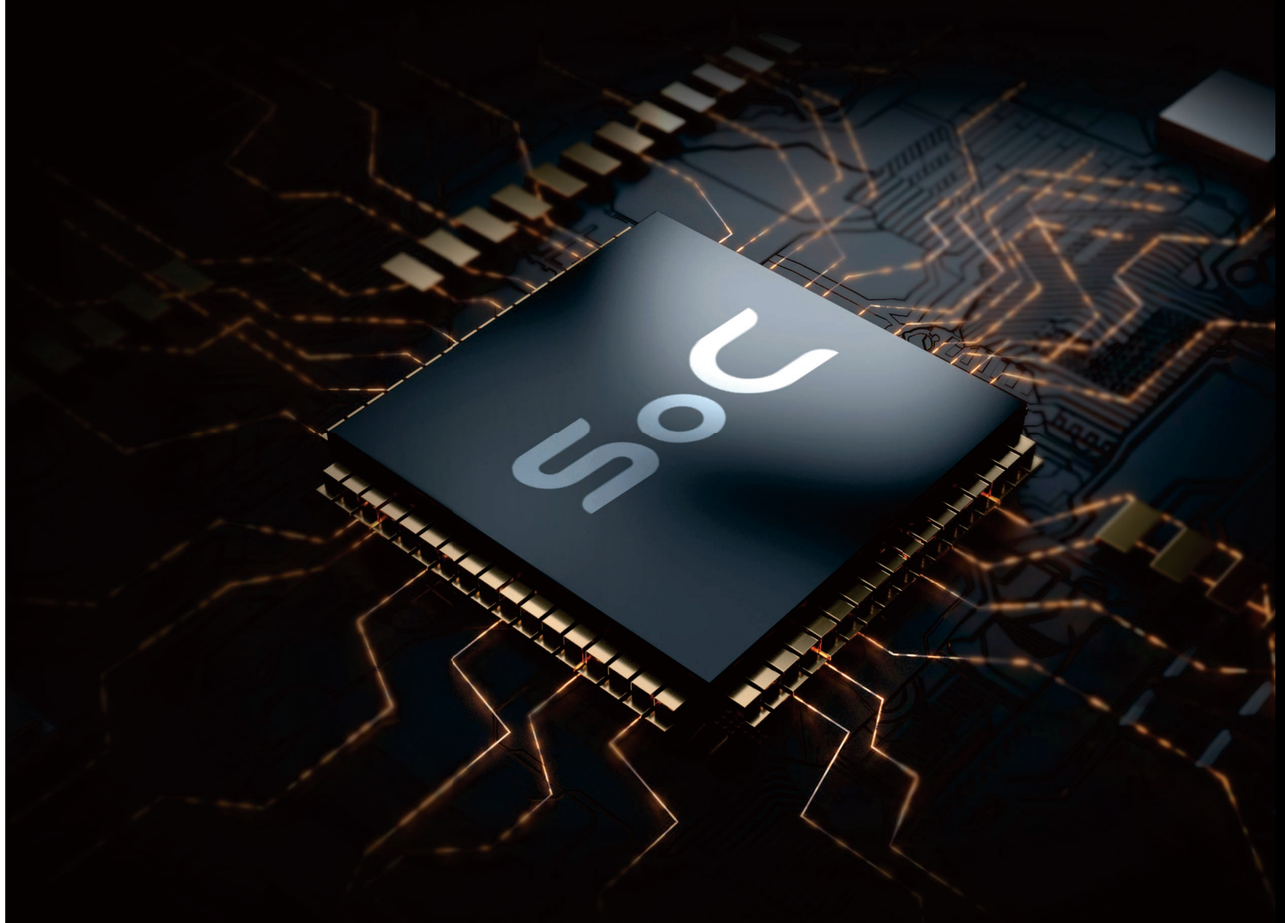
The ultimate internal UHF performance

The G9 breaks through the constraints on wavelengths based on a SOUTH high-performance UHF module with Farlink communication technology, which increases signal sensitivity and transmission efficiency, and really achieves the goal of 10km ultra-long-distance working range.

Advantageous SoC (System-on-Chip) platform

The GNSS board of G9 is upgraded to the most advanced SoC which is a high integration chip that has 1598 channels for multi-constellation and multi-frequency tracking, efficiently suppresses the interference signals, and obtains higher quality observation data from GNSS constellations.

↓50%	↓50%	↓50%	↑30%	↑100%	↑120%
Modules	Consumption	Module size	Immunity	Signal tracking	Channels



Powerful system management —Smart ROS

G9 is integrated with the ROS system, which comes with intelligent deployment of multi-mode hardware components, strong computing power and an intelligent scheduling mechanism, and coupling with an ultra-fine memory management mechanism, making the fluency and running speed of the receiver comprehensively improved.

Efficient and reliable tilt measurement

Built-in high-performance IMU automatic compensator corrects the coordinates to the pole tip, assisting users to quickly and accurately measure or stake out points at will without strict leveling the receiver. The tilt angle range can achieve up to 60°.

Furthermore, the compensation is still available even though the fixed solution is lost for a short time. Users can continue the survey after the fixed solution recovers without initializing the IMU module again, which helps surveyors boost productivity by 30 percent.

Immune to magnetic	Calibration free	200Hz update rate	Large tilt angle

Super long working hours

G9 also adopts a dual-battery system design so that it can achieve longer battery life while maintaining strong performance. The hot replaceable function allows you to change the battery one by one when power is low. You can continue with work without switching off the receiver.

The G9 receiver is able to continuously work for about 15 hours in Rover+Bluetooth mode with 2 batteries. Power volume is visible synchronously on the control panel.