## SPECIFICATIONS

### **GNSS** Features

Channels	
GPS	L1, L1C, 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)	L1*
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**

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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	
	Vertical: 3.5 mm + 0.5 nnm RMS
Rapid static	Horizontal: 2.5 mm + 0.5 ppm RMS
	Vortical: 5 mm + 0.5 ppm RMS
PPK	Horizontal: 3 mm + 1 nnm PMS
1 T K	Vertical: 5 mm + 1 ppm RNS
	Vertical. 5 mm + 1 ppm RMS
RIK(UHF)	Horizontal: 8 mm + 1 ppm RMS
	Vertical: 15 mm + 1 ppm RMS
R I K(N I RIP)	Horizontal: 8 mm + 0.5 ppm RMS
	Vertical: 15 mm + 0.5 ppm RMS
RTK initialization time	
SBAS positioning	Typically < 5m 3DRMS
BANDA-L	Horizontal: 5-10cm (5-30min)
	Vertical: 10-30cm (5-30min)
IMU	Less than 10mm + 0.7 mm/° tilt to 30°
IMU tilt angle	

### Hardware Performance

Dimension	135mm(W) ×135mm(L) × 84.75mm(H)
Weight	
Material	Magnesium aluminum alloy shell
Operating temperature	
Storage temperature	40°C ~ +80°C
Humidity	
Waterproof/Dustproof	IP67 standard, protected from long
	time immersion to depth of 1m
	IP67 standard, fully protected against
	blowing dust
Shock/Vibration	Withstand 2 meters pole drop onto
	the cement ground naturally
Power supply	
Battery	Inbuilt 7.2V 6800mAh rechargeable,
	Li-ion battery
Battery life	15h (Rover Bluetooth mode)

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

The data comes from the SOUTH GNSS Product Laboratory, and the specific situation is subject to local actual usage.

SOUTH SURVEYING & MAPPING TECHNOLOGY CO., LTD.

Communications

I/O Port.

Internal UHF.

Bluetooth...

Frequency range.

Communication protocol...

Communication range.

NFC Communication...

Data transmission...

Data format.....

Sensors Electronic bubble

Thermometer.

User Interaction Operating system..

Buttons...

Indicators..

Web interaction.

Voice guidance.

Cloud service..

Secondary development.

IMU.

Data Storage/Transmission

5-PIN LEMO external power port + RS232

Type-C interface (charge, OTG, data transfer to PC or phone, Ethernet) 1 UHF antenna interface

.2W radio, receive and transmit, radio router and radio repeater

. Farlink, Trimtalk450s, SOUTH,

Typically 8km with Farlink protocol

.Bluetooth 3.0/4.1 standard, Bluetooth 2.1 + EDR

Storage......4GB SSD internal storage standard, extendable up to 64GB

...Realizing close range (shorter than 10cm) automatic pair between receiver and controller (controller requires NFC wireless communication module else)

Automatic cycle storage (The earliest data files will be removed automatically while the

Supports FTP/HTTP data download

RTCM 3.0, RTCM 3.1, RTCM 3.2

The customizable sample interval is up to 20Hz ... Plug and play mode of USB data transmission

Differential data format: RTCM 2.1, RTCM 2.3,

Network model support: VRS, FKP, MAC,

Controller software can display electronic bubble, checking leveling status of the

Built-in thermometer sensor, adopting intelligent temperature control technology, monitoring and adjusting the receiver temperature

..4 LED indicators(satellite, Datalink, Bluetooth, Power)

..... 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

. It provides status and operation voice guidance,

Korean/Spanish/Portuguese/Russian/Turkish ......Provides secondary development

package, and opens the OpenSIC observation data format and interaction interface definition

.....The powerful cloud platform provides online services like remote manage, firmware update,

and supports Chinese/English/

online register and etc.

Built-in IMU module, calibration-free and immue to magnetic interference

GPS output data format: NMEA 0183, PJK plane

.Static data format: STH, Rinex2.01, Rinex3.02 and etc.

HUACE, Hi-target, Satel

memory is not enough) Support external USB storage

coordinate, Binary code

carbon pole in real-time

Linux

. Single button

fully support NTRIP protocol

..410 - 470MHz

Add: South Geo-information Industrial Park, No.39 Si Cheng Rd, Guangzhou, China Tel: +86-20-23380888 Fax: +86-20-23380800 E-mail: mail@southsurvey.com export@southsurvey.com impexp@southsurvey.com gnss@southsurvey.com http://www.southinstrument.com http://www.southsurvey.com





# **SOUTH** Target your success

**G7** - New miniaturized RTK receiver -



# **Extraordinary GNSS....**

The GNSS unit of G7 is integrated with an advanced **SoC** which is a chip comes with the advantage of high integration and low power consumption, efficiently suppress the interference signals, and obtain higher quality observation data from satellite constellations.

Combines with powerful GNSS RTK engine with **1598** channels, and the new generation high sensitivity antenna, G7 achieves centimeter precision in seconds while fully tracking GPS, GLONASS, BEIDOU, GALILEO and QZSS signals.

Now G7 supports the BeiDou-3 B2b L-band BDS-PPP corrections to get realtime centimeter level positioning services.

Thanks to the new function **"Fixed-keep"**, now it is possible for G7 to keep centimeter-level accuracy for few minutes when the RTK corrections is missing.



# **Brilliant design**

Single button boot design, one button evokes all RTK operations.

The body screen adopts a translucent high-strength panel, which has a stronger visual sense of technology. Plus four color indicator lights, common information is clear at a glance.

# Smart unit of tilt measurement

<u>60</u>°

An inbuilt high performance **IMU** automatic compensator which corrects the coordinates to the pole tip, that assists users quickly and accurately measure or stake out points at will without strict leveling the receiver, it helps surveyors boost productivity by 30 percent. Furthermore, the compensation is still available even though the fixed solution is lost at a short time, surveyors are able to continue the job after fixed solution recovers without initializing again for the IMU module. And the tilt angle range can achieve to 60°.

# **Unmatched connectivity**

Built-in SOUTH self-developed digital radio, with an advanced protocol **"Farlink"**, makes G7 achieve the typical working range as 8km. The transmission bandwidth of "Farlink" becomes large, and it increases the sensitivity of radio signal capture, which perfectly solves the problem of large data volume of multiple constellations transmission. And the power consumption can reduce about 60% in the same amount of data transmission compare to the traditional RTK.

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# Unlimited productivity

The new generation of SoC platform gives RTK more stable performance and lower power consumption. The built-in 6800mAh high-performance battery can support more than **15 hours** of continuous operation. Featuring with a universal type-C interface, G7 allows to charge the built-in batteries with a PD rapid charger, and support power supply from a power bank to ensure a full-day work.

Both internal memory and web interface are accessed by this type-C interface simultaneously without switching working mode for this port.

