SPECIFICATIONS

GNSS Features

Channels…………………………………………………………………1760
GPS…………………………………………… L1C/A, L1C, L2C, L2P, L5
GLONASS……………………………………… L1C/A, L2C/A, L2P, L3CDMA
BDS……………………………………………………B1I, B1C, B2I, B2a, B3
GALILEO………………………………………E1, E5A, E5B, E5AltBOC, E6[1]
SBAS…….…………….EGNOS, WAAS, GAGAN, MSAS, SDCM(L1,L5)
QZSS………………………………………………… L1C/A, L1C, L2C, L5, L6
Navic.. L5
On module L-Band (Reserve)
Positioning output rate……………………………………… 1Hz~50Hz
Initialization time…………………………………………………< 10s
Initialization reliability……………………………………………> 99.9%

Positioning Precision*

Real-time kinematic……………………Horizontal: 6 mm + 0.5 ppm RMS
(Baseline<40km)   Vertical: 10 mm + 1 ppm RMS
GNSS static………………………… Horizontal: 2.5 mm + 0.5 ppm RMS
                                                        Vertical: 5 mm + 0.5 ppm RMS
Standalone……………………… Horizontal: 1.2m   Vertical: 1.9m RMS
DGNSS………………………… Horizontal: 0.4m   Vertical: 0.7m RMS
SBAS positioning……………… Horizontal: 0.6m   Vertical: 0.8m RMS
RTK initialization time…………………………………………………2 ~ 8s
IMU tilt compensation……… Additional horizontal pole tip uncertainty
                           typically less than 10mm + 0.7 mm/° tilt down to 30°
IMU tilt angle…………………………………………………… 0° ~ 60°

Hardware Performance

Dimension………………………………130mm(W) ×130mm(L) × 80mm(H)
Weight………………………………………………………790g (battery included)
Material…………………………………………… Magnesium aluminum alloy shell
Operating temperature……………………………………… -45℃ ~ +75℃
Storage temperature………………………………………… -55℃ ~ +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
                                                        MIL-STD 810G
Power supply…………………………………… 6-28V DC, overvoltage protection
Battery………………………………………… Inbuilt 7.2V 6800mAh rechargeable,
                                                        Li-ion battery
Battery life…………………………………………15h(Rover Bluetooth mode)

Communications

I/O Port……………………......……… 5-PIN LEMO external power port + RS232
                                                        Type-C(charge, OTG to USB disk,
                                                        data transfer with PC or phone, Ethernet)
                                                        1 UHF antenna TNC interface
Internal UHF……………………………......………2W radio, receive and transmit,
                                                        radio router and radio repeater
Frequency range…………………………………………………......……410 - 470MHz
Communication protocol…………………..……… Farlink, Trimtalk450s, SOUTH,
                                                        HUACE, Hi-target, Satel
Communication range……………….....……… Typically 8km with Farlink protocol
Bluetooth………………..………Bluetooth 3.0/4.1 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)

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

Data Storage/Transmission

Storage……………………………………………………………….. 4GB 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 and etc.
                                          Differential format: CMR, RTCM 2.x,
                                          RTCM 3.x(MSM included)
                                          GPS output data format: NMEA 0183, PJK plane
                                          coordinate, SOUTH 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 immue 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…………………………………………………………………....One button
Indicators…………………………………….5 LED indicators(Satellite, Charging,
                                          Power, Datalink, Bluetooth)
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.

[1]Hardware is ready

*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.

GALAXY G3
— Supercharged Pocket RTK —

CE FC MIL-STD 810G

Colourful LED indicators

The colorful LED indicators can briefly show the current status.

tracking Satellites

Green Indicator flashes when tracking satellites

ON

Red indicator will on when receiver turning on

receiving corrections

When receiving corrections, Green Indicator flashes, otherwise the Red indicator flashes

Bluetooth

Blue Indicator will on when connecting

external power

when connecting to external power, Red indicator will on. if the battery has been fully charged, Green Indicator will on.

Lighter and Faster

Only **790g** in weight, G3 is still packaged with the magnesium alloy shell. Highly intergrated design, smaller and lighter, easy to use in the field.

Battery life checking:

we can quickly check the battery life by pressing the button, after pressing the button, some of the Indicators will turn on.

| 100%~75% | 75%~50% | 50%~25% | 25% > |

Supercharged by SoC technology

Galaxy G3 is a new product from **SOUTH SoC** platform, most components of G3 (GNSS module, Wi-Fi, Bluetooth, etc.) are integrated on one circuit board. G3 has lower power consumption, and efficiently improves the ability of receiving higher quality satellites signals.

Powerd by the new SoC GNSS board, new generation sensitivity satellite antenna, new ROS platform and GNSS RTK engine, G3 can fully track GPS, GLONASS, BDS, GALILEO and QZSS toobtain centimeter-level positioning in few seconds.

Now G3 supports the BeiDou-3 B2b L-band BDS-PPP corrections to get real-time centimeter level positioning services.

Thanks to the new function **"Fixed-keep"**, now it is possible for G3 to keep centimeter-level accuracy for few minutes when the RTK corrections is missing.
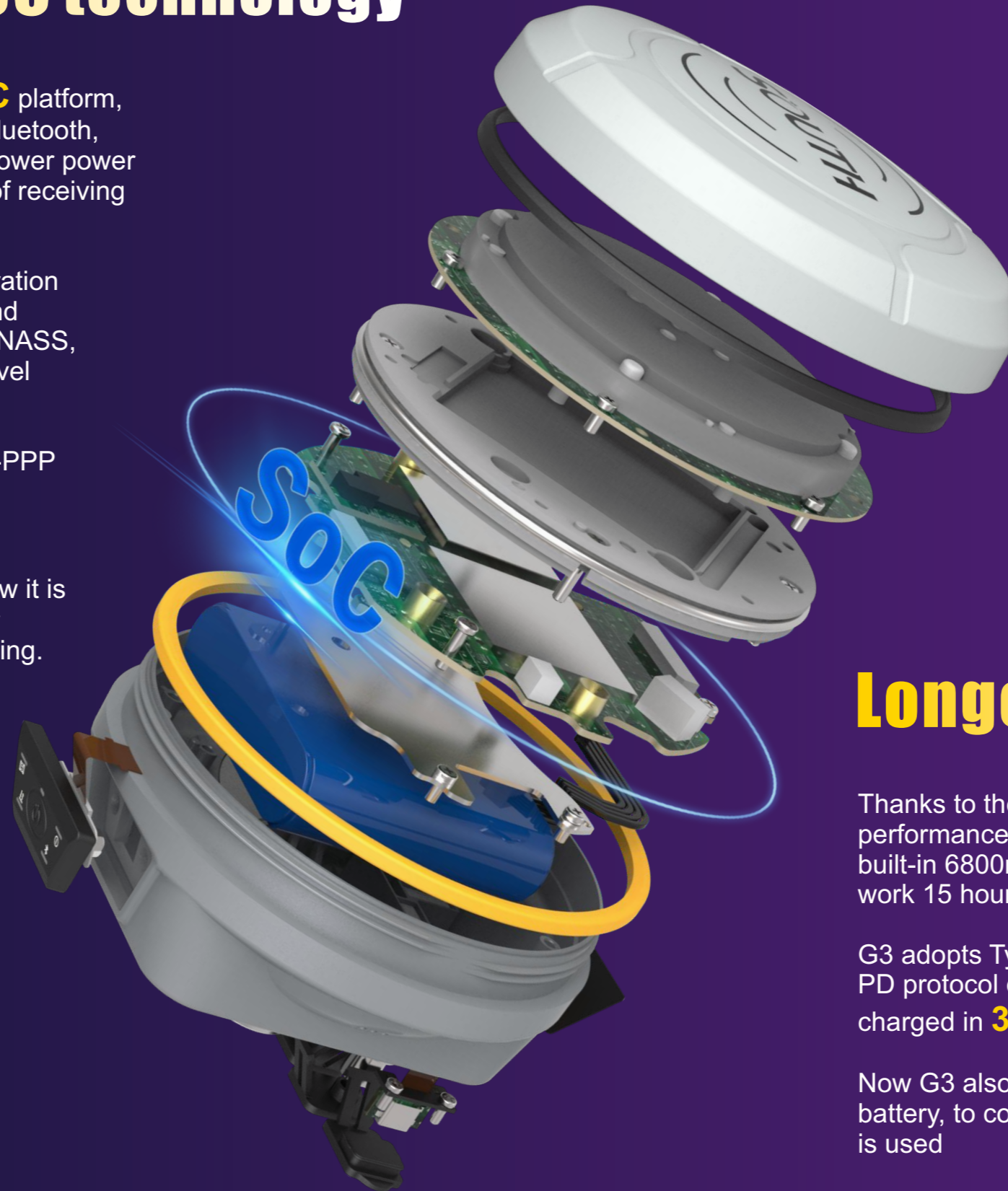
Longer battery life

Thanks to the SOC technology, G3 achives higher performance and lower power consumption. The built-in 6800mAh Li-ion battery can continuously work 15 hours(Rover Bluetooth mode).

G3 adopts Type-C charging interface which supports PD protocol quickly charging, the battery can be fully charged in **3 hours** and then supports full-day work.

Now G3 also supports the external phone portable battery, to continue the work even internal battery is used

IMU for tilt survey

Galaxy G3 is intergrated with the latest **Inertial Measurement Unit (IMU)**. Featured with anti-magnetic chracteristic, you can start the tilt survey in any place. Shaking to initialize the IMU sensor, no need to calibrate. Up to 200Hz IMU data output rate, boosting the speed of field work.

60°

Super radio and Farlink protocol

Galaxy G3 is packaged with SOUTH "Beaver" super radio and the exclusive **"Farlink"** protocol. The "Beaver" super radio is more power saving, "Farlink" protocol has larger bandwidth. The combination of "Beaver" super radio and "Farlink" protocol makes better performance on signal capturing.

8km

1km 2km 3km 4km 5km 6km 7km