Galaxy G5

Improving Never Stops

Galaxy G5 is designed to enhance your performance in the field survey and to provide the most reliable positioning result.
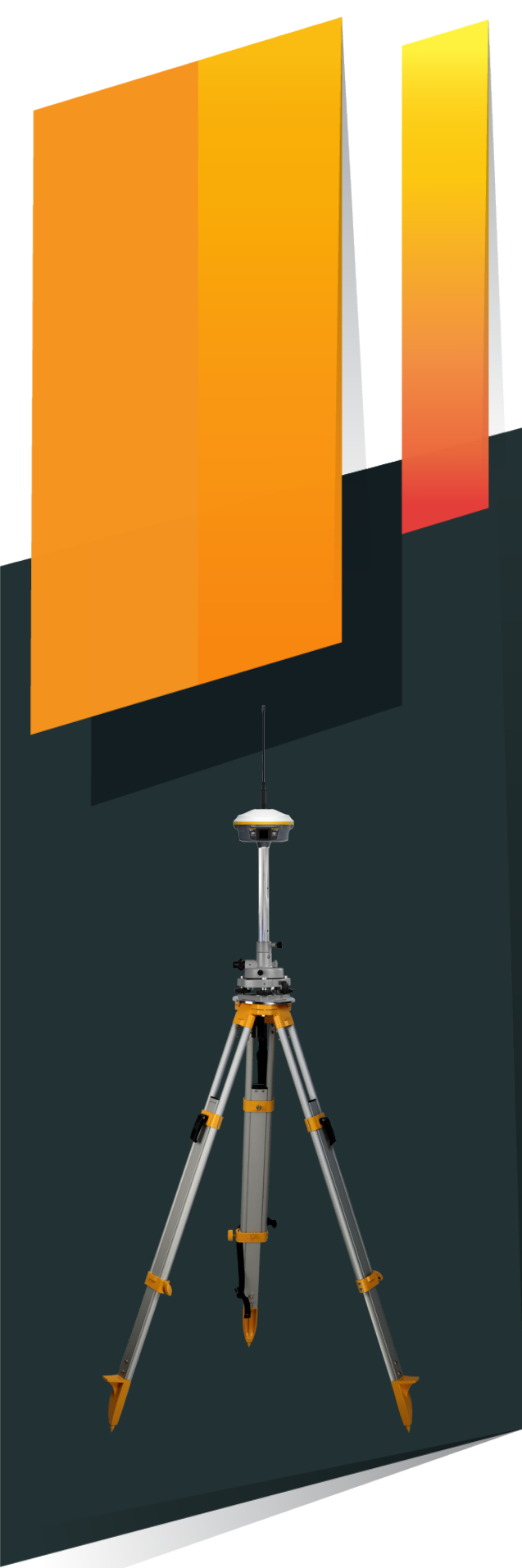
It integrates a 1760 channels world leading GNSS positioning engine, a high precision IMU, a long range UHF radio, and a new interact operating system.

More features are to be discovered by you...

More channels and all constellations tracking
With 1760 GNSS channels solution, Galaxy G5 can support multi-constellation and multi-frequency tracking with the help of high-performance GNSS antenna.

Color touch screen, makes workflow simpler
HD 1.3-inch color LCD touch screen with high brightness and low power consumption, which is convenient and efficient to complete touch settings, information browsing, function settings.

More powerful inbuilt radio
Coupling a high-performance UHF module with Farlink communication technology, which increases signal sensitivity and transmission efficiency, Galaxy G5 really achieves the goal of a 10~15km ultra-long-distance working range. And the power consumption of this carrying new generation module is 60% lower than additional UHF, making the Base working time is much longer.

Superior Endurance, Up to 25 hours working
Galaxy G5 uses a built-in 10000mAh ultra-large capacity Li-ion battery, which can last 25 hours of continuous work (Static) benefits from low power consumption circuit design. The Type-C interface is used on G5 that it can support fast charging through a charger with PD protocol, and it can be full charged in 4 hours.

Double data backup
The measured data can be simultaneously stored into both internal memory of receiver and controller, realizing the measured data double backup, which effectively avoid data loss.

Outstanding IMU measurement
Built-in 4th-generation IMU automatic compensator corrects the coordinates to the pole tip, assisting surveyors to quickly and accurately measure or stake out point at will without strictly leveling the receiver, the tilt angle range can achieve up to 60°.

Upward and hidden UHF antenna design
Upward UHF antenna design, achieving all-direction UHF signal receiving and transmitting. And the antenna interface is hidden into top cover that effectively avoid accident breaking, protect from water and dust.

Intelligent base signal locking technology
Using one-to-one signal tracking and locking technology, and the independent frequency under Farlink protocol, the G5 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.

Smart system management-ROS
Galaxy G5 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.

SurvStar APP

Field Data Collection & Mapping: The Most Advanced is Here

Measure & Draw : Save Time in Field work and Office
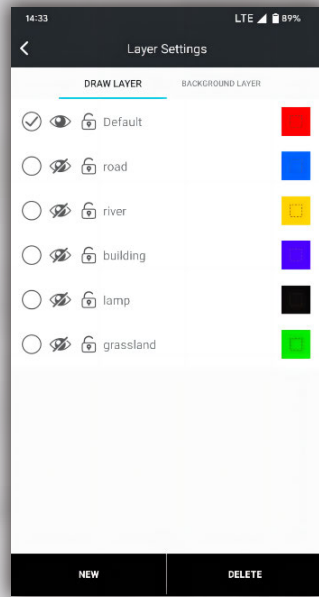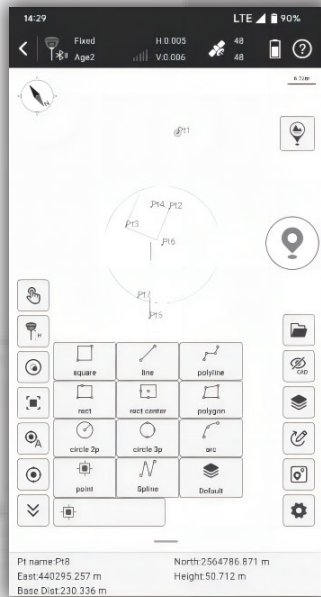
This feature allows you to draw the result map while completing point measurements.

• Before measuring points, users can choose the shape of the target object to be measured from 11 preset figures. The software will guide you to measure points in an order and automatically connect lines and complete the drawing of the figure.

• The .dxf or .dwg maps created on-site can be used directly in office work.

• Users can assign measured objects with different attributes, to different layers for measurement and management, making no mistakes.

CAD Draw : Drafting without a PC
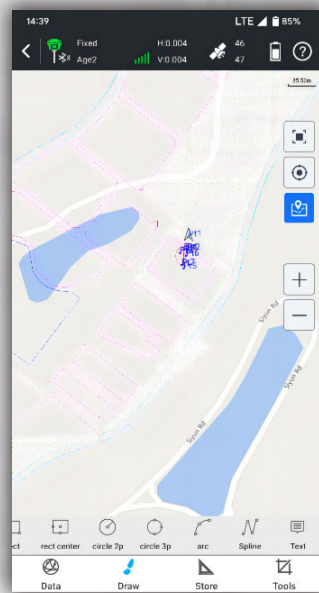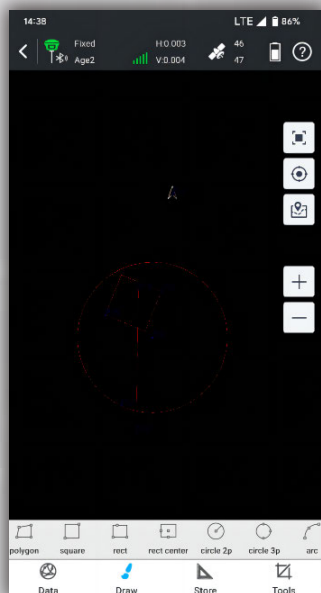
Select points to form a polygon, and directly identify the area division points for the surveyor to stake out. There is no more need for the user to guess a position to measure, and then to adjust.

• CAD drawing does not require a computer.

• CAD files prepared on office PCs can be edited and managed by users on RTK data collection terminals.

• Drawing tools include up to 11 types of figures and one type of text.

Visual Positioning : Industry-Leading Non-Contact Measurement Technology
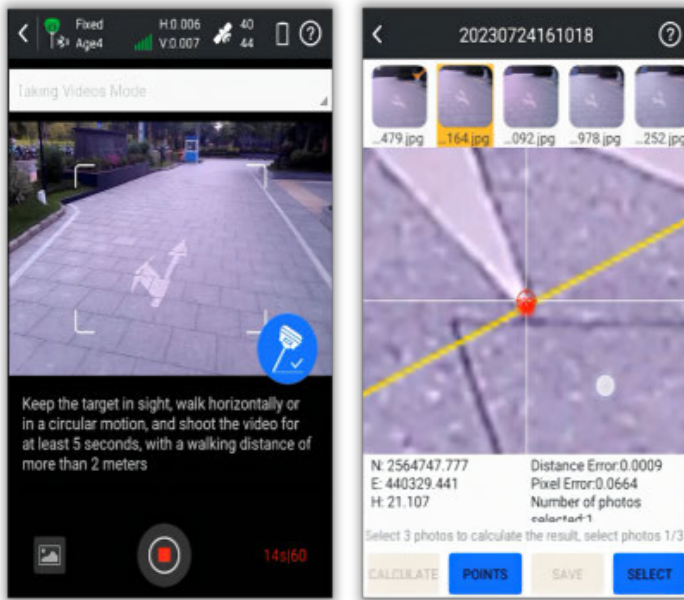

(This function only works with the receiver models that have front-facing camera or dual-cameras)

Photogrammetry Measurements can be conducted by taking pictures or videos. Coordinates of all points in the photos can be acquired.

• Now, target points that are inaccessible due to dangerous environments, poor satellite signals, or impassable terrain can be measured remotely.

• The captured image data can also be used with software like SGO, Pixel4D, DJI Terra, and CC for 3D modeling.

• Image measurement data can also be combined with drone measurement data to address issues of blurriness and deformation in ground data models collected by drones.

Static & PPK Measurement : More Assistance Now is Available
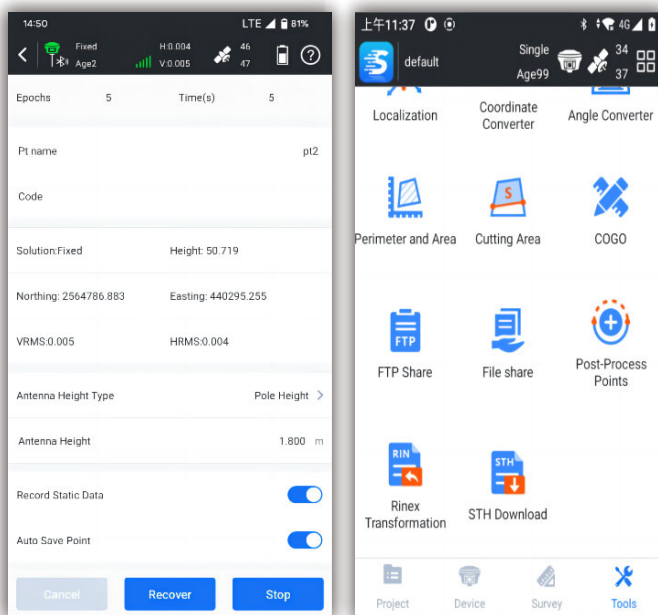
The software provides both static and PPK data collection capabilities.

• Data can be downloaded wirelessly, no need for a PC and cables.

• It is possible to convert .sth files into RINEX files right on the data collector or tablet or your phone, no need of PC.

• Data can be shared with others through mobile Internet.

• The accuracy of PPK data collection is as high as Trimble equipment, the result can be directly imported for use in TBC.

SurvStar APP

Stakeout: Lighten Your Load, Increase Your Output

### CAD Stake-Out : Save Labor Cost and Reduce Errors
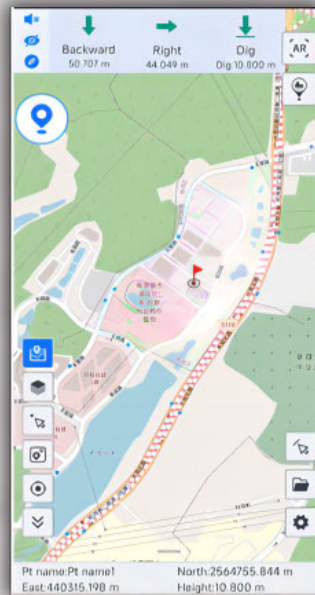
Traditional data collection software requires users to import points or lines to be setout from .csv or .txt files, users need to spend quite a lot of time to edit point and line libraries.

Moreover, for complex shapes such as curves, circles, and polygons, the traditional stake-out process is complicated. Now, our new CAD stake-out program offers a superior solution for surveyors.

• No need for manual editing of point libraries.
• Staking-out geometric shape is faster and easier.

• No need for obtaining coordinate files before work. Staking-out can be done with just a CAD drawing.
• Online maps and CAD drawings can be displayed simultaneously, improving accuracy.
• AR guide lines make staking-out more intuitive.

Area Division : Developed for Professional Cadastral Survey and Stake Out
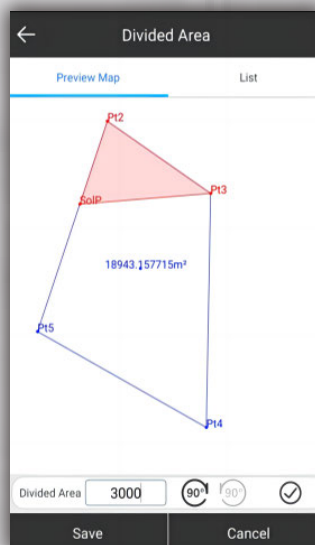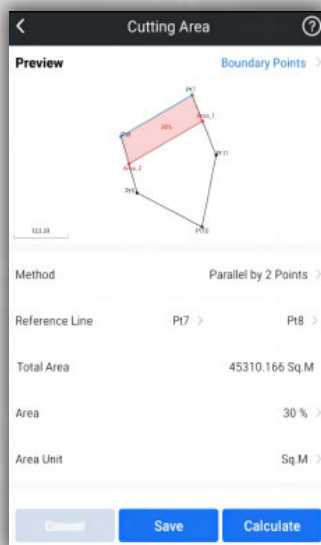
Select points to form a polygon, and directly identify the area division points for the surveyor to stake out. There is no more need for the user to guess a position to measure, and then to adjust.

• Six methods of division to determine the area division points. The methods are flexible and suitable to different user needs.

• The graphic display is intuitive and understandable.

Live-View Stake-Out : Faster, More Accurate, More Intelligent

(This function only works with the receiver models that have downward-facing camera or dual-cameras)

Users utilize the real-time imagery captured by the camera at the bottom of the receiver and the AR guide lines displayed by the software, to locate the target points.

• When users perform stake-out with a dual-camera GNSS receiver, the software can call upon both cameras to work together. At medium to long distances, the software uses the front-facing camera to indicate the direction of travel, and at close range, it uses the downward-facing camera to find the specific location. This further increases the speed of staking out.

• AR guide lines can be displayed in point staking out, line staking out, and CAD staking out programs.

Additional Features

Compatible with Multiple Devices
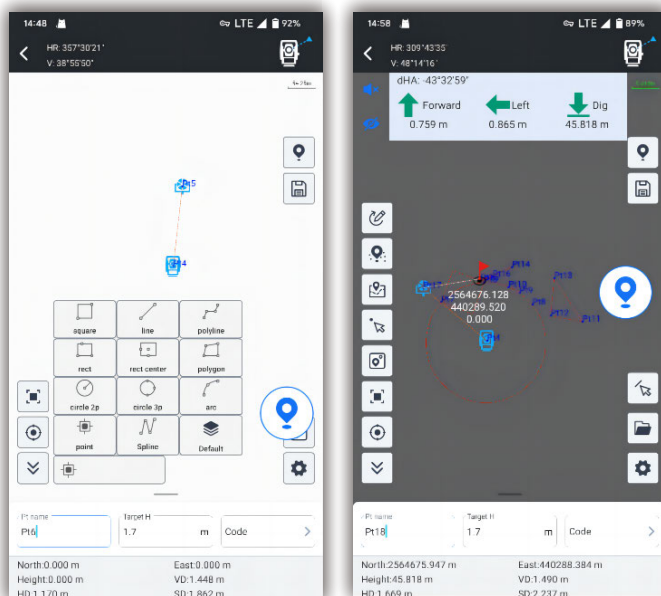
The App Now works with GNSS, Total Station, Echo Sounder, GIS Tablet, in future it will work with SLAM Scanner, Terrestrial Lidar Scanner.

Innovations for Better User Experience

- ■ RTK Data Backup
- ■ QR Code Share
- ■ Multiple Basemap Support
- ■ Basemap
- ■ Adjustment
- ■ Network Mount Point Sorting
- ■ NMEA Output Setting
- ……

SOUTH Geo Office (SGO)

Ideal GNSS Data Processor, Help You To Keep Advancing
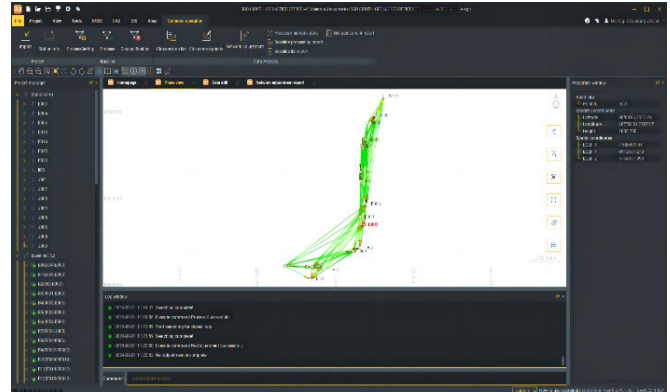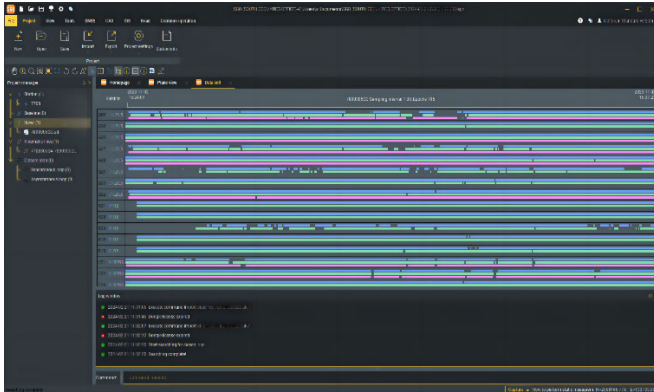
Data Processing & Reporting

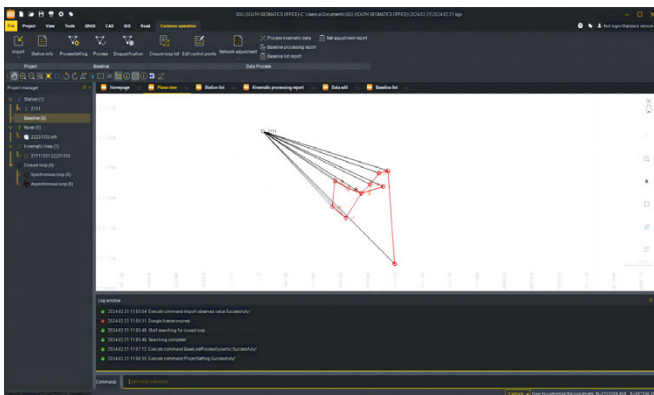When surveyors need to do post-processing of GNSS data, our software always can provide state-of-the-art technology to help you to produce optimal results. User just need to import field data, the software will automatically process GNSS baselines. Once results come out, the software can generate reports.

RINEX Import and Export

This feature enables users to import the third party GNSS receiver data into our software and post-process it, by using the industry standard RINEX format.

High Accuracy Guaranteed

RTK check, the unique function in our software, can compare RTK and PPK results to automatically acquire the most accurate coordinates for each target point.

It fills up the gap of poor corrections in RTK or hindered observations in PPK.

This improvement is to provide guarantee for your every survey.

3D Modelling

User can import photogrammetry image data into the software, to achieve 3D modeling, visually presenting geographic information data such as coordinates, areas, and volumes.

Model data can be transformed into different formats and applied with various coordinate parameters based on actual needs, making it adaptable to a wider range of application scenarios.

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
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…………………………………………165mm(φ) × 108mm(H)
Weight……………………………………………1.35kg (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 supply…………………………. 6-28V DC, overvoltage protection
Battery……………………………………. Inbuilt 10000mAh rechargeable,
                                   unremovable Li-ion battery
Battery life……………….…………...………………………Static: 20~25hrs
                                   Base: 10~12hrs
                                   Rover: 16~20hrs

Communications

I/O Port………………………...5-PIN LEMO external power port + RS232
                    Type-C interface (charge + OTG + Ethernet)
                    1 UHF antenna interface
                    1 PPS ouput interface
                    SIM card slot (Micro SIM)
Internal UHF……...……………………..Receiver and transmitter 1/2/3W
                    (Just receiver 0.01W for Russia)
Frequency range……………………………………………….410 - 470MHz
Communication protocol……………… Farlink, Trimtalk450s, SOUTH,
                    HUACE, Hi-target, Satel
Communication range……………..Typically 15km with Farlink protocol
Cellular mobile network……….…………… 4G cellular module standard
Bluetooth…...…………….. Bluetooth 4.2 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………………Receiver broadcasts its hotspot form web UI
                    accessing with any mobile terminals
WIFI datalink…………… Receiver can transmit and receive correction
                    data stream via WiFi datalink

Data Storage/Transmission

Storage…16GB SSD internal storage standard, extendable up to 64GB
                    Automatic cycle storage (The earliest data
                    files will be removed automatically while the
                    memory is not enough)
                    Support external USB storage
                    The customizable sample interval is up to 20Hz
Data transmission…….. Plug and play mode of USB data transmission
                    Supports FTP/HTTP data download
Static data format…………………………………… STH, Rinex2.x, Rinex3.x
Differential data format……CMR, RTCM 2.x, RTCM 3.x(MSM included)
Position output data format…..NMEA 0183, PJK plane coordinate, SBF
Network model supports…………………….. 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………………………………................................ Dual-button
Indicators………………………............................……. 3 LED indicators
Display..1.3-inch color touch screen
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
                    package, 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.

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

CE FC MIL-STD 810G