

GNSS Performance	
Channels	220 Channels
Signal tracking	GPS L1C/A, L1C, L2C, L2E, L5 GLONASS L1C/A, L1P, L2C/A, L2P, L3 BDS B1, B2, B3 SBAS L1C/A, L5 (Just for the satellites supporting L5) GALILEO GIOVE-A, GIOVE-B, E1, E5A, E5B QZSS, WAAS, MSAS, EGNOS, GAGAN
GNSS Features	Positioning output rate: 1Hz~50Hz Initialization time: < 10s Initialization reliability: >99.99%
Positioning Precision	
Code Differential GNSS Positioning	Horizontal: ± 0.25 m + 1 ppm Vertical: ± 0.50 m + 1 ppm
SBAS positioning accuracy	typically < 5m 3DRMS
Static GNSS Surveying	Horizontal: ± 2.5 mm + 0.5 ppm Vertical: ± 5 mm + 0.5 ppm
Real-Time Kinematic Surveying	Horizontal: ± 8 mm + 1 ppm Vertical: ± 15 mm + 1 ppm
RTK initialization time	2~8s
Physical	
Dimension	16.5cm x 16.8cm x 12.2cm (L x W x H)
Weight	1.85kg (battery included)
Environmental	
Operating Temperature	-45°C~+60°C
Storage Temperature	-55°C~+85°C
Humidity	100% Non-condensing
Waterproof/Dustproof	IP67 standard, protected from long time immersion to depth of 1m IP67 standard, fully protected against blowing dust
Shock and Vibration	Withstand 3 meters pole drop onto the cement ground naturally
Electrical	
Power Consumption	2W
Power Supply	9-25V DC, overvoltage protection
Internal Battery	7.4V, Rechargeable, removable Lithium-ion battery, allow to check remaining electricity quantity
Battery Life	Single battery: 16h (static mode) 10h (internal UHF base mode) 12h (rover mode)
Communications	
I/O Port	5PIN LEMO external power port + Rs232 7PIN LEMO +external USB(OTG)+Ethernet 1 UHF/GPRS antenna interface SIM card slot
UHF	Integrated internal radio receiver and transmitter, 1W/2W/3W optional External radio transmitter 5W/25W UHF repeater function
Frequency Range	410-470MHz
Communication Protocol	TrimTalk450s, TrimMark3, PCC EOT, SOUTH
Cellular Mobile Network	Standard with TDD-LTE/FDD-LTE 4G module customized WCDMA3.5G network communication module, downward compatible with GPRS/EDGE Intelligent PPP dial technology which base on LINUX platform
Double Module Bluetooth	BLEBluetooth 4.0 standard, support for Android, ios cellphone connection Bluetooth 2.1 + EDR standard
External Devices	Optional external GPRS/EDGE dual-mode communication module, switchable; allow to connect external WLAN card
WiFi Modem	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 monitor receiver
WiFi Client	To work as the datalink that receiver is able to broadcast and receive differential data through WIFI
Data Storage/Transmission	
Storage	8GB SSD internal storage Automatic cycle storage (The earliest data files will be removed while the memory is not enough) Support external USB storage
Data Transmission	The customizable sample internal is up to 50Hz Plug and play mode of USB data transmission Support FTP/HTTP data download
Data Format	Static data format: STH, Rinex2.01 and Rinex3.02 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 GSOFF Network model support: VRS, FKP, MAC, fully support NTRIP protocol
Inertial Sensing System	
Tilt Survey	Built-in tilt compensator, correcting coordinates automatically according to the tilt direction and angle of the centering rod
Electronic Bubble	Controller software display electronic bubble, checking leveling status of the centering rod real time
Thermometer	Built-in multiple thermometer sensors, adopts intelligent frequency conversion temperature control technology, monitoring and adjusting the receiver temperature in real time
User Interaction	
Operating system	Linux
Buttons	4-button operation, visual operation, convenient and efficient
Display	1.54 inch HD OLED screen with resolution 128 x 64
Indicators	4 indicators, convenient to view and understand mode settings and status
Webserver	Allows to control and monitor the receiver in webserver through WIFI or Bluetooth, freely to configure receiver
Language	Support multiple languages, Chinese/English/Korean/Spanish/Portuguese/Russian/Turkish supported
Open platform	The OpenSIC observation data format and interactive interface support secondary development

New S86

-The Excellent GNSS Sensor-

Adhering to the excellent quality and creating the high-end brand, the new S86 leads the new standard of the RTK measurement with multiple constellations and multibands receiving technology. Fusing strong practicability of the high precision integration, brings unparalleled efficiency measurement experience for the user.



New S86

-The Excellent GNSS Sensor-



Brand new Linux platform

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. While the stability of system is much higher, it can be adopt to the job of longer uninterrupted power.



Functional Web UI management

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.

Double 50Hz update rate

Positioning update rate: The brand new embedded Linux platform improves the responding ability of the hardware that can make instrument bear higher strength data update rate, really accomplish 50Hz positioning update rate.

Static sampling rate: The particular multithreading core processing mechanism, ensure higher efficiency of data writing, so that the static sampling rate really is up to 50Hz.

Such a high sampling rate is appropriate for speeding devices measurement, such as UAV positioning.



CLOUD service

The powerful SOUTH cloud service really makes new S86 realize the remote control, manage and configure device, issue job mission, data upload and backup, check the real-time track or history track. Really know where the place of receiver is working.

Excellent network modem

Standard 4G module which supports TDD-LTE/FDD-LTE 4G network, and is downward compatible with 3G like WCDMA/CDMA2000 and GPRS/EDGE 2G network.



Smart PPP dialing

Using the intelligent PPP dialing technology which is based on Linux platform and adopting the network loading mechanism which is same to the smart cellphone, make S86 be able to have heartbeat interaction with base station real-time, ensure the instrument keeps online continuously during the survey, at the meantime, PPP dialing status and error messages would be broadcasted via voice guide, and display on controller software.

In-built 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.

Radio repeater: The rover can broadcast the corrections via internal radio to other rovers after receiving the radio differential signal. This function really achieves the goals of extending long distance working range, and the repeater receiver is not necessary to be fixed on a place that it still works as usual.



Internet repeater: The rover can broadcast the corrections via internet to other rovers after received the network differential signal. The repeater receiver can share the corrections to the other rovers in the case of high cost of network usage.



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.

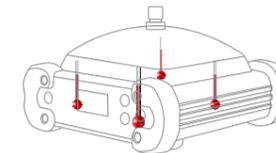
Dual-mode Bluetooth V4.0

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



Intelligent 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.



Visual HD display

The HD OLED colorful display supports multiple languages display and it is suitable to field work with high brightness and low power consumption.



Intelligent storage

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.

Disk-On-key which can easily copy the data to external U disk.

