SPECIFICATIONS

GNSS Features		Bluetooth	Bluetooth 3.0/4.1 standard, Bluetooth 2.1 + EDR
Channels	1598	NFC Communication	Realizing close range (shorter than 10cm)
GPS	L1, L1C, L2C, L2P, L5		automatic pair between receiver and
GLONASS	L1C/A,L1P,L2C/A,L2P,L3*		controller (controller requires NFC
BDS	BDS-2: B1I, B2I, B3I		wireless communication module else)
	BDS-3: B1I, B3I, B1C, B2a, B2b*	**WIFI**	
GALILEOS	E1, E5A, E5B, E6C, AltBOC*	Modem	802.11 b/g standard
SBAS	L1*	WIFI hotspot	AP mode, Receiver broadcasts its hotspot form
IRNSS	L5*		web UI accessing with any mobile terminals
QZSS	L1, L2C, L5*	WIFI datalink	Client mode, Receiver can transmit and receive
MSS L-Band	BDS-PPP		correction data stream via WiFi datalink
Positioning output rate	1Hz~20Hz	**Data Storage/Transmission**	
Initialization time	< 10s	Storage	4GB SSD
Initialization reliability	> 99.99%		Automatic cycle storage (The earliest data
Positioning Precision			files will be removed automatically while the
Code differential GNSS positioning	Horizontal: 0.25 m + 1 ppm RMS		memory is not enough)
	Vertical: 0.50 m + 1 ppm RMS		Support external USB storage
GNSS static	Horizontal: 2.5 mm + 0.5 ppm RMS	Data transmission	Plug and play mode of USB data transmission
	Vertical: 5 mm + 0.5 ppm RMS		Supports FTP/HTTP data download
Real-time kinematic	Horizontal: 8 mm + 1 ppm RMS	Data format	Static data format: STH, Rinex2.01, Rinex3.02 and etc.
(Baseline<30km)	Vertical: 15 mm + 1 ppm RMS		Differential format: RTCM 2.3, RTCM 3.0,
SBAS positioning	Typically < 5m 3DRMS		RTCM 3.1, RTCM 3.2
RTK initialization time	2 ~ 8s		GPS output data format: NMEA 0183, PJK plane
IMU tilt compensation	Additional horizontal pole tip uncertainty typic-		coordinate
	ally less than 10mm + 0.7 mm/° tilt down to 30°		Network model support: VRS, FKP, MAC,
IMU tilt angle	0° ~ 60°		fully support NTRIP protocol
Hardware Performance		**Sensors**	
Dimension	130mm(W)×130mm(L)×80mm(H)	Electronic bubble	Controller software can display electronic
Weight	790g (battery included)		bubble, checking leveling status of the
Material	Magnesium aluminum alloy shell		carbon pole in real-time
Operating temperature	-45° C~ +75° C	IMU	Built-in IMU module, calibration-free
Storage temperature	-55° C ~ +85° C		and immue to magnetic interference
Humidity	100% Non-condensing	Thermometer	Built-in thermometer sensor, adopting intelligent
Waterproof/Dustproof	IP67 standard, protected from long		temperature control technology, monitoring
	time immersion to depth of 1m		and adjusting the receiver temperature
	IP67 standard, fully protected against	**User Interaction**	
	blowing dust	Operating system	Linux
Shock/Vibration	Withstand 2 meters pole drop onto	Buttons	One button
	the cement ground naturally	Indicators	5 LED indicators(Satellite, Charging,
Power supply	6-28V DC, overvoltage protection		Power, Datalink, Bluetooth)
Battery	Inbuilt 7.4V 6800mAh rechargeable,	Web interaction	With the access of the internal web interface
	Li-ion battery		management via WiFi or USB connection, users
Battery life	15h(Rover Bluetooth mode)		are able to monitor the receiver status and
Communications			change the configurations freely
I/O Port	5-PIN LEMO external power port + RS232	Voice guidance	It provides status and operation voice guidance,
	Type-C(charge, OTG to USB disk,		and supports Chinese/English/
	data transfer with PC or phone, Ethernet)		Korean/Spanish/Portuguese/Russian/Turkish
	1 UHF antenna TNC interface	Secondary development	Provides secondary development
Internal UHF	2W TX and RX		kit, and opens the OpenSIC observation
Frequency range	410 - 470MHz		data format and interaction interface definition
Communication protocol	Farlink, Trimtalk450s,	Cloud service	The powerful cloud platform provides online
	HUACE, Hi-target, Satel		services like remote manage, firmware update,
Communication range	Typically 5-8km		online register and etc.

Satelit

Satelit

S1

- Palm-size genius -

Lighter and Faster

Only 790g in weight, S1 is still packaged with the magnesium alloy shell. High integrated design, smaller and lighter, fully consider surveyors needs. Easy carry and pack with its handy size.

IMU for tilt survey

S1 epuipped with the latest **Inertial Measurement Unit (IMU)**. Featured with anti-magnetic characteristic, you can start the tilt survey in any place. Shaking to initialize the IMU sensor, no need to calibrate. Up to 100Hz IMU data output rate, down to 2cm accuracy.

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.

External power: when connecting to external power, Red indicator will on.if the battery has been fully charged, Green Indicator will on.
Bluetooth: Blue Indicator will on when connecting.
Receiving corrections: When receiving corrections,green Indicator flashes, otherwise the Red indicator flashes

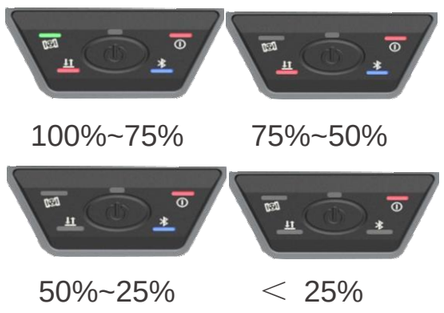
Longer battery life

Because of the latest SOC technology, S1 achieves higher performance and lower power consumption. The built-in **6800mAh** Li-ion battery can continuously work 15 hours(Rover Bluetooth mode).

It 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 S1 also supports the external phone portable battery, to continue the work even internal battery is used.

6800mAh
Fast-Charge



Smart indications

One click press to know battery remain capacity. Without connecting to any software, without logging in to WEBUI to know battery status by a simple press.

Work mode, Datalink, Channel number easy to know by its voice indication.

All these smart indications were designed to increase the working efficiency.

Supercharged by SoC technology

S1 is a new product from SANDING SoC platform, most components of C7 (GNSS module, Wi-Fi, Bluetooth, etc.) are integrated on one circuit board. C7 has lower power consumption, and efficiently improves the ability of receiving higher quality satellites signals.

Powered by the new ROS GNSS board, new generation sensitivity satellite antenna, new ROS platform and GNSS RTK engine, S1 can fully track GPS, GLONASS, BDS, GALILEO and QZSS toobtain centimeter-level positioning in few seconds.

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

Thanks to the new function "IFixed", now it is possible for S1 to keep centimeter-level accuracy for few minutes when the RTK corrections is missing.