

SP Nano

GIS SYSTEM

***Lightweight and
Long-Endurance***



***Real-Time Tilt
Compensation***

SP Nano Compact RTK Receiver

The SP Nano is a compact, intelligent GNSS receiver engineered for high-precision field positioning. Built on advanced BDS positioning technology, the lightweight main unit delivers exceptional portability without compromising performance. It tracks signals from all global satellite constellations across 1408 channels, integrates a high-precision IMU for tilt-compensated measurements, and achieves centimeter-level accuracy. Ideal for road construction, power line surveying, site grading control, CAD layout, railway stakeout, and many other surveying tasks.



LENGTH	WIDTH	HEIGHT	WEIGHT
60mm	41.3mm	126.3mm	176g

Reliable Centimeter-Level Accuracy



With a full-constellation helical antenna and 1408 channels, it locks onto BDS, GPS, GLONASS, GALILEO, QZSS, SBAS, and NavIC signals. Real-time differential corrections (base station or GBAS) deliver horizontal and vertical accuracy down to the centimeter level.

Integrated 4G & Bluetooth Connectivity



The receiver includes a Qualcomm 4G full-band modem and Bluetooth (BR+EDR+BLE). Remote monitoring, configuration, and alerts are supported via cloud server linkage.

Lightweight and Long-Endurance



Weighing just 176g and drawing low power, the unit runs for over 12 hours on a single charge of its 2500mAh internal battery — ideal for full-day field work.

Real-Time Tilt Compensation



An onboard high-precision IMU module provides dynamic tilt correction, keeping positioning error under 2 cm even when the receiver is tilted up to 60°.



Characteristic



- Cortex-A7 1.8GHz, runs Linux, supports feature expansion.
- Supports LTE FDD/TDD, WCDMA, GSM, and Bluetooth BR+EDR+BLE.



- 1408 channels, supports GPS, GLONASS, BDS, Galileo, QZSS, SBAS, NavIC.
- Centimeter-Level Accuracy: Horizontal $\pm(8\text{ mm} + 1\text{ ppm})$, vertical $\pm(15\text{ mm} + 1\text{ ppm})$.



- Real-Time Tilt Compensation – Error $< 2\text{ cm}$ within 60° tilt.
- Weighs only 176g, dimensions $60 \times 41.3 \times 126.3\text{ mm}$, PC+ABS material.



- 2500mAh battery, >12 hours operation, 5V/2A charging.
- IP67 rating, operating temperature -20°C to $+60^\circ\text{C}$, storage -40°C to $+85^\circ\text{C}$.

Appearance



Charge port



Power button



SIM Card Slot



Indicator



Application Scenario

Road construction



Power line surveying



GIS data collection



ITEM		SPECIFICATION	REMARKS
HARDWARE SYSTEM		ARM Cortex-A7 1.8GHz	
OS		Linux	
GNSS	GPS	L1C/A, L1C, L2C, L2P(Y), L5	Support PPP-B2b Support PPP-E6 Support SBAS
	GLONASS	G1, G2, G3	
	BDS	B1I, B2I, B3I, B1C, B2a, B2b (PPP)	
	GALILEO	E1, E5a, E5b, E6 (PPP)	
	QZSS	L1C/A, L2C, L5	Requires latest firmware support
	SBAS	L1C/A	
	NavIC(IRNSS)*	L5*	
	Channel	1408 channels	
	Data format	NMEA-0183	
	Correction I/O	RTCM3.X	
	Update Rate	5 Hz (max)	
ACCURACY	Single point(RMS)	Horizontal: 1.5m Vertical: 2.5m	
	RTK(RMS)	Horizontal: $\pm(8\text{mm}+1\text{ppm})$ Vertical: $\pm(15\text{mm}+1\text{ppm})$	
	Tilt compensation (within 60°)	< 2 cm	
CONNECTIVITY	Bluetooth	BR+EDR+BLE	
	Cellular	LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28 LTE TDD: B38/39/40/41 WCDMA: B1/2/4/5/6/8/19 GSM: B2/3/5/8	
	Tilt compensation (within 60°)	< 2 cm	
INDICATORS	Power	On/off status	
	Satellite	Positioning status	
	Data Link	Differential signal status	
	Bluetooth	Pairing status	
ENVIRONMENT	Operating Temp.	-20°C to +60°C	
	Storage Temp.	-40°C to +85°C	
	Protection	IP67	
PHYSICAL	Material	PC+ABS	
	Dimensions	60 mm × 41.3 mm × 126.3 mm (height includes helical antenna)	
	Weight	176 g (includes helical antenna)	
POWER	Battery	3.7 V, 2500 mAh	
	Operating Time	>12 hours	
	Charging	5 V / 2 A	
ACCESSORIES	SP Nano unit	1 set	
	Full-band helical antenna	1 pc	
	Plumb rod adapter	1 pc	
	5V/2A USB power adapter	1 pc	

► Manufacturers may update parameters at any time, please refer to the latest product information.