

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
 GLONASS G1, G2, G3
 BDS B1I, B2I, B3I, B1C, B2a, B2b (PPP)
 GALILEO E1, E5a, E5b, E6 (PPP)
 QZSS L1C/A, L2C, L5
 SBAS L1C/A
 NavIC(IRNSS)* L5*
 Channel 1408 channels
 Data format NMEA-0183
 Correction I/O RTCM3.X
 Update Rate 5 Hz (max)

Support PPP-B2b
 Support PPP-E6
 Support SBAS

Requires latest firmware support

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.