

RS50 Pro

GNSS SYSTEM

Fast setup. Stable fix



KEY FEATURES

- Visual Stakeout: See the point
- 30m Laser: Fast near-range work
- Photogrammetry: Capture points by photo
- Laser Aiming Cam: Aim faster, miss less
- Solid Fix: Hold a stable fix
- Rugged Built: Jobsite tough



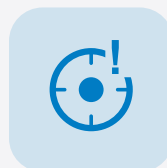
Visual Stakeout



Photo Measurement



Quick Capture



Hard-to-Reach



Site Documentation

Physical Characteristics	
Dimension	Weight
• 130 × 130 × 75 mm	• 880g±10%
Display	
• Size 1.39 inches	• Resolution 240 × 240
Button	
• 1 x Power	
I/O Ports	
• 1 x USB Type-C	• Charging, data download
• 1 x SIM Card Slot	• 1 x Nano-SIM card slot
• 1 x TNC	• UHF antenna interface
• 1 × 5-pin LEMO port	• power supply , RS232 , external radio communication port
• Audio	• 1 x Integrated Speaker 1W
System Specification	
Operating System	Storage
• Linux OS	• 32GB eMMC
Sensor	
• IMU Supported,4D IMU initialization in 3 seconds	
• Update rate 5 / 10Hz	• Accuracy <2.5cm within 120°
• Tilt compensation 0 ~ 120°	
Camera RS50 Pro	
• Laser assisted 2.0 MP	• Laser distance 30m
• AR camera 5.0 MP	
Power	
• Battery Li-Ion 7.4V 6600mAh (48.84wh) ,Built-in	
• Battery Operating Time	
-Rover mode: 12 hours	-Base mode: 7 hours
-Static mode: 15 hours	
• Power supply Supports Type-C fast charging PD2.0 12W	
Communication	
GNSS Performance	
• Signals tracking	
-GPS:L1C/A,L2C,L2P,L5	-GLONASS:L1,L2
-BDS:B1,B1C,B2,B2a,B2b,B3	-GALILEO:E1,E5a,E5b,E6
-QZSS:L1,L2,L5,L6	-SBAS:WAAS,EGNOS,MSAS
-GAGAN,SDCM	
• Channels 1408	• Cold start < 60s
• Hot strart < 15s	• Positioning output rate 1Hz ~ 50Hz
• Signal reacquisition <1s	• RTK initialization time <5s
• Initialization reliability >99.99%	• Time accuracy 20ns
Positioning accuracy	
• Code differential GNSS positioning H:0.25m+1ppm RMS, V:0.50m+1ppm RMS	
• SBAS differential positioning accuracy Typically<5m 3DRMS	
• Static GNSS surveying H:2.5mm+0.5ppm RMS, V:5mm+0.5ppm RMS	
• RTK surveying (baseline<30km) H:8mm+1ppm RMS, V:15mm+1ppm RMS	
• Network RTK H:8mm+0.5ppm RMS, V:15mm+0.5ppm RMS	
• Laser measurement 3 cm within range 10 m	
• Photogrammetry accuracy 2~4 cm 95% (10m,normal lighting conditions)	

Internal UHF

- 2.0 W receiver and transmitter Typical 8km working distance
- Frequency band | 410MHz~470MHz,supports frequency modification
- Protocols | Trimtalk450S, Lora,South, Satel, PCC-EOT

Wi-Fi

- 802.11 a/b/g/n/ac (2.4 & 5GHz)
- access point & client mode, supports accessing to hotspot for correction transmission

Bluetooth

- Bluetooth 5.2 Classical / BLE proprietary dual-mode

NFC

- 13.56MHz 14443A

Cellular network

- LTE-FDD: B1/ 3/ 5/ 7/ 8/ 20
- LTE-TDD: B38/ 40/ 41
- UMTS: B1/ 8
- GSM: 900/ 1800

Differential data format

- RTCM2x, RTCM3x, CMR & CMR+, sCMRx

GPS output data format

- RINEX, NMEA-0183

Reliability

Environment

- Operating Temperature | - 30°C to +70°C
- Storage Temperature | - 40°C to +80°C
- Operating Humidity | 0% to 100% RH, non-condensing

Rugged

- Shock | MIL-STD-810H
- Vibration | MIL-STD-810H
- IP rating | IEC 60529-2013 IP67

Certification

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- FCC / CE / ROSH / REACH / WEEE / UN38.3 / MSDS