

RS 50 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,L3
-BDS:B1,B1C,B2,B2a,B2b,B3	-GALILEO:E1,E5a,E5b,E6
-QZSS:L1,L2,L5	-SBAS:WAAS,EGNOS,MSAS
-GAGAN,SDCM	
• Channels 1408	• Cold start < 60s
• Hot start < 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

• FCC / CE / ROHS / REACH / WEEE / UN38.3 / MSDS
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