

RS50

GNSS SYSTEM

Fast setup. Stable fix



KEY FEATURES

- **Visual Stakeout:** See the point
- **100m Laser:** Reach farther, walk less
- **Laser Aiming Cam:** Aim faster, miss less
- **Solid Fix:** Hold a stable fix
- **Tilt Ready:** Work around obstacles
- **Rugged Built:** Jobsite tough



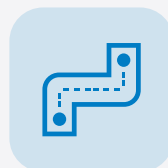
Laser Stakeout



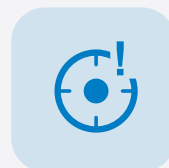
Long-Range Points



Road Works



Utilities



Hard-to-Reach

Physical Characteristics	
Dimension	Weight
• 130 × 130 × 75 mm	• 880g ± 10%
Display	Button
• Size 1.39 inches	• 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	
• Laser assisted 5.0 MP	• Laser distance 100m
• 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	
• Battery Operating Time	
-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	-SSBAS: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	
• Laser distance 0.05m ~ 100m	

Internal UHF	
• 2W 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	
Certification	
• FCC / CE / ROSH / REACH / WEEE / UN38.3 / MSDS	