GNSS Receiver Model S

2025

Model S is a portable multi-functional GNSS receiver. It has a built-in high-precision positioning module that supports tracking satellite signals from all systems and frequency bands. It is equipped with 4G full network access, Bluetooth, WIFI and built-in data transmission radio. The high-precision IMU integrates AR and Laser to achieve tilt measurement, Laser measurement and AR real-Time Stakeout, making the measurement work more convenient and efficient.

Linux Smart System

Linux+ARM Cortex-A7 intelligent system platform offers efficient computationand unlimited product functionality expansion.

Full System GNSS Reception

The receiver integrates a high-precision positioning module, utilizing 1408 channels to support a comprehensive range of signals including BDS (B1I/B2I/B3I/B1C/B2a/B2b), GPS (L1/L2/L5), GLONASS (L1/L2/L3), Galileo (E1/E5a/E5b/E6), QZSS (L1/L2/L5), SBAS and NavIC(IRNSS).

4C Full NetCom

The 4G NetCom solution based on the Linux platform fully supports 2/3/4G networks, offering better compatibility, stronger signals, and more stable connections.

Tilt Measurement

Built-in intelligent high-precision inertial navigation 4D module for real-time tilt compensation, eliminating "fly points" in RTK measurement.

Laser Measurement

Equipped with a high-precision millimeter-level laser ranging module, combined with high-precision inertial navigation for accurate laser targeting in complex environments.

AR Real-Time Stakeout

Utilizes a professional ultra-wide-angle camera to provide high-definition real-time plotting functionality, making stakeout tasks more accurate and convenient.

Characteristic

- Linux + ARM Cortex-A7 Smart System
- Support BDS/GPS/GLONASS/Galileo / QZSS/NavIC(IRNSS) and SBAS
- Centimeter-level positioning
- The accuracy of the tilt measurement is less than 2cm within a 60° range
- Complete data link, support 4G/BT/WIFI and radio, more flexible work
- Support AR real-time Stakeout
- Support Laser Measurement
- Equipped with a high-capacity lithium battery, long endurance
- Meets IP68 design requirements, safe and reliable

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ITEM		SPECIFICATION	REMARKS
HARDWARE SYSTEM		ARM Cortex-A7	
OS		Linux	
CHANNEL		1408	
GNSS	GPS	L1 C/A, L1C, L2P(Y), L2C, L5	
	GLONASS	L1, L2, L3	
	BDS	B1I, B2I, B3I, B1C, B2a, B2b	
	GALILEO	E1, E5a, E5b, E6	
	QZSS	L1, L2, L5	
	SBAS	L1	
	NavIC(IRNSS)	L5	
	Standard Output	NMEA-0183	
	Correction I/O Protocol	RTCM3.X	
	Frequency	≤20Hz	
	Reacquisition Time	<1s	
	Cold Start Time	<40s	
	RTK Initialization Time	<10s	
	Internal noise level	≤1mm	
	Phase Center Offset	≤2.5mm	
ACCURACY	SINGLE(RMS)	Horizontal: 1.5m Vertical: 2.5m	
	DGPS(RMS）	Horizontal: 0.4m Vertical: 0.8m	
	RTK(RMS)	Horizontal: ±（8mm+1ppm） Vertical: ±（15mm+1ppm）	
	Timing Precision(RMS)	20ns	
	Static Mode Precision (RMS)	Horizontal: ±（2.5mm+1ppm） Vertical: ±（5mm+1ppm）	
	Velocity Estimation(RMS)	0.03m/s	
	Tilt Correction（Within 60°）	<2cm	
	AR Stakeout	Horizontal: ±（8mm+1ppm） Vertical: ±（15mm+1ppm）	
	Laser Measurement	The three-dimensional accuracy of laser tiltmeasurement within 6m: no more than 2 cm	
SYSTEM	Bluetooth	BR+EDR+BLE	
	NFC	Support	
	WIFI	802.11 b/g/n/ac	
	Network	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	
	Radio	Integrated transceiver radio Frequency Range: 410~470MHz Power: 0.5W/1.5W Protocols: TRIMTALK、TRIMMK3、SOUTH、TRANSEOT、SATEL、LORA	

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		Air Baud Rate: 4800、9600、19200	
	Storage	8GB	
	Voice	Support	
	Laser Camera	Sensor size:1/3.06 Aperture: f/2.9 Resolution:4224*3200 Field of view: D44°H=35°V=26.5° Distortion: ＜1%	
	AR Camera	Supports AR real scene stakeout Sensor size: 1/2.8 inch Aperture: f/2.5 Resolution: 1920*1080 Field of view: 69.3°±3° Distortion: ＜0.38%	
BATTERY	Battery	7.4V, 6500mAh	2P2S
	Work time	More than 16 hours (Typical, Rover, GSM)	**TBD**
	Charge	USB PD 15V/2A 5V/3A	
ENVIRONMENTAL	Operating Temperature	-25℃~+60℃	
	Storage Temperature	-40℃~+85℃	
	Shock Resistance	Can withstand a 2m drop at normal temperatures	
	Protection Rating	IP68	
PHYSICAL	Materials	Magnesium alloy casing with ABS/PC plastic top cover	
	Dimensions	Φ134mm*86mm	
	Weight	≤0.78Kg	
ACCESSORIES	Receiver Model S	1 PCS	
	Type-C power adapter	1 PCS	
	Type-C To Type-C	1 PCS	
	Radio Antenna	1 PCS	
	Controller（Optional）	1 Set	