SATLAB®
GEOSOLUTIONS

SL9

SLAM RTK

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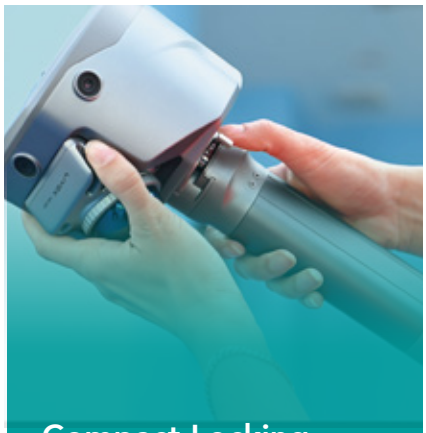
SL9 SLAM RTK combines high-precision GNSS positioning with cutting-edge SLAM technology, eliminating the spatial constraints of traditional RTK measurements.
Whether in urban buildings, dense forests, or indoor environments, SL9 ensures reliable, precise measurements, redefining efficiency and versatility in fieldwork.

01



Compact Locking Design

Portable body with no moving parts and a secure battery-host locking mechanism for vibration-free operation.

02

Intuitive HD Touch Interface

User-friendly 2.8-inch touch-screen for seamless field workflow.

03

New Generation GNSS SoC Chip

The new GNSS SoC chip combines ultra-low power with advanced anti-interference filtering, ensuring strong signals, quality data, and pinpoint accuracy.

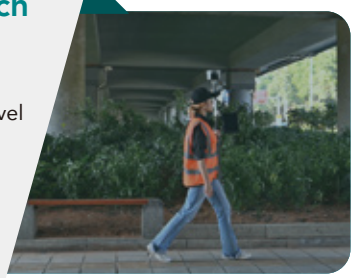
Features

New Image Measurement Experience

Equipped with three HD cameras and combined with SLAM technology, SL9 SLAM RTK brings a new image measurement experience. With Satsurv software, users only need to select the target point in the image to calculate its 3D coordinates in real-time, with an accuracy of 2 to 5 centimeters within 15 meters.

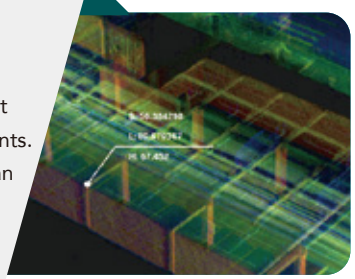
Boundaryless Surveying with SLAM-Fix Tech

SL9 innovatively combines RTK and SLAM technologies to deliver a seamless and efficient workflow for cross-environment measurement projects. Outdoors, the integrated RTK receiver ensures centimeter-level positioning accuracy. When entering GNSS-challenged or obstructed areas (such as semi-indoor environments under eaves or bridges), the system automatically switches to the SLAM reverse positioning algorithm, intelligently calculating precise coordinates to maintain uninterrupted measurement.



Unified Coordinate System

Equipped with a high-precision RTK module, SL9 delivers real-time centimeter-level positioning outdoors while automatically aligning point cloud data to maintain the unified coordinate system across environments. Its SLAM scanning supports no control points or loop closure—users can freely move and capture data, dramatically improving field efficiency. Point cloud data is directly exported in unified coordinates (BLH/NEZ), providing a seamless field-to-office workflow.



Volume Calculation

Based on high-performance point cloud processing technology on Android, Satsurv software can provide users with 3D terrain data in a timely manner and calculate the earthwork volume with simple operation.

Strong Signal and High-Quality Data

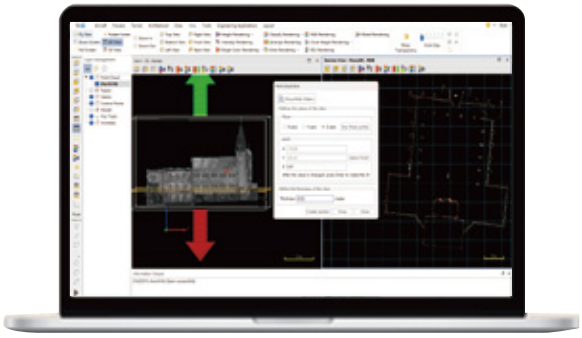
Full-constellation tracking (GPS/Galileo/GLONASS/BeiDou/NAVIC) with enhanced signal robustness in urban canyons. BDS B2b + Galileo HAS + QZSS L6 convergence for centimeter-level reliability without base stations.

Software

Satsurv — Professional Measurement Software

Satsurv combines high-performance point cloud and image processing with CAD and real-world engines, delivering real-time point cloud calculations, visual accuracy heatmaps, and an intuitive user experience for fieldwork and layout tasks.

Sat-LiDAR — Office Software



Post-process your data with Sat-LiDAR for <2 cm thickness and <1 cm accuracy. The software supports tunnel excavation analysis, progress monitoring, and acceptance checks. It also aids renovation projects with cross-section, plan, and elevation outputs.

Applications

SL9 excels in challenging environments like under eaves, dense forests, and urban canyons where traditional RTK struggles. It significantly improves efficiency in forestry and urban data collection.

Perfect for indoor and underground spaces, SL9 handles point cloud scanning with ease, making it ideal for underground parking lots, urban tunnels, and heritage sites.

From building facades in urban planning to road earthworks and mining volume assessments, SL9's point cloud technology streamlines data collection for various engineering projects.

Dual Operating Modes

Retain the precision of traditional centering pole measurements for ground feature data collection.

Enjoy the flexibility of handheld operation, ideal for efficient SLAM point cloud collection in earthwork and underground spaces.

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CE

Specifications

GNSS Configuration	Channel	1408
	GNSS Signal	GPS: L1C/A, L1C, L2P(Y), L2C, L5
		BDS: B1I, B2I, B3I, B1C, B2a, B2b
		GLONASS: L1, L2, L3
		GALILEO: E1, E5a, E5b, E6
		QZSS: L1, L2, L5, L6
		NavIC: L5
		SBAS: L1, L2, L5
		PPP: B2b-PPP, E6-HAS
	Output format	ASCII: NMEA-0183, Binary
	Output rate	1Hz~20Hz
	Static data format	GNS, Rinex
	Real Time Kinematic	RTCM2.X, RTCM3.X
	Network Mode	VRS, FKP, MAC, Support NTRIP protocol
System Configuration	Operation system	Linux
	Storage	Circulating 512GB ROM
Accuracy and Reliability[1]	High-Precision Static	Horizontal: 2.5 mm + 0.1 ppm RMS | Vertical: 3.5 mm + 0.4 ppm RMS
	Static and Fast Static	H: 2.5 mm + 0.5ppm RMS | V: 5 mm + 0.5ppm RMS
	PPK	H: 8mm + 1ppm RMS | V: 15mm + 1ppm RMS
	PPP	H: 10cm | V: 20cm
	Code Differential GNSS Positioning	H: ±0.25m+1ppm RMS | V: ±0.5m+1ppm RMS SBAS: 0.5m (H), 0.85m (V)
	Real Time Kinematic (RTK)	H: 8mm+1ppm RMS | V: 15mm+1ppm RMS Initialization time: Typically <10s | Initialization reliability: Typically > 99.9%
	Tilt Survey Performance[2]	8mm+0.3mm/°tilt
	AR stakeout	Support
	Image measurement	A single photo can acquire multiple point coordinates, with an accuracy of better than 5cm within 15 meters[3]
	Real-time accuracy evaluation	Supports
Camera	Pixel	3 Professional Dual HD Cameras
	Function	Support AR stakeout, image measurement, working distance 2~15m
Laser Scanner	Range	0.1~ 40m@10%, 0.1~ 70m@80%
	Laser product classification	Class 1 Eye Safe
	FOV	H: 160° | V: 59°
IMU	Update rate	200Hz
Communication	I/O Interface	USB type C port; SMA antenna port; Nano SIM card slot
	Network	TDD-LTE，FDD-LTE，GSM
	WiFi	IEEE 802.11a/b/g/n/ac/ax，2.4GHz/5GHz，Wifi hotspot
	Bluetooth	Bluetooth 5.2
	Internal UHF Radio	Power：0.5W/1W Adjustable Frequence: 410MHz~470MHz
		Protocol: HI-TARGET, TRIMTALK450S, TRIMMARK III, SATEL-3AS, TRANSEOT, etc.
		Channel: 116（16 scalable）
Sensor	Electronic bubble	Supports
	Tilt Survey	Built-in High-precision IMU Module
Control Panel	Physical button	Single button
	Display	2.8 inch, 480×640 pixel touchable screen
	LED lights	Mode, Accuracy, Network
Application	Advanced function	NFC, WebUI, Firmware upgrade via U-disk
	Intelligence application	Intelligent Voice, Self-check
	Remote service	Message push, online upgrade, remote control
Physical	Power[4]	Lithium battery, supports portable charger
		RTK rover(UHF/Cellular): up to 10 hours | SLAM mode: up to 5 hours
		USB 45W fast charging, fully charged in 2 hours
	Size	Φ134.4mm×109.9mm
	Weight	1.68kg
Environments	Water/dustproof	IP64
	Humidity	100% non-condensing
	Operation temperature	-20 C ~+55 C
	Storage temperature	-40 C ~+70 C

Note:
[1]The measurement accuracy, precision, reliability and initialization time depend on various factors, including tilt angle, number of satellites, geometric distribution, observation time, atmospheric conditions and multi-path validation, etc. The data are derived under normal conditions.
[2]Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.
[3]The results are the accuracy obtained in laboratory scenarios, and some scenarios may have accuracy deviations.
[4]The battery operating time is related to the operating environment, operating temperature and battery life.
*Descriptions and Specifications are subject to change without notice.