SATLAB GEOSOLUTIONS

SL8

Dual-Camera Laser RTK

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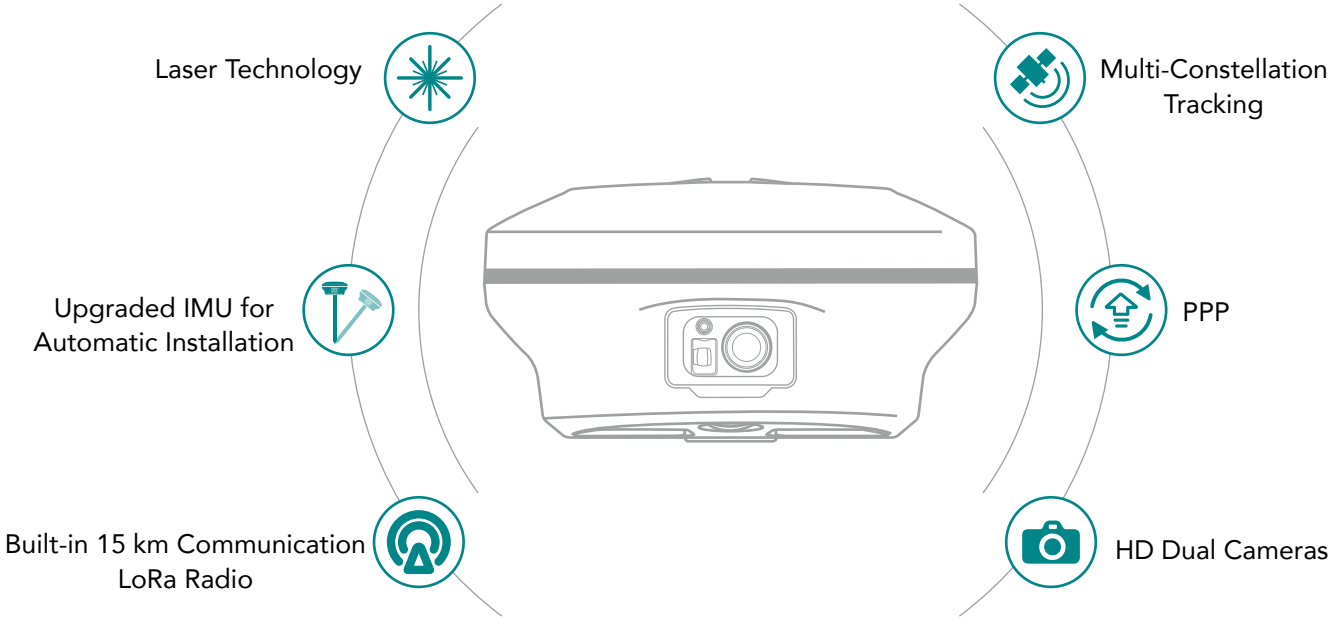
SatLab SL8 Laser RTK combines dual cameras, GNSS, IMU, and visible laser technology to make surveying faster and easier. With non-contact measurement, image-assisted targeting, CAD live-view stakeout, and a built-in LoRa radio , it ensures smooth, reliable work even in complex or GNSS-limited environments.

Features



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Features

Laser Measurement — Wide Coverage for Typical Tasks

Our Laser RTK delivers 2 cm accuracy within 10 m, enabling effortless measurements even in GNSS-denied areas. It ensures dependable, high-precision surveying across bridges, tunnels, rivers, and other challenging environments.

Exclusive Image-assisted Targeting

Laser points are directly overlaid on real-time images via Satsurv software, allowing users to quickly and accurately aim at distant objects, significantly improving field efficiency.

Automotive-grade IMU — Greatly Boosted Efficiency

The vehicle-grade IMU requires no manual calibration, allowing users to start measuring immediately without initialization. It delivers stable, accurate data, enhancing precision by up to 40%, and ensuring smooth operations in GNSS-challenged zones.

Extended-Range LoRa Communication — Reliable Working Distance

Equipped with a built-in LoRa transceiver supporting multiple protocols and compatible with various RTK brands, our self-developed LoRa algorithms deliver reliable data transmission over distances of more than 15 km.

CAD & Visual Stakeout — 50% Faster Layout

Combining a high-performance CAD engine with real-world imagery, users can perform visual, CAD-based stakeout, seeing target points directly on-site. This integration boosts stakeout efficiency by up to 50%, offering a safer, smarter, and more intuitive surveying workflow.

Technical parameters

GNSS Signal[1]	Channel	1408
	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, Galileo E6-HAS
Positioning Performance[2]	High-Precision Static	**Horizontal:** 2.5 mm + 0.1 ppm RMS | **Vertical:** 3.5 mm + 0.4 ppm RMS
	Static and Fast Static	**Horizontal:** 2.5 mm + 0.5 ppm RMS | **Vertical:** 5 mm + 0.5 ppm RMS
	Post Processing Kinematic (PPK / Stop & Go)	**Horizontal:** 8 mm + 1 ppm RMS | **Vertical:** 15 mm + 1 ppm RMS Initialization time: typically 10 min for base and 5 min for rover Initialization reliability: typically>99.9%
	PPP	**Horizontal:** 10 cm | **Vertical:** 20 cm
	Code Differential GNSS Positioning	**Horizontal:** ±0.25 m+1 ppm RMS | **Vertical:** ±0.5 m+1 ppm RMS **SBAS:** 0.5 m (H), 0.85 m (V)
	Real Time Kinematic (RTK)	**Horizontal:** 8 mm+1 ppm RMS | **Vertical:** 15 mm+1 ppm RMS **Initialization time:** typically < 10s | **Initialization reliability:** typically > 99.9%
	Positioning Rate	1 Hz, 5 Hz and 10 Hz
	Time to First Fix	**Cold start:** < 45 s | **Hot start:** < 30s | **Signal re-acquisition:** < 2 s
	Hi-Fix[3]	**Horizontal:** RTK+ 10 mm / minute RMS | **Vertical:** RTK+ 20 mm / minute RMS
	Tilt Survey Performance[4]	200 Hz, auto calibration, additional horizontal pole-tilt uncertainty typically less than **Horizontal:** 8 mm+0.7mm/° tilt (0~60°) | **Vertical:** 15mm+0.7mm/° tilt (0~60°)
	Image Stakeout Accuracy	2 cm accuracy
	Laser Measurement	2 cm accuracy within 10 m
Physical	Dimensions (W x H)	130.97 mm × 68.7 mm
	Weight	≤ 0.73 kg (1.61 lb)
	Operation Temperature	-40℃ ~ +75℃ (-40°F~ +167°F)
	Storage Temperature	-55℃ ~ +85℃ (-67°F ~ +185°F)
	Humidity	100% non-condensing
	IP Rating	IP68 (according to IEC 60529)
	Shock and Vibration	MIL- STD- 810 G, 514.6
	Free Fall	Designed to survive a 1.8 m natural fall onto concrete
Electrical	Internal Battery[5]	RTK rover(UHF/GSM): up to 20 h; UHF RTK base: up to 13 h; GSM RTK base: up to 17 h
	External Power	Using standard smartphone chargers or external power banks (Support 5V 2.8A Type-C USB external charging)
Communication	I/O Interface	1 × USB type C port; 1 × SMA antenna port, 1 × Nano SIM card slot
	Wi-Fi	Frequency 2.4 GHz, supports 802.11 a/b/g/n/ac/ax
	Bluetooth	BT 5.2, 2.4 GHz
	NFC	Near field communication for device touch pairing
	Network Modem	TDD-LTE, FDD-LTE, GSM
	Internal UHF Radio	Power: 1 W / 1.5 W adjustable
		Frequence: 410 MHz~470 MHz
		Protocol: LoRa, HI-TARGET, TRIMTALK450S, TRIMMARK III, SATEL-3AS, TRANSEOT, etc.
		Working range: 15-20 km[6]
		Channel: 116 (16 scalable)
Laser	Laser Product Classification	Class 3R
Camera	Front Camera	Support image-assisted measurement and AR stakeout
	Bottom Camera	Support AR stakeout
Control Panel	Physical Button	1
	LED Lights	Satellite, signal, power
System Configuration	Storage	64GB ROM internal storage
	Output Format	ASCII: NMEA-0183
	Output Rate	1 Hz~20 Hz
	Static Data Format	GNS, Rinex
	Real Time Kinematic (RTK)	RTCM2.X, RTCM3.X, CMR
	Network Mode	VRS, FKP, MAC, support NTRIP protocol

Note:
[1]QZSS L6 can be provided by firmware upgrade.
[2]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.
[3]Accuracies are dependent on GNSS satellite availability. Hi-Fix Positioning ends after 5 minutes without differential data.Hi-Fix is not available in all regions, check with your local sales representative for more information.
[4]Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.
[5]Rechargeable built-in 7.2V / 4900 mAh lithium battery; operating time varies with environment, temperature, and battery condition.
[6] This distance can be achieved when using a super base station
*Descriptions and Specifications are subject to change without notice