Meridian M27LV Specification

GNSS Signal	Channel	1408
	BDS	B1I, B2I, B3I, B1C, B2a, B2b*
	GPS	L1C/A, L1C, L2P(Y), L2C, L5
	GLONASS	L1, L2, L3*
	GALILEO	E1, E5a, E5b, E6*
	QZSS	L1C/A, L1C, L2C, L5, L6*
	SBAS	L1, L5*
	NavIC(IRNSS)*	L5
	L-band	B2b PPP (Only for the Asian-Pacific Region) & HAS*
	Data Format	CMR, CMR+, RTCM2.X, RTCM3.X
	Data Output	NMEA-0183, RINEX, TXT
	Data Updating Rate	Up to 20Hz
	Time to Recapture	<1s
	Cold Start	<40s
Positioning Performance	Single Point Positioning (RMS)	Horizontal: 1.5m | Vertical: 3.0m
	DGPS (RMS)	Horizontal: 0.4m | Vertical: 0.8m
	Real-Time Kinematic (RMS)	Horizontal: ±(8mm+1×10^{-6}•D)
		Vertical: ±(15mm+1×10^{-6}•D)
	Speed Accuracy (RMS)	0.03m/s
	Static Accuracy (RMS)	Horizontal: ±(2.5mm+0.5^{-6}•D)
		Vertical: ±(5mm+0.5^{-6}•D)
	Time Accuracy (RMS)	20ns
	Speed Accuracy	≥0.03m/s
	Tilt Compensation Accuracy	≤2cm(Tilt Angles60°, Up to 120°)
	IMU Update Frequency	200Hz
	Laser Accuracy (RMS)	Horizontal: ±(8mm+3mm/m)
		Vertical: ±(15mm+3mm/m)
Communication	Bluetooth	Bluetooth Core v5.4/4.2/2.1 (2.4GHz ISM Band)
	WiFi	802.11 a/b/g/n | 5.0GHz
	Cellular	**LTE TDD:** B34/38/39/40/41
		LTE FDD: B1/3/5/7/8/20/28
		WCDMA: B1/5/8
		GSM: B850/900/1800
	Storage	32GB
	Internal Radio	Transmitting Power: 2W(33±1dBm) 1W(30±1dBm)
		Frequency: 410-470MHz
		Protocol: SOUTH, TRIMTALK 450S, TRIMMK III, TRANSEOT, SATEL, MERIDIANLINK
		Air Baud Rate: 9600, 11000, 19200
Battery	Specifications	7.2V, 6600mAh lithium-ion Rechargeable Battery
	Operating Time	Laser RTK Rover: Up to 22 hours (Typical Power Consumption)
		Static: Up to 40 hours (Typical Power Consumption)
	Charging	Support USB PD 15V/2A (Supports Quick Charging Adapter)
Environment	Operating Temperature	-40℃~+85℃
	Storage Temperature	-55℃~+85℃
	Anti-seismic	2m Pole Drop Onto Concrete
	Dust & Waterproof	IP68
Physical	AR Camera	5 MegaPixel, large viewing angle, supports live view stakeout
	VR Camera	5 MegaPixel, supports Photogrammetry
	I/O Interface	1× USB type-C port; 1 × TNC antenna port; 1× SIM card slot; 1× 5 pin LEMO port
	Dimensions	125mm x 125mm x 79mm
	Weight	≤749g

*All specifications are subject to change without notice.
(1) Compliant, GLONASS L3, Galileo E6, Galileo E6 High Accuracy Service (HAS), BDS B2b and SBAS L5 will be provided through future firmware upgrade.
(2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. PPP accuracy is subject to the region, environment, and convergence time. High-precision static requires a minimum of 24 hours of long-term observation and precise ephemeris.

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M27LV Enhanced Laser-Visual Fusion GNSS RTK

The Meridian M27LV seamlessly combines high-precision laser measurement with an integrated high resolution camera, enabling a powerful Laser-Visual Fusion workflow. In complex field conditions-such as bright sunlight, reflective surfaces, or long-distance targets-the camera functions as the system's eye, delivering real-time visual feedback for accurate and confident targeting.





Photogrammetry Support, On-Site and Off-Site

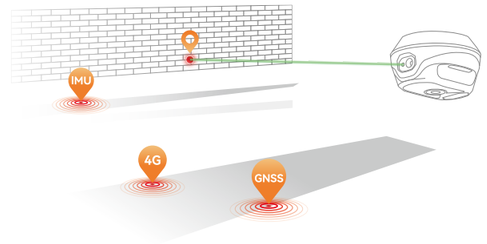
The M27LV also supports photogrammetric data capture, enabling users to collect images or videos in the field. These visuals can then be processed on-site or later in the office to extract accurate coordinates, making it easy to measure:

Hard-to-reach locations
Unsafe or restricted areas
Points obscured by terrain or obstacles



Latest Laser Technology

Laser technology offers unparalleled advantages in precision positioning and makes surveying work rodless and Easier. Combining cutting-edge laser technology with full constellation GNSS, IMU, and 4G integration, delivers calibration-free accuracy, significantly enhancing work efficiency and reducing potential risks.



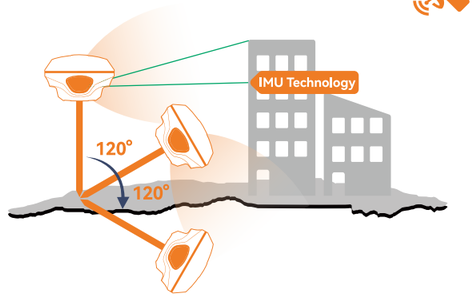
AR Stakeout

Visual positioning eases point finding by overlaying design files onto real scenes, enhancing stakeout efficiency. A high-performance HD camera achieves high accuracy with precise signal tracking. The 360-degree AR stakeout seamlessly switches between the handheld controller and rover, ensuring fast and accurate stakeout xperinces.



Calibration-Free Solution

Equipped with laser & 120° calibration-free IMU technology in a small body, it complements the laser's outstanding performance, extending the M27LV application range to locations that traditional RTK systems cannot reach, open-ing up new horizons for product applications, enhancing customer satisfaction and boosting operational efficiency.



Longer Working Distance

Equipped the MeridianLink protocol internal radio offers 15km working range and increases flexibility. By eliminating the need for an external radio, the M27LV becomes more lightweight, less complex, and more portable, which can lead to increased efficiency and convenience in the field.

