GreenValley International

LiMobile M2 Ultra

High-precision Mobile Laser Scanning System

The LiMobile M2 Ultra mobile laser scanning system, developed by GreenValley International (GVI), is a high-precision survey-grade mobile mapping system. The system integrates long-range high-precision LiDAR, GNSS/INS integrated navigation system, multi-channel SLAM LiDAR, and high-resolution panoramic camera. It also provides multiple expansion interfaces and can be installed on different vehicle models. Paired with GVI's self-developed LiDAR360MLS software, it enables one-stop data processing to deliver industry results in applications like road maintenance, road reconstruction and expansion, road asset extraction, intelligent transportation, high-precision maps, digital twins, and more.

Advantages

High Precision

The system employs GNSS, IMU, DMI, and LiDAR SLAM technologies to easily handle various complex working conditions, accurately recreating 3D reality even in GPS-denied areas. Integrated with a LiDAR offering millimeter-level accuracy, the system can achieve centimeter-level precision.

Instant Insight, Total Control

The newly designed data collection APP features a guided operational process, enabling real-time monitoring of data and location, and ensuring convenient access to all critical information.

Highly integrated, Flexible Installation

Integrated equipment with a quick-release design allows for rapid installation and removal. Seven predefined mounting angles (0°, ±15°, ±30°, ±45°) can be flexibly selected to meet the needs of different projects.

Abundant Expansion

Compatible with optional pavement camera, front camera, DMI, and other external sensors. The pavement camera focuses on the road surface for a detailed pavement analysis. The front camera captures traffic signs at high resolution. The DMI provides assistance when satellite signals are blocked or missing, improving system stability.

Long-lasting Power, Continuous Operation

It supports an external power supply, enabling efficient and uninterrupted operation.

Multi-Industry Applications

It is widely used in various fields, including road maintenance, road reconstruction and expansion, road asset extraction, intelligent transportation, high-precision maps, digital twins, and more.

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Specifications

System Parameters					
Dimensions	554×230×547 mm		Weight	18 kg	
Roof Rock Dimensions	730×350×95 mm		Roof Rock Weight	17.5 kg	
Storage	1 TB×2		Battery Capacity	6000 mAh×6	
Operating Time	≥3 h		Port	LAN, ODO	
Operating Temperature	-10 °C ~ 40 °C		IP Rating	IP65	
Power Consumption (Typical)	120 W		Power Supply Input Voltage	24 V-DC	
Power Consumption (Max)	150 W		Interface Connection	Wi-Fi / Ethernet	
LiDAR Sensor Parameters					
Accuracy	5 mm		Precision	3 mm	
Scan Rate	10 - 250 revolutions per second, equivalent to 10 - 250 scans/sec		FOV	360°	
Laser Pulse Repetition Rate	300 kHz	500 kHz	1000 kHz	1250 kHz	1500 kHz	1800 kHz
Maximum range, target reflectivity ≥ 10%	170 m	130 m	85 m	85 m	85 m	85 m
Maximum range, target reflectivity ≥ 80%	475 m	370 m	235 m	235 m	235 m	235 m
Camera Parameters					
	Ladybug5+		**Ladybug6 (Optional)**		**Pavement / Front (Optional)**	
Pixels	30 MP (5 MP×6 Sensors)		72 MP (12 MP×6 Sensors)		24 MP (12 MP×2 Sensors)	
Maximum Frame Rate	10 FPS		5 FPS		5 FPS (4096×2160) 3 FPS (4096×3000)	
Image Resolution	8192×4096		12288×6144		4096×3000	
Sensor Type	CMOS		CMOS		CMOS	
Trigger Mode	Time / Distance Trigger		Time / Distance Trigger		Time / Distance Trigger	
Power Consumption	Maximum 13 W		Maximum 13 W		3.0 W @ 12 VDC	
Positioning and Orientation System Parameters					
GNSS System	GPS; GLONASS; GALILEO; BEIDOU; QZSS; SBAS		IMU Data Frequency	100 Hz	
Mechanical DMI (Optional)	Mechanical wheel odometer for road applications.				
Position Accuracy (RMS 1σ)[1]	Horizontal: 0.01 m		Roll / Pitch Accuracy (RMS 1σ)[1]	0.005°	
	Vertical: 0.02 m		Heading Accuracy (RMS 1σ)[1]	0.01°	
Data Output					
Absolute Accuracy[2]	≤3 cm		Point Cloud Data Format	LAS, LAZ, LiData	
Software					
Data Collection	GreenValley APP				
Pre-Processing	LiDAR360MLS-Geo Module		Post-Processing	LiDAR360MLS (Optional)	

[1] PPK performance in open-sky GNSS environment.
[2] The accuracy is measured in a specific calibration field of GVI, with a vehicle speed of 40 km/h and LiDAR360MLS software. The accuracy may vary in different operating environments, so please refer to actual use.