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 a 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

The M2 Ultra system is 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						
	Ladybug6		**Ladybug5+(Optional)**		**Pavement / Front (Optional)**	
Pixels	72 MP (12 MP×6 Sensors)		30 MP (5 MP×6 Sensors)		24 MP (12 MP×2 Sensors)	
Maximum Frame Rate	5 FPS		10 FPS		5 FPS (4096×3000)	
Image Resolution	12288×6144		8192×4096		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 V DC	
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.