

LiMOBILE M2

Mobile Laser Scanning System



The LiMobile M2 affordable mobile laser scanning (MLS) system is equipped with two LiDAR sensors (one tilted at a 30-degree angle and one positioned horizontally) and a Ladybug5+ panoramic camera, enabling efficient 3D mapping of roads and surrounding environments. Even in GPS-denied areas, high-precision scanning can be achieved with the help of laser SLAM. It also provides multiple expansion interfaces and can be installed on various types of vehicles. Paired with GVI's self-developed LiDAR360MLS software, it enables one-stop data processing to deliver industry results, supporting applications such as road asset extraction, urban power distribution line analysis, urban forestry management, smart transportation, and more.

Advantages

I Easily Handles Complex Scenarios

The M2 system integrates GNSS, IMU, DMI, and LiDAR SLAM technologies, enabling it to effortlessly handle a wide range of complex scenarios. It can also achieve precise 3D reconstruction of real-world environments, even in areas where GNSS signals are unavailable.

I 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.

I Abundant Expansion

The M2 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 unavailable, improving system stability.

I Highly Integrated, Flexible Installation

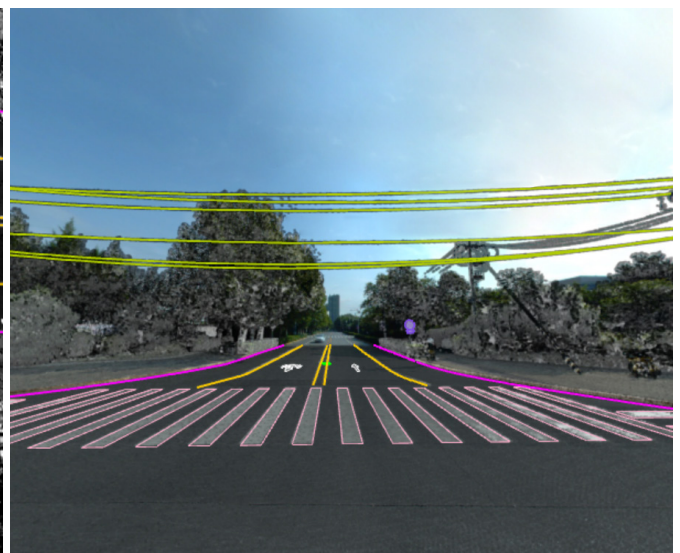
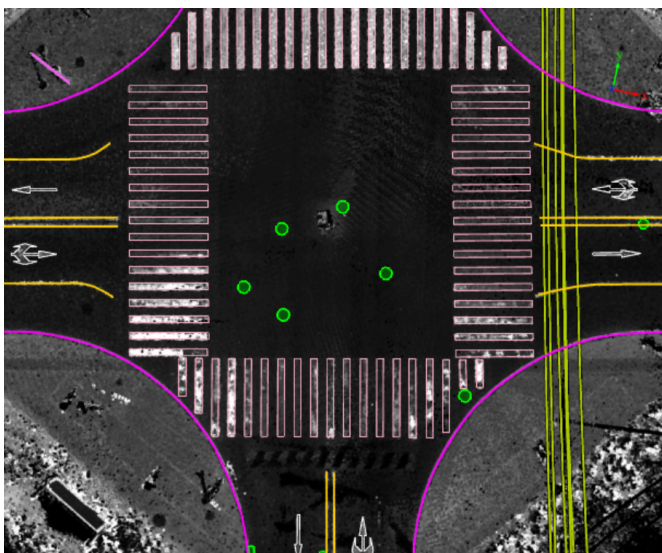
Integrated equipment with a quick-release design allows for rapid installation and removal. Seven predefined mounting angles (0° , $\pm 15^\circ$, $\pm 30^\circ$, $\pm 45^\circ$) can be flexibly selected to meet the needs of different projects.

I Long-lasting Power, Continuous Operation

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

I Multi-Industry Applications

Paired with LiDAR360MLS software, M2 achieves one-stop result delivery and is widely applied in road asset extraction, urban power distribution line analysis, urban forestry management, smart transportation, and more.



Specifications

System Parameters

Dimensions	508.5×263×531.5 mm	Weight	14 kg
Roof Rock Dimensions	730×350×95 mm	Roof Rock Weight	17.5 kg
Operating Time	≥6 h	Port	LAN, ODO
Storage	1 TB×2	Battery Capacity	6000 mAh×6
Operating Temperature	-10 °C ~ 50 °C	IP Rating	IP65
Power Consumption (Typical)	75 W	Power Supply Input Voltage	24 V DC
Power Consumption (Max)	125 W	Interface Connection	Wi-Fi / Ethernet

LiDAR Sensor Parameters

Laser	XT32M2X	Range Accuracy	±1 cm
FOV (Vertical)	40.3° (-20.8° to +19.5°)	FOV (Horizontal)	360°
Scan Rate	1,280,000 pts/s (Dual Return)	Detection Range	0.5 to 300 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 (4096×3000)
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 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]	0.01°
	Vertical: 0.02 m	Heading Accuracy (RMS 1σ) ^[1]	0.04°

Data Results

Relative Accuracy ^[2]	≤2 cm	Absolute Accuracy ^[2]	≤5 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.