



Tersus MVP S1

HANDHELD SLAM 3D LASER SCANNER

ULTRA-LIGHT. ULTRA-REAL. NEXT-GEN EFFICIENCY.

Designed for professionals who demand portability without compromise. The Tersus MVP S1 combines a 360° LiDAR, high-precision RTK module, and flagship panoramic imaging into a compact body. Whether mapping indoor spaces or outdoor construction sites, it ensures seamless data capture with microsecond-level synchronization.



982 g

Ultra-lightweight



<1 cm / <5 cm

Relative & Absolute Accuracy



200,000 pts/s

High-density Point Cloud



0.1–70 m

Wide Scanning Range



Dual 48 MP cameras

3DGS Reconstruction Ready



150 min

Operating Time



<1 cm

Point Cloud Thickness



TimeSync 3.0

Microsecond-level
Hardware Sync

COMPACT DESIGN, FLAGSHIP PERFORMANCE

1 982 g Ultra-Lightweight

The total weight of the MVP S1 (including battery) is only 982 g. Its integrated ergonomic design combines LiDAR, panoramic cameras, and high-precision RTK modules, allowing a single operator to easily complete long-duration, large-scale data collection tasks with one hand.

2 Dual 48 MP Cameras & 3DGS

More than just point clouds—it's a digital twin. Capture stunning high-resolution texture details. Utilizing advanced 3D Gaussian Splatting technology to generate photorealistic 3D models. Experience data as if you were physically on-site with perfect field detail reproduction.

3 TimeSync 3.0 Microsecond-Level Synchronization

Precision is rooted in synchronization. The MVP S1 utilizes hardware-level TimeSync 3.0 technology to achieve microsecond-level time alignment between LiDAR, cameras, IMU, and GNSS. This completely eliminates data misalignment and ghosting during high-speed movement, ensuring precise fusion of point clouds and imagery.



INTELLIGENT WORKFLOW



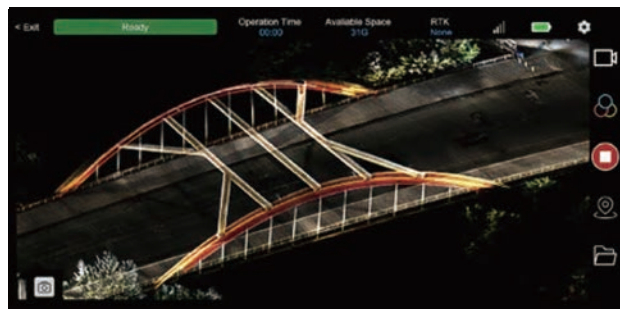
AI-Driven RTK-SLAM Algorithm

The SOTA-SLAM algorithm, trained on massive real-world datasets, is combined with Tersus high-precision RTK technology:
Leverages RTK constraints to achieve absolute accuracy < 5 cm, eliminating long-distance accumulated drift. In GNSS-denied areas, the SLAM algorithm operates robustly, ensuring smooth, drift-free trajectories.



Real-Time Preview

Via the mobile APP, operators can view true-color point clouds and movement trajectories in real-time.
Avoid Missing Data: Detect and scan blind spots immediately on-site.
On-Site Quality Check: Verify data integrity before leaving the site to eliminate unnecessary rework.



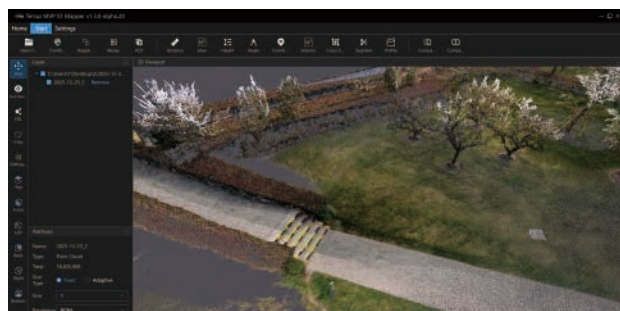
Smart Resume (Seamless Scanning)

Worry-free large-scale operations. Supports hot-swappable batteries or mission pauses. After a battery swap, the system automatically recognizes its current position and seamlessly stitches the previous data, easily handling ultra-large-scale surveying projects.

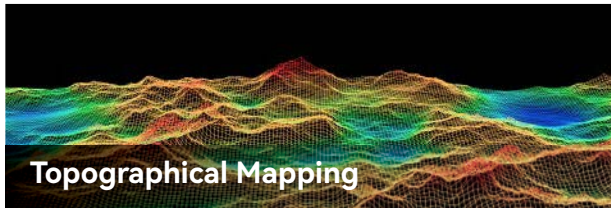


Comprehensive Software Ecosystem

From the field APP to the desktop software (MVP S1 Mapper):
One-Click Export: Supports LAS, PCD, PLY, RCP, and other universal formats.
Advanced Processing: Supports point cloud denoising, automatic georeferencing, and panoramic image generation.



SCENARIO



TECHNICAL SPECIFICATIONS

System & Data

Weight	982 g (Battery: 363 g, Main unit: 619 g)
Dimensions	104 × 140 × 305.7 mm (with positioning plate)
Ingress Protection	IP5X
Operating Temperature	-20°C to +55°C
Storage Temperature	-20°C to +65°C
Phone Mounting	Magnetic
Interfaces	
WIFI	Wi-Fi 6, 2.4G / 5G dual-band, up to 20 m
Bluetooth	Supported
Data Export	TF card / Type-C
USB	USB OTG,
	Supports app connection and SD card copy
RTK/GNSS	
Accuracy	Horizontal 0.8 cm + 1 ppm
	Vertical 1.5 cm + 1 ppm

LIDAR

Laser Class	Class 1 / 905 nm
Point Cloud Rate	200,000 pts/s
Frequency	10 Hz
Range	0.1–40 m @10% reflectivity
	0.1–70 m @80% reflectivity
Field of View (FOV)	Horizontal 360°
	Vertical -7° to +52°

Camera System

Resolutio	48 MP × 2
Sensor Size	1/2"
Panoramic Image	Supported
Camera Count	2
Max Capture Rate	10hz
Lens Field of View	Vertical 200°
Horizontal 200° (per fisheye lens)	

Power

Power Consumption	< 20w
Battery Capacity	41.97 Wh (2849.41 mAh)
Battery Voltage	12.7 – 16.2 V
Operating Time	150 min

Onboard Computing

Computing Power	6 TOPS
Memory	8 GB
Storage	256 GB (expandable)

Processed Accuracy

Point Thickness	< 1 cm
Accuracy	Relative < 1 cm
	Absolute < 5 cm

3DGS

Model Generation	Basic 3DGS model generation
Preview	Basic 3DGS preview

Note:

- (1) The initialization time depends on various factors, including the number of satellites, observation time, atmospheric conditions, multi-path, obstructions, satellite geometry, etc.
- (2) The initialization reliability may be affected by atmospheric conditions, signal multipath, and satellite geometry.
- (3) It is recommended using 2A instead of 1A when the external power is 5V.
- (4) The actual size/weight may vary depending on the manufacturing process and measurement method.



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Descriptions, specifications and related materials are subject to change.

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