SATLAB GEOSOLUTIONS

HYPER-TECH Systems
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Cygnus 3

Series Scanner

Engineering-Grade SLAM Scanner

Integrated RTK-SLAM | Real-Time Quality Check | Multi-Platform Mapping

- Integrated RTK
- Accuracy Heatmap
- Real-Time Point Cloud Preview
- Handheld / Backpack / Vehicle / UAV

320k / 640k pts/s	120 m / 300 m	RTK / PPK GCPs + Resume	2 × 48 MP 1 × 5 MP
Point Rate	Measurement Range	SLAM Workflow Support	Colorization & Visual-Aided Positioning

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Cygnus 3 series Scanner

Cygnus 3 is built for complex indoor, outdoor, and GNSS-challenged environments. It combines LiDAR, vision, RTK positioning, and advanced SLAM algorithms to deliver reliable 3D data for surveying, construction, infrastructure, and digital twin workflows.

Integrated RTK
Built-in RTK for globally consistent point cloud results.

Accuracy Heatmap
Check data quality directly during field scanning.

Multi-Platform Mapping
Handheld, backpack, vehicle, and UAV operation.

Rich Deliverables
Point clouds, mesh, 3DGS, and engineering outputs.

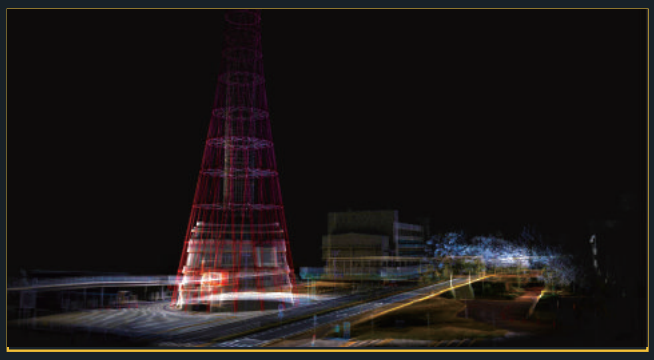
Key Features

Industry-Leading SLAM with Integrated RTK

- Advanced SLAM algorithms for complex environments
- RTK / PPK / GCP-supported workflows
- Improved coordinate consistency
- Clean setup with fewer external accessories

Real-Time Data Confidence

- Real-time point cloud preview
- Accuracy heatmap feedback
- Resume scanning support
- Verify data quality on site



Available on both Android and iOS platforms

Multiple Output Forms

- High-Accuracy Point Clouds ----Engineering-grade geometry for surveying and analysis
- Mesh Surface Models ---Structured surfaces for inspection, visualization, and measurements
- 3DGS Reconstruction & Visualization ---Visual representations for presentation, communication, and digital twins

Flexible Operation Modes

- Handheld Mode
- Backpack Mode
- Vehicle-Mounted Mode
- UAV-Mounted Mode

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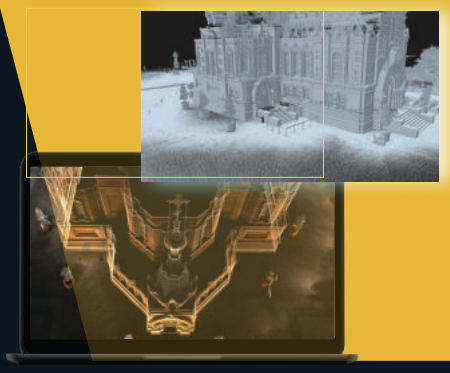

SAT-LIDAR SOFTWARE WORKFLOW

From SLAM Data to Engineering Deliverables

Cygnus 3 works with Sat-LiDAR to connect field scanning, SLAM processing, correction, analysis, visualization, and deliverable preparation in one workflow.Users can move from raw scan data to engineering-ready outputs without breaking the workflow.

Powered by Sat-LiDAR — A connected workflow for SLAM processing, correction, analysis, visualization, and delivery.

Sat-LiDAR Software Workflow & Ecosystem

1. **Import** — Cygnus 3 raw scan data
2. **Process** — Optimize, correct and georeference
3. **Analyze** — Measure, section and calculate
4. **Deliver** — Generate final deliverables

Process & Correct

Convert Cygnus 3 raw scan data into optimized, georeferenced, and colorized point clouds.

- SLAM processing and optimization
- Colorized point cloud generation
- Coordinate transformation and georeferencing
- RTK / PPK / GCP-supported correction
- Accuracy check and data adjustment

Analyze & Deliver

Turn processed data into engineering, visualization, and digital twin deliverables.

- DEM, contours, sections, and profiles
- Volume measurement and engineering analysis
- Mesh and 3DGS visualization
- CAD / BIM reference data output

Application Scenarios

Urban Mapping

Infrastructure & Corridors

Industrial Facilities

Architecture & Construction

Digital Twins & Visualization

Emergency Response & Rapid Mapping

Specifications

Laser Scanning Performance

Item	Cygnus 3	Cygnus 3 Pro
LiDAR Channels	16 channels	32 channels
Point Rate	320,000 pts/s	640,000 pts/s
Measurement Range	Up to 120 m	Up to 300 m
Field of View	360° × 280°	360° × 280°
Relative Accuracy	1 cm	1 cm
Point Cloud Thickness	1 cm	1 cm
Absolute Accuracy	Up to 4 cm*	Up to 2 cm*

Mapping & Positioning

Item	Specification
Mapping Modes	SLAM / RTK-SLAM / PPK-SLAM
Real-Time Processing	Yes
Real-Time Point Cloud Preview	Yes
Accuracy Heatmap	Yes
Resume Scanning	Yes
RTK Protocol	NTRIP

Camera System

Item	Specification
Resolution	2 × 48 MP + 1 × 5 MP
Camera FOV	190° × 190° for 48 MP; 135° × 100° for 5 MP

General Specifications

Item	Cygnus 3	Cygnus 3 Pro
Weight	1.98 kg	1.68 kg
Battery	70 Wh	70 Wh
Operating Time	Up to 180 min	Up to 180 min
Storage	512 GB SSD	512 GB SSD
IP Rating	IP54	IP54
Operating Temp.	-20 °C to +55 °C	-20 °C to +55 °C
Interfaces	Type-C / SkyPort / GNSS	Type-C / SkyPort / GNSS

Notes Cygnus 3 is equipped with a 16-channel LiDAR delivering up to 320,000 pts/s. Cygnus 3 Pro features a 32-channel LiDAR with a point rate of up to 640,000 pts/s. Accuracy values are obtained under satlab standard calibration conditions(RMS). Performance may vary depending on environment, operating method, and GNSS avail Battery endurance depends on operating temperature and working conditions.

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