

Hovermap STX

Fast, versatile mobile
scanning — on the ground
or fully autonomous.



Featuring AI-powered autonomous mapping, Hovermap incorporates the latest in LiDAR sensing technology to generate high-density point clouds in areas where humans struggle to access.

With a sensing range of up to 300 meters and the ability to capture more than a million points per second, Hovermap delivers detailed, survey-grade data over a wide area fast – accelerating your time to insight.

- Emesent SLAM - Proprietary
- Hesai XT32M2X
- RTK integrations with Emlid, Trimble & Leica
- GoPro 360 degree image kit

Hovermap STX Accessories



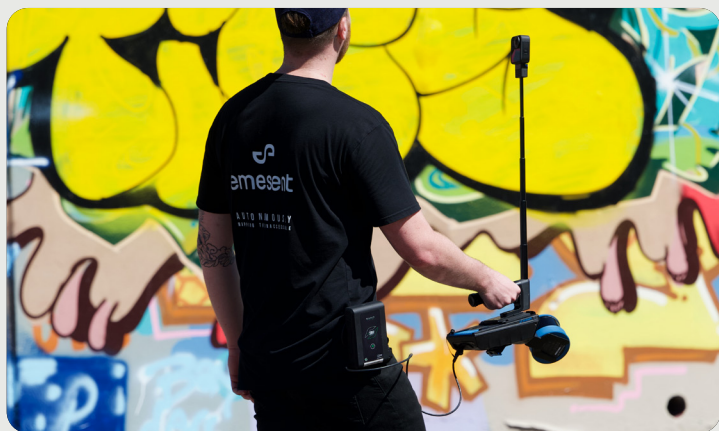
Backpack RTK — Fast, accurate and repeatable results

Emesent's Backpack RTK automates high-accuracy georeferencing and drift-correction for backpack based scans, to deliver fast, accurate and precise scans while reducing or eliminating the need to lay out and georeference ground control points. Intelligently leveraging both RTK and SLAM to optimize results, Backpack RTK ensures the most reliable, robust point cloud.



Drone RTK — Fast, accurate drone-based scans

Emesent Aura supports RTK, automating high accuracy georeferencing and drift correction for Hovermap scans on DJI's M300 and M350 drones, in addition to Astro Max. This enables the delivery of fast, accurate and precise above-ground drone scans on demand, without the need to lay out and georeference ground control points.



360° Image Kit — Augment Hovermap point cloud scans

The Handheld 360° Image Kit attaches a 360° camera directly to Hovermap, allowing users to capture panoramic imagery alongside LiDAR data in a single pass—adding visual context that makes point clouds easier to understand for non-technical stakeholders.



Vehicle RTK — Rapid vehicle-based scanning

Drone scan not suitable? Need to scan an area too large to walk? Emesent Vehicle RTK delivers confident scanning over large areas and of long, linear assets without the need for GCPs.

"It's got to the point now where people use that scanner in the office more than other scanners because you can just grab it and go. Emesent has taken probably 80% of the TLS jobs away."

— John Philipp | Director, Orion Spatial Solutions, Australia

Your End-to-End Solution

Field to finish, Emesent delivers your complete workflow

From capture to collaboration — access your data where you need it, when you need it. Our technology is more than scanners — developments in Commander, Aura and Aura Cloud will enable users to better capture, visualize, share and collaborate on their data.



Unlock the power of your point clouds with Aura

Experience Emesent Aura — the all-in-one processing and visualization platform that takes your scans to the next level.

Powerful automation, intelligent filtering, and advanced point cloud enhancement tools deliver precise, high-quality results with speed and ease. Now, with innovations in Aura Cloud - you'll be able to share 360 degree walk-throughs of your data more easily than ever before.



Mission control with Commander

Emesent Commander is your mission control app, designed to make mapping simple and intuitive. Designed with a responsive touchscreen interface, user-friendly workflows, and high-density visualization, Commander puts powerful control at your fingertips.

It's also your gateway to Emesent Cortex, the intelligent software that powers Hovermap's world class autonomy and smart navigation capabilities.

Integrated Technology



"I found the interface to be super intuitive, and the display of all control points' error is very much appreciated. I especially like how you can see the rigid control error before you "commit" to running the longer SLAM GCP adjustments."

— **Scott Harrigan** | President, Chief Pilot, Harkin Aerial

Hovermap STX

Specifications

**Specifications are indicative only and are subject to change without notice.*

Emesent Hovermap STX is powered by Emesent SLAM, a proprietary SLAM algorithm which is the key to unlocking stunning global accuracies in a variety of environments. All global accuracies are reported as 3D RMSE in accordance with good surveying practice. SLAM global accuracy is correlated with the density of features in the scan environment.

Global accuracy

Global accuracy	5 - 10mm
Global accuracy - RTK/PPK1	15 - 30mm

Local accuracy & precision

Local accuracy	5 - 10mm
Precision ²	Up to 2mm

² Reported at 1 standard deviation.

RTK

RTK georeferencing	With external RTK receivers: → Emlid RS2/RS2+/RS3 → Leica GS18/GS18I/GS18T → Trimble R10/R12/R12i/R980
PPK	Yes

Cameras

Cameras	Optional accessories: → 360 colorization kit (GoPro Max) → Handheld 360 Image Kit
Panorama field of view	360°

LiDAR

Model	Hesai XT32M2X
Sensing range	300 meters / 984ft
Returns	3
Points/sec	→ 640,000 (single return) → 1,920,000 (triple returns)
Channels	32

Battery & charging

Power	External battery (V-Mount compatible), or Platform power (drone or robot) 14-55V
Battery life	2 hours
Charging	Battery charger (with international adapters US/Canada/Japan, AUS/NZ, UK and Europe)
Charging time	Approx 3-4 hours

Scanner

Weight	1.57kg / 3.46lb
IMU	High-performance AHRS
Travel protection	→ Hardshell backpack or → Hovermap carry case
IP rating	IP65
Operating temperature	-10 to 45°C (14 to 113 °F)
External interfaces	→ USB-A (USB 3.0) → Push-pull connector → Smart connector (accessory expansion)
Wireless interfaces	WiFi (2.4GHz)
Storage	512 Gigabytes (<16 hours of sensor data)
Mounting methods	→ Handheld → Backpack → Vehicle → Drone → Boston Dynamics Spot Robot → LHD Mount → Cage → Telescopic boom pole → Cavity Monitoring System adapter kit

Other Accessories & Hardware

Supported drones	→ Freefly Astro → Astro Max → DJI M300 → M350
Additional hardware	→ Long Range Radio → Emesent Control Point targets → Samsung tablet and tablet display kit for DJI Smart Controller

Autonomy

Tap-to-fly and guided exploration	Waypoint, bounding box settings in real time 3D map and autonomous path planning.
Collision avoidance	→ LiDAR omnidirectional range of 1.2 to 40m (3.9 to 131 ft) → Size of an obstacle > 2 mm wire (3/32 in) → In-flight adjustable safety distance
Intelligent return to home	Autonomous Return To Home navigation triggered by low battery or excessive dust.
Assisted flight	Non-GPS flight, position hold, assisted flight, collision avoidance, regulated flight speed