emesent

Hovermap ST

HOVERMAP ST IS THE NEW STANDARD IN SURVEY GRADE AUTONOMOUS LIDAR MAPPING FOR HARSH GPS-DENIED ENVIRONMENTS.

- SLAM-based 3D mapping
- Omnidirectional collision avoidance
- Autonomous waypoints
- GPS-denied flight

Its tough, lightweight, IP65 weather sealed design enables the capture of valuable data in previously inaccessible areas.

This powerful combination of precision engineering, world-leading SLAM algorithms, and robust drone autonomy capability provide accurate LiDAR mapping for as-builts, surveys, or inspections.

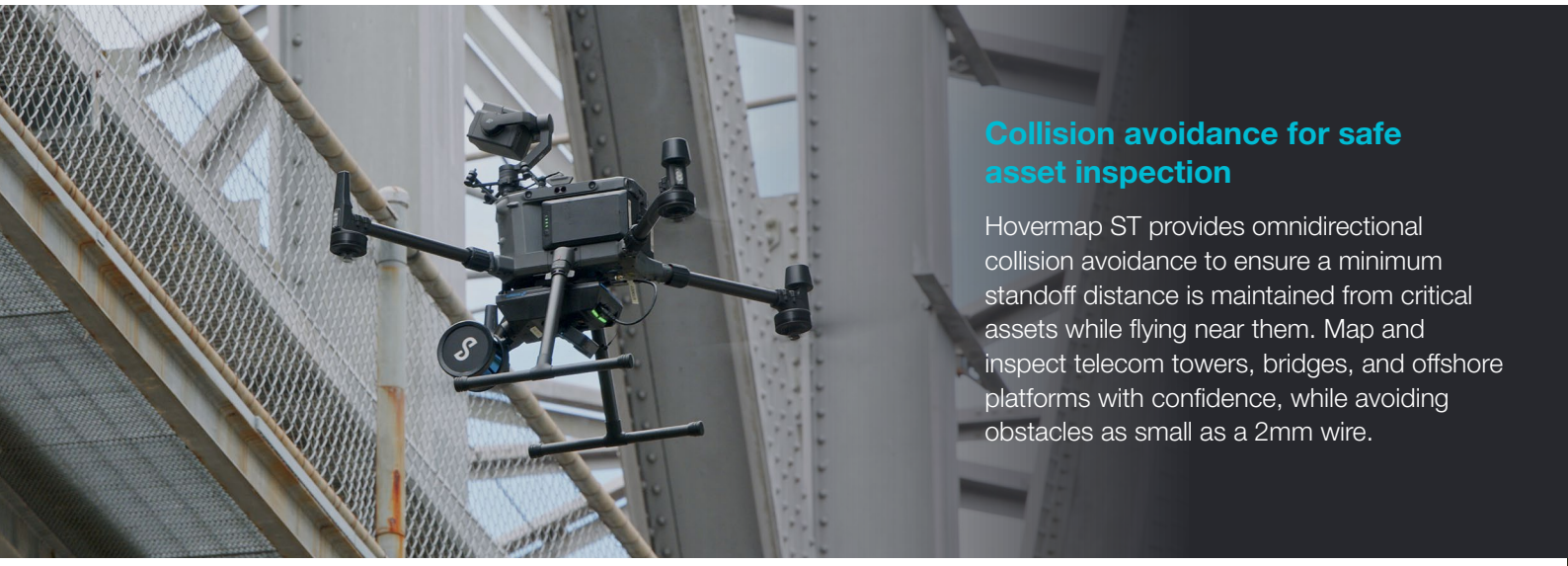
Equally capable above ground or underground, indoors or out, Hovermap ST can easily be switched from a drone flight to a walking, vehicle-, or backpack-mounted scan, providing the versatility needed to capture data anywhere.

Scan the Inaccessible

Hovermap ST's advanced autonomy enables flight and mapping in challenging situations, including beyond visual line of sight and communication range even in GPS-denied environments. Send a Hovermap ST enabled drone to explore and map previously inaccessible areas, providing new, valuable insights while the operator remains in a safe location.

Capture survey grade point clouds

Hovermap ST's precision engineering, world-class SLAM (Simultaneous Localization and Mapping), and the automated ground control feature provides survey grade accuracy, with shadowless and dense point clouds of an entire asset. The ground control feature also automatically georeferences the point clouds.



Collision avoidance for safe asset inspection

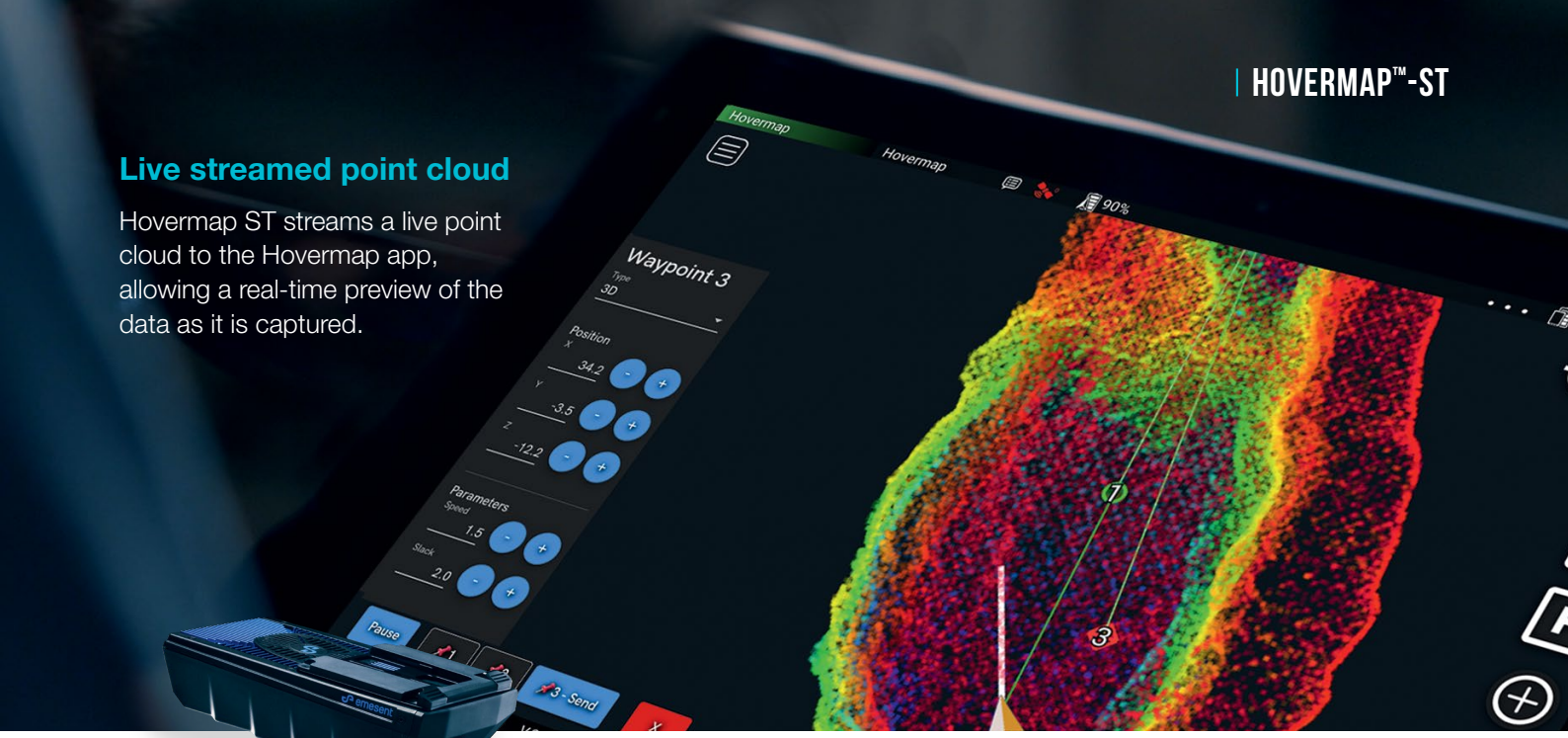
Hovermap ST provides omnidirectional collision avoidance to ensure a minimum standoff distance is maintained from critical assets while flying near them. Map and inspect telecom towers, bridges, and offshore platforms with confidence, while avoiding obstacles as small as a 2mm wire.

Unrivaled versatility and deployment options

The plug and play design and quick-release mechanism allow easy switching from drone-based use to backpack-, vehicle-, or ground robot-based scanning. This versatility enables the easy collection of critical data in any environment.

Live streamed point cloud

Hovermap ST streams a live point cloud to the Hovermap app, allowing a real-time preview of the data as it is captured.



Small and lightweight

The compact, lightweight design makes it easy to carry for walking scans and provides longer flight time when used on a drone. It can also be used on smaller drones.

Additional insights with true color

Add a new level of reality capture to your 3D point clouds with Hovermap ST's Colorization feature. Easily attach the camera module when needed and automatically colorize the point clouds using Emesent's colorization post-processing engine to provide enhanced visualization results and the potential to reveal previously hidden details in your critical infrastructure.

Tough, IP65 rated for harsh environments

The tough, IP65 rated unit is dust and splash resistant, making it ideal for use in underground mines and other harsh environments.

Accessory port for future expansion

The inclusion of an accessory port and mount points expand Hovermap ST's capability with accessories such as a long-range radio or inspection camera.

Mapping and autonomy modes to suit your needs

Autonomous Waypoint Mode provides beyond line of sight flight through Smart Waypoints and Guided Exploration. Simply tap on the map to set smart waypoints, and Hovermap ST takes care of the rest, navigating to the waypoints, mapping the area, and keeping itself and the drone safe from obstacles.

Pilot Assist Mode provides omnidirectional collision avoidance and line of sight GPS-denied flight capability for close-up inspections.

Mapping Mode offers fast, accurate, and high resolution mobile scanning of environments where drone autonomy is not needed.

Easily switch between autonomy modes during flight as needed.

EXPLORE FURTHER WITH THE TOUGH NEW AUTONOMY AND MAPPING PAYLOAD, HOVERMAP ST.

UNRIVALED SLAM ACCURACY AND WORKFLOW EFFICIENCIES

HOVERMAP ST AND AUTOMATED GROUND CONTROL FEATURE

Together Hovermap ST and Emesent's automated Ground Control Point feature speed up survey workflows and produce georeferenced, survey grade point clouds.

- Place Emesent ground control targets at surveyed locations in the environment prior to scanning.
- Conduct your non-stop scan. Unlike other SLAM control point solutions, there is no need to stop at each target or place Hovermap on the target.
- Emesent ground control targets are automatically detected by the processing software and used to remove SLAM drift and georeference the point cloud.
- Automatic constellation matching between the detected targets and survey locations removes the need for manual target matching.

In addition to improving accuracy for common mapping tasks, Hovermap ST with automated Ground Control Point feature can be used to create survey grade scans for long, linear assets, large or feature-poor environments that have previously been challenging for SLAM-based systems.

ST HARDWARE KIT

- Hovermap ST
- Emesent SLAM mapping software license dongle
- Custom fitted tough case with space for accessories
- Hovermap handle
- 1.5 m power cable (handle-mount/battery)
- 0.35 m power cable (drone/battery)
- Battery Belt Clip
- Slim V-Mount 98Wh, 14.8v 6600mAh battery
- Standard charger with international adaptors (US/Canada, AUS/NZ and Europe/Japan)
- 128 GB USB 3.1 stick with lanyard
- Introductory training session/video and manual
- Global support and service

SOFTWARE

- Emesent SLAM Processing software license

And select from

- Hovermap Autonomy software license
- Hovermap Plus software license

ACCESSORIES

- Hovermap magnetic or suction-cup vehicle mounts
- Hovermap protective cage
- Hovermap hardcase backpack (walking scans and storage)
- Battery fast charger kit
- Standard dual battery charger
- Cavity Monitoring System adaptor kit

HARDWARE OPTIONS

- Colorization kit
- Emesent Control Point targets

HOVERMAP™ ST SPECIFICATIONS

PHYSICAL

IP Rating	IP65
Operating Temperature	-10 to 45 °C (14 to 113 °F)
Weight	1.6 kg 3.63 lb
Supported Drones	DJI M300 DJI M210v1 Acecore Zoe
Auxiliary port	Proprietary connector
USB port	Yes
WiFi Antenna	Internal

MAPPING

LiDAR Sensing Range	0.40 to 100 m 1.3 to 330 ft
LiDAR	Single Return Mode: up to 300,000 points/sec Dual Return Mode: up to 600,000 points/sec 360 x 290° field of view Class 1 Eye Safe
Mapping Output	Full resolution and decimated in .E57, .laz, .las, .ply, or .dxf format point clouds, trajectory file
Mapping Method	Simultaneous Localization and Mapping (SLAM)
Mapping Accuracy	± 20 mm (3/4 in) in general environments ± 15 mm (19/32 in) in typical indoor and underground environments ± 5 mm (7/32 in) isolated change detection capability
Onboard Storage	512 Gigabytes Approximately 8 hours of sensor data
Point Cloud Attributes	Intensity, range, time, return number (strongest & last), ring number, RGB / true color (optional)

AUTONOMY

Tap-To-Fly and Guided Exploration	Waypoint setting in real time 3D map and autonomous path planning
Collision Avoidance	LiDAR omnidirectional range of 1.2 to 40 m (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, and assisted flight, collision avoidance, regulated flight speed