emesent

Hovermap ST X

HOVERMAP ST-X EXTENDS THE REACH OF AUTONOMOUS LIDAR MAPPING.

- LiDAR sensing range of 300 meters
- More than a million points captured per second with triple returns
- Detailed scans, however complex the asset or terrain
- Robust, autonomous capability

Hovermap ST-X takes SLAM-based LiDAR mapping to new heights and enables autonomous mapping of large assets and complex terrains.

Building on the proven success of Hovermap ST's versatile autonomy and mapping capability, Hovermap ST-X incorporates the latest in LiDAR sensing technology to offer high density point clouds with increased coverage. Featuring a sensing range of 300 meters and more than a million points per second, it captures detailed, accurate data over a greater area in less time - giving you faster time to insight.

Hovermap ST-X also excels at indoor or close-range scans, producing sub-centimeter results thanks to the award winning Wildcat SLAM solution, Automated Ground Control Points and improved LiDAR sensor accuracy.

Uniquely versatile, Hovermap ST-X allows you to capture data in any environment. Mount it to a drone for autonomous aerial mapping even in GPS-denied environments. Easily remove it from the drone and use it as a handheld, backpack, or vehicle-mounted scanner. Use a combination of these to rapidly capture as-builts and digital twins in minutes rather than hours.

The tough, lightweight, and designed for IP65, weather sealed design makes Hovermap ST-X equally capable in the harshest environments, above ground or underground, indoors or out.

LONG RANGE RADIO FAST-TRACKS INSPECTIONS AND SURVEYING WITH CONTINUOUS SCANNING

Easily attach Emesent's Long Range Radio to Hovermap ST-X to increase the connectivity range up to 20 times. This allows viewing the live streamed point cloud and provides the benefits of safe, autonomous GPS-denied flight over longer distances.

Both Long Range Radio and Hovermap ST-X have weather sealed designs allowing the capture of valuable data in previously inaccessible areas, whether above ground, underground, indoors, or out. Together they can be mounted to a drone or vehicle, providing the versatility needed to capture data anywhere.

*Long Range Radio available in North America, EU, Japan, New Zealand, and Australia only

Additional insights with true color

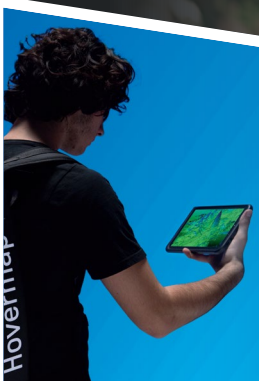
Add a new level of reality capture to your 3D point clouds with Emesent's Colorization feature. Easily attach the camera module (optional) and automatically colorize the point cloud to enhance visualization and reveal previously hidden detail.

Exceptional vegetation penetration

Triple returns and a rotating LiDAR (not statically mounted) make Hovermap ST-X perfect for terrain or forestry scanning. The resulting point cloud is dense, making it easier to classify scanned objects.

Increased precision and accuracy

A cleaner, more precise point cloud with sub-centimeter accuracy for ground-based scans over a larger distance allows you to obtain more accurate measurements and more defined features for improved insights. Use in combination with Emesent's Automated Ground Control points (optional) for survey grade accuracy.



View your data as you capture it

Hovermap ST-X live streams the point cloud to your control tablet, allowing a real-time preview of the data as it is captured. The addition of Emesent's Long Range Radio accessory (optional*) enables live streaming and device control up to 20 times further, allowing you to see real-time data and set smart waypoints for Guided Exploration from even further away.

Tough, weather sealed design for harsh environments

Dust and splash resistant, making it ideal for use in dusty or otherwise harsh environments.

Add accessories to meet your needs

The inclusion of an accessory port and mount points expands Hovermap ST-X's capability with the ability to add Long Range Radio, Colorization hardware.

Scan the inaccessible

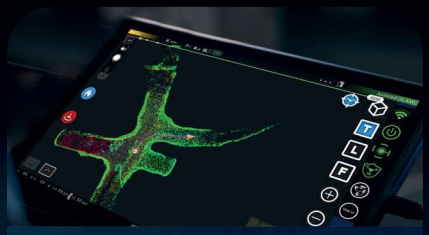
Advanced autonomy and 360 degree collision avoidance enables flight and mapping in challenging surroundings, including beyond visual line of sight and communication range, even in GPS-denied environments - providing new, valuable insights while the operator remains in a safe location.

Unrivaled versatility and deployment options

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

MAPPING AND AUTONOMY MODES TO SUIT YOUR NEEDS

Easily switch between autonomy modes during flight as needed.

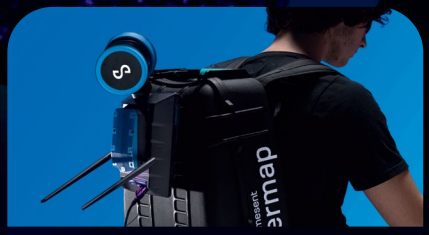


Autonomous Waypoint Mode

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

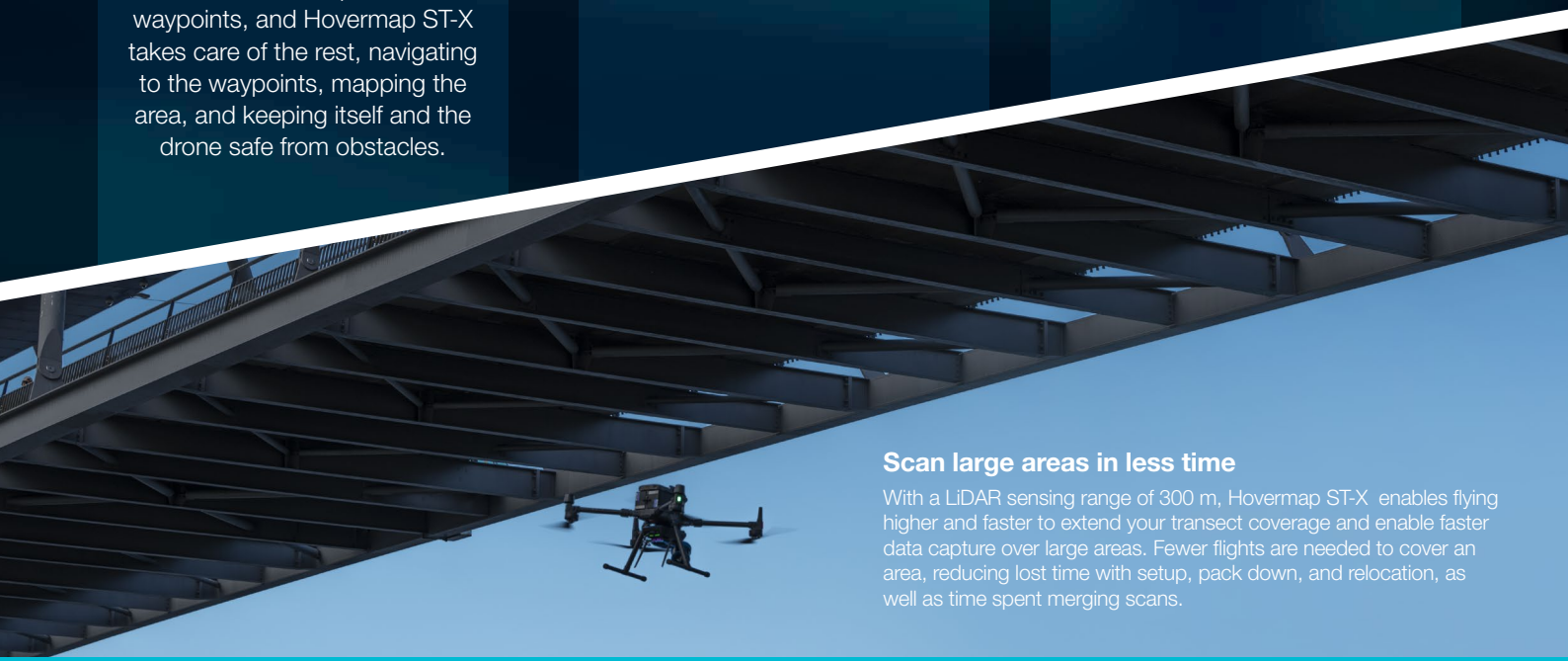
Pilot Assist Mode

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.



Scan large areas in less time

With a LiDAR sensing range of 300 m, Hovermap ST-X enables flying higher and faster to extend your transect coverage and enable faster data capture over large areas. Fewer flights are needed to cover an area, reducing lost time with setup, pack down, and relocation, as well as time spent merging scans.

HOVERMAP ST-X HARDWARE KIT

- Hovermap ST-X
- 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/platform)
- Battery Belt Clip
- V-Mount 98Wh, 14.8v 6600mAh battery
- Standard charger with international adaptors (US/Canada/Japan, AUS/NZ, and Europe)
- 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
- Telescopic Boom Pole

HARDWARE OPTIONS

- Colorization kit
- Emesent Control Point targets
- Emesent Long Range Radio

HOVERMAP™ ST-X SPECIFICATIONS

PHYSICAL

IP Rating	IP65 certification pending
Operating Temperature	-10 to 45 °C 14 to 113 °F
Weight	1.57kg 3.46 lb
Supported Drones	DJI M300 DJI M210v1 Acecore Zoe
Auxiliary port	Propriety Connector
USB port	Yes
WiFi Antenna	Internal

MAPPING

LiDAR Sensing Range	0.5 to 300 m 1.6 to 984 ft
LiDAR	Single Return Mode: up to 640,000 points/sec Multi Return Mode (3 return): up to 1,920,000 points/sec 360 x 290° field of view Class 1 Eye Safe
Mapping Output	Full resolution point cloud, decimated point cloud, trajectory file. Point cloud file formats: .las, .laz, .ply, .dxf, .E57
Mapping Method	Simultaneous Localization and Mapping (SLAM)
Mapping Accuracy	± 15 mm (19/32 in) in general environments ± 10 mm (3/8 in) in typical indoor and underground environments ± 5 mm (7/32 in) isolated change detection capability
Onboard Storage	512 Gigabytes More than 4 hours of sensor data
Point Cloud Attributes	Intensity, range, time, return number (strongest, first & 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, assisted flight, collision avoidance, regulated flight speed