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GX1

FRONTIER PRECISION
UNMANNED
uas@frontierprecision.com
www.frontierprecision.com/unmanned

Reliable, highly accurate SLAM that works in any environment.

Emesent GX1 is the world's most accurate RTK SLAM scanner, delivering 5-10mm global accuracy with integrated premium RTK georeferencing.

Featuring 4×20MP cameras for stunning 360° panoramas and rapid accuracy reports in Aura, GX1 provides the proof professional surveyors need to stand behind their data.

→ Emesent SLAM - Proprietary
→ Hesai XT32M2X
→ Premium, integrated RTK Receiver
→ 1hr integrated battery
→ Quick Mount Accessory

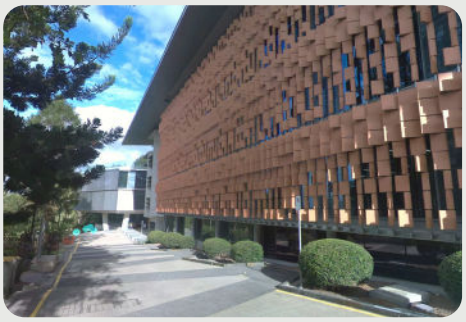
GX1 Features

Emesent SLAM

Proven in some of the world's most extreme environments via autonomous drone mapping, Emesent SLAM is the powerful technology that drives GX1's impressive accuracy results.

Integrated RTK

GX1's premium 448-channel RTK receiver delivers 0.6cm + 0.5ppm horizontal and 1cm + 0.5ppm vertical accuracy – supporting real-time monitoring.



Superb 360° imagery

360° horizontal and 284° vertical coverage, GX1 captures every detail in a single pass, reducing mission times and saving on return visits.

Best-in-class LiDAR

1.92 million points per second, a 300m range for high-precision and 360° scanning for capturing accurate data quickly and reliably.

Unlimited Processing, No Usage Fees

Process unlimited datasets on-premise with no per-scan charges or cloud processing costs that eat into your project margins.

Enhanced End-to-End Workflow

A complete survey system from in-field monitoring and capture to point cloud processing – and integrations with industry platforms like Revit.

GX1 Accessories

Quick Mount

Vehicle Mount

Backpack/case

Handheld

> "You are able to turn up on site, press go and start capturing data. Still the same robust SLAM and great pickups as far as point cloud density goes, but packaged in a more thoughtful and efficient way."
>
> — Adam Wylie | Operations Manager, Sonto, Australia

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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

GX1

Specifications

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

Emesent GX1 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 - unconstrained [1]	→ 5mm (many features) → 10mm (few features)
Global accuracy - with GCPs [2]	→ 5mm (many features) → 8mm (few features)
Global accuracy - with RTK/PPK [3]	→ 15mm

[1] *Measured in test environments by performing a rigid alignment to control points.*

[2] *Measured in test environments by non-rigidly constraining the point cloud with control points and measuring global accuracy with check points. Constraint points are not used in the accuracy calculation.*

[3] *Measured in a standard outdoor test environment using a local base station (<1km baseline).*

Local accuracy & precision

Local accuracy [1]	5mm
Precision [2]	Up to 2mm

[1] *Reported as 3D RMSE. Measured in test environments by calculating point-to-point distances between control points. Constraint points are not used in the accuracy calculation.*

[2] *Reported at 1 standard deviation.*

Integrated RTK

Channels	448
Horizontal Accuracy[1]	0.6cm + 0.5ppm
Vertical accuracy	1cm + 0.5ppm
PPK	Yes
Connectivity	Integrated 4G modem, nano size SIM

[1] *RTK receiver accuracy only. Not indicative of overall global accuracy. Global accuracy is typically improved when combining RTK and SLAM data.*

LiDAR

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

Cameras

Cameras	4 x 20MP high-resolution cameras
Panorama field of view	360° x 284°
Ground sample distance	→ 0.96mm/px @ 1 meter → 4.8mm/px @ 5 meters

Scanner

Weight	→ 3.2kg / 7.05lbs (without battery) → 3.5kg / 7.71lbs (with battery)
IMU	High-performance AHRS
Travel protection	Store in custom-designed IP65 backpack
IP rating	IP65
Operating temperature	-10 to 45°C (14 to 113 °F)
External interfaces	→ RJ45 (Ethernet) → Multi-function connector → USB-C (USB3.2)WiFi (2.4GHz)
Wireless interfaces	→ WiFi 2.4/5.8GHz → 4G
Storage	→ 2TB → SD card expansion (up to 2 TB)
Mounting methods	→ Backpack → Survey pole (5/8" thread) → Vehicle → Supported handheld

Battery & charging

Power	54Wh 10.8V Smart Li-Ion Battery (removable)
Battery life	60 minutes
External power	→ Multi-function connector (9-24V) → USB-C (65W, for offload and firmware upgrades only)
Charging	→ Dual-bay battery charger → In-device battery charging with external power
Charging time	Approx 2 hours