

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 - unconstrained¹ → 5mm (many features)
→ 10mm (few features)

Global accuracy - with GCPs² → 5mm (many features)
→ 8mm (few features)

Global accuracy - with RTK/PPK³ → 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 accuracy¹ 5mm

Precision² 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 Accuracy¹ 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