

Epson G370 IMU Enables Higher-Accuracy LiDAR Mapping Through GNSS Outages

50% reduction in Angle Random Walk (ARW) dramatically improves how accurately LiDAR data can be oriented

DENVER, CO, NORWAY, February 16, 2026 /EINPresswire.com/ -- Epson, a leading global supplier of high-performance components including quartz crystal-based inertial sensors and semiconductors, today announced updates to its G370 Inertial Measurement Unit (IMU), for LiDAR applications. In industries such as mobile mapping, surveying, construction, mining, and autonomous platforms, system accuracy is increasingly challenged by real-world operating conditions rather than sensor resolution alone. In many deployments, GNSS interruptions, caused by urban canyons, tunnels, tree cover, bridges, or industrial structures have become a primary limiter of mapping accuracy and consistency, especially in high-risk conditions.

In practice, even high-resolution LiDAR systems can produce distorted or misaligned point clouds when navigation errors accumulate. Heading drift during GNSS loss often manifests as warped geometry, duplicated edges “ghosting”, or long-range distortion issues that drive rework, extended post-processing, and costly re-scans. The Epson G370 improves inertial stability and reduces drift, allowing LiDAR platforms to preserve scan alignment and accuracy for longer periods when satellite positioning is degraded or unavailable. The Epson G370 addresses these challenges with very low drift, particularly for a MEMS-based sensor, strong bias stability, and low inertial noise. This enables accurate, consistent trajectories during GNSS dropouts, dynamic



Epson G370T_IMU base



Epson G370T_IMU case

motion, and feature-poor operation. At typical mapping ranges, the G370 limits lateral blur to the millimeter scale during seconds of inertial-only operation, preserving sharper edges and cleaner geometry.

“LiDAR accuracy is increasingly limited by the navigation solution, not the scanner,” said Bhushan Chaudhari, Senior Product Marketing Manager, Inertial Sensors at Epson. “The G370 stabilizes trajectory estimates during GNSS interruptions, vibration, and dynamic motion, delivering reliable results in real-world environments. High-stability inertial performance reduces trajectory drift, improving point-cloud alignment and reducing post-processing time in real-world mapping environments”



Bhushan Chaudhari, Senior Product Marketing Manager

Cleaner Point Clouds, Less Post-Processing

The Epson G370’s low inertial noise and stable rate sensing translate directly into measurable point-cloud improvements: at typical mapping ranges, attitude noise contributes only millimeter-level lateral blur over seconds of inertial-only operation. This helps LiDAR systems produce crisper edges, thinner surfaces, and more consistent scan alignment across vehicle-mounted, UAV, UGV, and backpack platforms. All while reducing filter tuning effort and post-processing time.

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In LiDAR mapping, the difference between centimeter-class drift and millimeter-class blur is the difference between

distorted geometry and crisp, trustworthy point clouds. The Epson G370 is designed to keep errors in the millimeters when GNSS can’t be trusted.

Lowering Integration Risk

For LiDAR OEMs and system integrators, calibration stability and repeatability directly affect manufacturing cost and long-term reliability. Shifts in IMU behavior across temperature or operating conditions can cause boresight calibration drift, forcing repeated recalibration in production and the field. The Epson G370 delivers consistent inertial performance, reducing

integration risk and simplifying deployment.

Supporting SLAM in Feature-Poor Environments

In environments with limited visual or geometric features such as tunnels, highways, warehouses, or agricultural fields, SLAM performance relies heavily on inertial propagation. In these scenarios, IMU drift and heading stability often determine whether mapping solutions remain accurate or diverge. The Epson G370 helps improve propagated pose quality during low-constraint segments, strengthening SLAM robustness and improving mapping consistency across real-world deployments.



Availability

The [Epson G370 IMU](#) is in full-rate production and available now for integration into LiDAR mapping, mobile scanning, and navigation systems.

Epson will showcase its G370 IMU at [Geo Week 2026](#). Feb 16-18, 2026, Denver, CO, USA

For more information, visit www.epsondevice.com/sensing

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Epson Microdevices is a leading global supplier of high-performance components, including semiconductors and quartz crystal-based inertial sensors and timing devices such as crystal units and oscillators. Epson Microdevices integrates Japanese manufacturing excellence with marketing, sales, and engineering expertise to deliver world-class products and services. A pioneer in the crystal device market since the 1960s, Epson's in-house production of raw quartz and semiconductors drives innovation in quality, power savings, miniaturization, and performance. For more information, visit <https://epson.com/microdevices>.

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