

Real-time navigation and guidance. Positioning designed for indoor spaces.

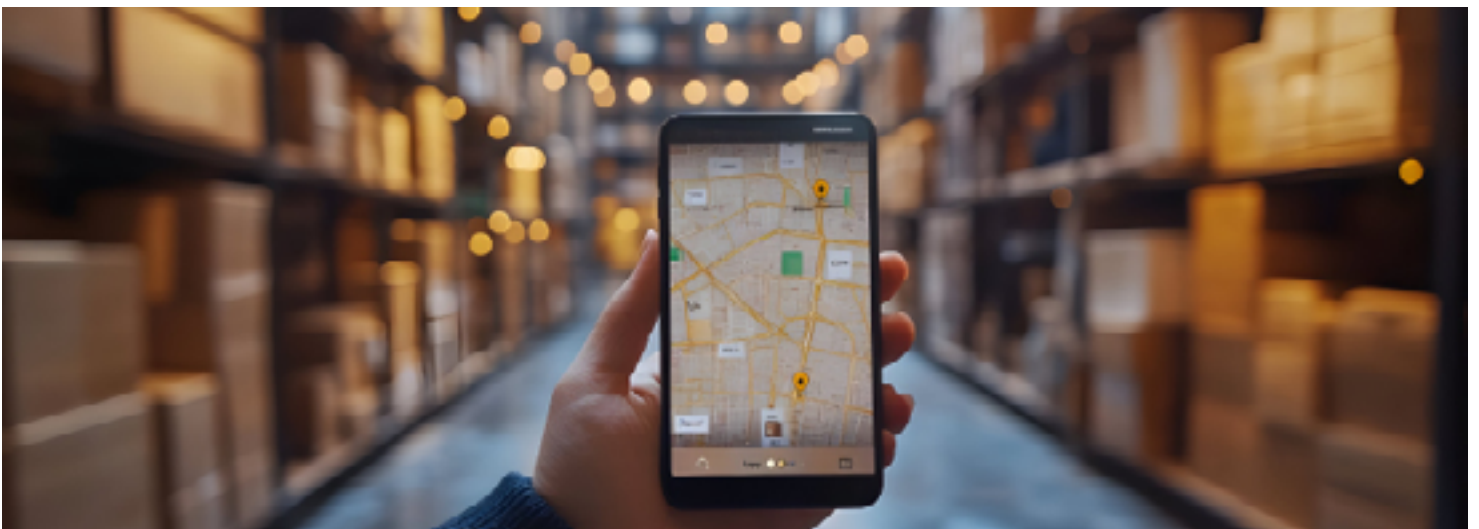
Indoor location solutions with Qualcomm® Terrestrial Positioning Service (TPS)

Throughout indoor environments where positioning accuracy and precision are critical, the absence of accurate indoor positioning services and navigation guidance can lead to delayed responses, misplaced assets, and operational gaps. GNSS systems like GPS fall short in these settings—such as warehouses, factories, retail stores, and hospitals—where structural complexity and signal limitations make precise navigation difficult. That's why real-time indoor positioning pinpoint accuracy and precision is essential for ensuring smooth operations and maximizing efficiency.

Qualcomm TPS Indoor Real-Time Location System (RTLS) for Customer Venues

Location-based guidance solutions from Qualcomm Technologies, Inc. deliver industry-leading location, addressing critical challenges across various industries such as manufacturing, retail, hospitals, logistics, and warehousing. Powered by [Qualcomm TPS](#), this solution delivers superior and low-latency location intelligence using Wi-Fi, cellular, IP, and Bluetooth® Low Energy (BLE) signals, including ESLs.

Qualcomm TPS uses a hybrid positioning approach and is pre-integrated across the Qualcomm® processor portfolio, while being easily deployable on third-party hardware through lightweight SDKs and APIs. This results in enterprise applications across indoor areas throughout retail, warehouses, hospitals, and manufacturing environments, among others, gaining better visibility into asset and personnel whereabouts. They can use individual signal types alone or an intelligent blend of signals tailored to the environment. A survey tool is also available that further improves accuracy by mapping indoor environments with access point data. It helps reduce deployment costs for new infrastructure by leveraging existing networks.



Benefits

- **Superior Location Virtually Anywhere:** Locate assets even where GPS is not reliable using our proprietary positioning technology and global terrestrial signal network
- **Indoor-optimized Tracking:** No GPS required, ideal for malls, hospitals, warehouses, and multi-level spaces
- **Floor-level Accuracy:** Position devices indoors, down to the very floor. Critical for locating high-value items, especially in life-saving environments like hospitals, and helping meet E911 and E112 emergency positioning regulations
- **Energy-focused Design:** Power-optimized algorithms support continuous or intermittent tracking, without draining batteries
- **Offline Location Capability:** Determines device location without a live connection using caching and tokening techniques
- **Ultra-precise Positioning:** Available indoor survey tools deliver extreme accuracy and precision using existing infrastructure. Add Bluetooth (see visual below) Low Energy (BLE) beacons to further enhance location accuracy and precision, at retail shelves and beyond Bluetooth® Low Energy (BLE)

Use Cases

- **Improved Retail Efficiency:** Utilize Electronic Shelf Labels (ESLs) for aisle-level navigation, increasing re-stocking efficiency and accuracy
- **Last-mile Delivery Confirmation:** Automatically know when items have been delivered to their proper location inside buildings, down to the exact floor
- **Increased Warehouse Efficiency:** Improve operations by tracking assets and staff, reducing search time, and enabling decision-makers to infer utilization and productivity
- **Point-of-Sale (POS) Devices:** Easily locate POS devices and support payment security for financial transactions

Powered by Qualcomm® Technology

At the core of these solutions are our cutting-edge processors, proprietary geolocation database and services, and intelligent software frameworks:

- **Qualcomm Dragonwing™ Products:** A family of low-power, high-performance processors designed specifically for powerful and energy-efficient computing, and edge AI processing in embedded and industrial environments
- **Qualcomm TPS:** Industry-leading, power-efficient indoor/outdoor positioning and observability using global Wi-Fi, cellular, IP, and BLE signals, without the need for GPS. Flexible integration options through SDKs and RESTful APIs

Reimagine What's Possible with Location-based Guidance

Bring visibility, and real-time awareness to people, places and assets with intelligent location services.

Get in touch to learn more and get started

