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Navigation Satellite System Chip Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Device Type (Smartphones, Tablets and Wearables, Personal Tracking Devices, Low-power Asset Trackers, In-vehicle Systems, and Drones), By Application (Navigation, Mapping, Location-Based Services, Surveying, Telematics, Timing and Synchronization, Others), By End-user Industry (Automotive, Aviation, and Consumer Electronics), By Region & Competition, 2021-2031F

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Abstracts

The Global Navigation Satellite System Chip Market is anticipated to expand from a valuation of USD 8.63 Billion in 2025 to USD 11.98 Billion by 2031, registering a compound annual growth rate of 5.62%. These GNSS chips are specialized semiconductor integrated circuits engineered to capture and process signals from satellite constellations like GPS, Galileo, and GLONASS to facilitate precise timing, velocity, and location tracking. The industry's growth is largely fueled by the intensifying integration of location-based services within consumer electronics, alongside the imperative need for accurate positioning in precision agriculture and autonomous vehicles, reflecting a fundamental broadening of end-use applications rather than merely technological feature updates.

Despite this growth, the sector encounters a major obstacle known as the urban canyon effect, which compromises signal reliability in dense city landscapes, thereby reducing positioning accuracy and hindering critical infrastructure deployment. As per the

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European Union Agency for the Space Programme, the automotive and consumer solution segments were expected to represent roughly 92% of global GNSS device shipments in 2024. Although this figure highlights substantial shipment volumes, the technical complexity of guaranteeing stable connectivity in visually obstructed environments persists as a significant hurdle limiting broader market diversification.

Market Driver

The surging requirement for Advanced Driver Assistance Systems (ADAS) and Autonomous Vehicles stands as a central driver for the Global Navigation Satellite System (GNSS) chip industry, given that these technologies mandate centimeter-level positioning precision for safe execution. Distinct from standard navigation needs, autonomous platforms depend on multi-frequency GNSS receivers to ensure redundancy and accuracy, guaranteeing reliable lane-level tracking even in difficult surroundings. This transition toward high-performance automotive components generates significant revenue for manufacturers optimizing designs for safety-critical use; for instance, u-blox projected double-digit revenue growth for its Locate division in 2025 within its 'Annual Report 2024' from February 2025, attributing this to the rising uptake of high-precision technologies in industrial and automotive sectors.

Furthermore, the proliferation of consumer electronics and 5G-enabled smartphones fuels market expansion by establishing immense volume requirements for GNSS components capable of sustaining connectivity in complex urban settings. Modern devices are increasingly adopting dual-frequency GNSS chips to reduce signal multipath errors, thereby improving location-based services like emergency response, fitness tracking, and ride-sharing. This broad adoption is evidenced by Apple Inc., which reported in its 'Fiscal Year 2025 First Quarter Results' in January 2025 that its active device installed base surpassed 2.35 billion, highlighting the massive scale of consumer electronics needing location features. Reinforcing this trajectory, the European Union Agency for the Space Programme (EUSPA) noted in its April 2025 'EO and GNSS Market Report' that combined annual global revenues for downstream GNSS and Earth Observation markets are expected to rise from over ?260 billion in 2023 to nearly ?590 billion by 2033.

Market Challenge

The difficulty in sustaining consistent signal reliability within dense metropolitan environments significantly constrains the addressable market for Global Navigation Satellite System chips. Termed the urban canyon effect, this phenomenon arises when

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tall infrastructure reflects or blocks satellite transmissions, resulting in considerable inaccuracies in positioning data. Such instability directly impedes the deployment of these chips in safety-critical domains such as emergency response and autonomous urban logistics, where exact location tracking is an essential operational prerequisite, causing potential clients in these high-value sectors to restrict or postpone procurement due to performance limitations in city settings.

This technical constraint poses a considerable obstacle to fully realizing the sector's financial capabilities. According to data from the European Union Agency for the Space Programme in 2024, global revenues derived from GNSS downstream markets were anticipated to surpass ?260 billion. Although this statistic demonstrates the industry's immense economic magnitude, the ongoing challenge of guaranteeing connectivity in obstructed locations prevents chip manufacturers from capturing the full revenue potential linked to advanced commercial applications in urban centers.

Market Trends

The integration of GNSS receivers with Low Earth Orbit (LEO) satellite systems is transforming the market by resolving the signal weakness and latency issues typical of traditional Medium Earth Orbit constellations. Because LEO satellites transmit considerably stronger signals, chips can sustain connection locks in signal-degraded environments where standard GPS struggles, effectively establishing a novel infrastructure layer for autonomous navigation. This shift is swiftly progressing from experimental phases to commercial reality, as evidenced by Inside GNSS in February 2025; the publication reported in its 'Xona Secures $4.65M Contract with AFRL' article that Xona Space Systems had accumulated signed contracts exceeding $20 million, confirming the industry's financial investment in this next-generation positioning tier.

Alongside these orbital advancements, the creation of resilient Positioning, Navigation, and Timing (PNT) and anti-jamming features has emerged as a crucial priority to combat the rising frequency of spoofing attacks and signal interference. Manufacturers are incorporating advanced cryptographic authentication and interference mitigation algorithms directly into receiver architectures to guarantee operational reliability for critical infrastructure and defense sectors that cannot withstand disruption. This focus on security-hardened technology is driving high-value consolidation among key providers, as highlighted by Hexagon AB's January 2025 press release 'Hexagon to acquire Septentrio,' which noted that Septentrio was anticipated to generate revenues exceeding ?50 million in 2024, emphasizing the strong demand for robust positioning technologies in mission-critical scenarios.

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Key Market Players

Broadcom Limited

Furuno Electric Co., Ltd.

Navika Electronics

Quectel Wireless Solutions Co., Ltd.

Skyworks Solutions, Inc.

U-Blox Holding AG

Qualcomm Incorporated

MediaTek Inc.

Intel Corporation

STMicroelectronics NV.

Report Scope

In this report, the Global Navigation Satellite System Chip Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Navigation Satellite System Chip Market, By Device Type

Smartphones

Tablets and Wearables

Personal Tracking Devices

Low-power Asset Trackers

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- In-vehicle Systems
- Drones

Navigation Satellite System Chip Market, By Application

- Navigation
- Mapping
- Location-Based Services
- Surveying
- Telematics
- Timing and Synchronization
- Others

Navigation Satellite System Chip Market, By End-user Industry

- Automotive
- Aviation
- Consumer Electronics

Navigation Satellite System Chip Market, By Region

- North America
  - United States
  - Canada
  - Mexico

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- Europe
  - France
  - United Kingdom
  - Italy
  - Germany
  - Spain
- Asia Pacific
  - China
  - India
  - Japan
  - Australia
  - South Korea
- South America
  - Brazil
  - Argentina
  - Colombia
- Middle East & Africa
  - South Africa
  - Saudi Arabia
  - UAE

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Navigation Satellite System Chip Market.

Available Customizations:

Global Navigation Satellite System Chip Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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