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Global Automotive-grade MEMS Inertial Measurement Unit (IMU) Market 2025 by Manufacturers, Regions, Type and Application, Forecast to 2031

https://marketpublishers.com/r/G782949F251BEN.html
Date: November 2025
Pages: 93
Price: US$ 3,480.00 (Single User License)
ID: G782949F251BEN

Abstracts

According to our (Global Info Research) latest study, the global Automotive-grade MEMS Inertial Measurement Unit (IMU) market size was valued at US$ 255 million in 2024 and is forecast to a readjusted size of USD 530 million by 2031 with a CAGR of 10.8% during review period.

In this report, we will assess the current U.S. tariff framework alongside international policy adaptations, analyzing their effects on competitive market structures, regional economic dynamics, and supply chain resilience.

An automotive-grade MEMS Inertial Measurement Unit (IMU) is a specialized sensor device designed for use in automotive applications to measure and track a vehicle's movement, orientation, and acceleration with high precision. These IMU chips utilize Micro-Electro-Mechanical Systems (MEMS) technology to provide accurate data for various automotive systems such as stability control, navigation, autonomous driving, and driver assistance systems.

Market Drivers for Automotive-grade MEMS Inertial Measurement Unit (IMU):

Rise in Autonomous Driving Technologies: The increasing adoption of autonomous driving technologies in the automotive industry is driving the demand for high-performance IMU chips that can provide accurate real-time data for navigation, localization, and vehicle control systems.

Growing Demand for Advanced Driver Assistance Systems (ADAS): ADAS technologies rely on IMU chips to provide critical data for functions such as lane-keeping assist,

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adaptive cruise control, collision avoidance, and parking assistance, fueling the demand for automotive-grade IMU chips.

Enhanced Vehicle Safety and Stability Requirements: IMU chips play a crucial role in enhancing vehicle safety and stability by providing precise information on the vehicle's dynamics, acceleration, and orientation, which is essential for electronic stability control systems and anti-lock braking systems.

Shift Towards Electric and Connected Vehicles: The increasing adoption of electric vehicles (EVs) and connected vehicles is driving the need for advanced sensor technologies like IMU chips to support the development of energy-efficient and intelligent automotive systems.

Market Challenges for Automotive-grade MEMS Inertial Measurement Unit (IMU):

Stringent Automotive Industry Standards: Automotive-grade IMU chips must meet stringent quality, reliability, and safety standards set by the automotive industry. Ensuring compliance with these standards and certifications can be a challenge for IMU chip manufacturers.

Complex Integration Requirements: Integrating IMU chips into complex automotive systems and ensuring seamless communication with other sensors and electronic control units (ECUs) can pose integration challenges for automotive manufacturers.

Cost Pressure and Price Competition: Price competition and cost pressures in the automotive industry can impact the profit margins of IMU chip manufacturers. Finding a balance between cost-effectiveness and high performance is a challenge in this competitive market.

Environmental Factors and Durability: Automotive-grade IMU chips must be designed to withstand harsh environmental conditions, vibrations, temperature variations, and long-term durability requirements typical of automotive applications, which can be challenging in terms of design and testing.

This report is a detailed and comprehensive analysis for global Automotive-grade MEMS Inertial Measurement Unit (IMU) market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing

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demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Automotive-grade MEMS Inertial Measurement Unit (IMU) market size and forecasts, in consumption value ($ Million), sales quantity (K Units), and average selling prices (US$/Unit), 2020-2031

Global Automotive-grade MEMS Inertial Measurement Unit (IMU) market size and forecasts by region and country, in consumption value ($ Million), sales quantity (K Units), and average selling prices (US$/Unit), 2020-2031

Global Automotive-grade MEMS Inertial Measurement Unit (IMU) market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (K Units), and average selling prices (US$/Unit), 2020-2031

Global Automotive-grade MEMS Inertial Measurement Unit (IMU) market shares of main players, shipments in revenue ($ Million), sales quantity (K Units), and ASP (US$/Unit), 2020-2025

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Automotive-grade MEMS Inertial Measurement Unit (IMU)

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Automotive-grade MEMS Inertial Measurement Unit (IMU) market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Bosch, STMicroelectronics, Panasonic, TDK, Murata, QST Corporation, etc.

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This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Automotive-grade MEMS Inertial Measurement Unit (IMU) market is split by Type and by Application. For the period 2020-2031, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

6-axis

Others

Market segment by Application

Passenger Cars

Commercial Vehicles

Major players covered

Bosch

STMicroelectronics

Panasonic

TDK

Murata

QST Corporation

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Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Automotive-grade MEMS Inertial Measurement Unit (IMU) product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Automotive-grade MEMS Inertial Measurement Unit (IMU), with price, sales quantity, revenue, and global market share of Automotive-grade MEMS Inertial Measurement Unit (IMU) from 2020 to 2025.

Chapter 3, the Automotive-grade MEMS Inertial Measurement Unit (IMU) competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Automotive-grade MEMS Inertial Measurement Unit (IMU) breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2020 to 2031.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2020 to 2031.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2020

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to 2025.and Automotive-grade MEMS Inertial Measurement Unit (IMU) market forecast, by regions, by Type, and by Application, with sales and revenue, from 2026 to 2031.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of Automotive-grade MEMS Inertial Measurement Unit (IMU).

Chapter 14 and 15, to describe Automotive-grade MEMS Inertial Measurement Unit (IMU) sales channel, distributors, customers, research findings and conclusion.

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Contents

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3 COMPETITIVE ENVIRONMENT: AUTOMOTIVE-GRADE MEMS INERTIAL MEASUREMENT UNIT (IMU) BY MANUFACTURER

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4 CONSUMPTION ANALYSIS BY REGION

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List Of Tables

LIST OF TABLES

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List Of Figures

LIST OF FIGURES

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