Automotive Electronics Market Report by Component (Electronic Control Unit, Sensors, Current Carrying Devices, and Others), Vehicle Type (Light Commercial Vehicles, Passenger Vehicles, Heavy Commercial Vehicles, and Others), Distribution Channel (OEM, Aftermarket), Application (ADAS, Infotainment, Body Electronics, Safety Systems, Powertrain), and Region 2024-2032

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Report description:

The global automotive electronics market size reached US$ 322.2 Billion in 2023. Looking forward, IMARC Group expects the market to reach US$ 558.5 Billion by 2032, exhibiting a growth rate (CAGR) of 6.1% during 2024-2032. The rising demand for advanced safety features in automobiles, the transition to electric and hybrid vehicles, and the proliferation of connected vehicles and the Internet of Things (IoT) are fostering the market growth.

Automotive electronics refer to the electronic systems and components integrated into vehicles to enhance their functionality, safety, and overall performance. They are manufactured using advanced technologies, including microcontrollers, sensors, and actuators. They operate by processing data from various sources, such as sensors that monitor engine performance, vehicle speed, and environmental conditions. This information is then analyzed and used to control various aspects of the vehicle, including engine management, anti-lock braking systems, airbag deployment, and entertainment systems. The advantages of automotive electronics include improved fuel efficiency, enhanced safety through advanced driver assistance systems, and a more comfortable driving experience. There are different types of automotive electronics, ranging from powertrain control modules to infotainment systems.

The global automotive electronics market is influenced by the increasing consumer demand for advanced safety features, such as collision avoidance systems and autonomous emergency braking, and the growing adoption of electric and hybrid vehicles

(H/EVs). Moreover, the trend towards connected vehicles and the Internet of Things (IoT) necessitates sophisticated infotainment systems and telematics solutions, fostering the market growth. Additionally, stringent government regulations focusing on emissions reduction and vehicle efficiency push automotive manufacturers to implement electronic solutions for better compliance, which is fueling the market growth. Furthermore, the rise of artificial intelligence (AI) and machine learning (ML) enhances features, such as adaptive cruise control and driver assistance, propelling market expansion. Moreover, burgeoning investments in user interface technologies and personalized in-car entertainment and inflating consumer expenditure power are contributing to the market growth.

Automotive Electronics Market Trends/Drivers:
Consumer demand for advanced safety features

The global automotive electronics market is driven by a robust consumer demand for advanced safety features that redefine the driving experience. As safety concerns remain paramount, automobile manufacturers are increasingly integrating cutting-edge electronics to enhance road safety. Collision avoidance systems and autonomous emergency braking are two prominent examples. These technologies leverage sensors, cameras, and radar systems to detect potential collisions and autonomously engage braking mechanisms. This demand surge is further intensified by rising awareness about road safety and a growing emphasis on minimizing accidents. As a result, automotive electronics manufacturers are investing heavily in research and development to innovate and refine these safety features, contributing to the market's expansion.

Rise of electric and hybrid vehicles

The shift towards electric and hybrid vehicles is a substantial driver of the global automotive electronics market. With the global push for sustainable transportation, automakers are transitioning from internal combustion engines to electric powertrains. This shift necessitates intricate electronic systems to manage power distribution, battery monitoring, and energy efficiency. Additionally, EVs demand advanced electronics for charging infrastructure integration, battery cooling, and thermal management. The hybrid segment, encompassing vehicles with both internal combustion and electric power sources, also propels the demand for sophisticated electronics to synchronize the operation of these dual powertrains. As governments worldwide promote EV adoption through incentives and regulations, the automotive electronics sector is poised to witness remarkable growth due to its pivotal role in advancing electric and hybrid vehicle technologies.

Proliferation of connected vehicles and IoT

The proliferation of connected vehicles and IoT is a major driving force in the automotive electronics market. Modern vehicles are increasingly equipped with sophisticated infotainment systems, telematics solutions, and connectivity features that enhance driver experience and convenience. These systems enable real-time navigation, remote diagnostics, over-the-air updates, and seamless integration with smartphones and other devices. The demand for constant connectivity, entertainment options, and personalized services has led to a surge in the integration of electronic components and software solutions. As consumers seek a seamless blend of technology and transportation, automotive electronics manufacturers are focusing on developing reliable and efficient connectivity solutions that can withstand the challenges of varying environments and ensure a safe and enjoyable driving experience.

Automotive Electronics Industry Segmentation:
IMARC Group provides an analysis of the key trends in each segment of the global automotive electronics market report, along with forecasts at the global and regional levels for 2024-2032. Our report has categorized the market based on component, vehicle type, distribution channel, and application.

Breakup by Component:

Electronic Control Unit
Sensors
Current Carrying Devices
Others

The report has provided a detailed breakup and analysis of the market based on the component. This includes electronic control unit, sensors, current carrying devices, and others.

The increasing need for advanced vehicle functionalities is driving growth in various segments. Electronic control units (ECUs) are vital in managing functions like performance, efficiency, and safety. The rise in autonomous driving technologies has spurred demand for sensors like LiDAR, radar, and cameras, facilitating navigation and safety features. The transition to electric and hybrid vehicles is boosting the current carrying devices segment, comprising wiring and connectors essential for efficient energy flow. The growing demand for cleaner and more sustainable transport supports this growth. In addition, consumer demand for enhanced in-car experiences, including displays, touchscreens, and entertainment systems, is shaping the market trends.

Breakup by Vehicle Type:

Light Commercial Vehicles
Passenger Vehicles
Heavy Commercial Vehicles
Others

Passenger vehicles hold the largest share in the market

A detailed breakup and analysis of the market based on the vehicle type has also been provided in the report. This includes light commercial vehicles, passenger vehicles, heavy commercial vehicles, and others. According to the report, passenger vehicles represented the largest segment.

The passenger vehicles segment's dominance in the automotive electronics market is linked to rising global population and urbanization, increasing the need for personal mobility and, consequently, passenger vehicles. Individuals' desire for comfort, convenience, and connectivity has led to the integration of advanced electronics. The emphasis on safety has encouraged the inclusion of electronic systems like airbags and anti-lock braking systems, a trend further supported by strict government regulations for enhanced safety. The growth of electric and hybrid passenger vehicles demands complex electronic systems for power management and energy efficiency, as the shift toward sustainable transportation continues. These electronics are crucial in driving the performance of electric vehicles. Moreover, the demand for in-car entertainment, infotainment systems, and connectivity features has increased the significance of passenger vehicle electronics, with consumers seeking integration with smartphones and personalized infotainment options.

Breakup by Distribution Channel:

OEM
Aftermarket

OEM dominates the market

The report has provided a detailed breakup and analysis of the market based on the distribution channel. This includes OEM and

aftermarket. According to the report, OEM represented the largest segment.

The original equipment manufacturer (OEM) segment commands dominance in the automotive electronics market as it possesses a distinct advantage in integrating electronics seamlessly during the vehicle manufacturing process. This integration enhances reliability and performance while reducing aftermarket installation complexities. Moreover, stringent safety and emission regulations necessitate sophisticated electronics to comply with standards. OEMs can integrate these technologies directly into their vehicles, ensuring compliance from the outset. Furthermore, OEMs maintain strong relationships with component suppliers, facilitating access to cutting-edge technologies and enabling efficient procurement. In line with this, the trend towards connected and autonomous vehicles requires intricate integration of electronics with other vehicle systems, an expertise that OEMs possess. Additionally, brand reputation plays a crucial role, and consumers often associate quality and innovation with OEM-fitted electronics.

Breakup by Application:

ADAS
Infotainment
Body Electronics
Safety Systems
Powertrain

Infotainment holds the largest share in the market

A detailed breakup and analysis of the market based on the application has also been provided in the report. This includes ADAS, infotainment, body electronics, safety systems, and powertrain. According to the report, infotainment represented the largest segment.

The infotainment segment's prominence in the automotive electronics market is due to changing consumer preferences that demand a seamless blend of entertainment, connectivity, and navigation in vehicles. As convenience and connectivity become priority, automakers are investing in advanced infotainment systems to meet these demands. The rise of connected vehicles and the Internet of Things (IoT) has further elevated the importance of infotainment systems, with features such as real-time navigation and over-the-air updates playing a vital role in enhancing the driving experience. With the progression towards autonomous vehicles, infotainment systems also offer a means of engagement while balancing entertainment and safety, fueling demand for sophisticated solutions. Moreover, the competitive landscape in the automotive industry necessitates differentiation, and advanced infotainment systems provide a platform for automakers to set their vehicles apart with unique and attractive features.

Breakup by Region:

North America
Asia-Pacific
Europe
Latin America
Middle East and Africa

Asia Pacific exhibits a clear dominance, accounting for the largest automotive electronics market share

The report has also provided a comprehensive analysis of all the major regional markets, which include Asia Pacific, Europe, North

America, the Middle East and Africa, and Latin America. According to the report, Asia Pacific represented the largest segment.

The dominance of the Asia Pacific region in the automotive electronics market can be attributed to the region's robust automotive manufacturing base, led by countries like China, Japan, and South Korea, which, in turn, drives substantial demand for electronic components across vehicle types. Moreover, the rising middle class and urbanization in Asia Pacific fuel automotive sales, further boosting the need for advanced electronics to cater to evolving consumer preferences and regulatory standards. Besides this, the rapid adoption of EVs in countries like China propels the demand for EV-specific electronics, including battery management systems and power electronics. Furthermore, the presence of established electronics manufacturing capabilities and a skilled workforce enhances the region's competitiveness in producing high-quality automotive electronic components. Additionally, supportive government policies and investments in research and development contribute to technological innovations, solidifying Asia Pacific's position as a global hub for automotive electronics. In line with this, collaborations between regional automotive giants and global technology firms facilitate knowledge transfer, driving continuous advancements in automotive electronics, and sustaining the region's dominance in the market.

Competitive Landscape:
The competitive landscape of the automotive electronics market is characterized by dynamic interactions driven by technological advancements and market trends. Players in this landscape continually innovate to capture opportunities arising from the growing demand for advanced safety features, connectivity solutions, and electric vehicle technologies. Market leaders leverage their extensive research and development capabilities to introduce cutting-edge electronic components, gaining a competitive edge. Collaboration between automotive manufacturers and electronics suppliers is a common strategy to ensure seamless integration of electronic systems. New entrants often focus on niche areas, contributing to market diversification. As the industry emphasizes sustainability, players are also investing in eco-friendly solutions such as energy-efficient electronic components and materials. The global nature of the market requires participants to navigate diverse regulatory landscapes while maintaining product quality and reliability. With customer preferences evolving rapidly, adaptability and the ability to anticipate future trends are essential for players aiming to secure a strong position in this ever-evolving competitive realm.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

Omron Corporation
Robert Bosch GmbH
Infineon Technologies AG
HGM Automotive Electronics
Hitachi, Ltd.
Delta Electronics, Inc.
Atotech Deutschland GmbH
TRW Automotive
Continental AG
Bosch Group
Altera Corporation
Lear Corporation
Aptiv
Texas Instruments
Atmel Corporation
Denso Corporation
Recent Developments:
In February 2022, Infineon Technologies AG announced to build the world?s largest 200-millimeter silicon carbide (SiC) Power Fab

in Malaysia.
In December 2022, Bosch introduced an Integrated Asset Performance Management solution powered by Digital Twin in the Middle East.
In July 2023, Omron Healthcare Manufacturing, a subsidiary of Omron Healthcare Corporation Japan, begun the construction of a new plant in Chennai.

Key Questions Answered in This Report

1. What was the size of the global automotive electronics market in 2023?
2. What is the expected growth rate of the global automotive electronics market during 2024-2032?
3. What has been the impact of COVID-19 on the global automotive electronics market?
4. What are the key factors driving the global automotive electronics market?
5. What is the breakup of the global automotive electronics market based on the vehicle type?
6. What is the breakup of the global automotive electronics market based on the distribution channel?
7. What is the breakup of the global automotive electronics market based on the application?
8. What are the key regions in the global automotive electronics market?
9. Who are the key players/companies in the global automotive electronics market?

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