

Automotive Communication Protocol Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 to 2032

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Abstracts

The Global Automotive Communication Protocol Market was valued at USD 1.6 billion in 2023 and is projected to expand at a CAGR of 7.4% from 2024 to 2032. This growth is primarily driven by the increasing demand for V2X (Vehicle-to-Everything) communication, which requires protocols capable of facilitating connections among vehicles, infrastructure, pedestrians, and networks. The integration of cloud services, 5G networks, and smart city infrastructure is also pivotal in this evolution. As the automotive industry shifts toward electric and hybrid vehicles, there is a pressing need for advanced communication protocols that can manage intricate power systems, battery management, and charging infrastructure. These modern vehicles, equipped with multiple electronic control units (ECUs), rely on seamless communication to monitor essential functions such as regenerative braking, battery health, thermal management, and power distribution.

The complexity of these systems necessitates robust, high-speed communication protocols like CAN FD (Controller Area Network Flexible data rate) and Automotive Ethernet. The market is segmented based on protocol types, including Controller Area Network (CAN), Local Interconnect Network (LIN), FlexRay, Media Oriented System Transport (MOST), Ethernet, and others. The CAN segment captured more than 45% of the total market share in 2023 and is anticipated to surpass USD 1.5 billion by 2032. Ongoing standardization efforts within the automotive sector, particularly for CAN and its Flexible Data-Rate variant, are fueling market growth. With support from semiconductor manufacturers and industry leaders, these standards ensure interoperability among various components and enhance supply chain efficiency.

Additionally, the automotive communication protocol market is categorized by vehicle



type, including passenger vehicles and commercial vehicles. The passenger vehicle segment is projected to exceed USD 2 billion by 2032, largely due to the rising adoption of electric vehicles (EVs) that require sophisticated communication protocols to oversee powertrain systems, battery management, and energy distribution. Communication protocols like CAN and Ethernet are essential for maintaining real-time connectivity amidst the motor controllers, battery management system, and other critical components in EVs. As manufacturers increasingly prioritize electrification, the demand for low-latency communication networks and high bandwidth is surging, especially for efficient energy management and power distribution.

China's automotive communication protocol market is poised for substantial growth in 2023, backed by rapidly integrating high-bandwidth Ethernet solutions to support the data-intensive needs of advanced driver assistance systems (ADAS) and connected vehicle features. This transition is propelled by a strong focus on developing autonomous vehicles and the necessity for faster, more reliable in-vehicle networking, especially in the realm of electric mobility.



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