

Global Automotive Smart Key Market: Analysis By Technology (Remote Keyless Entry and Passive Keyless Entry), By Installation (OEM and Aftermarket), By Application (Multi Function and Single Function), By Region, Size and Trends with Impact of COVID-19 and Forecast up to 2029

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Abstracts

Automotive smart keys revolutionize vehicle access and ignition. These advanced keys utilize proximity sensors to unlock doors automatically when the user approaches the vehicle, enhancing convenience and security. Equipped with push-button ignition, they eliminate the need for traditional keys, streamlining the start-up process. Smart keys often integrate additional features like remote engine start and trunk release, further enhancing user experience. With encrypted communication protocols, they provide robust protection against theft and unauthorized access. Offering seamless integration with modern vehicles, automotive smart keys represent the pinnacle of convenience and technological advancement in the automotive industry. The global automotive smart key market was valued at US\$12.25 billion in 2023, and is expected to be worth US\$17.44 billion in 2029.

A notable trend within the automotive smart key market is the shift towards lightweight and eco-friendly materials in key component manufacturing. This shift not only enhances the durability and efficiency of smart keys but also aligns with the broader automotive industry's sustainability goals. Leading car manufacturers like BMW, Volkswagen, and Mercedes-Benz are actively developing compact and visually appealing smart keys, leveraging lightweight materials for their construction. This trend presents lucrative growth opportunities for the market in the coming years. The global automotive smart key market is expected to grow at a CAGR of 6.07% over the years

2024-2029.

Market Segmentation Analysis:

By Technology: The global automotive smart key market by technology can broadly be divided into two segments namely, Remote Keyless Entry and Passive Keyless Entry. Remote keyless entry likely dominated the market in 2023 due to its widespread adoption in vehicles, offering convenience and enhanced security features. However, the passive keyless entry segment is anticipated to grow rapidly due to its seamless user experience, eliminating the need to physically interact with the key fob. This technology aligns with the increasing consumer preference for convenience and automation, driving its projected growth at the fastest CAGR during the forecasted period.

By Installation: The global automotive smart key market by installation can broadly be divided into two segments namely, Original Equipment Manufacturer (OEM) and Aftermarket. Original Equipment Manufacturer (OEM) segment dominated the market in 2023 and is also expected to grow at the fastest CAGR during the forecasted period. The OEM segment encompasses smart keys integrated directly into vehicles during the manufacturing process by original equipment manufacturers. These keys are designed to seamlessly mesh with the vehicle's existing systems, offering a unified user experience. Factors propelling growth in the OEM segment include the rising global vehicle production, fueled by technological advancements and consumer demand.

By Application: The global automotive smart key market by application can broadly be divided into two segments namely, Multi Function and Single Function. Multi Function segment dominated the market in 2023 and is also foreseen to grow at the fastest CAGR during the forecasted period. Multi-Function smart keys are designed to offer a variety of advanced features beyond basic keyless entry and ignition, such as remote start, trunk release, and personalized vehicle settings. Factors propelling the demand for Multi-Function smart keys include the increasing consumer demand for convenience, rapid technological advancements enabling feature integration, growing vehicle customization trends, incorporation of advanced security measures like biometric authentication and encrypted communication, and the integration of cutting-edge technologies, such as Bluetooth and Wi-Fi connectivity, into smart key systems.

By Region: In the report, the global automotive smart key market is divided into four regions: North America, Europe, Asia Pacific, and Rest of the World. Asia Pacific dominated the automotive smart key market in 2023. The Asia Pacific region is

experiencing a surge in digitalization and the "Internet of Cars," driving higher connectivity through technology-enabled vehicles. The rising demand for smart keys in countries like India, China, and Japan is fueled by increasing vehicle security concerns and the emergence of eco-friendly technologies. Smart keys, once exclusive to luxury vehicles, are now gaining popularity in more affordable car models. Chinese tech giant OPPO recently collaborated with Chinese automaker NIO to develop and test a digital car key based on the Car Connectivity Consortium (CCC) 2.0 standard. This innovation aims to integrate the feature into OPPO's Wallet App for smartphones and smartwatches.

China's automotive smart key market is experiencing robust growth, driven by several factors. The country's rapidly expanding middle-class population and increasing disposable incomes have led to a growing demand for vehicles equipped with advanced features like smart key systems. Many automobile company manufacturers are focusing on the PKE devices to provide comfort to the customer, which is generating demand to the market. For instance, Xiaopeng Motors, a Chinese electric vehicle manufacturer have selected G+D Mobile Security for their smart digital car key solution.

In North America, the automotive smart key market is characterized by high consumer awareness and a strong preference for technologically advanced vehicles. Differentiated factors driving the market's growth in this region include the presence of a tech-savvy consumer base and a robust aftermarket for automotive accessories and upgrades. Consumers in North America are increasingly prioritizing convenience and security, making smart key systems a popular choice for vehicle upgrades. Moreover, stringent safety regulations and standards set by regulatory bodies like the National Highway Traffic Safety Administration (NHTSA) are compelling automakers to integrate advanced security features, including smart key systems, into their vehicles. The region's mature automotive industry, combined with a strong emphasis on innovation and consumer preferences, positions North America as a key market for automotive smart keys.

Market Dynamics:

Growth Drivers: The market has been growing over the past few years, due to factors such as surging demand for high-end cars, increasing demand for hybrid vehicle and electric vehicles, increasing demand for advanced vehicle security, integration with mobile devices, technological advancements and increasing convenience and user experience. The surging demand for high-end cars has become a key driver in propelling the growth of the automotive smart key market. As consumers increasingly

seek luxury and convenience in their vehicles, the automotive industry has witnessed a notable shift towards incorporating advanced technologies, including smart key systems. High-end car manufacturers are integrating smart key features as a standard offering, providing users with enhanced security, convenience, and seamless access to their vehicles. Moreover, the rise in disposable income among consumers, coupled with evolving lifestyles, has fueled the preference for premium vehicles equipped with state-of-the-art amenities, further driving the demand for automotive smart key systems.

Challenges: However, some challenges are also impeding the growth of the market such as high cost of smart key systems, limited aftermarket availability and complex integration and compatibility. The high cost of smart key systems poses a significant challenge to the automotive smart key market by limiting widespread adoption, particularly in price-sensitive markets. Consumers may hesitate to invest in these systems due to their added expense compared to traditional key systems, impacting market penetration and hindering growth. Additionally, higher costs can deter OEMs from integrating smart key technology into their vehicles, further impeding market expansion.

Trends: The market is projected to grow at a fast pace during the forecast period, due to various latest trends such as integration of internet of things (IoT) into Smart Key Systems, Infusion of AI technologies, advancements in biometric authentication, shared mobility and car-sharing services and advanced connectivity and over-the-air updates. The integration of the Internet of Things (IoT) is emerging as a significant trend in the automotive smart key market, revolutionizing the way vehicles are accessed, monitored, and controlled. By incorporating IoT technology into smart key systems, vehicles can be connected to the internet, enabling seamless communication between the vehicle, the driver, and external systems. This connectivity opens up a host of possibilities, such as remote access and control functionalities through smartphone apps or web portals. Drivers can remotely lock/unlock doors, start the engine, adjust climate control settings, and even locate their vehicle using GPS tracking. Moreover, IoT integration enables real-time monitoring of vehicle health and diagnostics, allowing for proactive maintenance and enhancing overall vehicle safety and reliability.

Impact Analysis of COVID-19 and Way Forward:

The COVID-19 pandemic has had a multifaceted impact on the global automotive smart keys market. Initially, widespread lockdowns and restrictions on movement significantly disrupted automotive manufacturing and supply chains, leading to a slowdown in production. This disruption resulted in a temporary decline in the demand for automotive

smart keys as vehicle production decreased. Moreover, the economic uncertainty caused by the pandemic led to reduced consumer spending and a decrease in vehicle sales. Many consumers postponed purchasing new vehicles due to financial concerns, further dampening the demand for smart key systems. However, as the automotive industry adapted to the challenges posed by the pandemic, there was a renewed focus on innovation and technology. Automotive manufacturers accelerated their efforts to digitize and enhance vehicle features, including smart key systems, to meet evolving consumer preferences for contactless and convenient solutions.

Competitive Landscape:

The competitive landscape of the automotive smart key market is marked by a variety of players vying for market share in this rapidly evolving sector. These entities range from established automotive manufacturers to tech giants and specialized component suppliers. Manufacturers are constantly striving to develop smart key systems that offer enhanced security, convenience, and integration with other vehicle systems. This includes features such as passive entry systems, remote start capabilities, and smartphone-based keyless entry solutions. The ability to offer comprehensive smart key solutions that cater to the diverse needs of consumers is crucial in gaining a competitive edge in the market. Moreover, as smart key technology becomes more prevalent across various vehicle segments, competition intensifies. Players are not only focusing on improving the performance and functionality of their smart key systems but also on optimizing manufacturing processes to reduce costs and improve scalability. This allows them to offer competitive pricing while maintaining high-quality standards. Additionally, the emergence of new players, particularly from the tech industry, adds another layer of competition to the market.

The key players of the global automotive smart key market are:

DENSO Corporation
Continental AG
HELLA GmbH & Co (Forvia)
Garmin Ltd.
Valeo SE
Bayerische Motoren Werke AG (BMW Group)
Volkswagen Group
Hyundai Motor Company
Nissan Motor Corporation
Car Keys Express

Huf Group
Tokai Rika Co., Ltd.

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