

North America Embedded Systems Market Forecast to 2030 - Regional Analysis - by Component [Hardware (Sensor, Microcontroller, Processors and ASICs, Memory, and Others) and Software], Functionality (Real-Time Embedded Systems, Standalone Embedded Systems, Networked Embedded Systems, and Mobile Embedded Systems), and Application (Automotive, Telecommunication, Healthcare, Industrial, Consumer Electronics, and Others)

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Abstracts

The North America embedded systems market was valued at US\$ 31,115.67 million in 2022 and is expected to reach US\$ 48,327.96 million by 2030; it is estimated to register a CAGR of 5.7% from 2022 to 2030.

Rise in Demand in Automotive Industry Fuels North America Embedded Systems Market

The impact of modern technology has shaped the industry. The advent of digital technology across the world made it possible to implement advanced solutions in automobiles. Today, cars are equipped with a range of sophisticated technologies for making driving safer, comfortable, and enjoyable for users. Embedded systems are highly used in both regular and hybrid automotive vehicles. These systems are playing a significant role in redesigning the automotive industry. The systems are used in ADAS technology incorporated in electric and hybrid vehicles. The growing demand for electric and hybrid vehicles is driving the market. For instance, according to the International Energy Agency (IEA), electric vehicle sales increased by 10 million in 2022. A total of

14% of all new cars sold across the globe were electric. The increasing sales of electric cars globally raises the adoption of embedded systems among automotive manufacturers. These systems are used to monitor and control various features of an electric vehicle, including charging systems and battery management systems.

The embedded hardware is integrated into vehicles systems to reduce overheating and the release of gases. These systems are used even in luxury automobiles to make them more network-savvy, energy-efficient, and safe to drive. The expansion of the automotive industry is fueling the embedded system market growth. The key players in the market are partnering to develop high-performance embedded systems used in autonomous vehicles. For instance, in May 2022, Magna International Inc. partnered with BlackBerry Limited to develop next-generation ADAS solutions for automotive original equipment manufacturers (OEMs). Magna International Inc. is leveraging BlackBerry Limited's various QNX software platforms, such as QNX Software Development Platform, QNX Platform for ADAS, and QNX OS for Safety in design engineering, validation and performance optimization roles, and systems integration. The partnership helps Magna International to develop high-performance and secure embedded systems for ADAS, autonomous driving, and infotainment systems, driving the market.

North America Embedded Systems Market Overview

The US, Canada, and Mexico are among the major economies in North America. This region contributes a significant share of the global embedded systems market owing to greater investment in automation and software coupled with the growing number of investments in IoT technology. The increasing adoption of IoT solutions among consumers is driving the market in North America. IoT technology is highly deployed in electric vehicles (EVs). Manufacturers are engaging in investing to increase their EV supply in order to meet growing consumer demand. For instance, according to the International Energy Agency (IEA), in April 2023, EV manufacturers announced investments totaling ~US\$ 52 billion in EV supply chains in North America. Embedded systems are highly used in electric vehicles to empower constant communication, information processing, control, and criticism components that enhance the user's experience. The increasing adoption of electric vehicles among consumers is fueling the market. Embedded system encourages energy management system in EVs. The system controls power circulation and energy usage by ensuring proficient utilization of stored energy.

Market players operating in the region are also raising awareness about the benefits

embedded system provides in cybersecurity practices. For instance, in September 2023, Digi International Inc. announced its participation in upcoming events planned to be held at Arrow University in October 2023. These events are premeditated to educate OEMs as well as software developers about the designing of embedded systems and software and their benefits in cybersecurity practices. The growing number of cyber-attacks has increased the adoption of embedded systems. Cybersecurity specialists work with user's systems design teams to ensure that the embedded system has the necessary security mechanisms to mitigate the damage from these attacks. The system ensures security by requiring regular firmware updates. Embedded system is highly utilized for intrusion detection and prevention in network security. They monitor network traffic and automate actions to migrate threats. However, integrating embedded systems in cybersecurity practices protects the user's system from all types of malicious behavior.

North America Embedded Systems Market Revenue and Forecast to 2030 (US\$ Million)

North America Embedded Systems Market Segmentation

The North America embedded systems market is segmented based on component, functionality, application, and country.

Based on component, the North America embedded systems market is bifurcated into hardware and software. The hardware segment held a larger North America embedded systems market share in 2022. The hardware segment is further subsegmented into sensor, microcontroller, processors and ASICs, memory, and others.

In terms of functionality, the North America embedded systems market is segmented into real-time embedded systems, standalone embedded systems, networked embedded systems, and mobile embedded systems. The mobile embedded systems segment held the largest North America embedded systems market share in 2022.

By applications, the North America embedded systems market is segmented into automotive, telecommunication, healthcare, industrial, consumer electronics, and others. The consumer electronics segment held the largest North America embedded systems market share in 2022.

Based on country, the North America embedded systems market is categorized into the US, Canada, and Mexico. The US dominated the North America embedded systems market in 2022.

Advantech Co Ltd, Infineon Technologies AG, Intel Corp, Marvell Technology Inc, Microchip Technology Inc, NXP Semiconductors NV, Qualcomm Inc, Renesas Electronics Corp, STMicroelectronics NV, and Texas Instruments Inc are some of the leading companies operating in the North America embedded systems market.

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