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V2X Cybersecurity Market by Form (In-vehicle and External Cloud Services), Communication Type (V2I, V2V, V2G, and V2P), Security Framework (PKI and Embedded), Security type, Connectivity Type, Propulsion, Vehicle Type and Region - Global Forecast to 2030

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Abstracts

The global V2X cybersecurity market is projected to grow from USD 42 million in 2023 to USD 778 billion by 2030, at a CAGR of 51.3%. The growth of the V2X cybersecurity market is driven by the increasing demand for connected vehicles and the significant expansion of the automotive V2X market. Additionally, the surging sales of electric vehicles, supported by governmental initiatives promoting V2X technology, are expected to open up new opportunities for the V2X cybersecurity market.

“V2V segment is expected to be the largest market during the forecast period, by communication.”

Vehicle-to-Vehicle (V2V) communication is a wireless interaction enabling vehicles to share information regarding their location, direction, and speed. This communication facilitates the exchange of omnidirectional messages, providing vehicles with a 360-degree awareness of nearby vehicles. V2V communication, currently utilizing Dedicated Short Range Communication (DSRC), operates within the 5.9 GHz spectrum with a range exceeding 300 meters. According to the US Department of Transportation, V2V technology has the potential to prevent around 615,000 motor vehicle crashes annually. V2V enhances safety warning capabilities, including forward collision warning (FCW), blind spot warning (BSW), lane changing warning (LCW), and do-not-pass warning (DNPW). Safety applications such as Intersection Movement Assist (IMA), Left

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Turn Assist (LTA), and Emergency Electronic Brake Light are achieved through V2V. The primary advantages of V2V communication include reduced traffic congestion, enhanced road safety, and streamlined vehicle flow. However, securing these communications poses challenges for cybersecurity solution providers. While V2V is instrumental in traffic optimization, unauthorized access or remote tampering by hackers can disrupt traffic conditions. Tampered information received by vehicles may compromise their safety features, particularly in vehicles with automatic driver assist features. To avert such scenarios, cybersecurity solution providers must prioritize the security of V2V communications.

“Europe is expected to have significant growth during the forecast period.”

Europe emerges as a significant growth prospect for the V2X cybersecurity market, driven by stringent safety regulations and a rising demand for connected cars featuring V2X technologies. The market is anticipated to experience substantial growth in this region, supported by the automotive industry's inclination towards connected vehicles and recovery from the financial crisis. Germany is projected to be the fastest-growing market for connected cars and cybersecurity solutions, benefiting from the robust infrastructure and commitment of Original Equipment Manufacturers (OEMs) in the region. To bolster the competitiveness of the EU automotive sector and uphold global technological leadership, the European Commission promotes technological harmonization and allocates funds for Research and Development (R&D). The German automotive industry, renowned as a global innovation hub, contributes significantly to premium car production worldwide, with German OEMs manufacturing around 70% of premium cars globally. The region's extensive R&D landscape, technological prowess, and a wealth of automotive electronics-related study programs reinforce its dominance in connectivity, vehicle electronics, self-driving cars, and cybersecurity. The development of intelligent transportation systems further propels the V2X cybersecurity market in Europe. Prominent European vehicle manufacturers like Daimler AG and Volkswagen AG have integrated V2X technology into their vehicles. The European market benefits from the presence of key players in the V2X cybersecurity sector, including ESCRYPT GmbH, ID Quantique, and Altran, contributing to its growth throughout the forecast period.

“Passenger car expected to be the largest segment in V2X cybersecurity market during the forecast period”

Passenger cars, encompassing sedans, hatchbacks, station wagons, sports utility vehicles, multi-utility vehicles, and vans, constitute the largest vehicle segment in the

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global automotive industry and represent a highly promising market for automotive V2X. With a maximum authorized mass below 3.5 tons, this segment has witnessed rapid growth, particularly in developing countries like China and India. Leading automotive manufacturers are increasing their investments in these countries, leveraging available resources, cost-effective skilled labor, existing auto-ancillary businesses, and favorable government policies for production and trade. The susceptibility of V2X technologies in passenger cars to cyberattacks is notable, especially compared to commercial vehicles, owing to the prevalence of connected technology in passenger cars. In-vehicle communication systems, along with a broad array of external networks such as Wi-Fi and cellular connectivity, expose passenger cars to increased vulnerability to cyber threats. Connected passenger cars generate substantial data from diverse sources, engaging in interactions with other vehicles, exchanging data, and providing drivers with real-time updates. Additionally, these cars can communicate with road sensors, charging stations, and embedded road infrastructure (RSUs) for traffic updates and rerouting alerts. V2X-enabled passenger cars extend their communication to residences, offices, and smart devices, collecting a vast array of information. Consequently, the imperative for cybersecurity in passenger cars becomes paramount, particularly given the extensive transfer of V2V and V2I data. The escalating concerns over road accidents and traffic safety are anticipated to drive the adoption of advanced technologies such as Vehicle-to-Vehicle (V2V), Vehicle-to-Infrastructure (V2I), and Vehicle-to-Pedestrian (V2P). However, these communications remain vulnerable to cyberattacks as they involve the exchange of information with vehicles, pedestrians, and infrastructures, propelling the growth of the V2X cybersecurity market.

In-depth interviews were conducted with CEOs, marketing directors, other innovation and technology directors, and executives from various key organizations operating in this market.

By Company Type: OEMs - 21%, Tier I - 31%, and Tier II - 48%

By Designation: CXOs - 40%, Directors - 35%, and Others - 25%

By Region: North America - 30%, Europe - 50%, Asia Pacific - 15%, and RoW - 5%

The V2X cybersecurity market is dominated by major players including ESCRYPT GmbH (Germany), Qualcomm Incorporated (US), Autotalks (Israel), AUTOCRYPT Co., Ltd. (Korea), and Continental AG (Germany). These companies have strong product

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portfolio as well as strong distribution networks at the global level.

Research Coverage:

The report covers the V2X cybersecurity market, in terms of Connectivity (DSRC, and Cellular), Communication (V2V, V2I, V2P, and V2G), Vehicle Type (Passenger Cars, and Commercial Vehicles), Security Framework (PKI, and Embedded), Form (In-Vehicle, and External Cloud Services), Propulsion (Internal Combustion Engines, and Electric Vehicles), Security Type (Endpoint Security, Software Security, and Cloud Security), and Region (Asia Pacific, Europe, North America, and Row). It covers the competitive landscape and company profiles of the major players in the V2X cybersecurity market ecosystem.

The study also includes an in-depth competitive analysis of the key players in the market, along with their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying the Report:

The report will help market leaders/new entrants with information on the closest approximations of revenue numbers for the overall V2X cybersecurity market and its subsegments.

This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies.

The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report also helps stakeholders understand the current and future pricing trends of different V2X cybersecurity systems based on their capacity.

The report provides insight on the following pointers:

Analysis of key drivers (Large amount of data generated by vehicles and increasing cyberattacks, Significantly growing global automotive V2X market, Increasing demand for fully autonomous driving and safe vehicles,

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Reinforcement of mandates by regulatory bodies for vehicle data protection), restraints (Complex ecosystem with multiple stakeholders, Lack of infrastructure for proper functioning of V2X, Underdeveloped regulatory frameworks in V2X cybersecurity), challenges (Need for keeping up with continuous evolutions in V2X ecosystem, Legacy systems and cybersecurity mismatch), and opportunities (Increasing trend of connected and autonomous vehicle technologies prone to cyberattacks, Rising demand for electric vehicles, Specialized coverage for v2x cybersecurity challenges).

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the automotive V2X market.

Market Development: Comprehensive information about lucrative markets - the report analyses the V2X cybersecurity market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the V2X cybersecurity market.

Competitive Assessment: In-depth assessment of market ranking, growth strategies, and service offerings of leading players like ESCRYPT GmbH (Germany), Qualcomm Incorporated (US), Autotalks (Israel), AUTOCRYPT Co., Ltd. (Korea), and Continental AG (Germany) among others in V2X cybersecurity market.

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