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Vehicle-to-everything (V2X) Security Chips Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Vehicle-to-everything Security Chips Market was valued at USD 681.8 million in 2024 and is estimated to grow at a CAGR of 19.1% to reach USD 3.9 billion by 2034.

Rising adoption of automated driving, connected vehicles, and advanced driver-assistance features is rapidly transforming the landscape for in-vehicle security hardware. Automakers are increasingly embedding components such as AI accelerators, radar interfaces, signal processors, and secure microcontrollers to improve situational awareness, decision-making, and system resilience. A growing emphasis on regulatory compliance, cyber protection, and real-time responsiveness has pushed manufacturers to design chips with embedded encryption and automotive-grade certifications. The pandemic spotlighted the fragility of global chip supply chains, which accelerated the push for regional manufacturing, end-to-end validation, and scalable security architectures. As electric mobility and autonomous fleets expand, demand for secure vehicle communication systems continues to climb. Subscription-based encryption updates, integrated software-hardware co-design, and Security-as-a-Service (SECaAS) offerings are being used to provide ongoing protection across evolving threat landscapes.

The vehicle-to-vehicle (V2V) communication systems segment accounted for a 37% share in 2024 and is expected to grow at a CAGR of 19% through 2034. This growth is driven by the increasing need for safe and responsive data exchanges between vehicles. Security chips within V2V architectures are critical for shielding traffic data, collision alerts, and system commands from cyber threats, ensuring safe and authenticated communication across vehicles in motion.

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In 2024, the original equipment manufacturers (OEMs) segment held a 73% share and is projected to grow at a CAGR of 18.1% by 2034. The high share is linked to the direct integration of secure connectivity features into vehicle platforms at the production stage. Compliance with standards like ISO/SAE 21434 and UNECE WP.29 is now a priority, prompting automakers to hardwire V2X security into their systems to counter threats such as spoofing and unauthorized access, while enhancing user trust and brand integrity.

US Vehicle-to-everything (V2X) Security Chips Market held an 86% share in 2024, generating USD 197.3 million. Market momentum in the US is largely supported by federal safety regulations, the expansion of intelligent transport systems, and rapid growth in autonomous mobility. Federal bodies are reinforcing the need for V2X protocols, encouraging automakers and component suppliers to implement tamper-proof microcontrollers, hardware encryption engines, and root-of-trust frameworks to secure data flow and maintain compliance across connected vehicle platforms.

Key companies in the Global Vehicle-to-everything (V2X) Security Chips Market are Denso, Qualcomm Technologies, NXP Semiconductors, Renesas Electronics, Bosch, Infineon Technologies, ST Microelectronics, Huawei Technologies, Autotalks, and Continental. Leading firms in the Vehicle-to-everything (V2X) Security Chips Market are focusing on developing dedicated hardware security modules, secure boot protocols, and over-the-air (OTA) cryptographic key management systems to safeguard communication channels in connected vehicles. These players are actively co-developing solutions with OEMs and Tier-1 suppliers to ensure chips meet functional safety and data protection standards. Several companies are investing in AI-powered security engines capable of real-time threat detection at the edge.

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