

CIC 灼识



China's V2X (Vehicle-to-Everything) Industry Report

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Executive Summary

Intelligent driving relies heavily on the synergy between Vehicle Intelligence and V2X (Vehicle-to-Everything) technology. While vehicle intelligence forms the foundational core, it is physically constrained by blind spots. V2X bridges these gaps by connecting vehicles, roads, clouds, and networks via standardized communication frameworks (like DSRC and C-V2X), ensuring safety and efficiency across all road users.

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1. Market Overview

1.1 Market Definition

Intelligent driving relies on the synergy between vehicle intelligence and V2X (Vehicle-to-Everything) technology. While vehicle intelligence provides the foundation through onboard perception, decision-making, and control, it suffers from physical limitations like blind spots and poor infrastructure integration; meanwhile, V2X bridges these gaps by connecting vehicles, roads, clouds, and networks. Together, they eliminate information blind spots in complex traffic and enable coordinated control and intention sharing between vehicles and infrastructure, ultimately resolving road conflicts and significantly enhancing both transportation safety and system efficiency.

1.2 V2X Core Components

On-Board Unit (OBU): It is a vehicle-installed wireless transceiver that transmits vehicle status data to other vehicles and roadside infrastructure via the 5.9 GHz frequency band.

Roadside Device: Comprising RSUs and sensors (like cameras and LiDAR), it broadcasts real-time traffic conditions to vehicles and connects with the cloud platform.

Cloud Platform: Serving as the central data and traffic decision center, it analyzes aggregated data from OBUs and RSUs to provide traffic optimization plans and control commands.

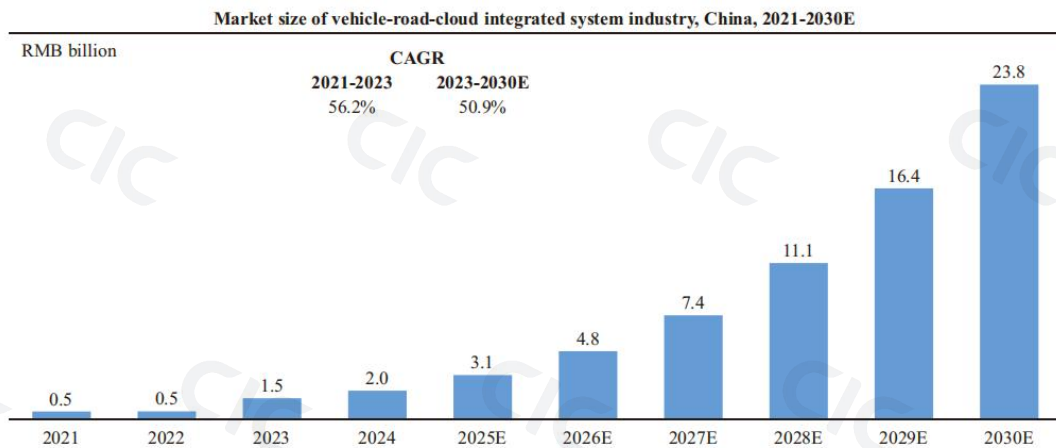
Communication Infrastructure: Consisting of optical fibers and 4G/5G base stations, it ensures efficient, stable, and high-speed data transmission across the entire V2X network.

To enable seamless interconnectivity among hardware from diverse market players, the industry relies on standardized communication frameworks like DSRC and C-V2X. While the V2X ecosystem—comprising hardware suppliers, software providers, system integrators, and network operators—delivers limited direct value to individual vehicles lacking an OBU, the overall deployment of V2X solutions generates systemic benefits that enhance traffic efficiency and road safety for all road users.

1.3 Market Size and Growth

China's V2X market has arrived at a pivotal breakthrough stage, propelled by technological advancements in 5G, sensing and artificial intelligence, complemented by robust government policy support, comprehensive standardization efforts and large-scale testing ground construction. To date, China has deployed 17 national

demonstration zones, 7 national V2X pilot zones and 16 "dual-intelligence" pilot cities, which have successfully pioneered the development and implementation of fully integrated vehicle-road-cloud collaborative systems. The market size for these integrated systems is forecast to experience explosive growth, expanding from RMB 2.0 billion in 2024 to RMB 23.8 billion by 2030, corresponding to an impressive CAGR of 50.9%.



Source: CIC Reports

2. Key Growth Drivers

2.1 Key Drivers

Favorable Government Policy

Government policy is a critical driver for China's V2X industry, focusing on infrastructure construction, intelligent applications, cloud platforms, and expanded use cases. Key initiatives include a 2021 pilot program establishing 7 national V2X pilot zones and 16 dual-intelligence pilot cities by late 2024, which attracted hundreds of billions in investments. Additionally, a 2024 joint ministry notice launched the "Vehicle-Road-Cloud" application pilot, positioning V2X as a primary catalyst for the future growth of the nation's automotive sector.

Demand for Traffic Safety

Due to increasing private vehicle ownership and the growing complexity of traffic conditions, the number of traffic accidents continues to rise, causing economic losses of trillions of dollars annually. V2X can significantly reduce traffic accidents, such as chain collisions and red-light running incidents, by communicating traffic conditions and sending warnings to vehicles.

Increased Demand for Urban Traffic Efficiency

As urbanization accelerates and population density increases, the demand for fast and convenient travel grows. V2X integrates information from vehicles, roadside infrastructure and cloud platforms, helping traffic management authorities monitor traffic conditions, optimize routes and precisely control traffic flow, thereby significantly improving efficiency and reducing congestion.

Improved Smart Roadside Infrastructure

Continuously improved roadside infrastructure has laid a solid foundation for the application of V2X. Technologies such as RSUs, sensing devices and edge computing enable real-time data collection and information exchange between roads and vehicles, supported by intelligent algorithms for data processing and integration. As more smart roadside devices are deployed in the future, V2X will continue to advance.

2.2 Future Outlook

Going forward, the V2X industry is poised for sustained, high-velocity expansion driven by a convergence of technological, regulatory, and societal factors.



About CIC

CIC is a professional consulting firm offering tailored end-to-end support across the full investment and financing lifecycle. The firm boasts a world-leading track record in guiding landmark first-in-sector IPOs across global markets, alongside unrivaled reach and in-depth coverage capabilities across specialized niche market segments.

CIC helps enterprises refine scalable business models and craft compelling capital narratives to enable seamless access to global capital markets, while serving as a trusted due diligence partner to investment institutions. It delivers granular industry insights and direct access to subject matter experts, empowering clients to identify high-value opportunities and mitigate critical risks effectively.

CIC team maintains deep, real-time market intelligence across a diverse set of sectors—including financial services, artificial intelligence, big data, internet, high technology, healthcare, education, entertainment, consumer goods, transportation and logistics, energy and power, environmental and building technology,



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chemicals, industrial manufacturing, and agriculture—delivering unparalleled access to sector-specific, actionable insights.

CIC Reports & Industry Overview

At CIC, we employ a rigorous, multi-method research framework, combining primary and secondary sources to underpin our analysis. Primary research involves in-depth engagements with industry thought leaders and practitioners, particularly in supply chain finance. Secondary research synthesizes publicly available datasets from authoritative bodies, including the National Bureau of Statistics of the People's Republic of China, the State Administration of Financial Regulation (SAFR, formerly the China Banking and Insurance Regulatory Commission), the China Securities Regulatory Commission (CSRC), and public company filings. We apply proprietary data analytics frameworks to process collected information, validating findings through cross-referencing data from multiple research streams to ensure analytical rigor and reliability.

All statistical data presented is verifiable and grounded in information available as of the date of this report.



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Extracts are refined summaries of in-depth CIC industry research reports, highlighting supply and demand trends, key growth drivers, R&D trends and future outlook, etc. of various segmented fields, integrating multi-dimensional insights such as expert interviews, market surveys and industry data analysis.

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