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## INDUSTRY OVERVIEW

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*Certain information and statistics set out in this section have been extracted from various official government publications, market data providers and a report commissioned by us and prepared by an independent third party, Frost & Sullivan. The information from official government sources has not been independently verified by us, the Joint Sponsors, the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED] or any of their respective directors, officers, employees, advisers or agents or any other parties involved in the [REDACTED], and no representation is given as to its accuracy, fairness and completeness.*

Propelled by technological advancement, end-user demand for technologically sophisticated products continues to escalate, and the automotive market is undergoing a profound transformation. Consequent to the evolution of electronic and electrical (E/E) architectures, vehicles have transformed into intelligent vehicles. The E/E architecture itself has progressed from the initial distributed Electronic Control Unit (ECU) architecture to a domain controller architecture and is currently advancing towards a centralized computing architecture.

According to Frost & Sullivan, in 2025, global and China passenger car sales reached 76.9 million and 30.8 million units, respectively. By 2030, the market is projected to rise to 88.4 million and 50.7 million units, respectively. In the future, these vehicles will adopt advanced controllers to enable intelligent functions, indicating a vast market potential for intelligent vehicles.

### OVERVIEW OF THE GLOBAL AND CHINA INTELLIGENT VEHICLE MARKET

#### Definition of Intelligent Vehicle

Intelligent vehicles generally refer to vehicles equipped with environmental perception, intelligent decision-making, and coordinated control capabilities. Their E/E architecture has evolved from distributed ECUs to domain control architectures. Under the domain control architecture, different domain controllers undertake distinct functions, including cockpit domain controllers, ADAS domain controllers, body domain controllers, chassis domain controllers, and powertrain domain controllers. With ongoing industry advancements, the E/E architecture is now witnessing the integration of cockpit and ADAS domains as well as the convergence of multiple domains, progressively moving toward a centralized computing architecture.

#### Development Stages of Intelligent Vehicle

In the era of "software-driven mobility," the E/E architecture has emerged as the cornerstone of automotive intelligence, constituting a primary strategic focus for intelligent vehicle manufacturers. Benefiting from advancements in hardware, software and communication architectures, the distributed ECU architecture prevalent in vehicles is gradually superseded by the domain controller architecture. Through meticulous E/E architecture design, critical vehicle components are transformed into practical physical layouts, signal networks, data networks and diagnostic frameworks. By evolving from distributed ECU architecture to domain controller architecture, the evolved E/E architecture enables shared computing power and resources within domain, which enhances efficiency and functional integration.

Confronted by the challenges and demands arising, the industry faces significant issues: escalating research and development and production costs, inadequate computational capacity coupled with poor coordination, redundant computational processes, and substantial resource inefficiencies. Consequently, the industry is undergoing a transition from domain controller architecture towards centralized computing architecture.

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During the phase of centralized computing architecture, the computing platform consolidates all vehicle data within a central computer. Utilizing on-device AI models, the system comprehends complicated commands and orchestrates multiple functions. Vehicles consequently evolve from mere transportation devices into comprehensive task-processing units.

Centralized computing replaces numerous domain controllers, establishing a unified computational center for the vehicle. Internally, a high-speed Ethernet backbone integrates optical transmission at critical nodes to facilitate the real-time transmission of high-bandwidth data.

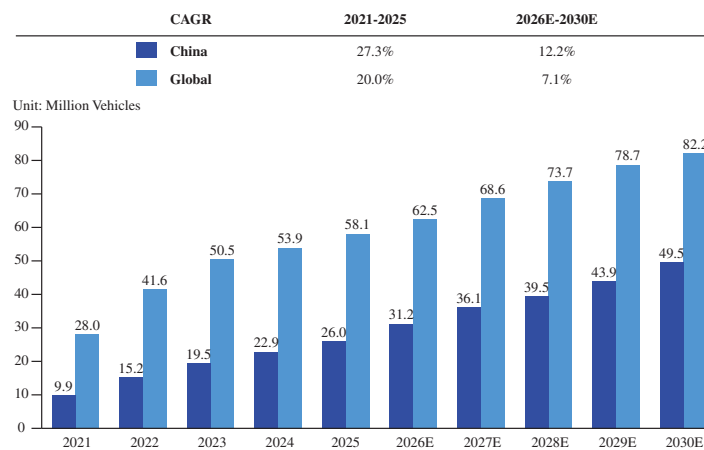
### The Shift from Domain Controller to Centralized Computing Architecture

Domain controllers have enabled the unified allocation of computing power and resources, playing a pivotal role in the E/E architecture. As SoC chip performance improves dramatically, E/E architectures are evolving toward centralized computing, driving restructuring across hardware, software and applications. Enhanced chip performance is enabling deep integration across communication modules, software platforms, data processing and AI technologies, shifting the architecture from independent systems to a collaborative centralized computing framework. In this context, integrators’ architectural design and cross-domain coordination capabilities are becoming vital, determining system efficiency and future development direction.

### Market Size of Intelligent Vehicle

Driven by end-user demands, technology evolution and policy support, the global intelligent vehicle market has shown strong growth in recent years. According to Frost & Sullivan, the global sales volume of intelligent vehicles with L1-L5 grew from 28.0 million to 58.1 million units from 2021 to 2025. With continuous advances in autonomous driving and connected vehicle technologies, global sales are expected to reach 82.2 million units by 2030. According to Frost & Sullivan, China intelligent vehicle sales volume increased from 9.9 million units in 2021 to 26.0 million in 2025, and are projected to reach 49.5 million by 2030.

**Global and China Intelligent Vehicle with L1-L5 Market Size, by Sales Volume, 2021-2030E**



Source: Interviews with industry experts, CPCA, Frost & Sullivan report

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### Key Drivers of the Intelligent Vehicle Market

#### *Upgraded Consumer Demands*

As end-user expectations rise, drivers seek vehicles capable of delivering safety, personalized interactions, seamless human-vehicle collaboration and continuous evolution via OTA updates. Automakers are adopting centralized computing architectures and open ecosystems for faster feature deployment and updates. With deeper integration of AI and big data, in-car services are becoming more intelligent.

#### *Technology Evolution*

Driven by the limits of distributed ECUs in handling data complexity, the industry is shifting from distributed architectures through domain control to centralized computing, which consolidates power for dynamic resource allocation. This evolution, combined with AI, transforms vehicles into intelligent entities where large models predict needs, enable proactive interaction, enhance experiences, and shorten iteration cycles.

### OVERVIEW OF THE GLOBAL AND CHINA DOMAIN CONTROLLER MARKET

#### Definition and Classification of Domain Controller

Domain controller is a key component in the transition of E/E architectures. It consolidates the functionalities of multiple ECUs into a unified, high-performance domain control and processing platform. Based on core functions, domain controllers are mainly divided into: autonomous driving domain controllers, intelligent cockpit domain controllers, powertrain domain controllers, body domain controllers, chassis domain controllers.

#### Development of Domain Controller

Domain controllers have facilitated the transition from distributed ECUs to domain-level functional integration, substantially reducing redundant ECUs, simplifying automotive wiring harnesses, and enhancing hardware-software synergy.

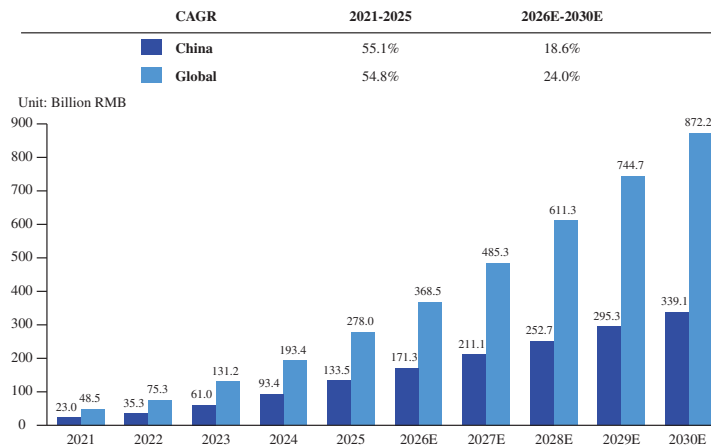
Presently, the industry is progressing towards a new phase of centralized computing. Cockpit-driving integration, which consolidates the computing power and functionalities of both the cockpit and ADAS domains, represents a prominent transitional strategy within this evolutionary trajectory. This integration transcends traditional domain barriers and lays the foundation for next-generation centralized architectures characterized by heightened efficiency, cost-effectiveness, and user-experience orientation.

#### Market Size of Domain Controller

According to Frost & Sullivan, driven by growing demand for faster system response and rising electrification and control complexity, the global domain controller market grew from RMB48.5 billion in 2021 to RMB278.0 billion in 2025, with a CAGR of 54.8%. It is projected to reach RMB872.2 billion by 2030, maintaining a strong 24.0% CAGR during 2026-2030. In the coming years, distributed ECUs, domain controllers, zone controllers and centralized computing platform will coexist and complement each other. According to Frost & Sullivan, by 2035, the global market is expected to reach USD350.0 billion. In China, the market is also expanding rapidly, from RMB23.0 billion in 2021 to RMB133.5 billion in 2025, representing a 55.1% CAGR, and is forecast to reach RMB339.1 billion by 2030, with an 18.6% CAGR during 2026-2030, according to Frost & Sullivan.

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### Global and China Domain Controller Market Size, by Revenue, 2021-2030E



Source: Interviews with industry experts, CAAM, Frost & Sullivan report

### Drivers and Trends of Domain Controller Market

As intelligent vehicles grow more complex, user expectations for quicker system response and smoother interaction are driving optimization across the entire data chain, enabling faster decision-making and seamless human-machine interaction, evident in rapid ADAS reactions, smoother cockpit interfaces, and near-instant voice feedback. This demand is accelerating the adoption of centralized computing architectures, which, as technology upgrades and costs decline, are expanding from high-end to mainstream vehicle models, enhancing vehicle value and creating new growth opportunities across the industry.

## OVERVIEW OF THE GLOBAL AND CHINA INTELLIGENT COCKPIT DOMAIN CONTROLLER MARKET

### Definition of Intelligent Cockpit Domain Controller

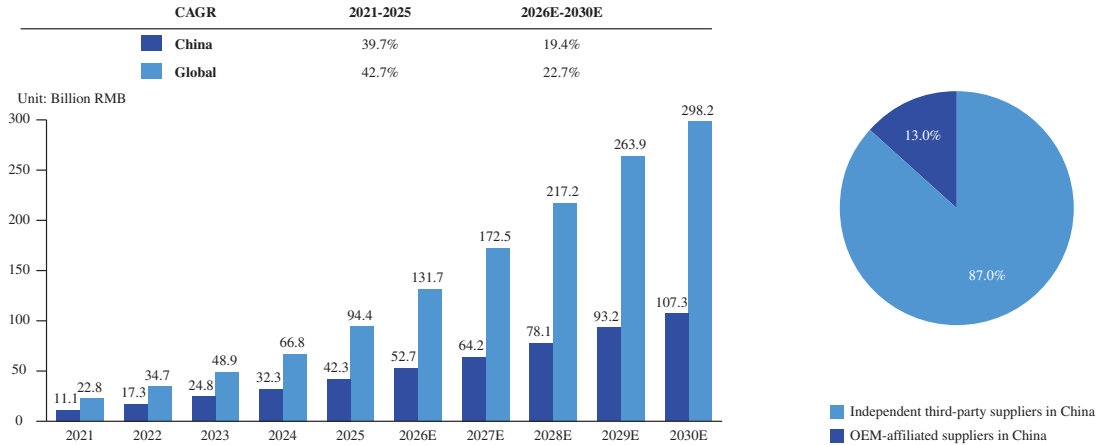
The intelligent cockpit domain controller is the core pillar of the in-vehicle computing platform. It leverages a high-performance SoC to drive holistic display and operating concepts on various displays in the vehicle interior, enabling information sharing, collaborative interaction, and efficient resource management. This configuration reduces the number of hardware devices, simplifies the wiring and hardware layout within the cockpit, frees up additional space for the arrangement of other in-vehicle components, and contributes to reducing the overall vehicle weight.

### Market Size of Intelligent Cockpit Domain Controller

According to Frost Sullivan, the global market size for intelligent cockpit domain controllers increased from RMB22.8 billion in 2021 to RMB94.4 billion in 2025, representing a 42.7% CAGR, and is projected to reach RMB298.2 billion by 2030, maintaining a 22.7% CAGR from 2026 to 2030. In China, the market size grew from RMB11.1 billion in 2021 to RMB42.3 billion in 2025, representing a 39.7% CAGR, and is expected to reach RMB107.3 billion by 2030, representing a 19.4% CAGR during 2026-2030. In terms of market participants, the China domain controller market comprises independent third-party suppliers and OEM-affiliated suppliers, accounting for 87% and 13%, respectively.

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### Global and China Intelligent Cockpit Domain Controller Market Size, by Revenue, 2021-2030E



Source: Interviews with industry experts, CAAM, Frost & Sullivan report

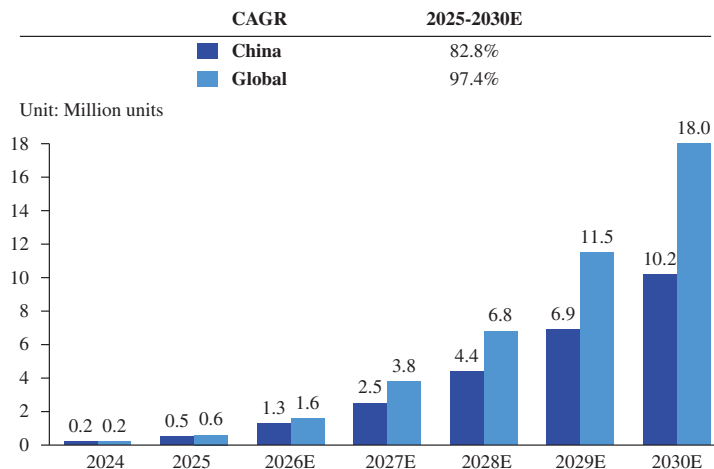
### Market Size of the Integrated Cockpit-ADAS Controller

The cockpit domain is progressively integrating advanced driving functionalities, evolving toward comprehensive integrated cockpit-ADAS controllers. The integrated controller constitutes a scalable, modular architecture, consolidating system functions for both autonomous driving and infotainment within a single high-performance computational unit.

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The cockpit domain is increasingly incorporating advanced driving features, moving toward full integration of cockpit and ADAS. According to Frost & Sullivan, from 2024 to 2030, global installations of integrated cockpit-ADAS controllers grew from 0.2 million units in 2024 to 0.5 million in 2025, reaching about 18.0 million units by 2030, representing a 97.4% CAGR from 2025 to 2029. According to Frost & Sullivan, in China, installations in passenger vehicles rose from 0.2 million units in 2024 to 0.5 million in 2025, and reach around 10.2 million units by 2030, achieving a CAGR of 82.8% over the same period.

### Global and China Integrated Cockpit-ADAS Controller Shipments, 2024-2030E



Source: Interviews with industry experts, Frost & Sullivan report

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### Competitive Landscape of Intelligent Cockpit Domain

The intelligent cockpit domain controller market is dominated by two principal categories of participants: independent third-party suppliers and OEM-affiliated suppliers. Each category capitalizes on distinct technological capabilities and resource advantages, thereby establishing divergent competitive landscapes.

#### *Independent Third-Party Suppliers*

These entities constitute principal industry players, specializing in automotive electronics research and development independently of automakers. They distinguish themselves through their capacity to optimize supplier collaboration and deliver tailored hardware-software solutions. As demand escalates for comprehensive hardware-software integration, vendors limited to either hardware or software provision are encountering innovation bottlenecks. Organizations possessing full-stack capabilities and robust customization expertise can establish formidable technical barriers and demonstrate substantial growth potential, thereby securing an exceptionally competitive position within the intelligent automotive value chain.

#### *OEM-affiliated Suppliers*

These suppliers are incubated or controlled by automakers and are closely aligned with specific vehicle strategies. They provide highly customized cockpit domain controllers for particular models. However, their dependence on the parent automaker limits broader market reach, flexibility, and responsiveness, and their technology upgrades are constrained by vehicle development cycles.

### Competitive Landscape of China Intelligent Cockpit Domain Controller Market

The global intelligent cockpit domain controller market remains relatively fragmented. China companies are steadily increasing their influence through advantages in technology integration, cost control, supply chain management, and customer service.

In 2025, installations of intelligent cockpit domain controllers in China’s passenger vehicle market registered robust growth. Building on profound insights into the local market, agile strategic responses, and continuously strengthening technical capabilities, the company achieved revenue of RMB2.0 billion, capturing a 5.4% market share among independent third-party suppliers, ranking the third in the industry, and an 4.7% share across all intelligent cockpit domain controller suppliers in China.

#### China Intelligent Cockpit domain controller supplier, by Revenue<sup>(1)</sup>, 2025

Ranking	Company	Market Share, 2025 <sup>(2)</sup>
1 . . . . .	Company A <sup>(3)</sup>	18.2%
2 . . . . .	Company B <sup>(4)</sup>	8.2%
<b>3 . . . . .</b>	<b>The Company</b>	<b>5.4%</b>
4 . . . . .	Company C <sup>(5)</sup>	5.2%
5 . . . . .	Company D <sup>(6)</sup>	4.1%

*Source: Interviews with industry experts, annual reports and websites of listed companies, S&P 500, Frost & Sullivan report*

*Notes:*

- (1) Revenue includes sales from passenger vehicle intelligent cockpit domain controller in China.
- (2) Market share among independent third-party suppliers in China.

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- (3) Company A was founded in 1986 and headquartered in Huizhou City, Guangdong Province, listed on SZSE. The company's core business focuses on the full-stack integration of the three major areas of smart cabin, smart drive and smart service.
- (4) Company B was founded in 2009 and headquartered in Shanghai, listed on HKEX Exchange. It's core business covers two major segments, intelligent cockpit solutions and intelligent connected solutions.
- (5) Company C was founded in 1886 and headquartered in Gerlingen-Schillerhöhe, Germany, and is a privately held company. The company provides full-stack intelligent mobility solutions and products, including Intelligent cockpit domain controllers, cockpit-driving integration solutions, high-end and mid-end autonomous driving systems, vehicle motion control systems, sensors, computing platforms, and cloud services.
- (6) Company D founded in 2018 and headquartered in Beijing and is a privately held company. Main products include intelligent cockpit systems, intelligent body domain controllers, intelligent connected controllers, intelligent voice interaction systems, vehicle networking, and automotive big data platforms, among others.

### Entry Barriers of Intelligent Cockpit Domain Controller

#### *Technical Barrier: Complex System Integration and Optimization*

Intelligent cockpit domain controllers integrate hardware and software in a manner significantly more complex than distributed ECUs. Newcomers must possess expertise in high-performance hardware design, high-speed circuit layout, and thermal management. Crucially, they should achieve profound hardware-software integration to ensure the seamless and stable operation of multi-screen interactions, voice recognition, and visual functionalities within constrained resource environments.

#### *Safety and Reliability Barrier: Strict Automotive Standards and Certification*

Automotive-grade safety and reliability standards create a high barrier. Companies should comply with functional safety and cybersecurity standards and validate products under extreme conditions to ensure long-term stability. They also need to make sure their quality management systems meeting IATF16949 standards. Meeting these requirements and completing lengthy certification cycles demands significant time and capital investment, posing a major challenge for new entrants.

### Trends in Intelligent Cockpit Domain Controller

#### *Cockpit & ADAS Integration*

The ongoing shift in E/E architecture is driving the development of high-performance cross-domain controllers that integrate previously separate functions like infotainment and ADAS. This consolidation can be achieved through approaches such as shared housing or the use of fusion SoCs, with the latter offering advantages in cost, scalability, and software integration, making them ideal for entry-level to mid-range vehicles supporting Level 2+ autonomy.

The cockpit is transforming from a standalone infotainment unit into an active service platform that leverages driving perception data to deliver proactive, context-aware services based on environment, navigation, and driver state. This evolution enhances interaction between occupants and external traffic participants, reduces cognitive load, and ensures safe task coordination in complex scenarios, ultimately boosting driving safety and overall vehicle intelligence. In the context of the cockpit & ADAS integration development trend, the growing demand for high computing power and high speed necessitates the integration of optical communication technologies, where early-movers will gain a significant competitive edge.

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### Multi-Domain Integration

As multi-domain integration progresses, the role of cockpit controller expands beyond cockpit functions to coordinate body, powertrain, and chassis systems. With powerful human-machine interfaces and growing computing capacity, the cockpit becomes the central hub for user-vehicle interaction. It executes complex scenario-based commands, coordinating air conditioning, seats, windows, and other subsystems, transforming scattered functions into a unified, seamless user experience.

### Central Computing

As E/E architecture is shifting to a centralized computing setup, cockpit and ADAS hardware will integrate into a unified central hardware platform. With the growing standardization of vehicle hardware design, brand differentiation among automakers will increasingly rely on the integrated software and hardware solutions of the central computing platform, which systematically defines the user experience.

## OVERVIEW OF THE GLOBAL AND CHINA ZONE CONTROLLER MARKET

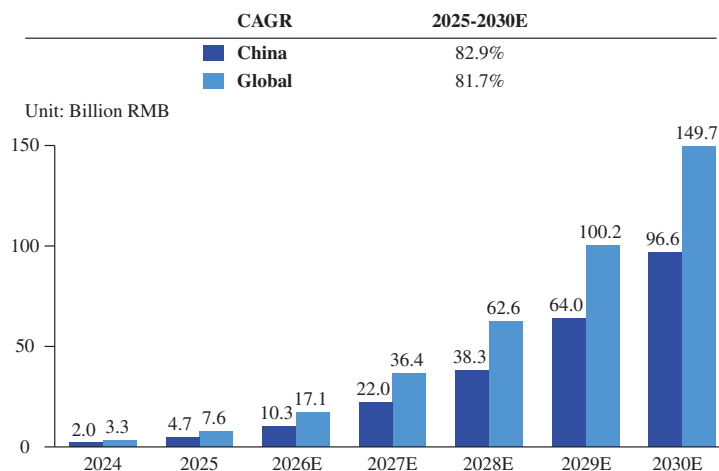
### Definition of Zone Controller

Zone controllers are key components in the shift of E/E architecture toward a centralized computing architecture. They address data redundancy and bandwidth bottlenecks. Serving as a zone hub between the centralized computing unit and local sensors and actuators, they are deployed based on physical location and handle signal collection, power distribution, and command execution within their area. By replacing long wiring harnesses with local short connections, they optimize electrical layout, improving system response speed, communication efficiency, scalability, and reducing vehicle weight.

### Market Size of Zone Controller

Zone controllers are gaining rapid traction in the mainstream end-user vehicle market. According to Frost & Sullivan, the global penetration rate of zone controller in passenger vehicle is expected to be around 3.7% in 2025, corresponding to a market size of RMB7.6 billion. As E/E architectures become more centralized and AI capabilities are increasingly integrated, both the number of controllers per vehicle and their unit value are rising. According to Frost & Sullivan, by 2030, global penetration is expected to reach 18.5%, with the market size growing to RMB149.7 billion, representing a 81.7% CAGR from 2025 to 2030. China is a key driver of the global zone controller market. According to Frost & Sullivan, in 2025, the market size of China was RMB4.7 billion, and by 2030, leading the global market, the market size is expected to reach RMB96.6 billion and a CAGR of 82.9%.

Global and China Zone Controller Market Size, by Revenue, 2024-2030E



Source: Interviews with industry experts, Frost & Sullivan report

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### Drivers and Trends of Zone Controller

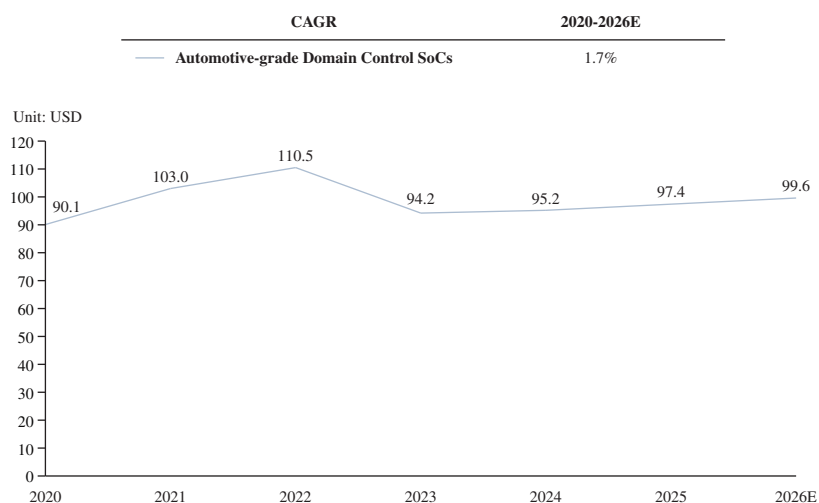
The shift to centralized E/E architectures integrates cockpit and ADAS hardware into a unified central platform. As vehicle hardware standardizes, brand differentiation hinges on this platform's integrated software-hardware solutions that define the user experience. To manage growing sensor data and AI models, zone controllers act as edge nodes preprocessing local data, while the centralized computing platform fuses multi-source information for global decision-making.

### RAW MATERIAL PRICE ANALYSIS

The price trend for automotive-grade integrated domain control SoCs experienced a notable fluctuation over the past few years. The price index increased steadily from 90.1 in 2020 to a peak of 110.5 in 2022, before declining to 94.2 in 2023. The upward trend between 2020 and 2022 was primarily driven by surging demand for high-performance computing chips amid the rapid advancement of intelligent vehicles, combined with global semiconductor supply chain constraints and rising raw material costs. The decline in 2023 reflected the easing of chip shortages, inventory adjustments by downstream manufacturers, and a temporary slowdown in demand growth following a period of aggressive procurement.

The relatively stable yet modest recovery observed in 2024 to 2026E suggests a gradual rebalancing of supply and demand dynamics, with intensified competition among suppliers also contributing to price normalization. Overall, the market is moving toward a more sustainable equilibrium, though underlying demand for high-performance automotive chips remains structurally robust.

### Price of Automotive-grade Integrated Domain Control SoCs in China, 2020-2026E



Source: Interviews with industry experts, annual reports and websites of listed companies, Frost & Sullivan report

### SOURCE OF INFORMATION

In connection with the [REDACTED], we have engaged Frost & Sullivan to conduct a detailed analysis and prepare an industry report on the markets in which we operate (the "Frost & Sullivan Report"). Services provided by Frost & Sullivan include market assessments, competitive benchmarking, and strategic and market planning for a variety of industries. We have agreed to a total of RMB450,000 in fees and expenses for the preparation and use of the Frost & Sullivan

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Report. The payment of such an amount was not contingent upon our successful Listing or on the results of the Frost & Sullivan Report. Apart from the Frost & Sullivan Report, we have not commissioned any other industry report in connection with the [REDACTED].

We have extracted certain information from the Frost & Sullivan Report in this section, as well as in the sections headed "Summary," "Risk Factors," "Business," "Financial Information" and elsewhere in this document to provide our potential investors with a more comprehensive presentation of the industries in which we operate. Unless otherwise noted, all of the data and forecasts contained in this section are derived from the Frost & Sullivan Report, various official government publications and other publications. Frost & Sullivan prepared its report based on its in-house database, independent third-party reports and publicly available data from reputable industry organizations. Where necessary, Frost & Sullivan contacts companies operating in the industry to gather and synthesize information in relation to the market, prices and other relevant information. Frost & Sullivan believes that the basic assumptions used in preparing the Frost & Sullivan Report, including those used to make future projections, are factual, correct and not misleading. Frost & Sullivan has independently analyzed the information, but the accuracy of the conclusions of its review largely relies on the accuracy of the information collected. Frost & Sullivan's research may be affected by the accuracy of these assumptions and the choice of these primary and secondary sources.