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Global Serial M.2 Card Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Serial M.2 Card market size was valued at US$ 91.89 million in 2025 and is forecast to a readjusted size of US$ 131 million by 2032 with a CAGR of 5.2% during review period.

In 2025, the global annual shipment volume of Serial M.2 Cards is projected to be approximately 1.24 million units. Industrial computing, embedded systems, and network security equipment are the main sources of demand, with the Asia-Pacific market accounting for over 45%. The average price of these products, depending on the number of channels, interface type, and industrial grade, ranges from $65 to $80 per unit. Models supporting multiple serial ports (RS-232/422/485), isolated designs, or wide temperature specifications can reach up to $140 per unit. In terms of device usage, a single industrial computer or network device typically uses one Serial M.2 Card for connecting legacy serial devices; in scenarios involving multiple devices, redundant communication, or protocol isolation (such as rail transit, energy, and avionics ground systems), configuring 2-3 cards is also common. These products are inexpensive but indispensable functional expansion modules in a system; their value lies not in computing power, but in their ability to 'extend the lifespan' of traditional industrial communication ecosystems. A Serial M.2 Card is a serial communication expansion module based on the M.2 Key B/Key M interface, primarily used in compact industrial motherboards, embedded computers, or specialized equipment to provide standard serial communication capabilities such as RS-232, RS-422, and RS-485. Its core function is not data processing, but rather acting as a protocol bridging node between the I/O expansion layer and industrial field devices. Compared to traditional PCIe/PCI serial cards, Serial M.2 Cards emphasize miniaturization, low power consumption, and platform compatibility, making them suitable for modern industrial computing architectures that lack standard expansion slots but still require extensive serial

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communication. As x86 and ARM industrial platforms continue to evolve towards high integration and slotless designs, M.2 has gradually become the mainstream physical form factor for serial I/O expansion.

Supply Chain Overview

The upstream supply chain for Serial M.2 Cards primarily includes: multi-port serial control chips (UART/PCIe-to-Serial Bridge), isolation and level shifting chips, crystal oscillators and clock devices, ESD/surge protection devices, high-speed connectors, and industrial-grade PCB materials. The serial control chips and isolation/protection circuits have a decisive impact on communication stability, anti-interference capabilities, and long-term operational reliability. The cost of these components and their related design typically accounts for 55%–65% of the total BOM (Bill of Materials) for the card. Typical upstream suppliers include: Texas Instruments, MaxLinear, NXP Semiconductors, Analog Devices, and W?rth Elektronik.

Manufacturer Characteristics

DFI: Focusing on its industrial motherboard platform, DFI continuously optimizes the BIOS compatibility and long-term supply capabilities of its M.2 serial modules in embedded systems, emphasizing platform-level stability. ASUS: ASUS integrates Serial M.2 Cards as part of its industrial and commercial embedded solutions, focusing on compatibility with its compact motherboards and edge computing devices. Innodisk: Innodisk strengthens wide temperature range, vibration resistance, and long-life cycle support in its collaborative design of industrial-grade storage and I/O expansion, serving rail transportation and energy customers. Delock: Delock has a significant advantage in covering multiple interfaces and specifications, meeting the rapid selection needs of system integrators. ACCES I/O: ACCES I/O emphasizes serial port isolation, surge protection, and industrial protocol stability, serving automation and defense-related applications for the long term.

Breakthrough Point

For Serial M.2 Card manufacturers, the true breakthrough direction is not simply increasing the number of serial ports, but rather redefining the engineering value of serial port expansion in the context of 'highly integrated computing platforms.' As industrial computing platforms increasingly move towards SoC (System-on-a-Chip) and slotless designs, the physical space and power consumption advantages of traditional PCIe/PCI serial cards are disappearing, while the serial devices themselves (PLCs,

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sensors, instruments, controllers) have not been phased out. Using Innodisk's platform strategy as a reference, they have not attempted to 'replace serial communication,' but rather, through the M.2 form factor, industrial-grade protection, and long supply cycles, they enable the continued existence of serial port capabilities with minimal system modification costs. This logic dictates that the competitive advantage of Serial M.2 Cards lies not in performance parameters, but in compatibility assurance, long-term supply commitments, and engineering stability. In the eyes of many industrial customers, 'being usable for 10 years without problems and without requiring software changes' is far more important than 'being faster.'

Applications

Serial M.2 Cards are primarily used in industrial automation equipment, rail transit control systems, energy and power monitoring equipment, network security and communication gateways, avionics, and defense ground systems, connecting PLCs, instruments, card readers, older controllers, and serial sensor devices. Typical downstream customers include: Siemens, Schneider Electric, Rockwell Automation, ABB, and Honeywell.

Technological Trends

From a technological evolution perspective, Serial M.2 Cards are evolving from 'simple serial port expansion modules' to 'platform-level I/O compatible components.' Taking DFI as an example, in its new generation of industrial motherboard designs, the M.2 serial port expansion is deeply integrated with the BIOS, drivers, and system verification processes, making it part of the motherboard ecosystem rather than an independent accessory. This trend has not weakened the demand for serial ports themselves, but rather changed their mode of existence: in new systems, serial ports no longer exist through large expansion cards, but are embedded in the platform design in a highly modular and customizable way. The future value of Serial M.2 Cards will be reflected more in system consistency and lifecycle management capabilities.

Case Study

In a rail transit signal and monitoring system upgrade project, DFI provided a Serial M.2 Card solution based on its industrial motherboard platform to the system integrator. Without replacing existing serial communication equipment and software protocols, the solution achieved a reduction in control cabinet size and system power consumption. The final solution used DFI's M.2 serial port module, significantly reducing motherboard

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size and wiring complexity while maintaining the original RS-485 network structure and meeting long-term supply and rail transit certification requirements, demonstrating the practical engineering value of this type of product in upgrading existing systems.

Market Influencing Factors

The core influencing factor in the Serial M.2 Card market is not the short-term fluctuations in industrial automation investment, but rather the structural characteristic of the industrial communication system's 'long-term non-obsolescence.' On the one hand, industrial computing platforms are continuously evolving towards higher integration and miniaturization, which objectively reduces the market space for traditional expansion cards; on the other hand, a large number of existing industrial equipment, control systems, and communication protocols still heavily rely on serial ports. This contradiction of 'new platforms + old interfaces' has persisted for a long time, forming a stable demand base for Serial M.2 Cards. It is worth noting that this market exhibits a clear concentration of Taiwanese manufacturers. Taiwanese companies represented by DFI, Innodisk, IEI, ASUS, and Cervoz have long been deeply involved in the industrial motherboard and embedded computing fields, possessing platform-level design capabilities, long-life cycle management experience, and global industrial customer channels, giving them a natural advantage in this 'non-core but critical' niche product segment. Compared to European and American manufacturers, who tend to focus on modular or project-based supply, Taiwanese manufacturers emphasize ecosystem consistency and continuous supply, which allows them to dominate markets sensitive to product life cycles, such as rail transportation, energy, and defense. This market does not have the logic of explosive growth, but it has a highly predictable demand curve and stable cash flow. The essence of the competition is a competition of engineering certainty and long-term reliability.

This report is a detailed and comprehensive analysis for global Serial M.2 Card market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Serial M.2 Card market size and forecasts, in consumption value ($ Million),

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sales quantity (K Units), and average selling prices (US$/Unit), 2021-2032

Global Serial M.2 Card market size and forecasts by region and country, in consumption value ($ Million), sales quantity (K Units), and average selling prices (US$/Unit), 2021-2032

Global Serial M.2 Card market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (K Units), and average selling prices (US$/Unit), 2021-2032

Global Serial M.2 Card market shares of main players, shipments in revenue ($ Million), sales quantity (K Units), and ASP (US$/Unit), 2021-2026

The Primary Objectives in This Report Are:
To determine the size of the total market opportunity of global and key countries
To assess the growth potential for Serial M.2 Card
To forecast future growth in each product and end-use market
To assess competitive factors affecting the marketplace

This report profiles key players in the global Serial M.2 Card market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include DFI (Public, Taipei, China Taiwan), ASUS (Public, Taipei, China Taiwan), ACCES I/O (Private, San Diego, USA), Delock (Private, Berlin, Germany), Innodisk (Public, Taipei, China Taiwan), Brainboxes (Private, Liverpool, UK), StarTech (Private, Ontario, Canada), SYBA (Private, Chino, USA), Di-ARTs Technology (Private, Taipei, China Taiwan), Cervoz Technology (Private, Taipei, China Taiwan), etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Serial M.2 Card market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

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Market segment by Type

Single-Lane

2 Port

4 Port

Market segment by Size

2230

2242

2260

2280

Others

Market segment by Interface Type

B Key

M Key

Market segment by Application

Industrial Automation Equipment

Rail Transit

Energy and Power

Cybersecurity and Communications

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Others

Major players covered

DFI (Public, Taipei, China Taiwan)

ASUS (Public, Taipei, China Taiwan)

ACCES I/O (Private, San Diego, USA)

Delock (Private, Berlin, Germany)

Innodisk (Public, Taipei, China Taiwan)

Brainboxes (Private, Liverpool, UK)

StarTech (Private, Ontario, Canada)

SYBA (Private, Chino, USA)

Di-ARTs Technology (Private, Taipei, China Taiwan)

Cervoz Technology (Private, Taipei, China Taiwan)

Serial Cables (Private, Englewood, USA)

Shentek (Private, Taipei, China Taiwan)

Hilscher (Privat, Hattersheim, Germany)

T-Chip (Private, Zhongshan, China)

LEKUO (Privat, Shenzhen, China)

KALEA-INFORMATIQUE (Private, Provence, France)

EXSYS Vertriebs GmbH (Private, Steinbach, Germany)

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DANBIT (Private, Koge, Denmark)

VersaLogic (Private, Tualatin, USA)

TKH (Public, Amsterdam, Netherlands)

IEI (Public, Taipei, China Taiwan)

Market segment by region, regional analysis covers
North America (United States, Canada, and Mexico)
Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)
Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)
South America (Brazil, Argentina, Colombia, and Rest of South America)
Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Serial M.2 Card product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Serial M.2 Card, with price, sales quantity, revenue, and global market share of Serial M.2 Card from 2021 to 2026.

Chapter 3, the Serial M.2 Card competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Serial M.2 Card breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and Serial M.2 Card market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

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Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of Serial M.2 Card.

Chapter 14 and 15, to describe Serial M.2 Card sales channel, distributors, customers, research findings and conclusion.

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Table 181. Serial M.2 Card Typical Customers

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