

# **SerDes Market By Component (Clock Multiplier Uni, Lanes, Physical Coding Sub-Block) , By Industry Vertical (Automotive, Consumer electronics, IT and telecom, Aerospace, Military and Defense, Manufacturing, Others) : Global Opportunity Analysis and Industry Forecast, 2024-2032**

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## **Abstracts**

The SerDes market was valued at \$0.9 billion in 2023, and is projected to reach \$2.7 billion by 2032, growing at a CAGR of 13.3% from 2024 to 2032.

Serializer/deserializer (SerDes) is an integrated circuit or a functional block used to convert parallel data into serial data and vice versa. It facilitates high-speed data transfer between two points while minimizing the number of physical connections. Commonly employed in communication systems, computer interfaces, and high-speed data transmission applications, SerDes enables efficient data handling in environments requiring high bandwidth and reduced latency.

The global SerDes market is witnessing robust growth due to increase in adoption of applications requiring high-speed connectivity, such as cloud computing, AI, and IoT. The market has rapidly evolved from 10 Gbps speeds in 2005 to 112 Gbps today, with a significant push toward 224 Gbps rates. This shift is supported by the adoption of PAM4 modulation, which enables faster data transfers and reduced latency. The SerDes PHY IP supports PAM4 and NRZ signaling and data rates from 1G to 112G. Furthermore, rise in penetration of connected and autonomous vehicles significantly contributes toward the market growth. This is attributed to the fact that SerDes technology is crucial for high-speed communication between electronic control units, advanced driver assistance systems, and infotainment systems. As per a 2023 study published by

Statista, the number of connected cars in operation is estimated to reach approximately 400 million by 2025 from 237 million in 2021, thus highlighting the need for SerDes. Moreover, proliferation of data-intensive applications such as virtual reality, augmented reality, and high-definition video streaming that require high-throughput communication links augments the adoption of advanced SerDes architectures. In addition, surge in adoption of consumer electronics significantly contributes toward the market growth, as SerDes technology is crucial in consumer devices like smartphones, gaming consoles, and smart TVs, supporting high-definition displays and low-latency communication. A study published in 2024 revealed that there are around 3,739 consumer electronics manufacturing businesses globally as of 2024. Statista claimed that the volume of consumer electronics is anticipated to reach 9,007.0m pieces by 2029. Such as the widespread adoption emphasizes the need for SerDes, thereby propelling the market growth. However, as SerDes systems scale to higher speeds (e.g., 112 Gbps and beyond), the power requirements increase, especially in applications like data centers. Meeting these demands while maintaining efficiency is a significant design challenge, which hampers the market growth. In addition, high-speed SerDes systems generate substantial heat, which is a major concern that limits their adoption. On the contrary, advancements in networking technologies such as 5G, Wi-Fi 6, and Ethernet (40G, 100G, and beyond) demands sophisticated SerDes solutions capable of handling higher data rates and minimizing latency. Such advancements are expected to open new avenues for the expansion of the global market during the forecast period.

The global SerDes market is segmented according to the patents filed in the U.S., PCT, European Patent Office, Canada, China, Australia, India, UK, Republic of Korea, and Japan. The U.S., and the PCT have the largest number of patent filings, owing to suitable research infrastructure. Approvals from these authorities are followed/accepted by registration authorities in many of the developing regions/countries. Therefore, these two regions have maximum number of patent filings.

### Key Findings

By component, the physical coding sub-block (PCS) segment is expected to dominate the market from 2024 to 2032.

On the basis of industry vertical, the IT & telecom segment is anticipated to exhibit the highest growth during the forecast period.

Region wise, Asia-Pacific attained the highest share in the SerDes market, and is

projected to continue the same trend throughout the forecast period.

## Competition Analysis

Competitive analysis and profiles of the major players in the global SerDes market include Rambus, Texas Instruments Inc., ON Semiconductor Corporation, STMicroelectronics NV, ROHM Semiconductor, Renesas Electronics Corp (Japan), NXP Semiconductors NV (Netherlands), Maxim Integrated Products, Inc., Broadcom, and Cypress Semiconductor Corp. These major players have adopted various key development strategies such as business expansion, new product launches, and partnerships to sustain the intense competition and gain a strong foothold in the global market.

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Regulatory Guidelines

Historic market data

SWOT Analysis

Key Market Segments

By Component

Clock Multiplier Uni

Lanes

Physical Coding Sub-Block

By Industry Vertical

Automotive

Consumer electronics

IT and telecom

Aerospace

Military and Defense

Manufacturing

Others

By Region

North America

U.S.

Canada

Mexico

Europe

France

Germany

Italy

UK

Rest of Europe

Asia-Pacific

China

Japan

India

South Korea

Rest of Asia-Pacific

LAMEA

Latin America

Middle East

Africa

## Key Market Players

Rambus

Texas Instruments Inc.,

ON Semiconductor Corporation

STMicroelectronics NV

ROHM Semiconductor

Renesas Electronics Corp (Japan)

NXP Semiconductors NV (Netherlands)

Maxim Integrated Products, Inc.

Broadcom

Cypress Semiconductor Corp.

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