

Ethernet Controller - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 139 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License \$4750.00
- Team License (1-7 Users) \$5250.00
- Site License \$6500.00
- Corporate License \$8750.00

Report description:

The Ethernet Controller Market size is estimated at USD 11.62 billion in 2024, and is expected to reach USD 16.63 billion by 2029, growing at a CAGR of 7.42% during the forecast period (2024-2029).

The market studied is driven by the increasing adoption of data centers and cloud computing in the modern digital economy. From scientific discoveries to Artificial Intelligence (AI), modern data centers are crucial to solving some of the critical global challenges. These current data centers, like Artificial Intelligence, are transforming to increase networking bandwidth and optimize workloads.

Key Highlights

- The growing volume of Big Data across the business ecosystem is gaining maturity. A study by Accenture indicates that about 79% of enterprise executives agreed that companies that do not embrace Big Data would lose their competitive position and are expected to face extinction. With enterprises transitioning to Big Data, the data traffic is expected to increase, fueling the demand for Ethernet controllers.
- Ethernet for Control Automation Technology (EtherCAT) is based on the CANopen protocol and Ethernet. Still, it differs from the internet or network communications in optimized explicitly for industrial automation control. Utilizing the OSI network model, Ethernet and EtherCAT rely on the same physical and data link layers. Beyond that, the two networks diverge by design as they are optimized for different tasks.
- A USB-to-Ethernet converter is helpful in a variety of circumstances. For example, a user's laptop's Wi-Fi option may be experiencing technical difficulties, or the user may discover that the Wi-Fi is disabled for security reasons in specific locations, even though users require internet access. In the circumstances like these, an Ethernet port and a simple adapter should suffice. Using a cable will provide a faster and more consistent connection.

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

-The market is expected to create a roadblock for itself to update faster on technology, as long-duration contracts with extensions saturate the market, thus impacting its growth. When the industry trends indicate to the solution and services providers to use new and emerging technology Ethernet controllers, long-term contracts can be counterproductive in the market. Moreover, the growing competition in the market impacts the profit margins and existing vendors' growth. The competition level between suppliers is so high that Ethernet controller products are transitioning to commoditized worldwide.

-The Work-From-Home (WFH) policies shifted information security's focus from enterprise infrastructure to cloud and virtualized infrastructure. As per IBM Security Report from the previous year, about 54% of the organizations responded positively to remote working amid the COVID-19 outbreak. Such developments in the market have contributed to the rising demand for cloud-based solutions, which will increase the need for ethernet controllers.

Ethernet Controller Market Trends

Servers to Hold the Largest Market Share

- Most businesses require data storage, whether for their email, website, or online transactions, and this may be done on a server. Servers are specialized computers linked to a company's local network and, in most cases, the Internet. If a company is small enough, it may decide to keep its servers in-house and run them own. However, as organizations and their demands expand, more servers and storage space are required as more data is generated. A typical data center infrastructure includes many servers, which are powerful computers. According to Ericsson, by the next four years, global monthly traffic per mobile PC is projected to amount to 25.88 GB per active device.

- As servers power data centers and support cloud environments, the server industry is the backbone of innumerable mission-critical and client-side corporate computing operations. As businesses seek to power big data and advanced workload requirements, demand for higher-performing servers continues to climb. With the increasing cloud computation, AI, Big Data, and Data Centers, the need for servers will also grow significantly. With this growing demand for servers, Ethernet Controller demand will also increase.

- A Baseboard Management Controller (BMC) monitors most modern servers' temperature, voltages, and fans. When something in the system requires an administrator's attention (such as the CPU overheating), the BMC may generally be set to send out notifications (in the form of emails and SNMP alerts).

- Application Device Queues (ADQ), Dynamic Device Personalization (DDP), and support for both iWARP and RoCEv2 Remote Direct Memory Access (RDMA) are included in Intel Ethernet 800 Series controllers. It provides workload-optimized performance and the flexibility to meet changing network requirements. For high-performance server applications, including NFV, storage, HPC-AI, and hybrid cloud, the 800 Series controllers provide speeds up to 100GbE.

- The NetXtreme-E Series BCM57414 50G PCIe 3.0 Ethernet controller is based on Broadcom's scalable 10/25/50/100/200G. Ethernet controller architecture is designed to build highly scalable, feature-rich networking solutions in servers for enterprise and cloud-scale networking and storage applications, such as high-performance computing, telco, machine learning, storage disaggregation, and data analytics.

North America Holds Largest Market Share

- 5G requires a flexible networking and transportation infrastructure to reach its full potential. As Ethernet becomes the most efficient transport technology, carrier routers and switches are charged with supporting a range of use cases over shared infrastructure, increasing Ethernet gear installations.

- With the 5G network growth and their growing applications, the need for ethernet controllers for 5G infrastructure will also be in

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

demand. As in the United States, only some companies have started to provide 5G network services. For instance, after the deployment of the new wireless technology was scale delayed, telecom giants AT&T and Verizon debuted 5G service in the United States in January 2022 without significant flight delays.

- As Ethernet Controller allows wired connection to the computer network, any device requiring a high-speed internet connection will have to use Ethernet Controllers for fast internet connections. Such is the case with Cloud Infrastructure networks. With developing cloud capabilities and enterprises shifting their work to the cloud, the demand for cloud applications is increasing rapidly in the United States. In the coming years, more and more businesses will opt for Cloud storage solutions due to their low costs, less maintenance, data security, and almost unlimited scalability. Therefore this rise in cloud computing and storage will also surge in the Ethernet Controller Market.

- According to Ericsson ConsumerLab, 5G wireless technology is already transforming how Canadians use their smartphones. Compared to 4G users, early 5G adopters spend two hours per week on cloud gaming and 90 minutes more on augmented reality (AR) apps. After upgrading, 15% said they had reduced their Wi-Fi usage, even at home. It means that 5G will finally deliver the experience consumers have been waiting for in high-bandwidth apps. Furthermore, users expect 5G to provide interior coverage, which is considered more significant than speed or battery life.

- Telecommunications companies' enormous spending in the 3500 MHz spectrum (three times more than projected) further proves their commitment to 5G. Rogers spent CAD 3.3 billion (USD 2.43 billion) on the 5G spectrum, which covers 99.4% of the Canadian population, making it the country's largest single investor in the technology.

Ethernet Controller Industry Overview

The Ethernet Controller Market is fragmented in nature due to high competition. Despite the fragmentation, the market is primarily tied to the regulatory requirements for establishment and operation. Further, with increasing innovation, acquisitions, and partnerships, market rivalry tends to rise in the future. The major players in the market are Intel Corporation, Broadcom Inc., Microchip Technology Inc, Cirrus Logic Inc., and Texas Instruments Incorporated, among others.

- December 2022 - Marvell Technology, Inc., one of the leaders in data infrastructure semiconductor solutions, announced the Alaska CX9340P, a new 5nm 1.6T Ethernet PHY with 100G I/O capability, built-in Media Access Control security (MACsec) and total Precision Time Protocol (PTP) support communications network applications and for the cloud data center. PTP enables Ethernet networks to handle ultra-reliable timing-critical services, whereas MACsec allows data center operators to enable hardware-based link-layer security. The combination of the X9340P and the previously announced Alaska C X93160 PHY provides a pin-compatible, versatile platform for retiming, gear boxing, encryption, and timing applications at speeds up to 800 GbE.

- April 2022 - Cadence Design Systems Inc. announced the Cadence High-Speed Ethernet Controller IP family, enabling complete Ethernet subsystem solutions up to 800G. The company also introduced Cadence SerDes PHY IP in 7 nm, 5 nm, and 3 nm process nodes, optimized for power, performance, and area (PPA). The low-latency, high-speed controller IP expands Cadence's Ethernet Controller IP portfolio and is well suited for vast applications of Ethernet in new-age artificial intelligence and machine learning (AI/ML), cloud, and 5G infrastructures. The new controller family supports different aggregated bandwidths for 100G, 200G, 400G, and 800G Ethernet.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

1 INTRODUCTION

1.1 Study Assumptions and Market Definition

1.2 Scope of the Study

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET DYNAMICS

4.1 Market Overview

4.2 Market Drivers

4.2.1 Adoption of EtherCat for Realtime Network for Machine Control

4.2.2 Adoption of USB Ethernet Controllers

4.3 Market Restraints

4.3.1 Low Demand Due to Impact of COVID-19

4.3.2 Competitive Prices Led to Stiff Profit Margins

4.4 Industry Value Chain Analysis

4.5 Industry Attractiveness - Porter's Five Forces Analysis

4.5.1 Bargaining Power of Suppliers

4.5.2 Bargaining Power of Buyers

4.5.3 Threat of New Entrants

4.5.4 Threat of Substitute Products

4.5.5 Intensity of Competitive Rivalry

4.6 Assessment of the Impact of COVID-19 on the Market

5 MARKET SEGMENTATION

5.1 Bandwidth Type

5.1.1 Fast Ethernet

5.1.2 Gigabit Ethernet

5.1.3 Switch Ethernet

5.2 Function

5.2.1 PHY (Physical Layer)

5.2.2 Integrated

5.3 End User

5.3.1 Servers

5.3.2 Routers and Switches

5.3.3 Consumer Applications

5.3.4 Other End Users

5.4 Geography

5.4.1 North America

5.4.1.1 United States

5.4.1.2 Canada

5.4.2 Europe

5.4.2.1 Germany

5.4.2.2 United Kingdom

5.4.2.3 France

5.4.2.4 Rest of Europe

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 5.4.3 Asia Pacific
 - 5.4.3.1 India
 - 5.4.3.2 China
 - 5.4.3.3 Japan
 - 5.4.3.4 Rest of Asia Pacific
- 5.4.4 Latin America
- 5.4.5 Middle East and Africa

6 COMPETITIVE LANDSCAPE

6.1 Company Profiles

6.1.1 Intel Corporation

6.1.2 Broadcom Inc.

6.1.3 Microchip Technology Inc.

6.1.4 Cirrus Logic Inc.

6.1.5 Texas Instruments Incorporated

6.1.6 Silicon Laboratories, Inc.

6.1.7 Marvell Technology Group

6.1.8 Realtek Semiconductor Corp.

6.1.9 Cadence Design Systems, Inc.

6.1.10 Futurlec Inc.

7 INVESTMENT ANALYSIS

8 MARKET OPPORTUNITIES AND FUTURE TRENDS

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Ethernet Controller - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 139 pages | Mordor Intelligence

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	\$4750.00
	Team License (1-7 Users)	\$5250.00
	Site License	\$6500.00
	Corporate License	\$8750.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>
		Date	<input type="text" value="2026-03-03"/>
		Signature	

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

