

Time Sensitive Networking Market – Global Industry Size, Share, Trends, Opportunity, and Forecast. 2018-2028 Segmented By Component Type (Switches, Hubs, Routers & Gateways, Controller & Processors, Isolators & Converters, Connectors, Communication Interfaces and Others), By Application (Industrial Automation, Power & Energy, Automotive, Transportation, Oil & Gas, Aerospace, and Others), By Region, Competition

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Abstracts

Global Time Sensitive Networking Market is anticipated to thrive in the forecast period 2024-2028. Time sensitive networking (TSN) is a distinctive and ground-breaking technology that is becoming more and more prevalent. Advancement in the technology development such as in the Industrial Internet of Things, machine learning has empowered and implemented futureproof industry 4.0 applications for the manufacturing and automation sectors. Moreover, snowballing rollout of 5G technology and wireless time sensitive networking has enabled major firms in providing next level of connectivity and optimization solutions integrated with automation in machines to their clientele. Additionally, benefits like ease of network configuration, accurate motion control, low latency, secure networks, reduction system costs, and future enhancements capabilities are boosting the demand for time sensitive networking market across the globe.

The time sensitive networking refers to a set of Ethernet sub-standards technology devices and gadgets designed by the Institute of Electrical and Electronic Engineers (IEEE) that provide deterministic messaging on standard Ethernet. It redefines the

industrial connectivity environment and creates a framework for the integration of information technology (IT) and industrial operations technology (OT). Time sensitive networking technologies are centrally managed and deliver guarantees of delivery and help minimize jitter by using the time scheduling for real time applications that require determinism. The payloads flexibility of the ethernet framework and the ability of forwarding decisions by the TSN bridges makes it capable of carrying the payload of any industrial applications and offers a suitable environment. The TSN components known as TSN flow, end devices, bridges, central network controller (CNC) and centralized user configuration (CUC) are used for time sensitive networking solutions to connect the diverse devices for data streams with real-time requirements.

Growing adoption of industrial automation in industries

Time sensitive networking is a key for industrial applications such as process and machine controls where low communication latency and minimal jitter are critical to meet closed loop control requirements. Technological connectivity like TSN Testbed is enabling adoption of smart IoT solutions, critical industrial IoT & industry 4.0 solutions in the automation industries supporting the real time control and synchronization of high-performance machines over a single, standard Ethernet network. This connectivity enables customers, suppliers, and vendors to rely more towards readily available data to support rapid manufacturing reconfiguration with plant downtime reduction. Critical control applications like robot control, drive control, IO, vision systems have become easy to get accessed. Thus, the growing adoption of industrial automation in the various industries is raising the demand of time sensitive networking market.

Increasing number for real time networking for various applications

The objective of real time networking approach is to assess the state of current network connection and exchange information instantly with negligible latency or transmission delay when it is necessary. Real time communication with the help of time sensitive networking has opened the path to integrating with varied applications. The increasing number of smart devices coupled with real time sensitive networking to deliver high data transmission rates with deterministic Ethernet has inspired major players to include such methods into their current products and services. This is given the boost to time sensitive networking market across the global. Moreover, autonomous supply chain and smart manufacturing techniques require smart and connected items as essential elements. The emergence of low-cost linked devices has enabled the manufacturers to deploy IoT technology to enhance overall production and minimize resource consumption. Furthermore, because IoT apps have a minimal operational cost, many

enterprises are now incorporating them into their equipment to increase production while spending less.

Development of Different Industrial Ethernet Protocols

The industrial ethernet is the fastest growing communication protocol within industrial automation and control systems. The popularity and ubiquity of Ethernet has continued to motivate the upgradation to traditional industrial Ethernet. Many different industrial Ethernet protocols have been implemented in the field such as EtherCAT, EtherNet/IP, Profinet, and Powerlink. Future industrial Ethernet protocols will continue to evolve and converge to deliver hard, real-time, deterministic communication links with better reliability and integrated safety. The low-cost, adaptable system can support multiple and precision time protocols (PTP) enabling flexible network topologies that scale with the number of network nodes are increasing the growth of Time Sensitive Networking Market across the globe.

Market Segmentation

The global time sensitive networking market is segmented based on component type, application type, and region. By component, market is bifurcated into switches, hubs, routers & gateways, controller & processors, isolators & converters, connectors, communication interfaces, and others. Based on application, segment is further categorized into industrial automation, power & energy, automotive, transportation, oil & gas, aerospace, and others.

Market Player

Major market players in the global time sensitive networking market are Cisco Systems Inc., NXP Semiconductors N.V., Marvell Technology Group Ltd., Microsemi Corporation, Intel Corporation, Xilinx, Inc., National Instruments Corporation, Analog Devices, Inc., Belden Inc., Broadcom Limited, and others.

Report Scope:

In this report, the global time sensitive networking market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Time Sensitive Networking Market, By Component Type

Switches

Hubs

Routers & Gateways

Controllers & Processors

Isolators & Converters

Connectors

Communication Interfaces

Others

Time Sensitive Networking Market, By Application

Industrial Automation

Power & Energy

Automotive

Transportation

Oil & Gas

Aerospace

Others

Time Sensitive Networking Market, By End User Vertical

Manufacturing

Energy

Healthcare

Metals & Mining

Retail

Others

Time Sensitive Networking Market, By Region:

North America

United States

Canada

Mexico

Asia-Pacific

India

Japan

South Korea

Australia

China

Europe

Germany

United Kingdom

France

Spain

Italy

South America

Brazil

Argentina

Colombia

Middle East

Saudi Arabia

South Africa

UAE

Kuwait

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the global time sensitive networking market.

Available Customizations:

Global time sensitive networking market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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