

Global Silicon Photonics Market Size, Share, Price, Trends, Growth, Analysis, Key Players, Report, Forecast 2022-2027

Global Silicon Photonics Market Size To Grow At A CAGR Of 42.1% In The Forecast Period Of 2022-2027

SHERIDAN, WYOMING, UNITED STATES, January 17, 2023 /EINPresswire.com/ -- The 'Global [Silicon Photonics Market Size](#), Share, Trends, Report and Forecast 2022-2027' by Expert Market Research gives an extensive outlook of the global silicon photonics market, assessing the market on the basis of its segments like products, components, applications, and major regions.



Silicon Photonics Market

The report studies the latest updates in the market, along with their impact across the market. It also analysis the market demand, together with its price and demand indicators. The report also tracks the market on the bases of SWOT and Porter's Five Forces Models.

The key highlights of the report include:

Market Overview (2017-2027)

Forecast CAGR (2022-2027): 42.1%

Forecast Market Size (2027): USD 7.8 billion

With an upsurge in demand for high data transfer capabilities and high bandwidth, the silicon photonics market is growing across the globe. There is increasing demand for silicon photonics to create photonic integrated circuits and usage of silicon photonics in expanding in optical datacom, biomedical, sensing, automotive, aerospace, astronomy, AI applications, and AR/VR. The wide range of applications are expected to boost the market growth during the forecast period.

Photonic integrated circuits extend, assist, as well as enhance data transmission and are likely to use less power and create less heat than conventional electronic circuits, providing the assurance of energy-efficient bandwidth scaling. This is further expected to augment the demand for silicon photonics in the coming years.

Silicon photonics is useful for the production of electronic complementary metal-oxide-semiconductors, which enable silicon photonics-based photonic integrated circuits to be manufactured utilising recognised foundry infrastructure. Older complementary metal-oxide-semiconductors nodes are likely to be entirely able to produce and pattern photonic devices and circuits.

Key aspects driving the growth of the silicon photonics market are the surging awareness regarding the advantages of optoelectronics and the rising popularity of 5G transmission. Other factors driving the market growth are the introduction of varied applications of silicon photonics and the rising penetration of smartphones in the automotive industry.

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Silicon Photonics Industry Definition and Major Segments

Silicon photonics is an advanced technology involving application of photonic systems for processing, generating, manipulating, and then utilising light for faster data transfer both within and between microchips with silicon employed as the optical medium. Optical rays can carry far more data in less time as compared to electrical conductors. The operation is in infrared wavelengths, which are employed in fibre-optic telecommunication systems.

The market can be broadly categorised on the basis of products into:

- Optical Multiplexers
- Active Optical Cable
- Fibre Optical Switches
- Transceiver
- Others

On the basis of its component, the market can be divided into:

- Photodetectors
- Laser
- Modulators
- Others

Based on application, the market can be segmented into:

Data Centre and High-Performance Computing
Telecommunications
Others

Based on region, the market is divided into:

North America
Latin America
Asia Pacific
Europe
Middle East and Africa

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Silicon Photonics Market Trends

The global silicon photonics market is anticipated to gain momentum over the coming years on account of the significant increase in the demand for faster data transfer technologies like silicon photonics. This is due to the growing number of data centres and rapid digitalisation.

The adoption of silicone products substantially augments the processing and computational capabilities of data centres and decreases cost. This is likely to propel the silicon photonics market growth. The products of silicon photonics are progressively developing standard solutions for high-speed transmission due to their low energy consumption, reliability, cost-effective features, and higher integration. They have emerged as ideal alternatives for traditional electronic elements.

The surging silicone photonics application across various industries like healthcare, IT, metrology, electronics, and defence, among others is expected to escalate the market growth of silicon photonics around the world. Moreover, the incorporation of silicon photonics in light detection and ranging (Lidar) to evaluate pollutants and support self-driving among autonomous cars is likely to aid new growth opportunities in the market. The growing trend of miniaturisation of electronic devices and rising development of semiconductor and electronics industries is expected to fuel the silicon photonics products sales over the upcoming years.

Geographically, the North American region is anticipated to register significant growth in the silicon photonics market share on account of the rise in demand for data transfer, initiatives by governments, and early adoption of innovative technologies. Meanwhile, the Asia Pacific region is expected to witness market growth owing to the growing economies in the region, along with significant consumption and production of electronics in China.

Key Market Players

The major players in the global silicon photonics market report are Cisco Systems, Inc., Intel Corporation, IBM Corporation, NeoPhotonics Corporation, Hamamatsu Photonics K.K, and STMicroelectronics N.V., among others. The report covers the market shares, capacities, plant turnarounds, expansions, investments and mergers and acquisitions, among other latest developments of these market players.

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