

Indium Gallium Arsenide Market: Poised to Reach \$2.58 Billion by 2034

Indium Gallium Arsenide (InGaAs) Market Sees Robust Growth Fueled by Demand for High-Speed Communication and Data Transmission Solutions, States Fact.MR

ROCKVILLE, MD, UNITED STATES, January 7, 2025 /EINPresswire.com/ -- The [indium gallium arsenide market](#) is anticipated to grow at a compound annual growth rate (CAGR) of 7.2% from 2024 to 2034, from a projected valuation of US\$ 1,288.9 million in 2024 to US\$ 2,583.2 million by 2034.



The growing demand for high-speed communication and data transmission, especially in the fields of telecommunication, defense, and aerospace, acts as a driving force towards the growth in the InGaAs market. InGaAs has superior electron mobility, sensitivity to NIR and SWIR wavelengths, and high radiation tolerance, hence ideal for high-frequency and high-bandwidth applications. Besides, InGaAs is also present in the photodetectors, optical fibers, and laser diodes used in 5G infrastructure, fiber optics, and satellite communication.

Recent market trends indicate that firms are into strategic partnerships and acquisitions for capacity building in order to integrate high-end technologies. High production costs and restricted availability of raw material act as limiting factors for wider adoption.

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The U.S. and China are considered as the most dynamic growth regions due to developing telecommunications and defense. The PIN photodiode is used largely due to its fit with high-speed optical communication and cost-effectiveness.

Key Takeaways from the Market Study

During 2024-2034, the market will expand with a CAGR of 7.2%. Among regions, East Asia exhibits the fastest growth with a CAGR of 7.9%.

PIN photodiodes hold about 42.8% of the share in the product type segment. In the end-use industry, telecommunications hold about 32.2% of the market in 2024.

The global indium gallium arsenide market growth was about 5.6% during the historic period (2019-2023).

"The InGaAs Market is Poised for Robust Growth, Driven by Increasing Demand for High-Speed Communication and Advancements in 5g, Defense, and Optical Technologies," says a Fact.MR analyst.

Market Growth Strategies

Recent developments indicate a strong growth trajectory in the indium gallium arsenide (InGaAs) market, driven by advancements in optoelectronic device production and increasing demand for high-performance applications. The launch of sensitive avalanche photodiodes enhances capabilities in LiDAR and optical-fiber systems, while strategic partnerships boost manufacturing efficiency and product integration. For instance,

In October 2022, AIXTRON SE has received an order from Furukawa FTEL Optical Device Co., Ltd. in Japan for its AIX 2800G4 MOCVD system to support the development and production of optoelectronic devices based on GaAs and InP. The equipment is valued for its superior epitaxial layer uniformity and high-volume manufacturing efficiency.

Rising Demand for High-Speed Communication and Data Transmission

High needs for fast data transfer and communication across a range of corporate domains are the primary factors propelling the InGaAs market. In tandem with the development of communications technologies, the telecoms industry is seeing a surge in demand for the use of faster and more effective transmission networks.

In this regard, InGaAs's wide spectrum range and higher electron mobility make it the perfect choice for high frequency and high bandwidth applications. In high-speed communication networks like 5G and fiber optics, all of these materials find employment in photodetectors, optical fibers, and laser diodes.

The need for InGaAs components has also increased due to the deployment of 5G infrastructure and advancements in satellite communications. Due to their ability to provide larger data speeds and fewer signal losses, InGaAs-based devices are well-positioned to take the majority of the growing market as needs for data transmission rise.

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Growing Uptake in High-Performance Domains Like the Defense, Industrial, and Telecommunications Sectors

The growing use of InGaAs for high-performance applications in the industries, defense, and telecommunications sectors will further contribute to the market's robust expansion in the US. The nation's emphasis on cutting-edge military technology and its expanding need for better imaging solutions for security and surveillance are the main drivers of demand. Because InGaAs is ideal for high-speed optical communication systems, the expansion of 5G infrastructure and the development in data centers are two other reasons that have contributed to the growth of the InGaAs market in the U.S.

One of the main drivers of growth in the US is the government's support for developments in the fields of defense and aerospace, where InGaAs is utilized for night vision and infrared detection systems. The United States will continue to hold the top spot in the worldwide market for InGaAs as it is primarily an innovation-driven country that prioritizes technical breakthroughs.

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[SiC & GaN Power Semiconductor Market](#) In 2024, the global market for SiC and GaN power semiconductors is projected to grow to a value of US\$1.41 billion. SiC and GaN power semiconductor sales are expected to reach US\$11.08 billion by the end of 2034, growing at a compound annual growth rate (CAGR) of 22.9%.

[Shortwave Infrared Market](#) In 2024, the shortwave infrared market is projected to be valued at US\$206.5 million. It is anticipated to increase at a compound annual growth rate (CAGR) of 7.1% from 2024 to 2034, reaching US\$ 410.0 million.

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