*The information contained in this section, unless otherwise indicated, has been derived from various official government publications and other publications and the market research report prepared by Frost & Sullivan which we commissioned (the "**F&S Report**"). We engaged Frost & Sullivan for preparing the F&S Report in respect of the* **[REDACTED]**. *We have not, nor have any of the Sole Sponsor,* **[REDACTED]**, *or any of their respective directors, officers or representatives or any other parties involved in the* **[REDACTED]**, *independently verified the information in the various official government publications nor give any representation as to the accuracy.*

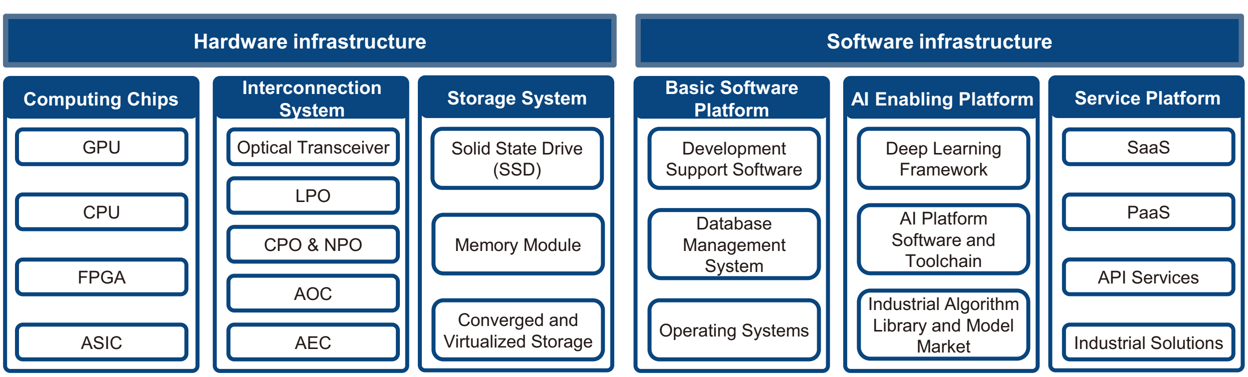
MACRO BACKGROUND OF OPTOELECTRONIC INTERCONNECTION MARKET DEVELOPMENT IN THE AI ERA

AI Industry Development Driving the Evolution of Communication Networks

In recent years, the rapid development of the artificial intelligence (AI) industry has imposed higher demands on communication networks, profoundly driving innovation and application in optoelectronic interconnection technologies.

AI's infrastructure comprises two major components: hardware and software. On one hand, computing, storage, and networking hardware infrastructure collectively form the hardware foundation that supports the widespread application of new-generation artificial intelligence. On the other hand, diverse machine learning frameworks, algorithms, and related tool software, PaaS platforms, and services together constitute the software-based infrastructure that enables the development and continuous innovation of AI applications.

AI's Infrastructure



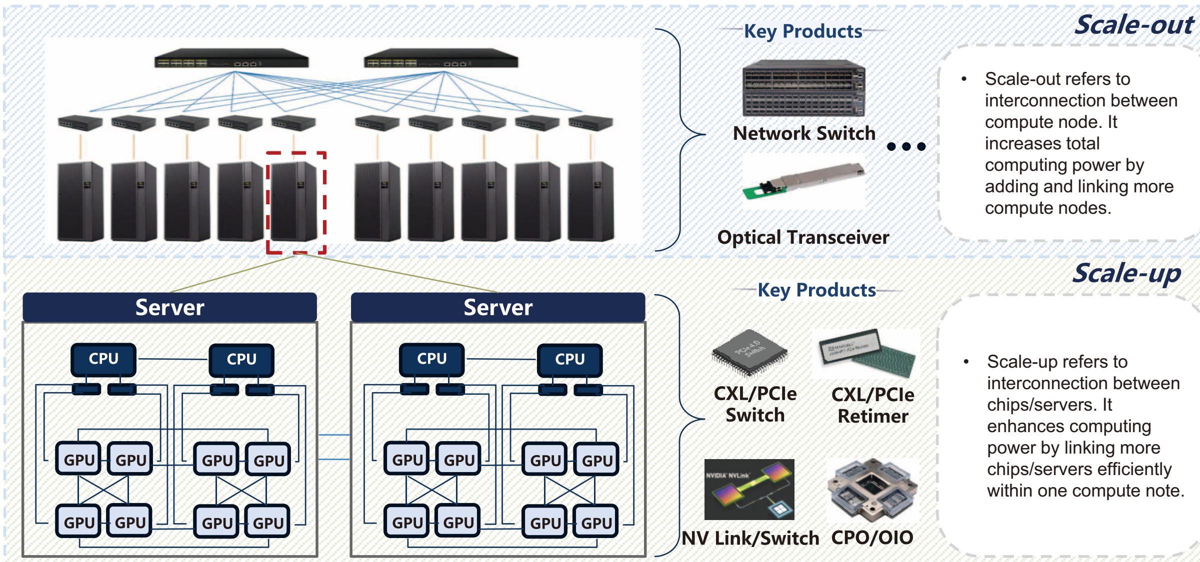
Source: Frost & Sullivan

At the computing power level, the explosive growth in demand for AI large model training and inference is driving computing clusters to scale from thousands of cards to tens of thousands of cards, promoting the construction of ultra-large-scale intelligent computing centers and forming a cross-regional, multi-center computing system.

In terms of data center network architecture, AI workloads are driving traditional networks to evolve towards smarter and more efficient directions, requiring simultaneous improvements in both scale-out and scale-up capabilities. Scale-out relies on high-bandwidth, lossless interconnection between computing nodes, while scale-up focuses on ultra-fast data interaction at the chip and server levels.

This shift has given rise to new data center networks with dynamic perception and flexible resource scheduling capabilities. Benefiting from their advantages in high-density, low-power interconnections, optoelectronic interconnection technologies have become the core foundation for achieving high-speed connections within data centers and between data centers, thereby strongly supporting the collaboration and global scheduling of distributed computing resources driven by AI.

High-Speed Interconnection Network Architecture Diagram

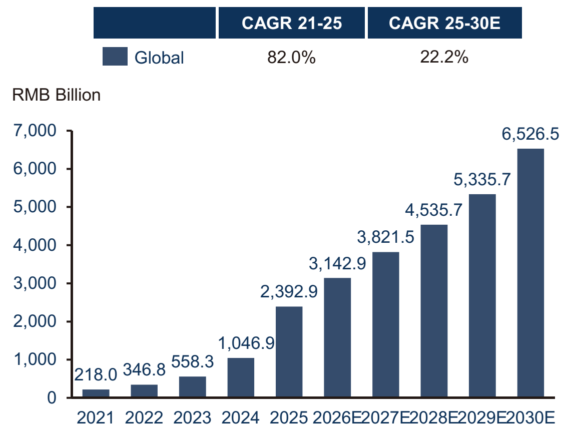


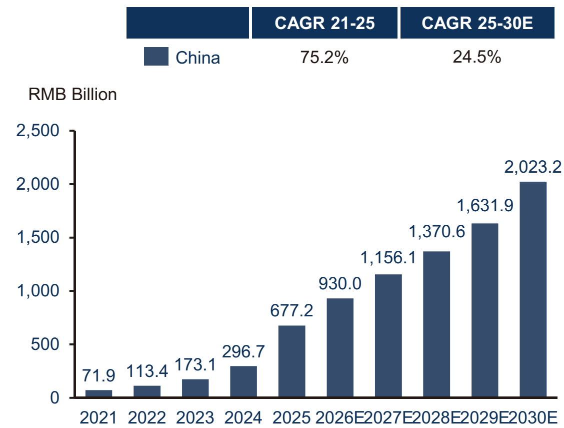
Source: Frost & Sullivan

Amid the global race for supremacy in AI industry, computing power has emerged as a core metric for assessing a nation's AI competitiveness. China is steadily enhancing its global standing in this field through the continuous scaling-up of its AI computing capacity. In 2025, the scale of Al computing power in China was 741.3 EFLOPs, and it is expected to increase to 3,633.4 EFLOPs in 2030, representing a CAGR of 37.4% from 2025 to 2030.

Driven by massive investments from tech giants and the widespread industrialization of AI applications, global investment in AI infrastructure increased rapidly from 2020 to 2024, and this growth is projected to continue due to the structural shift in computing demand towards inference and the expansion of cloud-based AI services. In 2025, global investment in AI infrastructure increased from RMB218.0 billion in 2021 to RMB2,392.9 billion in 2025, representing a CAGR of 82.0%. It's projected that the investment amount will further grow to RMB6,526.5 billion by 2030, with a CAGR of 22.2% from 2025 to 2030. In 2025, China's investment in AI infrastructure increased from RMB71.9 billion in 2021 to RMB677.2 billion in 2025, representing a CAGR of 75.2%. It's projected that the investment amount will further grow to RMB2,023.2 billion by 2030, with a CAGR of 24.5% from 2025 to 2030.

AI Infrastructure Investment, Global and China, 2021-2030E





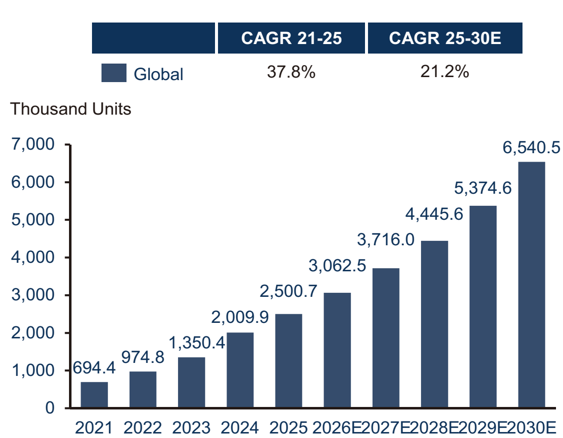
Source: Frost & Sullivan

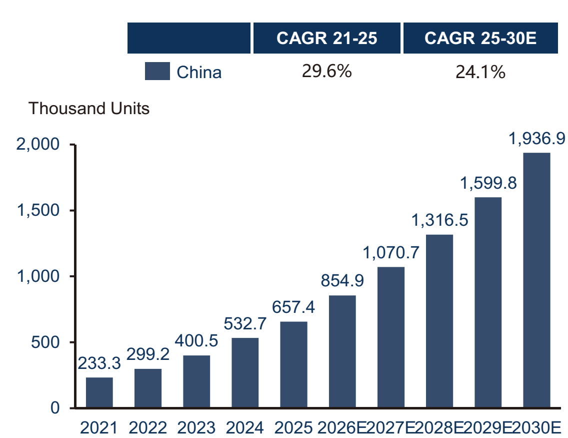
Market Size of Global and China's AI Server

The need for large model training and inference primarily drives the growth in AI server demand. To facilitate massive data interactions inherent in multi-chip cluster architectures, high-bandwidth, low-latency interconnection technologies are essential. This dependency directly stimulates market demand for various interconnect chips, including those adhering to PCIe/CXL standards, as well as Ethernet and optoelectronic interconnect solutions (such as AOC, AEC). Concurrently, this trend is accelerating the necessity for system main memory characterized by both greater capacity and enhanced bandwidth.

In 2025, global shipments of AI servers increased from 694.4 thousand units in 2021 to 2,500.7 thousand units in 2025, representing a CAGR of 37.8%. It's projected that shipments will further grow to 6,540.5 thousand units by 2030, with a CAGR of 21.2% from 2025 to 2030. In 2025, China's shipments of AI servers increased from 233.3 thousand units in 2021 to 657.4 thousand units in 2025, representing a CAGR of 29.6%. It's projected that shipments will further grow to 1,936.9 thousand units by 2030, with a CAGR of 24.1% from 2025 to 2030.

Shipments of AI Server, Global and China, 2021-2030E





Source: Frost & Sullivan

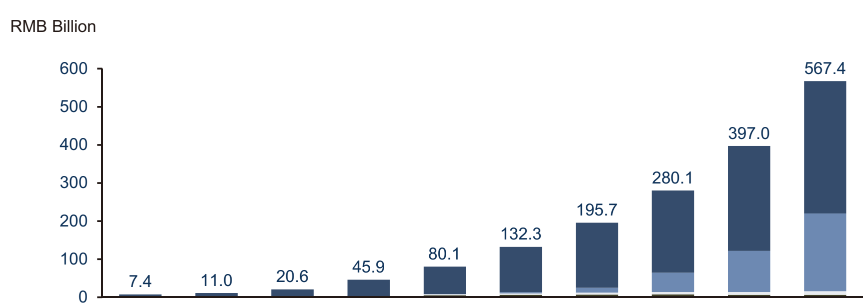
Market Size of Global Optoelectronic Interconnection

By product type, optoelectronic interconnect products mainly include pluggable AI optical transceivers, Co-Packaged Optics/Near-Packaged Optics (CPO/NPO), and Active Electrical Cables (AEC), and others. A pluggable optical transceiver connects to a server, GPU, or other device at one end to receive electrical signals, and connects to an optical fibre at the other end, enabling bidirectional conversion between electrical and optical signals, thereby completing data transmission between devices. Co-Packaged Optics (CPO) and Near-Packaged Optics (NPO) highly integrate the optical engine with the switch chip or AI accelerator chip. By shortening the electrical interconnect path, they systematically achieve the highest bandwidth density and lowest transmission power consumption, making them core solutions for building the next generation of ultra-large-scale computing clusters. Active Electrical Cables (AEC) integrate chips at both ends of the copper cable, effectively improving signal transmission quality. While maintaining advantages of low cost and low power consumption, they achieve better transmission performance than passive copper cables. They have become a key solution for short-distance connections within AI data centers.

Driven by the explosive growth in AI computing demand and the large-scale deployment of data centers, the sales value of optoelectronic interconnection increased rapidly from 2021 to 2025. In the future, this trend is expected to continue growing because of continuous technological advancements towards 1.6T/3.2T and the commercial adoption of emerging CPO/NPO solutions.

In 2025, global optoelectronic interconnect sales increased from RMB7.4 billion in 2021 to RMB80.1 billion, with a CAGR of 81.2%. Sales are expected to further increase to RMB567.4 billion by 2030, with a CAGR of 47.9% from 2025 to 2030.

Sales Value of Optoelectronic Interconnection (by Product Type), Global, 2021-2030E



	2021	2022	2023	2024	2025	2026E	2027E	2028E	2029E	2030E	CAGR (21-25)	CAGR (25-30E)
AI Optical Transceivers	7.0	10.4	19.0	42.8	71.8	119.3	170.8	215.9	275.3	347.5	79.0%	37.1%
CPO / NPO	0.0	0.0	0.0	0.0	0.6	3.0	12.9	50.7	108.0	204.2	N/A	218.7%
AEC	0.1	0.1	0.4	0.8	2.4	3.7	5.0	6.4	7.3	9.2	151.6%	30.3%
Other	0.4	0.5	1.2	2.3	5.3	6.3	6.9	7.1	6.4	6.5	93.1%	4.2%
Total	**7.4**	**11.0**	**20.6**	**45.9**	**80.1**	**132.3**	**195.7**	**280.1**	**397.0**	**567.4**	**81.2%**	**47.9%**

Source: Frost & Sullivan

ANALYSIS OF GLOBAL AND CHINA'S AI OPTICAL TRANSCEIVER MARKET

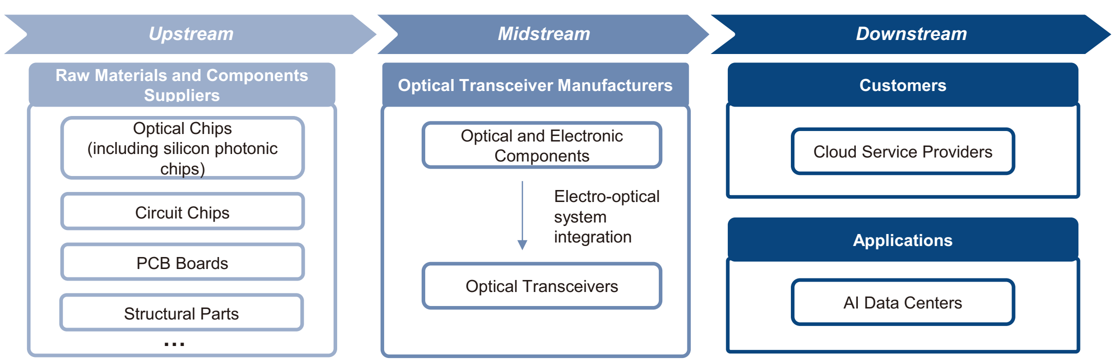
Overview of AI Optical Transceiver Market

AI optical transceivers refer to optical transceivers used to meet the ultra-high bandwidth and low latency requirements of AI computing clusters. These products are typically deployed in AI data centers to solve the bottleneck of massive data exchange.

In terms of transmission rate, due to the high requirements of AI computing clusters for data throughput and transmission capacity, AI optical transceivers are mainly those above 100G, including 100G, 200G, 400G, 800G, 1.6T, and 3.2T. Furthermore, segmented by technology route, AI optical transceivers can be broadly divided into silicon photonics optical transceivers, which have significant cost and power consumption advantages in ultra-high-speed scenarios, and non-silicon photonics optical transceivers.

The optical transceiver industry chain covers three major links: The upstream is centered on material and component supply, including core components such as optical chips (including silicon photonic chips), integrated circuit chips, PCBs, and structural parts etc. The midstream is engaged in the integration and manufacturing of optical transceivers, achieving efficient data transmission functions through the integration of optoelectronic components. Downstream customers are primarily cloud service providers, who purchase AI optical transceivers for application in AI data centers.

Industry Value Chain of Optical Transceiver



Source: Frost & Sullivan

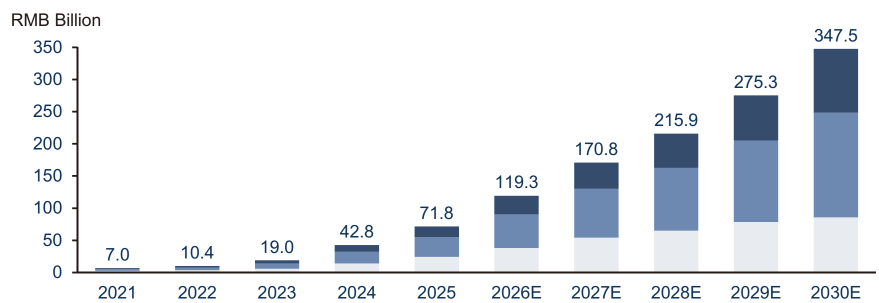
Market Size of Global AI Optical Transceivers Market

Driven by the rapid development of large language model training, inference, and commercial application, global cloud service providers and large internet companies have invested heavily in building AI data centers. As the key "data arteries" enabling high-speed interconnection within data centers, the demand for AI optical transceivers has surged accordingly. The global AI optical transceiver market grew from RMB7.0 billion in 2021 to RMB71.8 billion in 2025, with a CAGR of 79.0%. Looking ahead, the global AI optical transceiver market is expected to further expand, driven by the continuous iteration of next-generation high-speed products (such as 1.6T and 3.2T) and the gradual commercial penetration of new low-power architectures. It is projected that by 2030, the global AI optical transceiver market will reach RMB347.5 billion, representing a CAGR of 37.1% from 2025 to 2030.

North America is currently the largest regional market for optical transceivers globally, accounting for 43% of the global market share in 2025. The leading position of this region is mainly attributed to the continuous investment by tech giants such as Amazon and Google in hyperscale data centers, as well as the exponential growth in bandwidth demand triggered by the generative AI boom. These factors collectively drive long-term strong demand for higher-speed optical transceivers, consolidating North America's leading position.

China is the fastest-growing optical transceiver market globally, with a CAGR of 79.6% from 2021 to 2025, and is expected to maintain a high CAGR of 42.8% from 2025 to 2030, continuing to be the fastest-growing market globally. This growth momentum stems from localized initiatives such as the national "East Data West Computing" project and the increasing investments in AI infrastructure by major Chinese hyper-scale cloud providers, which are continuously driving large-scale data center construction, especially AI data centers, thereby stimulating sustained demand for AI optical transceivers.

Sales Value of AI Optical Transceivers (by Region), Global, 2021-2030E



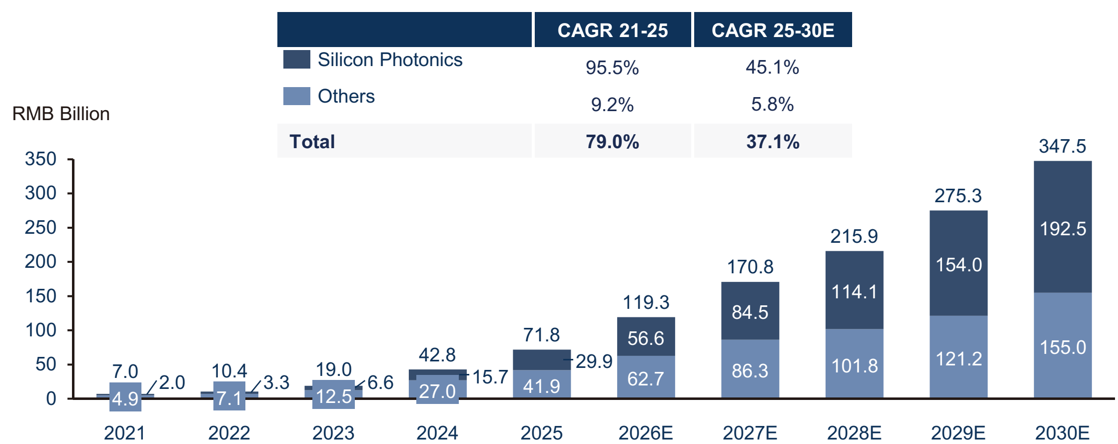
	2021	2022	2023	2024	2025	2026E	2027E	2028E	2029E	2030E	CAGR (21-25)	CAGR (25-30E)
China	1.6	2.5	5.0	10.6	16.7	29.0	40.7	53.2	70.2	99.0	79.6%	42.8%
North America	2.8	4.3	7.9	18.0	30.7	52.0	75.9	97.6	126.6	162.6	81.5%	39.6%
RoW	2.6	3.6	6.1	14.2	24.4	38.3	54.3	65.1	78.5	85.8	75.7%	28.6%
Total	**7.0**	**10.4**	**19.0**	**42.8**	**71.8**	**119.3**	**170.8**	**215.9**	**275.3**	**347.5**	**79.0%**	**37.1%**

Source: Frost & Sullivan

From a technology perspective, silicon photonics is a technology system based on silicon semiconductor materials, utilizing CMOS-compatible processes (aligned with traditional chip manufacturing) to integrate functions such as optical signal generation, transmission, modulation, and detection onto a single silicon chip. Its core value lies in overcoming the limitations of traditional discrete optoelectronic devices (such as high cost, low integration, and high power consumption) by leveraging the cost-effectiveness of silicon and mature semiconductor manufacturing processes. This enables the miniaturization and mass production of optoelectronic components while achieving high speed and low power consumption, making silicon photonics a key bridge connecting "optical communication" and "semiconductor" technologies.

Driven by the dual forces of surging demand for high-speed and high-bandwidth driven by AI computing power growth, and the continuous maturation and improvement of silicon photonics technology, the market for AI optical transceivers utilizing silicon photonics technology has experienced explosive development in recent years, growing from RMB2.0 billion in 2021 to approximately RMB29.9 billion in 2025, achieving a CAGR of approximately 95.5%. Looking ahead, the market for AI optical transceivers utilizing silicon photonics technology is expected to further expand, with projected sales revenue reaching RMB192.5 billion in 2030, representing a CAGR of 45.1% from 2025 to 2030.

Sales Value of AI Optical Transceivers (by Technology), Global, 2021-2030E



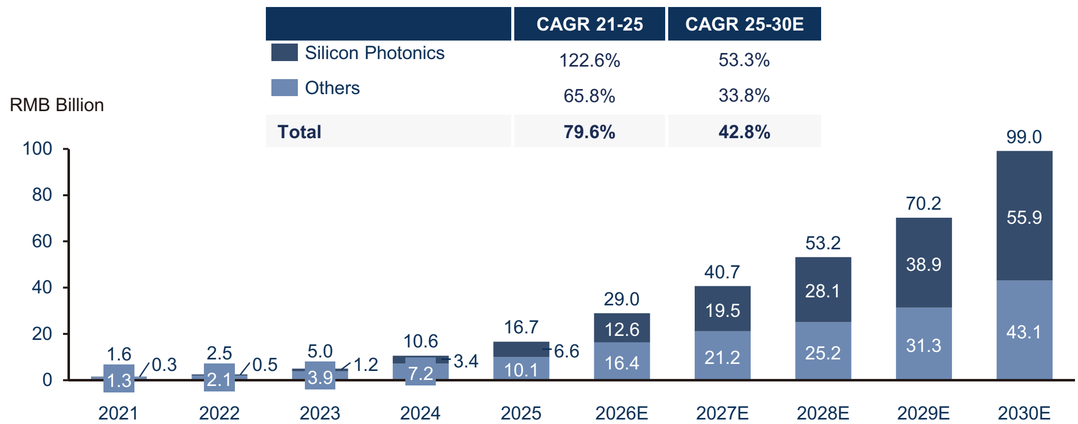
Source: Frost & Sullivan

Market Size of China's AI Optical Transceivers

Benefiting from the rigid demand for high-speed interconnection brought by the surge in AI and computing power demand, and the national "East Data West Computing" project promoting the integrated layout of national large data centers, China's AI optical transceiver market size has grown from RMB1.6 billion in 2021 to RMB16.7 billion in 2025, with a CAGR of 79.6%. During the forecast period, this market is expected to further increase to RMB99.0 billion by 2030, with a CAGR of 42.8% from 2025 to 2030.

In terms of technology, similar to the global trend, driven by the explosive growth of AI computing demand, accelerated data center upgrades, and major progress in domestic silicon photonics technology, China's AI silicon photonics optical transceiver market experienced rapid growth, rising from RMB0.3 billion in 2021 to RMB6.6 billion in 2025. Looking ahead, with the commercialization of next-generation products such as 1.6T optical transceivers and continuous policy support for the semiconductor and photonics industries domestically, this market is expected to continue its explosive growth to RMB55.9 billion by 2030, with a CAGR of 53.3% from 2025 to 2030.

Sales Value of AI Optical Transceivers (by Technology), China, 2021-2030E



Source: Frost & Sullivan

Drivers of Global and China's Optical Transceiver Market

1) The explosive growth in AI computing demand

Artificial intelligence, particularly generative AI and large model training, has created unprecedented requirements for data transfer rates and bandwidth within data centers. Traditional computing clusters cannot meet the massive data exchange generated by co-work across tens of thousands of GPUs, directly driving iteration and volume expansion of optical transceivers used for high-speed interconnection. 800G optical transceivers have become the mainstream choice for current AI training clusters, while higher-rate products such as 1.6T are already in the pre-commercialization stage. It is expected that as AI model parameter scales continue to expand and application scenarios deepen, demand for high-speed, low-power optical transceivers will maintain strong long-term growth, becoming the most core engine of the market.

2) Global data center upgrades and cloud service expansion

Digital transformation worldwide is driving the continuous construction of hyperscale data centers and upgrades to existing data center network architectures, evolving from 100G/400G to 800G and above. The proliferation of cloud computing, edge computing, and applications like streaming media and IoT has led to sustained rapid growth in global data traffic, imposing higher bandwidth requirements for connections within data centers and between them. This trend not only directly increases the volume of optical transceivers used but also pushes technological development towards lower power consumption and higher density (e.g. silicon photonics, CPO). In China, driven by national projects like "East Data West Computing," the pace of data center construction is accelerating, providing a broad and sustained domestic market for optical transceivers.

3) Strategic national policy support for digital infrastructure

Governments worldwide are recognizing computing infrastructure and broadband networks as strategic assets and implementing policies to support their development. Initiatives such as China's "East Data West Computing" project and the EU's "2030 Digital Compass" aim to enhance high-performance computing and data center capabilities while building high-speed, comprehensive network foundations. These policies not only directly stimulate data center construction and high-speed optical communication demand but also provide strong policy and ecosystem support.

4) Optical Transceiver Technology Iteration and Commercialization Breakthroughs

In recent years, significant breakthroughs in materials, packaging, and integration technologies for optical transceiver have effectively supported the simultaneous achievement of high speed, low power consumption, and cost reduction. Advanced solutions represented by silicon photonics have gradually matured and entered the phase of large-scale commercialization, demonstrating excellent performance and integration advantages in high-speed scenarios such as 800G/1.6T. Meanwhile, new architectures such as CPO and NPO have made substantial progress in reducing system power consumption and latency, providing key technical support for next-generation data centers and AI clusters. The continuous innovation and commercialization of these technologies are constantly expanding the performance boundaries of optical transceivers, promoting their widespread adoption in high-speed data communications, and thereby becoming an important technical driver for market development.

Development Trends of Global and China's Optical Transceiver Market

1) Increasing Demand for High-speed Optical Transceivers

The rapid expansion of cloud computing and AI applications is driving unprecedented growth in global data center infrastructure, intensifying the need for higher bandwidth and lower-latency communication solutions. High-speed optical transceivers, such as 400G, 800G, and the emerging 1.6T variants, have become critical enablers for data center internal connectivity and inter-facility links. These components not only support compute-intensive workloads like AI training and large-scale simulation but also ensure seamless data transmission across cloud, edge, and endpoint layers. Additionally, the technology lifecycle is accelerating markedly: the industry transitioned from 100G to 800G in just a few years, and 1.6T transceivers are poised for widespread commercial deployment. This condensed development cycle is compelling leading suppliers to continuously innovate to keep pace with market expectations and evolving architectural demands.

2) Evolving towards Highly Integrated and Low Power Consumption Solution

As data rates advance beyond 800G towards 1.6T and higher, traditional pluggable transceivers face growing challenges in power consumption and front-panel density. This physical limitation is driving the industry's transition towards more integrated solutions. Co-packaged optics (CPO) and near-packaged optics (NPO) represent a fundamental architectural shift by moving the optical engine closer to, or directly onto the switch ASIC. This integration drastically reduces power consumption by minimizing electrical trace losses and enables a radical increase in port density, thereby addressing the critical bottlenecks in next-generation AI clusters and hyperscale data centers.

3) Continuous Penetration of Silicon Photonics Technology

Silicon photonics, leveraging the unique advantages of mature CMOS processes, demonstrates significant potential in integration, power consumption, and cost efficiency, establishing itself as a critical pathway to meet the demands of high-speed, high-density data centers. With the gradual ramp-up of 800G/1.6T optical transceivers, silicon photonics solutions are increasingly being deployed in AI clusters and hyperscale data centers, emerging as a key force driving technological iteration and reshaping the competitive landscape.

4) Strengthening of Vertically Integration Capabilities

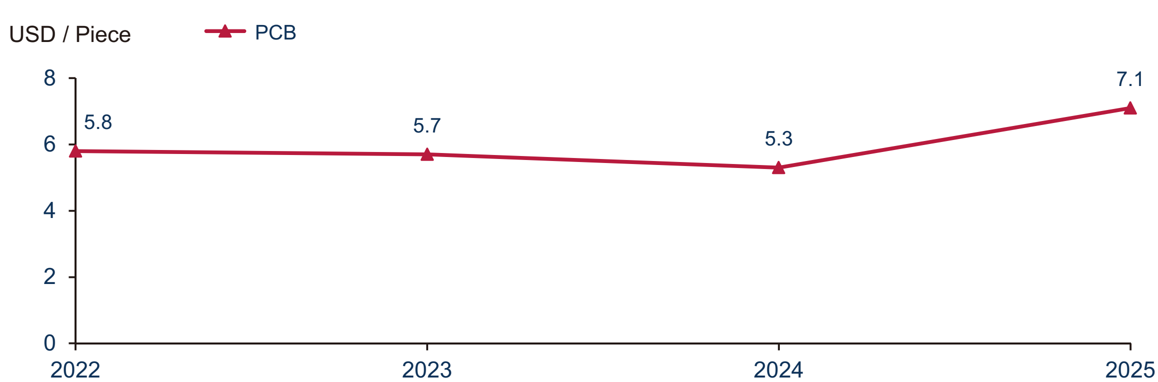
To enhance supply chain resilience and technological autonomy, leading optical transceiver manufacturers in China are actively strengthening vertical integration. By expanding upstream into core optical components and downstream into optical network terminal equipment, these firms are building comprehensive capabilities that span the entire industry chain. This integrated approach not only improves design compatibility and accelerates time-to-market but also allows for more flexible responses to customized customer needs. As a result, companies with full-chain expertise are better positioned to drive product innovation and sustain long-term competitiveness in a rapidly evolving marketplace.

Analysis of Key Raw Material of AI Optical Transceiver

Optical chips serve as a key component in optical transceivers. To address the increasing need for higher transmission speeds in AI data center, optical chips are advancing toward higher data rates and increased power output, which makes the overall price of optical chips rising in recent years. There are considerable price variations across optical chips with different speeds. The prices of optical chips used in low-speed optical transceivers have gradually decreased with growing production volumes, improving manufacturing processes, and Chinese manufacturers continuously strengthening their production capabilities. However, the optical chips used in high-speed optical transceivers have faced supply shortages in recent years due to strong market demand for high-speed optical transceivers, driving their average prices into an upward trend.

Printed circuit boards (PCBs) represent another critical raw material in optical transceivers, primarily functioning as the platform for circuit integration and component interconnection. PCB prices have remained steady in recent years, supported by mature production techniques and a stable supply chain. In 2025, driven by rising copper prices and stronger downstream demand from data centers and AI-related applications, the prices of PCBs used in optical transceivers increased noticeably. Looking ahead to 2026, PCB prices are expected to maintain a relatively fast growth trend, as demand for high-speed and high-performance PCB materials continues to rise.

Average Price of PCB, Global, 2022-2025



Note: The above price refers to the price of PCB used for 400G optical transceivers.

Competitive Landscape of AI Optical Transceiver Market

Overall speaking, participants in the AI optical transceiver industry fall into two categories: specialized optical transceiver suppliers and non-specialized optical transceiver manufacturers. Specialized players refer to companies that primarily develop and produce AI optical transceivers for external sales rather than internal consumption. In contrast, non-specialized manufacturers focus on producing such transceivers mainly for in-house use.

The global AI optical transceiver industry has a total market size of RMB71.8 billion in 2025. Our Company achieved an AI optical transceivers revenue of RMB1.1 billion in 2025, ranking seventh among Chinese specialized AI optical transceiver suppliers, eighth among global specialized AI optical transceiver suppliers and representing a global market share of 1.6%.

Ranking of Chinese Specialized AI Optical Transceiver Suppliers (by Revenue), Global, 2025

Rank	Company Name	2025 Sales (RMB Billion)	Market Share
1	Company A	29.2	40.7%
2	Company B	15.8	22.0%
3	Company C	4.7	6.6%
4	Company D	3.3	4.5%
5	Company E	2.7	3.7%
6	Company F	1.7	2.3%
7	**The Company**	**1.1**	**1.6%**
	Others	13.3	18.6%
	Total	71.8	100.0%

Notes:
Company A is a company listed on the Shenzhen Stock Exchange and established in 2005, with a business focus on the development and manufacturing of optical transceivers.
Company B is a company listed on the Shenzhen Stock Exchange and established in 2008, which is a manufacturer of optical transceivers.
Company C is a company listed on the Shenzhen Stock Exchange and established in 2001, which is a developer and manufacturer of optoelectronic components and modules, including optical transceivers.
Company D is a private company founded in 2003, specializing in the development and manufacturing of optical transceivers, optical chips, and optical network terminals. Company D is a subsidiary of a diversified business group focusing on smart home appliances and technology industries.
Company E is a private company established in 2001, which is a developer and manufacturer of optical transceivers. Company E is a subsidiary of a company listed on the Shenzhen Stock Exchange.
Company F, established in 2001, is a subsidiary of a company listed on the Shenzhen Stock Exchange. It engaged in the manufacturing of fibre optic communication products and related equipment.
Source: Company Reports, Frost & Sullivan

Our Company ranked twelfth among global specialized optical transceiver suppliers in 2025 with the second fastest revenue growth rate within the top twelfth suppliers during the period from 2023 to 2025. It achieved a revenue of RMB1.2 billion in 2025, representing a global market share of 0.8%.

Ranking of Specialized Optical Transceivers Suppliers (by Revenue), Global, 2025

Rank	Company Name	2025 Sales (RMB Billion)	Market Share	Revenue Growth, 2023-2025
1	Company A	37.5	23.1%	91.8%
2	Company B	24.3	15.0%	183.1%
3	Company G	20.5	12.7%	22.2%
4	Company C	10.5	6.5%	47.3%
5	Company D	6.5	4.0%	54.5%
6	Company E	6.1	3.8%	37.8%
7	Company F	4.8	2.9%	91.8%
8	Company H	3.3	2.0%	7.4%
9	Company I	1.7	1.0%	93.7%
10	Company J	1.3	0.8%	18.6%
11	Company K	1.2	0.8%	43.4%
12	**The Company**	**1.2**	**0.8%**	**163.9%**
	Others	42.9	26.5%	
	Total	161.8	100.0%	

Notes:

Company G is a company listed on the New York Stock Exchange and established in 1966, which is a vertically integrated manufacturing company that develops, manufactures, and markets lasers, transceivers, and other optical and optoelectronic devices, modules, and systems, as well as engineered materials, for use in the communications, industrial, instrumentation and electronics markets.

Company H is a supplier of optical and photonic products founded in 2015 and listed on NASDAQ stock exchange.

Company I is a supplier of ICT terminal equipment and high-speed optical transceivers founded in 2006 and listed on the Shanghai Stock Exchange.

Company J is a company founded in 1997 and listed on the NASDAQ stock exchange in the United States, which provides fibre optic access network solutions.

Company K is a company listed on the Shenzhen Stock Exchange and established in 2011, specializing in development and manufacturing of optical transceivers.

Source: Company Reports, Frost & Sullivan

Entry Barriers of Global and China's Optical Transceivers Market

1) Technological Research and Development Barrier

The optical transceiver market is characterized by exceptionally high technical entry barriers across advanced domains such as silicon photonics, low-power high-speed optical communication, and high-density integration. These areas demand interdisciplinary expertise spanning materials science, optoelectronic integration, advanced packaging, and microelectronics. Companies that pioneer next-generation products often secure significant first-mover advantages, necessitating sustained R&D commitment and the ability to keep pace with rapid technological evolution.

2) Customer Barrier

The optical transceiver industry is defined by high customer barriers, with primary clients comprising large cloud service providers, telecom operators, and equipment manufacturers. These customers maintain high standards in product performance, reliability, delivery timelines, and technical support services. Given the strategic importance and scale of procurement, the supplier selection process is highly rigorous, often involving multiple years of verification testing, pilot deployments, and relationship cultivation before large-scale orders are finalized. Notably, the Joint Design Manufacturing (JDM) model further elevates this barrier by deeply embedding suppliers into customers' R&D and lifecycle management processes, creating unparalleled integration and dependency. This results in strong customer stickiness and substantial switching costs, creating a significant barrier to entry for new market players.

3) Supply Chain Barrier

The core upstream resources in the optical transceiver supply chain exhibit strong monopolistic characteristics, and not all enterprises can easily have access to them. Key optoelectronic chips such as high-frequency semiconductor lasers and high-performance photodetectors have long been dominated by a few leading international manufacturers, making it difficult for new entrants to establish stable and cost-competitive supply relationships. Raw materials such as high-end optical fibres require both strong production capacity and technical certification from suppliers, resulting in extremely high entry barriers. In addition, the priority allocation rights for upstream resources are often deeply tied to an enterprise's technical capabilities, order scale, and industry credibility, making it even harder for small and medium-sized enterprises to break through this resource monopoly pattern.

4) Product Comprehensiveness Barrier

The optical transceiver market exhibits significant barriers related to product comprehensiveness, where leading competitors leverage vertically integrated portfolios spanning from optical chips and transceivers to advanced optical network terminals. This full-stack capability allows them to offer end-to-end solutions, realize technical and resource synergies, and enhance supply chain resilience while accelerating product iteration and optimizing cost structures. Such integrated offerings, which are difficult to replicate in the short term, help secure long-term customer relationships through one-stop solutions.

5) Globalization Barrier

The optical transceiver industry operates within a globalized market landscape, requiring participants to establish international footprints in R&D, manufacturing, and sales operations. Leading players maintain competitive advantages through localized service capabilities and worldwide logistics networks that enable rapid response to diverse regional demands. Building such global infrastructure demands not only substantial capital investment but also mature management systems, operational expertise, and long-term customer partnerships—resources that cannot be rapidly replicated.

SOURCE OF INFORMATION AND RESEARCH METHODOLOGY

We engaged Frost & Sullivan for preparing an independent industry report in respect of the global and China's optoelectronic interconnection, silicon photonics, optical transceiver market. The information from Frost & Sullivan disclosed in this document is extracted from the Frost & Sullivan Report, a report commissioned by us for a fee of RMB500,000, and is disclosed with the consent of Frost & Sullivan. The Frost & Sullivan Report has been prepared by Frost & Sullivan independently without any influence from us or other interested parties. Frost & Sullivan is an independent global consulting firm founded in 1961 in New York. Its services include, among others, industry consulting, market strategic consulting and corporate training. Frost & Sullivan conducted (i) primary research, which involved discussing the status of the industry with certain leading industry participants, and interviews with industry experts on a best-effort basis to collect information in aiding in-depth analysis; and (ii) secondary research, which involved reviewing government statistics, industry association publication, company reports, independent research reports and data based on its own research database.

If the track record period extends beyond the period of industry data disclosed and there is no subsequent data in support, a directors' confirmation that there has been no adverse change in the market information since the date of the commissioned research report that may qualify, contradict or impact the information disclosed.