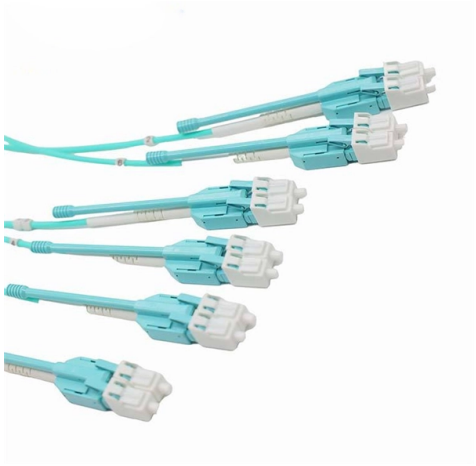
Huawei Optical Chips and Modules



Overview

Optical Modules in General-Purpose Computing Scenarios Huawei offers a comprehensive portfolio of pluggable StarryLink optical modules for data center netw.

Key Takeaways

Huawei develops both high-performance optical modules and in-house optical chips, integrating them to enable ultra-high-speed, reliable, and scalable optical networks.

Optical Modules

Huawei offers a full range of optical modules from GE to 800GE, designed for data centers, enterprise networks, and carrier infrastructure. These modules emphasize three core capabilities: Spanning (ultra-long transmission), Stable (high reliability), and Secure (robust security), ensuring resilient interconnectivity in AI-driven networks. Huawei's modules are pluggable and flexible, supporting multiple interface types and high-density, low-power designs with 25G, 50G, or 100G per lane configurations.

Proprietary solutions include co-packaged optics (CPO) and silicon photonics-based modules, which integrate closely with switches and routers to reduce power consumption and insertion loss.

Optical Chips

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Huawei invests heavily in optical chip development, producing core components such as lasers, modulators, and photodetectors in-house. Key technologies include:oDSP (Optical Digital Signal Processing) chips in the OptiXtreme series, supporting adjustable single-wavelength rates from 100G to 600G, with spectrum efficiency up to 8 bit/s/Hz, and single-fiber capacities reaching 96Tbps. Thin Film Lithium Niobate (TFLN) modulators, which increase bandwidth by 50% and reduce power consumption by 30% compared to traditional indium phosphide modulators, enabling single-wavelength terabit transmission.

Indium Phosphide (InP) chips, developed through strategic investments in companies like Milphoton Semiconductor, supporting 800G and 1. 6T high-speed optical modules, 6G all-photonic wireless base stations, and AI data center interconnects.

Integration and Strategic Focus

By controlling both chip and module design, Huawei achieves vertical integration, improving performance, reliability, and supply chain security. Optical chips and modules are deployed across data centers, metropolitan networks, long-haul transmission systems, and 5G backbones, enabling high-speed, low-latency, and scalable connectivity. Huawei also integrates AI algorithms and system-level innovations to enhance network autonomy and optimize optical interconnect architectures.

Future Directions

Huawei continues to advance photonic integration, AI-driven optical networks, and quantum technologies, aiming to reshape intelligent computing infrastructure. Investments in InP-based chips and co-packaged optics indicate a focus on next-generation 6G networks, terabit-level transmission, and high-speed AI data center interconnects. These developments position Huawei as a leading player in both optical module manufacturing and optical chip innovation.

Article Content

Optical Modules in General-Purpose Computing Scenarios

Huawei offers a comprehensive portfolio of pluggable StarryLink optical modules for data center networks, with various models providing flexible plug-and-play solutions tailored to diverse interface

Optical Modules in Intelligent Computing Scenarios

Huawei provides a full series of pluggable optical modules. A wide variety of modules give you flexible plug-and-play options for all types of interfaces.

DS: Introduction to Huawei''s optical fiber chip technology

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In the future, Huawei will continue to deepen the integration of optical chips with AI and quantum technologies to reshape the information infrastructure of the intelligent era.

Is Huawei a manufacturer of optical chips or optical modules?

Huawei is both a producer of optical modules and a developer of optical chips, but its public identity is stronger in optical modules, as these are the end products deployed worldwide.

Huawei Takes Stake in InP Optical Chip Firm

Against the backdrop of accelerating global deployment of AI computing clusters and intelligent computing infrastructure, demand for 800G

Huawei''s first optical chip factory is completed, and the

With the completion of the Wuhan Huawei Optical Factory project, this also marks that Huawei has finally completed the entire process from chip R&D

Economic Watch: From optical modules to chips

The competitiveness of optical modules also largely hinges on the synergy of the complete upstream industrial chain, covering optical chips, ceramic packages and precision structural

Huawei Optical Module Part Number Decoder

EXECUTIVE SUMMARYThis document provides a comprehensive technical overview of the Huawei Optical Module Part Number Decoder, an essential framework for understanding the nomenclature,

Huawei AI CloudMatrix 384 – China''s Answer to Nvidia

Huawei is making waves with its new AI accelerator and rack scale architecture. Meet China''s newest and most powerful Chinese domestic solution,

Huawei backs optical chip push through photonics supplier investment

Against this backdrop, Huawei is expanding its photonics ecosystem through in-house chip development, capital investment, and global talent recruitment.

Optical Module Market Analysis And Forecast In 2026--ETU-LINK

AI computing power has driven explosive growth in the optical module market,with 800G and 1.6T technologies leading the industry transformation. Chinese companies occupy a dominant

Snowball, the market leader in optical chips and modules

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Overview: Optical Communications as a Core Investment Sector In an era of rapid development in the optical communications industry, optical chips and optical modules have become

What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals, appearance and structure, key performance counters, common types,

Global Optical Transceiver Market Strategic Audit 2026

The current super-normal profits generated by 800G modules have incentivized aggressive brownfield capacity expansions. As upstream optical chip yields improve and assembler

Everything You Need to Know About 800G/1.6T Optical Transceiver

Introduction to 800G/1.6T Pluggable Optics Modules The Evolution of Optical Transceivers: From 100G to 1.6T Driven by the demand for computing power in data centers and artificial intelligence clusters,

Optical Modules

Overall, optical modules are evolving from a “standard commodity device” into a platform-type industry that tightly integrates chip design, optoelectronic packaging, and system

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What Is StarryLink Optical Module? Why Do We Need It?

The StarryLink optical module is a core component developed by Huawei for data center networks. It delivers ultra-long-distance transmission, exceptional reliability, and enhanced security,

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