

Huawei Optical Module Liquid Cooling



AI Overview

Huawei's liquid-cooled optical modules achieve 100% liquid cooling, doubling industry cooling efficiency for high-density data centers. Overview Huawei has developed advanced liquid-cooled optical modules as part of its high-performance data center solutions, including the CloudEngine XH9230-128DQ-LC switch and StarryLink 400GE/800GE optical modules. These modules are designed to operate under extreme power densities typical of AI, HPC, and cloud workloads, where conventional air cooling is insufficient.

Key Features

- 100% Liquid Cooling:** The optical modules are fully integrated into Huawei's liquid cooling architecture, ensuring all heat is dissipated through liquid rather than air, which significantly improves thermal management.
- Enhanced Cooling Efficiency:** Using patented cooling designs and next-generation thermal interface materials (TIM), these modules deliver twice the cooling efficiency compared to traditional solutions.
- High-Density Deployment:** Supports up to eight switches per cabinet, enabling compact, high-performance compute clusters while maintaining optimal thermal conditions.
- Extended Reliability and Range:** The StarryLink optical modules offer twice the reliability and extended transmission range, ensuring stable high-speed connectivity in demanding environments.

Benefits

- Energy Efficiency:** Full liquid cooling reduces the power consumption of cooling systems by up to 96%, lowering the Power Usage Effectiveness (PUE) from 2.2 to 1.1, which translates into substantial energy and CO₂ savings.
- Operational Stability:** Liquid cooling maintains consistent temperatures across high-density racks, preventing thermal throttling and extending the lifespan of optical modules and switches.
- Scalability:** The modular design allows for flexible expansion of AI and HPC clusters without compromising cooling performance.

Applications

Huawei's liquid-cooled optical modules are ideal for:

- AI Data Centers:** Supporting high-throughput AI workloads with stable thermal performance.
- High-Performance Computing (HPC):** En...

Article Content

Huawei launched advanced AI data center tech at MWC 2026,

Huawei launched advanced AI data center tech at MWC 2026, including a 51.2T liquid-cooled switch and high-speed optical modules. At MWC Barcelona 2026, Huawei unveiled the

2026-06-18

18 Jun, 2026 Introduction to Liquid-Cooled Optical Modules and Development Trends
As AI large model computing infrastructure accelerates across the industry, with 800G achieving large-scale

Unveiling the industry's first 51.2T (128 × 400GE) liquid-cooled fixed ...

Powered by an exclusive patented cooling architecture and next-gen thermal interface material (TIM), it achieves 100% liquid cooling for optical modules—delivering twice the industry's...

Underlying Logic and Value Reconstruction: The

Huawei TMU evolves liquid cooling from distribution to intelligence. Breakthroughs in safety, efficiency, and deployment enable high-density green

Simulation and experimental investigation of liquid-cooling thermal ...

Abstract This study explores the application of cold plate liquid cooling technology in co-packaged optics (CPO). By integrating optical modules and the switch chip on the same substrate, CPO shortens the

Huawei Unveils Next-Gen AI Networking and 51.2T Liquid-Cooled

The 51.2T switch features 100% liquid cooling for optical modules and doubles cabinet utilization efficiency, addressing critical power and space constraints in modern AI data centers.

MWC 2026□Unveiling the industry's first 51.2T (128 × 400GE) liquid ...

Powered by an exclusive patented cooling architecture and next-gen thermal interface material (TIM), it achieves 100% liquid cooling for optical modules—delivering twice the industry's

Simulation and experimental investigation of liquid-cooling thermal ...

For the unique architecture of CPO, this study analyzes its heat dissipation needs in detail, and a thermal management scheme is designed. The thermal management scheme is simulated and

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Liquid-Cooled Heat Dissipation Technology for Co-Packaged Optics

This article explores the liquid-cooling heat dissipation technology for CPO systems over 12.8 Tbps. We designed a heat dissipation structure to address the special heat dissipation needs of CPO systems

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Full Liquid Cooling Makes Data Centers More Energy

Full Liquid Cooling Makes Data Centers More Energy-efficient AI applications, high-performance computing, and GPU servers have driven the power consumption

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533 Replacing a Liquid Cooling Controller (LCC) 540 Follow-Up Procedure 544 Replacing a Backplane 544 Replacing an Outdoor Fan 548 Replacing a Compressor Drive Module 556 Replacing a

Liquid Cooling for Optical Networking Equipment

Liquid Cooling for Optical Networking Equipment Abstract: This article provides insights into a successful upgrade of an air-cooled coherent metro router into a Hybrid Liquid/Air-cooled

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Full Liquid Cooling Makes Data Centers More Energy

To address this challenge, Huawei developed a full liquid cooling solution. In a closed liquid-cooled cabinet, all heat is dissipated in liquid, reducing the power

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Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

Global Optical Transceiver Market Strategic Audit 2026

THE ECOSYSTEM INTEGRATORS & JDMS Luxshare Precision Industry Co. Ltd.
Operational Moat: A dual-pronged approach dominating both optical and high-speed copper.

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HUAWEI LUNA2000-4472 SERIES USER MANUAL

The optical modules are optional. Page 154 LUNA2000-4472 Series Smart String ESS User Manual 6 Installing Cables Figure 6-19 Connecting optical fiber cables

AI to Reshape the Global Technology Landscape in

In the near to midterm, cold-plate liquid cooling will remain the primary solution, with CDUs transitioning from liquid-to-air to liquid-to-liquid

(PDF) Simulation and experimental investigation of

For the unique architecture of CPO, this study analyzes its heat dissipation needs in detail, and a thermal management scheme is designed. The

Huawei launched advanced AI data center tech at MWC 2026,

At MWC Barcelona 2026, Huawei unveiled the Xinghe AI Fabric 2.0 Solution, featuring a three-layer architecture and four core capabilities to enhance AI-driven data center performance.

Contact Us

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