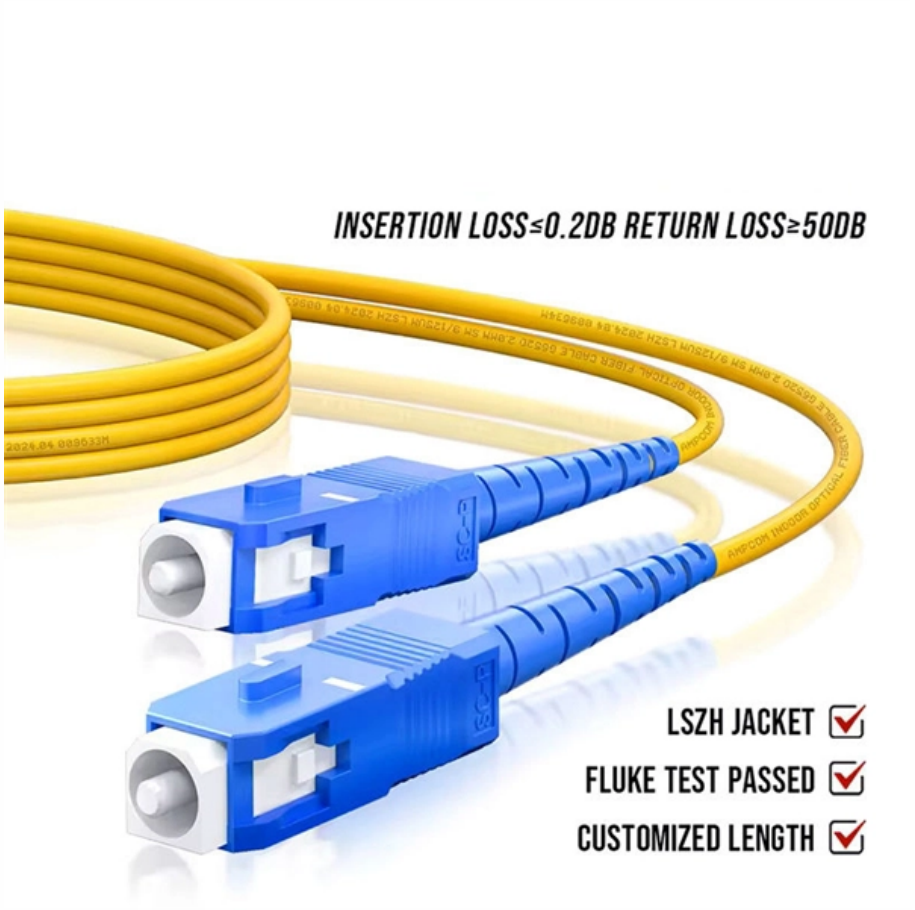
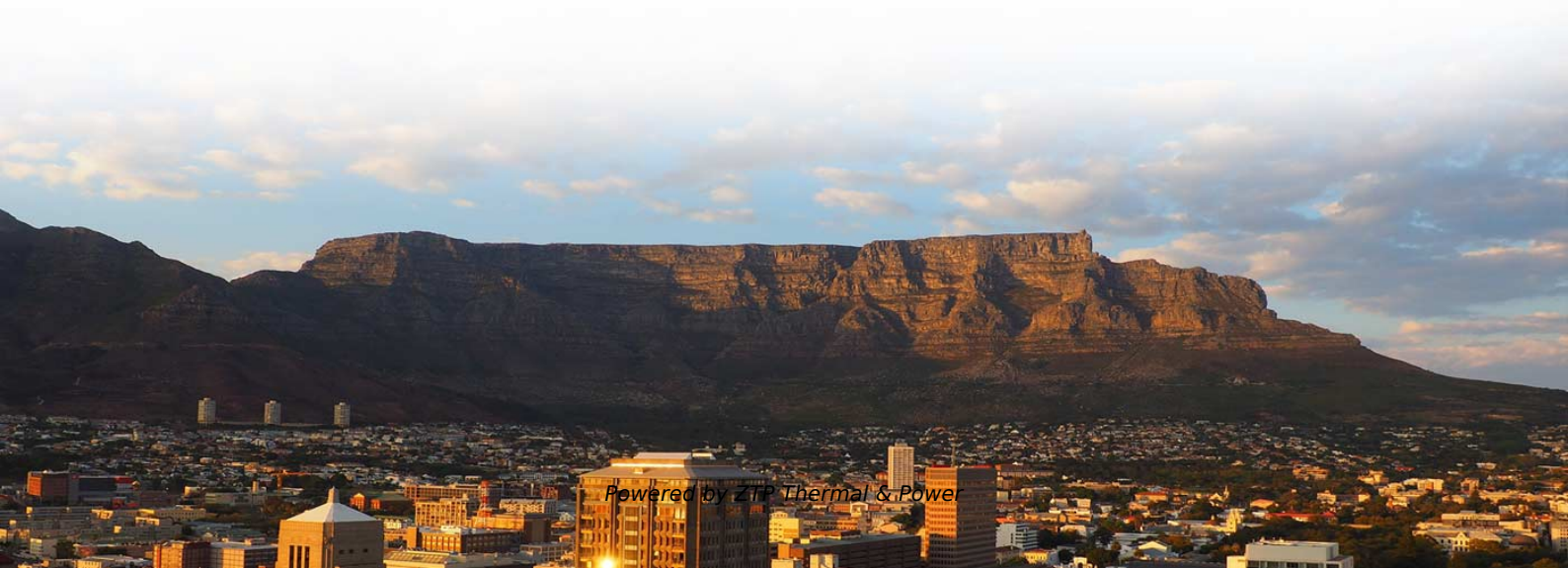
ZTP Thermal & Power

Silicon Photonics Cold Plate Liquid-Cooled Switch





Overview

8Tbps of bandwidth using 64 electrical lanes and incorporates an integrated liquid-cooled cold plate capable of supporting 400W+ module power consumption. Graphics processing unit (GPU) computing clusters, which serve as the basic architecture to support AI, ML, and similar applications, raise higher requirements for network transmission than central processing unit (CPU) common computing clusters. While the industry-standard OSFP (Octal Small Form-Factor Pluggable) module has successfully enabled 400Gbps, 800Gbps, and 1. 8 Tbps liquid cooled optics module that it says will help address the power and performance needed for AI data center network development. With the rapid development of AI, HPC (High-Performance Computing), and 5G, the power density of data centers has increased dramatically. " In this framework, network iteration commences with high-performance GPU scenarios to address premier business demands and subsequently broadens its support to encompass more general scenarios.

Silicon Photonics Cold Plate Liquid-Cooled Switch

Liquid Cooling CPU for Intel Sapphire Rapids , JetCool

Outperform the Competition: Unlock Processor Performance with Liquid Cooling for Intel Sapphire Rapids Champion sustainable and scalable high-performance

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Silicon Photonics: Revolutionizing Sustainable Data Centre Networks

During this prestigious event, Ruijie Networks officially unveiled its 25.6T silicon photonic NPO cold plate liquid cooling switch, designed to meet the stringent reliability standards of data

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Arista targets AI data centers with new liquid cooled

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A comprehensive review of cold plate liquid cooling technology for

This study provides a comprehensive review of cold plate liquid cooling technology for data centers, covering aspects such as cold plate materials, coolant properties, inlet and outlet

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Cooling Hot Electronics with Cold Plates , Advanced

Cold plates offer highly efficient, localized cooling by transferring heat from hot components--such as power semiconductors--into a liquid coolant

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Liquid Cooling

In indirect forced convection cooling, the most widely used liquid cooling option, the coolant is pumped through the micro-channels in a cold plate

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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

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The Study of Cold Plate Liquid Cooling Solution for Optics and ASIC

In this paper, single-phase cold plate liquid cooling solution is studied to identify thermal feasibility and thermal improvement for 30 W Octal Small Form Factor Pluggable (OSFP) optics and 750 W

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What is Liquid Cooled Switch?

Based on the special characteristics of silicon photonics technology, Ruijie Network has developed cold-plate liquid-cooled switches. Among them,

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Silicon Photonics for Optical Circuit Switch

Optical circuit switches enable scalable, low-latency, and energy-efficient architectures for next-generation AI data center networks. This paper explores silicon photonic

switches as a

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Using the latest 112G SerDes switching chip and 64 connectors, Ruijie 25.6T silicon photonics NPO cold-plate liquid-cooling switch realizes ultra-high-density port design of 64 ports of 400G in 1RU space.

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Gigalight Liquid-Cooled Optics: A Thematic Study on

Cold Plate Liquid Cooling: Suitable for partial retrofits, though less efficient than immersion cooling. Silicon Photonics + Liquid Cooling: Silicon

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Immersion Cooling in Silicon Photonics , Dustphotonics

Immersion cooling involves submerging computer components in a thermally conductive, but electrically insulating liquid. This method stands out for its

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Design Considerations for High Performance Processor

Table 1. Cold plate description summary. * Dh = 4A/P, where A is the cross-sectional area of the channel and P is the wetted perimeter. This article

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Liquid Cooling Cold Plates

Cold plates have been used for thermal management since the 1960s, particularly in aerospace and military applications, where air-cooling was insufficient. The trend toward higher circuit power density

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Simulation and experimental investigation of liquid-cooling thermal

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

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XPO: Redefining Pluggable Optics for AI Networking

By combining a dual-paddle mechanical architecture, integrated liquid-cooling cold plate, clean linear electrical channel, and high-voltage power delivery, XPO dramatically increases optical density while

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Why Can Silicon Photonics and Liquid Cooling Lead the Direction of

Among them, the 51.2Tbps silicon photonics NPO cold-plate liquid-cooling switch adopts the design of silicon photonics NPO and cold-plate liquid-cooling, integrating high-density 800GE

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Nvidia Unveils Revolutionary Silicon Photonics Switches

The Quantum-X InfiniBand switches include a liquid cooling system, ensuring the

onboard silicon photonics chips operate at peak efficiency without

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CoolIT Unveils 4000W Coldplate Technology , CoolIT

CoolIT's 4000W coldplate captures 97%+ heat, setting new standards in single-phase liquid cooling for AI and HPC processors.

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Silicon Photonic Switches , part of Optical Switching: Device

Photonic switching is a crucial function of photonic integrated circuits and has been studied for many years to get reduced power consumption, fast switching speed, and compact footprint. This chapter

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