LPO Core Switch Test Report



Overview

This DesignCon paper showcases high-speed design and testing schemes for LPO systems from a system perspective while also presenting the testing results, data, and product architecture of a linear direct-drive switch in conjunction with an LPO module system. Standards-based (Ethernet) networking for AI/ML training, leveraging low latency and high-throughput RoCEv2. Reduces Job Completion Time (JCT) using the cognitive routing and congestion management capabilities of the switch. A next-generation, highest-capacity switch for data center spine use case. In the data center network system, the application of LPO (Linear-direct-drive Pluggable Optics) modules has certain advantages in terms of cost, power consumption, and latency compared to traditional DSP modules. Tlaletso Global Photonics (TGO) designs and manufactures laser diodes, VCSEL, DFB lasers, laser drivers, CDR circuits, optical modulators, TIAs, co-packaged optics, silicon photonics, linear drive plu. However, it also poses significant challenges to the end-to-end system. In AI training clusters, thousands or even tens of thousands of GPUs perform All-Reduce operations, generating massive “east-west” traffic. This traffic exhibits high burstiness, extremely high bandwidth demands, and extreme sensitivity to latency.

© 2026 EXF OPTICAL NETWORKS - All rights reserved

Article Content

Core Switch LPO

To thoroughly assess whether the core switch has the capability to fully support LPO optical modules on all ports, this paper establishes a test environment as shown in Figure 4-1.

PAPER_Track03_800GLinearDirectDriveNetworkSystemDesign&Implementation ...

To thoroughly assess whether the core switch has the capability to fully support LPO optical modules on all ports, this paper establishes a test environment as shown in Figure 4-1.

800G-FR4 without inner FEC

Contemporary applications of linear pluggable optics (LPO) and co-packaged optics (CPO) use the host-side SERDES/DSP for PAM4 decoding. 200G/L LPO and CPO architectures will likely require

Maintenance of Core Switch LPO

To thoroughly assess whether the core switch has the capability to fully support LPO optical modules on all ports, this paper establishes a test environment as shown in Figure 4-1.

800G Linear Direct Drive Network System Design & Implementation

This paper will showcase high-speed design and testing schemes for LPO systems from a system perspective. The paper will also present the testing results, data, and product architecture

In-Depth Analysis Report on 800G Switches | FiberMall

This report will deeply analyze the technical standards, core silicon photonics landscape, system vendors'' solutions, and revolutionary changes in optical interconnect technologies

Linear Pluggable Optics – An Overview

Farnood Rezaie (Cisco Systems Inc.) With the advent of Artificial intelligence (AI) and the push to increase domestic manufacturing, the data center workloads and associated power consumption is

Co Packaged Optics (CPO) – Scaling with Light for the Next Wave of ...

We will explore whether CPO is ready for primetime when it comes to scale-out, touching on the data we have so far on solution reliability such as Meta''s CPO scale-out switch study

© 2026 EXF OPTICAL NETWORKS - All rights reserved

800G LPO Modules: Reliability Test in AI/HPC Networks

Explore how FS 800G LPO modules meet AI/HPC network demands through rigorous reliability testing. Learn about specific reliability test types and real-world validation results.

LPO webinar note

Man Jiangwei, Director of the Advanced Opto-Electronics Laboratory at HiSilicon, shared their test data for LPO modules and suggested that the switch ASIC should include additional functionality to

1.6T Switch Era: Choosing Between CPO, NPO, and LPO for Next

At its core, LPO remains tied to traditional 1.6T switch architectures, merely trading the removal of the DSP for a drop in power consumption. It is by no

Analysis of the advantages of CPO over LPO

LPO requires specific modules to pair with ASIC switch chips, which diminishes the versatility advantage of pluggable modules. Additionally, link

Test and validation challenges in the Linear Pluggable Optics (LPO ...

However, both module and switch designers face significant challenges in deploying this technology while ensuring interoperability with the existing infrastructure. The OIF-CEI-112G linear

Co-Packaged Optics (CPO) 2026: Complete Technical

CPO switches are shipping in 2026. Learn how co-packaged optics work, which platforms are live, power savings vs pluggable, and what optics you

Optics Primer, Part 3: Co-Packaged Optics (CPO)

Optics Primer, Part 3: Co-Packaged Optics (CPO) From EML lasers and DSPs to silicon photonics and external CW lasers. How CPO works and the impact on the optical supply chain.

Revolutionizing Data Centers with a Linear Pluggable

One of the most groundbreaking network innovations driving transformations of data centers in 2025 is Linear Pluggable Optics (LPO)—a

What is LPO Optical Module? | FiberMall

LPO emphasizes “pluggable” to distinguish it from CPO solution, in which optical modules are not pluggable. The optical module (optical engine) is

LPO vs. CPO: Which Data Center Optical Interconnect Will Be the

© 2026 EXF OPTICAL NETWORKS - All rights reserved

Meanwhile, the linear drive solution introduced by Arista has been recognized by prominent switch vendors, including Innovium and NVIDIA, reflecting the industry''s consensus on the

Contact Us

Continue your research online:

Website: https://explosivefunctions.co.za
Technical inquiry: https://explosivefunctions.co.za/contact.html
EU project coordination: Parque das Nações, Lisbon, Portugal

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 EXF OPTICAL NETWORKS - All rights reserved