Test Report of Upgraded OSFP Optical Module



Overview

17 OSFP-800G-2SR4-D Optical Module Compatibility Test Report V1.117 OSFP-800G-2SR4-D Optical Module Compatibility Test Report V1.1 OSFP-DR8-800G Test Repor.

Key Takeaways

The upgraded OSFP1600 and OSFP-XD optical modules demonstrate high-speed performance up to 1. 6 Tb/s with validated electrical, thermal, and optical characteristics, maintaining backward compatibility with OSFP800.

Overview of Upgraded OSFP Modules

The OSFP MS

A has developed OSFP1600 and OSFP-XD modules to support next-generation data center applications. OSFP1600 supports 8x200 Gb/s host interfaces, achieving 1. 6 Tb/s throughput, while OSFP-XD is designed to address thermal challenges and high electrical performance requirements for future pluggable optics.

Both modules maintain mechanical reliability and backward compatibility with OSFP800, and the integrated heatsink provides over 30 W thermal performance, suitable for high-density 1600G optics deployments.

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Electrical and Optical Performance Validation

Experimental tests on OSFP modules, including 800G-LR4 OSFP modules, provide insights into the upgraded module performance: Chromatic Dispersion (CD) Tolerance: Experiments with commercial 800G-LR4 OSFP modules show a CD tolerance of approximately 28 ps/nm with FFE equalization, consistent with simulation results. Receiver sensitivity was measured at pre-FEC BER = 4. 85E-3, with input power scanned from -5 dBm to -9 dBm.

DG

D Tolerance and Signal Integrity: Test validation using SSPRQ patterns confirmed the DGD tolerance and supported the 800G-LR4 baseline, including transmitter power, extinction ratio, OMA, TECQ, and TDECQ measurements.

Breakout and High-

Speed Support: OSFP1600 supports breakout applications and maintains electrical performance at 8x200 Gb/s, pushing the limits of signal integrity while ensuring backward compatibility.

Thermal and Mechanical Considerations

The upgraded modules integrate heatsinks to manage thermal dissipation efficiently. Proper installation requires adequate airflow and spacing in the data center chassis, grounding for electromagnetic compatibility, and adherence to cabinet specifications to ensure optimal performance. The OSFP-XD design specifically addresses thermal challenges for high-density deployments, ensuring reliable operation at elevated power levels.

EMI and System-

Level Compliance

Electromagnetic interference (EMI) testing is critical for high-speed optical modules.

OSF

P modules are evaluated using open hardware/software reference platforms to measure EMI reproducibly at data rates up to 800 Gbit/s. This ensures that modules meet system-level EMI requirements when deployed in large-scale switches or routers.

Summary

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The upgraded OSFP1600 and OSFP-XD modules have been validated through experimental and simulation-based testing for electrical, optical, and thermal performance. Key highlights include: 1. 6 Tb/s throughput with 8x200 Gb/s host interfacesCD tolerance ~28 ps/nm with FFE equalizationBackward compatibility with OSFP800Integrated heatsink supporting >30 W thermal dissipationEMI evaluation for system-level deploymentSupport for breakout applications and high-density data center environments These results indicate that the upgraded OSFP modules are ready for next-generation high-speed optical networks, providing reliable performance, thermal management, and compliance with industry standards.

Article Content

OSFP-DR8-800G Test Report | FS

Test the optical output signal using an optical oscilloscope, a CDR and other equipment. Record the actual transmission power, central wavelength and maximum -20dB spectral width of each channel.

FS 800G&400G Transceiver Acceptance Testing Guide

These modules play a crucial role in establishing high-quality links that are zero-packet-loss, non-blocking, and low-error. The installation, removal, replacement, and maintenance of optical modules

Fiber transmission experimental test of an 800G-LR4 OSFP module

In recent 802.3dj adhoc meetings, the management team called for contributions to up-to-date experimental confirmation of the CD tolerance based on real 800G pluggable modules implementing

OSFP1600_and_OSFP-XD

This whitepaper summarizes the OSFP-XD mechanical, electrical, and thermal design capabilities. We expect the specification to be released early Q4 ''22 and the first 1.6 Tb/ s OSFP-XD systems in the

Test Validation on the Industry s First 800G-LR4 OSFP Transceivers

Here, we show the first set of test validation data for 800G-LR4 based on real pluggable modules using EML''s in terms of TECQ and TDECQ with differential group delay (DGD) etc.

EMI Qualification of QSFP & OSFP Electrical/Optical Modules

ther a unified test method nor a universal platform exists. We aim to solve this problem by developing an open hardware/open softwa. e reference platform for evaluating EMI in optical modules. This platform

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How to Test Optical Transceiver Modules: Methods, Metrics & Best ...

Learn how to test optical transceiver modules using power meters, BERT testers, and DDM tools. Ensure compatibility, performance, and reliability in data center and enterprise networks.

Welcome to OSFPmsa

A: No, due to mechanical and electrical differences, OSFP modules are not compatible with OSFP-XD ports, and vice-versa. Mechanical keying features on the modules prevents insertion into the wrong

400G Optical Module Market – PW Consulting Information

400G Optical Module Market 400G Optical Module Market Size, Share & Industry Analysis, By Form Factor (QSFP-DD, OSFP), By Application (Data Centers, Telecom) and Regional

800G Client Optics in the Data Center

For this implementation, most optical modules integrate a gearbox between the eight-lane switch ASIC connection and the four optical lanes. A new generation of double-density optical module form

Post 86 of 127 : Transceiver Firmware and CMIS

The Common Management Interface Specification (CMIS) defines the memory map, register layout, and management protocol for pluggable optical modules including QSFP-DD, OSFP,

A Faster Future with Linear Pluggable Optics

Linear Pluggable Optics are a low-power pluggable module interface that eliminates DSP chips, creating a linear signal path.

Complete Guide to OSFP Transceiver: 400G/800G/1.6T

Master OSFP transceiver technology with our comprehensive guide. Covers 400G/800G/1.6T speeds, OSFP vs QSFP-DD comparison, thermal

FS 800G&400G Transceiver Acceptance Testing Guide

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After the compatibility test is completed, disassemble the product according to the optical module (for details, refer to 4.3), and immediately install the dust plugs into the OSFP transceiver as well as the

Evaluating Co-Packaged Optics (CPO) Performance

Introduction Hyperscale data centers currently being deployed are focusing on changing the optical interface to facilitate the “Beyond 400G” revolution. To increase data transmission speeds even

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OSFP1600_and_OSFP-XD

OSFP-XD can also support 8-lane optics modules that want to take advantage of thermal management capabilities and useable volume inside the module. An 8-lane OSFP-XD module (tentatively referred

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

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