

Article Overview

The EML Fiber Ethernet Switch was tested under standard operating conditions for FCC compliance, with detailed radiated emission measurements and environmental documentation confirming its performance.

Test Report Summary

The EML Fiber Ethernet Switch underwent testing to comply with FCC Part 15, Subpart B rules for industrial Ethernet equipment. The device was evaluated under typical operating conditions without any modifications to meet testing criteria, ensuring that the results reflect real-world performance .

Test Environment

- o Laboratory: Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory, registered with the FCC and certified by A2LA, USA (Registration No.: 4343.01) for EMC testing .
- o Test Setup: The switch was placed on a 0.8m-high turntable, 3 meters from the receiving antenna. The turntable rotated 360° to identify maximum emission levels, and the antenna polarization was varied between horizontal and vertical to capture the highest radiated emissions .
- o Environmental Conditions: Measurements were conducted under controlled conditions, with uncertainty calculated according to CISPR 16-4 standards, ensuring accuracy within the calibration limits of the equipment .

Measurement Methodology

- o Radiated Emission Test: Field strength was calculated using the formula: $RA = \text{Reading Amplitude} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain} - \text{Duty Cycle Correction Factor}$. The six highest emissions were maximized to ensure compliance with FCC limits .
- o Compliance Verification: The switch was tested across all relevant frequencies, and results were documented to confirm adherence to FCC emission standards .

Test Documentation

- o Photos: The report includes setup photos of the EUT (Equipment Under Test) to illustrate the test configuration and procedures .
- o Measurement Uncertainty: Expanded uncertainty was expressed at approximately 95% confidence level ($k=2$), accounting for component and process variability .

Additional Considerations for Fiber Ethernet Testing



EML Fiber Ethernet Switch Test Report

For fiber-based Ethernet switches, testing may also involve SFP module evaluation using dedicated evaluation boards such as the EVB-KSZ9477 for KSZ9477S switches . Fiber optic system performance is typically assessed on a link-by-link basis, including passive components like fiber cables, connectors, adapters, and splices, to ensure the network meets required specifications .

Conclusion

The EML Fiber Ethernet Switch test report confirms that the device meets FCC Part 15 emission standards under standard operating conditions. The testing methodology, environmental controls, and measurement uncertainty documentation provide a comprehensive validation of the switch's compliance and performance. For further testing of fiber modules or network links, evaluation boards and fiber system testing procedures should be considered to ensure full network reliability and certification .

In 2020, for example, Intel showcased the integration of its 1.6 Tb/s silicon photonics engine with a 12.8 Tb/s programmable

The purpose of the test is to determine whether the O/E characteristics, mechanical integrity and endurance of 25 Gb/s SFP28 ER

Supermicro Ethernet Switch Performance Test Straightforward Public Domain Test Demonstrates 40Gbps Wire Speed Performance

Networking switches take many forms, ranging from managed and unmanaged switches to

If the server pushes data out via Fiber, assuming 5 Gbps and needs to serve several clients simultaneously (let's

1 Introduction This document identifies test procedures for interoperability testing of EtherNet/IP devices. The test procedures are

Configure both the EtherNet/IP device and the corresponding Ethernet switch port for a forced operation, not autonegotiation. For

We will explore whether CPO is ready for primetime when it comes to scale-out, touching on the data we have so far on

To address reliability concerns, Moxa's next generation EDS E series industrial Ethernet switches are engineered to create a higher

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a



EML Fiber Ethernet Switch Test Report

report filed with the (FCC)

This white paper discusses the importance of reliability and compliance with industry standards such as IEC 61850 and IEEE 1613

This comprehensive guide to network and cable testing essentials can help professionals

Learn how to stress test a network switch to ensure its reliability and performance. Discover

SPIRENT Communications SPIRENT Communications

Key takeaways AI The swift reliability test methodology reduces test time by a factor of 205 compared to traditional methods.

Netzwerk Switch Test 2026 o Die 10 besten Netzwerk Switches im Vergleich In der digitalen Welt sind leistungsstarke

Web: <https://supremeacademicresearch.co.za>

