Optical Module Code Reading

Overview

How to Read SFP & QSFP EEPROM Data — Practical Practical, step-by-step guide to reading and interpreting SFP/QSFP EEPROM and DDM data (A0/A2), with Optical.

Key Takeaways

Optical module codes can be read by decoding the part number and accessing the module's EEPROM to verify specifications and compatibility.Understanding Optical Module Codes

Optical module codes, such as GLC-SX-MMD or SFP-10G-LR, are structured identifiers that reveal key information about the transceiver, including speed, wavelength, supported distance, and power levels . These codes act as a digital fingerprint stored in the module's EEPROM, allowing network devices to quickly identify the module type and ensure compatibility . Vendor-specific codes may create compatibility locks, meaning a module may only work with certain switches unless the code matches the expected specifications .

Decoding Part Numbers
• Prefix: Indicates the module type or standard (e.g., GLC for Cisco SFP modules).

• Speed and Distance: Letters or numbers denote data rate (1G, 10G, 25G) and maximum transmission distance (SR for short-range, LR for long-range, ZX for extended range).

• Wavelength or Mode: Some codes include wavelength (e.g., 850nm, 1310nm) or single-mode/multi-mode designation.

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• Special Features: Optional letters may indicate duplex type, digital diagnostics, or vendor-specific enhancements .

Reading Module Information on Switches

To verify the code and module parameters, you can use switch commands to access the EEPROM and diagnostic data:

• Cisco Switches:
• show interface displays link status, speed, and transceiver type.

• show inventory provides model, serial number, and EEPROM-stored specifications.

• show idprom interface reveals detailed coding information .

• Extreme Switches:
• show port configuration shows interface speed, duplex, and module type.

• show ports transceiver information detail returns module identification and digital diagnostic monitoring (DDM) data, including wavelength, vendor, and serial number .

• Huawei Switches:
• display transceiver [interface interface-type interface-number | slot slot-id] shows module information.

• display transceiver diagnosis interface provides DDM data such as optical power, temperature, voltage, and current .

Practical Tips

• Always check vendor compatibility; non-certified modules may not be recognized or may show unsupported status.

• Use the EEPROM data to confirm module specifications before deployment to avoid network instability.

• For multi-vendor environments, understanding the coding system helps ensure modules meet the Multi-Source Agreement (MSA) standards while avoiding proprietary lockouts . By combining part number decoding with switch-based EEPROM reading, you can accurately identify, verify, and monitor optical modules in your network.

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Optical module coding illustrated tutorial

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Optical Encoder Module Pinout This is the pinout diagram for the optical encoder module

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I have a HP Optical Incremental Encoder (256 CPR) in which Pin 1 = A, Pin 2 = VCC, Pin 3 = GND, Pin 8 = B. I

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Scene text recognition extends the capabilities of traditional optical character recognition to

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What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals,

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These can be read using purpose-built 2D optical scanners. Both matrix codes and linear barcodes can also be read by a digital

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SMART 3D OPTICAL CHARACTER RECOGNITION The Surface OCR tool recognizes and extracts a string of text from surfaces,

TCRT5000 Reflective Optical Sensor module example

In this example we look at a module based on the TCRT5000 Reflective Optical Sensor with Transistor Output. A very

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