

How to check the bandwidth of an optical module

Article Overview

You can check an optical module's bandwidth by querying its type, speed, and DDM diagnostics using CLI commands on your network device.

Using CLI Commands

Huawei Devices

On Huawei switches, you can use the following commands:

- o `display transceiver [interface interface-type interface-number | slot slot-id]` - shows detailed information about the optical module, including type, speed, and operational parameters .
- o `display transceiver diagnosis interface [interface-type interface-number]` - provides Digital Diagnostic Monitoring (DDM) data such as optical power, temperature, and voltage, which helps verify module performance and bandwidth capability .

Cisco Devices

For Cisco switches and routers:

- o `show inventory` - lists all installed SFPs with Product ID, Version ID, and serial number .
- o `show interface transceiver detail` - displays full DDM metrics including transmit/receive power, temperature, voltage, and module type, which indicates supported bandwidth .
- o `show interfaces status` - shows port speed and duplex settings, confirming the module's operational bandwidth .

Aruba Devices

On Aruba switches:

- o `show interfaces` - displays interface configuration, transceiver type, link status, and speed (e.g., 25G, 10G), .
- o Real-time DDM diagnostics can be checked to monitor TX/RX optical power and ensure the module operates within its rated bandwidth .

Fortinet Devices

For Fortinet switches:

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- o get switch modules detail - reads EEPROM data including transceiver type, transmission distance, and manufacturer details .
- o get switch modules status - shows real-time DDM values and alarm thresholds, helping verify that the module is performing at its rated bandwidth .

Key Points to Verify Bandwidth

- o Module Type and Speed - The module's type (e.g., SFP, SFP+, QSFP28) usually indicates its maximum supported bandwidth.
- o Port Speed - Check the interface speed in the CLI to confirm the module is operating at its rated bandwidth.
- o DDM Diagnostics - Monitor TX/RX optical power, temperature, and voltage to ensure the module is functioning correctly and can sustain the expected data rate.
- o Certification and Compatibility - Using certified modules ensures accurate bandwidth reporting and reliable performance . By combining these commands and diagnostics, you can accurately determine the bandwidth capability and operational status of any optical module in your network.

Test transmitted power of optical modules using an optical power meter or DOM to ensure signal strength, network

3.2.1 Optical bandwidth Optical fiber communication systems use carrier frequencies in the near-infrared region of the

This Applications Engineering Note (AE Note) discusses bandwidth characterization for multimode optical fiber (MMF), and

Optical modules distinct from one another in their transmission distance, a feature that should be taken into account in

Objective The Cisco Small Business Series Switches allow you to plug in a Small Form-factor Pluggable (SFP) transceiver in their

Confused by SFP vs SFP+? Read the definitive 2026 guide on SFP modules. We explain Single Mode vs Multimode, DDM

It represents the spectral width available for carrying optical information. The calculator converts wavelength or channel spacing into

Once the transceiver and fiber optic cable are plugged in properly in the switch optical module, you should be

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able to view the current

Learn how to test optical transceiver modules using power meters, BERT testers, and DDM tools. Ensure

Explore the working principles, structures, and performance metrics of optical modules, essential components of

Learn about the common contaminants of fiber optics in today's mission critical networks and get a detailed look at fiber testing and

Multi-mode optical fiber is a type of optical fiber mostly used for communication over short distances, such as within a building or on a

Optical bandwidth refers to the range of frequencies available for modulation in optical fiber communication systems,

Optical modules come in various types, and their external structures are not exactly the same. However, their basic compositional

DDM (Digital Diagnostics Monitoring) is a feature that is included in optical modules, such as SFP, SFP+, QSFP, and

Bandwidth is the information carrying capacity of an optical fiber and is also determined and specified by the optical fiber

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