

Switch optical port threshold values



AI Overview

Optical port thresholds define the acceptable TX (transmit) and RX (receive) power ranges for fiber transceivers, and while you can monitor them, built-in thresholds on Cisco transceivers cannot be modified.

Understanding TX and RX Power Levels

TX Power (Transmit): The light signal leaving the SFP module. Typical values for 10G-SR modules are between -1 dBm and -7 dBm.

RX Power (Receive): The light signal arriving at the SFP module from the remote end. For 10G-SR, expected RX power is generally -2 dBm to -9 dBm, while 10G-LR modules may range from -3 dBm to -12 dBm. Values below the receiver sensitivity indicate weak or no signal, often caused by dirty connectors, cable damage, or excessive distance.

Digital Optical Monitoring (DOM)

DOM allows real-time monitoring of optical transceivers, including:

- Transmit power
- Receive power
- Temperature
- Laser bias current
- Voltage

Each monitored attribute has four threshold levels:

- Above maximum threshold (alarm)
- Above normal but below maximum (warning)
- Below minimum threshold (alarm)
- Below normal but above minimum (warning)

These thresholds are predefined by the transceiver and are used to trigger alerts or syslog messages when crossed.

Threshold Adjustment

Limitations

Built-in thresholds cannot be modified on Cisco transceivers. They are calibrated to ensure reliable signal conversion for the MAC layer. Attempting to override them in the switch CLI or MIBs is not supported.

If alarms are triggered due to minor fluctuations (e.g., RX power oscillating around -20 dBm), the recommended approach is to:

- Inspect and clean fiber connectors
- Verify fiber type and quality (OM3, single-mode, etc.)
- Consider extended reach optics if the link is long
- Adjust monitoring software thresholds (e.g., SolarWinds) rather than the transceiver itself

Practical Tips

- Always reference the transceiver datasheet for TX/RX operating ranges and receiver sensitivity.
- Use DOM metrics via the switch GUI or CLI (show interface transceiver details) to monitor optical health.
- For long or lossy links, consider long-h...

Article Content

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AITAF provides end-to-end optical communication solutions, structured cabling, ODN, optical modules, fiber testing instruments, data center networks, base station energy, smart city communications, and

ONT Optical Parameter

Overview of ONT Optical Parameter The ONT Optical Parameter feature allows you to configure thresholds of the optical transmit (TX) and receive (RX) parameter of an ONT. When the received

%SFF8472-5-THRESHOLD_VIOLATION: Te1/3: Rx power high

Hi, I am receiving following warning messages for all the 6 ports in WS-C4500X-16 which are connected to access switch 2960-X. Fiber is Multimode and sfp at both ends are SFP-10G-LRM.

How to edit threshold values for optical links?

Given the first transceiver's built-in threshold, you cannot override that. It is programmed in based on the device's ability to reliably convert the received optical signal to usable bits for the

Rx power low warning; Operating value: -20.7 dBm, Threshold value:

Hi, I have installed a new 2960 plus with a original cisco sfp module connected to a 2960S, also with a new cisco sfp, as a trunk. Curenly they are connected with a 2 mtr. fiber cable.

Normal Rx Power range for 10gb optics

Hello, Just put a new 3 switch stack of 5520's in a site and I'm wondering if this one RX power is to be alarmed about. All ports below are 10gbps 850nm sm. See the one for port 2:59 has a

Cisco NCS 1010 Optical Applications Configuration Guide, IOS XR

An Optical Time Domain Reflectometer (OTDR) is a fiber optic measurement device that captures real-time data on loss and back reflection across fiber links, performs bidirectional analysis

Got a head scratcher: Trunk port slow switching between amber

Got a head scratcher: Trunk port slow switching between amber/green and.... Hello all, Got a headscratcher of a problem. Here's the equipment: Cisco 9300 48 port/SFP-10G-BX Single Mode in

How To View Port Status And Optical Module Information On Extreme

This document uses the Moduletek SFP-10G-LR-BIDI optical module installed on an Extreme X690-48x-2q-4c switch as an example to demonstrate how to view port status and optical

How To View Port Status And Optical Module Information On Cisco

It presents real-time DDM values and alarm threshold ranges. Check TX/RX optical power, temperature and bias current to confirm normal operation of transceivers on both ends.

SFP Optical Receive Power lower than Alarm Threshold

Hi, Experts Recently we received the alert about the Optical Receive Power -40dBm, it occurred after physical migration. IOS is: isr4400v2-universalk9.17.03.04a.SPA.bin
cisco#show

Connectrix: How to Interpret SFP Transceiver TX and

On the left is a switch port SFP which is connected using a cable to the right of another switch port SFP. The red channel left TX transceiver is the source of the

Solved: Rx power low warning

Hi all, I'm running on cisco 3750E series switch stack and getting following errors in log "SFF8472-5-THRESHOLD_VIOLATION: Gi2/1/2: Rx power low warning; Operating value: -19.4

Chapter 10, Change Card Settings

This chapter explains how to change transmission settings on electrical and optical ports in a Cisco ONS 15327. Before You Begin Before

Mastering Cisco Optics: Understanding TX/RX Light Levels

Optical Receive Power (RX): The most critical metric. This tells you how much light is making it through the fiber cable to your switch. Thresholds

SFP+ complains threshold violation and went down

All, Recently bought 3 Cisco switches: 3560x and two 2960Xs. 3560 acting as the core switch and other 2 switches are connected using SFP+ (One SFP-H10GB

Chapter 10, Change Card Settings

Step 1 In node view, double-click the XTC card where you want to change the DS-1 line or threshold settings. Step 2 Click the Provisioning > DS-1 tabs (Figure 10-1).

Configuring DDM

The DDM (Digital Diagnostic Monitoring) function is used to monitor the status of the SFP modules inserted into the SFP ports on the switch. The user can choose to shut down the monitored SFP port

Solved: SFP Low Signal Levels?

The port TE1/1/2 is offline and not working, and what bothers me is the values on the receive. This is a 1Gbps link and for what I saw and understand this signal is too low. In this link I'm

Threshold Violation

Steps I have taken: A switch is a C9500 and Z switch is a 4510. Replaced SFP on both ends. They are the same type of SFP. Replaced fiber patch cords on both sides. MM patch cords.

Optical parameters

Transceivers are manufactured to meet the specifications (usually of the IEEE standards) and ranges represent the values that the part can operate within. The fact that one part can be at the lower end

Optical parameters

Optical parameters This guide provides average transmit and receive power ranges for transceiver modules. Transceivers are manufactured to meet the specifications (usually of the IEEE standards)

Issue with Fiber & SFP %SFF8472-3-THRESHOLD_VIOLATION

Dec 20 12:26:35.280: %SFF8472-3-THRESHOLD_VIOLATION: Txe1/0/1: Tx power high alarm; Operating value: -5.5 dBm, Threshold value: -40.0 dBm. >> This switch 9500 series stack once,

Digital Optical Monitoring

Move your cursor over the chart to see a tooltip for each data point that contains median, max, and min values for that specific day. It also contains the threshold values provided by the SFP

cisco 4948E SFP+ warning

Cisco Community Technology and Support Networking Switching cisco 4948E SFP+ warning - THRESHOLD_VIOLATION Tx power high warning 3.2dBm - Threshold 0.4 dBm Bookmark

Mastering Cisco Optics: Understanding TX/RX Light Levels

In this guide, we will explain what optical signal strength is, how to check it on Cisco IOS using the command line, and how to troubleshoot common

SFP issue: Rx power low alarm;

As per logs it means that, Currently received power is Operating value: -27.9 dBm, but the Threshold value: -26.0 dBm. If you can manage the power under -26.0

%SFF8472-5-THRESHOLD_VIOLATION: RX

Solved: Hello everyone, i have this problem on 2 switch 4503E CORE01

%SFF8472-5-THRESHOLD_VIOLATION: Te1/1: Rx power low warning; Operating value: -13.8 dBm, Threshold

Setting Optical Power Alarm Thresholds

The configured optical power alarm thresholds must be within the default range. The default optical power alarm thresholds are proper values verified by testing. Therefore, it is not recommended to

Contact Us

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