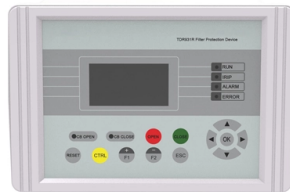


How to reduce the power of Huawei optical modules



Overview

Understanding Pluggable Optical Modules If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce.

Key Takeaways

Use optical attenuators or adjust module settings to reduce the optical power output of Huawei optical modules. Using Optical Attenuators

An optical attenuator is a passive device designed to reduce the power of optical signals in fiber links, protecting receivers from overload and preventing module damage . There are two main types:

- Fixed Optical Attenuators: Reduce optical power by a predetermined value (e.g., 3 dB, 5 dB, 10 dB). They are simple, cost-effective, and typically installed at the transmit end of active modules to prevent downstream receivers from being damaged .
- Variable Optical Attenuators (VOA): Allow adjustable attenuation within a specific range, enabling fine-tuning of optical power to match network requirements . Attenuators can be installed at the transmit side of the module or inline in the fiber path to achieve the desired power reduction.

Monitoring and Adjusting Optical Power

Before reducing power, it is important to check the current TX/RX optical power of the module. On Huawei devices, you can use commands such as:

- display interface to view the transceiver status, including transmitted and received optical power .

- display transceiver interface verbose for detailed optical parameters and operational status . By monitoring these values, you can determine whether the optical power exceeds safe levels and decide the appropriate attenuation.

Additional Considerations

- Module Type and Data Rate: Higher-speed modules (e.g., 100G, 400G) consume more power and may require more attenuation or careful monitoring .

- Fiber Compatibility: Ensure single-mode and multi-mode fibers are not mixed with incompatible modules, as this can affect power levels and signal quality .

- Environmental Factors: Reducing optical power can also help with thermal management and energy efficiency in high-density deployments . By combining optical attenuators with real-time monitoring and proper module selection, you can safely reduce the optical power of Huawei optical modules, protect receivers, and optimize network performance.

Article Content

Understanding Pluggable Optical Modules

If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce the receive power

How Do I Ensure that the Transmit Power and Receive Power of an

Ensure that the transmit and receive power values of the two optical modules are in the normal ranges. Otherwise, traffic forwarding

01-10 OPTICAL MODULES

If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce the receive power

Troubleshooting for Optical Modules on Huawei Switch

If the transmit power remains low, replace the optical module or install it in another optical port to check whether it is faulty. If the

Checking TX / RX optical power for Huawei Switches and Routers

Here is an example on how to query or display optical power of an interface in a Huawei Router. This is tested using NetEngine40E

Optical Module Troubleshooting

In this case, install an optical attenuator on the remote optical module to reduce the transmit power. If TxPower Low is

Types of Optical Modules

The transmit power of a long-distance optical module is often larger than its overload power. Therefore, when using such optical

SiCaps reduce Power consumption

We explained how AC-coupling UBB SiCaps are efficient in very high-speed optical modules, thanks to their specific design and low

Understanding Pluggable Optical Modules

The transmit power of a long-distance optical module is often larger than its overload power. Therefore, when using such optical

Checking that the Optical Power Is Within the Normal Range

In the preceding command output, the information in bold shows the optical power of the optical module. If the value of Rx Optical

Introduction of Optical Modules on Huawei Switches

Check Optical Module Parameters: If an optical module is installed in a running switch, you can run the display transceiver command

Case Study: Transmit Power of an Optical Module Is Too Low ...

Use a dust cap to cover the bores of an idle optical module. If the transmit power of the optical module is still low, install

Displaying Optical Module Information

If an optical module on an interface is faulty, you can run the display commands to view information about the optical module.

Typical Troubleshooting Cases of Optical Module

Use an optical power meter to measure the transmit power of the optical module. If the transmit power is much lower than the

Optical Module: Typical Optical Module Troubleshooting Procedure

Check the model of the faulty optical module. If it is not a Huawei-certified optical module, replace it with a Huawei-certified optical

StarryLink Optical Module

Huawei's StarryLink optical modules for data center networks offer seamless interconnection from GE to 800GE across all scenarios,

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

