

# Checking the optical attenuation of Huawei CE switches

## Article Overview

Use the display transceiver and display transceiver diagnosis commands to view optical module power and attenuation on Huawei CE switches.

## Viewing Optical Module Information

To check optical attenuation, you first need to view the optical module's transmit (Tx) and receive (Rx) power:

- o Command for all ports: `display transceiver` This shows basic information for all optical modules, including type, wavelength, and DDM support .
- o Command for a specific interface: `display transceiver interface` This provides detailed information for a specific port, including Tx and Rx power, module type, connector type, wavelength, and transfer distance .
- o Verbose output for power details: `display transceiver interface verbose` This displays the actual transmit and receive power values, high/low thresholds, and other diagnostic parameters .

## Using Digital Diagnostic Monitoring (DDM)

Huawei optical modules support DDM, which allows real-time monitoring of:

- o Transmit power (Tx)
- o Receive power (Rx)
- o Temperature
- o Voltage
- o Bias current To view DDM data, use: `display transceiver diagnosis interface` This command provides the digital diagnostic monitoring information, which is essential for calculating optical attenuation and verifying that the module operates within safe limits .

## Interpreting Optical Attenuation

Optical attenuation can be inferred by comparing the transmit power of the local module with the receive power at the remote module:

- o  $\text{Attenuation (dB)} = \text{Tx power (dBm)} - \text{Rx power (dBm)}$
- o If the Rx power is below the low threshold, the fiber may be too long, or the fiber attenuation is high .
- o If the Rx power is above the high threshold, the module may be overloaded or the fiber is too short.

## Additional Considerations

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- o Ensure that local and remote modules match in type, wavelength, and rate; mismatched modules can prevent the link from coming up .
- o Check that the fiber type and length are within the module's supported transmission distance. For example, 850 nm multimode modules are typically short-distance, while 1310 nm single-mode modules support medium to long distances .
- o Use Huawei-certified optical modules to avoid abnormal power readings or interface issues . By following these steps, you can accurately monitor optical attenuation, verify link quality, and troubleshoot CE switch optical interfaces effectively.

Using a Command If an optical module is installed in a running device, you can run the display transceiver command

By default, numerous alarm messages will be generated when a non-original Huawei module is used. Huawei

Description: Huawei switches must use Huawei-certified optical modules. Non-Huawei-certified optical modules cannot ensure

However, during recent laboratory verification, we discovered that CE series switches also perform certification checks on optical

Procedure Run the display interface interface-type interface-number transceiver [ verbose ] command to check optical module

The working temperature range of the optical module does not meet requirements, reducing the optical power at a high temperature.

The optical time domain reflectometer (OTDR) is usually used for locating abnormal attenuation points on the optical line.

The optical modules used on CE series switches support a transmission distance of up to 100 km. Center wavelengths of optical

How Do I View the Transmit and Receive Power of an Optical Module? Run the display transceiver verbose command. In the

How Do I Query the Optical Power of an Interface? You can run the display interface [ interface-type interface-number

## Checking the optical attenuation of Huawei CE switches

Modular Switch V200R002&V200R003 The Current Rx Power (dBm) field in the command output indicates the

Check whether an optical module that is certified for Huawei data center switches is installed on the optical interface. The CE series

Troubleshooting for Optical Modules on Huawei Switch If the transmit power remains low, replace the optical module or install it in

Optical Signal Attenuation is the single greatest factor limiting the distance and performance of your network. Check whether the

If an optical module is installed in a running device, you can run the display transceiver command to view parameters of the optical

Check whether the optical module is Huawei-certified. If it is not certified by Huawei, replace it with a Huawei certified one. Remove

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