

Can 28dBm power supply run an optical module



Overview

The optimal input power range for optical modules can vary depending on the specific module and its intended application.

Key Takeaways

No, a 28 dBm power supply is not directly suitable for an optical module, because optical modules require low-voltage DC power, not high optical output power. Understanding Optical Module Power Requirements

Optical modules, such as SFP, SFP+, and SFP28, are electrically powered devices that convert electrical signals to optical signals and vice versa. They typically operate from a DC supply voltage of 3.3V or 5V, with current requirements ranging from 100 mA to a few amps, depending on the module type and data rate . The 28 dBm figure usually refers to optical transmit power, not the electrical supply. For reference, 28 dBm corresponds to about 630 mW of optical power, which is far higher than the typical transmit power of an SFP/SFP28 module, which is usually in the range of -1 to +5 dBm for short-range modules .

Electrical vs Optical Power

- Electrical power supply: Provides the voltage and current needed to operate the module's internal circuits, including lasers, detectors, and DSPs .



- **Optical transmit power (dBm):** Indicates the strength of the light signal emitted by the module, not the electrical input. Typical optical modules operate at -1 to +5 dBm for short-range links and up to +10 dBm for long-range modules . Using a power supply rated at 28 dBm (if interpreted as optical power) is not applicable, because the module's electrical circuits cannot handle such high optical energy. Conversely, if the user meant 28 dBm electrical power, this would correspond to about 630 mW, which is generally sufficient for powering most SFP/SFP28 modules, as they typically consume less than 1 W .

Key Considerations

- **Check the module datasheet:** Always verify the input voltage and current specifications. Using a supply outside the recommended range can damage the module.
 - **Understand the units:** dBm is a logarithmic measure of power relative to 1 mW. Electrical supply ratings are usually given in volts and amps, not dBm.
 - **Thermal and form factor limits:** High-power supplies may exceed the thermal budget of compact optical modules, which are designed for low-power operation .
- #### Conclusion

A 28 dBm optical power cannot be used to run an optical module. If the 28 dBm refers to electrical power, it is generally sufficient for standard SFP/SFP28 modules, but the voltage and current must match the module's specifications. Always consult the module datasheet to ensure safe and reliable operation .

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How much minimum Optical Module Input Power (dBm) is good for

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What is the best optical module input power dbm?

In conclusion, the best optical module input power level in terms of dBm can vary depending on the module type and its specific

Optical Power In Optical Fiber

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How to Check SFP Optical Power Levels on Cisco Switches

Learn how to monitor SFP optical power on Cisco switches, interpret Tx/Rx levels, and troubleshoot fiber link issues. Step-by-step

Introduction to Optical Fibers, dB, Attenuation and Measurements

Introduction This document is a quick reference to some of the formulas and important information related to optical

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