

Which DML optical switch is better



Article Overview

DML optical switches are best suited for short- to medium-distance, cost-sensitive applications, while EML alternatives outperform DML in high-speed, long-distance scenarios.

Overview of DML

A Directly Modulated Laser (DML) modulates the optical signal by directly varying the current through the laser diode. This design integrates both light generation and modulation in a single device, resulting in a compact structure, lower cost, and reduced power consumption . DML is simple to implement and works well for short-reach applications, typically up to 10 km at 25 Gbps, making it ideal for intra-data center links or metro networks with limited distance requirements .

Advantages of DML

- Lower cost: Fewer components and simpler design reduce manufacturing and deployment expenses .
- Lower power consumption: Suitable for energy-sensitive environments .
- Compact and simple design: Easier integration into optical modules and transceivers .

Limitations of DML

- Limited modulation rate: Carrier recombination time restricts high-speed performance

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In short-distance (SR, Short Reach; single-channel 50 Gband LR) transmission scenarios, such as server-to-switch

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