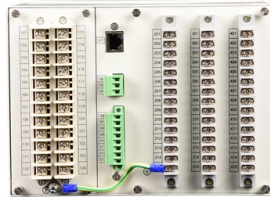


The optical module has been used for 10 years



Overview

Why Are Used Optical Modules Returning to the Market?

— Unveiling ETU-Link Technology Co., Ltd. has been dedicated to the R&D and production of a full rang.

Key Takeaways

Optical modules typically last 5-7 years in standard conditions, so a 10-year-old module is likely beyond its optimal lifespan and may require replacement or careful evaluation.

Expected Lifespan

Most optical transceivers, such as SFP+, QSFP+, and QSFP28 modules, are designed to operate reliably for 5-7 years in well-cooled, clean data center environments. Industrial-grade modules rated for extreme temperatures (-40°C to $+85^{\circ}\text{C}$) can sometimes exceed 10 years, but this is less common. Modules used in harsher conditions—like outdoor enclosures or poorly ventilated telecom rooms—often need replacement after 3-5 years.

Factors Affecting Longevity

Temperature and Cooling: Heat accelerates aging of laser diodes and driver ICs. Modules consistently operating near their maximum rated temperature degrade faster. Optical Link Quality: Dirty connectors or damaged fiber increase laser workload, shortening module life.

Mechanical Wear: Frequent insertions, rough handling, or bending fiber beyond recommended radii can damage connectors and internal components. **Power Budget and Signal Margins:** Modules operating near their initial performance limits may experience errors as components age. **Practical Considerations for a 10-Year-Old Module**
Performance Check: Monitor pre-FEC errors, CRC spikes, and TX bias drift to assess current reliability.

Replacement Planning: Even if the module still functions, proactive replacement is recommended to avoid unexpected failures, especially in critical network links.

Resale or Repurposing: Older modules may no longer meet high-speed or low-latency requirements but can be used in budget-constrained or low-speed scenarios, such as backup links or internal monitoring.

Conclusion

A 10-year-old optical module has likely exceeded its typical service life under standard conditions. While it may still operate, its reliability and performance could be compromised. Careful monitoring, testing, and planning for replacement or repurposing are strongly advised to maintain network stability and prevent unexpected downtime.

Article Content

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Everything You Need to Know About Optical Modules

Optical modules are electronic devices used in communication systems to transmit optical signals. These modules convert electrical signals into optical signals, which can travel long distances

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