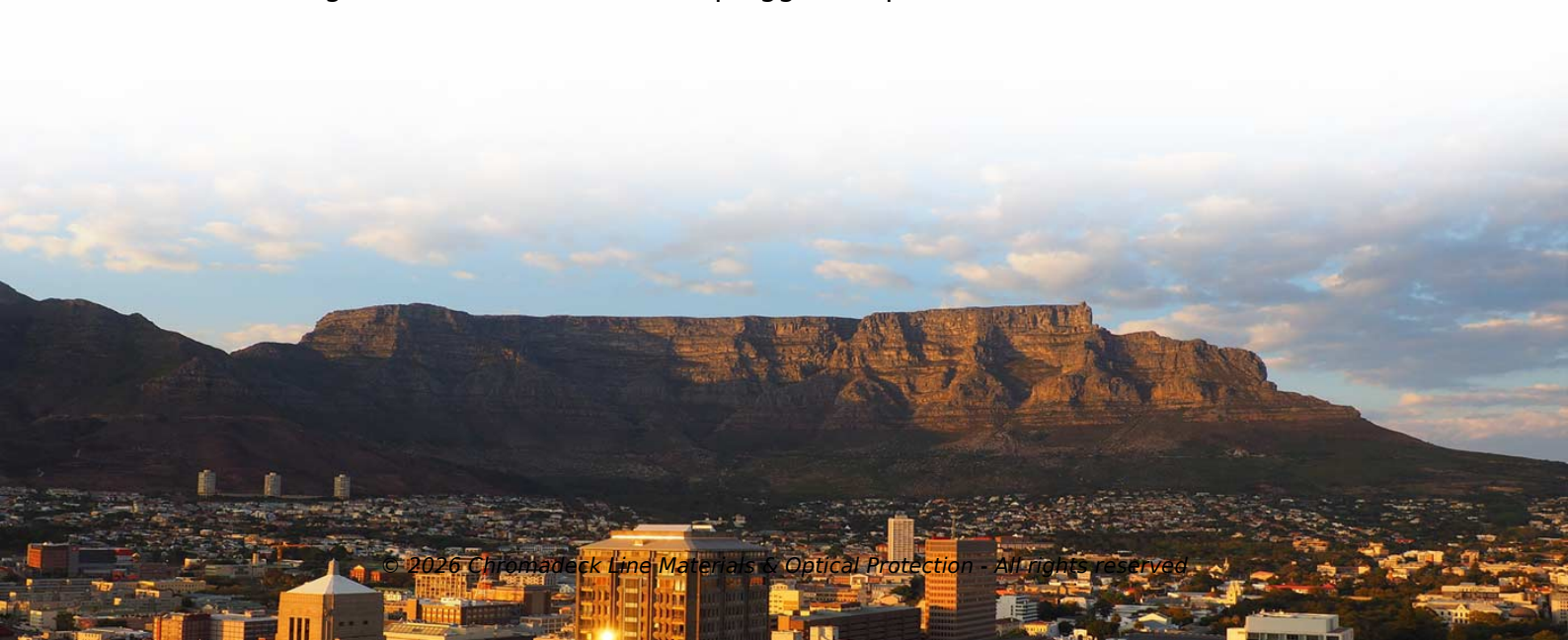


Technology for upgrading optical modules



Overview

This article unpacks the technologies powering this leap (silicon photonics, advanced modulation, and co-packaged optics), compares deployment paradigms, and delivers a tactical upgrade roadmap that balances performance, cost, and scalability. Optical modules, which serve as the building blocks for optical communication systems, are at the forefront of this evolution. This article will explore the evolution of modules' speed and form factor from 400G to 1.6T, discuss speed enhancement technologies, and paths to achieving high-speed. These requirements act as a powerful catalyst for ongoing innovation in optical modules. The goal is to. This comprehensive roadmap explores the technological evolution of optical modules over the next decade, examining the innovations in modulation techniques, photonic integration, packaging, and system architectures that will enable the exponential bandwidth growth required by AI and other demanding. Silicon photonics (SiPh) offers a high degree of integration and cost-effectiveness, helping to enhance optical module performance while driving down costs. Linear drive pluggable optics (LPO).



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