

## Low-loss OEM for core switches



### Overview

UltraBased on a patented MEMS technology, the Fiber-Fiber™ Series self-aligns a fiber directly to another fiber with a tiny gap filled with Ultra-Low Loss/.

### Key Takeaways

Agiltron and POLATIS are leading OEM providers of low-loss optical switches suitable for core network integration, offering insertion loss as low as 0.1–0.2 dB and high reliability for large-scale deployments. Agiltron Optical Switches

Agiltron specializes in ultra-low-loss optical switches with insertion loss typically around 0.2 dB, and in special configurations, as low as 0.1 dB. Their Fiber-Fiber™ Series uses patented MEMS technology to self-align fibers with minimal back-reflection and no mode distortion, supporting single-mode, multimode, and polarization-maintaining fibers. These switches are vibration-insensitive, moisture-resistant, and capable of handling high optical power, making them suitable for data centers, quantum computing, and telecom applications. Agiltron offers both fast MEMS switches for small port counts and motor-driven switches for large matrices up to 300 ports, with OEM integration options including TTL, USB, RS232, and custom interfaces.

POLATIS Optical Circuit Switches

POLATIS provides high-performance optical circuit switches with low insertion loss (typically below 1 dB) and low return loss, ensuring minimal signal degradation. Their DirectLight™ piezo-actuated beam-steering technology enables fast, reliable switching independent of wavelength, direction, or power level. POLATIS switches are modular, supporting matrix sizes from 8x8 up to 384x384, and are designed for OEM integration in test and measurement systems, AI data centers, and photonic fabrics. Features include dark fiber switching, SDN-enabled control interfaces, and hot-swappable components for high availability.

### Corning Co-Packaged Optics (CPO)

For next-generation high-bandwidth switches, Corning's CPO technology integrates optical components directly into switch hardware, reducing latency and improving signal integrity. While primarily focused on co-packaged optics for 400G and beyond, CPO solutions are relevant for OEMs seeking compact, low-loss optical modules for core switch integration.

### Key Considerations for OEM Selection

- Insertion Loss: Aim for switches with  $\leq 0.2$  dB for minimal signal degradation.
- Switching Speed: MEMS or piezo-actuated switches offer nanosecond to millisecond response times.
- Fiber Compatibility: Ensure support for SM, MM, PM fibers and various core sizes.
- Scalability: Modular designs allow expansion from small matrices to hundreds of ports.
- Integration Options: Look for TTL, USB, RS232, or SDN interfaces for seamless OEM integration.
- Reliability: Consider vibration, moisture resistance, and high optical power handling for mission-critical deployments. Both Agiltron and POLATIS provide proven low-loss optical switch solutions suitable for OEM integration in core network switches, with Agiltron excelling in ultra-low-loss MEMS designs and POLATIS offering scalable, high-reliability circuit switches with advanced software interfaces.

## Article Content

Ultra-Low Loss/Broadband Fiber Switches – All Fiber Types, 0.3dB

Ultra-Broadband/Low-Loss Fiber Optic Switch System – Custom Configurations – Fiber-Fiber™ ultra broadband 350-5000nm, all

Test & Measurement Network Equipment Manufacturer Solutions

POLATIS ® optical circuit switches, working in conjunction with test automation software, can augment existing test infrastructures to

Fiber Optic Switches | santec

Our ultra low-loss switches have been deployed in diverse applications including long-term environmental testing, datacom

POLATIS Optical Switch Modules from 16x16 up to 48x48 Ports

POLATIS Series 6000 Optical Switch Modules (OSM) are high-performance, fully non-blocking all-optical matrix switch modules with

Switches

Luminos CORALIGN moving fiber optic switches achieve direct fiber to fiber coupling through an air or oil filled gap, achieving the

Test & Measurement Network Equipment Manufacturer Solutions

POLATIS offers superior optical performance for test and measurement. Low insertion loss minimizes impact of test results per

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