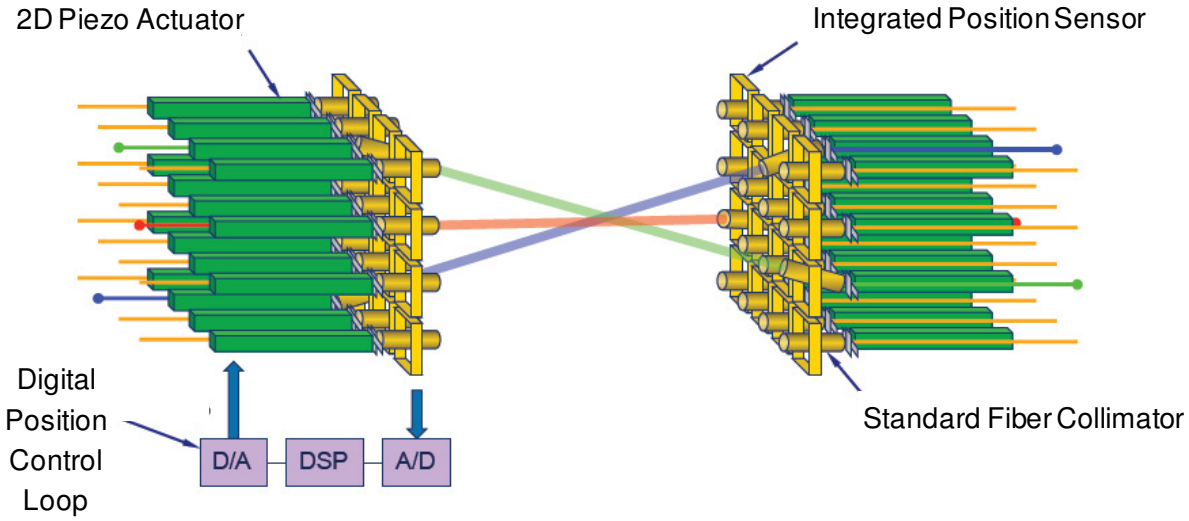
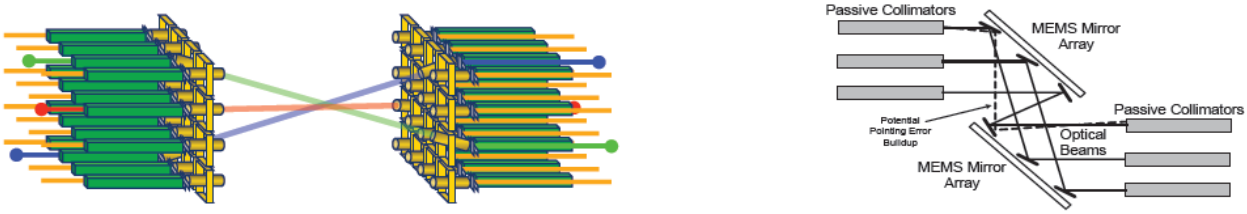
The Polatis all optical matrix switching platform provides scalable switching options from 4 x 4 to 192 x 192+. Based on the Polatis patented DirectLight® optical switch technology, matrices are fully non-blocking and provide typical insertion losses of less than 1 dB. The Polatis all optical matrix switch is wavelength independent and signal agnostic. Analog RF frequencies up to 40 GHz and digital signals up to 100 Gbps can be switched independently within the same matrix.

DirectLight® beam steering enables transparent optical connections with minimal degradation. The patented 2D piezo actuation with integrated position control maintains robust connections even on dark fiber.



DirectLight® Beam Steering

DirectLight® beam steering provides multiple advantages over MEMS switching.



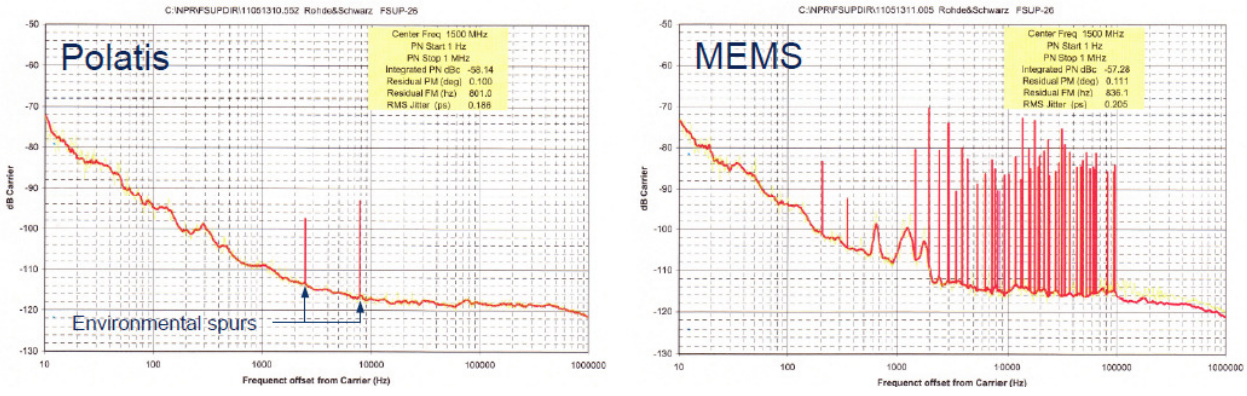
DirectLight® vs. 3D MEMS Technology

DirectLight® beam steering provides a direct light path. 3D MEMS utilizes fixed collimator beams reflected by silicon micromirror arrays. There is no direct light path and mirrors affect the optical signal.

DirectLight® beam steering provides ultra-low insertion loss, 0.4 dB typical, 1.0 dB maximum. 3D MEMS insert 2.5 dB loss typical, 4.0 dB maximum.

DirectLight® supports both singlemode and multimode fiber. 3D MEMS supports only singlemode fiber.

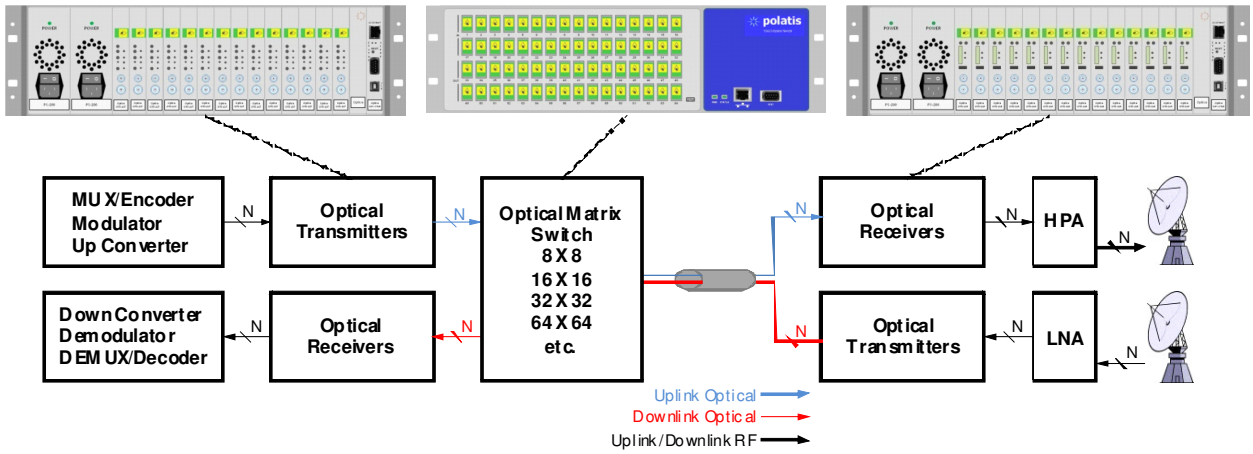
DirectLight® beam steering uses integral position sensors for alignment. Control is independent of light level and the switch is fully transparent and bi-directional. There is no dithering, and therefore no unwanted signal modulation. 3D MEMS uses optical feedback for alignment. Optical feedback requires a stable light level and is difficult to achieve with dark, transient, or bidirectional optical traffic. MEMs mirrors dither to optimize optical coupling. This dithering introduces AM noise close to signal carriers.



DirectLight® vs. 3D MEMS Technology, Phase Noise

DirectLight® beam steering provides 70 dB optical (140 dB RF) crosstalk isolation between channels even with strong interferers on adjacent ports. Optical return loss is > 55 dB.

A typical optical switch application within the antenna to satellite receiver signal path is shown below.



RF Signal Switching Application