

64x64 Photonic Switch J4096A Evaluation Module

Preliminary



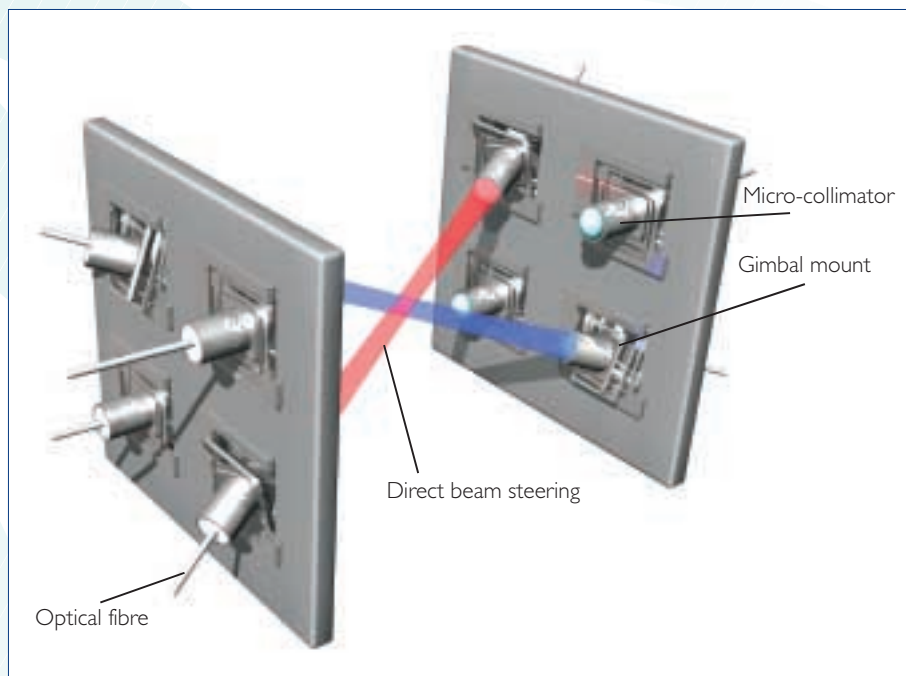
J4096A 64x64 Evaluation Module

Features

- ◆ Ultra low insertion loss (<1 dB)
- ◆ Compact package comprising core switch and integrated control electronics
- ◆ Low crosstalk
- ◆ <10ms switching
- ◆ Bi-directional & fully non-blocking
- ◆ Protocol and bit-rate independent

Applications

- ◆ Optical cross connects
- ◆ Reconfigurable optical add/drop
- ◆ Dynamic capacity provisioning



Principle operation.

Description

The J4096A is a true all-optical 64 x 64 switch offering <1 dB insertion loss. This ultra low loss performance is achieved through Polatis 3D direct beam steering technology. As there are no loss inducing dynamic components (such as tilting micro-mirrors) in the optical path of the core switch, direct beam steering is optically the purest and simplest way of implementing a rugged and manufacturable non-blocking switch. Moreover, 3D direct beam steering offers insertion loss that is polarisation, wavelength and path length independent.

The J4096A is a product demonstrator for generic evaluation purposes by network equipment vendors. Our Network Solutions Team are pleased to discuss subsequent customisation requirements to suit specific network equipment vendor production and packaging requirements.

The unit may be used in both Long Haul and Metro network applications such as Optical Cross Connects and Reconfigurable Optical Add/Drop Multiplexer units.



Detail showing collimators on MASS gimbal mounts in 64x64 switch core.



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Technology

The photonic switch fabric at the heart of the J4096A utilises Polatis MASS* technology to manoeuvre collimating micro-optics in three dimensions using rugged piezo micro-actuators.

As these actuators are directly applied to leading-edge photonic components (micro-collimators in this case), high performance switching is achieved without compromising optical performance.

Compact direct beam steering technology enables collimated light beams to be re-directed from any input port to any output port in <10ms switching time.

Independent closed loop position control continuously monitors each collimator position with precision and repeatability.

* *Micro Actuation and Sensor Systems*

Specifications

Parameter	Specification	Comment
Insertion loss	<1dB	
Crosstalk (static)	<-60 dB	Typically <-80 dB
Optical return loss	> 50 dB	Typically >70dB
Switching time	<10 ms	
Wavelength dependent loss	<0.1 dB	
Operational wavelength band 1	1528 – 1562 nm [C-band]	Can be optimised to also cover L-band
Operational wavelength band 2	1280 – 1320 nm [1.3µm band]	
Polarisation dependent loss	<0.1 dB	
Input optical power	<25 dBm	Single channels to 10W power handling
Number of optical ports	64 inputs & 64 outputs	
Input voltage	-48V DC	
Dimensions WxHxD	81mm x 400mm x 198mm	
Durability	> 10 ⁷ cycles	
Optical fibre termination	MU connector	Alternative fibre connectors possible
Total power consumption	<25W	
Communications interface	10/100 Base T Ethernet	

All specifications referenced to pigtails. Technical data maybe subject to change.

Further Information

Further performance details are available on request.

Please contact our Network Solutions Team at:



25 Cambridge Science Park, Cambridge CB4 0FW, UK
Tel: +44 (0) 1223 472014 **E-mail:** info@polatis.com
Fax: +44 (0) 1223 472015
Web: www.polatis.com