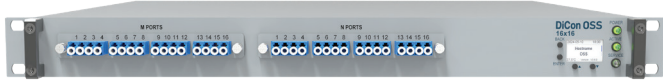# DiCon Fiberoptics, Inc.

MEMS 16X16 OPTICAL SWITCHING SYSTEM
OSS Model, Single Mode Fiber, Quantum Grade

DiCon's **Optical Switching System (OSS)** is an all-optical non-blocking cross-connect switch. This rack-mount device is designed with DiCon's proprietary 3D MEMS mirror technology and delivers industry-leading optical performance. The unit works without any position sensor or feedback loop, and the optical signals can pass through the equipment without any observable dithering artifacts. The **OSS** can switch repeatedly with great accuracy and maintain long-term connectivity with superior stability even when there is no optical signal in the fiber.

The chassis is compact, taking minimal rack space. It is also lightweight and can be picked up easily for installation. The **OSS** comes with multiple control interfaces so authorized administrators can automate network management and set user permissions in a Software Defined Network (SDN). This product can be ordered in standard simplex or duplex configurations, and customized port arrangements are available upon request. Optical power monitors and attenuators can be added to each path as options.

Key Features

- Market Leading Performance with Recognized Reliability
- Low Loss with High Stability & No Dithering Artifacts
- Compact, Lightweight, Easy to Transport
- Switches Fast & Consumes Low Power
- Operates Bi-Directionally & Works with Dark Fibers
- Supports Software Defined Networks

Applications

- Optical Network Management
- Quantum Communications
- Data Center Interconnect
- AI (Artificial Intelligence) Networks
- LLM (Large Language Models) Machine Training
- Cyber Security & Monitoring
- Network Test Automation

ORDERING INFORMATION

OSS – Q☐ – ☐ – 9 – ☐ – ☐☐ – ☐ – ☐

Grade

Q	Quantum

Configuration

S16x16	Simplex 16x16
SMxN	Simplex (M, N≤16)
D16	Duplex 16 Ports
DM	Duplex (M≤16)

Function

S	Matrix Switch Only
MS	With Input Power Monitor
SN	With Output Power Monitor
MSN	With Both Power Monitors

Fiber Type

9	9/125 µm SMF

Other fiber options available upon request

Optimized Wavelength Range

O	1260-1360 nm
E	1360-1460 nm
S	1460-1530 nm
C	1530-1570 nm
L	1570-1625 nm
U	1625-1675 nm

Multiple wavelength ranges can be supported.
Use "/" to add multiple ranges.
For example: For 1260 - 1360 nm & 1530 - 1570nm use O/C,
for 1260 to 1675 nm use O/E/S/C/L/U

Chassis Height

1U	1U
2U	2U
3U	3U

Contact Sales for assistance

Power

A1	AC 90-264V Single
D1	DC -48V Single
A2	AC 90-264V Redundant
D2	DC -48V Redundant

Connector Type

LC	LC/UPC
LC/APC	LC/APC
HLC	High Density LC UPC
HLC/APC	High Density LC APC
M8	MTP/MPO-8 APC
M12	MTP/MPO-12 APC

Other connector types available upon request

Connector Location

F	Front
R	Rear

DiCon Fiberoptics, Inc. • www.diconfiberoptics.com • sales@diconfiberoptics.com • 1689 Regatta Blvd.Richmond, CA 94804, USA

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MEMS 16X16 OPTICAL SWITCHING SYSTEM

OSS Model, Single Mode Fiber, Quantum Grade

OPTICAL SPECIFICATIONS

Wavelength Range	1260 to 1675 nm
Insertion Loss[1]	< 0.8 dB
Insertion Loss (with 1 OPM)	< 1.1 dB
Insertion Loss (with 2 OPM)	< 1.4 dB
Loss Repeatability[2]	+/- 0.01 dB
Connection Stability[3]	+/- 0.01 dB
Connection Stability (Short Term)[4]	+/- 0.005 dB
PDL, C+L Band (1530-1625 nm)	< 0.1 dB
PDL, C+L Band with OPM	< 0.3 dB
WDL, C+L Band (1530-1625 nm)	< 0.3 dB
Crosstalk	< -70 dB
Data Latency	< 20 ns
Back Reflection	< -50 dB
Switching Time, All Channels	< 25 ms
Switch Lifetime	> 1 Billion Cycles
Input Power Range	Dark to +27 dBm
OPM Dynamic Range	-50 to +22 dBm
OPM Accuracy	+/-0.2 dB @ > -30 dBm +/-0.5 dB @ > -50 dBm

1. Measured at optimized λ (e.g. 1550 nm), 25°C, excluding connectors (Each pair of connectors will add extra 0.2 dB loss.)
2. Over 100 cycles
3. 1 Hz sampling rate for 15 min
4. 10 KHz sampling rate for 10 Sec

ELECTRICAL SPECIFICATIONS

Power Consumption	< 20W Steady State < 30W at Startup
Power Supply Options	Redundant Power Supply, 90-264 VAC or -48 VDC
Network Interface Card	RJ45 Dual Redundant Gigabit Ethernet
SDN & Automation Interfaces	REST API, NETCONF, SNMPv3, TL1, Web GUI, RS232

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0 to 45°C, < 85% RH
Storage Temperature	-40 to 70°C, < 40% RH

MECHANICAL SPECIFICATIONS

19" Chassis Depth	559 mm (22")
19" Chassis Height	1U (with LC)