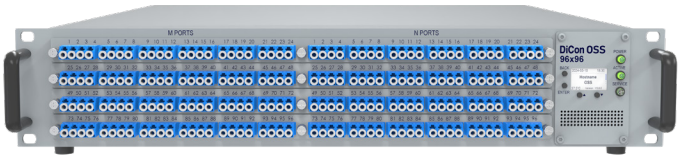
DiCon Fiberoptics, Inc.

MEMS 96X96 OPTICAL SWITCHING SYSTEM

OSS Model, Single Mode Fiber, Network 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

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Grade

N	Network

Configuration

S96x96	Simplex 96x96
SMxN	Simplex (M, N≤96)
D96	Duplex 96 Ports
D#	Duplex (#≤96)

Function

Simplex	**S**	Matrix Switch Only
	SA	VOA Only
	MS	M Side Power Monitor
	MSA	M Side Power Monitor & VOA
	SN	N Side Power Monitor
	SAN	N Side Power Monitor & VOA
	MSN	Both Sides Power Monitor
	MSAN	Both Sides Power Monitor & VOA
Duplex	**D**	Matrix Switch Only
	DA	VOA Only
	DP	Power Monitor (B Ports / Outputs)
	DAP	Power Monitor & VOA (B Ports / Outputs)

Fiber Type

9	9/125 µm SMF

**Other fiber options available upon request*

Test Wavelength

O	1310 nm
C	1550 nm
L	1590 nm

**Use "/" to add multiple wavelengths. E.g., O/C or O/C/L*

Chassis Type

2U	2U
3U	3U
4U	4U

**Please consult DiCon **See "Mechanical Specifications"*

Power

A1	AC 100-240V Single
D1	DC -48V Single
A2	AC 100-240V Redundant
D2	DC -48V Redundant

Bulkhead Connector Type

LC	LC/UPC
LC/APC	LC/APC
RLC	LC/UPC on Removable Panel
RLC/APC	LC/APC on Removable Panel
HLC	High Density LC/UPC
HLC/APC	High Density LC/APC
M8F	MTP-8 Female APC
M8M	MTP-8 Male APC
M12F	MTP-12 Female APC
M12M	MTP-12 Male APC
M24F	MTP-24 Female APC
M24M	MTP-24 Male APC

**Other connector types are available upon request*

Connector Location

F	Front
R	Rear

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OPTICAL SPECIFICATIONS[1]

Test Wavelength	1260 to 1675 nm
Insertion Loss[2]	< 1.3 dB
Insertion Loss (with 1 OPM)[2]	< 1.7 dB
Insertion Loss (with 2 OPM)[2]	< 2.0 dB
Loss Repeatability[3]	+/- 0.03 dB
Connection Stability[4,5]	+/- 0.03 dB
PDL[5]	< 0.1 dB
PDL with OPM[5]	< 0.3 dB
WDL[5,6]	< 0.3 dB
Crosstalk[5]	< -60 dB
Data Latency[5]	< 15 ns
Back Reflection	< -50 dB
Optical Transition Time[5,7]	< 25 ms
Switch Lifetime	> 1 Billion Cycles
Input Power Range	Dark to +27 dBm
OPM Dynamic Range	-50 to +22 dBm
OPM Relative Accuracy	+/-0.2 dB @ > -30 dBm +/-0.5 dB @ > -50 dBm
VOA Accuracy (Closed-Loop)[5,8,9]	+/-0.3 dB @ 20 dB Attn +/-0.5 dB @ 30 dB Attn
VOA Accuracy (Open-Loop)[8,10]	+/-1.5 dB @ 20 dB Attn +/-1.5 dB @ 30 dB Attn

1. Measured separately for each Test Wavelength at room temperature
2. Measured with 3-jumper method or equivalent. See TIA/EIA 526-7
3. Over 100 cycles
4. 1 Hz sampling rate for 15 min
5. Met by design, not measured
6. Test Wavelength +/-20 nm
7. Optical transition time for all ports switching concurrently, not including command processing overhead
8. 98th percentile of optical connections; defined as the average +2 standard deviations
9. Requires N side Power Monitoring
10. Corresponds to accuracy using Constant Attenuation Mode. Both Constant Power Mode and Relative Attenuation Mode will have better accuracy due to Closed-Loop feedback

ELECTRICAL SPECIFICATIONS

Power Consumption*	< 40W Steady State < 45W at Startup
Power Supply Options	Redundant Power Supply, 100-240 VAC or -48 VDC
Network Interface Card	RJ45 Dual Redundant Gigabit Ethernet
SDN & Automation Interfaces	REST API, NETCONF, SNMPv3, TL1, Web GUI, RS232, gNMI

*Power is measured with a redundant AC power supply and both M and N side power monitoring. When using a redundant DC power supply, the total power consumption may increase by 5-10 W.

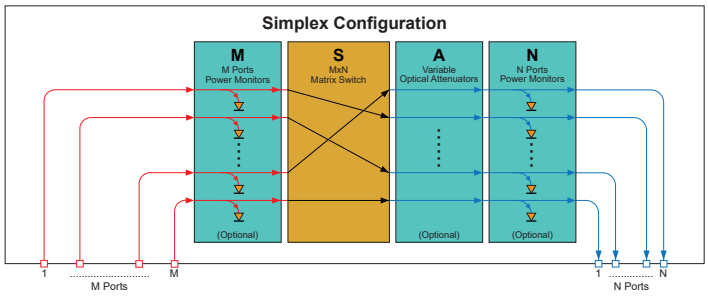
ENVIRONMENTAL SPECIFICATIONS

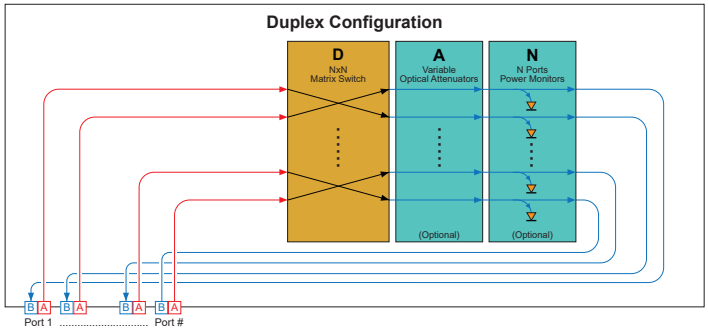
Operating Temperature	0 to 50°C, < 85% RH
Storage Temperature	-40 to 70°C, < 40% RH

MECHANICAL SPECIFICATIONS

Chassis Width	483 mm (19”)
Chassis Depth*	435 mm (17”) 559 mm (22”)
Chassis Height	2U (with LC)*

*Please consult DiCon. Depends on connectors and options.





*Switch and light path operate bi-directionally but power monitors(optical) only measure uni-directionally unless special ordered.