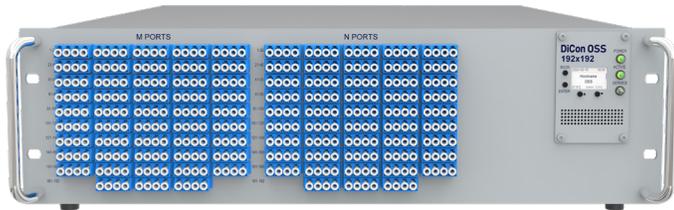


# MEMS 192X192 OPTICAL SWITCHING SYSTEM

## 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

**S192x192** Simplex 96x96  
**SMxN** Simplex (M, N≤96)  
**D192** Duplex 96 Ports  
**D#** Duplex (#≤96)

### Function

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

**4U** 4U  
**6U** 6U  
*\*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<sup>1</sup>

Test Wavelength	1260 to 1675 nm
Insertion Loss <sup>2</sup>	< 1.9 dB
Insertion Loss (with 1 OPM) <sup>2</sup>	< 2.2 dB
Insertion Loss (with 2 OPM) <sup>2</sup>	< 2.5 dB
Loss Repeatability <sup>3</sup>	+/- 0.01 dB
Connection Stability <sup>4,5</sup>	+/- 0.01 dB
Connection Stability (Short Term) <sup>6</sup>	+/- 0.005 dB
PDL <sup>5</sup>	< 0.1 dB
PDL with OPM <sup>5</sup>	< 0.3 dB
WDL <sup>5,7</sup>	< 0.3 dB
Crosstalk	< -70 dB
Data Latency <sup>5</sup>	< 15 ns
Back Reflection	< -50 dB
Optical Transition Time <sup>5,8</sup>	< 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) <sup>5,9,10</sup>	+/-0.3 dB @ 20 dB Attn +/-0.5 dB @ 30 dB Attn
VOA Accuracy (Open-Loop) <sup>9,11</sup>	+/-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. 10 KHz sampling rate for 10 Sec
7. Test Wavelength +/-20 nm
8. Optical transition time for all ports switching concurrently, not including command processing overhead
9. 98th percentile of optical connections; defined as the average +2 standard deviations
10. Requires N side Power Monitoring
11. 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*	< 55W Steady State < 65W 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 M and N side Power Monitoring

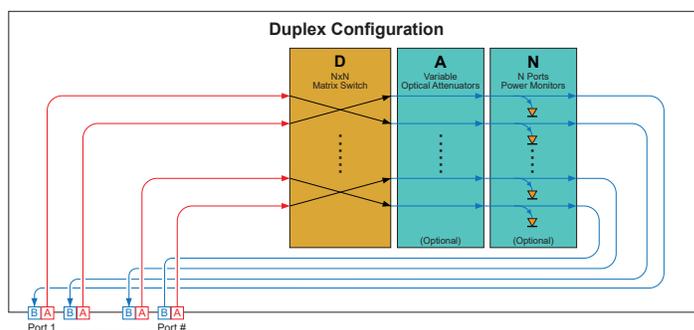
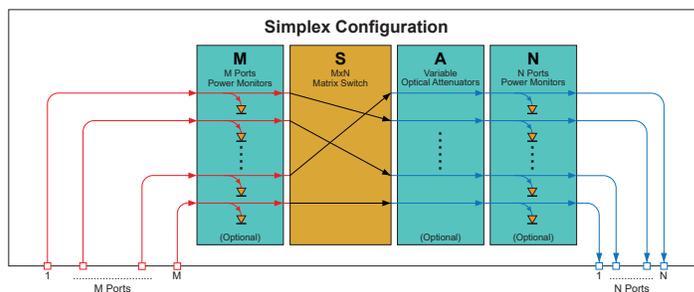
### ENVIRONMENTAL SPECIFICATIONS

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	4U (with HD 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.

