MEMS M x M Fiber Optical Switch
(Non-Blocking, Bidirectional)

(Protected by U.S. patents 7224860，6757101，6577430 and pending patents)

Product Description

The Agiltron MEMS Matrix M x M optical fiber switch is a leading solution to manage and monitor large optical networks intelligently and remotely, establishing optical signal paths in milliseconds. The switch system is supported by a robust software and control algorithms making the management of live traffic resilient to the effects of time, vibration and temperature. Their unique capabilities enable the dynamic selection and distribution of optical signals for analysis and storage. The passive switch is bit rate independent, supporting all date rates.

Monitoring Applications - access signals for analysis in real time without disrupting traffic.

Reconfigure Applications – select, duplicate, and distribute optical signals to one or many locations.

Features

- Low Cost
- High Reliability
- Low Insertion Loss
- Broad Band
- Compact Design
- Low Voltage

Applications

- Optical Signal Routing
- Network Protection
- Wavelength Management
- Signal Monitoring
- Instrumentation

Performance Specifications

MEMS M x M Switch	Min	Typical	Max	Unit
Operation Wavelength		1260~1650		nm
Insertion Loss[1]	0.5	1	1.2	dB
Cross Talk	50			dB
Switch Speed (Rise, Fall)		5	10	ms
Durability	10^8			cycle
Polarization Dependent Loss		0.04	0.2	dB
Wavelength Dependence Loss[2]		0.1	0.3	dB
Return Loss	45			dB
Repeatability		0.3	0.5	dB
Operating Temperature [3]	-5		65	ºC
Optical Power Handling (CW) [4]		300	500	mW
Storage Temperature	-40		85	ºC
Electrical Power Consumption			80	W
Switch type	Non-Latching/Latching			
Package Dimension	1RU / 2RU /3RU / 4RU			

1. Measured without connectors
2. Within 50nm bandwidth
3. -25 ºC~75ºC version is also available.
4. High power version available

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Switching Module Mechanical Dimensions (mm)

The switch module is mounted inside a standard rack box with front fiberoptic connectors of customer choice and back electrical power input and control interfaces. The height of the box is determined by the port count.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical Specification

- •RS 232/ RS 485
- •Ethernet 10/100 with definable IP address
- •CLI
- •GUI
- •Dual 48V/120-220V Power Input
- • USB
- • SNMPv3

Graphic Interface

Per customer request

Ordering Information

MEMS-	☐☐☐	☐	☐	☐	☐	☐	☐
	Type	**Wavelength**	**Switch Type**	**Package**	**Fiber Type**	**Power Monitor**	**Connector**
	8x8=008 Dual 8x8 =208 12x12=012 Dual 12x12 =212 16x16=016 24x24=024 32x32=032 48x48=048 64x64=064 128x128=128 144x144=144 192x192=192 256x256=256 Special=000	1060=1 1310=3 1410=4 1550=5 1310/1550=2 650=6 780=7 850=8 Special=0	Symmetric=1 Special=0	1RU=1 2RU=2 3RU=3 4RU=4 Special=0	SMF-28 =1 MM 50/125=2 MM 62.5/125=3 Panda=5 Special=0	Input=1 Output=2 Input/output=3 None =0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Duplex LC=8 Special=0

MEMS 1x1, 1x2, ..., Dual 2x2
Fiber Optical Switch
(*SM & MM: 1x1, 1x2, 2x2, Dual 1x1, Dual 1x2, Dual 2x2, Quad 1x1. *PM: 1x1, 1x2)

10 ^{9} Switching Cycle Test

We have tested MEMS 1x2 switch at the resonant frequency ~300Hz for more than 40 days, as shown in the attachment, which corresponding over 10 ^{9} switching cycles. The measurements show little changes in Insertion loss, Cross Talk, Return loss ect, all parameters are within our specs.
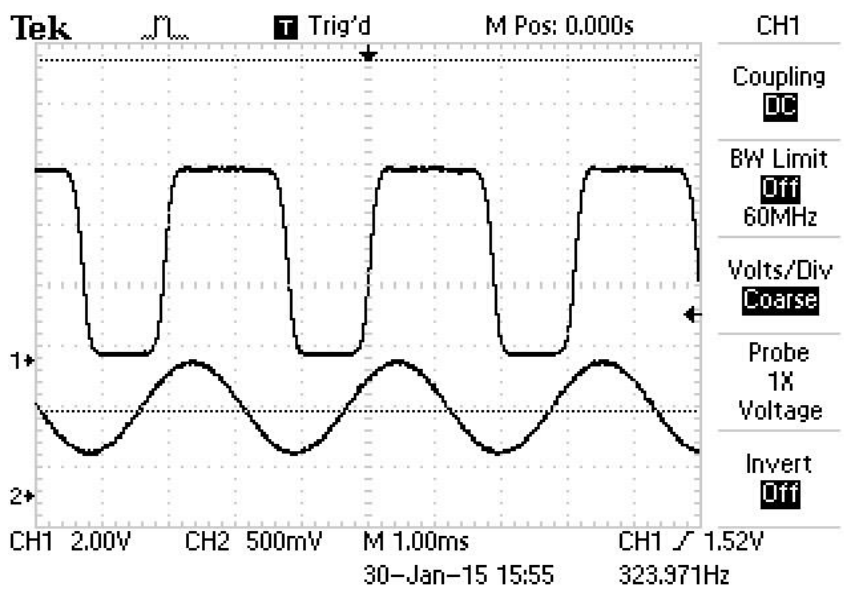
Questions and Answers

Q: If the device were to fail, would the switch continue to pass the fiber light through the switch as configured before failure? When power is restored, does the IN/OUT configuration before failure remain in place?
A: This depends, if one mirror fails, it only affects the light go through that mirror. Yes, when power back up it will go to the previous points

Q: When power is restored, does the IN/OUT configuration before failure remain in place?
A: Yes, when power back up it will go to the previous flightpath

Q: If power to the device were shutoff, would the device continue to pass the fiber light as configured before failure?
A: This function is call latching. We uniquely offer MEMS latching switch but cost more.

Q: With the Ethernet Control Option, does the switch support SNMPv3
A: Yes. This internet standard protocol allows user to write their own control code

Q: With the Ethernet Control Option, what type of encryption does the SNMPv3 use?
A: MD5/DES

Q: With the Ethernet Control Option, could this device be controlled by multiple users at different locations and all users will also see the configuration updates?
A: Yes

Q: With the Ethernet Control Option, could this switch be controlled by multiple users at different locations and all users will also see the configuration updates?
A: Yes

Q: With the Ethernet Control Option, does the user need to install any software on their computer other than a web browser?
A: No