MEMS DUAL 4x4 MULTICAST SWITCH

DiCon's MEMS Dual 4x4 Multicast Switch is based on DiCon's proven MEMS 1xN Switch, and incorporates two 4x4 Multicast Switches for add/drop functionality in a single package. For the drop side, input signals are first broadcast via 1x4 optical splitters into 4 optical switches, which are then used to independently route network traffic from any input to any or all output ports. For the add side, each switch receives an input and selects one of the N splitters to receive traffic for broadcast to the network. The MEMS Dual 4x4 Multicast Switch is ideal for colorless, directionless and contentionless add/drop multiplexing.
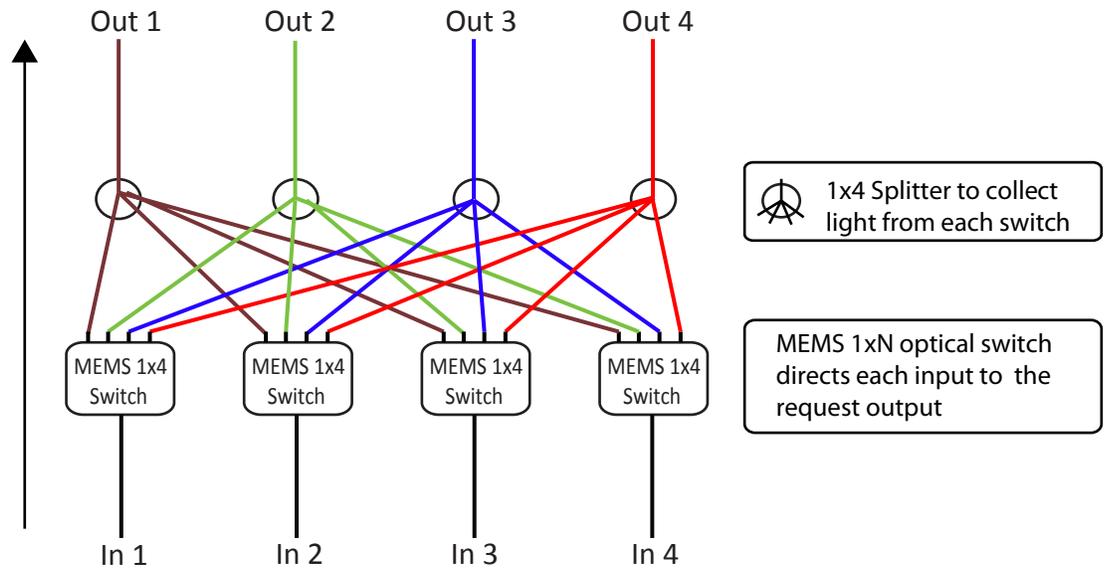
FEATURES

- Compact Form Factor
- Excellent Thermal Stability
- Proven MEMS Durability and Reliability

APPLICATIONS

DiCon's MEMS Multicast Switches are intended for colorless, directionless and contentionless add/drop multiplexing in ROADM networks.
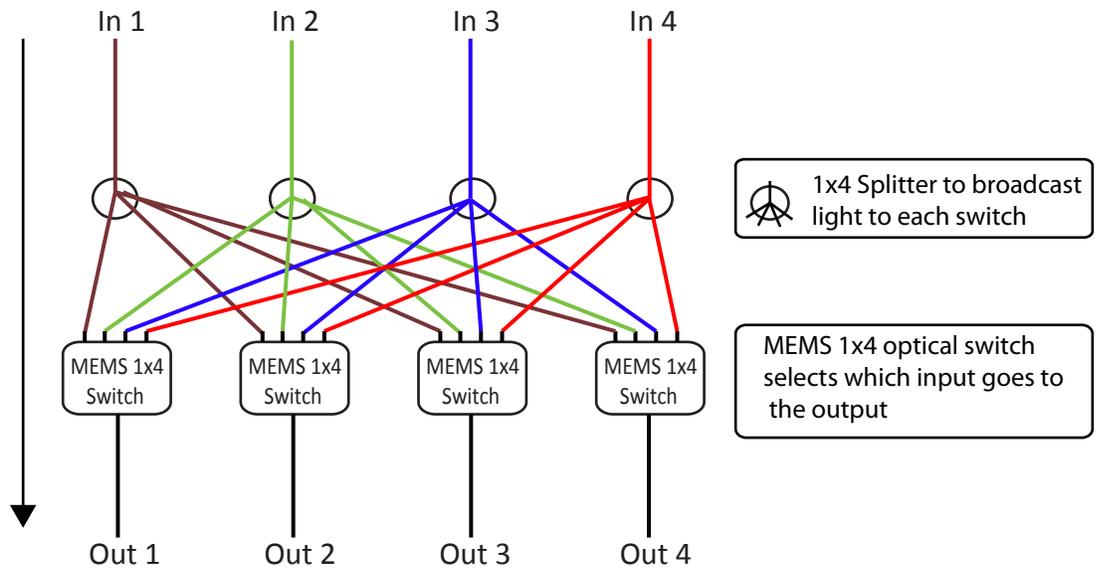
ADD SIDE

Out 1   Out 2   Out 3   Out 4

1x4 Splitter to collect
light from each switch

MEMS 1x4   MEMS 1x4   MEMS 1x4   MEMS 1x4
Switch   Switch   Switch   Switch

MEMS 1xN optical switch
directs each input to the
request output

In 1   In 2   In 3   In 4

On the Add Side, a series of MEMS 1xN optical switches are used to direct each input to a requested output. Splitters are then used on each output to collect and combine the light from the switches, so that each output can contain any requested combination of inputs.

DROP SIDE

In 1   In 2   In 3   In 4

1x4 Splitter to broadcast
light to each switch

MEMS 1x4   MEMS 1x4   MEMS 1x4   MEMS 1x4
Switch   Switch   Switch   Switch

MEMS 1x4 optical switch
selects which input goes to
the output

Out 1   Out 2   Out 3   Out 4

On the Drop Side, splitters are used on each input to broadcast light to a series of MEMS 1xN optical switches, which select which input goes to which output. In this way each output can contain the signal from any requested input.
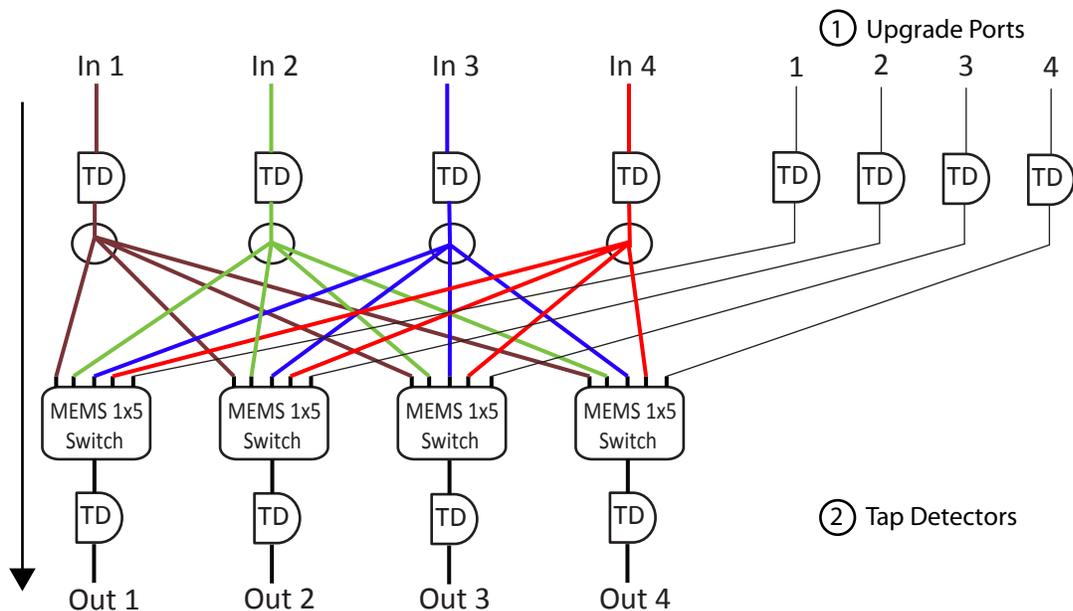
DiCon

FIBEROPTICS

OPTIONS

The MEMS Dual 4x4 Mulitcast Switches can be customized to best meet the applications requirements, and two standard options are available as follows:

　　1) Upgrade ports can be added to the Add and Drop sides.
　　2) Tap Detectors to monitor the input and output power.

ADD SIDE WITH OPTIONS
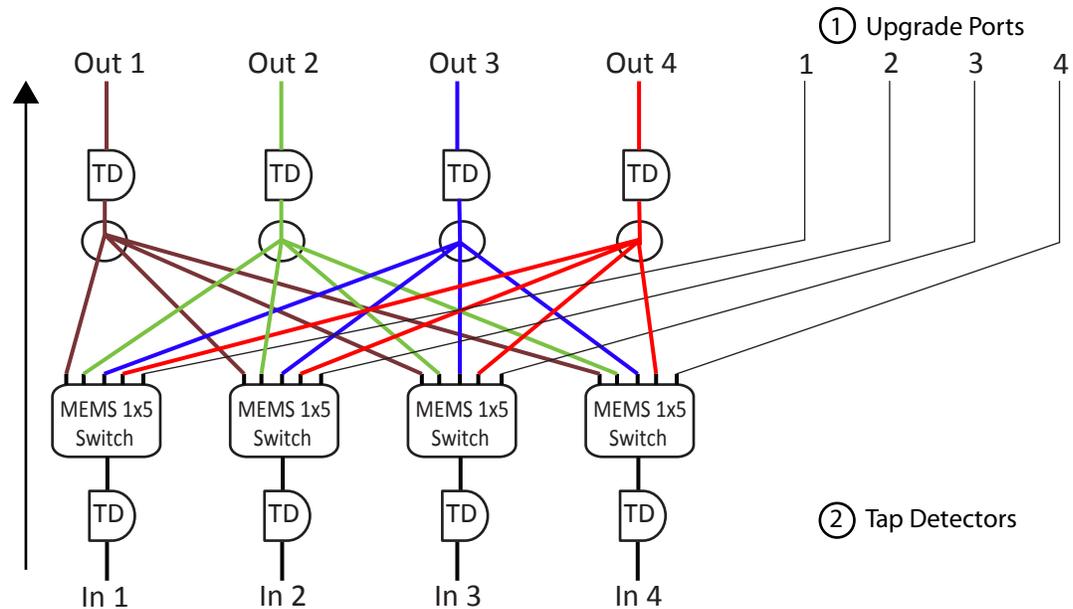
## DROP SIDE WITH OPTIONS

MEMS DUAL 4x4 MULTICAST SWITCH

OPTICAL SPECIFICATIONS[1]

PARAMETER		RATING
Insertion Loss[2,3,4]	Add/Drop Ports[5]	8.1 dB max.
	Upgrade Ports	1.6 dB max.
TDL		0.4 dB max.
WDL[6]		0.35 dB max.
PDL		0.2 dB max.
Crosstalk[7]		-50 dB max.
Back Reflection		-40 dB max.
Switching Time		30 ms max.
Repeatability[8]		0.04 dB max.
Durability		10^9 cycles min.
Optical Power		200 mW max.
Operating Temp		-5 to 70°C
Storage Temp		-40 to 85°C
Fiber Type		9/125 μm single mode
PHOTODIODE PARAMETER		RATING
2% Tap TD Responsivity	1260-1360nm	10-23 mA/W
	1510-1610nm	14-25 mA/W
Dark Current	(70°C, -5V bias)	3 nA typ., 10 nA max.
Reverse Voltage		20 V max.
Forward Current		10 mA max.

1. Specifications are without connectors.
2. IL is measured at CWL, 23ºC.
3. IL is for standard opaque model.
4. IL is for single-band. Dual band adds 0.2 dB.
5. IL for Add/Drop Ports without Tap Detectors, add 0.2 dB for optional Tap Detectors
6. WDL is measured in a +/- 20nm range at 23ºC.
7. Power off isolation is same as cross talk. -35 dB max. for hitless switching.
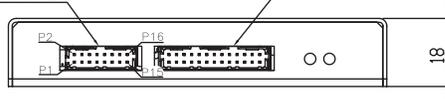8. Repeatability is defined after 100 cycles.

MECHANICAL DIMENSIONS
(Units: mm)
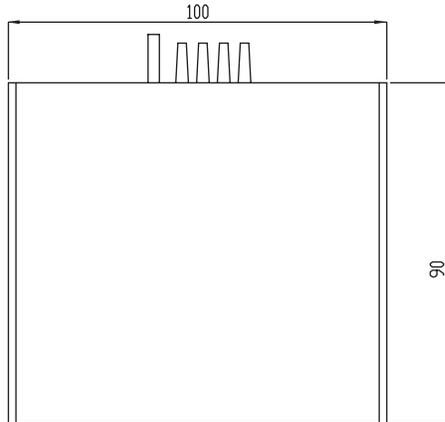
MOLEX：87833-1620
MTAES：87568-1694
OR 5110-1651

MOLEX：87833-2620
MTAES：87568-2694

100

90

18

P2 P16
P1 P12

ORDERING INFORMATION

MCS - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐

Switch Configuration

4x4/D	Dual 4x4

Control Interface

I2C	I^2C
RS2	RS-232

Wavelength Range

13	1290 - 1330 nm
15	1530 - 1570 nm
16	1570 - 1610 nm
13/15	1290 - 1330 & 1530 - 1570 nm
15/16	1530 - 1570 & 1570 - 1610 nm

Upgrade Port Option

UG	With Upgrade Ports
N	Without Upgrade Ports

Tap Detector Option

TD	With Tap Detectors
N	Without Tap Detectors

Fiber and Jacket Type

9/LT	Corning SMF-28, Loose-Tube
8/RB	8-Fiber Ribbon Cable, 3mm OD Jacket
9/LR	Loose-Tube for In/Out ports and Ribbon Cable for upgrade ports

Connector Type

FC/SPC	FC/SPC
FC/APC	FC/APC
MPO/APC	MPO/APC
N	NONE

Also Available: SC, SC/UPC, SC/APC, ST, ST/UPC, LC

Pigtail Length

1	1 Meter
X	Specify X Meters

Tolerance is +/- 0.05 m

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Latching Type	non-latching
Control Type	I^2C or RS232
Vcc Voltage	5 or 12 VDC
Power Consumption	1 W max.

0279A