



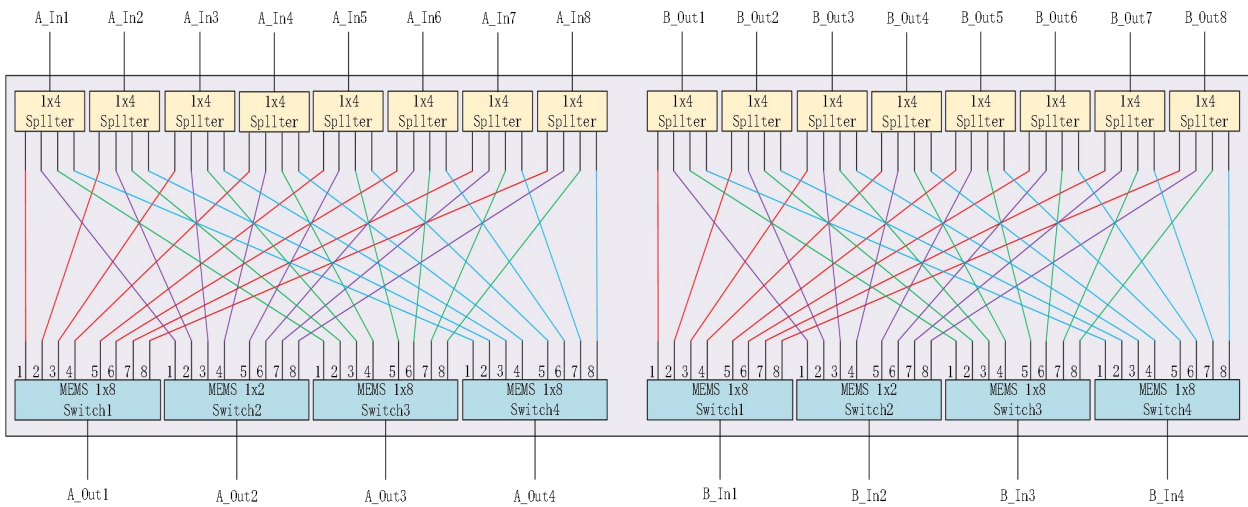
## Product Presentation

MEMS Dual 4x8 Multicast Switch is based proven MEMS 1xN Switch, and incorporates two 4x8 Multicast Switches for add/drop functionality in a single package. For the drop side, input signals are first broadcast via 1x4 optical splitters into 8 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 4x8 Multicast Switch is ideal for colorless, directionless and contentionless add/drop multiplexing.

## Features

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

## Block Diagram

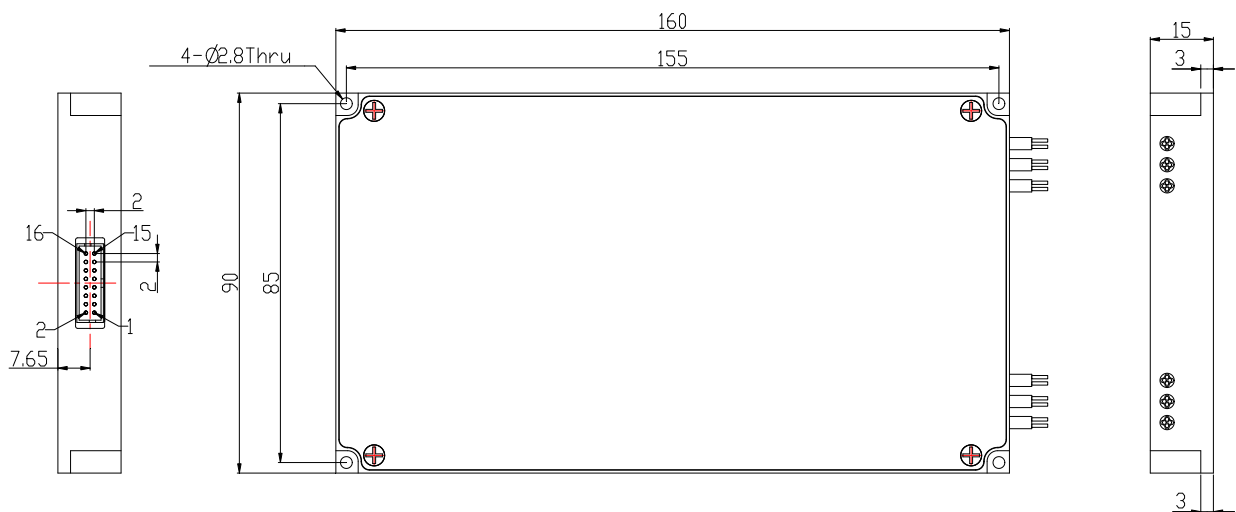




## Specifications

| Product Number              | MEMS-D4×8-MCS-M               |
|-----------------------------|-------------------------------|
| Fiber Type                  | SM (9/125)                    |
| Wavelength Range            | 1550nm                        |
| Insertion Loss              | ≤8.0dB                        |
| Wavelength Dependent Loss   | ≤0.5dB                        |
| Polarization Dependent Loss | ≤0.5dB                        |
| Return Loss                 | ≥40 dB                        |
| Crosstalk                   | ≥50 dB                        |
| Repeatability               | ≤±0.05dB                      |
| Switching Time              | ≤15ms                         |
| Durability                  | ≥10 <sup>9</sup> cycles       |
| Connector Type              | FC/PC                         |
| Pigtail Length              | 1.0m                          |
| Optical Power               | ≤500 mW                       |
| Power Supply                | 5V / 250mA                    |
| Working Temperature         | -5 ~ 70 °C                    |
| Storage Temperature         | -40 ~ 85 °C                   |
| Packaging Dimensions        | 90(L) x 160(W) x 15(H) ±0.2mm |

## Dimension(mm)





## Electrical-pins definition

| PIN | definition | Signal | Function                        |
|-----|------------|--------|---------------------------------|
| 1   | NC         |        | No physical internal connection |
| 2   | NC         |        | No physical internal connection |
| 3   | VCC        | Power  | Power supply, 5V/0.25A          |
| 4   | NC         |        | No physical internal connection |
| 5   | NC         |        | No physical internal connection |
| 6   | GND        | Power  | GND                             |
| 7   | NC         |        | No physical internal connection |
| 8   | SDA        | I/O    | I2C DATA                        |
| 9   | TXD        | Output | RS232: Transmit Data;           |
| 10  | RXD        | Input  | RS232: Receive Data             |
| 11  | SCL        | I/O    | I2C CLK                         |
| 12  | NC         |        | No physical internal connection |
| 13  | NC         |        | No physical internal connection |
| 14  | NC         |        | No physical internal connection |
| 15  | NC         |        | No physical internal connection |
| 16  | NC         |        | No physical internal connection |

Note: the electrical interface of the module uses Molex 87833-1620, and the customer's connector is recommended to use Molex 87568-1694.

## Program Control Order

This module can receive control signals through RS232 interface to realize automatic measurement or real-time monitoring.

- (1) This module can only execute one instruction at a time. Usually, the next instruction can be entered only after the program returns the corresponding value
- (2) Please use capital letters.
- (3) In actual operation, enter the sharp bracket "<" as the start character and the sharp bracket ">" as the end character
- (4) Instruction error return < Er >.

### Program control instruction set

| Order     | Describe  | Example  |
|-----------|---|--|
| <RESET>   | Restart module  | Successful return: <RESET_OK>  |
| <RESTORE> | Restore factory settings  | Successful return: <RESET_OK>  |
| <INFO_?>  | Query module information  | Successful return:<br><MEMS-D4X4_VER1.00_<br>SN01234567890_C08.04.00051> |
| <BAUD_x>  | Set or query serial port baud rate<br>1.x is 1~9, Baud rate 2400、4800、9600、14400、 | set: <BAUD_5><br>Successful return: <BAUD_5_OK>                          |



|                         |   |  |
|-------------------------|---|--|
|                         | 19200、38400、56000、57600、115200<br>Successful return: <BAUD_x_OK><br>2. Send < BAUD_? > Query Baud Rate  | Set the baud rate of the serial port of the device to 19200<br><br>After saving the configuration, restart it to take effect!                                      |
| <OSW_xx_SW_s1_s2_s3_s4> | Set current channel<br>xx: 00~02, 00 mean is A and B simultaneous switching, 01 indicates 4x8 switching of group A and 02 indicates 4x8 switching of group B;<br>s1~s4: mean is Switch1 ~Switch4, value 00~08, 0 ~ 8 channels respectively;<br>Successful return : <OSW_xx_SW_s1_s2_s3_s4_OK> | set: <OSW_01_SW_01_02_03_04><br>Successful return:<br><OSW_01_SW_01_02_03_04_OK><br>Indicates that A group 4X4 switches to:<br>In1→Out1、In2→Out2、In3→Out3、In4→Out4 |
| <OSW_A_?>               | Query channel status<br>Successful return:<br><OSW_A_a1_a2_a3_a4_b1_b2_b3_b4><br>a1~a4 : Respectively represent the current channels of Switch1 ~ switch4 of group A;<br>b1~b4 : Respectively represent the current channels of Switch1 ~ switch4 of group B;                                 | Return:<br><OSW_A_01_02_03_04_01_02_03_04 ><br>Indicates that the channels of group A and group B are : In1→Out1、In2→Out2、In3→Out3、In4→Out4                        |
| <SAVE_ALL>              | Save configuration<br>Successful return: <SAVE_ALL_OK>  | Save the configuration, such as channel status.  |

### Fiber Length and Boot Length definition



Note: including boot and connector length.

### Factory default configuration

| Item             | Factory default configuration          | Note   |
|------------------|--|--|
| Serial baud rate | 115200                                 | 8 data bits, 1 stop bit, no parity                           |
| Working channel  | In1→Out1、In2→Out2<br>In3→Out3、In4→Out4 | Group A and group B are the same optical path identification |