36X36 MEMS matrix optical switch module

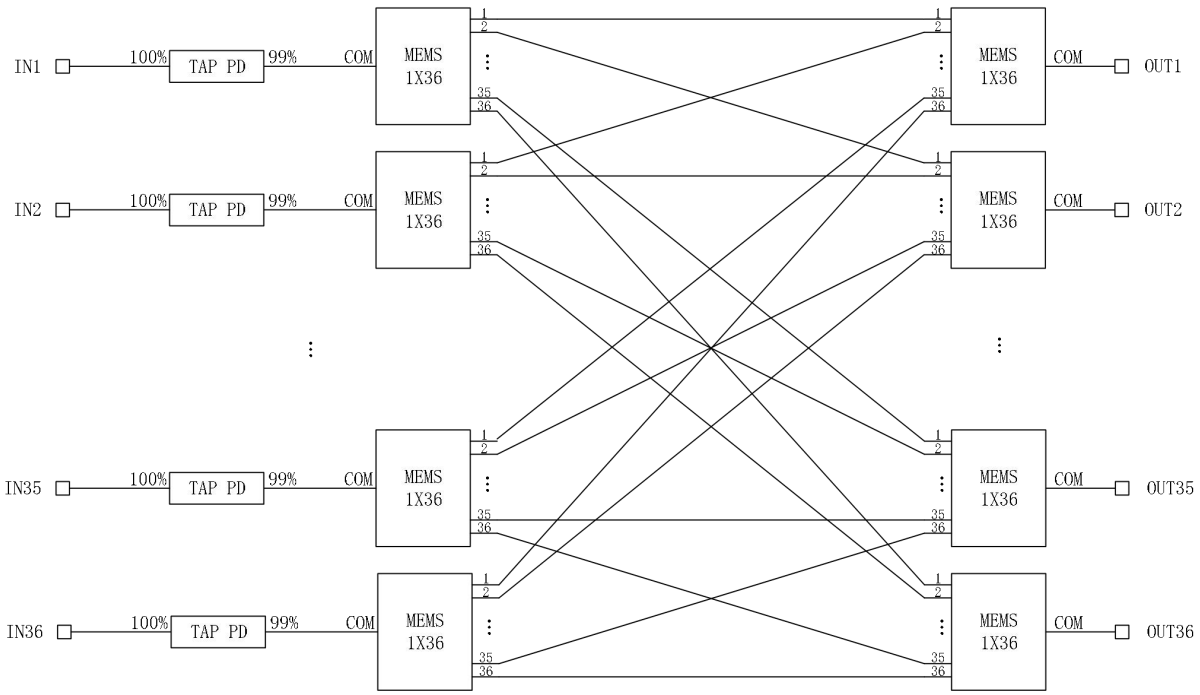
Features

Modular Design
Non-Blocking Switching
“any-to-any” switch
High stability and reliability

Applications

OXC
Data Center
Instrumentation
Configuration OADM

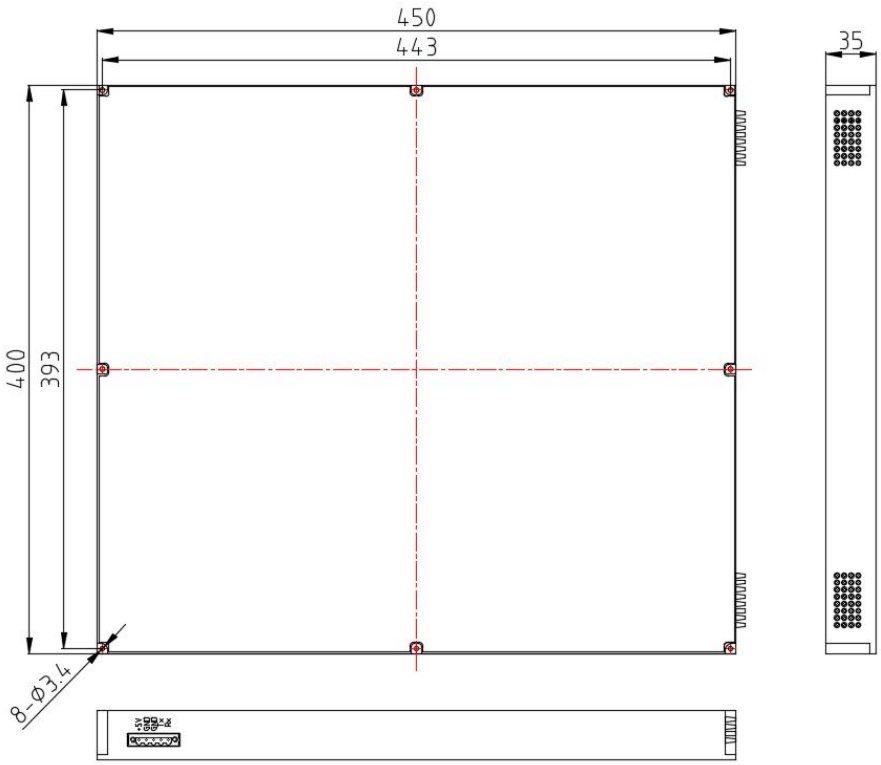
Optical Path Diagram



Technical parameters

Type	MEMS-36X36
Test Wavelength	1310/1550nm
Insertion loss	≤4.0dB（Included connector）
Return loss	< 45 dB
Switch cross talk	< 45 dB
Polarization dependent loss	< 0.2dB
Wavelength dependent loss	< 1.5dB
Switching time	< 30ms
Repeatability	< 0.1dB
Maximum Optical Input Power	< 23dBm
PD report accuracy	±0.5dB (at -50 to 23 dBm)
Fiber type	Corning SMF-28, 250μm with 900μm loose tube
Fiber length	0.5m±0.01m
Connectors	FC/PC
Supervision interface	RS232
Operating voltage	5V
Power Consumption	< 20W
Operating Temperature	-10 ~ 70 °C
Storage Temperature	-40 ~ 80 °C
Package Dimension	400×450×35mm

Dimension (mm)



Pin definition

Pin#	Signal name	Type	level	Description
1	+5V	I	+5V	+5V 4A Power supply
2	GND	N	N	workplace
3	GND	N	N	workplace
4	RS232-Tx	O	RS232	Transmit Data
5	RS232-Rx	I	RS232	Receive Data

Programmed instruction set

（1）、This module can only execute one instruction at a time.Usually wait for the program to return the corresponding value before entering the next instruction.

（2）、Please use capital letters.

（3）、In practice, enter the sharp bracket "<"As a starting character, the brackets ">As an end.

Command	Describe	The sample
<RESET>	Restart the module	Successful return：<RESET_OK>
<RESTORE>	factory data reset	Successful return：<RESET_OK>
<INFO_?>	Query module information	Successful return： <MEMS-36X36_VERV1.00_SN01234567890_C06.005.00015> Indicates MEMS-36X36 Matrix Optical Switch, Version 1.00, SN No. 01234567890, Product Code C06.05.00015；
<OPM_A_?>	Query In port power value Successfully returned:<OPM_In1 power value_In2 power value_In3 power value_In4 power value_In5 power value_In6 power value_In7 power value_In8 power value_In9 power value_In10 power value_In11 power value_In12 power value_In13 power value_In14 power value_In15 power value_In15 power value In16_In17_In18_In19_In20_In21_In22_In23_In24_In25_In26_In27_In28_In29_In30_In31_In31 In32 power value_In33 power value_In34 power value_In35 power value_In36 power value>	Successful return： <OPM_+05.55_-12.34_-22.55_-33.66_+02.75_-48.36_-08.47_-36.21_-00.00_-01.00_-02.00_-03.00_-04.00_-05.00_-06.00_-07.00_-08.00_-09.00_-10.00_-11.00_-12.00_-13.00_-14.00_-15.00_-16.00_-17.00_-18.00_-19.00_-20.00_-21.00_-22.00_-23.00_-08.00_-09.00_-10.00_-11.00> indicates: In1 port power is +05.55dBm, In2 port power is -12.34dBm, In3 port power is -22.55dBm, In4 port power is -33.66dBm, In5 port power is +02.75dBm, In6 port power is -48.36dBm, In7 port power is -08.47dBm, In8 port power is -36.21dBm, ..., and In36 port power is -11.00dBm;
<OPM_xx_W_yyyy>	Power acquisition working wavelength setting: x value: 00~36, indicates the input channel, xx take 00 indicates all channels; yyyy value: 1310, 1550, indicates the wavelength value yyyy take the value ? , indicates query working wavelength;	Send: <OPM_02_W_1310> Indicates that the In2 power harvesting operating wavelength is set to 1310nm; Successful return: <OPM_02_W_1310_OK> Send: <OPM_00_W_1550> Indicates that the power harvesting operating wavelength of all input channels is set to 1550nm; Successful return: <OPM_00_W_1550_ Successful return: <OPM_00_W_1550_OK
<OPM_xx_PC_yyyy_±zz.zz>	Calibration Channel Input Port Optical Power xx value: 01~36 Input Port yyyyy value: 1310, 1550nm wavelength ±zz.zz: calibration value, -10.00 ~ +10.00dB;	Send: <OPM_04_PC_1310_+01.55> Indicates that the output power value of 1310nm wavelength of In4 port will be compensated +1.55dB; Successfully returned: <OPM_04_PC_1310_+01.55_OK>
<OSW_A_?>	Query channel status Successfully returned: <OSW_In1 corresponding to output channel _In2 corresponding to output channel _In3 corresponding to output channel _In4 corresponding to output channel _In5 corresponding to output channel _In6	Return: <OSW_36_02_03_04_05_06_07_08_09_10_11_12_13_14_15_16_17_18_19_20_21_22_23_24_25_26_27_28_29_30_31_32_33_34_35_01> Indicates that the current light path is: In1→ Out36, In2→Out2, In3→Out3, In4→Out4, In5→Out5, In6→Out6,

	corresponding to output channel _In7 corresponding to output channel _In8 corresponding to output channel _In9 corresponding to output channel _In10 corresponding to output channel _ In11 Corresponding output channel_In12 Corresponding output channel_In13 Corresponding output channel_In14 Corresponding output channel_In15 Corresponding output channel_In16 Corresponding output channel_In17 Corresponding output channel_In18 Corresponding output channel_In19 Corresponding output channel_In20 Corresponding output channel_In21 Corresponding output Channel_In22 corresponding output channel_In23 corresponding output channel_In24 corresponding output channel_In25 corresponding output channel_In26 corresponding output channel_In27 corresponding output channel_In28 corresponding output channel_In29 corresponding output channel_In30 corresponding output channel_In31 corresponding output channel_In32 corresponding Output channel_In33 corresponding Output channel_In34 corresponding Output channel_In35 corresponding Output channel_In36 corresponding Output channel>	In7→Out7, In8→Out8, ..., In36→Out1;
<OSW_SW_a01_a02_a03_a04_a05_a06_a07_a08_a09_a10_a11_a12_a13_a14_a15_a16_a17_a18_a19_a20_a21_a22_a23_a24_a25_a26_a27_a28_a29_a30_a31_a32_a33_a34_a35_a36>	Channel switching a01~a36 are the output channels corresponding to In1~In36 respectively, taking values 00~36, and the values cannot be the same! Otherwise, switching fails; Successful return: <OSW_SW_a01_a02_a03_a04_a05_a06_a07_a08_a09_a10_a11_a12_a13_a14_a15_a16_a17_a18_a19_a20_a21_a22_a23_a24_a25_a26_a27_ a28_a29_a30_a31_a32_a33_a34_a35_a36_ok>	Send: <OSW_SW_01_02_03_04_05_06_07_08_09_10_11_12_13_14_15_16_17_18_19_20_21_22_23_24_25_26_27_28_29_30_31_32_33_34_35_36> Return: <OSW_SW_ 01_02_03_04_05_06_07_08_09_10_11_12_13_14_15_16_17_18_19_20_21_22_23_24_25_26_27_28_29_30_31_32_33_34_35_36_OK> Indicates that the optical path is set to: In1→Out1, In2→Out2, ..., In36→Out36

Note: Failure returns information <ER>

Factory default configuration

Project	Factory default configuration	Note
In port power acquisition wavelength	1310nm	
State of the light path	In1→Out1、In2→Out2、……、In36→Out36	Commutative state
Serial port baud rate	115200	8 data bits, 1 stop bit, no parity.