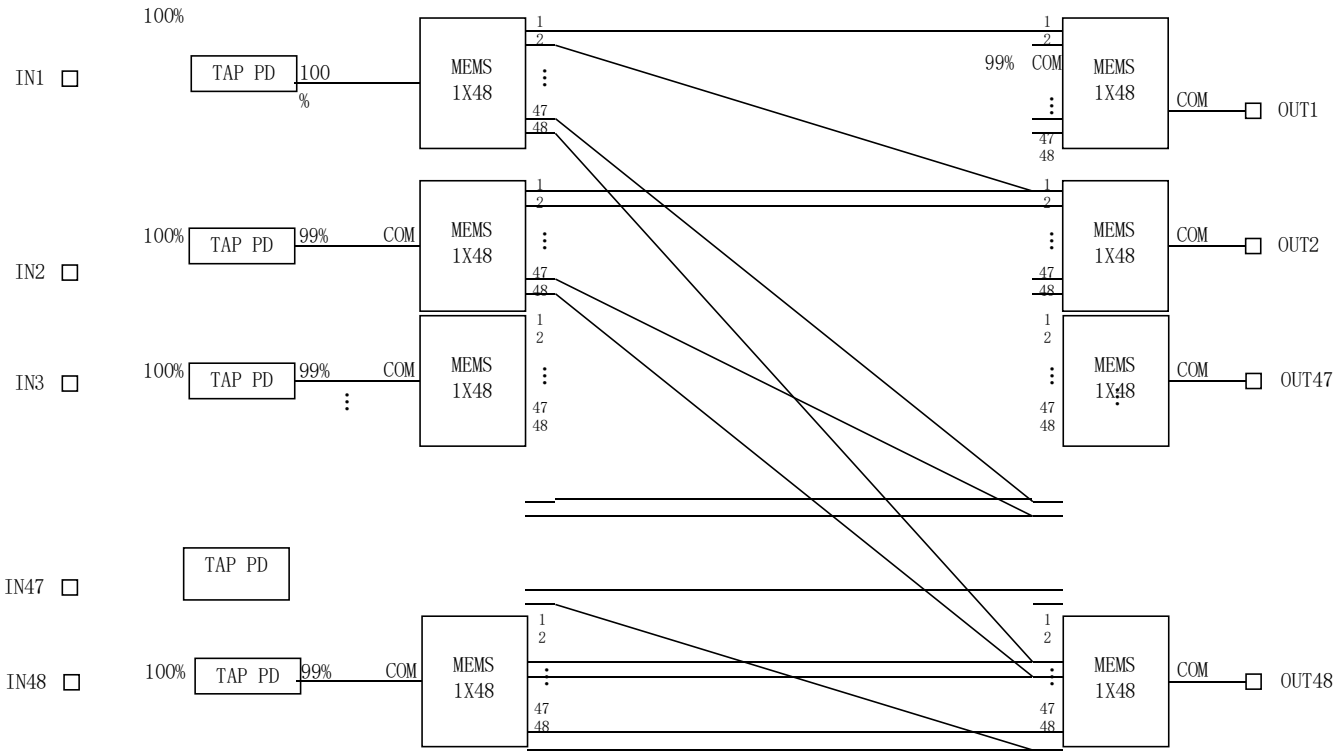
48X48 MEMS matrix optical switch module

Optical Path Diagram

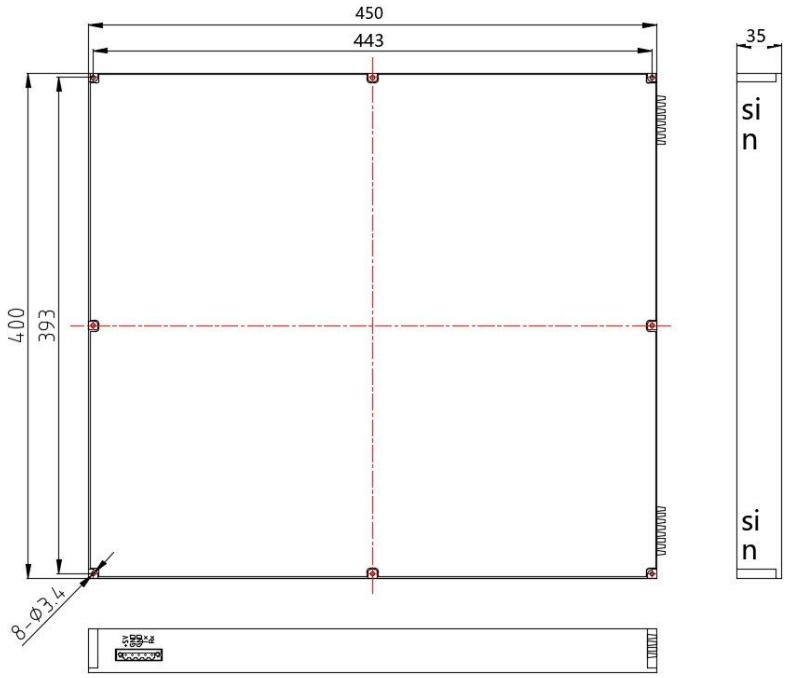


Technical parameters

Typeno.	MEMS-48X48
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	< 25W
Operating Temperature	-10 ~ 70 °C
Storage Temperature	-40 ~ 80 °C
Package Dimension	450×400×35mm

Structural diagram



Pin definition

Pin#	Signal name	Type	Level	Description
1	+5V	I	+5V	+5V 5A 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.

The command	**Describe**	**The sample**
<RESET>	Restart the module	Success return: < RESET _ OK >
<RESTORE>	Factory data reset	Success return: < RESET _ OK >
<INFO_?>	Query module information	Successfully returned: <MEMS-48X48_VERV1.00_SN01234567890_C06.05.00015> Indicates MEMS-48X48 matrix optical switch, version 1.00, SN No. 01234567890, product code C06.05. 00015;

<OPM_A_?>	Query the In port power value Successfully returned: < OPM _ In1 Power _ In2 Power _ In3 Power _ In4 Power _ In5 Power _ In6Power _ In7Power _ In8Power _ In9Power _ In10Power _ In11Power _ In12Power _ In13Power _ In14Power _ In15Power _ In16Power _ In17Power _ In18Power _ In19 Power Value _ In20 Power Value _ In21 Power Value _ In22 Power Value _ In23 Power Value _ In24 Power Value _ In25 Power Value _ In26 Power Value _ In27 Power Value _ In28 Power Value _ In29 Power Value _ In30 Power Value _ In31 Power Value _ In32 Power _ In33 Power _ In34 Power _ In35 Power _ In36 Power _ In37 Power _ In38 Power _ In39 Power _ In40 Power _ In41 Power _ In42 Power _ In43 Power _ In44 Power Value _ In45 Power Value _ In46 Power Value _ In47 Power Value _ In48 Power value >	Successfully returned: <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_-12.00_-13.00_-14.00_-15.00_-16.00_-17.00_-18.00_-19.00_-20.00_-21.00_-22.00_-23.00> In1 port power is + 05.55 dBm, In2 port power is -12.34 dBm, -22.55 dBm at In3, -33.66 dBm at In4, + 02.75 dBm at In5, -48.36 dBm at In6, -08.47 dBm at In7, -36.21 dBm at In8 , In48 port power is -23.00dBm；
<OPM_xx_W_yyyy >	Setting of working wavelength for power acquisition: Value of X: 00 ~ 48, indicating input channel, XX is 00, indicating all channels; Yyyy value: 1310, 1550, indicating the wavelength value yyyy value?, indicating to query the working wavelength;	Send: < OPM 02 _ W _ 1310 > Indicates that the In2 power acquisition working wavelength is set to 1310 nm; Success return: < OPM _ 02 _ W _ 1310 _ OK > Send: < OPM _ 00 _ W _ 1550 > Indicates that the working wavelength of power acquisition for all input channels is set to 1550nm； Success return: < OPM _ 00 _ W _ 1550 _ OK >
<OPM_xx_PC_yyyy_±zz.zz>	Calibrate optical power of channel input port XX value: 01 ~ 48 input port Yyyy value: 1310, 1550nm wavelength ± ZZ. ZZ: calibration value, -10.00 ~ + 10.00 dB;	Send: < OPM _ 04 _ PC _ 1310 _ + 01.55 > Indicating that the output power value of 1310nm wavelength of In4 port is compensated. +1.55dB; Success return: < OPM _ 04 _ PC _ 1310 _ + 01.55 _ OK >
<OSW_A_?>	Query the channel status Successfully returned: < output channel corresponding to OSW _ In1 _ In2, _ In3, _ In4, _ In5, _ In6, _ In7, _ In8, _ In9, _ In10, _ In11 Corresponding output channel _ In12 Corresponding output channel _ In13 corresponding output Channel _ In14 corresponding output	Return <OSW_48_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_37_38_39_40_41_42_43_44_45_46_47_01> Indicates that the current optical path is: In1→Out48、In2→Out2、In3→Out3、 In4→Out4、 In5→Out5、In6→Out6、 In7→Out7、 In8→Out8、……、In48→Out1；

	Channel _ In15, output channel _ In16, output channel _ In17, output channel _ In18, and output channel _ In19 _ In20, _ In21, _ In22, _ In23, _ In24, _ In25, _ In26 _ In27, _ In28, _ In29, _ In30, _ In31, _ In32, _ In33 _ In34, _ In35, _ In36, _ In37, _ In38, _ In39, _ In40 _ In41, _ In42, _ In43, _ In44, _ In45, _ In46, _ In47 _ In48 corresponding output channel >	
<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_a37_a38_a39_a40_a41_a42_a43_a44_a45_a46_a47_a48>	Channel switching A01 ~ a48 are the output channels corresponding to In1 ~ In48 respectively, and the values are 00 ~ 48 and cannot be the same! Otherwise, the switching fails; Successfully returned: <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_a37_a38_a39_a40_a41_a42_a43_a44_a45_a46_a47_a48_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_37_38_39_40_41_42_43_44_45_46_47_48> 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_37_38_39_40_41_42_43_44_45_46_47_48_OK> Indicates that the optical path is set to: In1→Out1、In2→Out2、……、In48→Out48
	Channel _ In15, output channel _ In16, output channel _ In17, output channel _ In18, and output channel _ In19 _ In20, _ In21, _ In22, _ In23, _ In24, _ In25, _ In26 _ In27, _ In28, _ In29, _ In30, _ In31, _ In32, _ In33 _ In34, _ In35, _ In36, _ In37, _ In38, _ In39, _ In40 _ In41, _ In42, _ In43, _ In44, _ In45, _ In46, _ In47 _ In48 corresponding output channel >	
<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_a37_a38_a39_a40_a41_a42_a43_a44_a45_a46_a47_a48>	Channel switching A01 ~ a48 are the output channels corresponding to In1 ~ In48 respectively, and the values are 00 ~ 48 and cannot be the same! Otherwise, the switching fails; Successfully returned: <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_a37_a38_a39_a40_a41_a42_a43_a44_a45_a46_a47_a48_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_37_38_39_40_41_42_43_44_45_46_47_48> 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_37_38_39_40_41_42_43_44_45_46_47_48_OK> Indicates that the optical path is set to: In1→Out1、In2→Out2、……、In48→Out48

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、……、In48→Out48	The tong state
Serial port baud rate	115200	8 data bits, 1 stop bit, no parity.