36X36 MEMS matrix optical switch module

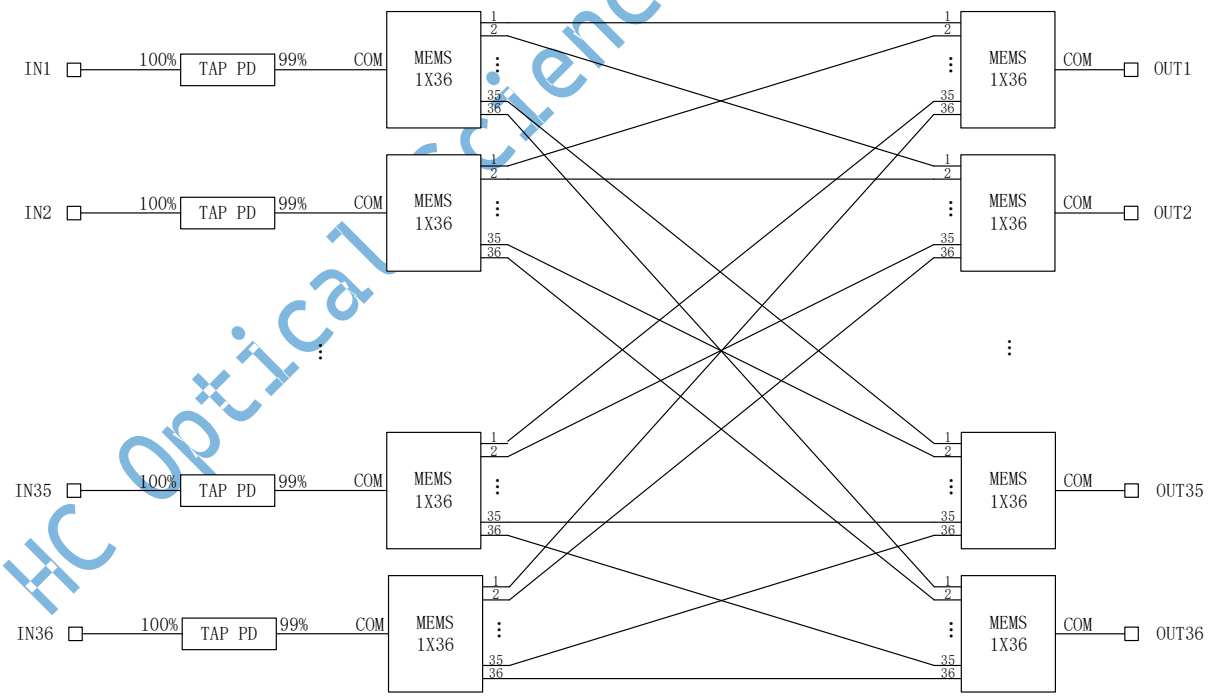
Features

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

Applications

- Data Center
- Instrumentation
- Configuration OADM
- OXC

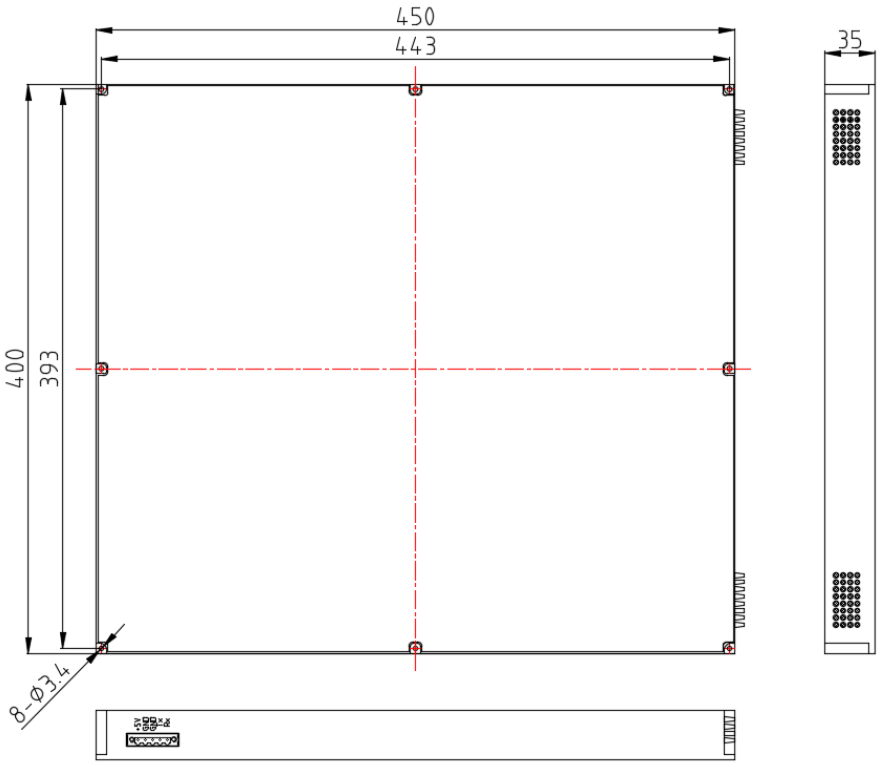
Diagram of light path inside module



Technical parameters

Type no.	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

Structure schematic



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	Success return: < RESET _ OK >
<RESTORE>	factory data reset	Success return: < RESET _ OK >
<INFO_?>	Query module information	Successfully returned: <MEMS-36X36_VERV1.00_SN01234567890_C06.0 05.00015> Indicates MEMS-36X36 matrix optical switch, version 1.00, SN number 01234567890, product number C06.05. 00015;
<OPM_A_?>	Query the In port power value Success return: < 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 _ IN16 POWER VALUE _ IN17 POWER VALUE _ IN18 POWER VALUE _ IN19 POWER VALUE _ IN20 POWER VALUE _ IN21 POWER	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_-1 9.00_-20.00_-21.00_-22.00_-23.00_-08.00_-09.00_-10 .00_-11.00> 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 -08.47 dBm, In8 port power is -36.21 dBm In36 port power is -11.00 dBm;

	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 _ In32 Power _ In33 Power _ In34 Power _ In35 Power _ In36 Power >	
<OPM_xx_W_yyyy >	Setting of working wavelength for power acquisition: Value of X: 00 ~ 36, indicating input channel, XX is 00, indicating all channels; Yyyy value: 1310, 1550, indicating the wavelength value The value of yyyy is "0", indicating the working wavelength to be queried;	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 > It indicates that the working wavelength of power collection of all input channels is set as 1550nm; Success return: < OPM _ 00 _ W _ 1550 _ OK >
<OPM_xx_PC_yyyy_±zz.zz>	Calibrate optical power of channel input port XX value: 01 ~ 36 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 the 1310nm wavelength of the In4 port is compensated by + 1.55dB; Success return: < OPM _ 04 _ PC _ 1310 _ + 01.55 _ OK >
<OSW_A_?>	Query the channel status Success return: < OSW _ In1 _ In2 _ In3 _ In4 _ In5 _ In6 _ In7 _ In8 _ In9 _ In10 _ In11, _ In12, _ In13, _ In14, _ In15, _ In16, _ In17, _ In18, _ In19, _ In20 _ In21, _ In22, _ In23, _ In24, _ In25, _ In26, _ In27, _ In28, _ In29, _ In30 _ In31, _ In32, _ In33, _ In34, _ In35, _ In36 >	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 optical path is: In1→Out36、In2→Out2、In3→Out3、 In4→Out4、In5→Out5、In6→Out6、 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, and the values are 00 ~ 36 and cannot be the same! Otherwise, the switching fails; Success 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.