

### 2xN MxN Matrix Optical Switch Rackmount

2xN or MxN rack-mounted optical switch is a kind of functional device, with the ability of controlling and switching optical route. It can be manually selected from front panel or controlled via RS232 port, Ethernet port and auto-scanned on certain frequency. In optical fiber transmission system, it is used for multi-channel fiber monitoring, multi light source/ detector selection, and optical fiber path protection etc. Besides, it is also used in optical fiber test system for optical fiber and its component test, outdoor cable test and multi-spot optical sensors monitoring system.

Features	Applications
<ul style="list-style-type: none"> <li>SerialNet, High Reliability, High Stability</li> <li>LED display panel. Visual display, Convenient operation</li> <li>Transparent transmission signal. High stability and reliability</li> <li>Channel and time interval of automatic scanning can be set up</li> <li>RS232 Control and RJ45 Ethernet Remote Management</li> </ul>	<ul style="list-style-type: none"> <li>FITL</li> <li>Automatic Measurement</li> <li>Optical Network Remote Monitoring Cable Monitoring and Maintaining system</li> </ul>

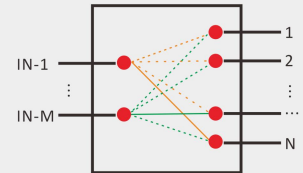
1U Rackmount



2U Rackmount



Optical Path



### Technical Index

Parameter	Unit	2x4	2x8	2x12	2x16	2x24	2x32	2x64	4x4	8x8	16x16
Wavelength Range	nm	1260~1650									
Testing Wavelength	nm	1310/1550									
Insertion Loss	dB	≤1.5	≤1.5	≤1.5	≤1.5	≤1.8	≤1.8	≤2.0	≤2.0	≤2.0	≤2.5
Return Loss	dB	SM ≥ 50									
Crosstalk	dB	≤-55									
PDL	dB	≤0.05									
WDL	dB	≤0.25									
TDL	dB	≤0.25									
Repeatability	dB	≤0.02									
Lifetime	times	> 10 <sup>7</sup>									
Switching Time	ms	≤8 (Adjacent Channel)									
Optical Power	mW	≤500									
Connector	/	FC, SC, LC, ST, SMA or customized									
Monitor Port	/	RJ45, RS232									
Working Power Supply (Plug Tyep)	V	AC: 220V (50/60Hz) or DC: 36V~72V									
Operating Temperature	°C	-10~+60									
Storage Temperature	°C	-40~+85									
Rackmount	mm	19" Rack mount 1U, 2U, 3U or 4U									

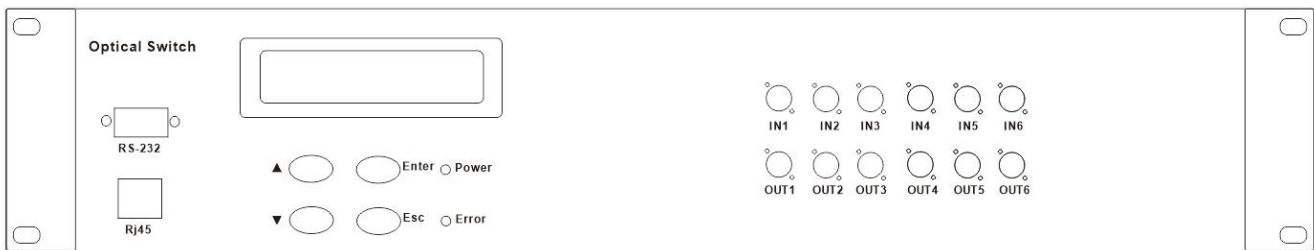
**Ordering Information OSW-XxX-X-XX-X-XX-XX-XX-XX**

OSW	Mode	Wavelength	Package	Fiber Type	Fiber Diameter	Connector
2x4	S=SM	85=850nm	1U=1U Rackmount	M5=50/125	AC=Single 85~265V	00=None
2x8	M=MM	13=1310nm	2U=2U Rackmount	M6=62.5/125	DC=Single 36~72V	FP=FC/UPC
2x64		15=1550nm	3U=3U Rackmount	S9=9/125	AA=Dual 85~265V	FA=FC/APC
4x16		85/13=850/1300	4U=4U Rackmount	S105/125	DD=Dual 36~72V	SP=SC/UPC
16x16		13/15=1310/1550nm	S=Specify	S200/240	AD=AC85~265V+DC36~75V	SA=SC/APC
20x20		460		S272/300		LP=LC/UPC
S=Specity		780		S365/400		LA=LC/APC
		980		S550/600		S=Specify
		S=Specify		S=Specify		

**Panel to Explain**

**Front Panel**

**6x6 Matrix Optical Switch 19" 1U Rack mount**



- RJ45: Communications network management interface ;
- RS-232: Rs- serial interface ; RS232 serial communication interface;
- LCD: Devices that display information directly;
- ▲: Key to move up; ▼: Key to move down; Enter: Key to determine;
- Esc: Key to cancel.
- Power: Power light; Error: trouble lamp;
- IN1~IN6,OUT1~OUT6: Fiber interface;

**Back Panel**

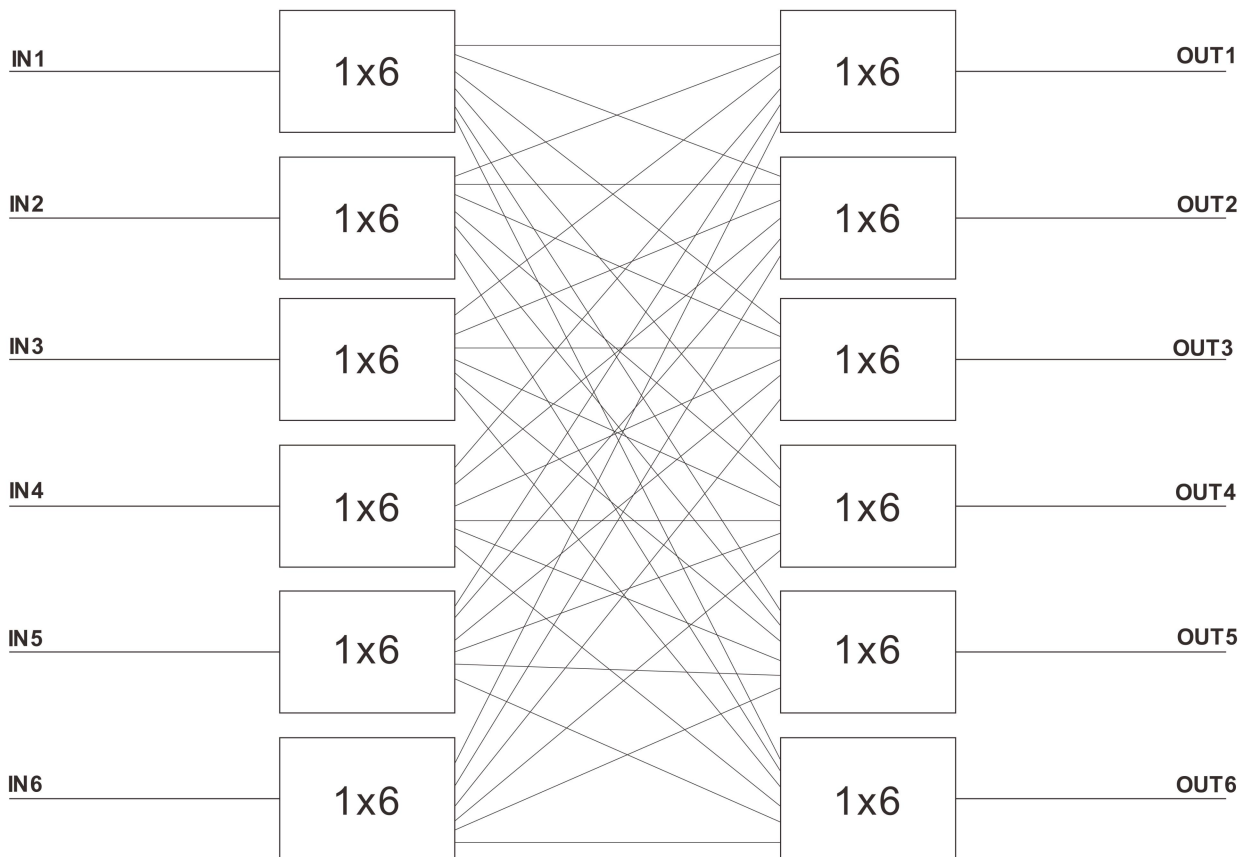


- AC:85~265V: Power cord interface;
- ON/OFF: Master switch of power supply ;

**Default Setting**

- address: 01
- RS-232: Baud rate:9600; Data bits:8 bit; Stop bit: 1 bit; Parity bit:NONE;
- RJ45: IP: 192.168.1.100 ; PORT: 5000; TCP/IP:TCP Server and UDP  
(Fixed port: 18888)

**Sketch Map:**



**LCD function display description**



Manual Control: This function is used to manually control the optical switch channel.



Automatic Control: This function is used to set up start and end channels under automatic control

C. Switching Interval  
D. Special Setup

Switching Interval: This function is used for how long the dwell time after channel switching under automatic control is between the time of switching to the next channel and setting the dwell time for re cycling

D. Special Setup  
E. Device Address

Special Setup: This function is used to quickly set the switching channel. You can directly switch the channel by pressing the up and down keys in the main interface

E. Device Address  
F. SET Communication

Device Address: This function is used to set the device address

F. SET Communication  
G. SET the Keys

SET Communication : This function is used to set RJ45 communication and RS-232 communication parameters

G. SET the Keys  
H. SET the LCD

SET the Keys: This function is used to set whether the key press makes sound and the lock key is not available

H. SET the LCD  
I. Query Information

SET the LCD: This function is used to set the status of LCD backlight

I. Query Information  
J. Query version

Query Information: This function is used to query the optical switch information

I. Query Information  
J. Query Version

Query Version : This function is used to query the device version

### Communication Protocol

- " \_ " :A underline;
- Communication protocol all in uppercase characters;
- The device executes an instruction each time;
- "<" As the start instruction; ">" As an end instruction;

### Instruction set

Name	Instructions	Describe
Set Optical Switch Channel	Send:<OSW01_OUT_01_02_03_N>  Return1:<OSW01_OUT_OK>or Return2:<OSW01_OUT_E1> (go beyond)or Return3:<OSW01_OUT_E2>(fault)	Setup the optical switch channel to IN1-OUT1,IN2-OUT2,...IN6-OUT6 ,returned successfully;
Query Optical Switch Channel	Send:<OSW01_OUT_?>  Return:<OSW01_OUT_01_02_03_N>	Query the optical switch channel,returned successfully; 01: optical switch channel to IN1-OUT1 02: optical switch channel to IN2-OUT2 ..... N: optical switch channel to INM-OUTN
Sets Device Address	Send:<OSW01_ADD_02>  Return:<OSW02_ADD_OK>	Setup the device address 01 to 02,returned successfully
Query Device Address	Send:<OSW_ADD_?>  Return:<OSW01_OK>	Query the device address, returned successfully 01:device address to 01
Set the IP Address	Send:<OSW01_IP_192.168.1.100>  Return:<OSW01_IP_OK>	Setup the IP addresse to 192.168.1.100,returned successfully
Query IP Address	Send:<OSW01_IP_?>  Return:<OSW01_IP_192.168.1.100>	Query the IP address, returned successfully 192.168.1.100:IP address to 192.168.1.100
Set the Port Number	Send:<OSW01_PORT_5000>  Return:<OSW01_PORT_OK>	Setup the port number to 5000,returned successfully
Query Port Number	Send:<OSW01_PORT_?>  Return:<OSW01_PORT_5000>	Query the port number ,returned successfully 5000:port number to 5000

Set the Subnet Mask	Send:<OSW01_SM_255.255.255.0>	Setup the subnet mask to 255.255.255.0, returned successfully
	Return:<OSW01_SM_OK>	
Query Subnet Mask	Send:<OSW01_SM_?>	Query the subnet mask ,returned successfully 255.255.255.0:subnet mask to 255.255.255.0
	Return:<OSW01_SM_255.255.255.0>	
Set the Default Gateway	Send:<OSW01_GW_192.168.1.1>	Setup the default gateway to 192.168.1.1,returned successfully
	Return:<OSW01_GW_OK>	
Query Default Gateway	Send:<OSW01_GW_?>	Query the default gateway, returned successfully 192.168.1.1:default gateway to 192.168.1.1
	Return:<OSW01_GW_192.168.1.1>	
Set the Baud Rate	Send:<OSW01_BAUD_9600>	Set the baud rate to 9600,returned successfully
	Return:<OSW01_BAUD_OK>	
Query Baud Rate	Send:<OSW01_BAUD_?>	Query the baud rate ,returned successfully 9600:baud rate to 9600
	Return:<OSW01_BAUD_9600>	
Lock Keys	Send:<OSW01_KEY_OFF>	Setup the Lock keys to Lock(OFF), returned successfully
	Return:<OSW01_KEY_OK>	
Unlocking Keys	Send:<OSW01_KEY_ON>	Setup the Unlocking keys to Unlocking(ON) , returned successfully
	Return:<OSW01_KEY_OK>	
Query Keys State	Send:<OSW01_KEY_?>	Query the keys state , returned successfully ON:Unlocking OFF:Lock
	Return:<OSW01_KEY_ON>Or Return:<OSW01_KEY_OFF>	
Device Restarts	Send:<OSW01_RESET>	Setup the device restarts , returned successfully
	Return:<OSW01_RESET_OK>	
Query Device Information	Send:<OSW01_TYPE_?>	Query the device information ,returned successfully; Model: FSW-XXXX Wavelength Range: 1260~1650nm Fiber Type: SM(9/125um) Working Power Supply: AC:100~240V
	Return:<OSW01_TYPE_FSW-6X6_1260~1650NM_SM9/125um_FP_>	

Query Version	Send:<OSW01_VERSION_?>	Query the version, returned successfully
	Return:<OSW01_VERSION_HARDWARE:V1.0.1SOFTWARE:V1.0.1>	Hardware version: V1.0.1 SOFTWARE: V1.0.1

**Matters need attention**

- Return “<OSW01\_ER>” is command syntax error occurred.
- Return “<OSW01\_E2>” is not operating properly.
- Return “<OSW01\_E1>” ,The channel of setting up are outside the scope of this article
- “OSW01” , Indicate that the device address is 01
- Send arbitrary the Instructions in automatic mode, Stop to Automatic mode
- In RS-232 serial port communication, the system require that the baud rate of dispatcher and sink should keep consistent

**Refer to software control chart**

