1xN Optical Switch Rackmount

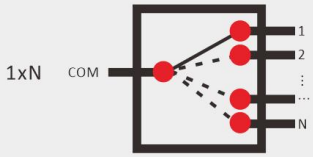
1×N rack-mounted optical switch is a kind of functional device,with the ability of controlling and switching optical route. It can be manually selected from front panel or controlled via RS232 port, Ethernet port and auto-scanned on certain frequency. In optical fiber transmission system, it is used 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
● SerialNet, High Reliability, High Stability ● LED display panel. Visual display, Convenient operation ● Transparent transmission signal. High stability and reliability ● Channel and time interval of automatic scanning can be set up ● RS232 Control and RJ45 Ethernet Remote Management	● FITL ● Automatic Measurement ● Optical Network Remote Monitoring Cable Monitoring and Maintaining system

1U Rackmount

2U Rackmount

Optical Path



Technical Index

Parameter	Unit	1x4	1x8	1x12	1x16	1x24	1x32	1x64	1x128
Wavelength Range	nm	1260~1650 or customized							
Testing Wavelength	nm	1310/1550 or customized							
Insertion Loss (Max)	dB	≤1.0	≤1.0	≤1.5	≤1.5	≤1.5	≤1.5	≤1.5	≤2.0
Return Loss	dB	SM ≥ 50							
Crosstalk	dB	≤-70							
PDL	dB	≤0.05							
WDL	dB	≤0.25							
TDL	dB	≤0.20							
Repeatability	dB	≤0.02							
Switching Time	ms	≤10 (Adjacent Channel)							
Optical Power	mW	≤500							
Fiber Type	um	9/125							
Connector	/	FC, SC, LC, ST, SMA or customized							
Monitor Port	/	RJ45 & RS232 or customized							
Working Power Supply (Plug Tyep)	V	AC：220V (50/60Hz) or DC：36V~72V							
Operating Temperature	℃	-10~+60							
Storage Temperature	℃	-40~+85							
Rack mount Dimensions	mm	1U L483XW230XH44.5 (Up to 16 channel) customization is available.							
		2U L483XW230XH89 (Up to 36 channel) customization is available. 2U L483XW350XH89 (Up to 64 channel) customization is available.							
		3U L483XW350XH133.5 (Up to 128 channel) customization is available.							
		4U L483XW350XH178 (Up to 256 channel) customization is available.							

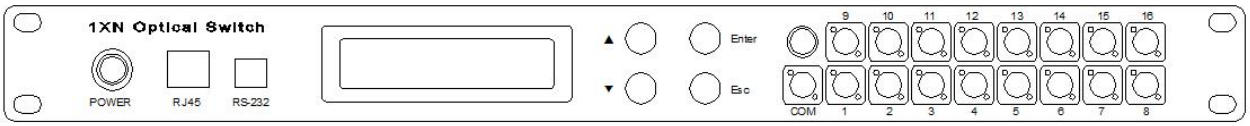
Ordering Information **OSW-XxX-X-XX-X-XX-XX-XX-XX**

OSW	Mode	Wavelength	Package	Fiber Type	Power Supply	Connector
1x4	S=SM	85=850nm	1U=1U Rackmount	M5=50/125	AC=Single 85~265V	00=None
1x8	M=MM	13=1310nm	2U=2U Rackmount	M6=62.5/125	DC=Single 36~72V	FP=FC/UPC
1x16		15=1550nm	3U=3U Rackmount	S9=9/125	AA=Dual 85~265V	FA=FC/APC
1x32		85/13=850/1300	4U=4U Rackmount	S105/125	DD=Dual 36~72V	SP=SC/UPC
1x64		13/15=1310/1550nm	S=Specify	S200/240	AD=AC85~265V+DC36~75V	SA=SC/APC
1x128		460nm		S272/300		LP=LC/UPC
S=Specity		780nm		S365/400		LA=LC/APC
		980nm		S550/600		S=Specify
		S=Specify		S=Specify		

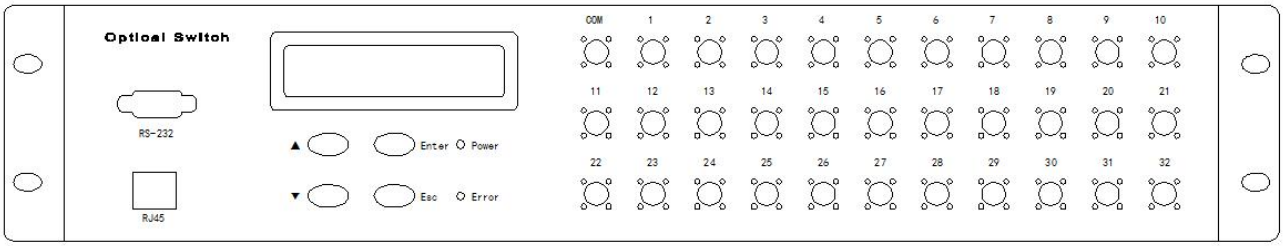
Panel to Explain

Front Panel

1xN≤16 Optical Switch 19" 1U Rack mount



1xN≤36 Optical Switch 19" 2U Rack mount



- Power: Master switch of power supply
- 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;
- com,1~16: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)

LCD function display description

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

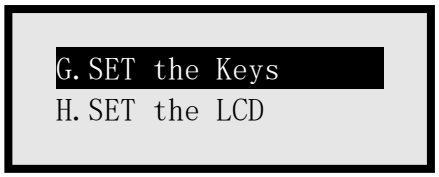
Automatic Control：This function is used to set up start and end channels under automatic control

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

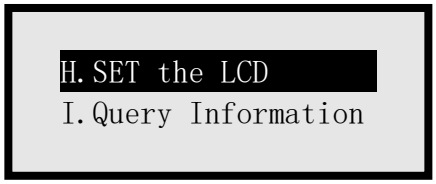
Special Setup:This function is used to quickly set the switching channel. You can directly switch the channel by pressing the up and down keys in the main interface

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

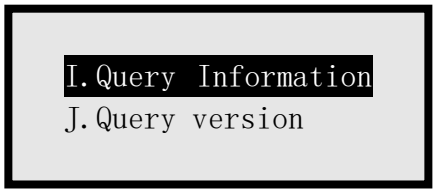
SET Communication :This function is used to set RJ45 communication and RS-232 communication parameters



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



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



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

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_02>	Set the optical switch with address 01 to channel 02 ,Successfully set return;
	Return1:<OSW01_OUT_OK> or return2:<OSW01_OUT_E1> (go beyond) or Return3:<OSW01_OUT_E2>(fault)	
Query Optical Switch Channel	Send:<OSW01_OUT_?>	Query the optical switch channel at address 01, Successfully Query return; 02: optical switch channel to 2
	Return:<OSW01_OUT_02>	
Set Automatic Switching of Optical Switch Channel	Send:<OSW01_S01_E08>	Set the optical switch with address 01 to start channel 01 and end channel 08 in automatic control,returned successfully;
	Return:<OSW01_S_E_OK>	

Query Automatic Switching of Optical Switch Channel	Send:<OSW01_S_E_?> Return:<OSW01_S01_E08>	Query the optical switch start channel and end channel of address 01, Successfully Query return; 01: Starting channel 08:End channel
Set Optical Switch Channel Switch Interval	Send:<OSW01_TCH_00_01_02> Return:<OSW01_TCH_OK>	Setup the optical switch channel switch interval for in automatic mode;interval to 0 hours 1 second for 2 seconds ,Successfully set return;
Query Optical Switch Channel Switch Interval	Send:<OSW01_TCH_?> Return:<OSW01_TCH_00_01_02>	Query the optical switch channel switch interval for in automatic mode; returned successfully; 00_01_02:interval to 0 hours 1 second for 2 seconds
Set Residence Time of The Cycle	Send:<OSW01_TCI_00_01_02> Return:<OSW01_TCI_OK>	Setup the residence time of the cycle; residence time to 0 hours 1 second for 2 seconds, Successfully set return;
Query Residence Time of The cycle	Send:<OSW01_TCI_?> Return:<OSW01_TCI_00_01_02>	Query the residence time of the cycle;returned successfully 00_01_02:residence time to 0 hours 1 second for 2 seconds
Starting to Automatic Mode	Send:<OSW01_START> Return:<OSW01_OUT_01> (Starting channel) intervals... Return:<OSW01_OUT_02> (Starting channel+1)	Setup the starting to automatic mode,returned successfully
Stop to Automatic Mode	Send:<OSW01_END> Return:<OSW01_END_OK>	Setup the stop to Automatic mode ,Successfully set return;
Sets Device Address	Send:<OSW01_ADD_02> Return:<OSW02_ADD_OK>	Setup the device address 01 to 02,Successfully set return;
Query Device Address	Send:<OSW_ADD_?> Return:<OSW01_OK>	Query the device address, returned successfully 01:device address to 01
Set the IP	Send:<OSW01_IP_192.168.1.100>	Setup the IP addresse to

Address	Return:<OSW01_IP_OK>	192.168.1.100,Successfully set return;
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,Successfully set return;
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> Return:<OSW01_SM_OK>	Setup the subnet mask to 255.255.255.0,returned successfully
Query Subnet Mask	Send:<OSW01_SM_?> Return:<OSW01_SM_255.255.255.0>	Query the subnet mask ,Successfully set return; 255.255.255.0:subnet mask to 255.255.255.0
Set the Default Gateway	Send:<OSW01_GW_192.168.1.1> Return:<OSW01_GW_OK>	Setup the default gateway to 192.168.1.1,returned successfully
Query Default Gateway	Send:<OSW01_GW_?> Return:<OSW01_GW_192.168.1.1>	Query the default gateway, returned successfully 192.168.1.1:default gateway to 192.168.1.1
Set the Baud Rate	Send:<OSW01_BAUD_9600> Return:<OSW01_BAUD_OK>	Set the baud rate to 9600,Successfully set return;
Query Baud Rate	Send:<OSW01_BAUD_?> Return:<OSW01_BAUD_9600>	Query the baud rate ,returned successfully 9600:baud rate to 9600
Lock Keys	Send:<OSW01_KEY_OFF> Return:<OSW01_KEY_OK>	Setup the Lock keys to Lock(OFF),Successfully set return;
Unlocking Keys	Send:<OSW01_KEY_ON> Return:<OSW01_KEY_OK>	Setup the Unlocking keys to Unlocking(ON) ,Successfully set return;
Query Keys State	Send:<OSW01_KEY_?> Return:<OSW01_KEY_ON> or Return:<OSW01_KEY_OFF>	Query the keys state , returned successfully ON:Unlocking OFF:Lock

Device Restarts	Send:<OSW01_RESET>	Setup the device restarts , Successfully set return;
	Return:<OSW01_RESET_OK>	
Query Device Information	Send:<OSW01_TYPE_?>	Query the device information ,returned successfully; Model: FSW-1X16-U Wavelength Range: 750~850nm Fiber Type: 50/125um Connector: FC/PC Working Power Supply : AC:100~240V
	Return:<OSW01_TYPE_FSW-1X16-U_750~850 _50/125 _ FP_A>	
Query Version	Send:<OSW01_VERSION_?>	Query the version, returned successfully Hardware version: V1.0.2 SOFTWARE: V1.0.2
	Return:<OSW01_VERSION_HARDWARE:V1.0.2SOFTWARE:V1.0.2>	

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