MX-OFSW-2X1

OPTICAL FIBER 2×1 SWITCH

USER MANUAL

SUMMARY

The **MXOFSW-2X1** is a 2×1 prism optical switch. It will support two optical fibers input and one fiber output with an auto detect switch. The unit supports a wide operating wavelength range and a quick switching rate.

The MXOFSW-2X1- has two operational modes:

① **Manual mode**: Through the LCD control interface or via a GUI web interface over a network, the operator may trigger a switch of the fiber route in real time.

② **Automatic mode**: Automatically detects and switches fiber inputs based on the parameters set by the operator, or requirement. Example: if input 1 is set to -5 dBm, and if the input power drops to a level below -5 dBm, the unit will automatically switch to input 2.

The **MXOFSW-2X1** is mounted in a 19" rack mount 1U chassis. The LCD is located at the front panel and provides all operating parameters and the current operator scheme. The RS232 interface and RJ45 ethernet interface provide remote management and control, as well as SNMP.

CONTROLS, INDICATORS, AND ALARMS

This section of the manual will give a brief overview of the available menu in the **MXOFSW-2X1** series optical switch and their descriptions. All instructions in this Section refer to the representation of the front panel shown in the diagram below. The user may scroll through the menu using the push buttons found on the front panel, these are located just on the right of the LCD screen.
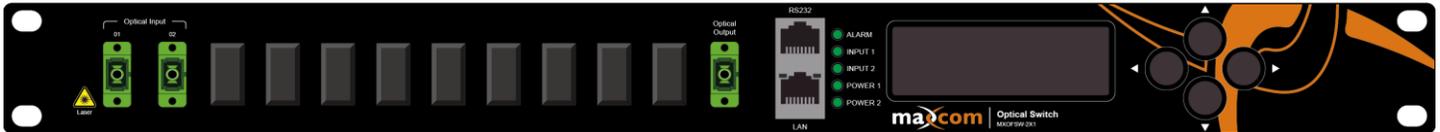
Using the menu and operation of the control panel

Connect the power supplies. Turn the power switch on the rear panel if equipped with AC power supplies.

Navigating the front panel menu with the push buttons:

Press the ▶ button to modify the interface, and then press ▶ button to enter the edited status, press ▲\▼ button to choose type, press ▶ button to save, press ◀ button to exit. *Note some units may be equipped with a key to lock or unlock some functions of the menu.

Start-up main menu
Pressing the Right Arrow ▶ button will display the menu below in sequence.

Descriptor
Read-only menu, indicates the description of this equipment.
S/N
Read-only menu, indicates the serial-number
INPUT 1
Read-only menu, indicates the input optical power of INPUT 1
INPUT 2
Read-only menu, indicates the input optical power of INPUT 2
OUTPUT POWER
Read-only menu, indicates the output optical power
CONTROL MODE
Read-only menu, indicates the optical switch type (Auto/Manual)
INPUT
Read-only menu, indicates the input optical currently routed to output

TH Low

Adjustable menu, +10 to -50 dBm. Allows the operator to set the optical power level. While in AUTO, if the optical power falls below this set point, the switcher will automatically switch to the alternate input. An alarm will also be displayed.

TH High

Adjustable menu, +10 to -50 dBm. The operator may select "Enable" or "Disable". This feature allows the operator to set the optical power level. While in AUTO, if the optical power exceeds this set point, the switcher will automatically switch to the alternate input. An alarm will also be displayed.

Restore

Adjustable menu. The operator may select "Enable" or "Disable". This feature allows the operator to instruct the switch to return back to the primary input once the primary optical input has been restored. While in "Enable", you may set the delay time to restore the primary route up to 400 seconds. This allows you to ensure the primary input is stable before switching back to primary.

AMBIANT TEMP

Read-only menu, indicates the ambient temperature

Power 1

Read-only menu, indicates online or offline

Power 2

Read-only menu, indicates online or offline

IP

Adjustable menu, Static/DHCP

SUBMASK

Adjustable menu, displays the address of sub net mask

GATEWAY

Adjustable menu, displays the gateway address of SNMP

TRAP ADDR1

Adjustable menu, displays the TRAP1 address of SNMP

TRAP ADDR2

Adjustable menu, displays the TRAP2 address of SNMP

MAC

Read-only menu, indicates the MAC address

Console Baud

Adjustable menu, allow the user to adjust

HW Version

Read-only menu, indicates the version

SW Version

Read-only menu, indicates the version

Reboot
Adjustable menu, allows user to select
Factory Reset
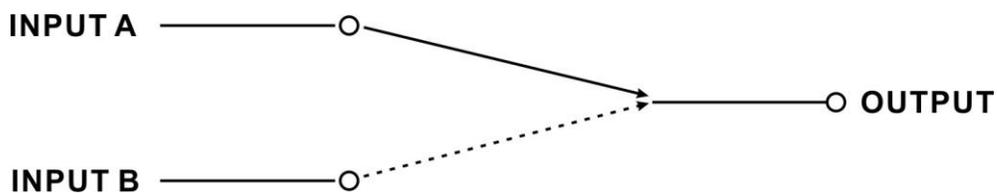Adjustable menu, allows user to select
LCD Brightness
Adjustable menu, allows user to select

STANDARD OPERATION METHOD

Four indicators on the front panel show which light path is being used. Inputs are represented by 1 and 2 respectively, where 1 is the main input and 2 is the backup input. The main and standby optical paths are automatically switched:


The operator may set the Optic Switch Point by adjusting the threshold settings in the menu (TH Low and TH High)

* If optical signal powers are both less than switch point power, the device will maintain the current state.

DUAL FIBER BI-DIRECTIONAL METHOD

For Dual Fiber Bi-Directional protection, two **MXOFSW-2X1** switches may be used as shown in the illustration below. In this scenario, a two-way fiber splitter is used on the transmit signal at both ends, and a **MXOFSW-2X1** switch is used for the receive signal at both ends. This is an excellent solution for redundant route protection in a bi-directional dual fiber set-up.
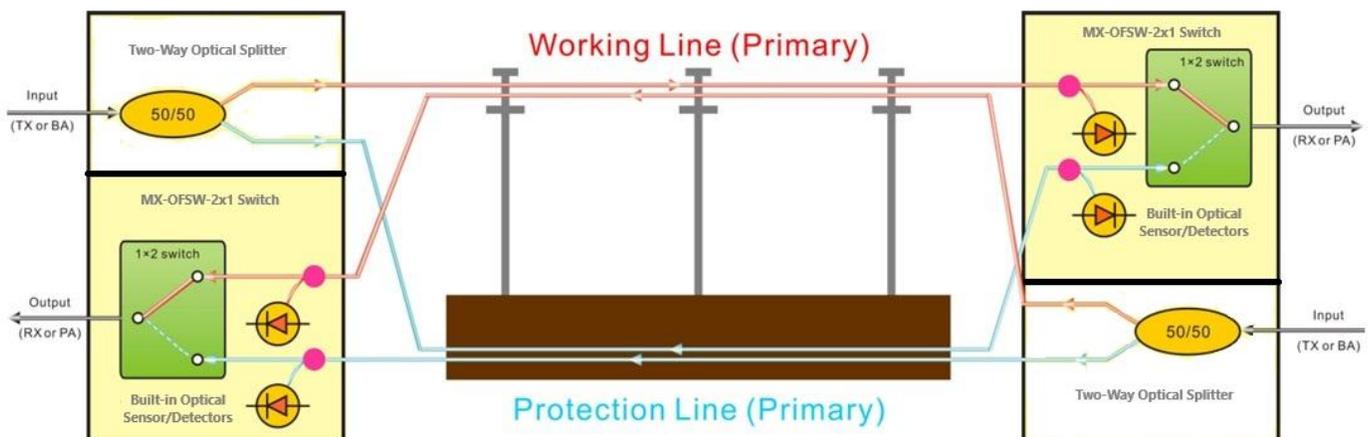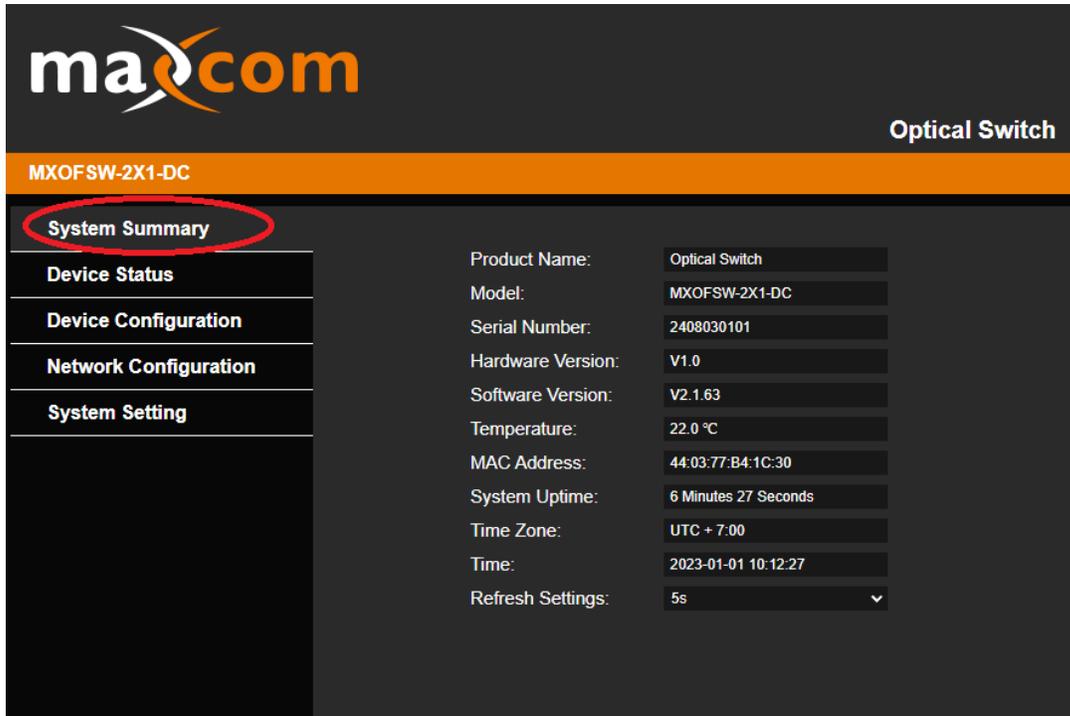
Supplemental: Web Interface

The **MX-OFSW-2x1** may be accessed from a web interface using the RJ45 port.
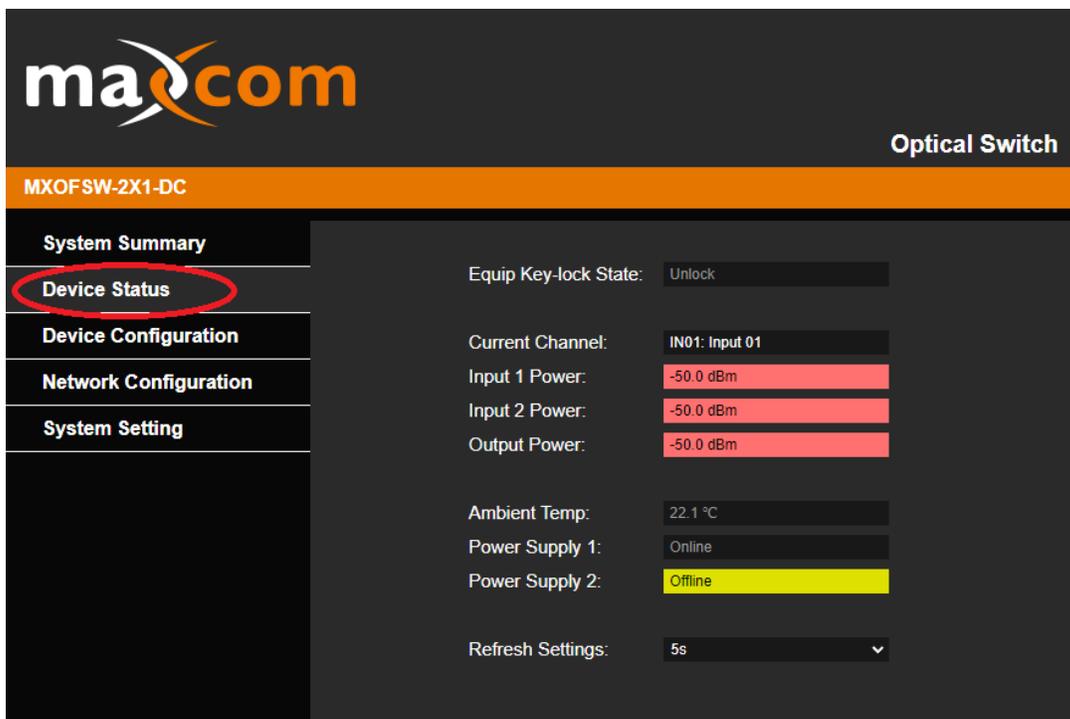The web interface can be viewed using the default IP address 192.168.1.50
The default username is "admin", and the default password is "admin"
The categories will be displayed on the left side of the screen as follows. The right
side of the screen will display the parameters and settings:

Optical Switch

MXOFSW-2X1-DC

- System Summary
- Device Status
- **Device Configuration**
- Network Configuration
- System Setting

Change Channel Remarks ▼

[   ] Save

Switch TH Low: -5.0   dBm
Switch TH High: Enable ▼ 10.0   dBm

Save

Control mode

Manual ▼

Save

Manual: IN01: Input 01

IN01: Input 01 ▼

Save

Current channel is IN01,Current saved channel is IN01

Optical Switch

MXOFSW-2X1-DC

- System Summary
- Device Status
- Device Configuration
- **Network Configuration**
- System Setting

HostName: OpticalSwitch_1C30   Apply

IP Setting

Connection Type: Static ▼
IP Address: 192.168.1.50
Subnet Mask: 255.255.255.0
Gateway: 192.168.1.1

Apply

SNMP

Name: [   ]   Apply
Location: [   ]   Apply
Contact: [   ]   Apply

Community RO: public
Community RW: private
Trap Address 1:   0.0.0.0
Trap Address 2:   0.0.0.0
Trap Address 3:   0.0.0.0
Trap Address 4:   0.0.0.0
Trap Address 5:   0.0.0.0
Trap Address 6:   0.0.0.0

Apply

Reference Internal Operation Diagram:
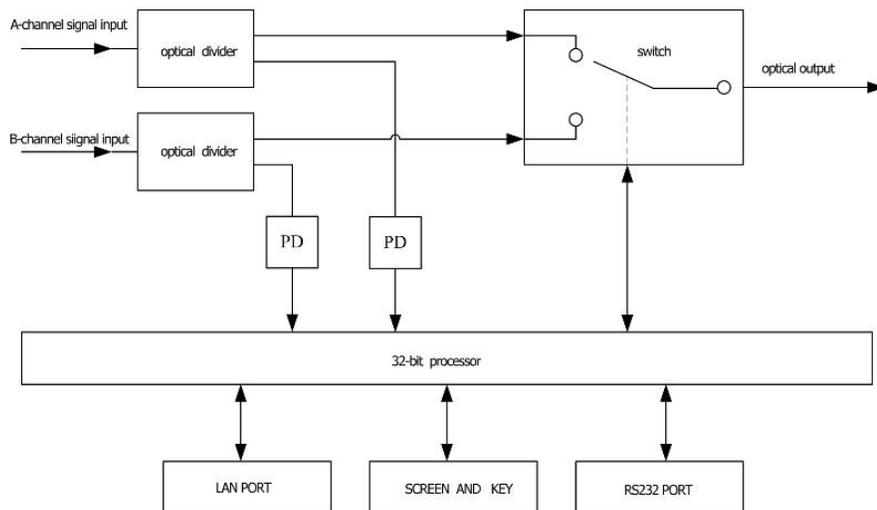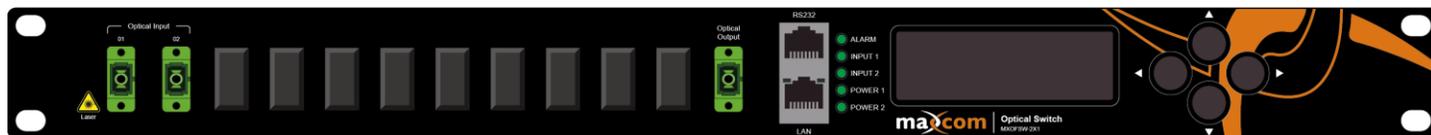
Front Panel Indicator Lights:

ALARM	Turns Red if Alarm Condition Exists
INPUT 1	Turns Red if Input 1 Levels fall outside set parameters
INPUT 2	Turns Red if Input 1 Levels fall outside set parameters
POWER 1	Turns off if not power to PS 1
POWER 2	Turns off if no power to PS 2

*The Active Input routed to the output will blink

Specification:

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical features	Insertion loss	(dB)		1.6	2.5	
	Pass Wavelength	(nm)	1270		1650	
	Auto Detect Wavelength	(nm)	1400	*Detector is calibrated for optimal detection within these wavelength	1610	
	Return loss	(dB)	55	60		
	Switch cross talk	(dB)	55	60		
	PDL	(dB)			0.2	
	Switching time	(mS)			20	
	Auto Detect Optical Levels Switch point	dBm	The settable range for the Low and High Threshold is +10 dBm to -50 dBm			User Adjustable
	Fiber type		9 / 125			
	Optical connector		SC/APC			
General feature	10/100M Ethernet		RJ45			LAN Interface
	Networking protocol		SNMP			
	Com interface		RS232			
	Power supply (AC)	(VAC)	90		265	50 / 60Hz
	Power supply (DC)	(VDC)		-48 VDC		
	Operating temp.	(℃)	-20		65	
	Storage temp.	(℃)	-40		85	
	Relative humidity	(%)	5		95	
	Size (W) x (D) x (H)		19×11.75×1.75 (")			1U
			483×315×44 (mm)			