OPTICAL
SYSTEMS
DESIGN

Quick Start Guide

OSD2790SFP

MANAGED 24 x 100M/1G SFP

+ 4 x 1G TRUNK/UPLINK SFP ETHERNET SWITCH

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1 INTRODUCTION

Thank you for choosing the OSD2790SFP 28-Port Gigabit Managed Ethernet Switch. This Quick Start Guide is designed to guide you through the installation and basic software function.

2 TECHNICAL SUMMARY

2.1 BRIEF DESCRIPTION

2.1.1 OVERVIEW

The OSD2790SFP is a managed 24 port 100M/1G SFP + 4 port 1G Trunk/Uplink SFP Ethernet Switch. A number of various SFPs can be used including 100Mbps, 1Gbps duplex, single-fiber and RJ45 Copper. Please see OSD SFP datasheets for options available.

2.1.2 APPLICATIONS

- Managed L2/3 switch for small to medium-sized enterprise networks requiring very high throughput.
- Redundant and self-healing network
- Ideal for star configured optical networks
- Industrial IP communications for rugged environments
- Available with either DC or AC powering. The DC version has dual redundant inputs as standard whereas redundant AC powering is optional for the AC version

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2.1.3 FEATURES AND BENEFITS

General

- L2/3 managed 1G Ethernet switch
- Supports RSTP/MRSTP/STP for Ethernet redundancy
- CPU Memory 128MB
- User-friendly web browser based GUI
- CLI and SNMP management

Port Control

- Port speed and flow control
- Port status -- link monitoring
- Port statistics -- MIB counters

Qos

- Traffic classes (1, 2, or 4, 8 active priorities)
- Port default priority and user assigned priority
- Scheduler priority
- QoS control
- Storm control

L2 Switching

- IEEE 802.1D Bridge with auto MAC learning/aging
- IEEE 802.1Q static VLAN
- Private VLAN (static)
- 80Gbps switching backplane
- IEEE 802.1Q-2005 – Rapid spanning tree (RSTP)
- IEEE 802.3ad Link aggregation, static and LACP
- DHCP client
- Port mirroring

Security

- Port-based 802.1X
- Web and CLI authentication and authorization

OAM

- IEEE 802.3ah Link OAM

Multicasting

- IGMP Snooping (IGMPv2, IGMPv3)
- Multicast Listener Discovery (MLD) v1 and v2

Power Saving

- Ethernet Energy Efficiency
  - Link down power savings
  - Scales power based on cable length
- Thermal protection

Management

- HTTP server
- Web management
- CLI console port
- Management access filtering
- System log
- Software download through web
- SNMPv1/v2c/v3Agent
- IEEE 802.1AB-2005 Link Layer Discovery, LLDP
- Configuration download or upload
- RFC 1213 MIB II
- RFC 3621 LLDP-MED power
- RFC 3635 Ethernet-like MIB
- RFC 4188 Bridge MIB
- Private MIB framework
- IEEE 802.1 MSTP MIB
- IEEE 802.1AB LLDP

2.2 TECHNICAL SPECIFICATIONS

TABLE 1: TECHNICAL SPECIFICATIONS

SPECIFICATION	PERFORMANCE
Electrical Data Interface	IEEE802.3z 1000Base-Lx, 1000Base-Sx IEEE802.3u 100Base-Fx
Operating Mode	Full duplex for 100M/1G Store-and-Forward IEEE802.3x full-duplex flow control
Number of Optical Port Connectors	SFP x 28: 24 for 10/1000SFPs Port1-24, 4 for the 1G uplink/trunk ports
Optical Port Connector Type	SFP (LC or SC)
SFP Options	Short haul, long haul, single fiber operation, etc. Please see OSD Datasheets #102100XX and #1021000XX for 100Mbps and 1Gbps SFP optical modules
Indicators	28 x 100M/1G Link/Activity/Speed 2 x Power 1 x Status
Configuration Connector	Mini USB Console Port
Alarms	Four: Two for Power Supply Status Two user definable via the GUI as specified in the user manual
Alarm Interface	Four opto-isolated relay drivers via two 4-way 3.5mm terminal blocks
Control	System Reset
Operating Temperature	-20°C to +75°C for OSD2790SFPDC -20°C to +65°C for OSD2790SFPAC and OSD2790SFPDAC
Relative Humidity	0 to 95% non-condensing
Power Requirements	+10 to +36V_{DC} @ 40VA Max for DC version 90 to 264V_{AC} @ 50VA Max for standard single AC version 90 to 264V_{AC} @ 55VA Max for optional redundant AC version
Power Connector	4 way 5.08mm Terminal Block for DC powered version One IEC power inlet module for the standard AC powered version Two IEC power inlet modules for the optional redundant AC powered version
Dimensions of Enclosure (mm)	443W x 300D x 44H

1022790SFP01

3 INSTALLATION

ELECTROMAGNETIC COMPATIBILITY

WARNING: This is a **Class A product**. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

OPTICAL OUTPUT OPERATION

WARNING: **Laser Safety:** Class 1 Laser Product (SFP) per IEC 60825-1:2014 standard.

Class 1
The OSD2790SFP is a **Class 1 laser product** when SFPs are fitted

PRECAUTIONS

- All service personnel should be provided training as to the hazards of direct viewing of laser radiation and of the precautionary measures during servicing of equipment
- Areas where laser products are installed should be restricted in access to trained service personnel only and appropriate warning signs posted in the work area.
- All laser apertures should be covered by protective covers when not connected to optical fibers. Never leave outputs uncovered.
- Laser equipment should be positioned above or below eye level where possible. Apertures should be positioned away from personnel.
- Protective eyewear should be worn in the vicinity of laser equipment.

4 OSD2790SFP FRONT AND REAR PANELS

4.1 FRONT PANEL

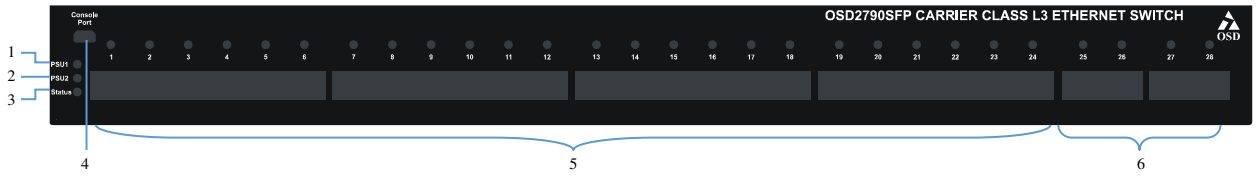


FIGURE 1: FRONT PANEL

1. PSU1 Status LED
2. PSU2 Status LED
3. Status LED
4. USB Console Port
5. 24 x 100/1000M SFP ports with 100M/1G Link/Activity/Speed LEDs
6. 4 x 1G Trunk/Uplink SFP ports with 100M/1G Link/Activity/Speed LEDs

4.2 REAR PANEL

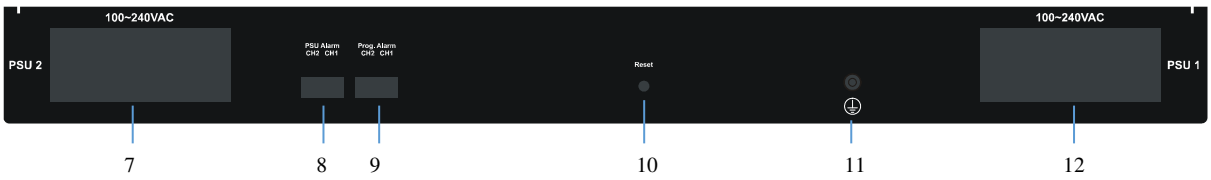


FIGURE 2: REAR PANEL

7. PSU 2 Redundant Power Supply Input
8. PSU Alarm Output connector
9. Programmable Alarm Output Connector
10. Reset Switch
11. Earth/Ground screw
12. PSU 1 Redundant Power Supply Input

5 Power Supply Connections

Connect the two IEC Power connectors to PSU 1 and PSU 2 located on the rear of the unit.

The OSD2790SFP requires external 90 to 264V_{AC} @ 55VA Max power.

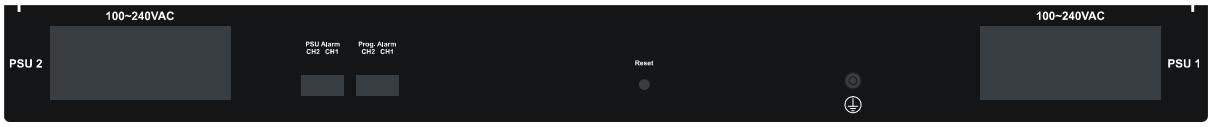


FIGURE 3: POWER CONNECTION

6 LED Indicators

TABLE 2: LED FUNCTION

LED	Function
PSU 1	• Red – PSU 1 Not connected or faulty • Green – PSU 1 On
PSU 2	• Red – PSU 2 Not connected or faulty • Green – PSU 2 On
Status	• Red – Standby/Initialization Mode • Green – Normal status
SFP 1-24	Port Status LED will indicate the below information. • Green – 1Gbps • Amber – 100MBps • Off – No Connection
SFP 25-28	Port Status LED will indicate the below information. • Green – 1Gbps • Off – No Connection

7 Fitting SFP Connectors

Care should be taken when inserting/removing the SFP connectors from the SFP port as SFP modules are Electrostatic (ES) sensitive and Electrostatic Discharge (ESD) precautions should be taken when installing. Ensure that the SFP is fully engaged and latched into position.

Inserting SFP – Ensure that the SFP lever is in the locked position and insert into appropriate SFP port. Gently push the SFP until it locks into place. Remove plastic/rubber dust cap and fit appropriate fiber cable.

Removing SFP – Remove fiber connector. Pull the SFP lever down to unlock SFP from housing. Using the lever, gently pull the SFP out.

Fiber SFP

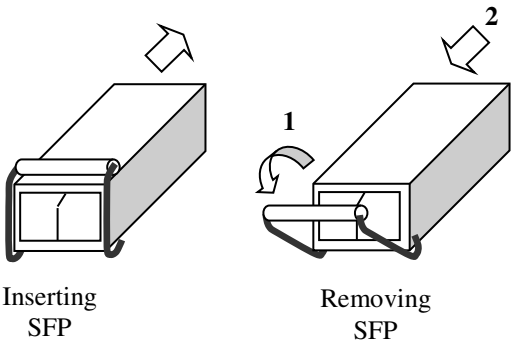
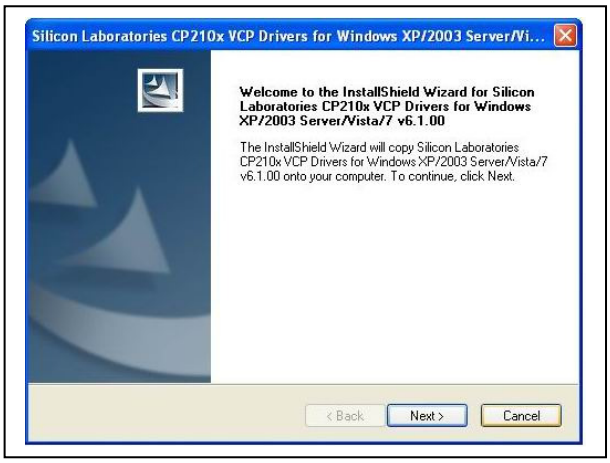


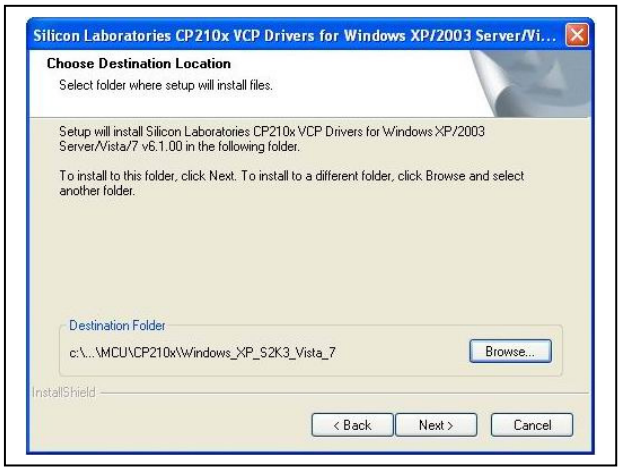
FIGURE 4: FITTING/REMOVING SFP CONNECTORS

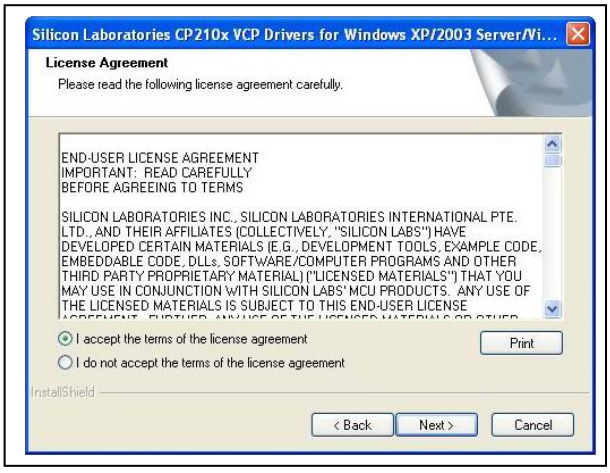
8 CLI OVERVIEW

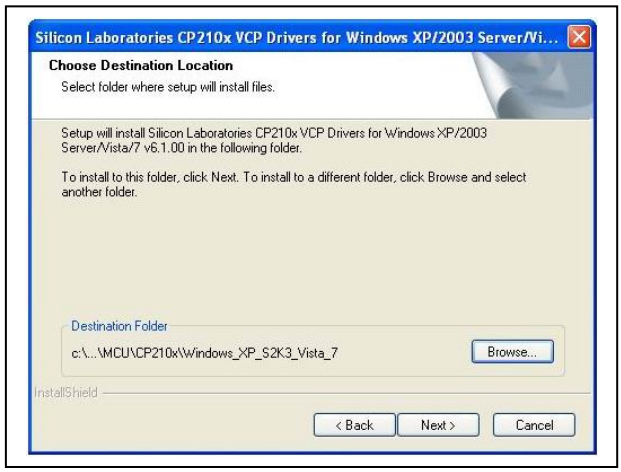
8.1 CONNECT TO CLI

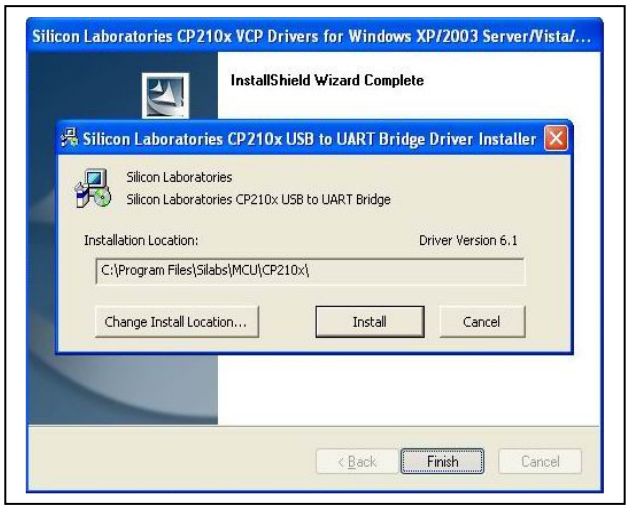
The Silicon Laboratories CP210x VCP Drivers is required to be installed on the PC before connecting the switch.

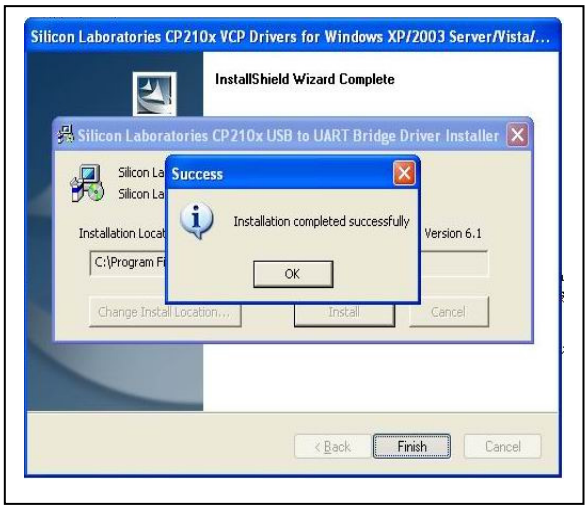












1. Connect the Console Port on OSD2790 (Mini USB) to PC with USB cable.
2. Using HyperTerminal to set up the following parameters.
    - Baud Rate: 115200
    - Data Bits: 8
    - Parity: None
    - Stop Bits: 1
    - Flow Control: None
3. Check the link by pressing <ENTER>. The line should jump to the next line.
4. Using the Username and password to login the switch
    - Default Username: admin
    - Default Password: (None)

8.2 CLI COMMAND FOR IP CONFIGURATION

- ***show ip interface brief***: Display the current IP address and subnet mask.
- ***configure terminal -> interface vlan 1 -> ip address <IP address> <subnet mask>***: Setup the switch IP address.
- ***copy running-config startup- config***: Save the current configuration to start-up configuration.

PS: All configuration changes must be saved otherwise all the changes will be lost after rebooting!

9 GUI Overview

9.1 DEFAULT SETTING

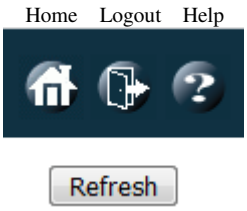
- IP Address: 192.168.0.99
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.0.1
- User Name: admin
- Password: (None)

9.2 LOG INTO THE SWITCH

- Connect a switch port to a PC, Change the PC's network IP address to connect to the switch (i.e.: 192.168.0.2).
- In a web browser, enter the URL 192.168.0.99.
- Enter the username and password.

9.3 GUI OVERVIEW

This Quick Start Guide will only show a few main or important features to get the user started and running the OSD254SFP successfully. On the top right hand of the GUI screen there are three icons available to quickly navigate or obtain help for each GUI menu item.



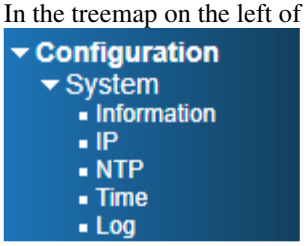
HOME: Clicking the Home button will exit any GUI current screen and display the panel status.

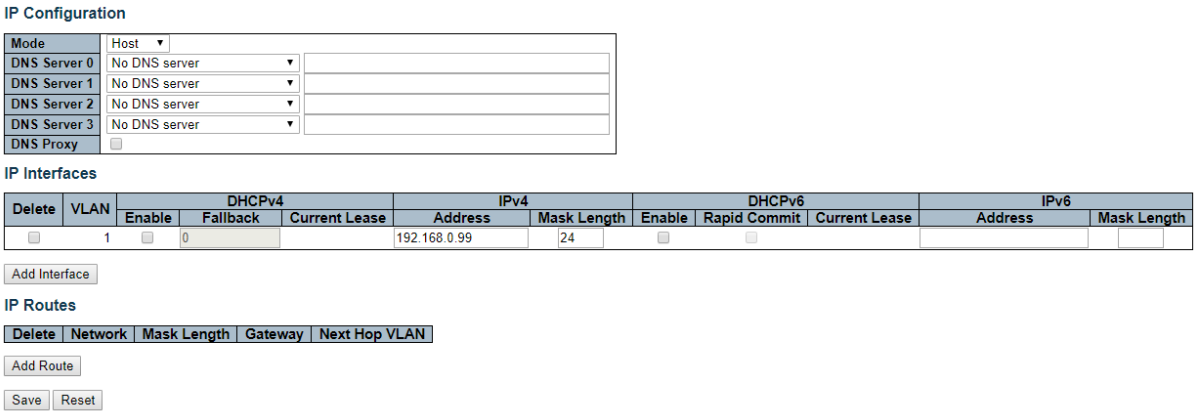
LOGOUT: Clicking the Logout button will logout the current user.

HELP: Clicking the Help button will open a help window for the current open menu window and display all functions and input arguments for that page.

9.4 IP CONFIGURATION

In the treemap on the left of the GUI, expand the **Configuration → System → IP.**





Enter the **IPv4 address** and **Mask Length** in the table.

Choose the management VLAN ID to access that IP in **VLAN** table if VLAN function is required.

If the multiple IP addresses are required, click **Add Interface** to add more IP interface.

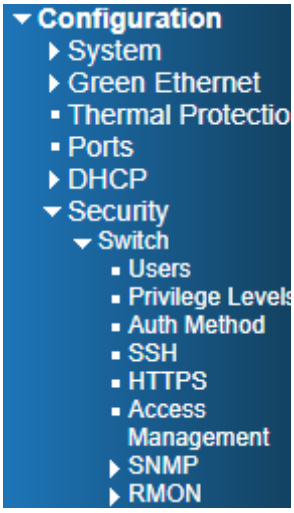
Click **Save** to save the configuration.

Use new IP address to access the switch.

PS: All configuration changes must be saved otherwise all the changes will be lost after rebooting!

9.5 USERS AUTHENTICATION

In the tree map on the left of the GUI, expand the **Configuration → Security→ Switch→ Users**



Users Configuration

User Name	Privilege Level
admin	15

Add New User

Click **admin** to change the current admin account setting.

Edit User

User Settings	
User Name	admin
Password	
Password (again)	
Privilege Level	15

Save Reset Cancel

If multiple users are required, click **Add New User**

Add User

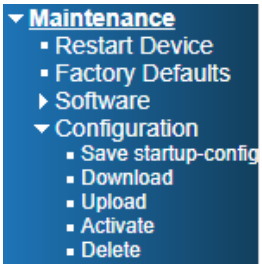
User Settings	
User Name	
Password	
Password (again)	
Privilege Level	0

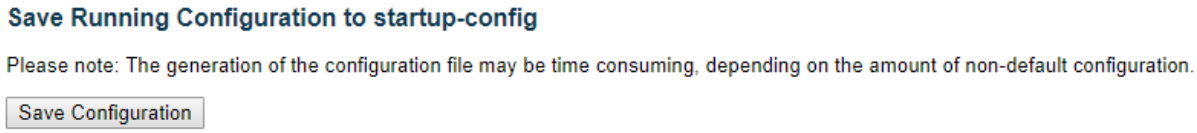
Save Reset Cancel

PS: All configuration changes must be saved otherwise all the changes will be lost after rebooting!

9.6 SAVE CONFIGURATION TO START-UP

In the treemap below, expand the **Maintenance → Configuration**, then select Save startup-config.

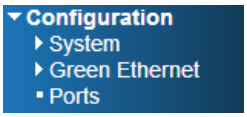


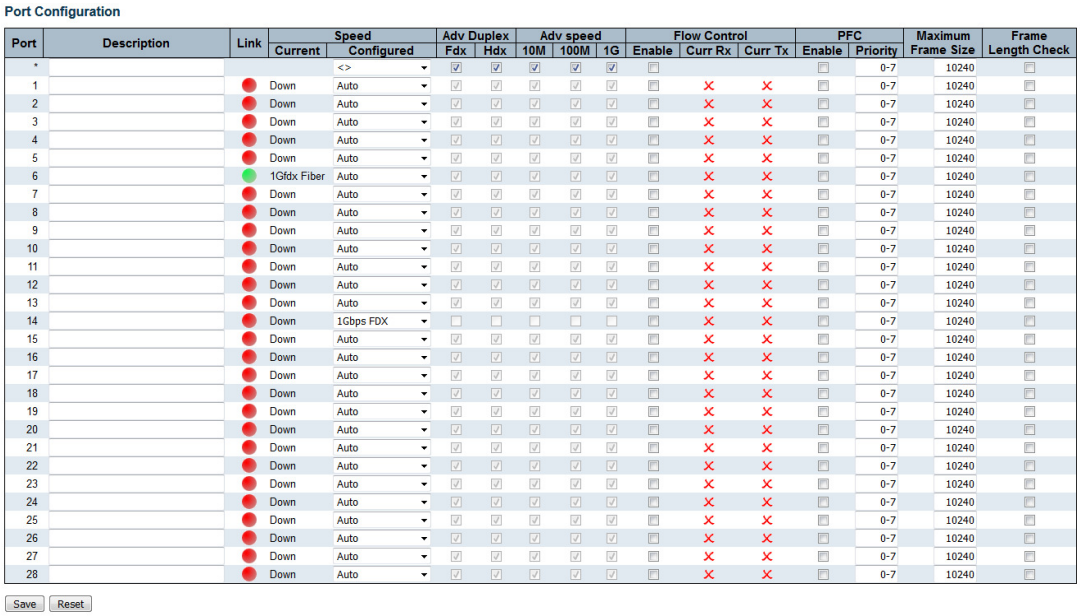


Click **Save Configuration** to save the configuration on start-up.

9.7 PORT SPEED SETTING

The default port speed settings for the OSD2790SFP is 1Gbps. If the user uses 100Mbps SFP devices, the unit will have to have those ports manually set to 100Mbps for correct operation. In the tree map below expand the **Configuration** menu and select **Ports**. Select **Port** number then in the **Speed Configured** column from the drop down menu select the **100Mbps** option. Click **Save** to save setting.





10 WARRANTY

Thank you for purchasing equipment designed, manufactured and serviced by Optical Systems Design (OSD). OSD warrants that at the time of shipment, its products are free from defects in material and workmanship and conforms to specifications. Our Warranty conditions are outlined below:

10.1 WARRANTY PERIOD

For warranty period, please call your local OSD distributor.

10.2 REPAIRS

Optical Systems Design reserves the right to repair or replace faulty modules/units. Please obtain a "Return Material Authorisation" (RMA) form and number before returning goods.
Goods must be returned in adequate packing material to Optical Systems Design, Warriewood or its nominated authorised representative, for all repairs.

10.2.1 WARRANTY REPAIRS

Return shipments to OSD shall be at customer's expense and freight back to the customer will be at OSD expense.

10.2.2 OUT-OF-WARRANTY REPAIRS

OSD reserves the right to repair or replace any faulty goods. Freight costs and insurance for both journeys are met by the user. All equipment repaired by OSD will have a 3-Month Warranty from the date of dispatch.

10.2.3 SITE REPAIRS

By agreement site repairs may be undertaken for which out of pocket, hotel and travel expenses will be charged.

10.2.4 EXCLUSIONS

This warranty does not apply to defects caused by unauthorized modifications, misuse, abuse or transport damage to the equipment. All modifications to OSD's standard product will need written authorization and will be charged at normal repair rates. All modifications are to be carried out by OSD Technicians. Warranty is void if unauthorized removal and/or tampering with serial number and/or repair labels is evident.

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