
OPTICAL

SYSTEMS

DESIGN

OPERATOR MANUAL

OSD2700F SERIES

**MANAGED 24-PORT 10/100BASE T AND 4-
COMBO PORT GIGABIT ETHERNET
SWITCH**

OPTICAL SYSTEMS DESIGN

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1 QUICK START GUIDE

This quick start guide describes how to install and use the Managed Ethernet Switch.

1.1 FUNCTIONAL DESCRIPTION

- RS-232 console, Telnet, SNMP v1 & v2c & v3, RMON, Web Browser, and TFTP management.
- Supports Command Line Interface in RS-232 console.
- Supports 8192 MAC addresses. Provides 3M bits memory buffer.
- Supports IEEE802.3/802.3u/802.3ab/802.3z/802.3x. Auto-negotiation: 1000Mbps-full-duplex; 10/100Mbps-full/half-duplex; Auto MDI/MDIX.
- 100Base-FX: Multi mode SC or ST type, Single mode SC or ST type; 100Base-BX: WDM Single mode SC type.
- 1000Base-SX/LX: Multi mode SC type, Single mode SC type; 1000Base-BX: WDM Single mode SC type.
- SFP socket for Gigabit fiber optic expansion.
- Store-and-forward mechanism.
- Full wire-speed forwarding rate.
- AC inlet power socket: 90~264VAC, 50~60Hz internal universal PSU.
- Supports redundant power supplies for flexible application.
- -10°C to 60°C operating temperature range.
- Metal case.
- Supports Rack Mounting installation.

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1.2 PHYSICAL DESCRIPTION

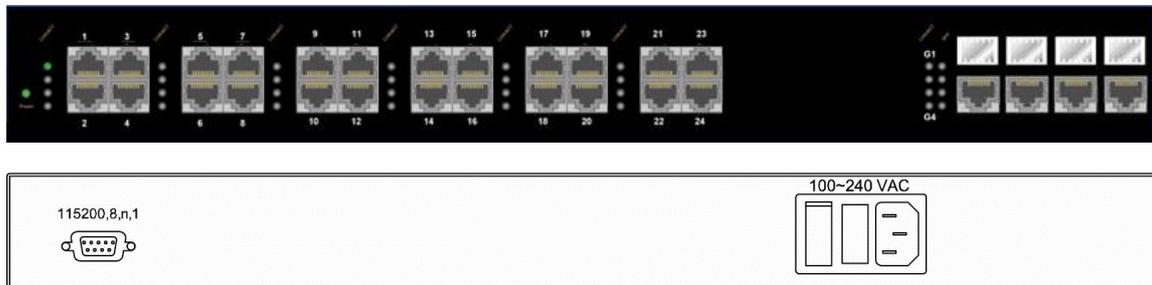


FIGURE 1: OSD2700 FRONT AND REAR PANELS

TABLE 1: OSD2700 LED FUNCTIONS

LED	State	Indication
Power	Green	Power on
	Off	Power off
10/100Base-TX, 100Base-FX/BX		
Link/ACT	Steady	A valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
10/100/1000Base-TX, SFP, 1000Base-SX/LX/BX		
Link/ACT	Steady	A valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
SFP		
SFP	Steady	A valid SFP connection established
	Off	SFP not installed

1.3 CONSOLE CONFIGURATION

1.3.1 CONNECT TO THE SWITCH CONSOLE:

Connect the DB9 straight cable to the RS-232 serial port of the device and the RS-232 serial port of the terminal or computer running the terminal emulation application. Direct access to the administration console is achieved by directly connecting a terminal or a PC equipped with a terminal-emulation program (such as HyperTerminal) to the switch console port.

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1.3.2 CONFIGURATION SETTINGS OF THE TERMINAL-EMULATION PROGRAM:

Baud rate: 115,200bps

Data bits: 8

Parity: none

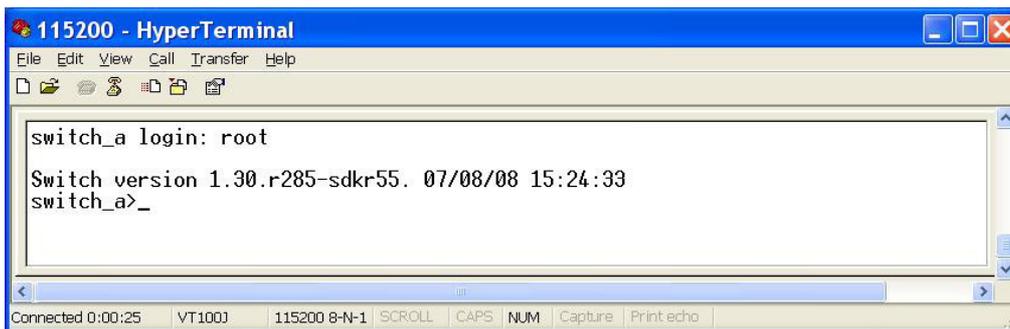
Stop bit: 1

Flow control: none

Press the “Enter” key. The Command Line Interface (CLI) screen should appear as below:

Logon to Exec Mode (View Mode):

At the “switch_a login:” prompt just type in “root” and press <Enter> to logon to Exec Mode (or View Mode). And the “switch_a>” prompt will show on the screen.



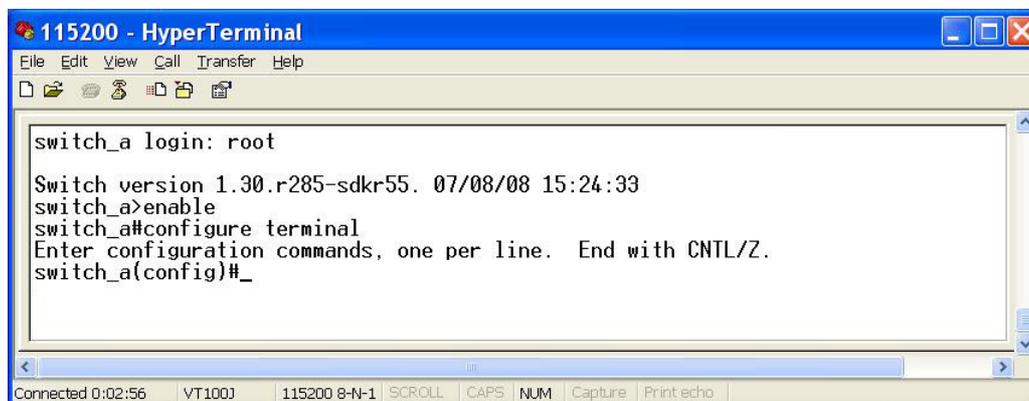
```
115200 - HyperTerminal
File Edit View Call Transfer Help
switch_a login: root
Switch version 1.30.r285-sdkr55. 07/08/08 15:24:33
switch_a>_
Connected 0:00:25 VT1003 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
```

FIGURE 2: CLI LOGIN

- Logon to Privileged Exec Mode (Enable Mode):
At the “switch_a>” prompt just type in “enable” and press <Enter> to logon to Privileged Exec Mode (or Enable Mode). And the “switch_a#” prompt will show on the screen.
- Logon to Configure Mode (Configure Terminal Mode):
At the “switch_a#” prompt just type in “configure terminal” and press <Enter> to logon to Configure Mode (or Configure Terminal Mode). And the “switch_a(config)#” prompt will show on the screen.
- Set new IP address and subnet mask for Switch:
At the “switch_a(config)#” prompt just type in “interface vlan1.1” and press <Enter> to logon to vlan 1 (vlan1.1 means vlan 1). And the “switch_a(config-if)#” prompt will show on the screen.

Command Syntax: “ip address A.B.C.D/M”. “A.B.C.D” specifies IP address. “M” specifies IP subnet mask. “M”= 8: 255.0.0.0, 16:255.255.0.0, or 24: 255.255.255.0.

For example, At the “switch_a(config-if)#” prompt just type in “ip address 192.168.1.10/24” and press <Enter> to set new IP address (192.168.1.10) and new IP subnet mask (255.255.255.0) for Switch.



```
115200 - HyperTerminal
File Edit View Call Transfer Help
switch_a login: root
Switch version 1.30.r285-sdkr55. 07/08/08 15:24:33
switch_a>enable
switch_a#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch_a(config)#_
Connected 0:02:56 VT1003 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
```

FIGURE 3: CLI CONFIG

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1.4 WEB CONFIGURATION

- Login the switch:
Specify the default IP address (192.168.1.10) of the switch in the web browser. A login window will be shown as below:

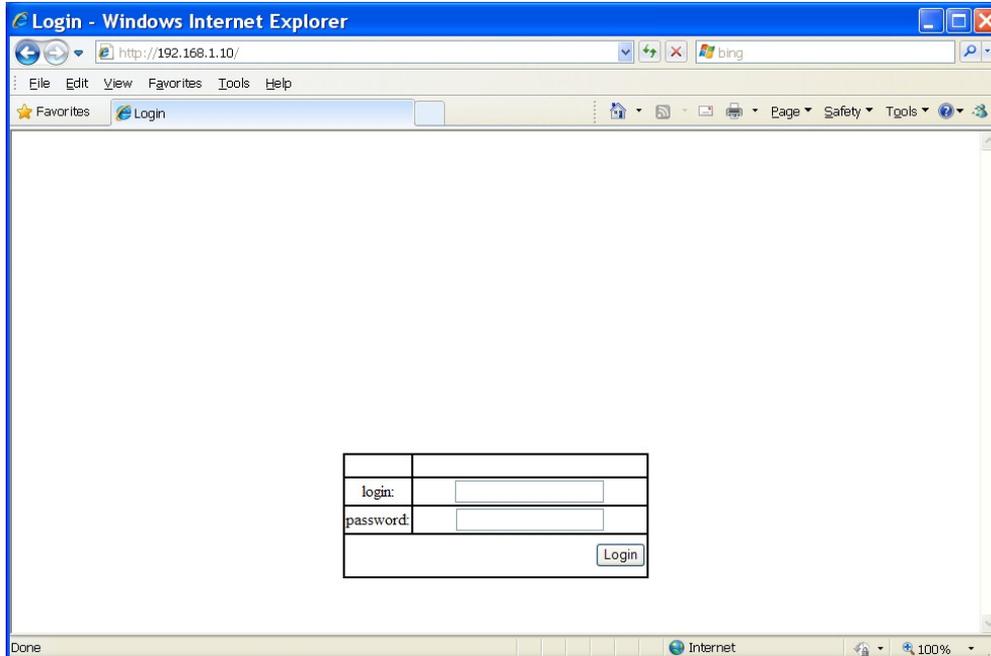


FIGURE 4: WEB LOGIN

- Enter the factory default login ID: root.
Enter the factory default password (no password).
Then click on the "Login" button to log on to the switch.

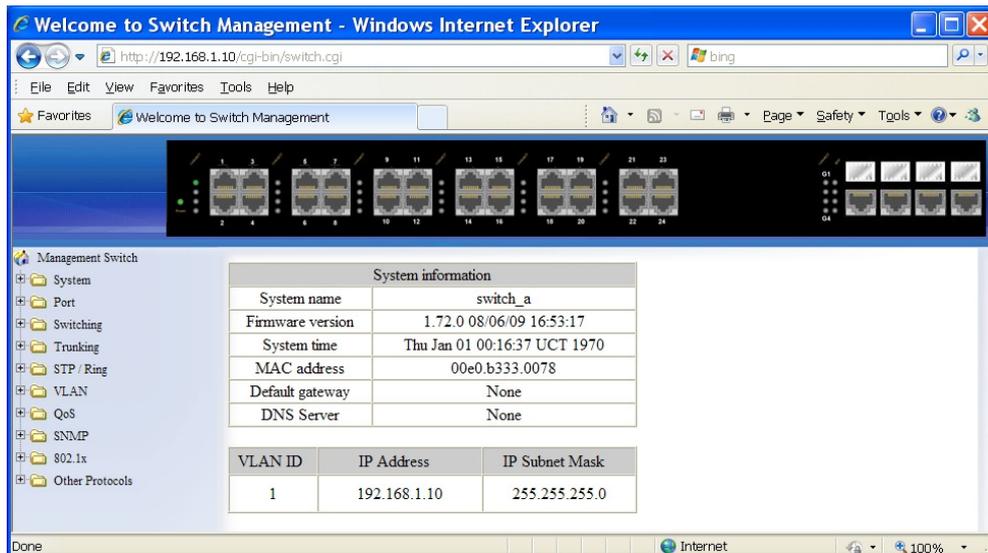


FIGURE 5: WEB CONFIG

2 TECHNICAL SUMMARY

2.1 BRIEF DESCRIPTION

2.1.1 PREFACE

This manual describes how to install and use the OSD2700F Managed Ethernet Switch. The OSD2700F switch is designed to deliver full scalability with SNMP/RMON web-based management functions. To get the most out of this manual, you should have an understanding of Ethernet networking concepts.

2.1.2 OVERVIEW

The OSD2700SFP is a managed 24-port 100BaseT and 4-port Gigabit Ethernet switch designed to operate in tough industrial applications providing real-time redundant performance. The four 1000Base RJ45 copper ports and four Gigabit SFP ports are combo ports - It is possible to use either the RJ45 port of the SFP port per channel (G1, G2, G3, G4). ie It is not possible to use both at the same time. SFPs are sold separately.

The unit will operate on either 1310nm and/or 1550nm singlemode. Operation over at least 40km of singlemode fiber is possible by use of the appropriate SFP optical devices. It normally requires two fibers per SFP port but is optionally available for one fiber operation.

A major benefit of the OSD2700F is its reliable and consistent performance over the -10°C to +60°C temperature range that allows it to be used in uncontrolled environments such as roadside cabinets, mine sites and factories.

2.1.3 APPLICATIONS

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ▲ Any network utilising a mix of copper and fiber ▲ Industrial IP communications | <ul style="list-style-type: none"> ▲ Self-healing Gigabit Ethernet backbone networks ▲ Gigabit Combo ports: copper (RJ45) or fiber (SFP) |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|

2.1.4 FEATURES AND BENEFITS

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ▲ Complies with IEEE802.3i/802.3u/802.3ab 10/100/1000Base-T, IEEE802.3z 1000Base-LX standards. ▲ Supports RSTP/MSTP/STP for Ethernet redundancy IP Multicast Filtering through IGMP Snooping V1, V2 & V3 ▲ Supports port-based VLAN and IEEE802.1Q VLAN Tagging and GVRP ▲ IEEE802.1p QoS with four priority queues ▲ MAC-based trunking with automatic link fail-over ▲ RS232 console, Telnet, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management | <ul style="list-style-type: none"> ▲ Full wire-speed forwarding rate ▲ Supports IEEE802.1x Security ▲ Bandwidth Rate Control ▲ Per-port programmable MAC address locking ▲ Up to 24 Static Secure MAC addresses per port ▲ Port mirroring ▲ Supports NTP ▲ SFP modules sold separately ▲ 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX ▲ Operates over the temperature range of -10°C to +60°C |
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2.2 TYPICAL CONFIGURATION

Figure 6 below indicates a possible set-up for an OSD2700F system.

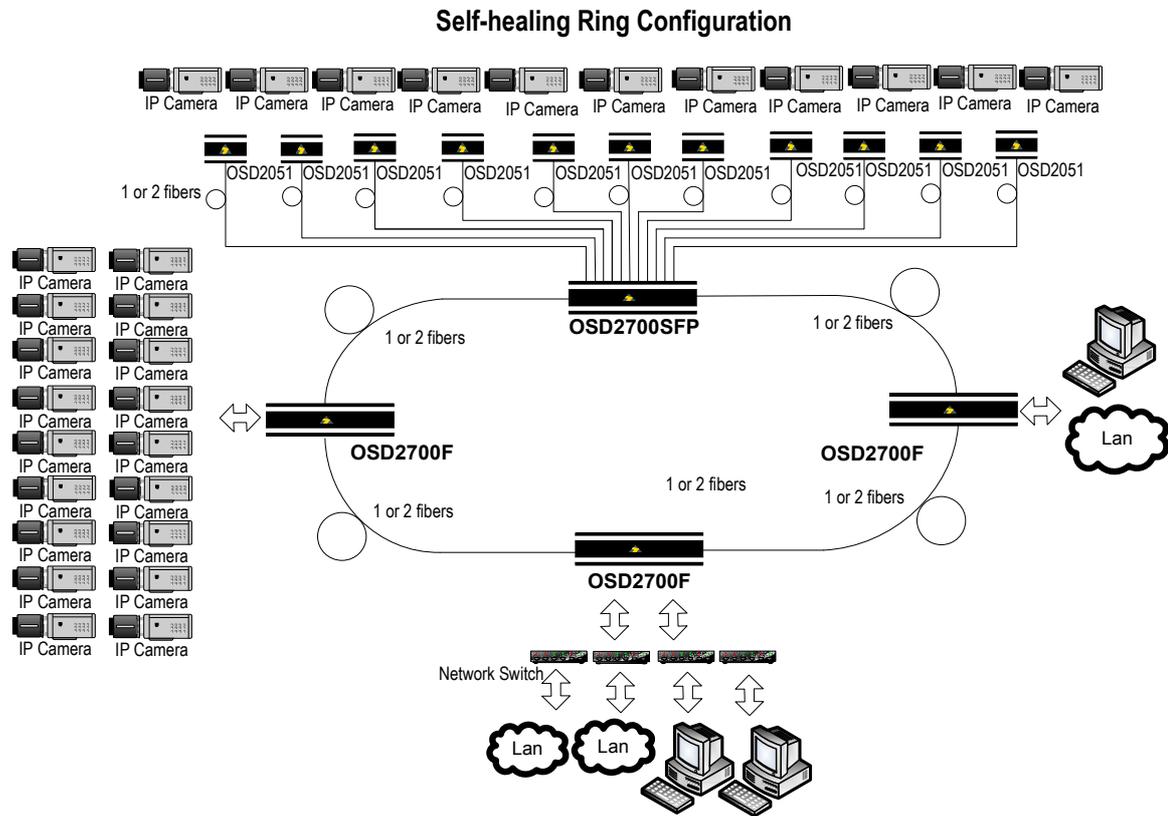


FIGURE 6: OSD2700F TYPICAL CONFIGURATION

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2.3 TECHNICAL SPECIFICATIONS

TABLE 2: TECHNICAL SPECIFICATIONS

SPECIFICATION	PERFORMANCE
24 x Copper RJ45 Ports	
Standards	IEEE802.3i, 802.3u
Optical connector	RJ45
4 x RJ45/SFP Combo Ports	
Standards	IEEE802.3i, IEEE802.3ab for 10, 100 or 1000Base-T Ethernet
Optical Connector	LC Standard
Electrical Connector	RJ45
SFP Port Options	1000Base-Lx, 10/100/1000Base-T (Contact OSD for SFP options)
Optical Data Interface	IEEE802.3z, 100Base-Lx, 1000Base-Sx, IEEE802.3u, 100Base-Fx
Transmitter Wavelength	Refer to OSD SFP datasheets or contact OSD sales for options
Transmit Optical Power	
Receiver Sensitivity	
Standard Optical Link Budget	Optical link budgets are SFP dependant. Refer to OSD SFP data sheets or contact OSD sales for options/details.
Optional Optical Link Budget	
Operating Mode	Half or full duplex for 10/100 Full duplex for 1000 Store-and-Forward Half-duplex back-pressure and IEEE802.3x full-duplex flow control
Common	
Standards	IEC61850-3/IEEE1613 for power substations & EN50121-4 for railway applications
Indicators	1x Power 24x 100Base-T, 100BaseFx: Link/Activity 4x 10/100/1000Base-T, 100Base-Sx, 1000Base-Lx: Link/Activity
Configuration Connector	DB9
Dimensions (mm)	442W x 250D x 44H
Weight	4.1kg
Power Requirements	90-264V _{AC} @ 45VA Max
Operating Temperature	-10°C to +60°C
Relative Humidity	5 to 95% non-condensing

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2.4 OSD2700F FRONT AND REAR PANELS

There are 24 fixed copper ports for 10/100Base-T, four fixed Gigabit copper ports and four optional Gigabit SFP ports which can be either copper or fiber on the front panel. The rear panel consists of a DB9 configuration connector and an IEC power. Each section will be described further throughout this manual.

*Note: The 4 SFP ports and 4 fixed Copper ports are Gigabit combo ports. It is possible to use either the RJ45 port or the SFP port per channel (G1, G2, G3, G4). ie It is not possible to use both at the same time.

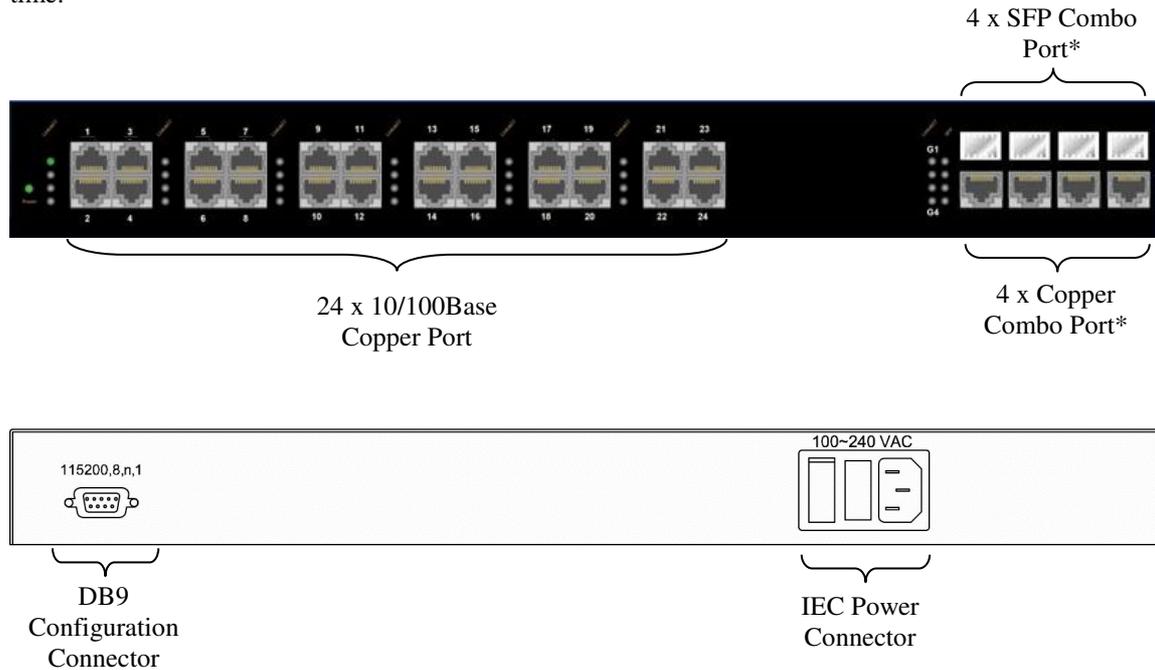
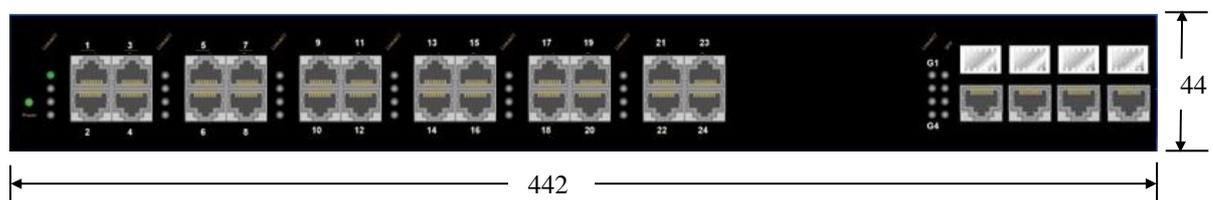


FIGURE 7: OSD2700 FRONT AND REAR PANELS

2.4.1 OSD2700F DIMENSIONS

The OSD2700 is designed to be mounted onto a 19" rack unit occupying 1RU space or can be free standing on an even surface.



3 INSTALLATION AND OPERATION

3.1 INTRODUCTION

This section outlines the methods required to install and operate the OSD2700F successfully. It should be studied carefully if damage to the equipment or poor results are to be avoided.

This equipment has been fully tested prior to dispatch and is ready for immediate operation. However it is advisable to check for external transportation damage before operation. If damage is evident, return the unit with the packaging to your supplier immediately.

3.2 INSTALLATION

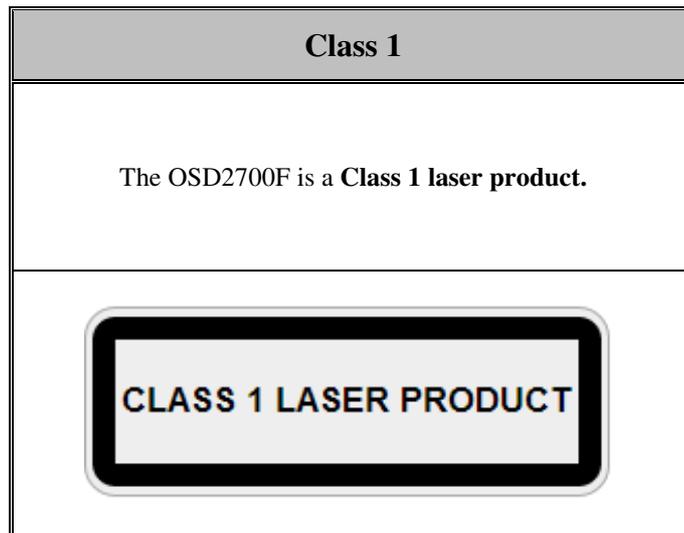
3.2.1 WARNING AND PRECAUTIONS

▲ 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 per IEC/EN 60825-1:20011 standard.



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.

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3.2.2 POWER SUPPLY CONNECTIONS

The OSD2700F requires external 90 to 264V_{AC} @ 45VA Max power. Power should be connected to the power socket located at the back of the unit using standard IEC plug (supplied). Always ensure that the power is off before any installation.

3.2.3 DB9 CONFIGURATION CONNECTIONS

The OSD2700F has a DB9 DCE connector located on the rear of the unit. Table 3 outlines the pin assignments.

TABLE 3: DB9 CONFIGURATION CONNECTOR

Pin no.	Name	RS232 Signal name
1	DCD	Data Carrier detect
2	RxD	Received data
3	TxD	Transmit data
4	---	N/C
5	GND	Signal ground
6	DSR	Data set Ready
7	---	N/C
8	CTS	Clear to send
9	---	N/C

3.2.4 LED INDICATORS

TABLE 4: OSD2700F LED INDICATORS

LED	State	Indication
Power	Green	Power on
	Off	Power off
10/100Base-TX, 100Base-FX/BX		
Link/ACT x 24	Steady	A valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
10/100/1000Base-TX, SFP, 1000Base-SX/LX/BX		
Link/ACT x 4	Steady	A valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
SFP		
SFP	Steady	A valid SFP connection established
	Off	SFP not installed

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3.2.5 FITTING SFP CONNECTORS

Care should be taken when inserting/removing the SFP connectors from SFP ports 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 fiber cable or RJ45 plug.

Removing SFP – Remove fiber connector or RJ45 plug. Pull the SFP lever down to unlock SFP from housing. Using the lever, gently pull the SFP out.

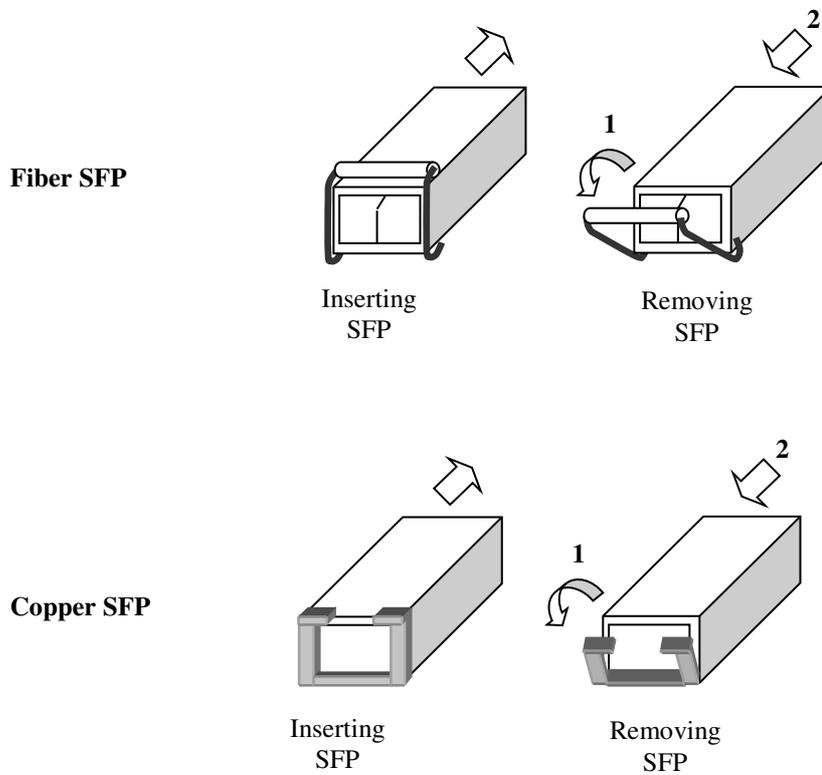


FIGURE 8: FITTING/REMOVING SFP CONNECTORS

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3.3 OSD2700F OPERATION

When using the OSD2700F for the first time, check that the unit is in good condition with no visible damage.

Connect the unit to an appropriate power source and check that the indicators illuminate accordingly on power up (see Table 4) after all other connections have been made.

3.3.1 CABLE CONNECTIONS

It is necessary to follow the cable specifications below when connecting the switch to your network. Use appropriate cables that meet your speed and cabling requirements.

TABLE 5: CABLE SPECIFICATIONS

Speed	Connector	Port Speed Half/Full Duplex	Cable	Max. Distance
Copper RJ45				
10Base-T	RJ-45	10/20 Mbps	2-pair UTP/STP Cat. 3, 4, 5	100m
100Base-TX	RJ-45	100/200 Mbps	2-pair UTP/STP Cat. 5	100m
1000Base-T	RJ-45	2000 Mbps	4-pair UTP/STP Cat. 5	100m
SFP				
1000Base-SX	Duplex LC	2000 Mbps	MMF (62.5µm)	550m 2km
1000Base-LX	Duplex LC	2000 Mbps	SMF (9µm)	10, 40, 60km
1000Base-BX	Duplex LC	2000 Mbps	SMF (9µm)	70km

Step 1: First, ensure the power of the switch and end devices are turned off.

Step 2: Prepare cable with corresponding connectors for each type of port in use.

Step 3: Consult Cable Specifications Table on previous page for cabling requirements based on connectors and speed.

Step 4: Connect one end of the cable to the switch and the other end to a desired device.

Step 5: Once the connections between two end devices are made successfully, turn on the power and the switch is operational.

4 SWITCH MANAGEMENT

This chapter explains the methods that can be used to configure management access to the switch. It describes the types of management applications and the communication and management protocols that deliver data between your management device (workstation or personal computer) and the system. It also contains information about port connection options.

This chapter covers the following topics:

- Management Access Overview
- Key Concepts
- Key Guidelines for Implementation
- Web Management Access
- Administration Console Access
- SNMP Access
- Standards, Protocols, and Related Reading

4.1 MANAGEMENT ACCESS OVERVIEW

The switch gives you the flexibility to access and manage the switch using any or all of the following methods.

The web browser interface and administration console (CLI) support are embedded in the switch software and are available for immediate use.

4.2 ADMINISTRATION CONSOLE (CLI)

The administration console is an internal, character-oriented, Command Line Interface (CLI) for performing system administration such as displaying statistics or changing option settings.

Using this method, you can view the administration console from a terminal, personal computer, Apple Macintosh, or workstation connected to the switch's console port.

There are two ways to use this management method: direct access or modem access. The following sections describe these methods.

4.2.1 DIRECT ACCESS

Direct access to the administration console is achieved by directly connecting a terminal or a PC equipped with a terminal-emulation program (such as HyperTerminal) to the switch console port.

When using the management method, configure the terminal-emulation program to use the following parameters (you can change these settings after login):

[Default parameters]

- 115,200bps
- 8 data bits
- No parity
- 1 stop bit

This management method is often preferred because you can remain connected and monitor the system during system reboots. Also, certain error messages are sent to the serial port, regardless of the interface through which the associated action was initiated. A Macintosh or PC attachment can use any terminal-emulation program for connecting to the terminal serial port. A workstation attachment under UNIX can use an emulator such as TIP.

4.2.2 MODEM ACCESS

You can access the switch's administration console from a PC or Macintosh using an external modem attached to the console port. The switch management program provides **Console Port** screen, accessible from the **Basic Management** screen that lets you configure parameters for modem access.

When you have configured the external modem from the administration console, the switch transmits characters that you have entered as output on the modem port. The switch echoes characters that it receives as input on the modem port to the current administration console session. The console appears to be directly connected to the external modem.

4.3 WEB MANAGEMENT

The switch provides a browser interface that lets you configure and manage the switch remotely.

After you set up your IP address for the switch, you can access the switch's web interface applications directly in your web browser by entering the IP address of the switch. You can then use your web browser to list and manage switch configuration parameters from one central location, just as if you were directly connected to the switch's console port.

4.4 SNMP-BASED NETWORK MANAGEMENT

You can use an external SNMP-based application to configure and manage the switch. This management method requires the SNMP agent on the switch and the SNMP Network Management Station to use the same community string. This management method, in fact, uses two community strings: the get community string and the set community string. If the SNMP Network management station only knows the set community string, it can read and write to the MIBs. However, if it only knows the get community string, it can only read MIBs. **The default get and set community strings for the switch are public.**

4.5 PROTOCOLS

The switch supports the following protocols:

Virtual terminal protocols, such as Telnet

A virtual terminal protocol is a software program, such as Telnet, that allows you to establish a management session from a Macintosh, a PC, or a UNIX workstation. Because Telnet runs over TCP/IP, you must have at least one IP address configured on the switch before you can establish access to it with a virtual terminal protocol.

<Note> Terminal emulation is different from a virtual terminal protocol in that you must connect a terminal directly to the console port.

Simple Network Management Protocol (SNMP)

SNMP is the standard management protocol for multivendor IP networks. SNMP supports transaction-based queries that allow the protocol to format messages and to transmit information between reporting devices and data-collection programs. SNMP runs on top of the User Datagram Protocol (UDP), offering a connectionless-mode service.

4.6 MANAGEMENT ARCHITECTURE

All of the management application modules use the same Messaging Application Programming Interface (MAPI). By unifying management methods with a single MAPI, configuration parameters set using one method (e.g. console port) are immediately displayed the other management methods (e.g. SNMP agent of web browser).

The management architecture of the switch adheres to the IEEE open standard. This compliance assures customers that the switch is compatible with, and will interoperate with other solutions that adhere to the same open standard.

5 SNMP & RMON MANAGEMENT

This chapter describes the switch's Simple Network Management Protocol (SNMP) and Remote Monitoring (RMON) capabilities. The following documentation applies to both the OSD2700F and to the OSD2700SFP

5.1 OVERVIEW

RMON is an abbreviation for the Remote Monitoring MIB (Management Information Base). RMON is a system defined by the Internet Engineering Task Force (IETF) document RFC 2819, which defines how networks can be monitored remotely.

RMONs typically consist of two components: an RMON probe and a management workstation:

- *The RMON probe is an intelligent device or software agent that continually collects statistics about a LAN segment or VLAN. The RMON probe transfers the collected data to a management workstation on request or when a pre-defined threshold is reached.*
- *The management workstation collects the statistics that the RMON probe gathers. The workstation can reside on the same network as the probe, or it can have an in-band or out-of-band connection to the probe.*

The switch provides RMON capabilities that allow network administrators to set parameters and view statistical counters defined in MIB-II, Bridge MIB, and RMON MIB. RMON activities are performed at a Network Management Station running an SNMP network management application with graphical user interface.

5.2 SNMP AGENT AND MIB-2 (RFC 1213)

The SNMP Agent running on the switch manager CPU is responsible for:

- *Retrieving MIB counters from various layers of software modules according to the SNMP GET/GET NEXT frame messages.*
- *Setting MIB variables according to the SNMP SET frame message.*
- *Generating an SNMP TRAP frame message to the Network Management Station if the threshold of a certain MIB counter is reached or if other trap conditions (such as the following) are met:*
 - Warm start
 - Cold start
 - Link up
 - Link down
 - Authentication failure
 - Rising alarm
 - Falling alarm
 - Topology Alarm

MIB-II defines a set of manageable objects in various layers of the TCP/IP protocol suites. MIB-II covers all manageable objects from layer 1 to layer 4, and, as a result, is the major SNMP MIB supported by all vendors in the networking industry. The switch supports a complete implementation of SNMP Agent and MIB-II.

5.3 RMON MIB (RFC 2819) AND BRIDGE MIB (RFC 1493)

The switch provides hardware-based RMON counters in the switch chipset. The switch manager CPU polls these counters periodically to collect the statistics in a format that complies with the RMON MIB definition.

5.3.1 RMON GROUPS SUPPORTED

The switch supports the following RMON MIB groups defined in RFC 2819:

- *RMON Statistics Group* – maintains utilization and error statistics for the switch port being monitored.
- *RMON History Group* – gathers and stores periodic statistical samples from the previous Statistics Group.
- *RMON Alarm Group* – allows a network administrator to define alarm thresholds for any MIB variable. An alarm can be associated with Low Threshold, High Threshold, or both. A trigger can trigger an alarm when the value of a specific MIB variable exceeds a threshold, falls below a threshold, or exceeds or falls below a threshold.
- *RMON Event Group* – allows a network administrator to define actions based on alarms. SNMP Traps are generated when RMON Alarms are triggered. The action taken in the Network Management Station depends on the specific network management application

5.3.2 BRIDGE GROUPS SUPPORTED

The switch supports the following four groups of Bridge MIB (RFC 1493):

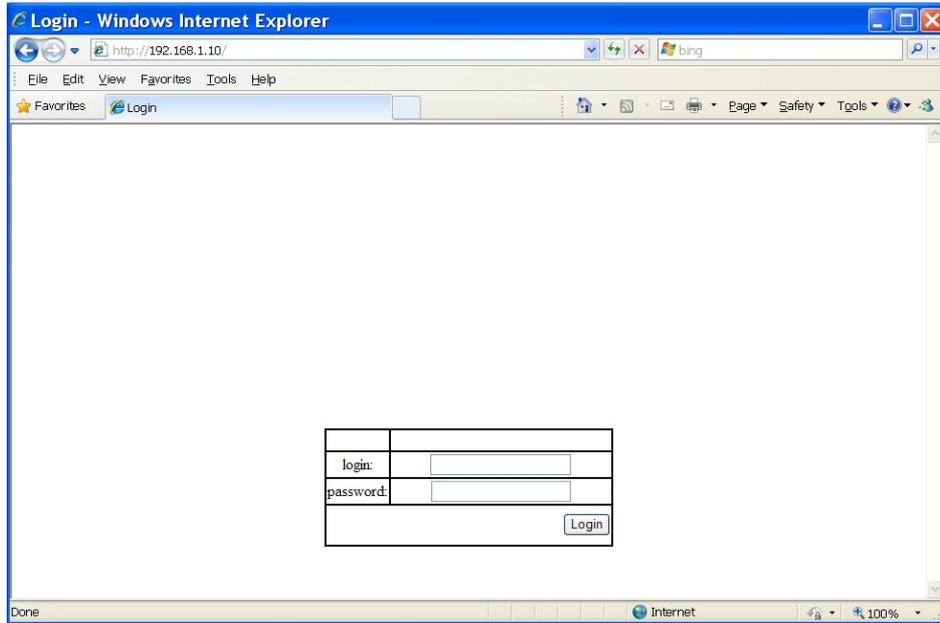
- *The dot1dBase Group* – a mandatory group that contains the objects applicable to all types of bridges.
- *The dot1dStp Group* – contains objects that denote the bridge's state with respect to the Spanning Tree Protocol. If a node does not implement the Spanning Tree Protocol, this group will not be implemented. This group is applicable to any transparent only, source route, or SRT bridge that implements the Spanning Tree Protocol.
- *The dot1dTp Group* – contains objects that describe the entity's transparent bridging status. This group is applicable to transparent operation only and SRT bridges.
- *The dot1dStatic Group* – contains objects that describe the entity's destination-address filtering status. This group is applicable to any type of bridge which performs destination-address filtering.

6 WEB-BASED BROWSER MANAGEMENT

The switch provides a web-based browser interface for configuring and managing the switch. This interface allows you to access the switch using a preferred web browser.

This chapter describes how to configure the switch using its web-based browser interface.

6.1 LOGGING ON TO THE SWITCH



SWITCH IP ADDRESS

In your web browser, specify the IP address of the switch. Default IP address is 192.168.1.10.

LOGIN

Enter the factory default login ID: root.

PASSWORD

Enter the factory default password (no password).

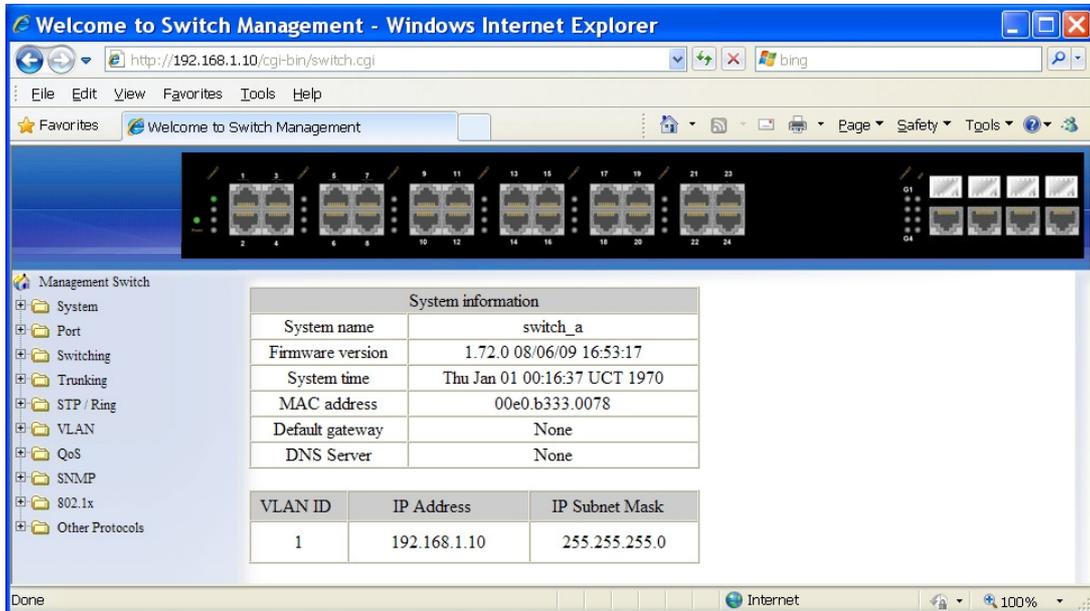
Or enter a user-defined password if you followed the instructions later and changed the factory default password.

Then click on the "Login" button to log on to the switch.

OPTICAL SYSTEMS DESIGN

6.2 UNDERSTANDING THE BROWSER INTERFACE

The web browser interface provides groups of point-and-click buttons at the left field of the screen for configuring and managing the switch.



SYSTEM

System Information, System Name/Password, IP Address, Save Configuration, Firmware Upgrade, Reboot, Logout

PORT

Configuration, Port Status, Rate Control, RMON Statistics, Per Port VLAN Activities

SWITCHING

Bridging, Static MAC Entry, Port Mirroring

TRUNKING

Port Trunking

STP / RING

Global Configuration, RSTP Port Setting, MSTP Properties, MSTP Instance Setting, MSTP Port Setting, Ring Setting

VLAN

VLAN Mode Setting, 802.1Q VLAN Setting, 802.1Q Port Setting, Port Based VLAN

QOS

Global Configuration, 802.1p Priority, DSCP

SNMP

SNMP General Setting, SNMP v1/v2c, SNMP v3

802.1X

Radius Configuration, Port Authentication

OTHER PROTOCOLS

GVRP, IGMP Snooping, NTP

OPTICAL SYSTEMS DESIGN

6.3 SYSTEM

The screenshot shows a web browser window titled "Welcome to Switch Management - Windows Internet Explorer". The address bar shows the URL "http://192.168.1.10/cgi-bin/switch.cgi". The main content area displays a network diagram at the top, followed by a "System information" table and a "VLAN" table. The left sidebar contains a navigation menu with options like "System Information", "IP Address", "Save Configuration", etc.

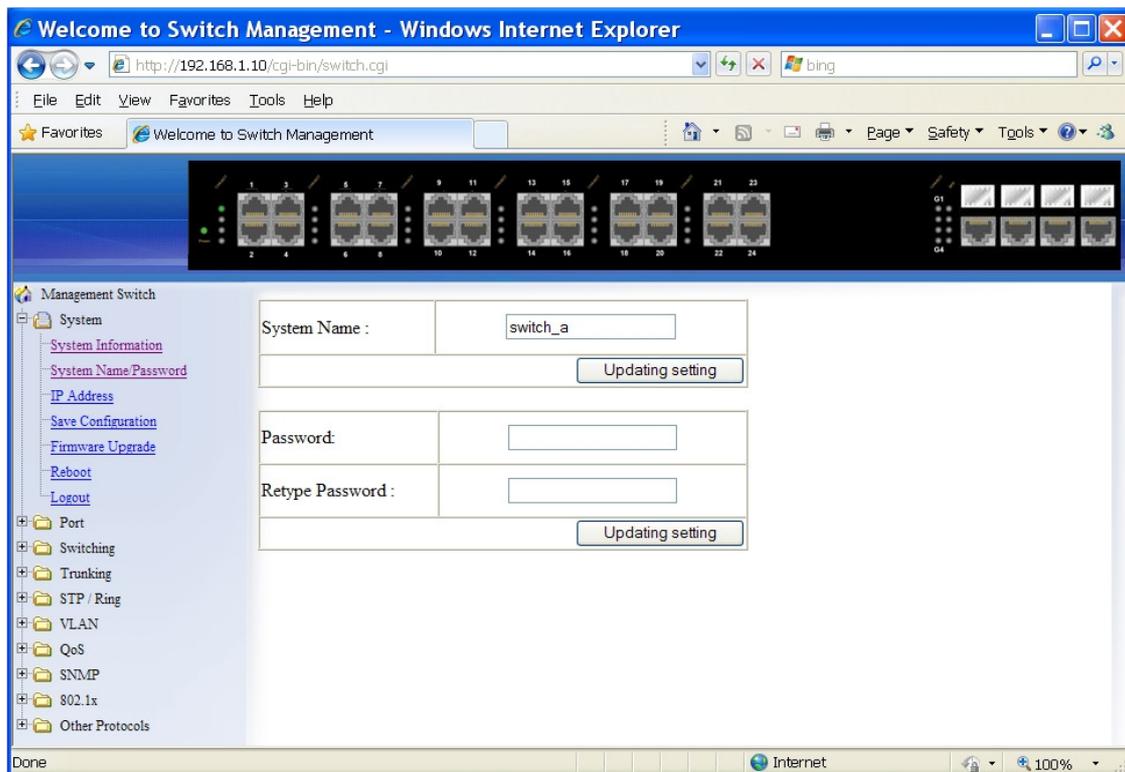
System information	
System name	switch_a
Firmware version	1.72.0 08/06/09 16:53:17
System time	Thu Jan 01 00:15:46 UCT 1970
MAC address	00e0.b333.0078
Default gateway	None
DNS Server	None

VLAN ID	IP Address	IP Subnet Mask
1	192.168.1.10	255.255.255.0

SYSTEM INFORMATION

The System name, Firmware version, MAC address, Default gateway, VLAN ID, IP Address, and IP Subnet Mask of Switch.

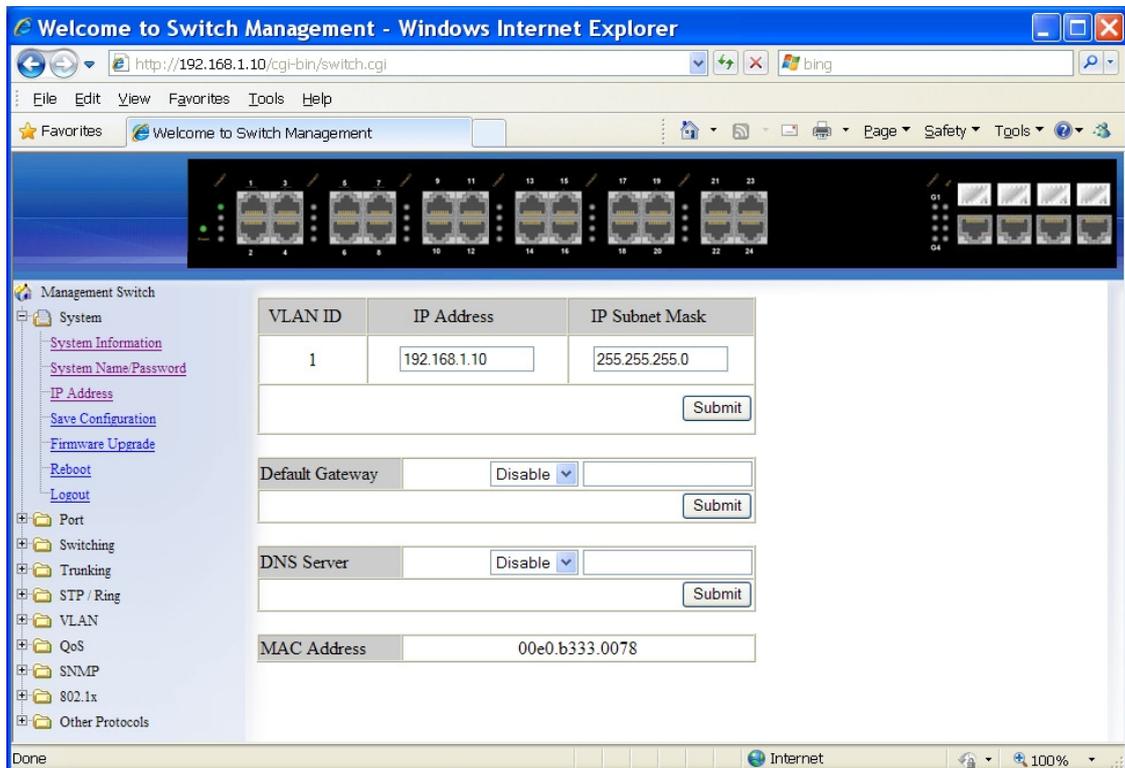
OPTICAL SYSTEMS DESIGN



SYSTEM NAME/PASSWORD

1. System Name: Click in “System Name” text box. Type a system name if it is blank, or replace the current system name with a new one.
2. Updating setting: Click “Updating setting” button to update your settings.
3. Password: Click in “Password” text box. Type a password.
4. Retype Password: Click in “Retype Password” text box. Type the same password in “Password” text box again to verify it.
5. Updating setting: Click “Updating setting” button to update your settings

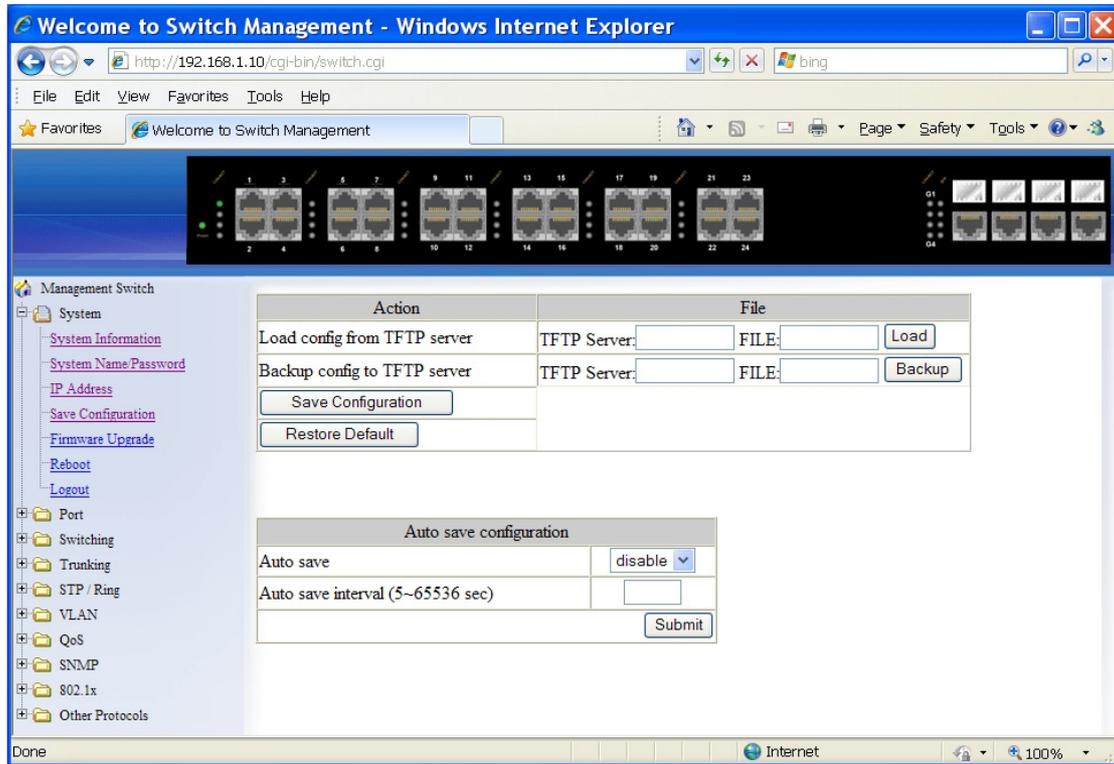
OPTICAL SYSTEMS DESIGN



IP ADDRESS

1. IP Address: Click in "IP Address" text box and type a new address to change the IP Address.
2. IP Subnet Mask: Click in "IP Subnet Mask" text box and type a new address to change the IP Subnet Mask.
3. Submit: Click "Submit" button when you finished these selections.
4. You need to enter the new IP address on the browser and reconnect to the switch after IP or subnet mask are changed.
5. Default Gateway: Click "Default Gateway" drop-down menu to choose "Disable" or "Enable" from the "Default Gateway" drop-down list to disable or enable Default Gateway Setting for the switch.
6. Click the text box and type a new address to change the Default Gateway. (Need to choose "Enable" from the "Default Gateway" drop-down menu.)
7. Submit: Click "Submit" button when you finished Default Gateway.

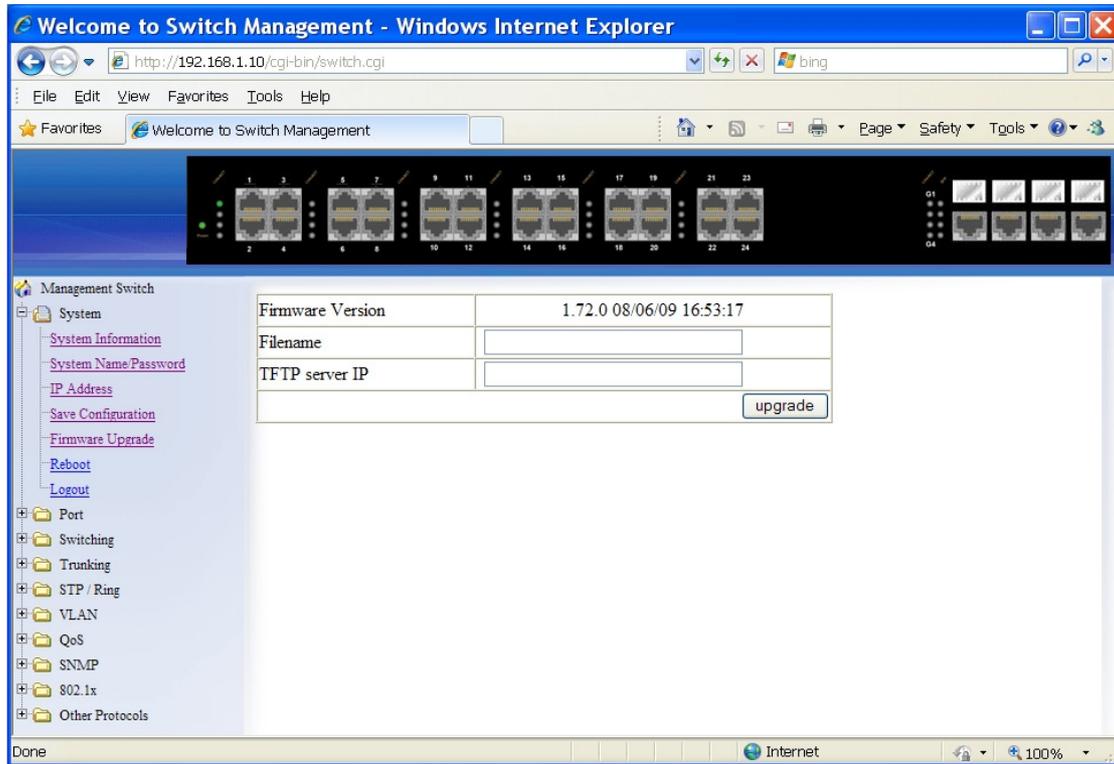
OPTICAL SYSTEMS DESIGN



SAVE CONFIGURATION

1. Load config from TFTP server:
2. Click in "TFTP Server" text box and type the TFTP server IP address from where the file will be obtained.
3. Click in "FILE" text box and type the name of the file that will be obtained.
4. Click "Load" button to load the file from the TFTP server.
5. Backup config to TFTP server:
6. Click in "TFTP Server" text box and type the TFTP server IP address to where the file will be backed up.
7. Click in "FILE" text box and type the name of the file that will be backed up.
8. Click "Backup" button to backup the file to the TFTP server.
9. Save Configuration: Click "Save Configuration" button to save your configuration settings.
10. Restore Default: Click "Restore Default" button to restore the default settings of the switch.
11. Auto save: Click "Auto save" drop-down menu to choose "Disable" or "Enable" from the "Auto save" drop-down list to disable or enable Auto save for the switch.
12. Auto save interval (5~65536 sec): Click in "Auto save interval" text box and type a decimal number between 5 and 65536.
13. Submit: Click "Submit" button when you finished Auto save configuration.

OPTICAL SYSTEMS DESIGN



ERROR: stackunderflow
OFFENDING COMMAND: ~

STACK: