

USER'S MANUAL



COMPEX MANAGED SWITCH SERIES

SXP2224WM (RoHS-compliant)

Manual Number: U-0374-V1.2C

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This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

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- 1. This device may not cause harmful interference, and
- 2. This device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Compex, Inc. declares the following:

Product Name: Compex 24-Port 10/100 + 1 Modular Exp. Slot Web-managed Switch

Model No: SXP2224WM conforms to the following Product Standards:

This device complies with the Electromagnetic Compatibility Directive (89/336/EEC) issued by the Commission of the European Community.

Electromagnetic Interference (Conduction and Radiation): EN 55022 (CISPR 22)

Electromagnetic Immunity: EN 55024 (IEC61000-4-2,3,4,5,6,8,11)

Power Line Harmonics: EN 61000-3-2 (IEC610000-3-2) Power Line Flicker: EN 61000-3-3 (IEC610000-3-3)

Product Safety: EN 60950 (IEC60950)

Therefore, this product is in conformity with the following regional standards: FCC Class A — following the provisions of FCC Part 15 directive; CE Mark — following the provisions of the EC directive.

This Class A digital apparatus complies with Canadian ICES-003.

Technical Support Information

The warranty information and registration form are found in the Quick Install Guide.

For technical support, you may contact Compex or its subsidiaries. For your convenience, you may also seek technical assistance from the local distributor, or from the authorized dealer/reseller that you have purchased this product from. For technical support by email, write to support@compex.com.sg.

Refer to the table below for the nearest Technical Support Centers:

	Technical Support Centers						
	Contact the technical support center that services your location.						
1	U.S.A., Canada, Latin America and South America						
⊠ Write	Compex, Inc. 840 Columbia Street, Suite B, Brea, CA92821, USA						
☎ Call □Fax	Tel: +1 (714) 482-0333 (8 a.m5 p.m. Pacific time) Tel: +1 (800) 279-8891 (Ext.122 Technical Support) Fax: +1 (714) 482-0332						
	Europe						
⊠ Write	ReadyLINK Networktechnology GmbH						
	Albert Einstein Straβe 34/M21						
0.011	63322 Rödermark, Germany						
Call	Tel: +49 (0) 6074 - 98017 (8 a.m5 p.m. local time)						
Fax	Fax: +49 (0) 6074 - 90668						
	Email: readylink@compex.com.sg						
	Asia, Australia, New Zealand, Middle East						
	and the rest of the World						
⊠ Write	Compex Systems Pte Ltd						
	135, Joo Seng Road #08-01, PM Industrial Building						
☎ Call	Singapore 368363 Tel: (65) 6286-1805 (8 a.m5 p.m. local time)						
- Can	Tel: (65) 6286-2086 (Ext.199 Technical Support)						
Fax	Fax: (65) 6283-8337						
Internet	E-mail: support@compex.com.sg						
access/	FTPsite: ftp.compex.com.sg						
Website:	http://www.cpx.com or http://www.compex.com.sg						

About This Document

The product described in this document, Compex Web Management Switch Series, Compex SXP2224WM is a licensed product of Compex Systems Pte Ltd. This document contains instructions for installing, configuring and using Compex SXP2224WM. It also gives an overview of the key applications and the networking concepts with respect to the product.

This documentation is for both Network Administrators and the end user who possesses some basic knowledge in the networking structure and protocols.

It makes a few assumptions that the host computer has already been installed with TCP/IP and already up & running and accessing the Internet. Procedures for Windows 95/98/2000/XP/ME/NT operating systems are included in this document. However, for other operating system, you may need to refer to your operating system's documentation for networking.

How to Use this Document

The document is written in such a way that you as a user will find it convenient to find specific information pertaining to the product. It comprises of chapters that explain in details on the installation and configuration of Compex SXP2224WM.

Firmware

This manual is written based on Firmware version 4.23.

Conventions

In this document, special conventions are used to help and present the information clearly. The Compex 24-Port 10/100 + 1 Modular Exp. Slot Web-managed Switch is often referred to as Compex SXP2224WM in this document. Below is a list of conventions used throughout.



NOTE

This section will consist of important features or instructions



CAUTION

This section concerns risk of injury, system damage or loss of data



WARNING

This section concerns risk of severe injury

References on Menu Command, Push Button, Radio Button, LED and Label appear in **Bold**. For example, "Click on the "**Ok**" button"

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Chapter 1 Product Overview

1.1 Introduction

The Compex SXP2224WM is a 24-ports 10/100 Mbps + 1 modular slot web-managed switch that offers fiber or copper-based gigabit connectivity through its expansion modules. The SXP222WM comes with enhanced features that can be catered for today's most demanding Ethernet-based switching applications. It is the most ideal workgroup switch for any small and medium enterprises.

1.2 Features and Benefits

Compex SXP2224WM is designed with the following features:

• 1 modular port for 1000Base-T or 1000Base-FX

Compex SXP2224WM is designed with an expansion slot which supports 2 types of optional modules: 2 Gigabit Copper Module and 1000T Gigabit Copper + 1 GBIC slot.

• Web-based Management Interface

Compex SXP2224WM is embedded with a HTTP server, facilitating a simple configuration process with a user-friendly web-based interface. Simply connect Compex SXP2224WM to a workstation and configure the switch for your network via a Java-enabled web browser.

Through the management interface, you can also change the transmission mode of all ports on Compex SXP2224WM switch. This means that you can change the operating mode of any port to 10 Base-T half duplex, 10 Base-T full duplex, 100 Base-TX half duplex, 100 Base-TX full duplex or N-way Auto-negotiation at any time.

• Port Trunking increases cascading bandwidth

Up to 7 groups may be defined for Port Trunking, delivering up to 800Mbps cascading bandwidth between two switches.

• Port Mirroring for monitoring purposes

This function allows you to set up a 'mirror' port on any specified port/s, such that you can monitor the traffics of the monitored port/s without intervening them. In effect, the traffics on the monitored port/s are replicated on the mirror port, such that you can use a protocol analyzer to analyze the traffic for specific problem.

• Port Priority for traffic prioritization (QoS)

Compex SXP224WM supports first come first serve basis. You can set the port priority according to the types of operations you are working in.

• Bandwidth Control for limiting network bandwidth

Bandwidth control allows you to specify the maximum line bandwidth that a particular transfer operation can use, so that it can be carried out at low priority in the background without interfering any users or network applications. It is ideally suitable for interactive network users.

• Virtual LAN (VLAN)

Compex SXP2224WM can support both port-based and 802.1Q VLANs. It allows network administrator to separate the network into a few segments by defining which port belong to which VLAN segment. This can effectively control broadcast and multi-cast packet flooding the network. This not only improves the network performance, but also provides security between workgroups.

1.3 Panel Views



Figure 1.3a Front Panel View of Compex SXP2224WM

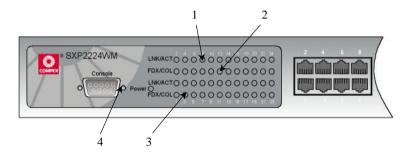


Figure 1.3b Front Panel View of Compex SXP2224WM (Section #1)

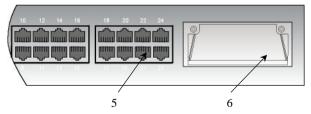


Figure 1.3c Front Panel View of Compex SXP2224WM (Section #2)



Figure 1.3d Back Panel View of Compex SXP2224WM

1.4 Panel Features

	Features	Status and Indication			
1	LNK/ACT LEDs	Steady Green	The port is connected to the switch.		
		Blinking Green	The port is transmitting or receiving data.		
		Off	There is no connection established in the network.		
2	FDX/COL LEDs	Steady Amber	The port is operating in Full Duplex mode.		
		Off	The port is operating in Half Duplex mode.		
		Blinking Amber	Collision occurs in the network segment of the respective port.		
3	Power LED	Steady Green	Power is supplied to the switch.		
		Off	No power is supplied to the switch.		
4	Console Port	A serial 9 Pin (DB9) RS232 straight socket is connected to PC COM Port for monitoring the switch.			
5	24 RJ45 Management Ports	Connect to web-browser via RJ45 UTP/STP network cable 10Base-T 100Base-TX Auto-negotiation			
6	Open Expansion Module Slot	Types of Optional Module used: SXM1000T/2: 2 Gigabit Copper Module SXM1000T/GBIC: 1 Gigabit Copper + 1 GBIC (3.3V) slot			
7	Power Socket	Flexible power in	put (range 100VAC ~ 240VAC, 50~60Hz)		

1.5 Specifications

•	Industry Standards	Complies with IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.1p Priority Queuing IEEE 802.1ad Port Trunk
•	Safety Certifications	 CE Mark FCC Part 15 Class A Gost C-Tick UL
•	Interface	 24 RJ45 UTP 10/100 Mbps ports that supports half/full duplex modes 1 expandable slot 1 RS232 serial interface
•	Protocol	CSMA/CD
•	Transmission Mode	Full DuplexHalf Duplex
•	LED Indicators	LNK/ACTFDX/COLPower
•	Optional Modules	 SXM1000T/2: 2 Gigabit Copper Module SXM1000T/GBIC: 1 Gigabit Copper + 1 GBIC (3.3V) slot
•	Switching Method	Store and Forward
•	Management	Console InterfaceWeb-based Management Interface
•	MAC Address Table	6K

•	Transfer Rate	 14,880pps Ethernet port 148,800pps Fast Ethernet port 1488,000pps Gigabit port 		
•	Packet Buffer	3Mbits		
•	Back Plane Capacity	8.8Gbps		
•	Bandwidth Control	Per port support bandwidth control.		
•	Virtual LAN	Port-based VLAN with VLAN ID up to 255		
•	Port Trunking	Provide 7 trunk groups of a maximum of 4 member ports (minimum 2 member ports) within 24 ports.		
•	Port Monitoring	Global System support 3 mirroring type RX, TX and both packet. The maximum of mirror entries up to 25.		
•	Priority Queuing	Supports 8 priority levels ID for high/low priority queue.		
•	Physical Dimension	440mm x 161mm x 44mm (L x B x H)		
•	Environmental Requirements	Operating temperature : 0°C to 45°C Storage temperature : -20°C to 70°C Operating humidity : 10% to 90% RH Storage humidity : 5% to 90% RH RH = Relative Humidity		

Chapter 2 Getting Started

Chapter 2 Getting Started

This chapter outlines the basic requirement for any installation and configuration of Compex SXP2224WM.

2.1 Packaging Content

Thank you for purchasing the Compex Web Managed Switch SXP2224WM. You will find the following items in the package:

- 1 x Compex SXP2224WM unit
- 4 x rubber foot
- 1 x Power Cord
- 2 x brackets
- 8 x screws
- 1 x RS232 serial console cable
- 1 x Quick Install Guide with warranty card
- 1 x Product CD (Web browser, Acrobat Reader, User's Manual)

2.2 Setup Considerations

Prepare checklist before you start:

- Check your Local Area Network configurations. Check if the network has Static IP addressing or dynamic IP assignment.
- Check whether any of the browsers (Netscape Navigator, Netscape Communicator or Microsoft Internet Explorer) is installed in your PC.

2.2.1 Software Requirements

- Windows 95/98/2000/NT/ME/XP
- Any other TCP/IP-enabled systems like Mac OS and UNIX
- Web Browser, such as Microsoft Internet Explorer (4.0 and above) or Netscape Navigator (4.0 and above)

2.2.2 Hardware Requirements

 RJ45 Category 3, 4 or 5 MDI or MDXI Ethernet cable and Compex SXP2224WM unit

Chapter 3 Network Applications

Chapter 3 Network Applications

Compex SXP2224WM is ideally suitable for interconnecting networking segments. It is a multiport switch that can be used to build high-performance switched workgroup networks. It supports auto MDIX/MDX which allows you to connect to another Ethernet switch or workstations without changing straight or cross-over network cable.

3.1 Small workgroup

In the illustration stated below, Compex SXP2224WM can be used as a standalone switch to which workstations, server, printer server are directly connected to form a small workgroup.

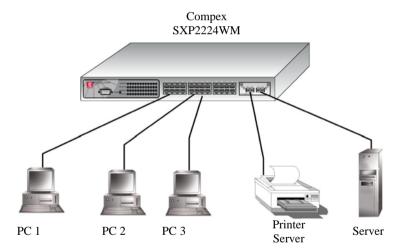


Figure 3.1a Small workgroup application

Chapter 3 Network Applications

3.2 Segment Bridge

For enterprise company, bulky data broadcasts are constantly processed. Compex SXP2224WM is ideally suitable for department users to connect to the corporate backbone.

From the illustration shown below, Compex SXP2224WM is attached to a uplink backbone. Two Ethernet switches are connected to Compex SXP2224WM. All devices in the network can communicate with one another through Compex SXP2224WM. A server is connected to the switch to allow users from accessing the data on the server.

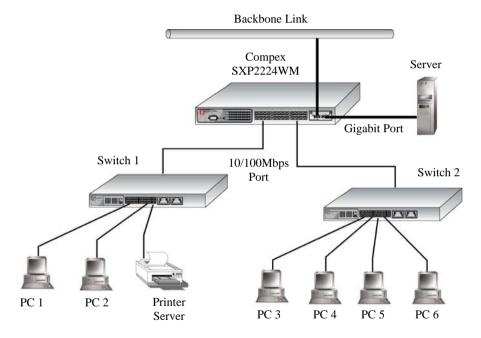


Figure 3.2a Department Bridge Application

Chapter 4 Hardware Installation

Compex SXP2224WM can be installed as a desktop unit or mounted on a 19-inch rack. There are two types of installation for Compex SXP2224WM, one is to connect your PC directly to the management port. Alternatively, you can configure by linking the management port to one of the LAN ports and configure the switch through one of the ports. Detailed installation process will be listed as shown below.

4.1 Desktop installation

- 1. Unpack Compex SXP2224WM.
- 2. Place it near to a power outlet. Ensure that there is sufficient space for heat ventilation.
- 3. The surface to place Compex SXP2224WM should be clean, smooth, level and sturdy.
- Ensure there is enough spacing around the unit to allow attachment of network cables.
- 5. Attach the rubber foot at the bottom of the metal chassis.



Figure 4.1a Attach rubber foot

- Insert the power cord into the socket located at the back of Compex SXP2224WM.
- 7. Use a RJ45 network cable and insert to any of the port and power on the switch.

8. Check that the **Power** LED at the front panel of Compex SXP2224WM has lighted up. The unit is now ready to use.

4.2 Rack installation



Figure 4.2a Secure brackets onto Compex SXP2224WM

 Position one bracket to align with the holes on one side of Compex SXP2224WM and secure it with the smaller bracket screws (3mm diameter) as shown in Figure 4.2a. Then attach the other bracket to another side of it.



Figure 4.2b Compex SXP2224WM on rack

- 2. After attaching both mounting brackets, position the device in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure it to the rack using the rack-mounting screws (8mm diameters) with a screwdriver.
- Insert the power cord to the socket located at the back of Compex SXP2224WM.
- 4. Use a RJ45 network cable and insert to any of the port and power on the switch.

Check that the **Power** LED at the front panel of Compex SXP2224WM has lighted up.

5. The unit is now ready to use.



NOTE

Please allow at least 4 inches of clearance on the front and back of the switch for proper ventilation. This is especially important for enclosed rack installation.

4.3 Installation of Expansion Module

A series of optional expansion modules are available for Compex SXP2224WM. You need to install the modules before turning on Compex SXP2224WM. Please refer to "Specifications" for the types of optional modules to be used.

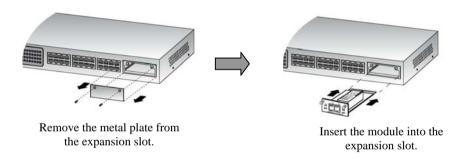


Figure 4.3a Installing expansion module

- 1. Power off Compex SXP2224WM.
- 2. Unscrew and remove the metal plate from the expansion slot.
- Insert the module carefully into the expansion module window and push it along the rail until it is firmly inserted into the connector of the PCB board of Compex SXP2224WM.
- 4. Tighten the screws on the module.

4.3.1 Removal of Expansion Module

- Power off Compex SXP2224WM and remove any cable connecting to the module.
- Loosen the captive screws which are used to secure the module and slide the module out completely from the window.
- Cover the empty expansion module window with the metal plate and tighten it up with the screws provided.

4.4 Connecting Console cable to Compex SXP2224WM

Console Configuration allows you to set Compex SXP2224WM for remote terminal as if the console terminal is directly connected to it.

The console cable is a male DB-9 connector that enables a connection to a PC or terminal for monitoring and configuring Compex SXP2224WM. Using the supplied RS232 console cable with a female DB-9 connector, you can easily connect it to a terminal or PC to the console port.

4.4.1 Configure Hyper Terminal Program

After established the hardware connection, you need to set your hyper terminal configuration as shown below:

Bits per seconds: 9600

Data Bits: 8 Parity: none Stop bits: 1

Flow Control: none

Now, you can access to Compex SXP2224WM through console configuration!

Chapter 5 Access to Web Interface

This chapter explains the basic set up procedures of configuring Compex SXP2224WM using web-based interface.

5.1 Configuration on PC settings

Each PC in the LAN must be configured in order for them to communicate with Compex SXP2224WM. Please follow the steps as shown below:

- From your Windows 95/98/2000/NT/ME/XP computer, click "Start" button, point to Settings, and select Control Panel.
- 2. Double click the **Network** icon.
- 3. Check to see if the TCP/IP protocol is installed. If not yet, please add this protocol first before proceeding with the next step.
- Select TCP/IP protocol and click "Properties" button. Click on the radio button for Specify an IP address and key in the IP Address and Subnet Mask as 192.168.100.xxx and 255.255.255.0 respectively, where xxx can be any number from 1 to 254 except 128.
- 5. Hit the "Ok" button and restart your computer.

5.2 Configuration of Compex SXP2224WM using Web-based Interface

Activate your Internet browser on your workstation which is connected onto the same network as Compex SXP2224WM. Enter the URL Address, http://192.168.100.128.

5.2.1 Login to Web Browser Interface

The following is a list of the various ways for different browsers in accessing a website. Follow the instructions for the browser that you use.

For Netscape Navigator

- 1. Select the **File** menu and click on **Open Location**.
- In the Open Location dialog box, enter the IP address http://192.168.100.128. The switch default management IP address is set to 192.168.100.128.
- 3. Click on the "**Open**" button.

For Netscape Communicator

- 1. Select the **File** menu, and then press **Open Page**.
- In the Open Location dialog box, enter the IP address http://192.168.100.128. The switch default management IP address is set to 192.168.100.128.
- Ensure that the Navigator radio button is selected. Click on the "Open" button.

For Microsoft Internet Explorer

- 1. Select the **File** menu, then select **Open**.
- In the Open Location dialog box, enter the IP address http://192.168.100.128. The switch default management IP address is set to 192.168.100.128.
- 3. Click on the "**OK**" button.

Next, the authentication page will appear as shown in Figure 5.2a. Type in the Username and password and click on the "**Login**" button. The default Username and password are *admin*.



Figure 5.2a Login to Remote Access Switch Manager



NOTE

Please note that the username and password are case-sensitive.

The Main Page will display as shown in Figure 5.2b.

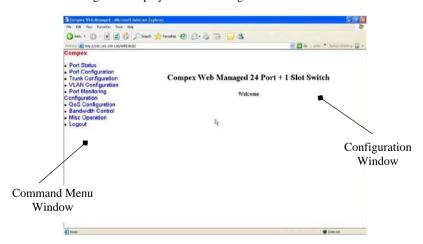


Figure 5.2b Main Page of Compex SXP2224WM

The overall descriptions for individual sub-functions are listed as shown:

Menu	Description	Reference in User's Manual
Port Status	View every port's status that depends on the user setting and the negotiation result.	Section 6.1
Port Configuration	Change each port's parameters.	Section 6.2
Trunk Configuration	Configure trunk group.	Section 6.3
VLAN Configuration	Create, modify, delete or configure VLAN group/s.	Section 6.4
Port Monitoring Configuration	Keep track of the traffic of switched network.	Section 6.5
QoS Configuration	Configure port priority level to high or low queue.	Section 6.6
Bandwidth Control	Configure the bandwidth rate for individual port in and port out.	Section 6.7
Misc Operation	Change password, set advanced configuration, restore to the system default setting, reboot system, display system information and configure IP address.	Chapter 7
Logout	Exit from the web interface.	Section 7.8

Chapter 6 Configure Compex SXP2224WM using Web Interface

Port	Туре	Enable	Link Status	Spd/Dpx	Flow Contro
PORT1	100TX	Enable	Down		
PORT2	100TX	Enable	Down		
PORT3	100TX	Enable	Down		
PORT4	100TX	Enable	Down		
PORT5	100TX	Enable	Down		
PORT6	100TX	Enable	Down		
PORT7	100TX	Enable	Down		
PORT8	100TX	Enable	Down		
PORT9	100TX	Enable	Down		
PORT10	100TX	Enable	Down		
PORT11	100TX	Enable	Down		
PORT12	100TX	Enable	Down	Down	
PORT13	100TX	Enable	Down		
PORT14	100TX	Enable	Down		
PORT15	100TX	Enable	Down		
PORT16	100TX	Enable	Down		
PORT17	100TX	Enable	Down		
PORT18	100TX	Enable	Up	100F	Off
PORT19	100TX	Enable	Down		
PORT20	100TX	Enable	Down	Down	
PORT21	100TX	Enable	Down		
PORT22	100TX	Enable	Down		
PORT23	100TX	Enable	Down		
PORT24	100TX	Enable	Down		
PORT25	PORT25				
PORT26	PORT26				

Compex SXP2224WM eases the configuration process with a user-friendly web-based interface. You can now simply complete the configuration process in just a few minutes.

6.1 Port Status

This function allows you to view every status of individual ports.

Enable

Displays the current port availability.

Link Status

Displays the current port status. When the port is connected to the network and is working in normal condition, the screen will appear "Up".

Spd/Dpx

Displays the connection speed and types of duplex of individual port.

Flow Control

Displays the Flow Control status of the port. Enabling the Flow Control function allows Half and Full Duplex mode.

Figure 6.1a Port status

6.2 Port Configuration

This functions allows you to modify the configuration of Compex SXP2224WM. Simply select the options from the drop-down menu in the individual fields and click on the "Apply" button to update the changes.



Apply

You can easily set the ports that are connected to the network to **enable** or **disable**.

Enable:

Auto:

Spd/Dpx:
• Auto

On ,Off

100H,100F

10H.10F

Flow Control:
• On. Off

Enable, Disable

Auto negotiation regulates the speed and duplex of each port, based on the capabilities of both devices. Disabling auto negotiation is accomplished by fixing the speed or duplex of a port.

Spd/Dpx

Enable

Auto

Full duplex allows two-way transmission over the same port.

Flow Control

Flow control allows transmission from a 100Mbps to 10Mbps without the loss of data.

Figure 6.2a Port Configuration

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6.3 Trunk Configuration

Port Trunking is the ability to group together several switch ports to increase the bandwidth between Compex SXP2224WM and other switch/es. This is an inexpensive method to increase throughput between switches. We define the Port Trunking as the ability to group a set of ports into a single logical link. The port trunk acts as single link between switches. It does not create a loop even though it is physically connected.

Compex SXP2224WM uses Port-based method for load balancing. Port-based method is to assign each port outside the trunk to a trunk port. For example, port A is assigned to trunk port B, then packets from port A destined to the trunk will be forwarded to port B. Please note that the assignment is done by management software, so you do not need to make the assignment manually.



NOTE

You are not allowed to configure the same port in different trunking groups on a switch unit.

Port / Group	Normal	Group1	Group2	Group3	Group4	Group5	Group6	Group?
PORT1	0	0	0	0	0	0	0	0
PORT2	0	0	0	0	0	0	0	0
PORT3	0	0	0	0	0	0	0	0
PORT4	0	0	0	0	0	0	0	0
PORT5	0	0	0	0	0	0	0	0
PORT6	0	0	0	0	0	0	0	0
PORT7	0	0	0	0	0	0	0	0
PORT8	•	0	0	0	0	0	0	0
PORT9	0	0	0	0	0	0	0	0
PORT10	0	0	0	0	0	0	0	0
PORT11	0	0	0	0	0	0	0	0
PORT12	•	0	0	0	0	0	0	0
PORT13	0	0	0	0	0	0	0	0
PORT14	0	0	0	0	0	0	0	0
PORT15	0	0	0	0	0	0	0	0
PORT16	0	0	0	0	0	0	0	0
PORT17	0	0	0	0	0	0	0	0
PORT18	0	0	0	0	0	0	0	0
PORT19	0	0	0	0	0	0	0	0
PORT20	0	0	0	0	0	0	0	0
PORT21	0	0	0	0	0	0	0	0
PORT22	0	0	0	0	0	0	0	0
PORT23	0	0	0	0	0	0	0	0
PORT24	0	0	0	0	0	0	0	0

You can select up to 7 trunking groups for a switch unit. A maximum of 4 trunking port is allowed in a trunk group.

Select on the radio button for your setting and click on the "Apply" button to update the changes.

Kindly refer to the example on the next section.

Figure 6.3a Trunking configuration

6.3.1 Examples on Port Trunking

From Figure 6.3b, two Compex SXP2224WM units are used to perform the trunking ability. For unit 1, port 1 and 5 are selected as trunking ports; and port 26 is connected to a control station. For unit 2, port 5 and 6 are selected as trunking ports. After selecting the respective trunking group for individual switches, all SXP2224WM units combined the bandwidth to increase the network speed.

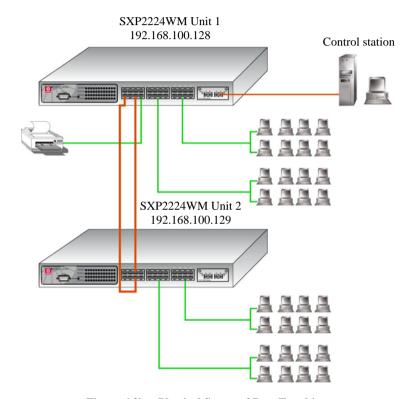


Figure 6.3b Physical Set up of Port Trunking



NOTE

Port 25 and 26 are not allowed to set as trunking ports. Also note that you cannot set port 25 and 26 as trunk ports if they are configured as monitoring or monitored ports.

- Using a RJ45 Ethernet cable to connect port 1 and 5 of Compex SXP2224WM unit 1 to port 1 and 5 of Compex SXP2224WM unit 2 respectively.
- From the control station, logon to http://192.168.100.128. Go to the main menu and select **Trunk Configuration** option.
- 3. Select Port 1 and 5 of Group 1 as trunking ports.

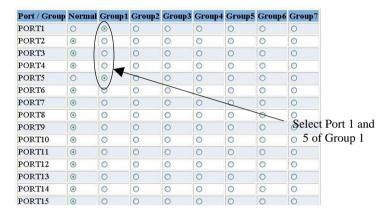


Figure 6.3c Set trunking ports

- 4. Click on the "Apply" button to update the changes.
- 5. Next, for Compex SXP2224WM unit 2, logon to http://192.168.100.129 and go to **Trunk Configuration** option.
- 6. Select Port 5 and 6 of Group 1 as trunking ports.
- 7. Click on the "Apply" button to update the changes.

6.4 Virtual LAN Configuration

Virtual LAN is actually equated to a broadcast domain. In a VLAN, all end-stations communicate with each other as in a local LAN although they may be not on the same physical segment. However, all data packets in a VLAN are constrained, so different end stations in different VLANs cannot communicate with each other directly. Compex SXP2224WM not only supports port-based VLAN, i.e. the VLAN is specified by selecting a group of ports VLAN, but also tagged VLAN.

In a tagged VLAN application, you still can assign specific ports within a switch to be a VLAN group. In addition, the data transferred within the VLAN group is tagged with an ID as specified with the 802.1Q Tagged VLAN standard. It allows the VLAN information to be carried along as the data flow from switch to switch. It also allows a port to carry multiple VLANs data stream. It is more flexible and scalable than the untagged VLAN application. However, all networking devices have to support the 802.1Q Tagged VLAN standard for VLAN Tagging system to work.

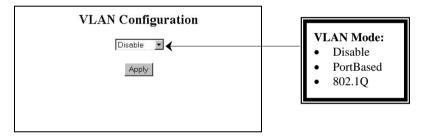


Figure 6.4a VLAN Configuration

6.4.1 Example on PortBased VLAN

In an untagged VLAN application, you can assign a group of ports within a switch as members of a specific VLAN. Data traffic would be confined within the member ports. In this way, devices connected with the switch can be partitioned into distinct groups each corresponds to a different VLAN. The partition (VLAN) can be expanded when two untagged VLANs are connected together through their member ports. No two VLANs can be overlapped. Each VLAN is separate from the rest. It provides a simple means to implement a secure and managed network.

Figure 6.4b illustrated the setup of port based VLAN in a company. Port 2 and 6 of Compex SXP2224WM are attached to two Ethernet switches; Port 16 and 24 are attached an Ethernet switch individually. When Port 2 and 6 are assigned as port based VLAN, the PCs in VLAN 1 will be able to communicate with one another within the same VLAN. However, they are not allowed to communicate with other departments.

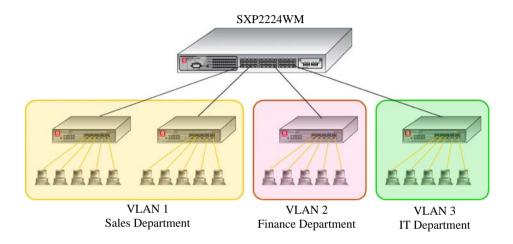


Figure 6.4b Setting up of SXP2224WM for Virtual LAN

- Access to the web interface and select "PortBased" in the VLAN Mode field.
- 2. Click on the "AddNew" button as shown in Figure 6.4c.



Figure 6.4c Select Port-Based VLAN

3. Enter the value "1" in the **VLAN Group** field and select the port members (port 2 and 6).

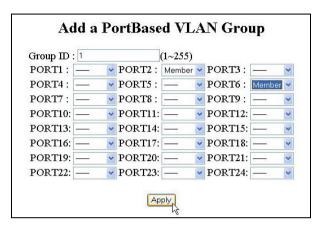


Figure 6.4d Adding members into PortBased VLAN Group 1

4. Click on the "Apply" button and you will see the updated screen as shown in Figure 6.4e.

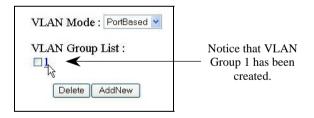


Figure 6.4e VLAN Group 1 created

If you wish to delete the VLAN group, simply select the check box and click on the "Delete" button.

For VLAN 2 and 3, repeat the procedures from steps 2 to 4.

6.4.2 Tagged VLAN 802.1Q

To create Tagged VLAN, select **802.1Q** from the **VLAN Mode** field.



Please note that you are not allowed to configure and delete the default VLAN (VLAN ID: 1). To create a new entry,

- 1. Click on the **AddNew** button.
- 2. Enter the **VLAN ID** from 0 to 255 and select the port that you wish to set as tagged or untagged in the VLAN group.
- Click Apply button to update the changes.



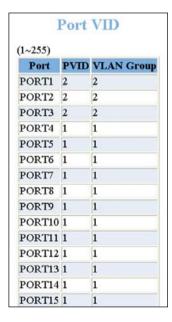
Please note that the changing of VLAN mode (from **PortBased** to **802.1Q** or vice versa) will reset the VLAN configuration to its default setting. Refer to the screenshot shown below. Click **OK** button to proceed.



To view your VLAN port status, click on Port VID as shown on the right:



The Port VLAN ID and the members in the VLAN Groups will be listed out:



6.5 Port Monitoring Configuration

This function allows you to set up a 'mirror' port of any specified port/s from 1 to 26, such that you can monitor the transmitted or received traffics of the monitored port/s without intervening them. You can then use a protocol analyzer to analyze the traffic for that port for any specific problem.

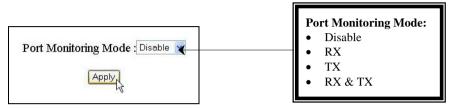


Figure 6.5a Port Monitoring

6.5.1 Examples on Port Monitoring

The example shown in Figure 6.5b illustrated that port 26 which is connected to a control station, is assigned to be a monitoring port; and port 24 is configured as a monitored port. This means that when a packet is being sent/received to/from PC 24, the control station will also get a duplicate copies.

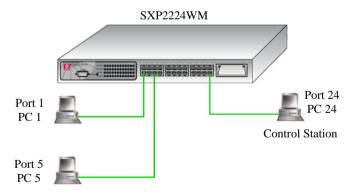


Figure 6.5b Illustration on Port monitoring setting

- 1. Go to Port Monitoring option from the main menu.
- 2. Select "RX & TX" in the **Port Monitoring Mode** field.
- 3. Choose port 24 as a monitoring port
- 4. Put a tick at the check box of port 1 and 5 to set as a monitored ports.

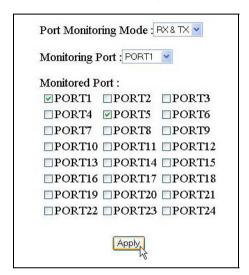


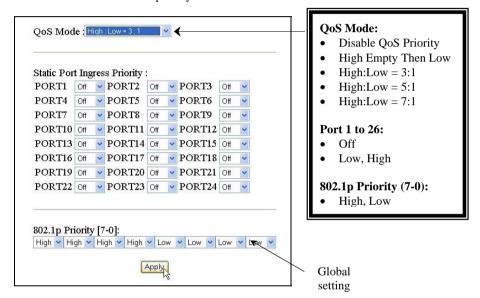
Figure 6.5c Configuration on Port monitoring

5. Click on the "Apply" button to update the changes.

6.6 QoS Configuration

Quality of Service (QoS) refers to the capability of a network to provide a better service to select network traffic over various technologies, such as Frame Relay, Asynchronous Transfer Mode (ATM), etc. The primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency.

With this ability, Compex SXP2224WM is able to improve the loss characteristics and ensure that the priority for one or more flows does not make other flow fails.



Disable QoS Priority

No QoS priority function is activated

High:Empty Then Low

The system will process all high priority packet first, and then proceed to low priority packet

High:Low = 3:1

The system will process 3 high priority packet, and then 1 low priority packet

$\underline{\text{High:Low}} = 5:1$

The system will process 5 high priority packet, and then 1 low priority packet

High:Low = 7:1

The system will process 7 high priority packet, and then 1 low priority packet

Figure 6.6a Quality of Service (QoS) Configuration

OoS Mode section

This mode will affect the levels (high or low) of all priority configuration.

Static Port Ingress Priority section

By default, the setting in the **Static Port Ingress Priority** is "Off". At this stage, the switch will appoint the packets to low priorities.

If a normal packet is transmitted from a "high" or "low" setting port, Compex SXP2224WM will deliver all the packets to its designated port according to the QoS mode ratio setting.

802.1p* Priority section

If a tagged packet is being transmitted from any port, it will directs the packet to the global setting. A tagged packet consists up to 8 traffic classes, ranging from 0 to 7. The traffic classes can be set using switches, routers, servers or desktop systems. Based on the tagged traffic classes, Compex SXP2224WM will then check the priority values from the global setting, distribute the packets according the QoS mode ratio setting to their designated ports respectively.

By default, the setting for **802.1p Priority** is 4 high priority (7 to 4) and 4 low priority (3 to 0). Please refer to Figure 6.6a.

Kindly note that the configuration in the **Static Port Ingress Priority** section does not affect the global setting, and vice versa. This means that the global setting will still remains as it is

*802.1p is an IEEE standard for providing quality of service (QoS) in Ethernet networks. It uses tagged packets and allows switches to transmit packets based on the tagged priority value.

6.7 Bandwidth Control

In a network environment, massive data are being transferred from one node to another node/s. And this often caused serious slowdown problems for interactive network users. This means that users are forced to restructure their operations due to network load limitations.

To overcome this problem, Compex SXP2224WM is specially designed to control the bandwidth using relatively bandwidth technique. It enables you to specify the maximum line bandwidth (in Mbps) that a particular transfer operation can use, so that it can be carried out in the background, at a low priority without interfering other users or other network applications.

Rate: • Enter the bandwidth in Mbps, where 0 indicates "disable"

Ensure that the Flow Control status is "On" before configuring the bandwidth control. Please refer to **Section 6.2 "Port Configuration"** for details in activating Flow Control function.

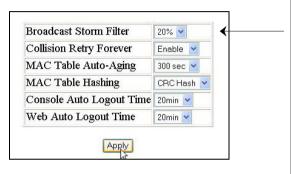
Port	Rate
PORT1	0
PORT2	0
PORT3	0
PORT4	0
PORT5	0
PORT6	0
PORT7	0
PORT8	a
PORT9	0
PORT10	0
PORT11	0
PORT12	0
PORT13	0
PORT14	O .
PORT15	0
PORT16	0
PORT17	0
PORT18	0
PORT19	0
PORT20	0
PORT21	0
PORT22	0
PORT23	0
PORT24	0

Apply

Chapter 7 Miscellaneous Operation

This chapter will brief on how to configure system related settings, e.g. changing of password, IP configuration, restore the setting to factory default and configuring auto aging, etc.

7.1 Advanced Switch Configuration



MAC Table Auto-Aging

MAC address table refresh time setting.

MAC Table Hashing

This Hash Algorithm is for hardware maintain on MAC table calculation.

Broadcast Storm Filter

A broadcast storm occurs when a switch port receives a large number of broadcast packets, and forwarding these packets causes the network to slow down or time out. In order to prevent this, broadcast storm filter function is implemented to solve performance degradation.

Collision Retry Forever

Upon disabling this function, the switch will retry 48 times and then drop the frame when collision occurs in half duplex mode. However, if you enabled this function, the switch will retry forever when collision occurs.

Console/Web Auto Logout Time

If you stay idled in the console/web interface after the respective set time, the switch will automatically logout from the console/web interface.

Broadcast Storm Filter:

5%, 10%, 20%, off

Collision Retry Forever:

• Disable, Enable

MAC Table Auto-Aging:

- Disable
- 150 sec, 300 sec, 600 sec

MAC Table Hashing

• CRC Hash, Direct Map

Console Auto Logout Time

• Never, 5 min, 10 min, 20 min

Web Auto Logout Time

5 min, 10 min, 20 min

7.2 Password Setting

This option allows the system administrator to amend the current password or user name.

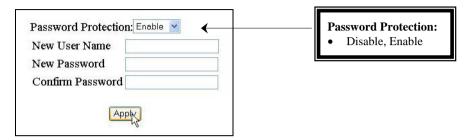


Figure 7.2a Password setting

Click on the "Apply" button to activate the changes.

7.2.1 Retrieval of password

If you have forgotten your password, not to worry! Simply use the supplied RS232 console cable and connect Compex SXP2224WM to the console interface. Enter the username as *root* and password as *pds*, hit on the "Enter" key from the keyboard. From there, you can change your password.



NOTE

Please note that you are not allowed to use the above-mentioned username and password in the web interface. It is only applicable in the console interface.

7.3 Backup & Restore Settings

This option allows you to backup and restore your configuration on Compex SXP2224WM.

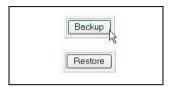


Figure 7.3a Backup and restore settings

7.4 Restore System Default Setting

Current configurations, except password and identity, are replaced by vendor's default settings, then the switch is rebooted automatically. It is useful when you save wrong configurations into the switch.

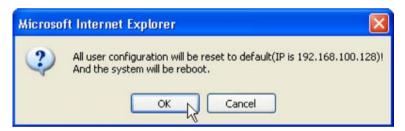


Figure 7.4a Restore system default setting

7.5 Reboot System

Reboot Switch is for rebooting switch remotely. It is useful when you restore saved configurations.



Figure 7.5a System reboot

7.6 System Information

This function displays the information about the management system of Compex SXP2224WM.

Firmware Version : 4.23 Chip Version : A7

Figure 7.6a System Information

7.7 IP Configuration

IP address configuration is for configuring IP address of the management board in the switch. You can easily change the IP address of Compex SXP2224WM remotely.



Figure 7.7a IP configuration

Click on the "Apply" button to activate the changes.

7.8 Technical Support

If you have encountered any problems, simply write an email to our friendly technical support officer.



Figure 7.8a Technical Support

7.9 Logout

By clicking on the "Logout" button, you will get out of the web interface of Compex SXP2224WM. However, if you wish to login again, you can just click on the "<Back" button.