

ReadyLINK

Quick Install Guide

Complex 24-Port + 1 Expansion Slot Switch

SAS2224B 1A

SAS2224B 6A (RoHS compliant)

Version 1.1



networks@work



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Quick Install Guide

Complex 24-Port + 1 Expansion Slot Switch SAS2224B

1. Introduction



Figure 1.1 **Complex SAS2224B**

Complex SAS2224B is a Fast Ethernet switch that provides 24 10/100Mbps ports capable of delivering full/half duplex transmission with flow control. SAS2224B provides an expandable slot using 100Mbps fiber optic module. Advanced features like Virtual LANs and port priority are configurable through the console port. SAS2224B also allows network administrators to control the traffic bandwidth of each port on the switch. With full auto negotiation function for the switch operational mode, coupled with large switching backplane capacity, the Complex SAS2224B is the cost-effective solution for expanding your network.

1.1. Packaging Content

Thank you for purchasing Compex SAS2224B. You will find the following items in the package:



1 x Power Cord



3 x Quick Install Guide
with warranty card in
different languages



1 x Compex SAS2224B unit



1 x RS232 straight
console cable



6 x screws



2 x brackets

1.2. Overall Procedures

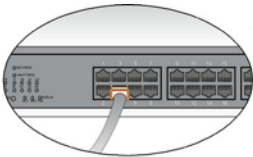
Here are some of the basic steps to guide you along:

1. **Hardware setup**
Please refer to **Section 2 “Hardware Installation”**.
2. **Configure Hyper Terminal**
Please refer to **Section 3 “Hyper Terminal Configuration”**.
3. **Configure your Compex SAS2224B**
Please refer to **Section 4 “Configure Compex SAS2224B using Hyper Terminal”**.

2. Hardware Installation

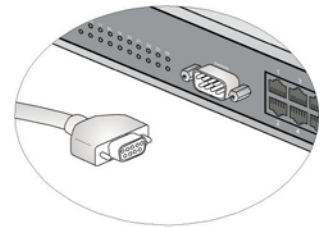
Complex SAS2224B can be installed as a desktop unit or mounted on a 19-inch rack. Detailed installation process will be listed as shown.

2.1. Desktop installation



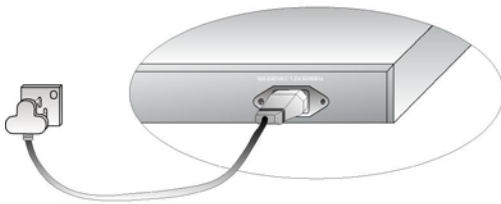
1

Insert one end of RJ45 network cable to any port of Complex SAS2224B and the other end to your PC.



2

Insert one end of RS232 straight console cable to the console port of Complex SAS2224B and the other end to your PC.

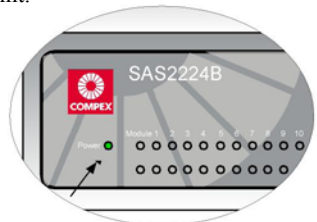


3

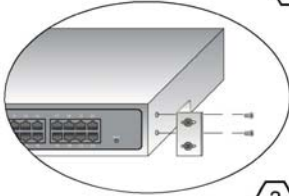
Insert the power cord to the socket located at the back of Complex SAS2224B and the other end to the power point.

4

Check that the **Power** LED at the front panel of Complex SAS2224B has lighted up. The unit is now ready to use.



2.2. Rack installation



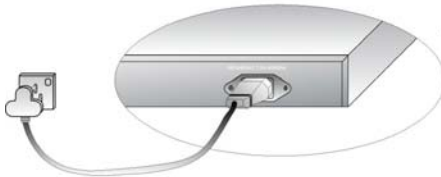
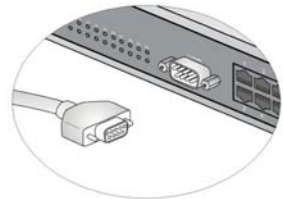
- 1 Secure brackets to the holes located at both sides of CompeX SAS2224B. Fasten it with the screws provided in the packaging.

Align the brackets holes with the rack holes and fasten both brackets to the rack.



- 3 Insert one end of RJ45 network cable to any port of CompeX SAS2224B and the other end to your PC.

Insert one end of RS232 straight console cable to the console port of CompeX SAS2224B and the other end to your PC.



- 5 Insert the power cord to the socket located at the back of CompeX SAS2224B and the other end to the power point.

Check that the **Power** LED at the front panel of CompeX SAS2224B has lighted up. 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.

2.3. Module Installation

A series of optional expansion modules are available for CompeX SAS2224B. You need to install the modules before turning on CompeX SAS2224B. Please refer to “**Specifications**” for the types of optional modules to be used.

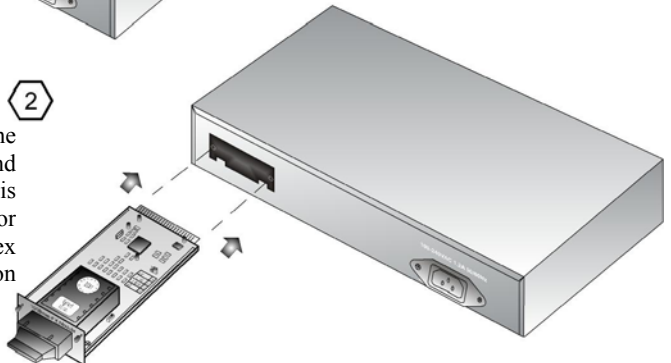
1

Power off CompeX SAS2224B, unscrew and remove the metal plate from the expansion slot.



2

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 SAS2224B. Tighten the screws on the module.





NOTE

The expansion module is sold separately. Please refer to www.complex.com.sg or www.cpx.com for more details.

To remove the expansion module, simply power off your Compex SAS2224B, draw out the expansion module from the expansion slot and place back the metal plate to cover the slot.

2.4. Operating Systems Compatibilities for the usage of Keyboard Arrow Key

Compex SAS2224B is specially designed with the support of two arrow key sets to manipulate the selection in the console interface.

The table below illustrates the types of operating systems using different types of function keys in your keyboard.

Windows 95, 98, 98SE, XP, ME or 2000				Windows 2000 with SP 1			
←	→	↑	↓	J	L	I	M
J	L	I	M				

If you are using Windows 2000 Hyper Terminal Program, ensure that you have installed Windows 2000 Service Pack 2 or higher. With Windows 2000 Service Pack 2, the arrow keys will function properly in the Hyper Terminal's VT100 emulation.

3. Hyper Terminal Configuration

By installing a terminal emulation program, such as Hyper Terminal, you can simply connect your PC to Compex SAS2224B. Using a RS232 straight console cable, connect one end to a PC, and the other end to Compex SAS2224B. You need to set your configuration as shown below.

1. Type the name in the space provided.

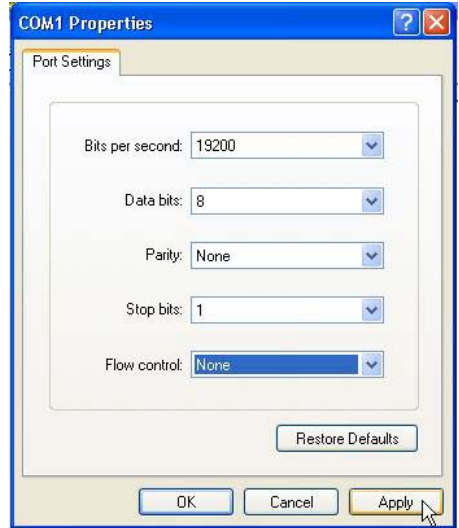


2. Choose the COM Port that you have selected from your PC.

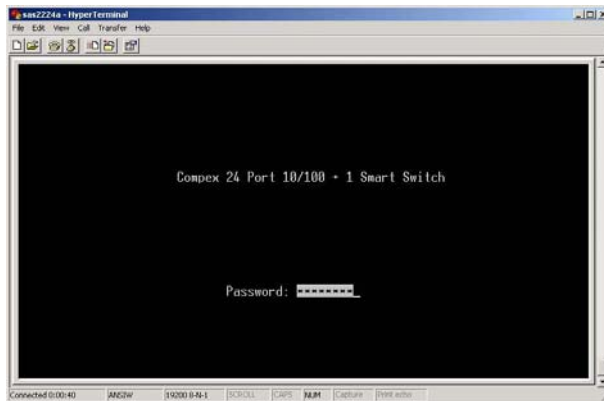


- Adjust the Port setting from the COM1 (depends on the console port you have used) Properties screen.

Bits per seconds: 19200
Data Bits: 8
Parity: none
Stop bits: 1
Flow Control: none



A Hyper Terminal screen will appear as shown below. The default password is *password*.



You can easily configure your Compex SAS2224B, such as setting the trunking ports, VLANs, etc.

```

SAS2224B                                Version 2.6

Main Menu
-----
[1] Status
[2] Configuration
[3] Diagnostics
[4] Password
[5] Load Factory Defaults
[6] Save

-----

Function Key
Do select menu item, press item symbol. [F]Refresh Screen [R]Logout
  
```

4. Configure Compex SAS2224B using Hyper Terminal

Attach one end of the console cable to your PC and the other end to your Compex SAS2224B. Configure your hyper terminal and log on to the main page to start configuring.

4.1. Port Configuration

This feature allows you to configure the speed, flow control, receiving and transmitting bandwidth of your Compex SAS2224B.

```

Config Port
-----
Port | Enabled | Speed | Flow Control | Rx Bandwidth | Tx Bandwidth
-----|-----|-----|-----|-----|-----
01 | Enable | Auto | Enable | Non-control | Non-control
02 | Enable | Auto | Enable | Non-control | Non-control
03 | Enable | Auto | Enable | Non-control | Non-control
04 | Enable | Auto | Enable | Non-control | Non-control
05 | Enable | Auto | Enable | Non-control | Non-control
06 | Enable | Auto | Enable | Non-control | Non-control
07 | Enable | Auto | Enable | Non-control | Non-control
08 | Enable | Auto | Enable | Non-control | Non-control
-----

Function Key
[Arrow Key]Select Item [1/2]PageUp/PageDown [ESC]Return [F]Refresh Screen
[Space]Toggle State [Enter]Take effect
  
```



Speed:

This option allows the port to work in either forced or auto mode. When Complex SAS2224B is set to 100Mbps forced mode, auto-MDIX function will be disabled. Please note that when auto-MDIX is enabled, the respective port LED in the **100 FORCE** and **HALF FORCE** mode, will not light up.

Upon setting the speed to **Auto**, you will be able to use any type of Ethernet RJ45 cable for connecting to any devices since the auto-MDIX function has activated.

Options: Auto, 100M Full, 100M Half, 10M Full, 10M Half

Please note that for expansion module (Port 25), you can only configure as 100 Full or 100 Half Duplex. By default, it is set to 100 Full Duplex.

Flow Control:

This feature reports the flow control setting of the port. Enabling flow control function prevents the overflow of data transfer in the network.

Rx/Tx Bandwidth:

This feature will control the bandwidth of the received/transmitted packets for all ports. Each port's bandwidth is configurable on both ingress and egress traffic independently. By default, this feature is set to **Non-Control** for all ports. This means that Complex SAS2224B will follow the bandwidth of each individual port, either in 10Mbps or 100Mbps.

Please note that whenever the ingress or egress traffic bandwidth exceeds the configured threshold, the flow control will be triggered to limit the throughput.

Options: Non-control, 128Kbps, 256Kbps, 512Kbps, 1Mbps, 2Mbps, 4Mbps, 8Mbps

4.2. Port Trunking

Port Trunking is the ability to group together several 10/100Mbps ports into single logical link. This is an inexpensive method to increase throughput between switches. CompeX SAS2224B supports 7 trunking groups, and each trunking group can aggregate 2 or 4 fixed physical ports.

```

Enable Trunking
-----
Trunking                | Enabled
-----
Trunk1 (Port 01,02    ) | Disable
Trunk2 (Port 03,04    ) | Disable
Trunk3 (Port 05,06,07,08) | Disable
Trunk4 (Port 09,10,11,12) | Disable
Trunk5 (Port 13,14,15,16) | Disable
Trunk6 (Port 17,18,19,20) | Disable
Trunk7 (Port 21,22,23,24) | Disable
-----

Function Key
-----
[Arrow Key] Select Item |ESC|Return |F|Refresh Screen
[Space] Toggle State

```

Enable your desired trunking group/s by tapping your space bar from your keyboard.

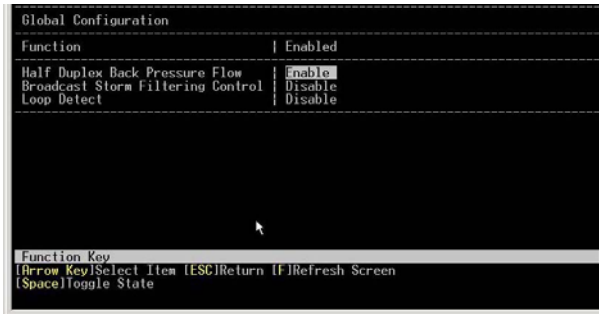


NOTE

Port Trunking is not applicable to Port 25 (expansion module).

4.3. Global Configuration

This option allows you to configure the global port control registers.



Half Duplex Back Pressure Flow:

Complex SAS2224B supports two backpressure flow control scheme to force incoming packet back off after the switch destination port is congested. This means that when A sends packets to B continuously, the latter might not be able to receive all packets on time. As a result, some of the packets will be dropped. Upon enabling this option, B will send out a packet, informing A to slow down the progress in transmitting the packets.

Broadcast Storm Filtering Control:

Enabling this option will allow each port to drop broadcast packets after a continuous received broadcast packets counter up to 64 count. The counter will be reset to 0 every 800ms or when receiving any non-broadcast packets.

Loop Detect:

Complex SAS2224B provides loop-detecting function to alarm a network loop existing via the diagnostic section (Section 5.3).

4.4. Quality of Service

Quality of Service (QoS) refers to the capability of a network to provide a better service to selected ports in the switch. A port with priority set High will have its transmitted packets serviced first at the receiving port.

```

QoS Configuration
-----
Function                               | State
-----|-----
TOS/Diff Serv. Priority                 | Disable
802.1p Priority                         | Disable
Adapted Flow Control                   | Disable
Priority Weighted Ratio(High:Low)      | 4:1
-----

Force Set High-Priority Port
-----
| |Port101 | |Port105 | |Port109 | |Port113 | |Port117 | |Port121 | |Port 25
| |Port102 | |Port106 | |Port110 | |Port114 | |Port118 | |Port122
| |Port103 | |Port107 | |Port111 | |Port115 | |Port119 | |Port123
| |Port104 | |Port108 | |Port112 | |Port116 | |Port120 | |Port124
-----

Function Key
|Arrow Key|Select Item |ESC|Return |F|Refresh Screen
|Space|toggle State

```

Comex SAS2224B can recognize QoS priority information from the incoming packets and distribute packets in different queues for different service priority. It identifies the packets' priority based on:

TOS/Diff Serv. Priority:

This stands for Type of Services/Differentiated Services Priority. When TCP/IP's TOS/DiffServ (DS) based priority is applied, Comex SAS2224B can recognize TCP/IP Differentiated Services Codepoint (DSCP) priority information from the DS-field defined on RFC2474. The DS field byte for IPv4 is the Type-of-Service (TOS) octet, and for IPv6, it is the Traffic-Class octet. The recommended DiffServ Codepoints is defined in RFC2597 to classify the traffic into different service classes.

802.1p Priority:

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.

Adapted Flow Control:

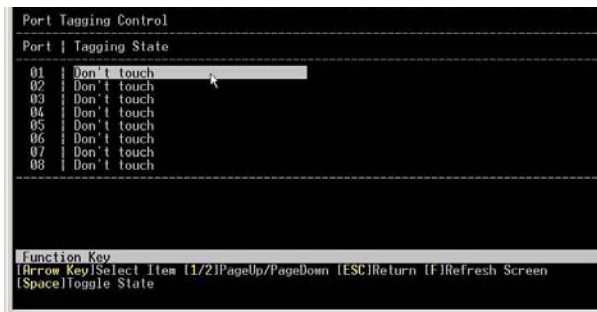
Upon disabling this function, CompeX SAS2224B can automatically turn off 802.3x flow control and Back pressure flow control for 1~2 seconds whenever the port receives a high priority frames. The flow control is re-enabled when no priority frames are received for 1~2 seconds.

Priority Weighted Ration (High:Low):

CompeX SAS2224B supports 2 levels of priority queues. The packet-based priority weighted ratio of high-priority and low-priority queuing can be set as 4:1, 8:1 or 16:1 or 1:0.

4.5. Port Tagging Control

This option allows you to determine the tagging status of incoming frames that needs to be forwarded to their respective destinations.



Don't touch

CompeX SAS2224B will leave the frames as it is, regardless of whether they are tagged or untagged.

Remove Tag

CompeX SAS2224B will follow the instruction for the individual ports and remove the tag from the incoming frame before forwarding it to its destination.

Insert Tag (high-priority only)

Compex SAS2224B will follow the instruction for the individual port and insert the tag for incoming frames that are set to high priority before forwarding them to their destination.

Insert Tag (all frame)

Compex SAS2224B will follow the instruction for individual port and insert a tag to all incoming frames before forwarding them to their respective destinations.

Kindly select your option by toggling the space bar from your keyboard.



NOTE

This function can be enabled even if the VLAN function is not enabled.

4.6. VLAN Global Control

This feature allows you to control the various types of events that can encounter in the network.

```

VLAN Control
-----
Function                               | State
-----|-----
VLAN Function                           | Enable
Unicast Packet Inter-VLAN Leaky         | Disable
ARP broadcast Packet Inter-VLAN Leaky   | Disable
IP Multicast Packet Inter-VLAN Leaky    | Disable
802.1Q VLAN tag aware                   | Disable
Ingress Rule for Acceptable frame types | Admit all Frames
Ingress Rule for Ingress Filtering      | Disable
-----

Function Key
-----
[Arrow Key] Select Item [ESC]Return [F]Refresh Screen
[Space]Toggle State
  
```

VLAN Function:

Normally, any broadcast/multicast and unicast packet all not allowed switching between VLANs. For example, Port 1 broadcast packet will only flood to port 2 and 3, and port 1 unicast packet is not allowed to forward to any member of another VLAN.

If the leaky VLAN function is enabled, 3 types of specific frame could be forward to different VLAN destination port:

- ◆ Unicast packet leaky control
- ◆ ARP broadcast leaky control
- ◆ IP multicast leaky control

These 3 types of leaky control are useful for a switch to be broken into many VLANs and want to enable a host-to-host communication between different VLANs without any router or with router but improve the router performance.

Unicast Packet Inter-VLAN Leaky:

Unicast is a term to describe the communication in the network that packets are being sent out from one point to another point.

Upon enabling this option, CompeX SAS2224B allows the packet to be forwarded to a destination port at different VLAN.

ARP broadcast Packet Inter-VLAN Leaky:

ARP broadcast refers to the ARP packets that are being sent out from one point to all connected points in the network.

Upon enabling this option, CompeX SAS2224B allowed ARP frame to be broadcasted to all switch ports.

IP Multicast Packet Inter-VLAN Leaky:

IP multicast provides dynamic many-to-many connectivity between a set of senders (at least 1) and a group of receivers.

Upon enabling this option, CompeX SAS2224B allows the IP multicast packet to be flooded to all multicast address group members.

802.1Q VLAN tag aware:

IEEE 802.1Q is a standard for tagged Virtual LAN that uses an extra tag in the frame header to identify the VLAN membership of a frame across bridges. Enabling this option will inform Compex SAS2224B to take note of the tagged frames that are being sent out to the network.

Ingress Rule for Acceptable frame types:

This Ingress Rule determines the types of frames being accepted by the receiving port.

Upon selecting **Admit all Frames**, the switch port will simultaneously allow the incoming tagged and untagged frames to be forwarded to its destination port.

Options: Admit all Frames, Admit only VLAN-Tagged Frames

Ingress Rule for Ingress Filtering:

Ingress Filtering improves security by reducing the effectiveness of source address spoofing denial of service attacks.

Upon enabling this option, Compex SAS2224B will follow the Ingress Rules that is set for the Ingress Filtering to improve the security in the network.

4.7. VLAN Member Setup

Compex SAS2224B supports Virtual LAN, which logically groups every connection into VLANs for traffic isolation and security purposes. Both tagged-and untagged-based VLANs support a maximum of 32 groups. Each VLAN group can only forwards traffic among its member ports.

For tagged VLAN, each port can be a member of more than one VLAN group. The VLAN configuration feature allows you to create, delete, view tagged/untagged VLAN groups. The range of VID starts from 2 to 4094.

```
VLAN | Port Base VLAN | VLAN | Port (VLAN member)
Entry: or ID 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2
No. | 802.1Q VLAN | | 1 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
-----|-----|-----|-----
01 | Port Base VLAN | NA | V V V V V V V V V V V V V V V V V V V V V V V V V V V V
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | | |
-----|-----|-----|-----
Function Key
[Arrow Key] Select Item 11/21 PageUp/PageDown [ESC] Return [F] Refresh Screen
[E] Edit Mode [Enter] Update VLAN [A] Add VLAN [D] Del VLAN [Space] Toggle/Edit State
[<] to execute VLAN entry configure, <Enter> to update VLAN table!
```

Create a new VLAN

You need to set the configuration environment to **Edit** mode.

1. Hit on the letter **E** (indicates that the environment is in edit mode) and then the letter **A** to add in a new VLAN entry.

```
VLAN | Port Base VLAN | VLAN | Port (VLAN member)
Entry: or ID 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2
No. | 802.1Q VLAN | | 1 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
-----|-----|-----|-----
01 | Port Base VLAN | NA | V V V V V V V V V V V V V V V V V V V V V V V V V V V V
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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-----|-----|-----|-----
Function Key
[Arrow Key] Select Item 11/21 PageUp/PageDown [ESC] Return [F] Refresh Screen
[E] Edit Mode [Enter] Update VLAN [A] Add VLAN [D] Del VLAN [Space] Toggle/Edit State
```

Toggle your spacebar to change the types of VLAN: Port-based or 802.1Q Tagged

For Port-based VLAN

The classification of any incoming packet on each port is defined by the PVID. CompeX SAS2224B uses the PVID to search the VLAN table for a VLAN member.

For Tagged VLAN

The VLAN classification is the first step to be done before VLAN table lookup. To classify a unique VID value to a received frame is defined as follows:

- ◆ If the tagged VID is not equal to 0, then tagged VID value is used.
- ◆ If the tagged VID is equal to 0, then PVID value is used.

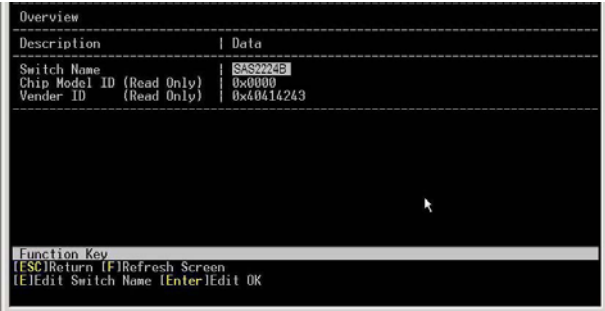
After the unique 12-bits VID is classified, Compex SAS2224B will then lookup the VLAN table, check for the ingress/egress rule and then forward to the valid destination ports with specified tagging control process.

5. Monitor your Compex SAS2224B via Hyper Terminal

Besides configuring using Hyper Terminal, you can also monitor your network via this program.

5.1. Overview

To view or edit your switch's name, simply select **1** (Status) from the main menu, and then choose **1** (Overview). The following screenshot will appear:



```
Overview
-----
Description      | Data
-----
Switch Name      | SAS2224B
Chip Model ID (Read Only) | 0x0000
Vendor ID (Read Only) | 0x40416243
-----

Function Key
[ESC]Return [F]Refresh Screen
[Enter]Edit Switch Name [Enter]Edit OK
```

1. To edit your switch's name, hit on **E** key on your keyboard and enter a name for your Compex SAS2224B.
2. After completion, press the **Enter** key to update the changes.

5.2. Port Status

This option allows you to view the connection speed (10M/100M), the duplex mode (Half/Full Duplex), flow control (enable/disable), auto negotiation (enable/disable), linking (Up/Down) and trunking status of all ports.

The screen will auto refresh in around 5 seconds' time.

```

Port Status (Read Only) (Auto-refresh)
-----
Port # | Speed | Duplex | Link | Flow Control | Auto Negotiation | Trunk
-----|-----|-----|-----|-----|-----|-----
01     | 10M   | Half   | Down | Enable       | Enable           |
02     | 10M   | Half   | Down | Enable       | Enable           |
03     | 10M   | Half   | Down | Enable       | Enable           |
04     | 10M   | Half   | Down | Enable       | Enable           |
05     | 10M   | Half   | Down | Enable       | Enable           |
06     | 10M   | Half   | Down | Enable       | Enable           |
07     | 10M   | Half   | Down | Enable       | Enable           |
08     | 10M   | Half   | Down | Enable       | Enable           |
-----|-----|-----|-----|-----|-----|-----

Function Key
[F1/2]PageUp/PageDown [ESC]Return [F]Refresh Screen
  
```

5.3. Diagnostics

This option detects problems found in looping or trunking in the network. When you discover a [X] at any of the two sections, this means that the particular port in the trunking group is not functioning; or the network encounters looping.

```

Diagnostics (Read Only) (Auto-refresh)
-----
Fault Information | VLAN ID | Port (VLAN member)
-----|-----|-----
Trunk Link Warning | Trunk1(P01_02) => [ ] | Trunk5(P13_14_15_16) => [ ]
                  | Trunk2(P03_04)  => [ ] | Trunk6(P17_18_19_20) => [ ]
                  | Trunk3(P05_06_07_08) => [ ] | Trunk7(P21_22_23_24) => [ ]
                  | Trunk4(P09_10_11_12) => [ ]
-----|-----|-----
Network Loop Fault | P01 P02 P03 P04 P05 P06 P07 P08 P09 P10 P11 P12 P13
Port Detected      | [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
                  | P14 P15 P16 P17 P18 P19 P20 P21 P22 P23 P24 P25
                  | [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
-----|-----
Note: [X] => 1. Detected some port link down, that belonged to the trunk group.
        -> 2. Some port loop detected.
-----
Function Key
[F]Refresh Screen [ESC]Return
  
```

5.4. Changing your Password

Password is an invaluable tool for a system administrator to secure Comlex SAS2224B. You can amend your current password through hyper terminal.

Please note that if you happen to forget your password, you need to reset your Comlex SAS2224B to its factory default. But, do bear in mind that, once this option is being activated, all current configuration such as the VLANs, Port Trunking will also be reset to its factory default.

5.4.1 Forget your Password

If you forget your password, you can

- ◆ Enter another backup password - *supadmin*
Or
- ◆ Reset your setting to factory default. But please bear in mind that all configuration, including the VLAN setting, Trunking setting, etc will be reset to its default.

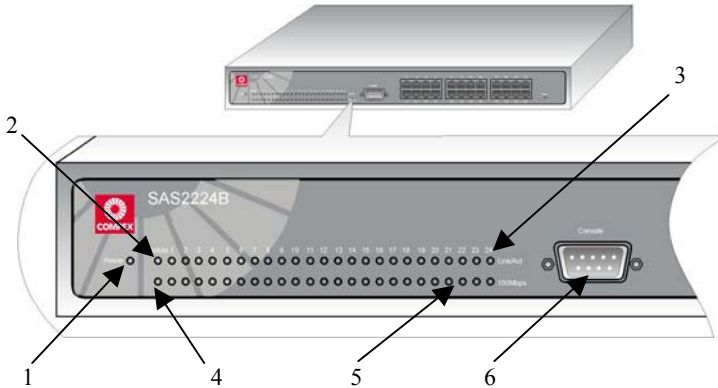
5.5. Save your Configuration

This option assists you in saving your current configuration.

5.6. Load Factory Default Setting

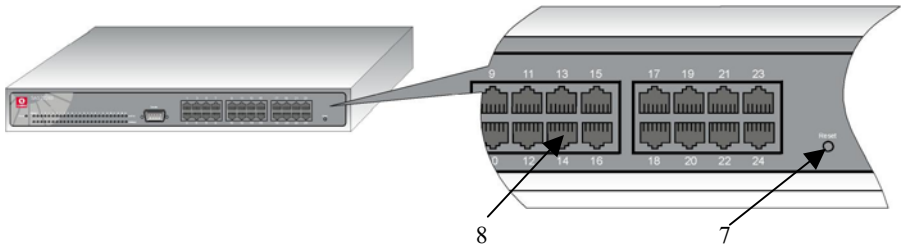
This option allows you to load your configuration to its factory default.

Appendix I Panel Views and Descriptions

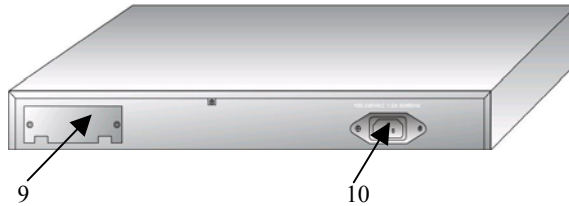


	Features	Status and Indication	
1	Power LED	Steady Green	Power is supplied to the device.
		Off	No power is supplied to the device.
2	Link/ACT LED (For expansion module)	Steady Green	A module is installed to the switch.
		Blinking Green	Activity is going on in the network.
		Off	<ul style="list-style-type: none"> No module is connected to the expansion slot. The module is not properly installed.
3	Link/ACT LEDs (For Port 1 to 24)	Steady Green	The particular port is connected to the switch.
		Blinking Green	Activity is going on in the network.
		Off	No link is established to the switch.

	Features	Status and Indication	
4	100Mbps LED (For expansion module)	Steady Green	The module is operating at the speed of 100Mbps.
		Off	No function.
5	100Mbps LEDs (For Port 1 to 24)	Steady Green	The port is operating at the speed of 100Mbps.
		Off	The port is operating at the speed of 10Mbps.
6	Console Port	Connect a serial 9 Pin (DB9) RS232 straight console cable here and link it to the COM Port of the PC you are now using for monitoring the switch.	



	Features	Status and Indication
7	Reset Button	To reboot your CompeX SAS2224B.
8	24 RJ45 Ethernet Ports	Supports <ul style="list-style-type: none"> • Auto negotiable 10/100Mbps • Auto MDI/MDIX crossover detection function.



	Features	Status and Indication
9	Expansion Slot	For optional module: <ul style="list-style-type: none"> • 100Base-FX Single Mode Fiber Fast Ethernet Module • 100Base-FX Multi Mode Fiber Fast Ethernet Module
10	AC power connector	Internal power supply is provided with voltage ratings of 100VAC to 240VAC, 50/60 Hz.

Appendix II Specifications

Network Protocol, Standards and Electrical Emissions	
Industry Standards	Complies with <ul style="list-style-type: none"> • IEEE 802.3 10Base-T • IEEE 802.3u 100Base-TX, 100Base-FX • IEEE 802.3x Flow Control • IEEE 802.3p QoS • IEEE 802.3ad Trunking • IEEE 802.1q VLAN
Safety Certifications	<ul style="list-style-type: none"> • CE Mark • FCC Class A • Gost • C-Tick • UL
Interface Options	
24 RJ45 Ports	Supports 24 10/100Mbps ports (RJ-45, STP/UTP): Half/Full Duplex modes at 10Mbps and 100Mbps.
Expansion Modules	Supports 1 modular slot for optional module <ul style="list-style-type: none"> • 100Base-FX Single Mode Fiber Fast Ethernet Module • 100Base-FX Multi Mode Fiber Fast Ethernet Module
Network Cables	<ul style="list-style-type: none"> • 10Base-T: STP/UTP Cat 3 or 5 • 100Base-TX: STP/UTP Cat 5 • 100Base-FX: Multi-mode/Single-mode SC/ST fiber optic cable
Network Management	
In Band and Out of Band	Console Port

Performance	
Transmission Method	Store and Forward
Data Transfer Rate	<ul style="list-style-type: none"> • 10 Base-T Ethernet: 10Mbps (Half Duplex); 20Mbps (Full Duplex) • 100Base-TX/FX Fast Ethernet: 100Mbps (Half Duplex); 200Mbps (Full Duplex)
VLAN	<ul style="list-style-type: none"> • Up to 32 VLAN groups for port based VLAN and Tagged VLAN • Support leaky VLAN control
Trunking	7 trunking groups are available in Compex SAS2224B
Priority Queues	Two priority queues for three types of Class Of Service (CoS) <ul style="list-style-type: none"> • Port based • 802.1p priority tag • TCP/IP header's TOS/DS classifier
Flow Control	<ul style="list-style-type: none"> • Back Pressure Flow Control (Half Duplex) • IEEE 802.3x Flow Control (Full Duplex)
Address Table	8K MAC Address
Switching Buffer	2.5Mbits
Physical and Environment	
Environmental Requirements	Operating temperature : 0°C to 40°C Storage temperature : -20°C to 70°C Operating humidity : 10% to 90% RH Storage humidity : 5% to 90% RH RH = Relative Humidity
Physical Dimension	440mm x 200mm x 44mm (L x D x H)



Power Consumption	Maximum of 22 Watts
Maximum current	0.5A Max at 110V
AC Inputs	Internal power supply is provided with voltage ratings of 100VAC to 240VAC, 50/60 Hz.



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Manual Revision by Ong

Manual Number: **M-0432-VI.IC** Version 1.1, August 2004

FCC NOTICE: 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the computer and receiver.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

FCC Compliance Statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

ICES 003 Statement

This Class A digital apparatus complies with Canadian ICES-003

DECLARATION OF CONFORMITY: **Compex, Inc.** declares that the product:

Product Name: **Compex 24 Ports + 1 Expansion Slot Switch**

Model No.: **SAS2224B** conforms to the following Product Standards:

Radiated Emission Standards: EN55022A, FCC Part 15 Class A

Conducted Emission Standards: EN60555Pt2 conducted emission; EN55022A conducted emission, LVD 60950 standard, FCC Part 15 Class A

Immunity Standards: IEC 801-2; IEC 801-3; IEC 801-4

Low Voltage Directive: EN 60 950:1992+A1: 1993+A2: 1993+A3; 1995+A4; 1996+A11: 1997.

*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.*

Manufacturer's Name: **Compex, Inc.**

Address: 4051 E. La Palma, Unit A,
Anaheim, CA 92807, USA

European Contact & Technical Support

ReadyLINK Networktechnology GmbH,
Albert Einstein Straße 34/M21,
63322 Rödermark, Germany




Fax: ++49 (60) 749-0668




Technical Support Centers

Contact the technical support center that services your location.




U.S.A., Canada, Latin America and South America

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 Fax	Tel: +1 (800) 279-8891 (Ext. 122 Technical Support) Fax: +1 (714) 630-6521 BBS: +1 (714) 630-2570 (24-hour access)

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WARRANTY REGISTRATION CARD

[M-0088-V2.3C]



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Or E-mail: support@complex.com.sg with the following information:

To activate the warranty, please complete this card and return to Compex within ninety (90) days of purchase date.

Product: _____ Purchase Date: _____ Revision: _____ Serial No: _____

Name: _____ Title: _____ E-mail: _____

Company: _____ Dept: _____

Address: _____ City: _____

Postal/Zip Code: _____ State: _____ Country: _____

Phone: () _____ Extn: _____ Fax: () _____

Computer in which this product is installed? _____ Model: _____ Serial No: _____

Network protocol (Check all that apply): TCP/IP IPX/ODI XNS OST DLC DECnet
 NDIS SNA NBP Other: _____

Network Operating System (Check all that apply): **Novell NetWare:** 3.X 4.X 5.X SCO Unix: Openserver Ver: ____

Microsoft Windows: NT4.0 95 98 Win 2000

Linux: Red Hat Ver: ____ SUSE Ver: ____ Others: ____ Ver: ____
Others NOS: _____ Ver: ____

Applications used on network processing (Check all that apply): Desktop Publishing Word Processing Accounting
 CAD/CAM Spreadsheet Database Management

E-mail Other: _____

How did you learn about Compex? Work Friend Internet Dealer Magazine Exhibition
 Other: _____

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For purchases outside U.S.A. and Canada, please fax to Compex Systems Pte Ltd at (65) 6280-9947

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Version 1.1
August 2004



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