

TE100-S1212 12-port NWay 10/100 Fast Ethernet Switch

User's Guide

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RECYCLABLE

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TABLE OF CONTENTS

ABOUT THIS GUIDE	vii
PURPOSE	vii
TERMS/USAGE	vii
OVERVIEW OF THIS USER'S GUIDE	vii
INTRODUCTION	1
FAST ETHERNET TECHNOLOGY	1
SWITCHING TECHNOLOGY	2
FEATURES	3
<i>Performance Features</i>	4
UNPACKING AND SETUP	5
UNPACKING	5
SETUP	6
RACK INSTALLATION	6
POWER ON.....	7
<i>LED Indicators</i>	7
<i>Power Failure</i>	8
IDENTIFYING EXTERNAL COMPONENTS	9
FRONT PANEL	9
REAR PANEL	10
LED INDICATORS	11
CONNECTING THE SWITCH	13
PC TO SWITCH	13
HUB TO SWITCH.....	14
<i>10Base-T Hub</i>	15
<i>100Base-TX Hub</i>	15
HUB WITHOUT UPLINK (MDI-II) PORT	15
<i>Using a Straight Cable</i>	16

Using a Crossover Cable..... 16
CONFIGURING THE PORT SPEED & DUPLEX MODE 16
SWITCH TO SWITCH (OTHER DEVICES) 17
 Using a Straight Cable 18
 Using a Crossover Cable..... 18
CONSOLE MANAGEMENT PROGRAM 19
 Overview..... 19
 Setting Up a Console Device 19
 Navigating the Console Program Screens..... 20
 Configuring the Console..... 22
TECHNICAL SPECIFICATIONS..... 29
RJ-45 PIN SPECIFICATION..... 32

ABOUT THIS GUIDE

Congratulations on your purchase of the 10/100 Fast Ethernet Switch. This device integrates 100Mbps Fast Ethernet and 10Mbps Ethernet network capabilities in a highly flexible desktop package.

Purpose

This manual discusses how to install your 12-port 10/100 Fast Ethernet Switch.

Terms/Usage

For simplicity, this documentation uses the terms “Switch” (first letter upper case) to refer to your 12-port 10/100 Fast Ethernet Switch, and “switch” (first letter lower case) to refer to all Ethernet switches, including your 12-port Switch.

Overview of this User's Guide

- ◆ Chapter 1, *Introduction*. Describes the Switch and its features.

- ◆ Chapter 2, *Unpacking and Setup*. Helps you get started with the basic installation of the Switch.
- ◆ Chapter 3, *Identifying External Components*. Describes the front panel, rear panel and LED indicators of the Switch.
- ◆ Chapter 4, *Connecting the Switch*. Tells how you can connect the your Switch to your Ethernet network.
- ◆ Appendix A, *Technical Specifications*. Lists the technical (general, physical and environmental, and performance) specifications of the Switch.
- ◆ Appendix B, *RJ-45 Pin Specification*. Describes the RJ-45 receptacle/connector and the straight and crossover cable connector.

1

INTRODUCTION

This section describes the features of the 12-port Switch, as well as giving some background information about Ethernet and Fast Ethernet switching technology.

Fast Ethernet Technology

The growing importance of LANs and the increasing complexity of desktop computing applications are fueling the need for high performance networks. A number of high-speed LAN technologies have been proposed to provide greater bandwidth and improve client/server response times. Among them, Fast Ethernet, or 100Base-T, provides a non-disruptive, smooth evolution from the current 10Base-T technology. The non-disruptive and smooth evolution nature, and the dominating potential market base, virtually guarantee cost effective and high performance Fast Ethernet solutions in the years to come.

100Mbps Fast Ethernet is a new standard specified by the IEEE 802.3 LAN committee. It is an extension of the 10Mbps Ethernet standard with the ability to transmit and receive data at 100Mbps, while maintaining the CSMA/CD Ethernet protocol. Since the 100Mbps Fast Ethernet is compatible with all other 10Mbps Ethernet environments, it provides a straightforward upgrade and takes advantage of the company's existing investment in hardware, software, and personnel training.

Switching Technology

Another approach to pushing beyond the limits of Ethernet technology is the development of switching technology. A switch bridges Ethernet packets at the MAC address level of the Ethernet protocol transmitting among connected Ethernet or Fast Ethernet LAN segments.

Switching is a cost-effective way of increasing the total network capacity available to users on a local area network. A switch increases capacity and decreases network loading by making it possible for a local area network to be divided into different *segments* which don't compete with each other for network transmission capacity, giving a decreased load on each.

The switch acts as a high-speed selective bridge between the individual segments. The switch, without interfering with any other segments automatically forwards traffic that needs to go from one segment to another. This allows the total network capacity to be multiplied, while still maintaining the same network cabling and adapter cards.

For Fast Ethernet networks, a switch is an effective way of eliminating problems of chaining hubs beyond the two-repeater limit." A switch can be used to split parts of the network into different collision domains, making it possible to expand your Fast Ethernet network beyond the 205-meter network diameter limit for 100BASE-TX networks. Switches supporting both traditional 10Mbps Ethernet and 100Mbps Fast Ethernet are also ideal for bridging between existing 10Mbps networks and new 100Mbps networks.

Switching LAN technology is a marked improvement over the previous generation of network bridges, which were characterized by higher latencies. Routers have also been used to segment local area networks, but the cost of a router and the setup and

maintenance required make routers relatively impractical. Today switches are an ideal solution to most kinds of local area network congestion problems.

Features

The Switch is designed for easy installation and high performance in an environment where traffic on the network and the number of users increase continuously.

The Switch with its rack size is specifically designed for network workgroups. The Switch provides immediate access to a rapidly growing network through a wide range of user-reliable functions.

The Switch is ideal for deployment with multiple high-speed servers for shared bandwidth 10Mbps or 100Mbps workgroups. In 200Mbps full-duplex mode, any port can provide workstations with a congestion-free data pipe for simultaneous access to the server.

The Switch is expandable by cascading two or more switches together. As all ports support 200Mbps full duplex, the Switch can be cascaded from any port and to any number of switches.

The Switch is a perfect choice for site planning to upgrade to Fast Ethernet in the future. Ethernet workgroups can connect to the Switch now, and change adapters and hubs anytime later without needing to change the Switch or reconfigure the network.

The Switch combines dynamic memory allocation with store-and-forward switching to ensure that the buffer is effectively allocated for each port, while controlling the data flow between the transmit and receive nodes to guarantee against all possible packet loss.

Other key features are:

- ◆ Twelve N-Way UTP/STP ports all come with auto-negotiation and operate at 10/100 Mbps for connection to servers and hubs. All ports can be configured for full or half-duplex operation.
- ◆ Uplink/MDI-II (media dependent interface) port for uplinking to another switch, hub or repeater. Please note that if you are using the uplink port, you will not be able to use port one (1x) because these ports are logically connected.

Performance Features

- 10/100Mbps Auto-Negotiation and Auto-Sensing on All Ports
- Full/half duplex operation for each port
- 1.3 Gbps Switching Fabric, Provides Wire-Speed Performance on All Ports
- Parallel Store-and-forward Architecture Provides High-Speed Switching scheme
- LEDs for Easy Recognition of the Switch Operating Status
- Optional DMA Port for a 100BASE-FX SC type module (paired with Port 12)
- Console Port for easy Troubleshooting and Management
- Complete Frame Checking & Error Filtering

2

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the Switches.

Unpacking

Open the shipping carton of the Switch and carefully unpack its contents. The carton should contain the following items:

- ◆ One 12-port 10/100 Fast Ethernet Switch
- ◆ One AC power cord
- ◆ This *User's Guide*
- ◆ Four rubber feet with adhesive backing
- ◆ Six screws for rack mounting

If any item is found missing or damaged, please contact your local Reseller for replacement.

Setup

Consider the following when setting up the Switch:

- ◆ The power outlet should be within 1.82 meters of the device.
- ◆ Visually inspect the power cord and see that it is fully secured to the AC power connector.
- ◆ Make sure that there is proper heat dissipation from and adequate ventilation around the Switch. Do not place heavy objects on the Switch.

Rack Installation

The Switch can be mounted in an EIA standard size, 19-inch rack, which can be placed in a wiring closet with other equipment. To install, attach the mounting brackets on the switch's front panel (one on each side) and secure them with the screws provided.

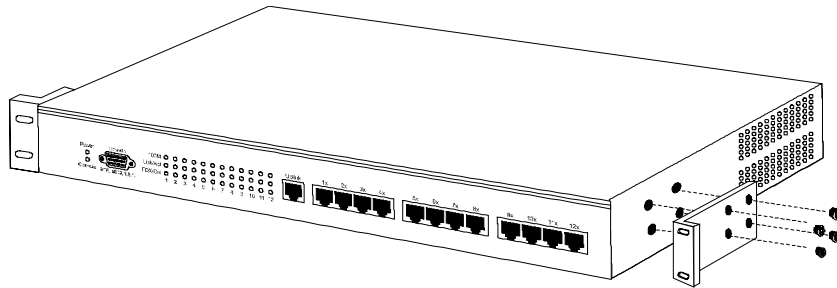


Figure 1A, Attaching the mounting brackets to the Switch

Then, use the screws provided with the equipment rack to mount the Switch in the rack.

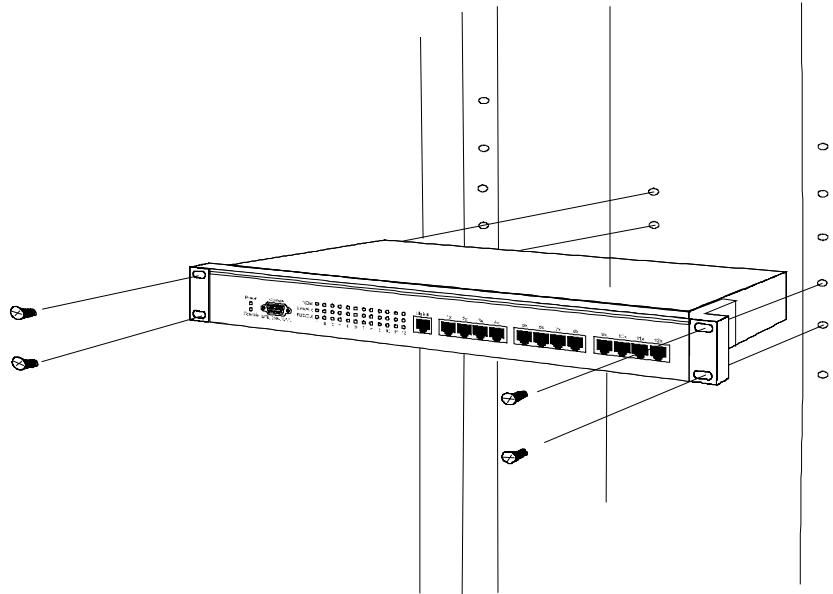


Figure 1B, Installing the Switch in an equipment rack

Power On

The Switch can be used with AC power sources 100 to 240 VAC, 50 to 60 Hz. The power switch is located at the rear of the unit adjacent to the AC power connector and the system fan. To turn the Switch on, press the power switch to the on or “1” position. The Switch’s power supply will adjust to the local power source automatically and may be turned on without having any or all LAN segment cables connected.

LED Indicators

After the switch is turned on, the LED indicators should respond as follows:

- ◆ The power LED indicator will be *green*.

Power Failure

As a precaution, the Switch should be turned **OFF** in case of a power failure. Press the power switch to the off or “0” position. When power is resumed, turn the Switch **ON**. At all times, avoid leaving the Switch ON after the occurrence of a power failure.

3

IDENTIFYING EXTERNAL COMPONENTS

This chapter describes the front panel, rear panel and LED indicators of the Switch.

Front Panel

The front panel of the Switch consists of 12 (10/100 Mbps MDI-X) ports, one Uplink (MDI-II) port and LED indicators. Descriptions of the ports appear in the *Introduction* of this User's Guide.

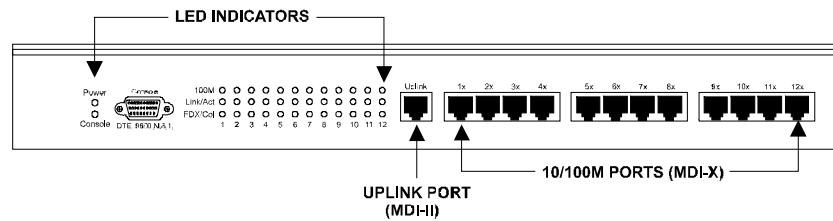


Figure2, Front panel view of the Switch

Rear Panel

The rear panel of the Switch consists of a power switch, an AC power connector, a system fan, a location for slide-in module, and a duplex-mode Dip switch.

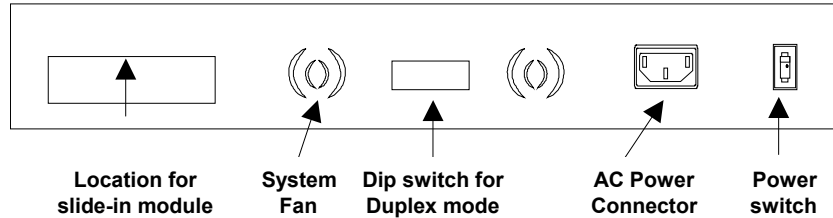


Figure 3, Rear panel view of the Switch

- ◆ **Slide-in Module Slot.** Use this slot to install a optional 100Base-FX(SC type) slide-in module. The module can be used to provide a high speed link to the rest of your network. Contact your supplier for availability. When a slide-in module is fitted, port 12 automatically switches to become the slide-in module port.
- ◆ **System Fan.** This fan is used to circulate air inside the Switch and also to dissipate heat. The sides of the system also provide heat vents to serve the same purpose. Do not block these openings, and leave adequate space at the rear and sides of the Switch for proper ventilation. Be reminded that without proper heat dissipation and air circulation, system components might overheat, which could lead to system failure.
- ◆ **Dip Switch.** Use this Dip switch to set the duplex mode. Each port in the 12-port NWay switch can be set for half duplex or full duplex mode. Opening the Dip Switch cover reveals a set of switches labeled 1 to 12. To set a port in full

duplex mode, slide the corresponding switch **up**. To set it in half duplex mode, slide the corresponding switch **down**.

- ◆ **AC Power Connector.** This is a three-pronged connector that supports the power cord. Plug in the female connector of the provided power cord into this connector, and the male into a power outlet. Supported input voltages range from 100 ~ 240 VAC at 50 ~ 60 Hz.
- ◆ **Power Switch.** This turns the Switch on and off. To turn on the system, press the switch to the “1” position; to turn off, press the switch to the “0” position.

LED Indicators

The LED indicators of the Switch include Power, 100 M, Link/Act (Link/Activity) and FDX/Col (Full-duplex/Collision). The LED indicators are used to facilitate monitoring and troubleshooting of the Switch. The following shows the LED indicators for the Switch along with an explanation of each indicator.

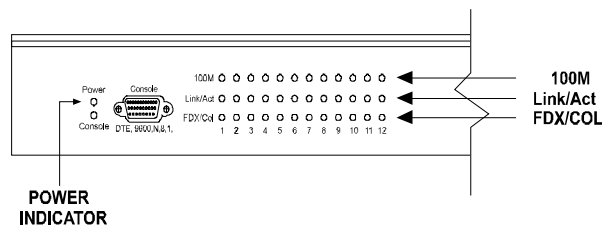


Figure 4, The Switch LED indicators

- ◆ **Power.** This indicator operates when the Switch is turned on. If this indicator is not lit, check the AC power connector to ensure proper insertion of the power cord and that the power switch is turned ON.

- ◆ **100M.** The LED indicator lights *green* when a 100 Mbps device is connected to a respective port or the uplink port. If a 10 Mbps device is connected to a respective port or the uplink port, the LED indicator is OFF.
- ◆ **Link/Act.** These LED indicators are lighted up *green* when there is a secure connection (or link) to a device at any of the ports. The LED indicators blink *green* whenever there is reception or transmission (i.e. Activity act) of data occurring at a port.
- ◆ **FDX/Col.** This LED indicator is *green* when a respective port is in full duplex (FDX) mode. Otherwise, it is OFF for half duplex (HDX) operations. It blinks *yellow* when collisions are occurring on the respective port.
- ◆ **Console.** This LED indicator lights *green* when the switch receives a management packet from RS-232.

4

CONNECTING THE SWITCH

This chapter describes how to connect the 10/100 Fast Ethernet Switch to your Fast Ethernet network.

PC to Switch

A PC can be connected to the Switch via a two-pair Category 3, 4, 5 UTP /STP straight cable. The PC (equipped with a RJ-45 10/100 Mbps jack) can be connected to any of the ports.

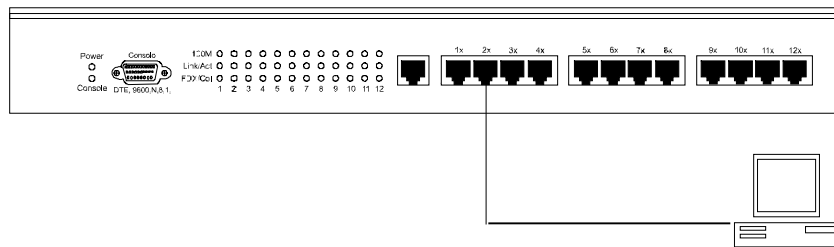


Figure5, The Switch connected to a PC or Workstation

The LED indicators for a PC connection are dependent on the LAN card capabilities. If the LEDs are not illuminated after making a

proper connection, check the PC LAN card, the cable, switch conditions and connections.

The following are LED indicator possibilities for a PC to Switch connection:

1. The 100 M LED indicator comes on for a 100 Mbps and stays off for 10 Mbps.
2. The Link/Act LED indicator illuminates upon hookup.
3. The FDX/Col LED indicator depends upon LAN card capabilities.

Hub to Switch

A hub (10 or 100Base-TX) can be connected to the Switch via a two-pair Category 3, 4, 5 UTP/STP straight cable. The connection is accomplished from the hub uplink (MDI-II) port to any of the Switch (MDI-X) ports.

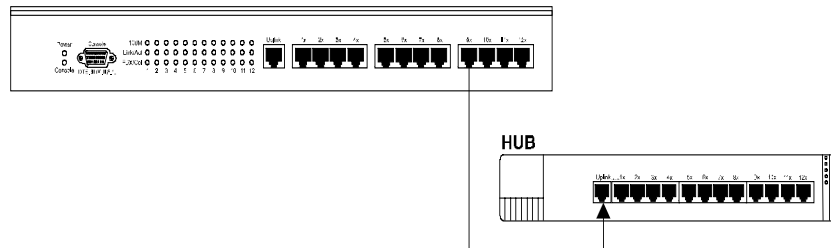


Figure 6, Switch connected to a 10Base-T or 100Base-TX Hub

10Base-T Hub

For a 10 Base-T hub, the Switch LED indicators should illuminate as follows:

- ◆ 100M LED speed indicator is *OFF*.
- ◆ Link/Act indicator is *ON*.
- ◆ FDX/Col indicator is *OFF*.

100Base-TX Hub

For a 100Base-TX hub, the Switch LED indicators should illuminate as follows:

- ◆ 100M LED speed indicator is *ON*.
- ◆ Link/Act is *ON*.
- ◆ FDX/Col LED indicator is *OFF*.

Hub Without Uplink (MDI-II) Port

If a hub is not equipped with an uplink (MDI-II) port, then a connection can be made using either a straight cable or a crossover cable (see *Appendix A, Technical Specifications* for cable requirements).

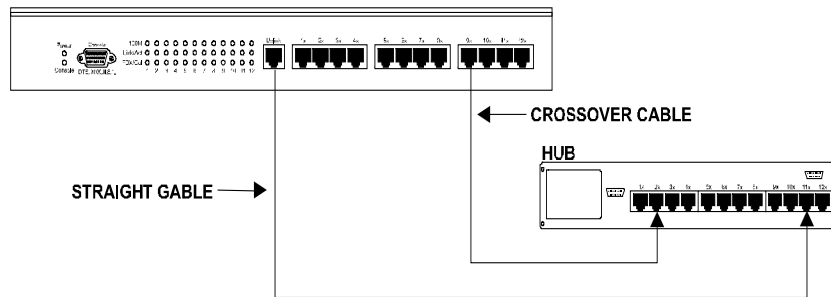


Figure 7, The Switch connected to a Hub without an uplink (MDI-II) port using the Straight or crossover cable option

Using a Straight Cable

When using straight cable, the connection can be made from the uplink (MDI-II) port of the Switch to any port of the Hub (see figure 7).

Using a Crossover Cable

When using crossover cable, the connection can be made from any port of the Switch to any port of the Hub (see figure 7).

Configuring the Port Speed & Duplex Mode

After plugging the selected cable to a specific port, you can configure the communication mode through console program (Auto Negotiation Enable/disable, Port Speed) and Dip switch (Half/Full Duplex) on the rear panel of the Switch:

1. If you have auto-negotiation disabled, an auto-sensing process is initiated to select the speed, and the duplex mode will be set based on the Dip switch setting.
2. If you have auto-negotiation enabled, but the partner does not support auto-negotiation. Then an auto-sensing process is initiated to select the speed, and the duplex mode is set based on the Dip switch setting.
3. If auto-negotiation is supported and enabled on both ends of the connection and Dip switch is set to half-duplex (HDX), Dip switch **down**, the auto-negotiation process is initiated to negotiate for one of the following modes:
 - 100Mbps/HDX
 - 10Mbps/HDX
4. If auto-negotiation is supported and enabled on both ends of the connection and Dip switch is set to full-duplex (FDX), Dip switch **up**, the auto-negotiation process is initiated to negotiate for one of the following modes:
 - 100Mbps/FDX
 - 100Mbps/HDX
 - 10Mbps/FDX
 - 10Mbps/HDX

NOTE: The default communication mode of the Switch is: auto-negotiation (On), and HDX (Dip switch down) .

Switch to Switch (Other Devices)

The Switch can be connected to another switch or other devices (routers, bridges, etc.) via a two-pair Category 3, 4, 5 UTP/STP straight or crossover cable.

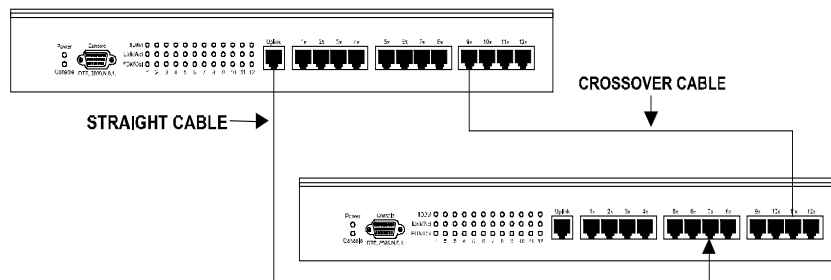


Figure 8, A Switch to switch connection using the straight or crossover cable options.

Using a Straight Cable

When using a straight cable, this is done from the uplink (MDI-II) port of the Switch (Switch A) to any of the 10Mbps or 100Mbps (MDI-X) port of the other switch (switch B) or other devices (see figure 8).

Using a Crossover Cable

When using crossover cable, this is done from any (MDI-X) port of the Switch (Switch A) to any of the 10Mbps or 100Mbps (MDI-X) port of the other switch (switch B) or other devices (see figure 8).

Switch A's LED indicators for the respective connected ports are as follows:

- ◆ 100 M is ON for 100Base-TX, otherwise it is OFF.
- ◆ Link/Act is ON.
- ◆ FDX/Cool depends on the connected switch or other device.

Console Management Program

This section discusses how to manage the 12-port NWay switch using the console management program. It describes the steps required to set up a console device and details how to configure the console program.

Overview

The console program allows you to manage the 12-port NWay switch and monitor its performance. You have to access this program through a direct connection between a management console and the console port of the 12-port NWay switch. The management console used for the connection can be a VT-100 terminal or a PC running terminal emulation software.

Setting Up a Console Device

To set up the connection, follow these steps:

1. Connect a terminal or a PC with terminal emulation software to the console port using the RS-232 cable.
2. The console port on the management module is a DTE DB-9 connector. You need a null adapter installed between the cable and the console port.
3. Set your terminal to the following setting:
 - Baud—9600
 - Parity—none
 - Data Bits—8
 - Stop Bit—1
 - Flow Control—Xon / Xoff
4. Turn on the 12-port NWay switch. When you enter the main screen of the terminal, press the **<Enter>** or **<Esc>** key once

to start communication. If the connection is successful, the console program Main Menu will appear on the screen.

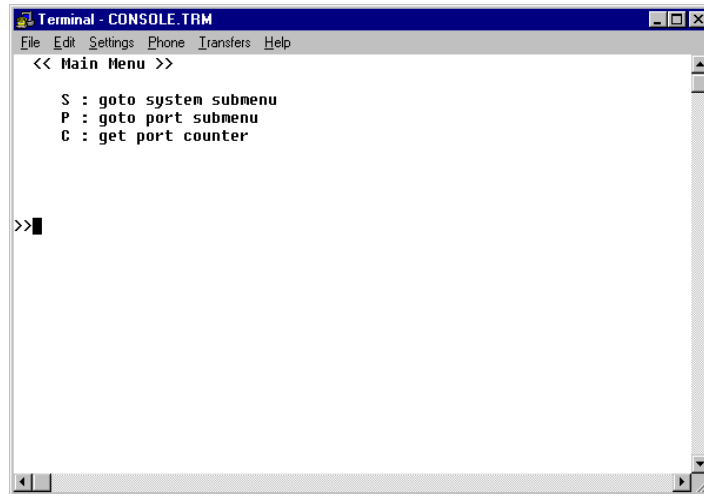


Figure 9, The Console Program Main Menu

Navigating the Console Program Screens

To Do This	Use This Key . .
Move to the submenu	First character of each option line
Select a specific port	Corresponding port: 01 02 03 04 05 06 07 08 09 10 11 12
Disable a function or select 10Mbps	0
Enable a function or select 100Mbps	1
Go back to the main menu	Esc or Enter

While following steps in these sections, you may find the screen map below useful:

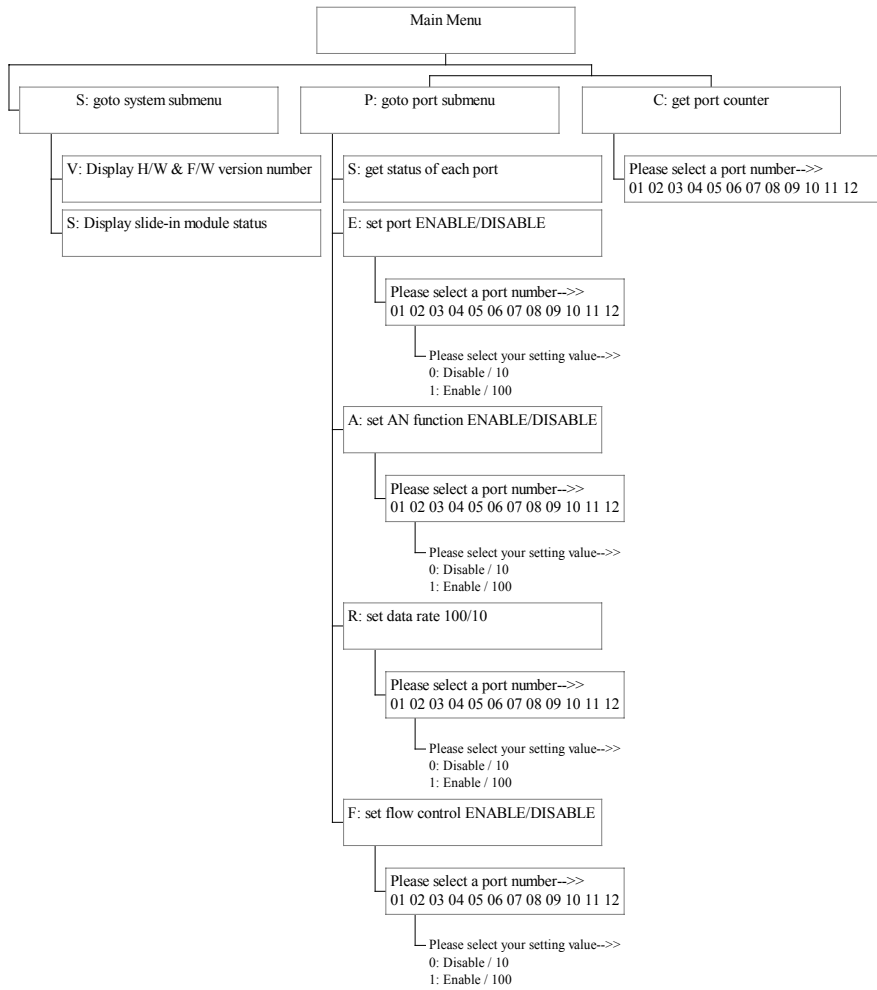


Figure 10, The Console Program Screen Map

The following example illustrates how to disable or enable the AN function for Port 1:

1. Press **P** from the Main Menu to access the Port Submenu.
2. Press **A** in the port submenu to access the set AN function ENABLE/DISABLE screen.
3. Press **01** to access Port 1.
4. Press **0** to disable the AN function or press **1** to enable the AN function.
5. Press <Esc> or <Enter> to go back to the main menu.

Configuring the Console

The options available from the Main Menu are:

- S** : goto system submenu
- P** : goto port submenu
- C** : get port counter

System Submenu

With the System Submenu, you can perform the following:

V: Display the Hardware and Firmware version numbers.

This is a view-only screen showing the hardware and software version of the switch.

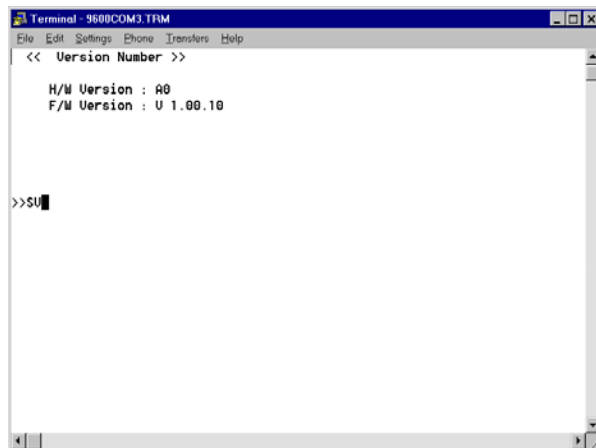


Figure 11, Version Number Screen

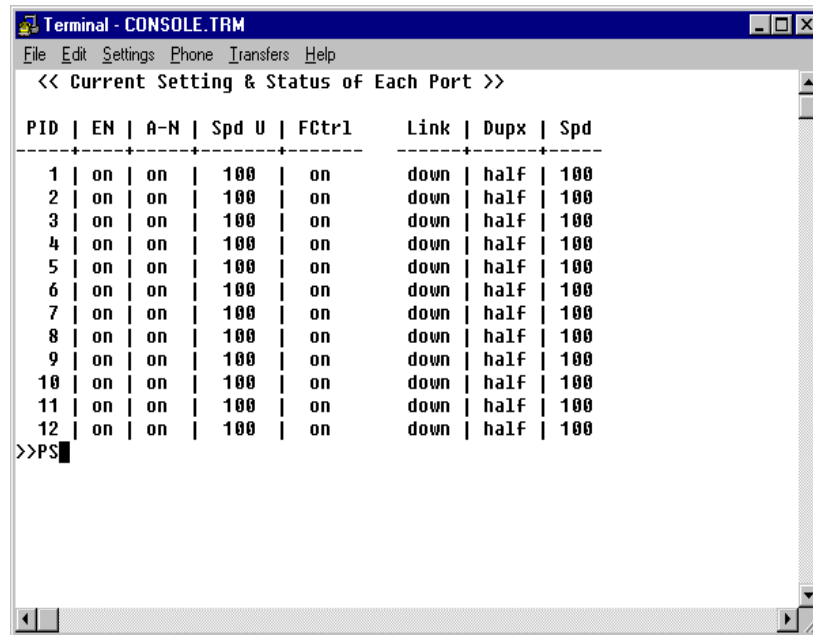
S: Display slide-in module status. This indicates the status of the slide-in module. If there is no module installed, the field will read, slide-in module is Absent.” If there is a module installed, this field will display the type of slide-in module.

NOTE: When a slide-in module is fitted, port 12 automatically switches to become the slide-in module port.

Port Submenu

With the Port Submenu, you can perform the following:

S: Get status of each port. This is a view-only screen, which indicates the current status and settings of the ports. The following screen displays port status and factory settings.



The image shows a terminal window titled "Terminal - CONSOLE.TRM" with a menu bar (File, Edit, Settings, Phone, Transfers, Help). The main content displays the command "<< Current Setting & Status of Each Port >>" followed by a table of port settings and status. The table has columns for PID, EN, A-N, Spd U, FCtrl, Link, Dupx, and Spd. All ports (1-12) show "down" link status, "half" duplex, and "100" speed. The cursor is at the bottom prompt ">>PS".

PID	EN	A-N	Spd U	FCtrl	Link	Dupx	Spd
1	on	on	100	on	down	half	100
2	on	on	100	on	down	half	100
3	on	on	100	on	down	half	100
4	on	on	100	on	down	half	100
5	on	on	100	on	down	half	100
6	on	on	100	on	down	half	100
7	on	on	100	on	down	half	100
8	on	on	100	on	down	half	100
9	on	on	100	on	down	half	100
10	on	on	100	on	down	half	100
11	on	on	100	on	down	half	100
12	on	on	100	on	down	half	100

Figure 12, Port Status List

NOTE: To perform a factory reset, turn the device off. Power on the device again and the factory settings should now be in effect.

Parameters in this screen are described in the following table.

Field	Description
PID	Displays the number of the currently selected port.
EN	Displays the RX/TX status of the selected port, Enable or Disable.
Link	Displays the current status of the link between the selected port and the connected node. This can be Up or Down.
AN	Displays the Auto Negotiation function status of the selected port. This can be On or Off.
Spd	Displays the Port Speed associated with duplex mode. This can be 10(10M/HDX), 20(10M/FCX), 100(100M/HDX), or 200 (100M/FDX).
Dupx	<p>Displays the Duplex mode of the selected port. This can be Full or Half Duplex mode. Full duplex transmissions effectively double your bandwidth by carrying out transmission and receipt of packets at the same time.</p> <p>Each port in the 12-port NWay switch can be set for half duplex or full duplex mode. You need to set the Duplex mode through the Dip switch at the rear of the device. To set a port in full-duplex mode, slide the corresponding switch up. To set it in half-duplex mode, slide the corresponding switch down.</p> <p>To make full duplex mode work properly, make sure both ends of the link are configured to full duplex mode.</p>
FCtrl	Displays Flow Control status of the selected port. This can be On or Off.
Spd U	Displays User Set Port Speed. This can be 10 or 100Mbps.

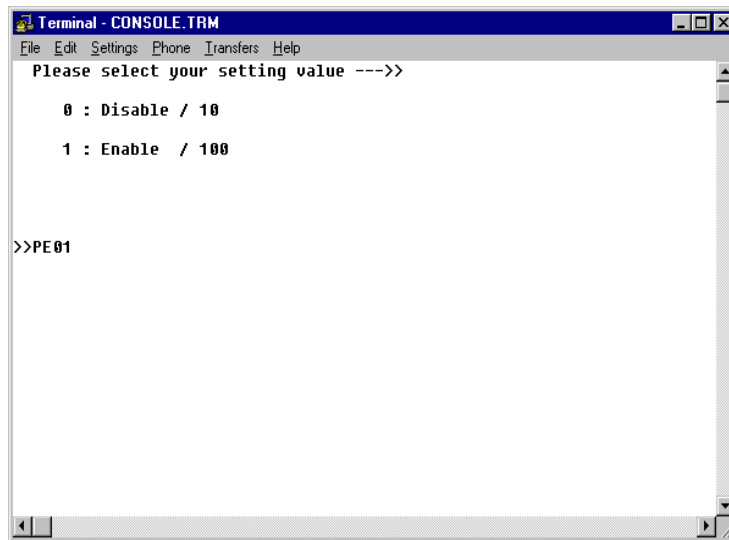


Figure 13, Set port ENABLE/DISABLE

Because the following four functions have the similar screens that let you specify. Displayed here is the screen for **E**: set port ENABLE/DISABLE.

- E: Set port ENABLE/DISABLE.** This is the operating status of the port. Use this screen to enable or disable the selected port. A disabled port does not transmit any packets to the connected segment, nor forward any received packets.
- A: Set the AN function ENABLE/DISABLE.** This is the Auto Negotiation status for the port. Use this screen to enable or disable the Auto Negotiation function for the port.
- R: Set the data rate 10/100.** This is the current connection speed specified for the port. Use this screen to set the speed of a port. Port speed can be either 10Mbps or 100Mbps.
- F: Set flow control ENABLE/DISABLE.** This is the Flow Control status for the port. Use this screen to enable or disable Flow

Control for the port. Flow Control minimizes dropped packets by sending out collision signals when the port receiving buffer is full. Press 0 to disable flow control and press 1 to set data rate as 100Mbps.

NOTE: Flow control is only available in half-duplex mode. In full-duplex mode, flow control is not available. The port status & setting list indicates only the setting configured for flow control rather than the status of flow control.

Port Counter

With the Port Counter, you can do the following:

C: Monitor statistics related to the traffic status of each port.

The screen below is the Port 2 counter.

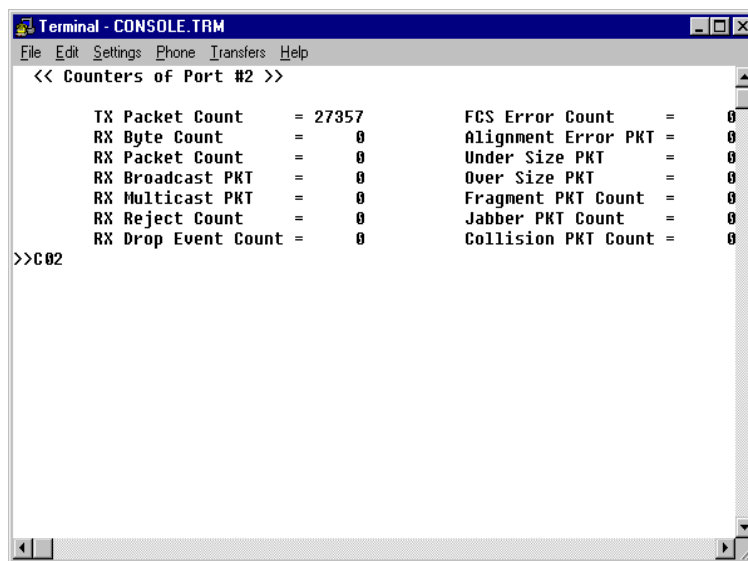


Figure 14, Counters for Port 2

NOTE: Any changes you make to a specific port will clear the counters of that port and return that port counter to the

default settings.

Parameters in this screen are described in the following table.

Field	Description
TX Packet Count	The number of packets that have been transmitted successfully by the selected port. Packets are from 64-1518 bytes, including the CRC.
RX Byte Count	The size, in bytes, of all packets received and forwarded successfully by the selected port.
RX Packet Count	The number of packets that have been received successfully on the selected port.
RX Broadcast PKT	The number of broadcast packets that are received.
RX Multicast PKT	The number of multicast packets that are received.
RX Reject Count	The number of discarded packets that are received on the selected port. These frames are discarded at the receiving port because of frame filtering.
RX Drop Event Count	The number of lost packets received on the selected port. Lost packets result from the lack of internal receive buffer space.
FCS Error Count	The number of packets with cyclic redundancy check (CRC) errors that are received on the selected port.
Alignment Error PKT	The number of alignment errors received on the selected port. An alignment error occurs when a received packet is not an integral number of bytes.
Under Size PKT	The number of packets received that were well formed but less than 64 bytes long.
Over Size PKT	The number of packets received that were well formed but greater than 1,518 bytes long.

Fragment PKT Count	The number of packets received that were less than 64 bytes long and had either a CRC error or an alignment error.
Jabber PKT Count	The number of packets received that were greater than 1,518 bytes long and had either a CRC error or an alignment error.
Collision PKT Count	The number of collisions that occurred on the segment connected to the selected port.



TECHNICAL SPECIFICATIONS

General		
Standards:	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100 Base-TX/FX Fast Ethernet ANSI/IEEE Std 802.3 NWay auto-negotiation IEEE 802.3 Frame types: Transparent IEEE 802.3 MAC layer frame size: 64 - 1518 Bytes	
Protocol:	CSMA/CD	
Data Transfer Rate:	Ethernet: 10Mbps (half duplex) 20Mbps (full duplex)	Fast Ethernet: 100Mbps (half duplex) 200Mbps (full duplex)
Topology:	Star	

General (continued)	
Network Cables:	<p>10BaseT:</p> <p>2-pair UTP Cat. 3,4,5 (100 m)</p> <p>EIA/TIA- 568 100-ohm STP (100 m)</p> <p>100Base-TX:</p> <p>2-pair UTP Cat. 5 (100 m)</p> <p>EIA/TIA-568 100-ohm STP (100 m)</p>
Number of Ports:	12 x 10/100Mbps ports
Media Interface Exchange:	MDI-II RJ-45 shared with port 1x

Physical and Environmental	
AC inputs:	100 - 240 VAC, 50/60 Hz (internal universal power supply)
Power Consumption:	40 watts maximum
DC fans:	1 built-in 40x40 mm fan
Operating Temperature:	32° ~ 122° F (0° ~ 50° C)
Storage Temperature:	-22° ~ 140° F (-30° ~ 60° C)

Humidity:	5% ~ 95% non-condensing
Dimensions:	442x258x44 mm (1U)
Weight:	2.5 Kg
EMI:	FCC Class A, CE Mark Class A, VCCI Class I
Safety:	UL (UL 1950), CSA (CSA950), TUV/GS (EN60950)

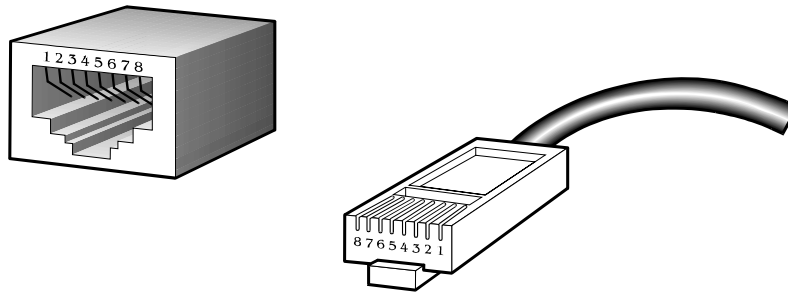
Performance	
Transmission Method:	Store-and-forward
RAM Buffer:	128K bytes per port
Filtering Address Table:	4K entries per port
Packet Filtering/Forwarding Rate:	14,880 bps per port (for 10Mbps) 148,800 bps per port (for 100Mbps)
MAC Address Learning:	Automatic update



RJ-45 PIN SPECIFICATION

When connecting your 10/100 Fast Ethernet Switch to another switch, a bridge or a hub, a modified crossover cable is necessary. Please review these products for matching cable pin assignment.

The following diagram and tables show the standard RJ-45 receptacle/connector and their pin assignments for the switch-to-network adapter card connection and the straight/ crossover cable for the Switch-to-switch/hub/bridge connection.

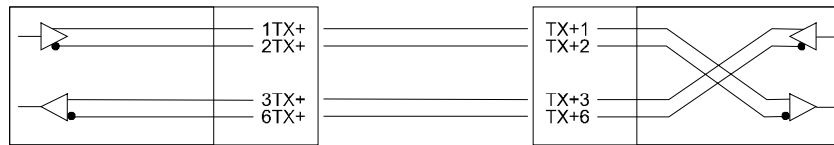


The standard RJ-45 receptacle/connector

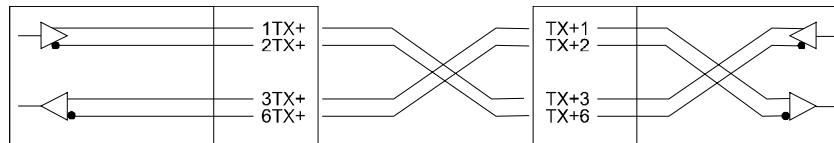
RJ-45 Connector pin assignment	
Contact	Media Direct Interface Signal
1	Tx + (transmit)
2	Tx - (transmit)
3	Rx + (receive)
4	Not used
5	Not used
6	Rx - (receive)
7	Not used
8	Not used

The standard Category 3 cable, RJ-45 pin assignments

The following shows straight cable and crossover cable connection:



Straight cable for Switch (uplink MDI-II port) to switch/Hub or other devices connection



Crossover cable for Switch (MDI-X port) to switch/hub or other network devices (MDI-X port) connection
