Gigabit Switches

AT-9108
AT-8518
AT-8525
AT-8550

Installation Guide

Version 4.x

Allied Telesyn

Simply Connecting the World

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AT-9108
AT-8518
AT-8525
AT-8550

Gigabit Switches

Installation Guide

PN 613-10841-00 Rev A

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Preface

This preface provides an overview of this guide, describes guide conventions, and lists other publications that may be useful.

Introduction

This guide provides the required information to install and configure the AT-9108 (SX and LX), AT-8518 (SX and LX), AT-8525 (SX and LX) and AT-8550 (SX and LX) Gigabit Ethernet Switches.

This guide is intended for use by network administrators who are responsible for installing and setting up network equipment. It assumes a basic working knowledge of

- Local Area Networks (LANs)
- Ethernet concepts
- Ethernet switching and bridging concepts
- Simple Network Management Protocol (SNMP).

Terminology

When a feature, functionality, or operation is specific to a particular model of the switches, the model name is used (for example, AT-8525 or AT-8550). Non-specific explanations about features and operations are the same among all members of the switches.

Document Conventions

The conventions that are used throughout this guide are as follows:

Note

A note provides additional information.

Caution

A caution indicates that performing or omitting a specific action may result in equipment damage or loss of data.

Warning

A warning indicates that performing or omitting a specific action may result in bodily injury.

Related Publications

Allied Telesyn wants our customers to be well informed by providing the most up-to-date and most easily accessible way to find our guides and other technical information.

Visit our website at: **www.alliedtelesyn.com/techhome.htm** and download the following guides:

AT-9108, AT-8518, AT-8525, AT-8550 User's Guide,
PN 613-10793-00

AT-9108, AT-8518, AT-8525, AT-8550 User's Command Guide,
PN 613-10794-00

The following guides are shipped with the product:

AT-9108, AT-8518, AT-8525 and AT-8550 Installation Guide,
PN 613-10841-00

AT-RPS1000 Redundant Power Supply Installation Guide,
PN 613-10755-00

AT-GBIC (SX and LX) Quick Install Guide,
PN 613-10757-00

Chapter 1
Overview

This chapter describes the following:

- Features of the AT-9108, AT-8518, AT-8525 and AT-8550 Gigabit Ethernet switches
- How to use the switches in your network configuration
- Front and rear views of the switches
- Factory default settings

About the Switches

The switches are available from Allied Telesyn in the following configurations:

- AT-9108SX with short wavelength gigabit interface connector (GBIC)
- AT-9108LX with long wavelength GBIC
- AT-8518SX with short wavelength GBIC
- AT-8518LX with long wavelength GBIC
- AT-8525SX with short wavelength GBIC
- AT-8525LX with long wavelength GBIC
- AT-8550SX with short wavelength GBIC
- AT-8550LX with long wavelength GBIC

Network managers are currently faced with the challenge of creating networks that can provide ultra-fast speed and high performance to serve the needs of today's network users, while simultaneously preserving the investment they have made in Ethernet and Fast Ethernet technology.

By addressing the entire spectrum of Ethernet data rates (10/100/1000 Mbps), the switches enable you to introduce high-speed Gigabit Ethernet backbones into your existing network, while maintaining established connections to the 10 Mbps and 100 Mbps segments that already exist.

Summary of Features

The switches have the following features:

- Support for 128K MAC addresses or 64K IP addresses in the switch forwarding database (FDB)
- Fully nonblocking operation - all ports transmit and receive packets at wire speed
- Auto-negotiation for full-duplex operation and speed on Fast Ethernet (10/100 Mbps) ports
- Auto-negotiation for half- or full-duplex operation on Gigabit Ethernet (1000 Mbps) ports
- Optional redundant power supply (AT-RPS1000)
- Redundant physical Gigabit Ethernet backbone connection
- Virtual local area networks (VLANs) including support for 802.1Q
- Policy-Based Quality of Service (PB-QoS)
- Spanning Tree Protocol (STP) (IEEE 802.1D) with multiple STP domains
- Wirespeed Internet Protocol (IP) routing
- IP Multinetting using the Internet Group Multicast Protocol (IGMP)
- DHCP/BOOTP Relay
- Routing Information Protocol (RIP) version 1 and RIP version 2
- Open Shortest Path First (OSPF) routing protocol
- Wirespeed IP multicast routing support
- IGMP snooping to control IP multicast traffic
- Distance Vector Multicast Routing Protocol (DVMRP)
- Protocol Independent Multicast-Dense Mode (PIM-DM)
- IPX, IPX/RIP, and IPX/SAP support
- Console command line interface (CLI) connection
- Telnet CLI connection

- Web interface via Omega
- Simple Network Management Protocol (SNMP) support
- Load sharing on multiple ports
- Integrated network management
- Remote monitoring (RMON)
- Tracffic mirroring for all ports.

Note

For more information about switch features, refer to the *AT-9108, AT-8518, AT-8525, and AT-8550 User's Guide*.

Port Connections

The AT-9108 provides eight Gigabit Ethernet ports. Six of the ports are are fixed, 1000Base-SX ports using 850nm duplex SC connectors. Two of the ports are modular, and support the standard Gigabit Interface Connector (GBIC). This enables you to select various types of fiber and copper modules to support longer distances or lower cost. The AT-9108 module can be ordered with either two 1000Base-SX or two 1000Base-LX GBIC transceivers already installed. GBIC modules can also be ordered separately. Contact your Allied Telesyn dealer for the availability of the GBIC modules.

Figure 1-1 shows the front view of the AT-9108 (common to both SX and LX configurations).

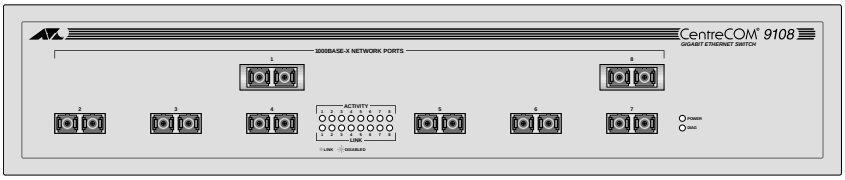


Figure 1-1 AT-9108 Front View

The AT-8518 is a workgroup switch featuring sixteen 10Base-T/100Base-TX ports, two Gigabit Ethernet uplinks, and one redundant Gigabit Ethernet uplink. The 10Base-T/100Base-TX ports use standard RJ45 connectors. They autonegotiate for 10/100Mbps operation, as well as half- or full-duplex operation. The Gigabit Ethernet interfaces support the GBIC connector, and ship with standard 1000Base-SX, 850nm GBIC modules. Additional cable media types are also supported; see Table 1-1.

Figure 1-2 shows the front view of the AT-8518 (common to both SX and LX configurations).

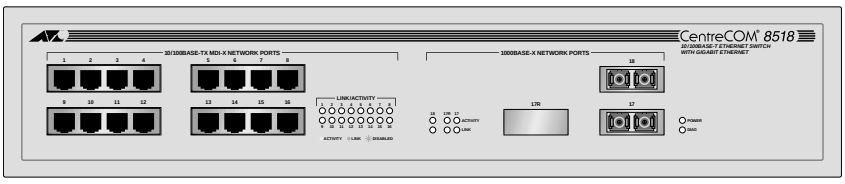


Figure 1-2 AT-8518 Front View

The AT-8525 provides 24 auto-negotiating 10Base-T/100Base-TX ports, one Gigabit Ethernet port, and one redundant Gigabit Ethernet port. The AT-8525SX model has the 1000Base-SX GBIC transceiver already installed, and the AT-8525LX model has the 1000Base-LX GBIC transceiver already installed. You can also order GBIC modules separately. Contact your Allied Telesyn dealer for the availability of the GBIC modules.

Figure 1-3 shows the front view of the AT-8525 (common to both SX and LX configurations).

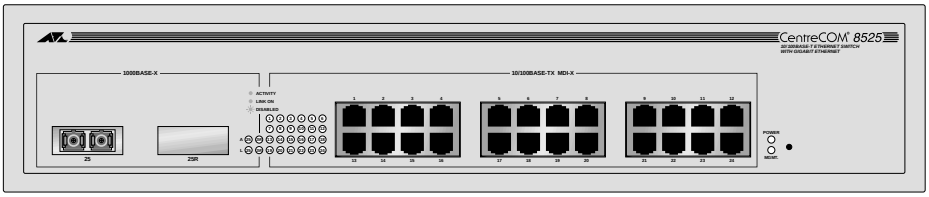


Figure 1-3 AT-8525 Front View

The AT-8550 features 48 auto-negotiating 10Base-T/100Base-TX ports, two Gigabit Ethernet ports, and two redundant Gigabit Ethernet ports. The AT-8550SX model has the 1000Base-SX GBIC transceiver already installed, and the AT-8550LX model has the 1000Base-LX GBIC transceiver already installed. You can also order GBIC modules separately. Contact your Allied Telesyn dealer for the availability of the GBIC modules.

Figure 1-4 shows the front view of the AT-8550.

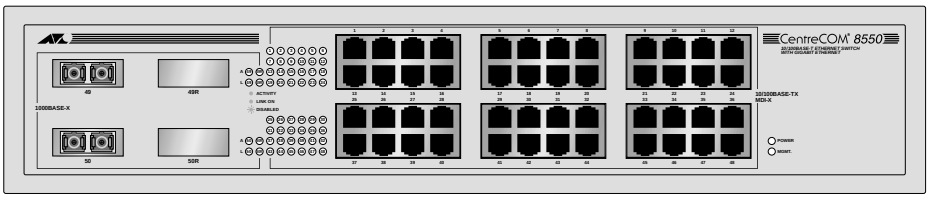


Figure 1-4 AT-8550 Front View

The 10Base-T/100Base-TX ports on the switches use standard RJ45 connectors. They are auto-negotiating for 10/100 Mbps operation and for half- or full-duplex operation. The Gigabit Ethernet interfaces support the GBIC connector, and ship with standard 1000Base-SX, 850nm GBIC modules.

Table 1-1 describes the standard (connectors), media, and maximum distances for each port type.

Table 1-1 Media Types and Distances

Standard	Media Type	Mhz/Km Rating	Maximum Distance
1000Base-SX	50/125um Multimode Fiber	400	500 m (1640 ft)
	50/125um Multimode Fiber	500	550 m (1804 ft)
	62.5/125um Multimode Fiber	160	220 m (722 ft)
	62.5/125um Multimode Fiber	200	275 m (902 ft)
1000Base-LX	50/125um Multimode Fiber	400	550 m (1804 ft)
	50/125um Multimode Fiber	500	550 m (1804 ft)
	62.5/125um Multimode Fiber	500	550 m (1804 ft)
	10u Single-mode Fiber		5,000 m (16,400 ft)
100Base-TX	Category 5 UTP Cable (100 Mbps)		100 m (328 ft)
10Base-T	Category 3 UTP Cable (10 Mbps)		100 m (328 ft)

Note

For more information on 1000Base-SX and 1000Base-LX link characteristics, refer to *IEEE 802.3z*, Section 38.

LEDs

Table 1-2 describes the light emitting diode (LED) indications on the AT-9108..

Table 1-2 AT-9108 LED

LED	Color	Indicates
Power	Green	The switch is powered up.
	Yellow	The switch is indicating a power, overheat, or fan failure.
DIAG	Green flashing: *Slow* *Medium* *Fast* Yellow	 Power On Self Test (POST) in progress. The switch is operating normally. Software download in progress. The switch has failed its POST.
Gigabit Ethernet Port Status LEDs		
Packet	Yellow	Frames are being transmitted/received on this port.
	Off	No activity on this port.
Status	Green on	Link is present; port is enabled; full-duplex operation.
	Green flashing	Link is present; port is disabled.
	Off	Link is not present.

Table 1-3 describes the LED indications on the AT-8518.

Table 1-3 AT-8518 LED

LED	Color	Indicates
Power	Green	The switch is powered up.
	Yellow	The switch is indicating a power, overheat, or fan failure.
DIAG	Green flashing: *Slow* *Medium* *Fast*	 Power On Self Test (POST) in progress. The switch is operating normally. Software download in progress.
	Yellow	The switch has failed its POST.
10/100Mbps Port Status LEDs		
	Green	Link is present; port is enabled.
	Yellow	Frames are being transmitted/received on this port.
	Green flashing	Link is present; port is disabled.
	Off	Link is not present.
Gigabit Ethernet Port Status LEDs		
Packet	Yellow	Frames are being transmitted/received on this port.
	Off	No activity on this port.
Status	Green on	Link is present; port is enabled; full-duplex operation.
	Green flashing	Link is present; port is disabled.
	Off	Link is not present.

Table 1-4 describes the LED indications on the AT-8525 and the AT-8550.

Table 1-4 AT-8525 and AT-8550 LEDs

LED	Color	Indicates
Power	Green	The switch is powered up.
	Yellow	The switch is indicating a power, overheat, or fan failure.
MGMT	Green flashing: *Slow* *Fast*	 The switch is operating normally. Power On Self Test (POST) or software download in progress.
	Yellow	The switch has failed its POST.
10/100Mbps Port Status LEDs		
	Green	Link is present; port is enabled.
	Yellow	Frames are being transmitted/received on this port.
	Green flashing	Link is present; port is disabled.
	Off	Link is not present.
Gigabit Ethernet Port Status LEDs		
Packet	Yellow	Frames are being transmitted/received on this port.
	Off	No activity on this port.
Status	Green on	Link is present; port is enabled; full-duplex operation.
	Green flashing	Link is present; port is disabled.
	Off	Link is not present.

Full-Duplex

The switches provide full-duplex support for all ports. Full-duplex allows frames to be transmitted and received simultaneously and, in effect, doubles the bandwidth available on a link. All 10/100 Mbps ports on the switches auto-negotiate for half- or full-duplex operation.

Port Redundancy

The AT-8518, AT-8525, and AT-8550 switches have optional redundant Gigabit Ethernet ports. Using the redundant port, you can dual-home the switch to one or two switches. Figure 1-5 illustrates a switch dual-homed to two different switches.

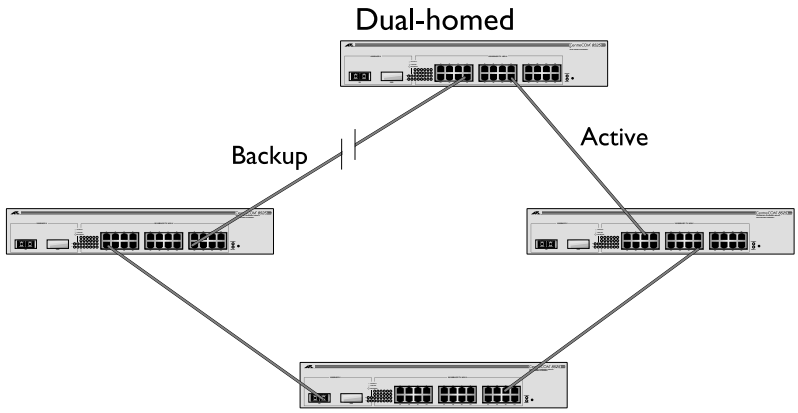


Figure 1-5 AT-8525 Dual-Homing Configuration

In the event that the active port fails or loses link status, the redundant port is automatically activated. When the primary port resumes operation, the redundant port becomes inactive. This feature can be disabled.

The redundant port cannot be used for load sharing when the primary port is active. If the primary port becomes inactive, the redundant port is activated in the load sharing configuration.

Network Configuration Examples

This section describes where to position the switches within your network.

One common use of the switches is on a Gigabit Ethernet backbone. Figure 1-6 shows an example of a Gigabit Ethernet backbone within a building.

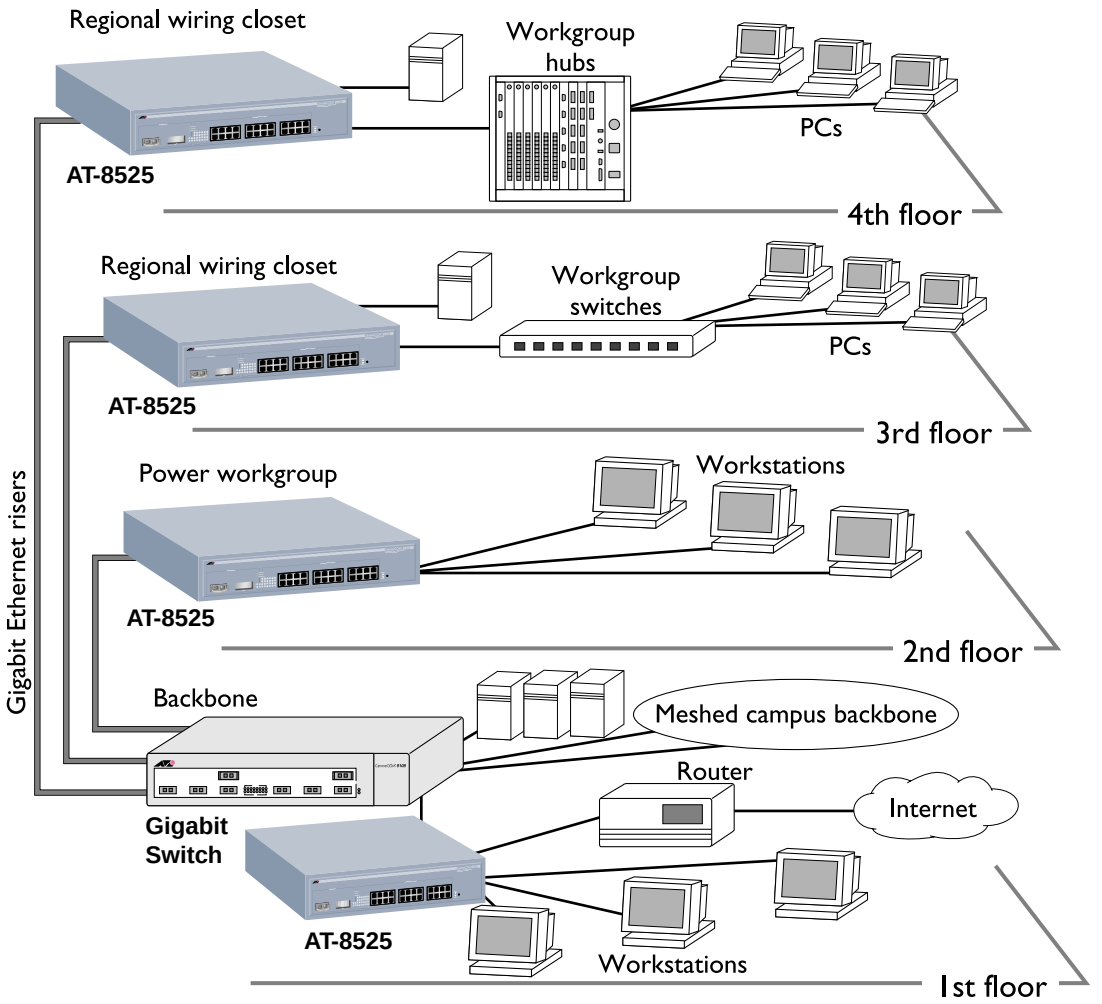


Figure 1-6 AT-8550 Used in a Backbone Configuration

The switch on each floor is connected to the backbone Gigabit Ethernet switch using a 1 Gbps, full-duplex link. Using Gigabit Ethernet as a backbone technology removes bottlenecks by providing scalable bandwidth, low-latency, high-speed data switching.

As well as providing a fast-switched backbone between Ethernet LANs, Gigabit Ethernet-equipped file servers and devices can be directly attached to the switch, providing improved performance to the Ethernet desktop.

Another common use for the switches is in a campus environment, as shown in Figure 1-7.

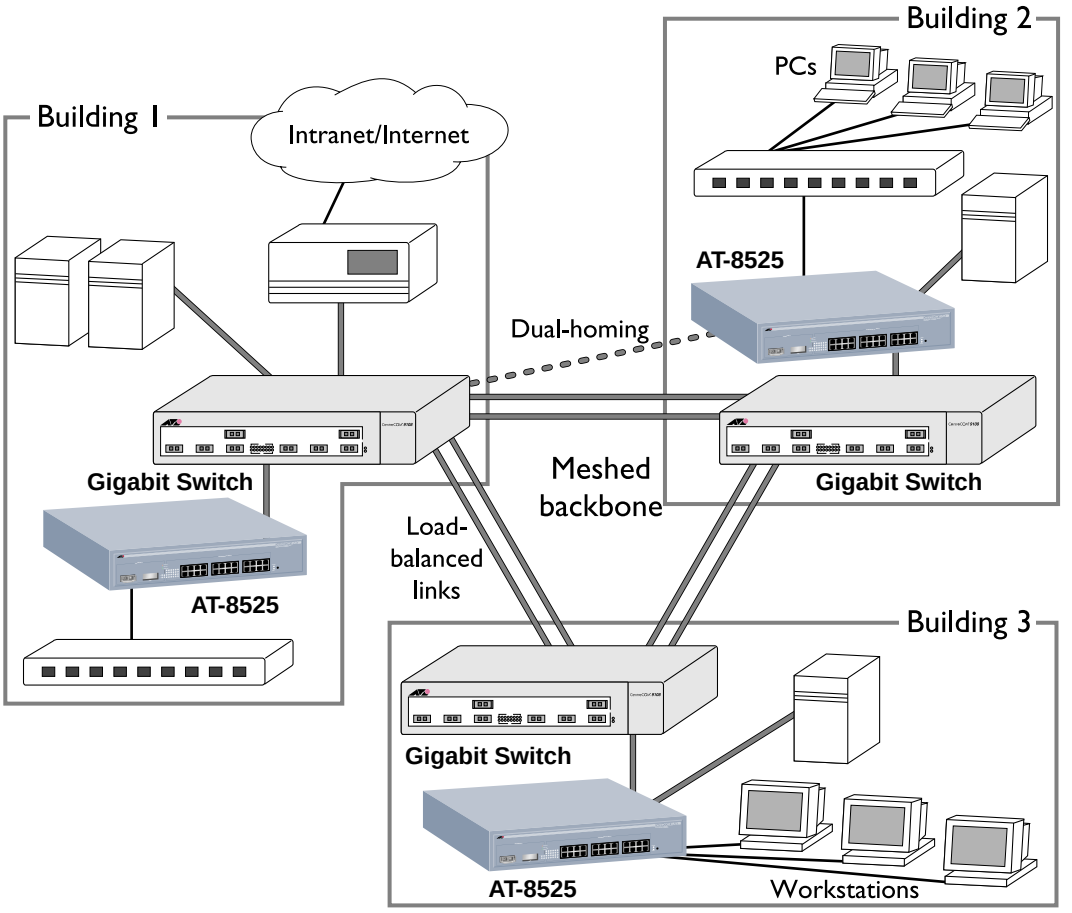


Figure 1-7 AT-8525 and AT-8550 Used in a Campus Environment

The Gigabit Ethernet switches located in each building form a meshed backbone, providing load balancing and redundancy. In addition, the switch in Building 2 is dual-homed to the switch in Building 1 and to the switch in Building 2.

Switch Rear View

Figure 1-8 shows the rear view common to the switches.

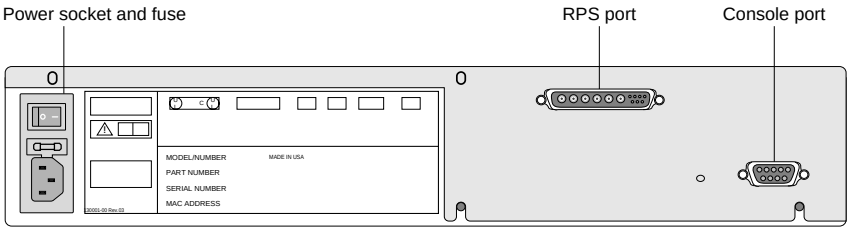


Figure 1-8 Rear View

Power Socket

The switch automatically adjusts to the supply voltage. The power supply operates down to 90 V. The fuse is suitable for both 110 V AC and 220-240 V AC operation.

Serial Number

Use this serial number for fault-reporting purposes.

MAC Address

This is the unique Ethernet MAC address assigned to this device.

Console Port

Use the console port (9-pin, “D” type connector) for connecting a terminal and carrying out local out-of-band management.

Redundant Power Supply Port

The redundant power supply (RPS) port is used to connect to the AT-RPS1000, the RPS unit that provides a redundant power source to the switch. If the primary power source for the switch fails, the RPS takes over, ensuring uninterrupted network operation.

In addition, when connected to the AT-RPS1000, the switch can provide status on power and fan operation of the redundant power supply module through SNMP and the command-line interface. The RPS can simultaneously provide power for up to two switches.

Contact your Allied Telesyn representative for the AT-RPS1000’s availability.

Factory Defaults

Table 1-5 shows factory defaults for the all switch models.

Table 1-5 Switch Factory Defaults

Item	Default Setting
Port status	Enabled on all ports
Serial or Telnet user account	*admin* with no password and *user* with no password
Console port configuration	9600 baud, eight data bits, one stop bit, no parity, XON/XOFF flow control enabled
Web network management	Enabled
SNMP read community string	Public
SNMP write community string	Private
RMON history session	Enabled
RMON alarms	Disabled
BootP	Enabled on the default VLAN (*default*)
QoS	All traffic is part of the default queue.
802.1p priority	Recognition enabled
802.3x flow control	Enabled
Virtual LANs	One VLAN named *default*; all ports belong to the default VLAN. The default VLAN belongs to the STPD named *s0*.
802.1Q tagging	All packets are untagged on the default VLAN (*default).*
Spanning Tree Protocol	Disabled; one STPD (*s0*)
IP Routing	Disabled
Forwarding database aging period	300 seconds (5 minutes)
RIP	Disabled for the switch; enabled on each VLAN configured with an IP address.
OSPF	Disabled for the switch; enabled on each VLAN configured with an IP address. All VLANs belong to the backbone area.
IP multicast routing	Disabled
DVMRP	Disabled for the switch; enabled on each VLAN configured with an IP address.
IGMP snooping	Disabled for the switch; enabled on each VLAN configured with an IP address.
GVRP	Disabled

Chapter 2
Installation and Setup

This chapter describes the following:

- How to decide where to install the switch
- Gigabit Ethernet configuration rules
- How to install the switch in a rack or free-standing
- How to connect equipment to the console port
- How to check the installation using the Power On Self-Test (POST)

Following Safety Information

Before installing or removing any components of the switch, or before carrying out any maintenance procedures, you must read the safety information provided in Appendix A of this guide.

Verifying the Switch Package

Check your package for the following contents:

- One gigabit Ethernet switch (AT-9108, AT-8518, AT-8525 or AT-8550)
- Two rackmount brackets and eight flathead screws
- Four self-adhesive rubber feet
- One power cord
- This installation guide
- One warranty card

If any of the above items are damaged or missing, contact your Allied Telesyn representative.

Determining the Switch Location

The switches are suited for use in the office, where it can be free-standing, or mounted in a standard 19-inch equipment rack. Alternatively, the device can be rack-mounted in a wiring closet or equipment room. Two mounting brackets are supplied with the switch.

When deciding where to install the switch, ensure that:

- ❑ The switch is accessible and cables can be connected easily.
- ❑ Water or moisture cannot enter the case of the unit.
- ❑ Air-flow around the unit and through the vents in the side of the case is not restricted. You should provide a minimum of 25 mm (1-inch) clearance.
- ❑ No objects are placed on top of the unit.
- ❑ Units are not stacked more than four high if the switch is free-standing.

Configuration Rules

The connectors, supported media types, and maximum distances for the switches are described in Chapter 1.

Note

For more information on 1000Base-SX and 1000Base-LX link characteristics, refer to IEEE Draft P802.3z/D4.2, Table 2-1 and Table 38-6.

Installing the Switch

The switch can be mounted in a rack, or placed free-standing on a tabletop.

Rack Mounting

Each switch is two rack units high and will fit in most standard 19-inch racks.

Note

The rack mount kits must not be used to suspend the switch from under a table or desk, or attach it to a wall.

To rack mount the switch, follow these steps:

1. Place the switch the right way up on a hard flat surface, with the front facing toward you.
2. Locate a mounting bracket over the mounting holes on one side of the unit.

3. Insert four flathead screws and fully tighten with a suitable screwdriver, as shown in Figure 2-1.

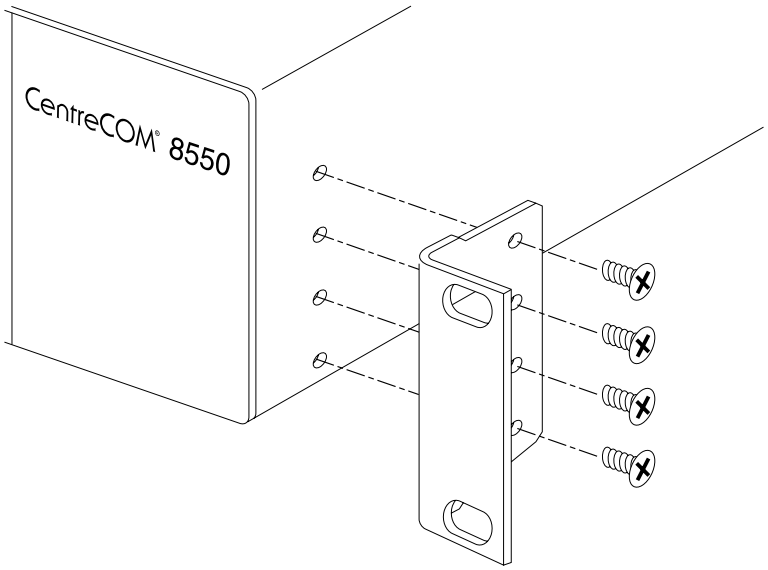


Figure 2-1 Fitting the Mounting Bracket

4. Repeat the three previous steps for the other side of the switch.
5. Insert the switch into the 19-inch rack and secure with suitable screws (not provided). Ensure that ventilation holes are not obstructed.
6. Connect the switch to the redundant power supply (if applicable).
7. Connect cables.

Free-Standing

The switch is supplied with four self-adhesive rubber pads. Apply the pads to the underside of the device by sticking a pad in the marked area at each corner of the switch.

Stacking the Switch and Other Devices

Up to four units can be placed on top of one another.

Note

This section relates only to physically placing the devices on top of one another. The switch does not form a stack (that is, a number of devices linked together with special expansion cables to form a single logical device).

Apply the pads to the underside of the device by sticking a pad at each corner of the switch. Place the devices on top of one another, ensuring that the corners align.

Connecting Equipment to the Console Port

Connection to the console port is used for direct local management. The switch console port settings are set as follows:

- **Baud rate** — 9600
- **Data bits** — 8
- **Stop bit** — 1
- **Parity** — None
- **Flow control** — XON/XOFF

The terminal connected to the console port on the switch must be configured with the same settings. This procedure will be described in the documentation supplied with the terminal.

Appropriate cables are available from your local supplier. In order to make your own cables, pin-outs for a DB-9 male console connector are described in Table 2-1.

Table 2-1 Console Connector Pin-Outs

Function	Pin Number
TXD (transmit data)	3
RXD (receive data)	2
GND (ground)	5

Figure 2-2 shows the pin-outs for a 9-pin to RS232 25-pin null-modem cable.

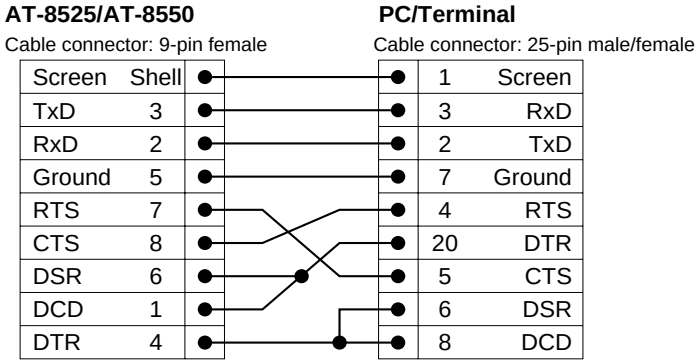


Figure 2-2 Null Modem Cable Pin-outs

Figure 2-3 shows the pin-outs for a 9-pin to 9-pin PC-AT null-modem serial cable.

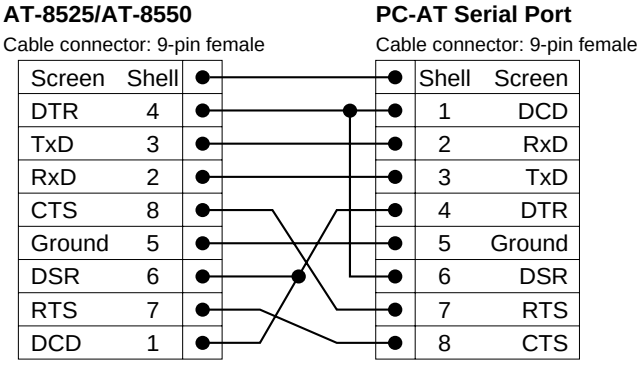


Figure 2-3 PC-AT Serial Null Modem Cable Pin-outs

Powering Up the Switch

To turn on power to the switch, connect the power cable to the switch and then to the wall outlet, and turn the on/off switch to the On position.

Checking the Installation

After turning on power to the switch, it performs a Power On Self-Test (POST).

During the POST, all ports are temporarily disabled, the packet LED is off, the Power LED is on, and the DIAG LED (AT-9108, AT-8518) or MGMT LED (AT-8525, AT-8550) flashes.

If the switch passes the POST, the DIAG LED or MGMT LED blinks at a different rate. If the switch fails the POST, the DIAG LED or MGMT LED shows a solid yellow light.

Note

For more information on the LED indications, refer to Chapt er1, Tables 1-2, 1-3 and 1-4.

Logging in for the First Time

After the switch has completed the POST, it is operational. Once operational, you can log in to the switch and configure an IP address for the default VLAN (named *default*).

To manually configure the IP settings, perform the following steps:

1. Connect a terminal or workstation running terminal-emulation software to the console port.
2. At your terminal, press [Return] one or more times until you see the login prompt.
3. At the login prompt, enter the default user name *admin* to log on with administrator privileges. For example:

   login: `admin`

   Administrator capabilities allow you to access all switch functions.

Note

For more information on switch security, refer to the *AT-9108, AT-8518, AT-8525, and AT-8550 User's Guide*. See "Related Publications" on page vi.

4. At the password prompt, press [Return].

   The default name, *admin*, has no password assigned. When you have successfully logged on to the switch, the command-line prompt displays the name of the switch in its prompt.

5. Assign an IP address and subnetwork mask for VLAN *default* by typing

   ```
   config vlan default ipaddress <switch's IP address>
   <subnet mask>
   ```

   Your changes take effect immediately.

6. Save your configuration changes so that they will be in effect after the next switch reboot, by typing

   `save`

Note

For more information on saving configuration changes, refer to the *AT-9108, AT-8518, AT-8525, and AT-8550 User's Guide*.

7. When you are finished using the facility, logout of the switch by typing

   `logout`

Note

After two incorrect login attempts, the switch locks you out of the login facility. You must wait a few minutes before attempting to log in again.

Where to Go Next

You are now ready to manage your switch. Go to Allied Telesyn's website at **www.alliedtelesyn.com/techhome.htm** and download the following manuals for information on how to configure and manage your switch:

- *AT-9108, AT-8518, AT-8525, and AT-8550 User's Guide*
- *AT-9108, AT-8518, AT-8525, and AT-8550 Command Reference*

Chapter 3
Troubleshooting

If you encounter problems when using the switch, this chapter may be helpful. If you have a problem not listed here or in the *AT-9108, AT-8518, AT-8525, and AT-8550 User's Guide*, contact your local technical support representative.

LEDs

Power LED does not light:

Check that the power cable is firmly connected to the device and to the supply outlet.

Check the unit fuse. For information on changing the fuse, see Appendix A.

On powering-up, the DIAG LED (AT-9108, AT-8218) or MGMT LED (AT-8525, AT-8550) lights yellow:

The device has failed its Power On Self Test (POST) and you should contact your supplier for advice.

A link is connected, but the Status LED does not light:

Check that:

- All connections are secure.
- Cables are free from damage.
- The devices at both ends of the link are powered-up.
- Both ends of the gigabit link are set to the same auto-negotiation state.

Both sides if the gigabit link must be enabled or disabled. If the two are differently enabled, typically the side with auto-negotiation disabled will have the LINK LED on, and the LINK LED on the side with auto-negotiation enabled will not light. The default configuration for a gigabit port is auto-negotiation enabled. This can be verified by entering the following command:

```
show port config
```

Appendix A
Safety Information

Important Safety Information

Note

Please read the following safety information thoroughly before installing the switches.

- ❑ Installation and removal of the unit must be carried out by qualified personnel only.
- ❑ To reduce the risk of fire or electrical shock, install the unit in a temperature- and humidity-controlled indoor area free of conductive contaminants.

Power

- ❑ To ensure compliance with international safety standards, only use the power adapter that is supplied with the unit.
- ❑ The unit must be connected to a grounded outlet to comply with European safety standards.
- ❑ Do not connect the unit to an AC outlet (power supply) without a ground connection.
- ❑ The socket outlet must be near to the unit and easily accessible. You can only remove power from the unit by disconnecting the power cord from the outlet.
- ❑ The appliance coupler (the connector to the unit and not the wall plug) must have a configuration for mating with an EN60320/IEC320 appliance inlet.
- ❑ France and Peru only

  This unit cannot be powered from IT supplies. If your supplies are of IT type, this unit must be powered by 230V (2P+T) via an isolation transformer ratio 1:1, with the secondary connection point labeled Neutral, connected directly to ground.

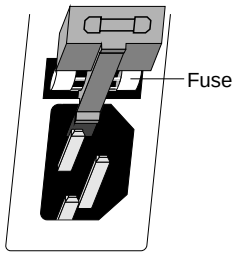
Power Cord

- ❑ This must be approved for the country where it is used:

USA and Canada	❑ The cord set must be UL-approved and CSA-certified. ❑ The minimum specification for the flexible cord is No. 18 AWG, Type SV or SJ, 3-conductor. ❑ The cord set must have a rated current capacity of at least 10A. ❑ The attachment plug must be an earth-grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration.
Denmark	❑ The supply plug must comply with section 107-2-D1, standard DK2-1a or DK2-5a.
Switzerland	❑ The supply plug must comply with SEV/ASE 1011.

Fuse

- ❑ Disconnect power from the unit before opening the fuse holder cover. The unit automatically adjusts to the supply voltage. The fuse is suitable for both 110V A.C. and 220-240V A.C. operation. To change the fuse, release the fuse holder by gently levering a small screwdriver under the fuse holder catch. Only fuses of the same manufacturer, rating, and type as the original must be used with the unit. Insert the new fuse. Close the fuse holder.



- ❑ To comply with European safety standards, a spare fuse must not be fitted to the appliance inlet. Only fuses of the same manufacturer, make, and type must be used with the unit.

Connections

Warning

Fiber Optic ports - Optical Safety: Never look at the transmit LED/laser through a magnifying device while it is powered on. Never look directly at the fiber TX port and fiber cable ends when they are powered on.

- ❑ Class 1 Laser Device

Lithium Battery

- The battery in the bq4830 device is encapsulated and not user-replaceable.

Warning

There is a danger of explosion if the battery is incorrectly replaced.

- Dispose of used batteries according to the manufacturer's instructions.
  - — Do not dispose of the batteries in water, or by fire.
  - — Disposal requirements vary by country and by state.
  - — Lithium batteries are not listed by the Environmental Protection Agency (EPA) as a hazardous waste. Therefore, they can typically be disposed of as normal waste.
  - — If you are disposing of large quantities, contact a local waste-management service.
- No hazardous compounds are used within the battery module.
- The weight of the lithium contained in each coin cell is approximately 0.035 grams.
- Two types of batteries are used interchangeably:
  - — CR chemistry uses manganese dioxide as the cathode material.
  - — BR chemistry uses poly-carbonmonofluoride as the cathode material.

Appendix B

AT-9108, AT-8518, AT-8525 and AT-8550 Technical Specifications

Physical Dimensions	Height: 3.5 inches x Width: 17.32 inches x Depth: 17.32 inches Weight: 10 kg
Environmental Requirements	
Operating Temperature	0 to 40° C
Storage Temperature	-10 to 70° C
Operating Humidity	10% to 95% relative humidity, noncondensing
Standards	EN60068 (IEC68)
Safety	
Agency Certifications	UL 1950 3rd Edition, listed cUL listed to CSA 22.2#950 TUV GS mark & GOST safety approval to the following EN standards: EN60960:1992/A3:1995 plus ZB/ZC Deviations EN60825-1
Electromagnetic Compatibility	FCC part 15 Class A CSA C108.8-M11983 (A) VCCI Class 2 EN55022 Class B EN50082 -1 (1997) C-Tick mark to AS/NZS 3548:1995

Note: The products that have the RJ45 ports comply with EN55022 Class B when used with shielded UTP cable.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note: Modifications or changes not expressly approved by the manufacturer or the FCC, can void your right to operate this equipment.

Canadian Department of Communications.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Heat Dissipation	118W maximum (341.2 BTU/hr maximum)
Power Supply	
AC Line Frequency	47Hz to 63Hz
Input Voltage Options	90VAC to 264VAC, auto-ranging
Current Rating	100-120/200-240 VAC 3.0/1.5 A

Standards Supported Refer to the *AT-9108, AT-8518, AT-8525, and AT-8550 User's Guide*, Appendix A, for a list of supported standards.

Appendix C

Technical Support Fax Order

Name _____

Company _____

Address _____

City _____ **State/Province** _____

Zip/Postal Code _____ **Country**_____

Phone _____ **Fax**_____

Incident Summary

Model number of Allied Telesyn product I am using_____

Network software products I am using_____

_____

Brief summary of problem_____

_____

Conditions (list the steps that led up to the problem)_____

_____

_____

Detailed description (use separate sheet, if necessary)

_____

_____

When completed, fax this sheet to the appropriate Allied Telesyn office. Fax numbers can be found on page E-1.

Appendix D

AT-9108, AT-8518, AT-8525 and AT-8550 Installation Guide Feedback

Please tell us what additional information you would like to see discussed in the guide. If there are topics you would like information on that were not covered in the guide, please photocopy this page, answer the questions and fax or mail this form back to Allied Telesyn. The mailing address and fax number are at the bottom of the page. Your comments are valuable when we plan future revisions of the guide.

I found the following the most valuable _____

_____

_____

_____

_____

I would like the following more developed _____

_____

_____

_____

I would find the guide more useful if _____

_____

_____

_____

Please fax or mail your feedback. Fax to 1-408-736-0100. Or mail to:
Allied Telesyn International, Corp.
c/o Technical Communications
960 Stewart Drive, Suite B
Sunnyvale, CA 94086 USA

PN 613-10841-00 Rev A

Appendix E
Where to Find Us

For Technical Support or Service		
Location	**Phone**	**Fax**
Americas United States, Canada, Mexico, Central America, South America	1 (800) 428-4835	1 (503) 639-3946
Asia Singapore, Taiwan, Thailand, Malaysia, Indonesia, Korea, Philippines, China, India, Hong Kong	(+65) 3815-612	(+65) 3833-830
Australia Australia, New Zealand	1 (800) 000-880	(+61) 2-9438-4966
France France, Belgium, Luxembourg, The Netherlands, Middle East, Africa	(+33) 1-60-92-15-32	(+33) 1-69-28-37-49
Germany Germany, Switzerland, Austria, Eastern Europe	(+49) 30-435-900-126	(+49) 30-435-70-650
Italy Italy, Spain, Portugal, Greece, Turkey, Israel	(+39) 02-416047	(+39) 02-419282
Japan	(+81) 3-3443-5640	(+81) 3-3443-2443
United Kingdom United Kingdom, Denmark, Norway, Sweden, Finland, Iceland	(+44) 1-235-442560	(+44) 1-235-442680
Technical Support E-mail Address	TS1@alliedtelesyn.com	
World Wide Web	http://www.alliedtelesyn.com	
FTP Server	Address: ftp.alliedtelesyn.com [lowercase letters] Login: anonymous [lowercase letters] Password: your e-mail address [requested by the server at login]	

For Sale and Corporate Information	
Allied Telesyn International, Corp. 19800 North Creek Parkway, Suite 200 Bothell, WA 98011 Tel: 1 (425) 487-8880 Fax: 1 (425) 489-9191	**Allied Telesyn International, Corp.** 960 Stewart Drive, Suite B Sunnyvale, CA 94086 Tel: 1 (800) 424-4284 (USA and Canada) Fax: 1 (408) 736-0100

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