



**8 ports 10/100/1000Mbps**

**Gigabit Ethernet Desktop Switch Layer 2**

**USER'S GUIDE**

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# *ABOUT THIS GUIDE*

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This user's guide tells you how to install your 8-port 10/100/1000Mbps Gigabit Ethernet Switch, how to connect it to your Gigabit Ethernet network.

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## Terms

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For simplicity, this documentation uses the terms "Switch" (first letter upper case) to refer to the 8-port 10/100/1000Mbps Gigabit Ethernet Switch, and "switch" (first letter lower case) to refer to all Ethernet switches, including the 8-port 10/100/1000Mbps Gigabit Ethernet Switch.

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## Overview of this User's Guide

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- ◆ *Introduction.* Describes the Switch and its features.
  - ◆ *Unpacking and Setup.* Helps you get started with the basic installation of the Switch.
  - ◆ *Identifying External Components.* Describes the front panel, rear panel, and LED indicators of the Switch.
  - ◆ *Connecting the Switch.* Tells how you can connect the Switch to your Ethernet network.
  - ◆ *Technical Specifications.* Lists the technical specifications of the 8-port 10/100/1000Mbps Gigabit Ethernet Switch.
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## *INTRODUCTION*

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This section describes the features of the 8-port 10/100/1000Mbps Gigabit Ethernet Switch, as well as giving some background information about Gigabit Ethernet, Fast Ethernet and Switching technology.

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### **Gigabit Ethernet Technology**

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Gigabit Ethernet is an extension of IEEE 802.3 Ethernet utilizing the same packet structure, format, and support for CSMA/CD protocol, full duplex, flow control, and management objects, but with a tenfold increase in theoretical throughput over 100-Mbps Fast Ethernet and a hundredfold increase over 10-Mbps Ethernet. Since it is compatible with all 10-Mbps and 100-Mbps Ethernet environments, Gigabit Ethernet provides a straightforward upgrade without wasting a company's existing investment in hardware, software, and trained personnel.

The increased speed and extra bandwidth offered by Gigabit Ethernet is essential to coping with the network bottlenecks that frequently develop as computers and their busses get faster and more users use applications that generate more traffic. Upgrading key components, such as your backbone and servers to Gigabit Ethernet can greatly improve network response times as well as significantly speed up the traffic between your subnets.

Gigabit Ethernet enables fast optical fiber connections to support video conferencing, complex imaging, and similar data-intensive applications. Likewise, since data transfers occur 10 times faster than Fast Ethernet, servers outfitted with Gigabit Ethernet NIC's are able to perform 10 times the number of operations in the same amount of time.

In addition, the phenomenal bandwidth delivered by Gigabit Ethernet is the most cost-effective method to take advantage of today and tomorrow's rapidly improving switching and routing internetworking technologies. And with expected advances in the coming years in silicon technology and digital signal processing that will enable Gigabit Ethernet to eventually operate over unshielded twisted-pair (UTP) cabling, outfitting your network with a powerful 1000-Mbps-capable backbone/server connection creates a flexible foundation for the next generation of network technology products.

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## Fast Ethernet Technology

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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, 100BASE-T (Fast Ethernet) 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 existing investment in hardware, software, and personnel training.

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## Switching Technology

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Another key development pushing the limits of Ethernet technology is in the field 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. Traffic that needs to go from one segment to another is automatically forwarded by the switch, without interfering with any other segments. This allows the total network capacity to be multiplied, while still maintaining the same network cabling and adapter cards.

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's switches are an ideal solution to most kinds of local area network congestion problems.

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## Features

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The 8-port 10/100/1000Mbps Gigabit Ethernet Switch was designed for easy installation and high performance in an environment where traffic on the network and the number of users increase continuously.

Switch features include:

### *Ports*

- ◆ 8 x 10/100/1000Mbps Gigabit Ethernet port

## *Performance features*

- ◆ Auto MDI/MDI-X for each port
- ◆ Support Full/Half duplex transfer mode for 10 and 100Mbps
- ◆ Support Full duplex transfer mode for 1000Mbps
- ◆ Wire speed reception and transmission
- ◆ Store-and-Forward switching method
- ◆ Supports 4K absolute MAC addresses
- ◆ Supports 3.5MBit RAM for data buffering
- ◆ Extensive front-panel diagnostic LEDs
- ◆ IEEE 802.3x flow control for full-duplex
- ◆ Back pressure flow control for half-duplex

## *UNPACKING AND SETUP*

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This chapter provides unpacking and setup information for the Switch.

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### **Unpacking**

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

- ◆ One 8-port 10/100/1000Mbps Gigabit Ethernet Switch
- ◆ Four rubber feet with adhesive backing
- ◆ One external power adapter
- ◆ This User's Guide (CD-Rom)

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

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## Setup

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The setup of the Switch can be performed using the following steps:

- ◆ The surface must support at least 5 kg.
- ◆ Install the Switch in a fairly cool and dry place. See Technical Specification for the acceptable operation temperature and humidity ranges.
- ◆ Install the Switch in a site free from strong electromagnetic source, vibration, dust, and direct sunlight.
- ◆ Leave at least 10 cm of space at the left and right hand side of the Switch for ventilation.

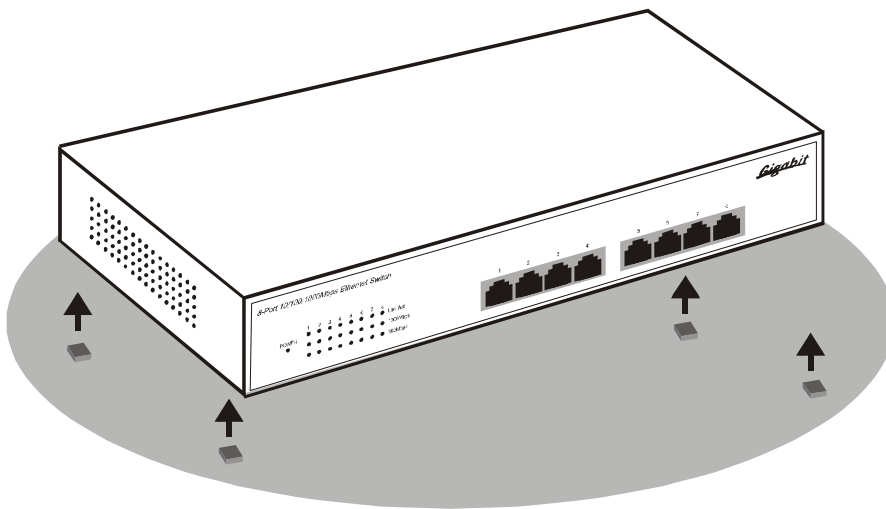
- ◆ Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.

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## Desktop or Shelf Installation

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When installing the Switch on a desktop or shelf, the rubber feet included with the device must be first attached. Attach these cushioning feet on the bottom at each corner of the device. Allow enough ventilation space between the device and the objects around it.



**Gigabit Ethernet Switch installed on a Desktop or Shelf**

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## Connecting Network Cable

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The 8-Port 10/100/1000Mbps Gigabit Ethernet Switch supports four or eight 10/100/1000Mbps Gigabit Ethernet ports. These

ports runs both half duplex and full duplex while they're running in 10Mbps or 100Mbps and runs full duplex while they're running in 1000Mbps.

These ports are Auto-MDI type port, these ports can auto transform to MDI-II or MDI-X type, so you can just make an easy connection that without worrying if you are using a standard or crossover cable.

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## Power on

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The 8-port Gigabit Ethernet Switch can be used with DC power adapter [200~240V AC, 50~60 Hz].

# *IDENTIFYING EXTERNAL COMPONENTS*

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

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## Front Panel

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The front panel of the Switch consists of 8 Gigabit Ethernet port, and LED indicators.



### Front panel view of the 8-port 10/100/1000Mbps Gigabit Ethernet Switch

- ◆ Eight 10/100/1000Mbps Gigabit Ethernet ports
- ◆ Comprehensive LED indicators that display the conditions of the Switch and status of the network. A description of these LED indicators follows (see *LED Indicators*).

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## Rear Panel

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The rear panel of the Switch consists of an DC power connector. The following figure shows the rear panel of the Switch.



Rear panel view of the 8-port 10/100/1000Mbps Gigabit Ethernet Switch

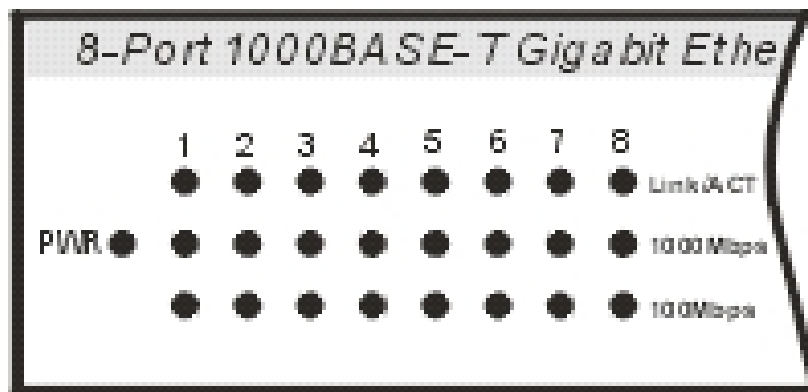
- ◆ **DC Power Jack:** Power is supplied through an external AC power adapter. Check the technical specification section for information about the AC power input voltage.

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## LED Indicators

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The LED indicators of the Switch include Power, Link/Act, 1000Mbps and 100Mbps. The following shows the LED indicators for the Switch along with an explanation of each indicator.



### The 8-port 10/100/1000Mbps Gigabit Ethernet Switch LED indicators

- ◆ **POWER:** This indicator lights green when the Switch is receiving power, otherwise, it is off.
- ◆ **LINK/ACT:** These LED indicators are lighted up when there is a secure connection (or link) to the desired port. The LED indicators blinking whenever there is reception or transmission (i.e. Activity—Act) of data occurring at a port.
- ◆ **1000Mbps :** These LED indicators are lighted up when there is a secure connection (or link) to 1000Mbps Gigabit Ethernet device at the desired port.
- ◆ **100Mbps:** These LED indicators are lighted up when there is a secure connection (or link) to 100Mbps Fast Ethernet device at the desired port.

When the connection (or link) is 10Mbps, both 1000Mbps and 100Mbps LED indicators are off.



## ***PRODUCT SUPPORT***

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If you continue to have problems you should contact the dealer where you bought this product. If you have any other questions you can contact the Atlantis Land company directly at the following address:

**Atlantis Land SpA**

**Via De Gasperi 122**

**20017 Mazzo di Rho(MI)**

**Tel: 02/93906085, 02/93907634(help desk)**

**Fax: 02/93906161**

**Email: [info@atlantis-land.com](mailto:info@atlantis-land.com) or [tecnici@atlantis-land.com](mailto:tecnici@atlantis-land.com)**

**WWW: <http://www.atlantiland.it> or [www.atlantis-land.com](http://www.atlantis-land.com)**

# *TECHNICAL SPECIFICATIONS*

## General

Standards:	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet ANSI/IEEE 802.3 Auto-negotiation IEEE 802.3x Full duplex Flow Control
Protocol:	CSMA/CD
Data Transfer Rate:	Ethernet: 10Mbps (half-duplex), 20Mbps (full-duplex) Fast Ethernet: 100Mbps (half-duplex), 200Mbps (full-duplex) Gigabit Ethernet: 2000 Mbps (full-duplex)
Topology	Star
Network Cables:	Ethernet: 2-pair UTP Cat. 3/4/5 Fast Ethernet: 2-pair UTP Cat.5 Gigabit Ethernet: 4-pair UTP Cat. 5
Number of Ports:	8 x 10/100/1000Mbps Gigabit Ethernet Auto-MDI port

## Physical and Environmental

DC inputs:	200 – 240 VAC, 50/60 Hz
Power Consumption:	11 watts max (8 ports)
Operating Temperature:	0 ~ 40 degrees Celsius
Storage Temperature:	-10 ~ 55 degree Celsius
Humidity:	5% ~ 95% RH, non-condensing
Dimensions:	190 mm x 120 mm x 38 mm
EMI:	FCC Class A, CE Mark Class A, VCCI-A
Safety:	UL (UL 1950), TUV/GS (EN60950)

## Performance

Transmission Method:	Store-and-forward
RAM Buffer:	3.5Mbit per device
Filtering Address Table:	4K MAC address per device
Packet Filtering / Forwarding Rate:	Full wire speed
MAC Address Learning:	Self-learning, Auto-aging

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