

# 8000S Series

## Fast Ethernet Managed Switches

### AT-8000S/16-xx

16-port standalone 10/100TX Layer 2 switch

### AT-8000S/24-xx

24-port stackable 10/100TX Layer 2 switch

### AT-8000S/24POE-xx

24-port stackable 10/100TX Power over Ethernet switch

### AT-8000S/48-xx

48-port stackable 10/100TX Layer 2 switch

### AT-8000S/48POE-xx

48-port stackable 10/100TX Power over Ethernet switch



### Overview

The Allied Telesis 8000S Series of Fast Ethernet switches provides exceptional performance and flexibility at an affordable price.

### Combined Ethernet and Power for Branch Office and Wiring Closet Connectivity

Powerful line-rate performance and stackability make this switch ideal for branch offices or the wiring closet of larger offices where power is needed for remote devices. The state-of-the-art Quality of Service (QoS) capability of this product ensures reliable delivery of advanced network services such as voice while effectively controlling the continually increasing traffic needs found in today's networks.

### Easy Access Networking

Featuring an industry-standard CLI and Allied Telesis' intuitive yet fully featured Web interface, the advanced features of the 8000S Series are accessible to a wide range of system administrators. The well known CLI and Web interfaces significantly reduce learning time and minimize the cost of deployment.

### Management

Only authorized administrators can access the management interface of the 8000S Series. Protocols such as SSL, SSH and SNMPv3 facilitate this protection of the network with local or remote connections.

### Securing the Network Edge

To ensure the protection of the data, it is important to control access to the network. Protocols such as IEEE 802.1x port-based authentication guarantee that only known users are connected to the network. Unknown users who physically connect can be isolated to a predetermined part of the network, offering guests such benefits as Internet access while ensuring the integrity of private network data.

### Gigabit and Fast Ethernet SFP Support

All switches in the 8000S family support both Gigabit and Fast Ethernet Small Form-factor Pluggables (SFPs). This makes the 8000S Series an ideal family for environments where Gigabit fiber switches will be phased-in over time. The 8000S family allows for connectivity to the legacy 100FX hardware until it is upgraded to Gigabit. Support for both speeds of SFPs allows organizations to stay within budget as they migrate to faster technologies.

## Key Features

### Easy, Well Known Management

- ▶ Industry-standard CLI
- ▶ Simple intuitive, fully featured Allied Telesis Web Interface
- ▶ Secure encrypted Web and CLI management with SSHv2 and SSL
- ▶ SNMP
- ▶ Two-level access privileges

### Affordable Truly Stackable 10/100 Switching Platform

- ▶ Single IP address stack management
- ▶ 4G resilient ring stacking architecture
- ▶ Across stack link aggregation
- ▶ Across stack VLAN configuration
- ▶ Across stack port mirroring
- ▶ Redundant standby stack master

### All the QoS Needed in the Wiring Closet for Today's Voice and Data Networking

- ▶ Eight priorities assigned to four queues
- ▶ IEEE 802.1p for Layer 2 QoS
- ▶ DSCP (DiffServ) for Layer 3 QoS
- ▶ IEEE 802.1p to DSCP remarking traffic ready for transport to the Layer 3 core of the network
- ▶ Layer 2 and Layer 3 ACL

## Key Features

### Securing the Network at its Most Vulnerable Point

- ▶ IEEE 802.1x and RADIUS network login: for advanced control of user authentication and accountability
- ▶ Guest VLAN: to ensure visitors or unauthorized users connect only to services defined by IT e.g. Internet
- ▶ TACACS+: for ease of management security administration
- ▶ Layer 2 and Layer 3 ACL
- ▶ Port MAC address security options

## Specifications

### Port speed

|                       |  |
|-----------------------|--|
| 10/100TX              | RJ-45  |
| 10/100/1000T          | RJ-45  |
| 100FX, 1000SX, 1000LX | SFP slot   |
| RS23                  | DB9 pin, male port   |
| Internal power supply | no fan (AT-8000S/16)<br>fan (AT-8000S/24)<br>fan (AT-8000S/48) |

### Power over Ethernet

#### AT-8000S/24PoE

|   |                              |
|---|------------------------------|
| Total power budget                                      | 225W                         |
| For switch  | 12W/ 45W                     |
| PoE budget  | 50W/ 185W                    |
| PoE max supported IEEE 802.3af class 3 devices (15.4W): | 12 ports                     |
| PoE max supported IEEE 802.3af class 2 devices (7.3W):  | 24 ports                     |
| IEEE 802.af   | Power over Ethernet (mode B) |

#### AT-8000S/48PoE

|   |                              |
|---|------------------------------|
| Total power budget                                      | 465W                         |
| For switch  | 12W/ 90W                     |
| PoE budget  | 50W/ 375W                    |
| PoE max supported IEEE 802.3af class 3 devices (15.4W): | 24 ports                     |
| PoE max supported IEEE 802.3af class 2 devices (7.3W):  | 48 ports                     |
| IEEE 802.af   | Power over Ethernet (mode B) |

### Interface standards

|                             |
|-----------------------------|
| IEEE 802.3 10T              |
| IEEE 802.3u 100TX and 100FX |
| IEEE 802.3z 1000SX          |
| IEEE 802.3ab1000T           |

### General standards

|  |
|--|
| IEEE 802.1D Bridging                   |
| IEEE 802.3x BackPressure/ flow control |

## Physical Specifications

| PRODUCT        | WIDTH            | DEPTH            | HEIGHT          | MOUNTING         | WEIGHT            |
|----------------|------------------|------------------|-----------------|------------------|-------------------|
| AT-8000S/16    | 330 mm (13 in)   | 230 mm (9.1 in)  | 43 mm (1.7 in)  | 19 in Rack-mount | 1.95 kg (4.29 lb) |
| AT-8000S/24    | 440 mm (17.3 in) | 257 mm (10.1 in) | 43 mm (1.70 in) | 19 in Rack-mount | 3.15 kg (6.94 lb) |
| AT-8000S/24POE | 440 mm (17.3 in) | 257 mm (10.1 in) | 43 mm (1.70 in) | 19 in Rack-mount | 3.7 kg (8.16 lb)  |
| AT-8000S/48    | 440 mm (17.3 in) | 257 mm (10.1 in) | 43 mm (1.70 in) | 19 in Rack-mount | 3.38 kg (7.45 lb) |
| AT-8000S/48POE | 440 mm (17.3 in) | 347 mm (13.7 in) | 43 mm (1.70 in) | 19 in Rack-mount | 5.6 kg (12.34 lb) |

## Performance

Wirespeed switching on all Ethernet ports for all packet sizes

| PRODUCT        | THROUGHPUT | SWITCHING CAPACITY | MTBF   |
|----------------|------------|--------------------|--|
| AT-8000S/16    | 3.87Mpps   | 5.2Gbps            | 447,901 hours  |
| AT-8000S/24    | 9.52Mpps   | 12.8Gbps           | 233,997 hours in standalone operation<br>221,210 hours in stacked operation (up to six) with no free space between switches* |
| AT-8000S/24POE | 9.52Mpps   | 12.8Gbps           | 194,113 hours  |
| AT-8000S/48    | 13.09Mpps  | 17.6Gbps           | 314,322 hours  |
| AT-8000S/48POE | 13.09Mpps  | 17.6Gbps           | 197,009 hours  |

Store and forward mode  
Non-blocking switch fabric  
Auto MDI/MDI-X

\* MTBF figures apply to fanless model (v2) introduced 2009

## Latency

| PRODUCT        | 10Mbit     | 100Mbit    | 1000Mbit  |
|----------------|------------|------------|-----------|
| AT-8000S/16    | 85.71 µsec | 17.30 µsec | -         |
| AT-8000S/24    | 85.39 µsec | 17.49 µsec | 2.72 µsec |
| AT-8000S/24POE | 85.39 µsec | 17.76 µsec | 2.72 µsec |
| AT-8000S/48    | 88.60 µsec | 18.06 µsec | 2.82 µsec |
| AT-8000S/48POE | 88.60 µsec | 18.06 µsec | 2.82 µsec |

## Status Indicators

64MB RAM  
16MB flash memory  
400Mhz CPU  
Up to 4,096 VLAN ID  
8,000 MAC address  
Packet buffer memory 1Mbit

## Redundancy Standards

IEEE 802.1D Spanning-Tree Protocol  
IEEE 802.1W Rapid Spanning-Tree  
IEEE 802.1s Multiple Spanning-Tree  
BPDU guard<sup>1</sup>  
IEEE 802.3adLACP link aggregation  
(with up to eight members per group and up to eight groups per device)  
Static port trunk

## Quality of Services (QoS)

QoS in Layer 2 (IEEE 802.1p compliant Class of Service)  
Traffic prioritization using IEEE 802.1p, ToS, DSCP fields  
Map IEEE 802.1p priorities to CoS queues to prioritize traffic at egress  
Strict Scheduling and Weighted Round Robin

## VLANs

IEEE 802.1Q VLAN tagging  
Up to 256 VLANs  
Port-based VLANs  
MAC-based VLANs  
Private VLANs  
GARP VLAN Registration Protocol (GVRP)

## Multicast Standards

RFC 1112 IGMP snooping (ver. 1)  
RFC 2236 IGMP snooping (ver. 2)  
RFC 3376 IGMP snooping (ver. 3)  
RFC 3376 IGMP querier  
Option to forward/filtering of unregistered MC frames<sup>1</sup>

## IPv6<sup>1</sup>

IPv6 QoS  
IPv6 ACL  
IPv6 Host  
RFC 2461 IPv6 neighbor discovery  
RFC 2463 ICMPv6: Internet Control Message Protocol version 6  
RFC 1981 Path MTU discovery Dual-stack IPv4/IPv6 protocol  
IPv6 Tunnelling over IPv4  
IPv6 Network management  
IPv6 Applications: WEB/SSL Telnet server/SSH, AAA/RADIUS, Management ACLs, SNMP, PING, TFTP/Copy, Syslog

## Management and Monitoring

WEB, CLI, Serial  
RFC 1157 SNMPv1/v2c  
RFC 2570 SNMPv3  
RFC 1213 MIB-II  
RFC 1573 Evolution of MIB-II  
RFC 1215 TRAP MIB  
RFC 1493 Bridge MIB  
RFC 2863 Interfaces group MIB  
RFC 1643 Ethernet like MIB

<sup>1</sup> New feature on AT-S94 version 3.0.0.32

<sup>2</sup> Worst case load condition for actual measured power on sample unit

## 8000S Series | Fast Ethernet Managed Switches

RFC 1757 RMON 4 groups:  
Stats, History, Alarms, Events

RFC 2819 RMON 4 groups

RFC 2674 IEEE 802.1Q MIB

RFC 1866 HTML

RFC 2068 HTTP

RFC 854 Telnet

RFC 783 TFTP

LLDP<sup>1</sup>

IEEE 802.1ab

LLDP-MED<sup>1</sup>

IP address allocation

RFC 951/ RFC 1542 BootP/ DHCP

DHCP snooping

Manual

RFC 2030 SNTP, Simple Network Time Protocol

Syslog event

Dual software images

Stacking

Up to six units

Single system appearance

Single IP management

Backup master

Full-duplex link with 2Gbps performance

Link aggregation/trunking across stack

Port mirroring across stack

VLAN across stack

### Security

Management security: username and password protection

SSHv2 for Telnet management SSLv3 for Web management

RFC 1492 TACACS+

RFC 2138 RADIUS authentication

IEEE 802.1x Port-based network access control

IEEE 802.1x Dynamic VLAN<sup>1</sup>

IEEE 802.1x RADIUS accounting<sup>1</sup>

IEEE 802.1x Multi-session mode<sup>1</sup>

IEEE 802.1x Action on violation<sup>1</sup>

IEEE 802.1x Single-host violation<sup>1</sup>

IEEE 802.1x Guest VLAN timeout<sup>1</sup>

IEEE 802.1x Authentication not-required<sup>1</sup>

Security login banner<sup>1</sup>

Guest VLANs

RFC 2865 IEEE 802.1x port-based network access control

MAC-based network access control

ACL - Access Control Lists

### Fault Protection

Broadcast storm control

### Power Characteristics

Voltage input 100-240V AC

Voltage output 12vDC

Current 1.5A

Power consumption 26.5W<sup>2</sup>

Power supply efficiency 78.46%

Heat dissipation 184.41 BTU/hour

Clock frequency 166MHz

Acoustic noise 14.9dB

### Environmental Specifications

Operating temp 0°C to 40°C (32°F to 104°F)

Storage temp -25°C to 70°C (-13°F to 158°F)

Relative humidity 10% to 90% non-condensing

Storage humidity 5% to 95% non-condensing

Operating altitude Max 3,000m (9,843ft)

### Electrical/ Mechanical Approvals

Safety UL 1950 (UL/cUL), EN60950 (TUV)

EMI FCC Class A, EN55022 Class A, VCCI Class A, C-Tick, EN61000-3-2, EN61000-3-3

Immunity EN55024

RoHS compliant

### Country of Origin

China

## Ordering Information

### AT-8000S/16-xx

16-port standalone 10/100TX Layer 2 switch with 1 active SFP bay (unpopulated) and 1 standby 10/100/1000T port (RJ-45)

### AT-8000S/24-xx

24-port stackable 10/100TX Layer 2 switch with 2 active SFP bays (unpopulated) and 2 standby 10/100/1000T ports (RJ-45)

### AT-8000S/24POE-xx

24-port stackable 10/100TX PoE Layer 2 switch with 2 active SFP bays (unpopulated) and 2 standby 10/100/1000T ports (RJ-45)

### AT-8000S/48-xx

48-port stackable 10/100TX Layer 2 switch with 2 active SFP bays (unpopulated) and 2 standby 10/100/1000T ports (RJ-45)

### AT-8000S/48POE-xx

48-port stackable 10/100TX PoE Layer 2 switch with 2 active SFP bays (unpopulated) and 2 standby 10/100/1000T ports (RJ-45)

Where xx = 10 for US power cord  
20 for no power cord  
30 for UK power cord  
40 for Australian power cord  
50 for European power cord

### Associated Products

Small Form Pluggables (SFPs)

### AT-SPFX/2

Multi-mode fiber, 2km, 100FX, SFP, 1310nm

### AT-SPFX/15

Single-mode fiber, 15km, 100FX, SFP, 1310nm

### AT-SPFX/40

Single-mode fiber, 40km, 100FX, SFP, 1310nm

### AT-SPTX

Copper, GbE Small Form-factor Pluggable (SFP)

### AT-SPSX

Multi-mode fiber, GbE Small Form-factor Pluggable (SFP) 850nm

### AT-SPLX10

Single-mode fiber, 10km, GbE SFP, 1310nm

### AT-SPLX40

Single-mode fiber, 40km, GbE SFP, 1310nm

### AT-SPLX40/1550

Single-mode fiber, 40km, GbE SFP, 1550nm

### AT-SPZX80

Single-mode fiber, 80km, GbE SFP, 1550nm

### AT-SPBD10-13

Single-mode fiber, 10km, GbE SFP, 1310/1490nm, LC-BiDi

### AT-SPBD10-14

Single-mode fiber, 10km, GbE SFP, 1490/1310nm, LC-BiDi