

## AT-9424T/POE

### 24 Port 10/100/1000T Standalone Power over Ethernet Managed Layer 3 Switch

#### AT-9424T/POE-xx

Layer 3 Power over Ethernet managed switch with 20 ports 10/100/1000T, 4 x 10/100/1000T / SFP combo ports

#### Product Overview

The AT-9424T/POE is an ideal Gigabit-to-the-desk Layer 3 Gigabit switch. Power over Ethernet for the SMB and the enterprise edge markets. It comes in a 1RU form factor and provides rich QoS and IGMP capabilities for voice and video enabled networks.

The relative affordability of the AT-9424T/POE makes high performance Gigabit switching a reality for small to medium enterprises. It offers an extensive set of standards-based features to ensure ease of management and integration into existing networks.

#### Network QoS and IGMP for Video and Voice-over-IP

A rich offering of voice and video networking features is incorporated to ensure support for demanding multimedia networking applications in the enterprise. Converged networking is enhanced with QoS/CoS including eight priority queues for IEEE 802.1p/ToS/DiffServ traffic.

The high performance hardware platform makes latency a non-issue. The IGMP implementation on the AT-9424T/POE is capable of transmitting broadcast quality video throughout the enterprise network.

#### Network Security

To address the concern of network attacks in the form of *Denial of Service* (DoS), the AT-9424T/POE, using Layer 2-4 intelligence, can be deployed to complement WAN firewalls and PC anti-virus protections to further fortify the network against malicious attacks. The AT-9424T/POE comes pre-programmed to detect six well-known DoS attacks and supports security features such as IEEE 802.1x (port-based Network Access Control) and Radius/TACACS+.

#### Long-term Relevance

The AT-9424T/POE is the ideal choice for organizations seeking a long-term switching solution. In addition to the extensive Layer 2 feature set this switch features Layer 3 switching for the future flexibility to meet emerging needs.

#### Management Stacking

Stacking provides CLI-based management of up to 24 switches with the same effort as for one switch. The Allied Telesis solution uses open standards interfaces as stacking links so that many switches can be stacked across different sites.

#### Key Features

##### Layer 3 Support

- RIPv2
- Static routing
- ECMP

##### Performance

- Throughput 71.424Mpps
- Switch fabric 96Gbps
- 4K VLANs (static and dynamic)
- 256 static Layer 2 multicast groups
- 255 dynamic Layer 2 multicast groups
- 9K jumbo frame support

##### Layer 2-4 Intelligence

- Packet inspection and classification at MAC, IP, TCP/UDP layers
- Set QoS, ACL, mirroring, and rate-limiting using traffic classes

##### Security

- DoS attack protection
- Radius/TACACS+
- Port security
- SSH
- SSL
- IEEE 802.1x port-based network access control
- Access Control Lists

##### Advanced Services

- Rate limiting (ingress and egress)
- Eight QoS service levels
- IEEE 802.1p for MAC-based QoS
- DSCP for IP-based QoS

##### Resiliency

- IEEE 802.1s Multiple STP
- IEEE 802.3ad link aggregation
- IEEE 802.1D Spanning-Tree
- IEEE 802.1w Rapid STP
- Temperature threshold alert

##### Management

- Telnet
- Web GUI
- CLI
- Dedicated management port
- Management stacking of up to 24 switches with Enhanced Stacking™

##### Power over Ethernet

- Provides standards-based IEEE 802.3af
- Power over Ethernet for all 24 ports
- Support for 24 class 2 powered devices @ 7.3Watts
- Support for 24 class 3 powered devices @ 15.4Watts

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## Hardware Specifications

### Physical Characteristics

Dimensions (H x W x D)	4.4cm x 44cm x 40.8cm (1.75in x 17.2in x 16.1in)
Weight	6.17kg (13.60lbs.)

### System Capacity

200MHz PowerPC CPU
4096 VLANs
16000 MAC addresses
8 Megabytes file system

128MB SDRAM
16MB flash memory

### Performance

Wirespeed switching on all Ethernet ports
14,880pps for 10Mbps Ethernet
148,800pps for 100Mbps Ethernet
1,488,000pps for 1000Mbps Ethernet

Ethernet throughput	71.424Mpps
Switch fabric	96Gbps

### Power Characteristics

Voltage:	100-240V AC
Current:	4.0/2.0A
Frequency:	50-60Hz
Max power consumption:	54 Watts
PoE output power:	
Available PoE power:	370W @ 48vDC
IEEE 802.3af class 3 (15.4W):	Max 24 ports
IEEE 802.3af class 2 (7.3W):	Max 24 ports

### Environmental Specifications

Operating temperature:	0°C to 40°C (32°F to 104°F)
Storage temperature:	-25°C to 70°C (-13°F to 158°F)
Operating humidity:	5% to 90% non-condensing
Storage humidity:	5% to 90% non-condensing
Max operating altitude:	3,048m (10,000 ft)

Recommended ventilation on all sides: 10cm (4.0 in.)

MTBF	250,000 hrs.
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### Electrical/Mechanical Approvals

Safety UL 60950-1, CSA C22.2 No. 60950-1-03,  
EN60950-1, EN60825-2 (TUV)  
EMI FCC Part 15 Class A, EN55022 Class A, EN55024  
Immunity, VCCI Class A, C-TICK, EN61000-3-2,  
EN61000-3-3, AS/NZS 3548 (Australia/New Zealand)  
Immunity EN55024

### Country of Origin

Singapore / China

## Software Specifications

### Layer 3 Support

RIPv1
RIPv2
ECMP
Static IPv4 Routing (128 routes)

### Interface Standards

IEEE 802.3	10T
IEEE 802.3u	100TX and 100FX
IEEE 802.3z	1000SX
IEEE 802.3ab	1000T

### General Standards

IEEE 802.1d	Bridging
IEEE 802.3ac	VLAN tag frame extension
IEEE 802.3x	BackPressure/ flow control

### Redundancy

Static and dynamic port trunking (with six trunk groups and up to 8 ports per trunk)	
IEEE 802.3ad	32 LACP link aggregation <sup>1</sup>
IEEE 802.1D	Spanning-Tree Protocol
IEEE 802.1w	Rapid Spanning-Tree
IEEE 802.1s	Multiple Spanning-Tree
BPDU guard <sup>1</sup>	
Loop guard <sup>1</sup>	
Router Redundancy Protocol (RRP) snooping	
Dual software images, dual configuration files	

### Traffic Management Quality of Services (QoS)

Layer 2, 3 and 4 criteria
Flow groups, traffic classes and policies
DSCP replacement
IEEE 802.1Q priority replacement
Type of Service replacement
Type of Service to IEEE 802.1Q priority replacement
IEEE 802.1q Priority to Type of Service replacement
Maximum bandwidth control
Burst size control
Ingress rate limiting
Head of line blocking prevention
Support for ingress and egress ports
Eight egress queues per port
IEEE 802.1p Class of Service with Strict and Weighted Round Robin Scheduling

## Multicast

RFC 1112	IGMP snooping (v1)
RFC 2236	IGMP snooping (v2)
RFC 2710	Multicast Listener Discovery (MLD) snooping (v1)
RFC 3810	Multicast Listener Discovery (MLD) snooping (v2)
	IGMP snooping querier <sup>1</sup>

## Management and Monitoring

RFC 1157	SNMPv1
RFC 1901	SNMPv2
RFC 3411	SNMPv3
RFC 1213	MIB-II
RFC 1215	TRAP MIB
RFC 1493	Bridge MIB
RFC 2863	Interfaces group MIB
RFC 1643	Ethernet-like MIB
RFC 1757	RMON 4 groups: Stats, History, Alarms and Events
RFC 2674	IEEE 802.1Q MIB
RFC 1866	HTML
RFC 2068	HTTP
RFC 2616	HTTPS
RFC 854	Telnet server
RFC 1350	TFTP client
Allied Telesis Private MIB	

IP address allocation:	
RFC 951 / RFC1542	BOOTP client
RFC 2131	DHCP client manual
RFC 2030	SNTP, Simple Network Time Protocol

BootP/DHCP relay
Group link control <sup>1</sup>
Link flap protection <sup>1</sup>

Syslog client
Two event logs:
4,000 event capacity in temporary memory
2,000 event capacity in permanent memory

## Management Access Methods

Single IP address for management
Out of Band management (serial port)
In-band management (over the network) using Telnet, Web browser or SNMP
Enhanced Stacking

## Management Interfaces

Menus
AlliedWare Plus™ CLI
Multiple management sessions (up to three administrators)
Command line
Web browser
SNMP v1/ v2/ v3

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## Security

RFC 1492	TACACS+
RFC 2865	RADIUS client
RFC 2866	RADIUS accounting
IEEE 802.1x	Port-based network access control with multiple supplicants per port ingress and egress control of broadcast, multicast and unknown unicast traffic

MAC address security/lockdown  
Layer 2/3/4/ Access Control Lists (ACLs)  
64 ACL profiles  
256 rules per ACL profile  
ACLs based on:

- Ethernet frame type
- MAC address/VLAN ID/IEEE 802.1p
- Layer 2/3 protocol
- IP subnet/address/TOS/DSCP
- UDP/TCP port/flag

SSHv2 for Telnet mgmt  
SSLv3 for Web mgmt  
DoS attack protection  
Smurf  
SYN flood  
Teardrop  
Land  
IP option  
Ping of Death  
SNMP attack  
Microsoft NAP compliant  
Symantec NAC support

## Fault Protection

Bad cable detection  
Broadcast storm control

<sup>1</sup> New features supported in AT-S63 v4.1.0.

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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

## Accessories

### Small Form Pluggables (SFPs)

#### AT-SPSX

Multi-mode fiber, GbE 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

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