AT-9448T/SP

48 Port 10/100/1000T Managed Layer 3 Switch with 4 Combo SFP Bays

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Layer 3 switch with 48 ports 10/100/1000T plus 4 combo SFP bays

Product Overview

As a member of the 9400 series the AT-9448T/SP is a managed Gigabit Ethernet switch with a 1RU form factor and rich QoS functionality. It is rack-mountable and supports DoS attack protection.

The AT-9448T/SP is an ideal choice for small to medium enterprises that need rich QoS functionality and Gigabit connectivity. It offers an extensive set of management features and advanced QoS functionality delivers Layer 2/4 ready traffic management for VoIP networks. A managed Gigabit Ethernet switch the AT-9448T/SP is ready to meet the Gigabit networking needs at the access tier of any organization. Implemented protocols and features are standards-based to ensure ease of management and integration into existing networks.

Smarter, More Secure and More Cost-Effective

The AT-9448T/SP is a Layer 3 managed Gigabit switch for the access edge that brings enhanced security and intelligence to Gigabit networks. The cost-effective AT-9448T/SP offers advanced attack detection and suppression capabilities for increased security and advanced QoS to support converged applications.

The 9400 series provides the perfect solution for:

- Traditional Enterprise LAN (wiring closet)
- Service-provisioned Leased Offices or MTUs
- Security-conscious Government Institutions
- Security-conscious Financial Institutions
- Cost/security-conscious Educational Institutions

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 platforms high performance hardware makes latency a non-issue and IGMP implementation on the AT-9448T/SP 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-9448T/SP, 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-9448T/SP 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+.

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 71.242Mpps
- Switch fabric 96Gbps
- 4096 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 (ACLs)

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™
- Compact flash slot

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Hardware Specifications

Physical Characteristics

Dimensions (H x W x D)	4.4cm x 43.8cm x 30.4cm (1.75" x 17.3" x 12")
Weight	4.61kg (10.15lbs.)

System Capacity

64MB RAM
16MB flash memory
200MHz PowerPC CPU
4096 VLANs
16000 MAC addresses

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	71.242Mpps
Switch fabric	96Gbps

Power Characteristics

Voltage:	100-240V AC
Current:	4.0/2.0A
Frequency:	50-60Hz
Max power consumption:	120 Watts

Environmental Specifications

Operating temperature:	0°C to 40°C (32°F to 104°F)
Storage temperature:	-20°C to 70°C (-13°F to 158°F)
Operating humidity:	5% to 90% non-condensing
Storage humidity:	5% to 95% non-condensing
Max operating altitude:	3,048m (10,000 ft)

Recommended ventilation on all sides:	10cm (4")
MTBF	250,000 hrs.

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

Software Specifications

Layer 3 Support

RIPv1
RIPv2
ECMP
Static IPv4 routing (1024 routes)

Interface Standards

IEEE 802.3	10T and 10FL
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 eight ports per trunk)

IEEE 802.3ad	32 LACP link aggregation[1]
IEEE 802.1D	Spanning-Tree Protocol
IEEE 802.1w	Rapid Spanning-Tree
IEEE 802.1s	Multiple Spanning-Tree

BPDU guard[1]
Loop guard[1]
Router Redundancy Protocol (RRP) snooping
Dual software images, dual configuration files

Traffic Management and 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[1]

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

AlliedTelesis Private MIB

IP address allocation:

RFC 951 / RFC 1542	BOOTP client
RFC 2131	DHCP client manual
RFC 2030	SNTP, Simple Network Time Protocol

BootP/DHCP relay
Group link control[1]
Link flap protection[1]

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

Management Access Methods

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

[1] New features supported in AT-S63 v4.1.0.

AT-9448T/SP-xx
Layer 3 switch with 48 ports 10/100/1000T plus 4 combo SFP bays

Where xx =
10 for U.S. power cord
20 for no power cord
30 for U.K. 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

Redundant Power Supply

AT-RPS3204
Chassis for up to four redundant power supplies (chassis includes one power supply and one cable)

AT-PWR3202
Additional 200W redundant power supply with cable

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