AT-8500 Series

Managed Fast Ethernet Switches with Enhanced Security & Layer 2-4 Intelligence

AT-8524M-xx
24-port 10/100TX L2+ Switch with 2 expansion bays

AT-8524POE-xx
24-port 10/100TX L2+ Power-over-Ethernet Switch with 2 expansion bays

AT-8550/GB-xx**
48-port 10/100TX L2+ Switch with 2 active GBIC bays (unpopulated) and 2 standby 10/100/1000T ports (RJ-45)

AT-8550/SP-xx
48-port 10/100TX L2+ Switch with 2 active SFP bays (unpopulated) and 2 standby 10/100/1000T ports (RJ-45)

AT-8516F/SC-xx
16-port 100FX (SC) L2+ Switch with 2 expansion slots

Smarter, More Secure, and More Cost-Effective

The AT-8500 Series is a managed switch that brings enhanced security and Layer 2-4 intelligence to networks. Many network administrators demand easy to manage, cost effective, intelligent switches at the LAN edge, and the AT-8500 switch answers such demands, with the optimal balance of features, performance, and value. More intelligent than simple L2 switches, the cost-effective AT-8500 offers advanced attack detection and suppression capabilities for increased security and advanced QoS to support converged applications.

The sweet spot applications for such switches are:
- Traditional Enterprise LAN (Wiring closet)
- Service-provisioned Leased Offices or MTUs
- Security-conscious Government and Financial Institutions
- Cost/security-conscious Educational Institutions

Layer 2-4 Intelligence

The AT-8500 Series packs a lot of features in one rack unit. With advanced AlliedWareTM technology, the AT-8500 switches, allow network administrators to configure the switch to examine packet formats and content from Layer 2, Layer 3, or Layer 4 (also known as the MAC, IP and TCP/UDP layers). After these layer parameters are defined and detected, the switch can trigger network decisions such as Access Control Lists (ACLs) for protection against DoS attacks, establishing rate limits for excessive bandwidth usage, and altering QoS to support converged applications.

Securing the LAN Edge

With the heightened concern for Denial of Services attacks, Allied Telesis is focusing on the security features within its products. Assisted by the L2 through L4 intelligence, network administrators can deploy the AT-8500 as a complement to WAN firewalls and PC anti-virus software to fortify networks against attacks. The AT-8500 switches are programmed to detect six well-known DoS attacks, and coupled with security features such as 802.1x (Port Based Network Access Control) and Radius/TACACS+, the AT-8500 series offers Tiered Security on each port. Deploying Tiered Security within unsecured areas of corporate offices—such as meeting rooms and lounges—provides cost-effective protections at the network layer.

Service Features for Revenue Generation

Today's global economic climate pushes network administrators to focus on managing capital spending. One way to keep costs low is to allocate resources efficiently. Allied Telesis has designed the AT-8500 series to allow smart management of network resources with two key features:
- Ingress and Egress rate-limiting to provision bandwidth QoS support with 802.1p and DSCP for priority traffic.
- The AT-8500 Series also includes CoS to DSCP remarking, allowing layer 2 QoS priorities to be preserved over the WAN (typically a Layer 3 feature).

The AT-8500 series can be pre-configured to control bandwidth-wasting traffic—such as music streaming to the desktops—by dynamically lowering the priority and limiting bandwidths to a mere trickle without completely blocking it. The same features can benefit metro providers as well, allowing them to offer bandwidth provisioning and QoS priority as premium service to customers.

Key Features

- **L2-L4 Intelligence**
  Packet look-up at MAC, IP, TCP/UDP layers
  For QoS, ACL, Mirroring, Rate-Limiting
- **Advanced Security**
  DoS Attack Detection and Reporting
  Radius/TACACS+
  Port Security
  Secure Telnet
  802.1x
  L2-L4 ACL
- **Advanced Services**
  Rate-Limiting (Ingress & Egress)
  4 levels of Services
  802.1p based Class of Service
  DSCP for IP-based QoS
- **L2 Redundancy**
  802.1s, Multiple STP (compatible with PVST+)
  802.3ad, Link Aggregation
  802.1D, Spanning Tree
  802.1w, Rapid STP
- **POE capable**
  802.3af compliant

Physical Characteristics

AT-8524M

Dimensions	(H x W x D) 4.4cm x 43.8cm x 18.4cm (1.75"x 17.25" x 7.25")
Weight	3.3kg (7.2 lbs)

AT-8524POE

Dimensions	(H x W x D) 4.4cm x 43.8cm x 40.6cm (1.75"x 17.25" x 16.00")
Weight	6.0kg (13.3 lbs)

AT-8516F/SC

Dimensions	(H x W x D) 4.4cm x 43.8cm x 18.4cm (1.75"x 17.25"x 7.25")
Weight	3.5kg (7.6 lbs)

AT-8550GB** & AT-8550SP

Dimensions	(H x W x D) 4.4cm x 43.8cm x 26.16cm (1.75" x 17.25" x 10.3")
Weight	3.6kg (8 lbs)

System Capacity

32MB RAM
4MB Flash Memory
200MHz PowerPC CPU
255 VLANs
8K MAC Addresses
2 megabytes file system

Performance

Latency:
<40 microseconds latency between 10Mbps ports
<11 microseconds latency between 100Mbps ports
<4 microseconds latency between 1000Mbps ports

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

Throughput:

AT-8524M & AT-8524POE	6.6Mpps (64-byte packets)
AT-8550GB** & AT-8550SP	10.1Mpps (64-byte packets)
AT-8516F/SC	5.4Mpps (64-byte packets)

Chipset switching capacity:

AT-8524M	8.8Gbps
AT-8550GB** & AT-8550SP	17.6Gbps
AT-8516F/SC	8.8Gbps

Auto MDI/MDI-X

Interface Standards

802.3	10Base-T & 10Base-FL
802.3u	100Base-TX & 100Base-FX
802.3z	1000Base-SX
802.3ab	1000Base-T

General Standards

802.1d	Bridging
802.3ac	VLAN Tag Frame Extension
802.3x	BackPressure/ Flow control

Redundancy Standards

802.1D	Spanning Tree Protocol
802.1w	Rapid Spanning Tree
802.1s	Multiple Spanning Tree (compatible with PVST+)
802.3ad	LACP Link Aggregation (with six trunk groups and up to eight port in a trunk)

Static port trunk

Quality of Services (QoS)

QoS in Layer 2 (802.1p compliant Class of Service)
Map 802.1p Priorities to CoS Queues to prioritize traffic at Egress
Strict and Weighted Round Robin Scheduling
Rate Limiting using Classifiers, Flow Groups, Traffic Classes and Policies
QoS for both Ingress and Egress traffic
Traffic Reprioritization using 802.1p, ToS, DSCP fields

VLANs

IEEE 802.1Q VLAN Tagging
Port-based VLANs
Multiple VLANs mode
Protected port VLAN
GARP VLAN Registration Protocol (GVRP)

Multicast Standards

RFC 1112	IGMP Snooping (Ver. 1.0)
RFC 2236	IGMP Snooping (Ver. 2.0)
RFC 3376	IGMP v3

Management and Monitoring

Web, CLI, Serial

RFC 1157	SNMPv1/v2c

SNMP v3

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 & Events
RFC 2674	802.1Q MIB

AlliedTelesis Private MIB

RFC 1866	HTML
RFC 2068	HTTP
RFC 854	Telnet
RFC 783	TFTP

IP address allocation:
RFC 951 / RFC1542 BOOTP
DHCP
Manual

RFC 2030 SNTP, Simple Network Time Protocol
Syslog client
Dual Software Images, Dual Configuration Files
Event logs - 4,000 event capacity

Enhanced Stacking™

Security

SSHv2 for Telnet mgmt
SSLv3 for Web mgmt

RFC 1492	TACACS+
RFC 2138	RADIUS Authentication
RFC 2139	RADIUS Accounting
IEEE802.1x	Port-Based Network Access Control

Authenticator
Multiple supplicants
MAC Address Security/Lockdown
Layer 1/2/3/4/ Access Control (ACLs)

Fault Protection

DoS Attack Protection
Smurf
SYN Flood
Teardrop
Land
IP Option
Ping of Death
Bad Cable Detection
Broadcast Storm Control

Power Characteristics

Voltage	100-240vAC
Current	4.0/2.0A
Frequency	50-60Hz
Power Consumption	80w Max

AT-8524POE

Voltage	100-240vAC
Current	6.0A for AC
Frequency	50-60Hz
Power Consumption	500w Max

Environmental Specifications

Operating Temp.	0°C – 40°C (32°F – 104°F)
Storage Temp.	-25°C – 70°C (-13°F – 158°F)
Operating Humidity	5% – 90% non-condensing
Storage Humidity	5% – 95% non-condensing

Electrical/Mechanical Approvals

Safety UL 60950-1, CSA C22.2 No. 60950-1-03, EN60950, EN60825 (TUV)
EMI FCC Class A, EN55022 Class A, VCCI Class A, C-TICK, EN61000-3-2, EN61000-3-3
Immunity EN55024

Country of Origin

China

**Contact sales associate for availability

Ordering Information

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Where xx = 10 for U.S. power cord
= 20 for no power cord
= 30 for U.K. power cord
= 40 for Australia power cord
= 50 for Europe power cord

Expansion Modules

AT-45/SC
One module with single 100FX port (SC) for MMF, distance up to 2km in full-duplex

AT-A45/MT
One module with single 100FX port (MT-RJ) for MMF, distance up to 2km in full-duplex

AT-A45/SC-SM15
One module with single 100FX port (SC) for SMF, distance up to 15km in full-duplex

AT-A46
One module with single 10/100/1000T port (RJ-45), distance up to 100m

AT-A47
One module with single unpopulated GBIC bay

AT-STACKM
Stacking module

Redundant Power Supply

AT-RPS3004 (AT-8524M, AT-8516F/SC, AT-8550xx)
Chassis for up to 4 redundant power supplies (Chassis includes one power supply and cable)

AT-PWR3004 (AT-8524M, AT-8516F/SC, AT-8550xx)
Additional AC redundant power supply with cable

AT-RPS3104 (AT-8524POE)
Chassis for up to 4 redundant power supplies (Chassis includes one power supply and cable)

AT-PWR3101 (AT-8524POE)
Additional AC redundant power supply with cable

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