

CentreCOM® FS980M Series

Fast Ethernet Managed Access Switches

Allied Telesis CentreCOM FS980M switches feature centralized network management via Allied Telesis Autonomous Management Framework™ (AMF), and a redundant system with Virtual Chassis Stacking (VCStack™). These high-performing switches deliver flexible uplink connectivity and lower management costs.



AlliedWare Plus™
OPERATING SYSTEM

Overview

FS980M switches provide high-performance Fast Ethernet connectivity right where you need it—at the network edge. Flexible and robust, the FS980M series provide total security and management features for enterprises of all sizes. They also support video surveillance and Point of Sale (POS) applications.

Reduce network running costs by automating and simplifying many day-to-day tasks—an FS980M is the ideal AMF edge switch when an AMF Master switch is available in the network.

With both copper and Power over Ethernet (PoE) models, the FS980M Series has the ideal solution for your network. All models are available with 8, 16, 24 and 48 × 10/100TX Fast Ethernet ports. PoE models support the IEEE 802.3at (PoE+) standard, delivering up to 30 Watts of power per port for video surveillance and security applications. The dual power supply model provides system and PoE redundancy to maximize network and end-point uptime.

Key Features

Allied Telesis Autonomous Management Framework™ (AMF)

- ▶ AMF is a sophisticated suite of management tools that provides a simplified approach to network management. Common tasks are automated, or made so simple, that your network can run without the need for highly-trained and expensive network engineers. Powerful features like centralized management, auto-backup, auto-upgrade, auto-provisioning and auto-recovery enable Plug-and-Play networking and zero-touch management.
- ▶ AMF secure mode increases network security with management traffic encryption, authorization, and monitoring.
- ▶ The FS980M can function as an AMF edge switch when an AMF Master switch is available in the network.

EPSRing™

- ▶ Ethernet Protection Switched Ring (EPSRing) allows several FS980M switches to join a protected ring, capable of recovery within as little as 50ms. This feature is perfect for high availability in enterprise networks.

Layer 3 Routing

- ▶ The FS980M Series provides static IPv4 routing at the edge of the network, as well as support for RIPv1 and RIPv2.

VCStack™

- ▶ FS980M/28, FS980M/28PS, FS980M/52, FS980M/52PS, FS980M/28DP models.
- ▶ Create a VCStack of up to four units with 2 Gbps of stacking bandwidth per each unit. VCStack provides a highly-available system in which network resources are spread out across stacked units, minimizing the impact should any unit fail.

Centralized Power with PoE+

- ▶ PoE+ provides centralized power connection to media, cameras, IP phones and wireless access points.
- ▶ PoE+ reduces costs and offers greater flexibility with the capability to connect devices requiring more power (up to 30W), such as pan-tilt-zoom security cameras.
- ▶ PoE power redundancy is available with a dual power supply model, to ensure critical powered devices remain online.

System/PoE Redundancy

- ▶ The FS980M/28DP has dual power supplies to further increase reliability.

Security at the Edge

- ▶ The edge is the most vulnerable point of the network—the FS980M Series protects you with a full set of security features including Multi Supplicant Authentication, IEEE 802.1x, RADIUS, TACACS+, and Dynamic VLAN.
- ▶ Guest VLAN ensures visitors or unauthorized users can only connect to user-defined services—for example, Internet only.
- ▶ Access Control Lists (ACLs) enable inspection of incoming frames and classify them based on various criteria. Specific actions are applied to effectively manage the network traffic. Typically, ACLs are used as a security mechanism, either permitting or denying entry.

VCStack™

EPSRing™

AMF™

Specifications

Physical Specifications

| PRODUCT | 10/100T (RJ-45) COPPER PORTS | 10/100/1000T (RJ-45) COPPER PORTS | 100/1000X SFP PORTS | SWITCHING FABRIC | FORWARDING RATE | WIDTH X DEPTH X HEIGHT | WEIGHT | |
|-------------|------------------------------|-----------------------------------|---------------------|------------------|-----------------|--|-------------------|------------------|
| | | | | | | | UNPACKAGED | PACKAGED |
| FS980M/9 | 8 | 1 combo | 1combo | 3.6 | 2.68 Mpps | 330 x 204 x 43.6 mm (13.0 x 8.0 x 1.7 in)) | 2.0 kg (4.41 lb) | 3.7 kg (8.2 lb) |
| FS980M/9PS | 8 | 1 combo | 1combo | 3.6 | 2.68 Mpps | 330 x 204 x 43.6 mm (13.0 x 8.0 x 1.7 in) | 2.5 kg (5.51 lb) | 4.2 kg (9.3 lb) |
| FS980M/18 | 16 | 2 combo | 2 combo | 7.2 | 5.36 Mpps | 330 x 204 x 43.6 mm (13.0 x 8.0 x 1.7 in) | 2.15 kg (4.74 lb) | 4.0 kg (8.8 lb) |
| FS980M/18PS | 16 | 2 combo | 2 combo | 7.2 | 5.36 Mpps | 440 x 257 x 43.2 mm (17.3 x 10.1 x 1.7 in) | 3.6 kg (7.94 lb) | 5.7 kg (12.5 lb) |
| FS980M/28 | 24 | - | 4 | 12.8 | 9.52 Mpps | 440 x 257 x 43.2 mm (17.3 x 10.1 x 1.7 in) | 3.2 kg (7.05 lb) | 5.3 kg (11.7 lb) |
| FS980M/28PS | 24 | - | 4 | 12.8 | 9.52 Mpps | 440 x 345 x 43.2 mm (17.3 x 13.6 x 1.7 in) | 5.1 kg (11.24 lb) | 7.6 kg (16.8 lb) |
| FS980M/28DP | 24 | - | 4 | 12.8 | 9.52 Mpps | 440 x 425 x 44 mm (17.3 x 16.7 x 1.7 in) | TBD | TBD |
| FS980M/52 | 48 | - | 4 | 17.6 | 13.09 Mpps | 440 x 257 x 43.2 mm (17.3 x 10.1 x 1.7 in) | 3.4 kg (7.50 lb) | 5.6 kg (12.3 lb) |
| FS980M/52PS | 48 | - | 4 | 17.6 | 13.09 Mpps | 440 x 345 x 43.2 mm (17.3 x 13.6 x 1.7 in) | 5.4 kg (11.91 lb) | 8.2 kg (18.1 lb) |

Power and Noise Characteristics

| PRODUCT | NO POE LOAD | | | FULL POE+ LOAD | | |
|-------------|---------------------------|-------------------------------|----------------|---------------------------|--------------------------------------|----------------|
| | MAX POWER CONSUMPTION (W) | MAX HEAT DISSIPATION (BTU/HR) | MAX NOISE (DB) | MAX POWER CONSUMPTION (W) | MAX SYSTEM HEAT DISSIPATION (BTU/HR) | MAX NOISE (DB) |
| FS980M/9 | 6.3 | 22 | fanless | - | - | - |
| FS980M/9PS | 13 | 45 | 37 | 190 | 660 | 49 |
| FS980M/18 | 12 | 42 | fanless | - | - | - |
| FS980M/18PS | 24 | 82 | 33 | 320 | 1,100 | 46 |
| FS980M/28 | 19 | 66 | fanless | - | - | - |
| FS980M/28PS | 49 | 170 | 36 | 520 | 1,800 | 49 |
| FS980M/28DP | 49 | 170 | 36 | 520 | 1,800 | 49 |
| FS980M/52 | 36 | 120 | 34 | - | - | - |
| FS980M/52PS | 63 | 210 | 36 | 540 | 1,800 | 49 |

Power over Ethernet specifications

| PRODUCT | CONNECTED PSU | POE POWER BUDGET(W) | SYSTEM/POE REDUNDANCY | MAX POE ENABLED PORTS AT 7.0W PER PORT | MAX POE ENABLED PORTS AT 15.4W PER PORT | MAX POE+ ENABLED PORTS AT 30W PER PORT |
|-------------|---------------|---------------------|-----------------------|--|---|--|
| FS980M/9PS | 1 | 150 | - | 8 | 8 | 4 |
| FS980M/18PS | 1 | 250 | - | 16 | 16 | 8 |
| FS980M/28PS | 1 | 375 | - | 24 | 24 | 12 |
| FS980M/28DP | 1 | 375 | - | 24 | 24 | 12 |
| | 2 | | Yes | | | |
| FS980M/52PS | 1 | 375 | - | 48 | 24 | 12 |

Latency

| PRODUCT | 64byte | | | 1518byte | | |
|-------------|----------|---------|----------|------------|----------|----------|
| | 10Mbps | 100Mbps | 1000Mbps | 10Mbps | 100Mbps | 1000Mbps |
| FS980M/9 | 24.45µs | 4.50µs | - | 24.58µs | 4.474µs | - |
| FS980M/9PS | 24.45µsc | 4.50µs | - | 24.58µs | 4.474µs | - |
| FS980M/18 | 82.05µs | 10.05µs | 3.44µs | 1,245.36µs | 126.64µs | 15.20µs |
| FS980M/18PS | 82.05µs | 10.05µs | 3.44µsc | 1,245.36µs | 126.64µs | 15.20µsc |
| FS980M/28 | 80.20µs | 9.94µs | 3.23µs | 1,234.27µs | 126.72µs | 15.01µs |
| FS980M/28PS | 80.05µs | 9.91µs | 3.24µs | 1,243.55µs | 126.72µs | 15.01µs |
| FS980M/28DP | 80.05µs | 9.91µs | 3.24µs | 1,243.55µs | 126.72µs | 15.01µs |
| FS980M/52 | 80.11µs | 9.96µs | 3.23µs | 1,234.36µs | 126.74µs | 15.01µs |
| FS980M/5PS | 80.61µs | 9.91µs | 3.24µs | 1,243.28µs | 126.76µs | 15.01µs |

Performance

- ▶ 4 Gbps of stacking bandwidth
- ▶ Supports 10K jumbo frames
- ▶ Wirespeed multicasting
- ▶ Up to 16K MAC addresses
- ▶ 512 MB DDR2 SDRAM
- ▶ 128 MB flash memory

Power Characteristics

- ▶ FS980M/9 and FS980M/18 100-240VAC, 0.9A maximum, 50/60Hz
- ▶ FS980M/9PS 100-240VAC, 3.9A maximum, 50/60Hz
- ▶ FS980M/18PS 100-240VAC, 4.0A maximum, 50/60Hz
- ▶ FS980M/28 and FS980M/52 100-240VAC, 1.5A maximum, 50/60Hz
- ▶ FS980M/28PS and FS980M/52PS 100-240VAC, 8.0A maximum, 50/60Hz
- ▶ FS980M/28DP 100-240AP, 8.0A maximum, 50/60Hz

Diagnostic Tools

- ▶ Find-me device locator
- ▶ Automatic link flap detection and port shutdown
- ▶ Optical Digital Diagnostic Monitoring (DDM)
- ▶ Ping polling for IPv4 and IPv6
- ▶ Port mirroring
- ▶ TraceRoute for IPv4 and IPv6
- ▶ UniDirectional Link Detection (UDLD)

IP Features

- ▶ RIP and static routing for IPv4 (16 routes)
- ▶ Device management over IPv6 networks with SNMPv6, Telnetv6 and SSHv6
- ▶ NTP client
- ▶ Log to IPv6 hosts with Syslog v6

Management

- ▶ Allied Telesis Autonomous Management Framework (AMF) enables powerful centralized management and zero-touch device installation and recovery
- ▶ Console management port on the front panel for ease of access
- ▶ Eco-friendly mode allows ports and LEDs to be disabled to save power
- ▶ Industry-standard CLI with context-sensitive help
- ▶ Powerful CLI scripting engine
- ▶ Comprehensive SNMP MIB support for standards-based device management
- ▶ Built-in text editor
- ▶ Event-based triggers allow user-defined scripts to be executed upon selected system events

Quality of Service (QoS)

- ▶ 8 priority queues with a hierarchy of high priority queues for real time traffic, and mixed scheduling, for each switch port
- ▶ Limit bandwidth per port or per traffic class down to 64kbps
- ▶ Wirespeed traffic classification with low latency essential for VoIP and real-time streaming media applications
- ▶ Policy-based QoS based on VLAN, port, MAC and general packet classifiers
- ▶ Policy-based storm protection

- ▶ Extensive remarking capabilities
- ▶ Taildrop for queue congestion control
- ▶ Strict priority, weighted round robin or mixed scheduling
- ▶ IP precedence and DiffServ marking based on layer 2, 3 and 4 headers

Resiliency

- ▶ Control Plane Prioritization (CPP) ensures the CPU always has sufficient bandwidth to process network control traffic
- ▶ Dynamic link failover (host attach)
- ▶ Ethernet Protection Switched Ring (EPSRing™)
- ▶ Link aggregation (LACP) on LAN ports
- ▶ Loop protection: loop detection and thrash limiting
- ▶ PVST+ compatibility mode
- ▶ Spanning Tree (STP, RSTP, MSTP)
- ▶ STP root guard

Security Features

- ▶ Access Control Lists (ACLs) based on layer2, 3 and 4 headers
- ▶ ACL Groups enable multiple hosts/ports to be included in a single ACL, reducing configuration
- ▶ Auth-fail and guest VLANs
- ▶ Authentication, Authorization and Accounting (AAA)
- ▶ Bootloader can be password protected for device security
- ▶ BPDU protection
- ▶ DHCP snooping, IP source guard and Dynamic ARP Inspection (DAI)
- ▶ Dynamic VLAN assignment
- ▶ Network Access and Control (NAC) features manage endpoint security
- ▶ Port-based learn limits (intrusion detection)
- ▶ Private VLANs provide security and port isolation for multiple customers using the same VLAN
- ▶ Secure Copy (SCP)
- ▶ Strong password security and encryption
- ▶ Tri-authentication: MAC-based, web-based and IEEE 802.1x

Environmental Specifications

- ▶ Operating ambient temp. 0°C to 50°C (32°F to 122°F)
- ▶ Storage temp. -20°C to 60°C (-4°F to 140°F)
- ▶ Operating humidity 5% to 90% non-condensing
- ▶ Storage humidity 5% to 95% non-condensing
- ▶ Maximum Operating Altitude: 28-port and 52-port version 3048m 9-port and 18-port version TBD

Safety and Electromagnetic Emissions

- ▶ EMI: FCC part15 B, EN55022 Class A, CISPR22:2006, VCCI Class A, C-Tick, EN 55024
- ▶ Safety: UL 60950-1 Ed2, C22.2 NO.60950-1, EN 60950-1 Ed2, IEC60950-1 Ed.2, EN60950-1 Ed2

Compliance

- ▶ Compliance Marks : CE, cULus, TUV
- ▶ EU RoHS compliant

¹ AMF edge is for products used at the edge of the network, and only support a single AMF link. They cannot use cross links or virtual links.

Standards and Protocols

Cryptographic Algorithms

FIPS Approved Algorithms

Encryption (Block Ciphers):

- ▶ AES (ECB, CBC, CFB and OFB Modes)
- ▶ 3DES (ECB, CBC, CFB and OFB Modes)

Block Cipher Modes:

- ▶ CCM
- ▶ CMAC

- ▶ GCM
- ▶ XTS

Digital Signatures & Asymmetric Key Generation:

- ▶ DSA
- ▶ ECDSA

- ▶ RSA

Secure Hashing:

- ▶ SHA-1
- ▶ SHA-2 (SHA-224, SHA-256, SHA-384, SHA-512)

Message Authentication:

- ▶ HMAC (SHA-1, SHA-2(224, 256, 384, 512))

Random Number Generation:

- ▶ DRBG (Hash, HMAC and Counter)

Non FIPS Approved Algorithms

RNG (AES128/192/256)

DES
MD5

Ethernet Standards

- IEEE 802.2 Logical Link Control (LLC)
- IEEE 802.3 Ethernet
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3af Power over Ethernet (PoE)
- IEEE 802.3at Power over Ethernet plus (PoE+)
- IEEE 802.3x Flow control - full-duplex operation
- IEEE 802.3z 1000BASE-X

IPv4 Features

- RFC 768 User Datagram Protocol (UDP)
- RFC 791 Internet Protocol (IP)
- RFC 792 Internet Control Message Protocol (ICMP)
- RFC 793 Transmission Control Protocol (TCP)
- RFC 826 Address Resolution Protocol (ARP)
- RFC 894 Standard for the transmission of IP datagrams over Ethernet networks
- RFC 919 Broadcasting Internet datagrams
- RFC 922 Broadcasting Internet datagrams in the presence of subnets
- RFC 932 Subnetwork addressing scheme
- RFC 950 Internet standard subnetting procedure
- RFC 1027 Proxy ARP
- RFC 1035 DNS client
- RFC 1042 Standard for the transmission of IP datagrams over IEEE 802 networks
- RFC 1071 Computing the Internet checksum
- RFC 1122 Internet host requirements
- RFC 1191 Path MTU discovery
- RFC 1256 ICMP router discovery messages
- RFC 1518 An architecture for IP address allocation with CIDR
- RFC 1519 Classless Inter-Domain Routing (CIDR)
- RFC 1591 Domain Name System (DNS)
- RFC 1812 Requirements for IPv4 routers
- RFC 1918 IP addressing
- RFC 2581 TCP congestion control

IPv6 Features

- RFC 1981 Path MTU discovery for IPv6
- RFC 2460 IPv6 specification
- RFC 2464 Transmission of IPv6 packets over Ethernet networks
- RFC 2711 IPv6 router alert option
- RFC 3484 Default address selection for IPv6

CentreCOM FS980M Series | Fast Ethernet Managed Access Switches

| | |
|----------|---|
| RFC 3587 | IPv6 global unicast address format |
| RFC 3596 | DNS extensions to support IPv6 |
| RFC 4007 | IPv6 scoped address architecture |
| RFC 4193 | Unique local IPv6 unicast addresses |
| RFC 4291 | IPv6 addressing architecture |
| RFC 4443 | Internet Control Message Protocol (ICMPv6) |
| RFC 4861 | Neighbor discovery for IPv6 |
| RFC 4862 | IPv6 Stateless Address Auto-Configuration (SLAAC) |
| RFC 5014 | IPv6 socket API for source address selection |
| RFC 5095 | Deprecation of type 0 routing headers in IPv6 |

Management

| | |
|--|--|
| AMF edge node ¹ | |
| AT Enterprise MIB including AMF MIB and SNMP traps | |
| SNMPv1, v2c and v3 | |
| IEEE 802.1AB Link Layer Discovery Protocol (LLDP) | |
| RFC 1155 | Structure and identification of management information for TCP/IP-based Internets |
| RFC 1157 | Simple Network Management Protocol (SNMP) |
| RFC 1212 | Concise MIB definitions |
| RFC 1213 | MIB for network management of TCP/IP-based Internets: MIB-II |
| RFC 1215 | Convention for defining traps for use with the SNMP |
| RFC 1227 | SNMP MUX protocol and MIB |
| RFC 1239 | Standard MIB |
| RFC 2578 | Structure of Management Information v2 (SMIPv2) |
| RFC 2579 | Textual conventions for SMIPv2 |
| RFC 2580 | Conformance statements for SMIPv2 |
| RFC 2674 | Definitions of managed objects for bridges with traffic classes, multicast filtering and VLAN extensions |
| RFC 2741 | Agent extensibility (AgentX) protocol |
| RFC 2819 | RMON MIB (groups 1,2,3 and 9) |
| RFC 2863 | Interfaces group MIB |
| RFC 3411 | An architecture for describing SNMP management frameworks |
| RFC 3412 | Message processing and dispatching for the SNMP |
| RFC 3413 | SNMP applications |
| RFC 3414 | User-based Security Model (USM) for SNMPv3 |
| RFC 3415 | View-based Access Control Model (VACM) for SNMP |
| RFC 3416 | Version 2 of the protocol operations for the SNMP |
| RFC 3417 | Transport mappings for the SNMP |
| RFC 3418 | MIB for SNMP |
| RFC 3621 | Power over Ethernet (PoE) MIB |
| RFC 3635 | Definitions of managed objects for the Ethernet-like interface types |
| RFC 3636 | IEEE 802.3 MAU MIB |
| RFC 4022 | MIB for the Transmission Control Protocol (TCP) |
| RFC 4113 | MIB for the User Datagram Protocol (UDP) |
| RFC 4188 | Definitions of managed objects for bridges |
| RFC 4292 | IP forwarding table MIB |
| RFC 4293 | MIB for the Internet Protocol (IP) |
| RFC 4318 | Definitions of managed objects for bridges with RSTP |
| RFC 4560 | Definitions of managed objects for remote ping, traceroute and lookup operations |
| RFC 5424 | Syslog protocol |

Multicast Support

| | |
|-----------------------------------|--|
| IGMP query solicitation | |
| IGMP snooping (IGMPv1, v2 and v3) | |
| IGMP snooping fast-leave | |
| MLD snooping (MLDv1 and v2) | |
| RFC 2715 | Interoperability rules for multicast routing protocols |
| RFC 3306 | Unicast-prefix-based IPv6 multicast addresses |
| RFC 4541 | IGMP and MLD snooping switches |

Quality of Service (QoS)

| | |
|-------------|--|
| IEEE 802.1p | Priority tagging |
| RFC 2211 | Specification of the controlled-load network element service |
| RFC 2474 | DiffServ precedence for eight queues/port |
| RFC 2475 | DiffServ architecture |
| RFC 2597 | DiffServ Assured Forwarding (AF) |
| RFC 2697 | A single-rate three-color marker |
| RFC 2698 | A two-rate three-color marker |
| RFC 3246 | DiffServ Expedited Forwarding (EF) |

Resiliency

| | |
|--------------|--|
| IEEE 802.1AX | Link aggregation (static and LACP) |
| IEEE 802.1D | MAC bridges |
| IEEE 802.1s | Multiple Spanning Tree Protocol (MSTP) |
| IEEE 802.1w | Rapid Spanning Tree Protocol (RSTP) |
| IEEE 802.3ad | Static and dynamic link aggregation |

Routing Information Protocol (RIP)

| | |
|----------|------------------------------------|
| RFC 1058 | Routing Information Protocol (RIP) |
| RFC 2082 | RIP-2 MD5 authentication |
| RFC 2453 | RIPv2 |

Security

| | |
|--|---|
| SSH remote login | |
| SSLv2 and SSLv3 | |
| TACACS+ Accounting, Authentication | |
| IEEE 802.1X authentication protocols (TLS, TTLS, PEAP and MD5) | |
| IEEE 802.1X multi-suplicant authentication | |
| IEEE 802.1X port-based network access control | |
| RFC 2560 | X.509 Online Certificate Status Protocol (OCSP) |
| RFC 2818 | HTTP over TLS ("HTTPS") |
| RFC 2865 | RADIUS authentication |
| RFC 2866 | RADIUS accounting |
| RFC 2868 | RADIUS attributes for tunnel protocol support |
| RFC 2986 | PKCS #10: certification request syntax specification v1.7 |

| | |
|----------|--|
| RFC 3546 | Transport Layer Security (TLS) extensions |
| RFC 3579 | RADIUS support for Extensible Authentication Protocol (EAP) |
| RFC 3580 | IEEE 802.1x RADIUS usage guidelines |
| RFC 3748 | PPP Extensible Authentication Protocol (EAP) |
| RFC 4251 | Secure Shell (SSHv2) protocol architecture |
| RFC 4252 | Secure Shell (SSHv2) authentication protocol |
| RFC 4253 | Secure Shell (SSHv2) transport layer protocol |
| RFC 4254 | Secure Shell (SSHv2) connection protocol |
| RFC 5246 | Transport Layer Security (TLS) v1.2 |
| RFC 5280 | X.509 certificate and Certificate Revocation List (CRL) profile |
| RFC 5425 | Transport Layer Security (TLS) transport mapping for Syslog |
| RFC 5656 | Elliptic curve algorithm integration for SSH |
| RFC 6125 | Domain-based application service identity within PKI using X.509 certificates with TLS |
| RFC 6614 | Transport Layer Security (TLS) encryption for RADIUS |
| RFC 6668 | SHA-2 data integrity verification for SSH |

Services

| | |
|----------|---|
| RFC 854 | Telnet protocol specification |
| RFC 855 | Telnet option specifications |
| RFC 857 | Telnet echo option |
| RFC 858 | Telnet suppress go ahead option |
| RFC 1091 | Telnet terminal-type option |
| RFC 1350 | Trivial File Transfer Protocol (TFTP) |
| RFC 1985 | SMTP service extension |
| RFC 2049 | MIME |
| RFC 2131 | DHCPv4 client |
| RFC 2616 | Hypertext Transfer Protocol - HTTP/1.1 |
| RFC 2821 | Simple Mail Transfer Protocol (SMTP) |
| RFC 2822 | Internet message format |
| RFC 4330 | Simple Network Time Protocol (SNTP) version 4 |
| RFC 5905 | Network Time Protocol (NTP) version 4 |

VLAN Support

| | |
|--------------|--|
| IEEE 802.1Q | Virtual LAN (VLAN) bridges |
| IEEE 802.1v | VLAN classification by protocol and port |
| IEEE 802.3ac | VLAN tagging |

Voice over IP (VoIP)

| | |
|------------|---------------|
| LLDP-MED | ANSI/TIA-1057 |
| Voice VLAN | |



Ordering Information

AT-FS980M/9-xx²

8-port 10/100TX switch with 1 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/9PS-xx²

8-port 10/100TX PoE+ switch with 1 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/18-xx²

16-port 10/100TX switch with 2 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/18PS-xx²

16-port 10/100TX PoE+ switch with 2 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/28-xx

24-port 10/100TX switch with 4 SFP uplinks and one fixed AC power supply

AT-FS980M/28PS-xx

24-port 10/100TX PoE+ switch with 4 SFP uplinks and one fixed AC power supply

AT-FS980M/28DP-xx

24-port 10/100TX PoE+ switch with 4 SFP uplinks and dual fixed AC power supply

AT-FS980M/52-xx

48-port 10/100TX switch with 4 SFP uplinks and one fixed AC power supply

AT-FS980M/52PS-xx

48-port 10/100TX PoE+ switch with 4 SFP uplinks and one fixed AC power supply

AT-BRKT-J22

Wall-mount kit for FS980M/9, 9PS, 18, 18PS, 28, 28PS, 52, 52PS

²Rackmount kit is included

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

Feature Licenses

| NAME | DESCRIPTION | INCLUDES |
|-----------------|-------------------------------|----------|
| AT-FL-FS98-UDLD | UniDirectional Link Detection | ▶ UDLD |

Small Form Pluggable (SFP) Optics Modules

1000Mbps SFP modules

AT-SPSX

1000SX GbE multi-mode 850 nm fiber up to 550 m

AT-SPEX

1000X GbE multi-mode 1310 nm fiber up to 2 km

AT-SPLX10

1000LX GbE single-mode 1310 nm fiber up to 10 km

AT-SPLX40

1000LX GbE single-mode 1310 nm fiber up to 40 km

AT-SPZX80

1000ZX GbE single-mode 1550 nm fiber up to 80 km

AT-SPBD10-13

1000LX GbE Bi-Di (1310 nm Tx, 1490 nm Rx) fiber up to 10 km

AT-SPBD10-14

1000LX GbE Bi-Di (1490 nm Tx, 1310 nm Rx) fiber up to 10 km

AT-SPBD20-13/I

1000BX GbE Bi-Di (1310 nm Tx, 1490 nm Rx) fiber up to 20 km

AT-SPBD20-14/I

1000BX GbE Bi-Di (1490 nm Tx, 1310 nm Rx) fiber up to 20 km

AT-SPSX/I

1000SX GbE multi-mode 850 nm fiber up to 550m Industrial Temperature

AT-SPLX10/I

1000LX GbE single-mode 1310 nm fiber up to 10 km industrial temperature

AT-SPTX³

1000T 100m copper

³ Supported on 28 and 52 port models

100Mbps SFP Modules

AT-SPFX/2

100FX multi-mode 1310 nm fiber up to 2 km

AT-SPFX/15

100FX single-mode 1310 nm fiber up to 15 km

AT-SPFXBD-LC-13

100BX Bi-Di (1310 nm Tx, 1550 nm Rx) fiber up to 10 km

AT-SPFXBD-LC-15

100BX Bi-Di (1550 nm Tx, 1310nm Rx) fiber up to 10 km

Stacking modules

AT-SP10TW1

Direct attach stacking cable (1.0m)