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.

Key Features

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 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.

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/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/52	36	120	51	-	-	-
FS980M/52PS	63	210	36	540	1,800	49

Power over Ethernet specifications

PRODUCT	POE POWER BUDGET(W)	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	150	8	8	4
FS980M/18PS	250	16	16	8
FS980M/28PS	375	24	24	12
FS980M/52PS	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	1,2456.µs	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/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

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 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

- Access Control Lists (ACLs) based on layer2, 3 and 4 headers
- 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 113°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

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 Standards

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 Standards

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
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 (SLAAC)	IPv6 Stateless Address Auto-Configuration
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

[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.

RFC 2578 Structure of Management Information v2 (SMIv2)
RFC 2579 Textual conventions for SMIv2
RFC 2580 Conformance statements for SMIv2
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-supplicant 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-xx[1]
8-port 10/100TX switch with 1 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/9PS-xx[1]
8-port 10/100TX PoE+ switch with 1 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/18-xx[1]
16-port 10/100TX switch with 2 Gigabit/SFP combo uplinks and one fixed AC power supply

AT-FS980M/18PS-xx[1]
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/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

[1] Rackmount 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

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, 1550 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-SPTX*
1000T 100m copper
* 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)

Feature Licenses

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

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