CentreCOM® FS980M Series

Fast Ethernet Managed Access Switches

Allied Telesis CentreCOM FS980M switches feature centralized network management via Allied Telesis 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.

▶ 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

▶ FS980/28, FS980M/28PS, FS980/52, FS980/52PS 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.

*Initial release supports up to 2 units. 5.4.7 or later will support up to 4 units.

VCStack™

EPSRing™

AMF™

CentreCOM FS980M Series | Fast Ethernet Managed Access Switches

Specifications

Physical Specifications

PRODUCT	WIDTH	DEPTH	HEIGHT	WEIGHT	10/100T (RJ-45) COPPER PORTS	10/100/1000T (RJ-45) COPPER PORTS	100/1000X SFP PORTS*	SWITCHING FABRIC	FORWARDING RATE
FS980M/28	440 mm (17.3 in)	257 mm (10.1 in)	43.2 mm (1.7 in)	3.2 kg (7.05 lb)	24	-	4	12.8	9.52 Mpps
FS980M/28PS	440 mm (17.3 in)	345 mm (13.6 in)	43.2 mm (1.7 in)	5.1 kg (11.24 lb)	24	-	4	12.8	9.52 Mpps
FS980M/52	440 mm (17.3 in)	257 mm (10.1 in)	43.2 mm (1.7 in)	3.4 kg (7.50 lb)	48	-	4	17.6	13.09 Mpps
FS980M/52PS	440 mm (17.3 in)	345 mm (13.6 in)	43.2 mm (1.7 in)	5.4 kg (11.91 lb)	48	-	4	17.6	13.09 Mpps

*Initial release does not support 100BASE-X SFP

Power and Noise Characteristics

PRODUCT	NO POE LOAD			FULL POE+ LOAD		
	MAX POWER CONSUMPTION (W)	MAX HEAD DESSIPATION (BTU/HR)	MAX NOISE (DB)	MAX POWER CONSUMPTION (W)	MAX SYSTEM HEAT DISSIPATION (BTU/HR)	MAX NOISE (DB)
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 Characteristics

PRODUCT	POE POWER BUDGET(W)	MAX POE ENABLED PORTS AT 7.5W PER PORT	MAX POE ENABLED PORTS AT 15.4W PER PORT	MAX POE+ ENABLED PORTS AT 30W PER PORT
FS980M/28PS	375	24	24	12
FS980M/52PS	375	48	24	12

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
- ▶ AT-FS980M/28   AC model:115-230VAC, 2.0A maximum, 47/63Hz
- ▶ AT-FS980M/28PS   AC model:100-240VAC, 8.0A maximum, 47/63Hz
- ▶ AT-FS980M/52   AC model:115-230VAC, 2.0A maximum, 47/63Hz
- ▶ AT-FS980M/52PS   AC model:100-240VAC, 8.0A maximum, 47/63Hz

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)
- ▶ IPv4 and IPv6 dual stack
- ▶ 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 Marks : CE, cULus, TUV

Standards and Protocols

Authentication
RFC 1321	MD5 Message-Digest algorithm
RFC 1828	IP authentication using keyed MD5

Encryption
FIPS 180-1	Secure Hash standard (SHA-1)
FIPS 186	Digital signature standard (RSA)
FIPS 46-3	Data Encryption Standard (DES and 3DES)

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 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 4213	Transition mechanisms for IPv6 hosts and routers
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 MIB and SNMP traps	
AT Enterprise MIB	
SNMP support 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 2096	IP forwarding table MIB
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 3164	Syslog protocol
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 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

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 and 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 2818   HTTP over TLS ("HTTPS")
RFC 2865   RADIUS authentication
RFC 2866   RADIUS accounting
RFC 3280   Internet X.509 PKI Certificate and Certificate
        Revocation List (CRL) profile
RFC 3546   Transport Layer Security (TLS) extensions
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   TLS v1.2

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

AT-FS980M/18PS-xx[2]
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] Available in Q1/2017
[2] Available in Nov/2016

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-FS98M-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-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

Allied Telesis   **NETWORK SMARTER**

North America Headquarters | 19800 North Creek Parkway | Suite 100 | Bothell | WA 98011 | USA | T: +1 800 424 4284 | F: +1 425 481 3895
Asia-Pacific Headquarters | 11 Tai Seng Link | Singapore | 534182 | T: +65 6383 3832 | F: +65 6383 3830
EMEA & CSA Operations | Incheonweg 7 | 1437 EK Rozenburg | The Netherlands | T: +31 20 7950020 | F: +31 20 7950021

alliedtelesis.com