

# CentreCOM<sup>®</sup> GS980M Series

## Managed Gigabit Edge Switch

The Allied Telesis CentreCOM GS980M Series of Layer 3 Gigabit switches enable a cost-effective and fully managed network. A high-density, space saving solution, with Power over Ethernet (PoE+) to connect and power devices such as video surveillance cameras and IP phones, makes the GS980M Series ideal for applications at the network edge.



### Overview

Allied Telesis GS980M Series switches provide an excellent access solution for today's networks, supporting Gigabit to the desktop for maximum performance. Deploying the GS980M as an AMF edge node when an AMF Master switch is available in the network, helps reduce network running costs by automating and simplifying many day-to-day administration tasks. 48 Gigabit ports and 4 SFP uplinks enable high-density and secure connectivity at the network edge, and the PoE+ model can supply up to 30 Watts to powered end-points

### Specifications

#### Performance

- ▶ Up to 16K MAC addresses
- ▶ Route: 16(IPv4), 16(IPv6)
- ▶ Up to 2K multicast entries
- ▶ 512MB DDR SDRAM
- ▶ 128MB flash memory
- ▶ 4094 configurable VLANs
- ▶ Packet Buffer memory: 3MB
- ▶ Supports 10KB jumbo frames

#### Reliability

- ▶ Modular AlliedWare Plus operating system
- ▶ Full environmental monitoring of PSU internal temperature and internal voltages
- ▶ SNMP traps alert network managers in case of any failure

#### Diagnostic tools

- ▶ Active Fiber Monitoring detects tampering on optical links
- ▶ Built-In Self Test (BIST)
- ▶ Find-me device locator
- ▶ Optical Digital Diagnostics Monitoring (DDM)
- ▶ Automatic link flap detection and port shutdown
- ▶ Ping polling for IPv4 and IPv6
- ▶ Port and VLAN mirroring (RSPAN)
- ▶ TraceRoute for IPv4 and IPv6

#### IP Features

- ▶ IPv4 static routing and RIP
- ▶ IPv6 static routing

### 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 with built-in text editor
- ▶ Web-based Graphical User Interface (GUI)
- ▶ USB interface allows software release files, configurations and other files to be stored for backup and distribution to other devices
- ▶ Comprehensive SNMP MIB support for standards based device management
- ▶ Event-based triggers allow user-defined scripts to be executed upon selected system events
- ▶ Wirespeed forwarding

### 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 Features

- ▶ Control Plane Prioritization (CPP) ensures the CPU always has sufficient bandwidth to process network control traffic
- ▶ Dynamic link failover (host attach)
- ▶ EPSRing<sup>™</sup> (Ethernet Protection Switched Rings) with enhanced recovery for extra resiliency
- ▶ Loop protection: loop detection and thrash limiting
- ▶ PVST+ compatibility mode
- ▶ RRP snooping
- ▶ STP root guard

## Key Features

- ▶ AlliedWare Plus operating system
- ▶ Autonomous Management Framework<sup>™</sup> (AMF) edge node
- ▶ Active Fiber Monitoring
- ▶ PoE+ supplies up to 30W per port
- ▶ PoE power budget of 740 Watts
- ▶ Continuous PoE
- ▶ Ethernet Protection Switched Ring (EPSR<sup>™</sup>)
- ▶ Static routing and RIP
- ▶ DHCP snooping
- ▶ IEEE 802.1x/MAC/Web authentication support
- ▶ Loop Protection
- ▶ Eco-friendly
- ▶ Web-based Graphical User Interface (GUI)

### Security Features

- ▶ Access Control Lists (ACLs) based on Layer 3 and 4 headers, per VLAN or port
- ▶ Configurable ACLs for management traffic
- ▶ 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
- ▶ MAC address filtering and MAC address lock down
- ▶ Network Access and Control (NAC) features manage endpoint security



## Specifications

PRODUCT	10/100/1000T (RJ-45) COPPER PORTS	100/1000X SFP PORTS	MAX POE+ ENABLED	TOTAL PORTS	SWITCHING FABRIC	FORWARDING RATE
GS980M/52PS	48	4	48	52	104Gbps	77.4Mpps
GS980M/52	48	4	-	52	104Gbps	77.4Mpps

## Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	MOUNTING	WEIGHT		PACKAGED DIMENSIONS
			UNPACKAGED	PACKAGED	
GS980M/52PS	441 x 359 x 44 mm (17.36 x 14.13 x 1.73 in)	1RU Rack-mount	5.8 kg (12.79 lbs)	7.8 kg (17.20 lbs)	575 x 520 x 150 mm (22.64 x 20.47 x 5.90 in)
GS980M/52	441 x 323 x 44 mm (17.36 x 12.72 x 1.73 in)	1RU Rack-mount	4.5 kg (9.92 lbs)	6.4 kg (14.12 lbs)	575 x 445 x 150 mm (22.64 x 17.52 x 5.90 in)

## Power and Noise Characteristics 100-240 VAC, 50/60 Hz, 1.0A maximum

PRODUCT	NO POE LOAD			FULL POE+ LOAD (PWR800)			POE SOURCING PORTS		
	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE	POE POWER BUDGET	POE (15W)	POE+ (30W)
GS980M/52PS	48W	164 BTU/h	42 dBA	909W	3102 BTU/h	42 dBA	740W	48	24
GS980M/52	47W	160 BTU/h	39 dBA	-	-	-	-	-	-

Noise: tested to ISO7779; front bystander position

- ▶ 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 temperature range: 0°C to 50°C (32°F to 122°F)  
Derated by 1°C per 305 meters (1,000 ft)
- ▶ Storage temperature range: -25°C to 70°C (-13°F to 158°F)
- ▶ Operating relative humidity range: 5% to 90% non-condensing
- ▶ Storage relative humidity range: 5% to 95% non-condensing
- ▶ Operating altitude: 3,048 meters maximum (10,000 ft)

### Electrical approvals and compliances

- ▶ EMC: EN55022 class A, FCC class A, VCCI class A
- ▶ Immunity: EN55024, EN61000-3-levels 2 (Harmonics), and 3 (Flicker) – AC models only

### Safety

- ▶ Standards: UL60950-1, CAN/CSA-C22.2 No. 60950-1-03, EN60950-1, EN60825-1, AS/NZS 60950.1
- ▶ Certifications: UL, cUL, UL-EU

### Restrictions on Hazardous Substances (RoHS) Compliance

- ▶ EU RoHS compliant
- ▶ China RoHS compliant

### Latency

PRODUCT	PORT SPEED		
	10MPS	100MBPS	1GBPS
GS980M/52PS	39.6µs	6.8µs	3.8µs
GS980M/52	35.1µs	5.5µs	2.6µs

## 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

- 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 802.3u 100BASE-X
- 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 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 1518 An architecture for IP address allocation with CIDR
- RFC 1519 Classless Inter-Domain Routing (CIDR)
- RFC 1812 Requirements for IPv4 routers
- RFC 1918 IP addressing
- RFC 2581 TCP congestion control

### Management

- AMF edge node<sup>1</sup>
- AT Enterprise MIB including AMF MIB and SNMP traps
- Optical DDM MIB
- 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 1724 RIPv2 MIB extension
- 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

<sup>1</sup> 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.

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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, 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 Features

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 Features

SSH remote login	
SSLv2 and SSLv3	
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 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 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 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 3315	DHCPv6 client
RFC 4330	Simple Network Time Protocol (SNTP) version 4
RFC 5905	Network Time Protocol (NTP) version

## 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

19 inch rack-mount brackets included

### AT-GS980M/52-xx

48 10/100/1000T switch with 4 SFP slots

### AT-GS980M/52PS-xx

48 10/100/1000T-POE+ switch with 4 SFP slots

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

<sup>1</sup> The tri-speed AT-SPSX only supports Gigabit connectivity in the GS980M Series

## 100Mbps SFP Modules

### AT-SPTX

1000T 100 m copper

### AT-SPSX<sup>1</sup>

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

### AT-SPSX/I

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

### 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-SPLX10/I

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

### 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-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-SPBD40-13/I

1000LX GbE single-mode Bi-Di (1310 nm Tx, 1490 nm Rx) fiber up to 40 km, industrial temperature

### AT-SPBD40-14/I

1000LX GbE single-mode Bi-Di (1490 nm Tx, 1310 nm Rx) fiber up to 40 km, industrial temperature

## 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

## Feature Licenses

NAME	DESCRIPTION	INCLUDES
AT-FL-GS98M-CP	Continuous PoE license	▶ CPoE