

CentreCOM[®] 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™ (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™ (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™)
- ▶ 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
- ▶ Dynamic ACLs assigned via port authentication
- ▶ 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
- ▶ MAC address filtering and MAC address lock down
- ▶ Network Access and Control (NAC) features manage endpoint security
- ▶ Port-based learn limits (intrusion detection)

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

| 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

- ▶ 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 node¹
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

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 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

² The tri-speed AT-SPSX only supports Gigabit connectivity in the GS980M Series

1000Mbps SFP Modules

AT-SPTX

1000T 100 m copper

AT-SPSX²

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 |