

# CentreCOM<sup>®</sup> GS970M Series

## Managed Gigabit Ethernet Switches

The Allied Telesis CentreCOM GS970M Series of Layer 3 Gigabit switches offer an impressive set of features in a compact design, making them ideal for applications at the network edge.



### Overview

Allied Telesis CentreCOM GS970M Series switches provide an excellent access solution for today's networks, supporting Gigabit to the desktop for maximum performance. The Power over Ethernet Plus (PoE+) models provide an ideal solution for connecting and remotely powering wireless access points, IP video surveillance cameras, and IP phones. The GS970M models feature 8, 16 or 24 Gigabit ports, and 2 or 4 SFP uplinks, for secure connectivity at the network edge.

### Specifications

#### Performance

- ▶ Supports 10K jumbo frames
- ▶ Wirespeed multicasting
- ▶ Up to 16K MAC addresses
- ▶ 556MB DDR SDRAM
- ▶ DDR SDRAM:
 

|                |       |
|----------------|-------|
| GS970M non PoE | 512MB |
| GS970M PS      | 256MB |
- ▶ 64MB flash memory
- ▶ Packet Buffer memory: 1.5MB

#### Flexibility and Compatibility

- ▶ Port speed and duplex configuration can be set manually or by auto-negotiation diagnostic tools
- ▶ Automatic link flap detection and port shutdown
- ▶ Optical Digital Diagnostics Monitoring (DDM)
- ▶ Ping polling and TraceRoute for IPv4 and IPv6 Port mirroring

#### IP Features

- ▶ IPv4 static routing and RIP
- ▶ Device management over IPv6 networks with SNMPv6, Telnetv6, SSHv6
- ▶ NTPv6 client

#### Management

- ▶ Allied Telesis Management Framework<sup>™</sup> (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
- ▶ SD/SDHC memory card socket allows software release files, configurations and other files to be stored for backup and distribution to other devices
- ▶ Configurable logs and triggers provide an audit trail of SD card insertion and removal

#### Quality of Service (QoS)

- ▶ Eight 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
- ▶ Loop protection: loop detection and thrash limiting
- ▶ PVST+ compatibility mode
- ▶ STP root guard
- ▶ UniDirectional Link Detection (UDLD)

#### Security Features

- ▶ Access Control Lists (ACLs) based on Layer 2, 3 and 4 headers
- ▶ Configurable 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

## Key Features

- ▶ Allied Telesis Management Framework<sup>™</sup> (AMF) edge node
- ▶ AlliedWare Plus operating system
- ▶ Eco-friendly
- ▶ IPv6 features
- ▶ IEEE 802.1x/MAC/Web authentication support
- ▶ Graphical User Interface (GUI) for easy management
- ▶ Basic L3 features supported
  - ▶ Static routing
  - ▶ RIP



Product Specifications

| PRODUCT      | 10/100/1000T (RJ-45) COPPER PORTS | 100/1000X SFP PORTS | TOTAL PORTS | POE+ ENABLE PORTS | SWITCHING FABRIC | FORWARDING RATE |
|--------------|-----------------------------------|---------------------|-------------|-------------------|------------------|-----------------|
| GS970M/10PS* | 8                                 | 2                   | 10          | 8                 | 20Gbps           | 14.9Mpps        |
| GS970M/10    | 8                                 | 2                   | 10          | -                 | 20Gbps           | 14.9Mpps        |
| GS970M/18PS* | 16                                | 2                   | 18          | 16                | 36Gbps           | 26.8Mpps        |
| GS970M/18    | 16                                | 2                   | 18          | -                 | 36Gbps           | 26.8Mpps        |
| GS970M/28PS* | 24                                | 4                   | 28          | 24                | 56Gbps           | 41.7Mpps        |
| GS970M/28    | 24                                | 4                   | 28          | -                 | 56Gbps           | 41.7Mpps        |

Physical specifications

| PRODUCT      | WIDTH X DEPTH X HEIGHT                       | WEIGHT           | PACKAGED DIMENSIONS                       | WEIGHT            |
|--------------|----------------------------------------------|------------------|-------------------------------------------|-------------------|
| GS970M/10PS* | 210 x 275 x 42.5 mm (8.27 x 10.83 x 1.67 in) | 2.1 kg (4.6 lb)  | 43 x 36 x 15 cm (16.93 x 14.17 x 5.90 in) | 3.45 kg (7.6 lb)  |
| GS970M/10    | 265 x 180 x 42.5 mm (10.43 x 7.08 x 1.67 in) | 1.5 kg (3.3 lb)  | 43 x 36 x 15 cm (16.93 x 14.17 x 5.90 in) | 2.85 kg (6.3 lb)  |
| GS970M/18PS* | 341 x 231 x 44 mm (13.42 x 9.09 x 1.73 in)   | 3.0 kg (6.6 lb)  | 43 x 36 x 15 cm (16.93 x 14.17 x 5.90 in) | 4.35 kg (9.6 lb)  |
| GS970M/18    | 341 x 231 x 44 mm (13.42 x 9.09 x 1.73 in)   | 2.4 kg (5.3 lb)  | 43 x 36 x 15 cm (16.93 x 14.17 x 5.90 in) | 4.0 kg (8.8 lb)   |
| GS970M/28PS* | 440 x 290 x 44 mm (17.32 x 11.42 x 1.73 in)  | 4.7 kg (10.4 lb) | 53 x 43 x 15 cm (20.86 x 16.93 x 5.90 in) | 6.35 kg (14.0 lb) |
| GS970M/28    | 341 x 231 x 44 mm (13.42 x 9.09 x 1.73 in)   | 2.4 kg (5.3 lb)  | 43 x 36 x 15 cm (16.93 x 14.17 x 5.90 in) | 4.0 kg (8.8 lb)   |

Latency (microseconds)

| PRODUCT   | PORT SPEED |         |       |
|-----------|------------|---------|-------|
|           | 10MBPS     | 100MBPS | 1GBPS |
| GS970M/10 | 55µs       | 7.8µs   | 3.4µs |
| GS970M/18 | 56µs       | 7.9µs   | 3.4µs |
| GS970M/28 | 59µs       | 8.6µs   | 4.3µs |

Power characteristics

100-240 VAC, 50-60Hz, 2.4A maximum

| PRODUCT      | NO POE LOAD           |                      |         | FULL POE+ LOAD        |                      |        | MAX POE POWER | MAX POE PORTS AT 15W PER PORT | MAX POE+ PORTS AT 30W PER PORT |
|--------------|-----------------------|----------------------|---------|-----------------------|----------------------|--------|---------------|-------------------------------|--------------------------------|
|              | MAX POWER CONSUMPTION | MAX HEAT DISSIPATION | NOISE   | MAX POWER CONSUMPTION | MAX HEAT DISSIPATION | NOISE  |               |                               |                                |
| GS970M/10PS* | 16W                   | 55 BTU/hr            | 33 dBA  | 180W                  | 126 BTU/hr           | 41 dBA | 124W          | 8                             | 4                              |
| GS970M/10    | 16W                   | 55 BTU/hr            | Fanless | -                     | -                    | -      | -             | -                             | -                              |
| GS970M/18PS* | 21W                   | 72 BTU/hr            | 34 dBA  | 330W                  | 169 BTU/hr           | 42 dBA | 247W          | 16                            | 8                              |
| GS970M/18    | 18W                   | 61 BTU/hr            | 29 dBA  | -                     | -                    | -      | -             | -                             | -                              |
| GS970M/28PS* | 37W                   | 127 BTU/hr           | 33 dBA  | 520W                  | 303 BTU/hr           | 42 dBA | 370W          | 24                            | 12                             |
| GS970M/28    | 26W                   | 89 BTU/hr            | 34 dBA  | -                     | -                    | -      | -             | -                             | -                              |

\* Available June 2017

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 802.1AX Link aggregation (static and LACP)
- IEEE 802.2 Logical Link Control (LLC)
- IEEE 802.3 Ethernet
- IEEE 802.3ab1000T
- IEEE 802.3ae10 Gigabit Ethernet
- IEEE 802.3ad Static and dynamic link aggregation
- IEEE 802.3af Power over Ethernet (PoE)
- IEEE 802.3at Power over Ethernet plus (PoE+)
- IEEE 802.3az Energy Efficient Ethernet (EEE)
- IEEE 802.3u 100X
- IEEE 802.3x Flow control - full-duplex operation
- IEEE 802.3z 1000X

IPv4 Features

- RFC 791 Internet Protocol (IP)
- RFC 792 Internet Control Message Protocol (ICMP)
- 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 1256 ICMP router discovery messages
- RFC 1518 An architecture for IP address allocation with CIDR
- RFC 1519 Classless Inter-Domain Routing (CIDR)
- RFC 1918 IP addressing

IPv6 Features

- RFC 2460 IPv6 specification
- RFC 2464 Transmission of IPv6 packets over Ethernet networks
- RFC 3484 Default address selection for IPv6
- 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 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  
 AMF MIB and SNMP traps  
 AT Enterprise 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  
 ORFC 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 SNMPv2 MIB for TCP using SMIv2  
 RFC 4113 SNMPv2 MIB for UDP using SMIv2  
 RFC 4293 SNMPv2 MIB for IP using SMIv2  
 RFC 4188 Definitions of managed objects for bridges  
 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 snooping (v1, v2 and v3)  
 IGMP snooping fast-leave  
 MLD snooping (v1 and v2)

## 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 802.1D MAC bridges  
 IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)  
 IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

## 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  
 TACACS+ Accounting, Authentication, Authorization (AAA)  
 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 2246 TLS protocol v1.0  
 RFC 2865 RADIUS  
 RFC 2866 RADIUS accounting  
 RFC 2868 RADIUS attributes for tunnel protocol support  
 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

## 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 DHCP  
 RFC 2132 DHCP options and BootP vendor extensions  
 RFC 2554 SMTP service extension for authentication  
 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

## Environmental Specifications

Operating ambient temp. 0°C to 50°C (32°F to 113°F)  
 Storage temp. -25°C to 70°C (-13°F to 158°F)  
 Operating humidity 5% to 90% non-condensing  
 Storage humidity 5% to 95% non-condensing  
 Maximum operating Altitude 3,000 m (9,842 ft)  
 Maximum Non operating Altitude 4,000 m (13,100 ft)

## Safety and Electromagnetic Emissions

EMI (Emissions) : FCC Class A, EN55022 Class A, EN61000-3-2, EN61000-3-3, VCCI Class A, CISPR Class A  
 EMC (Immunity) : EN55024  
 Electrical and Laser Safety : EN60950-1 (TUV), UL 60950-1(cULus), EN60825-1  
 Compliance Marks UL, cUL, UL-EU, CE

## Restrictions on Hazardous Substances (RoHS) Compliance

- ▶ EU RoHS compliant
- ▶ China RoHS compliant

## Country of origin

- ▶ China



## CentreCOM GS970M Series | Managed Gigabit Ethernet Switches

### Ordering Information

#### AT-GS970M/10PS\*

L3 switch with 8 x 10/100/1000T PoE ports and 2 x 100/1000X SFP ports

#### AT-GS970M/10

L3 switch with 8 x 10/100/1000T ports and 2 x 100/1000X SFP ports

#### AT-GS970M/18PS\*

L3 switch with 16 x 10/100/1000T PoE ports and 2 x 100/1000X SFP ports

#### AT-GS970M/18

L3 switch with 16 x 10/100/1000T ports and 2 x 100/1000X SFP ports

#### AT-GS970M/28PS\*

L3 switch with 24 x 10/100/1000T PoE ports and 4 x 100/1000X SFP ports

#### AT-GS970M/28

L3 switch with 24 x 10/100/1000T ports and 4 x 100/1000X SFP ports

#### AT-RKMT-J05

Rack mount kit for GS970M/10

#### AT-RKMT-J13

Rack mount kit for GS970M/18 and 18PS

#### AT-RKMT-J14

Rack mount kit for GS970M/10PS

#### AT-BRKT-J23

Wall mount kit for GS970M/10

#### AT-BRKT-J24

Wall mount kit for GS970M/18, 28, 10PS, 18PS and 28PS

\* Available June 2017

### 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, 1310 nm Rx) fiber up to 10 km

#### AT-SPTX

1000T 100 m copper

#### AT-SPSX

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-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



### Feature Licenses

| NAME            | DESCRIPTION                   | INCLUDES |
|-----------------|-------------------------------|----------|
| AT-FL-GS97-UDLD | UniDirectional Link Detection | ▶ UDLD   |