

# CentreCOM<sup>®</sup> GS900MX/MPX Series

## Layer 3 Managed Gigabit Ethernet Stackable Switches

Allied Telesis CentreCOM GS900MX/MPX Series switches are cost-effective, fully managed, and stackable. The switches in this series can serve as an AMF node when an AMF Master switch is available in the network, which helps to reduce network running costs by automating and simplifying many day-to-day tasks.



AlliedWare Plus<sup>™</sup>  
OPERATING SYSTEM



### Overview

With a choice of 24- and 48-port 10/100/100T versions with 10G up link, Power over Ethernet (PoE), plus the ability to stack up to four units, the CentreCOM GS900MX/ GS900MPX Series switches are ideal for demanding applications at the edge of the network.

### Key Features

- ▶ Allied Telesis Autonomous Management Framework<sup>™</sup> (AMF) edge node
- ▶ AMF secure mode
- ▶ AlliedWare Plus operating system
- ▶ Eco-friendly
- ▶ Mixed stacking up to four units
- ▶ IPv6 features
- ▶ IEEE 802.1x/MAC/Web authentication support
- ▶ Graphical User Interface (GUI) for easy management
- ▶ Basic L3 features supported
  - ▶ Static routing
  - ▶ RIP
- ▶ DHCP relay
- ▶ L2 Multicast 512 entries
- ▶ IPv4 ACL 256 entries

### Specifications

#### Performance

- ▶ 40Gbps of stacking bandwidth
- ▶ Supports 9216bytes jumbo frames
- ▶ Wirespeed multicasting

- ▶ Up to 16K MAC addresses
- ▶ 512MB DDR SDRAM
- ▶ 64MB flash memory

#### Power Characteristics

AT-GS924MX and AT-GS948MX  
AC model: 100-240 VAC, 1.0A maximum, 50/60 Hz  
AT-GS924MPX and AT-GS948MPX  
AC model: 100-240 VAC, 5.0A maximum, 50/60 Hz

#### Expandability

- ▶ Hardware Virtual Chassis Stacking (VCStack<sup>™</sup>) up to four units

#### 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

- ▶ Front panel 7-segment LED provides at-a-glance status and fault information
- ▶ Allied Telesis Autonomous Management Framework<sup>™</sup> (AMF) enables powerful centralized management and zerotouch device installation and recovery
- ▶ AMF secure mode increases network security with management traffic encryption, authorization, and monitoring
- ▶ 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
- ▶ USB interface allows software release files, configurations, and other files to be stored for backup and distribution to other devices

#### 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

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## Specifications

PRODUCT	10/100/1000T (RJ-45) COPPER PORTS	COMBO (100/1000X SFP PORTS OR 10/100/1000T, RJ-45 PORTS)	10 GIGABIT SFP+ PORTS OR 10 GIGABIT STACKING PORTS	MAX POE+ ENABLED PORTS	SWITCHING FABRIC	FORWARDING RATE
GS924MX	24	2	2		92Gbps	68.44Mpps
GS924MPX	24	2	2	24	92Gbps	68.44Mpps
GS948MX	48	2	2		140Gbps	104.16Mpps
GS948MPX	48	2	2	48	140Gbps	104.16Mpps

## Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	WEIGHT	PACKAGED DIMENSIONS	WEIGHT
GS924MX	339 x 211 x 44 mm (13.4 x 8.3 x 1.72 in)	2.5 Kg (5.5 lb)	48 x 30 x 13 cm (18.9 x 11.8 x 5.1 in)	3.7 Kg (8.2 lb)
GS924MPX	441 x 356 x 44 mm (17.3 x 14.0 x 1.72 in)	5.3 Kg (11.6 lb)	56 x 51 x 15 cm (22.1 x 20.1 x 5.9 in)	7.4 Kg (16.3 lb)
GS948MX	441 x 356 x 44 mm (17.3 x 14.0 x 1.72 in)	4.5 Kg (9.9 lb)	58 x 46 x 15 cm (22.6 x 18.1 x 5.9 in)	6.2 Kg (13.6 lb)
GS948MPX	441 x 356 x 44 mm (17.3 x 14.0 x 1.72 in)	5.8 Kg (12.8 lb)	58 x 56 x 15 cm (22.8 x 22.1 x 5.9 in)	7.9 Kg (17.4 lb)

## Power and Noise Characteristics

PRODUCT	NO POE LOAD				FULL POE+ LOAD					
	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	TYPICAL NOISE	MAX NOISE	MAX SYSTEM POWER CONSUMPTION	MAX POWER CONSUMPTION	MAX SYSTEM HEAT DISSIPATION	MAX HEAT DISSIPATION	TYPICAL NOISE	MAX NOISE
GS924MX	30.7W	104.6 BTU/hr	27.1 dB	52.7 dB						
GS924MPX	53.6W	182.9 BTU/hr	43.7 dBA (55% FAN speed)	57.7 dBA (100% FAN speed)	94.3W	464.3W (370W POE+ Load)	321.7 BTU/h	1584 BTU/h (370W POE+ Load)	43.7 dB	57.7 dB
GS948MX	50.7W	173.1 BTU/hr	33.8 dB	58.1 dB						
GS948MPX	70.2W	239.5 BTU/hr	42.0 dBA (55% FAN speed)	58.4 dBA (100% FAN speed)	110.6W	480.6W (370W POE+ Load)	377.4 BTU/h	1640 BTU/h (370W POE+ Load)	42.0 dB	58.4 dB

Noise: tested to ISO7779; front bystander position

PRODUCT	MAX POE POWER	MAX POE PORTS AT 7.0W PER PORT	MAX POE PORTS AT 15.4W PER PORT	MAX POE PORTS AT 30W PER PORT
GS924MPX	370W	24	24	12
GS948MPX	370W	48	24	12

## Latency

PRODUCT	64byte			1518byte		
	10Mbps	100Mbps	1000Mbps	10Mbps	100Mbps	1000Mbps
GS924MX	21.1µs	3.6µs	3.5µs	22.7µs	3.7µs	3.7µs
GS924MPX	21.1µs	3.6µs	3.5µs	22.7µs	3.7µs	3.7µs
GS948MX	21.1µs	3.6µs	3.5µs	22.7µs	3.7µs	3.7µs
GS948MPX	21.1µs	3.6µs	3.5µs	22.7µs	3.7µs	3.7µs

## 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 802.3ab1000BASE-T  
IEEE 802.3ae10 Gigabit Ethernet  
IEEE 802.3af Power over Ethernet (PoE)  
IEEE 802.3at Power over Ethernet plus (PoE+)  
IEEE 802.3u 100BASE-X

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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 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 Features

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 edge node<sup>1</sup>  
AT Enterprise MIB including AMF MIB and SNMP traps  
SNMPv1, v2c and v3  
IEEE 802.1ABLink 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  
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 The 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 Features

IEEE 802.1AXLink 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 802.3adStatic 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  
TACACS+ Accounting, Authentication and Authorisation (AAA)  
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 2865 RADIUS authentication  
RFC 2866 RADIUS accounting  
RFC 2986 PKCS #10: certification request syntax specification v1.7  
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 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 802.3acVLAN 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  
GS924MX: 2,000 m (6,562 ft)  
GS924MPX: 3,000 m (9,842 ft)  
GS948MX: 2,000 m (6,562 ft)  
GS948MPX: 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, RCM, CE  
EMC (Immunity) : EN55024  
Electrical and Laser Safety : EN60950-1 (TUV), UL 60950-1(cULus), EN60825-1  
Compliance Marks CE, cULus, TUV, RCM

<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.



## Ordering Information

### GS900MX and GS900MPX Series

#### AT-GS924MX-xx

24-port 10/100/1000T stackable switch with 2 combo ports (10/100/1000T or 100/1000X SFP) and 2 SFP+ stacking/user ports

#### AT-GS924MPX-xx

24-port 10/100/1000T PoE+ stackable switch with 2 combo ports (10/100/1000T or 100/1000X SFP) and 2 SFP+ stacking/user ports

#### AT-GS948MX-xx

48-port 10/100/1000T stackable switch with 2 combo ports (10/100/1000T or 100/1000X SFP) and 2 SFP+ stacking/user ports

#### AT-GS948MPX-xx

48-port 10/100/1000T PoE+ stackable switch with 2 combo ports (10/100/1000T or 100/1000X SFP) and 2 SFP+ stacking/user ports

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

### 1000Mbps SFP Modules

1G SFP speed on 10G port is not supported.

#### 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-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

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

### 10GbE SFP+ Modules

#### AT-SP10SR

10GSR 850 nm short-haul, 300 m with MMF

#### AT-SP10SR/I

10GSR 850 nm short-haul, 300 m with MMF industrial temperature

#### AT-SP10LRM

10GLRM 1310 nm short-haul, 220 m with MMF

#### AT-SP10LR

10GLR 1310 nm medium-haul, 10 km with SMF

#### AT-SP10LR/I

10GLR 1310 nm medium-haul, 10 km with SMF industrial temperature

#### AT-SP10LR20/I

10GER 1310 nm long-haul, 20 km with SMF industrial temperature

#### AT-SP10ER40/I

10GER 1310 nm long-haul, 40 km with SMF industrial temperature

#### AT-SP10ZR80/I

10GER 1550 nm long-haul, 80 km with SMF industrial temperature

#### AT-SP10TW1

1 meter SFP+ direct attach cable, can also be used for stacking



## Feature Licenses

NAME	DESCRIPTION	INCLUDES
AT-FL-GS9X-UDLD	UniDirectional Link Detection	▶ UDLD