

CentreCOM® GS980MX Series

Stackable Multi-Gigabit Layer 3 Lite Switches



The Allied Telesis Centre COM GS980MX Series of Layer 3 Gigabit switches feature high-capacity, resiliency and easy management. Power over Ethernet models with Multi-Gigabit support make them an ideal solution for high-speed connectivity at the network edge.

Overview

The GS980MX Series are high-performing, feature-rich, and versatile for today's networks. With Gigabit/Multi-Gigabit ports and 10 Gigabit uplinks, plus the power of Allied Telesis Virtual Chassis Stacking (VCStack™), the GS980MX Series enable flexible deployment and a resilient solution.

The Power over Ethernet models offer 2.5G and 5G Multi-Gigabit ports to support connecting and powering high-speed Wi-Fi 6 wireless networks, and other high bandwidth applications. The HSm models can provide up to 90 Watts (PoE++) per port. This enables powering high power devices such as high resolution PTZ cameras with heater/blowers for outdoor applications, enhanced infrared lighting, and more.

SPECIFICATIONS

Performance

- 10KB L2 and 9KB L3 Jumbo frames
- 4094 configurable VLANs
- Up to 16K MAC addresses
- 1GB DDR3 SDRAM
- Packet buffer memory:
 - 1.5MB (28-port models)
 - 3MB (10, 18, 52-port models)
 - 4.5MB (52PSm models)

Reliability

- Modular AlliedWare Plus operating system
- Full environmental monitoring of PSUs, fans, temperature and internal voltages.
- SNMP traps alert network managers in case of any failure

Expandability

- Stack up to 4 units in a VCStack at any port speed

Diagnostic Tools

- Active Fiber Monitoring detects tampering on optical links
- Built-In Self test (BIST)
- Cable fault locator (TDR)
- Find-me device locator
- Automatic link flap detection and port shutdown
- Optical Digital Diagnostic Monitoring (DDM)
- Ping polling for IPv4 and IPv6
- Port mirroring
- Trace Route for IPv4 and IPv6
- Uni-Directional Link Detection (UDLD)

IPv6 Features

- Equal Cost Multi Path (ECMP) routing
- Static routing and RIP for IPv4
- Static routing for IPv6

- Device management over IPv6 networks with SNMPv6, Telnetv6, SSHv6
- IPv6 hardware ACLs
- Log to IPv6 hosts with Syslog v6
- IPv6 Ready certified

Management

- Front panel 7-segment LED provides at-a-glance status and fault information
- Autonomous Management Framework Plus (AMF Plus) enables powerful centralized management and zero-touch device installation and recovery
- Manage the GS980MX with Vista Manager EX, our graphical single-pane-of-glass monitoring and management tool for AMF Plus networks. Also supports wireless and third party devices
- From AW+ 5.5.2-2, an AMF Plus license operating in the network provides all standard AMF network management and automation features, and also enables the AMF Plus intent-based networking features in Vista Manager EX (from version 3.10.1 onwards)
- AMF Security (AMF-Sec) enables a self-defending network—managing the GS980MX Series (or other AMF Plus switches) to automatically block the spread of malware by quarantining suspect end user devices
- IPFIX exports IP flow data in a network for analysis, so administrators have information for accounting, capacity planning, and optimization
- Console management port on the front panel for ease of access
- NETCONF/RESTCONF northbound interface with YANG data modelling
- 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

Key Features

- AlliedWare Plus Enterprise-class operating system
- Autonomous Management Framework™ Plus (AMF Plus) edge node
- Vista Manager EX compatible
- AMF-Security compatible
- VCStack™ up to 4 switches
- VCStack LD for long distance stacking
- EPSR transit node
- 10 Gigabit uplinks
- 2.5/5G with PoE for high-speed wireless APs (PSm and HSm models)
- IEEE 802.3at PoE+ (30W per port on PSm models)
- IEEE 802.3bt PoE++ (90W per port on HSm models)
- Continuous PoE
- Active Fiber Monitoring (AFM)
- IPv6 features
- Eco-Friendly
- Device GUI for web-based management
- NETCONF/RESTCONF with YANG data modelling
- IPFIX (IP Flow Information Export)
- Enhanced Transmission Selection (ETS)

- Event-based triggers allow user-defined scripts to be executed upon selected system events
- Wirespeed forwarding

Quality of Service

- 8 priority queues with a hierarchy of high priority queues for real time traffic, and mixed scheduling, for each switch port

Product Specifications

	10/100/1000T (RJ-45) copper ports	100M/1/2.5/5 Gigabit ports	1/10 Gigabit SFP+ ports	Stacking ports	PoE enabled ports	Switching Fabric	Forwarding Rate
GS980MX/10HSm	-	8	2	2*	8	120Gbps	89.2Mpps
GS980MX/18HSm	-	16	2	2*	16	200Gbps	148.8Mpps
GS980MX/28	24	-	4	2*	-	128Gbps	95.2Mpps
GS980MX/28PSm	20	4	4	2*	24	160Gbps	119Mpps
GS980MX/52	48	-	4	2*	-	176Gbps	130.9Mpps
GS980MX/52PSm	40	8	4	2*	48	240Gbps	179Mpps

* Any port/s can be used for stacking

Physical Specifications

	Width	Depth	Height	Mounting	Unpackaged Weight	Packaged Weight	Packaged dimensions
GS980MX/10HSm	210 mm (8.26 in)	362 mm (14.25 in)	42.5 mm (1.67 in)	Rack-mount	3.5 kg (7.7 lb)	5.5 kg (12.1 lb)	461 x 371 x 153 mm (18.15 x 14.60 x 6.02 in)
GS980MX/18HSm	441 mm (17.36 in)	256 mm (10.07 in)	44 mm (1.73 in)	Rack-mount	4.3 kg (9.48 lb)	5.8 kg (12.78 lb)	526 x 412 x 129 mm (20.70 x 16.22 x 5.07 in)
GS980MX/28	441 mm (17.36 in)	323 mm (12.72 in)	44 mm (1.73 in)	Rack-mount	4.3 kg (9.5 lb)	6.3 kg (13.8 lb)	563 x 534 x 128 mm (22.16 x 21.02 x 5.04 in)
GS980MX/28PSm	441 mm (17.36 in)	421 mm (16.57 in)	44 mm (1.73 in)	Rack-mount	5.6 kg (12.4 lb)	7.6 kg (16.7 lb)	563 x 534 x 128 mm (22.16 x 21.02 x 5.04 in)
GS980MX/52	441 mm (17.36 in)	323 mm (12.72 in)	44 mm (1.73 in)	Rack-mount	4.8 kg (10.1 lb)	6.8 kg (14.9 lb)	563 x 534 x 128 mm (22.16 x 21.02 x 5.04 in)
GS980MX/52PSm	441 mm (17.36 in)	421 mm (16.57 in)	44 mm (1.73 in)	Rack-mount	6.1 kg (17.8 lb)	8.1 kg (17.8 lb)	563 x 632 x 128 mm (22.16 x 24.88 x 5.04 in)

Power and Noise Characteristics

	No PoE Load			Full PoE+ Load			Max PoE Power	PoE sourcing ports				
	Max Power Consumption	Max Heat Dissipation	Noise	Max Power Consumption	Max Heat Dissipation	Noise (dBA)		PoE (7.54W)	PoE (15.4W)	PoE+ (30W)	PoE++ (60W)	PoE++ (90W)
GS980MX/10HSm	60	204	42	605	2065	64	500W	8	8	8	8	5
GS980MX/18HSm	86	293	42	970	3317	42	720W	16	16	16	12	8
GS980MX/28	39	133	42*	-	-	-	-	-	-	-	-	-
GS980MX/28PSm	70	239	42*	510	1741	42*	370W	24	24	12	-	-
GS980MX/52	60	205	42*	-	-	-	-	-	-	-	-	-
GS980MX/52PSm	95	324	42*	530	1809	42*	370W	48	24	12	-	-

* This figure is under 30 degree C ambient temperature

Noise: tested to ISO7779; front bystander position

Latency (microseconds)

	100Mbps	1Gbps	2.5Gbps	5Gbps	10Gbps
GS980MX/10HSm	8.24µs	7.89µs	5.63µs	3.49µs	2.12µs
GS980MX/18HSm	8.35µs	7.96µs	7.72µs	5.23µs	2.56µs
GS980MX/28	8.29µs	7.63µs	-	-	1.63µs
GS980MX/28PSm	8.29µs	7.63µs	7.41µs	4.97µs	1.63µs
GS980MX/52	8.34µs	7.75µs	-	-	1.67µs
GS980MX/52PSm	8.34µs	7.75µs	7.51µs	5.06µs	1.67µs

- 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
- IPv6 QoS support
- Policy-based QoS based on VLAN, port, MAC and general packet classifiers
- Policy-based storm protection
- Extensive remarking capabilities
- Taildrop for queue congestion control
- Queue scheduling options for Strict priority, weighted round robin or mixed scheduling
- Type of Services (ToS) IP precedence and DiffServ marking based on layer 2, 3 and 4 headers
- Enhanced Transmission Selection (ETS)

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 Super-Loop Protection (SLP) and enhanced recovery for extra resiliency
- Long-Distance VCStack with fiber modules (VCStack LD)
- Loop protection: loop detection and thrash limiting
- PVST+ compatibility mode
- STP root guard
- VCStack fast failover minimizes network disruption

Security Features

- Access Control Lists (ACLs) based on layer 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)
- DoS attack blocking and virus throttling
- 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)
- Private VLANs provide security and port isolation for multiple customers using the same VLAN
- Secure Copy (SCP)
- Secure File Transfer (SFTP) client
- Strong password security and encryption
- Simple Certificate Enrollment Protocol (SCEP) supports secure management
- Tri-authentication: MAC-based, web-based and IEEE 802.1x
- Web-based authentication

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 range:
Up to 3,000 meters maximum (9,843 ft)

Electrical approvals and compliances

- EMC: EN55024 FCC Class A, EN55032 Class A, EN61000-3-2, EN61000-3-3, VCCI Class A, RCM
- Immunity: EN55024, EN61000-3-levels 2 (Harmonics), and 3 (Flicker) – AC models only

Safety

- Standards: UL60950-1, CSA-C22.2 No. 60950-1, EN60950-1, UL62368-1
- Certifications: cUL, cULus, TUV

Restrictions on Hazardous Substances (RoHS) Compliance

- EU RoHS compliant
- China RoHS compliant

STANDARDS & PROTOCOLS

Authentication

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

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 Standards

- 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 up to 30W (PoE+)
- IEEE 802.3azEnergy Efficient Ethernet (EEE)
- IEEE 802.3bt Power over Ethernet up to 90W (PoE++)
- IEEE 802.3bz2.5GBASE-T and 5GBASE-T ("multi-gigabit")
- 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 951 Bootstrap Protocol (BootP)
- 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 1542 Clarifications and extensions for BootP
- 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 3056 Connection of IPv6 domains via IPv4 clouds
- 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 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
- RFC 5175 IPv6 Router Advertisement (RA) flags option
- RFC 6105 IPv6 Router Advertisement (RA) guard

Management

- AT Enterprise MIB including AMF Plus MIB and SNMP traps
- 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 2011 SNMPv2 MIB for IP using SMIv2
- RFC 2012 SNMPv2 MIB for TCP using SMIv2
- RFC 2013 SNMPv2 MIB for UDP using SMIv2
- 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 2787 Definitions of managed objects for VRRP
- 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 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
- RFC 6527 Definitions of managed objects for VRRPv3
- RFC 7011 IPFIX: a method of exporting IP flow data in a network for analysis

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 4541 IGMP and MLD snooping switches

Quality of Service (QoS)

IEEE 802.1p Priority tagging
 IEEE 802.1Qaz Enhanced Transmission Selection (ETS)
 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
 RFC 5798 Virtual Router Redundancy Protocol version 3 (VRRPv3) for IPv4 and IPv6

Routing Information Protocol (RIP)

RFC 1058 Routing Information Protocol (RIP)
 RFC 2081 RIPng protocol applicability statement

RFC 2082 RIP-2 MD5 authentication
 RFC 2453 RIPv2

Security Features

SSH remote login
 SSLv2 and SSLv3
 TACACS+ Accounting and Authentication
 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 2818 HTTP over TLS ("HTTPS")
 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 8446 Transport Layer Security (TLS) v1.3
 RFC 8894 Simple Certificate Enrollment Protocol (SCEP)

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 (server, relay and client)
 RFC 2132 DHCP options and BootP vendor extensions
 RFC 2616 Hypertext Transfer Protocol - HTTP/1.1
 RFC 2821 Simple Mail Transfer Protocol (SMTP)
 RFC 2822 Internet message format
 RFC 3046 DHCP relay agent information option (DHCP option 82)
 RFC 3315 DHCPv6 (server, relay and client)
 RFC 3633 IPv6 prefix options for DHCPv6
 RFC 3646 DNS configuration options for DHCPv6
 RFC 3993 Subscriber-ID suboption for DHCP relay agent option
 RFC 4330 Simple Network Time Protocol (SNTP) version 4
 RFC 5905 Network Time Protocol (NTP) version 4

VLAN Support

Generic VLAN Registration Protocol (GVRP)
 IEEE 802.1Q Virtual LAN (VLAN) bridges
 IEEE 802.1v VLAN classification by protocol and port

Voice over IP (VoIP)

LLDP-MED ANSI/TIA-1057
 Voice VLAN

Feature Licenses

	Description	Includes	Stack Licensing
AT-FL-G98MX-CP	Continuous PoE license	■ Continuous PoE power for PSm and HSm models	■ One license per stack member
AT-FL-G98MX-UD	Mixed stacking license	■ UniDirectional Link Detection	■ One license per stack member

ORDERING INFORMATION

AT-GS980MX/10HSm-xx	8-port 100M/1/2.5/5G PoE++ stackable switch with 2 SFP+ ports and a single fixed power supply
AT-GS980MX/18HSm-xx	16-port 100M/1/2.5/5G PoE++ stackable switch with 2 SFP+ ports and a single fixed power supply
AT-GS980MX/28-xx	24-port 10/100/1000T stackable switch with 4 SFP+ ports and a single fixed power supply
AT-GS980MX/28PSm-xx	20-port 10/100/1000T PoE+ and 4-ports 100M/1/2.5/5G PoE+ stackable switch with 4 SFP+ ports and a single fixed power supply
AT-GS980MX/52-xx	48-port 10/100/1000T stackable switch with 4 SFP+ ports and a single fixed power supply
AT-GS980MX/52PSm-xx	40-port 10/100/1000T PoE+ and 8-ports 100M/1/2.5/5G PoE+ stackable switch with 4 SFP+ ports and a single fixed power supply
AT-RKMT-J15	Rack mount shelf kit for GS980MX/10HSm
AT-BRKT-J24	Wall mount kit for GS980MX/10HSm
AT-BRKT-J22	Wall-mount kit for GS980MX/28 & 52
AT-VT-Kit3	Management Cable (USB to Serial Console)

Where xx = 10 for US power cord
 20 for no power cord
 30 for UK power cord
 40 for AU power cord
 50 for EU power cord

Accessories

10G SFP+ Modules	
AT-SP10TM	1G/2.5G/5G/10G, 100m copper, TAA ¹
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-SP10LRa/I	10GBASE-LR, 1310 nm, 10 km with SMF, I-Temp, TAA ¹
AT-SP10ZR80/I	10GER 1550 nm long-haul, 80 km with SMF industrial temperature
AT-SP10BD10/I-12	10 GbE Bi-Di (1270 nm Tx, 1330 nm Rx) fiber up to 10 km industrial temperature, TAA ¹
AT-SP10BD10/I-13	10 GbE Bi-Di (1330 nm Tx, 1270 nm Rx) fiber up to 10 km industrial temperature, TAA ¹
AT-SP10BD20-12	10G Bi-Di, 1270 nm TX/1330 nm RX, 20km, TAA ¹
AT-SP10BD20-13	10G Bi-Di, 1330 nm TX/1270 nm RX, 20km, TAA ¹
AT-SP10BD40/I-12	10 GbE Bi-Di (1270 nm Tx, 1330 nm Rx) fiber up to 40 km industrial temperature, TAA ¹
AT-SP10BD40/I-13	10 GbE Bi-Di (1330 nm Tx, 1270 nm Rx) fiber up to 40 km industrial temperature, TAA ¹
10GbE SFP+ Cables	
AT-SP10TW1	1 meter SFP+ direct attach cable
AT-SP10TW3	3 meter SFP+ direct attach cable

1000Mbps SFP Modules	
AT-SPTX	1000T 100 m copper
AT-SPTX/I	1000SX GbE multi-mode 850 nm fiber up to 550 m industrial temperature
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-SPSX/I	1000SX GbE multi-mode 850 nm fiber up to 550 m industrial temperature
AT-SPLX10a	1000LX SFP, LC, SMF, 1310nm (10km), TAA ¹
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-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
AT-SPLX40	1000LX GbE single-mode 1310 nm fiber up to 40 km

¹ Trade Act Agreement compliant (TAA)