CentreCOM® GS970EMX Series

Gigabit Layer3 Lite Access Switches with 10 Gigabit Uplinks

The Allied Telesis CentreCOM GS970EMX series Layer 3 Lite switches provide Gigabit connectivity with 10 Gigabit copper and fiber uplinks. They feature a comprehensive feature-set making them ideal for secure and cost-effective access in small to medium business networks.

Overview

The Allied Telesis GS970EMX series provide high availability, security, and a basic L3 feature set. The GS970EMX/10 features 8x 10M/100M/1 Gigabit ports with 1x 100M/1/2.5/5/10 Multi-Gigabit copper uplink and 1x 1/10G SFP+ uplink. The GS970EMX/28 features 24x 10M/100M/1 Gigabit ports with 2x 100M/1/2.5/5/10 Multi-Gigabit copper uplinks and 2x 1/10G SFP+ uplinks.

The compact and fan-less design provides silent operation and flexible deployment, making it ideal for the edge of modern business networks.

Network Management

The GS970EMX Series support the AlliedWare Plus™ advanced operating system for consistent management across all devices. The industry-standard Command Line Interface (CLI) reduces time and cost, while the web-based Graphical User Interface (GUI) is built in for easy-to-use visual management.

Network Security

Network security is guaranteed, with powerful control over network traffic types, secure management options, and other multi-layered security features built right in.

Network Access Control (NAC) gives unprecedented control over user access to the network, in order to mitigate threats to network infrastructure.

802.1x port-based authentication, in partnership with standards-compliant dynamic VLAN assignment, checks a user's adherence to network security policies and either grants access or offers remediation. Tri-authentication

ensures the network is only accessed by known users and devices, and secure access is available for guests.

Protection from malicious network attacks is provided by security features such as DHCP snooping, STP root guard, BPDU protection, and access control lists. Each of these can be configured to perform a variety of actions upon detection of a suspected attack.

Stackable

Create a VCStack™ of up to four GS970EMX/28 switches with 40 Gbps of stacking bandwidth. VCStack provides a highly-available system in which network resources are spread out across stacked units, minimizing the impact should any link or unit fail.

Reliability

The GS970EMX Series support Ethernet Protection Switched Ring (EPSRing™), which prevents loops in ring-based networks. EPSR offers rapid detection and extremely fast failover in the event of a link or node failure, with recovery in as little as 50 milliseconds.

The GS970EMX Series can act as the EPSR master with a premium license, ensuring resiliency in Ethernet ring-based networks.

Comprehensive Security

As AMF members, the GS970EMX Series is compatible with our AMF-Security solution, which enables a self-defending network. The AMF–Sec controller responds immediately to any internal malware threats by instructing the GS970EMX to isolate the affected part of the network, and quarantine the suspect device.

ECO Friendly

The GS970EMX Series support Energy Efficient Ethernet, which automatically reduces the power consumed by the switch whenever there is no traffic on a port.

The GS970EMX Series are fanless, providing silent operation, which makes them ideal for desktop or work area deployment.

Key Features

- ▶ AlliedWare Plus operating system
- ▶ Autonomous Management Framework (AMF) edge node
- ▶ Vista Manager EX compatible
- ▶ AMF-Security compatible
- ▶ 1/2.5/5/10 Multi-Gigabit copper uplink ports
- ▶ 1/10G SFP/SFP+ fiber uplink ports
- ▶ EPSRing™ for resilient high-speed ring-based networks
- ▶ EPSR Master
- ▶ Energy Efficient Ethernet
- ▶ Active Fiber Monitoring
- ▶ Static and dynamic routing
- ▶ Fan-less design for silent operation
- ▶ Web-based Device GUI
- ▶ Multicast Source Discovery Protocol (MSDP)
- ▶ Link Monitoring

AlliedWare Plus OPERATING SYSTEM   VISTA MANAGER™ EX   AMF™   EPSRing™   AMF-Sec   ACTIVE Fiber Monitoring™   eco friendly

GS970EMX Series | Gigabit Layer 3 Lite Access Switches with 10 Gigabit Uplinks

Product Specifications

PRODUCT	10/100/1000T (RJ-45) COPPER PORTS	1/2.5/5/10GT COPPER PORT	1/10G SFP+ PORT	TOTAL PORTS	STACKING PORTS	SWITCHING FABRIC	FORWARDING RATE
GS970EMX/10	8	1	1	10	2	56Gbps	41.6Mpps
GS970EMX/28[1]	24	2	2	28	4	128Gbps	95.2Mpps

Physical Specifications

PRODUCT	WIDTH X DEPTH X HEIGHT	MOUNTING	WEIGHT		PACKAGED DIMENSIONS
			UNPACKAGED	PACKAGED	
GS970EMX/10	263 x 179 x 38 mm (10.35 x 7.04 x 1.50 in)	Rack-mount	1.6 kg (3.53 lb)	2.98 kg (6.57 lb)	462 x 258 x 107 mm (18.19 x 10.15 x 4.21 in)
GS970EMX/28[1]	341 x 231 x 44 mm (13.42 x 9.09 x 1.73 in)	Rack-mount	TBD	TBD	TBD

Latency (microseconds)

PRODUCT	PORT SPEED				
	100MBPS	1GBPS	2.5GBPS	5GBPS	10GBPS
GS970EMX/10	6.22	3.68	3.24	2.68	1.73
GS970EMX/28[1]	TBD	TBD	TBD	TBD	TBD

Power Characteristics

PRODUCT	MAX POWER CONSUMPTION (W)	MAX HEAT DISSIPATION (BTU/H)
GS970EMX/10	19	65
GS970EMX/28[1]	TBD	TBD

[1] GS970EMX/28 available Q2 2022

Specifications

Performance
▶ Supports 10KB L2 jumbo frames for 2.5G connections, or 12KB for all other connection speeds
▶ Wire speed multicasting
▶ 4094 configurable VLANs
▶ Up to 16K MAC addresses
▶ 1GB DDR3 SDRAM, 256MB NAND flash memory
▶ Packet buffer memory: 2MB

Reliability
▶ Modular AlliedWare Plus operating system
▶ Temperature and internal voltages. SNMP traps alert network managers in case of any failure

Expandability
▶ Stack up to four units in a VCStack (GS970EMX/28 only)
▶ Premium license for additional features

Flexibility and Compatibility
▶ 10G SFP+ ports will support any combination of Allied Telesis 1000Mbps SFP and 10GbE SFP+ modules and direct attach cables listed in this document under Ordering Information
▶ The 1/2.5/5/10G Multi-Gigabit port enables flexible uplink options, and support for legacy cabling
▶ Port speed and duplex configuration can be set manually or by auto-negotiation

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

IP Features
▶ RIP, OSPF, and Static routing for IPv4
▶ IPv6 static routing
▶ Device management over IPv6 networks with SNMP, Telnet, SSH
▶ IPv6 hardware ACLs
▶ Log to IPv6 hosts with Syslog
▶ DHCP Client

Management
▶ Allied Telesis Autonomous Management Framework™ (AMF) enables powerful centralized management and zero-touch device installation and recovery
▶ Manage the GS970EMX Series switches with Vista Manager EX—our graphical single-pane-of glass monitoring and management tool for AMF networks, which also supports wireless and third party devices
▶ AMF Security (AMF-Sec) enables a self-defending network—managing the GS970EMX (or other AMF switches) to automatically block the spread of malware by quarantining suspect end devices
▶ Industry-standard CLI with context-sensitive help
▶ Built-in text editor and powerful CLI scripting engine
▶ Comprehensive SNMP MIB support for standards-based device management
▶ Console management port on the front panel for ease of access
▶ Event-based triggers allow user-defined scripts to be executed upon selected system events
▶ Eco-friendly mode allows ports and LEDs to be disabled to save power
▶ USB interface allows software release files, configurations and other files to be stored for backup and distribution to other devices
▶ Front panel 7-segment LED provides at-a-glance status and fault information
▶ Web-based Graphical User Interface (GUI)

Quality of Service
▶ IP precedence and DiffServ marking based on Layer 2, 3 and 4 headers
▶ Queue scheduling options for strict priority, weighted round robin or mixed scheduling
▶ Taildrop for queue congestion control
▶ Extensive remarking capabilities
▶ Policy-based QoS based on VLAN, port, MAC and general packet classifiers
▶ Type of Services (ToS) IP precedence and DiffServ marking based on layer 2, 3 and 4 headers
▶ Limit bandwidth per port or per traffic class down to 64kbps
▶ 8 priority queues with a hierarchy of high priority queues for real time traffic, and mixed scheduling, for each switch port
▶ Policy-based storm protection
▶ Wirespeed traffic classification with low latency essential for VoIP and real-time streaming media applications

Resiliency Features
▶ EPSRing (Ethernet Protection Switched Rings) with Super Loop Protection (SLP) and enhanced recovery
▶ STP root guard
▶ Loop protection: thrash limiting and loop detection
▶ Dynamic link failover (host attach)
▶ Control Plane Prioritization (CPP) ensures the CPU always has sufficient bandwidth to process network control traffic
▶ PVST+ compatibility mode
▶ BPDU forwarding

Security Features
▶ MAC address filtering and MAC address lock-down
▶ Port-based learn limits (intrusion detection)
▶ Access Control Lists (ACLs) based on layer 3 and 4 headers
▶ Private VLANs provide security and port isolation for multiple customers using the same VLAN

- Secure Copy (SCP)
- BPDU protection
- Network Access and Control (NAC) features manage endpoint security
- Dynamic VLAN assignment
- Tri-authentication: MAC-based, web-based and IEEE 802.1x
- DoS attack blocking and virus throttling
- DHCP snooping, IP source guard and Dynamic ARP Inspection (DAI)
- Strong password security and encryption
- Auth fail and guest VLANs
- Secure File Transfer Protocol (SFTP) client
- Authentication, Authorisation and Accounting (AAA)
- Bootloader can be password protected for device security
- Configurable ACLs for management traffic
- RADIUS group selection per VLAN or port

Environmental Specifications

- Operating temperature range: 0°C to 50°C (32°F to 122°F)
- 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 3,048 meters maximum (10,000 ft)

Electrical Approvals and Compliances
EMC:
- EN55032 class A

EMI:
- FCC part15 Subpart B/ Class A
- ICES-003:2016, Issue6 Class A
- EN55032:2012 / AC: 2013 Class A
- CISPR 32:2012 ClassA
- RCM AS/NZS CISPR 32 : 2013 Class A
- EN 61000-3-2
- EN 61000-3-3

EMS:
- EN 55024: 2010
- EN 55035: 2017

Safety Standards
- UL62368-1(cULus),
- EN/IEC62368-1(UL-CB/EU)
- EN/IEC 60825-1 (Laser Safety)
- ISO/IEC 15408
- CE
- EAC
- UKCA
- NOM

Restrictions on Hazardous Substances (RoHS) Compliance
- EU RoHS compliant
- China RoHS compliant

Standards and 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

Encryption (management traffic only)
FIPS 180-1   Secure Hash standard (SHA-1)
FIPS 186   Digital signature standard (RSA)
FIPS 46-3   Data Encryption Standard (DES and 3DES)

Ethernet Standards
IEEE 802.2   Logical Link Control (LLC)
IEEE 802.3   Ethernet
IEEE 802.3ab 1000BASE-T
IEEE 802.3ae 10 Gigabit Ethernet
IEEE 802.3az Energy Efficient Ethernet (EEE)
IEEE 802.3bz 2.5GBASE-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 2711   IPv6 router alert option
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 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 MIB and SNMP traps
Optical DDM MIB
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 3176   sFlow: a method for monitoring traffic in switched and routed networks
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 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 4502	RMON 2
RFC 4560	Definitions of managed objects for remote ping, traceroute and lookup operations
RFC 5424	The Syslog protocol

Multicast Support

Bootstrap Router (BSR) mechanism for PIM-SM
IGMP query solicitation
IGMP snooping (IGMPv1, v2 and v3)
IGMP snooping fast-leave
IGMP/MLD multicast forwarding (IGMP/MLD proxy)
MLD snooping (MLDv1 and v2)

RFC 1112	Host extensions for IP multicasting (IGMPv1)
RFC 2236	Internet Group Management Protocol v2 (IGMPv2)
RFC 2715	Interoperability rules for multicast routing protocols
RFC 3376	IGMPv3
RFC 3618	Multicast Source Discovery Protocol (MSDP)
RFC 3810	Multicast Listener Discovery v2 (MLDv2) for IPv6
RFC 3956	Embedding the Rendezvous Point (RP) address in an IPv6 multicast address
RFC 3973	PIM Dense Mode (DM)
RFC 4541	IGMP and MLD snooping switches
RFC 4601	Protocol Independent Multicast - Sparse Mode (PIM-SM): protocol specification (revised)
RFC 4604	Using IGMPv3 and MLDv2 for source-specific multicast
RFC 4607	Source-specific multicast for IP

Open Shortest Path First (OSPF)

OSPF link-local signaling
OSPF MD5 authentication
Out-of-band LSDB resync

RFC 1245	OSPF protocol analysis
RFC 1246	Experience with the OSPF protocol
RFC 1370	Applicability statement for OSPF
RFC 1765	OSPF database overflow
RFC 2328	OSPFv2
RFC 2370	OSPF opaque LSA option
RFC 3101	OSPF Not-So-Stubby Area (NSSA) option

RFC 3509	Alternative implementations of OSPF area border routers
RFC 3623	Graceful OSPF restart
RFC 3630	Traffic engineering extensions to OSPF

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
TACACS+ Accounting, Authentication and 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 2560	X.509 Online Certificate Status Protocol (OCSP)
RFC 2818	HTTP over TLS ("HTTPS")
RFC 2865	RADIUS authentication
RFC 2866	RADIUS accounting
RFC 2868	RADIUS attributes for tunnel protocol support
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 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 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 3315	DHCPv6 client
RFC 3633	IPv6 prefix options for DHCPv6
RFC 3646	DNS configuration options for DHCPv6
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
IEEE 802.3ac VLAN tagging

Voice over IP (VoIP)

LLDP-MED   ANSI/TIA-1057
Voice VLAN

Feature Licenses

NAME	DESCRIPTION	INCLUDES	STACK LICENSING
AT-FL-G97EMX-01	GS970EMX Premium license	▶ Static Route[2] (128 routes) ▶ RIP[2] (256 routes) ▶ OSPFv2[2] (128 routes) ▶ PIMv4-SM, DM and SSM v4 ▶ EPSR Master[3]	▶ One license per stack member

[2] The standard switch software supports 16 Static, RIP, and OSPF routes
[3] The standard switch software supports EPSR transit mode

Ordering Information

Model availability can vary between regions. Please check to see which models are available in your region.

AT-GS970EMX/10-xx
8-port 10/100/1000T switch with 1x 1/2.5/5/10 Gigabit copper uplink, 1x SFP/SFP+ slot, and a single fixed power supply

AT-GS970EMX/28-xx[4]
24-port 10/100/1000T switch with 2x 1/2.5/5/10 Gigabit copper uplinks, 2x SFP/SFP+ slots, and a single fixed power supply

Where xx = 10 for US power cord
            30 for UK power cord
            40 for Australian power cord
            50 for European power cord

AT-RKMT-J05
Rack Mount Tray for GS970EMX/10

AT-RKMT-J13
Rack Mount Kit for GS970EMX/28

AT-BRKT-J23
Wall mount kit for GS970EMX/10

AT-BRKT-J24
Wall mount kit for GS970EMX/28

AT-VT-Kit3
Management Cable (USB to Serial Console)

[4] GS970EMX/28 available Q2 2022
[5] Trade Act Agreement compliant

10G SFP+ Modules
Any 10G SFP+ module or cable can be used for stacking with the front panel 10G ports

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

AT-SP10TM
1G/2.5G/5G/10G, 100m copper, TAA[5]

AT-SP10BD10/I-12
10 GbE Bi-Di (1270 nm Tx, 1330 nm Rx) fiber up to 10 km industrial temperature, TAA[5]

AT-SP10BD10/I-13
10 GbE Bi-Di (1330 nm Tx, 1270 nm Rx) fiber up to 10 km industrial temperature, TAA[5]

AT-SP10BD20-12
10 GbE Bi-Di (1270 nm Tx, 1330 nm Rx) fiber up to 20 km, TAA[5]

AT-SP10BD20-13
10 GbE Bi-Di (1330 nm Tx, 1270 nm Rx) fiber up to 20 km, TAA[5]

AT-SP10TW1
1 meter SFP+ direct attach cable

AT-SP10TW3
3 meter SFP+ direct attach cable

1000Mbps SFP Modules

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-SPLX10a
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-SPLX40
1000LX GbE single-mode 1310 nm fiber up to 40 km

AT-SPBD10-13
1000LX (LC) GbE Bi-Di (1310 nm Tx, 1490 nm Rx) fiber up to 10 km

AT-SPBD10-14
1000LX (LC) GbE Bi-Di (1490 nm Tx, 1310 nm Rx) fiber up to 10 km

AT-SPBD20-13/I
1000BX GbE Bi-Di (1310 nm Tx, 1490 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

AT-SPBD40-13/I
1000LX (LC) GbE single-mode Bi-Di (1310 nm Tx, 1490 nm Rx) fiber up to 40 km, industrial temperature

AT-SPBD40-14/I
1000LX (LC) GbE single-mode Bi-Di (1490 nm Tx, 1310 nm Rx) fiber up to 40 km, industrial temperature

AT-SPTX
10/100/1000 TX (RJ45), up to 100 m