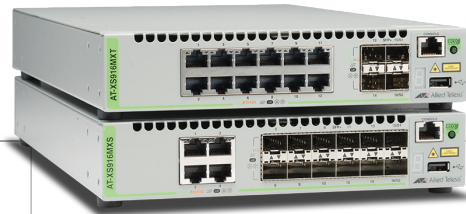


CentreCOM® XS900MX Series

Layer 3 10G Stackable Managed Switches



The XS916MXT and XS916MXS switches offer cost effective, high-speed 10G connectivity for servers and storage, and support 100/1000 connections for existing networks. The XS900MX Series enable a highly flexible and reliable network, which can easily scale to meet increasing traffic demands.

Overview

The XS900MX Series are the ideal 10G access switches for enterprise networks or anywhere a relay switch with 10G uplink is required. The switches also make the ideal core or aggregation switch, to connect servers and storage in a small network.

The XS916MXT features 12 x 100/1000/10GBASE-T and 4 x SFP+ slots. The AT-XS916MXS features 4 x 100/1000/10GBASE-T and 12 x SFP+ slots.

Easy management

The XS900MX Series switches feature Allied Telesis Autonomous Management Framework™ Plus (AMF Plus), a sophisticated suite of management tools that provides a simplified approach to network management.

Common tasks are automated or made so simple that the everyday running of a network can be achieved without the need for highly trained, and expensive, network engineers. Powerful features like centralized management, auto-backup, auto-upgrade, auto-provisioning and auto-recovery enable plug-and-play networking and zero-touch management.

Resiliency

Ethernet Protection Switching Ring (EPSRing™) and 10 Gigabit Ethernet allow several XS900MX Series switches to form a protected ring capable of recovery within as little as 50ms. This feature is perfect for high performance and high availability in enterprise networks.

Stackable

Flexi-stacking allows a user to stack two XS900MX Series switches, with the choice of using 10G SFP+ direct attach cables, or RJ45 copper connectivity. VCStack provides a highly available system where network resources are spread out across stacked units, reducing the impact if one of the units fails. With VCStack and the XS900MX Series, up to 28 x 10G ports can be provisioned as a single virtual switch in one rack unit.

Enhanced security

A secure network environment is guaranteed, with powerful control over network traffic types, secure management options, and other multi-layered security features built right into the XS900MX Series switches:

- Tri-Authentication
- Multiple Dynamic VLAN
- Enhanced Guest VLAN
- Auth-fail VLAN
- Promiscuous/intercept web authentication
- Two-step web authentication

Advanced security features include:

- Port security
- SSH to secure remote access environment
- DHCP snooping
- RADIUS/TACACS – User authentication database
- Encryption and authentication of SNMPv3

Key Features

- Allied Telesis Autonomous Management Framework™ Plus (AMF Plus) supports auto-recovery, zerotouch configuration, and auto-backup
- AMF Plus secure mode
- AMF Plus edge node
- Vista Manager EX compatible
- Ethernet Protection Switching Ring (EPSRing™)
- RIP, OSPF, and static routing
- Unicast and Multicast routing
- Mixed hardware Virtual Chassis Stacking (VCStack™)—two units
- Flexi-stacking
- Compact size: units can be mounted side by side on optional rackmount bracket
- Extended operating temperature: up to 50° C
- DHCP relay
- IPv6 management and forwarding
- IEEE802.1x/MAC/web authentication support
- Loop guard prevents network loops
- Front to back cooling
- Graphical User Interface (GUI) for easy management
- NETCONF/RESTCONF with YANG data modelling

SPECIFICATIONS

Product Specifications

	100/1000/10G BASE-T (RJ45) Copper Ports	SFP/SFP+ Slot	Switching Fabric	Forwarding Rate
XS916MXT	12	4	3208Gbps	238Mbps
XS916MXS	12	4	3208Gbps	238Mbps

Power and Noise Characteristics

	Max Power Consumption	Max Heat Dissipation	Noise
XS916MXT	78W	270 BTU/h	42 dBA
XS916MXS	53W	180 BTU/h	42 dBA

Latency (microseconds)

	64byte			1518byte		
	100Mbps	1000Mbps	10Gbps	100Mbps	1000Mbps	10Gbps
XS916MXT	6.93µs	2.40µs	1.35µs	6.93µs	2.40µs	2.51µs
XS916MXS	6.88µs	2.80µs	2.35µs	6.90µs	2.82µs	3.49µs

Performance

- 40 Gbps of stacking bandwidth
- 9KB L2 and L3 jumbo frames
- Wirespeed multicasting
- Up to 16K MAC addresses
- 2M Byte Packet Buffer
- 96 MB flash memory
- 4094 configurable VLANs

- IPV4 and IPV6 dual stack
- Device management over IPV6 networks with SNMPv6, Telnetv6 and SSHv6
- NTP client
- Log to IPV6 hosts with Syslog v6
- IPV6 Ready certified

Power characteristics

- 100-240 VAC, 47-63 Hz

Expandability

- VCStack two units with SFP+ direct attach, or copper RJ45 cables

Flexibility and compatibility

- Port speed and duplex configuration can be set manually or by auto-negotiation

Diagnostic tools

- Find-me device locator
- Automatic link flap detection and port shutdown
- Optical Digital Diagnostic Monitoring (DDM)
- Ping polling and TraceRoute for IPV4 and IPV6
- Port mirroring
 - No limit on mirrored ports
 - Up to 4 mirror (analyzer) ports
- UniDirectional Link Detection (UDLD)

IP features

- Black hole routing
- RIP and static routing for IPV4 (16 routes)
- Extended routing with premium license - Static routing (128 routes), RIP (256 routes), OSPF (256 routes)

Management

- Allied Telesis Autonomous Management Framework Plus (AMF Plus)¹ enables powerful centralized management and zero-touch device installation and recovery
- Manage the XS900MX Series with Vista Manager EX—our graphical single-pane-of-glass monitoring and management tool for AMF Plus networks, which 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)
- Console management port on the front panel for ease of access
- GUI for easy management
- 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
- 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)

- 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 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 and SuperLoop Protection (SLP)
- ESPR Master (with premium license)
- Link aggregation (LACP) on LAN ports
- Loop protection: loop detection and thrash limiting
- PVST+ compatibility mode
- RRP snooping
- Spanning Tree (STP, RSTP, MSTP)
- STP root guard
- VCStack fast failover minimizes network disruption

Security features

- Access Control Lists (ACLs) based on layer 3 and 4 headers
- ACL Groups enable multiple hosts/ports to be included in a single ACL, reducing configuration
- Auth-fail and guest VLANs
- Authentication, Authorisation 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
- DoS attack blocking and virus throttling
- 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
- Simple Certificate Enrollment Protocol (SCEP) supports secure management
- Tri-authentication: MAC-based, web-based and IEEE 802.1x

Physical specifications

Dimensions (W x D x H) 21.0 cm x 32.3 cm x 4.3 cm
(8.3 in x 12.7 in x 1.7 in)

Weight: XS916MXT:	2.8 kg (6.1 lb)
XS916MXS:	2.7 kg (5.9 lb)
Packaged:	
Dimensions (W x D x H)	40.0 cm x 33.0 cm x 15.0 cm (15.7 in x 13.0 in x 5.9 in)
Weight: XS916MXT:	4.5 kg (9.9 lb)
XS916MXS:	4.2 kg (9.3 lb)

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 humidity range: 5% to 90% non-condensing
- Storage humidity range: 5% to 95% non-condensing
- Operating altitude: 3,000 meters maximum (9,843 ft)

Safety and electromagnetic emissions

RFI (Emissions):	FCC Class A, EN55022 Class A, EN61000-3-2, EN61000-3-3, VCCI Class A, RCM
EMC (Immunity):	EN55024
Electrical and Laser Safety:	UL 60950-1(cULus), CSA-C22 No. 60950-1 (cULus), EN60950-1 (TUV), EN60852-1 (TUV)

STANDARDS & 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 Standards

IEEE 802.2 Logical Link Control (LLC)

IEEE 802.3 Ethernet

IEEE 802.3ab 1000BASE-T

IEEE 802.3ae 10 Gigabit Ethernet

IEEE 802.3an 10GBASE-T

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 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 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 Plus edge node ¹	
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 2578	Structure of Management Information v2 (SMIPv2)
RFC 2579	Textual conventions for SMIPv2
RFC 2580	Conformance statements for SMIPv2
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 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

¹ The XS900MX Series support AMF Plus edge. AMF Plus edge is for products used at the edge of the network, and only support a single AMF Plus link. They cannot use cross links or virtual links.

RFC 3418	MIB for SNMP
RFC 3635	Definitions of managed objects for the Ethernet-like interface types
RFC 4022	MIB for the Transmission Control Protocol (TCP)
RFC 4113	MIB for the User Datagram Protocol (UDP)
RFC 4292	IP forwarding table MIB
RFC 4293	MIB for the Internet Protocol (IP)
RFC 5424	Syslog protocol

Multicast Support

IGMP query solicitation	
IGMP snooping (IGMPv1, v2 and v3)	
IGMP snooping fast-leave	
MLD snooping (MLDv1 and v2)	
PIM-SM and SSM for IPv6	
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)

OSPF link-local signaling	
OSPF MD5 authentication	
OSPF restart signaling	
Out-of-band LSPB 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, Authorization (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 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	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 5176	RADIUS CoA (Change of Authorization)
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
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	The TFTP protocol (revision 2)
RFC 1985	SMTP service extension
RFC 2049	MIME
RFC 2131	DHCPv4 (server, relay and 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 LAN Features

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

	Description	Includes	Stack Licensing
AT-FL-XS9MX-01	XS900MX premium license	<ul style="list-style-type: none"> ■ IPv4 Static routing (128 routes) ■ RIP (256 routes) ■ OSPFv2 (256 routes) ■ PIMv4-SM, DM and SSM ■ ESR master 	<ul style="list-style-type: none"> ■ One license per stack member
AT-FL-XS9X-UDLD	UniDirectional Link Detection	<ul style="list-style-type: none"> ■ UDLD 	<ul style="list-style-type: none"> ■ One license per stack member

ORDERING INFORMATION

AT-XS916MXT-xx	12-port 100/1000/10G Base-T (RJ-45) stackable switch with 4 SFP/SFP+slot
AT-XS916MXS-xx	12 SFP/SFP+ slot stackable switch with 4-port 100/1000/10G Base-T (RJ-45)
AT-RKMT-J15	Rack mount kit to install two devices side by side in a 19-inch equipment rack
AT-STND-J03	Stand-kit for AT-XS916MXT and AT-XS916MXS

Where x = 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

² Trade Act Agreement compliant

Accessories

Refer to the installation guide for the recommended Maximum Operating Temperature according to the selected SFP module.

1000Mbps SFP Modules	
AT-SPSX	550 m, 1000SX SFP, LC, MMF, 850 nm
AT-SPEX	2 km, 1000EX SFP, LC, MMF, 1310 nm
AT-SPLX10	10 km, 1000LX SFP, LC, SMF, 1310 nm
AT-SPLX40	40 km, 1000LX SFP, LC, SMF, 1310 nm

10G 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-SP10LR	10GLR 1310 nm medium-haul, 10 km with SMF
AT-SP10LR/I	10GLR 1310 nm medium-haul, 10 km with SMF, industrial temperature

10G SFP Modules	
AT-SP10ER40/I	10GER 1310nm long-haul, 40 km with SMF, industrial temperature
AT-SP10ZR80/I	10GER 1550 nm long-haul, 80 km with SMF, industrial temperature
AT-SP10TM	1G/2.5G/5G/10G, 100m copper, TAA ¹
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	10 GbE Bi-Di (1270 nm Tx, 1330 nm Rx) fiber up to 20 km, TAA ¹
AT-SP10BD20-13	10 GbE Bi-Di (1330 nm Tx, 1270 nm Rx) fiber up to 20 km, 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, can also be used as a stacking cable
AT-SP10TW3	3 meter SFP+ direct attach cable, can also be used as a stacking cable
AT-SPBD20-13/I	20 km, 1G BiDi SFP, SC, SMF, (1310 Tx/1490 Rx), industrial temperature
Accessories	
AT-RKMT-J15	Rack mount kit to install two devices side by side in a 19-inch equipment rack
AT-STND-J03	Stand-kit for AT-XS916MXT and AT-XS916MXS

¹ Trade Act Agreement compliant (TAA)