

Omada Switch | Datasheet

SX3016F

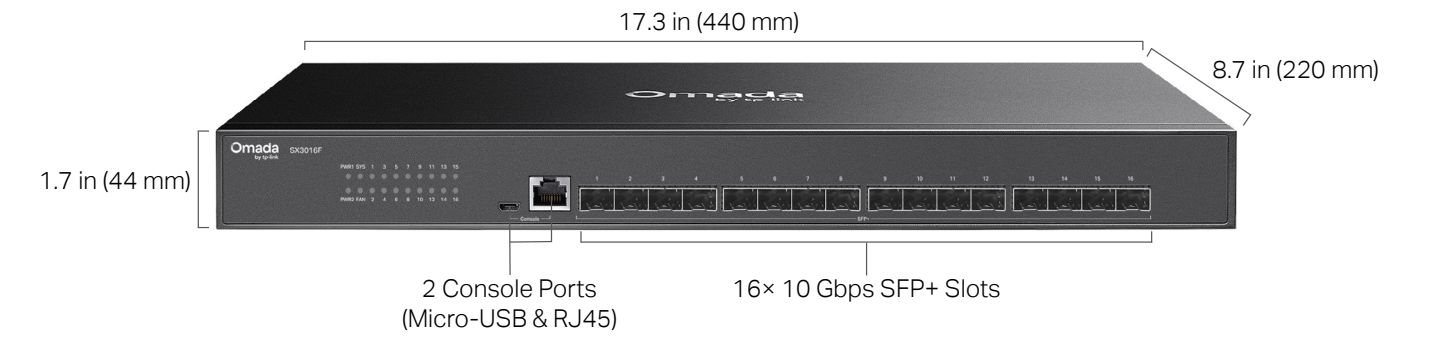
Omada Aggregation 16-Port 10GE SFP+ Switch



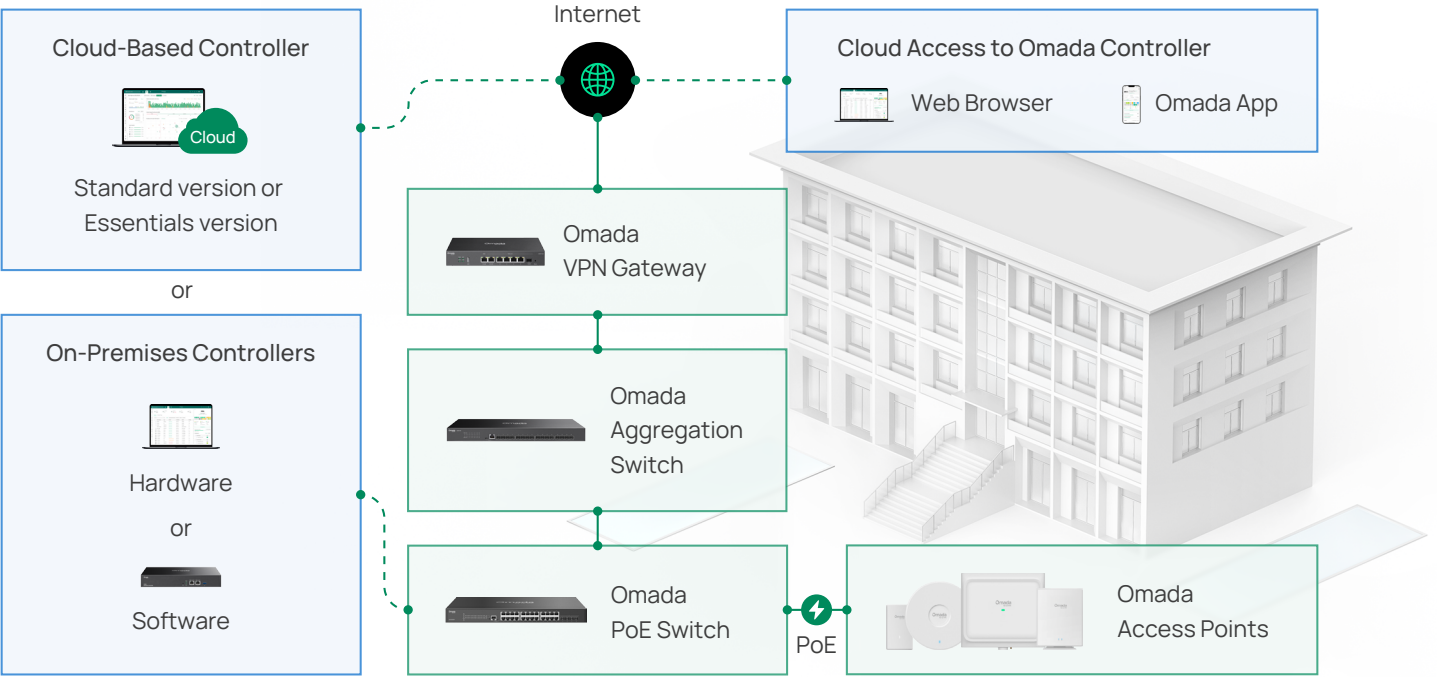
Highlights

- 16× 10 Gbps SFP+ slots
- 320 Gbps switching capacity
- Two power supplies backing each other up
- Centralized cloud management via the web or the Omada app[†]
- Standalone management via web, CLI, SNMP, and RMON
- Static Routing helps route internal traffic for higher efficiency
- VLAN, ACL, QoS, IGMP Snooping, OAM, and DDM
- ERPS supports rapid protection and recovery in a ring topology
- Durable metal casing and rack-mountable design

Product Picture



Omada Solution



Hassle-Free Cloud or On-Premises Controllers



Multi-Site Cloud Management



Zero-Touch Provisioning (ZTP)[†]



Intelligent Monitoring

Specifications

Hardware Features & Performance			
Model		SX3016F	
General	Interface	16× 10 Gbps SFP+ slots*	
	Console Port	1 RJ45 Console Port, 1 Micro-USB Console Port	
	Flash	32 MB	
	DRAM	256 MB	
	Port Standard	IEEE 802.3z: 1000BASE-X Gigabit Ethernet (Optical fiber) IEEE 802.3ae: 10GBASE-SR/LR 10G Ethernet (Optical fiber)	
Performance	Switching Capacity	320 Gbps	
	Packet Forwarding Rate	238.08 Mpps	
	MAC Address Table	32K	
	Packet Buffer	24 Mbit	
	Transmission Method	Store and Forward	
	Number of IP Interfaces	128	
	Number of Static Routers	48 (IPv4, IPv6)	
	Jumbo Frame	9 KB	
Physical & Environment	Power Supply	100-240 V~ 50/60 Hz	
	Max Power Consumption	32.3 W max @ 220V/50Hz 25 °C 32.7 W max @ 110V/60Hz 25 °C	
	Standby Power Consumption	13.5 W max @ 220V/50Hz 25 °C 13.3 W max @ 110V/60Hz 25 °C	
	Max Heat Dissipation	109.68 BTU/hr (220 V/50 Hz) 111.32 BTU/hr (110 V/60 Hz)	
	Noise	Max	45.1 dBA @ 1 m (100% load, 45 °C ambient) 41.2 dBA @ 1m (100% load, 25°C ambient)
		Typical	38.4 dBA @ 1 m (with 14 SFP modules active at 100% load, 25°C ambient)
		Min	32.6 dBA @ 1 m (with ≤8 SFP modules active at 100% load, 25°C ambient)
	Fan Quantity	1	
	ESD Protection	Air: ±15 kV, Contact: ±8 kV	
	MTBF	824,191 h @ 25 °C	
	Dimensions (W x D x H)	17.3 × 8.7 × 1.7 in (440 × 220 × 44 mm)	
	Net Weight	2.79 kg (6.15 lbs)	
	Installation	Rack Mountable	
	Operating Temperature	-5 °C to 45 °C (23 °F to 113 °F)	
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)	
	Operation Humidity	10% to 90% RH, non-condensing	
	Storage Humidity	5% to 90% RH, non-condensing	
	Certification	CE, FCC	

*It is recommended to use a maximum of 4 10G RJ45 SFP+ modules (SM5310-T) for the SX3016F, with one module used for each group of SFP+ slots.

Software Features [^]		
Model	SX3016F	
SDN Support	• Support Omada Hardware Controller, Software Controller • Automatic Device Discovery • Batch Configuration • Batch Firmware Upgrading	• Intelligent Network Monitoring • Abnormal Event Warnings • Unified Configuration • Reboot Schedule
L3 Features	• 128 IPv4/IPv6 Interfaces • Static Routing - 48 static routes • Static ARP - 128 static entries • 512 ARP Entries • Proxy ARP	• Gratuitous ARP • DHCP Server • DHCP Relay - DHCP interface relay - DHCP VLAN relay • DHCP L2 Relay
L2 Features	• Link Aggregation - Static link aggregation - 802.3ad LACP - Up to 8 aggregation groups and up to 8 ports per group • Spanning Tree Protocol - 802.1d STP - 802.1w RSTP - 802.1s MSTP - STP Security: TC Protect, BPDU Filter, BPDU Protect, Root Protect, Loop Protect	• Loopback Detection - Port based - VLAN based • Flow Control - 802.3x Flow Control - HOL Blocking Prevention • Mirroring - Port Mirroring - CPU Mirroring - One-to-One - Many-to-One - Tx/Rx/Both
L2 Multicast	• Supports 4,000 (IPv4, IPv6) IGMP groups • IGMP Snooping - IGMP v1/v2/v3 Snooping - Fast Leave - IGMP Snooping Querier - IGMP Authentication • IGMP Authentication • MVR	• Multicast Listener Discovery (MLD) Snooping - MLD v1/v2 Snooping - Fast Leave - MLD Snooping Querier - Static Group Config - Limited IP Multicast • Multicast Filtering: 256 profiles and 16 entries per profile
VLAN	• VLAN Group - Max 4K VLAN Groups • 802.1Q Tagged VLAN • MAC VLAN: 30 Entries • Protocol VLAN (IEEE 802.1v): Protocol Template 16, Protocol VLAN 16	• Private VLAN (RFC 5517) • GVRP • VLAN VPN (QinQ) - Port-Based QinQ - Selective QinQ • Voice VLAN
QoS	• 8 priority queues • 802.1p CoS/DSCP priority • Queue scheduling - Strict Priority (SP) - Weighted Round Robin (WRR) - SP+WRR • Bandwidth Control - Port/Flow based Rating Limiting	• Smoother Performance • Action for Flows - Mirror (to supported interface) - Redirect (to supported interface) - Rate Limit - QoS Remark
ACL	• MAC ACL - Source MAC - Destination MAC - VLAN ID - User Priority - Ether Type • IP ACL - Source IP - Destination IP - Fragment - IP Protocol - TCP Flag	- TCP/UDP Port - DSCP/IP TOS - User Priority • Combined ACL • IPv6 ACL • Policy - Mirroring - Redirect - Rate Limit - QoS Remark • ACL apply to Port/VLAN • Time-based ACL

Software Features[^]

Model	SX3016F	
Security	• IP-MAC-Port Binding - 512 Entries - DHCP Snooping - Dynamic ARP Inspection (DAI) - IPv4 Source Guard: 100 Entries • IPv6-MAC-Port Binding - 512 Entries - DHCPv6 Snooping - ND Detection - ND Snooping - IPv6 Source Guard: 100 Entries • DoS Defend • DHCP Filter • Static/Dynamic Port Security - Up to 64 MAC addresses per port • Broadcast/Multicast/Unicast Storm Control - kbps/ratio/pps control mode	• 802.1X - Port base authentication - Mac base authentication - VLAN Assignment - MAB - Guest VLAN - CoA & DM - Support RADIUS authentication and accountability • Authentication, Authorization, Accounting (AAA) (including TACACS+) • Port Isolation • Secure web management through HTTPS with SSLv3/TLS 1.2 • Secure Command Line Interface (CLI) management with SSHv1/SSHv2 • IP/Port/MAC based access control • CPP (Control Plane Policing) • MAC Spoofing Defend • MAC Flapping Detection
ISP Features	• 802.3ah Ethernet Link Operation Administration and Maintenance (OAM) • Layer 2 Protocol Tunneling (L2PT) • Digital Diagnostic Monitoring (DDM) • Device Link Detect Protocol (DLDP)	• PPPoE ID Insertion • sFlow • ERPS - V1&V2 - Ring: 8
Management	• Web-based GUI • Command Line Interface (CLI) through consoleport, telnet • SNMPv1/v2c/v3 - Trap/Inform - RMON (1, 2, 3, 9 groups) • SDM Template • DHCP/BOOTP Client • 802.1ab LLDP/LLDP-MED • DHCP Auto Install • Dual Image, Dual Configuration • CPU Monitoring	• Password Recovery • SNTP • System Log • Dying Gasp • ONVIF • Packet Capture • Syslog (UDP/TCP/DTLS/TLS) • DNS Lookup • Remote Access (NAT Traversal, Controller Mode Only)
IPv6 Support	• IPv4/IPv6 dual stack • MLD Snooping • IPv6 ACL • IPv6 Interface • Static IPv6 Routing • IPv6 neighbor discovery (ND) • Path maximum transmission unit (MTU) discovery • Internet Control Message Protocol (ICMP) version 6 • TCPv6/UDPv6	• IPv6 applications - DHCPv6 Client - Ping6 - Tracert6 - Telnet (v6) - IPv6 SNMP - IPv6 SSH - IPv6 SSL - Http/Https - IPv6 TFTP
MIBs	• MIB II (RFC1213) • Interface MIB (RFC2233) • Ethernet Interface MIB (RFC1643) • Bridge MIB (RFC1493) • P/Q-Bridge MIB (RFC2674) • RMON MIB (RFC2819)	• RMON2 MIB (RFC2021) • RADIUS Accounting Client MIB (RFC2620) • RADIUS Authentication Client MIB (RFC2618) • Remote Ping, Traceroute MIB (RFC2925) • Support TP-Link Private MIB

Others

Package Content	• SX3016F Switch • Power Cords • Console Cable • Rackmount Kit • Rubber Feet • Installation Guide
System Requirements	Microsoft® Windows® 98SE, NT, 2000, XP, Vista™ or Windows 7/8/10/11, MAC® OS, NetWare®, UNIX® or Linux.

Ordering Information

Host Switch	
Model	Description
SX3016F	Omada Aggregation 16-Port 10GE SFP+ Switch

SFP/SFP+ Module	
Model	Description
SM311LS	Gigabit SFP module, Single-mode, LC interface, Up to 20km distance
SM311LM	Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance
SM321A	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 20 km
SM321A-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 2 km
SM321B	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 20 km
SM321B-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 2 km
SM5110-LR	10GBase-LR SFP+ LC Transceiver, single-mode, LC connector, 1310nm, 10 km
SM5110-SR	10GBase-SR SFP+ LC Transceiver, multi-mode, LC connector, 850nm, 300 m
SM5110LSA-10	10GBase-BX WDM Bi-Directional SFP+ Module, single-mode, LC connector, TX: 1330 nm/RX: 1270 nm, 10 km
SM5110LSB-10	10GBase-BX WDM Bi-Directional SFP+ Module, single-mode, LC connector, TX: 1270 nm/RX: 1330 nm, 10 km

MC Series Media Converter	
Model	Description
MC420L	10G Multi-Gigabit SFP+ Media Converter, up to 100 m, chassis mountable
MC220L	Gigabit SFP Media Converter, up to 100 m, chassis mountable
MC210CS	Gigabit Single-Mode Media Converter, up to 20 km, chassis mountable
MC211CS-20	Gigabit WDM Media Converter, up to 20 km, chassis mountable
MC212CS-20	Gigabit WDM Media Converter, up to 20 km, chassis mountable
MC211CS-2	Gigabit WDM Media Converter, up to 2 km, chassis mountable
MC212CS-2	Gigabit WDM Media Converter, up to 2 km, chassis mountable
MC200CM	Gigabit Multi-Mode Media Converter, up to 550 m, chassis mountable

Direct Attach Cable	
Model	Description
SM5220-1M	1 Meter 10G SFP+ Direct Attach Cable
SM5220-3M	3 Meters 10G SFP+ Direct Attach Cable

[†]These functions require the use of the Omada SDN Controller. Zero-Touch Provisioning requires the use of the Omada Cloud-Based Controller. Go to the Omada Cloud-Based Controller Product List to find all the models supported by the Omada Cloud-Based Controller.

[^]Some features are available only after upgrading to the latest software version.

Specifications are subject to change without notice. All brands and product names are trademarks or registered trademarks of their respective holders. © 2026 TP-Link