Omada Lite L3 Managed Switch Datasheet
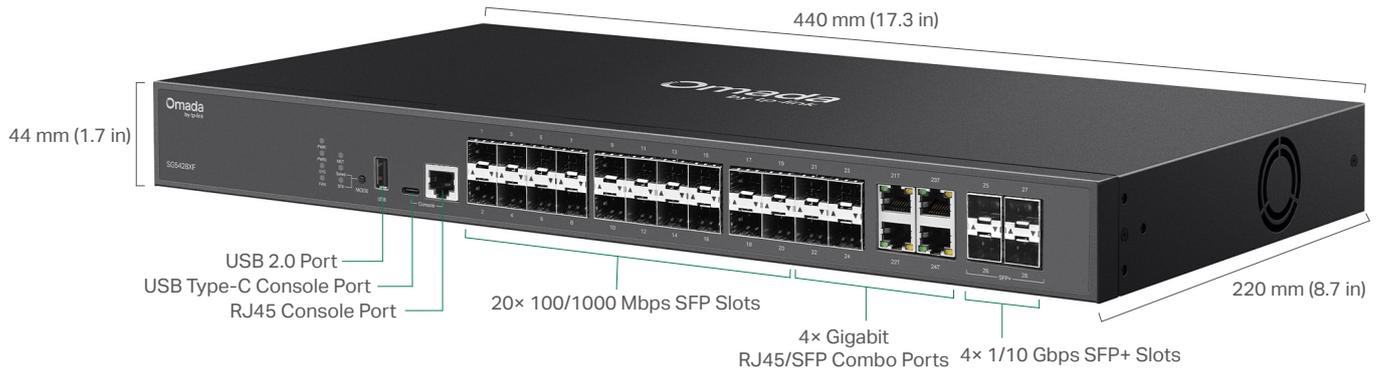
SG5428XF V1.20

Omada 24-Port SFP Stackable Lite L3 Managed Switch with 4× 10G Slots
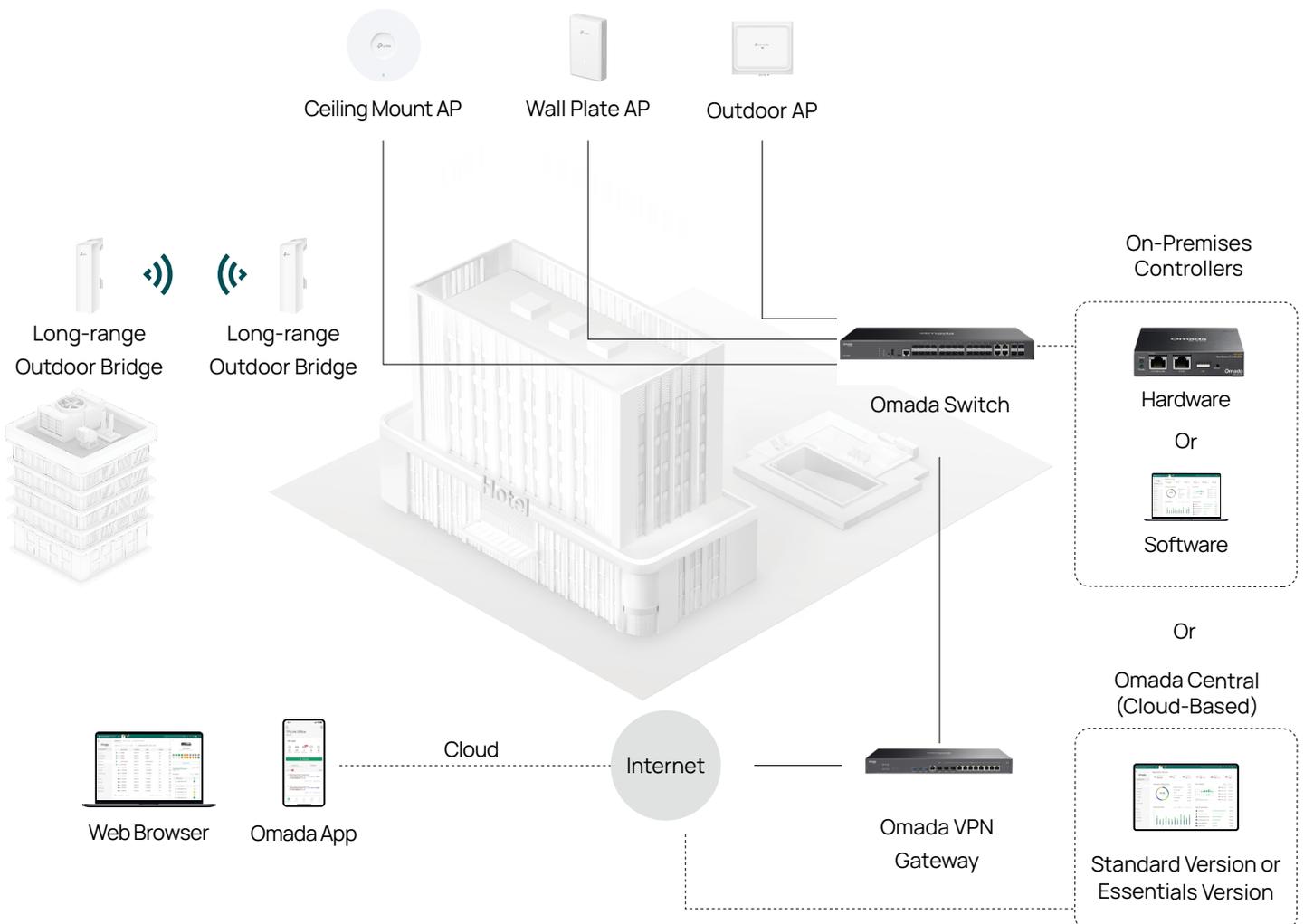

Highlights

- 20× Gigabit SFP slots and 4× Gigabit RJ45/SFP Combo ports

- 4× 10 Gbps SFP+ slots

- 128 Gbps switching capacity per unit

- Dual internal power supplies provide mutual backup

- Physical stacking up to 4 units for built-in redundancy and performance

- L3 features: RIP, OSPF, VRRP, Static Routing, and DHCP Server/Relay

- Security strategies: ACL, Port Security, DoS Defend, 802.1X

- ERPS supports rapid protection and recovery in a ring topology

- Centralized cloud management via the Omada SDN controller

- Standalone management via web, CLI, SNMP, and RMON

Product Picture

440 mm (17.3 in)

44 mm (1.7 in)

220 mm (8.7 in)

USB 2.0 Port
USB Type-C Console Port
RJ45 Console Port

20× 100/1000 Mbps SFP Slots

4× Gigabit
RJ45/SFP Combo Ports

4× 1/10 Gbps SFP+ Slots

Omada Solution

Omada's Software Defined Networking (SDN) platform integrates network devices, including access points, switches, and gateways, providing 100% centralized cloud management. Omada creates a highly scalable network—all controlled from a single interface.

Ceiling Mount AP

Wall Plate AP

Outdoor AP

Long-range
Outdoor Bridge

Long-range
Outdoor Bridge

On-Premises
Controllers

Omada Switch

Hardware

Or

Software

Or

Omada Central
(Cloud-Based)

Cloud

Internet

Web Browser

Omada App

Omada VPN
Gateway

Standard Version or
Essentials Version

**Hassle-Free Cloud or
On-Premises Controllers**

Zero-Touch Provisioning (ZTP)†

Multi-Site Cloud Management

Intelligent Monitoring

Specifications

Hardware Features & Performance		
Model		SG5428XF V1.20
General	Interface	20× 100/1000 Mbps SFP Slots 4× Gigabit RJ45/SFP Combo Ports 4× 1/10 Gbps SFP+ Slots*
	Console Ports	1× RJ45 + 1× USB Type-C
	USB Ports	1× USB 2.0
	Flash	1× 4 MB Nor + 1× 512 MB NAND
	DRAM	1 GB DDR
	Processor	Dual-Core ARM @1.2GHz CPU
Performance	Switching Capacity	128 Gbps
	Forwarding Bandwidth	64 Gbps
	Packet Forwarding Rate	95.23 Mpps
	MAC Address Table	16 K
	Packet Buffer	12 Mbit
	Stacking Port	10G SFP+ slot (all uplink ports can be used as stacking ports)
	Stacking Bandwidth	Up to 80 Gbps (4 stacking ports)
	Max Stacking Number	4
	Compatible Models for Stacking	SG5428XF V1.20, SG5428X V1.20, SG5428XMPP V1.20, SG5452X V1.20, SG5452XMPP V1.20
	Transmission Method	Store and Forward
	Jumbo Frame	9 KB
Physical & Environment	Power Supply	100-240 V~ 50/60 Hz
	Max Power Consumption	28.3 W (220V/50Hz @ 25 °C) 29.0 W (110V/60Hz @ 25 °C)
	Max Heat Dissipation	96.50 BTU/hr (220V/50Hz @ 25 °C) 98.82 BTU/hr (110V/60Hz @ 25 °C)
	Standby Power Consumption	9.5 W (220V/50Hz @ 25 °C) 9.5 W (110V/60Hz @ 25 °C)
	Fan Quantity	1
	Noise	Max	25.9 dBA (100% load, @ 1 m 25 °C)
		Typical	13.8 dBA (80% ports up, @ 1 m 25 °C)
		Min	10.7 dBA (no load, @ 1 m 25 °C)
	Surge Protection	Service port: ±6 kV in common mode
	ESD Protection	Air: ±15 kV, Contact: ±8 kV
	MTBF	428,537 h @ 25 °C
	Dimensions (W x D x H)	17.3 × 8.7 × 1.7 in (440 × 220 × 44 mm)
	Net Weight	2.93 kg (6.46 lbs)
	Installation	Rackmount
	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, UL, RoHS

*Only one 10G RJ45 SFP+ module (SM5310-T) can be inserted at a time.

Software Features[a]

Model	SG5428XF V1.20	

System	System Info	• Device Description
		  - Name
		  - Location
		  - System Contact
		• System Time
		  - Manual
		  - Synchronize with PC's Clock
		  - SNTP Client
		• DST
		  - Predefined Mode
		  - Recurring Mode
		  - Date Mode
			• LED
			   - LED on/off
			• System IP
			  - Static IP/DHCP/BOOTP
			• System IPv6
			  - Link-local Address Config
			  - Global Address Autoconfig via RA Message
			  - Global Address Autoconfig via DHCPv6 Server
			  - Add a Global Address Manually

	User Management	• User Settings • Access Level: 4 levels	• Password Recorvery Settings

	System Tools	• Config Restore/Backup
		  - Web: HTTP
		  - CLI: TFTP/USB
		• Firmware Upgrade
		  - Web: HTTP
		  - CLI: TFTP/USB
			• System Reboot
			• System Reset
			• Boot Config (Dual Image)
			• Reboot Schedule

	Access Security	• Access Control Config
		  - IP-based
		  - MAC-based
		  - Port-based
		  - IPv6-based
		• HTTP Config
		  - Enable/Disable
		  - Session Config
		  - Access User Number
		  - Port Setting
		• SSL Config
		  - SSLv3/TLSv1 Enable/Disable
		  - CipherSuite Config
		  - IPv6 SSL
			• SSH Config
			  - Enable/Disable
			  - v2
			  - Encryption Algorithm
			  - Data Integrity Algorithm
			  - Port Setting
			  - IPv6 SSH
			• Telnet Config
			  - Enable/Disable
			  - Port Setting
			  - IPv6 Telnet
			• Console Port
			  - Baud Rate setting

	Stack	• Stack Setting • Stack-port LAG: up to 4 groups, each group supports a maximum of all stackable-ports	• Stackable Devices: up to 4 devices • Stack MAC Address Switching Delay • Multi-active Detection (MAD)

	SDM Template	• Default Template
		  - IPv4 ACL Rules: 300 entries
		  - MAC ACL Rules: 600 entries
		  - Combined ACL Rules: 300 entries
		  - IPv6 ACL Rules: 0 entries
		  - IPv4 Source Guard: 127 entries
		  - IPv6 Source Guard: 0 entries
		• IPv4 Access
		  - IPv4 ACL Rules: 0 entries
		  - MAC ACL Rules: 600 entries
		  - Combined ACL Rules: 600 entries
		  - IPv6 ACL Rules: 0 entries
		  - IPv4 Source Guard: 127 entries
		  - IPv6 Source Guard: 0 entries
		• IPv6 Access
		  - IPv4 ACL Rules: 0 entries
		  - MAC ACL Rules: 600 entries
		  - Combined ACL Rules: 0 entries
		  - IPv6 ACL Rules: 250 entries
		  - IPv4 Source Guard: 0 entries
		  - IPv6 Source Guard: 127 entries
			• Omada
			  - IPv4 ACL Rules: 0 entries
			  - MAC ACL Rules: 0 entries
			  - Combined ACL Rules: 400 entries
			  - IPv6 ACL Rules: 200 entries
			  - IPv4 Source Guard: 0 entries
			  - IPv6 Source Guard: 0 entries

	Time Range	• Time Range Config	• Holiday Config
	File System	• File Operation • TFTP • USB Storage	

Software Features[△]			
Model		SG5428XF V1.20	

L2 Features	Port	• Port config
		  - Speed and Duplex
		  - Flow Control (802.3x)
		  - Jumbo Frame: 1518-9216 KB
		• Port Mirror
		  - Ingress (Many to One)
		  - Egress (Many to One)
		  - RSPAN
			• Port Security
			  - Learn mode: Dynamic/Static/
			    Permanent/Sticky
			  - Port Max Learned MAC: 64
			  - Exceed Max Learned Trap
			• Port Isolation
			• Loopback Detection
			  - Alert
			  - Port Based
			  - VLAN Based

	Digital Diagnostic Monitoring (DDM)		

	LAG	• Hash Algorithm: SRC MAC/DST
		        MAC/SRC MAC +
		        DST MAC/SRC IP/
		        DST IP/SRC IP +
		        DST IP
			• Static LAG
			• LACP (802.3ad)
			• Up to 64 LAGs, up to 8 ports per
			  LAG

	Traffic Monitor	• TX Packets/Bytes • RX Packets/Bytes • TX Unicast/Multicast/Broadcast • RX Unicast/Multicast/Broadcast	• TX Errors • RX Errors • TX/RX Packet Size Analysis
	MAC Address	• MAC Address Table: 16K entries • IVL/SVL: IVL • Create Static Unicast Address	• Bind Dynamic Address • Create Filtering Address • MAC Notification Settings

	VLAN	• 802.1Q VLAN: 4K VLANs
		• MAC VLAN: 60 entries
		• Protocol VLAN (IEEE 802.1v)
		  - 16 Protocol VLAN Template
		  - 12 Protocol VLAN Group
			• QinQ (VLAN VPN): 256 entries
			• Private VLAN
			• GVRP

	L2 Multicast	• Max Multicast Groups: 2000 (IGMP
		  Snooping & MLD Snooping & MVR)
		• IGMP Snooping
		  - IGMP V1/V2/V3
		  - Report Message Suppression
		  - Fast Leave
		  - Unknown Multicast Discard
		  - Static Multicast Groups
		  - IGMP Snooping Querier
		  - IGMP Packet Statistics
		  - IGMP Authentication
		  - Multicast Filtering: 256 profiles
		    and 16 entries per profile
		  - Router Port Setting: Static Router
		    Port/Forbidden Router Port
		• MVR
			• Multicast Listener Discovery (MLD)
			  Snooping
			  - MLD V1/V2
			  - Report Message Suppression
			  - Unknown Multicast Discard
			  - Fast Leave
			  - Static Multicast Groups
			  - MLD Snooping Querier
			  - MLD Packet Statistics
			  - Multicast Filtering: 256 profiles and
			    16 entries per profile
			  - Router Port Setting: Static Router
			    Port/Forbidden Router Port

	STP	• STP (802.1d)
		• RSTP (802.1w)
		• MSTP (802.1s)
		• MSTI instances: 16
			• STP Security
			  - Loop Protect
			  - Root Protect
			  - TC Protect
			  - BPDU Protect
			  - BPDU Filter

	LLDP (802.1ab)	• Local Info • Neighbor Info	• Statistic Info • LLDP-MED
	L2PT		
	PPPoE ID Insertion	• Circuit-ID Type	• Remote-ID
	ERPS	• Ring: 16	
	Virtual MAC		
	Sticky MAC		

Software Features[△]		
Model	SG5428XF V1.20	
L3 Features	IPv4 Interfaces: 512 (shared with IPv6 Interfaces) IPv6 Interfaces: 512 (shared with IPv4 Interfaces)	
	IPv4 Static Routes: 512 (shared with IPv6 Static Routes) IPv6 Static Routes: 128 (shared with IPv4 Static Routes)	
	IPv4 Host Routes: 1024 (shared with IPv4 Host Routes) IPv6 Host Routes: 890 (shared with IPv4 Host Routes)	
	IPv4 Network Routes: 1796 (shared with IPv6 Network Routes) IPv6 Network Routes: 450 (shared with IPv4 Network Routes)	
	IPv4/IPv6 dual stack	
	ARP	• Static ARP: 512 • Dynamic ARP: 2048
	ND: 3600	

	DHCP	• DHCP Server
		  - IP Pools: 64
		  - Max Leases: 8000
		  - Manual Binding Entries: 1000
		  - Exclude IP range Entries: 100 • DHCP Relay
		• DHCP L2 Relay
		• DHCPv6 Relay
		• DHCPv6 L2 Relay

	VRRP	• VRRP V2/V3 • VRRP Instance: 64

	OSPF	• OSPFv2
		  - OSPF Process: 4 • OSPFv3
		   - OSPFv3 Instance: 1

	RIP	• RIPv1/v2 • RIPng

QoS	Class of Service	• Priority Queues: 8 Queues
		• Port Priority
		• 802.1P Priority
		• DSCP/ToS Priority • Priority Schedule Mode: SP/WRR
		  per Queue
		• Queue Weight Config: For WRR/
		  SP+WRR Mode

	Bandwidth Control	• Rate Limit
		  - Ingress Rate Limit
		  - Egress Rate Limit
		  - Rate Limit Grade: 64kbps • Storm Control
		  - Control Mode: kbps/ratio
		  - Broadcast
		  - Multicast
		  - Unknown Unicast

	Voice VLAN	• OUI entries: 64

Software Features[Δ]			
Model		SG5428XF V1.20	

Network Security	IP-MAC Binding	• Binding entries: 1024 entries • Manual Binding	• ARP Scanning • DHCP Snooping
	IPv6-MAC Binding	• Binding entries: 1024 entries • Manual Binding	• DHCPv6 Snooping • ND Snooping
	Dynamic ARP Inspection (DAI)	• ARP Detect entries: 1024 entries • ARP Detect	• ARP Defend • ARP Statistics
	ND Detection	• ND Detection entries: 1024 entries • ND Detect	• ND Statistics

	IP Source Guard	• IP Source Guard entries
		  - Default SDM Template: 127
		  - IPv4 SDM Template: 127
		  - IPv6 SDM Template: 0
			• Security Type
			  - Source IP
			  - Source IP + Source MAC

	IPv6 Source Guard	• IPv6 Source Guard entries
		  - Default SDM Template: 0
		  - IPv4 SDM Template: 0
		  - IPv6 SDM Template: 127
			• Security Type
			  - Source IPv6
			  - Source IPv6 + Source MAC

	RA Guard: 30 entries		
	DoS Defend	• Scan SYNFIN • Xmascan • NULL Scan	• SYN sPort less 1024 • Ping Flooding • SYN/SYN-ACK Flooding

	DHCP Filter	• DHCPv4 Filter
		  - Legal Server entries: 200
			• DHCPv6 Filter
			  - Legal Server entries: 200

	802.1x	• Control Type
		  - Port Based
		  - MAC Based
		• Auth Method: PAP/EAP-MD5/EAP-TLS/EAP-TTLS/EAP-PEAP
			• Radius Authentication
			• Radius Accounting
			• Radius Server Load Balancing
			• RADSEC
			• Guest VLAN
			• VLAN Assignment
			• MAB

	Authentication, Authorization, Accounting (AAA)		

	ACL	• Time-Range
		  - Time Slice
		  - Week Time-Range
		  - Absolute Time-Range
		  - Holiday
		• MAC ACL
		• IP ACL
		• Combined ACL
		• IPv6 ACL
		• Rule Operation
		  - Permit
		  - Deny
		• Policy Action
		  - Mirror
		  - Rate Limit
		  - Redirect
		  - QoS Remark
		• Binding
		  - Port Binding
		  - VLAN Binding
			• Default Template
			  - IPv4 ACL Rules: 300 entries
			  - MAC ACL Rules: 600 entries
			  - Combined ACL Rules: 300 entries
			  - IPv6 ACL Rules: 0 entries
			• IPv4 Access
			  - IPv4 ACL Rules: 0 entries
			  - MAC ACL Rules: 600 entries
			  - Combined ACL Rules: 600 entries
			  - IPv6 ACL Rules: 0 entries
			• IPv6 Access
			  - IPv4 ACL Rules: 0 entries
			  - MAC ACL Rules: 600 entries
			  - Combined ACL Rules: 0 entries
			  - IPv6 ACL Rules: 250 entries
			• Omada
			  - IPv4 ACL Rules: 0 entries
			  - MAC ACL Rules: 0 entries
			  - Combined ACL Rules: 400 entries
			  - IPv6 ACL Rules: 200 entries

Software Features△

Model	SG5428XF V1.20	
Maintenance	System Monitor	• CPU Monitor • Memory Monitor
	sFlow	

	Operation Administration and Maintenance (OAM)	• EFM
		  - Link Monitoring
		  - Remote Failure Indication Config
		  - Statistics

	DLDP	
	Dying Gasp	

	SNMP	• SNMP Version: v1/v2c/v3
		• SNMP Config
		  - Global Config
		  - SNMP View
		  - SNMP Group
		  - SNMP User
		  - SNMP Community • Notification
		   - Trap: IPv4/IPv6
		   - Inform: IPv4/IPv6
		• RMON v1
		• Public MIBs
		• Private MIBs

	MIBs	• MIB II (RFC1213) • Interface MIB (RFC2233) • Ethernet Interface MIB (RFC1643) • Bridge MIB (RFC1493) • P/Q-Bridge MIB (RFC2674) • RMON MIB (RFC2819) • RADIUS Accounting Client MIB (RFC2620) • RADIUS Authentication Client MIB (RFC2618) • Remote Ping, Traceroute MIB (RFC2925) • Support TP-Link Private MIB
	IEEE 802.3az Energy Efficient Ethernet (EEE)	
	DHCP Auto Install	
	Log	• Display/Filtering • Remote Host • Severity Level • Backup Log • Save to Flash
	Device Diagnostics	• Cable Test
	Network Diagnostics	• Ping • Tracert • IPv6 Ping • IPv6 Tracert
Others	Index	
	Show running config	• Use the show running config command to view device's running status via telnet. • Configuration File: Import/Export/Edit
Omada SDN Controller	Omada SDN controller	

Others

Package Content	• SG5428XF V1.20 Switch • Power Cords • Console Cable • Rackmount Kits • 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
SG5428XF V1.20	Omada 24-Port SFP Stackable Lite L3 Managed Switch with 4× 10G Slots

SFP/SFP+ Modules

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

RJ45 SFP/SFP+ Modules

Model	Description
SM331T	1000BASE-T RJ45 SFP Module
SM5310-T	10GBASE-T RJ45 SFP+ Module

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.

‡Some models featured in this guide may be unavailable in your country or region. Visit Omada website for local sales information: https://www.omadanetworks.com/.