

Omada Lite L3 Managed Switch Datasheet

SG5452XMPP V1.20

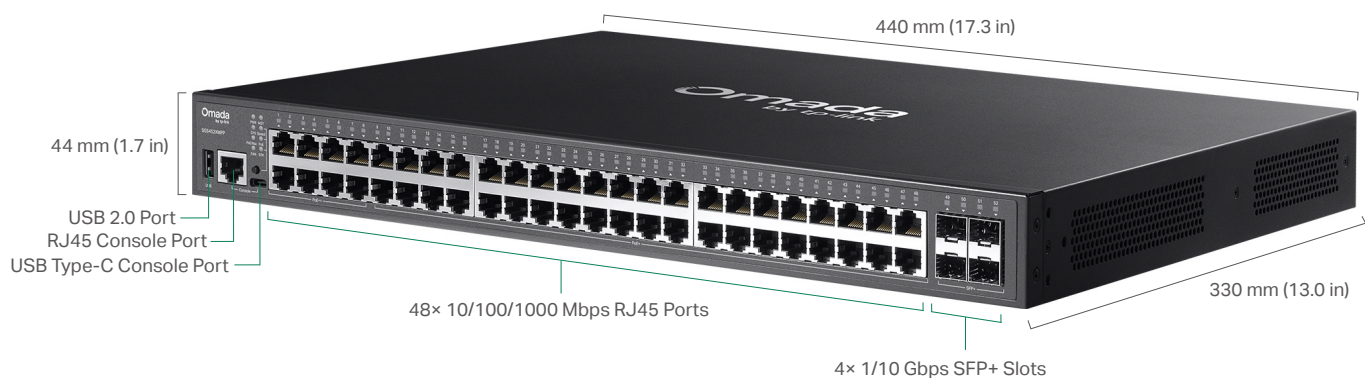
Omada 48-Port Gigabit Stackable Lite L3 Managed PoE++ Switch with 4× 10G Slots



Highlights

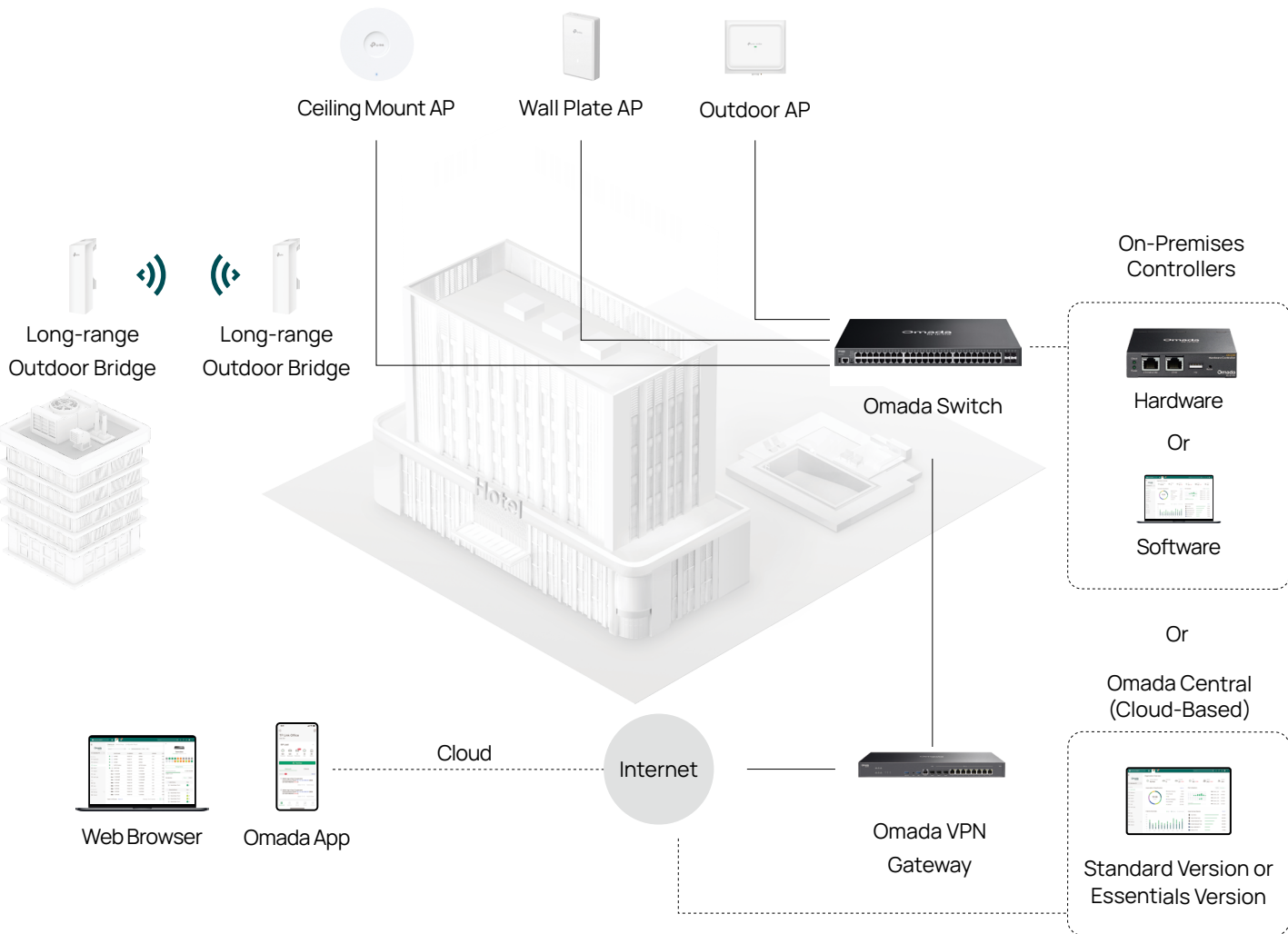
- 8× Gigabit 802.3af/at/bt PoE++ ports (Max 90W per port)
- 40× Gigabit 802.3af/at PoE+ ports (Max 30W per port)
- 4× 10 Gbps SFP+ slots
- Up to 770W total PoE budget*
- Fast PoE and Perpetual PoE
- Physical stacking up to 4 units for built-in redundancy and performance
- L3 features: RIP, OSPF, VRRP, 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



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.



Hassle-Free Cloud or On-Premises Controllers



Multi-Site Cloud Management



Zero-Touch Provisioning (ZTP)[†]



Intelligent Monitoring

Specifications

Hardware Features & Performance			
Model		SG5452XMPP V1.20	
General	Interface	48× 10/100/1000 Mbps RJ45 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	
PoE	PoE Standard	802.3af/at/bt, supporting perpetual PoE and fast PoE	
	PoE Port	8 Gigabit PoE++ RJ45 Ports (up to 90 W per Port) 40 Gigabit PoE+ RJ45 Ports (up to 30 W per Port)	
	PoE Power Budget	770 W	
Performance	Switching Capacity	176 Gbps	
	Forwarding Bandwidth	88 Gbps	
	Packet Forwarding Rate	130.94 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 40 Gbps (max 2 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	893.6 W (220V/50Hz) (with 770 W PD connected @ 25 °C) 942.7 W (110V/60Hz) (with 770 W PD connected @ 25 °C)	
	Max Heat Dissipation	3047.18 BTU/hr (220V/50Hz) (with 770 W PD connected @ 25 °C) 3214.61 BTU/hr (110V/60Hz) (with 770 W PD connected @ 25 °C)	
	Standby Power Consumption	23.7 W (220V/50Hz @ 25 °C) 24.4 W (110V/60Hz @ 25 °C)	
	Fan Quantity	3	
	Airflow	Left-to-right	
	Noise	Max	56.9 dBA @ 1 m (100% load, 40 °C ambient) 53.4 dBA @ 1 m (100% load, 25 °C ambient)
		Typical	41.0 dBA @ 1 m (100% system load, 385 W PoE load, 25°C ambient)
		Min	39.2 dBA @ 1 m (100% system load, PoE load <150 W, 25°C ambient)
	Surge Protection	Service port: ±6 kV in common mode Power port: ±6 kV in differential mode; ±6 kV in common mode	
	ESD Protection	Air: ±15 kV, Contact: ±8 kV	
	MTBF	439,858 h @ 25 °C	
	Dimensions (W x D x H)	17.3 × 13.0 × 1.7 in (440 × 330 × 44 mm)	
	Net Weight	5.7 kg (12.57 lbs)	
	Installation	Rackmount	
	Operating Temperature	-5 °C to 40 °C (23 °F to 104 °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	

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

Software Features^			
Model		SG5452XMPP 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		SG5452XMPP 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		SG5452XMPP 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^

Model		SG5452XMPP 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		SG5452XMPP 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 • Severity Level • Save to Flash • Remote Host • Backup Log
	Device Diagnostics	• Cable Test
	Network Diagnostics	• Ping • IPv6 Ping • Tracert • 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	• SG5452XMPP V1.20 Switch • Power Cord • 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
SG5452XMPP V1.20	Omada 48-Port Gigabit Stackable Lite L3 Managed PoE++ 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

*PoE budget calculations are based on laboratory testing. The actual PoE power budget is not guaranteed and will vary due to client limitations and environmental factors.

[†]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/>.

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