

Omada Lite L3 Managed Switch Datasheet

SG5452XMPP

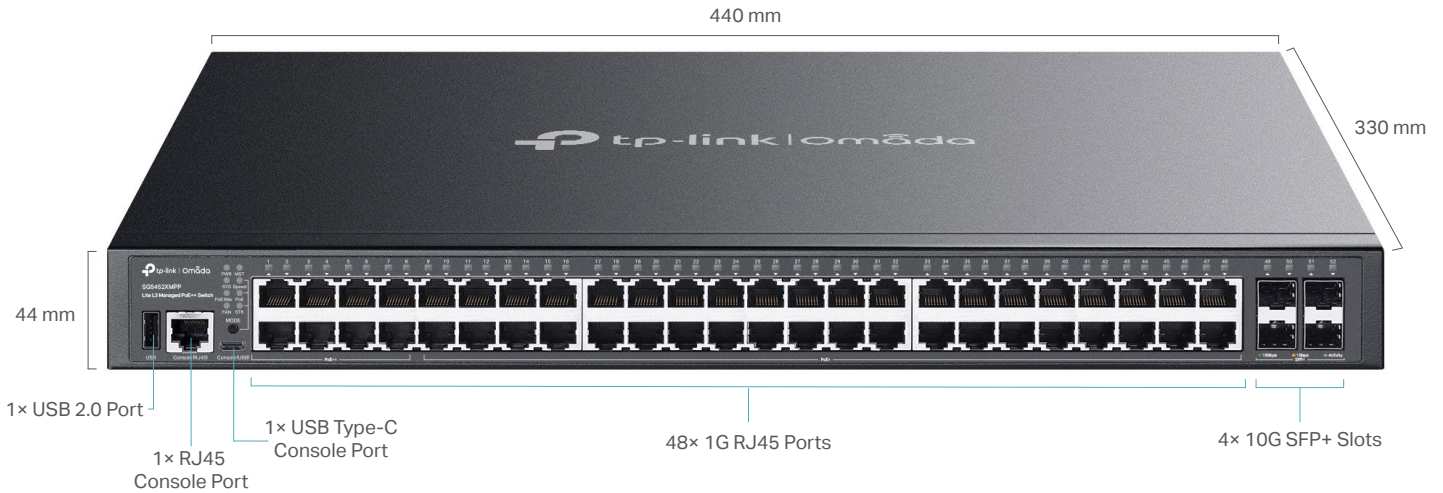
Omada 48-Port Gigabit Stackable Lite L3 Managed PoE++ Switch with 4× 10G Slots



Highlights

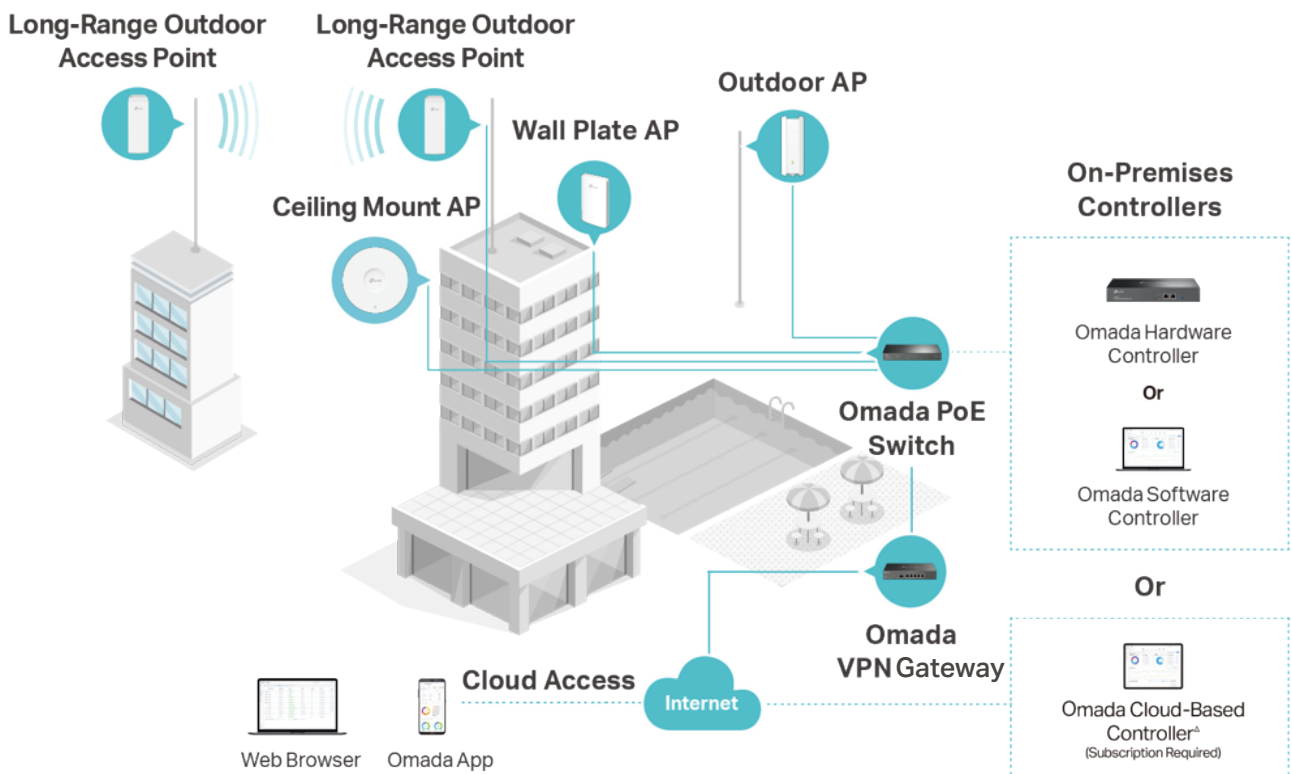
- 8× Gigabit 802.3af/at/bt PoE++ ports (Max 90 W per port)
- 40× Gigabit 802.3af/at PoE+ ports (Max 30 W per port)
- 4× 10 Gbps SFP+ slots
- Up to 770 W total PoE budget^Δ
- Fast PoE and Perpetual PoE
- Physical Stacking up to 4 units for built-in redundancy and performance
- L3 features: RIP, OSPF,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



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
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	2 GB DDR4
	Processor	Dual-Core ARM @1.2GHz CPU
PoE	PoE Standard	802.3af/at/bt
	PoE Ports	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 ^Δ
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 (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	SG5428X, SG5428XMPP, SG5452X, SG5452XMPP
	Transmission Method	Store and Forward
	Jumbo Frame	9 KB
Physical & Environmet	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) 24.3 W (110V/60Hz @ 25 °C)
	Noise	Min: 43.2 dBA @1m 25 °C Max: 58.5 dBA @1m 25 °C
	Fan Quantity	3
	Airflow	Left-to-right
	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	275,277 h @ 25 °C
	Dimensions (W x D x H)	17.3 × 13.0 × 1.7 in (440 × 330 × 44 mm)
	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, RoHS	

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

Software Features

Model		SG5452XMPP	
System	System Info	<ul style="list-style-type: none"> • Device Description <ul style="list-style-type: none"> - Name - Location - System Contact • System Time <ul style="list-style-type: none"> - Manual - Synchronize with PC's Clock - SNTP Client • DST <ul style="list-style-type: none"> - Predefined Mode - Recurring Mode - Date Mode 	<ul style="list-style-type: none"> • LED <ul style="list-style-type: none"> - LED on/off • System IP <ul style="list-style-type: none"> - Static IP/DHCP/BOOTP • System IPv6 <ul style="list-style-type: none"> - Link-local Address Config - Global Address Autoconfig via RA Message - Global Address Autoconfig via DHCPv6 Server - Add a Global Address Manually
	User Management	<ul style="list-style-type: none"> • User Settings • Access Level: 4 levels 	<ul style="list-style-type: none"> • Password Recovery Settings
	System Tools	<ul style="list-style-type: none"> • Config Restore/Backup <ul style="list-style-type: none"> - Web: HTTP - CLI: TFTP/USB • Firmware Upgrade <ul style="list-style-type: none"> - Web: HTTP - CLI: TFTP/USB 	<ul style="list-style-type: none"> • System Reboot • System Reset • Boot Config (Dual Image) • Reboot Schedule
	Access Security	<ul style="list-style-type: none"> • Access Control Config <ul style="list-style-type: none"> - IP-based - MAC-based - Port-based - IPv6-based • HTTP Config <ul style="list-style-type: none"> - Enable/Disable - Session Config - Access User Number - Port Setting • SSL Config <ul style="list-style-type: none"> - SSLv3/TLSv1 Enable/Disable - CipherSuite Config - IPv6 SSL 	<ul style="list-style-type: none"> • SSH Config <ul style="list-style-type: none"> - Enable/Disable - v2 - Encryption Algorithm - Data Integrity Algorithm - Port Setting - IPv6 SSH • Telnet Config <ul style="list-style-type: none"> - Enable/Disable - Port Setting - IPv6 Telnet • Console Port <ul style="list-style-type: none"> - Baud Rate setting
	Stack	<ul style="list-style-type: none"> • Stack Setting • Stack-port LAG: up to 4 groups, each group supports a maximum of 2 stackable-ports 	<ul style="list-style-type: none"> • Stackable Devices: up to 4 devices • Stack MAC Address Switching Delay
	SDM Template	<ul style="list-style-type: none"> • Default Template <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> • Omada <ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> • Time Range Config 	<ul style="list-style-type: none"> • Holiday Config
	File System	<ul style="list-style-type: none"> • File Operation • TFTP • USB Storage 	

Software Features

Model	SG5452XMPP		
L2 Features	Port	<ul style="list-style-type: none"> • Port config <ul style="list-style-type: none"> - Speed and Duplex - Flow Control(802.3x) - Jumbo Frame: 1518-9216 KB • Port Mirror <ul style="list-style-type: none"> - Ingress (Many to One) - Egress (Many to One) - RSPAN 	<ul style="list-style-type: none"> • Port Security <ul style="list-style-type: none"> - Learn mode: Dynamic/Static/Permanent/Sticky - Port Max Learned MAC: 64 - Exceed Max Learned Trap • Port Isolation • Loopback Detection <ul style="list-style-type: none"> - Alert - Port Based - VLAN Based
	DDM		
	LAG	<ul style="list-style-type: none"> • Hash Algorithm: SRC MAC/DST MAC/SRC MAC + DST MAC/SRC IP/DST IP/SRC IP + DST IP 	<ul style="list-style-type: none"> • Static LAG • LACP (802.3ad) • Up to 64 LAGs, up to 8 ports per LAG
	Traffic Monitor	<ul style="list-style-type: none"> • TX Packets/Bytes • RX Packets/Bytes • TX Unicast/Multicast/Broadcast • RX Unicast/Multicast/Broadcast 	<ul style="list-style-type: none"> • TX Errors • RX Errors • TX/RX Packet Size Analysis
	MAC Address	<ul style="list-style-type: none"> • MAC Address Table: 16K entries • IVL/SVL: IVL • Create Static Unicast Address 	<ul style="list-style-type: none"> • Bind Dynamic Address • Create Filtering Address • MAC Notification Settings
	VLAN	<ul style="list-style-type: none"> • 802.1Q VLAN: 4K VLANs • MAC VLAN: 60 entries • Protocol VLAN <ul style="list-style-type: none"> - 16 Protocol VLAN Template - 12 Protocol VLAN Group 	<ul style="list-style-type: none"> • QinQ(VLAN VPN): 256 entries • Private VLAN • GVRP
	L2 Multicast	<ul style="list-style-type: none"> • Max Multicast Groups: 2000 (IGMP Snooping & MLD Snooping & MVR) • IGMP Snooping <ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> • MLD Snooping <ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> • STP(802.1d) • RSTP(802.1w) • MSTP(802.1s) • MSTI instances: 16 	<ul style="list-style-type: none"> • STP Security <ul style="list-style-type: none"> - Loop Protect - Root Protect - TC Protect - BPDU Protect - BPDU Filter
	LLDP (802.1ab)	<ul style="list-style-type: none"> • Local Info • Neighbor Info 	<ul style="list-style-type: none"> • Statistic Info • LLDP-MED
	L2PT		
	PPPoE ID Insertion	<ul style="list-style-type: none"> • Circuit-ID Type 	<ul style="list-style-type: none"> • Remote-ID
	ERPS	<ul style="list-style-type: none"> • Ring: 16 	
	Virtual MAC		
	Sticky MAC		

Software Features

Model		SG5452XMPP	
L3 Features	IPv4 Interfaces: 128 (shared with IPv6 Interfaces) IPv6 Interfaces: 128 (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	<ul style="list-style-type: none"> • Static ARP: 512 • Dynamic ARP: 2000 	
	ND: 3600		
	DHCP	<ul style="list-style-type: none"> • DHCP Server <ul style="list-style-type: none"> - IP Pools: 64 - Max Leases: 8000 - Manual Binding Entries: 1000 - Exclude IP range Entries: 100 	<ul style="list-style-type: none"> • DHCP Relay • DHCP L2 Relay • DHCPv6 Relay • DHCPv6 L2 Relay
	OSPF	<ul style="list-style-type: none"> • OSPFv2 <ul style="list-style-type: none"> - OSPF Process: 4 	<ul style="list-style-type: none"> • OSPFv3 <ul style="list-style-type: none"> - OSPFv3 Instance: 1
RIP	<ul style="list-style-type: none"> • RIPv1/v2 	<ul style="list-style-type: none"> • RIPng 	
QoS	Class of Service	<ul style="list-style-type: none"> • Priority Queues: 8 Queues • Port Priority • 802.1P Priority • DSCP/ToS Priority 	<ul style="list-style-type: none"> • Priority Schedule Mode: SP/WRR per Queue • Queue Weight Config: For WRR/SP+WRR Mode
	Bandwidth Control	<ul style="list-style-type: none"> • Rate Limit <ul style="list-style-type: none"> - Ingress Rate Limit - Egress Rate Limit - Rate Limit Grade: 64kbps 	<ul style="list-style-type: none"> • Storm Control <ul style="list-style-type: none"> - Control Mode: kbps/ratio - Broadcast - Multicast - Unknown Unicast
	Voice VLAN	<ul style="list-style-type: none"> • OUI entries: 64 	

Software Features

Model	SG5452XMPP		
Network Security	IP-MAC Binding	<ul style="list-style-type: none"> • Binding entries: 1024 entries • Manual Binding 	<ul style="list-style-type: none"> • ARP Scanning • DHCP Snooping
	IPv6-MAC Binding	<ul style="list-style-type: none"> • Binding entries: 1024 entries • Manual Binding 	<ul style="list-style-type: none"> • DHCPv6 Snooping • ND Snooping
	ARP Inspection	<ul style="list-style-type: none"> • ARP Detect entries: 1024 entries • ARP Detect 	<ul style="list-style-type: none"> • ARP Defend • ARP Statistics
	ND Detection	<ul style="list-style-type: none"> • ND Detection entries: 1024 entries • ND Detect 	<ul style="list-style-type: none"> • ND Statistics
	IP Source Guard	<ul style="list-style-type: none"> • IP Source Guard entries - Default SDM Template: 127 - IPv4 SDM Template: 127 - IPv6 SDM Template: 0 	<ul style="list-style-type: none"> • Security Type - Source IP - Source IP + Source MAC
	IPv6 Source Guard	<ul style="list-style-type: none"> • IPv6 Source Guard entries - Default SDM Template: 0 - IPv4 SDM Template: 0 - IPv6 SDM Template: 127 	<ul style="list-style-type: none"> • Security Type - Source IPv6 - Source IPv6 + Source MAC
	RA Guard: 30 entries		
	DoS Defend	<ul style="list-style-type: none"> • Scan SYNFIN • Xmascan • NULL Scan 	<ul style="list-style-type: none"> • SYN sPort less 1024 • Ping Flooding • SYN/SYN-ACK Flooding
	DHCP Filter	<ul style="list-style-type: none"> • DHCPv4 Filter - Legal Server entries: 200 	<ul style="list-style-type: none"> • DHCPv6 Filter - Legal Server entries: 200
	802.1x	<ul style="list-style-type: none"> • Control Type - Port Based - MAC Based • Auth Method: PAP/EAP-MD5/EAP-TLS/EAP-TTLS/EAP-PEAP 	<ul style="list-style-type: none"> • Radius Authentication • Radius Accounting • Radius Server Load Balancing • RADSEC • Guest VLAN • VLAN Assignment • MAB
	AAA		
	ACL	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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	
Maintenance	System Monitor	<ul style="list-style-type: none"> • CPU Monitor • Memory Monitor
	sFlow	
	OAM	<ul style="list-style-type: none"> • EFM <ul style="list-style-type: none"> - Link Monitoring - Remote Failure Indication Config - Statistics
	DLDP	
	SNMP	<ul style="list-style-type: none"> • SNMP Version: v1/v2c/v3 • SNMP Config <ul style="list-style-type: none"> - Global Config - SNMP View - SNMP Group - SNMP User - SNMP Community • Notification <ul style="list-style-type: none"> - Trap: IPv4/IPv6 - Inform: IPv4/IPv6 • RMON v1 • Public MIBs • Private MIBs
	MIBs	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Display/Filtering • Severity Level • Save to Flash • Remote Host • Backup Log
	Device Diagnostics	<ul style="list-style-type: none"> • Cable Test
	Network Diagnostics	<ul style="list-style-type: none"> • Ping • IPv6 Ping • Tracert • IPv6 Tracert
Others	Index	
	Show running config	<ul style="list-style-type: none"> • 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	

Ordering Information

Host Switch

Model	Description
SG5452XMPP	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
MC210CS	Gigabit Single-Mode Media Converter, up to 20 km, chassis mountable
MC200CM	Gigabit multi-mode SC SFP Transceiver, up to 550 m, chassis mountable
MC220L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable
MC420L	10G SFP+ slot supporting mini-GBIC modules, 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

^APoE 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 TP-Link website for local sales information: www.tp-link.com.

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