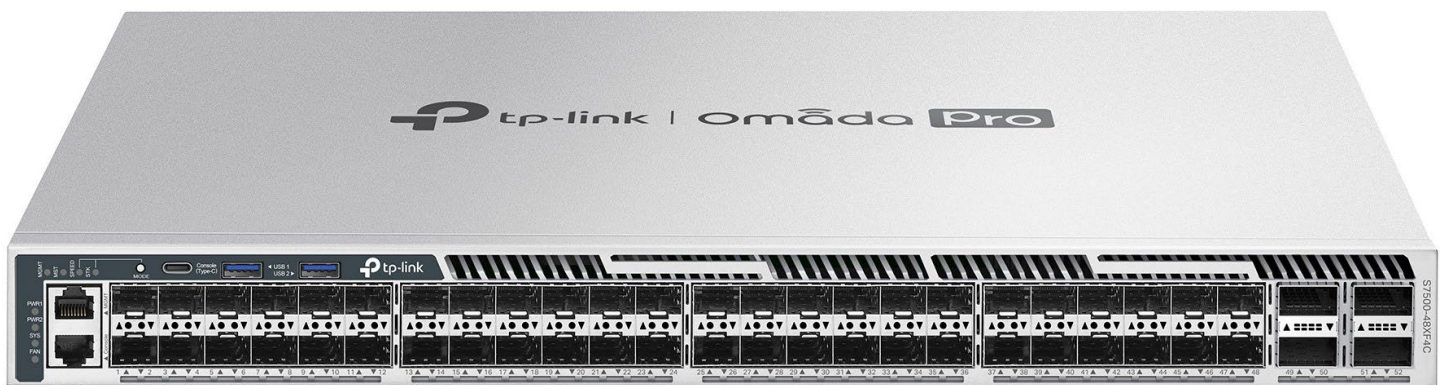


Omada Pro L3 Managed Switch Datasheet

S7500-48XF4C

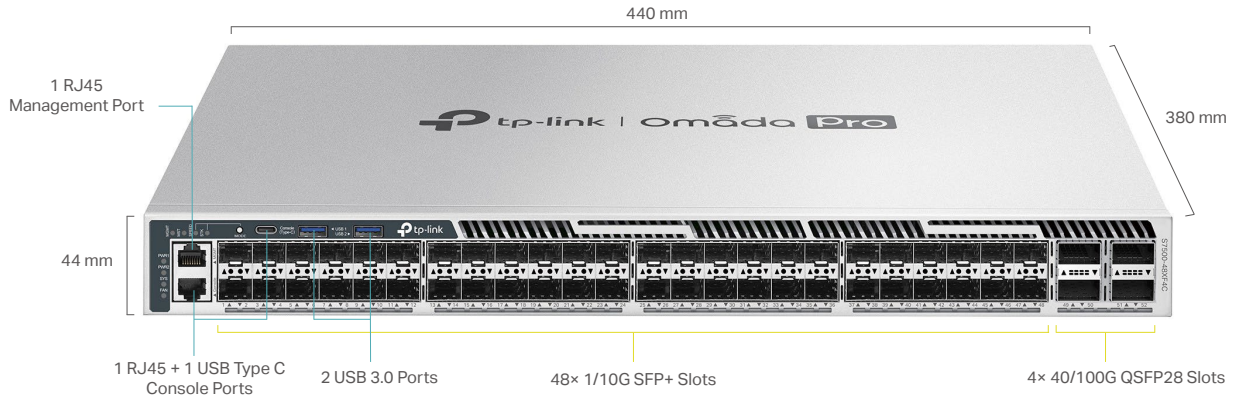
Omada Pro 48-Port 10G Stackable L3 Managed Aggregation Switch with 4 100G Slots



Highlights

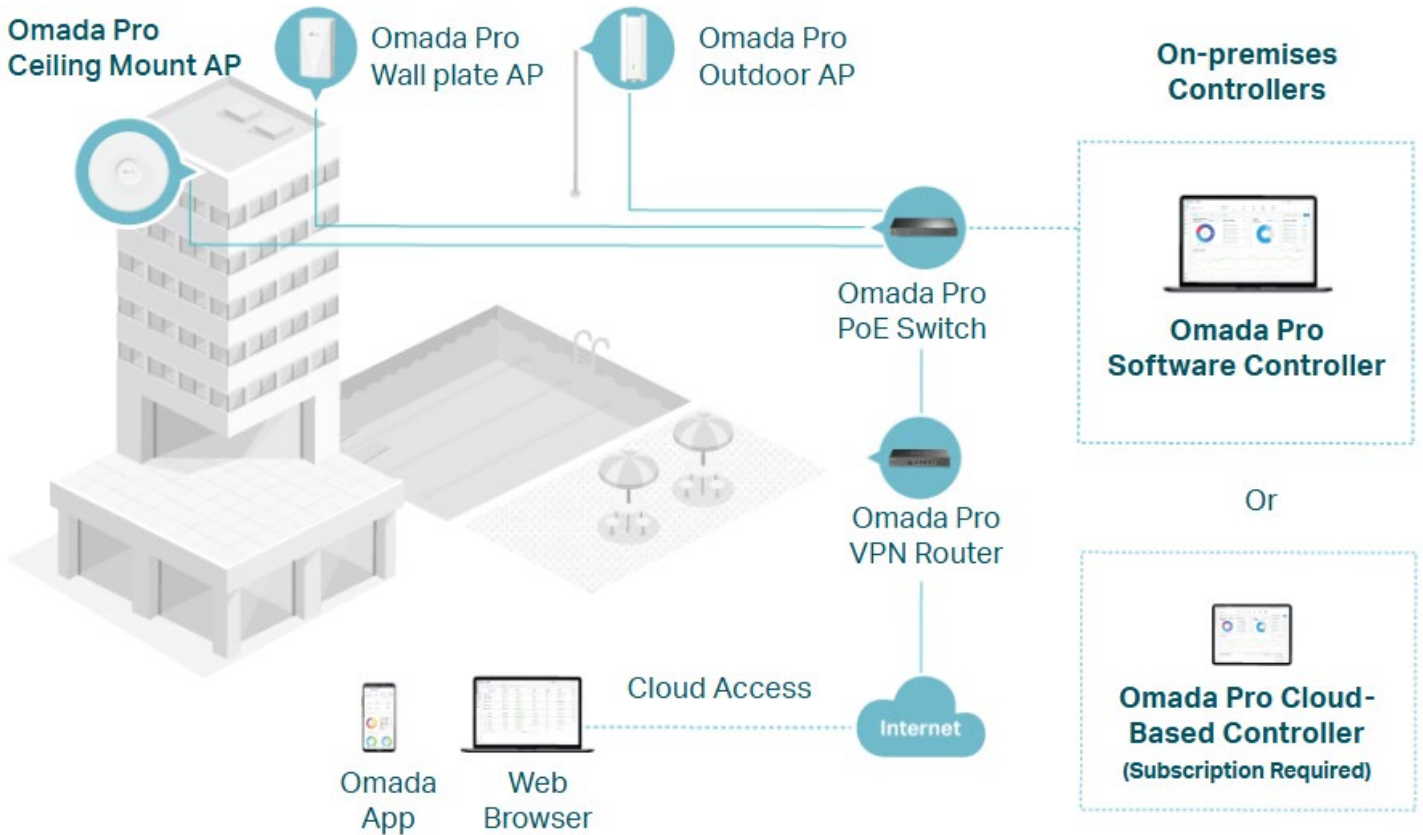
- 48× 10 Gbps SFP+ slots and 4× 100 Gbps QSFP28 slots
- Physical stacking for built-in redundancy and performance
- L3 Features: OSPF, BGP, IS-IS, VRRP, PIM-SM/PIM-DM/PIM-SSM, ECMP, PBR
- Security Strategies: Secure Boot, RADSEC, IMPB, SFTP, 802.1X, Port Security
- Highly available with two field-replaceable power supplies,* VRRP, ERPS, and BFD
- Easy O&M: NETCONF, Configuration Rollback, Hot Patching, and RSPAN
- Centralized cloud management via the web or the Omada app†

Product Pictures



Omada Pro Solution

Omada Pro is an intelligent cloud solution for enterprise networking, offering enterprise-grade product line designed to meet the high-capacity, security, and management needs of various industries, such as MDUs, hospitality, K-12 education, public works, and more.



MDUs



Hospitality



Public Works



Catering



Manufacturing



Retail

Specifications

Hardware Features & Performance

Model		S7500-48XF4C
General	Interface	48× 1/10G SFP+ Slots* 4× 40/100G QSFP28 Slots
	Console Ports	1 × RJ45 + 1 × USB Type C
	Management Port	1 × RJ45
	USB Ports	2 × USB 3.0
	Flash	2×4 MB Nor + 8 GB EMMC
	DRAM	8GB DDR4
	Processor	Quad-Core ARM @1.2GHz CPU
Performance	Switching Capacity	1760 Gbps
	Forwarding Bandwidth	880 Gbps
	Packet Forwarding Rate	600 Mpps
	MAC Address Table	128K
	Packet Buffer	10 MB
	Stacking Port	100G QSFP28 slot (all uplink ports can be used as stacking ports)**
	Stacking Bandwidth	Up to 800 Gbps (4 stacking ports)
	Max Stacking Number	12 in standalone mode, 4 in Omada controller mode
	Compatible Models for Stacking	S7500-48XF4C
	Transmission Method	Store and Forward
	Jumbo Frame	9 KB
Physical & Environmet	Power Supply	100-240 V ~50/60 Hz
	Redundant Power Supply	Max 2 hot swappable power supply module, N+1 redundant (shipping with one PSM550-AC module by default)
	Suitable Power Supply Module	PSM550-AC
	Max Power Consumption	105.7 W (110 V/60 Hz) 109.3 W (220 V/50 Hz)
	Max Heat Dissipation	360.7 BTU/hr (110 V/60 Hz) 372.9 BTU/hr (220 V/50 Hz)
	Standby Power Consumption	35.6 W (110 V/60 Hz) 34.6 W (220 V/50 Hz)
	Noise	2× PSM550-AC power supply module: Min: 33.9 dBA @ 1m & 25 °C Max: 56.7 dBA @ 1m & 25 °C
	Fan Quantity	4 hot swappable fan modules, N+1 redundant
	Airflow	Front-to-back
	Surge Protection	Service port: ±6 kV in common mode Power port: ±4 kV in differential mode; ±4 kV in common mode
	ESD Protection	Air: ±15 kV, Contact: ±8 kV
	MTBF	328,794 h @ 25 °C
	Dimensions (W x D x H)	17.3 × 15.0 × 1.7 in (440 × 380 × 44 mm)
	Installation	Rackmount
	Operating Temperature & Altitude	-5 °C to 50 °C (23 °F to 122 °F) @ 300 meters -5 °C to 45 °C (23 °F to 113 °F) @ 2,000 meters -5 °C to 40 °C (23 °F to 104 °F) @ 3,000 meters***
	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	

*No more than 12× 10G RJ45 SFP+ modules (SM5310-T) are supported. And it is recommended to have one column interval between every two 10G RJ45 SFP+ modules.

**The 100G QSFP28 slots support stacking only through 100G DAC/100G QSFP28 modules rather than 40G DAC/40G QSFP modules.

***The supported altitude is sea level to 5000 m. It should be noted that when the altitude is above 2000 m, for every 220 meters of altitude increase, the maximum operating temperature will drop by 1°C (1.8°F).

Software Features[^]

Model		S7500-48XF4C	
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/Flash/USB • Firmware Upgrade <ul style="list-style-type: none"> - Web: HTTP - CLI: TFTP/Flash/USB 	<ul style="list-style-type: none"> • System Reboot • System Reset • Boot Config (Dual Image) • Reboot Schedule • Config Rollback • Hot Patch
	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 6 groups, each group supports a maximum of all stackable-ports 	<ul style="list-style-type: none"> • Stackable Devices: up to 12 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: 150 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 150 entries - IPv6 ACL Rules: 0 entries - IPv4 Source Guard: 150 entries - IPv6 Source Guard: 0 entries • IPv4 Access <ul style="list-style-type: none"> - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 200 entries - IPv6 ACL Rules: 0 entries - IPv4 Source Guard: 200 entries - IPv6 Source Guard: 0 entries • IPv6 Access <ul style="list-style-type: none"> - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 0 entries - IPv6 ACL Rules: 100 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 100 entries 	<ul style="list-style-type: none"> • Extacl Access <ul style="list-style-type: none"> - IPv4 ACL Rules: 600 entries - MAC ACL Rules: 800 entries - Combined ACL Rules: 600 entries - IPv6 ACL Rules: 300 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 0 entries • Omada <ul style="list-style-type: none"> - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 0 entries - Combined ACL Rules: 500 entries - IPv6 ACL Rules: 150 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 • FTP • SFTP 	<ul style="list-style-type: none"> • SCP • TFTP • USB Storage

Software Features[^]

Model		S7500-48XF4C	
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 120 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: 128K 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: 200 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: 4K (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: 64 	<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: 64 	
	Virtual MAC		
	Sticky MAC		

Software Features[^]

Model	S7500-48XF4C	
L3 Features	IPv4 Interfaces: 256 (shared with IPv6 Interfaces) IPv6 Interfaces: 256 (shared with IPv4 Interfaces)	
	IPv4 Static Routes: 2048 (shared with IPv6 Static Routes) IPv6 Static Routes: 1024 (shared with IPv4 Static Routes)	
	IPv4 Host Routes: 22528 (shared with IPv4 Host Routes) IPv6 Host Routes: 22528 (shared with IPv6 Host Routes)	
	IPv4 Network Routes: 40960 (shared with IPv6 Network Routes) IPv6 Network Routes: 40960 (shared with IPv4 Network Routes)	
	ECMP	<ul style="list-style-type: none"> • Max ECMP Routes: 768 • Max ECMP Nexthops per Destination: 32
	ARP	<ul style="list-style-type: none"> • Static ARP: 1024 • Dynamic ARP: 45056
	ND: 45056	
	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 • DHCP Relay <ul style="list-style-type: none"> • DHCP L2 Relay • DHCPv6 Relay • DHCPv6 L2 Relay
	VRRP	<ul style="list-style-type: none"> • VRRP V2/V3 • VRRP Instance: 64 • VRRP Virtual IP: 32 per instance
	OSPF	<ul style="list-style-type: none"> • OSPFv2 <ul style="list-style-type: none"> - OSPF Process: 16 - Graceful Restart - OSPFv2 BFD • OSPFv3 <ul style="list-style-type: none"> - OSPFv3 Instance: 1 - OSPFv3 BFD
	RIP	<ul style="list-style-type: none"> • RIPv1/v2 • RIPng
	IS-IS	<ul style="list-style-type: none"> • IS-ISv4 • IS-ISv6 • IS-IS BFD
	BGPv4	
	PIM	<ul style="list-style-type: none"> • PIM-DM (IPv4) • PIM-SM (IPv4) • PIM-SSM (IPv4) • IPv4 Multicast Route entries: 1024
	IGMP	<ul style="list-style-type: none"> • Version: v1/v2/v3 • IGMP Groups: 2048
	BFD	<ul style="list-style-type: none"> • Template Numbers: 16 • Session Numbers: 8
	PBR	
	uRPF	
	QoS	Class of Service
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 • 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		S7500-48XF4C		
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: 150 - IPv4 SDM Template: 200 - IPv6 SDM Template: 0 - Extacl 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: 100 - Extacl SDM Template: 0 	<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: 150 entries - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 150 entries • IPv4 Access - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 200 entries • IPv6 Access - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 100 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 0 entries • Extacl - IPv4 ACL Rules: 600 entries - IPv6 ACL Rules: 300 entries - MAC ACL Rules: 800 entries - Combined ACL Rules: 600 entries • Omada - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 150 entries - MAC ACL Rules: 0 entries - Combined ACL Rules: 500 entries 	
	MACSec (gcm-aes-128, gcm-aes-256)			
	Secure Boot			
Virtualization	IP Tunnel	<ul style="list-style-type: none"> • IPv6 over IPv4 • IPv6 over IPv4 GRE 	<ul style="list-style-type: none"> • IPv4 over IPv4 GRE • Tunnel entries: 100 	

Software Features[^]

Model		S7500-48XF4C	
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 	<ul style="list-style-type: none"> • Notification <ul style="list-style-type: none"> - Trap: IPv4/IPv6 - Inform: IPv4/IPv6 • RMON v1/v2 • 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) • RMON2 MIB (RFC2021) 	<ul style="list-style-type: none"> • RADIUS Accounting Client MIB (RFC2620) • RADIUS Authentication Client MIB (RFC2618) • Remote Ping, Traceroute MIB (RFC2925) • Support TP-Link Private MIB
	NETCONF		
	DHCP Auto Install		
	Log	<ul style="list-style-type: none"> • Display/Filtering • Severity Level • Save to Flash 	<ul style="list-style-type: none"> • Remote Host • Backup Log
	Network Diagnostics	<ul style="list-style-type: none"> • Ping • IPv6 Ping 	<ul style="list-style-type: none"> • 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 Pro SDN controller		

Ordering Information

Host Switch

Model	Description
S7500-48XF4C	Omada Pro 48-Port 10G Stackable L3 Managed Aggregation Switch with 4 100G Slots

Power Supply Module

Model	Description
PSM550-AC	550 W AC Power Supply Module

SFP/SFP+/QSFP+/QSFP28 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+ LC Module, single-mode, LC connector, TX: 1330 nm/RX: 1270 nm, 10 km
SM5110LSB-10	10GBase-BX WDM Bi-Directional SFP+ LC Module, single-mode, LC connector, TX: 1270 nm/RX: 1330 nm, 10 km
TL-SM7110-SR	40GBase-SR QSFP+ MPO Transceiver
SM9110-SR4	100GBASE-SR4 QSFP28 Transceiver

Direct Attach Cable

Model	Description
SM5220-1M	1 Meter 10G SFP+ Direct Attach Cable
SM5220-3M	3 Meters 10G SFP+ Direct Attach Cable
SM9220-1M	1 Meter 100G QSFP28 Direct Attach Cable

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
MC200L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable

FC Series Media Converter

Model	Description
FC311A-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable

†These functions require the use of the Omada Pro SDN Controller. Zero-Touch Provisioning requires the use of the Omada Pro Cloud-Based Controller.

The model featured in this guide may be unavailable in your country or region. Visit TP-Link website for local sales information: www.tp-link.com.

Specifications are subject to change without notice. All the brands and product names are trademarks or registered trademarks of their respective holders. © 2024 TP-Link