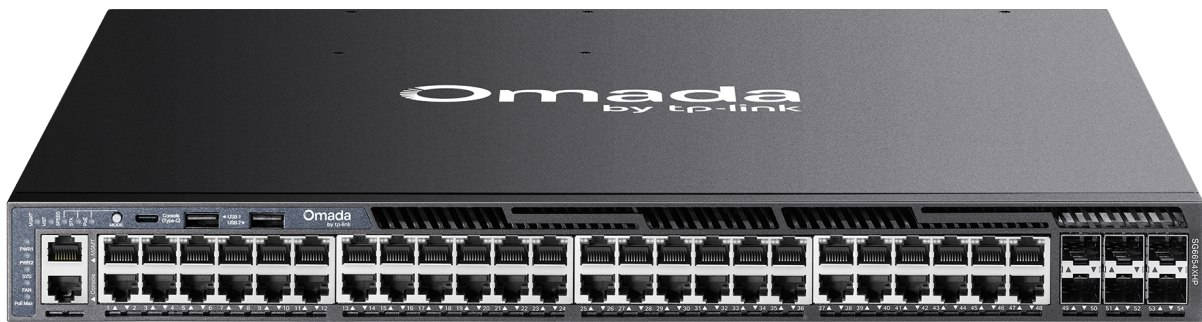


Omada Switch | Datasheet

SG6654XHP

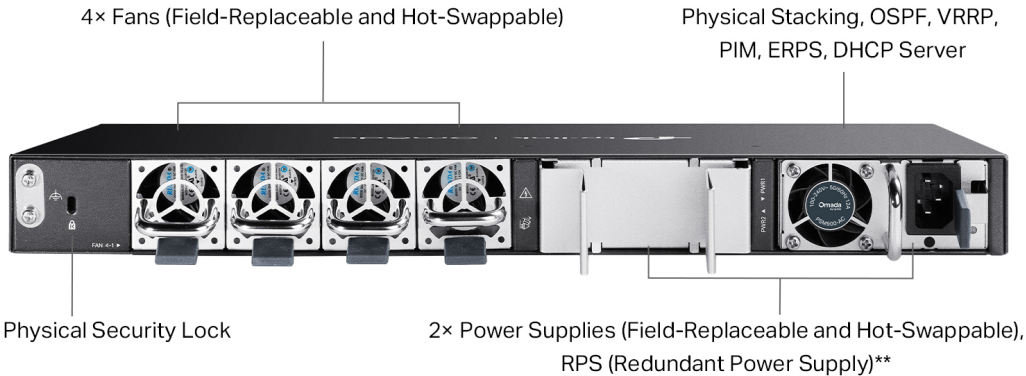
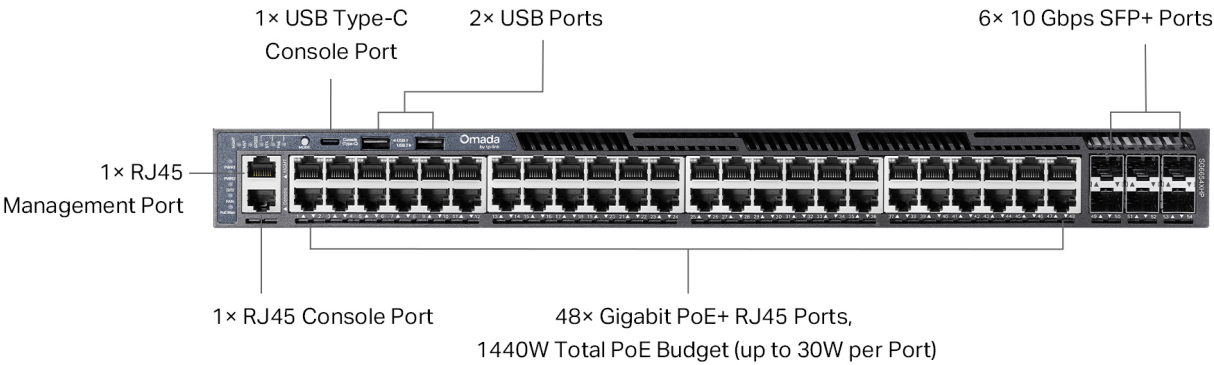
Omada Campus 48-Port Gigabit Stackable L3 Managed PoE+ Switch with 6× 10G Slots



Highlights

- 48× Gigabit RJ45 PoE+ ports
- 6× 10 Gbps SFP+ slots
- Up to 1440W total PoE budget*
- Fast PoE and Perpetual PoE
- Physical Stacking up to 8 units for built-in redundancy and performance***
- L3 features: RIP, OSPF, ECMP, VRRP, PIM-DM, PIM-SM, and DHCP Server/Relay
- Security Strategies: ACL, Port Security, DoS Defend, 802.1X
- Highly Available with two field-replaceable power supplies,** VRRP, and ERPS
- Centralized cloud management via the Omada SDN controller
- Standalone management via web, CLI, SNMP, and RMON

Product Pictures



*The total PoE budget varies with the power supply modules.

**Ships with one PSM900-AC module by default, and another field-replaceable redundant power supply requires a separate purchase.

***Physical stacking up to 8 units at standalone mode and 4 units at controller mode.

Specifications

Hardware Features & Performance		
Model		SG6654XHP
General	Interface	48× 10/100/1000 Mbps PoE+ RJ45 Ports, 6× 10G SFP+ Slots [†]
	Console Ports	1 × RJ45 + 1 × USB Type-C
	Management Port	1 × RJ45
	USB Ports	2 × USB 2.0
	Flash	2×4 MB Nor + 8GB EMMC
	DRAM	4 GB DDR4
	Processor	Dual-core ARM @1.5GHz CPU
PoE	PoE Standard	802.3af/at, support perpetual PoE and fast PoE
	PoE Ports	48
	PoE Power Budget	384W (with 1*PSM500-AC) 764W (with 1*PSM900-AC, by default) 812W (with 2*PSM500-AC) 1440W (with 2*PSM900-AC) 1176W (with 1*PSM500-AC and 1*PSM900-AC)
Performance	Switching Capacity	216 Gbps
	Forwarding Bandwidth	108 Gbps
	MAC Address Table	32K
	Hardware Routes Entries	10240
	Packet Forwarding Rate	160.7 Mpps
	Packet Buffer	3 MB
	Stacking Port	10G SFP+ slot* (all uplink ports can be used as stacking ports)
	Max Stacking Number	8 in standalone mode, 4 in controller mode
	Stacking Bandwidth	Up to 120 Gbps (6 stacking ports)
	Compatible Model for Stacking	SG6428X, SG6654X, SG6428XHP, SG6654XHP
	Transmission Method	Store and Forward
	Jumbo Frame	9 KB
Physical & Environment	Power Supply	100-240 V ~50/60 Hz
	Redundant Power Supply	Max 2 hot swappable power supply module, N+1 redundant (shipped with one PSM900-AC module by default) ^{††}
	Suitable Power Supply Module	PSM900-AC, PSM500-AC
	Max Power Consumption	67.24 W (110 V/60 Hz) (With no PD connected) 1767.7 W (110 V/60 Hz) (With 1440W PD connected and powered by 2× PSM900-AC)
	Max Heat Dissipation	229.29 BTU/hr (110 V/60 Hz) (With no PD connected) 6,027.86 BTU/hr (110 V/60 Hz) (With 1440W PD connected and powered by 2× PSM900-AC)
	Standby Power Consumption	41.43 W (220 V/50 Hz)
	Noise	1× PSM900-AC power supply module: Min: 38.2 dBA @1m 25 °C Max: 60.6 dBA @1m 25 °C 2× PSM900-AC power supply modules: Min: 39.9 dBA @1m 25 °C Max: 62.3 dBA @1m 25 °C
	Fan Quantity	4 hot swappable fan trays (shipped by default), N+1 redundant
	Airflow	Front-to-back
	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	648,538 h @ 25 °C
	Dimensions (W x D x H)	17.3 × 16.5 × 1.7 in (440 × 420 × 44 mm)
	Net Weight	8.2 kg (18.08 lbs)
	Installation	Rackmount
	Operating Temperature & Altitude	-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 two 10G RJ45 SFP+ modules are supported, and they can only be inserted into SFP+ slots 49&53.
^{††}An additional power supply module needs to be purchased separately.
^{†††}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		SG6654XHP	
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 Recovery Settings
	System Tools	• Config Restore/Backup - Web: HTTP - CLI: TFTP/Flash/USB • Firmware Upgrade - Web: HTTP - CLI: TFTP/Flash/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 64 groups, each group supports a maximum of all stackable-ports • Stackable Devices: up to 8 devices	• Stack MAC Address Switching Delay • Multi-active Detection (MAD) • Virtual MAC
	SDM Template	• Default Template - IPv4 ACL Rules: 300 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 300 entries - IPv6 ACL Rules: 0 entries - IPv4 Source Guard: 299 entries - IPv6 Source Guard: 0 entries • IPv4 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 500 entries - IPv6 ACL Rules: 0 entries - IPv4 Source Guard: 499 entries - IPv6 Source Guard: 0 entries • IPv6 Access - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 0 entries - IPv6 ACL Rules: 250 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 249 entries	• Extacl Access - 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 - IPv4 ACL Rules: 0 entries - MAC ACL Rules: 0 entries - Combined ACL Rules: 600 entries - IPv6 ACL Rules: 150 entries - IPv4 Source Guard: 0 entries - IPv6 Source Guard: 0 entries
	Time Range	• Time Range Config	• Holiday Config
	PTP	• Profile: IEEE 1588v2 (PTPv2), IEEE 802.1AS	• Clock-type: oc, bc, e2etc, p2ptc
	File System	• File Operation • FTP	• TFTP • USB Storage

Software Features [^]			
Model		SG6654XHP	
L2 Features	Port	• Auto Negotiation/Auto MDI/MDIX • Port config - Status - 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 - Current Learned Number - Status - Exceed Max Learned Trap • Port Isolation • Loopback Detection - Alert - Port Based - VLAN Based
	DDM		
	LAG	• Hash Algorithm: SRC MAC/DST MAC/SRC MAC + DST MAC/SRC IP/DST IP/SRC IP + DST IP	• Static LAG: Up to 64 groups, up to 8 ports per group • LACP (802.3ad)
	Traffic Monitor	• TX Packets/Bytes • RX Packets/Bytes • TX Unicast/Multicast/Broadcast • RX Unicast/Multicast/Broadcast	• TX Jumbo • RX Jumbo • TX Errors • RX Errors • TX/RX Packet Size Analysis
	MAC Address	• MAC Address Table: Max 32K entries • IVL/SVL: IVL • Create Static Unicast Address	• Bind Dynamic Address • Create Filtering Address • MAC Notification Settings
	VLAN	• 802.1Q VLAN(802.1q): 4K VLANs • MAC VLAN: 200 entries • Protocol VLAN (IEEE 802.1v) - 16 Protocol VLAN Templates - 12 Protocol VLAN Groups	• QinQ(VLAN VPN): 256 entries • Private VLAN • GVRP
	L2 Multicast	• Max Multicast Groups: 4093 (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	• 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 • MVR
	STP	• STP(802.1d) • RSTP(802.1w) • MSTP(802.1s)	• 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		SG6654XHP	
L3 Features	IPv4 Interfaces: 4094 IPv6 Interfaces: 4094		
	IPv4 Static Routes: 1024 (shared with IPv6 Static Routes) IPv6 Static Routes: 512 (shared with IPv4 Static Routes)		
	IPv4 Host Routes: 6100 (shared with IPv4 Host Routes) IPv6 Host Routes: 6100 (shared with IPv6 Host Routes)		
	IPv4 Network Routes: MAX 10240 (shared with IPv6 Network Routes) IPv6 Network Routes: MAX 5120 (shared with IPv4 Network Routes)		
	ECMP	• Max ECMP Routes: 128 • Max ECMP Nexhops per Destination: 32	
	ARP	• Static ARP: 512	• Dynamic ARP: 7680
	ND: 7680		
	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 • VRRP Virtual IP: 32 per instance	
	OSPF	• OSPFv2 - OSPF Process: 16	• OSPFv3 - OSPFv3 Instance: 1
	RIP	• RIPv1/v2	• RIPng
	VRF	• VRF Instance: 1024	
	PIM	• PIM-DM (IPv4) • PIM-SM (IPv4)	• IPv4 Multicast Route entries: 1024
	PBR		
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		SG6654XHP	
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
	ARP Inspection	• ARP Detect entries: 1024 entries • Dynamic ARP Inspection (DAI)	• 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: 299 - IPv4 SDM Template: 499 - IPv6 SDM Template: 249 - Extacl 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: 249 - Extacl SDM Template: 0	• 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 • Guest VLAN • VLAN Assignment • MAB
	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 - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 300 entries - IPv4 Source Guard: 299 entries • IPv4 Access - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 0 entries - MAC ACL Rules: 300 entries - Combined ACL Rules: 500 entries - IPv4 Source Guard: 499 entries • IPv6 Access - IPv4 ACL Rules: 0 entries - IPv6 ACL Rules: 250 entries - MAC ACL Rules: 200 entries - Combined ACL Rules: 0 entries - IPv6 Source Guard: 249 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: 600 entries

Software Features^

Model		SG6654XHP	
Maintenance	System Monitor	• CPU Monitor • Memory Monitor	
	sFlow		
	OAM	• EFM - Link Monitoring - Remote Failure Indication Config - Statistics	
	DLDP		
	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
	IEEE 802.3az Energy Efficient Ethernet (EEE)		
	DHCP Auto Install		
	Log	• Display/Filtering • Severity Level • Save to Flash	• Remote Host • Backup Log
	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		

Ordering Information

Host Switch	
Model	Description
SG6654XHP	Omada Campus 48-Port Gigabit Stackable L3 Managed PoE+ Switch with 6× 10G Slots

Power Supply Module	
Model	Description
PSM500-AC	Omada 500W AC Power Supply Module
PSM900-AC	Omada 900W AC Power Supply Module

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

RJ45 SFP/SFP+ Module	
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
MC210CM	Gigabit multi-mode SC SFP Transceiver, up to 550 m, chassis mountable
MC200L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable
MC1400	14-slot power supply chassis for TP-LINK MC Series Media Converter, 19-inch rack-mountable

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

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