Smart Switches Datasheet

MODELS: S4500-8G / S4500-8GP / S4500-8GP2F / S4500-8GHP2F / S4500-16GP / S4500-16G2F

Overview

TP-Link | Omada Pro gigabit smart switches provide huge upgrade comparing with previous versions. The switches can be managed by TP-Link | Omada Pro SDN Controller, which provides professional and reliable one-step solutions. Integrated L2 and L2+ features such as 802.1Q VLAN, QoS, IGMP Snooping and static routing provide cost-effective networking solutions for small and medium-sized businesses without sacrificing enhanced usability and strong performance.

Switch Product Features

Highlights

- Gigabit Ethernet connections on all ports provide full speed of data transferring
- L2+ Feature ——Static Routing, helps route internal traffic for more efficient use of network resources
- Advanced security features include IP-MAC-Port Binding, ACL, Port Security, DoS Defend, Storm Control, DHCP Snooping, 802.1X and Radius Authentication
- L2/L3/L4 QoS and IGMP Snooping optimize voice and video applications
- Comprehensive IPv6 support for management, QoS and ACL
- Web/CLI managed modes, SNMP, RMON and Dual Image bring abundant management features

Advanced QoS features

To integrate voice, data and video service on one network, the switch applies rich QoS policies. Administrator can designate the priority of the traffic based on a variety of means including Port Priority, 802.1P Priority and DSCP Priority, to ensure that voice and video are always clear, smooth and jitter free. In conjunction with the Voice VLAN that the switches support, Voice Applications will perform better and smoother.

Abundant L2 and L2+ features

TP-Link | Omada Pro smart switches support a complete lineup of L2 features, including IGMP Snooping/ MLD Snooping, 802.1Q/MAC/Protocol VLAN, STP/RSTP/MSTP, Link Aggregation Group (LAG), Port Isolation, Port Mirroring, and 802.3x Flow control function. IGMP Snooping ensures the multicast stream be forwarded intelligently to the appropriate subscribers by the switch, while IGMP Throttling & Filtering restricts each subscriber on a certain level to prevent unauthorized multicast access. Besides, these smart switches also support L2+ features like static routing. It is a simple way to provide segmentation of the network with internal routing through the switch and helps network traffic to be more efficient.

Enterprise Level Management Features

TP-Link | Omada Pro smart switches support multiple user-friendly standard management features such as intuitive web-based Graphical User Interface (GUI), industrially standard Command Line Interface (CLI) and SNMP (v1/v2c/v3). These switches support RMON (Remote Network Monitoring), which enables the switch to be polled for valuable status information and send traps when encountering abnormal events. Also, this series of switches support Dual Image function, which makes there be less ‘down-time’ when switches are being upgraded/downgraded.

IPv6 Support

TP-Link | Omada Pro smart switches support comprehensive IPv6 features including IPv6 management, ACL, QoS and MLD Snooping, all of these features help to ensure a smooth migration to IPv6-based network without changing switches in the future.

Specifications

Hardware Features & Performance

Product Picture				
Model		S4500-8G	S4500-8GP	S4500-8GP2F
General	Interface	8 10/100/1000Mbps RJ45 Ports	8 10/100/1000Mbps RJ45 ports	8 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots
	Flash	32 MB		
	DRAM	256 MB		
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber) (only for S4500-8GP2F)		
PoE	PoE Standard	--	802.3af/at	802.3af/at
	PoE Ports		4, up to 30 W	8, up to 30 W
	PoE Power Budget		62 W	61 W
Performance	Switching Capacity	16 Gbps	16 Gbps	20 Gbps
	Packet Forwarding Rate	11.90 Mpps		14.88 Mpps
	MAC Address Table	8K		
	Packet Buffer	4.1 Mbit		
	Transmission Method	Store and Forward		
	Number of IP Interfaces	16		
	Number of Static Routers	32 (IPv4, IPv6)		
	Jumbo Frame	9 KB		
Physical & Environment	Power Supply	12 VDC/1 A External Adapter or Obtain Power from PoE Source	53.5 VDC/1.31 A External Adapter	
	Max Power Consumption	6.4 W (220 V/50 Hz)	77.3 W (110 V/60 Hz) (with 62 W PD connected)	77.8 W (110 V/60 Hz) (with 61 W PD connected)
	Max Heat Dissipation	21.84 BTU/hr (220 V/50 Hz)	263.6 BTU/hr (110 V/60 Hz) (with 62 W PD connected)	265.3 BTU/hr (110 V/60 Hz) (with 61 W PD connected)
	Standby Power Consumption	2.56 W (220 V/50 Hz)	2.8 W (110 V/60 Hz)	4.5 W (110 V/60 Hz)
	Dimensions (W x D x H)	8.2 × 4.9 × 1.0 in (209 × 126 × 26 mm)		
	Fan Quantity	Fanless		
	Installation	Desktop/Wall-Mounting		
	Operating Temperature	0 °C to 40 °C (32 °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		

Hardware Features & Performance

Product Picture				
Model		S4500-8GHP2F	S4500-16GP	S4500-16G2F
General	Interface	8 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots	16 10/100/1000Mbps RJ45 Ports	16 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots
	Flash	32 MB		
	DRAM	256 MB		
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber) For TL-SG2016P: IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet		
PoE	PoE Standard	802.3af/at		-
	PoE Ports	8, up to 30 W		-
	PoE Power Budget	150 W	120 W	-
Performance	Switching Capacity	20 Gbps	32 Gbps	36 Gbps
	Packet Forwarding Rate	14.88 Mpps	23.81 Mpps	26.78 Mpps
	MAC Address Table	8K		
	Packet Buffer	4.1 Mbit		
	Transmission Method	Store and Forward		
	Number of IP Interfaces	16		
	Number of Static Routers	32 (IPv4, IPv6)		
	Jumbo Frame	9 KB		
Physical & Environment	Power Supply	100-240V AC, 50/60Hz	53.5VDC/2.43A External Adapter	100-240V AC, 50/60Hz
	Max Power Consumption	174.2 W (110 V/60 Hz) (with 150 W PD connected)	146.5 W (110V/60Hz) (with 120 W PD connected)	12.3 W (220 V/50 Hz)
	Max Heat Dissipation	594.46 BTU/hr (110 V/60 Hz) (with 150 W PD connected)	499.98 BTU/hr (110V/60Hz) (with 120 W PD connected)	41.97 BTU/hr (220 V/50 Hz)
	Standby Power Consumption	8.1 W (110 V/60 Hz)	9.0 W (110V/60Hz)	3.84 W (220 V/50 Hz)
	Dimensions (W x D x H)	11.6 x 7.1 x 1.7 in (294 x 180 x 44 mm)	11.3 × 4.4 × 1.0 in (286 × 111.7 × 25.4 mm)	17.3 × 7.1 × 1.7 in (440 × 180 × 44 mm)
	Fan Quantity	1	Fanless	
	Installation	Rackmount/Desktop	Desktop/Wall-Mounting	Rackmount
	Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)	0 °C to 40 °C (32 °F to 104 °F)	0 °C to 50 °C (32 °F to 122 °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		

Software Features

Model	S4500-8G / S4500-8GP / S4500-8GP2F / S4500-8GHP2F / S4500-16GP / S4500-16G2F	
SDN Support	• Support Omada Pro Controller • Automatic Device Discovery • Batch Configuration • Batch Firmware Upgrading • Intelligent Network Monitoring	• Abnormal Event Warnings • Unified Configuration • Reboot Schedule • Intelligent Anomaly Detection
L2+ Features	• 16 IP Interfaces - Support IPv4/IPv6 Interface • Static Routing - 32 IPv4/IPv6 Static Routes • DHCP Server • DHCP Relay - DHCP Interface Relay - DHCP VLAN Relay • DHCP L2 Relay	• Static ARP • Proxy ARP • Gratuitous ARP • DNS Queries
L2 Features	• Link Aggregation - Static link aggregation - 802.3ad LACP - Up to 8 aggregation groups and up to 8 ports per group • Spanning Tree Protocol - 802.1D STP - 802.1w RSTP - 802.1s MSTP - STP Security: TC Protect, BPDU Filter/Protect, Root Protect • Loopback Detection	• Flow Control - 802.3x Flow Control • Mirroring - Port Mirroring - CPU Mirroring - One-to-One - Many-to-One - Flow-Based - Ingress/Egress/Both • Device Link Detect Protocol (DLDP) • 802.1ab LLDP/ LLDP-MED
L2 Multicast	• 511 IPv4, IPv6 shared multicast groups • IGMP Snooping - IGMP v1/v2/v3 Snooping - Fast Leave - IGMP Snooping Querier - Static Group Config • Multicast VLAN Registration (MVR) • Multicast Filtering	• MLD Snooping - MLD v1/v2 Snooping - Fast Leave - MLD Snooping Querier - Static Group Config • Limited IP Multicast (256 profiles and 16 entries per profile)
VLAN	• VLAN Group - Max. 4K VLAN Groups • 802.1Q tag VLAN • MAC VLAN (12 entries) • Protocol VLAN	• GVRP • Voice VLAN • OUI-based VLAN
QoS	• 802.1p CoS/DSCP priority • 8 priority queues • Priority Schedule Mode - SP (Strict Priority) - WRR (Weighted Round Robin) • Queue Weight Config	• Bandwidth Control - Port/Flow based Rating Limit • Smoother Performance • Storm Control - Multiple Control Modes(kbps/ratio) - Broadcast/Multicast/Unknown-Unicast Control

Software Features

Model	S4500-8G / S4500-8GP / S4500-8GP2F / S4500-8GHP2F / S4500-16GP / S4500-16G2F
ACL	• Support up to 230 entries • Time-Range - Time Slice - Week Time-Range - Absolute Time-Range - Holiday • Time-based ACL • MAC ACL - Source MAC - Destination MAC - VLAN ID - User Priority - Ether Type • IP ACL - Source IP - Destination IP - IP Protocol - TCP Flag - TCP/UDP Source Port - TCP/UDP Destination Port - DSCP/IP TOS • IPv6 ACL • Combined ACL • Rule Operation - Permit/Deny • Policy Action - Mirror - Rate Limit - Redirect - QoS Remark • ACL Rules Binding - Port Binding - VLAN Binding • Actions for flows - Mirror (to supported interface) - Redirect (to supported interface) - Rate Limit - QoS Remark
Security	• AAA • 802.1X - Port based authentication - MAC (Host) based authentication - Authentication Method includes PAP/EAP-MD5 - MAB - Guest VLAN - Support Radius authentication and accountability • IP/IPv6-MAC Binding - 512 Binding Entries - DHCP Snooping - DHCPv6 Snooping - ARP Inspection - ND Detection - ND Snooping • IP Source Guard - 253 Entries - Source IP+Source MAC • IPv6 Source Guard - 183 Entries - Source IPv6 Address+Source MAC • DoS Defend • DHCP Filter • Static/Dynamic/Permanent Port Security - Up to 64 MAC addresses per port • Broadcast/Multicast/Unicast Storm Control - kbps/ratio control mode • Port Isolation • Secure web management through HTTPS with SSLv3/TLS 1.2 • Secure Command Line Interface (CLI) management with SSHv1/SSHv2 • IP/Port/MAC based access control

Software Features

Model	S4500-8G / S4500-8GP / S4500-8GP2F / S4500-8GHP2F / S4500-16GP / S4500-16G2F
IPv6 Support	• IPv6 Static Routing and ACL • IPv6 Dual IPv4/IPv6 • IPv6 Interface • Multicast Listener Discovery (MLD) Snooping • IPv6 neighbor discovery (ND) • Path maximum transmission unit (MTU) discovery • Internet Control Message Protocol (ICMP) version 6 • TCPv6/UDPv6 • IPv6 applications - DHCPv6 Client - Ping6 - Tracert6 - Telnet(v6) - IPv6 SNMP - IPv6 SSH - IPv6 SSL - Http/Https - IPv6 TFTP
Management	• Web-based GUI • Command Line Interface (CLI) through telnet • SNMPv1/v2c/v3 • SNMP Trap/Inform • RMON (1,2,3,9 groups) • SDM Template • DHCP/BOOTP Client • Dual Image, Dual Configuration • CPU Monitoring • Cable Diagnostics • EEE • SNTP • System Log • Remote Packet Capture
MIBs	• MIB II (RFC1213) • Bridge MIB (RFC1493) • P/Q-Bridge MIB (RFC2674) • Radius Accounting Client MIB (RFC2620) • Radius Authentication Client MIB (RFC2618) • Remote Ping, Traceroute MIB (RFC2925) • Support TP-Link private MIBs • RMON MIB(RFC1757, rmon 1,2,3,9)

Ordering Information

Host Switch

Model	Description
S4500-8G	Omada Pro 8-Port Gigabit Smart Switch
S4500-8GP	Omada Pro 8-Port Gigabit Smart Switch with 4-Port PoE+
S4500-8GP2F	Omada Pro 8-Port PoE+ Gigabit Smart Switch with 2 SFP Slots
S4500-8GHP2F	Omada Pro 8-Port PoE+ Gigabit Smart Switch with 2 SFP Slots
S4500-16GP	Omada Pro 16-Port Gigabit Smart Switch with 8-Port PoE+
S4500-16G2F	Omada Pro 16-Port Gigabit Smart Switch with 2 SFP Slots

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

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
MC1400	14-slot power supply chassis for MC Series Media Converter, 19-inch rack-mountable

RJ45 SFP Modules

Model	Description
SM331T	1000BASE-T RJ45 SFP Module

FC Series Media Converter

Model	Description
FC111A-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC111B-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
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
FC1400	14-slot power supply chassis for FC Series Media Converter, 19-inch rack-mountable

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.

PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.