All ports PoE+ with up to 460W PoE budget
and Remote Management option
Select your new network engine!

As a top-tier provider of network equipment, BENCHU GROUP recognizes the critical need for versatile speed and power options to meet the evolving demands of today's enterprises. With the rapid expansion of network speeds, the rise of virtualization, and the increasing reliance on cloud-based applications such as VoIP, video streaming, and IP surveillance, businesses across all industries must adapt to stay competitive. The surge in demand for higher network speeds is further driven by the advent of WiFi 6 and WiFi 6E access points, which necessitate faster and more efficient network infrastructures.

To address these needs, the SP7500-24PXE6TF-L3M 24-Port 2.5G Ethernet PoE+ Switch with 4 10Gb SFP+ Ports has been introduced as a robust addition to the BENCHU GROUP Smart Switch family. This switch not only supports 2.5G and 10G speeds but also provides a substantial PoE budget for powering PoE+ devices. It is an ideal companion for WiFi6/WiFi6e Access Points and other multi-gig capable PoE devices, ensuring seamless operation and optimal performance.

BENCHU GROUP Smart Switches are engineered with powerful L2+/L3 features, delivering exceptional PoE functionality and enhanced performance tailored for contemporary applications. They are designed to support the increasing trend of BYOD (Bring Your Own Device) environments, where businesses require greater bandwidth to maintain smooth network operations without congestion. Notably, the SP7500-24PXE6TF-L3M switch allows businesses to achieve 2.5G speeds without the need for costly cabling upgrades beyond Cat5E, making it a cost-effective solution for network enhancement.

Highlights

The Benchu group 2.5G PoE+ Smart Switches support 24 x 2.5G PoE+ ports and 6 x 10Gb SPF+ uplink,support IPV4/IPV6 and Remote Management provides a great value, support configurable L3 network features like VLANs and PoE operation scheduling, allowing customers to deploy PoE-based VoIP phones, 4K HD IP cameras, video-over-IP endpoints and Wif6/Wifi6e Wireless access points simply and securely. Advanced features such as IPv4/IPv6 Layer 3 static routing, RIP，OSPF，LACP link aggregation, DiffServ QoS, Private VLANs, Multicast VLAN and Spanning Tree will satisfy even the most advanced business networks.

Key features include:

- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing

- Layer 3 routing,RIP v1/V2 ,OSPF V1/V2 ,VRRP

- IPv4 / IPv6 Dual stack and switch virtual interfaces (SVIs)

- Advanced VLAN and Private VLAN support for better network segmentation

- L2/L3/L4 access control lists (ACLs) for granular network access control including 802.1x port authentication

- Advanced per port PoE controls for remote power management of PoE connected devices including operation scheduling (e.g. Wireless APs, IP security cameras, LED lighting, secure access door locks, IoT devices…)

- Advanced QoS (Quality of Service) for traffic prioritization including port-based, 802.1p and L2/L3/L4 DSCP-based

- Auto "denial-of-service" (DoS) prevention

- IGMP Snooping and Querier for multicast optimization

- Dynamic ARP for increased security targeting a class of Man in the Middle attack

- Rate limiting and priority queuing for better bandwidth allocation

- Port mirroring for network monitoring

- Energy Efficient Ethernet (IEEE 802.3az) for maximum power savings

- SNMP v1, v2c and RMON remote monitoring

Build a future-proof network with BENCHU:

- Solid performance with non-blocking architecture, 32K MAC addresses, 500 shared (ingress) ACLs and 1024 Multicast groups

- Comprehensive IPv6 supporting management, QoS, ACL and routing, ensuring investment protection and a smooth migration to IPv6-based network

- PoE+ support on all RJ45 ports with 100M/1G/2.5Gbps self-adaption

- 6 Dedicated SFP+s, not only providing fiber uplinks, but also uplink redundancy and failover, improving reliability and availability for the network

2.5G Ultra-Fast Access

- The remote units provide the full line-speed forwarding capability. All ports support non-blocking data packet forwarding, with 2.5G Ultra-Fast access and 10G hight speed uplink providing users with high-speed access experience and meeting the requirements of high-bandwidth services such as HD video conferencing, online video, and large file download.

BENCHU Quality and Reliability

- Low power consumption, with 2 fan.

- high redundancy design, providing a long termand stable PoE power output.

- CE, FCC, RoHS,CB.

- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

Easy operation and maintenance management

- Web management, CLI command line (Console, Telnet), SNMP (V1/V2).

- HTTPS, and SSHV1/V2.

- RMON, system log, LLDP, and port traffic statistics.

- CPU monitoring, memory monitoring, Ping test, and cable diagnose.

Hardware at a Glance

FRONT					REAR		SIDE
Model Name	10/100/1000/2500Base-T RJ45 ports	1G/2.5G/10GBASE-X Fiber SFP+ Ports	PoE+ 802.3at Ports	Power Budget	Power Supply	Fans
SP7500-24PXE6TF-L3M	24	6	24 PoE+	500W	1 internal PSU, fixed	2 internal fans, fixed

Software at a Glance

LAYER 2+ / LAYER 3 LITE FEATURES							
Management	IPv4/IPv6 ACL and QoS	IPv4/IPv6 Multicast Filtering	G.8032 ERPS STP/RSTP/MSTP	IEEE (802.3az) Energy Efficient Ethernet	VLANs	Convergence	IPv4 & IPv6 Static Routing RIP/OSPF/VRRP
Web Browser-based GUI (HTTP/HTTPS), PC-Based Smart Control Center Utility (SCC) , RMON, SNMP	L2, L3, L4, ingress	IGMP and MLD Snooping	Yes	Yes	Static Dynamic, Voice, MAC, Protocol-based	LLDP-MED, RADIUS, 802.1X	Yes

Performance at a Glance

|							
Model Name	Packet buffer	CPU	ACLs	MAC Address Table ARP Table VLANs	Fabric	Latency (Max Connection Speed)	Multicast IGMP Group
SP7500-24PXE6TF-L3M	16MB	Dual-Core 2GHz MIPS InterAptive CPU subsystem 4GB DDR RAM	500 shared	32K MAC 1024 ARP 4K VLANs QinQ	256Gbps 128Mpps line-rate	1G Copper: <3.35µs 2.5G Copper: <2.92µs 10G Fiber: <2.5µs	1024

Features and Benefits

Hardware Features	
2500BASE-T Copper Ethernet PoE+ connections	Support high-density VoIP, HD Surveillance and Wi-Fi6/ Wi-Fi6e AP deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
1G/2.5G/10GBASE-X Fiber SFP+ ports	Six dedicated 10G SFP+ ports for aggregation to the network core. Support for Fiber and Copper modules. Can also build dual redundancy by a trunked uplink with link aggregation.
Great choice of PoE port counts and PoE power budgets that can adapt to the business's needs	460W PoE budget available across 24 Gigabit PoE+ ports (802.3at) – Connect multiple power demanding devices to your network with a single wire for power and connectivity.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for onging operational cost savings.
Desktop and rack mount (kit available)	Flexible deployment on desktop and also supports rack mounting.
Software Features	
Comprehensive IPv6 Support for Management, ACL and QoS	Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement.
IPv4 & IPv6 Static Routing	A simple way to provide segmentation of the network with internal routing through the switch – reserving the router for external traffic routing only, making the entire network more efficient.
Robust security features: • 802.1x authentication (EAP) • Port-based security by locked MAC • ACL filtering to permit or deny traffic based on MAC and IP addresses	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users.
Comprehensive QoS features: • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.
IGMP (IPv4) and MLD (IPv6) Snooping and Querier modes with Fast Leave	Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches desig-nated receivers without the need of an extra multicast router.

Software Features (continued)	
Protected Ports	Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, thereby improving the security of your converged network. This allows your sensitive phone conversations to stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
DHCP Snooping and Dynamic ARP Inspection	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch. Use the DHCP snooping bindings database per port and per VLAN to drop incoming packets that do not match any binding and to enforce source IP/MAC addresses for malicious users traffic elimination.
Dynamic VLAN Assignment (RADIUS)	IP phones and PCs can authenticate on the same port but under different VLAN assignment policies. Users are free to move around and enjoy the same level of network access regardless of their physical location on the network.

Target Application
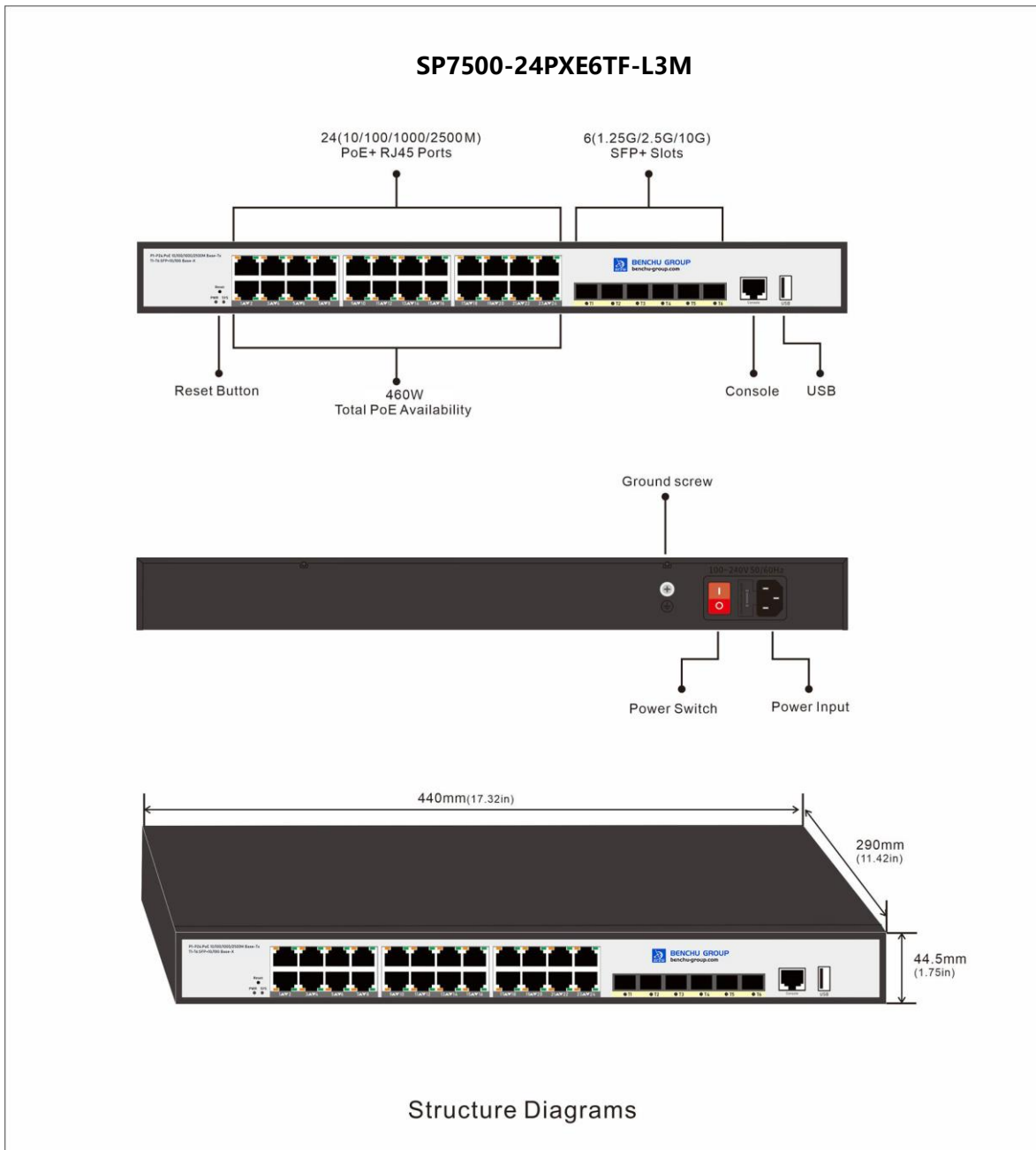
Network Convergence

SP7500-24PXE6TF-L3M
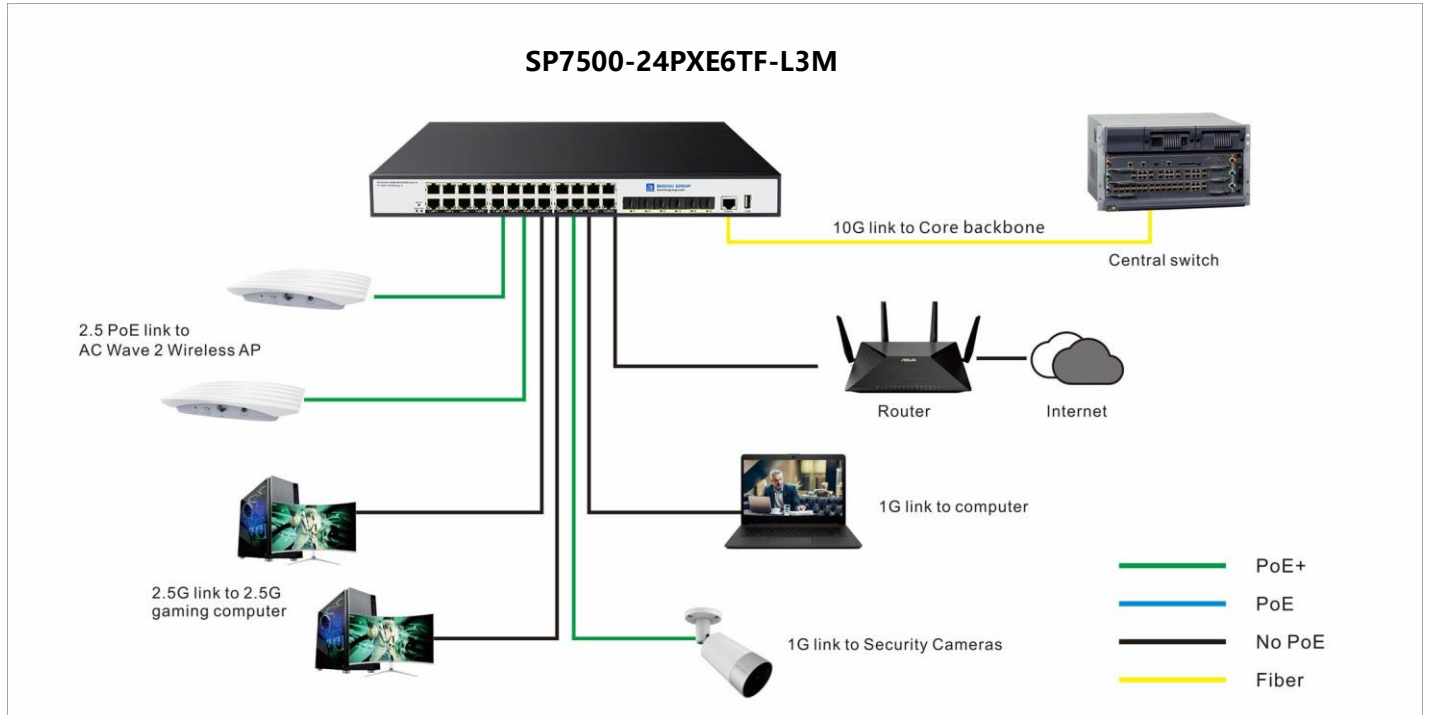
In rapidly expanding organizations, particularly in sectors like manufacturing, technology, internet services, and education, there is an increasing adoption of devices such as video phones, video conferencing systems, 4K HD IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The close proximity of these devices necessitates network switches that support Power over Ethernet (PoE), allowing network managers to connect and power these high-demand devices through a single cable. The need for PoE+ power (802.3at) is especially critical for advanced devices like WiFi 6/WiFi 6e access points and pan-tilt-zoom HD surveillance cameras equipped with night vision and motion tracking, which significantly increases the power requirements on PoE switches. With the surge in demand for high-speed networks, traditional 1G networks are no longer sufficient, prompting an urgent need to upgrade to faster options like 2.5G to meet users' growing needs. To ensure the sustained competitiveness of the enterprise

BENCHU GROUP's 24-port 2.5G Smart Switches support dense deployments of these modern high-power PoE+ devices. They offer powerful Layer 2 and Layer 3 features for IPv4 and IPv6 with enhanced performance and a focus on usability within fast growing corporate environments:

- 460W (SP7500-24PXE6TF-L3M) PoE budget across 24 Gigabit PoE+ ports
- 6 dedicated 1G/2.5G/10G SFP+ fiber ports for aggregation to the network core
- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing
- Layer 3 RIPv1、v2, OSPFv1、v2, VRRP for multiple routing
- IGMP Snooping, IGMP Querier and IGMP Fast Leave for multicast optimization
- ERPS(G.8032) STP/FSTP/MSTP for Ring network and Link protection
- Include VLANs, PoE scheduling, ACLs, DiffServ, LACP, MVR and DHCP
- Easy-to-use Web browser-based management GUI — No need for an IT expert
- Limited Lifetime* Warranty, Tech support

Structure Diagrams

SP7500-24PXE6TF-L3M

24(10/100/1000/2500M)
PoE+ RJ45 Ports

6(1.25G/2.5G/10G)
SFP+ Slots

Reset Button

460W
Total PoE Availability

Console   USB

Ground screw

100~240V 50/60Hz

Power Switch   Power Input

440mm(17.32in)

290mm
(11.42in)

44.5mm
(1.75in)

Structure Diagrams

Technical Specifications	SP7500-24PXE6TF-L3M
10M/100M/1G/2.5G RJ-45 copper ports	24
PoE / PoE+ ports	24 PoE+ (460W PoE budget)
1G/2.5G/10G SFP+ (fiber) ports	4 (dedicated)
Console Port (For config)	Yes
USB port (for config file upload/backup & firm-ware updates)	Yes
Performance Specification	
CPU	Dual-Core 2GHz MIPS InterAptive CPU subsystem
Packet buffer memory (Dynamically shared across only used ports)	16 MB
Forwarding modes	Store-and-forward
Bandwidth	256 Gbps
Packet forwarding rate (64 byte packet size) (Mpps)	132Mpps
MAC address database size (48-bit MAC ad-dresses)	32K
Multicast groups	1K
Number of IPv4 static routes	500
Number of IPv6 static routes	500
Number of VLANs	4094
Number of VLANs(Open QinQ)	16,760,836(4094*4094)
Number of ARP cache entries	1024 ARP
Number of DHCP snooping bindings	1024
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs (ingress)
Priority queues	8
Jumbo frame support (bytes)	Up to 12K packet size
Mean Time Between Failures (MTBF) @ 25°C	122,546 hours
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.314μs; 8.412μs; 8.451μs
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.414μs; 3.545μs; 3.628μs
2.5G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.121μs; 3.413μs; 3.562μs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.980μs; 3.101μs; 3.179μs
2.5G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.635μs; 2.862μs; 2.996μs
10G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.330μs; 2.561μs; 2.712μs

L2 Services - VLANs	SP7500-24PXE6TF-L3M
IEEE 802.1Q VLAN tagging	Yes
QinQ VLAN tagging	Yes
IP-based VLANs	Yes
MAC-based VLANs	Yes
Protocol-based VLAN	Yes
Voice VLAN	Yes
VLAN mapping	Yes
L2 Services - Availability	
Broadcast, multicast, unknown unicast storm control	Yes
IEEE 802.3ad - LAGs (LACP)	Yes
IEEE 802.3x (full duplex and flow control)	Yes
IEEE 802.1D Spanning Tree Protocol	Yes
IEEE 802.1w Rapid Spanning Tree Protocol	Yes
IEEE 802.1s Multiple Spanning Tree Protocol	Yes
Layer 2 DHCP Relay	Yes
L2 Services - Multicast Filtering	
IGMP snooping (v1, v2 and v3)	Yes
MLD snooping support (v1 and v2)	Yes
IGMP snooping querier (v2)	Yes
MLD snooping querier (v1)	Yes
Multicast VLAN Registration (MVR)	Yes
L3 Services - DHCP	
DHCP client	Yes
DHCP snooping	Yes
DHCP Server	Yes
L3 Services - Routing	
IPv4 static routing	500
IPv6 static routing	500
VLAN routing	Yes
RIP V1/V2	Yes
OSPF V2	Yes
Number of IP VLAN interfaces(routed VLANs)	15
Policy routing	Yes
VRRP	Yes

Link Aggregation	SP7500-24PXE6TF-L3M
IEEE 802.3ad - LAGs (LACP)	Yes
Manual LAG	Yes
# of LAGs / # of members in each LAG	8 LAGs with max 8 members in each LAG
Network Monitoring and Discovery Services	
802.1ab LLDP	Yes
SNMP	v1, v2,v3
RMON group 1,2,3,9	Yes
Network Security	
IEEE 802.1x	Yes
RADIUS accounting	Yes
Access Control Lists (ACLs)	Yes
IP-based ACLs (IPv4 and IPv6)	L2 / L3 / L4
MAC-based ACLs	Yes
TCP/UDP-based ACLs	Yes
Control MAC # static entries	48
Port-based security by locked MAC addresses	Yes
Dynamic ARP inspection	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Network storm protection, DoS	Yes
Quality of Service (QoS)	
Port-based rate limiting	Yes ingress and egress
Port-based QoS	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes ingress
IEEE 802.1p COS	Yes
Destination MAC and IP	Yes
IPv4 and v6 DSCP	Yes
TCP/UDP-based	Yes
Weighted Round Robin (WRR)	Yes
Strict priority queue technology	Yes

IEEE Network Protocols	SP7500-24PXE6TF-L3M
• IEEE 802.3 Ethernet	• IEEE 802.3ad Trunking (LACP)
• IEEE 802.3u 100BASE-T	• IEEE 802.3x Full-Duplex Flow Control
• IEEE 802.3ab 1000BASE-T	• IEEE 802.1Q VLAN Tagging
• IEEE 802.3z 1000BASE-SX/LX	• IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)
• IEEE 802.3bz 2.5G BASE-X	• IEEE 802.1p Class of Service
• IEEE 802.3ae 10G BASE-X	• IEEE 802.1D Spanning Tree (STP)
• IEEE 802.3af PoE	• IEEE 802.1s Multiple Spanning Tree (MSTP)
• IEEE 802.3at PoE+	• IEEE 802.1w Rapid Spanning Tree (RSTP)
• IEEE 802.3az Energy Efficient Ethernet (EEE)	• IEEE 802.1x RADIUS Network Access Control

Management, Monitoring & Troubleshooting	
Password management	Yes
Admin access control via RADIUS and TACACS+	Yes
IPv6 management	Yes
SNMP v1/v2c/v3	Yes
RMON group 1,2,3,9	Yes
Port mirroring	Yes ingress and egress
Many-to-one port mirroring	24
Cable test utility	Yes
TLS/HTTPS Web-based access (version)	Yes (v1.2)
File transfers (uploads, downloads)	TFTP / HTTP
HTTP upload/download (firmware)	Yes
Syslog (RFC 3164)	Yes
USB port for firmware and config upload/ download	Yes
LEDs	Yes
Per port	Speed, Link, Activity; or PoE in different mode
Per device	Power, system

Physical Specifications	
Dimensions(Width * Depth * Height)	440 x 290 x 44.5 mm (17.32 x 11.42 x 1.75 in)
Weight	4.9 kg (10.8 lb)
Power Consumption (when all ports used, line-rate traffic and max PoE)	500W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	22W
Iddle power consumption (all ports link-down standby) (Watts)	18W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	2

Environmental Specifications	SP7500-24PXE6TF-L3M
Operating	
Operating Temperature	-20° to 50°C (-4° to 122°F)
Humidity	90% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum
Storage	
Storage Temperature	−30° to 70°C (− 22° to 158°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum
Electromagnetic Emissions and Immunity	
Certifications	CE mark, commercial
	FCC Part 15 Class A, VCCI Class A
	Class A EN 55022 (CISPR 22) Class A
	Class A C-Tick
	EN 55024
	CCC
	47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A
	ANSI C63.4:2014
	IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A
Safety	
Certifications	CB mark, commercial
	CSA certified (CSA 22.2 #950)
	EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005
	(ed.2)+A1:2009+A2:2013
	AN/NZS 60950.1:2015
	CCC (China Compulsory Certificate)
Warranty and Support	
Hardware Limited Warranty	Limited Lifetime*
Technical Support via Phone and Email*	Limited Lifetime*
Limited Lifetime* 24x7 Online Chat Technical Support	Limited Lifetime*
Package Contents	
All models	Smart Switch
	AC Power cord with C13 connector (localized to region of sale)
	Brackets and screws for rack mounting
	Rubber protection caps, which are already installed in the SFP sockets Installation guide

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