Cisco Sx250 Series Smart Switches Product Specifications

Introduction

The Cisco Sx250 Series Smart Switches are designed to be easy to configure, manage, and troubleshoot, allowing you to focus on your business priorities. These switches are equipped with a new generation of highly-integrated, cost-effective packet processors targeted for Carrier Ethernet and Small-Medium Enterprise (SME) applications with full wire-speed performance Fast Ethernet (FE) or Gigabit Ethernet (GE) ports, and GE Combo platforms.

The web-based utility allows you to deploy and manage your network efficiently. Setting up and troubleshooting can be done easily with easy-to-use tools such as Cisco Discovery Protocol (CDP), FindIT, and Cisco Smartports, which let your network automatically detect and configure all connected Cisco devices.

This article shows the product specifications of the Sx250 Smart Switches.

Note: If you want to know about the features and functions of the Sx250 Smart Switches, click here.

Applicable Devices

- SF250 Series
- SG250 Series

Software Version

- 2.2.5.68

Sx250 Series Product Specifications

Performance

Switching capacity and forwarding rate All switches are wire-speed and	Model	Capacity in Millions of Packets per Second (mpps) (64-byte packets)	Switching Capacity in Gigabits per Second (Gbps)

non-blocking	SF250-48	13.10	17.6
	SF250-48HP	13.10	17.6
	SG250-10P	14.88	20.0
	SG250- 26	38.69	52.0
	SG250-26HP	38.69	52.0
	SG250-26P	38.69	52.0

Layer 2 Switching

Spanning Tree Protocol (STP)	Standard 802.1d spanning tree support Fast convergence using 802.1w (Rapid Spanning Tree Protocol [RSTP]), enabled by default Multiple spanning tree instances using 802.1s (MSTP); 8 instances are supported
Port grouping/link aggregation	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP) Up to 4 groups Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad LAG
VLAN	Support for up to 256 active VLANs simultaneously Port-based and 802.1Q tag-based VLANs Management VLAN
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS. Auto voice capabilities deliver networkwide zero-touch deployment of voice endpoints and call control devices.
IGMP (versions 1, 2, and 3) snooping	Internet Group Management Protocol (IGMP) limits bandwidth-intensive multicast traffic to only the requesters; supports 4K multicast groups (source-specific multicasting is also supported).
HOL blocking	Head-of-line (HOL) blocking.

Security

SSL	Secure Sockets Layer (SSL) encrypts all HTTPS traffic, allowing secure access to the web-based utility in the switch.
IEEE 802.1X (authenticator role)	RADIUS authentication, MD5 hash, single/multiple host mode, and single/multiple sessions.
Secure Sensitive Data (SSD)	A mechanism to manage sensitive data (such as passwords, keys, and so on) securely on the switch, populating this data to other devices, and secure autoconfig. Access to view the sensitive data as plaintext or encrypted is provided according to the user-configured access level and the access method of the user.
Port security	Ability to lock source MAC addresses to ports and limit the number of learned MAC addresses.

RADIUS	Supports RADIUS authentication for management access. Switch functions as a client.
Storm control	Broadcast, multicast, and unknown unicast.
DoS prevention	Denial-of-service (DoS) attack prevention.

Quality of Service

Priority levels	4 hardware queues
Scheduling	Strict priority and weighted round-robin (WRR)
Class of service	Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/ToS/DSCP based; DiffServ; trusted QoS Queue assignment based on differentiated services code point (DSCP) and class of service (802.1p/CoS)
Rate limiting	Ingress policer, per VLAN, per port

Standards

Standards	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad Link Aggregation Control Protocol, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.3 ad LACP, IEEE 802.1D (STP), IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at, RFC 768, RFC 783, RFC 791, RFC 792, RFC 793, RFC 813, RFC 879, RFC 896, RFC 826, RFC 854, RFC 855, RFC 856, RFC 858, RFC 894, RFC 919, RFC 920, RFC 922, RFC 950, RFC 951, RFC 1042, RFC 1071, RFC 1123, RFC 1141, RFC 1155, RFC 1157, RFC 1213, RFC 1215, RFC 1286, RFC 1350, RFC 1442, RFC 1451, RFC 1493, RFC 1533, RFC 1541, RFC 1542, RFC 1573, RFC 1624, RFC 1643, RFC 1700, RFC 1757, RFC 1867, RFC 1907, RFC 2011, RFC 2012, RFC 2013, RFC 2030, RFC 2131, RFC 2132, RFC 2233, RFC 2576, RFC 2616, RFC 2618, RFC 2665, RFC 2666, RFC 2674, RFC 2737, RFC 2819, RFC 2863, RFC 3164, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 3416, RFC 4330

IPv6

IPv6	Ipv6 host mode Ipv6 over Ethernet Dual Ipv6/Ipv4 stack Ipv6 neighbor and router discovery (ND) Ipv6 stateless address auto configuration Path maximum transmission unit (MTU) discovery

	Duplicate address detection (DAD) Internet Control Message Protocol (ICMP) version 6 Ipv6 over Ipv4 network with Intrasite Automatic Tunnel Addressing Protocol (ISATAP) support USGv6 and Ipv6 Gold Logo certified
Ipv6 QoS	Prioritize Ipv6 packets in hardware
Multicast Listener Discovery (MLD v1/2) snooping	Deliver Ipv6 multicast packets only to the required receivers
Ipv6 applications	Web/SSL, Ping, Traceroute, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP), Simple Network Management Protocol (SNMP), Remote Authentication Dial-In User Service (RADIUS), Syslog, DNS client, DHCP Client, DHCP Autoconfig
Ipv6 RFC supported	RFC 4443 (which obsoletes RFC 2463): ICMPv6 RFC 4291 (which obsoletes RFC 3513): Ipv6 address architecture RFC 4291: IP Version 6 Addressing Architecture RFC 2460: Ipv6 Specification RFC 4861 (which obsoletes RFC 2461): Neighbor Discovery for Ipv6 RFC 4862 (which obsoletes RFC 2462): Ipv6 Stateless Address Autoconfiguration RFC 1981: Path MTU Discovery RFC 4007: Ipv6 Scoped Address Architecture RFC 3484: Default address selection mechanism RFC 5214 (which obsoletes RFC 4214): ISATAP tunneling RFC 4293; MIB Ipv6: Textual Conventions and General Group RFC 3595: Textual Conventions for Ipv6 Flow Label

Management

Web-based Utility	Built-in switch configuration utility for easy browser-based device configuration (HTTP/HTTPS). Supports configuration, system dashboard, system maintenance, and monitoring.	
SNMP	SNMP versions 1, 2c, and 3 with support for traps, and SNMP v3 User-based Security Model (USM)	
Standard MIBs	lldp-MIB lldpextdot1-MIB lldpextdot3-MIB lldpextmed-MIB rfc2674-MIB rfc2575-MIB rfc2573-MIB rfc2233-MIB rfc2013-MIB rfc2012-MIB rfc2011-MIB RFC-1212 RFC-1215	rfc2665-MIB rfc2668-MIB rfc2737-MIB rfc2925-MIB rfc3621-MIB rfc4668-MIB rfc4670-MIB trunk-MIB tunnel-MIB udp-MIB draft-ietf-bridge-8021x-MIB draft-ietf-bridge-rstpmib-04-MIB draft-ietf-hubmib-etherif-mib-v3-00-MIB

	SNMPv2-CONF SNMPv2-TC p-bridge-MIB q-bridge-MIB rfc1389-MIB rfc1493-MIB rfc1611-MIB rfc1612-MIB rfc1850-MIB rfc1907-MIB rfc2571-MIB rfc2572-MIB rfc2574-MIB rfc2576-MIB rfc2613-MIB	draft-ietf-syslog-device-MIB ianaaddrfamnumbers-MIB ianaifty-MIB ianaprot-MIB inet-address-MIB ip-forward-MIB ip-MIB RFC1155-SMI RFC1213-MIB SNMPv2-MIB SNMPv2-SMI SNMPv2-TM RMON-MIB rfc1724-MIB dcb-raj-DCBX-MIB-1108-MIB rfc1213-MIB rfc1757-MIB
Private MIBs	CISCOSB-lldp-MIB CISCOSB-brgmulticast-MIB CISCOSB-bridgemibobjects-MIB CISCOSB-bonjour-MIB CISCOSB-dhcpcl-MIB CISCOSB-MIB CISCOSB-wrandomtaildrop-MIB CISCOSB-traceroute-MIB CISCOSB-telnet-MIB CISCOSB-stormctrl-MIB CISCOSBssh-MIB CISCOSB-socket-MIB CISCOSB-sntp-MIB CISCOSB-smon-MIB CISCOSB-phy-MIB CISCOSB-multisessionterminal-MIB CISCOSB-mri-MIB CISCOSB-jumboframes-MIB CISCOSB-gvrp-MIB CISCOSB-endofmib-MIB CISCOSB-dot1x-MIB CISCOSB-deviceparams-MIB CISCOSB-cli-MIB CISCOSB-cdb-MIB CISCOSB-brgmacswitch-MIB CISCOSB-3sw2swtables-MIB CISCOSB-smartPorts-MIB CISCOSB-tbi-MIB CISCOSB-macbaseprio-MIB CISCOSB-env_mib-MIB CISCOSB-policy-MIB CISCOSB-sensor-MIB CISCOSB-aaa-MIB CISCOSB-application-MIB CISCOSB-bridgesecurity-MIB CISCOSB-copy-MIB	CISCOSB-ip-MIB CISCOSB-iprouter-MIB CISCOSB-ipv6-MIB CISCOSB-mnginf-MIB CISCOSB-lcli-MIB CISCOSB-localization-MIB CISCOSB-mcmngr-MIB CISCOSB-mng-MIB CISCOSB-physdescription-MIB CISCOSB-PoE-MIB CISCOSB-protectedport-MIB CISCOSB-rmon-MIB CISCOSB-rs232-MIB CISCOSB-SecuritySuite-MIB CISCOSB-snmp-MIB CISCOSB-specialbpdu-MIB CISCOSB-banner-MIB CISCOSB-syslog-MIB CISCOSB-TcpSession-MIB CISCOSB-traps-MIB CISCOSB-trunk-MIB CISCOSB-tuning-MIB CISCOSB-tunnel-MIB CISCOSB-udp-MIB CISCOSB-vlan-MIB CISCOSB-ipstdacl-MIB CISCOSB-eee-MIB CISCOSB-ssl-MIB CISCOSB-digitalkeymanage-MIB CISCOSB-qosclimib-MIB CISCOSB-digitalkeymanage-MIB CISCOSB-tbp-MIB CISCOSMB-MIB CISCOSB-secsd-MIB CISCOSB-draft-ietf-entmib-sensor-MIB CISCOSB-draft-ietf-syslog-device-MIB

	CISCOSB-CpuCounters-MIB CISCOSB-Custom1BonjourService-MIB CISCOSB-dhcp-MIB CISCOSB-dlf-MIB CISCOSB-dnscl-MIB CISCOSB-embweb-MIB CISCOSB-fft-MIB CISCOSB-file-MIB CISCOSB-greeneth-MIB CISCOSB-greeneth-MIB CISCOSB-interfaces-MIB CISCOSB-interfaces_recovery-MIB	CISCOSB-rfc2925-MIB CISCO-SMI-MIB CISCOSB-DebugCapabilities-MIB CISCOSB-CDP-MIB CISCOSB-vlanVoice-MIB CISCOSB-EVENTS-MIB CISCOSB-sysmng-MIB CISCOSB-sct-MIB CISCO-TC-MIB CISCO-VTP-MIB CISCO-CDP-MIB
Remote monitoring (RMON)	Embedded RMON software agent supports 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis	
Ipv4 and Ipv6 dual stack	Coexistence of both protocol stacks to ease migration	
Firmware upgrade	Web browser upgrade (HTTP/HTTPS) and TFTP and SCP	
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to 4 source ports can be mirrored to one destination port.	
VLAN mirroring	Traffic from a VLAN can be mirrored to a port for analysis with a network analyzer or RMON probe. Up to 4 source VLANs can be mirrored to one destination port.	
Dynamic Host Configuration Protocol (DHCP) (options 12, 66, 67, 129, and 150)	DHCP options facilitate tighter control from a central point (DHCP server), to obtain IP address, autoconfiguration (with configuration file download), DHCP Relay, and host name.	
Autoconfiguration	Enables mass deployment with protection of sensitive data.	
Text-editable configs	Config files can be edited with a text editor and downloaded to another switch, facilitating easier mass deployment.	
Smartports	Simplified configuration of QoS and security capabilities.	
Auto Smartports	Automatically applies the intelligence delivered through the Smartports roles to the port based on the devices discovered over Cisco Discovery Protocol or LLDP-MED. This facilitates zero-touch deployments.	
Cloud services	Support for Cisco Active Advisor	
Localization	Localization of the web-based utility and documentation into multiple languages	
Login banner	Configurable multiple banners for web as well as CLI	
Other management	Traceroute; single IP management; HTTP/HTTPS; RADIUS; port mirroring; TFTP upgrade; DHCP client; Simple Network Time Protocol (SNTP); cable diagnostics; Ping; syslog; automatic time settings from Management Station.	

Green (Power Efficiency)

Energy detect	Automatically turns power off on RJ-45 port when detecting link down. Active mode is resumed without loss of any packets when the switch detects the link is up.

Cable length detection	Adjusts the signal strength based on the cable length. Reduces the power consumption for shorter cables.
EEE compliant (802.3az)	Supports IEEE 802.3az on all copper Gigabit Ethernet ports.
Disable port LEDs	LEDs can be manually turned off to save on energy.
General	
Jumbo frames	Frame sizes up to 9K bytes. The default MTU is 2K bytes.
MAC table	8K addresses.

Discovery

Bonjour	The switch advertises itself using the Bonjour protocol.
Link Layer Discovery Protocol (LLDP) (802.1ab) with LLDP-MED extensions	Link Layer Discovery Protocol (LLDP) allows the switch to advertise its identification, configuration, and capabilities to neighboring devices that store the data in a MIB. LLDP-MED is an enhancement to LLDP that adds the extensions needed for IP phones.
Cisco Discovery Protocol	The switch advertises itself using the Cisco Discovery Protocol. It also learns the connected device and its characteristics using Cisco Discovery Protocol.
Auto Smartports	Automatically applies the intelligence delivered through the Smartports roles to the port based on the devices discovered over Cisco Discovery Protocol or LLDP-MED. This capability facilitates zero-touch deployments.

802.3at PoE+ and 802.3af PoE delivered over any of the RJ-45 ports within the listed power budgets

The following switches support 802.3at PoE+, 802.3af, and Cisco pre-standard (legacy) PoE. There is a maximum power of 30.0 W to any 10/100 or Gigabit Ethernet port until the PoE budget for the switch is reached. The total power available for PoE per switch is as follows:

SF250-48HP	195 W	48
SG250-10P	62 W	8
SG250-26HP	100 W	24
SG250-26P	195 W	24

PoE powered device (PD) and PoE pass-through

Besides AC power, compact switch models can work as PoE powered device (PD) and be powered by PoE switches connected to the uplink ports. The switch can also pass through the power to downstream PoE end devices if required.

Maximum of 60 W can be drawn per uplink port if the peer PoE switch supports 60 W PoE. When multiple uplink ports are connected to PoE switches, the power drawn from these ports is combined.

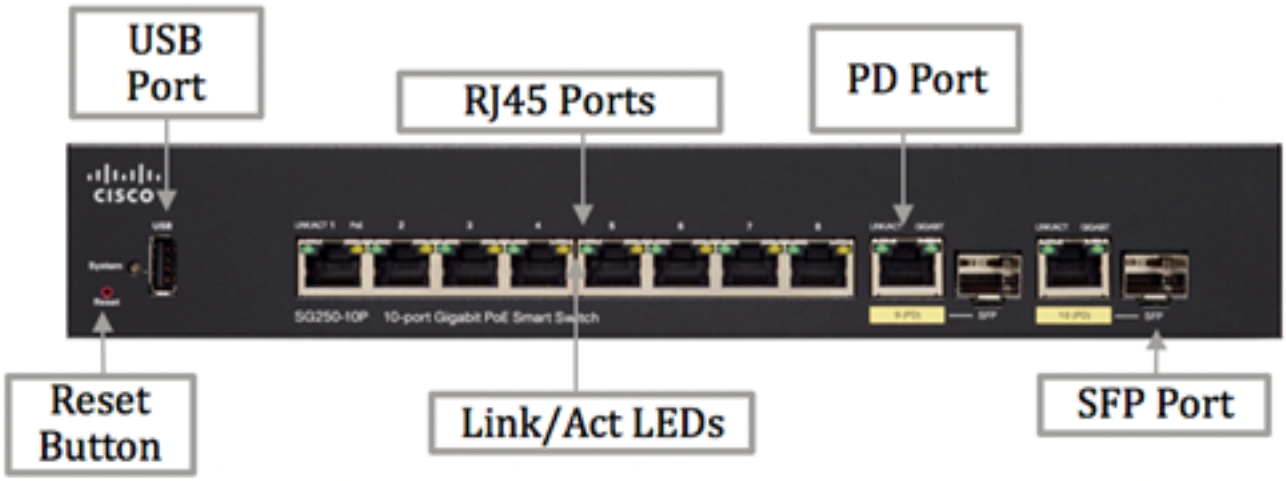
When AC power is connected and functioning correctly, it is preferred over PoE power. The PoE power can function as a backup to the AC power source or be used as the sole power source for the switch.

SG250-10P	1 PoE uplink 2 PoE uplink 1 PoE+ uplink 2 PoE+ uplink 1 60W PoE uplink 2 60W PoE uplink AC Power	0W 0W 0W 22W 22W 50W 62W	Yes Yes Yes Yes Yes Yes Yes

Power Consumption

SF250-48	EEE, Energy Detect	110V=23.4W 220V=24.2W	N/A	82.57
SF250-48HP	EEE, Energy Detect	110V=43.1W 220V=44.3W	110V=265.2W 220V=255.8W	904.90
SG250-10P	EEE, Energy Detect, Short Reach	110V=13.25W 220V=13.42W	110V=85.19W 220V=84.17W	290.68
SG250-26	EEE, Energy Detect, Short Reach	110V=18.1W 220V=18.9W	N/A	64.49
SG250-26HP	EEE, Energy Detect, Short Reach	110V=23.5W 220V=24.4W	110V=135.2W 220V=133.9W	461.32
SG250-26P	EEE, Energy Detect, Short Reach	110V=34.2W 220V=37.2W	110V=262W 220V=254.5W	893.98

Physical Interfaces



Ports

SF250-48	48 Fast Ethernet + 2 Gigabit Ethernet	48 Fast Ethernet	2 Gigabit Ethernet combo + 2 SFP
SF250-48HP	48 Fast Ethernet + 2 Gigabit Ethernet	48 Fast Ethernet	2 Gigabit Ethernet combo + 2 SFP
SG250-10P	10 Gigabit Ethernet	8 Gigabit Ethernet	2 Gigabit Ethernet combo
SG250-26	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo
SG250-26HP	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo
SG250-26P	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo

Buttons

USB Slot	USB Type-A slot at the front panel of the switch for easy file and image management
Buttons	Reset button
Cabling Type	Unshielded twisted pair (UTP) Category 5 or better for 10BASE-T/100BASE-TX; UTP Category 5e or better for 1000BASE-T
LEDs	System, Link/Act, PoE, Speed
Flash	256 MB
CPU	800 MHz ARM
CPU Memory	512 MB

Packet Buffer

All numbers are aggregate across all ports because the buffers are dynamically shared:

SF250-48	24 Mb
SF250-48HP	24 Mb
SG250-10P	12 Mb
SG250-26	12 Mb
SG250-26HP	12 Mb
SG250-26P	12 Mb

Supported SFP/SFP+ modules	**SKU**	**Media**	**Speed**	**Maximum Distance**
	MGBBX1	Single-mode fiber	100 Mbps	10 km
	MGBSX1	Multimode fiber	100 Mbps	500 m
	MGBLH1	Single-mode fiber	100 Mbps	40 km
	MGBLX1	Single-mode fiber	100 Mbps	10 km
	MGBT1	UTP cat 5e	100 Mbps	100 m

Environmental

Unit dimensions (W x H x D)	Model Name	Unit Dimensions
	SF250-48	440 x 44 x 257 mm (17.3 x 1.45 x 10.12 in)
	SF250-48HP	440 x 44 x 350 mm (17.3 x 1.45 x 13.78 in)
	SG250-10P	280 x 44 x 170 mm (11.0 x 1.45 x 6.69 in)
	SG250-26	440 x 44 x 202 mm (17.3 x 1.45 x 7.95 in)
	SG250-26HP	440 x 44 x 257 mm (17.3 x 1.45 x 10.12 in)
	SG250-26P	440 x 44 x 257 mm (17.3 x 1.45 x 10.12 in)
Unit weight	Model Name	Unit Weight
	SF250-48	3.57 kg (7.87 lb)
	SF250-48HP	4.93 kg (10.87 lb)
	SG250-10P	1.2 kg (2.65 lb)
	SG250-26	2.72 kg (6.0 lb)
	SG250-26HP	3.37 kg (7.43 lb)
	SG250-26P	3.81 kg (8.40 lb)
Power	100–240V 50–60 Hz, internal, universal – SF250-48, SF250-48HP, SG250-26, SG250-26HP, SG250-26P 100–240V 50–60 Hz, external – SG250-10P	
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15	

	(CFR 47) Class A
Operating temperature	SF250-48, SF250-48HP, SG250-10P, SG250-26, SG250-26HP, SG250-26P 32° to 122°F (0° to 50°C)
Storage temperature	-4° to 158°F (-20° to 70°C)
Operating humidity	10% to 90%, relative, noncondensing
Storage humidity	10% to 90%, relative, noncondensing

Acoustic noise and mean time between failures (MTBF)	**Model Name**	**Fan (Number)**	**Acoustic Noise**	**MTBF at 50°C (Hours)**
	SF250-48	No fan	N/A	256,281.25
	SF250-48HP	2	0°C to 30°C: 38.0dB 50°C: 52.7dB	286,555.77
	SG250-10P	No fan	N/A	205,647.00
	SG250-26	No fan	N/A	343,592.66
	SG250-26HP	1	0°C to 30°C: 37.5dB 50°C: 49.7dB	333,792.21
	SG250-26P	2	0°C to 30°C: 36.0dB 50°C: 53.7dB	430,341.06
Warranty	Limited lifetime			