

Cisco 220 Series Smart Plus Switches

Product and Hardware Specifications

Objective

The Cisco Small Business 220 Series Smart Plus Switches has a combination of powerful product performance and reliability. This series provides higher levels of security, management, and scalability, allowing you to experience maximum performance but at a lesser cost.

The objective of this document is to show you the product and hardware specifications of the Cisco 220 Series Smart Plus Switches. To get to know more about the features and other details of the Cisco 220 Series Smart Plus Switches, click [here](#).

Product Specifications

Performance

Feature	Description		
Switching Capacity	Model Name	Forwarding rate in millions of packets per second (mpps; 64-byte packets)	Switching capacity in Gigabits per second
	SF220-24	6.55	8.8
	SF220-24P	6.55	8.8
	SF220-48	10.12	13.6
	SF220-48P	10.12	13.6
	SG220-26	38.69	52
	SG220-26P	38.69	52
	SG220-50	74.40	100
	SG220-50P	74.40	100

Layer 2 Switching

Feature	Description
Media Access Control (MAC) Table	Up to 8192 MAC addresses
Spanning Tree Protocol (STP)	Standard 802.1d Spanning Tree support, enabled by default Fast convergence using 802.1w - Rapid Spanning Tree Protocol (RSTP) Multiple Spanning Tree Protocol (MSTP)instances using 802.1s 16 instances are supported
Port Grouping	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP): Up to 8 groups Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation Load balance based on source and destination MAC address, or source and destination MAC/IP

Virtual Local Area Network (VLAN)	Support for up to 256 VLANs simultaneously Port-based and 802.1Q tag-based VLANs Management VLAN Guest VLAN
Auto Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of Quality of Service (QoS)
QinQ VLAN	VLANs transparently cross a service provider network while isolating traffic among customers
Generic VLAN Registration Protocol (GVRP) and Generic Attribute Registration Protocol (GARP)	Protocols for automatically propagating and configuring VLANs in a bridged domain
Head-of-Line (HOL) Blocking	HOL blocking prevention
Jumbo Frame	Frame sizes up to 9216 supported

Security

Feature	Description
Access Control Lists (ACLs)	Drop or rate limit based on source and destination MAC, VLAN ID or IP address, protocol, port, Differentiated Services Code Point (DSCP)/IP precedence, Transmission Control Protocol (TCP)/User Datagram Protocol (UDP) source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, Internet Group Management Protocol (IGMP) packets, TCP flag Supports up to 512 rules
Port Security	Creates the ability to lock source MAC addresses to ports; limits the number of learned MAC addresses
IEEE 802.1X (Authenticator Role)	802.1X: RADIUS authentication; guest VLAN; multiple host mode
Remote Authentication Dial-In User Service (RADIUS), Terminal	Supports RADIUS and TACACS authentication; switch functions as a client

Access Controller Access Control System (TACACS+)	
MAC Address Filtering	Supported
Storm Control	Broadcast, multicast, and unknown unicast
Denial of Service (DoS) Protection	DoS attack prevention
STP Bridge Protocol Data Unit (BPDU) Guard	This security mechanism protects the network from invalid configurations. A port enabled for BPDU Guard is shut down if a BPDU message is received on that port.
Secure Shell (SSH) Protocol	SSH is a secure replacement for Telnet traffic. SCP also uses SSH. SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL support: Encrypts all Hyper Text Transfer Protocol Secure (HTTPS) traffic, allowing highly secure access to the browser-based management GUI in the switch

QoS

Feature	Description
Priority Levels	8 hardware queues per port
Scheduling	Strict priority and Weighted Round-Robin (WRR) queue assignment based on DSCP and class of service (802.1p/CoS)
Class of Service	Port-based; 802.1p VLAN priority-based; IPv4/v6 IP precedence, Type of Service (ToS), and DSCP-based; Differentiated Services (DiffServ); classification and re-marking ACLs, trusted QoS
Rate Limits	Ingress policer; egress shaping and rate control; per VLAN, per port, and flow-based

ng	
Congestion Avoidance	A TCP congestion avoidance algorithm is required to reduce and prevent global TCP loss synchronization

Multicast

Feature	Description
IGMP Versions 1, 2, and 3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters; supports 256 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router

Standards

Feature	Description
Standards	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad LACP, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.1D (STP, GARP, and GVRP), 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 922, RFC 920, RFC 950, RFC 1042, RFC 1071, RFC 1123, RFC 1141, RFC 1155, RFC 1157, RFC 1350, RFC 1533, RFC 1541, RFC 1624, RFC 1700, RFC 1867, RFC 2030, RFC 2616, RFC 2131, RFC 2132, RFC 3164, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 2576, RFC 4330, RFC 1213, RFC 1215, RFC 1286, RFC 1442, RFC 1451, RFC 1493, RFC 1573, RFC 1643, RFC 1757, RFC 1907, RFC 2011, RFC 2012, RFC 2013, RFC 2233, RFC 2618, RFC 2665, RFC 2666, RFC 2674, RFC 2737, RFC 2819, RFC 2863, RFC 1157, RFC 1493, RFC 1215, RFC 3416

IPv6

Feature	Description
IPv6	IPv6 host mode IPv6 over Ethernet IPv6/IPv4 Dual Stack IPv6 neighbor and router discovery (ND) IPv6 stateless address auto-configuration

	Path maximum transmission unit (MTU) discovery Duplicate address detection (DAD) ICMP version 6
IPv6 ACL	Drop or rate limit IPv6 packets in hardware
Pv6 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, Telnet server/SSH, Dynamic Host Configuration Protocol (DHCP) Client, DHCP Autoconfig, Cisco Discovery Protocol (CDP), Link Layer Discovery Protocol (LLDP)
IPv6 Request for Comments (RFCs) Supported	RFC 4443 (which obsoletes RFC2463) - ICMP version 6 RFC 4291 (which obsoletes RFC 3513) - IPv6 address architecture RFC 4291 - IPv6 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 auto-configuration RFC 1981 - Path MTU discovery RFC 4007 - IPv6 scoped address architecture RFC 3484 - Default address selection mechanism

Management

Feature	Description	
Web User Interface	Built-in switch configuration utility for easy browser-based device configuration (HTTP/HTTPS). Supports configuration, system dashboard, system maintenance, and monitoring	
Text-Editable Config Files	Config files can be edited with a text editor and downloaded to another switch, facilitating easier mass deployment	
Command Line Interface (CLI)	Scriptable CLI; a full CLI is supported. User privilege levels 1 and 15 are supported for the CLI	
Cloud Services	Support for Cisco Small Business FindIT Network Tool	
Simple Network Management Protocol (SNMP)	SNMP versions 1, 2c, and 3 with support for traps, and SNMP version 3 user-based security model (USM)	
Standard Management Information Base (MIBs)	MIB-II (RFC1213)	Generic Traps MIB (RFC1215)
	IF-MIB (RFC2863)	SNMP-COMMUNITY-MIB
	Bridge-MIB (RFC4188)	SNMP-MIB
	Bridge-MIB-Extension (RFC2674)	LLDP-MIB
	RMON (RFC2819)	LLDP-EXT-MED-MIB
	Etherlike MIB (RFC3635)	IEEE8023-LAG-MIB
	Radius Client MIB (RFC2618)	CISCO-PORT-SECURITY-MIB
Entity MIB (RFC2737)	CISCO-ENVMON-MIB	

	POWER-ETHERNET-MIB (RFC3621) Syslog MIB (RFC3164)	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	
Port Mirroring	Traffic on a port or VLAN can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to 8 source ports can be mirrored to one destination port. Four sessions are supported.	
Firmware Upgrade	<ul style="list-style-type: none"> • Web browser upgrade (HTTP/HTTPS) and Trivial File Transfer Protocol (TFTP) • Dual images for resilient firmware upgrades 	
DHCP (Option 12, 66, 67, 82, 129, and 150)	DHCP options facilitate tighter control from a central point (DHCP server) to obtain IP address, auto-configuration (with configuration file download), DHCP relay, and hostname	
Time Synchronization	Simple Network Time Protocol (SNTP)	
Login Banner	Configurable multiple banners for web as well as CLI	
Other Management	HTTP/HTTPS; TFTP upgrade; DHCP client; BOOTP; cable diagnostics; ping; traceroute; syslog	

Discovery

Feature	Description
Bonjour	The switch advertises itself using the Bonjour protocol
Link Layer Discovery Protocol (LLDP) (802.1ab) with LLDP-MED Extensions	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. Display brief information for connected Cisco network devices, IP phones, and wireless access points

Power Efficiency

Feature	Description
EEE Compliance (802.3az)	Support 802.3az Energy Efficient Ethernet on all ports; substantially reduce the power consumption when link bandwidth is not at full utilization
Energy Detect	Automatically turns power off on Gigabit Ethernet and 10/100 RJ-45 ports when detecting a link down Active mode is resumed without loss of any packets when the

t	switch detects the link up
---	----------------------------

Power Over Ethernet

Feature	Description															
802.3af PoE or 802.3at PoE+ Delivered over Any of the RJ-45 Ports Within the Listed Power Budgets	Switches support 802.3af, 802.3at, and Cisco pre-standard (legacy) PoE on port 1 to port 4 with maximum power of 30 W per port; switches support 802.3af and Cisco pre-standard (legacy) PoE on other RJ-45 ports with maximum power of 15.4 W per port. This applies to all PoE-enabled models; the maximum number of ports providing PoE power simultaneously is determined by the total PoE budget for the switch, and the actual power requirement of PD devices. The total power available for PoE per switch is as follows:															
	<table border="1"> <thead> <tr> <th>Model Name</th> <th>Power Dedicated to PoE</th> <th>Number of Ports That Support PoE</th> </tr> </thead> <tbody> <tr> <td>SF220-24P</td> <td>180 W</td> <td>24</td> </tr> <tr> <td>SF220-48P</td> <td>375 W</td> <td>48</td> </tr> <tr> <td>SF220-26P</td> <td>180 W</td> <td>24</td> </tr> <tr> <td>SF220-50P</td> <td>375 W</td> <td>48</td> </tr> </tbody> </table>	Model Name	Power Dedicated to PoE	Number of Ports That Support PoE	SF220-24P	180 W	24	SF220-48P	375 W	48	SF220-26P	180 W	24	SF220-50P	375 W	48
	Model Name	Power Dedicated to PoE	Number of Ports That Support PoE													
	SF220-24P	180 W	24													
	SF220-48P	375 W	48													
SF220-26P	180 W	24														
SF220-50P	375 W	48														
Pre-Standard PoE	Support Cisco Pre-Standard PoE															
Intelligent PoE Power Management	Support the granular power negotiation with CDP/LLDP communication with Powered Devices (PD) after IEEE classification															

Hardware Specifications

Feature	Description																																				
Buttons	Reset button																																				
Cabling Type	Unshielded twisted pair (UTP) Category 5 or better for 10BASE-T/100BASE-TX; UTP Category 5 Ethernet or better for 1000BASE-T																																				
LEDs	System, Link/Act, Speed																																				
Flash	32 MB																																				
CPU Memory	128 MB																																				
Ports	<table border="1"> <thead> <tr> <th>Model</th> <th>Total System Ports</th> <th>RJ-45 Ports</th> <th>Uplink Ports</th> </tr> </thead> <tbody> <tr> <td>SF220-24</td> <td>24 Fast Ethernet plus 2 Gigabit Ethernet</td> <td>24 Fast Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SF220-24P</td> <td>24 Fast Ethernet plus 2 Gigabit Ethernet</td> <td>24 Fast Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SF220-48</td> <td>48 Fast Ethernet plus 2 Gigabit Ethernet</td> <td>48 Fast Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SF220-48P</td> <td>48 Fast Ethernet plus 2 Gigabit Ethernet</td> <td>48 Fast Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SG220-26</td> <td>26 Gigabit Ethernet</td> <td>24 Gigabit Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SG220-26P</td> <td>26 Gigabit Ethernet</td> <td>24 Gigabit Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SG220-50</td> <td>50 Gigabit Ethernet</td> <td>48 Gigabit Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> <tr> <td>SG220-50P</td> <td>50 Gigabit Ethernet</td> <td>48 Gigabit Ethernet</td> <td>2 Gigabit Ethernet combo</td> </tr> </tbody> </table>	Model	Total System Ports	RJ-45 Ports	Uplink Ports	SF220-24	24 Fast Ethernet plus 2 Gigabit Ethernet	24 Fast Ethernet	2 Gigabit Ethernet combo	SF220-24P	24 Fast Ethernet plus 2 Gigabit Ethernet	24 Fast Ethernet	2 Gigabit Ethernet combo	SF220-48	48 Fast Ethernet plus 2 Gigabit Ethernet	48 Fast Ethernet	2 Gigabit Ethernet combo	SF220-48P	48 Fast Ethernet plus 2 Gigabit Ethernet	48 Fast Ethernet	2 Gigabit Ethernet combo	SG220-26	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo	SG220-26P	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo	SG220-50	50 Gigabit Ethernet	48 Gigabit Ethernet	2 Gigabit Ethernet combo	SG220-50P	50 Gigabit Ethernet	48 Gigabit Ethernet	2 Gigabit Ethernet combo
	Model	Total System Ports	RJ-45 Ports	Uplink Ports																																	
	SF220-24	24 Fast Ethernet plus 2 Gigabit Ethernet	24 Fast Ethernet	2 Gigabit Ethernet combo																																	
	SF220-24P	24 Fast Ethernet plus 2 Gigabit Ethernet	24 Fast Ethernet	2 Gigabit Ethernet combo																																	
	SF220-48	48 Fast Ethernet plus 2 Gigabit Ethernet	48 Fast Ethernet	2 Gigabit Ethernet combo																																	
	SF220-48P	48 Fast Ethernet plus 2 Gigabit Ethernet	48 Fast Ethernet	2 Gigabit Ethernet combo																																	
	SG220-26	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo																																	
	SG220-26P	26 Gigabit Ethernet	24 Gigabit Ethernet	2 Gigabit Ethernet combo																																	
SG220-50	50 Gigabit Ethernet	48 Gigabit Ethernet	2 Gigabit Ethernet combo																																		
SG220-50P	50 Gigabit Ethernet	48 Gigabit Ethernet	2 Gigabit Ethernet combo																																		
Packet Buffer	All numbers are aggregate across all ports as the buffers are dynamically shared																																				
	Model Name	Packet Buffer																																			
	SF220-24	4.1 Mb																																			
	SF220-24P	4.1 Mb																																			

	SF220-48	12 Mb		
	SF220-48P	12 Mb		
	SG220-26	4.1 Mb		
	SG220-26P	4.1 Mb		
	SG220-50	12 Mb		
	SG220-50P	12 Mb		
	Supported SFP Modules	SKU	Media	Speed
MFEFX1		Multimode fiber	100 Mbps	2 km
MFELX1		Single-mode fiber	100 Mbps	10 km
MFEBX1		Single-mode fiber	100 Mbps	20 km
MGBSX1		Multimode fiber	1000 Mbps	550 m
MGBLX1		Single-mode fiber	1000 Mbps	10 km
MGBLH1		Single-mode fiber	1000 Mbps	40 km
MGBBX1		Single-mode fiber	1000 Mbps	40 km
MGBT1		UTP Category 5	1000 Mbps	100 km

Environmental

Feature	Description				
Dimensions (W x H x D)	SF220-24, SF220-48, SG220-26, SG220-50: 440 x 44 x 201 mm SF220-24P, SG220-26P: 440 x 44 x 250 mm SF220-48P, SG220-50P: 440 x 44 x 350 mm				
Unit Weight	SF220-24: 2.6 kg SF220-24P: 3.64 kg SF220-48: 2.98 kg SF220-48P: 5.12 kg	SG220-26: 2.81 kg SG220-26P: 3.7 kg SG220-50: 3.3 kg SG220-50P: 5.28 kg			
Power	100-240 V, 50-60 Hz, Internal				
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A, C-tick				
Operating Temperature	0-50° C				
Storage Temperature	-20° C to +70° C				
Operating Humidity	10% to 90%, relative, noncondensing				
Storage Humidity	10% to 90%, relative, noncondensing				
Power Consumption	Model Name	Green Power (mode)	System Power Consumption	Power Consumption (with PoE)	Heat Dissipation (BTU/hr)
	SF220-24	EEE + Energy Detect	110V=8.2W 220V=9.2W	N/A	28.0
	SF220-24P	EEE + Energy Detect	110V=19.9W 220V=21.1W	110V=191.5W 220V=188.5W	653.4
	SF220-48	EEE + Energy Detect	110V=13.2W 220V=13.7W	N/A	45.0
	SF220-48P	EEE + Energy Detect	110V=39.5W 220V=39.7W	110V=413W 220V=405W	1409.2
	SG220-26	EEE + Energy Detect	110V=18.9W 220V=18.2W	N/A	64.5
	SG220-26P	EEE + Energy Detect	110V=29.1W 220V=30.7W	110V=206.5W 220V=200.7W	704.6
	SG220-50	EEE + Energy	110V=36.6W 220V=39.9W	N/A	124.9

		Detect			
	SG220-50P	EEE + Energy Detect	110V=59.4W 220V=63.2W	110V=426W 220V=427W	1453.6
Acoustic Noise and Mean Time Between Failure (MTBF)	Model Name		FAN (Number)	Acoustic Noise	MTBF @ 50°C (Hours)
	SF220-24		No fan	N/A	603,729
	SF220-24P		2 pcs/6300rpm and Fan speed control	<32°C=26.4dB 32°C-40°C=38.6dB >40°C=41.9dB	445,488
	SF220-48		No fan	N/A	369,704
	SF220-48P		4 pcs/9500rpm and Fan speed control	<32°C=39dB 32°C-40°C=50.3dB >40°C=52dB	210,753
	SG220-26		No fan	N/A	342,867
	SG220-26P		2 pcs/6300rpm and Fan speed control	<32°C=25.6dB 32°C-40°C=37.2dB >40°C=41.5dB	343,684
	SG220-50		1 pcs/6300rpm No Fan speed control	40.3dB	382,742
	SG220-50P		4 pcs/9500rpm and Fan speed control	<32°C=39.1dB 32°C-40°C=50.5dB >40°C=52dB	194,036