

CloudEngine S12700E Series Switches

Huawei CloudEngine S12700E series switches are flagship core switches that intended to help customers build smart campus networks and lead customers' campus transformation from traditional networks to experience-centric smart campus networks.

Product Overview

Huawei CloudEngine S12700E series switches ("S12700E switches") are flagship core switches in Huawei's CloudCampus portfolio. By building an intelligent campus core, these feature-rich switches help customers head towards a service experience-centric campus network that is intelligent and simplified.

S12700E switches stand out with massive capacity expansion and flexible service upgrade capabilities to protect customer investments and facilitate their long-term network evolution. Built on Huawei's high-performance Solar series chipsets, S12700E switches deliver up to 4.8 Tbit/s of single-slot bandwidth and 57.6 Tbit/s of switching capacity, six times that of the industry. S12700E switches also offer a broad range of line cards, including 100GE, 40GE, 10GE, and GE line cards, and provide up to 288 x 100GE ports, the unmatched port density in the industry. These give customers flexible choices to meet their capacity expansion and upgrade needs.

By integrating large-capacity WLAN AC capabilities, a single S12700E switch can manage up to 10,000 WLAN APs and 50,000 users. This capability, combined with free mobility functionality, achieves fully converged wired and wireless networks and policies, greatly simplifying network management with users and services at the core.

With a holistic set of reliability, security, and trusted features, S12700E switches are ideal for building a reliable, secure, and trusted campus core. By using a next-generation cell switching architecture, S12700E switches ensure lossless and non-blocking forwarding on core nodes and guarantee service quality in high-concurrency, large-capacity, and high-load environments.

Models and Appearances

Product Model	Product Description
S12700E-4	<ul style="list-style-type: none"> • A maximum of 96 100G / 96 40G / 192 10G ports • Four slots for service boards, two slots for switching boards, two slots for main control boards, and four slots for power modules • Switching capacity 19.2 Tbps • Packet forwarding rate 14400 Mpps
S12700E-8	<ul style="list-style-type: none"> • A maximum of 192 100G / 192 40G / 384 10G ports • Eight slots for service boards, four slots for switching boards, two slots for main control boards, and six slots for power modules • Switching capacity 38.4 Tbps • Packet forwarding rate 28800 Mpps

Product Model	Product Description
S12700E-12*	<ul style="list-style-type: none"> • A maximum of 288 100G / 288 40G / 576 10G ports • 12 slots for service boards, 4 slots for switching boards, 2 slots for main control boards, and 6 slots for power modules • Switching capacity 57.6 Tbps • Packet forwarding rate 43200 Mpps

Note: *S12700E-12 will be available soon.

The S12700E series is available in three models: S12700E-4, S12700E-8, S12700E-12.



S12700E-4

S12700E-8

S12700E-12

Features and Highlights

Switch Highlights

Fully-programmable Architecture

- The S12700E uses a fully-programmable architecture that adapts to the changing forwarding processes driven by protocol evolution and technology advances. It enables fast and flexible provisioning of new services simply by upgrading software, without having to replace hardware, thereby protecting customers' investment. In contrast, traditional ASIC chips use a fixed forwarding architecture and follow a fixed forwarding process; as a result, new services cannot be provisioned until new hardware is developed to support the services, which may take 1 to 3 years.

Wired and Wireless Convergence

- The S12700E series' native AC capabilities allow enterprises to build a wireless network without additional AC hardware. Each S12700E switch can manage up to 10K APs and 65, 536 users. It is a core switch that provides up to 4 Tbit/s AC capabilities, avoiding the performance bottleneck on independent AC devices. The native AC capabilities help organizations better cope with challenges in the high-speed wireless era.
- The S12700E series' unified user management function authenticates both wired and wireless users, ensuring a consistent user experience no matter whether they are connected to the network through wired or wireless access devices. The unified user management function supports various authentication methods, including 802.1x, MAC address, and Portal authentication, and is capable of managing users based on user groups, domains, and time ranges. These functions control user and service management and enable the transformation from device-centered management to user-centered management.

Provide Agile Fine Granular Management

- Packet Conservation Algorithm for Internet (iPCA) changes the traditional method that uses simulated traffic for fault location. iPCA technology monitors network quality for any service flow at any network node, at any time, and without extra costs. It can detect temporary service interruptions within one second and can identify faulty ports accurately. This cutting-edge fault detection technology turns "extensive management" into "fine granular management."
- Super Virtual Fabric 2.0 (SVF 2.0) technology can not only virtualize fixed-configuration switches into S12700E switch line cards but also virtualize APs as switch ports. With this virtualization technology, a physical network with core/aggregation switches, access switches, and APs can be virtualized into a "super switch", offering the simplest network management solution.
- The S12700E series manages access switches in a similar way an AC manages APs, saving the trouble of laborious configuration on access switches. It manages access switches and APs uniformly through CAPWAP tunnels, allowing access switches and APs to connect to the network with zero configuration.

System Openness Capability

- The Netconf/YANG is supported. Users can configure the Netconf/YANG automatically.
- Open Programmability System (OPS) is an open programmable system based on the Python language. IT administrators can program the O&M functions of a switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Secure and Trusted System

- The digital signature of the code identifies the software source and the real identity of the software developer to ensure that the code is not tampered with after being signed. Huawei switches use the memory signature and outer signature mechanisms to ensure that the software is not tampered with.
- Supports secure boot based on the hardware trust root. Starting from the trusted hardware anchor, the software code is checked level by level to ensure that the main control board, line card, and switch of the switch are not intruded from the startup phase.
- The chip provides the secure random number generation module (Random Number Generator) certified by NIST SP 800-90A and NIST SP 800-90B to provide a real secure random number source for system running to ensure secure and reliable encryption.

Network Reliability

- The S12700E supports link detection technologies such as hardware Eth-OAM and BFD, and standard/compatible link switching technologies such as G.8032 and intelligent Ethernet protection protocol SEP. It provides end-to-end 50 ms hardware-level switchover to build the most responsive and reliable campus network. The S12700E supports the fast self-healing protection technology HSR (High-speed Self Recovery), which exclusively implements the end-to-end IP MPLS bearer network 50 ms switching protection, further improving network reliability.

Easy Operation

- The Easy Operation can implement plug-and-play for newly deployed devices on the network and manage all devices running on the network in a unified manner. The functions are as follows: The network device Zero-Touch is deployed, and the startup files such as version files, configuration files, and patches are automatically loaded. Upgrade network devices in batches and deliver configurations in batches. New devices can be quickly replaced. Plug-and-play is not required for new devices.

Intelligent Diagnosis

- Open Intelligent Diagnosis System (OIDS) integrates the device health monitoring and fault diagnosis functions – that are typically deployed on a Network Management System (NMS) – into the switch software to implement intelligent diagnosis on a single switch. After OIDS is deployed on a switch, the switch periodically collects and records the running information and automatically determines whether a fault occurs. If a fault occurs, the switch automatically locates the fault or helps locate the fault. All these merits increase fault locating efficiency of O&M staff while improving device maintainability.

Solution Benefits

Simplified Management

- Automatic deployment: VXLAN and BGP-EVPN are supported. The unified virtual switching network (UVF) is constructed to support automatic deployment of up to 512 virtual networks. Multiple service networks or tenant networks can be deployed on the same physical network, and service and tenant networks are isolated from each other, in this way, one network can be used for multiple purposes.

- Service automation: Supports user-based and policy-based group configuration mode 100,000 free mobility.

Intelligent O&M

- The CloudEngine S12700E provides telemetry technology to collect device data in real time and send the data to Huawei campus network analyzer CampusInsight. The CampusInsight analyzes network data based on the intelligent fault identification algorithm, accurately displays the real-time network status, effectively demarcates and locates faults in a timely manner, and identifies network problems that affect user experience, accurately guaranteeing user experience.
- The CloudEngine S12700E supports a variety of intelligent O&M features for audio and video services, including the enhanced Media Delivery Index (eMDI). With this eMDI function, the switch can function as a monitored node to periodically conduct statistics and report audio and video service indicators to the CampusInsight platform. In this way, the CampusInsight platform can quickly demarcate audio and video service quality faults based on the results of multiple monitored nodes.

Big Data Security Collaboration

- Huawei CloudEngine S12700E switches use NetStream to collect campus network data and then report such data to the Huawei Cybersecurity Intelligence System(CIS). The purposes of doing so are to detect network security threats, display the security posture across the entire network, and enable automated or manual response to security threats. The CIS delivers the security policies to the Agile Controller. The Agile Controller then delivers such policies to switches that will handle security events accordingly. All these ensure campus network security.
- Huawei CloudEngine S12700E supports Encrypted Communication Analytics(ECA). It uses built-in ECA probes to extract characteristics of encrypted streams based on NetStream sampling and Service Awareness(SA), generates metadata, and reports the metadata to Huawei Cybersecurity Intelligence System(CIS). The CIS uses the AI algorithm to train the traffic model and compare characteristics of extracted encrypted traffic to identify malicious traffic. The CIS displays detection results on the GUI, provides threat handling suggestions, and automatically isolates threats with the Agile Controller to ensure campus network security.
- Huawei CloudEngine S12700E supports deception. It functions as a sensor to detect threats such as IP address scanning and port scanning on a network and lures threat traffic to the honeypot for further checks. The honeypot performs in-depth interaction with the initiator of the threat traffic, records various application-layer attack methods of the initiator, and reports security logs to the CIS. The CIS analyzes security logs. If the CIS determines that the suspicious traffic is an attack, it generates an alarm and provides handling suggestions. After the administrator confirms the alarm, the CIS delivers a policy to the Agile Controller. The Agile Controller delivers the policy to the switch for security event processing, ensuring campus network security.

Licensing

Huawei CloudEngine S12700E supports the traditional license authorization mode based on features and the Huawei IDN one software (N1 mode for short) authorization mode. The N1 mode is oriented to the CloudCampus network solution deployed in enterprise private cloud mode, which simplifies the customer's experience in purchasing and upgrading software services.

Package Features in N1 Mode

Switch Functions	N1 Management	N1 Fondation	N1 Advance
Basic network functions: Layer 2 functions, IPv4, IPv6, MPLS, and SVF	√	√	√
Basic network automation: Basic automation: Plug-and-play, SSID, and AP group management Basic monitoring: Application visualization NE management: Image and topology management and discovery WLAN enhancement: <128 AP Roaming and Optimization	×	√	√
Advance network automation and intelligent O&M: VXLAN, user access authentication, free mobility, and basic CampusInsight functions	×	×	√

Product Specifications

Functions and Features

Category	Service Features	S12700E-4	S12700E-8
User management	Unified user management	√	√
	Supports PPPoE, 802.1X, MAC, and Portal authentication modes.	√	√
	Traffic-based and duration-based charging modes are supported.	√	√
	Supports the grouping, domain-based, and time-based authorization.	√	√
MAC address	Maximum number of MAC address entries	512K	512K
	Automatic MAC address learning and aging	√	√
	Supports static, dynamic, and blackhole MAC address entries.	√	√
	Source MAC address filtering	√	√
	MAC address learning limit based on port and VLAN	√	√
VLAN	Supports 4K VLANs.	√	√
	Supports access, trunk, and hybrid modes, and LNP negotiation.	√	√
	default VLAN	√	√
	Supports VLAN switching.	√	√
	QinQ and enhanced selective QinQ	√	√
	Dynamic VLAN allocation based on MAC addresses	√	√
ARP	Maximum number of ARP entries	256K	256K
	ARP Snooping	√	√
IP route	Specifications of IPv4 routing entries	3M	3M
	Supports IPv4 dynamic routing protocols such as RIP, OSPF, IS-IS, and BGP.	√	√
	Supports IPv6 dynamic routing protocols such as RIPng, OSPFv3, ISISv6, and BGP4+.	√	√
Multicast	Specifications of multicast routing entries	128K	128K
	Supports IGMPv1/v2/v3 and IGMP v1/v2/v3 Snooping.	√	√
	Supports PIM-DM, PIM SM, and PIM SSM.	√	√
	MSDP and MBGP	√	√
	Supports the fast leave mechanism.	√	√
	Multicast traffic control	√	√
	Multicast querier	√	√
	Multicast protocol packet suppression	√	√
	Multicast CAC	√	√
	Multicast ACL	√	√

Category	Service Features	S12700E-4	S12700E-8
MPLS	Basic MPLS functions	√	√
	MPLS OAM	√	√
	MPLS TE	√	√
	MPLS VPN/VLL/VPLS	√	√
VXLAN	Distributed VXLAN gateway and centralized gateway	√	√
	BGP-EVPN	√	√
	VXLAN can be configured using NETCONF.	√	√
QoS	Number of ACL rules	6K	6K
	Supports combination traffic classification based on the Layer2 protocol header, Layer3 protocol, Layer4 protocol, and 802.1p priority.	√	√
	Supports ACL, CAR, remark, and schedule actions.	√	√
	Supports queue scheduling modes such as PQ, WRR, DRR, PQ+WRR, and PQ+DRR.	√	√
	Congestion avoidance mechanisms such as WRED and tail drop	√	√
	Multi-level HQoS	√	√
	Traffic shaping	√	√
IPCA	Service packets can be directly marked to obtain the number of lost packets and the packet loss ratio in real time.	√	√
	Collects statistics on the number of lost packets and packet loss rate on Layer 2 and Layer 3 networks at the network and device levels.	√	√
SVF 2.0	A maximum of 4K client nodes (access switches and APs) can be virtualized into one device for management.	√	√
	Supports Layer 2 ASs.	√	√
	Supports hybrid networking management with third-party vendors.	√	√
Ring protection	Supports STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s).	√	√
	Supports the SEP intelligent protection protocol.	√	√
	BPDU protection, root protection, and loop protection	√	√
	BPDU Tunnel	√	√
	Supports ERPS Ethernet ring protection (G.8032).	√	√
Reliability	Supports LACP and inter-device E-Trunk.	√	√
	VRRP and BFD for VRRP	√	√
	Supports BFD for BGP/IS-IS/OSPF/ static routes.	√	√
	NSF and GR for BGP/IS-IS/OSPF/LDP	√	√
	Supports TE FRR and IP FRR.	√	√
	Eth-OAM 802.3ah and 802.1ag (hardware level)	√	√

Category	Service Features	S12700E-4	S12700E-8
	Supports the fast self-healing protection technology HSR.	√	√
	ITU-Y.1731	√	√
	DLDP is supported.	√	√
	Smartlink	√	√
	Monitor-link	√	√
Reliability	Easy Operation	√	√
	Supports terminal services such as console, Telnet, and SSH.	√	√
	Supports network management protocols such as SNMP v1/v2c/v3.	√	√
	Files can be uploaded and downloaded through FTP or TFTP.	√	√
	BootROM upgrade and remote online upgrade	√	√
	Hot patches are supported.	√	√
	User operation logs are supported.	√	√
	OPS Open Programmability System	√	√
	Supports the (Streaming Telemetry) technology for stream remote sensing.	√	√
	eMDI	√	√
	Supports MAC address authentication, Portal authentication, 802.1x authentication, and DHCP Snooping authentication.	√	√
Security and management	MACsec	√	√
	NAC	√	√
	RADIUS and HWTACACS user login authentication	√	√
	Hierarchical command line protection prevents unauthorized users from accessing the system.	√	√
	Defense against DoS attacks, TCP SYN Flood attacks, UDP Flood attacks, broadcast storms, and heavy traffic attacks	√	√
	Supports 1K CPU hardware queues to implement hierarchical scheduling and protection for protocol packets on the control plane.	√	√
	Supports RMON.	√	√
	Secure boot (The control board that supports secure boot must be used.)	√	√
	Support for Big Data Security Collaboration	√	√
Wireless management (native AC): Basic WLAN Services	Mesh networking	√	√
	Supports native N+N cold backup between ACs.	√	√
	Supports cluster-based AC hot backup in cluster mode.	√	√
	WLAN terminal location	√	√
	The function of locating interference sources is supported.	√	√

Category	Service Features	S12700E-4	S12700E-8
	Supports the spectrum analysis function.	√	√
	2.4G&5G load balancing	√	√
	The 5G priority mode is supported.	√	√
Wireless management (native AC): AP management	Total number of managed APs	10K	10K
	An IPv4 network can be deployed between an AP and an AC.	√	√
	AP blacklist	√	√
	AP whitelist	√	√
	The AP access control mode can be set.	√	√
	AP configuration and management	√	√
	AP energy saving	√	√
	AP LLDP topology awareness	√	√
	The AP supports traffic adjustment priorities for wired interfaces.	√	√
	The AP must support the rate limit function on the wired interface.	√	√
Wireless management (native AC): Wireless user management	Supports roaming of users in the AC.	√	√
	Supports AP-based user location.	√	√
	Users can roam between ACs.	√	√
	802.1x access authentication	√	√
	Portal access authentication	√	√
	MAC access authentication	√	√
Wireless management (native AC): CAPWAP	Supports direct data forwarding on L2/L3 networks.	√	√
	Supports the data tunnel forwarding mode of L2/L3 networks.	√	√
	Dual-link load balancing for CAPWAP tunnels	√	√
	CAPWAP tunnel encryption	√	√
Wireless management (native AC): RF Management	802.11a/b/g/n	√	√
	802.11ac	√	√
	Setting RF interference monitoring and avoidance	√	√
	Supports co-channel, adjacent-channel, other devices, and terminal interference detection.	√	√
	Automatically selects channels and power when APs go online.	√	√
	Dynamic power and channel optimization	√	√
Wireless management (native AC): WLAN Qos	Mapping between user wireless priorities and wired priorities	√	√
	Mapping between user radio priorities and CAPWAP tunnel priorities	√	√
	Supports the rate limit of upstream and downstream traffic over the air interface based on the VAP.	√	√
	Limiting the rate of upstream and downstream traffic on the air	√	√

Category	Service Features	S12700E-4	S12700E-8
	interface based on users		
	Supports SSID-based CAR.	√	√
	Supports the CAR function for WLAN users.	√	√
Interoperability	VBST based on the VLAN spanning tree protocol (interworking with PVST/PVST+/RPVST)	√	√
	LNP negotiation protocol (similar to DTP)	√	√
	VCMP VLAN centralized management protocol (similar to VTP)	√	√

Hardware Specifications

Project	S12700E-4	S12700E-8
Switching capacity	19.2 Tbps	38.4 Tbps
Packet forwarding rate	14400 Mpps	28800 Mpps
Control board slot	2	2
SFU slot	2	4
Service board slot	4	8
Fan tray	2	4
Cache capacity	Maximum 200 ms data buffer per port	Maximum 200 ms data buffer per port
Redundancy design	Main control board, switch board, power module, and fan module	Main control board, switch board, power module, and fan module
Virtualization	CSS service port clustering	CSS service port clustering
Dimensions (H x W x D): x mm (H x W x D)	441.7x442x489, 10U	663.95x442x489, 15U
Weight (empty)	24.5 kg	42 kg
Operating voltage	DC: -40V~-72V AC: 90V~290V	
Maximum power consumption of the entire system	≤2200W	≤4400W
Operating temperature	<ul style="list-style-type: none"> -60m~+1800m: 0°C~45°C 1800m~4000m: The maximum operating temperature decreases by 1°C each time the altitude increases by 220 m. 4000 m: 0°C~35°C 	
Relative humidity	5%~95% (non-condensing)	
Heat dissipation mode	Left-to-rear ventilation channel, ventilation and heat dissipation, and automatic fan speed adjustment	

Hardware Introduction

Main Control Processing Unit

The main control processing unit provides the control plane and management plane for the entire system. The control plane performs functions such as protocol processing, service processing, route calculation, forwarding control, service scheduling, traffic statistics, and system security. The management plane monitors the system running status, monitors the environment, processes logs and alarms, loads the system, and upgrades the system.

The following table lists the main processing units supported by Huawei S12700E series switches.

Board Name	Board Description	Supported Version
LST7MPUE0000	S12700E main control processing unit E	V200R019C00 and later versions

Interface Cards

The interface board processes all traffic on the network data plane of the switch. Huawei CloudEngine S12700E supports various interface boards, which provide different number of 100GE, 40GE, 10GE, and GE interfaces. You can configure them as required.

Board Name	Board Description	Supported Version
LST7G48TX5E0	48-port 10/100/1000BASE-T Interface Card (X5E, RJ45)	V200R019C00 and later versions
LST7G48TX5S0	48-port 10/100/1000BASE-T Interface Card (X5S, RJ45)	V200R019C00 and later versions
LST7G48SX6E0	48-port 1000M Ethernet optical interface card (X6E, SFP)	V200R019C00 and later versions
LST7G48SX6S0	48-port 1000M Ethernet optical interface card (X6S, SFP)	V200R019C00 and later versions
LST7X24BX6E0	24-port 10GBASE-X and 24-Port 1000BASE-X Interface Card (X6E, SFP+)	V200R019C00 and later versions
LST7X24BX6S0	24-port 10GBASE-X and 24-Port 1000BASE-X Interface Card (X6S, SFP+)	V200R019C00 and later versions
LST7X48SX6E0	48-port 10GBASE-X Interface Card (X6E, SFP+)	V200R019C00 and later versions
LST7X48SX6S0	48-port 10GBASE-X Interface Card (X6S, SFP+)	V200R019C00 and later versions
LST7C06HX6E0	6-port 100GE Ethernet optical interface board (X6E, QSFP28)	V200R019C00 and later versions
LST7C06HX6S0	6-port 100GE Ethernet optical interface board (X6S, QSFP28)	V200R019C00 and later versions

Power Supply

Power Supply Backup Modes

Huawei CloudEngine S12700E power modules support the backup mode. Three power module configuration modes are recommended: N+N backup, N + 1 backup, and N+0 no backup. The value of N is determined by the maximum power required by the system. $N * \text{Maximum output power of each power module} > \text{Maximum power required by the system}$. The system can automatically identify the backup mode without manual configuration.

For example, the maximum power required by the system is 4000W. If two 2200W power modules are installed, the backup mode is 2+0 without backup. If three 2200W power modules are installed, the backup mode is 2 + 1 backup. If four 2200W power modules are installed, the backup mode is 2 + 2 backup.

Huawei CloudEngine S12700E supports the 2200W DC power supply and 3000W AC power supply. In different backup modes, the maximum output power of the entire system is as follows:

Types of Power Modules	Backup Mode	Maximum output power of the S12700E-4	Maximum output power of the S12700E-8
2200W DC power module	N+N backup	A maximum of four (two +2) 2200W DC power modules can be configured, providing the maximum power supply capability of 4400W.	A maximum of six (three +3) 2200W DC power modules can be configured, providing the maximum power supply capability of 6600W.
	N + 1 backup	A maximum of four (three +1) 2200W DC power modules can be configured, providing the maximum power supply capability of 6600W.	A maximum of six (five +1) 2200W DC power modules can be configured, providing the maximum power supply capability of 11000W.
	N+0 No backup	A maximum of four (four +0) 2200W DC power modules can be configured, providing the maximum power supply capability of 8800W.	A maximum of six (six +0) 2200W DC power modules can be configured, providing the maximum power supply capability of 12000W.
3000W AC power module	N+N backup	A maximum of four (two +2) 3000W AC power modules can be configured, providing the maximum power supply capability of 6000W.	A maximum of six (three +3) 3000W AC power modules can be configured, providing the maximum power supply capability of 9000W.
	N + 1 backup	A maximum of four (three +1) 3000W AC power modules can be configured, providing the maximum power supply capability of 9000W.	A maximum of six (five +1) 3000W AC power modules can be configured, providing the maximum power supply capability of 12000W.
	N+0 No backup	A maximum of four (four +0) 3000W AC power modules can be configured, providing the maximum power supply capability of 9000W.	A maximum of six (six +0) 3000W AC power modules can be configured, providing the maximum power supply capability of 12000W.

Specifications of the power module

The specifications of each power module are as follows:

Parameter		2000W DC power supply	3000W AC power supply
Dimensions (H x W x D)		41mm×393mm×130mm	41mm×417.4mm×130mm
Weight		<2.5kg	<3.0kg
AC input	Rated input voltage	-48V DC/-60V DC	220V AC/110V AC; 50/60Hz
	Rated input voltage range	-40V DC~-72V DC	200V AC~240V AC (rated input voltage: 220V AC) /100V AC~130V AC (rated input voltage: 110V AC) 47Hz~63Hz
	Maximum input voltage range	-40V DC~-72V DC	90V AC~290V AC; 47Hz~63Hz (When the input voltage range is 90V AC~175V AC, the maximum output power of the power module is reduced by half.) The maximum current of the power cable used by the 3000W AC power module is 16 A. When the 220 V input is used, the minimum voltage cannot be lower than 200V. When the 110 V input is used, the minimum

Parameter		2000W DC power supply	3000W AC power supply
			voltage cannot be lower than 100V.
	Maximum input current	60A	16 A
High-voltage DC input	Rated input voltage	-	240V DC
	Maximum input voltage range	-	190V DC~290V DC
	Maximum input current	-	14A
Output	Maximum output current	42A	56.1A (rated input voltage: 220V AC) /28.1A (rated input voltage: 110V AC)
	Maximum output power	2200W	3000W (rated input voltage: 220V AC or 240V DC) /1500W (rated input voltage: 110V AC)
Hot swap		Supported	Supported
Environment parameters		<ul style="list-style-type: none"> Operating temperature: 0°C~45°C Relative humidity: 5%RH~95%RH, non-condensing Storage temperature: -40°C~+70°C Storage relative humidity: 5%RH~95%RH, non-condensing 	<ul style="list-style-type: none"> Operating temperature: 0°C~45°C Relative humidity: 5%RH~95%RH, non-condensing Storage temperature: -40°C~+70°C Storage relative humidity: 5%RH~95%RH, non-condensing
Power Module Code		W2PSD2200 PDC-2200WF	PAC3KS54-CB PAC3KS54-CE

Networking and Applications

In an enterprise campus network

Huawei CloudEngine S12700E series switches are deployed on the core layer of an enterprise campus network. Native ACs provided by the S12700E enable customers to build wireless networks without additional AC hardware, reducing network construction costs. It is a core switch that provides 4 Tbit/s AC capabilities, avoiding the performance bottleneck on independent ACs. The native AC capabilities help customers migrate their wireless networks to 802.11ac or 802.11ax. Huawei CloudEngine S12700E series realizes wired and wireless convergence and delivers consistent experience to wired and wireless users through uniform device, user, and service management.

In a college campus network

Huawei CloudEngine S12700E series switches are deployed on the core layer of a college campus network. The unified user management function on the S12700E reduces network construction costs by removing the need to purchase new BRAS hardware. Each S12700E switch supports up to 65,536 users, allowing a large number of concurrent access users. Its H-QoS feature implements fine granular user and service management. The S12700E series realizes wired and wireless convergence and delivers consistent experience to wired and wireless users through uniform device, user, and service management.

In a bearer network for video conferencing, desktop cloud, and video surveillance applications

The Large buffer prevents packet loss upon traffic bursts, delivering high-quality video streams. The S12700E series supports up to 1M MAC address entries and 3M FIB entries, which allow access from a large number of terminals and help evolution to IPv6 and the Internet of Things (IoT). Employing end-to-end hardware reliability technologies and iPCA technology, the S12700E series offers a highly reliable, high-quality, scalable video conferencing and surveillance solution.

On the core/aggregation layer of a MAN

The S12700E is deployed at the core or aggregation layer of the broadcasting and education MAN. The S12700E supports 3M FIB entries to meet the requirements of large routing applications on core nodes of the MAN. The S12700E supports L2/L3 MPLSVPN and provides a highly reliable, secure, and scalable MAN bearer solution.

In an enterprise data center

The S12700E is deployed at the core or aggregation layer of the enterprise data center. The S12700E supports high-bandwidth high-density boards to meet the massive data throughput capability of core and aggregation nodes in data centers, helping customers build data center network with high performance, high reliability, and low latency.

Ordering Information

S12700E Basic Configuration	
LE2BN66ED000	N66E DC assembly cabinet (eight 60A outputs, maximum 2200W, 600 × 600 × 2200 mm)
LE2BN66EA000	N66E AC assembly cabinet (four 16 A outputs, a maximum of 2500W, 600 × 600 × 2200 mm)
ET1BS12704E0	S12700E-4 assembly chassis
ET1BS12708E0	S12700E-8 assembly chassis
FAN-770A-B	Fan box (-5degC–55degC, 48V, 400W, 2, indoors, VA)

Main control unit	
LST7MPUE0000	S12700E main control unit E

Monitoring Board	
EH1D200CMU00	Centralized Monitoring Board

Switch fabric unit	
LST7SFUEX100	S12700E switch fabric unit E(X1)

100G Ethernet optical interface board	
LST7C06HX6E0	6-port 100GE QSFP28 interface card (X6E,QSFP28)
LST7C06HX6S0	6-port 100GE QSFP28 interface card (X6S,QSFP28)

10GE optical interface card	
LST7X48SX6E0	48-port 10GE SFP+ interface card (X6E,SFP+)
LST7X48SX6S0	48-port 10GE SFP+ interface card (X6S,SFP+)

10GE/1000M Ethernet optical interface card	
LST7X24BX6E0	24-port 10GE SFP+ interface and 24-port GE SFP interface card (X6E,SFP+)
LST7X24BX6S0	24-port 10GE SFP+ interface and 24-port GE SFP interface card (X6S,SFP+)

Gigabit Ethernet optical interface board	
LST7G48SX6E0	48-port GE SFP interface card (X6E,SFP)
LST7G48SX6S0	48-port GE SFP interface card (X6S,SFP)

Gigabit Ethernet electrical interface board	
LST7G48TX5E0	48-port 10/100/1000BASE-T interface card (X5E,RJ45)
LST7G48TX5S0	48-port 10/100/1000BASE-T Interface Card (X5S, RJ45)

Power supply	
PDC-2200WF	2200W DC power module
W2PSD2200	2200W DC power module
PAC3KS54-CB	3000W AC power module (black)
PAC3KS54-CE	3000W AC power module (black)

License	
N1-S127E-F-Lic	N1-CloudCampus,Foundation,S127E Series, Per Device
N1-S127E-F-SnS1Y	N1-CloudCampus,Advanced,S127E Series, Per Device
N1-S127E-A-Lic	N1-CloudCampus,Foundation,S127E Series, SnS, Per Device,1Year
N1-S127E-A-SnS1Y	N1-CloudCampus,Advanced,S127E Series, SnS, Per Device,1Year
N1-S127E-FToA-Lic	N1-Upgrade-Foundation to Advanced,S127E,Per Device
N1-S127E-FToA-SnS1Y	N1-Upgrade-Foundation to Advanced,S127E,SnS,Per Device,1Year
N1-AC1.0-AM-15-Lic	N1-CloudCampus, access management -AC1.0, 15 terminals
N1-AC1.0-AM-15-SnS1Y	N1- CloudCampus, access management -AC1.0, software subscription and assurance annual fee, 15 terminals, 1 year
CI-X7MSwitch-U	CampusInsight-Network Intelligent Analysis Upgrade Package -X7 Series Modular Switches, Per Device

License

CI-X7MSwitch-U-SnS1Y	CampusInsight-network intelligent analysis upgrade package -X7 series modular switches, annual software subscription and assurance fee, one year for each device
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Software

LST7MPUE0000	S12700E V200R019C00 MPUE Mainframe Software
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More Information


For more information about Huawei Campus Switches, visit <http://e.huawei.com> or contact us in the following ways:

- Global service hotline: <http://e.huawei.com/en/service-hotline>
- Logging in to the Huawei Enterprise technical support website: <http://support.huawei.com/enterprise/>
- Sending an email to the customer service mailbox: support_e@huawei.com

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