

# CloudEngine S12700E Series Switches

## Datasheet

Huawei CloudEngine S12700E series switches are new core switches designed for next-generation high-quality campus networks. These purpose-built switches help create a campus network that improves user experiences, reduces operating costs, and delivers unm

### 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.

CloudEngine S12700E stands 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 full-programmable chipsets, CloudEngine S12700E delivers 4.8 Tbps of single-slot bandwidth, which can easily scale to 7.2 Tbps simply by upgrading SFUs in the future. CloudEngine S12700E also offers a broad range of line cards, including 100GE, 40GE, 25GE, 10GE, and GE line cards, and provides 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 CloudEngine S12700E can manage up to 10,240 WLAN APs. 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, CloudEngine S12700E is ideal for building a reliable, secure, and trustworthy campus core. By using a next-generation cell switching architecture, CloudEngine S12700E ensures non-blocking service data forwarding on core nodes and guarantees service quality in high-concurrency, large-capacity, and high-load environments.

### Models and Appearances

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

|                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |
| S12700E-4                                                                         | S12700E-8                                                                          | S12700E-12                                                                          |

| Product Model | Product Description                                                                                                                                                                                                                                                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S12700E-4     | <ul style="list-style-type: none"> <li>• A maximum of 96 x 100GE, 96 x 40GE, 160 x 25GE or 192 x 10GE ports</li> <li>• 4 slots for line cards, 2 slots for Switch Fabric Units (SFUs), 2 slots for Main Processing Units (MPUs), and 4 slots for power modules</li> <li>• Switching capacity: 19.2 Tbit/s</li> <li>• Forwarding performance: 14,400 Mpps</li> </ul> |
| S12700E-8     | <ul style="list-style-type: none"> <li>• A maximum of 192 x 100GE, 192 x 40GE, 320 x 25GE or 384 x 10GE ports</li> <li>• 8 slots for line cards, 4 slots for SFUs, 2 slots for MPUs, and 6 slots for power modules</li> <li>• Switching capacity: 38.4 Tbit/s</li> <li>• Forwarding performance: 28,800 Mpps</li> </ul>                                             |
| S12700E-12    | <ul style="list-style-type: none"> <li>• A maximum of 288 x 100GE, 288 x 40GE, 480 x 25GE or 576 x 10GE ports</li> <li>• 12 slots for line cards, 4 slots for SFUs, 2 slots for MPUs, and 6 slots for power modules</li> <li>• Switching capacity: 57.6 Tbit/s</li> <li>• Forwarding performance: 43,200 Mpps</li> </ul>                                            |

## Features and Highlights

### Switch Highlights

#### Fully-programmable Architecture

- Built on chipsets with a fully-programmable architecture, CloudEngine S12700E 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

- By integrating WLAN AC capabilities, CloudEngine S12700E eliminates the need to purchase additional WLAN AC hardware. Each CloudEngine S12700E can manage up to 10,240 APs. With up to 4 Tbps WLAN AC forwarding capacity, CloudEngine S12700E avoids the performance bottleneck on independent WLAN AC devices. As such, organizations are well poised to cope with challenges in the high-speed wireless era.
- CloudEngine S12700E supports the unified user management function that 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. CloudEngine S12700E supports various authentication methods, including PPPoE, 802.1X, MAC address, and Portal authentication, and is capable of managing users based on user groups, domains, and time ranges. These functions intuitively control user and service management and enable the transformation from data switching-centered management to service experience-centered management.

Note: The CloudEngine S12700E series switches can manage 16 APs by default. You can purchase licenses for more AP management on demand.

## Service Experience Assurance

- CloudEngine S12700E supports a 4 GB buffer to cope with the burst data traffic pressure caused by massive concurrent users. This alleviates the data packet loss and even connection interruption caused by traffic burst.
- In addition, based on the industry-leading HQoS, hierarchical scheduling is performed on network-wide data traffic on the core nodes of the network to provide differentiated services for different users and applications, fully ensuring the service quality of key users and key applications and ensuring service experience.

## Refined Network 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 quickly detect intermittent service interruptions and accurately identify faulty ports. 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 modular 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", simplifying network management.
- CloudEngine S12700E series manages access switches in a similar way a WLAN AC manages APs, saving the trouble of laborious configuration on access switches. It manages access switches and APs uniformly, allowing them to connect to the network with zero configuration.

## System Openness Capability

- CloudEngine S12700E supports NETCONF/YANG through which users can perform automated configuration.
- CloudEngine S12700E supports the Open Programmability System (OPS), an open programmable system based on the Python language. IT administrators can program the O&M functions of CloudEngine S12700E through Python scripts to quickly innovate functions and implement intelligent O&M.

## Secure and Trustworthy System

- Digital signatures of codes are used to identify software sources and the real identities of software developers to ensure that code is not tampered with after being signed. To protect software, CloudEngine S12700E uses two levels of signature mechanisms: inner signature and outer signature.
- CloudEngine S12700E supports secure boot based on the hardware trust root. Starting from the trusted hardware anchor, the software code to be loaded is checked level by level. This approach ensures that the MPUs, line cards, and SFUs are not intruded since the boot phase.
- The chipsets provide a secure Random Number Generator (RNG) module certified by NIST SP 800-90A and NIST SP 800-90B to generate true secure random numbers for system running, thereby ensuring secure and trustworthy encryption.

## Network-Level Reliability

- CloudEngine S12700E uses link detection technologies such as hardware Eth-OAM and BFD, and adopts standard/standards-compatible link switching technologies like G.8032 and Smart Ethernet Protection (SEP). These technologies achieve end-to-end 50 ms hardware-level switchover and help build highly responsive campus network that provides highly reliable services.

- CloudEngine S12700E supports High-speed Self Recovery (HSR) technology that implements end-to-end IP MPLS transmission network protection switchover within 50 ms, improving network reliability.

## Easy Operation

CloudEngine S12700E supports EasyDeploy that implements plug-and-play for newly deployed devices and centrally manages all devices running on the network. Typical Easy Deploy functions include the following:

- Implementing Zero Touch Provisioning (ZTP) to automatically load the boot files such as version files, configuration files, and patches
- Upgrading network devices and delivering configurations in batches
- Quickly replacing old devices with new ones that are plug-and-play without configuration

## Intelligent Diagnosis

- CloudEngine S12700E supports Open Intelligent Diagnosis System (OIDS). By integrating the device health monitoring and fault diagnosis functions – that are typically deployed on a Network Management System (NMS) – into the switch software, OIDS implements 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

- Deployment automation: CloudEngine S12700E supports VXLAN and BGP-EVPN, and builds a Unified Virtual Fabric (UVF) to automate deployment of up to 512 Virtual Networks (VNs). In this way, multiple service networks or tenant networks can be deployed and isolated from each other on the same physical network, truly achieving one network for multiple purposes.
- Policy automation: CloudEngine S12700E automates deployment of wired and wireless user policies on the entire network and implements refined management and control based on SDN to achieve free mobility.

### Intelligent O&M

- CloudEngine S12700E provides telemetry technology to collect device data in real time and send the data to the CampusInsight (a campus network analysis component of Huawei iMaster NCE). The CampusInsight then 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 experiences.
- CloudEngine S12700E supports a variety of intelligent O&M features for audio and video services, including the enhanced Media Delivery Index (eMDI). With the eMDI function, the switch can function as a monitored node to periodically conduct statistics and report audio and video service indicators to the CampusInsight. In this way, the CampusInsight can quickly demarcate audio and video service quality faults based on the results of multiple monitored nodes.

### Big Data Security Collaboration

- CloudEngine S12700E uses NetStream to collect campus network data and then report such data to the Huawei HiSec Insight. 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 HiSec Insight delivers the security policies to the iMaster NCE-Campus(or Agile Controller). The iMaster NCE-Campus(or Agile Controller) then delivers such policies to switches that will handle security events accordingly. All these ensure campus network security.

## Licensing

CloudEngine S12700E supports both the traditional feature-based licensing mode and the latest Huawei IDN One Software (N1 mode for short) licensing mode. The N1 mode is ideal for campus network deployments in enterprise private cloud mode, and greatly enhances the customer experiences in purchasing and upgrading software services with simplicity.

| Switch Functions                                                                                                                                                                                                                                                                                                                                                               | N1 Basic Software | N1 Foundation Software Package | N1 Advanced Software Package |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|------------------------------|
| <b>Basic network functions:</b><br>Layer 2 functions, IPv4, IPv6, MPLS, SVF, and others<br>Note: For details, see the Functions and Features                                                                                                                                                                                                                                   | √                 | √                              | √                            |
| <b>Basic network automation based on the Agile Controller:</b> <ul style="list-style-type: none"> <li>Basic automation: Plug-and-play, SSID, and AP group management</li> <li>Basic monitoring: Application visualization</li> <li>NE management: Image and topology management and discovery</li> <li>WLAN enhancement: Roaming and optimization for up to 128 APs</li> </ul> | ×                 | √                              | √                            |
| <b>Advanced network automation and intelligent O&amp;M:</b><br>VXLAN, user access authentication, free mobility, and CampusInsight basic functions                                                                                                                                                                                                                             | ×                 | ×                              | √                            |

Note: Only V200R019C00 and later versions can support N1 mode

## Product Specifications

### Functions and Features

Except for special instructions, the following features are supported by CloudEngine S12700E with N1 basic software.

| Category        | Service Features                                                              | CloudEngine S12700E |
|-----------------|-------------------------------------------------------------------------------|---------------------|
| User management | Unified user management                                                       | Yes                 |
|                 | PPPoE, 802.1X, MAC, and Portal authentication                                 | Yes                 |
|                 | Traffic- and duration-based accounting                                        | Yes                 |
|                 | User authorization based on user groups, domains, and time ranges             | Yes                 |
| MAC address     | Number of MAC address entries                                                 | 1M(MAX)             |
|                 | Automatic MAC address learning and aging                                      | Yes                 |
|                 | Static, dynamic, and blackhole MAC address entries                            | Yes                 |
|                 | Source MAC address filtering                                                  | Yes                 |
|                 | MAC address learning limiting based on ports and VLANs                        | Yes                 |
| VLAN            | 4K VLANs                                                                      | Yes                 |
|                 | Access, trunk, and hybrid interface types; auto-negotiation of LNP link types | Yes                 |
|                 | Default VLAN                                                                  | Yes                 |
|                 | VLAN switching                                                                | Yes                 |

| Category   | Service Features                                                        | CloudEngine S12700E             |
|------------|-------------------------------------------------------------------------|---------------------------------|
|            | QinQ and enhanced selective QinQ                                        | Yes                             |
|            | Dynamic VLAN assignment based on MAC addresses                          | Yes                             |
| ARP        | Maximum number of ARP entries                                           | 384K(MAX)                       |
|            | ARP Snooping                                                            | √                               |
| IP routing | Maximum number of IPv4 routing entries                                  | 3M(MAX)                         |
|            | Maximum number of IPv6 routing entries                                  | 1M(MAX)                         |
|            | IPv4 dynamic routing protocols such as RIP, OSPF, IS-IS, and BGP        | Yes                             |
|            | IPv6 dynamic routing protocols such as RIPng, OSPFv3, ISISv6, and BGP4+ | Yes                             |
| Multicast  | Maximum number of multicast routing entries(IPv4)                       | 64K(MAX)                        |
|            | Maximum number of multicast routing entries(IPv6)                       | 64K(MAX)                        |
|            | IGMPv1/v2/v3 and IGMP v1/v2/v3 Snooping                                 | Yes                             |
|            | PIM-DM, PIM-SM, and PIM-SSM                                             | Yes                             |
|            | MSDP and MBGP                                                           | Yes                             |
|            | Fast-leave mechanism                                                    | Yes                             |
|            | Multicast traffic control                                               | Yes                             |
|            | Multicast querier                                                       | Yes                             |
|            | Multicast protocol packet suppression                                   | Yes                             |
|            | Multicast Call Admission Control (CAC)                                  | Yes                             |
|            | Multicast ACL                                                           | Yes                             |
| MPLS       | Basic MPLS functions                                                    | Yes                             |
|            | MPLS OAM                                                                | Yes                             |
|            | MPLS TE                                                                 | Yes                             |
|            | MPLS VPN/VLL/VPLS                                                       | Yes                             |
| VXLAN      | VXLAN Layer 2 gateway                                                   | Yes, require additional license |
|            | VXLAN Layer 3 gateway                                                   | Yes, require additional license |
|            | Centralized gateway                                                     | Yes, require additional license |
|            | Distributed gateway                                                     | Yes, require additional license |
|            | BGP-EVPN                                                                | Yes, require additional license |
|            | Configures VXLANs through NETCONF                                       | Yes, require additional license |
| QoS        | Number of ACL rules(IPv4)                                               | 32K(MAX)                        |

| Category                | Service Features                                                                                           | CloudEngine S12700E |
|-------------------------|------------------------------------------------------------------------------------------------------------|---------------------|
|                         | Number of ACL rules(IPv6)                                                                                  | 16K(MAX)            |
|                         | Traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority | Yes                 |
|                         | Actions such as ACL, Committed Access Rate (CAR), re-marking, and scheduling                               | Yes                 |
|                         | Queuing algorithms, such as PQ, WRR, DRR, PQ+WRR, and PQ+DRR                                               | Yes                 |
|                         | Congestion avoidance mechanisms such as WRED and tail drop                                                 | Yes                 |
|                         | HQoS                                                                                                       | Yes                 |
|                         | Traffic shaping                                                                                            | Yes                 |
| iPCA                    | Marks the real service packets to obtain real-time count of dropped packets and packet loss ratio          | Yes                 |
|                         | Counts the number of dropped packets and packet loss ratio on devices and L2/L3 networks                   | Yes                 |
| SVF 2.0                 | Up to 10K clients (access switches and APs) virtualized into a single device                               | Yes                 |
|                         | Two layers of ASs allowed in an SVF system                                                                 | Yes                 |
|                         | Third-party devices allowed between SVF parent and clients                                                 | Yes                 |
| Ring network protection | STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s).                                             | Yes                 |
|                         | SEP                                                                                                        | Yes                 |
|                         | BPDU protection, root protection, and loop protection                                                      | Yes                 |
|                         | BPDU tunnel                                                                                                | Yes                 |
|                         | G.8032 Ethernet Ring Protection Switching (ERPS)                                                           | Yes                 |
| Reliability             | Link Aggregation Control Protocol (LACP) and E-Trunk                                                       | Yes                 |
|                         | Virtual Router Redundancy Protocol (VRRP) and Bidirectional Forwarding Detection (BFD) for VRRP            | Yes                 |
|                         | BFD for BGP/IS-IS/OSPF/static routes                                                                       | Yes                 |
|                         | Non-Stop Forwarding (NSF) and Graceful Restart (GR) for BGP/IS-IS/OSPF/LDP                                 | Yes                 |
|                         | TE Fast ReRoute (FRR) and IP FRR                                                                           | Yes                 |
|                         | Eth-OAM 802.3ah and 802.1ag (hardware-based)                                                               | Yes                 |
|                         | High-speed Self Recovery (HSR)                                                                             | Yes                 |
|                         | ITU-Y.1731                                                                                                 | Yes                 |
|                         | Device Link Detection Protocol (DLDP)                                                                      | Yes                 |
|                         | Smart Link                                                                                                 | Yes                 |
|                         | Monitor Link                                                                                               | Yes                 |
| Configuration and       | Easy Operation                                                                                             | Yes                 |



| Category                                                         | Service Features                                                                                                                                                            | CloudEngine S12700E |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| maintenance                                                      | Terminal access services such as console port login, Telnet, and SSH                                                                                                        | Yes                 |
|                                                                  | Network management protocols, such as SNMPv1/v2/v3                                                                                                                          | Yes                 |
|                                                                  | File uploading and downloading through FTP and TFTP                                                                                                                         | Yes                 |
|                                                                  | BootROM upgrade and remote in-service upgrade                                                                                                                               | Yes                 |
|                                                                  | Hot patches                                                                                                                                                                 | Yes                 |
|                                                                  | User operation logs                                                                                                                                                         | Yes                 |
|                                                                  | Open Programmability System (OPS)                                                                                                                                           | Yes                 |
|                                                                  | Streaming Telemetry                                                                                                                                                         | Yes                 |
|                                                                  | eMDI                                                                                                                                                                        | Yes                 |
| Security and management                                          | MAC address, Portal, 802.1X, and DHCP snooping-triggered authentication                                                                                                     | Yes                 |
|                                                                  | MACsec                                                                                                                                                                      | Yes                 |
|                                                                  | NAC                                                                                                                                                                         | Yes                 |
|                                                                  | RADIUS and HWTACACS authentication for login users                                                                                                                          | Yes                 |
|                                                                  | Command line authority control based on user levels, preventing unauthorized users from using command configurations                                                        | Yes                 |
|                                                                  | Defense against DoS attacks, Transmission Control Protocol (TCP) SYN Flood attacks, User Datagram Protocol (UDP) Flood attacks, broadcast storms, and heavy traffic attacks | Yes                 |
|                                                                  | 1K CPU hardware queues to implement hierarchical scheduling and protection for protocol packets on the control plane                                                        | Yes                 |
|                                                                  | Remote Network Monitoring (RMON)                                                                                                                                            | Yes                 |
|                                                                  | Secure boot (need to use MPU that supports secure boot)                                                                                                                     | Yes                 |
|                                                                  | Big data security collaboration                                                                                                                                             | Yes                 |
| Wireless management (integrated WLAN AC):<br>Basic WLAN services | Mesh networking                                                                                                                                                             | Yes                 |
|                                                                  | N+N cold backup for devices with integrated WLAN AC functionality                                                                                                           | Yes                 |
|                                                                  | Hot backup for devices with integrated WLAN AC functionality in cluster mode                                                                                                | Yes                 |
|                                                                  | WLAN terminal location                                                                                                                                                      | Yes                 |
|                                                                  | Locating of interference sources                                                                                                                                            | Yes                 |
|                                                                  | Spectrum analysis function                                                                                                                                                  | Yes                 |
|                                                                  | 2.4G & 5G load balancing                                                                                                                                                    | Yes                 |
|                                                                  | 5G-prior access                                                                                                                                                             | Yes                 |
| Wireless management (integrated WLAN AC):<br>AP management       | Total number of managed APs                                                                                                                                                 | 10K                 |
|                                                                  | An IPv4 network between an AP and a WLAN AC                                                                                                                                 | Yes                 |
|                                                                  | AP blacklist                                                                                                                                                                | Yes                 |



| Category                                                              | Service Features                                                                                     | CloudEngine S12700E |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------|
|                                                                       | AP whitelist                                                                                         | Yes                 |
|                                                                       | Sets the AP access control mode                                                                      | Yes                 |
|                                                                       | AP configuration and management                                                                      | Yes                 |
|                                                                       | AP energy saving                                                                                     | Yes                 |
|                                                                       | AP LLDP topology awareness                                                                           | Yes                 |
|                                                                       | Adjustable priority of traffic on wired interfaces of APs                                            | Yes                 |
|                                                                       | Rate limiting on wired interfaces of APs                                                             | Yes                 |
| Wireless management (integrated WLAN AC):<br>Wireless user management | User roaming within a WLAN AC                                                                        | Yes                 |
|                                                                       | AP-based user location                                                                               | Yes                 |
|                                                                       | User roaming between WLAN ACs                                                                        | Yes                 |
|                                                                       | 802.1X authentication                                                                                | Yes                 |
|                                                                       | Portal authentication                                                                                | Yes                 |
|                                                                       | MAC address authentication                                                                           | Yes                 |
| Wireless management (integrated WLAN AC):<br>CAPWAP                   | Direct data forwarding on L2/L3 networks                                                             | Yes                 |
|                                                                       | Tunnel-based data forwarding on L2/L3 networks                                                       | Yes                 |
|                                                                       | Dual-link load balancing for CAPWAP tunnels                                                          | Yes                 |
|                                                                       | CAPWAP tunnel encryption                                                                             | Yes                 |
| Wireless management (integrated WLAN AC):<br>RF management            | 802.11a/b/g/n                                                                                        | Yes                 |
|                                                                       | 802.11ac wave1/wave2                                                                                 | Yes                 |
|                                                                       | 802.11ax                                                                                             | Yes                 |
|                                                                       | Sets RF interference monitoring and avoidance                                                        | Yes                 |
|                                                                       | Detects co-channel interference, adjacent interference, and interference from other devices and STAs | Yes                 |
|                                                                       | Automatically selects channels and power when APs go online                                          | Yes                 |
|                                                                       | Dynamic power and channel optimization                                                               | Yes                 |
| Wireless management (integrated WLAN AC):<br>WLAN QoS                 | Mapping from wireless-side priority to wired-side priority                                           | Yes                 |
|                                                                       | Mapping from wireless-side priority to CAPWAP channel priority                                       | Yes                 |
|                                                                       | Rate limiting of upstream and downstream traffic on the air interface based on the VAP               | Yes                 |
|                                                                       | Rate limiting of upstream and downstream traffic on the air interface based on users                 | Yes                 |
|                                                                       | SSID-based CAR                                                                                       | Yes                 |
|                                                                       | CAR for WLAN users                                                                                   | Yes                 |
| Interoperability                                                      | Interoperable with VBST (compatible with PVST/PVST+/RPVST)                                           | Yes                 |
|                                                                       | Interoperable with LNP (similar to DTP)                                                              | Yes                 |
|                                                                       | Interoperable with VCMP (similar to VTP)                                                             | Yes                 |

## Hardware Specifications

| Item                            | CloudEngine S12700E-4                                                                                                                                                                                                                                                                                                                                                                | CloudEngine S12700E-8                                                                                                                                                                                                                                                                                                                                                                 | CloudEngine S12700E-12                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switching capacity              | 19.2 Tbps                                                                                                                                                                                                                                                                                                                                                                            | 38.4 Tbps                                                                                                                                                                                                                                                                                                                                                                             | 57.6Tbps                                                                                                                                                                                                                                                                                                                                                                              |
| Forwarding performance          | 14,400 Mpps                                                                                                                                                                                                                                                                                                                                                                          | 28,800 Mpps                                                                                                                                                                                                                                                                                                                                                                           | 43,200 Mpps                                                                                                                                                                                                                                                                                                                                                                           |
| MPU slots                       | 2                                                                                                                                                                                                                                                                                                                                                                                    | 2                                                                                                                                                                                                                                                                                                                                                                                     | 2                                                                                                                                                                                                                                                                                                                                                                                     |
| SFU slots                       | 2                                                                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                                                                                                                                                                                                                                                                     | 4                                                                                                                                                                                                                                                                                                                                                                                     |
| LPU slots                       | 4                                                                                                                                                                                                                                                                                                                                                                                    | 8                                                                                                                                                                                                                                                                                                                                                                                     | 12                                                                                                                                                                                                                                                                                                                                                                                    |
| Fan trays                       | 2                                                                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                                                                                                                                                                                                                                                                     | 5                                                                                                                                                                                                                                                                                                                                                                                     |
| Power                           | 4                                                                                                                                                                                                                                                                                                                                                                                    | 6                                                                                                                                                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                                                                                                                                                     |
| Buffering capacity              | Up to 200 ms data buffering per port                                                                                                                                                                                                                                                                                                                                                 | Up to 200 ms data buffering per port                                                                                                                                                                                                                                                                                                                                                  | Up to 200 ms data buffering per port                                                                                                                                                                                                                                                                                                                                                  |
| Redundancy design               | MPU, SFU, power module, and fan module                                                                                                                                                                                                                                                                                                                                               | MPU, SFU, power module, and fan module                                                                                                                                                                                                                                                                                                                                                | MPU, SFU, power module, and fan module                                                                                                                                                                                                                                                                                                                                                |
| Virtualization                  | CSS service port clustering                                                                                                                                                                                                                                                                                                                                                          | CSS service port clustering                                                                                                                                                                                                                                                                                                                                                           | CSS service port clustering                                                                                                                                                                                                                                                                                                                                                           |
| Dimensions (H x W x D)          | 441.7*442*517.4,10U                                                                                                                                                                                                                                                                                                                                                                  | 663.95*442*517.4, 15U                                                                                                                                                                                                                                                                                                                                                                 | 841.75*442*517.4, 19U                                                                                                                                                                                                                                                                                                                                                                 |
| Weight (empty/fully configured) | 24.5kg/66kg<br>Note <ul style="list-style-type: none"> <li>Empty configuration indicates that the switch has no line card, MPU, or power supply installed. Filler panels are used, instead.</li> <li>Full configuration indicates that the switch is fully configured with MPUs, SFUs, line cards, and power supplies. Their maximum weights are used during calculation.</li> </ul> | 42.5kg/114kg<br>Note <ul style="list-style-type: none"> <li>Empty configuration indicates that the switch has no line card, MPU, or power supply installed. Filler panels are used, instead.</li> <li>Full configuration indicates that the switch is fully configured with MPUs, SFUs, line cards, and power supplies. Their maximum weights are used during calculation.</li> </ul> | 71.8kg/184kg<br>Note <ul style="list-style-type: none"> <li>Empty configuration indicates that the switch has no line card, MPU, or power supply installed. Filler panels are used, instead.</li> <li>Full configuration indicates that the switch is fully configured with MPUs, SFUs, line cards, and power supplies. Their maximum weights are used during calculation.</li> </ul> |
| Operating voltage               | DC: -48V~-60V<br>AC: 90V~290V                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum power consumption       | 3344W                                                                                                                                                                                                                                                                                                                                                                                | 6950W                                                                                                                                                                                                                                                                                                                                                                                 | 8981W                                                                                                                                                                                                                                                                                                                                                                                 |
| Operating temperature           | <ul style="list-style-type: none"> <li>-60 m to +1800 m: 0°C to 45°C</li> <li>1800 m to 4000 m: The maximum operating temperature decreases by 1°C each time the altitude increases by 220 m.</li> <li>4000 m: 0°C to 35°C</li> </ul>                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                       |
| Relative humidity               | 5% to 95% (non-condensing)                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                       |
| Heat dissipation mode           | Left-to-rear airflow, air-cooled heat dissipation, and intelligent fan speed adjustment                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                       |

# Hardware Introduction

## MPU

The Main Processing Unit (MPU) provides the control and management planes for the entire system. The control plane is mainly responsible for protocol processing, service processing, route calculation, forwarding control, service scheduling, traffic statistics, and system security. The management plane provides functions like monitoring the system running status, monitoring the environment, processing logs and alarms, loading the system, and upgrading the system.

The following table lists the MPU supported by Huawei S12700E series switches.

| Models and Appearance                                                                             | Description                    | Supported Version              |
|---------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|
| <br>LST7MPUE0000 | S12700E main processing unit E | V200R019C00 and later versions |
| <br>LST7MPUE0001 | S12700E main processing unit E | V200R020C10 and later versions |

The following table lists the functions of MPUE

| Function          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic functions   | The LST7MPUE0000/LST7MPUE0001 integrate the main control unit, clock unit, and system maintenance unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| OAM               | The LST7MPUE0000/LST7MPUE0001 support the following OAM functions: <ul style="list-style-type: none"><li>802.1ag: identifies, detects, and sends continuity check (CC) packets.</li><li>Multiprotocol Label Switching (MPLS OAM): identifies, detects, and sends MPLS OAM packets.</li><li>OAM UNCFG_MEP.</li></ul>                                                                                                                                                                                                                                                                                                                              |
| Memory            | 16 GB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Flash             | 64 MB/128 MB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| NAND Flash        | 2 GB<br>The system configuration data, startup files, system software package, and system logs are saved in the NAND Flash by default.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Redundancy backup | 1+1 hot standby<br>Main control board is mandatory for switches. Each switch must be configured with one or two main control boards. When one main control board is configured for a switch, the main control board can be installed in either main control board slot of the switch. When two main control boards are configured, the two main control boards work in hot standby mode to improve reliability of the switch. The active and standby main control boards monitor the status of each other. If the active main control board fails, the standby main control board automatically becomes active to ensure uninterrupted services. |
| Hot swapping      | Supported<br>Before removing the active card, perform an active/standby switchover.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## SFU

The Switch Fabric Unit (SFU) provides the data plane for the entire system. The data plane provides high-speed and non-blocking data channels for service switching between service modules.

The following table lists the SFU supported by Huawei S12700E series switches.

| Models and Appearance                                                                             | Description                       | Supported Version                                                    |
|---------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------|
| <br>LST7SFUEX100 | S12700E Switch Fabric Unit E (X1) | V200R019C00 and later versions, only used in S12700E-4 and S12700E-8 |
| <br>LST7SFUHX100 | S12700E Switch Fabric Unit H (X1) | V200R019C00 and later versions, only used in S12700E-4 and S12700E-8 |
| <br>LST7SFUMX100 | S12700E Switch Fabric Unit M (X1) | V200R019C00 and later versions, only used in S12700E-12              |

The following table lists the functions of SFUE/SFUH/SFUM.

| Function          | SFUE                   | SFUH                   | SFUM                   |
|-------------------|------------------------|------------------------|------------------------|
| Basic function    | Core of data switching | Core of data switching | Core of data switching |
| Memory            | 1 GB                   | 2 GB                   | 2 GB                   |
| Flash             | 128 MB                 | 128 MB                 | 128 MB                 |
| Redundancy backup | N+1 hot standby        | N+1 hot standby        | N+1 hot standby        |
| Hot swapping      | Supported              | Supported              | Supported              |

#### NOTE

SFU cards in a chassis can work in redundancy mode to improve system reliability. If one SFU fails, service traffic on this card will be switched to other SFUs to ensure uninterrupted services

## CMU

The Centralized Monitoring Unit(CMU) manages power modules and fan modules in a chassis. The CMU is hot swappable. Two CMU cards can be installed in a chassis to work in active/standby mode.

The following table lists the CMU supported by Huawei S12700E series switches.

| Models and Appearance                                                                               | Description                 | Supported Version              |
|-----------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------|
| <br>EH1D200CMU00 | Centralized Monitoring Unit | V200R019C00 and later versions |

The following table lists the functions of CMU.

| Function              | Description                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fan module management | <ul style="list-style-type: none"> <li>Fan module presence detection</li> <li>Fan module registration management</li> <li>Fan speed monitoring</li> </ul> |

| Function                | Description                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"> <li>Fan speed control</li> <li>Management and report of fan module alarms</li> <li>Query of fan module electronic labels</li> </ul>                                                                                                                                        |
| Power module management | <ul style="list-style-type: none"> <li>Power module presence detection</li> <li>Power module shutdown</li> <li>Power module registration management</li> <li>Voltage and current monitoring</li> <li>Management and report of power module alarms</li> <li>Query of power module electronic labels</li> </ul> |

## Interface Card

An interface card, or called LPU, processes all traffic on the network data plane of a switch. The S12700E supports a broad set of interface cards that offer varying numbers of 100GE, 40GE, 25GE, 10GE, and GE ports. Customers can flexibly select them as required.

| Card Name    | Description                                                                       | Supported Version              |
|--------------|-----------------------------------------------------------------------------------|--------------------------------|
| LST7G48TX5E1 | 48-port 10/100/1000BASE-T interface card (X5E, RJ45)                              | V200R019C00 and later versions |
| LST7G48TX5S1 | 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 |
| LST7Y40SX6H0 | 40-port 25GE SFP28 interface card (X6H, SFP28)                                    | V200R019C10 and later versions |
| LST7C02BX6E0 | 2-port 100GE QSFP28 interface and 4-port 40GE QSFP28 interface card (X6E, QSFP28) | V200R020C00 and later versions |
| LST7C06HX6E0 | 6-port 100GE QSFP28 interface card (X6E, QSFP28)                                  | V200R019C00 and later versions |
| LST7C06HX6S0 | 6-port 100GE QSFP28 interface card (X6S, QSFP28)                                  | V200R019C00 and later versions |
| LST7C24HX6E0 | 24-Port 100GE QSFP28 Interface Card (X6E, QSFP28)                                 | V200R019C00 and later versions |

## Power Module

### Power Module Backup Modes

The S12700E power modules support the backup mode. Three power module configuration modes are recommended: N+N backup, N+1 backup, and N+0 without backup. The value of N is determined by the maximum power required by the system. N multiplied by the maximum output power of each power module must be larger than the maximum power required by the system. The system can automatically identify the backup mode, without the need of manual configuration through CLIs.

Assume that the maximum power required by the system is 4,000 W. If two 2,200 W power modules are installed, the backup mode is 2+0 without backup. If three 2,200 W power modules are installed, the backup mode is 2+1 backup. If four 2,200 W power modules are installed, the backup mode is 2+2 backup.

The S12700E supports 2,200 W DC and 3,000 W AC power modules. The following table lists the maximum output power of the entire system in different backup modes.

| Models and Appearance                                                                             | Backup Mode        | Maximum Output Power of the S12700E-4                                                                                         | Maximum Output Power of the S12700E-8                                                                                         | Maximum Output Power of the S12700E-8                                                                                         |
|---------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <br>W2PSD2200    | N+N backup         | A maximum of four (2+2) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 4,400 W. | A maximum of six (3+3) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 6,600W.   | A maximum of six (3+3) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 6,600W.   |
|                                                                                                   | N+1 backup         | A maximum of four (3+1) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 6,600 W. | A maximum of six (5+1) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 11,000 W. | A maximum of six (5+1) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 11,000 W. |
|                                                                                                   | N+0 without backup | A maximum of four (4+0) 2,200 W DC power modules can be configured, providing the maximum power supply capability of 8,800 W. | A maximum of six (6+0) 2,200W DC power modules can be configured, providing the maximum power supply capability of 12,000 W.  | A maximum of six (6+0) 2,200W DC power modules can be configured, providing the maximum power supply capability of 13,200 W.  |
| <br>PAC3KS54-NE | N+N backup         | A maximum of four (2+2) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 6,000 W. | A maximum of six (3+3) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 9,000 W.  | A maximum of six (3+3) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 9,000 W.  |
|                                                                                                   | N+1 backup         | A maximum of four (3+1) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 9,000 W. | A maximum of six (5+1) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 12,000 W. | A maximum of six (5+1) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 14,000 W. |
|                                                                                                   | N+0 without backup | A maximum of four (4+0) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 9,000 W. | A maximum of six (6+0) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 12,000 W. | A maximum of six (6+0) 3,000 W AC power modules can be configured, providing the maximum power supply capability of 14,000 W. |

## Power Module Specifications

The following table lists the specifications of each power module.

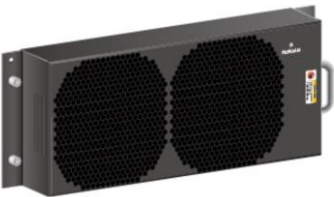
| Parameter              |                     | W2PSD2200(DC Power Module) | PAC3KS54-CE(AC Power Module)               |
|------------------------|---------------------|----------------------------|--------------------------------------------|
| Dimensions (H x W x D) |                     | 41 mm × 393 mm × 130 mm    | 41 mm × 417.4 mm × 130 mm                  |
| Weight                 |                     | < 2.5 kg                   | < 3.0 kg                                   |
| AC input               | Rated input voltage | -48 V DC/-60 V DC          | 220 V AC/110 V AC; 50/60 Hz                |
|                        | Rated input         | -40 V DC to -72 V DC       | 200 V AC to 240 V AC (rated input voltage: |

| Parameter              |                             | W2PSD2200(DC Power Module)                                                                                                                                                                                                                                              | PAC3KS54-CE(AC Power Module)                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | voltage range               |                                                                                                                                                                                                                                                                         | 220 V AC)/100 V AC to 130 V AC (rated input voltage: 110 V AC); 47 Hz to 63 Hz                                                                                                                                                                                                                                                                                                                                        |
|                        | Maximum input voltage range | -40 V DC to -72 V DC                                                                                                                                                                                                                                                    | 90 V AC to 290 V AC; 47 Hz to 63 Hz<br>(When the input voltage range is 90 V AC to 175 V AC, the maximum output power of the power module is reduced by half.)<br><br>The maximum current of the power cable used by the 3,000 W AC power module is 16 A. When the 220 V input is used, the minimum voltage cannot be lower than 200 V. When the 110 V input is used, the minimum voltage cannot be lower than 100 V. |
|                        | Maximum input current       | 60 A                                                                                                                                                                                                                                                                    | 16 A                                                                                                                                                                                                                                                                                                                                                                                                                  |
| High-voltage DC input  | Rated input voltage         | -                                                                                                                                                                                                                                                                       | 240 V DC                                                                                                                                                                                                                                                                                                                                                                                                              |
|                        | Maximum input voltage range | -                                                                                                                                                                                                                                                                       | 190 V DC to 290 V DC                                                                                                                                                                                                                                                                                                                                                                                                  |
|                        | Maximum input current       | -                                                                                                                                                                                                                                                                       | 14 A                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Output                 | Maximum output current      | 42 A                                                                                                                                                                                                                                                                    | 56.1 A (rated input voltage: 220 V AC)/28.1 A (rated input voltage: 110 V AC)                                                                                                                                                                                                                                                                                                                                         |
|                        | Maximum output power        | 2,200 W                                                                                                                                                                                                                                                                 | 3,000 W (rated input voltage: 220 V AC or 240 V DC)/1,500 W (rated input voltage: 110 V AC)                                                                                                                                                                                                                                                                                                                           |
| Hot swap               |                             | Supported                                                                                                                                                                                                                                                               | Supported                                                                                                                                                                                                                                                                                                                                                                                                             |
| Environment parameters |                             | <ul style="list-style-type: none"> <li>Operating temperature: 0°C to 45°C</li> <li>Operating relative humidity: 5%RH to 95%RH, non-condensing</li> <li>Storage temperature: -40°C to +70°C</li> <li>Storage relative humidity: 5%RH to 95%RH, non-condensing</li> </ul> | <ul style="list-style-type: none"> <li>Operating temperature: 0°C to 45°C</li> <li>Operating relative humidity: 5%RH to 95%RH, non-condensing</li> <li>Storage temperature: -40°C to +70°C</li> <li>Storage relative humidity: 5%RH to 95%RH, non-condensing</li> </ul>                                                                                                                                               |

## Fan Module

Each fan module has two fans and can work for a short time when one fan fails. When any fan in a fan module fails, handle the failure immediately to ensure that the fan module can work normally.

The following table lists the fan module supported by Huawei S12700E series switches.

| Models and Appearance                                                                                 | Description        | Supported Version              |
|-------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|
|  <p>FAN-770A-B</p> | FAN-770A-B fan box | V200R019C00 and later versions |



## Fan Module Functions

| Function                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     | Supported Version              |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Hot swapping                     | Supported<br>Other fan modules are not affected when you install or remove a fan module.                                                                                                                                                                                                                                                                                                                                                        | V200R019C00 and later versions |
| Intelligent fan speed adjustment | The S12700E series switches provide intelligent fan speed adjustment based on temperature in each zone, and correlate speeds of fans in the entire chassis. The system monitors the temperature of key components, and adjusts the fan speed based on temperature changes. This intelligent fan speed adjustment function ensures that the system stays within the proper operating temperature range, and reduces power consumption and noise. | V200R019C00 and later versions |

## Fan Module Specifications

| Function                   | Description                                                                                                                                                                                                                                                                                              | Supported Version              |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Dimensions (H x W x D)     | 126.6 mm x 323.9 mm x 65 mm (5.0 in. x 12.8 in. x 2.6 in.)                                                                                                                                                                                                                                               | V200R019C00 and later versions |
| Number of fans             | 2                                                                                                                                                                                                                                                                                                        | V200R019C00 and later versions |
| Weight                     | 2.5 kg (5.51 lb)                                                                                                                                                                                                                                                                                         | V200R019C00 and later versions |
| Maximum power consumption  | 395 W                                                                                                                                                                                                                                                                                                    | V200R019C00 and later versions |
| Operating voltage range    | -30 V DC to -73 V DC                                                                                                                                                                                                                                                                                     | V200R019C00 and later versions |
| Environment specifications | <ul style="list-style-type: none"><li>Operating temperature: 0°C to 45°C (32°F to 113°F)</li><li>Operating relative humidity: 5% RH to 95% RH (noncondensing)</li><li>Storage temperature: -40°C to +70°C (-40°F to +158°F)</li><li>Storage relative humidity: 5% RH to 95% RH (noncondensing)</li></ul> | V200R019C00 and later versions |

# Networking and Applications

## In a Campus Network

CloudEngine S12700E series switches are deployed on the core layer of an enterprise campus network. ACs are built in to the switches to achieve the following purposes:

- Wireless networks can be constructed without any additional AC devices, reducing network construction costs.
- With the wired and wireless convergence capability, they can deliver a consistent experience to wired and wireless users through uniform device management, user management, and service management.
- The T-bit AC capability avoids performance bottlenecks on independent ACs and enables a migration to 802.11ax networks.

## In a MAN

CloudEngine S12700E series switches can be used as core or aggregation switches on a metro television broadcasting or education network.

- Providing millions of FIB entries for large-scale routing on the network.

- Supporting comprehensive L2/L3 MPLS VPN features, ensuring high reliability, security, and scalability on the metropolitan bearer network.
- Single-link 100G hardware clustering technology delivers carrier-grade reliability.

## In a Data Center

CloudEngine S12700E series switches can be deployed on the core or aggregation layer of an enterprise data center network

- Providing large throughput using high-density line cards, such as 24\*100GE, 6\*100GE, 40\*25GE and 48\*10GE/GE cards.
- CloudEngine S12700E series switches support single-link 100G hardware clustering. This technology helps to build a data center network with high performance, high reliability, and low latency.

## In an Education Campus Network

CloudEngine S12700E series switches are deployed on the core layer of a college campus network.

- Allowing for a large number of concurrent access users.
- As they support unified user management, you do not need to buy additional hardware components, reducing network construction costs.
- The H-QoS feature implements fine granular user and service management.
- With the wired and wireless convergence capability, they can deliver a consistent experience to wired and wireless users through uniform device management, user management, and service management.

## In a Bearer Network for Video Conferencing, Desktop Cloud, and Video Surveillance Applications

- CloudEngine S12700E series switches have a large buffer to prevent packet loss when traffic bursts occur, delivering high-quality video streams.
- CloudEngine S12700E series switches support millions of hardware entries, which allow for a large number of terminals and facilitate evolution to IPv6 and the Internet of Things.
- Employing end-to-end hardware reliability technologies and iPCA, CloudEngine S12700E series switches offer a highly reliable, high-quality, scalable video conferencing and surveillance solution.

# Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of CloudEngine S12700E.

Safety and regulatory compliance of CloudEngine S12700E series

| Certification Category              | Specification                                                                                                                                                                                                         |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safety                              | <ul style="list-style-type: none"> <li>● IEC 60950-1</li> <li>● EN 60950-1</li> <li>● UL 60950-1</li> <li>● CSA C22.2 No 60950-1</li> <li>● AS/NZS 60950.1</li> <li>● BS EN 60950-1</li> <li>● CNS 14336-1</li> </ul> |
| Electromagnetic Compatibility (EMC) | <ul style="list-style-type: none"> <li>● CISPR22 Class A</li> <li>● CISPR24</li> <li>● EN55022 Class A</li> <li>● EN55024</li> <li>● ETSI EN 300 386 Class A</li> </ul>                                               |

| Certification Category | Specification                                                                                                                                                                                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"> <li>• CFR 47 FCC Part 15 Class A</li> <li>• ICES 003 Class A</li> <li>• AS/NZS CISPR22 Class A</li> <li>• VCCI Class A</li> <li>• IEC61000-6-2</li> <li>• IEC61000-6-4</li> <li>• IEC61000-4-2</li> <li>• ITU-T K 20</li> <li>• ITU-T K 21</li> <li>• ITU-T K 44</li> <li>• CNS13438</li> </ul> |
| Environment            | <ul style="list-style-type: none"> <li>• RoHS</li> <li>• REACH</li> <li>• WEEE</li> </ul>                                                                                                                                                                                                                                          |
| Laser safety           | <ul style="list-style-type: none"> <li>• IEC60825-1</li> <li>• IEC60825-2</li> <li>• EN60825-1</li> <li>• EN60825-2</li> </ul>                                                                                                                                                                                                     |

#### NOTE

- EMC: electromagnetic compatibility
- CISPR: International Special Committee on Radio Interference
- EN: European Standard
- ETSI: European Telecommunications Standards Institute
- CFR: Code of Federal Regulations
- FCC: Federal Communication Commission
- IEC: International Electrotechnical Commission
- AS/NZS: Australian/New Zealand Standard
- VCCI: Voluntary Control Council for Interference
- UL: Underwriters Laboratories
- CSA: Canadian Standards Association
- IEEE: Institute of Electrical and Electronics Engineers
- RoHS: restriction of the use of certain hazardous substances
- REACH: Registration Evaluation Authorization and Restriction of Chemicals
- WEEE: Waste Electrical and Electronic Equipment

## MIB and Standards Compliance

### Supported MIBs

The following table lists the MIBs supported by CloudEngine S12700E series.

MIBs supported by the S12700E series

| Category   | Specification                                                                      |
|------------|------------------------------------------------------------------------------------|
| Public MIB | <ul style="list-style-type: none"> <li>• BGP4-MIB</li> <li>• BRIDGE-MIB</li> </ul> |

| Category | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | <ul style="list-style-type: none"> <li>• DISMAN-NSLOOKUP-MIB</li> <li>• DISMAN-PING-MIB</li> <li>• DISMAN-TRACEROUTE-MIB</li> <li>• ENTITY-MIB</li> <li>• EtherLike-MIB</li> <li>• IF-MIB</li> <li>• IP-FORWARD-MIB</li> <li>• IPMCAST-MIB</li> <li>• IPv6-ICMP-MIB</li> <li>• IPv6-MIB</li> <li>• IPv6-TCP-MIB</li> <li>• IPv6-UDP-MIB</li> <li>• ISIS-MIB</li> <li>• LAG-MIB</li> <li>• LLDP-EXT-DOT1-MIB</li> <li>• LLDP-EXT-DOT3-MIB</li> <li>• LLDP-MIB</li> <li>• MGMD-STD-MIB</li> <li>• MPLS-FTN-STD-MIB</li> <li>• MPLS-L3VPN-STD-MIB</li> <li>• MPLS-LDP-GENERIC-STD-MIB</li> <li>• MPLS-LDP-STD-MIB</li> <li>• MPLS-LSR-STD-MIB</li> <li>• MPLS-TE-STD-MIB</li> <li>• MSDP-MIB</li> <li>• NOTIFICATION-LOG-MIB</li> <li>• NQA-MIB</li> <li>• OSPF-MIB</li> <li>• OSPF-TRAP-MIB</li> <li>• P-BRIDGE-MIB</li> <li>• PIM-BSR-MIB</li> <li>• PIM-STD-MIB</li> <li>• Q-BRIDGE-MIB</li> <li>• RFC1213-MIB</li> <li>• RIPv2-MIB</li> <li>• RMON2-MIB</li> <li>• RMON-MIB</li> <li>• SAVI-MIB</li> <li>• SNMP-FRAMEWORK-MIB</li> <li>• SNMP-MPD-MIB</li> <li>• SNMP-NOTIFICATION-MIB</li> <li>• SNMP-TARGET-MIB</li> <li>• SNMP-USER-BASED-SM-MIB</li> <li>• SNMPv2-MIB</li> <li>• SNMP-VIEW-BASED-ACM-MIB</li> </ul> |

| Category               | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <ul style="list-style-type: none"> <li>• TCP-MIB</li> <li>• UDP-MIB</li> <li>• VRRP-MIB</li> <li>• VRRPv3-MIB</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Huawei-proprietary MIB | <ul style="list-style-type: none"> <li>• HUAWEI-AAA-MIB</li> <li>• HUAWEI-ACL-MIB</li> <li>• HUAWEI-ALARM-MIB</li> <li>• HUAWEI-ALARM-RELIABILITY-MIB</li> <li>• HUAWEI-BASE-TRAP-MIB</li> <li>• HUAWEI-BFD-MIB</li> <li>• HUAWEI-BGP-VPN-MIB</li> <li>• HUAWEI-BRAS-RADIUS-MIB</li> <li>• HUAWEI-BRAS-SRVCFG-EAP-MIB</li> <li>• HUAWEI-BRAS-SRVCFG-STATICUSER-MIB</li> <li>• HUAWEI-BULKSTAT-MIB</li> <li>• HUAWEI-CBQOS-MIB</li> <li>• HUAWEI-CCC-MIB</li> <li>• HUAWEI-CONFIG-MAN-MIB</li> <li>• HUAWEI-CLOCK-MIB</li> <li>• HUAWEI-CPU-MIB</li> <li>• HUAWEI-DAD-MIB</li> <li>• HUAWEI-DC-TRAP-MIB</li> <li>• HUAWEI-DATASYNC-MIB</li> <li>• HUAWEI-DEVICE-MIB</li> <li>• HUAWEI-DHCPR-MIB</li> <li>• HUAWEI-DHCPS-MIB</li> <li>• HUAWEI-DHCP-SNOOPING-MIB</li> <li>• HUAWEI-DIE-MIB</li> <li>• HUAWEI-DNS-MIB</li> <li>• HUAWEI-DLDP-MIB</li> <li>• HUAWEI-ERPS-MIB</li> <li>• HUAWEI-ERRORDOWN-MIB</li> <li>• HUAWEI-ENERGYMNGT-MIB</li> <li>• HUAWEI-EASY-OPERATION-MIB</li> <li>• HUAWEI-ENTITY-EXTENT-MIB</li> <li>• HUAWEI-ENTITY-TRAP-MIB</li> <li>• HUAWEI-ETHARP-MIB</li> <li>• HUAWEI-ETHOAM-MIB</li> <li>• HUAWEI-E-TRUNK-MIB</li> <li>• HUAWEI-FLASH-MAN-MIB</li> <li>• HUAWEI-FTP-MIB</li> <li>• HUAWEI-FWD-RES-TRAP-MIB</li> <li>• HUAWEI-GARP-APP-MIB</li> <li>• HUAWEI-GTL-MIB</li> </ul> |

| Category | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | <ul style="list-style-type: none"> <li>• HUAWEI-GTSM-MIB</li> <li>• HUAWEI-HGMP-MIB</li> <li>• HUAWEI-HQOS-MIB</li> <li>• HUAWEI-HWTACACS-MIB</li> <li>• HUAWEI-IF-EXT-MIB</li> <li>• HUAWEI-INFOCENTER-MIB</li> <li>• HUAWEI-IPFPM-MIB</li> <li>• HUAWEI-IPLPM-MIB</li> <li>• HUAWEI-IPMCAST-MIB</li> <li>• HUAWEI-IPPOOL-MIB</li> <li>• HUAWEI-IPSESSION-MIB</li> <li>• HUAWEI-IPV6-MIB</li> <li>• HUAWEI-ISOLATE-MIB</li> <li>• HUAWEI-KOMPELLA-MIB</li> <li>• HUAWEI-L2IF-MIB</li> <li>• HUAWEI-L2MAM-MIB</li> <li>• HUAWEI-L2MULTICAST-MIB</li> <li>• HUAWEI-L2VLAN-MIB</li> <li>• HUAWEI-L2VPN-MIB</li> <li>• HUAWEI-LDT-MIB</li> <li>• HUAWEI-LSP-PING-TRACE-TRAP-MIB</li> <li>• HUAWEI-LINE-MIB</li> <li>• HUAWEI-LLDP-MIB</li> <li>• HUAWEI-MAC-AUTHEN-MIB</li> <li>• HUAWEI-MDNS-RELAY-MIB</li> <li>• HUAWEI-MEMORY-MIB</li> <li>• HUAWEI-MFF-MIB</li> <li>• HUAWEI-MFLP-MIB</li> <li>• HUAWEI-MGMD-STD-MIB</li> <li>• HUAWEI-MPLS-EXTEND-MIB</li> <li>• HUAWEI-MPLSLDP-MIB</li> <li>• HUAWEI-MPLSLSR-EXT-MIB</li> <li>• HUAWEI-MPLSOAM-MIB</li> <li>• HUAWEI-MSDP-MIB</li> <li>• HUAWEI-MSTP-MIB</li> <li>• HUAWEI-MULTICAST-MIB</li> <li>• HUAWEI-NETSTREAM-MIB</li> <li>• HUAWEI-NTPV3-MIB</li> <li>• HUAWEI-OSPFV2-MIB</li> <li>• HUAWEI-OSPFV3-MIB</li> <li>• HUAWEI-PERFORMANCE-MIB</li> <li>• HUAWEI-PIM-BSR-MIB</li> <li>• HUAWEI-PIM-STD-MIB</li> <li>• HUAWEI-PERFMGMT-MIB</li> <li>• HUAWEI-PORT-MIB</li> </ul> |

| Category | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | <ul style="list-style-type: none"> <li>• HUAWEI-PORTAL-MIB</li> <li>• HUAWEI-PWE3-MIB</li> <li>• HUAWEI-PWE3-TNL-MIB</li> <li>• HUAWEI-QINQ-MIB</li> <li>• HUAWEI-RIPv2-EXT-MIB</li> <li>• HUAWEI-RM-EXT-MIB</li> <li>• HUAWEI-RRPP-MIB</li> <li>• HUAWEI-RSVPTE-MIB</li> <li>• HUAWEI-SECURITY-MIB</li> <li>• HUAWEI-SEP-MIB</li> <li>• HUAWEI-SMARTLINK-MIB</li> <li>• HUAWEI-SNMP-EXT-MIB</li> <li>• HUAWEI-SSH-MIB</li> <li>• HUAWEI-STACK-MIB</li> <li>• HUAWEI-SWITCH-L2MAM-EXT-MIB</li> <li>• HUAWEI-SWITCH-SRV-TRAP-MIB</li> <li>• HUAWEI-SYS-MAN-MIB</li> <li>• HUAWEI-TASK-MIB</li> <li>• HUAWEI-TCP-MIB</li> <li>• HUAWEI-TFTPC-MIB</li> <li>• HUAWEI-TRNG-MIB</li> <li>• HUAWEI-TUNNEL-MIB</li> <li>• HUAWEI-TUNNEL-TE-MIB</li> <li>• HUAWEI-UNIMNG-MIB</li> <li>• HUAWEI-USC-MIB</li> <li>• HUAWEI-VPLS-EXT-MIB</li> <li>• HUAWEI-VPLS-TNL-MIB</li> <li>• HUAWEI-VPN-DIAGNOSTICS-MIB</li> <li>• HUAWEI-VRRP-EXT-MIB</li> <li>• HUAWEI-WLAN-DEVICE-MIB</li> <li>• HUAWEI-WLAN-QOS-MIBB</li> <li>• HUAWEI-WLAN-RADIO-MIB</li> <li>• HUAWEI-WLAN-SECURITY-MIB</li> <li>• HUAWEI-WLAN-SERVICE-MIB</li> <li>• HUAWEI-WLAN-SYS-MIB</li> <li>• HUAWEI-WLAN-UPDATE-MIB</li> <li>• HUAWEI-WLAN-WIDS-MIB</li> <li>• HUAWEI-XQOS-MIB</li> </ul> |

#### NOTE

For more information about MIBs supported by CloudEngine S12700E series, visit <https://support.huawei.com/enterprise/en/switches/s12700e-pid-250450822>

## Standard Compliance

The following table lists the standards that CloudEngine S12700E complies with.



| Standard Organization | Standard or Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IETF                  | <ul style="list-style-type: none"> <li>• RFC 768 User Datagram Protocol (UDP)</li> <li>• RFC 792 Internet Control Message Protocol (ICMP)</li> <li>• RFC 793 Transmission Control Protocol (TCP)</li> <li>• RFC 826 Ethernet Address Resolution Protocol (ARP)</li> <li>• RFC 854 Telnet Protocol Specification</li> <li>• RFC 951 Bootstrap Protocol (BOOTP)</li> <li>• RFC 959 File Transfer Protocol (FTP)</li> <li>• RFC 1058 Routing Information Protocol (RIP)</li> <li>• RFC 1112 Host extensions for IP multicasting</li> <li>• RFC 1157 A Simple Network Management Protocol (SNMP)</li> <li>• RFC 1256 ICMP Router Discovery</li> <li>• RFC 1305 Network Time Protocol Version 3 (NTP)</li> <li>• RFC 1349 Internet Protocol (IP)</li> <li>• RFC 1493 Definitions of Managed Objects for Bridges</li> <li>• RFC 1542 Clarifications and Extensions for the Bootstrap Protocol</li> <li>• RFC 1643 Ethernet Interface MIB</li> <li>• RFC 1757 Remote Network Monitoring (RMON)</li> <li>• RFC 1901 Introduction to Community-based SNMPv2</li> <li>• RFC 1902-1907 SNMP v2</li> <li>• RFC 1981 Path MTU Discovery for IP version 6</li> <li>• RFC 2131 Dynamic Host Configuration Protocol (DHCP)</li> <li>• RFC 2328 OSPF Version 2</li> <li>• RFC 2453 RIP Version 2</li> <li>• RFC 2460 Internet Protocol, Version 6 Specification (IPv6)</li> <li>• RFC 2461 Neighbor Discovery for IP Version 6 (IPv6)</li> <li>• RFC 2462 IPv6 Stateless Address Auto configuration</li> <li>• RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6)</li> <li>• RFC 2474 Differentiated Services Field (DS Field)</li> <li>• RFC 2740 OSPF for IPv6 (OSPFv3)</li> <li>• RFC 2863 The Interfaces Group MIB</li> <li>• RFC 2597 Assured Forwarding PHB Group</li> <li>• RFC 2598 An Expedited Forwarding PHB</li> <li>• RFC 2571 SNMP Management Frameworks</li> <li>• RFC 2865 Remote Authentication Dial In User Service (RADIUS)</li> <li>• RFC 3046 DHCP Option82</li> <li>• RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3)</li> <li>• RFC 3513 IP Version 6 Addressing Architecture</li> <li>• RFC 3579 RADIUS Support For EAP</li> <li>• RFC 4271 A Border Gateway Protocol 4 (BGP-4)</li> <li>• RFC 4760 Multiprotocol Extensions for BGP-4</li> <li>• draft-grant-tacacs-02 TACACS+</li> </ul> |
| IEEE                  | <ul style="list-style-type: none"> <li>• IEEE 802.1D Media Access Control (MAC) Bridges</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Standard Organization | Standard or Protocol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | <ul style="list-style-type: none"> <li>• IEEE 802.1p Virtual Bridged Local Area Networks</li> <li>• IEEE 802.1Q Virtual Bridged Local Area Networks</li> <li>• IEEE 802.1ad Provider Bridges</li> <li>• IEEE 802.2 Logical Link Control</li> <li>• IEEE Std 802.3 CSMA/CD</li> <li>• IEEE Std 802.3ab 1000BASE-T specification</li> <li>• IEEE Std 802.3ad Aggregation of Multiple Link Segments</li> <li>• IEEE Std 802.3ae 10GE WEN/LAN Standard</li> <li>• IEEE Std 802.3x Full Duplex and flow control</li> <li>• IEEE Std 802.3z Gigabit Ethernet Standard</li> <li>• IEEE802.1ax/IEEE802.3ad Link Aggregation</li> <li>• IEEE 802.3ah Ethernet in the First Mile.</li> <li>• IEEE 802.1ag Connectivity Fault Management</li> <li>• IEEE 802.1ab Link Layer Discovery Protocol</li> <li>• IEEE 802.1D Spanning Tree Protocol</li> <li>• IEEE 802.1w Rapid Spanning Tree Protocol</li> <li>• IEEE 802.1s Multiple Spanning Tree Protocol</li> <li>• IEEE802.1x Port based network access control protocol</li> </ul> |
| ITU                   | <ul style="list-style-type: none"> <li>• ITU SG13 Y.17ethoam</li> <li>• ITU SG13 QoS control Ethernet-Based IP Access</li> <li>• ITU-T Y.1730 ETH OAM performance monitor</li> <li>• ITU-T Y.1731 ETH OAM performance monitor</li> <li>• ITU-T Y.1710 Requirements for OAM functionality for MPLS networks</li> <li>• ITU-T Y.1711 Operation and maintenance mechanism for MPLS networks</li> <li>• ITU-T Y.1720 Protection switching for MPLS networks</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ISO                   | <ul style="list-style-type: none"> <li>• ISO 10589IS-IS Routing Protocol</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| MEF                   | <ul style="list-style-type: none"> <li>• MEF 2 Requirements and Framework for Ethernet Service Protection</li> <li>• MEF 9 Abstract Test Suite for Ethernet Services at the UNI</li> <li>• MEF 10.2 Ethernet Services Attributes Phase 2</li> <li>• MEF 11 UNI Requirements and Framework</li> <li>• MEF 13 UNI Type 1 Implementation Agreement</li> <li>• MEF 15 Requirements for Management of Metro Ethernet Phase 1 Network Elements</li> <li>• MEF 17 Service OAM Framework and Requirements</li> <li>• MEF 20 UNI Type 2 Implementation Agreement</li> <li>• MEF 23 Class of Service Phase 1 Implementation Agreement</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   |

## 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) |

### S12700E Basic Configuration

|              |                                                    |
|--------------|----------------------------------------------------|
| ET1BS12704E0 | S12700E-4 assembly chassis                         |
| ET1BS12708E0 | S12700E-8 assembly chassis                         |
| ET1BS12712E1 | S12700E-12 assembly chassis                        |
| FAN-770A-B   | Fan box (-5degC–55degC, 48V, 400W, 2, indoors, VA) |

### Main Processing Unit

|              |                                |
|--------------|--------------------------------|
| LST7MPUE0000 | S12700E Main Processing Unit E |
| LST7MPUE0001 | S12700E Main Processing Unit E |

### Monitoring Unit

|              |                             |
|--------------|-----------------------------|
| EH1D200CMU00 | Centralized Monitoring Unit |
|--------------|-----------------------------|

### Switch Fabric Unit

|              |                                   |
|--------------|-----------------------------------|
| LST7SFUEX100 | S12700E Switch Fabric Unit E(X1)  |
| LST7SFUHX100 | S12700E Switch Fabric Unit H (X1) |
| LST7SFUMX100 | S12700E Switch Fabric Unit M (X1) |

### 100G/40G Ethernet optical interface card

|              |                                                                                  |
|--------------|----------------------------------------------------------------------------------|
| LST7C02BX6E0 | 2-port 100GE QSFP28 interface and 4-port 40GE QSFP28 interface card (X6E,QSFP28) |
| LST7C06HX6E0 | 6-port 100GE QSFP28 interface card (X6E,QSFP28)                                  |
| LST7C06HX6S0 | 6-port 100GE QSFP28 interface card (X6S,QSFP28)                                  |
| LST7C24HX6E0 | 24-port 100GE QSFP28 interface card (X6E,QSFP28)                                 |

### 25GE optical interface card

|              |                                               |
|--------------|-----------------------------------------------|
| LST7Y40SX6H0 | 40-port 25GE SFP28 interface card (X6H,SFP28) |
|--------------|-----------------------------------------------|

### 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 card

|              |                                         |
|--------------|-----------------------------------------|
| LST7G48SX6E0 | 48-port GE SFP interface card (X6E,SFP) |
|--------------|-----------------------------------------|

### Gigabit Ethernet optical interface card

|              |                                         |
|--------------|-----------------------------------------|
| LST7G48SX6S0 | 48-port GE SFP interface card (X6S,SFP) |
|--------------|-----------------------------------------|

### Gigabit Ethernet electrical interface card

|              |                                                      |
|--------------|------------------------------------------------------|
| LST7G48TX5E1 | 48-port 10/100/1000BASE-T interface card (X5E,RJ45)  |
| LST7G48TX5S1 | 48-port 10/100/1000BASE-T Interface Card (X5S, RJ45) |

| Power supply |                               | Supported Version              |
|--------------|-------------------------------|--------------------------------|
| W2PSD2200    | 2200W DC power module         |                                |
| PAC3KS54-CE  | 3000W AC power module (black) | V200R019C00 and later versions |
| PAC3KS54-NE  | 3000W AC power module (black) | V200R020C10 and later versions |

### License

|                      |                                                                                                 |
|----------------------|-------------------------------------------------------------------------------------------------|
| L-1AP-S127E          | S127E Series,Wireless Access Controller AP Resource License-1AP                                 |
| L-VxLAN-S127E        | S127E Series,VxLAN License, Per Device                                                          |
| RTU-800G-S127E       | S127E Series,800G Capacity Right to Use License,Per Device                                      |
| N1-S127E-F-Lic       | N1-CloudCampus,Foundation,S127E Series,Per Device                                               |
| N1-S127E-F-SnS1Y     | N1-CloudCampus,Foundation,S127E Series,SnS,Per Device,1Year                                     |
| N1-S127E-A-Lic       | N1-CloudCampus,Advanced,S127E Series,Per Device                                                 |
| 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-S127E-M-Lic       | N1-CloudCampus,Device Management,S127E Series,Per Device                                        |
| N1-S127E-M-SnS1Y     | N1-CloudCampus,Device Management,S127E Series,,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-AC1.0,15 Terminals,SnS,1Year                                   |
| CI-X7MSwitch-U       | CampusInsight-Upgrade-Foundation to Advanced, X7 Series Modular Switch, Per Device              |
| CI-X7MSwitch-U-SnS1Y | CampusInsight-Upgrade-Foundation to Advanced, X7 Series Modular Switch, SnS, Per Device, 1 Year |

## 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](mailto:support_e@huawei.com)

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