Huawei CloudEngine S5732-H Series Multi-GE Switches Datasheet

CloudEngine S5732-H series switches are brand-new full-10GE(Multi-GE capable) access switches that provide 24-port and 48-port models, and provide four 25GE and two 100GE uplink ports and one extended slot.

Introduction

CloudEngine S5732-H series Switches are brand-new full-10GE(Multi-GE capable) switches developed by Huawei for the Wi-Fi 6 era. The CloudEngine S5732-H builds on Huawei's unified Versatile Routing Platform (VRP) and boasts various IDN features. For example, the integrated wireless AC capabilities can manage up to 1,024 wireless APs; the free mobility feature ensures consistent user experience; the VXLAN functionality implements network virtualization; and built-in security probes support abnormal traffic detection, threat analysis even in encrypted traffic, and network-wide threat deception. With these merits, the CloudEngine S5732-H can function as core switches for small-sized campus networks and branches of medium- and large-sized campus networks, and also work as access switches for Metropolitan Area Network. CloudEngine S5732-H can provide a maximum of 48 10GE Multi-GE ports, which is a good choice for WLAN APs to connect to a switch in the high-quality campus networks.

Product Overview

Models and Appearances

The following models are available in the CloudEngine S5732-H series.

Models and Appearances	Description
 CloudEngine S5732-H24UM2CC (02353SJY-015/02353SJY-016/02353SJY-019)	• 24 × 100M/1000M/2.5G/5G/10G Base-T Ethernet ports, 4 x 1/10/25GE SFP28 + 2 x 40/100GE QSFP28 ports • One extended slot • PoE++(60W) • 1+1 power backup • Forwarding performance: 490 Mpps • Switching capacity*: 1.28 Tbps/2.4 Tbps *Note:* *You can purchase right-to-use (RTU) licenses to upgrade the port rate (every 12 ports per RTU license) from GE to 2.5EG, 5GE, or 10GE.* *uplink ports support model 1(4 x 1/10/25GE SFP28 +2 x 40G QSFP) or model 2(2 x 40/100GE QSFP28)* *uplink ports 2 x 40/100GE QSFP28 support 40G split into 4 x 10G, or 100G split into 4 x 25G*

Models and Appearances	Description
 CloudEngine S5732-H24UM2CC (02353SJY-020/02353SJY-021/02353SJY-024)	• 24 × 100M/1000M/2.5G/5G/10G Base-T Ethernet ports, 4 x 10/25GE SFP28 + 2 x 40/100GE QSFP28 ports • One extended slot • PoE++(90W) • 1+1 power backup • Forwarding performance: 490 Mpps • Switching capacity*: 1.48 Tbps/2.4 Tbps *Note: You can purchase right-to-use (RTU) licenses to upgrade the port rate (every 12 ports per RTU license) from GE to 2.5EG, 5GE, or 10GE.*
 CloudEngine S5732-H48UM2CC (02353SJT-015/02353SJT-016/02353SJT-018/02353SJT-019)	• 48 × 100M/1000M/2.5G/5G/10G Base-T Ethernet ports, 4 x 1/10/25GE SFP28 + 2 x 40/100GE QSFP28 ports • One extended slot • PoE++(60W) • 1+1 power backup • Forwarding performance: 490 Mpps • Switching capacity*: 1.76 Tbps/2.4 Tbps *Note:* *You can purchase right-to-use (RTU) licenses to upgrade the port rate (every 12 ports per RTU license) from GE to 2.5EG, 5GE, or 10GE.* *uplink ports support model 1(4 x 1/10/25GE SFP28 +2 x 40G QSFP) or model 2(2 x 40/100GE QSFP28)* *uplink ports 2 x 40/100GE QSFP28 support 40G split into 4 x 10G, or 100G split into 4 x 25G*
 CloudEngine S5732-H48UM2CC (02353SJT-020/02353SJT-021/02353SJT-023/02353SJT-024)	• 48 × 100M/1000M/2.5G/5G/10G Base-T Ethernet ports, 4 x 10/25GE SFP28 + 2 x 40/100GE QSFP28 ports • One extended slot • PoE++(90W) • 1+1 power backup • Forwarding performance: 490 Mpps • Switching capacity*: 1.96 Tbps/2.4 Tbps *Note: You can purchase right-to-use (RTU) licenses to upgrade the port rate (every 12 ports per RTU license) from GE to 2.5GE, 5GE, or 10GE.*

*Note：The value before the slash (/) refers to the device's switching capability, while the value after the slash (/) means the system's switching capability.

Subcards

The following table lists the subcards applicable to the CloudEngine S5732-H.

Technical specifications of the subcards applicable to the CloudEngine S5732-H series

Subcards	Technical Specifications	Applied Switch Model
 S7X08000	• 8*10GE SFP+ or 2*25GE SFP28(only 0 and 1 port) interface • Operating temperature: 0°C to 45°C (32°F to 113°F) • Relative humidity: 5% to 95% • Storage temperature: -40°C to +70°C (-40°F to	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC

Subcards	Technical Specifications	Applied Switch Model
	+158°F) Note: The 8*10GE SFP+ subcard works as 8*10GE SFP+ by default, and can be changed to 2*25GE SFP28 as required.	
 S7Y08000	• 8*25GE/10GE/GE SFP28 interfaces • Operating temperature: 0°C to 45°C (32°F to 113°F) • Relative humidity: 5% to 95% • Storage temperature: -40°C to +70°C (-40°F to +158°F)	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC
 S7Q02001	• 2*40GE QSFP+ interfaces • Operating temperature: 0°C to 45°C (32°F to 113°F) • Relative humidity: 5% to 95% • Storage temperature: -40°C to +70°C (-40°F to +158°F)	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC
 S7C02000	• 2*100GE QSFP28 interfaces • Operating temperature: 0°C to 45°C (32°F to 113°F) • Relative humidity: 5% to 95% • Storage temperature: -40°C to +70°C (-40°F to +158°F)	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC

Fan Models

The following table lists the fan module applicable to the CloudEngine S5732-H.

Technical specifications of the fan module applicable to the CloudEngine S5732-H series

Fan Module	Technical Specifications	Applied Switch Model
 FAN-031A-B	• Dimensions (W x D x H): 40 mm x 100.3 mm x 40 mm • Number of fans: 1 • Weight: 0.1 kg • Maximum power consumption: 21.6 W • Maximum fan speed: 24500±10% revolutions per minute (RPM) • Maximum wind rate: 31 cubic feet per minute (CFM) • Hot swap: Supported	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC

Power Supply

The following table lists the power supplies applicable to the CloudEngine S5732-H.

Technical specifications of the power supplies applicable to the CloudEngine S5732-H series

Power Module	Technical Specifications	Applied Switch Model

Power Module	Technical Specifications	Applied Switch Model
 PAC1000S56-DB	• Dimensions (H x W x D): 40 mm x 90 mm x 215 mm (1.6 in. x 3.5 in. x 8.5 in.) • Weight: 1.1 kg (2.43 lb) • Rated input voltage range: – 100 V AC to 130 V AC, 50/60 Hz – 200 V AC to 240 V AC, 50/60 Hz – 240 V DC • Maximum input voltage range: – 90 V AC to 290 V AC, 45 Hz to 65 Hz – 190 V DC to 290 V DC • Input current: – 100 V AC to 130 V AC: 12 A – 200 V AC to 240 V AC: 8 A – 240 V DC: 8 A • Maximum output current: – 100 V AC to 130 V AC input: 16.08 A – 200 V AC to 240 V AC input and 240 V DC input: 17.86 A • Maximum output power: – Total power: 900 W (100 V AC to 130 V AC input)/1000 W (200 V AC to 240 V AC input and 240 V DC input) • Hot swap: Supported	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC
 PAC600S56-CB	• Dimensions (H x W x D): 40 mm x 90 mm x 215 mm (1.6 in. x 3.5 in. x 8.5 in.) • Weight: 1.1 kg (2.43 lb) • Rated input voltage range: – 100 V AC to 130 V AC; 50/60 Hz – 100 V AC to 240 V AC, 50/60 Hz – 240 V DC • Maximum input voltage range: – 90 V AC to 290 V AC, 45 Hz to 66 Hz – 190 V DC to 290 V DC • Maximum input current: – 100 V AC to 130 V AC: 8 A – 100 V AC to 240 V AC: 8 A – 240 V DC: 4 A • Rated output current: – 100 V AC to 130 V AC input: 5.36 A – 200–240 V AC and 240 V DC input: 10.72 A • Rated output voltage: 56 V • Rated output power: – 100 V AC to 130 V AC input: · Total power: 300 W – 200 V AC to 240 V AC input and 240 V DC input:	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC

Power Module	Technical Specifications	Applied Switch Model
	· Total power: 600 W • Hot swap: Supported	
 PAC1000S56-CB	• Dimensions (H x W x D): 40 mm x 90 mm x 215 mm (1.6 in. x 3.5 in. x 8.5 in.) • Weight: 1.1 kg (2.43 lb) • Rated input voltage range: – 100 V AC to 130 V AC, 50/60 Hz – 200 V AC to 240 V AC, 50/60 Hz – 240 V DC • Maximum input voltage range: – 90 V AC to 290 V AC, 45 Hz to 65 Hz – 190 V DC to 290 V DC • Input current: – 100 V AC to 130 V AC: 12 A – 200 V AC to 240 V AC: 8 A – 240 V DC: 8 A • Maximum output current: – 100 V AC to 130 V AC input: 16.08 A – 200 V AC to 240 V AC input and 240 V DC input: 17.86 A • Maximum output power: – Total power: 900 W (100 V AC to 130 V AC input)/1000 W (200 V AC to 240 V AC input and 240 V DC input) • Hot swap: Supported	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC
 PDC1000S56-CB	• Dimensions (H x W x D): 40 mm x 90 mm x 215 mm (1.6 in. x 3.5 in. x 8.5 in.) • Weight: 1.02 kg (2.25 lb) • Rated input voltage range: -48 V DC to -60 V DC • Maximum input voltage range: -38.4 V DC to -72 V DC • Maximum input current: 30 A • Maximum output current: 83.3 A • Maximum output power: 1000 W • Hot swap: Supported	• CloudEngine S5732-H24UM2CC • CloudEngine S5732-H48UM2CC

CloudEngine S5732-H series Multi-GE switches support PoE. They have two power module slots, each of which can have a 1000 W PoE power module installed.

The following table lists its power supply configurations.

Power supply configurations of CloudEngine S5732-H

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
S5732-H24UM2CC (02353SJY-	1000 W AC (220 V) 1000W DC	–	675 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 22 • 802.3bt (60 W per port): 11

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
015/02353SJY-016/02353SJY-019)	1000 W AC(110 V)	–	580 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 19 • 802.3bt (60 W per port): 9
	1000 W AC (220 V) 1000W DC	1000 W AC (220 V) 1000W DC	1440 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 24
	1000 W AC (110 V) 1000W DC	1000 W (110 V)	1435 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 23
	600 W AC (220 V)	–	295 W	• 802.3af (15.4 W per port): 19 • 802.3at (30 W per port): 9
	600 W AC (220 V)	600 W AC (220 V)	865 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24
	1000 W AC (220 V) 1000 W DC	600 W AC (220 V)	1245 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24
S5732-H24UM2CC (02353SJY-020/02353SJY-021/02353SJY-024)	1000 W AC (220 V) 1000 W DC	–	737 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 12 • 802.3bt (90 W per port): 8
	1000 W AC (110 V)	–	642 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 21 • 802.3bt (60 W per port): 10 • 802.3bt (90 W per port): 7
	1000 W AC (220 V) 1000 W DC	1000 W AC (220 V) 1000 W DC	1687 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 24 • 802.3bt (90 W per port): 18
	1000 W AC (110 V) 1000 W DC	1000 W AC (110 V)	1497 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 24 • 802.3bt (90 W per port): 16
	600 W AC (220 V)	–	357 W	• 802.3af (15.4 W per port): 23 • 802.3at (30 W per port): 11 • 802.3bt (60 W per port): 5 • 802.3bt (90 W per port): 3
	600 W AC (220 V)	600 W AC (220 V)	927 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 15 • 802.3bt (90 W per port): 10
	600 W AC (110 V)	600 W AC (110 V)	357 W	• 802.3af (15.4 W per port): 23

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
				• 802.3at (30 W per port): 11 • 802.3bt (60 W per port): 5 • 802.3bt (90 W per port): 3
	1000 W AC (220 V) 1000 W DC	600 W AC (220 V)	1307 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 21 • 802.3bt (90 W per port): 14
S5732-H48UM2CC (02353SJT-015/02353SJT-016/02353SJT-018/02353SJT-019)	1000 W AC (220 V) 1000 W DC	–	621 W	• 802.3af (15.4 W per port): 40 • 802.3at (30 W per port): 20 • 802.3bt (60 W per port): 10
	1000 W AC (110 V)	–	526 W	• 802.3af (15.4 W per port): 34 • 802.3at (30 W per port): 17 • 802.3bt (60 W per port): 8
	1000 W AC (220 V) 1000 W DC	1000 W AC (220 V) 1000 W DC	1571 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 48 • 802.3bt (60 W per port): 26
	1000 W AC (110 V) 1000 W DC	1000 W AC (110 V)	1381 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 46 • 802.3bt (60 W per port): 23
	600 W AC (220 V)	–	241 W	• 802.3af (15.4 W per port): 15 • 802.3at (30 W per port): 8
	600 W AC (220 V)	600 W AC (220 V)	811 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 27
	1000 W AC (220 V) 1000 W DC	600 W AC (220 V)	1191 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 39
S5732-H48UM2CC (02353SJT-020/02353SJT-021/02353SJT-023/02353SJT-024)	1000 W AC (220 V) 1000 W DC	–	682 W	• 802.3af (15.4 W per port): 44 • 802.3at (30 W per port): 22 • 802.3bt (60 W per port): 11 • 802.3bt (90 W per port): 7
	1000 W AC (110 V)	–	587 W	• 802.3af (15.4 W per port): 38 • 802.3at (30 W per port): 19 • 802.3bt (60 W per port): 9 • 802.3bt (90 W per port): 6
	1000 W AC (220 V) 1000 W DC	1000 W AC (220 V) 1000 W DC	1632 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 48 • 802.3bt (60 W per port): 27 • 802.3bt (90 W per port): 18
	1000 W AC (110 V) 1000 W DC	1000 W AC (110 V)	1442 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 48 • 802.3bt (60 W per port): 24

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
				• 802.3bt (90 W per port): 16
	600 W AC (220 V)	–	302 W	• 802.3af (15.4 W per port): 19 • 802.3at (30 W per port): 10 • 802.3bt (60 W per port): 5 • 802.3bt (90 W per port): 3
	600 W AC (220 V)	600 W AC (220 V)	872 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 29 • 802.3bt (60 W per port): 14 • 802.3bt (90 W per port): 9
	600 W AC (110 V)	600 W AC (110 V)	302 W	• 802.3af (15.4 W per port): 19 • 802.3at (30 W per port): 10 • 802.3bt (60 W per port): 5 • 802.3bt (90 W per port): 3
	1000 W AC (220 V) 1000 W DC	600 W AC (220 V)	1252 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 41 • 802.3bt (60 W per port): 20 • 802.3bt (90 W per port): 13

Product Features and Highlights

High-density Multi-GE Access Interface

- The uplink bandwidth of WLAN APs has been increased from 2.5 Gbit/s in 802.11ac to 5 Gbit/s or 10 Gbit/s. Traditional gigabit access or Multi-gigabit bundled access cannot meet the uplink bandwidth requirements of APs. With the launch of the CloudEngine S5732-H series 10GE(Multi-GE capable) switches, the ports support 100M/1/2.5/5/10G auto-sensing, meeting the bandwidth requirements of high-speed wireless APs in the Wi-Fi 6 era. In addition, Multi-GE ports support 60 W PoE++, which provides high-power power for powered devices (PDs) such as APs and IP cameras.
- The S5732-H series switches provide industry-leading Multi-GE port density, switching capacity, and packet forwarding rate. A single switch supports a maximum of 48 100M/1G/2.5G/5G/10G Base-T auto-sensing ports and 1G/10G/25G/40G/100G optical uplink ports, provides one extended slot to support 8*10GE or 8*25GE subcards, meets various device interconnection requirements and can be seamlessly integrated into the existing network.

Enabling Networks to Be More Agile for Services

- CloudEngine S5732-H has a built-in high-speed and flexible processor chip. The chip's flexible packet processing and traffic control capabilities can meet current and future service requirements, helping build a highly scalable network.
- In addition to capabilities of traditional switches, the CloudEngine S5732-H provides open interfaces and supports user-defined forwarding behavior. Enterprises can use the open interfaces to develop new protocols and functions independently or jointly with equipment vendors to build campus networks meeting their own needs.
- CloudEngine S5732-H series switches, on which enterprises can define their own forwarding models, forwarding behavior, and lookup algorithms. Microcode programmability makes it possible to provide new services within six months, without the need of replacing the hardware. In contrast, traditional ASIC chips use a fixed forwarding architecture and follow a fixed forwarding process. For this reason, new services cannot be provisioned until new hardware is developed to support the services one to three years later.

Delivering Abundant Services More Agilely

- This CloudEngine S5732-H provides the integrated WLAN AC(native AC) function that can manage 1,024 APs, reducing the costs of purchasing additional WLAN AC hardware and breaking the forwarding performance bottleneck of an external WLAN AC. With this switch series, customers can stay ahead in the high-speed wireless era.
- With the unified user management function, the CloudEngine S5732-H authenticates both wired and wireless users, ensuring a consistent user experience no matter whether they are connected to the network through wired or wireless access devices. The unified user management function supports various authentication methods, including 802.1x, MAC address, and Portal authentication, and is capable of managing users based on user groups, domains, and time ranges. These functions visualize user and service management and boost the transformation from device-centric management to user experience-centric management.
- The CloudEngine S5732-H provides excellent quality of service(QoS) capabilities and supports queue scheduling and congestion control algorithms. Additionally, it adopts innovative priority queuing and multi-level scheduling mechanisms to implement fine-grained scheduling of data flows, meeting service quality requirements of different user terminals and services.

Note: The CloudEngine S5732-H can manage 16 APs by default . You can purchase licenses for more AP management on demand.

Providing Fine Granular Network Management More Agilely

- The CloudEngine S5732-H uses the Packet Conservation Algorithm for Internet(iPCA) technology that changes the traditional method of using simulated traffic for fault location. iPCA technology can monitor network quality for any service flow anywhere and anytime, without extra costs. It can detect temporary service interruptions in a very short time and can identify faulty ports accurately. This cutting-edge fault detection technology turns "extensive management" to "fine granular management."
- The CloudEngine S5732-H supports Two-Way Active Measurement Protocol(TWAMP) to accurately check any IP link and obtain the entire network's IP performance. This protocol eliminates the need of using a dedicated probe or a proprietary protocol.
- The CloudEngine S5732-H supports SVF and functions as a parent switch. With this virtualization technology, a physical network with the "Small-sized core/aggregation switches + Access switches + APs" structure can be virtualized into a "super switch", greatly simplifying network management.
- With the Easy Deploy function, the CloudEngine S5732-H manages access switches in a similar way an AC manages APs. In deployment, access switches and APs can go online with zero-touch configuration. In the Easy Deploy solution, the Commander collects topology information about the connected clients and stores the clients' startup information based on the topology. Clients can be replaced with zero-touch configuration. The Commander can deliver configurations and scripts to clients in batches and query the delivery results. In addition, the Commander can collect and display information about power consumption on the entire network.

Comprehensive VPN Technologies

- The CloudEngine S5732-H supports the MPLS function, and can be used as access devices of high-quality enterprise leased line.
- The CloudEngine S5732-H allows users in different VPNs to connect to the same switch and isolates users through multi-instance routing. Users in multiple VPNs connect to a provider edge (PE) device through the same physical port on the switch, which reduces the cost on VPN network deployment.

Flexible Ethernet Networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the CloudEngine S5732-H supports Huawei-developed Smart Ethernet Protection (SEP) technology and the latest Ethernet Ring Protection Switching (ERPS) standard. SEP is a ring protection protocol specific to the Ethernet link layer, and applies to various ring network topologies, such as open ring topology, closed ring topology, and cascading ring topology. This protocol is reliable, easy to maintain, and implements fast protection switching within 50 ms. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- The CloudEngine S5732-H supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One CloudEngine S5732-H switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Various Security Control Methods

- The CloudEngine S5732-H supports 802.1x authentication, MAC address authentication, Portal authentication, and hybrid authentication, and can dynamically delivery user policies such as VLANs, QoS policies, and access control lists (ACL). It also supports user management based on user groups.
- The CloudEngine S5732-H provides a series of mechanisms to defend against DoS and user-targeted attacks. DoS attacks are targeted at switches and include SYN flood, Land, Smurf, and ICMP flood attacks. User-targeted attacks include bogus DHCP server attacks, IP/MAC address spoofing, DHCP request flood, and change of the DHCP CHADDR value.
- The CloudEngine S5732-H sets up and maintains a DHCP snooping binding table, and discards the packets that do not match the table entries. You can specify DHCP snooping trusted and untrusted ports to ensure that users connect only to the authorized DHCP server.
- The CloudEngine S5732-H supports strict ARP learning, which prevents ARP spoofing attackers from exhausting ARP entries.
- The CloudEngine S5732-H supports Media Access Control Security (MACsec), it provides identity authentication, data encryption, integrity check, and replay protection to protect Ethernet frames and prevent attack packets.

Note:

*CloudEngine S5732-H(02353SJT-020/02353SJT-021/02353SJT-023/02353SJT-024/02353SJY-020/02353SJY-021/02353SJY-024) supports Media Access Control Security (MACsec) with downlink ports (24 or 48× 100M/1G/2.5G/5G/10G)， and subcards (8*10GE SFP+ subcard, 8*25GE SFP28 subcard, 2*40GE QSFP+, 2*100GE QSFP28 subcard) .*

CloudEngine S5732-H(02353SJT-015/02353SJT-016/02353SJT-018/02353SJT-019/02353SJY-015/02353SJY-016/02353SJY-019) supports Media Access Control Security (MACsec) with uplink ports (4 x 1/10/25GE SFP28 + 2 x 40/100GE QSFP28 ports)

Mature IPv6 Features

- The CloudEngine S5732-H is developed based on the mature, stable VRP and supports IPv4/IPv6 dual stacks, IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6). With these IPv6 features, the CloudEngine S5732-H can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

Intelligent Stack (iStack)

- The CloudEngine S5732-H supports the iStack function that combines multiple switches into a logical switch. Member switches in a stack implement redundancy backup to improve device reliability and use inter-device link aggregation to improve link reliability. iStack provides high network scalability. You can increase a stack's ports, bandwidth, and processing capacity by simply adding member switches. iStack also simplifies device configuration and management. After a stack is set up, up to nine physical switches can be virtualized into one logical device. You can log in to any member switch in the stack to manage all the member switches in the stack.

Note: When uplink 25GE ports work in stack mode, they can be used only with 25GE high-speed cables, 25GE optical modules and patch cords, or SFP28 AOC cable. They do not support 10GE stack cables(including high-speed cable, dedicated stack cable, optical modules and patch cords or AOC cable).

VXLAN Features

- VXLAN is used to construct a Unified Virtual Fabric(UVF). As such, multiple service networks or tenant networks can be deployed on the same physical network, and service and tenant networks are isolated from each other. This capability truly achieves 'one network for multiple purposes'. The resulting benefits include enabling data transmission of different services or customers, reducing the network construction costs, and improving network resource utilization.
- The CloudEngine S5732-H series switches are VXLAN-capable and allow centralized and distributed VXLAN gateway deployment modes. These switches also support the BGP EVPN protocol for dynamically establishing VXLAN tunnels and can be configured using NETCONF/YANG.

Intelligent O&M

- The CloudEngine S5732-H provides telemetry technology to collect device data in real time and send the data to Huawei campus network analyzer CampusInsight. The CampusInsight analyzes network data based on the intelligent fault identification algorithm, accurately displays the real-time network status, effectively demarcates and locates faults in a timely manner, and identifies network problems that affect user experience, accurately guaranteeing user experience.
- The CloudEngine S5732-H supports a variety of intelligent O&M features for audio and video services, including the enhanced Media Delivery Index (eMDI). With this eDMI function, the switch can function as a monitored node to periodically conduct statistics and report audio and video service indicators to the CampusInsight platform. In this way, the CampusInsight platform can quickly demarcate audio and video service quality faults based on the results of multiple monitored nodes.

PoE Function

- **Perpetual PoE**:When a PoE switch is warm rebooting (Don't turn PSE switch power off), for example, reboot upon the software upgrade, the power supply to PDs is not interrupted.This capability ensures that PDs are not powered off during the switch warm reboot.
- **Fast PoE**: PoE switches can supply power to PDs within seconds after they are powered on. This is different from common switches that generally take 1 to 3 minutes to start to supply power to PDs. When a PoE switch reboots due to a power failure, the PoE switch continues to supply power to the PDs immediately after being powered on without waiting until it finishes reboot. This greatly shortens the power failure time of PDs.

Intelligent Upgrade

- Switches support the intelligent upgrade feature. Specifically, switches obtain the version upgrade path and download the newest version for upgrade from the Huawei Online Upgrade Platform (HOUP). The entire upgrade process is highly automated and achieves one-click upgrade. In addition, preloading the version is supported, which greatly shortens the upgrade time and service interruption time.
- The intelligent upgrade feature greatly simplifies device upgrade operations and makes it possible for the customer to upgrade the version independently. This greatly reduces the customer's maintenance costs. In addition, the upgrade policies on the HOUP platform standardize the upgrade operations, which greatly reduces the risk of upgrade failures.

Big Data Security Collaboration

- The CloudEngine S5732-H switches use 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. The iMaster NCE-Campus then delivers such policies to switches that will handle security events accordingly. All these ensure campus network security.
- The CloudEngine S5732-H supports Encrypted Communication Analytics(ECA). It uses built-in ECA probes to extract characteristics of encrypted streams based on NetStream sampling and Service Awareness(SA), generates metadata, and reports the metadata to HiSec Insight. The HiSec Insight uses the AI algorithm to train the traffic model and compare characteristics of extracted encrypted traffic to identify malicious traffic. The HiSec Insight displays detection results on the GUI, provides threat handling suggestions, and automatically isolates threats with the iMaster NCE-Campus to ensure campus network security.
- The CloudEngine S5732-H supports deception. It functions as a sensor to detect threats such as IP address scanning and port scanning on a network and lures threat traffic to the honeypot for further checks. The honeypot performs in-depth interaction with the initiator of the threat traffic, records various application-layer attack methods of the initiator, and reports security logs to the HiSec Insight. The HiSec Insight analyzes security logs. If the HiSec Insight determines that the suspicious traffic is an attack, it generates an alarm and provides handling suggestions. After the administrator confirms the alarm, the HiSec Insight delivers a policy to the iMaster NCE-Campus. The iMaster NCE-Campus delivers the policy to the switch for security event processing, ensuring campus network security.

Open Programmability System(OPS)

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

Licensing

IDN One Software

CloudEngine S5732-H 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 deploying Huawei CloudCampus Solution in the on-premises scenario, as it greatly enhances the customer experiences in purchasing and upgrading software services with simplicity.

Software Package Features in N1 Mode

Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package

Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package
Basic network functions: Layer 2 functions, IPv4, IPv6, MPLS, SVF, and others Note: For details, see the Service Features	√	√	√
Basic network automation based on the iMaster NCE-Campus: • Basic automation: Plug-and-play, SSID, and AP group management • Basic monitoring: Application visualization • NE management: Image and topology management and discovery • WLAN enhancement: Roaming and optimization for up to 128 APs • User access authentication	×	√	√
Advanced network automation and intelligent O&M: VXLAN, free mobility, and CampusInsight basic functions	×	×	√

RTU license

CloudEngine S5732-H series Multi-GE switches use the innovative RTU license design. The RTU license is used to flexibly manage and control downlink Multi-GE ports (every 12 ports in a group).The switches can be configured and upgraded on demand,when working with Wi-Fi 6 APs, aggregation switches, and core switches, they can quickly build a flexible campus network to meet actual service requirements , enable customers' networks and services to grow together, and avoid excessive investment

RTU license

RTU license decription	CloudEngine S5732-H24UM2CC	CloudEngine S5732-H48UM2CC
1G to 2.5G Electronic RTU License, 12-port	√	√
1G to 5G Electronic RTU License, 12-port	√	√
1G to 10G Electronic RTU License, 12-port	√	√
2.5G to 5G Electronic RTU License, 12-port	√	√
2.5G to 10G Electronic RTU License, 12-port	√	√
5G to 10G Electronic RTU License, 12-port	√	√

Product Specifications

Functions and Features

Except for special instructions, the following features are supported by CloudEngine S5732-H with N1 basic software.

Function and feature metrics for the CloudEngine S5732-H series

Function and Feature		Description	CloudEngine S5732-H Series
Ethernet features	Ethernet basics	Full-duplex, half-duplex, and auto-negotiation	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		Rate auto-negotiation on an interface	Yes
		Flow control on an interface	Yes
		Jumbo frames	Yes
		Link aggregation	Yes
		Load balancing among links of a trunk	Yes
		Transparent transmission of Layer 2 protocol packets	Yes
		Device Link Detection Protocol (DLDP)	Yes
		Link Layer Discovery Protocol (LLDP)	Yes
		Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED)	Yes
		Interface isolation	Yes
		Broadcast traffic suppression on an interface	Yes
		Multicast traffic suppression on an interface	Yes
		Unknown unicast traffic suppression on an interface	Yes
		VLAN broadcast traffic suppression	Yes
		VLAN multicast traffic suppression	Yes
		VLAN unknown unicast traffic suppression	Yes
	VLAN	VLAN specification	4094
		VLANIF interface specification	1024
		Access mode	Yes
		Trunk mode	Yes
		Hybrid mode	Yes
		QinQ mode	Yes
		Default VLAN	Yes
		VLAN assignment based on interfaces	Yes
		VLAN assignment based on protocols	Yes
		VLAN assignment based on IP subnets	Yes
		VLAN assignment based on MAC addresses	Yes
		VLAN assignment based on MAC address + IP address	Yes
		VLAN assignment based on MAC address + IP address + interface number	Yes
		Adding double VLAN tags to packets based on interfaces	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		Super-VLAN	Yes
		Super-VLAN specification	256
		Sub-VLAN	Yes
		Sub-VLAN specification	1K
		VLAN mapping	Yes
		Selective QinQ	Yes
		MUX VLAN	Yes
		Voice VLAN	Yes
		Guest VLAN	Yes
	GVRP	GARP	Yes
		GVRP	Yes
	VCMP	VCMP	Yes
	MAC	MAC address	128K
		Automatic learning of MAC addresses	Yes
		Automatic aging of MAC addresses	Yes
		Static, dynamic, and blackhole MAC address entries	Yes
		Interface-based MAC address learning limiting	Yes
		Sticky MAC	Yes
		MAC address flapping detection	Yes
		Configuring MAC address learning priorities for interfaces	Yes
		MAC address spoofing defense	Yes
		Port bridge	Yes
	ARP	Static ARP	Yes
		Dynamic ARP	Yes
		ARP entry	140K
		ARP aging detection	Yes
		Intra-VLAN proxy ARP	Yes
		Inter-VLAN proxy ARP	Yes
		Routed proxy ARP	Yes
		Multi-egress-interface ARP	Yes
Ethernet loop protection	MSTP	STP	Yes
		RSTP	Yes
		MSTP	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		VBST	Yes
		BPDU protection	Yes
		Root protection	Yes
		Loop protection	Yes
		Defense against TC BPDU attacks	Yes
	Loopback detection	Loop detection on an interface	Yes
	SEP	SEP	Yes
	Smart Link	Smart Link	Yes
		Smart Link multi-instance	Yes
		Monitor Link	Yes
	RRPP	RRPP	Yes
		Single RRPP ring	Yes
		Tangent RRPP ring	Yes
		Intersecting RRPP ring	Yes
		Hybrid networking of RRPP rings and other ring networks	Yes
	ERPS	G.8032 v1	Yes
		G.8032 v2	Yes
		ERPS semi-ring topology	Yes
		ERPS closed-ring topology	Yes
IPv4/IPv6 forwarding	IPv4 and unicast routing	IPv4 static routing	Yes
		VRF	Yes
		DHCP client	Yes
		DHCP server	Yes
		DHCP relay	Yes
		DHCP policy VLAN	Yes
		URPF check	Yes
		Routing policies	Yes
		IPv4 routes	192K
		RIPv1	Yes
		RIPv2	Yes
		OSPF	Yes
		BGP	Yes
		MBGP	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		IS-IS	Yes
		Policy-based routing (PBR)	Yes
	Multicast routing features	IGMPv1/v2/v3	Yes
		PIM-DM	Yes
		PIM-SM	Yes
		MSDP	Yes
		IPv4 multicast routes	64K
		IPv6 multicast routes	4K
		Multicast routing policies	Yes
		RPF	Yes
	IPv6 features	IPv6 protocol stack	Yes
		ND	Yes
		ND entry	80K
		ND snooping	Yes
		DHCPv6 snooping	Yes
		RIPng	Yes
		DHCPv6 server	Yes
		DHCPv6 relay	Yes
		OSPFv3	Yes
		BGP4+	Yes
		IS-IS for IPv6	Yes
		IPv6 routes	80K
		VRRP6	Yes
		MLDv1/v2	Yes
		PIM-DM for IPv6	Yes
		PIM-SM for IPv6	Yes
	IPv6 transition technology	IPv6 manual tunneling	Yes
Layer 2 multicast features	-	IGMPv1/v2/v3 snooping	Yes
		IGMP snooping proxy	Yes
		MLD snooping	Yes
		Multicast traffic suppression	Yes
		Inter-VLAN multicast replication	Yes
MPLS & VPN	MPLS basic functions	LDP protocol	Yes
		Double MPLS labels	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		Mapping from 802.1p priorities to EXP priorities in MPLS packets	Yes
		Mapping from DSCP priorities to EXP priorities in MPLS packets	Yes
	MPLS TE	MPLS-TE tunnel establishment	Yes
		MPLS-TE tunnel specification	256
		MPLS-TE protection group	Yes
	VPN	MCE	Yes
		GRE tunneling	Yes
		GRE tunnel specification	512
		VLL	Yes
		PWE3	Yes
		VPLS	Yes
		MPLS L3VPN	Yes
		IPSec Efficient VPN	Yes
Device reliability	BFD	Single-hop BFD	Yes
		BFD for static routes	Yes
		BFD for OSPF	Yes
		BFD for IS-IS	Yes
		BFD for BGP	Yes
		BFD for PIM	Yes
		BFD for VRRP	Yes
	Stacking	Service interface-based stacking	Yes
		Maximum number of stacked devices	9
		Stack bandwidth (Bidirectional)	800Gbps(MAX)
	VRRP	VRRP standard protocol	Yes
Ethernet OAM	EFM (802.3ah)	Automatic discovery of links	Yes
		Link fault detection	Yes
		Link troubleshooting	Yes
		Remote loopback	Yes
	CFM (802.1ag)	Software-level CCM	Yes
		802.1ag MAC ping	Yes
		802.1ag MAC trace	Yes
	OAM association	Association between 802.1ag and 802.3ah	Yes
	Y.1731	Unidirectional delay and jitter measurement	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		Bidirectional delay and jitter measurement	Yes
QoS features	Traffic classification	Traffic classification based on ACLs	Yes
		Matching the simple domains of packets	Yes
	Traffic behavior	Traffic filtering	Yes
		Traffic policing (CAR)	Yes
		Modifying the packet priorities	Yes
		Modifying the simple domains of packets	Yes
		Modifying the packet VLANs	Yes
	Traffic shaping	Traffic shaping on an egress interface	Yes
		Traffic shaping on queues on an interface	Yes
	Congestion avoidance	Weighted Random Early Detection (WRED) on queues	Yes
		Tail drop	Yes
	Congestion management	Priority Queuing (PQ)	Yes
		Weighted Deficit Round Robin (WDRR)	Yes
		PQ+WDRR	Yes
		Weighted Round Robin (WRR)	Yes
		PQ+WRR	Yes
ACL	Packet filtering at Layer 2 to Layer 4	Basic IPv4 ACL	Yes
		Advanced IPv4 ACL	Yes
		Basic IPv6 ACL	Yes
		Advanced IPv6 ACL	Yes
		Layer 2 ACL	Yes
		User group ACL	Yes
		User-defined ACL	Yes
Configuration and maintenance	Login and configuration management	Command line interface (CLI)-based configuration	Yes
		Console terminal service	Yes
		Telnet terminal service	Yes
		SSH v1.5	Yes
		SSH v2.0	Yes
		SNMP-based NMS for unified configuration	Yes
		Web page-based configuration and management	Yes
		EasyDeploy (client)	Yes
		EasyDeploy (commander)	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		SVF	Yes
		Cloud management	Yes
		OPS	Yes
	File system	Directory and file management	Yes
		File upload and download	Yes
	Monitoring and maintenance	Deception	Yes
		ECA	Yes
		eMDI	Yes
		Hardware monitoring	Yes
		Log information output	Yes
		Alarm information output	Yes
		Debugging information output	Yes
		Port mirroring	Yes
		Flow mirroring	Yes
		Remote mirroring	Yes
		Energy saving	Yes
	Version upgrade	Version upgrade	Yes
		Version rollback	Yes
Security	ARP security	ARP packet rate limiting	Yes
		ARP anti-spoofing	Yes
		Association between ARP and STP	Yes
		ARP gateway anti-collision	Yes
		Dynamic ARP Inspection (DAI)	Yes
		Static ARP Inspection (SAI)	Yes
		Egress ARP Inspection (EAI)	Yes
	IP security	ICMP attack defense	Yes
		IPSG for IPv4	Yes
		IPSG user capacity	3000
		IPSG for IPv6	Yes
		IPSGv6 user capacity	1500
	Local attack defense	CPU attack defense	Yes
	MFF	MFF	Yes
	DHCP snooping	DHCP snooping	Yes
		Option 82 function	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		Dynamic rate limiting for DHCP packets	Yes
	Attack defense	Defense against malformed packet attacks	Yes
		Defense against UDP flood attacks	Yes
		Defense against TCP SYN flood attacks	Yes
		Defense against ICMP flood attacks	Yes
		Defense against packet fragment attacks	Yes
		Local URPF	Yes
User access and authentication	AAA	Local authentication	Yes
		Local authorization	Yes
		RADIUS authentication	Yes
		RADIUS authorization	Yes
		RADIUS accounting	Yes
		HWTACACS authentication	Yes
		HWTACACS authorization	Yes
		HWTACACS accounting	Yes
	NAC	802.1X authentication	Yes
		MAC address authentication	Yes
		Portal authentication	Yes
		Hybrid authentication	Yes
	Policy association	Functioning as the control device	Yes
Network management	-	Ping	Yes
		Tracert	Yes
		NQA	Yes
		NTP	Yes
		iPCA	Yes
		Smart Application Control (SAC)	Yes
		NetStream	Yes
		SNMP v1	Yes
		SNMP v2c	Yes
		SNMP v3	Yes
		HTTP	Yes
		HTTPS	Yes
		RMON	Yes
		RMON2	Yes

Function and Feature		Description	CloudEngine S5732-H Series
		NETCONF/YANG	Yes
WLAN	-	AP management	Yes
		Number of managed APs	1,024
		Radio management	Yes
		WLAN service management	Yes
		WLAN QoS	Yes
		WLAN security	Yes
		WLAN user management	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
		BGP-EVPN neighbor capacity	256, require additional license
Interoperability	-	VLAN-based Spanning Tree (VBST)	Yes
		Link-type Negotiation Protocol (LNP)	Yes
		VLAN Central Management Protocol (VCMP)	Yes

NOTE

This content is applicable only to regions outside mainland China. Huawei reserves the right to interpret this content.

Hardware Specifications

The following table lists the hardware specifications of the CloudEngine S5732-H.

Hardware specifications of CloudEngine S5732-H models

Item		CloudEngine S5732-H24UM2CC (02353SJY-015/02353SJY-016/02353SJY-019)	CloudEngine S5732-H48UM2CC (02353SJT-015/02353SJT-016/02353SJT-018/02353SJT-019)
Physical specifications	Dimensions (H x W x D, mm)	43.6 x 442 x 420	43.6 x 442 x 420
	Chassis height	1 U	1 U
	Chassis weight (including packaging)	8.0kg	8.4kg
Fixed port	Multi-GE port	24	48
	10GE SFP+ port	-	-
	25GE SFP28 port	4, can work at 10Gbps and 1Gbps	4, can work at 10Gbps and 1Gbps

Item		CloudEngine S5732-H24UM2CC (02353SJY-015/02353SJY-016/02353SJY-019)	CloudEngine S5732-H48UM2CC (02353SJT-015/02353SJT-016/02353SJT-018/02353SJT-019)
	100GE QSFP28 port	2, can work at 40Gbps support 4*10G SFP+ ports with breakout cable support 4*25G SFP28 ports with breakout cable	2, can work at 40Gbps support 4*10G SFP+ ports with breakout cable support 4*25G SFP28 ports with breakout cable
Extended slot		One extended slot, support 8 x 25GE SFP28, 8 x 10GE SFP+ cards*	
Management port	ETH port	Supported	Supported
	Console port (RJ45)	Supported	Supported
	USB port	USB 2.0	USB 2.0
CPU	Frequency	1.4 GHz	1.4 GHz
	Cores	4	4
Storage	Memory (RAM)	4 GB	4 GB
	Flash memory	2 GB	2 GB
Power supply system	Power supply type	• 600 W PoE AC (pluggable) • 1000 W PoE AC (pluggable) • 1000 W PoE DC (pluggable)	• 600 W PoE AC (pluggable) • 1000 W PoE AC (pluggable) • 1000 W PoE DC (pluggable)
	Rated voltage range	• AC input (600 W/1000 W PoE AC): 100 V AC to 130 V AC, 200 V AC to 240 V AC，50/60 Hz • High-Voltage DC input: 240 V DC • DC input (1000 W PoE DC): -48 VDC to -60 V DC	• AC input (600 W/1000 W PoE AC): 100 V AC to 130 V AC, 200 V AC to 240 V AC，50/60 Hz • High-Voltage DC input: 240 V DC • DC input (1000 W PoE DC): -48 VDC to -60 V DC
	Maximum voltage range	• AC input(600 W/1000 W PoE AC): 90 V AC to 290 V AC, 45 Hz to 65 Hz • High-Voltage DC input: 190 V DC to 290 V DC • DC input(1000 W PoE DC): -38.4 V DC to -72 V DC	• AC input(600 W/1000 W PoE AC): 90 V AC to 290 V AC, 45 Hz to 65 Hz • High-Voltage DC input: 190 V DC to 290 V DC • DC input(1000 W PoE DC): -38.4 V DC to -72 V DC
	Maximum power consumption	• 285 W (without PD&Card) • 1933 W (with PD, PD power consumption of 1440 W)	• 347 W (without PD&Card); • 2043 W (with PD, PD power consumption of 1571 W)
	Power consumption in the case of 30% traffic load	161W	215W
	Power consumption in the case of 100% traffic load	188W	262W
	Power consumption in the case of 0% traffic load[1]	126W	148W

Item		CloudEngine S5732-H24UM2CC (02353SJY-015/02353SJY-016/02353SJY-019)	CloudEngine S5732-H48UM2CC (02353SJT-015/02353SJT-016/02353SJT-018/02353SJT-019)
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	2	2
	Airflow	Air flows in from the front side and exhausts from the rear panel.	Air flows in from the front side and exhausts from the rear panel.
	Maximum heat dissipation of the device (BTU/hour)	POE：6595.59 non PoE：972.45	POE：6970.92 non PoE：1184.00
Environment parameters	Long-term operating temperature	• 0-1800 m: -5°C to 45°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m.	• 0-1800 m: -5°C to 45°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m.
	Storage temperature	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%–95% (non-condensing)	5%–95% (non-condensing)
	Operating altitude	5000 m	5000 m
	Surge protection specification (power port)	• AC power port: ±6 kV in differential mode, ±6 kV in common mode • DC power port: ±2 kV in differential mode, ±4 kV in common mode	• AC power port: ±6 kV in differential mode, ±6 kV in common mode • DC power port: ±2 kV in differential mode, ±4 kV in common mode
Reliability	MTBF (year)[2]	38.05	32.38
	MTTR (hour)	3.11	3.66
	Availability	> 0.99999	> 0.99999
Certification		• EMC certification • Safety certification • Manufacturing certification	• EMC certification • Safety certification • Manufacturing certification

Item		CloudEngine S5732-H24UM2CC (02353SJY-020/02353SJY-021/02353SJY-024)	CloudEngine S5732-H48UM2CC (02353SJT-020/02353SJT-021/02353SJT-023/02353SJT-024)
Physical specifications	Dimensions (H x W x D, mm)	43.6 x 442 x 420	43.6 x 442 x 420
	Chassis height	1 U	1 U
	Chassis weight (including packaging)	8.88kg	9.53kg

Item		CloudEngine S5732-H24UM2CC (02353SJY-020/02353SJY-021/02353SJY-024)	CloudEngine S5732-H48UM2CC (02353SJT-020/02353SJT-021/02353SJT-023/02353SJT-024)
Fixed port	Multi-GE port	24	48
	10GE SFP+ port	-	-
	25GE SFP28 port	4, can work at 10Gbps	4, can work at 10Gbps
	100GE QSFP28 port	2, can work at 40Gbps	2, can work at 40Gbps
Extended slot		One extended slot, support 8 x 25GE SFP28, 8 x 10GE SFP+, 2 x 40GE QSFP+, 2 x 100GE QSFP28 cards*	
Management port	ETH port	Supported	Supported
	Console port (RJ45)	Supported	Supported
	USB port	USB 2.0	USB 2.0
CPU	Frequency	1.4 GHz	1.4 GHz
	Cores	4	4
Storage	Memory (RAM)	4 GB	4 GB
	Flash memory	2 GB	2 GB
Power supply system	Power supply type	• 600 W PoE AC (pluggable) • 1000 W PoE AC (pluggable) • 1000 W PoE DC (pluggable)	• 600 W PoE AC (pluggable) • 1000 W PoE AC (pluggable) • 1000 W PoE DC (pluggable)
	Rated voltage range	• AC input (600 W/1000 W PoE AC): 100 V AC to 130 V AC, 200 V AC to 240 V AC，50/60 Hz • High-Voltage DC input: 240 V DC • DC input (1000 W PoE DC): -48 VDC to -60 V DC	• AC input (600 W/1000 W PoE AC): 100 V AC to 130 V AC, 200 V AC to 240 V AC，50/60 Hz • High-Voltage DC input: 240 V DC • DC input (1000 W PoE DC): -48 VDC to -60 V DC
	Maximum voltage range	• AC input(600 W/1000 W PoE AC): 90 V AC to 290 V AC, 45 Hz to 65 Hz • High-Voltage DC input: 190 V DC to 290 V DC • DC input(1000 W PoE DC): -38.4 V DC to -72 V DC	• AC input(600 W/1000 W PoE AC): 90 V AC to 290 V AC, 45 Hz to 65 Hz • High-Voltage DC input: 190 V DC to 290 V DC • DC input(1000 W PoE DC): -38.4 V DC to -72 V DC
	Maximum power consumption	• 241 W (without PD&Card) • 2011 W (with PD, PD power consumption of 1687 W)	• 297 W (without PD&Card); • 2013 W (with PD, PD power consumption of 1632 W)
	Power consumption in the case of 30% traffic load	161W	210W
	Power consumption in the case of 100% traffic load	172W	216W
	Power consumption in the	112W	129W

Item		CloudEngine S5732-H24UM2CC (02353SJY-020/02353SJY-021/02353SJY-024)	CloudEngine S5732-H48UM2CC (02353SJT-020/02353SJT-021/02353SJT-023/02353SJT-024)
	case of 0% traffic load[1]		
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	2	2
	Airflow	Air flows in from the front side and exhausts from the rear panel.	Air flows in from the front side and exhausts from the rear panel.
	Maximum heat dissipation of the device (BTU/hour)	POE：6861.73 non PoE：822.32	POE：6868.56 non PoE：1013.39
Environment parameters	Long-term operating temperature	• 0-1800 m: -5°C to 45°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m.	• 0-1800 m: -5°C to 45°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m.
	Storage temperature	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%–95% (non-condensing)	5%–95% (non-condensing)
	Operating altitude	5000 m	5000 m
	Surge protection specification (power port)	• AC power port: ±6 kV in differential mode, ±6 kV in common mode • DC power port: ±2 kV in differential mode, ±4 kV in common mode	• AC power port: ±6 kV in differential mode, ±6 kV in common mode • DC power port: ±2 kV in differential mode, ±4 kV in common mode
Reliability	MTBF (year)[2]	42.49	51.4
	MTTR (hour)	2	2
	Availability	> 0.99999	> 0.99999
Certification		• EMC certification • Safety certification • Manufacturing certification	• EMC certification • Safety certification • Manufacturing certification

*Note: The 8*10GE SFP+ subcard works as 8*10GE SFP+ by default, and can be changed to 2*25GE SFP28 as required.

NOTE

1: The Static power consumption is calculated under 0% service traffic load conditions according to the ATIS standard. Additionally, the EEE function is enabled and there is no PoE power output.

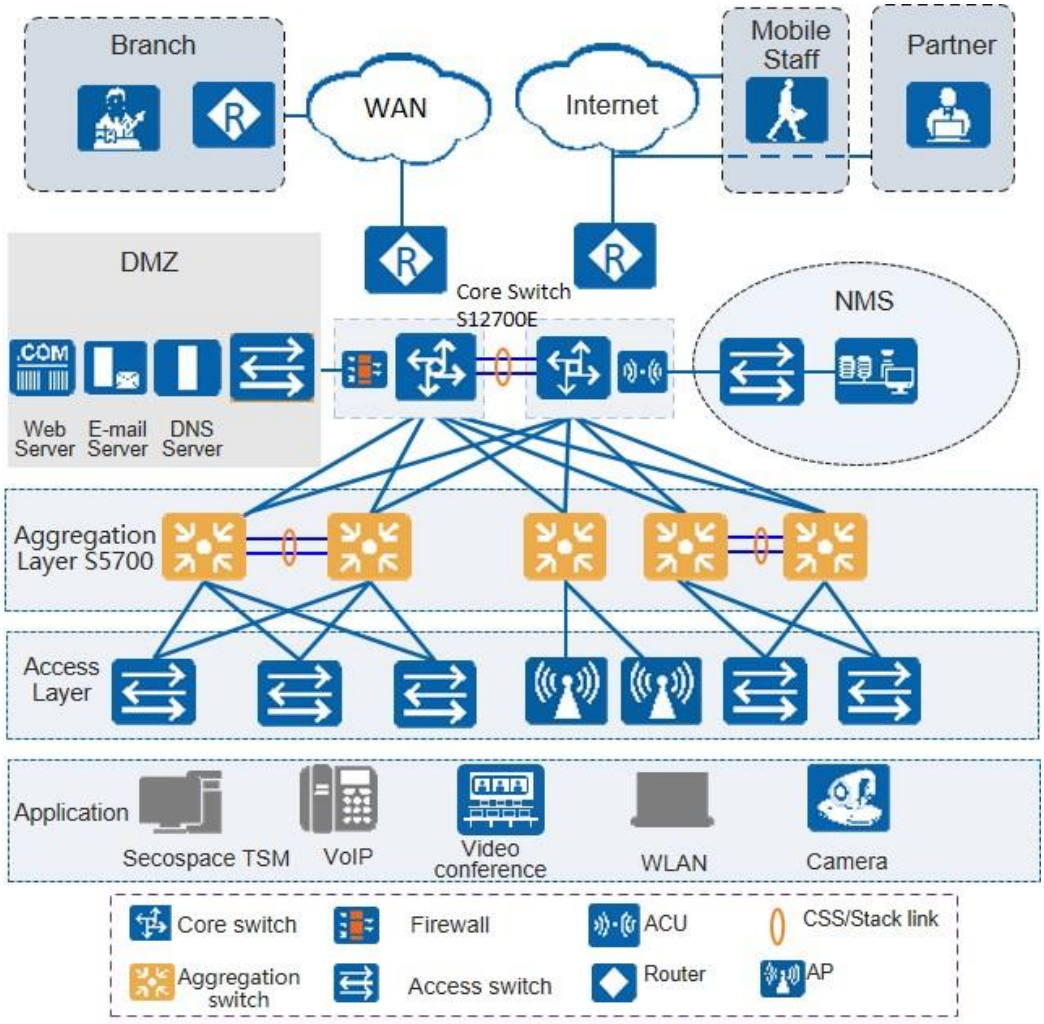
The Typical power consumption is calculated under 30% service traffic load conditions according to the ATIS standard. Additionally, the EEE function is enabled and there is no PoE power output.

2: The reliability parameter values are calculated based on the typical configuration of the device. The parameter values vary according to the modules configured by the customer.

Networking and Applications

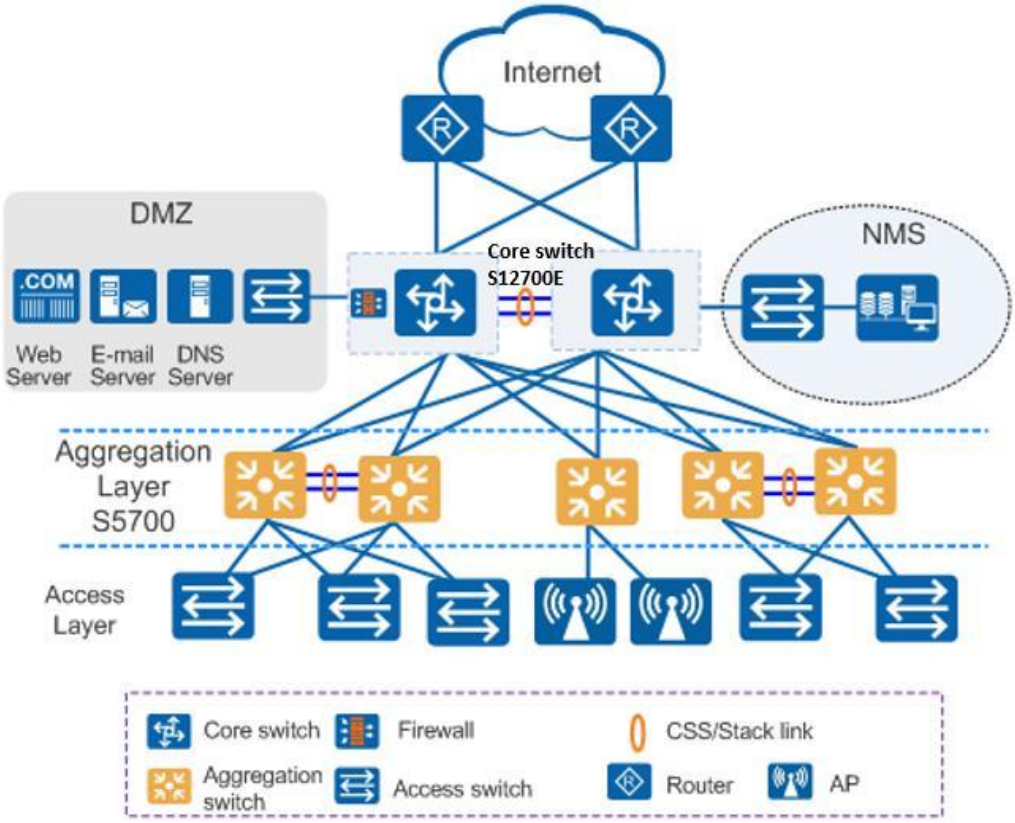
Large-Scale Enterprise Campus Network

CloudEngine S5732-H series switches can be deployed at the access layer of a campus network to build a high-performance and highly reliable enterprise network.



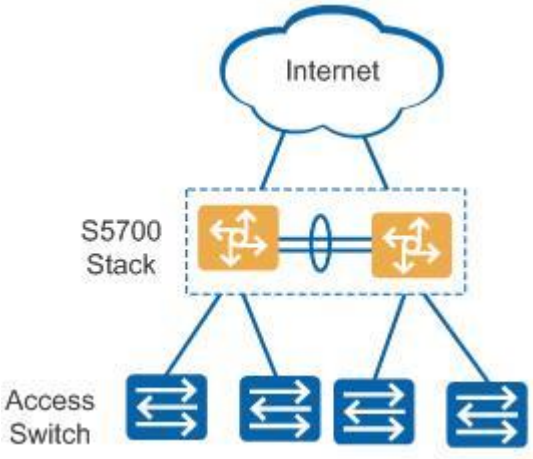
Small- or Medium-scale Enterprise Campus Network

CloudEngine S5732-H series switches can be deployed at the aggregation layer of a campus network to build a high-performance, multi-service, and highly reliable enterprise network.



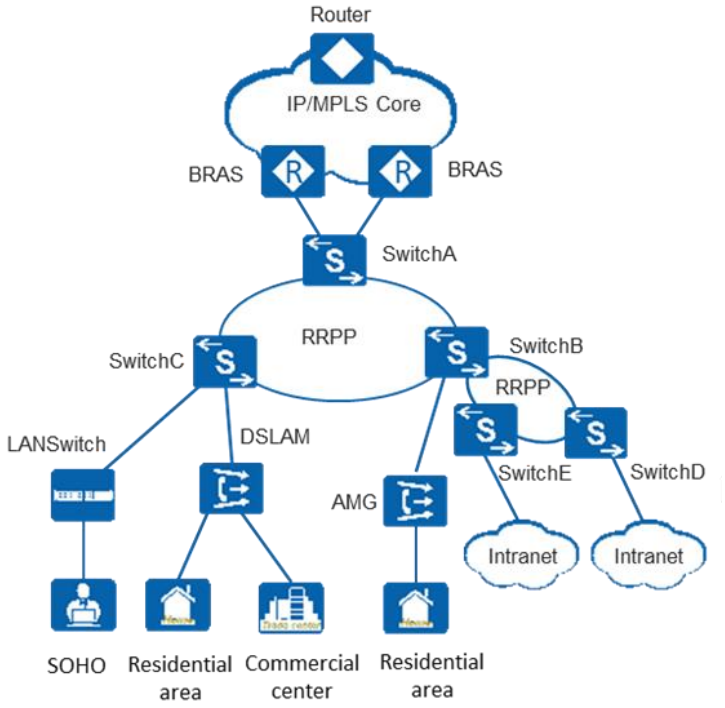
Small-scale Enterprise Campus Network

With powerful aggregation and routing capabilities of CloudEngine S5732-H series switches make them suitable for use as core switches in a small-scale enterprise network. Two or more S5732-H switches use iStack technology to ensure high reliability. They provide a variety of access control policies to achieve centralized management and simplify configuration.



Application on a MAN

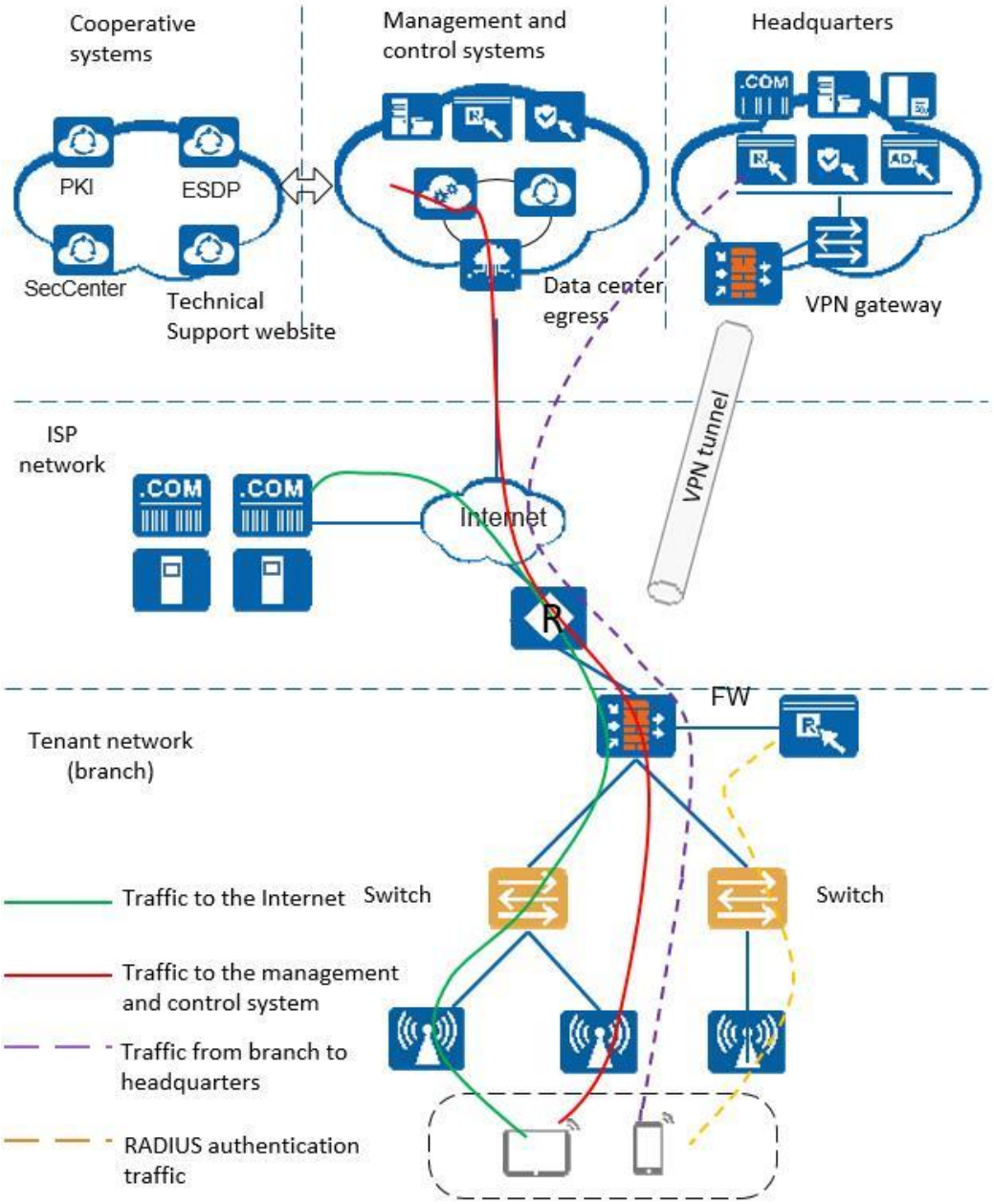
CloudEngine S5732-H series switches can be deployed at the access layer of a MAN(Metropolitan Area Network) to build a high-performance, multi-service, and highly reliable ISP MAN network.



Application in Public Cloud

CloudCampus Solution is a network solution suite based on Huawei public cloud. CloudEngine S5732-H series switches can be located at the access layer.

The switches are plug-and-play. They go online automatically after being powered on and connected with network cables, without the need for complex configurations. The switches can connect to the management and control system(iMaster NCE-Campus for switches running V200R019C10 and later versions), and use bidirectional certificate authentication to ensure management channel security. The switches provide the NETCONF and YANG interfaces, through which the management and control system delivers configurations to them. In addition, remote maintenance and fault diagnosis can be performed on the management and control system.



Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of the CloudEngine S5732-H.

Safety and regulatory compliance of the CloudEngine S5732-H series

Certification Category	Description
Safety	• IEC 60950-1 • EN 60950-1/A11/A12 • UL 60950-1 • CSA C22.2 No 60950-1 • AS/NZS 60950.1 • CNS 14336-1 • IEC60825-1 • IEC60825-2

Certification Category	Description
	• EN60825-1 • EN60825-2
Electromagnetic Compatibility (EMC)	• CISPR22 Class A • CISPR24 • EN55022 Class A • EN55024 • ETSI EN 300 386 Class A • CFR 47 FCC Part 15 Class A • ICES 003 Class A • AS/NZS CISPR22 Class A • VCCI Class A • IEC61000-4-2 • ITU-T K 20 • ITU-T K 21 • ITU-T K 44 • CNS13438
Environment	• RoHS • REACH • WEEE

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 the CloudEngine S5732-H.

MIBs supported by the CloudEngine S5732-H series

Category	MIB
Public MIB	• BRIDGE-MIB

Category	MIB
	• DISMAN-NSLOOKUP-MIB • DISMAN-PING-MIB • DISMAN-TRACEROUTE-MIB • ENTITY-MIB • EtherLike-MIB • IF-MIB • IP-FORWARD-MIB • IPv6-MIB • LAG-MIB • LLDP-EXT-DOT1-MIB • LLDP-EXT-DOT3-MIB • LLDP-MIB • MPLS-FTN-STD-MIB • MPLS-L3VPN-STD-MIB • MPLS-LDP-GENERIC-STD-MIB • MPLS-LDP-STD-MIB • MPLS-LSR-STD-MIB • MPLS-TE-STD-MIB • NOTIFICATION-LOG-MIB • NQA-MIB • OSPF-TRAP-MIB • P-BRIDGE-MIB • Q-BRIDGE-MIB • RFC1213-MIB • RIPv2-MIB • RMON2-MIB • RMON-MIB • SAVI-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMP-USER-BASED-SM-MIB • SNMPv2-MIB • TCP-MIB • UDP-MIB
Huawei-proprietary MIB	• HUAWEI-AAA-MIB • HUAWEI-ACL-MIB • HUAWEI-ALARM-MIB • HUAWEI-ALARM-RELIABILITY-MIB • HUAWEI-BASE-TRAP-MIB • HUAWEI-BRAS-RADIUS-MIB • HUAWEI-BRAS-SRVCFG-EAP-MIB • HUAWEI-BRAS-SRVCFG-STATICUSER-MIB

Category	MIB
	• HUAWEI-CBQOS-MIB • HUAWEI-CDP-COMPLIANCE-MIB • HUAWEI-CONFIG-MAN-MIB • HUAWEI-CPU-MIB • HUAWEI-DAD-TRAP-MIB • HUAWEI-DC-MIB • HUAWEI-DATASYNC-MIB • HUAWEI-DEVICE-MIB • HUAWEI-DHCPR-MIB • HUAWEI-DHCPS-MIB • HUAWEI-DHCP-SNOOPING-MIB • HUAWEI-DIE-MIB • HUAWEI-DNS-MIB • HUAWEI-DLDP-MIB • HUAWEI-ELMI-MIB • HUAWEI-ERPS-MIB • HUAWEI-ERRORDOWN-MIB • HUAWEI-ENERGYMNGT-MIB • HUAWEI-EASY-OPERATION-MIB • HUAWEI-ENTITY-EXTENT-MIB • HUAWEI-ENTITY-TRAP-MIB • HUAWEI-ETHARP-MIB • HUAWEI-ETHOAM-MIB • HUAWEI-FLASH-MAN-MIB • HUAWEI-FWD-RES-TRAP-MIB • HUAWEI-GARP-APP-MIB • HUAWEI-GTSM-MIB • HUAWEI-HGMP-MIB • HUAWEI-HWTACACS-MIB • HUAWEI-IF-EXT-MIB • HUAWEI-INFOCENTER-MIB • HUAWEI-IPPOOL-MIB • HUAWEI-IPV6-MIB • HUAWEI-ISOLATE-MIB • HUAWEI-L2IF-MIB • HUAWEI-L2MAM-MIB • HUAWEI-L2VLAN-MIB • HUAWEI_LDT-MIB • HUAWEI-LLDP-MIB • HUAWEI-MAC-AUTHEN-MIB • HUAWEI-MEMORY-MIB • HUAWEI-MFF-MIB • HUAWEI-MFLP-MIB • HUAWEI-MSTP-MIB • HUAWEI-BGP-VPN-MIB

Category	MIB
	• HUAWEI-CCC-MIB • HUAWEI-MULTICAST-MIB • HUAWEI-NAP-MIB • HUAWEI-NTPV3-MIB • HUAWEI-PERFORMANCE-MIB • HUAWEI-PORT-MIB • HUAWEI-PORTAL-MIB • HUAWEI-QINQ-MIB • HUAWEI-RIPv2-EXT-MIB • HUAWEI-RM-EXT-MIB • HUAWEI-RRPP-MIB • HUAWEI-SECURITY-MIB • HUAWEI-SEP-MIB • HUAWEI-SNMP-EXT-MIB • HUAWEI-SSH-MIB • HUAWEI-STACK-MIB • HUAWEI-SWITCH-L2MAM-EXT-MIB • HUAWEI-SWITCH-SRV-TRAP-MIB • HUAWEI-SYS-MAN-MIB • HUAWEI-TCP-MIB • HUAWEI-TFTPC-MIB • HUAWEI-TRNG-MIB • HUAWEI-XQOS-MIB

Standard Compliance

The following table lists the standards that the CloudEngine S5732-H complies with.

Standard compliance list of the CloudEngine S5732-H series

Standard Organization	Standard or Protocol
IETF	• RFC 768 User Datagram Protocol (UDP) • RFC 792 Internet Control Message Protocol (ICMP) • RFC 793 Transmission Control Protocol (TCP) • RFC 826 Ethernet Address Resolution Protocol (ARP) • RFC 854 Telnet Protocol Specification • RFC 951 Bootstrap Protocol (BOOTP) • RFC 959 File Transfer Protocol (FTP) • RFC 1058 Routing Information Protocol (RIP) • RFC 1112 Host extensions for IP multicasting • RFC 1157 A Simple Network Management Protocol (SNMP) • RFC 1256 ICMP Router Discovery • RFC 1305 Network Time Protocol Version 3 (NTP) • RFC 1349 Internet Protocol (IP) • RFC 1493 Definitions of Managed Objects for Bridges • RFC 1542 Clarifications and Extensions for the Bootstrap Protocol

Standard Organization	Standard or Protocol
	• RFC 1643 Ethernet Interface MIB • RFC 1757 Remote Network Monitoring (RMON) • RFC 1901 Introduction to Community-based SNMPv2 • RFC 1902-1907 SNMP v2 • RFC 1981 Path MTU Discovery for IP version 6 • RFC 2131 Dynamic Host Configuration Protocol (DHCP) • RFC 2328 OSPF Version 2 • RFC 2453 RIP Version 2 • RFC 2460 Internet Protocol, Version 6 Specification (IPv6) • RFC 2461 Neighbor Discovery for IP Version 6 (IPv6) • RFC 2462 IPv6 Stateless Address Auto configuration • RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6) • RFC 2474 Differentiated Services Field (DS Field) • RFC 2740 OSPF for IPv6 (OSPFv3) • RFC 2863 The Interfaces Group MIB • RFC 2597 Assured Forwarding PHB Group • RFC 2598 An Expedited Forwarding PHB • RFC 2571 SNMP Management Frameworks • RFC 2865 Remote Authentication Dial In User Service (RADIUS) • RFC 3046 DHCP Option82 • RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3) • RFC 3513 IP Version 6 Addressing Architecture • RFC 3579 RADIUS Support For EAP • RFC 4271 A Border Gateway Protocol 4 (BGP-4) • RFC 4760 Multiprotocol Extensions for BGP-4 • draft-grant-tacacs-02 TACACS+ • RFC 6241 Network Configuration Protocol (NETCONF) • RFC 6020 YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)
IEEE	• IEEE 802.1D Media Access Control (MAC) Bridges • IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering • IEEE 802.1Q Virtual Bridged Local Area Networks • IEEE 802.1ad Provider Bridges • IEEE 802.2 Logical Link Control • IEEE Std 802.3 CSMA/CD • IEEE Std 802.3ab 1000BASE-T specification • IEEE Std 802.3ad Aggregation of Multiple Link Segments • IEEE Std 802.3ae 10GE WEN/LAN Standard • IEEE Std 802.3x Full Duplex and flow control • IEEE Std 802.3z Gigabit Ethernet Standard • IEEE802.1ax/IEEE802.3ad Link Aggregation • IEEE 802.3ah Ethernet in the First Mile. • IEEE 802.1ag Connectivity Fault Management • IEEE 802.1ab Link Layer Discovery Protocol

Standard Organization	Standard or Protocol
	• IEEE 802.1D Spanning Tree Protocol • IEEE 802.1w Rapid Spanning Tree Protocol • IEEE 802.1s Multiple Spanning Tree Protocol • IEEE 802.1x Port based network access control protocol • IEEE 802.3az Automatic power adjustment on Ethernet interfaces
ITU	• ITU SG13 Y.17ethoam • ITU SG13 QoS control Ethernet-Based IP Access • ITU-T Y.1731 ETH OAM performance monitor
ISO	• ISO 10589 IS-IS Routing Protocol
MEF	• MEF 2 Requirements and Framework for Ethernet Service Protection • MEF 9 Abstract Test Suite for Ethernet Services at the UNI • MEF 10.2 Ethernet Services Attributes Phase 2 • MEF 11 UNI Requirements and Framework • MEF 13 UNI Type 1 Implementation Agreement • MEF 15 Requirements for Management of Metro Ethernet Phase 1 Network Elements • MEF 17 Service OAM Framework and Requirements • MEF 20 UNI Type 2 Implementation Agreement • MEF 23 Class of Service Phase 1 Implementation Agreement • Xmodem XMODEM/YMODEM Protocol Reference

Ordering Information

The following table lists ordering information of the CloudEngine S5732-H series switches.

Model	Product Description
CloudEngine S5732-H24UM2CC	S5732-H24UM2CC Base(24*100M/1G Ethernet ports, Optional RTU upgrade to 2.5/5/10G, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, without power module)
CloudEngine S5732-H24UM2CC	S5732-H24UM2CC 2.5&10G Bundle(12*100M/1G/2.5G Ethernet ports, 12*100M/1G/2.5G/5G/10G Ethernet ports, Optional RTU upgrade to 5/10G, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, 1*1000W AC power)
CloudEngine S5732-H24UM2CC	S5732-H24UM2CC 10G Bundle(48*100M/1G/2.5G/5G/10G Ethernet ports, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, 1*1000W AC power)
CloudEngine S5732-H48UM2CC	S5732-H48UM2CC Base(48*100M/1G Ethernet ports,Optional RTU upgrade to 2.5/5/10G, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, without power module)
CloudEngine S5732-H48UM2CC	S5732-H48UM2CC 2.5&10G Bundle(36*100M/1G/2.5G Ethernet ports, 12*100M/1G/2.5G/5G/10G Ethernet ports, Optional RTU upgrade to 5/10G, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, 1*1000W AC power)
CloudEngine S5732-H48UM2CC	S5732-H48UM2CC 5G Bundle(48*100M/1G/2.5G/5G Ethernet ports, Optional RTU upgrade to 10G, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, 1*1000W AC power)
CloudEngine S5732-H48UM2CC	S5732-H48UM2CC 10G Bundle(48*100M/1G/2.5G/5G/10G Ethernet ports, 4*25GE SFP28 + 2*100GE QSFP28 ports, 1*expansion slot, PoE++, 1*1000W AC power)
S7X08000	8-port 10GE SFP+ interface card
S7Y08000	8-port 25GE/10GE/GE SFP28 interface card

Model	Product Description
S7Q02001	2-port 40GE QSFP+ interface card
S7C02000	2-port 100GE QSFP28 interface card
PAC600S56-CB	600 W AC Power Module
PAC1000S56-DB	1000 W AC PoE power module
PAC1000S56-CB	1000 W AC PoE power module
PDC1000S56-CB	1000 W DC PoE power module
FAN-031A-B	Fan module
L-1GUPG2.5G-S57H	S57-H series, 1G to 2.5G Electronic RTU License, 12-port
L-1GUPG5G-S57H	S57-H series, 1G to 5G Electronic RTU License, 12-port
L-1GUPG10G-S57H	S57-H series, 1G to 10G Electronic RTU License, 12-port
L-2.5GUPG5G-S57H	S57-H series, 2.5G to 5G Electronic RTU License, 12-port
L-2.5GUPG10G-S57H	S57-H series, 2.5G to 10G Electronic RTU License, 12-port
L-5GUPG10G-S57H	S57-H series, 5G to 10G Electronic RTU License, 12-port
L-1AP-S57	S57 Series, Wireless Access Controller AP Resource License-1AP
L-VxLAN-S57	S57 Series, VxLAN License, Per Device
N1-S57H-M-Lic	S57XX-H Series Basic SW,Per Device
N1-S57H-M-SnS1Y	S57XX-H Series Basic SW,SnS,Per Device,1Year
N1-S57H-F-Lic	N1-CloudCampus,Foundation,S57XX-H Series,Per Device
N1-S57H-F-SnS1Y	N1-CloudCampus,Foundation,S57XX-H Series,SnS,Per Device,1Year
N1-S57H-A-Lic	N1-CloudCampus,Advanced,S57XX-H Series,Per Device
N1-S57H-A-SnS1Y	N1-CloudCampus,Advanced,S57XX-H Series,SnS,Per Device,1Year
N1-S57H-FToA-Lic	N1-Upgrade-Foundation to Advanced,S57XX-H,Per Device
N1-S57H-FToA-SnS1Y	N1-Upgrade-Foundation to Advanced,S57XX-H,SnS,Per Device,1Year

More Information

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

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

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