Huawei CloudEngine S5735I-S-V2 Series Industry Switches (Rack-mounted) Brochure

Huawei CloudEngine S5735I-S-V2 series industry switches are standard industry switches that provide GE downlink ports and GE, 10GE SFP+ uplink ports.

Product Overview

Huawei CloudEngine S5735I-S-V2 series industry switches (S5735I-S-V2 for short) are next-generation standard Layer 3 gigabit switches that provide flexible all-gigabit access and GE/10GE uplink ports.

Industry switches have an industrial-grade operating temperature range as well as professional outdoor surge protection to withstand harsh outdoor environments. As such, they can be widely used in ultra-broadband operating temperature scenarios, such as smart manufacturing, smart mining, smart transportation, safe city, and electric power.

Models and Appearances

Models and appearances of the CloudEngine S5735I-S-V2 series

Models and Appearances	Description
 CloudEngine S5735I-S16T8S4XE-QD-V2	• 16 x 10/100/1000Base-T Ethernet ports, 8 x GE SFP ports, 4 x 10GE SFP+ ports, 2 x 12GE stack ports, 1 x DI/DO • Built-in Dual DC • Forwarding performance: 132 Mpps • Switching capacity*:176 Gbps/520 Gbps
 CloudEngine S5735I-S24T8S4XE-QA-V2	• 24 x 10/100/1000Base-T Ethernet ports, 8 x GE SFP ports, 4 x 10GE SFP+ ports, 2 x 12GE stack ports, 1 x DI/DO • Built-in Dual AC • Forwarding performance: 144 Mpps • Switching capacity*:192 Gbps/520 Gbps

*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.

Features and Highlights

Powerful Service Processing Capability

- CloudEngine S5735I-S-V2 supports a broad set of Layer 2/Layer 3 multicast protocols, such as PIM SM, PIM DM, PIM SSM, and IGMP snooping. This capability is ideal for high-definition video backhaul and video conferencing access.
- CloudEngine S5735I-S-V2 provides multiple Layer 3 features including OSPF, IS-IS, BGP, and VRRP, meeting enterprises' access and aggregation service needs and enabling a variety of voice, video, and data applications.

Multiple Security Control Mechanisms

- CloudEngine S5735I-S-V2 supports MAC address authentication, 802.1X authentication, and implements dynamic delivery of policies (VLAN, QoS, and ACL) to users.
- CloudEngine S5735I-S-V2 provides a series of mechanisms to defend against DoS attacks 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 changing of the DHCP CHADDR value.
- CloudEngine S5735I-S-V2 sets up and maintains a DHCP snooping binding table, and discards the packets that do not match the table entries. The DHCP snooping trusted port feature ensures that users connect only to the authorized DHCP server.
- CloudEngine S5735I-S-V2 supports strict ARP learning, which protects a network against ARP spoofing attacks to ensure that users can connect to the Internet normally.
- CloudEngine S5735I-H-V2 supports policy association, user permission policy management and policy execution, and user permission association switchover based on the authentication status.

Multiple Reliability Mechanisms

- CloudEngine S5735I-S-V2 supports a single power module or two power modules. When two power modules are used, the power modules work in 1+1 backup mode.
- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the CloudEngineS5735I-S-V2 supports Huawei-developed Smart Ethernet Protection (SEP) technology and the latest Ethernet Ring Protection Switching (ERPS) standard. ERPS is defined in ITU-T G.8032. It implements 20ms fast protection switching based on traditional Ethernet MAC and bridging functions.
- CloudEngine S5735I-S-V2 supports Smart Link, which implements backup of uplinks. One CloudEngine S5735I-S switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Easy Network deployment

- CloudEngine S5735I-S-V2 supports Huawei Easy Operation, a solution that provides zero-touch deployment, replacement of faulty devices without additional configuration, USB-based deployment, batch device configuration, and batch remote upgrade. The capabilities facilitate device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduce O&M costs. CloudEngine S5735I-S-V2 can be managed using SNMP v1/v2c/v3, CLI, web-based network management system, or SSH v2.0. Additionally, it supports RMON, multiple log hosts, port traffic statistics collection, and network quality analysis, which facilitate network optimization and reconstruction.

Mature IPv6 Technologies

- CloudEngine S5735I-S-V2 supports IPv4/IPv6 dual stack, IPv6 RIPng, BGP4+, OSPFv3.
- CloudEngine S5735I-S-V2 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)

- CloudEngine S5735I-S-V2 supports intelligent stack (iStack). This technology 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 ports, bandwidth, and processing capacity of a stack by simply adding member switches to the stack.

- iStack also simplifies device configuration and management. After a stack is set up, multiple physical switches are 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. CloudEngine S5735I-S-V2 support stacking through electrical ports.

Network Slicing Functions

- CloudEngine S5735I-S-V2 provides a range of VLAN slicing functions to meet diversified SLA requirements of different services and customers. Service isolation and bandwidth guarantee are implemented based on QoS. Slices can be completely isolated from each other without affecting each other. Traffic is isolated at the physical layer, and network slicing is performed for services on the same physical network. The Network Slicing technology can be used at the access, aggregation, and core layers to meet differentiated SLA requirements of new services on campus networks.

Intelligent O&M

- CloudEngine S5735I-S-V2 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.

Intelligent Upgrade

- CloudEngine S5735I-S-V2 supports the intelligent upgrade feature. Specifically, CloudEngine S5735I-S-V2 obtains the version upgrade path and downloads 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.

NCE Management

- The Huawei NCE Campus management platform allows users to configure, monitor, and inspect switches on the cloud, reducing on-site deployment and O&M manpower costs and decreasing network OPEX.
- Huawei switches support both NCE Campus management and on-premise management modes. These two management modes can be flexibly switched as required to achieve smooth evolution while maximizing return on investment (ROI).

OPS

- CloudEngine S5735I-S-V2 supports Open Programmability System (OPS), an open programmable system based on the Python language. IT administrators can program the O&M functions of a CloudEngine S5735I-S-V2 switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Licensing

CloudEngine S5735I-S-V2 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
Basic network functions: Layer 2 functions, IPv4, IPv6 and others Note: For details, see the Service Features	√	√	√
Basic network automation based on the iMaster NCE-Campus:	×	√	√

Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package
• NE management: Device management, topology management and discovery • User access authentication			
Advanced network automation and intelligent O&M: IPCA, CampusInsight basic functions	×	×	√

Note: Only V600R022C01 and later versions can support N1 mode

Product Specifications

Item	S5735I-S16T8S4XE-QD-V2	CloudEngine S5735I-S24T8S4XE-QA-V2
Fixed port	16 x 10/100/1000Base-T Ethernet ports, 8 x GE SFP ports, 4 x 10GE SFP+ ports, 2 x 12GE stack ports	24 x 10/100/1000Base-T Ethernet ports, 8 x GE SFP ports, 4 x 10GE SFP+ ports, 2 x 12GE stack ports
Alarm port	1 x DI (Monitoring alarm input port), 1 x DO (Shorts and Opens alarm output port)	
Dimensions (H x W x D)	43.6 mm x 442 mm x 335 mm	43.6 mm x 442 mm x 335 mm
Mounting	Rack-mounted	Rack-mounted
Weight (with packaging)	6.74kg	7.16kg
IP level	IP40	IP40
Power supply type	Built-in Dual DC	Built-in Dual AC
Rated voltage range	• DC input: 24V DC～48V DC	• AC input: 100V~240V AC, 50/60Hz • HVDC input: 110V~250V DC
Maximum voltage range	• DC input: 18V DC～60V DC	• AC input: 90V~264V AC, 47~63Hz • HVDC input: 88V~300V DC
Maximum power consumption	38 W	44 W
Typical power consumption (30% of traffic load)	21.1 W	33 W
Operating temperature	0–1800 m altitude, industry optical modules: -40°C to +65°C (installed in the sealing cabinet) -40°C to +70°C (installed in the ventilation cabinet, with the wind speed of at least 40 LFM) -40°C to +75°C (installed in the ventilation cabinet shipped with fans running at a speed of at least 200 LFM)	0–1800 m altitude, industry optical modules: -40°C to +65°C (installed in the sealing cabinet) -40°C to +70°C (installed in the ventilation cabinet, with the wind speed of at least 40 LFM) -40°C to +75°C (installed in the ventilation cabinet shipped with fans running at a speed of at least 200 LFM)
Storage temperature	-40°C～+85°C	-40°C～+85°C
Power supply surge protection	±2 kV in differential mode, ±4 kV in common mode	±6 kV in differential mode, ±4 kV in common mode

Item	S5735I-S16T8S4XE-QD-V2	CloudEngine S5735I-S24T8S4XE-QA-V2
Noise under normal temperature (27°C, sound power)	Noise-free (no fans), < 30 dB(A)	Noise-free (no fans), < 30 dB(A)
Relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Heat dissipation	Natural heat dissipation	Natural heat dissipation

**Note:The maximum PoE output power varies with the temperature. For details, check the product documentation.*

Service Features

Item	Description
MAC address table	IEEE 802.1d compliance
	32K MAC entries
	MAC address learning and aging
	Static, dynamic, and blackhole MAC address entries
	Packet filtering based on source MAC addresses
VLAN	4094 VLANs
	Voice VLAN
	MUX VLAN
	VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports
	VLAN Stacking, VLAN mapping
Reliability	Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switchover
	SEP
	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s)
	ERPS (G.8032)
	BPDU protection, root protection, and loop protection
	LBDT
	Y.1731
IP routing	Static route, RIPv1/v2, RIPng, OSPF, OSPFv3, ECMP, IS-IS, IS-ISv6, BGP, BGP4+, VRRP, and VRRP6
	Up to 8192 FIBv4 entries
	Up to 3072 FIBv6 entries
IPv6 features	Up to 3072 ND entries
	Path MTU (PMTU)
	IPv6 ping, IPv6 tracert, and IPv6 Telnet
Multicast	PIM DM, PIM SM, PIM SSM, , PIMv6
	IGMP v1/v2/v3, IGMP v1/v2/v3 snooping and IGMP fast leave

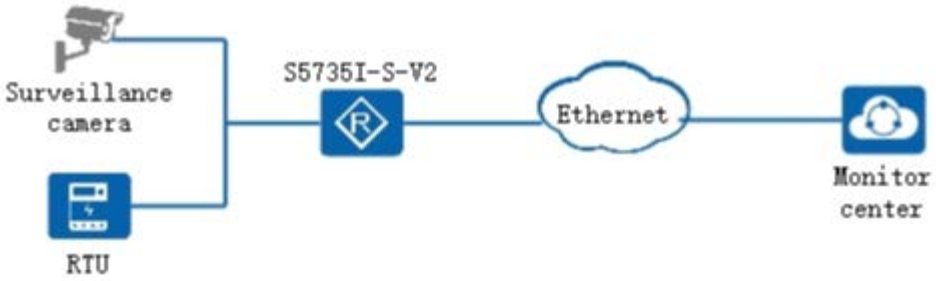
Item	Description
	Multicast load balancing among member ports of a trunk
	Port-based multicast traffic statistics
QoS/ACL	Rate limiting on packets sent and received by a port
	Packet redirection
	Port-based traffic policing and two-rate three-color CAR
	Eight queues on each port
	DRR, SP and DRR+SP queue scheduling algorithms
	Re-marking of the 802.1p priority and DSCP priority
	Packet filtering at Layer 2 to Layer 4, filtering out invalid frames based on the source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, and VLAN ID
	Rate limiting in each queue and traffic shaping on ports
	Profinet RT, Ethernet/IP, Modbus TCP, OPC UA and GOOSE mainstream industrial protocol forwarding
	Network Slicing（VLAN）
Security	Hierarchical user management and password protection
	DoS attack defense, ARP attack defense, and ICMP attack defense
	Binding of the IP address, MAC address, port number, and VLAN ID
	Port isolation, port security, and sticky MAC
	Blackhole MAC address entries
	Limit on the number of learned MAC addresses
	IEEE 802.1x authentication and limit on the number of users on a port
	AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC
	SSH v2.0
	HTTPS
	CPU defense
	Blacklist and whitelist
	IEEE 802.1x authentication, MAC address authentication
	DHCPv4 client/relay/server/snooping
	DHCPv6 client/relay
	Attack source tracing and punishment for IPv6 packets such as ND, DHCPv6
	ND snooping
Management and maintenance	iStack
	NCE Campus management based on Netconf/Yang
	Virtual cable test
	SNMP v1/v2c/v3

Item	Description
	RMON
	Web-based NMS
	System logs and alarms of different levels
	802.3az EEE
	GVRP
	iPCA、sFlow、NQA、Telemetry
Interoperability	Supports VBST (Compatible with PVST/PVST+/RPVST)

Networking and Applications

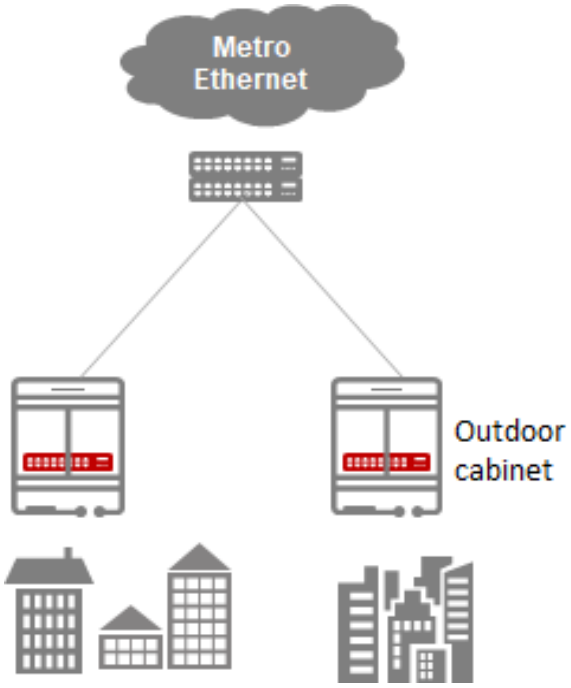
Video surveillance application, outdoor cabinet

CloudEngine S5735I-S-V2 series switches supports extended operating temperature range, IP40 protection rating, suitable for outdoor environment. CloudEngine S5735I-S-V2 series switch can be used for safe city scenario to provide remote access for the camera.



ETTx scenario

CloudEngine S5735I-S-V2 series switches supports extended operating temperature and provides GE access and 10GE uplinks for ETTx access scenarios.



Ordering Information

Module	Description
CloudEngine S5735I-S16T8S4XE-QD-V2	CloudEngine S5735I-S16T8S4XE-QD-V2(16*10/100/1000BASE-T ports, 8*GE SFP ports,4*10GE SFP+ ports, 2*12.5GE stack ports, Rack Mounting, Dual DC 18-60V power, Fanless)
CloudEngine S5735I-S24T8S4XE-QA-V2	CloudEngine S5735I-S24T8S4XE-QA-V2(24*10/100/1000BASE-T ports, 8*GE SFP ports,4*10GE SFP+ ports, 2*12.5GE stack ports, Rack Mounting, Dual AC power, Fanless)
N1-S57S-M-Lic	S57XX-S Series Basic SW,Per Device
N1-S57S-M-SnS1Y	S57XX-S Series Basic SW,SnS,Per Device,1Year
N1-S57S-F-Lic	N1-CloudCampus,Foundation,S57XX-S Series,Per Device
N1-S57S-F-SnS1Y	N1-CloudCampus,Foundation,S57XX-S Series,SnS,Per Device,1Year
N1-S57S-A-Lite-Lic	N1-CloudCampus,Advanced-Lite,S57XX-S,Per Device
N1-S57S-A-Lite-SnS-3Y	N1-CloudCampus,Advanced-Lite,S57XX-S,SnS,Per Device,3 Year
N1-S57S-FToA-Lite-Lic	N1-Upgrade-Foundation to Advanced-Lite,S57XX-S,Per Device
N1-S57S-FToA-Lite-SnS-3Y	N1-Upgrade-Foundation to Advanced-Lite,S57XX-S,SnS,Per Device,3 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

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