

## Specificații tehnice

Numărul procedurii de achiziție ocds-b3wdp1-MD-1663325028182 din 16.09.2022
Obiectul achiziției: Echipamente de rețea, inclusiv serviciile de conectare și configurare a acestora

	Denumirea bunurilor/serviciilor	Denumirea modelului bunului/serviciului	Țara de origine	Producătorul	Specificarea tehnică deplină solicitată de către autoritatea contractantă	Specificarea tehnică deplină propusă de către ofertant	Standarde de referință
Nr. ord	1	2	3	4	5	6	7
	Bunuri/servicii						
1	Core/Aggregation switch	Huawei CloudEngine S6730-H28Y4C	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Chassis type – 1U 19”</li> <li>- Power supplies – min 2 modular AC220V</li> <li>- Switching capacity – up to 2Tbps</li> <li>- Interfaces – 24 x 1/10/25Gbps SFP28, 4 x 40/100Gbps QSFP28</li> <li>- Included transceivers – 1 x 100Gbps QSFP28 DAC 1m, 20 x 10Gbps SFP+ 1310nm 10km, 4 x 10Gbps SFP+ DAC 3m</li> <li>- MAC address table size – min 64k</li> <li>- Active VLAN table – min 4K</li> <li>- ARP table – min 64K</li> <li>- Software features with included licenses: VXLAN, BGP-EVPN, OSPF, BGP, ACL, up to 192k IPv4 routes</li> <li>- WEB, SSH management interfaces</li> <li>- Stacking support with included in case of necessity cards and licenses</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<ul style="list-style-type: none"> <li>- Chassis type – 1U 19”</li> <li>- Power supplies – 2 modular AC220V</li> <li>- Switching capacity – 2.2Tbps/2.4Tbps</li> <li>- Interfaces – 28xSFP28, 4x 100G QSFP28</li> <li>- Included transceivers – 1 x 100Gbps QSFP28 DAC 1m, 20 x 10Gbps SFP+ 1310nm 10km, 4 x 10Gbps SFP+ DAC 3m</li> <li>- MAC address table size – 384k</li> <li>- Active VLAN table – 4K</li> <li>- ARP table – 140K</li> <li>- Software features with included licenses: VXLAN, BGP-EVPN, OSPF, BGP, ACL, up to 256k IPv4 routes</li> <li>- WEB, SSH management interfaces</li> <li>- Stacking support</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	
2	Access POE switch – type 1	Huawei CloudEngine S5735-L24P4X-A1	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Chassis type – 1U 19”</li> <li>- Power supply - AC220V</li> <li>- Switching capacity – up to 100 Gbps</li> <li>- Forwarding capacity – up to 90Mpps</li> <li>- Interfaces – 24 x 1Gbps RJ-45 PoE+, 4 x 10Gbps SFP+</li> <li>- Total PoE budget – 370W</li> <li>- Included transceivers – 2 x 10Gbps SFP+ 1310nm 10km</li> <li>- MAC address table size – min 32k</li> <li>- Active VLAN table – min 4K</li> <li>- ARP table – min 4k</li> <li>- Software features with included licenses: OSPF, ACL, up to 4k IPv4 routes, 802.1x</li> <li>- WEB, SSH management interfaces</li> <li>- Stacking support with included in case of necessity cards and licenses</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<ul style="list-style-type: none"> <li>- Chassis type – 1U 19”</li> <li>- Power supply - AC220V</li> <li>- Switching capacity – 128 Gbps/336 Gbps</li> <li>- Forwarding capacity – up to 96 Mpps</li> <li>- Interfaces – 24 x 1Gbps RJ-45 PoE+, 4 x 10Gbps SFP+</li> <li>- Total PoE budget – 380W</li> <li>- Included transceivers – 2 x 10Gbps SFP+ 1310nm 10km</li> <li>- MAC address table size – 32k</li> <li>- Active VLAN table – 4K</li> <li>- ARP table – 4k</li> <li>- Software features with included licenses: OSPF, ACL, 4k IPv4 routes, 802.1x</li> <li>- WEB, SSH management interfaces</li> <li>- Stacking support</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	

3	Access POE switch – type 2	Huawei CloudEngine S5735-L24P4S-A1	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Chassis type – 1U 19”</li> <li>- Power supply - AC220V</li> <li>- Switching capacity – up to 50 Gbps</li> <li>- Forwarding capacity – up to 40Mpps</li> <li>- Interfaces – 24 x 1Gbps RJ-45 PoE+, 4 x 1Gbps SFP</li> <li>- Total PoE budget – 370W</li> <li>- MAC address table size – min 32k</li> <li>- Active VLAN table – min 4K</li> <li>- ARP table – min 4k</li> <li>- Software features with included licenses: OSPF, ACL, up to 4k IPv4 routes, 802.1x</li> <li>- WEB, SSH management interfaces</li> <li>- Stacking support with included in case of necessity cards and licenses</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<ul style="list-style-type: none"> <li>- Chassis type – 1U 19”</li> <li>- Power supply - AC220V</li> <li>- Switching capacity – 56 Gbps/336 Gbps</li> <li>- Forwarding capacity – 42 Mpps</li> <li>- Interfaces – 24 x 1Gbps RJ-45 PoE+, 4 x 1Gbps SFP</li> <li>- Total PoE budget – 380W</li> <li>- MAC address table size – 32k</li> <li>- Active VLAN table – 4K</li> <li>- ARP table – 4k</li> <li>- Software features with included licenses: OSPF, ACL, up to 4k IPv4 routes, 802.1x</li> <li>- WEB, SSH management interfaces</li> <li>- Stacking support with included in case of necessity cards and licenses</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	
4	Wireless controller	Huawei AC6508 Access Controller	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Chassis type – desktop or 1U 19” rack-mount</li> <li>- Power supplies – AC220V</li> <li>- Forwarding capacity – min 10Gbps</li> <li>- Interfaces – 2 x 10Gbps SFP+, 4 x 1Gbps RJ-45</li> <li>- Controlled AP’s – up to 256</li> <li>- Centralized management of AP’s</li> <li>- Connection of AP’s via L2 or L3 network</li> <li>- Access users – up to 4k</li> <li>- L2/L3 traffic forwarding modes</li> <li>- Min 4k 802.1q VLAN support</li> <li>- Static/OSPF routing protocols</li> <li>- Integrated customizable WEB portal for clients authentication</li> <li>- 802.1X authentication (built-in and 3rd party)</li> <li>- MAC authentication</li> <li>- WPA/WPA2/WPA3 PSK authentication</li> <li>- RF automatic and manual management</li> <li>- L4-L7 applications detection and control</li> <li>- Wireless Intrusion Detection System (WIDS)</li> <li>- QoS</li> <li>- Wireless network visualization</li> <li>- Monitoring and statistics of wireless network</li> <li>- Wireless network diagnosis and self-healing</li> <li>- HA active/standby mode</li> <li>- WEB, SSH management interfaces</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<ul style="list-style-type: none"> <li>- Chassis type – desktop</li> <li>- Power supplies – AC220V</li> <li>- Forwarding capacity – 10Gbps</li> <li>- Interfaces – 2 x 10Gbps SFP+, 10 x 1Gbps RJ-45</li> <li>- Controlled AP’s – up to 256</li> <li>- Centralized management of AP’s</li> <li>- Connection of AP’s via L2 or L3 network</li> <li>- Access users – 4096</li> <li>- L2/L3 traffic forwarding modes</li> <li>- 4k 802.1q VLAN support</li> <li>- Static/OSPF routing protocols</li> <li>- Integrated customizable WEB portal for clients authentication</li> <li>- 802.1X authentication (built-in and 3rd party)</li> <li>- MAC authentication</li> <li>- WPA/WPA2/WPA3 PSK authentication</li> <li>- RF automatic and manual management</li> <li>- L4-L7 applications detection and control</li> <li>- Wireless Intrusion Detection System (WIDS)</li> <li>- QoS</li> <li>- Wireless network visualization</li> <li>- Monitoring and statistics of wireless network</li> <li>- Wireless network diagnosis and self-healing</li> <li>- HA active/standby mode</li> <li>- WEB, SSH management interfaces</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	
5	Wi-Fi Access Point	Huawei AirEngine 5762-13W	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Wall mount indoor case</li> <li>- Uplink wired port – 1 x 1Gbps RJ-45 with PoE-in support</li> <li>- BLE 5.0 Bluetooth</li> <li>- Min two integrated Wi-Fi radios</li> <li>- Dual band mode 2.4/5GHz</li> <li>- Aggregated wireless speed – min 2.9Gbps</li> <li>- Support of 20/40/80/160MHz channel width</li> <li>- Built-in omni antennas with gain min 2dBi for 2.4GHz, 3 dBi for 5GHz</li> <li>- Number of SSIDs – up to 16</li> </ul>	<ul style="list-style-type: none"> <li>- Wall mount indoor case</li> <li>- Uplink wired port – 2 x 1Gbps RJ-45 with PoE-in support</li> <li>- BLE 5.0 Bluetooth</li> <li>- Two integrated Wi-Fi radios</li> <li>- Dual band mode 2.4/5GHz</li> <li>- Aggregated wireless speed – 2.9Gbps</li> <li>- Support of 20/40/80/160MHz channel width</li> <li>- Built-in omni antennas with gain 2dBi for 2.4GHz, 3 dBi for 5GHz</li> <li>- Number of SSIDs – 16</li> </ul>	

					<ul style="list-style-type: none"> <li>- Number of real connected users – up to 100</li> <li>- Standards – 802.11/a/b/g/n/ac/ac wave2/ax, 802.11k/r/v/w</li> <li>- Supported features - DL/UL MU-MIMO, OFDMA, DFS, U-APSD, WMM, band steering, beamforming, QoS, airtime scheduling</li> <li>- Security features – WPA2-PSK/802.1X, WPA3-SAE, WPA3-802.1X, wireless intrusion detection and prevention, rogue AP detection, 802.1q VLAN</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<ul style="list-style-type: none"> <li>- Number of real connected users – up to 100</li> <li>- Standards – 802.11/a/b/g/n/ac/ac wave2/ax, 802.11k/r/v/w</li> <li>- Supported features - DL/UL MU-MIMO, OFDMA, DFS, U-APSD, WMM, band steering, beamforming, QoS, airtime scheduling</li> <li>- Security features – WPA2-PSK/802.1X, WPA3-SAE, WPA3-802.1X, wireless intrusion detection and prevention, rogue AP detection, 802.1q VLAN</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	
6	High performance security gateway	Huawei USG6610E	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Chassis – rack-mount, 1U or 2U</li> <li>- Power supply – 2 x AC220V</li> <li>- SSD – min 240GB</li> <li>- Interfaces – 4 x 10Gbps SFP+, 8 x 1Gbps RJ-45</li> <li>- Functionality with included licenses – next-generation firewall, IDS/IPS, antivirus, antispam, application control, DLP, bandwidth management, URL filtration, VPN, anti-DDoS, user authentication (MS AD, RADIUS, web portal), traffic blocking and isolation, reporting, logging of events, application and URL classification, user and traffic behavior detection, SSL decryption</li> <li>- Routing protocols – BGP, OSPF</li> <li>- Working scenarios – HA Active/Active and Active/Standby, L2 transparent, L3 routing</li> <li>- IPv4/IPv6 firewall throughput – 10Gbps</li> <li>- Firewall + Application control + IPS + Antivirus aggregated throughput – up to 7Gbps</li> <li>- Full protection (Firewall + Antivirus + Application control + IPS + URL filtering) throughput using real enterprise mix traffic model – up to 4.5Gbps</li> <li>- IPsec VPN throughput – 10Gbps</li> <li>- Number of supported IPsec tunnels – min 1000</li> <li>- SSL inspection throughput – min 3Gbps</li> <li>- SSL VPN concurrent users – min 200 with included license</li> <li>- Virtual firewalls – min 10 included</li> <li>- WEB, SSH management interfaces</li> <li>- Min 3 years of threat protection (antivirus, IPS, URL filtering) subscription</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<ul style="list-style-type: none"> <li>- Chassis – rack-mount, 1U</li> <li>- Power supply – 2 x AC220V</li> <li>- SSD – 240GB</li> <li>- Interfaces – 4 x 10Gbps SFP+, 8 x 1G SFP, 12 x 1Gbps RJ-45</li> <li>- Functionality with included licenses – next-generation firewall, IDS/IPS, antivirus, antispam, application control, DLP, bandwidth management, URL filtration, VPN, anti-DDoS, user authentication (MS AD, RADIUS, web portal), traffic blocking and isolation, reporting, logging of events, application and URL classification, user and traffic behavior detection, SSL decryption</li> <li>- Routing protocols – BGP, OSPF</li> <li>- Working scenarios – HA Active/Active and Active/Standby, L2 transparent, L3 routing</li> <li>- IPv4/IPv6 firewall throughput – 12Gbps</li> <li>- Firewall + Application control + IPS + Antivirus aggregated throughput – 10Gbps</li> <li>- Full protection (Firewall + Antivirus + Application control + IPS + URL filtering) throughput using real enterprise mix traffic model – 4.8Gbps</li> <li>- IPsec VPN throughput – 10Gbps</li> <li>- Number of supported IPsec tunnels – 15000</li> <li>- SSL inspection throughput – 3Gbps</li> <li>- SSL VPN concurrent users – 200 (included license)</li> <li>- Virtual firewalls – 10 (included license)</li> <li>- WEB, SSH management interfaces</li> <li>- 3 years of threat protection (antivirus, IPS, URL filtering) subscription</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	
7	Branch security gateway	Huawei USG6510E	China	Huawei Technologies Co. Ltd.	<ul style="list-style-type: none"> <li>- Chassis – desktop or rack-mount</li> <li>- Power supply – AC220V</li> <li>- SSD/microSD – min 64GB</li> <li>- Interfaces – 2 x 1Gbps SFP, 8 x 1Gbps RJ-45</li> <li>- Functionality with included licenses - next-generation firewall, IDS/IPS, antivirus, antispam, application control, DLP, bandwidth management, URL filtration, VPN, anti-DDoS, user authentication (MS AD, RADIUS, web portal),</li> </ul>	<ul style="list-style-type: none"> <li>- Chassis – desktop</li> <li>- Power supply – AC220V</li> <li>- microSD – 64GB</li> <li>- Interfaces – 2 x 1Gbps SFP, 10 x 1Gbps RJ-45</li> <li>- Functionality with included licenses - next-generation firewall, IDS/IPS, antivirus, antispam, application control, DLP, bandwidth management, URL filtration, VPN, anti-DDoS, user authentication (MS AD, RADIUS, web</li> </ul>	

					<p>traffic blocking and isolation, reporting, logging of events, application and URL classification, user and traffic behavior detection, SSL decryption</p> <ul style="list-style-type: none"> <li>- Routing protocols – OSPF</li> <li>- Working scenarios –L3 routing</li> <li>- IPv4/IPv6 firewall throughput – 1Gbps</li> <li>- Firewall + Application control + IPS + Antivirus aggregated throughput – up to 0.4Gbps</li> <li>- Full protection (Firewall + Antivirus + Application control + IPS + URL filtering) throughput using real enterprise mix traffic model – up to 0.3Gbps</li> <li>- IPsec VPN throughput – 1Gbps</li> <li>- Number of supported IPsec tunnels – min 500</li> <li>- SSL inspection throughput – min 0.2Gbps</li> <li>- SSL VPN concurrent users – min 10 with included license</li> <li>- WEB, SSH management interfaces</li> <li>- Min 3 years of threat protection (antivirus, IPS, URL filtering) subscription</li> <li>- Min 3 years for hardware, software upgrades and support from vendor</li> </ul>	<p>portal), traffic blocking and isolation, reporting, logging of events, application and URL classification, user and traffic behavior detection, SSL decryption</p> <ul style="list-style-type: none"> <li>- Routing protocols – OSPF</li> <li>- Working scenarios –L3 routing</li> <li>- IPv4/IPv6 firewall throughput – 1.2Gbps</li> <li>- Firewall + Application control + IPS + Antivirus aggregated throughput – 0.6Gbps</li> <li>- Full protection (Firewall + Antivirus + Application control + IPS + URL filtering) throughput using real enterprise mix traffic model – 0.3Gbps</li> <li>- IPsec VPN throughput – 1Gbps</li> <li>- Number of supported IPsec tunnels – 1000</li> <li>- SSL inspection throughput – 0.2Gbps</li> <li>- SSL VPN concurrent users – 100 (default)</li> <li>- WEB, SSH management interfaces</li> <li>- 3 years of threat protection (antivirus, IPS, URL filtering) subscription</li> <li>- 3 years for hardware, software upgrades and support from vendor</li> </ul>	
8	Materiale de construcții a rețelei informatice	Cable UTP Cat.5E,4X2X0.51, 305M, Premium	Ucraina	Odeskabel	- Cable UTP Cat.5E 4X2X0.51	Cable UTP Cat.5E,4X2X0.51, 305M	
9		Cable FTP Cat.5e outdoor cable with messenger, 24AWG 4X2X1/0.525 copper, APC Electronic	China	APC electronic	- Cable FTP outdoor cat. 5e /0,50 mm cooper+4 pairs	Cable FTP Cat.5e outdoor cable with messenger, 24AWG 4X2X1/0.525 copper, APC Electronic	
10		19" 42U Standard Rack Metal Cabinet, NB8142, 800*1000*2000	China	APC electronic	- Dulap pe podea 42U, 800*1000*1967, 19	Dulap pe podea 42U, 800*1000*2000, 19"	
11		19" 9U Wall Mounted cabinet, AP6609, 600x600x500	China	APC electronic	- Dulap pe perete 9U, 600*600*500, 19"Chassis – rack-mount, 1U or 2U	Dulap pe perete 9U, 600*600*500, 19"Chassis – rack-mount	
12		19" 1U patch panelă modulara UTP 24xRJ45 cat.5e cu suportul, neagră	China	APC electronic	- 19" 1U patch panelă UTP 24xRJ45 cat.5e cu suportul, neagră	19" 1U patch panelă UTP 24xRJ45 cat.5e cu suportul, neagră	
13		UPS Ultra Power 850VA/480W, (3 steps of AVR, CPU controlled), USB, 8 Schuko, 2 IEC, plastic case	China	APC electronic	- Sursă de alimentare neîntreruptibilă, neagra, 400W, voltaj: 180~266VAC, 2 pozitii, USB, CPU Controlled, carcasa plastica	Sursă de alimentare neîntreruptibilă, neagra, 480W, voltaj: 145~290VAC, , 8 Schuko, 2 IEC, USB, CPU Controlled, carcasa plastica	
14		Canal cablu 94127 2000 x 40 x 25 mm PVC alb	China	APlus Plastik ve Elektrik San. ve Tic. Ltd. Şti.	- Canal pentru cablu 2000 x 40 x 25 mm	Canal pentru cablu 2000 x 40 x 25 mm	
15		Canal cablu 2000 x 60 x 40 mm PVC alb	Turcia	APlus Plastik	- Canal pentru cablu 2000 x 60 x 40 mm	Canal pentru cablu 2000 x 60 x 40 mm	
16		Priza externă 1xRJ45/RJ12 cu ușița (goală, in set sunt lipici și șurube)	Turcia	APlus Plastik	- Priza externă 1xRJ45/RJ12 cu ușița (goală, in set sunt lipici și șurube)	Priza externă 1xRJ45/RJ12 cu ușița (goală, in set sunt lipici și șurube)	
17		Module (Keystone Jack) RJ45 Cat.5e UTP	China	APC electronic	- Module RJ45 Cat.5e UTP	Module RJ45 Cat.5e UTP	
18	19" 1U bloc de prize electrice (9 poziții) cu intrerupator,	China	APC electronic	- Bloc de prize electrice, 9 poziții, cu intrerupator, negru, 1U	Bloc de prize electrice, 9 poziții, cu intrerupator, negru, 1U		

		negru, lungimea cablului - 2 m., 16A, 3x1,5 mm2					
19		Standard Self-supporting Bow-Type Drop Cable GJYXFCH-2B6a1, G657A1 fiber, LSZH sheath, 1.00mm messenger, 2 core	Ucraina	FixNet	- Cablu optic, negru, cu 2 fibre, singlemode 9/125, LSZH, 1,00 mm messenger	Cablu optic, negru, cu 2 fibre, singlemode 9/125, LSZH, 1,00 mm messenger	
20		Adapter SC/UPC - SC/UPS, simplex	China	APC electronic	- Adaptor tip SC-SC, simplex	Adaptor tip SC-SC, simplex	
21		SM 9/125, simplex, Pigtail, SC/UPC type, 0,9mm, 1.5M	China	APC electronic	- Pigtail tip SC/UPC, singlemode 9/125, 0,9mm, 1,5m	Pigtail tip SC/UPC, singlemode 9/125, 0,9mm, 1,5m	
22		Box optic interior pina la 4 porturi, din plastic, dimensiuni (Lxlxh), mm:150x108x30	China	APC electronic	- Box optic interior pina la 4 porturi, din plastic, dimensiuni mm:150x108x30	Box optic interior pina la 4 porturi, din plastic, dimensiuni mm:150x108x30	
23		Bucșă de protecție 60 mm.	China	APC electronic	- Bucșă de protecție 60 mm.	Bucșă de protecție 60 mm.	
24		Optical aerial cable with additional loose tube type GYXC8Y-8B6a1, G657A1 fiber, LSZH sheath, 1.20mm messenger, 8 core	Ucraina	FixNet	- Cablu optic, negru, cu 8 fibre, singlemode 9/125, LSZH, 1,00 mm messenger	Cablu optic, negru, cu 8 fibre, singlemode 9/125, LSZH, 1,20 mm messenger	
25		19" patch panelă, 2U, tip LC/UPC 96 porturi full-loaded, cu caseta, buce de protecție, adaptoare si pig-tailuri	China	APC electronic	- 19" patch panelă tip LC/UPC 96duplex porturi (caseta, buce de protecție, adaptoare si pig-tailuri sunt incluse)	19" patch panelă tip LC/UPC 96duplex porturi (caseta, buce de protecție, adaptoare si pig-tailuri sunt incluse)	
26		19" patch panelă, 1U, tip LC/UPC 24 porturi full-loaded, cu caseta, buce de protecție, adaptoare si pig-tailuri	China	APC electronic	- 19" patch panelă tip LC/UPC 24duplex porturi (caseta, buce de protecție, adaptoare si pig-tailuri sunt incluse)	19" patch panelă tip LC/UPC 24duplex porturi (caseta, buce de protecție, adaptoare si pig-tailuri sunt incluse)	
27		SM 9/125, Duplex, patch-cord, LC-LC type, 3M	China	APC electronic	- Duplex patch-cord, singlemode 9/125, tip LC-LC, 3m	Duplex patch-cord, singlemode 9/125, tip LC-LC, 3m	
28	Servicii de construire, instalare configurare rețelei locale și echipamentelor de rețea	Servicii de construire, instalare configurare rețelei locale și echipamentelor de rețea	Moldova	IT-LAB GRUP SRL	<ul style="list-style-type: none"> <li>- Proiectarea, instalarea si configurarea echipamentelor din anexele caietului de sarcini oficiile ACC.</li> <li>- Crearea unui set complet de documente care va descrie infrastructura creata (topologie logica/fizica) și configurația echipamentelor.</li> <li>- Elaborarea setului de documente si scheme.</li> <li>- Educare/instruirea personalului – min 40 ore.</li> <li>- Elaborarea si dezvoltarea schemei fizice și logice a rețelei corporative ACC incluzând biroul central și sucursale ( IP addressing, VLAN, Inter-VLAN dynamic/static routing, DHCP, physical/logical interconnections in LAN/WAN clustering/failover, WLAN security/frequencies/mobility/load balancing/high density).</li> <li>- Dezvoltarea politicii de securitate a rețelei ( site-to-site VPN, end-user VPN, IDS/IPS, antivirus/antimalware/URL filtration, firewall, 802.1x, port security, wireless security, security alerts).</li> </ul>	<ul style="list-style-type: none"> <li>- Proiectarea, instalarea si configurarea echipamentelor din anexele caietului de sarcini oficiile ACC.</li> <li>- Crearea unui set complet de documente care va descrie infrastructura creata (topologie logica/fizica) și configurația echipamentelor.</li> <li>- Elaborarea setului de documente si scheme.</li> <li>- Educare/instruirea personalului – 40 ore.</li> <li>- Elaborarea si dezvoltarea schemei fizice și logice a rețelei corporative ACC incluzând biroul central și sucursale ( IP addressing, VLAN, Inter-VLAN dynamic/static routing, DHCP, physical/logical interconnections in LAN/WAN clustering/failover, WLAN security/frequencies/mobility/load balancing/high density).</li> <li>- Dezvoltarea politicii de securitate a rețelei ( site-to-site VPN, end-user VPN, IDS/IPS, antivirus/antimalware/URL filtration, firewall, 802.1x, port security, wireless security, security alerts).</li> </ul>	

				<ul style="list-style-type: none"> <li>- Planificarea unei migrari fără probleme sau stopuri de funcționalitate de la infrastructura existentă la cea nouă.</li> <li>- Toate lucrările trebuie efectuate în acord cu ACC și nu trebuie să oprească procesele operaționale ACC.</li> <li>- Lucrările de construcție a rețelei trebuie efectuate de specialiști cu experiență, în conformitate cu măsurile de siguranță.</li> <li>- Configurarea trebuie sa fie făcută conform schemei pct. 1 caietului de sarcini.</li> <li>- Instalarea și configurarea comutatoarelor în biroul central ( core switches, access switches).</li> <li>- Instalarea și configurarea security gateways în biroul central al ACC;</li> <li>- Instalarea și configurarea WLAN controller.</li> <li>- Instalarea și configurarea Wireless access point în biroul central al ACC;</li> <li>- Instalarea și configurarea security gateways, switches, Wireless access point în sucursalele ACC.</li> <li>- Testarea căilor optice și de cupru trebuie efectuată utilizând dispozitive specializate (OTDR, UTP cable certifier) însoțite de certificate de conformitate</li> <li>- Configurarea trebuie sa fie făcută conform schemei pct.1 caietului de sarcini.</li> <li>- Instalarea și configurarea comutatoarelor în biroul central ( core switches, access switches).</li> <li>- Instalarea și configurarea security gateways în biroul central al ACC;</li> <li>- Instalarea și configurarea WLAN controller.</li> <li>- Instalarea și configurarea Wireless access point în biroul central al ACC;</li> <li>- Instalarea și configurarea security gateways, switches, Wireless access point în sucursalele ACC.</li> <li>- Montare cablu UTP/FTP (materiale de fixare sunt incluse)</li> <li>- Montare canal pentru cablu (materiale de fixare sunt incluse)</li> <li>- Asamblare si montare dulap pentru telecomunicatii 9U</li> <li>- Asamblare si montare dulap pentru telecomunicatii 42U</li> <li>- Montare si instalare patch-panela</li> <li>- Montare si instalare priza</li> <li>- Montare cablu optic</li> <li>- Sudare fibra optica</li> <li>- Certificarea cablului optic prin folosirea aparatului de tip OTDR</li> <li>- Certificarea categoriei cablului UTP/FTP prin folosirea aparatului de tip "UTP cable certifier"</li> </ul>	<ul style="list-style-type: none"> <li>- Planificarea unei migrari fără probleme sau stopuri de funcționalitate de la infrastructura existentă la cea nouă.</li> <li>- Toate lucrările va fi efectuate în acord cu ACC și nu va opri procesele operaționale ACC.</li> <li>- Lucrările de construcție a rețelei va fi efectuate de specialiști cu experiență, în conformitate cu măsurile de siguranță.</li> <li>- Configurarea va fie făcută conform schemei pct. 1 caietului de sarcini.</li> <li>- Instalarea și configurarea comutatoarelor în biroul central ( core switches, access switches).</li> <li>- Instalarea și configurarea security gateways în biroul central al ACC;</li> <li>- Instalarea și configurarea WLAN controller.</li> <li>- Instalarea și configurarea Wireless access point în biroul central al ACC;</li> <li>- Instalarea și configurarea security gateways, switches, Wireless access point în sucursalele ACC.</li> <li>- Testarea căilor optice și de cupru va fi efectuată utilizând dispozitive specializate (OTDR, UTP cable certifier) însoțite de certificate de conformitate</li> <li>- Configurarea va fi făcută conform schemei pct.1 caietului de sarcini.</li> <li>- Instalarea și configurarea comutatoarelor în biroul central ( core switches, access switches).</li> <li>- Instalarea și configurarea security gateways în biroul central al ACC;</li> <li>- Instalarea și configurarea WLAN controller.</li> <li>- Instalarea și configurarea Wireless access point în biroul central al ACC;</li> <li>- Instalarea și configurarea security gateways, switches, Wireless access point în sucursalele ACC.</li> <li>- Montare cablu UTP/FTP (materiale de fixare sunt incluse)</li> <li>- Montare canal pentru cablu (materiale de fixare sunt incluse)</li> <li>- Asamblare si montare dulap pentru telecomunicatii 9U</li> <li>- Asamblare si montare dulap pentru telecomunicatii 42U</li> <li>- Montare si instalare patch-panela</li> <li>- Montare si instalare priza</li> <li>- Montare cablu optic</li> <li>- Sudare fibra optica</li> <li>- Certificarea cablului optic prin folosirea aparatului de tip OTDR</li> <li>- Certificarea categoriei cablului UTP/FTP prin folosirea aparatului de tip "UTP cable certifier"</li> </ul>	
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Semnat: \_\_\_\_\_  
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În calitate de: Director

# CloudEngine S6730-H Series 25GE Switches

Huawei CloudEngine S6730-H series 25GE switches are next-generation enterprise-class core and aggregation switches that provide 25GE downlink optical ports and 100GE uplink optical ports.

## Introduction

Huawei CloudEngine S6730-H series switches are next-generation enterprise-class core and aggregation switches that offer high performance, high reliability, cloud management, and intelligent operations and maintenance (O&M). They build on an industry-leading Versatile Routing Platform (VRP) and are purpose-built with security, IoT, and cloud in mind. With these traits, CloudEngine S6730-H can be widely used in enterprise campuses, colleges/universities, data centers, and other scenarios.

CloudEngine S6730-H switches offer 10GE, 25GE, 40GE, and 100GE port types, flexibly adapting to diversified network bandwidth requirements. They also support cloud management and implement cloud-managed network services throughout the full lifecycle from planning, deployment, monitoring, experience visibility, and fault rectification, all the way to network optimization, greatly simplifying network management.

By integrating the native wireless access controller (WAC) capability, a single CloudEngine S6730-H switch can manage a vast number of wireless access points (APs). The results are simplified network architecture, fewer required devices, and lowered networking costs. Free mobility, another key differentiator of CloudEngine S6730-H, enables consistent user experience no matter the user location or IP address, fully meeting enterprises' demands for mobile offices.


CloudEngine S6730-H switches support VXLAN to implement network virtualization, achieving multi-purpose networks and multi-network convergence for greatly improved network capacity and utilization. As such, CloudEngine S6730-H switches are an ideal choice for building next-generation IoT converged networks in terms of cost, flexibility, and scalability.

The full series of CloudEngine S6730-H switches have built-in security probes to enable abnormal traffic detection, analysis of threats even in encrypted traffic, and network-wide threat deception. With such robust security features, CloudEngine S6730-H switches transform traditional passive security defense into proactive security protection, fully ensuring campus network security.

## Product Overview

### Models and Appearances

The following models are available in the CloudEngine S6730-H series.

Appearance	Description
 <p>CloudEngine S6730-H28Y4C</p>	<ul style="list-style-type: none"> <li>• 28 x 25 Gig SFP28, 4 x 100 Gig QSFP28</li> <li>• Dual pluggable power modules, 1+1 power backup</li> <li>• Switching capacity: 2.2Tbps/2.4Tbps</li> </ul> <p><b>NOTE</b></p> <p>25GE SFP28 interfaces support 10GE and 25GE optical module auto-sensing. 100GE QSFP28 interfaces support 40GE and 100GE optical module auto-sensing.</p>

Appearance	Description
	<p>A QSFP28 optical port cannot be split into four 10GE ports, regardless of whether the port uses a QSFP28 or QSFP+ optical module.</p> <p>The value before the slash (/) refers to the device's switching capability, while the value after the slash (/) means the chip's switching capability.</p>

## Power Supply

The following table lists the power supplies on the CloudEngine S6730-H series.

Power Module	Technical Specifications	Applied Switch Model
 <p>PAC300S12-CL</p>	<ul style="list-style-type: none"> <li>• Dimensions (H x W x D): 40.2 mm x 47.2 mm x 202.6 mm</li> <li>• Weight: 0.5 kg</li> <li>• Rated input voltage range: <ul style="list-style-type: none"> <li>- 100 V AC to 240 V AC, 50/60 Hz</li> <li>- 240 V DC</li> </ul> </li> <li>• Maximum input voltage range: <ul style="list-style-type: none"> <li>- 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>- 190 V DC to 290 V DC</li> </ul> </li> <li>• Maximum input current: <ul style="list-style-type: none"> <li>- 100 V AC to 240 V AC: 4 A</li> <li>- 240 V DC: 2 A</li> </ul> </li> <li>• Maximum output current: 25 A</li> <li>• Rated output voltage: 12 V</li> <li>• Maximum output power: 300 W</li> <li>• Hot swap: Supported</li> </ul>	CloudEngine S6730-H28Y4C
 <p>PDC260S12-DL</p>	<ul style="list-style-type: none"> <li>• Dimensions (H x W x D): 40.2 mm x 47.2 mm x 202.6 mm</li> <li>• Weight: 0.5 kg</li> <li>• Rated input voltage range: -48 V DC to -60 V DC</li> <li>• Maximum input voltage range: -38.4 V DC to -72 V DC</li> <li>• Maximum input current: 10 A</li> <li>• Maximum output current: 21.7 A</li> <li>• Rated output voltage: 12 V</li> <li>• Maximum output power: 260 W</li> <li>• Hot swap: Supported</li> </ul>	CloudEngine S6730-H28Y4C

The S6730-H uses pluggable power modules. It can be configured with a single power module or double power modules for 1+1 power redundancy.

## Product Features and Highlights

### Abundant Convergence Feature

- This CloudEngine S6730-H provides the integrated WLAN AC function that can manage 1K APs, reducing the costs of purchasing additional WLAN AC hardware. The wireless forwarding performance reaches up to 668 Gbit/s, breaking the forwarding performance bottleneck of an external WLAN AC. With this switch series, customers can stay ahead in the high-speed wireless era.



## NOTE

The wireless forwarding performance is calculated based on 1024-byte packets.

- The S6730-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.
- The S6730-H provides excellent 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.

## Providing Fine Granular Network Management

- The S6730-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, 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 S6730-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.

## Flexible Ethernet Networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the S6730-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 service 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 S6730-H supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One S6730-H switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

## Intelligent Stack (iStack)

- The S6730-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 capability by simply adding member switches. iStack also simplifies device configuration and management. After a stack is set up, multiple 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 it.

## Cloud-based Management

- The Huawei cloud 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 cloud 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).

## 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.
- This 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.

## Link Layer Security

- This series switches support MACsec. MACsec protects transmitted Ethernet data frames through identity authentication, data encryption, integrity check, and anti-replay protection, reducing the risks of information leakage and malicious network

attacks. With MACsec, these switch models are able to address strict information security requirements of customers in industries such as government and finance.

## High-Performance VRP Software System

- Huawei S series switches build on a unified Versatile Routing Platform (VRP) software system, meeting the growing network scale and the evolving Internet technologies and guaranteeing network services and network quality.
- VRP is a network operating system developed by Huawei with independent intellectual property rights. It can run on multiple hardware platforms and provide unified network, user, and management views. VRP provides flexible application solutions for users. In addition, VRP is a future-proof platform that maximally protects customer investments.
- The VRP platform is focused on IP services and uses a component-based architecture to provide more than 300 features. Besides, VRP stands out for its application-based tailorable and scalable capabilities.

## 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.

## Big Data-Powered Collaborative Security

- This series of switches supports encrypted communication analytics (ECA), a traffic identification and detection technology. ECA can precisely detect malicious traffic by efficiently identifying encrypted and non-encrypted traffic, extracting the characteristics of encrypted traffic, and sending these characteristics to HiSec Insight (a big data-powered security analysis system). Furthering to this, ECA-capable switches can work with the controller iMaster NCE-Campus to automatically isolate threats, thereby ensuring campus network security.
- This series of switches also supports network deception technology. Specifically, switches functioning as sensors can detect threats (such as IP address scanning and port scanning on the network) and lure threat traffic to the honeypot for simulated interaction with attackers. In this way, it is easy to obtain attack behaviors, extract attack tools, and analyze suspicious traffic in depth to create defense policies. Switches then work with iMaster NCE-Campus to automatically isolate threats and block the spread of attack behaviors, ensuring campus network security.

## Intelligent O&M

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

## 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.

# Product Specifications

The following table describes the functions and features available on the CloudEngine S6730-H series.

## Functions and Features

Function and Feature		Description	CloudEngine S6730-H28Y4C	
Ethernet features	Ethernet basics	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	4094
	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	
	Super-VLAN	Yes		

Function and Feature		Description	CloudEngine S6730-H28Y4C
		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	384K max
		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 max (share)
		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
RSTP			Yes
MSTP			Yes
VBST			Yes
BPDU protection			Yes

Function and Feature		Description	CloudEngine S6730-H28Y4C	
		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			256K max (share)	
RIPv1			Yes	
RIPv2			Yes	
OSPF			Yes	
BGP			Yes	
MBGP			Yes	
IS-IS			Yes	
Policy-based routing (PBR)			Yes	

Function and Feature		Description	CloudEngine S6730-H28Y4C
	Multicast routing features	IGMPv1/v2/v3	Yes
		PIM-DM	Yes
		PIM-SM	Yes
		MSDP	Yes
		IPv4 multicast routes	64K-1 max (share)
		IPv6 multicast routes	4K
		Multicast routing policies	Yes
		RPF	Yes
	IPv6 features	IPv6 protocol stack	Yes
		ND	Yes
		ND entry	80K max (share)
		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 max (share)
		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
		Mapping from 802.1p priorities to EXP priorities in MPLS packets	Yes

Function and Feature		Description	CloudEngine S6730-H28Y4C	
		Mapping from DSCP priorities to EXP priorities in MPLS packets	Yes	
		LSP specification	16K max	
	MPLS TE	MPLS-TE tunnel establishment	Yes	
		MPLS-TE tunnel specification	512	
		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)	Up to 1.2 Tbit/s	
	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 S6730-H28Y4C
		Bidirectional delay and jitter measurement	Yes
QoS features	Traffic classification	Traffic classification based on ACLs	Yes
		Configuring traffic classification priorities	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	Number of rules per IPv4 ACL	6K (Shared with IPv6)
		Number of rules per IPv6 ACL	6K (Shared with IPv4)
		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



Function and Feature		Description	CloudEngine S6730-H28Y4C
		EasyDeploy (client)	Yes
		EasyDeploy (commander)	Yes
		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	3K
		IPSG for IPv6	Yes
		IPSGv6 user capacity	1.5K
	Local attack defense	CPU attack defense	Yes

Function and Feature		Description	CloudEngine S6730-H28Y4C	
	MFF	MFF	Yes	
	DHCP snooping	DHCP snooping	Yes	
		Option 82 function	Yes	
		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	
	Link Layer Security	MACsec	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	
	NetStream		Yes	
	SNMP v1		Yes	
	SNMP v2		Yes	
	SNMP v3		Yes	

Function and Feature		Description	CloudEngine S6730-H28Y4C
		HTTP	Yes
		HTTPS	Yes
		RMON	Yes
		RMON2	Yes
		NETCONF/YANG	Yes
WLAN	-	AP management	Yes
		Number of managed APs	1K
		Radio management	Yes
		WLAN service management	Yes
		WLAN QoS	Yes
		WLAN security	Yes
		WLAN user management	Yes
VXLAN	-	VXLAN Layer 2 gateway	Yes
		VXLAN Layer 3 gateway	Yes
		Centralized gateway	Yes
		Distributed gateway	Yes
		BGP-EVPN	Yes
		BGP-EVPN neighbor capacity	256
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 hardware specifications of the CloudEngine S6730-H series.

Item		CloudEngine S6730-H28Y4C
Physical specifications	Chassis dimensions (H x W x D, mm)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.)
	Chassis height	1U
	Chassis weight (full configuration weight, including weight of packaging materials)	4.65 kg
Fixed port	10GE port	28 (10GE and 25GE auto-sensing.)
	25GE port	28

Item		CloudEngine S6730-H28Y4C
	40GE port	4 (40GE and 100GE auto-sensing.)
	100GE port	4
Management port	ETH management port	Supported
	Console port (RJ45)	Supported
	USB port	USB 2.0
CPU	Frequency	1.4 GHz
	Cores	4
Memory	Memory (RAM)	4GB
	Flash	Hardware: 2 GB
Power supply system	Power supply type	<ul style="list-style-type: none"> <li>300 W AC Power Module</li> <li>260 W DC Power Module</li> </ul> <b>NOTE</b> The S6730-H can use a single power module or double power modules for 1+1 power redundancy. Pluggable AC and DC power modules can be used together in the same switch.
	Rated voltage range	<ul style="list-style-type: none"> <li>AC input: 100 V AC to 240 V AC, 50/60 Hz</li> <li>High-Voltage DC input: 240 V DC</li> <li>DC input: -48 V DC to -60 V DC</li> </ul>
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-Voltage DC input: 190 V DC to 290 V DC</li> <li>DC input: -38.4 V DC to -72 V DC</li> </ul>
	Maximum input current	<ul style="list-style-type: none"> <li>AC 300W: 4A</li> <li>DC 260W: 10A</li> </ul>
	Typical power consumption (30% of traffic load, tested according to ATIS standard)	186W
	Maximum power consumption (100% throughput, full speed of fans)	253W
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	3, Built-in fan
	Airflow	Air flows in from the left and exhausts from the right
Environment parameters	Long-term operating temperature	-5°C to +45°C (23°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.)  <b>NOTE</b> When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).  The switch cannot be started when the ambient temperature is lower than 0°C (32°F).

Item		CloudEngine S6730-H28Y4C
	Storage temperature	-40°C to +70°C
	Relative humidity	5% to 95%, noncondensing
	Operating altitude	0-5000 m
	Noise under normal temperature (sound power)	< 64.5 dB(A)
	Noise under high temperature (sound power)	< 84.5 dB(A)
	Noise under normal temperature (sound pressure)	< 51.7 dB(A)
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Using AC power modules: ±6 kV in differential mode, ±6 kV in common mode</li> <li>Using DC power modules: ±2 kV in differential mode, ±4 kV in common mode</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	54.68
	MTTR (hour)	2
	Availability	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul> <p><b>NOTE</b> For details about certifications, see the section Safety and Regulatory Compliance.</p>

#### NOTE

- 1: The power consumption under different load conditions is calculated according to the ATIS standard. Additionally.
- 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.

## Licensing

### Licensing

This series switches 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
<b>Basic network functions:</b> Layer 2 functions, IPv4, IPv6, MPLS, SVF, and others Note: For details, see the Service Features	√	√	√
<b>Basic network automation based on the iMaster NCE-Campus:</b>	×	√	√

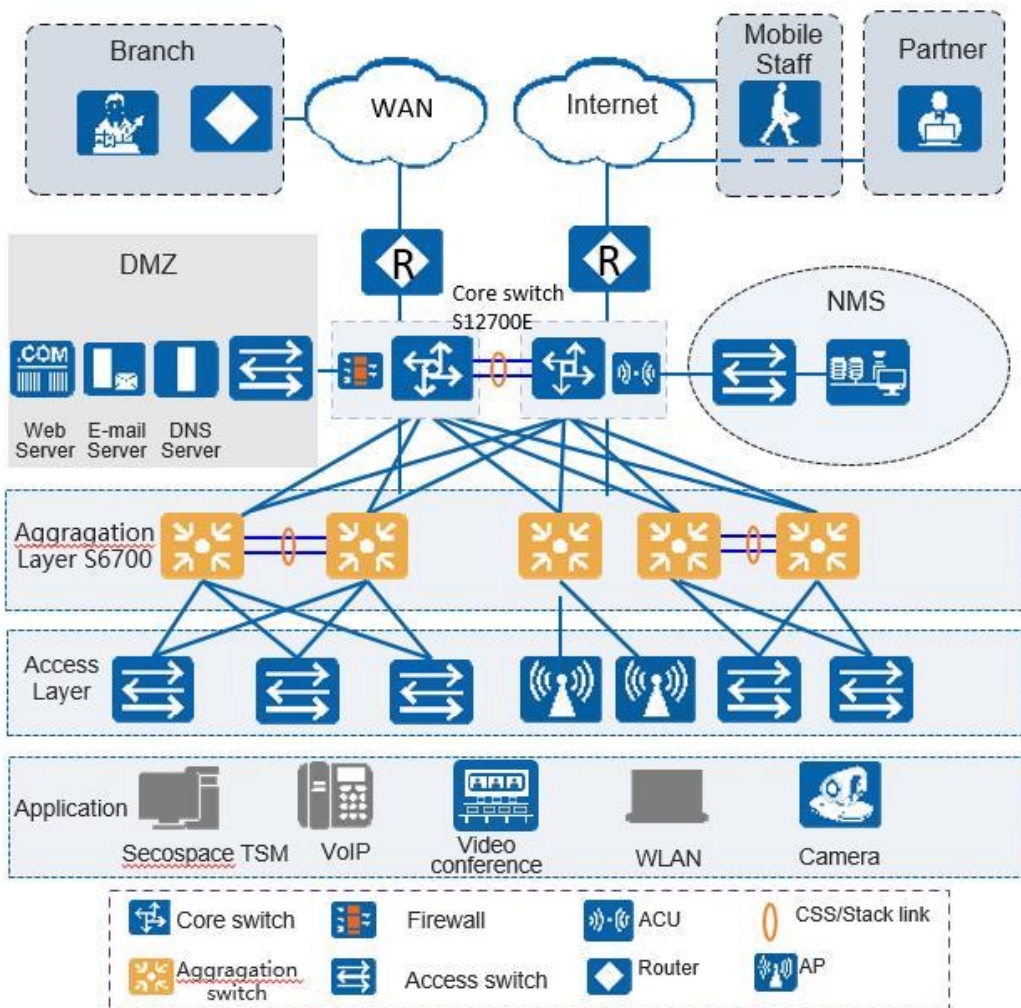
Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package
<ul style="list-style-type: none"> <li>• Basic automation: Plug-and-play, SSID, and AP group management</li> <li>• Basic monitoring: Application visualization</li> <li>• NE management: Image and topology management 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> VXLAN, user access authentication, free mobility, and CampusInsight basic functions	x	x	√

Note: Only V200R019C00 and later versions can support N1 mode

## Networking and Applications

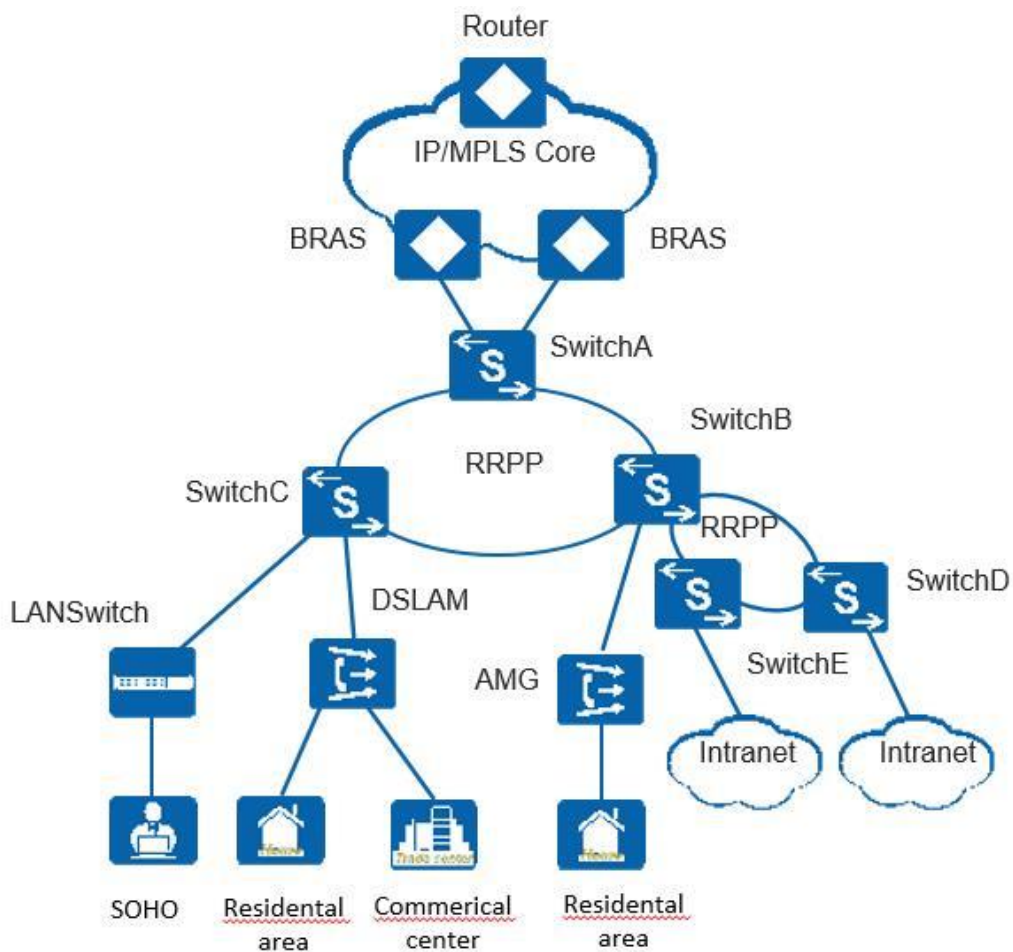
### Large-scale Enterprise Campus Network

CloudEngine S6730-H series switches can be deployed at the aggregation layer of a large-scale enterprise campus network, creating a highly reliable, scalable, and manageable enterprise campus network.



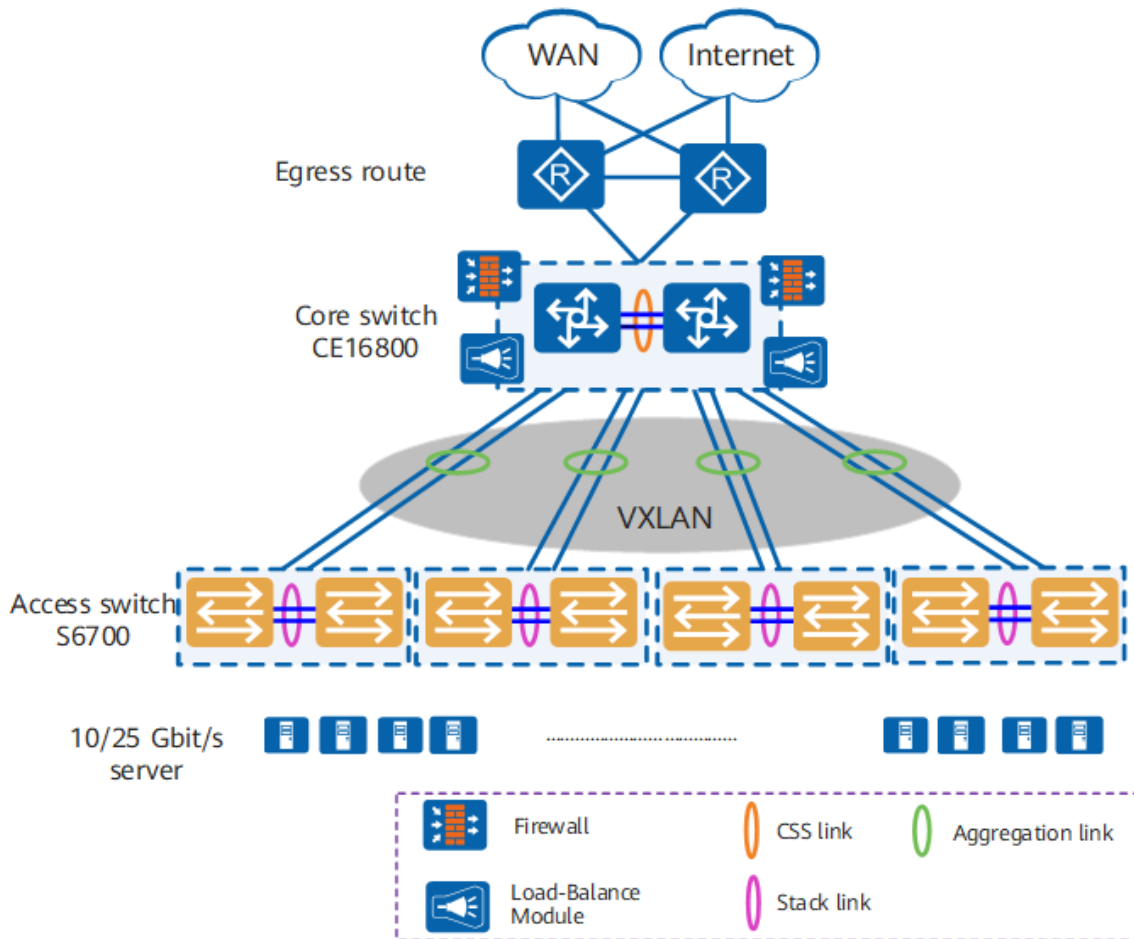
## Application on a MAN

CloudEngine S6730-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.



## Data Center

CloudEngine S6730-H switches can be deployed at the access layer build a virtualized, highly reliable, non-blocking, and energy conservative data center network.



## Product Accessories

### Optical Modules and Fibers

#### 10GE SFP+ ports support optical modules and cables

- GE optical module
- GE-CWDM optical module
- GE-DWDM optical module
- GE copper module
- 10GE SFP+ optical module (OSXD22N00 not supported)
- 10GE-CWDM optical module
- 10GE-DWDM optical module
- 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables
- 3 m and 10 m SFP+ AOC cables
- 0.5 m and 1.5 m SFP+ dedicated stack cables (supported by the last 16 SFP+ ports and used only for zero-configuration stacking)

#### 25GE SFP28 ports support optical modules and cables

- GE eSFP optical module
- GE SFP optical module
- GE-CWDM optical module
- GE-DWDM optical module
- 10GE SFP+ optical module (OSXD22N00 not supported)



- 10GE-CWDM optical module
- 10GE-DWDM optical module
- 25GE SFP28 optical module
- 1 m, 3 m, 5 m, and 10 m SFP+ high-speed cables
- 3 m and 10 m SFP+ AOC cables
- 1 m, 3 m, 5 m SFP28 high-speed cables
- 3 m, 5 m, 7 m, and 10 m SFP28 AOC cables

### 40GE/100GE QSFP28 ports support optical modules and cables

- QSFP+ optical module
- QSFP28 optical module
- 1 m, 3 m, and 5 m QSFP+ to QSFP+ high-speed copper cables
- 10 m QSFP+ to QSFP+ AOC cable
- 1 m QSFP28 to QSFP28 high-speed copper cable
- 10 m QSFP28 to QSFP28 AOC cable

#### NOTE

- A QSFP28 optical port cannot be split into four 10GE ports, regardless of whether the port uses a QSFP28 or QSFP+ optical module.

## Stack Cables

The CloudEngine S6730-H Series switches support service port stacking. The applicable stack cables are as follows:

Port Supporting Stacking	Stack Cable	Rate of a Single Port
10GE ports on the front panel	<ul style="list-style-type: none"> <li>● 1 m, 3 m, and 5 m SFP+ passive high-speed cables</li> <li>● 10 m SFP+ active high-speed copper cables</li> <li>● 3 m and 10 m AOC cables</li> <li>● 10GE SFP+ optical module and optical fiber</li> <li>● 0.5 m and 1.5 m SFP+ dedicated stack cable</li> </ul>	10 Gbit/s
40GE/100GE ports on the front panel	<ul style="list-style-type: none"> <li>● 1 m QSFP28 high-speed copper cables</li> <li>● 10 m QSFP28 AOC cables</li> <li>● QSFP28 optical module and optical fiber</li> </ul>	100Gbit/s

## Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of the CloudEngine S6730-H.

Certification Category	Description
Safety	<ul style="list-style-type: none"> <li>● IEC 60950-1 and all country deviations</li> <li>● EN 60950-1</li> <li>● UL 60950-1</li> <li>● CAN/CSA 22.2 No.60950-1</li> <li>● GB 4943</li> </ul>
Electromagnetic Compatibility (EMC)	<ul style="list-style-type: none"> <li>● EMI</li> <li>● FCC CFR47 Part 15 Class A</li> </ul>

Certification Category	Description
	<ul style="list-style-type: none"> <li>• EN55022 Class A</li> <li>• CISPR 22 Class A</li> <li>• EN61000-3-2/IEC-1000-3-2, Power line harmonics</li> <li>• EN61000-4-3/IEC-1000-4-3, Radiated immunity</li> <li>• EN61000-4-2/IEC-1000-4-2, ESD</li> <li>• EN61000-4-4/IEC-1000-4-4, EFT</li> <li>• EN61000-4-5/IEC-1000-4-5, Surge Signal Port</li> <li>• EN61000-4-6/IEC-1000-4-6, Low frequency conducted immunity</li> <li>• EN61000-4-11/IEC-1000-4-11, Voltage dips and sags</li> <li>• EN61000-4-29/IEC61000-4-29, Voltage dips and sags</li> <li>• EMC Directive 89/336/EEC</li> <li>• EMC Directive 2004/108/EC</li> <li>• VCCI V-3 Class A</li> <li>• ICES-003 Class A</li> <li>• AS/NZS CISPR 22 Class A</li> <li>• CNS 13438 Class A</li> <li>• GB9254 Class A</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

## MIB and Standards Compliance

### Supported MIBs

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

Category	MIB
	<ul style="list-style-type: none"> <li>• IPv6-MIB</li> <li>• LAG-MIB</li> <li>• LLDP-EXT-DOT1-MIB</li> <li>• LLDP-EXT-DOT3-MIB</li> <li>• LLDP-MIB</li> <li>• NOTIFICATION-LOG-MIB</li> <li>• NQA-MIB</li> <li>• OSPF-TRAP-MIB</li> <li>• P-BRIDGE-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>• TCP-MIB</li> <li>• UDP-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-BRAS-RADIUS-MIB</li> <li>• HUAWEI-BRAS-SRVCFG-EAP-MIB</li> <li>• HUAWEI-BRAS-SRVCFG-STATICUSER-MIB</li> <li>• HUAWEI-CBQOS-MIB</li> <li>• HUAWEI-CDP-COMPLIANCE-MIB</li> <li>• HUAWEI-CONFIG-MAN-MIB</li> <li>• HUAWEI-CPU-MIB</li> <li>• HUAWEI-DAD-TRAP-MIB</li> <li>• HUAWEI-DC-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> </ul>

Category	MIB
	<ul style="list-style-type: none"> <li>• HUAWEI-DLDP-MIB</li> <li>• HUAWEI-ELMI-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-FLASH-MAN-MIB</li> <li>• HUAWEI-FWD-RES-TRAP-MIB</li> <li>• HUAWEI-GARP-APP-MIB</li> <li>• HUAWEI-GTSM-MIB</li> <li>• HUAWEI-HGMP-MIB</li> <li>• HUAWEI-HWTACACS-MIB</li> <li>• HUAWEI-IF-EXT-MIB</li> <li>• HUAWEI-INFOCENTER-MIB</li> <li>• HUAWEI-IPPOOL-MIB</li> <li>• HUAWEI-IPV6-MIB</li> <li>• HUAWEI-ISOLATE-MIB</li> <li>• HUAWEI-L2IF-MIB</li> <li>• HUAWEI-L2MAM-MIB</li> <li>• HUAWEI-L2VLAN-MIB</li> <li>• HUAWEI_LDT-MIB</li> <li>• HUAWEI-LLDP-MIB</li> <li>• HUAWEI-MAC-AUTHEN-MIB</li> <li>• HUAWEI-MEMORY-MIB</li> <li>• HUAWEI-MFF-MIB</li> <li>• HUAWEI-MFLP-MIB</li> <li>• HUAWEI-MSTP-MIB</li> <li>• HUAWEI-MULTICAST-MIB</li> <li>• HUAWEI-NAP-MIB</li> <li>• HUAWEI-NTPV3-MIB</li> <li>• HUAWEI-PERFORMANCE-MIB</li> <li>• HUAWEI-PORT-MIB</li> <li>• HUAWEI-PORTAL-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-SECURITY-MIB</li> <li>• HUAWEI-SEP-MIB</li> <li>• HUAWEI-SNMP-EXT-MIB</li> <li>• HUAWEI-SSH-MIB</li> </ul>

Category	MIB
	<ul style="list-style-type: none"> <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-TCP-MIB</li> <li>• HUAWEI-TFTPC-MIB</li> <li>• HUAWEI-TRNG-MIB</li> <li>• HUAWEI-XQOS-MIB</li> </ul>

**NOTE**

For more information about MIBs supported by the CloudEngine S6730-H series, visit: <https://support.huawei.com/enterprise/en/switches/s6700-pid-6691593?category=reference-guides>

## Standards Compliance

The following table lists the standards that the CloudEngine S6730-H series 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> </ul>

Standard Organization	Standard or Protocol
	<ul style="list-style-type: none"> <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> <li>• RFC 6241 Network Configuration Protocol (NETCONF)</li> <li>• RFC 6020 YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)</li> </ul>
IEEE	<ul style="list-style-type: none"> <li>• IEEE 802.1D Media Access Control (MAC) Bridges</li> <li>• IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering</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.1731 ETH OAM performance monitor</li> </ul>
ISO	<ul style="list-style-type: none"> <li>• ISO 10589 IS-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> </ul>

Standard Organization	Standard or Protocol
	<ul style="list-style-type: none"> <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> <li>Xmodem XMODEM/YMODEM Protocol Reference</li> </ul>

#### NOTE

The listed standards and protocols are fully or partially supported by Huawei switches. For details, visit <http://e.huawei.com/en> or contact your local Huawei sales office.

## Ordering Information

The following table lists ordering information of the CloudEngine S6730-H series.

Model	Product Description
CloudEngine S6730-H28Y4C	S6730-H28Y4C (28*25GE SFP28 ports, 4*100GE QSFP28 ports, without power module)
PAC300S12-CL	300W AC power module
PDC260S12-DL	260W DC power module

License	Product Description
N1-S67H-M-Lic	S67XX-H Series Basic SW,Per Device
N1-S67H-M-SnS1Y	S67XX-H Series Basic SW,SnS,Per Device,1Year
L-VxLAN-S67	S67 Series, VxLAN License, Per Device
L-1AP-S67	S67 Series, Wireless Access Controller AP Resource License-1AP
N1-S67H-F-Lic	N1-CloudCampus,Foundation,S67XX-H Series,Per Device
N1-S67H-F-SnS	N1-CloudCampus,Foundation,S67XX-H Series,SnS,Per Device
N1-S67H-A-Lic	N1-CloudCampus,Advanced,S67XX-H Series,Per Device
N1-S67H-A-SnS	N1-CloudCampus,Advanced,S67XX-H Series,SnS,Per Device
N1-S67H-FToA-Lic	N1-Upgrade-Foundation to Advanced,S67XX-H,Per Device
N1-S67H-FToA-SnS	N1-Upgrade-Foundation to Advanced,S67XX-H,SnS,Per Device
N1-AM-30-Lic	N1-CloudCampus, Add-On Package, Access Management, Per 30 Endpoints
N1-AM-30-SnS1Y	N1-CloudCampus, Add-On Package, Access Management, Software Subscription and Support, Per 30 Endpoints, 1 Year
N1-EPNP-30-Lic	N1-CloudCampus, Add-On Package, Endpoints Plug and Play, Per 30 Endpoints
N1-EPNP-30-SnS1Y	N1-CloudCampus, Add-On Package, Endpoints Plug and Play, Software Subscription and Support, Per 30 Endpoints, 1 Year
N1-APP-X7FSwitch	N1-CloudCampus, Add-On Package, Intelligent Application Analysis, X7 Series Fixed Switch, Per

License	Product Description
	Device
N1-APP-X7FSwitch-SnS1Y	N1-CloudCampus, Add-On Package, Intelligent Application Analysis, X7 Series Fixed Switch, Software Subscription and Support, Per Device, 1 Year

## More Information


For more information about the 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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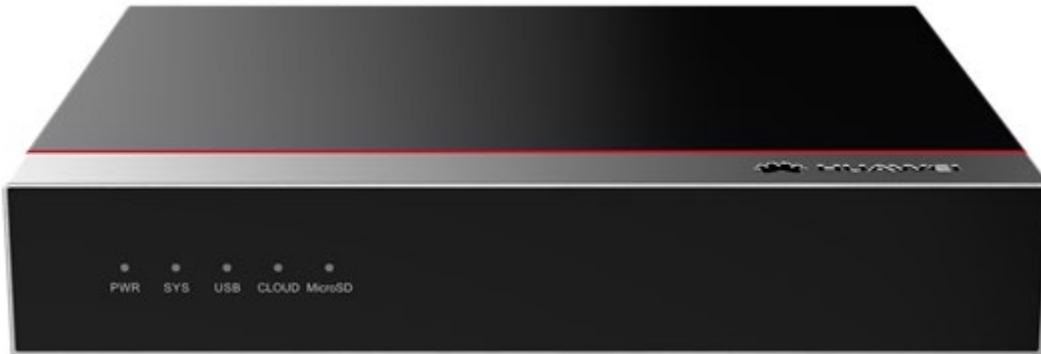


# Huawei AC6508 Wireless Access Controller Datasheet

# Product Overview

The AC6508 is a small-capacity box wireless access controller (AC) for small and medium enterprises. It can manage up to 256 access points (APs) and integrates the GE Ethernet switch function, achieving integrated access for wired and wireless users. The WLAN AC features high scalability and offers users considerable flexibility in configuring the number of managed APs. When used with Huawei's full series 802.11ax, 802.11ac and 802.11n APs, the AC6508 can be used to construct small and medium campus networks, enterprise office networks, wireless Metropolitan Area Networks (MANs), and hotspot coverage networks.

Huawei AC6508 wireless access controller



## Product Features

### Large-capacity and high-performance design

- The AC6508 can manage up to 256 APs, meeting requirements of small and medium campuses.
- Provides 2 x 10GE optical interfaces and 10 x GE electrical interfaces, supporting up to 10 Gbit/s forwarding performance.

### SmartRadio for air interface optimization

- Load balancing during smart roaming: The load balancing algorithm can work during smart roaming for load balancing detection among APs on the network after STA roaming to adjust the STA load on each AP, improving network stability.
- Intelligent DFA technology: The dynamic frequency assignment (DFA) algorithm is used to automatically detect adjacent-channel and co-channel interference, and identify any 2.4 GHz redundant radio. Through automatic inter-AP negotiation, the redundant radio is automatically switched to another mode (dual-5G AP models support 2.4G-to-5G switchover) or is disabled to reduce 2.4 GHz co-channel interference and increase the system capacity.
- Intelligent conflict optimization technology: The dynamic enhanced distributed channel access (EDCA) and airtime scheduling algorithms are used to schedule the channel occupation time and service priority of each user. This ensures that each user is assigned relatively equal time for using channel resources and user services are scheduled in an orderly manner, improving service processing efficiency and user experience.

### Various roles

- The AC6508 has a built-in Portal/AAA server and can provide Portal/802.1X authentication for users, reducing customer investment.

### Flexible networking

- The WLAN AC can be deployed in inline, bypass, bridge, and Mesh network modes, and supports both centralized and local forwarding.
- The WLAN AC and APs can be connected across a Layer 2 or Layer 3 network. In addition, NAT can be deployed when APs are deployed on the private network and the WLAN AC is deployed on the public network.
- The WLAN AC is compatible with Huawei full-series 802.11n, 802.11ac and 802.11ax APs and supports hybrid networking of 802.11n, 802.11ac and 802.11ax APs for simple scalability.

### Built-in application identification server

- Supports Layer 4 to Layer 7 application identification and can identify over 6000 applications, including common office applications and P2P download applications, such as Lync, FaceTime, YouTube, and Facebook.
- Supports application-based policy control technologies, including traffic blocking, traffic limit, and priority adjustment policies.
- Supports automatic application expansion in the application signature database.

### Comprehensive reliability design

- Supports AC 1+1 HSB, and N+1 backup, ensuring uninterrupted services.
- Supports port backup based on the Link Aggregation Control Protocol (LACP) or Multiple Spanning Tree Protocol (MSTP)..
- Supports WAN authentication escape between APs and WLAN ACs. In local forwarding mode, this feature retains the online state of existing STAs and allows access of new STAs when APs are disconnected from WLAN ACs, ensuring service continuity.

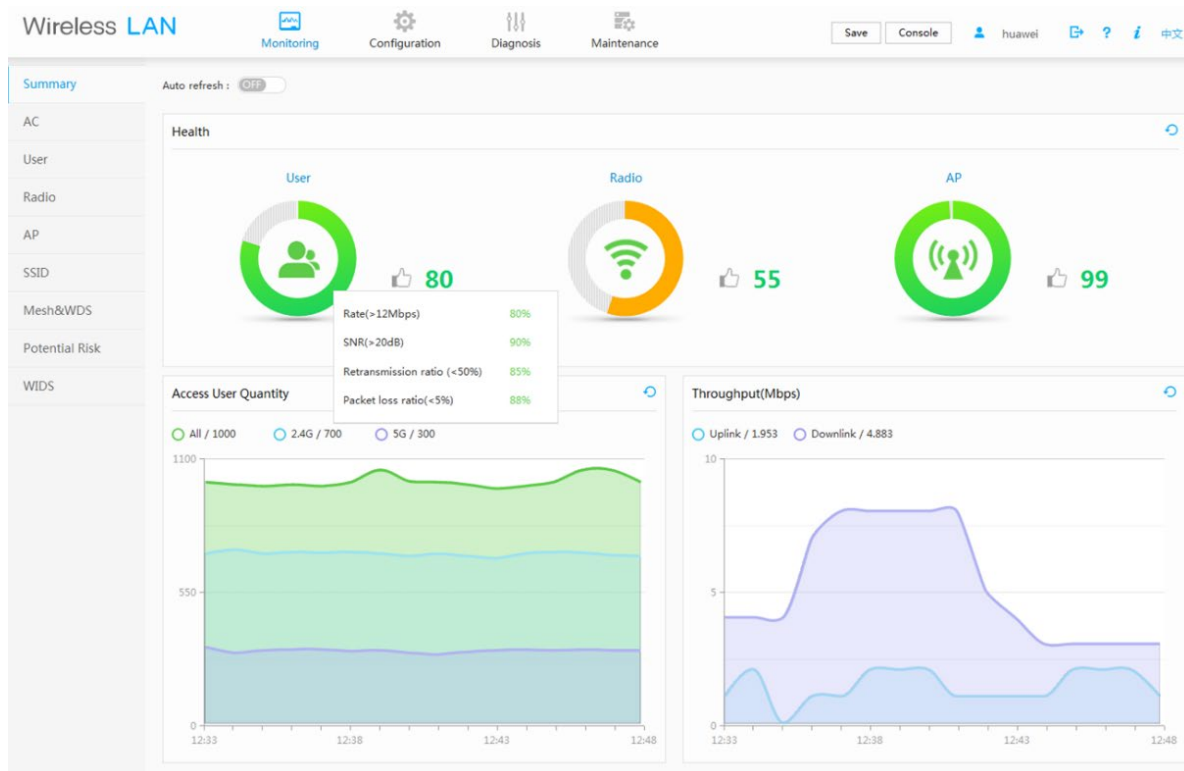
### Built-in visualized network management platform

The AC6508 has a built-in web system that is easy to configure and provides comprehensive monitoring and intelligent diagnosis.

### Health-centric one-page monitoring, visualized KPIs

- One page integrates the summary and real-time statistics. KPIs are displayed in graphs, including user performance, radio performance, and AP performance, enabling users to extract useful information from the massive amounts of monitored data, while also knowing the device and network status instantly.

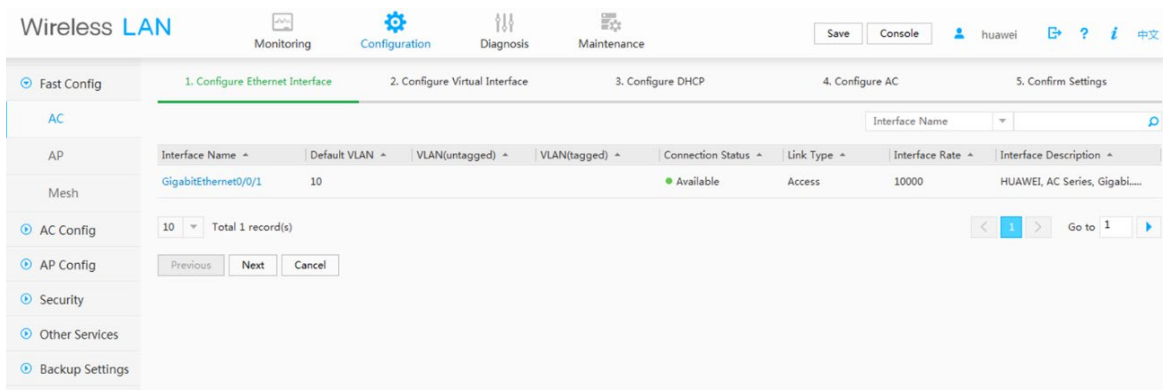
Monitoring interface



### Profile-based configuration by AP group simplifies configuration procedure and improves efficiency.

- The web system supports AP group-centric configuration and automatically selects the common parameters for users, meaning that users do not need to pre-configure the common parameters, simplifying the configuration procedure.
- If two AP groups have small configuration differences, users can copy the configurations of one AP group to the other. This improves configuration efficiency because users only need to modify the original configurations, not create entirely new ones each time.

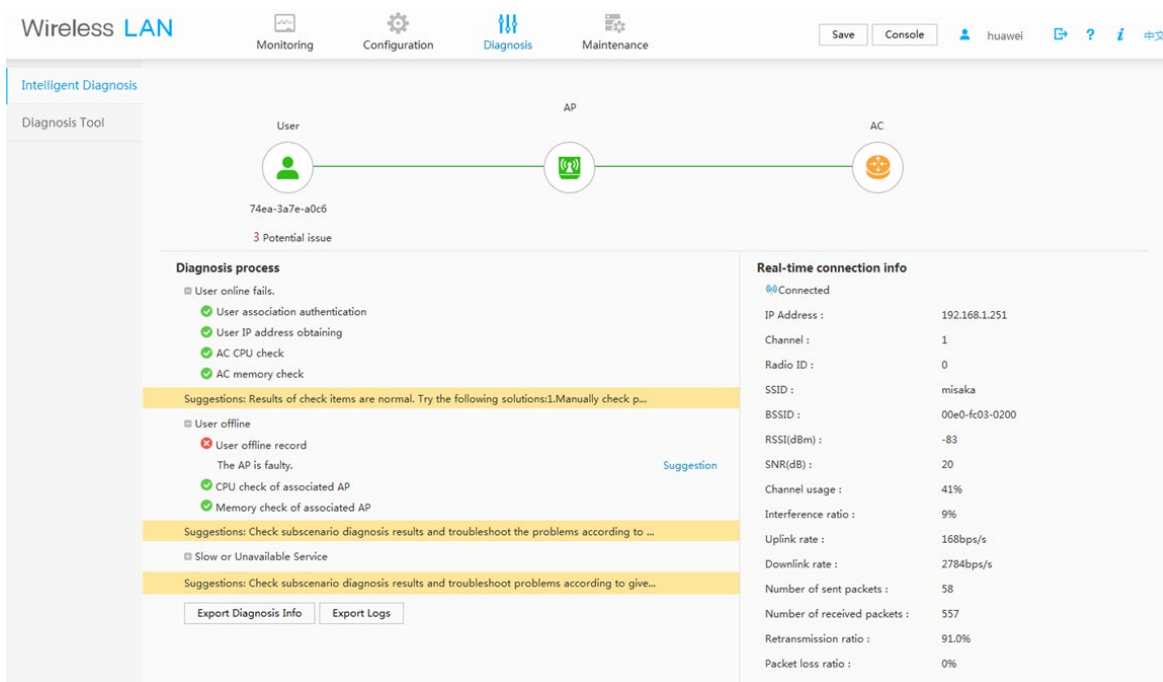
## Configuration interface



One-click diagnosis solves 80% of common network problems.

- The web system supports real-time and periodic one-click intelligent diagnosis from the dimensions of users, APs, and WLAN ACs, and provides feasible suggestions for troubleshooting the faults.

### Intelligent diagnosis



## AC6508 Features

### Switching and forwarding features

Feature	Description
Ethernet features	<p>Ethernet</p> <p>Operating modes of full duplex, half duplex, and auto-negotiation</p> <p>Rates of an Ethernet interface: 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, and auto-negotiation</p> <ul style="list-style-type: none"> <li>• Flow control on interfaces</li> <li>• Jumbo frames</li> <li>• Link aggregation</li> <li>• Load balancing among links of a trunk</li> <li>• Interface isolation and forwarding restriction</li> <li>• Broadcast storm suppression</li> </ul>

Feature		Description
	VLAN	Access modes of access, trunk, and hybrid Default VLAN VLAN pool
	MAC	Automatic learning and aging of MAC addresses Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses Interface-based MAC learning limiting
	ARP	Static and dynamic ARP entries ARP in a VLAN Aging of ARP entries
	LLDP	LLDP
Ethernet loop protection	MSTP	STP RSTP MSTP BPDU protection, root protection, and loop protection Partitioned STP
IPv4 forwarding	IPv4 features	ARP and RARP ARP proxy Auto-detection NAT Bonjour protocol
	Unicast routing features	Static route RIP-1 and RIP-2 OSPF BGP IS-IS Routing policies and policy-based routing URPF check DHCP server and relay DHCP snooping
	Multicast routing features	IGMPv1, IGMPv2, and IGMPv3 PIM-SM Multicast routing policies RPF
IPv6 forwarding	IPv6 features	ND protocol
	Unicast routing features	Static route RIPng OSPFv3 BGP4+ IS-IS IPv6 DHCPv6 DHCPv6 snooping

Feature		Description
	Multicast routing features	MLD MLD snooping
Device reliability	BFD	BFD
Layer 2 multicast features	Layer 2 multicast	IGMP snooping Prompt leave Multicast traffic control Inter-VLAN multicast replication
Ethernet OAM	EFM OAM	Neighbor discovery Link monitoring Fault notification Remote loopback
QoS features	Traffic classification	Traffic classification based on the combination of the L2 protocol header, IP 5-tuple, and 802.1p priority
	Action	Access control after traffic classification Traffic policing based on traffic classification Re-marking packets based on traffic classifiers Class-based packet queuing Associating traffic classifiers with traffic behaviors
	Queue scheduling	PQ scheduling DRR scheduling PQ+DRR scheduling WRR scheduling PQ+WRR scheduling
	Congestion avoidance	SRED WRED
	Application control	Smart Application Control (SAC)
Configuration and maintenance	Terminal service	Configurations using command lines Error message and help information in English Login through console and Telnet terminals Send function and data communications between terminal users
	File system	File systems Directory and file management File uploading and downloading using FTP and TFTP
	Debugging and maintenance	Unified management over logs, alarms, and debugging information Electronic labels User operation logs Detailed debugging information for network fault diagnosis Network test tools such as traceroute and ping commands Intelligent diagnosis Interface mirroring and flow mirroring
	Version upgrade	Device software loading and online software loading

Feature		Description
		BIOS online upgrade In-service patching
Security and management	Network management	ICMP-based ping and traceroute SNMPv1, SNMPv2c, and SNMPv3 Standard MIB RMON NetStream
	System security	Different user levels for commands, preventing unauthorized users from accessing device SSHv2.0 RADIUS and HWTACACS authentication for login users ACL filtering DHCP packet filtering (with the Option 82 field) Local attack defense function that can protect the CPU and ensure that the CPU can process services Defense against control packet attacks Defenses against attacks such as source address spoofing, Land, SYN flood (TCP SYN), Smurf, ping flood (ICMP echo), Teardrop, broadcast flood, and Ping of Death attacks IPSec URL filtering Antivirus Intrusion prevention

### Wireless networking capabilities

Feature	Description
Networking between APs and WLAN ACs	APs and WLAN ACs can be connected through a Layer 2 or Layer 3 network. APs can be directly connected to a WLAN AC. APs are deployed on a private network, while WLAN ACs are deployed on the public network to implement NAT traversal. WLAN ACs can be used for Layer 2 bridge forwarding or Layer 3 routing. WAN authentication escape is supported between APs and WLAN ACs. In local forwarding mode, this feature retains the online state of existing STAs and allows access of new STAs when APs are disconnected from WLAN ACs, ensuring service continuity.
Forwarding mode	Direct forwarding (distributed forwarding or local forwarding) Tunnel forwarding (centralized forwarding) Centralized authentication and distributed forwarding In direct forwarding mode, user authentication packets support tunnel forwarding. Soft GRE forwarding. Tunnel forwarding + EoGRE tunnel
WLAN AC discovery	An AP can obtain the device's IP address in any of the following ways: <ul style="list-style-type: none"> <li>• Static configuration</li> </ul>

Feature	Description
	<ul style="list-style-type: none"> <li>• DHCP</li> <li>• DNS</li> </ul> <p>The WLAN AC uses DHCP or DHCPv6 to allocate IP addresses to APs. DHCP or DHCPv6 relay is supported.</p> <p>On a Layer 2 network, APs can discover the WLAN AC by sending broadcast CAPWAP packets.</p>
Wireless networking mode	<p>WDS bridging:</p> <ul style="list-style-type: none"> <li>• Point-to-point (P2P) wireless bridging</li> <li>• Point-to-multipoint (P2MP) wireless bridging</li> <li>• Automatic topology detection and loop prevention (STP)</li> </ul> <p>Wireless mesh network</p> <ul style="list-style-type: none"> <li>• Access authentication for mesh devices</li> <li>• Mesh routing algorithm</li> <li>• Go-online without configuration</li> <li>• Mesh network with multiple MPPs</li> <li>• Vehicle-ground fast link handover</li> <li>• Mesh client mode</li> </ul>
CAPWAP tunnel	<p>Centralized CAPWAP</p> <p>CAPWAP control tunnel and data tunnel (optional)</p> <p>CAPWAP tunnel forwarding and direct forwarding in an extended service set (ESS)</p> <p>Datagram Transport Layer Security (DTLS) encryption, which is enabled by default for the CAPWAP control tunnel</p> <p>Heartbeat detection and tunnel reconnection</p>
Active and standby WLAN ACs	<p>Enables and disables the switchback function.</p> <p>Supports load balancing.</p> <p>Supports 1+1 hot backup.</p> <p><b>NOTE</b></p> <p><i>In 1+1 VRRP HSB mode, WLAN ACs share one virtual IP address, simplifying the network topology.</i></p> <p>Supports N+1 backup.</p> <p>Supports wireless configuration synchronization between WLAN ACs.</p>

### AP management

Feature	Description
AP access control	<p>Displays MAC addresses or SNs of APs in the whitelist.</p> <p>Adds a single AP or multiple APs (by specifying a range of MAC addresses or SNs) to the whitelist.</p> <p>Automatically discovering and manually confirming APs.</p> <p>Automatically discovering APs without manually confirming them.</p>
AP profile management	Specifies the default AP profile that is applied to automatically discovered APs.
AP group management	The AP group function is used to configure multiple APs in batches. When multiple APs managed by a WLAN AC require the same configurations, you can add these APs to one



Feature	Description
	AP group and configure the AP group to complete AP configuration.
AP region management	<p>Supports three AP region deployment modes:</p> <ul style="list-style-type: none"> <li>• Distributed deployment: APs are deployed independently. An AP is equivalent to a region and does not interfere with other APs. APs work at the maximum power and do not perform radio calibration.</li> <li>• Common deployment: APs are loosely deployed. The transmit power of each radio is less than 50% of the maximum transmit power.</li> <li>• Centralized deployment: APs are densely deployed. The transmit power of each radio is less than 25% of the maximum transmit power.</li> </ul> <p>Specifies the default region to which automatically discovered APs are added.</p>
AP type management	<p>Manages AP attributes including the number of interfaces, AP types, number of radios, radio types, maximum number of virtual access points (VAPs), maximum number of associated users, and radio gain (for APs deployed indoors).</p> <p>Provides default AP types.</p>
Network topology management	Supports LLDP topology detection.
AP working mode management	Supports AP working mode switchover. The AP working mode can be switched to the Fat or cloud mode on the AC.

### Radio management

Feature	Description
Radio profile management	<p>The following parameters can be configured in a radio profile:</p> <ul style="list-style-type: none"> <li>• Radio working mode and rate</li> <li>• Automatic or manual channel and power adjustment mode</li> <li>• Radio calibration interval</li> <li>• The radio type can be set to 802.11b, 802.11b/g, 802.11b/g/n, 802.11g, 802.11n, 802.11g/n, 802.11a, 802.11a/n, 802.11ac, or 802.11ax.</li> </ul> <p>You can bind a radio to a specified radio profile.</p> <p>Supports MU-MIMO.</p>
Unified static configuration of parameters	Radio parameters such as the channel and power of each radio are configured on the WLAN AC and then delivered to APs.
Dynamic management	<p>APs can automatically select working channels and power when they go online.</p> <p>In an AP region, APs automatically adjust working channels and power in the event of signal interference:</p> <ul style="list-style-type: none"> <li>• Partial calibration: The optimal working channel and power of a specified AP can be adjusted.</li> <li>• Global calibration: The optimal working channels and power of all the APs in a specified region can be adjusted.</li> </ul> <p>When an AP is removed or goes offline, the WLAN AC increases the power of neighboring APs to compensate for the coverage hole.</p> <p>Automatic selection and calibration of radio parameters in AP regions are supported.</p>
Enhanced service capabilities	<p>Band steering: Enables terminals to preferentially access the 5G frequency band, achieving load balancing between the 2.4G and 5G frequency bands.</p> <p>Smart roaming: Enables sticky terminals to roam to APs with better signals.</p> <ul style="list-style-type: none"> <li>• 802.11k and 802.11v smart roaming</li> </ul>

Feature	Description
	<ul style="list-style-type: none"> <li>802.11r fast roaming (<math>\leq 50</math> ms)</li> </ul>

### WLAN service management

Feature	Description
ESS management	<p>Allows you to enable SSID broadcast, set the maximum number of access users, and set the association aging time in an ESS.</p> <p>Isolates APs at Layer 2 in an ESS.</p> <p>Maps an ESS to a service VLAN.</p> <p>Associates an ESS with a security profile or a QoS profile.</p> <p>Enables IGMP for APs in an ESS.</p> <p>Supports Chinese SSIDs.</p>
VAP-based service management	<p>Adds multiple VAPs at a time by binding radios to ESSs.</p> <p>Displays information about a single VAP, VAPs with a specified ESS, or all VAPs.</p> <p>Supports configuration of offline APs.</p> <p>Creates VAPs according to batch delivered service provisioning rules in automatic AP discovery mode.</p>
Service provisioning management	<p>Supports service provisioning rules configured for a specified radio of a specified AP type.</p> <p>Adds automatically discovered APs to the default AP region. The default AP region is configurable.</p> <p>Applies a service provisioning rule to a region to enable APs in the region to go online.</p>
Multicast service management	<p>Supports IGMP snooping.</p> <p>Supports IGMP proxy.</p>
Load balancing	<p>Performs load balancing among radios in a load balancing group.</p> <ul style="list-style-type: none"> <li>Supports two load balancing modes: <ul style="list-style-type: none"> <li>Based on the number of STAs connected to each radio</li> <li>Based on the traffic volume on each radio</li> </ul> </li> </ul>
Bring Your Own Device (BYOD)	<ul style="list-style-type: none"> <li>Identifies device types according to the OUI in the MAC address.</li> <li>Identifies device types according to the user agent (UA) field in an HTTP packet.</li> <li>Identifies device types according to DHCP Option information.</li> <li>Carries device type information in RADIUS authentication and accounting packets.</li> </ul>
Location services	<p>Locates AeroScout and Ekahau tags.</p> <p>Locates Wi-Fi terminals.</p> <p>Locates Bluetooth terminals.</p> <p>Locates Bluetooth tags.</p>
Spectrum analysis	<p>Identifies the following interference sources: Bluetooth, microwave ovens, cordless phones, ZigBee, game controller, 2.4 GHz/5 GHz wireless audio and video devices, and baby monitors.</p> <p>Works with the eSight to display spectrums of interference sources.</p>
Hotspot2.0	Supports a Hotspot2.0 network.
Internet of Things (IoT)	Supports IoT cards on the AP to converge the WLAN and IoT.
Navi WLAN AC	Supports remote STA access on the Navi WLAN AC.

Feature	Description
Centralized license control	Supports a license server as the centralized AP license control point. Allows a license server to manage license clients. Supports license synchronization between a license server and clients.

### WLAN user management

Feature	Description
Address allocation of wireless users	Functions as a DHCP server to assign IP addresses to wireless users.
WLAN user management	Supports user blacklist and whitelist. Controls the number of access users: <ul style="list-style-type: none"> <li>Based on APs</li> <li>Based on SSIDs</li> </ul> Logs out users in any of the following ways: <ul style="list-style-type: none"> <li>Using RADIUS DM messages</li> <li>Using commands</li> </ul> Supports various methods to view information: <ul style="list-style-type: none"> <li>Allows you to view the user status by specifying the user MAC address, AP ID, radio ID, or WLAN ID.</li> <li>Displays the number of online users in an ESS, AP, or radio.</li> <li>Collects packet statistics on air interface based on user.</li> </ul>
WLAN user roaming	Supports intra-AC Layer 2 roaming. <b>NOTE</b> <i>Users can roam between APs connected to different physical ports on a WLAN AC.</i> Supports inter-VLAN Layer 3 roaming on a WLAN AC. Supports roaming between WLAN ACs. Supports fast key negotiation in 802.1X authentication. Authenticates users who request to reassociate with the WLAN AC and rejects the requests of unauthorized users. Delays clearing user information after a user goes offline so that the user can rapidly go online again.
User group management	Supports ACLs. Supports user isolation: <ul style="list-style-type: none"> <li>Inter-group isolation</li> <li>Intra-group isolation</li> </ul>

### WLAN security

Feature	Description
WLAN security profile management	Manages authentication and encryption modes using WLAN security profiles.
Authentication modes	Open system authentication with no encryption WEP authentication/encryption

Feature	Description
	<p>WPA/WPA2/WPA3 authentication and encryption:</p> <ul style="list-style-type: none"> <li>• WPA/WPA2-PSK+TKIP</li> <li>• WPA/WPA2-PSK+CCMP</li> <li>• WPA/WPA2-802.1X+TKIP</li> <li>• WPA/WPA2-802.1X+CCMP</li> <li>• WPA3-802.1X+GCMP256</li> <li>• WPA/WPA2-PSK+TKIP-CCMP</li> <li>• WPA/WPA2-802.1X+TKIP-CCMP</li> </ul> <p>WPA/WPA2-PPSK authentication and encryption</p> <p>WPA3-SAE+CCMP authentication and encryption</p> <p>WAPI authentication and encryption:</p> <ul style="list-style-type: none"> <li>• Supports centralized WAPI authentication.</li> <li>• Supports three-certificate WAPI authentication, which is compatible with traditional two-certificate authentication.</li> <li>• Issues a certificate file together with a private key.</li> </ul> <p>Allows users to use MAC addresses as accounts for authentication by the RADIUS server.</p> <p>Portal authentication:</p> <ul style="list-style-type: none"> <li>• Authentication through an external Portal server</li> <li>• Built-in Portal authentication and authentication page customization</li> </ul> <p>802.1X authentication:</p> <ul style="list-style-type: none"> <li>• Authentication through an external 802.1X server.</li> <li>• Built-in 802.1X authentication.</li> </ul>
Combined authentication	<p>Combined MAC authentication:</p> <ul style="list-style-type: none"> <li>• PSK+MAC authentication</li> </ul> <p>MAC+portal authentication:</p> <ul style="list-style-type: none"> <li>• MAC authentication is used first. When MAC authentication fails, portal authentication is used.</li> </ul>
AAA	<p>Local authentication/local accounts (MAC addresses and accounts)</p> <p>RADIUS authentication</p> <p>Multiple authentication servers:</p> <ul style="list-style-type: none"> <li>• Supports backup authentication servers.</li> <li>• Specifies authentication servers based on the account.</li> <li>• Configures authentication servers based on the account.</li> <li>• Binds user accounts to SSIDs.</li> </ul>
Security isolation	<p>Port-based isolation</p> <p>User group-based isolation</p>
Security standards	<p>802.11i, Wi-Fi Protected Access 2 (WPA2), WPA,802.1X</p> <p>Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), and Extensible Authentication</p> <ul style="list-style-type: none"> <li>• Protocol (EAP) types:</li> <li>• EAP-Transport Layer Security (TLS)</li> <li>• EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2)</li> </ul>

Feature	Description
	<ul style="list-style-type: none"> <li>Protected EAP (PEAP) v0 or EAP-MSCHAPv2</li> <li>EAP-Flexible Authentication via Secure Tunneling (FAST)</li> <li>PEAP v1 or EAP-Generic Token Card (GTC)</li> <li>EAP-Subscriber Identity Module (SIM)</li> </ul>
WIDS	<ul style="list-style-type: none"> <li>Rogue device scan, identification, defense, and countermeasures, which includes dynamic blacklist configuration and detection of rogue APs, STAs, and network attacks.</li> </ul>
Authority control	<ul style="list-style-type: none"> <li>ACL limit based on the following: <ul style="list-style-type: none"> <li>Port</li> <li>User group</li> <li>User</li> </ul> </li> </ul>
Other security features	<ul style="list-style-type: none"> <li>SSID hiding</li> <li>IP source guard: <ul style="list-style-type: none"> <li>Configures IP and MAC binding entries statically.</li> <li>Generates IP and MAC binding entries dynamically.</li> </ul> </li> </ul>

### WLANQoS

Feature	Description
WMM profile management	<p>Enables or disables Wi-Fi Multimedia (WMM).</p> <p>Allows a WMM profile to be applied to radios of multiple APs.</p>
Traffic profile management	<p>Manages traffic from APs and maps packet priorities according to traffic profiles.</p> <p>Applies a QoS policy to each ESS by binding a traffic profile to each ESS.</p>
AC traffic control	<p>Manages QoS profiles.</p> <p>Uses ACLs to perform traffic classification.</p> <p>Limits incoming and outgoing traffic rates for each user based on inbound and outbound CAR parameters.</p> <p>Limits the traffic rate based on ESSs or VAPs.</p>
AP traffic control	<p>Controls traffic of multiple users and allows users to share bandwidth.</p> <p>Limits the rate of a specified VAP.</p>
Packet priority configuration	<p>Sets the QoS priority (IP precedence or DSCP priority) for CAPWAP control channels.</p> <p>Sets the QoS priority for CAPWAP data channels:</p> <ul style="list-style-type: none"> <li>Allows you to specify the CAPWAP header priority.</li> <li>Maps 802.1p priorities of user packets to ToS priorities of tunnel packets.</li> </ul>
Airtime fair scheduling	<p>Allocates equal time to users for occupying the channel, which improves users' Internet access experience.</p>

### Physical Specifications

Feature	Description
Dimensions (H x W x D)	43.6 mm x 210 mm x 250 mm
Interface type	2 x 10G (SFP+) + 10 x GE

Feature	Description
Maximum power consumption	21 W
Weight	1.47 kg
Operating temperature and altitude	-60 m to +1800 m: 0°C to 45°C 1800 m to 5000 m: Temperature decreases by 1°C every time the altitude increases 220 m.
Relative humidity	5% RH to 95% RH, noncondensing
Power modules	AC/DC adapter

## Performance Specifications

Feature	Description
Number of managed APs	Central APs: 32 Common APs and RUs: 256 <b>NOTE</b> <i>The RUs managed by the WLAN AC do not occupy the AC's license resources. However, the total number of managed common APs and RUs cannot exceed the upper limit allowed by the AC.</i>
Number of access users	4096 <b>NOTE</b> <i>The maximum number of access users varies depending on the authentication mode.</i>
Number of MAC address entries	8192
Forwarding capability	10 Gbit/s <b>NOTE</b> <i>Packet length: 1514 bytes</i>
Number of VLANs	4096
Number of routing entries	<ul style="list-style-type: none"> <li>IPv4: 8192</li> <li>IPv6: 2048</li> </ul>
Number of ARP entries	6144
Number of multicast forwarding entries	2048
Number of DHCP IP address pools	64 IP address pools, each of which contains a maximum of 8192 IP addresses
Number of local accounts	4096
Number of ACLs	4096

## Standards compliance

Item	Description
Safety standards	IEC60950-1

Item	Description
	UL60950-1 CSA C22.2#60950-1 EN60950-1 AS/NZS 60950.1 GB 4943
EMC standards	FCC Part15B ETSI EN 300 386 IEC61000-4-11 IEC 61000-4-4 IEC61000-4-2 IEC61000-4-3 IEC61000-4-5 IEC61000-4-6 IEC 61000-3-2 IEC 61000-3-3 AS/NZS CISPR 32 EN55032/EN55024 ICES-003 GB9254
RoHS	Directive 2002/95/EC & 2011/65/EU
Reach	Regulation 1907/2006/EC
WEEE	Directive 2002/96/EC & 2012/19/EU

## Ordering Information

Part Number	Description
02351YTV	AC6508 mainframe (10*GE ports, 2*10GE SFP+ ports, with the AC/DC adapter)
88034UVY	Access Controller AP Resource License(1 AP)
88034UWA	Access Controller AP Resource License(8 AP)
88034UWB	Access Controller AP Resource License(16 AP)
88034UWC	Access Controller AP Resource License(32 AP)
88034UWD	Access Controller AP Resource License(64 AP)
88034UWE	Access Controller AP Resource License(128 AP)

## More Information

For more information about Huawei WLAN products, 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 web: <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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# Huawei AirEngine 5762-13W Access Point Datasheet

# Product Overview

Huawei AirEngine 5762-13W is a Wi-Fi 6 (802.11ax) wall plate access point (AP). It can simultaneously provide services on 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, achieving a device rate of up to 2.975 Gbps. This AP features high bandwidth and high concurrency with compact size, facilitating flexible deployment and saving customers' investment. These strengths make the AirEngine 5762-13W ideal for indoor coverage scenarios of small and medium-sized enterprise offices, hospitals, and higher education.



AirEngine 5762-13W

- Dual-radio mode: 2.4 GHz (2x2 MIMO) + 5 GHz (2x2 MIMO), achieving rates of up to 575 Mbps and 2.4 Gbps, respectively, and 2.975 Gbps for the device.
- Uplink: 1 x GE; downlink: 1 x GE.
- Various installation modes for easy deployment, including wall-mounting and plate-mounting.
- Built-in smart antennas to provide precise coverage for STAs, reduce interference, and improve signal quality.
- USB port for external IoT expansion (supporting protocols such as ZigBee, and RFID)
- Supports Bluetooth serial interface-based O&M through built-in Bluetooth and CloudCampus APP.
- Supports the Fat, Fit, and cloud three working modes.

## Feature Descriptions

### Wi-Fi 6 (802.11ax) standard

- As the latest generation Wi-Fi standards of IEEE 802.11, 802.11ax improves user experience in high-density access scenarios and supports 2.4 GHz and 5 GHz frequency bands.
- MU-MIMO on both the 2.4 GHz and 5 GHz frequency bands, allowing an AP to transmit data to and receive data from multiple STAs simultaneously and multiplying the utilization of radio spectrum resources.
- 1024-QAM modulation, improving data transmission efficiency by 25% compared with 802.11ac (256-QAM).
- OFDMA scheduling enables multiple users to receive and send information at the same time, reducing latency and improving network efficiency.
- Spatial reuse (SR) technology uses basic service set (BSS) coloring to enable APs and STAs to distinguish BSSs, minimizing co-channel interference.
- The target wake time (TWT)\* allows APs and STAs to negotiate the sleep and wake time with each other, thereby improving the battery life of the STAs.

#### NOTE

*The function and features marked with \* can be implemented through software upgrade. The following describes are the same.*

### MU-MIMO

The AP supports MU-MIMO and supports a maximum of four spatial streams, two spatial streams at 2.4 GHz (2x2 MIMO) and two spatial streams at 5 GHz (2x2 MIMO). The MU-MIMO technology enables an AP to send data to multiple STAs simultaneously, which doubles the radio spectrum resource usage, increases the number of access users and bandwidth, and improves user experience in high-density access scenarios.

## High-speed access

The AP supports 160 MHz frequency bandwidth, which increases the number of available data subcarriers and expands transmission channels. In addition, the AP uses 1024-QAM modulation and MU-MIMO to achieve a rate of up to 0.575 Gbps at 2.4 GHz radio, 2.4 Gbps at 5 GHz radio, and 2.975 Gbps for the device.

## High Density Boost technology

Huawei uses the following technologies to address challenges in high-density scenarios, including access problems, data congestion, and poor roaming experience:

### SmartRadio for air interface optimization

- Load balancing during smart roaming: The load balancing algorithm can work during smart roaming for load balancing detection among APs on the network after STA roaming to adjust the STA load on each AP, improving network stability.
- Intelligent DFA technology: The dynamic frequency assignment (DFA) algorithm is used to automatically detect adjacent-channel and co-channel interference, and identify any 2.4 GHz redundant radio. Through automatic inter-AP negotiation, the redundant radio is automatically switched to another mode (dual-5G AP models support 2.4G-to-5G switchover) or is disabled to reduce 2.4 GHz co-channel interference and increase the system capacity.
- Intelligent conflict optimization technology: The dynamic enhanced distributed channel access (EDCA) and airtime scheduling algorithms are used to schedule the channel occupation time and service priority of each user. This ensures that each user is assigned relatively equal time for using channel resources and user services are scheduled in an orderly manner, improving service processing efficiency and user experience.

### Air interface performance optimization

- In high-density scenarios where many users access the network, increased number of low-rate STAs consumes more resources on the air interface, reduces the AP capacity, and lowers user experience. Therefore, Huawei APs will check the signal strength of STAs during access and rejects access from weak-signal STAs. At the same time, the APs monitor the rate of online STAs in real time and forcibly disconnect low-rate STAs so that the STAs can reassociate with APs that have stronger signals. The terminal access control technology can increase air interface use efficiency and allow access from more users.

### 5G-prior access (band steering)

- The APs support both 2.4 GHz and 5 GHz frequency bands. The 5G-prior access function enables an AP to steer STAs to the 5 GHz frequency band first, which reduces load and interference on the 2.4 GHz frequency band, improving the user experience.

## Wired and wireless dual security guarantee

To ensure data security, Huawei APs integrate wired and wireless security measures and provide comprehensive security protection.

### Authentication and encryption for wireless access

- The APs support WEP, WPA/WPA2-PSK, WPA3-SAE, WPA/WPA2-PPSK, WPA/WPA2/WPA3-802.1X, and WAPI authentication/encryption modes to ensure security of the wireless network. The authentication mechanism is used to authenticate user identities so that only authorized users can access network resources. The encryption mechanism is used to encrypt data transmitted over wireless links to ensure that the data can only be received and parsed by expected users.

### Rogue device monitoring

- Huawei APs support WIDS/WIPS, and can monitor, identify, defend, counter, and perform refined management on the rogue devices, to provide security guarantees for air interface environment and wireless data transmission.

### Wired access authentication and encryption for the AP

- The AP access control ensures validity of APs. The CAPWAP link protection and DTLS encryption provide security assurance, improving data transmission security between the AP and the WLAN AC.

## Automatic radio calibration

Automatic radio calibration allows an AP to collect signal strength and channel parameters of surrounding APs and generate an AP topology according to the collected data. Based on the interference caused by authorized APs, rogue APs, and No Wi-Fi APs

and their loads, each AP automatically adjusts its transmit power and working channel to make the network operate at the optimal performance. In this way, network reliability and user experience are improved.

## Leader AP

The leader AP integrates some WLAN AC functions and can be used to manage Fit APs in small- and medium-sized enterprises and stores, implementing WLAN AC-free access not requiring licenses and saving customer investment.

## Cloud-based Management

The AP can be managed via cloud, then no need to deploy a WLAN AC and an authentication server. In cloud-based management mode, abundant authentication functions, such as pre-shared key (PSK) authentication, Portal authentication, SMS authentication, and social media authentication, can be implemented. This mode significantly simplifies the networking and reduces the capital expenditure (CAPEX). In addition, multiple advanced functions, such as online cloud-based network planning, cloud-based deployment, cloud-based inspection, and cloud-based O&M, can be implemented through Huawei cloud management platform. In multi-branch deployment scenarios, cloud APs are pre-configured on the cloud management platform firstly. Then on site, you only need to power on the cloud APs and connect them to switch ports, then scan the QR code to implement AP plug-and-play. Pre-configurations are automatically delivered to devices, greatly shortening the network deployment time. The cloud management platform can monitor the network status, device status, and terminal connection status of all sites of a tenant in a comprehensive and intuitive manner to learn the network and service running status in real time.

# Basic Specifications

## Fat/Fit AP mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)</p> <p>Beamforming</p> <p>Multi-user multiple-input multiple-output (MU-MIMO)</p> <p>Orthogonal frequency division multiple access (OFDMA)</p> <p>Compliance with 1024-quadrature amplitude modulation (QAM) and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)</p> <p>Target wake time (TWT)</p> <p>Low-density parity-check (LDPC)</p> <p>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)</p> <p>802.11 dynamic frequency selection (DFS)</p> <p>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz and 160 MHz modes</p> <p>Priority mapping and scheduling that are compliant with Wi-Fi multimedia (WMM) to implement priority-based data processing and forwarding</p> <p>Automatic and manual rate adjustment (the rate is adjusted automatically by default)</p> <p>WLAN channel management and channel rate adjustment</p> <p><b>NOTE</b></p> <p><i>For detailed management channels, see the Country Codes &amp; Channel Compliances.</i></p> <p>Automatic channel scanning and interference avoidance</p> <p>Service set identifier (SSID) hiding</p> <p>Signal sustain technology (SST)</p> <p>Unscheduled automatic power save delivery (U-APSD)</p>

Item	Description
	<p>Control and Provisioning of Wireless Access Points (CAPWAP) in Fit AP mode</p> <p>Extended Service Set (ESS) in Fit AP mode</p> <p>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks</p> <p>Multi-user call admission control (CAC)</p> <p>802.11k and 802.11v smart roaming</p> <p>802.11r fast roaming (≤ 50 ms)</p>
Network features	<p>Compliance with IEEE 802.3ab</p> <p>Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)</p> <p>Compliance with IEEE 802.1q</p> <p>SSID-based VLAN assignment</p> <p>VLAN trunk on uplink Ethernet ports</p> <p>Management channel of the AP uplink port in tagged and untagged mode</p> <p>DHCP client, obtaining IP addresses through DHCP</p> <p>Tunnel data forwarding and direct data forwarding</p> <p>STA isolation in the same VLAN</p> <p>IPv4/IPv6 access control lists (ACLs)</p> <p>Link Layer Discovery Protocol (LLDP)</p> <p>Uninterrupted service forwarding upon CAPWAP channel disconnection in Fit AP mode</p> <p>Unified authentication on the AC in Fit AP mode</p> <p>AC dual-link backup in Fit AP mode</p> <p>Network Address Translation (NAT) in Fat AP mode</p> <p>IPv6 in Fit AP mode</p> <p>Telemetry in Fit AP mode, quickly collecting AP status and application experience parameters</p> <p>IPv6 Source Address Validation Improvements (SAVI)</p> <p>Multicast Domain Name Service (mDNS) gateway protocol</p>
QoS features	<p>Priority mapping and scheduling that are compliant with WMM to implement priority-based data processing and forwarding</p> <p>WMM parameter management for each radio</p> <p>WMM power saving</p> <p>Priority mapping for upstream packets and flow-based mapping for downstream packets</p> <p>Queue mapping and scheduling</p> <p>User-based bandwidth limiting</p> <p>Adaptive bandwidth management (automatic bandwidth adjustment based on the user quantity and radio environment) to improve user experience</p> <p>Airtime scheduling</p> <p>Air interface HQoS scheduling</p> <p>Intelligent multimedia scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption (WPA2-Personal)</p> <p>WPA2-802.1X authentication and encryption (WPA2-Enterprise)</p> <p>WPA3-SAE authentication and encryption (WPA3-Personal)</p> <p>WPA3-802.1X authentication and encryption (WPA3-Enterprise)</p>

Item	Description
	<p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>WPA2-PPSK authentication and encryption in Fit AP mode</p> <p>WAPI authentication and encryption</p> <p>Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS), including rogue device detection and containment, attack detection and dynamic blacklist, and STA/AP blacklist and whitelist</p> <p>802.1X authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p> <p>Dynamic ARP Inspection (DAI)</p> <p>IP Source Guard (IPSG)</p> <p>802.11w Protected Management Frames (PMF)</p> <p>DTLS encryption</p>
Maintenance features	<p>Unified management and maintenance on the AC in Fit AP mode</p> <p>Automatic login and configuration loading, and plug-and-play (PnP) in Fit AP mode</p> <p>Batch upgrade in Fit AP mode</p> <p>Telnet</p> <p>STelnet using SSHv2</p> <p>SFTP using SSHv2</p> <p>Remote wireless O&amp;M through the Bluetooth serial interface</p> <p>Web-based local AP management through HTTP or HTTPS in Fat AP mode</p> <p>Real-time configuration monitoring and fast fault locating using the NMS</p> <p>SNMP v1/v2/v3 in Fat AP mode</p> <p>System status alarm</p> <p>Network Time Protocol (NTP) in Fat AP mode</p>
Locating service	<p><b>NOTE</b></p> <p><i>The AP supports the locating service only in Fit AP mode.</i></p> <p>Wi-Fi terminal location</p> <p>Working with a location server to locate rogue devices</p>

## Cloud-based management mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)</p> <p>Beamforming</p> <p>Multi-user multiple-input multiple-output (MU-MIMO)</p> <p>Orthogonal frequency division multiple access (OFDMA)</p> <p>Compliance with 1024-quadrature amplitude modulation (QAM) and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)</p> <p>Target wake time (TWT)</p> <p>Low-density parity-check (LDPC)</p>

Item	Description
	<p>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)</p> <p>802.11 dynamic frequency selection (DFS)</p> <p>Priority mapping and scheduling that are compliant with Wi-Fi multimedia (WMM) to implement priority-based data processing and forwarding</p> <p>Automatic and manual rate adjustment (the rate is adjusted automatically by default)</p> <p>WLAN channel management and channel rate adjustment</p> <p><b>NOTE</b></p> <p><i>For detailed management channels, see the Country Codes &amp; Channel Compliances.</i></p> <p>Automatic channel scanning and interference avoidance</p> <p>Service set identifier (SSID) hiding</p> <p>Signal sustain technology (SST)</p> <p>Unscheduled automatic power save delivery (U-APSD)</p>
Network features	<p>Compliance with IEEE 802.3ab</p> <p>Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)</p> <p>Compliance with IEEE 802.1q</p> <p>SSID-based VLAN assignment</p> <p>DHCP client, obtaining IP addresses through DHCP</p> <p>STA isolation in the same VLAN</p> <p>Access control lists (ACLs)</p> <p>Unified authentication on the Cloud management platform</p> <p>Network Address Translation (NAT)</p>
QoS features	<p>Priority mapping and scheduling that are compliant with WMM to implement priority-based data processing and forwarding</p> <p>WMM parameter management for each radio</p> <p>WMM power saving</p> <p>Priority mapping for upstream packets and flow-based mapping for downstream packets</p> <p>Queue mapping and scheduling</p> <p>User-based bandwidth limiting</p> <p>Airtime scheduling</p> <p>Air interface HQoS scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption (WPA2-Personal)</p> <p>WPA2-802.1X authentication and encryption (WPA2-Enterprise)</p> <p>WPA3-SAE authentication and encryption (WPA3-Personal)</p> <p>WPA3-802.1X authentication and encryption (WPA3-Enterprise)</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>802.1X authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p> <p>Dynamic ARP Inspection (DAI)</p> <p>IP Source Guard (IPSG)</p>
Maintenance features	<p>Unified management and maintenance on the Cloud management platform</p>

Item	Description
	Automatic login and configuration loading, and plug-and-play (PnP) Batch upgrade Telnet STelnet using SSHv2 SFTP using SSHv2 Remote wireless O&M through the Bluetooth console port Web-based local AP management through HTTP or HTTPS Real-time configuration monitoring and fast fault locating using the NMS System status alarm Network Time Protocol (NTP)

## Technical Specifications

Item	Description	
Technical specifications	Dimensions (H x W x D)	160 mm x 86 mm x 38 mm
	Weight	0.32 kg
	Interface type	2 x 10M/100M/1GE (RJ45) 1 x USB <b>NOTE</b> <ul style="list-style-type: none"> <li>GE supports PoE input.</li> </ul>
	Bluetooth	BLE 5.0
	LED indicator	Indicates the power-on, startup, running, alarm, and fault states of the system.
Power specifications	Power input	<ul style="list-style-type: none"> <li>DC: 12 V ± 10%</li> <li>PoE power supply: in compliance with 802.3af</li> </ul>
	Maximum power consumption	12 W (excluding USB) <b>NOTE</b> <i>The actual maximum power consumption depends on local laws and regulations.</i> <i>802.3af power supply by default; 802.3at power is required only if USB is required.</i>
Environmental specifications	Operating temperature	0°C to +40°C
	Storage temperature	-40°C to +70°C
	Operating humidity	5% to 95% (non-condensing)
	Altitude	-60 m to +5000 m
	Atmospheric pressure	53 kPa to 106 kPa
Radio specifications	Antenna type	Built-in smart antennas
	Antenna gain	2.4 GHz: 2 dBi 5 GHz: 3 dBi <b>NOTE</b> <ul style="list-style-type: none"> <li>The gains above are the single-antenna peak gains.</li> </ul>

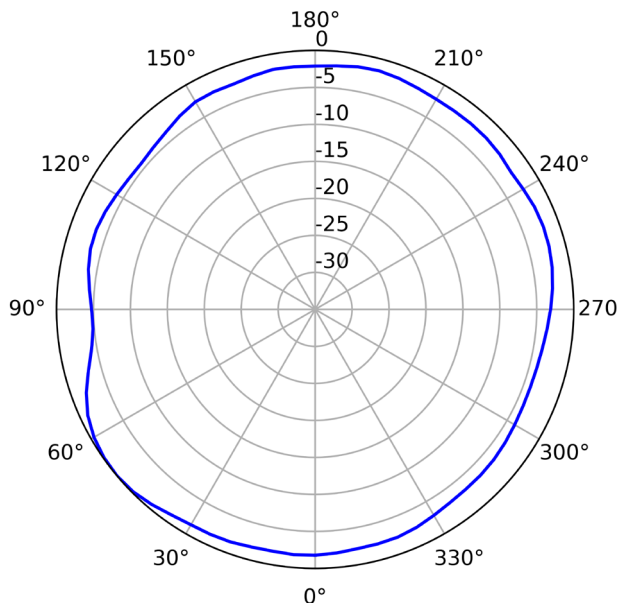


Item	Description
	<ul style="list-style-type: none"> <li>The equivalent antenna gain after all 2.4 GHz or 5 GHz antennas are combined is 1 dBi at 2.4 GHz or 1 dBi at 5 GHz.</li> </ul>
Maximum number of SSIDs for each radio	≤ 16
Maximum number of users	≤ 256 <b>NOTE</b> <i>The actual number of users varies according to the environment.</i>
Maximum transmit power	2.4 GHz: 23 dBm (combined power) 5 GHz: 23 dBm (combined power) <b>NOTE</b> <i>The actual transmit power depends on local laws and regulations.</i>
Power increment	1 dBm
Maximum number of non-overlapping channels	2.4 GHz (2.412 GHz to 2.472 GHz) <ul style="list-style-type: none"> <li>802.11b/g               <ul style="list-style-type: none"> <li>20 MHz: 3</li> </ul> </li> <li>802.11n               <ul style="list-style-type: none"> <li>20 MHz: 3</li> <li>40 MHz: 1</li> </ul> </li> <li>802.11ax               <ul style="list-style-type: none"> <li>20 MHz: 3</li> <li>40 MHz: 1</li> </ul> </li> </ul> 5 GHz (5.18 GHz to 5.825 GHz) <ul style="list-style-type: none"> <li>802.11a               <ul style="list-style-type: none"> <li>20 MHz: 13</li> </ul> </li> <li>802.11n               <ul style="list-style-type: none"> <li>20 MHz: 13</li> <li>40 MHz: 6</li> </ul> </li> <li>802.11ac               <ul style="list-style-type: none"> <li>20 MHz: 13</li> <li>40 MHz: 6</li> <li>80 MHz: 3</li> <li>160 MHz: 1</li> </ul> </li> <li>802.11ax               <ul style="list-style-type: none"> <li>20 MHz: 13</li> <li>40 MHz: 6</li> <li>80 MHz: 3</li> <li>160 MHz: 1</li> </ul> </li> </ul> <b>NOTE</b> <i>The table uses the number of non-overlapping channels supported by China as an example. The number of non-overlapping channels varies in different countries. For details, see the Country Codes &amp; Channels Compliance.</i>

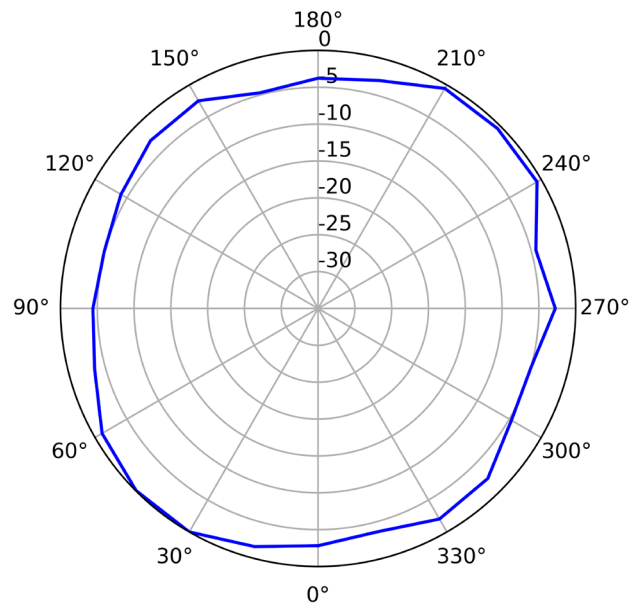
# Standards Compliance

Item	Description		
Safety standards	<ul style="list-style-type: none"> <li>UL 60950-1</li> <li>EN 60950-1</li> <li>IEC 60950-1</li> </ul>	<ul style="list-style-type: none"> <li>UL 62368-1</li> <li>EN 62368-1</li> <li>IEC 62368-1</li> </ul>	<ul style="list-style-type: none"> <li>GB 4943.1</li> <li>CAN/CSA 22.2 No.60950-1</li> </ul>
Radio standards	<ul style="list-style-type: none"> <li>ETSI EN 300 328</li> </ul>	<ul style="list-style-type: none"> <li>ETSI EN 301 893</li> </ul>	<ul style="list-style-type: none"> <li>AS/NZS 4268</li> </ul>
EMC standards	<ul style="list-style-type: none"> <li>EN 301 489-1</li> <li>EN 301 489-17</li> <li>EN 60601-1-2</li> <li>EN 55024</li> <li>EN 55032</li> <li>EN 55035</li> </ul>	<ul style="list-style-type: none"> <li>GB 9254</li> <li>GB 17625.1</li> <li>GB 17625.2</li> <li>AS/NZS CISPR32</li> <li>CISPR 24</li> <li>CISPR 32</li> <li>CISPR 35</li> </ul>	<ul style="list-style-type: none"> <li>IEC/EN61000-4-2</li> <li>IEC/EN 61000-4-3</li> <li>IEC/EN 61000-4-4</li> <li>IEC/EN 61000-4-5</li> <li>IEC/EN61000-4-6</li> <li>ICES-003</li> </ul>
IEEE standards	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g</li> <li>IEEE 802.11n</li> <li>IEEE 802.11ac</li> <li>IEEE 802.11ax</li> </ul>	<ul style="list-style-type: none"> <li>IEEE 802.11h</li> <li>IEEE 802.11d</li> <li>IEEE 802.11e</li> <li>IEEE 802.11k</li> </ul>	<ul style="list-style-type: none"> <li>IEEE 802.11v</li> <li>IEEE 802.11w</li> <li>IEEE 802.11r</li> </ul>
Security standards	<ul style="list-style-type: none"> <li>802.11i, Wi-Fi Protected Access (WPA), WPA2, WPA2-Enterprise, WPA2-PSK, WPA3, WAPI</li> <li>802.1X</li> <li>Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open</li> <li>EAP Type(s)</li> </ul>		
EMF	<ul style="list-style-type: none"> <li>EN 62311</li> </ul>	<ul style="list-style-type: none"> <li>EN 50385</li> </ul>	
RoHS	<ul style="list-style-type: none"> <li>Directive 2002/95/EC &amp; 2011/65/EU</li> </ul>	<ul style="list-style-type: none"> <li>(EU)2015/863</li> </ul>	
Reach	<ul style="list-style-type: none"> <li>Regulation 1907/2006/EC</li> </ul>		
WEEE	<ul style="list-style-type: none"> <li>Directive 2002/96/EC &amp; 2012/19/EU</li> </ul>		

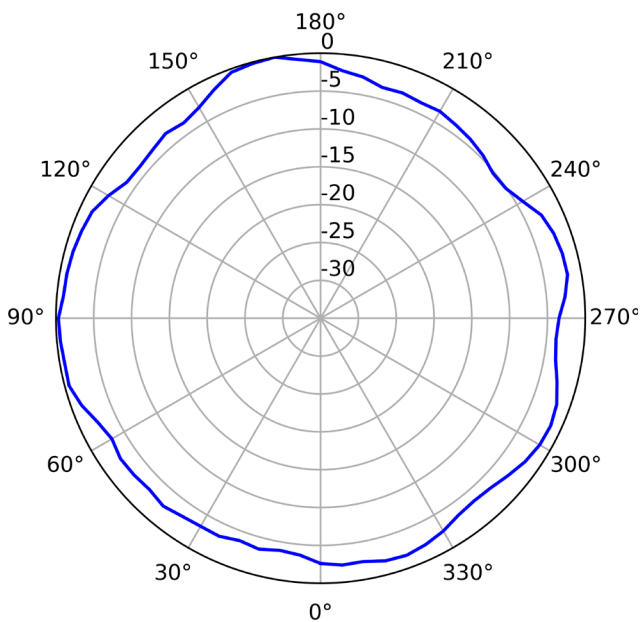
# Antennas Pattern



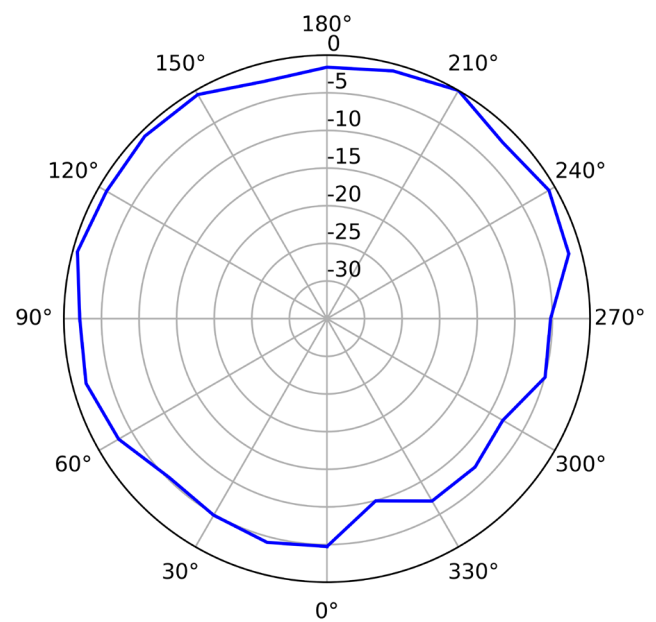
2.4G (Horizontal)



2.4G (Vertical)



5G (Horizontal)



5G (Vertical)

## More Information

For more information about Huawei WLAN products, 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 web: <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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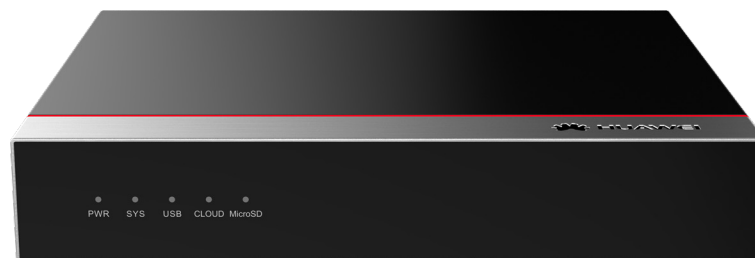
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# HUAWEI HiSecEngine USG6500E Series Firewalls (Desktop)

Huawei HiSecEngine USG6510E and USG6530E are new-generation desktop firewalls designed for small enterprises, industry branches, and chain business organizations. In addition to the traditional firewall management mode, the cloud-based management mode is supported. The cloud-based management mode provides plug-and-play, automated service configuration, automated and visualized O&M, and big data analytics for a large number of branches to access the network securely. The product provides pattern matching and encryption/decryption service processing acceleration capabilities, which greatly improve the performance for firewalls to process content security detection and IPSec services.

## Product Appearances



HiSecEngine USG6500E Series (Desktop)



## Product Highlights

### Comprehensive and integrated protection

- Integrates the traditional firewall, VPN, intrusion prevention, antivirus, data leak prevention, bandwidth management, and online behavior management functions all in one device.
- Provides refined bandwidth management and guarantees bandwidth for key services based on applications and website categories, so that key services can be preferentially forwarded.

### Quick deployment, simple O&M, and cloud-based management

- Initiates authentication and registration to the cloud-based management platform to implement plug-and-play and simplify network creation and deployment.
- Uses remote service configuration management, device monitoring, and fault management, implementing cloud-based management of mass devices and simplifying O&M.

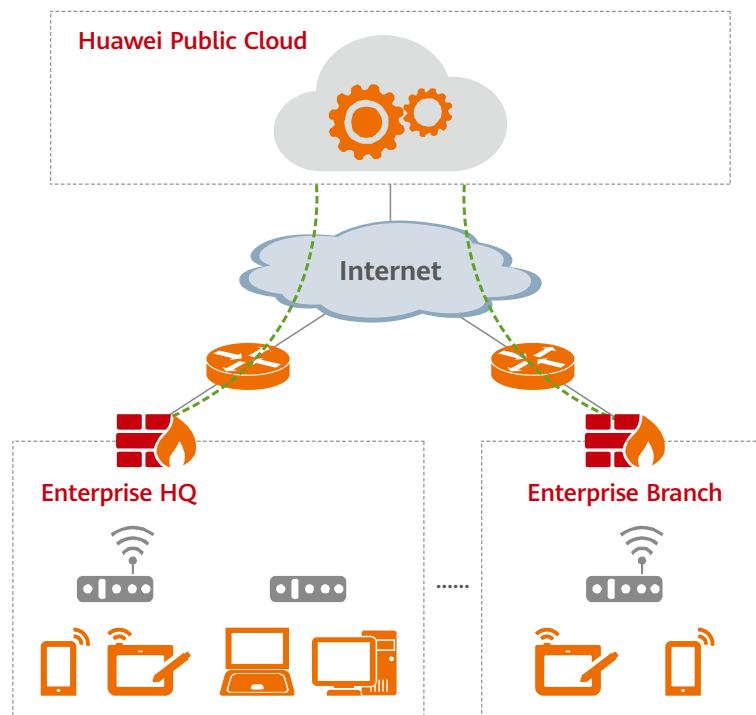
### Performance improvement

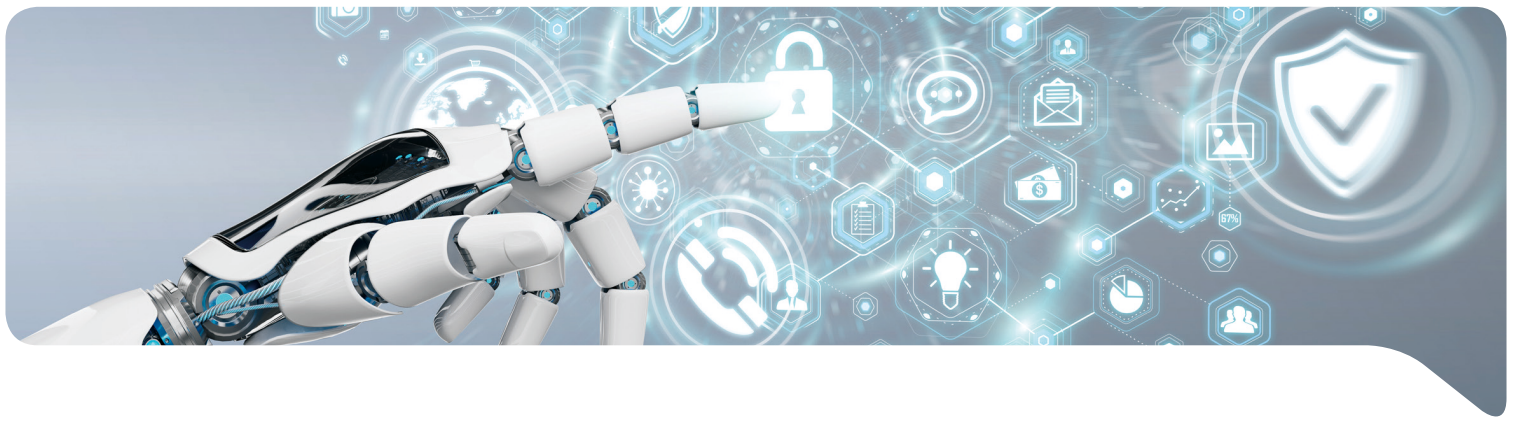
- Enables pattern matching and accelerates encryption/decryption, improving the performance for processing IPS, antivirus, and IPSec services.

## Deployment

### Cloud-based management

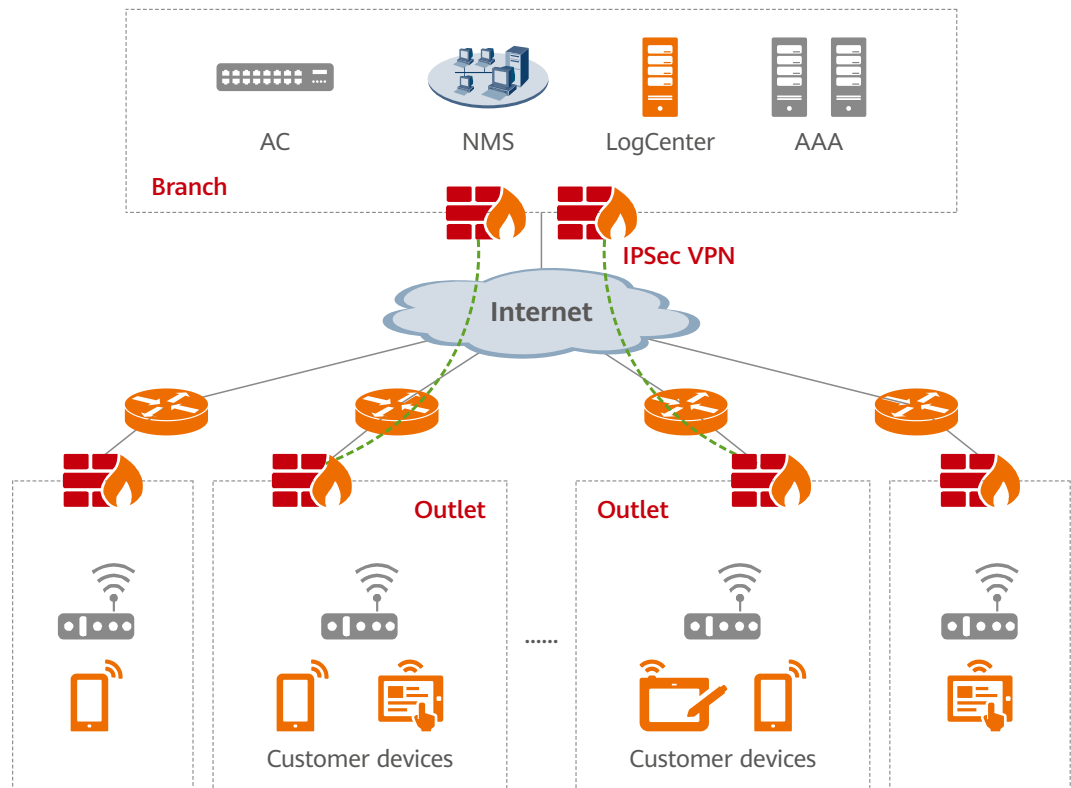
- Firewalls can proactively register with and be quickly incorporated into the cloud-based management platform to implement quick device deployment without manual attendance.
- Remote service configuration management, device monitoring, and fault management are used to implement cloud-based management of mass devices and simplify O&M.





### Access to enterprise networks

- The devices support USB-based deployment, simplifying device deployment. Centralized management is supported to reduce device O&M costs.
- IPSec VPN ensures access security. IPSec intelligent uplink selection automatically detects link quality and performs intelligent tunnel switching to ensure service continuity.
- The devices can work with the Agile Controller to form a branch access security solution that provides services such as user authentication and portal customization. This solution implements unified authentication, unified O&M, and unified log management. Centralized service management eases the difficulty of managing branch offices while allowing for platform customization for branches to perform targeted marketing.



## Software Features

Feature	Description
Integrated protection	Integrates firewall, VPN, intrusion prevention, antivirus, data leak prevention, bandwidth management, and URL filtering functions; provides a global configuration view and integrated policy management.
Application identification and control	Identifies common applications; supports application-specific access control; combines application identification with intrusion detection, antivirus, and data filtering, improving detection performance and accuracy.
Cloud-based management mode	Initiates authentication and registration to the cloud-based management platform to implement plug-and-play and simplify network creation and deployment. Supports remote service configuration, device monitoring, and fault management, implementing the management of mass devices in the cloud.
Cloud application security awareness	Controls enterprise cloud applications in a refined and differentiated manner to meet enterprises' requirements for cloud application management.
Intrusion prevention and web protection	Accurately detects and defends against vulnerability-specific attacks based on up-to-date threat information. The firewall can defend against web-specific attacks, including SQL injection and XSS attacks.
Antivirus	Rapidly detects over 5 million types of viruses based on the daily-updated virus signature database.
Data leak prevention (DLP)	Inspects files to identify the file types, such as WORD, EXCEL, POWERPOINT, and PDF, based on file content, and filters the file content.
Bandwidth management	Manages per-user and per-IP bandwidth in addition to identifying service applications to ensure the network access experience of key services and users. Control methods include limiting the maximum bandwidth, ensuring the minimum bandwidth, and changing application forwarding priorities.
URL filtering	Provides a URL category database with over 120 million URLs and accelerates access to specific categories of websites, improving access experience of high-priority websites. Supports DNS filtering, in which accessed web pages are filtered based on domain names. Supports the SafeSearch function to filter resources of search engines, such as Google, to guarantee access to only healthy network resources.
Behavior and content audit	Audits and traces the sources of the accessed content based on users.
Load balancing	Supports link load balancing to make full use of existing network resources.
Intelligent uplink selection	Supports service-specific PBR and intelligent uplink selection based on multiple load balancing algorithms (for example, based on bandwidth ratio and link health status) in multi-egress scenarios.
VPN encryption	Supports multiple highly available VPN features, such as IPSec VPN, SSL VPN, L2TP VPN, and GRE, and provides the Huawei-proprietary VPN client SecoClient for SSL VPN, L2TP VPN, and L2TP over IPSec VPN remote access.
DSVPN	Dynamic smart VPN establishes VPN tunnels between branches whose public addresses are dynamically changed, reducing the networking and O&M costs of the branches.
SSL-encrypted traffic detection	Detects and defends against threats in SSL-encrypted traffic using application-layer protection methods, such as intrusion prevention, antivirus, data filtering, and URL filtering.



Feature	Description
User authentication	Supports multiple user authentication methods, including local, RADIUS, HWTACACS, AD, and LDAP; supports built-in Portal and Portal redirection functions; works with the Agile Controller to implement multiple authentication modes.
Security virtualization	Supports virtualization of multiple types of security services, including firewall, intrusion prevention, antivirus, and VPN. Users can separately conduct personal management on the same physical device.
Policy Management	Manages and controls traffic based on VLAN IDs, quintuples, security zones, regions, applications, URL categories, and time ranges, and implements integrated content security detection. Provides predefined common-scenario defense templates to facilitate security policy deployment.
Diversified reports	Provides visualized and multi-dimensional report display by user, application, content, time, traffic, threat, and URL. Generates network security analysis reports on the Huawei security center platform to evaluate the current network security status and provide optimization suggestions.
Routing	Supports multiple types of routing protocols and features, such as RIP, OSPF, BGP, IS-IS, RIPng, OSPFv3, BGP4+, and IPv6 IS-IS.
Deployment mode	Supports transparent, routing, and hybrid working modes.

1. The HiSecEngine USG6510E supports the detection of 2 million viruses.

## Specifications

### System Performance and Capacity

Model	USG6510E	USG6530E
Firewall Throughput <sup>1</sup> (1518/512/64-byte, UDP)	1.2/1.2/1.2 Gbit/s	4/4/3.6 Gbit/s
Firewall Latency (64-byte, UDP)	15 μs	18 μs
FW + SA + IPS Throughput <sup>2</sup>	0.6 Gbit/s	1.5 Gbit/s
FW + SA + IPS + Antivirus Throughput <sup>2</sup>	0.6 Gbit/s	1.5 Gbit/s
Concurrent Sessions (HTTP1.1) <sup>1</sup>	300,000	500,000
New Sessions/Second (HTTP1.1) <sup>1</sup>	20,000	30,000
Maximum IPsec VPN Tunnels (GW to GW)	1,000	2,000
Maximum IPsec VPN Tunnels (Client to GW)	1,000	2,000
IPsec VPN Throughput <sup>1</sup> (AES-256 + SHA256, 1420-byte)	1 Gbit/s	3 Gbit/s

Model	USG6510E	USG6530E
SSL Inspection Throughput <sup>3</sup>	200 Mbit/s	300 Mbit/s
Concurrent SSL VPN Users (Default/Maximum)	100/100	100/500
Security Policies (Maximum)	1,000	3,000
Virtual Firewalls	10	20
URL Filtering: Categories	More than 130	
URL Filtering: URLs	A database of over 120 million URLs in the cloud	
Automated Threat Feedback and IPS Signature Updates	Yes, an industry-leading security center from Huawei ( <a href="http://sec.huawei.com/sec/web/index.do">http://sec.huawei.com/sec/web/index.do</a> )	
Third-Party and Open-Source Ecosystem	<p>Open API for integration with third-party products, providing RESTful and NetConf interfaces</p> <p>Other third-party management software based on SNMP, SSH, and Syslog</p> <p>Cooperation with third-party tools, such as Tufin, AlgoSec, and FireMon</p> <p>Collaboration with anti-APT solution</p>	
Centralized Management	Centralized configuration, logging, monitoring, and reporting is performed by Huawei eSight.	
VLANs (Maximum)	4094	
VLANIF Interfaces (Maximum)	256	1024

1. The performance is tested under ideal conditions based on RFC2544 and RFC3511. The actual result may vary with deployment environments.

2. The Antivirus, IPS, and SA performance is measured using 100 KB HTTP files.

3. SSL inspection throughput is measured with IPS enabled and HTTPS traffic using TLS v1.2 with AES128-GCM-SHA256.

\*SA: indicates service awareness.

## Hardware Specifications

Model	USG6510E	USG6530E
Dimensions (H x W x D) mm	43.6 x 250 x 210	
Form Factor/Height	Desktop	
Fixed Interface	2 x GE (SFP) + 10 x GE	2 x 10GE (SFP+) + 10 x GE
USB Port	1 x USB 3.0	
Weight (Full Configuration)	1.5 kg	
External Storage	Optional, Micro-SD card supported, 64 GB	
AC Power Supply	100V to 240V	
Power	36 W	
Power Supplies	External power adapter	

Model	USG6510E	USG6530E
Operating Environment (Temperature/Humidity)	Temperature: 0°C to 45°C; Humidity: 5% to 95%, non-condensing;	
Non-operating Environment	Temperature: -40°C to +70°C Humidity: 5% to 95%, non-condensing;	

## Ordering Information

Product	Model	Description
USG6510E	USG6510E-AC	USG6510E AC Host (2*GE (SFP) + 10*GE, with AC/DC Adapter)
USG6530E	USG6530E-AC	USG6530E AC Host (2*10GE (SFP+) + 10*GE, with AC/DC Adapter)
Function License		
SSL VPN Concurrent Users	LIC-USG6KE-SSLVPN-100	Quantity of SSL VPN Concurrent Users (100 Users)
	LIC-USG6KE-SSLVPN-200	Quantity of SSL VPN Concurrent Users (200 Users)
	LIC-USG6KE-SSLVPN-500	Quantity of SSL VPN Concurrent Users (500 Users)
NGFW License		
Threat Protection Bundle (IPS, AV, URL)	LIC-USG6510E-TP-1Y	Threat Protection Subscription 12 Months (Applies to USG6510E)
	LIC-USG6510E-TP-3Y	Threat Protection Subscription 36 Months (Applies to USG6510E)
	LIC-USG6530E-TP-1Y	Threat Protection Subscription 12 Months (Applies to USG6530E)
	LIC-USG6530E-TP-3Y	Threat Protection Subscription 36 Months (Applies to USG6530E)
Cloud Sandbox Inspection	LIC-USG6530E-CS-1Y	Cloud Sandbox Inspection 12 Months (Applies to USG6530E)
	LIC-USG6530E-CS-3Y	Cloud Sandbox Inspection 36 Months (Applies to USG6530E)
N1 License		
Foundation package function	N1-USG6510E-F-Lic	N1-USG6510E Foundation, Per Device
	N1-USG6530E-F-Lic	N1-USG6530E Foundation, Per Device

Note: Some parts of this table list the sales strategies in different regions. For more information, please contact your Huawei representative.

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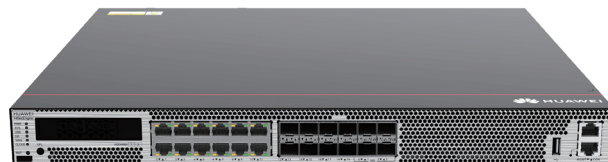
# Huawei USG6600E New-Generation Firewalls

With the continuous digitalization and cloudification of enterprise services, networks play an important role in enterprise operations, and must be protected. Network attackers use various methods, such as identity spoofing, website Trojan horses, and malware, to initiate network penetration and attacks, affecting the normal use of enterprise networks.

Deploying firewalls on network borders is a common way to protect enterprise network security. However, firewalls can only analyze and block threats based on signatures. This method cannot effectively handle unknown threats and may deteriorate device performance. This single-point and passive method does not pre-empt or effectively defend against unknown threat attacks. Threats hidden in encrypted traffic in particular cannot be effectively identified without breaching user privacy.

Huawei's next-generation firewalls provide the latest capabilities and work with other security devices to proactively defend against network threats, enhance border detection capabilities, effectively defend against advanced threats, and resolve performance deterioration problems. The product provides pattern matching and encryption/decryption service processing acceleration functions, which greatly improve the firewalls ability to process content security detection and IPSec services.

## Product Appearances



USG6600E New-Generation Firewalls



HUAWEI



## Product Highlights

### Comprehensive and integrated protection

- Integrates the traditional firewall, VPN, intrusion prevention, antivirus, data leak prevention, bandwidth management, URL filtering, and online behavior management functions all in one device.
- Interworks with the local or cloud sandbox to effectively detect unknown threats and prevent zero-day attacks.
- Implements refined bandwidth management based on applications and websites, preferentially forwards key services, and ensures bandwidth for key services.

### More comprehensive defense

- Intelligent defense: DGA malicious domain name detection, malicious C&C detection, malicious encrypted C&C detection, and new brute-force cracking detection.
- The built-in traffic probe of a firewall extracts traffic information and reports it to the HiSec Insight, a security big data analysis platform developed by Huawei. The HiSec Insight analyzes threats in the traffic, without decrypting the traffic or compromising the device performance. The threat identification rate is higher than 90%.
- The deception system proactively responds to hacker scanning behavior and quickly detects and records malicious behavior, facilitating forensics and source tracing.

### High performance

- Enables pattern matching and accelerates encryption/decryption, improving the performance for processing IPS, antivirus, and IPSec services.
- The throughput of a 1 U device can reach 80 Gbit/s.

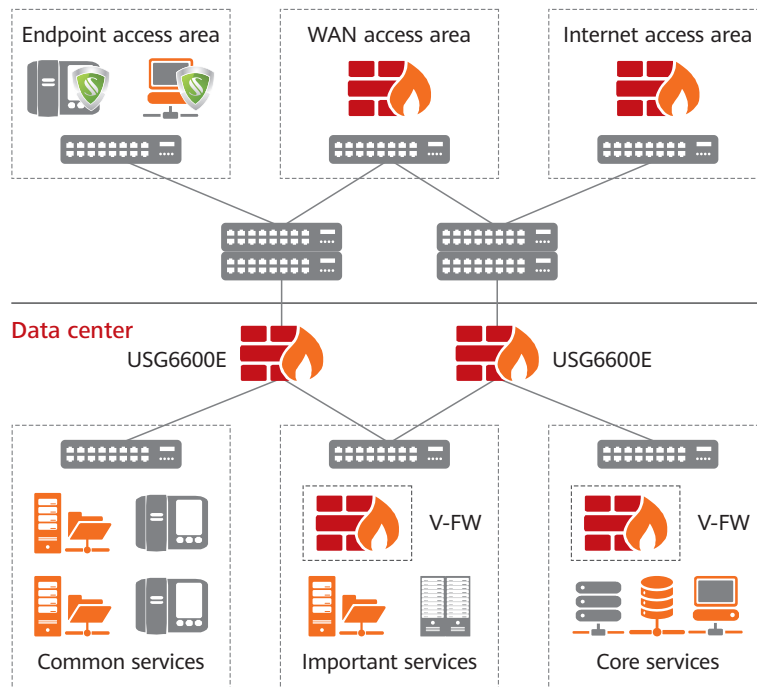
### High port density

- The device has multiple types of interfaces, such as 40G, 10G, and 1G interfaces. Services can be flexibly expanded without extra interface cards.

## Deployment

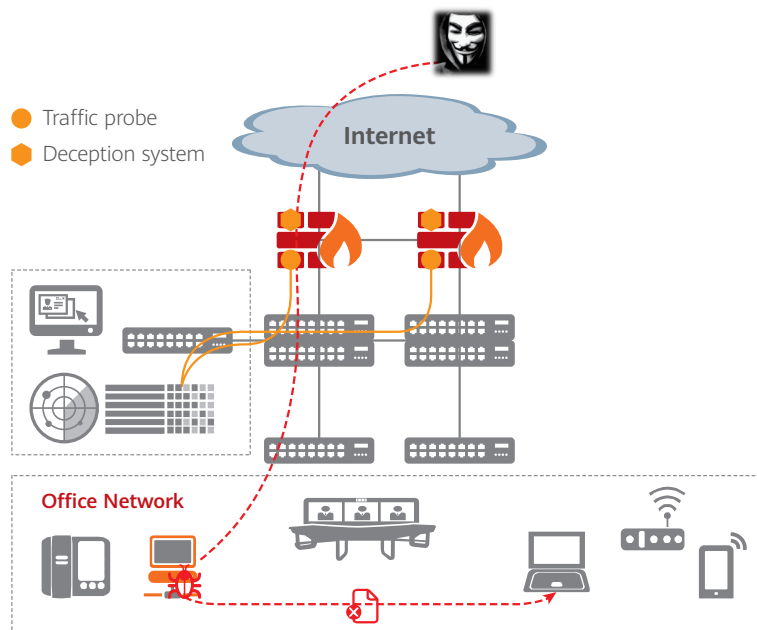
### Small Data center border protection

- Firewalls are deployed at egresses of data centers, and functions and system resources can be virtualized. The firewall has multiple types of interfaces, such as 40G, 10G, and 1G interfaces. Services can be flexibly expanded without extra interface cards.
- The 12-Gigabit intrusion prevention capability effectively blocks a variety of malicious attacks and delivers differentiated defense based on virtual environment requirements to guarantee data security.
- VPN tunnels can be set up between firewalls and mobile workers and between firewalls and branch offices for secure and low-cost remote access and mobile working.



### Enterprise border protection

- Firewalls are deployed at the network border. The built-in traffic probe extracts packets of encrypted traffic and sends the packets to the HiSec Insight, a big data analysis platform. In this way, threats in encrypted traffic are monitored in real time. Encrypted traffic does not need to be decrypted, protecting user privacy and preventing device performance deterioration.
- The deception function is enabled on the firewalls to proactively respond to malicious scanning behavior and associate with the HiSec Insight for behavior analysis to quickly detect and record malicious behavior, protecting enterprise against threats in real time.
- The policy control, data filtering, and audit functions of the firewalls are used to monitor social network applications to prevent data breach and protect enterprise networks.



## Software Features

Feature	Description
Integrated protection	Integrates firewall, VPN, intrusion prevention, antivirus, data leak prevention, bandwidth management, anti-DDoS, URL filtering, and anti-spam functions. Provides a global configuration view, and manages policies in a unified manner.
Application identification and control	Identifies over 6000 applications and supports the access control granularity down to application functions. The firewall combines application identification with intrusion detection, antivirus, and data filtering, improving detection performance and accuracy.
Cloud-based management mode	The firewall initiates authentication and registration to the cloud management platform to implement plug-and-play and simplify network creation and deployment. Service configuration, device monitoring, and fault management can be performed remotely, implementing the management of mass devices in the cloud.
Cloud application security awareness	Controls enterprise cloud applications in a refined and differentiated manner to meet enterprises' requirements for cloud application management.
Intrusion prevention and web protection	Accurately detects and defends against vulnerability-specific attacks based on up-to-date threat information. The firewall can defend against web-specific attacks, including SQL injection and XSS attacks.
Antivirus	Rapidly detects over 5 million types of viruses based on the daily-updated virus signature database.
Anti-APT	Collaborates with the local or cloud sandbox to detect and block malicious files. Supports the flow probe information collection function to collect traffic information and send the collected information to the HiSec Insight(Cybersecurity Intelligence System) for analysis, evaluation, and identification of threats and APT attacks. Encrypted traffic does not need to be decrypted. The firewall can work with the HiSec Insight to detect threats in encrypted traffic. The firewall can proactively respond to malicious scanning behavior and work with the HiSec Insight to analyze behavior, quickly detect and record malicious behavior, and protect enterprises against threats in real time.
Data leak prevention (DLP)	Inspects files to identify the file types, such as WORD, EXCEL, POWERPOINT, and PDF, based on file content, and filters the file content.
Bandwidth management	Manages per-user and per-IP bandwidth in addition to identifying service applications to ensure the network access experience of key services and users. Control methods include limiting the maximum bandwidth, ensuring the minimum bandwidth, and changing application forwarding priorities.
URL filtering	Provides a URL category database with over 120 million URLs and accelerates access to specific categories of websites, improving access experience of high-priority websites. Supports DNS filtering, in which accessed web pages are filtered based on domain names. Supports the SafeSearch function to filter resources of search engines, such as Google, to guarantee access to only healthy network resources.
Behavior and content audit	Audits and traces the sources of the accessed content based on users.

Feature	Description
Load balancing	Supports server load balancing and link load balancing, fully utilizing existing network resources.
Intelligent uplink selection	Supports service-specific PBR and intelligent uplink selection based on multiple load balancing algorithms (for example, based on bandwidth ratio and link health status) in multi-egress scenarios.
VPN encryption	Supports multiple highly available VPN features, such as IPsec VPN, SSL VPN, L2TP VPN, MPLS VPN, and GRE, and provides the Huawei-developed VPN client SecoClient for SSL VPN, L2TP VPN, and L2TP over IPsec VPN remote access.
DSVPN	Dynamic smart VPN (DSVPN) establishes VPN tunnels between branches whose public addresses are dynamically changed, reducing the networking and O&M costs of the branches.
SSL-encrypted traffic detection	Detects and defends against threats in SSL-encrypted traffic using application-layer protection methods, such as intrusion prevention, antivirus, data filtering, and URL filtering.
SSL offloading	Replaces servers to implement SSL encryption and decryption, effectively reducing server loads and implementing HTTP traffic load balancing.
Anti-DDoS	Defends against more than 10 types of common DDoS attacks, including SYN flood and UDP flood attacks.
User authentication	Supports multiple user authentication methods, including local, RADIUS, HWTACACS, AD, and LDAP. The firewall supports built-in Portal and Portal redirection functions. It can work with the Agile Controller to implement multiple authentication modes.
Security virtualization	Supports virtualization of multiple types of security services, including firewall, intrusion prevention, antivirus, and VPN. Users can separately conduct personal management on the same physical device.
Security policy management	Manages and controls traffic based on VLAN IDs, quintuples, security zones, regions, applications, URL categories, and time ranges, and implements integrated content security detection. Provides predefined common-scenario defense templates to facilitate security policy deployment.
Diversified reports	Provides visualized and multi-dimensional report display by user, application, content, time, traffic, threat, and URL. Generates network security analysis reports on the Huawei security center platform to evaluate the current network security status and provide optimization suggestions.
Routing	Supports multiple types of routing protocols and features, such as RIP, OSPF, BGP, IS-IS, RIPng, OSPFv3, BGP4+, and IPv6 IS-IS.
Deployment and reliability	Supports transparent, routing, and hybrid working modes and high availability (HA), including the Active/Active and Active/Standby modes.



## Specifications

### System Performance and Capacity

Model	USG6610E	USG6620E	USG6630E	USG6650E	USG6680E
IPv4 Firewall Throughput <sup>1</sup> (1518/512/64-byte, UDP)	12/12/12 Gbit/s	20/20/20 Gbit/s	30/30/30 Gbit/s	40/40/35 Gbit/s	80/80/16 Gbit/s
IPv6 Firewall Throughput <sup>1</sup> (1518/512/84-byte, UDP)	10/10/8 Gbit/s	20/20/8 Gbit/s	30/30/8 Gbit/s	37/33/8 Gbit/s	80/80/16 Gbit/s
Firewall Throughput (Packet per Second)	15 Mpps	30 Mpps	45 Mpps	57 Mpps	24 Mpps
Firewall Latency (64-byte, UDP)	15 μs	15 μs	15 μs	15 μs	80 μs
FW+SA Throughput <sup>2</sup>	12 Gbit/s	12 Gbit/s	17 Gbit/s	18 Gbit/s	36 Gbit/s
FW+SA+IPS Throughput <sup>2</sup>	10 Gbit/s	10 Gbit/s	13 Gbit/s	15 Gbit/s	24 Gbit/s
FW+SA+IPS+Antivirus Throughput <sup>2</sup>	10 Gbit/s	10 Gbit/s	12 Gbit/s	14 Gbit/s	23 Gbit/s
Full protection Throughput <sup>3</sup>	7.2 Gbit/s	7.2 Gbit/s	10 Gbit/s	11 Gbit/s	22 Gbit/s
Full protection Throughput <sup>4</sup> (Realworld)	4.8 Gbit/s	4.8 Gbit/s	6 Gbit/s	6 Gbit/s	12 Gbit/s
Concurrent Sessions <sup>1</sup> (TCP)	6,000,000	8,000,000	12,000,000	12,000,000	25,000,000
New Sessions/Second <sup>1</sup> (TCP)	200,000	200,000	400,000	400,000	800,000
IPSec VPN Throughput <sup>1</sup> (AES-256+SHA256, 1420-byte)	10 Gbit/s	20 Gbit/s	20 Gbit/s	30 Gbit/s	70 Gbit/s
Max IPSec VPN Tunnels (GW to GW)	15,000	15,000	15,000	15,000	60,000
Max IPSec VPN Tunnels (Client to GW)	15,000	15,000	15,000	15,000	60,000
SSL Inspection Throughput <sup>5</sup>	3 Gbit/s	3 Gbit/s	7 Gbit/s	7 Gbit/s	12 Gbit/s
SSL VPN Throughput <sup>6</sup>	1 Gbit/s	2 Gbit/s	2.8 Gbit/s	3 Gbit/s	6 Gbit/s
Concurrent SSL VPN Users (Default/Max)	100/2000	100/2000	100/5000	100/5000	100/15000
Firewall Policies (Max)	40,000	40,000	40,000	40,000	60,000
Virtual Firewalls (Max)	200	500	500	1,000	1,000
URL Filtering: Categories	More than 130				
URL Filtering: URLs	Can access a database of over 120 million URLs in the cloud				
Automated Threat Feed and IPS Signature Updates	Yes, an industry-leading security center from Huawei ( <a href="http://sec.huawei.com/sec/web/index.do">http://sec.huawei.com/sec/web/index.do</a> )				
Third-Party and Open-Source Ecosystem	Open API for integration with third-party products, providing RESTful and NetConf interface Other third-part management software based on SNMP, SSH, Syslog Co-operation with third-party tools, such as Tufin, Algosec and Firemon Collaboration with Anti-APT solution				

Model	USG6610E	USG6620E	USG6630E	USG6650E	USG6680E
Centralized Management	Centralized configuration, logging, monitoring, and reporting is performed by Huawei eSight				
High Availability Configurations	Active/Active, Active/Standby				

1. Performance is tested under ideal conditions based on RFC2544, 3511. The actual result may vary with deployment environments.

2. Antivirus, IPS, and SA performances are measured using 100 KB HTTP files.

3. Full protection throughput is measured with Firewall, SA, IPS, Antivirus and URL enabled, Antivirus, IPS, and SA performances are measured using 100 KB HTTP files.

4. Full protection throughput is measured with Firewall, SA, IPS and Antivirus enabled, Enterprise Mix Traffic Model.

5. SSL inspection throughput is measured with IPS-enabled and HTTPS traffic using TLS v1.2 with AES128-GCM-SHA256.

6. SSL VPN throughput is measured using TLS v1.2 with AES128-SHA.

\*SA: Service Awareness.

Note: All data in this document is based on USG V600R007.

## Hardware Specifications

Model	USG6610E	USG6620E	USG6630E	USG6650E	USG6680E
Dimensions (H x W x D) mm	44×442×420				
Form Factor/Height	1U				
Fixed Interface	12×GE (RJ45) + 8GE (SFP) + 4×10GE (SFP+)		2×40G (QSFP+) + 12×10GE (SFP+) + 12×GE (RJ45)		4×40GE (QSFP+) + 28×10GE (SFP+) 2×10GE (SFP+) HA <sup>1</sup>
USB Port	1×USB 3.0 Ports				
Weight (Full Configuration)	7.6 kg				12 kg
Local Storage	Optional, SSD(1*2.5inch) supported, 240G/HDD(1*2.5inch) supported, 1TB				
Power Supply	100V to 240V, 50/60Hz	100V to 240V, 50/60Hz	AC: 100V to 240V, 50/60Hz DC: -48V ~ -60V	100V to 240V, 50/60Hz	
Power Supplies	Optional dual AC power supplies		Dual AC or dual DC power supplies	Dual AC power supplies	
Operating Environment (Temperature/Humidity)	Temperature: 0°C to 45°C (without optional HDD); 5°C to 40°C (with optional HDD) Humidity: 5% to 95% (without optional HDD), non-condensing; 5% to 95% (with optional HDD), non-condensing				
Non-operating Environment	Temperature: -40°C to +70°C Humidity: 5% to 95% (without optional HDD), non-condensing; 5% to 95% (with optional HDD), non-condensing				

Model	USG6610E	USG6620E	USG6630E	USG6650E	USG6680E
Operating Altitude (maximum)	5,000 meters (without optional HDD); 3,000 meters (with optional HDD)				
Non-operating Altitude (maximum)	5,000 meters (without optional HDD); 3,000 meters (with optional HDD)				
Noise	Maximum value < 72 dBA				

1. Some 10G ports and 40G ports are mutually exclusive. The ports can be configured as follows: 4 \* 40GE (QSFP+) + 20 \* 10GE (SFP+) + 2 \* 10GE (SFP+) HA or 2 \* 40GE (QSFP+) + 28 \* 10GE (SFP+) + 2 \* 10GE (SFP+) HA

## Certifications

Certifications	
Hardware	CB, CE-SDOC, ROHS, REACH&WEEE(EU), RCM, NRTL, FCC&IC, CCC, VCCI

## Regulatory, Safety, and EMC Compliance

Certifications	
Regulatory Compliance	Products comply with EU directives 2014/30/EU (Low Voltage Directive), 2014/35/EU (EMC Directive), and 2011/65/EU (RoHS Directive).
Safety	<ul style="list-style-type: none"> <li>• UL 60950-1</li> <li>• CSA-C22.2 No. 60950-1</li> <li>• EN 60950-1</li> <li>• IEC 60950-1</li> </ul>
EMC: Emissions	<ul style="list-style-type: none"> <li>• EN55032 Class A</li> <li>• CISPR 32 Class A</li> <li>• ETSI EN 300 386</li> <li>• AS/NZS CIPSR 32</li> <li>• CAN/CSA-CISPR 32-17</li> <li>• IEC 61000-3-2/EN 61000-3-2</li> <li>• IEC 61000-3-3/EN 61000-3-3</li> <li>• FCC CFR47 Part 15 Subpart B Class A</li> <li>• ICES-003 Class A</li> <li>• VCCI V-3 Class A</li> </ul>
EMC: Immunity	<ul style="list-style-type: none"> <li>• EN 55024</li> <li>• CISPR 24</li> <li>• ETSI EN 300 386</li> </ul>

## Ordering Guide

Product	Model	Description
USG6610E	USG6610E-AC	USG6610E AC Host (12×GE (RJ45) + 8GE (SFP) + 4×10GE (SFP+) + 1*USB3.0, AC Power)
USG6620E	USG6620E-AC	USG6620E AC Host 12×GE (RJ45) + 8GE (SFP) + 4×10GE (SFP+) + 1*USB3.0, AC Power)
USG6630E	USG6630E-AC	USG6630E AC Host (2*40G (QSFP+) + 12*10GE (SFP+) + 12*GE (RJ45), AC Power)
USG6630E	USG6630E-DC	USG6630E DC Host (2*40G (QSFP+) + 12*10GE (SFP+) + 12*GE (RJ45), DC Power)
USG6650E	USG6650E-AC	USG6650E AC Host (2*40G (QSFP+) + 12*10GE (SFP+) + 12*GE (RJ45), AC Power)
USG6680E	USG6680E-AC	USG6680E AC Host (4*40GE (QSFP+) + 28*10GE (SFP+) + 2*10GE (SFP+) HA, AC Power)
<b>Function License</b>		
SSL VPN Concurrent Users	LIC-USG6KE-SSLVPN-100	Quantity of SSL VPN Concurrent Users (100 Users)
	LIC-USG6KE-SSLVPN-200	Quantity of SSL VPN Concurrent Users (200 Users)
	LIC-USG6KE-SSLVPN-500	Quantity of SSL VPN Concurrent Users (500 Users)
	LIC-USG6KE-SSLVPN-1000	Quantity of SSL VPN Concurrent Users (1000 Users)
	LIC-USG6KE-SSLVPN-2000	Quantity of SSL VPN Concurrent Users (2000 Users)
	LIC-USG6KE-SSLVPN-5000	Quantity of SSL VPN Concurrent Users (5000 Users)
Virtual Firewall	LIC-USG6KE-VSYS-10	Quantity of Virtual Firewall (10 Vsys)
	LIC-USG6KE-VSYS-20	Quantity of Virtual Firewall (20 Vsys)
	LIC-USG6KE-VSYS-50	Quantity of Virtual Firewall (50 Vsys)
	LIC-USG6KE-VSYS-100	Quantity of Virtual Firewall (100 Vsys)
	LIC-USG6KE-VSYS-200	Quantity of Virtual Firewall (200 Vsys)
	LIC-USG6KE-VSYS-500	Quantity of Virtual Firewall (500 Vsys)
	LIC-USG6KE-VSYS-1000	Quantity of Virtual Firewall (1000 Vsys)
<b>NGFW License</b>		
IPS Update Service	LIC-USG6610E-IPS-1Y	IPS Update Service Subscribe 12 Months (Applies to USG6610E)
	LIC-USG6610E-IPS-3Y	IPS Update Service Subscribe 36 Months (Applies to USG6610E)
	LIC-USG6620E-IPS-1Y	IPS Update Service Subscribe 12 Months (Applies to USG6620E)
	LIC-USG6620E-IPS-3Y	IPS Update Service Subscribe 36 Months (Applies to USG6620E)
	LIC-USG6630E-IPS-1Y	IPS Update Service Subscribe 12 Months (Applies to USG6630E)

Product	Model	Description
	LIC-USG6630E-IPS-3Y	IPS Update Service Subscribe 36 Months (Applies to USG6630E)
	LIC-USG6650E-IPS-1Y	IPS Update Service Subscribe 12 Months (Applies to USG6650E)
	LIC-USG6650E-IPS-3Y	IPS Update Service Subscribe 36 Months (Applies to USG6650E)
	LIC-USG6680E-IPS-1Y	IPS Update Service Subscribe 12 Months (Applies to USG6680E)
	LIC-USG6680E-IPS-3Y	IPS Update Service Subscribe 36 Months (Applies to USG6680E)
URL Filtering Update Service	LIC-USG6610E-URL-1Y	URL Update Service Subscribe 12 Months (Applies to USG6610E)
	LIC-USG6610E-URL-3Y	URL Update Service Subscribe 36 Months (Applies to USG6610E)
	LIC-USG6620E-URL-1Y	URL Update Service Subscribe 12 Months (Applies to USG6620E)
	LIC-USG6620E-URL-3Y	URL Update Service Subscribe 36 Months (Applies to USG6620E)
	LIC-USG6630E-URL-1Y	URL Update Service Subscribe 12 Months (Applies to USG6630E)
	LIC-USG6630E-URL-3Y	URL Update Service Subscribe 36 Months (Applies to USG6630E)
	LIC-USG6650E-URL-1Y	URL Update Service Subscribe 12 Months (Applies to USG6650E)
	LIC-USG6650E-URL-3Y	URL Update Service Subscribe 36 Months (Applies to USG6650E)
	LIC-USG6680E-URL-1Y	URL Update Service Subscribe 12 Months (Applies to USG6680E)
LIC-USG6680E-URL-3Y	URL Update Service Subscribe 36 Months (Applies to USG6680E)	
Antivirus Update Service	LIC-USG6610E-AV-1Y	AV Update Service Subscribe 12 Months (Applies to USG6610E)
	LIC-USG6610E-AV-3Y	AV Update Service Subscribe 36 Months (Applies to USG6610E)
	LIC-USG6620E-AV-1Y	AV Update Service Subscribe 12 Months (Applies to USG6620E)
	LIC-USG6620E-AV-3Y	AV Update Service Subscribe 36 Months (Applies to USG6620E)
	LIC-USG6630E-AV-1Y	AV Update Service Subscribe 12 Months (Applies to USG6630E)
	LIC-USG6630E-AV-3Y	AV Update Service Subscribe 36 Months (Applies to USG6630E)

Product	Model	Description
	LIC-USG6650E-AV-1Y	AV Update Service Subscribe 12 Months (Applies to USG6650E)
	LIC-USG6650E-AV-3Y	AV Update Service Subscribe 36 Months (Applies to USG6650E)
	LIC-USG6680E-AV-1Y	AV Update Service Subscribe 12 Months (Applies to USG6680E)
	LIC-USG6680E-AV-3Y	AV Update Service Subscribe 36 Months (Applies to USG6680E)
Threat Protection Bundle(IPS, AV, URL)	LIC-USG6610E-TP-1Y-OVS	Threat Protection Subscription 12 Months (Applies to USG6610E)
	LIC-USG6610E-TP-3Y-OVS	Threat Protection Subscription 36 Months (Applies to USG6610E)
	LIC-USG6620E-TP-1Y-OVS	Threat Protection Subscription 12 Months (Applies to USG6620E)
	LIC-USG6620E-TP-3Y-OVS	Threat Protection Subscription 36 Months (Applies to USG6620E)
	LIC-USG6630E-TP-1Y-OVS	Threat Protection Subscription 12 Months (Applies to USG6630E)
	LIC-USG6630E-TP-3Y-OVS	Threat Protection Subscription 36 Months (Applies to USG6630E)
	LIC-USG6650E-TP-1Y-OVS	Threat Protection Subscription 12 Months (Applies to USG6650E)
	LIC-USG6650E-TP-3Y-OVS	Threat Protection Subscription 36 Months (Applies to USG6650E)
	LIC-USG6680E-TP-1Y-OVS	Threat Protection Subscription 12 Months (Applies to USG6680E)
LIC-USG6680E-TP-3Y-OVS	Threat Protection Subscription 36 Months (Applies to USG6680E)	
Cloud Sandbox Inspection	LIC-USG6610E-CS-1Y	Cloud Sandbox Inspection 12 Months (Applies to USG6610E)
	LIC-USG6610E-CS-3Y	Cloud Sandbox Inspection 36 Months (Applies to USG6610E)
	LIC-USG6620E-CS-1Y	Cloud Sandbox Inspection 12 Months (Applies to USG6620E)
	LIC-USG6620E-CS-3Y	Cloud Sandbox Inspection 36 Months (Applies to USG6620E)
	LIC-USG6630E-CS-1Y	Cloud Sandbox Inspection 12 Months (Applies to USG6630E)
	LIC-USG6630E-CS-3Y	Cloud Sandbox Inspection 36 Months (Applies to USG6630E)
	LIC-USG6650E-CS-1Y	Cloud Sandbox Inspection 12 Months (Applies to USG6650E)

Product	Model	Description
	LIC-USG6650E-CS-3Y	Cloud Sandbox Inspection 36 Months (Applies to USG6650E)
	LIC-USG6680E-CS-1Y	Cloud Sandbox Inspection 12 Months (Applies to USG6680E)
	LIC-USG6680E-CS-3Y	Cloud Sandbox Inspection 36 Months (Applies to USG6680E)
Flow Probe	LIC-USG6610E-FP	Flow Probe Function (Applies to USG6610E)
	LIC-USG6620E-FP	Flow Probe Function (Applies to USG6620E)
	LIC-USG6630E-FP	Flow Probe Function (Applies to USG6630E)
	LIC-USG6650E-FP	Flow Probe Function (Applies to USG6650E)
	LIC-USG6680E-FP	Flow Probe Function (Applies to USG6680E)

Note: Some parts of this table list the sales strategies in different regions. For more information, please contact your Huawei representative.

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# CloudEngine S5735-L Series Switches Datasheet

Huawei CloudEngine S5735-L series are simplified gigabit Ethernet switches that provide all GE downlink ports and GE or 10GE uplink ports.

## Introduction





CloudEngine S5735-L series switches are ideal for scenarios such as enterprise campus network access and gigabit to the desktop. Built on next-generation, high-performance hardware and the Huawei Versatile Routing Platform (VRP), CloudEngine S5735-L switches stand out with compelling features such as intelligent stack (iStack), flexible Ethernet networking, and diversified security control. They support multiple Layer 3 routing protocols and provide high performance and service processing capabilities.

## Product Overview






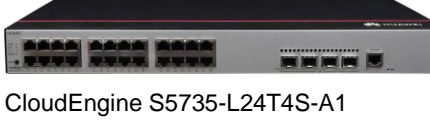
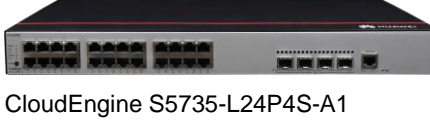



### Models and Appearances








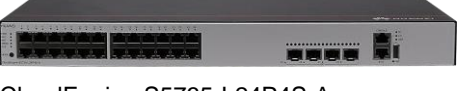


The following models are available in the CloudEngine S5735-L series.







Models and appearances of the CloudEngine S5735-L series

Models and Appearances	Description
 <p>CloudEngine S5735-L8T4S-QA1</p>	<ul style="list-style-type: none"> <li>• 8 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 18 Mpps</li> <li>• Switching capacity: 24 Gbps/336 Gbps</li> </ul>
 <p>CloudEngine S5735-L8P4S-QA1</p>	<ul style="list-style-type: none"> <li>• 8 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• PoE+</li> <li>• Forwarding performance: 18 Mpps</li> <li>• Switching capacity: 24 Gbps/336 Gbps</li> </ul>
 <p>CloudEngine S5735-L24T4S-QA1</p>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 42 Mpps</li> <li>• Switching capacity: 56 Gbps/336 Gbps</li> </ul>
	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>• AC power supply</li> </ul>



Models and Appearances	Description
CloudEngine S5735-L24T4X-QA1 	<ul style="list-style-type: none"> <li>Forwarding performance: 96 Mpps</li> <li>Switching capacity: 128 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L8T4S-A1	<ul style="list-style-type: none"> <li>8 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>AC power supply</li> <li>Forwarding performance: 18 Mpps</li> <li>Switching capacity: 24 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L8P4S-A1	<ul style="list-style-type: none"> <li>8 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>AC power supply</li> <li>PoE+</li> <li>Forwarding performance: 18 Mpps</li> <li>Switching capacity: 24 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L8T4X-A1	<ul style="list-style-type: none"> <li>8 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>Forwarding performance: 72 Mpps</li> <li>Switching capacity: 96 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L8P4X-A1	<ul style="list-style-type: none"> <li>8 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>PoE+</li> <li>Forwarding performance: 72 Mpps</li> <li>Switching capacity: 96 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L24T4S-A1	<ul style="list-style-type: none"> <li>24 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>AC power supply</li> <li>Forwarding performance: 42 Mpps</li> <li>Switching capacity: 56 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L24P4S-A1	<ul style="list-style-type: none"> <li>24 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>AC power supply</li> <li>PoE+</li> <li>Forwarding performance: 42 Mpps</li> <li>Switching capacity: 56 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L24T4X-A1	<ul style="list-style-type: none"> <li>24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>Forwarding performance: 96 Mpps</li> <li>Switching capacity: 128 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L24T4X-D1	<ul style="list-style-type: none"> <li>24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>DC power supply</li> <li>Forwarding performance: 96 Mpps</li> <li>Switching capacity: 128 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L24P4X-A1	<ul style="list-style-type: none"> <li>24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>PoE+</li> <li>Forwarding performance: 96 Mpps</li> <li>Switching capacity: 128 Gbps/336 Gbps</li> </ul>


Models and Appearances	Description
 <p>CloudEngine S5735-L48T4S-A1</p>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 78 Mpps</li> <li>• Switching capacity: 104 Gbps/432 Gbps</li> </ul>
 <p>CloudEngine S5735-L48P4S-A1</p>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• PoE+</li> <li>• Forwarding performance: 78 Mpps</li> <li>• Switching capacity: 104 Gbps/432 Gbps</li> </ul>
 <p>CloudEngine S5735-L48T4X-A1</p>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 132 Mpps</li> <li>• Switching capacity: 176 Gbps/432 Gbps</li> </ul>
 <p>CloudEngine S5735-L48P4X-A1</p>	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>• AC power supply</li> <li>• PoE+</li> <li>• Forwarding performance: 132 Mpps</li> <li>• Switching capacity: 176 Gbps/432 Gbps</li> </ul>
 <p>CloudEngine S5735-L12T4S-A</p>	<ul style="list-style-type: none"> <li>• 12 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 24 Mpps</li> <li>• Switching capacity: 32 Gbps/336 Gbps</li> </ul>
 <p>CloudEngine S5735-L12P4S-A</p>	<ul style="list-style-type: none"> <li>• 12 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• PoE+</li> <li>• Forwarding performance: 24 Mpps</li> <li>• Switching capacity: 32 Gbps/336 Gbps</li> </ul>
 <p>CloudEngine S5735-L24T4S-A</p>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 42 Mpps</li> <li>• Switching capacity: 56 Gbps/336 Gbps</li> </ul>
 <p>CloudEngine S5735-L24P4S-A</p>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>• AC power supply</li> <li>• PoE+</li> <li>• Forwarding performance: 42 Mpps</li> <li>• Switching capacity: 56 Gbps/336 Gbps</li> </ul>
 <p>CloudEngine S5735-L24T4X-A</p>	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>• AC power supply</li> <li>• Forwarding performance: 96 Mpps</li> <li>• Switching capacity: 128 Gbps/336 Gbps</li> </ul>
	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>• DC power supply</li> </ul>

Models and Appearances	Description
CloudEngine S5735-L24T4X-D	<ul style="list-style-type: none"> <li>Forwarding performance: 96 Mpps</li> <li>Switching capacity: 128 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L24P4X-A	<ul style="list-style-type: none"> <li>24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>PoE+</li> <li>Forwarding performance: 96 Mpps</li> <li>Switching capacity: 128 Gbps/336 Gbps</li> </ul>
 CloudEngine S5735-L48T4S-A	<ul style="list-style-type: none"> <li>48 x 10/100/1000Base-T ports, 4 x GE SFP ports</li> <li>AC power supply</li> <li>Forwarding performance: 78 Mpps</li> <li>Switching capacity: 104 Gbps/432 Gbps</li> </ul>
 CloudEngine S5735-L48T4X-A	<ul style="list-style-type: none"> <li>48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>Forwarding performance: 132 Mpps</li> <li>Switching capacity: 176 Gbps/432 Gbps</li> </ul>
 CloudEngine S5735-L48P4X-A	<ul style="list-style-type: none"> <li>48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>PoE+</li> <li>Forwarding performance: 132 Mpps</li> <li>Switching capacity: 176 Gbps/432 Gbps</li> </ul>
 CloudEngine S5735-L32ST4X-A	<ul style="list-style-type: none"> <li>24 x GE SFP ports, 8 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>AC power supply</li> <li>Forwarding performance: 108 Mpps</li> <li>Switching capacity: 144 Gbps/432 Gbps</li> </ul>
 CloudEngine S5735-L32ST4X-D	<ul style="list-style-type: none"> <li>24 x GE SFP ports, 8 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports</li> <li>DC power supply</li> <li>Forwarding performance: 108 Mpps</li> <li>Switching capacity: 144 Gbps/432 Gbps</li> </ul>

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.

## Power Supply

Technical specifications of the power supplies applicable to the CloudEngine S5735-L series

Power Module	Technical Specifications	Applied Switch Model
 PAC1000S56-DB	<ul style="list-style-type: none"> <li>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.)</li> <li>Weight: 1.1 kg (2.43 lb)</li> <li>Rated input voltage range:             <ul style="list-style-type: none"> <li>100 V AC to 130 V AC, 50/60 Hz</li> <li>200 V AC to 240 V AC, 50/60 Hz</li> <li>240 V DC</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>CloudEngine S5735-L48P4X-A</li> </ul>

Power Module	Technical Specifications	Applied Switch Model
	<ul style="list-style-type: none"> <li>• Maximum input voltage range: <ul style="list-style-type: none"> <li>– 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>– 190 V DC to 290 V DC</li> </ul> </li> <li>• Input current: <ul style="list-style-type: none"> <li>– 100 V AC to 130 V AC: 12 A</li> <li>– 200 V AC to 240 V AC: 8 A</li> <li>– 240 V DC: 8 A</li> </ul> </li> <li>• Maximum output current: <ul style="list-style-type: none"> <li>– 100 V AC to 130 V AC input: 16.08 A</li> <li>– 200 V AC to 240 V AC input and 240 V DC input: 17.86 A</li> </ul> </li> <li>• Maximum output power: <ul style="list-style-type: none"> <li>– 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)</li> </ul> </li> <li>• Hot swap: Supported</li> </ul>	

CloudEngine S5735-L48P4X-A is a PoE switch. It has one power module slot, which can have a 1000 W PoE power module installed.

The following table lists its power supply configurations.

Power supply configurations of CloudEngine S5735-L48P4X-A

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
1000 W AC PoE (220 V)	874 W	<ul style="list-style-type: none"> <li>• 802.3af (15.4 W per port): 48</li> <li>• 802.3at (30 W per port): 29</li> </ul>
1000 W AC PoE (110 V)	779 W	<ul style="list-style-type: none"> <li>• 802.3af (15.4 W per port): 48</li> <li>• 802.3at (30 W per port): 25</li> </ul>

Power supply configurations of CloudEngine S5735-L48P4X-A1

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	380 W	<ul style="list-style-type: none"> <li>• 802.3af (15.4 W per port): 24</li> <li>• 802.3at (30 W per port): 12</li> </ul>

Power supply configurations of CloudEngine S5735-L48P4S-A1

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	380 W	<ul style="list-style-type: none"> <li>• 802.3af (15.4 W per port): 24</li> <li>• 802.3at (30 W per port): 12</li> </ul>

Power supply of CloudEngine S5735-L24P4X-A

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	380 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 24</li> <li>802.3at (30 W per port): 12</li> </ul>

Power supply of CloudEngine S5735-L24P4X-A1

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	380 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 24</li> <li>802.3at (30 W per port): 12</li> </ul>

Power supply of CloudEngine S5735-L24P4S-A

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	380 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 24</li> <li>802.3at (30 W per port): 12</li> </ul>

Power supply of CloudEngine S5735-L24P4S-A1

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	380 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 24</li> <li>802.3at (30 W per port): 12</li> </ul>

Power supply of CloudEngine S5735-L12P4S-A

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	360 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 12</li> <li>802.3at (30 W per port): 12</li> </ul>

Power supply of CloudEngine S5735-L8P4X-A1

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	124 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 8</li> <li>802.3at (30 W per port): 4</li> </ul>

Power supply of CloudEngine S5735-L8P4S-A1

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
Built-in AC Power Module	124 W	<ul style="list-style-type: none"> <li>802.3af (15.4 W per port): 8</li> <li>802.3at (30 W per port): 4</li> </ul>

# Product Features and Highlights

## Flexible Ethernet Networking

- In addition to supporting traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), CloudEngine S5735-L is also designed with Huawei-developed Smart Ethernet Protection (SEP) technology and the industry's latest Ethernet Ring Protection Switching (ERPS) technology. 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, and it implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- CloudEngine S5735-L supports Smart Link, which implements backup of uplinks. One CloudEngine S5735-L switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.
- CloudEngine S5735-L supports Ethernet OAM (IEEE 802.3ah/802.1ag) to fast-detect link faults.

## Diversified Security Control

- CloudEngine S5735-L supports 802.1X authentication, MAC address authentication, and hybrid authentication on a per port basis, as well as Portal authentication on a per VLANIF interface basis, and implements dynamic policy delivery (VLAN, QoS, and ACL) to users.
- CloudEngine S5735-L 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 S5735-L 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 S5735-L supports strict ARP learning. This feature prevents ARP spoofing attackers from exhausting ARP entries so that users can connect to the Internet normally.

## Easy Operation and Maintenance

- CloudEngine S5735-L 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 Easy Operation solution facilitates device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduces O&M costs. CloudEngine S5735-L can be managed and maintained using Simple Network Management Protocol (SNMP) V1, V2, and V3, Command Line Interface (CLI), web-based network management system, or Secure Shell (SSH) V2.0. Additionally, it supports remote network monitoring (RMON), multiple log hosts, port traffic statistics collection, and network quality analysis, paving the way for network optimization and reconstruction.
- CloudEngine S5735-L supports the EasyDeploy function. Specifically, the Commander collects the topology information of the downstream clients and saves client startup information based on the topology. Clients can be replaced without configuration. Configuration and scripts can be delivered to clients in batches. In addition, the configuration delivery result can be queried. The Commander can also collect and display power consumption information on the entire network.
- CloudEngine S5735-L can use the GARP VLAN Registration Protocol (GVRP) to implement VLAN dynamic distribution, registration, and attribute propagation. GVRP reduces manual configuration workload and ensures correct configuration.
- CloudEngine S5735-L supports MUX VLAN, which involves a principal VLAN and multiple subordinate VLANs. Subordinate VLANs are classified into group VLANs and separate VLANs. Ports in the principal VLAN can communicate with ports in subordinate VLANs. Ports in a subordinate group VLAN can communicate with each other, whereas ports in a subordinate separate VLAN cannot communicate with each other. CloudEngine S5735-L also supports VLAN Central Management Protocol (VCMP) and VLAN-Based Spanning Tree (VBST) protocol.

Note: Only those switches with USB ports can USB-based deployment.

## iStack

- CloudEngine S5735-L 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 S5735-L support stacking through electrical ports.

Note: Mixed stacking between CloudEngine S5735-L-A/D and CloudEngine S5735-L-A1/D1 is not supported.

## Excellent Network Traffic Analysis

- CloudEngine S5735-L supports the sFlow function. It uses a method defined in the sFlow standard to sample traffic passing through it and sends sampled traffic to the collector in real time. The collected traffic statistics are used to generate statistical reports, helping enterprises maintain their networks.

## PoE Function

- **Perpetual PoE:** When a PoE switch is abnormal Power-off or the software version is upgraded, the power supply to PDs is not interrupted. This capability ensures that PDs are not powered off during the switch 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 O&M

- CloudEngine S5735-L 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.
- CloudEngine S5735-L supports a variety of intelligent O&M features for audio and video services, including the enhanced Media Delivery Index (eMDI). With this eMDI function, the switch can function as a monitored node to periodically conduct statistics and report audio and video service indicators to the CampusInsight platform. In this way, the CampusInsight platform can quickly demarcate audio and video service quality faults based on the results of multiple monitored nodes.

## Intelligent Upgrade

- CloudEngine S5735-L supports the intelligent upgrade feature. Specifically, CloudEngine S5735-L 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.

## Cloud Management

- The Huawei cloud 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 cloud 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 S5735-L 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 S5735-L switch through Python scripts to quickly innovate functions and implement intelligent O&M.

## Licensing

CloudEngine S5735-L 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.

Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package
<b>Basic network functions:</b> Layer 2 functions, IPv4, IPv6, SVF, and others Note: For details, see the Service Features	√	√	√
<b>Basic network automation based on the iMaster NCE-Campus:</b> <ul style="list-style-type: none"> <li>Basic automation: Plug-and-play</li> <li>Basic monitoring: Application visualization</li> <li>NE management: Image and topology management and discovery</li> </ul>	×	√	√
<b>Advanced network automation and intelligent O&amp;M:</b> User access authentication and CampusInsight basic functions	×	×	√

Note: Only V200R019C10 and later versions can support N1 mode.

## Product Specifications

### Functions and Features

Function and feature metrics for the CloudEngine S5735-L series

Function and Feature		Description	CloudEngines S5735-L
Ethernet features	Ethernet basics	Full-duplex, half-duplex, and auto-negotiation	Yes
		Rate auto-negotiation on an interface	Yes
		Auto MDI and MDI-X	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



Function and Feature		Description	CloudEngines S5735-L
		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
		VLAN mapping	Yes
		Selective QinQ	Yes
		MUX VLAN	Yes
		Voice VLAN	Yes
		Guest VLAN	Yes
		GVRP	GARP
	GVRP		Yes
	VCMP	VCMP	Yes
	MAC	MAC address	32896(MAX)
		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

Function and Feature		Description	CloudEngines S5735-L
		Sticky MAC	Yes
		MAC address flapping detection	Yes
		MAC address spoofing defense	Yes
		Port bridge	Yes
	ARP	Static ARP	Yes
		Dynamic ARP	Yes
		ARP entry	4096(MAX)
		ARP aging detection	Yes
		Intra-VLAN proxy ARP	Yes
		Routed proxy ARP	Yes
	Ethernet loop protection	MSTP	STP
RSTP			Yes
MSTP			Yes
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	IPv4 static routing

Function and Feature		Description	CloudEngines S5735-L
	routing	VRF	Yes
		DHCP client	Yes
		DHCP server	Yes
		DHCP relay	Yes
		Routing policies	Yes
		IPv4 routes	4096(MAX)
		RIPv1	Yes
		RIPv2	Yes
		OSPF	Yes
		Policy-based routing (PBR)	Yes
	Multicast routing features	IGMPv1/v2/v3	Yes
		PIM-DM	Yes
		PIM-SM	Yes
		MSDP	Yes
		IPv4 multicast routes	1500(MAX)
		IPv6 multicast routes	1500(MAX)
		Multicast routing policies	Yes
		RPF	Yes
	IPv6 features	IPv6 protocol stack	Yes
		ND	Yes
		ND entry	1024(MAX)
		ND snooping	Yes
		DHCPv6 snooping	Yes
		RIPng	Yes
		DHCPv6 server	Yes
		DHCPv6 relay	Yes
		OSPFv3	Yes
		IPv6 routes	1024(MAX)
		VRRP6	Yes
		MLDv1/v2	Yes
		PIM-DM for IPv6	Yes
		PIM-SM for IPv6	Yes
		Layer 2 multicast features	-
-	IGMP snooping proxy		Yes

Function and Feature		Description	CloudEngines S5735-L
		MLD snooping	Yes
		Multicast traffic suppression	Yes
		Inter-VLAN multicast replication	Yes
Device reliability	Stacking	Service interface-based stacking	Yes
		Maximum number of stacked devices	9
		Stack bandwidth (Bidirectional)	80Gbps(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
		Bidirectional delay and jitter measurement	Yes
QoS features	Traffic classification	Traffic classification based on ACLs	Yes
		Configuring traffic classification priorities	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	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	

Function and Feature		Description	CloudEngines S5735-L	
ACL	Packet filtering at Layer 2 to Layer 4	Number of rules per IPv4 ACL	2K	
		Number of rules per IPv6 ACL	2K	
		Basic IPv4 ACL	Yes	
		Advanced IPv4 ACL	Yes	
		Basic IPv6 ACL	Yes	
		Advanced IPv6 ACL	Yes	
		Layer 2 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	
		SVF	Yes	
		Cloud management	Yes	
		OPS	Yes	
		File system	Directory and file management	Yes
	File upload and download		Yes	
	Monitoring and maintenance	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

Function and Feature		Description	CloudEngines S5735-L
		Association between ARP and STP	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	1K
		IPSG for IPv6	Yes
		IPSGv6 user capacity	512
	Local attack defense	CPU attack defense	Yes
	MFF	MFF	Yes
	DHCP snooping	DHCP snooping	Yes
		Option 82 function	Yes
		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
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 access device	Yes

Function and Feature		Description	CloudEngines S5735-L
Network management	-	Ping	Yes
		Tracert	Yes
		NQA	Yes
		NTP	Yes
		sFlow	Yes
		SNMP v1	Yes
		SNMP v2c	Yes
		SNMP v3	Yes
		HTTP	Yes
		HTTPS	Yes
		RMON	Yes
		NETCONF/YANG	Yes
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

Hardware specifications of CloudEngine S5735-L8T4S-QA1/-L8P4S-QA1/-L24T4S-QA1/-L24T4X-QA1 models

Item		CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4X-QA1
Physical specifications	Dimensions (H x W x D)	43.6 mm x 320 mm x 210 mm	43.6 mm x 320 mm x 210 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1 U	1 U	1 U	1 U
	Chassis weight (including packaging)	3.10 kg	4.06 kg	4.45 kg	4.45 kg
Fixed port	GE port	8	8(PoE+)	24	24
	GE SFP pot	4	4	4	NA
	10GE port	NA	NA	NA	4
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported
	USB Port	NA	NA	NA	USB 2.0
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	2	2	2	2
Storage	Memory (RAM)	512 MB	512 MB	512 MB	512 MB

Item		CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4X-QA1
	Flash memory	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users
Power supply system	Power supply type	Built-in AC	AC Adapter	Built-in AC	Built-in AC
	Rated voltage range	AC input: 100 V AC to 240 V AC, 50/60 Hz	AC input: 100 V AC to 240 V AC, 50/60 Hz	AC input: 100 V AC to 240 V AC, 50/60 Hz	AC input: 100 V AC to 240 V AC, 50/60 Hz
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> </ul>
	Maximum input current	0.8 A	3 A	2 A	2 A
	Maximum power consumption of the device	22 W	<ul style="list-style-type: none"> <li>28 W (without PD)</li> <li>159 W (with PD, PD power consumption of 114 W)</li> </ul>	33 W	34 W
	Power consumption in the case of 30% traffic load <sup>1</sup>	20.5 W	26.3 W	29.8 W	30.8 W
	Power consumption in the case of 100% traffic load <sup>1</sup>	20.8 W	27.9 W	31.8 W	33.2 W
Heat dissipation system	Heat dissipation mode	Natural heat dissipation	Natural heat dissipation	Natural heat dissipation	Natural heat dissipation
	Number of fan modules	NA	NA	NA	NA
	Airflow	NA	NA	NA	NA
	Maximum heat dissipation of the device (BTU/hour)	69.95	89.74	101.68	105.09
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +45°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +45°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +45°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +45°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>



Item		CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4X-QA1
	Short-term operating temperature <sup>3</sup>	NA	NA	NA	NA
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	fanless, noise-free, <30dB (A)	fanless, noise-free, <30dB (A)	fanless, noise-free, <30dB (A)	fanless, noise-free, <30dB (A)
	Noise under high temperature (sound power)	fanless, noise-free, <30dB (A)	fanless, noise-free, <30dB (A)	fanless, noise-free, <30dB (A)	fanless, noise-free, <30dB (A)
	Noise under normal temperature (sound pressure)	fanless, noise-free, <20dB (A)	fanless, noise-free, <20dB (A)	fanless, noise-free, <20dB (A)	fanless, noise-free, <20dB (A)
	Surge protection specification (RJ45 service port)	±10 kV in common mode	±10 kV in common mode	±10 kV in common mode	±10 kV in common mode
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	71.82	66.56	66.16	62.05
	MTTR (hour)	2	2	2	2
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

#### Hardware specifications of CloudEngine S5735-L8T4S-A1/L8P4S-A1/L8T4X-A1/L8P4X-A1/L24T4S-A1 models

Item		CloudEngine S5735-L8T4S-A1	CloudEngine S5735-L8P4S-A1	CloudEngine S5735-L8T4X-A1	CloudEngine S5735-L8P4X-A1	CloudEngine S5735-L24T4S-A1
Physical specifications	Dimensions (H x W x D)	43.6 mm x 250 mm x 180 mm	43.6 mm x 300 mm x 220 mm	43.6 mm x 250 mm x 180 mm	43.6 mm x 300 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1 U	1 U	1 U	1 U	1U
	Chassis weight (including	2.02 kg	3.17 kg	2.08 kg	3.17 kg	3.34 kg

Item		CloudEngine S5735-L8T4S-A1	CloudEngine S5735-L8P4S-A1	CloudEngine S5735-L8T4X-A1	CloudEngine S5735-L8P4X-A1	CloudEngine S5735-L24T4S-A1
	packaging)					
Fixed port	GE port	8	8(PoE+)	8	8(PoE+)	24
	GE SFP port	4	4	NA	NA	4
	10GE port	NA	NA	4	4	NA
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported	Supported
	USB Port	NA	NA	USB 2.0	USB 2.0	NA
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	2	2	2	2	2
Storage	Memory (RAM)	512 MB	512 MB	512 MB	512 MB	512 MB
	Flash memory	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users
Power supply system	Power supply type	Built-in AC	Built-in AC	Built-in AC	Built-in AC	Built-in AC
	Rated voltage range	AC input : 100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> </ul>
	Maximum input current	0.8 A	3 A	0.8 A	3 A	2 A
	Maximum power consumption of the device	26.3 W	<ul style="list-style-type: none"> <li>38.6 W (without PD)</li> <li>162.6 W (with PD, PD power consumption of 124 W)</li> </ul>	26.3 W	<ul style="list-style-type: none"> <li>39.1 W (without PD)</li> <li>163.1 W (with PD, PD power consumption of 124 W)</li> </ul>	47.6 W
	Power consumption in the case of 30% traffic load <sup>1</sup>	21.2 W	28.4 W	21.1 W	28.7 W	32.7 W
	Power consumption in the case of 100% traffic load <sup>1</sup>	21.5 W	28.6 W	21.4 W	28.9 W	33.6 W
Heat dissipation	Heat dissipation	Air-cooled heat dissipation and	Air-cooled heat dissipation and	Air-cooled heat dissipation and	Air-cooled heat dissipation and	Air-cooled heat dissipation and

Item		CloudEngine S5735-L8T4S-A1	CloudEngine S5735-L8P4S-A1	CloudEngine S5735-L8T4X-A1	CloudEngine S5735-L8P4X-A1	CloudEngine S5735-L24T4S-A1
system	mode	intelligent fan speed adjustment	intelligent fan speed adjustment	intelligent fan speed adjustment	intelligent fan speed adjustment	intelligent fan speed adjustment
	Number of fan modules	1	1	1	1	1
	Airflow	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel
	Maximum heat dissipation of the device (BTU/hour)	101.34	<ul style="list-style-type: none"> <li>Without PDs: 131.71</li> <li>With PDs: 554.81</li> </ul>	103.1	<ul style="list-style-type: none"> <li>Without PDs: 133.41</li> <li>With PDs: 556.51</li> </ul>	162.42
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Short-term operating temperature <sup>3</sup>	NA	NA	NA	NA	NA
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	43 dB(A)	42.2 dB(A)	43 dB(A)	42.2 dB(A)	39 dB(A)
	Noise under high temperature (sound power)	68 dB(A)	70.2 dB(A)	68 dB(A)	70.2 dB(A)	73 dB(A)
	Noise under normal temperature	31.5 dB(A)	30.5 dB(A)	31.5 dB(A)	30.5 dB(A)	27.2 dB(A)

Item		CloudEngine S5735-L8T4S-A1	CloudEngine S5735-L8P4S-A1	CloudEngine S5735-L8T4X-A1	CloudEngine S5735-L8P4X-A1	CloudEngine S5735-L24T4S-A1
	(sound pressure)					
	Surge protection specification (RJ45 service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Differential mode: ±6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ±6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ±6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ±6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ±6 kV</li> <li>Common mode: ±6 kV</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	71.82	66.56	67.07	62.46	66.16
	MTTR (hour)	2	2	2	2	2
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

Hardware specifications of CloudEngine S5735-L24P4S-A1/L24T4X-A1/D1,-L24P4X-A1 models

Item		CloudEngine S5735-L24P4S-A1	CloudEngine S5735-L24T4X-A1	CloudEngine S5735-L24T4X-D1	CloudEngine S5735-L24P4X-A1
Physical specifications	Dimensions (H x W x D)	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1 U	1 U	1 U	1 U
	Chassis weight (including packaging)	3.91 kg	3.48 kg	3.28 kg	3.93 kg
Fixed port	GE port	24(PoE+)	24	24	24(PoE+)
	GE SFP port	4	NA	NA	NA
	10GE port	NA	4	4	4
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported
	USB Port	NA	USB 2.0	USB 2.0	USB 2.0
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	2	2	2	2
Storage	Memory (RAM)	512 MB	512 MB	512 MB	512 MB

Item		CloudEngine S5735-L24P4S-A1	CloudEngine S5735-L24T4X-A1	CloudEngine S5735-L24T4X-D1	CloudEngine S5735-L24P4X-A1
	Flash memory	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users
Power supply system	Power supply type	Built-in AC	Built-in AC	Built-in DC	Built-in AC
	Rated voltage range	AC input : 100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz	-48V DC~-60V DC	AC input : 100 V AC to 240 V AC, 50/60 Hz
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> </ul>	-38.4V DC~-72V DC	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>
	Maximum input current	6A	2A	6A	6A
	Maximum power consumption of the device	<ul style="list-style-type: none"> <li>53.2W(without PD)</li> <li>433.2W(with PD,PD Power consumption of :380W)</li> </ul>	45.6 W	37.3 W	<ul style="list-style-type: none"> <li>53.8W(without PD)</li> <li>433.8W(with PD,PD Power consumption of :380W)</li> </ul>
	Power consumption in the case of 30% traffic load <sup>1</sup>	41.7 W	33.2 W	34 W	42.4 W
	Power consumption in the case of 100% traffic load <sup>1</sup>	42.3 W	33.7 W	34.5 W	43 W
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	2	1	1	2
	Airflow	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel
	Maximum heat dissipation of the	<ul style="list-style-type: none"> <li>Without PDs: 181.52</li> </ul>	155.59	127.27	<ul style="list-style-type: none"> <li>Without PDs: 183.57</li> </ul>

Item		CloudEngine S5735-L24P4S-A1	CloudEngine S5735-L24T4X-A1	CloudEngine S5735-L24T4X-D1	CloudEngine S5735-L24P4X-A1
	device (BTU/hour)	<ul style="list-style-type: none"> <li>With PDs: 1478.12</li> </ul>			<ul style="list-style-type: none"> <li>With PDs: 1480.17</li> </ul>
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Short-term operating temperature <sup>3</sup>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	NA	NA	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	50 dB(A)	39 dB(A)	39 dB(A)	50 dB(A)
	Noise under high temperature (sound power)	73 dB(A)	73 dB(A)	73 dB(A)	73 dB(A)
	Noise under normal temperature (sound pressure)	38.2 dB(A)	27.2 dB(A)	27.2 dB(A)	38.2 dB(A)
	Surge protection specification (RJ45 service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
Surge protection specification	<ul style="list-style-type: none"> <li>Differential</li> </ul>	<ul style="list-style-type: none"> <li>Differential</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode:</li> </ul>	<ul style="list-style-type: none"> <li>Differential</li> </ul>	

Item		CloudEngine S5735-L24P4S-A1	CloudEngine S5735-L24T4X-A1	CloudEngine S5735-L24T4X-D1	CloudEngine S5735-L24P4X-A1
	(power port)	mode: $\pm 6$ kV • Common mode: $\pm 6$ kV	mode: $\pm 6$ kV • Common mode: $\pm 6$ kV	$\pm 2$ kV • Common mode: $\pm 4$ kV	mode: $\pm 6$ kV • Common mode: $\pm 6$ kV
Reliability	MTBF (year) <sup>2</sup>	55.72	62.05	62.05	52.74
	MTTR (hour)	2	2	2	2
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

#### Hardware specifications of CloudEngine S5735-L48T4S-A1/-L48P4S-A1/-L48T4X-A1/-L48P4X-A1 models

Item		CloudEngine S5735-L48T4S-A1	CloudEngine S5735-L48P4S-A1	CloudEngine S5735-L48T4X-A1	CloudEngine S5735-L48P4X-A1
Physical specifications	Dimensions (H x W x D)	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1U	1 U	1 U	1 U
	Chassis weight (including packaging)	3.74 kg	4.28 kg	3.79 kg	4.28 kg
Fixed port	GE port	48	48(PoE+)	48	48(PoE+)
	GE SFP port	4	4	NA	NA
	10GE port	NA	NA	4	4
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported
	USB Port	NA	USB 2.0	USB 2.0	USB 2.0
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	2	2	2	2
Storage	Memory (RAM)	512 MB	512 MB	512 MB	512 MB
	Flash memory	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users
Power supply system	Power supply type	Built-in AC	Built-in AC	Built-in AC	Built-in AC
	Rated voltage range	AC input : 100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz
	Maximum voltage	• AC input: 90 V	• AC input: 90 V	• AC input: 90 V	• AC input: 90 V

Item		CloudEngine S5735-L48T4S-A1	CloudEngine S5735-L48P4S-A1	CloudEngine S5735-L48T4X-A1	CloudEngine S5735-L48P4X-A1
	range	AC to 264 V AC, 47 Hz to 63 Hz	AC to 290 V AC, 45 Hz to 65 Hz <ul style="list-style-type: none"> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	AC to 264 V AC, 47 Hz to 63 Hz	AC to 290 V AC, 45 Hz to 65 Hz <ul style="list-style-type: none"> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>
	Maximum input current	2A	6A	2A	6A
	Maximum power consumption of the device	50.4 W	<ul style="list-style-type: none"> <li>76.1W(without PD)</li> <li>456.1W(with PD,PD Power consumption of :380W )</li> </ul>	51.9 W	<ul style="list-style-type: none"> <li>76.1W(without PD)</li> <li>456.1W(with PD,PD Power consumption of :380W )</li> </ul>
	Power consumption in the case of 30% traffic load <sup>1</sup>	43.3 W	58.7 W	43.2 W	58.7 W
	Power consumption in the case of 100% traffic load <sup>1</sup>	43.7 W	60.5 W	44 W	60.5 W
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	1	2	1	2
	Airflow	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel	Air flows in from the left side and front panel, exhausts from the right panel
	Maximum heat dissipation of the device (BTU/hour)	171.97	<ul style="list-style-type: none"> <li>Without PDs: 259.66</li> <li>With PDs: 1556.26</li> </ul>	177.09	<ul style="list-style-type: none"> <li>Without PDs: 259.66</li> <li>With PDs: 1556.26</li> </ul>
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude</li> </ul>



Item		CloudEngine S5735-L48T4S-A1	CloudEngine S5735-L48P4S-A1	CloudEngine S5735-L48T4X-A1	CloudEngine S5735-L48P4X-A1
		increases by 220 m.	increases by 220 m.	increases by 220 m.	increases by 220 m.
	Short-term operating temperature <sup>3</sup>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	48 dB(A)	50 dB(A)	48 dB(A)	50 dB(A)
	Noise under high temperature (sound power)	70.7 dB(A)	73 dB(A)	70.7 dB(A)	73 dB(A)
	Noise under normal temperature (sound pressure)	36.2 dB(A)	38.2 dB(A)	36.2 dB(A)	38.2 dB(A)
	Surge protection specification (RJ45 service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ± 6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ± 6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ± 6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ± 6 kV</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	56.7	44.9	53.67	44.03
	MTTR (hour)	2	2	2	2
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

Hardware specifications of CloudEngine S5735-L12T4S-A/L12P4S-A/L24T4S-A/L24P4S-A models

Item		CloudEngine S5735-L12T4S-A	CloudEngine S5735-L12P4S-A	CloudEngine S5735-L24T4S-A	CloudEngine S5735-L24P4S-A
Physical specifications	Dimensions (H x W x D)	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1 U	1 U	1 U	1 U
	Chassis weight (including packaging)	3.83 kg	4.24 kg	4.08 kg	4.31 kg
Fixed port	GE Base-T port	12	12(PoE+)	24	24(PoE+)
	GE SFP port	4	4	4	4
	10GE port	NA	NA	NA	NA
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported
	USB port	USB 2.0	USB 2.0	USB 2.0	USB 2.0
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	4	4	4	4
Storage	Memory (RAM)	1 GB	1 GB	1 GB	1 GB
	Flash memory	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users
Power supply system	Power supply type	Built-in AC	Built-in AC	Built-in AC	Built-in AC
	Rated voltage range	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>
	Maximum input current	2 A	6 A	2 A	6 A
	Maximum power consumption of the device	29 W	<ul style="list-style-type: none"> <li>49 W (without PD)</li> <li>441 W (with PD, PD power consumption of 360 W)</li> </ul>	34 W	<ul style="list-style-type: none"> <li>53 W (without PD)</li> <li>451 W (with PD, PD power consumption of 380 W)</li> </ul>
	Power consumption in the case of 30% traffic load <sup>1</sup>	23 W	38 W	28 W	39 W

Item		CloudEngine S5735-L12T4S-A	CloudEngine S5735-L12P4S-A	CloudEngine S5735-L24T4S-A	CloudEngine S5735-L24P4S-A
	Power consumption in the case of 100% traffic load <sup>1</sup>	25 W	40 W	32 W	44 W
Heat dissipation system	Heat dissipation mode	Natural heat dissipation	Air-cooled heat dissipation and intelligent fan speed adjustment	Natural heat dissipation	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	NA	2	NA	2
	Airflow	NA	Air flows in from the left side and front panel, exhausts from the right side	NA	Air flows in from the left side and front panel, exhausts from the right side
	Maximum heat dissipation of the device (BTU/hour)	98.95	without PD :167.2 with PD: 1505	116	without PD :180.8 with PD: 1539
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +45°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +45°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Short-term operating temperature <sup>3</sup>	NA	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	NA	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	Silent (fan-free)	57.7dB(A)	Silent (fan-free)	57.7dB(A)
Noise under high temperature (sound power)	Silent (fan-free)	74.2dB(A)	Silent (fan-free)	74.2dB(A)	

Item		CloudEngine S5735-L12T4S-A	CloudEngine S5735-L12P4S-A	CloudEngine S5735-L24T4S-A	CloudEngine S5735-L24P4S-A
	power)				
	Noise under normal temperature (sound pressure)	Silent (fan-free)	43dB(A)	Silent (fan-free)	43dB(A)
	Surge protection specification (RJ45 service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	98.6	85.52	111.94	92.2
	MTTR (hour)	1.22	1.4	1.07	1.3
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

Hardware specifications of CloudEngine S5735-L24T4X-A/D-L24P4X-A/L48T4S-A models

Item		CloudEngine S5735-L24T4X-A	CloudEngine S5735-L24T4X-D	CloudEngine S5735-L24P4X-A	CloudEngine S5735-L48T4S-A
Physical specifications	Dimensions (H x W x D)	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1 U	1 U	1 U	1 U
	Chassis weight (including packaging)	4 kg	4 kg	4.31 kg	4.42 kg
Fixed port	GE Base-T port	24	24	24(PoE+)	48
	GE SFP port	NA	NA	NA	4
	10GE port	4	4	4	NA
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported
	USB port	USB 2.0	USB 2.0	USB 2.0	USB 2.0
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	4	4	4	4
Storage	Memory (RAM)	1 GB	1 GB	1 GB	1 GB
	Flash memory	Hardware: 512 MB, of which 306 MB is	Hardware: 512 MB, of which 306 MB is	Hardware: 512 MB, of which 306 MB is	Hardware: 512 MB, of which 306 MB is

Item		CloudEngine S5735-L24T4X-A	CloudEngine S5735-L24T4X-D	CloudEngine S5735-L24P4X-A	CloudEngine S5735-L48T4S-A
		available for users	available for users	available for users	available for users
Power supply system	Power supply type	Built-in AC	Built-in DC	Built-in AC	Built-in AC power
	Rated voltage range	100 V AC to 240 V AC, 50/60 Hz	-48V DC~-60V DC	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	-38.4V DC~-72V DC	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>
	Maximum input current	2 A	2 A	6 A	2 A
	Maximum power consumption of the device	43 W	43 W	<ul style="list-style-type: none"> <li>56 W (without PD)</li> <li>458 W (with PD, PD power consumption of 380 W)</li> </ul>	53 W
	Power consumption in the case of 30% traffic load <sup>1</sup>	27 W	27 W	43 W	37 W
	Power consumption in the case of 100% traffic load <sup>1</sup>	32 W	32 W	47 W	46 W
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	1	1	2	1
	Airflow	Air flows in from the left side and front panel, exhausts from the right side	Air flows in from the left side and front panel, exhausts from the right side	Air flows in from the left side and front panel, exhausts from the right side	Air flows in from the left side and front panel, exhausts from the right side
	Maximum heat dissipation of the device (BTU/hour)	146.7	146.7	without PD :191.1 with PD: 1563	180.8
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C</li> </ul>

Item		CloudEngine S5735-L24T4X-A	CloudEngine S5735-L24T4X-D	CloudEngine S5735-L24P4X-A	CloudEngine S5735-L48T4S-A
		every time the altitude increases by 220 m.	every time the altitude increases by 220 m.	every time the altitude increases by 220 m.	every time the altitude increases by 220 m.
	Short-term operating temperature <sup>3</sup>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)	5%-95%(non-condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	50.8 dB(A)	47.3 dB(A)	57.7 dB(A)	53.3dB (A)
	Noise under high temperature (sound power)	71 dB(A)	71 dB(A)	74.2 dB(A)	71.5dB (A)
	Noise under normal temperature (sound pressure)	36 dB(A)	32.5 dB(A)	43 dB(A)	38.5dB (A)
	Surge protection specification (RJ45 service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 2 kV</li> <li>Common mode: ± 4 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	50.68	50.68	57.07	46.36
	MTTR (hour)	2.37	2	2.1	2.59
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

Item		CloudEngine S5735-L48T4X-A	CloudEngine S5735-L48P4X-A	CloudEngine S5735-L32ST4X-A	CloudEngine S5735-L32ST4X-D
Physical specifications	Dimensions (H x W x D)	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 420 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
	Chassis height	1 U	1 U	1 U	1 U
	Chassis weight (including packaging)	4.42 kg	8.7 kg	4.31 kg	4.31 kg
Fixed port	GE port	48	48(PoE+)	8	8
	GE SFP port	NA	NA	24	24
	10GE port	4	4	4	4
Management port	Console port (RJ45)	Supported	Supported	Supported	Supported
	USB port	USB 2.0	USB 2.0	USB 2.0	USB 2.0
CPU	Frequency	1000 MHz	1000 MHz	1000 MHz	1000 MHz
	Core	4	4	4	4
Storage	Memory (RAM)	1 GB	1 GB	1 GB	1 GB
	Flash memory	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users	Hardware: 512 MB, of which 306 MB is available for users
Power supply system	Power supply type	Built-in AC power	1000 W AC PoE	Built-in AC	Built-in DC
	Rated voltage range	100 V AC to 240 V AC, 50/60 Hz	AC input : 100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	-48V DC~-60V DC
	Maximum voltage range	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	<ul style="list-style-type: none"> <li>AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz</li> <li>High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)</li> </ul>	-38.4V DC~-72V DC
	Maximum input current	2 A	8 A	2 A	2 A
	Maximum power consumption of the device	54 W	<ul style="list-style-type: none"> <li>80 W (without PD)</li> <li>914 W (with PD, PD power consumption of 874 W)</li> </ul>	65 W	65 W

Item		CloudEngine S5735-L48T4X-A	CloudEngine S5735-L48P4X-A	CloudEngine S5735-L32ST4X-A	CloudEngine S5735-L32ST4X-D
	Power consumption in the case of 30% traffic load <sup>1</sup>	39 W	59 W	46 W	46 W
	Power consumption in the case of 100% traffic load <sup>1</sup>	48 W	68 W	48 W	48 W
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	1	2	2	2
	Airflow	Air flows in from the left side and front panel, exhausts from the right side	Air flows in from the left, right sides and front panel, exhausts from the rear panel	Air flows in from the left side and front panel, exhausts from the right side	Air flows in from the left side and front panel, exhausts from the right side
	Maximum heat dissipation of the device (BTU/hour)	184.3	<ul style="list-style-type: none"> <li>Without PDs: 262.7</li> <li>With PDs: 566.7</li> </ul>	221.8	221.8
Environment parameters	Long-term operating temperature	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +50°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Short-term operating temperature <sup>3</sup>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>	<ul style="list-style-type: none"> <li>0-1800 m altitude: -5°C to +55°C</li> <li>1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.</li> </ul>
	Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%-95%(non-	5%-95%(non-	5%-95%(non-	5%-95%(non-



Item		CloudEngine S5735-L48T4X-A	CloudEngine S5735-L48P4X-A	CloudEngine S5735-L32ST4X-A	CloudEngine S5735-L32ST4X-D
		condensing)	condensing)	condensing)	condensing)
	Operating altitude	5000 m	5000 m	5000 m	5000 m
	Noise under normal temperature (sound power)	53.3dB (A)	58.9dB (A)	53.3 dB(A)	53.3 dB(A)
	Noise under high temperature (sound power)	71.5dB (A)	75dB (A)	74.5 dB(A)	74.5 dB(A)
	Noise under normal temperature (sound pressure)	38.5dB (A)	43.8dB (A)	38.5 dB(A)	38.5 dB(A)
	Surge protection specification (RJ45 service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
	Surge protection specification (power port)	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 6 kV</li> <li>Common mode: ±6 kV</li> </ul>	<ul style="list-style-type: none"> <li>Differential mode: ± 2 kV</li> <li>Common mode: ± 4 kV</li> </ul>
Reliability	MTBF (year) <sup>2</sup>	41.48	61.7	85.87	85.87
	MTTR (hour)	2.89	1.94	1.4	1.4
	Availability	> 0.99999	> 0.99999	> 0.99999	> 0.99999
Certification		<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>	<ul style="list-style-type: none"> <li>EMC certification</li> <li>Safety certification</li> <li>Manufacturing certification</li> </ul>

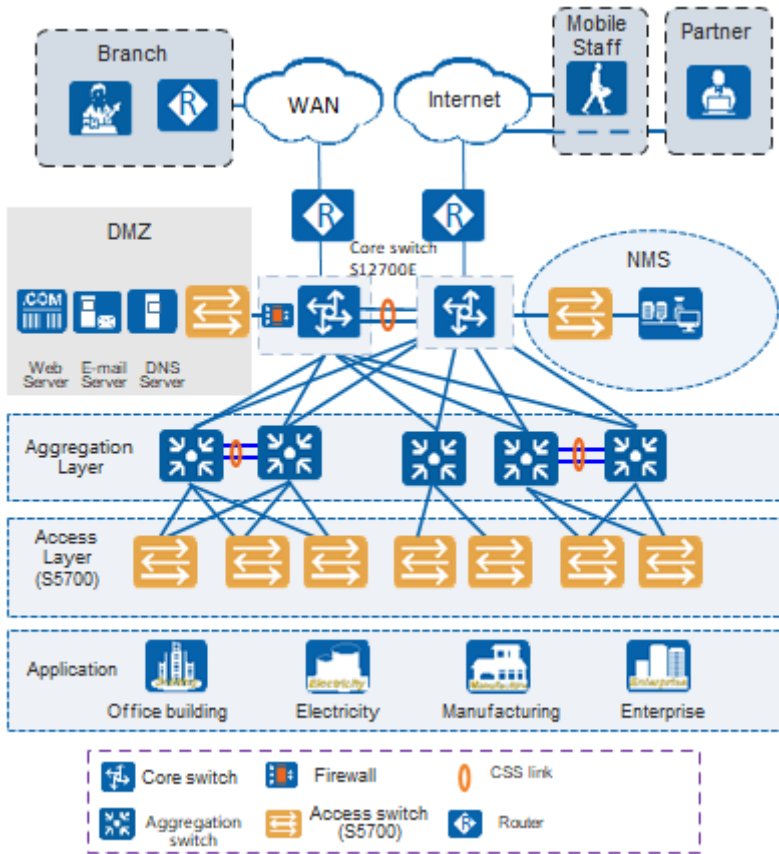
## NOTE

- 1: The power consumption under different load conditions is calculated 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.
- 3: Short term indicates that the successive operating time is no more than 96 hours, the total operating time is no more than 360 hours, or the number of times the operating temperature is over 45° C is no more than 15 in a year.

# Networking and Applications

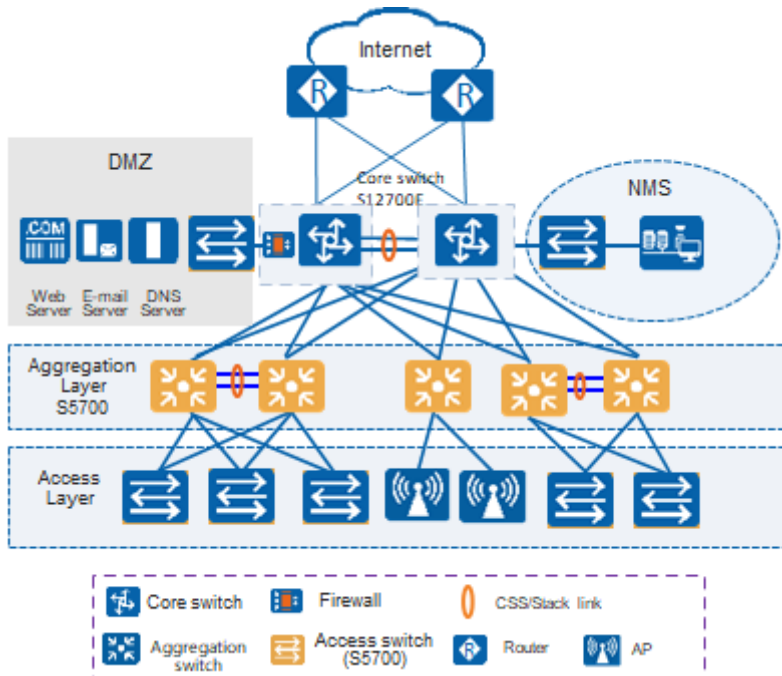
## Large-Scale Enterprise Campus Network

CloudEngine S5735-L series switches can be deployed at the access layer of a campus network to build a high-performance and highly reliable enterprise network.



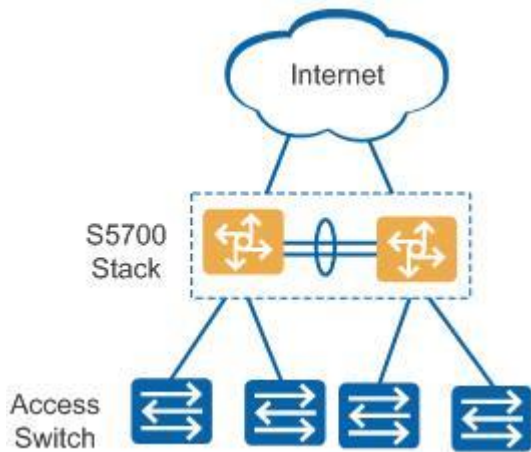
### Small- or Medium-scale Enterprise Campus Network

CloudEngine S5735-L 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.



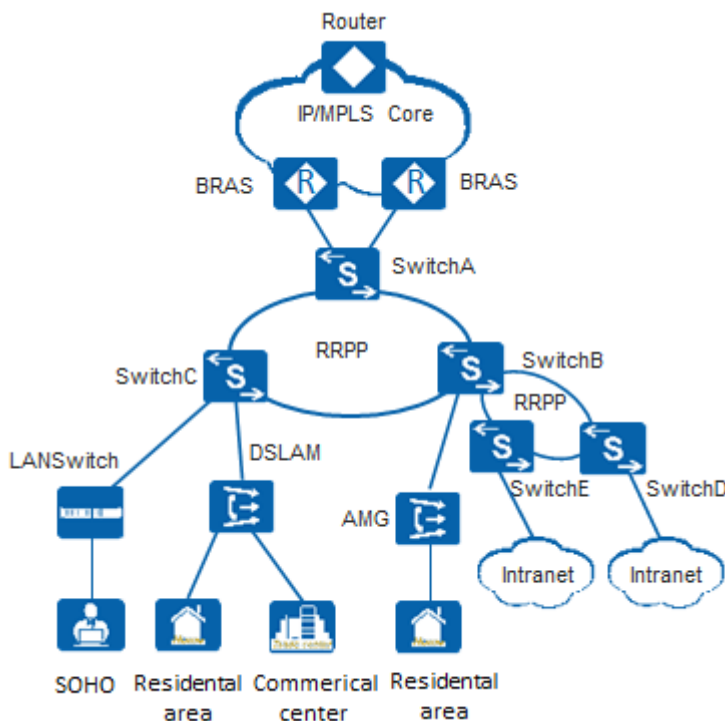
### Small-scale Enterprise Campus Network

With powerful aggregation and routing capabilities of CloudEngine S5735-L series switches make them suitable for use as core switches in a small-scale enterprise network. Two or more S5735-L 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

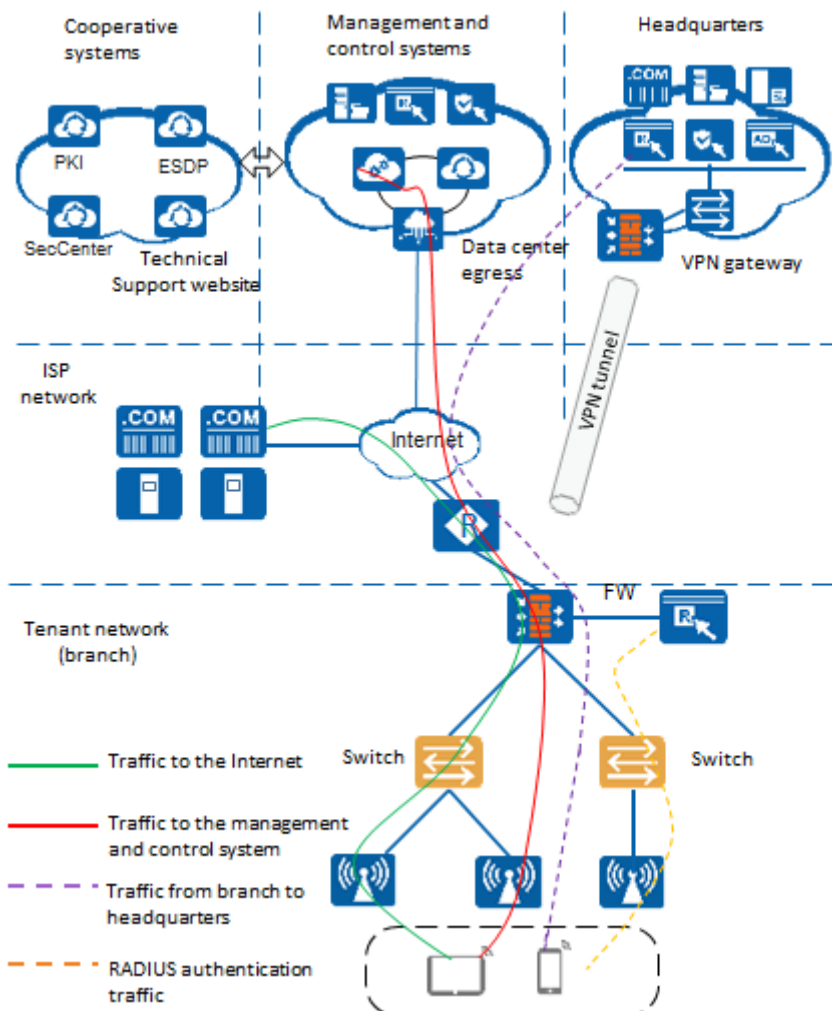
CloudEngine S5735-L series switches can be deployed at the access layer of a MAN (Metropolitan Area Network) to build a high-performance, multi-service, and highly reliable ISP MAN network.



## Application in Public Cloud

CloudCampus Solution is a network solution suite based on Huawei public cloud. CloudEngine S5735-L 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 (CloudCampus@AC-Campus for switches running V200R019C00 and earlier versions; 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

Safety and regulatory compliance of the CloudEngine S5735-L series

Certification Category	Description
Safety	<ul style="list-style-type: none"> <li>• IEC 60950-1</li> <li>• EN 60950-1/A11/A12</li> <li>• UL 60950-1</li> <li>• CSA C22.2 No 60950-1</li> <li>• AS/NZS 60950.1</li> <li>• CNS 14336-1</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>
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> </ul>

Certification Category	Description
	<ul style="list-style-type: none"> <li>• ETSI EN 300 386 Class A</li> <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>• EN61000-3-2</li> <li>• EN61000-3-3</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>

#### 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

Supported MIBs by the CloudEngine S5735-L series

Category	MIB
Public MIB	<ul style="list-style-type: none"> <li>• BRIDGE-MIB</li> <li>• DISMAN-NSLOOKUP-MIB</li> <li>• DISMAN-PING-MIB</li> <li>• DISMAN-TRACEROUTE-MIB</li> <li>• ENTITY-MIB</li> </ul>

Category	MIB
	<ul style="list-style-type: none"> <li>• EtherLike-MIB</li> <li>• IF-MIB</li> <li>• IP-FORWARD-MIB</li> <li>• IPv6-MIB</li> <li>• LAG-MIB</li> <li>• LLDP-EXT-DOT1-MIB</li> <li>• LLDP-EXT-DOT3-MIB</li> <li>• LLDP-MIB</li> <li>• NOTIFICATION-LOG-MIB</li> <li>• NQA-MIB</li> <li>• P-BRIDGE-MIB</li> <li>• Q-BRIDGE-MIB</li> <li>• RFC1213-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> <li>• TCP-MIB</li> <li>• UDP-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-BRAS-RADIUS-MIB</li> <li>• HUAWEI-BRAS-SRVCFG-EAP-MIB</li> <li>• HUAWEI-BRAS-SRVCFG-STATICUSER-MIB</li> <li>• HUAWEI-CBQOS-MIB</li> <li>• HUAWEI-CDP-COMPLIANCE-MIB</li> <li>• HUAWEI-CONFIG-MAN-MIB</li> <li>• HUAWEI-CPU-MIB</li> <li>• HUAWEI-DAD-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> </ul>

Category	MIB
	<ul style="list-style-type: none"> <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-FLASH-MAN-MIB</li> <li>• HUAWEI-FWD-RES-TRAP-MIB</li> <li>• HUAWEI-GARP-APP-MIB</li> <li>• HUAWEI-GTL-MIB</li> <li>• HUAWEI-HGMP-MIB</li> <li>• HUAWEI-HWTACACS-MIB</li> <li>• HUAWEI-IF-EXT-MIB</li> <li>• HUAWEI-INFOCENTER-MIB</li> <li>• HUAWEI-IPPOOL-MIB</li> <li>• HUAWEI-IPV6-MIB</li> <li>• HUAWEI-ISOLATE-MIB</li> <li>• HUAWEI-L2IF-MIB</li> <li>• HUAWEI-L2MAM-MIB</li> <li>• HUAWEI-L2VLAN-MIB</li> <li>• HUAWEI_LDT-MIB</li> <li>• HUAWEI-LLDP-MIB</li> <li>• HUAWEI-MAC-AUTHEN-MIB</li> <li>• HUAWEI-MEMORY-MIB</li> <li>• HUAWEI-MFF-MIB</li> <li>• HUAWEI-MFLP-MIB</li> <li>• HUAWEI-MSTP-MIB</li> <li>• HUAWEI-MULTICAST-MIB</li> <li>• HUAWEI-NTPV3-MIB</li> <li>• HUAWEI-PERFORMANCE-MIB</li> <li>• HUAWEI-PERFMGMT-MIB</li> <li>• HUAWEI-PORT-MIB</li> <li>• HUAWEI-PORTAL-MIB</li> <li>• HUAWEI-QINQ-MIB</li> <li>• HUAWEI-RM-EXT-MIB</li> <li>• HUAWEI-RRPP-MIB</li> <li>• HUAWEI-SECURITY-MIB</li> <li>• HUAWEI-SEP-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> </ul>

Category	MIB
	<ul style="list-style-type: none"> <li>• HUAWEI-SWITCH-SRV-TRAP-MIB</li> <li>• HUAWEI-SYS-MAN-MIB</li> <li>• HUAWEI-TCP-MIB</li> <li>• HUAWEI-TFTPC-MIB</li> <li>• HUAWEI-TRNG-MIB</li> <li>• HUAWEI-UNIMNG-MIB</li> <li>• HUAWEI-USA-MIB</li> <li>• HUAWEI-XQOS-MIB</li> </ul>

**NOTE**

For more detailed information of MIBs supported by the CloudEngine S5735-L series, visit <https://support.huawei.com/enterprise/en/switches/s5700-pid-6691579?category=reference-guides&subcategory=mib-reference>.

## Standard Compliance

Standard compliance list of the CloudEngine S5735-L series

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 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 2863 The Interfaces Group MIB</li> <li>• RFC 2597 Assured Forwarding PHB Group</li> </ul>



Standard Organization	Standard or Protocol
	<ul style="list-style-type: none"> <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 3513 IP Version 6 Addressing Architecture</li> <li>• RFC 3579 RADIUS Support For EAP</li> <li>• draft-grant-tacacs-02 TACACS+</li> <li>• RFC 6241 Network Configuration Protocol (NETCONF)</li> <li>• RFC 6020 YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)</li> </ul>
IEEE	<ul style="list-style-type: none"> <li>• IEEE 802.1D Media Access Control (MAC) Bridges</li> <li>• IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering</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>• IEEE 802.1x Port based network access control protocol</li> <li>• IEEE 802.3af DTE Power via MIDI</li> <li>• IEEE 802.3at DTE Power via the MDI Enhancements</li> <li>• IEEE 802.3az Energy Efficient Ethernet</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.1731 ETH OAM performance monitor</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 11 UNI Requirements and Framework</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> <li>• XMODEM/YMODEM Protocol Reference</li> </ul>

## NOTE

The listed standards and protocols are fully or partially supported by Huawei switches. For details, visit <http://e.huawei.com/en> or contact your local Huawei sales office.

## Ordering Information

Model	Product Description
CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8T4S-QA1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, AC power, Fanless)
CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L8P4S-QA1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power, Fanless)
CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4S-QA1 (24*10/100/1000BASE-T ports, 4*GE SFP ports, AC power, Fanless)
CloudEngine S5735-L24T4X-QA1	CloudEngine S5735-L24T4X-QA1 (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, AC power, Fanless)
CloudEngine S5735-L8T4S-A1	CloudEngine S5735-L8T4S-A1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
CloudEngine S5735-L8P4S-A1	CloudEngine S5735-L8P4S-A1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
CloudEngine S5735-L8T4X-A1	CloudEngine S5735-L8T4X-A1 (8*10/100/1000BASE-T ports, 4*10GE SFP+ ports, AC power)
CloudEngine S5735-L8P4X-A1	CloudEngine S5735-L8P4X-A1 (8*10/100/1000BASE-T ports, 4*10GE SFP+ ports, PoE+, AC power)
CloudEngine S5735-L24T4S-A1	CloudEngine S5735-L24T4S-A1 (24*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
CloudEngine S5735-L24P4S-A1	CloudEngine S5735-L24P4S-A1 (24*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
CloudEngine S5735-L24T4X-A1	CloudEngine S5735-L24T4X-A1 (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, AC power)
CloudEngine S5735-L24T4X-D1	CloudEngine S5735-L24T4X-D1 (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, DC power)
CloudEngine S5735-L24P4X-A1	CloudEngine S5735-L24P4X-A1 (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, PoE+, AC power)
CloudEngine S5735-L48T4S-A1	CloudEngine S5735-L48T4S-A1 (48*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
CloudEngine S5735-L48P4S-A1	CloudEngine S5735-L48P4S-A1 (48*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
CloudEngine S5735-L48T4X-A1	CloudEngine S5735-L48T4X-A1 (48*10/100/1000BASE-T ports, 4*10GE SFP+ ports, AC power)
CloudEngine S5735-L48P4X-A1	CloudEngine S5735-L48P4X-A1 (48*10/100/1000BASE-T ports, 4*10GE SFP+ ports, PoE+, AC power)
CloudEngine S5735-L12T4S-A	CloudEngine S5735-L12T4S-A (12 x 10/100/1000BASE-T ports, 4 x GE SFP ports, AC power)
CloudEngine S5735-	CloudEngine S5735-L12P4S-A (12 x 10/100/1000BASE-T ports, 4 x GE SFP ports, PoE+, AC power)

Model	Product Description
L12P4S-A	power)
CloudEngine S5735-L24T4S-A	CloudEngine S5735-L24T4S-A (24 x 10/100/1000BASE-T ports, 4 x GE SFP ports, AC power)
CloudEngine S5735-L24P4S-A	CloudEngine S5735-L24P4S-A (24 x 10/100/1000BASE-T ports, 4 x GE SFP ports, PoE+, AC power)
CloudEngine S5735-L24T4X-A	CloudEngine S5735-L24T4X-A (24 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, AC power)
CloudEngine S5735-L24T4X-D	CloudEngine S5735-L24T4X-D (24 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, DC power)
CloudEngine S5735-L24P4X-A	CloudEngine S5735-L24P4X-A (24 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, PoE+, AC power)
CloudEngine S5735-L48T4S-A	CloudEngine S5735-L48T4S-A (48 x 10/100/1000BASE-T ports, 4 x GE SFP ports, AC power)
CloudEngine S5735-L48T4X-A	CloudEngine S5735-L48T4X-A (48 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, AC power)
CloudEngine S5735-L48P4X-A	CloudEngine S5735-L48P4X-A bundle (48 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, PoE+, 1*1000W PoE AC power module)
CloudEngine S5735-L32ST4X-A	CloudEngine S5735-L32ST4X-A (24 x GE SFP ports, 8 *10/100/1000Base-T, 4 x 10 GE SFP+ ports, AC power)
CloudEngine S5735-L32ST4X-D	CloudEngine S5735-L32ST4X-D (24 x GE SFP ports, 8 *10/100/1000Base-T, 4 x 10 GE SFP+ ports, DC power)
PAC1000S56-DB	1000W AC PoE power module, can be used in CloudEngine S5735-L48P4X-A
N1-S57L-M-Lic	S57XX-L Series Basic SW,Per Device
N1-S57L-M-SnS1Y	S57XX-L Series Basic SW,SnS,Per Device,1Year
N1-S57L-F-Lic	N1-CloudCampus,Foundation,S57XX-L Series,Per Device
N1-S57L-F-SnS	N1-CloudCampus,Foundation,S57XX-L Series,SnS,Per Device
N1-S57L-A-Lic	N1-CloudCampus,Advanced,S57XX-L Series,Per Device
N1-S57L-A-SnS	N1-CloudCampus,Advanced,S57XX-L Series,SnS,Per Device
N1-S57L-FToA-Lic	N1-Upgrade-Foundation to Advanced,S57XX-L,Per Device
N1-S57L-FToA-SnS	N1-Upgrade-Foundation to Advanced,S57XX-L,SnS,Per Device

## 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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