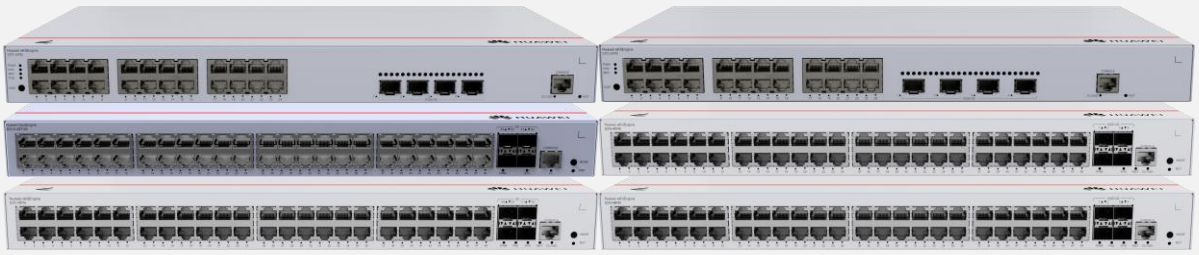
HUAWEI eKit

Huawei eKitEngine S310 Series Switches



Easy to use & maintain

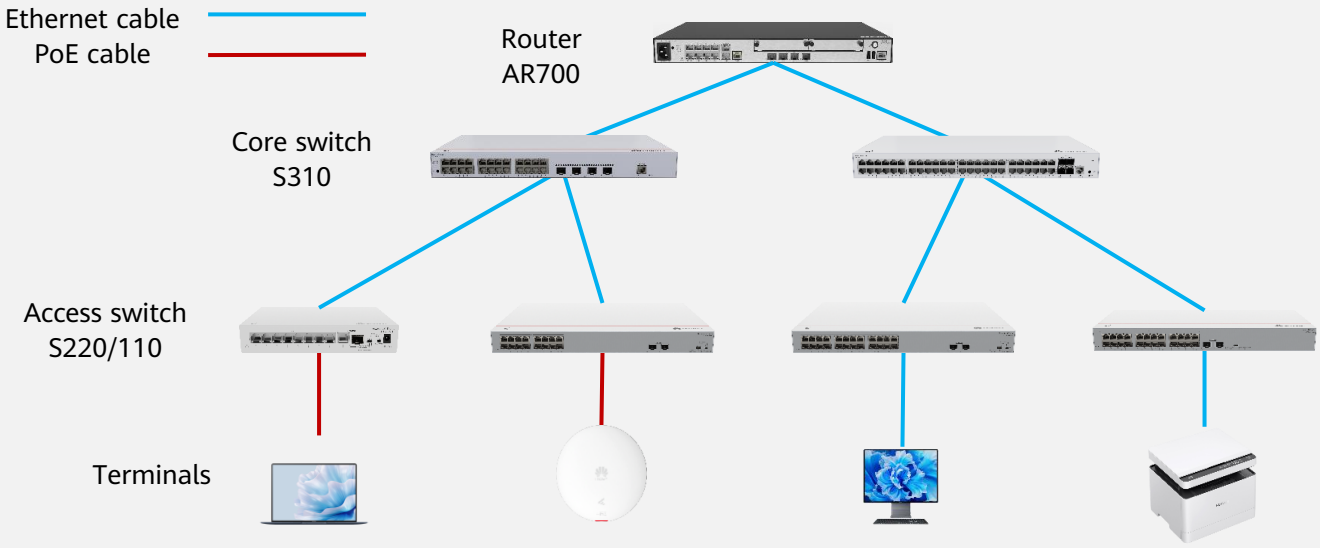
eKit app-based deployment and O&M

Powerful capabilities

Millisecond-level Ethernet ring protection switching (ERPS)

High quality

Strictly tested with 8 major items & 66 sub-items: 1/3 failure rate of the industry average



Based on the next-generation high-performance hardware and software platform, Huawei eKitEngine S310 series switches stand out with features such as intelligent stack (iStack), flexible Ethernet networking, and diversified security control. In addition, eKitEngine S310 series switches support Layer 3 routing protocol, delivering higher performance and more powerful service processing capabilities. These make them ideal for various application scenarios, such as enterprise campus access and gigabit to the desktop.

HUAWEI

Product Features and Highlights

Flexible Ethernet Networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), eKitEngine S310 series switches support the latest Ethernet Ring Protection Switching (ERPS) standard in the industry. ERPS is defined in ITU-T G.8032. It provides millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- eKitEngine S310 series switches support the Smart Link function, which implements backup of uplinks. One switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Diversified Security Control

- eKitEngine S310 series switches support multiple security authentication modes including MAC address authentication and 802.1X authentication, and dynamically deliver user policies (VLAN, QoS, and ACL). eKitEngine S310 series switches support port-based 802.1X authentication, MAC address authentication, and multi-mode authentication.
- eKitEngine S310 series switches provide 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 spoofing attacks, DHCP request flood attacks, and attacks with variable DHCP CHADDR values in packets.
- eKitEngine S310 series switches can generate and maintain DHCP snooping binding entries and discard invalid packets that do not match the binding entries. DHCP snooping trusted and untrusted ports can be specified to ensure that users connect only to the authorized DHCP server.
- eKitEngine S310 series switches support strict ARP entry learning, which prevents ARP spoofing from exhausting ARP entries and ensures Internet access of authorized users.

Easy Operations and Maintenance

- eKitEngine S310 series switches can be managed and maintained using SNMPv1, SNMPv2c, SNMPv3, CLI, web system, or SSHv2.0. Additionally, they support remote network monitoring (RMON), multiple log hosts, port traffic statistics collection, and network quality analysis, facilitating network optimization and reconstruction.
- eKitEngine S310 series switches support the MUX VLAN function. MUX VLAN contains a principal VLAN and multiple subordinate VLANs. Subordinate VLANs can be classified into group VLANs and separate VLANs. Subordinate VLANs can communicate with the principal VLAN. Ports on a subordinate group VLAN can communicate with each other, whereas ports on a subordinate separate VLAN cannot communicate with each other. Additionally, eKitEngine S310 series switches support VLAN Central Management Protocol (VCMP) and VLAN-based Spanning Tree (VBST).

Intelligent Stack (iStack)

- eKitEngine S310 series switches support iStack. Multiple switches that support stacking can be logically stacked into one virtual 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 stack member switch to manage all the member switches in the stack.

PoE Power Supply

PoE models of eKitEngine S310 series switches provide the following capabilities:

- Fast PoE: PoE switches can supply power to PDs within seconds upon power-on, which is different from common switches that supply power to PDs in 1 to 3 minutes after power modules are installed. When a PoE switch restarts due to a

power failure, it continues to supply power to PDs immediately after being powered on without waiting until it completes the restart. This greatly shortens the power-off time of PDs.

- Perpetual PoE: When a PoE switch restarts (for example, during software upgrade), it continues to supply power to downstream PDs, ensuring uninterrupted PoE power supply.

Smart Upgrade

- Based on Huawei Online Upgrade Platform (HOUP), eKitEngine S310 series switches support smart upgrade. They obtain the version upgrade path from the HOUP and download the new system software. The upgrade process is highly automated as it supports one-click upgrade. In addition, this feature supports system software pre-loading, which greatly shortens the upgrade time and reduces the service interruption time.
- Smart upgrade greatly simplifies device upgrade operations, making it possible for customers to upgrade versions by themselves. This feature helps customers reduce considerable maintenance costs. In addition, the upgrade policy of the HOUP is used to standardize the upgrade path, which greatly reduces the risk of upgrade failure.

Cloud Management

- Huawei eKit app allows users to configure, monitor, and inspect switches on the cloud, reducing onsite deployment and O&M manpower costs and decreasing network OPEX.
- eKitEngine S310 series 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).

Product Specifications

Item	eKitEngine S310-24T4X	eKitEngine S310-24P4X	eKitEngine S310-48T4X
Switching capacity	336 Gbps/3.36 Tbps	336 Gbps/3.36 Tbps	432 Gbps/4.32 Tbps
Packet forwarding	108 Mpps/126 Mpps	108 Mpps/126 Mpps	144 Mpps/166 Mpps
Fixed port	24 x 10/100/1000BASE-T ports, 4 x 10GE SFP+ ports	24 x 10/100/1000BASE-T ports (PoE+), 4 x 10GE SFP+ ports	48 x 10/100/1000BASE-T ports, 4 x 10GE SFP+ ports
Chassis 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
Chassis height	1 U	1 U	1 U
Weight in full configuration (including packaging materials)	3.44 kg	3.79 kg	3.59 kg
Power module type	Built-in AC power module	Built-in AC power module	Built-in AC power module
Rated voltage	100 V to 240 V AC, 50/60 Hz	100 V to 240 V AC, 50/60 Hz	100 V to 240 V AC, 50/60 Hz
Maximum voltage	• AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz	• AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz	• AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz

Item	eKitEngine S310-24T4X	eKitEngine S310-24P4X	eKitEngine S310-48T4X
Maximum power consumption	35.04 W	• Without PoE: 44.35 W • With PoE: 485.91 W (PoE: 400 W)	44.3 W
Noise	• Sound power at normal temperature: 47 dB (A) • Sound power at high temperature: 51 dB (A) • Sound pressure at normal temperature: 35 dB (A)	• Sound power at normal temperature: 49.3 dB (A) • Sound power at high temperature: 63 dB (A) • Sound pressure at normal temperature: 37.3 dB (A)	• Sound power at normal temperature: 46.6 dB (A) • Sound power at high temperature: 54.3 dB (A) • Sound pressure at normal temperature: 34.6 dB (A)
Long-term operating temperature	–5°C to +50°C	–5°C to +50°C	–5°C to +50°C
Storage temperature	–40°C to +70°C	–40°C to +70°C	–40°C to +70°C
Relative humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Service port surge protection	Common mode: ±10 kV	Common mode: ±10 kV	Common mode: ±10 kV
Power port surge protection	• Differential mode: ±6 kV • Common mode: ±6 kV	• Differential mode: ±6 kV • Common mode: ±6 kV	• Differential mode: ±6 kV • Common mode: ± 6 kV
Heat dissipation mode	Air cooling, intelligent fan speed adjustment	Air cooling, intelligent fan speed adjustment	Air cooling, intelligent fan speed adjustment

Item	ekitEngine S310-48P4X	ekitEngine S310-48P4S	CloudEngine S310-48T4S
Switching capacity	432 Gbps/4.32 Tbps	432 Gbps/4.32 Tbps	432 Gbps/4.32 Tbps
Packet forwarding	144 Mpps/166 Mpps	108 Mpps/166 Mpps	108 Mpps/166 Mpps
Fixed port	48 x 10/100/1000BASE-T ports (PoE+), 4 x 10GE SFP+ ports	48 x 10/100/1000BASE-T ports (PoE+), 4 x 10GE SFP ports	48 x 10/100/1000BASE-T ports, 4 x 10GE SFP+ ports
Chassis 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
Chassis height	1 U	1 U	1 U
Weight in full configuration (including packaging materials)	4.29 kg	4.29 kg	3.59 kg
Power module type	Built-in AC power module	Built-in AC power module	Built-in AC power module

Item	ekitEngine S310-48P4X	ekitEngine S310-48P4S	CloudEngine S310-48T4S
Rated voltage	100 V to 240 V AC, 50/60 Hz	100 V to 240 V AC, 50/60 Hz	100 V to 240 V AC, 50/60 Hz
Maximum voltage	• AC input: 90 V AC to 290 V AC, 45 Hz to 60 Hz	• AC input: 90 V AC to 290 V AC, 45 Hz to 60 Hz	• AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz
Maximum power consumption	• Without PoE: 64.7 W • With PoE: 462.8 W (PoE: 380 W)	• Without PoE: 63.7 W • With PoE: 462.8 W (PoE: 380 W)	43.3 W
Noise	• Sound power at normal temperature: 49.3 dB (A) • Sound power at high temperature: 63 dB (A) • Sound pressure at normal temperature: 37.3 dB (A)	• Sound power at normal temperature: 49.3 dB (A) • Sound power at high temperature: 63 dB (A) • Sound pressure at normal temperature: 37.3 dB (A)	• Sound power at normal temperature: 46.6 dB (A) • Sound power at high temperature: 54.3 dB (A) • Sound pressure at normal temperature: 34.6 dB (A)
Long-term operating temperature	–5°C to +50°C	–5°C to +50°C	–5°C to +50°C
Storage temperature	–40°C to +70°C	–40°C to +70°C	–40°C to +70°C
Relative humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Service port surge protection	Common mode: ±10 kV	Common mode: ±10 kV	Common mode: ±10 kV
Power port surge protection	• Differential mode: ±6 kV • Common mode: ±6 kV	• Differential mode: ±6 kV • Common mode: ±6 kV	• Differential mode: ±6 kV • Common mode: ± 6 kV
Heat dissipation mode	Air cooling, intelligent fan speed adjustment	Air cooling, intelligent fan speed adjustment	Air cooling, intelligent fan speed adjustment

Service Features

Feature	Description
MAC address table	Automatic MAC address learning and aging
	16K MAC address entries at maximum
	Static, dynamic, and blackhole MAC address entries
	Source MAC address filtering
	Limitation on the number of MAC addresses learned by an interface
VLAN features	4094 VLANs
	Voice VLAN

Feature	Description
	MUX VLAN
	VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports
	VLAN stacking
Ethernet switching	Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protective switchover
	G.8032 Ethernet Ring Protection Switching (ERPS)
	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s)
	BPDU protection, root protection, and loop protection
	BPDU tunnel
Multicast	IGMPv1/v2/v3, IGMPv1/v2/v3 snooping and MLD snooping
IP routing	Static routing and policy-based routing (PBR)
	512 FIBv4 entries at maximum
	512 FIBv6 entries at maximum
IPv6 features	Neighbor discovery (ND)
	PMTU
	IPv6 ping, IPv6 tracert, and IPv6 telnet
Reliability	Link Aggregation Control Protocol (LACP)
	Virtual Router Redundancy Protocol (VRRP)
	Bidirectional Forwarding Detection (BFD)
	Link Layer Discovery Protocol (LLDP)
QoS/ACL	Traffic rate limiting in the inbound and outbound directions of a port
	Packet redirection
	Port-based traffic policing and two-rate three-color CAR
	Eight queues on each port
	DRR, SP and DRR+SP queue scheduling algorithms
	Re-marking of the 802.1p and DSCP priorities for packets
	Packet filtering on Layer 2 to Layer 4, filtering out invalid frames based on the source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, or VLAN
	Rate limiting in each queue and traffic shaping on ports

Feature	Description
	Network Slicing (VLAN/VXLAN)
Security features	Hierarchical user management and password protection
	Defense against DoS, ARP, and ICMP attacks
	Binding of the IP address, MAC address, port ID, and VLAN ID
	Port isolation, port security, and sticky MAC
	Blackhole MAC address entries
	Limitation on the number of learned MAC addresses
	IEEE 802.1X authentication and limit on the number of users on a port
	Multiple authentication modes including AAA, RADIUS, HWTACACS and NAC authentication
	SSH v2.0
	HTTPS
	CPU defense
	Blacklist and whitelist
	DHCP client, DHCP relay, DHCP server, DHCP snooping
	DHCPv6 client, DHCPv6 relay
Management and maintenance	iStack
	Cloud management based on NETCONF/YANG
	Virtual cable test (VCT)
	Remote configuration and maintenance by using Telnet
	SNMPv1/v2/v3
	RMON
	Web system-based management
	HTTPS
	LLDP/LLDP-MED
	System logs and alarms based on severities
	802.3az: Energy Efficient Ethernet (EEE)
	IFIT
	Port mirroring
	Deployment through the registration query center
Interoperability	VBST, working with PVST, PVST+, and RPVST

More Information

For more information about Huawei switches, visit **https://e.huawei.com/en/** or contact Huawei's local sales office.

Alternatively, you can contact us through one of the following methods:

- Global branches: **https://e.huawei.com/en/about/service-hotline**
- Enterprise technical support website: **https://support.huawei.com/enterprise/en/index.html**
- Service email address for enterprise users: support_e@huawei.com

Huawei Technologies Co., Ltd.
Address: Huawei Industrial Base, Bantian, Longgang, Shenzhen 518129, People's Republic of China
Post code: 518129
Website: https://e.huawei.com/en/