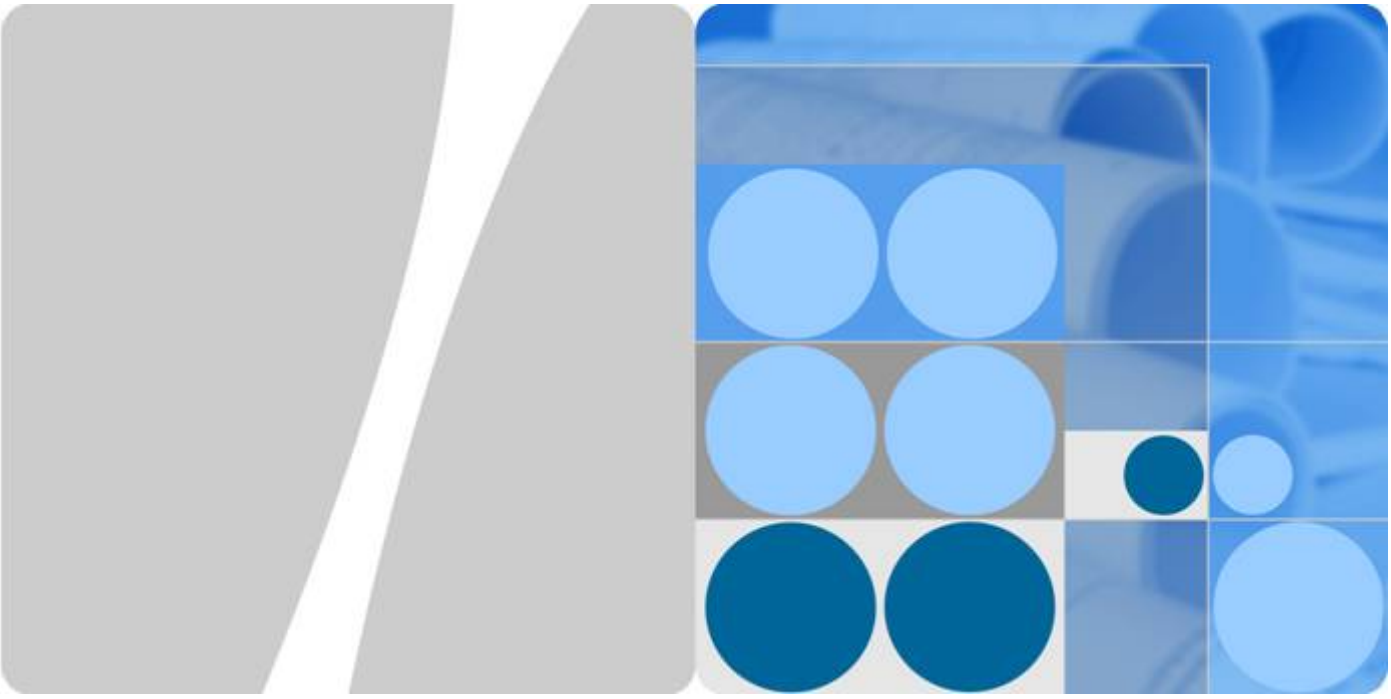

S1700 Managed Series Ethernet Switches

Product Description

Issue 20
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1 About This Document

Intended Audience

This document is intended for network engineers responsible for network design and deployment. You should understand your network well, including the network topology and service requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Disclaimer

- This document is designed as a reference for you to configure your devices. Its contents, including web pages, command line input and output, are based on laboratory conditions. It provides instructions for general scenarios, but does not cover all use cases of all product models. The examples given may differ from your use case due to differences in software versions, models, and

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configuration files. When configuring your device, alter the configuration depending on your use case.

- The specifications provided in this document are tested in a lab environment (for example, a certain type of cards have been installed on the tested device or only one protocol is run on the device). Results may differ from the listed specifications when you attempt to obtain the maximum values due to factors such as differences in hardware configurations and carried services.
- In this document, public IP addresses may be used in feature introduction and configuration examples and are for reference only unless otherwise specified.

Statement

The device provides the mirroring function for network monitoring and fault management, during which communication data may be collected. Huawei alone is unable to collect or save the content of users' communications. It is suggested that you activate the functions based on the applicable laws and regulations in terms of purpose and scope of usage. You are obligated to take considerable measures to ensure that the content of users' communications is fully protected when the content is being used and saved.

The device provides the NetStream function for network traffic statistics collection and advertisement, during which data of users may be used. You are obligated to take considerable measures, in compliance with the laws of the countries concerned and the privacy policies of your company, to ensure that the data of users is fully protected.

Device Dimension Conventions

The dimensions described in this document are theoretically typical dimensions and do not include dimension tolerances.

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2 Naming Conventions

NOTE

The device names in the figures are used as examples and do not represent specific devices.

The uplink and downlink ports mentioned in this document refer to the recommended usage of the port, and do not indicate that the corresponding port can be used only for the downlink or uplink.

Figure 2-1 Naming conventions for S1700 managed switches (applicable to non-S1730S series switches)

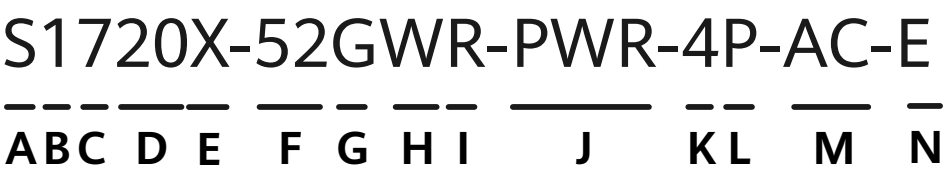

Table 2-1 Description of naming conventions for S1700 managed switches (applicable to non-S1730S series switches)

Identifier	Meaning	Description
A	Product type (1 letter)	It has a fixed value of **S**, indicating that the device is an S series switch.
B	Fixed switch type (1 digit)	1: SMB
C	Target market (1 digit)	7: enterprise network market
D	Switch sub-series (2 digits)	The tens place indicates the generation, such as 10, 20, and 50. The ones place indicates a specification upgrade, such as 01, 02, and 03.

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Identifier	Meaning	Description
E	Extension identifier (0 or 1 letter)	X: all-10GE model
F	Number of ports (2 digits)	Total number of uplink and downlink ports
G	Downlink port type (1 letter)	Empty: 100M downlink port G: GE downlink port X: 10GE downlink port
H	Management type (1 letter)	Empty: unmanaged W: web managed F: SNMP managed
I	Installation mode (1 letter)	Empty: desktop mounting R: rack mounting
J	Support for PoE (3 letters)	Empty: non-PoE switch PWR: PoE switch
K	Number of ports (1 digit)	Number of uplink ports
L	Uplink port type (1 letter)	P: SFP optical port T: RJ45 electrical port TP: combo port X: SFP+ optical port **NOTE** If uplink ports of a switch include both SFP optical ports and combo ports, its product name contains only TP.
M	Power supply type (2 letters)	Empty: AC by default AC: alternating current
N	Model supports all management methods (1 letter)	E: model that has a license loaded by default and supports all management methods

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Figure 2-2 Naming conventions for S1700 managed switches (applicable to S1730S series switches)

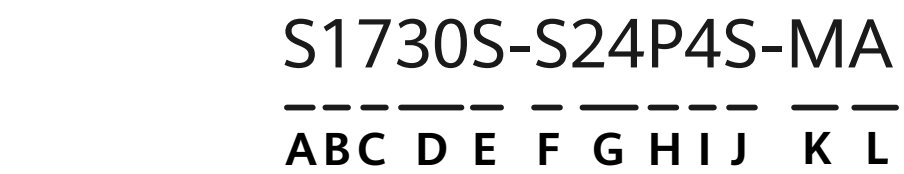

Table 2-2 Description of naming conventions for S1700 managed switches (applicable to S1730S series switches)

Identifier	Meaning	Description
A	Product type (1 letter)	It has a fixed value of **S**, indicating that the device is an S series switch.
B	Fixed switch type (1 digit)	1: SMB
C	Target market (1 digit)	7: enterprise network market
D	Switch sub-series (2 digits)	Production generation, such as 10, 20, and 30
E	Industry identifier (0 or 1 letter)	S: channel distribution model
F	Management type (1 letter)	• S: web management • H: SNMP managed
G	Number of downlink ports (1 or 2 digits)	Number of downlink ports
H	Downlink port type (1 letter)	• T: GE electrical port • P: GE electrical port, supporting PoE+
I	Number of uplink ports (0 or 1 digit)	Number of uplink ports Empty: Downlink ports can be used as uplink ports.
J	Uplink port type (0 or 1 letter)	• T: GE electrical port • S: GE optical port • X: 10GE optical port
K	Special identifier (0 or 1 letter)	M: The switch supports the monitoring function.

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Identifier	Meaning	Description
L	Power supply type (1 or 2 letters)	A or A1: alternating current

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3 Product Overview

3.1 Product Positioning

3.2 Product Features

3.1 Product Positioning

Depending on management types, S1700 series switches are classified into unmanaged switches, web-managed switches, and fully-managed switches. For details, see the **S1700 Documentation Bookshelf**.

This document describes the S1700 web-managed and fully-managed switches, including positioning, features, hardware structure, application scenarios, and technical specifications.

The S1700 is deployed at the access layer of an enterprise network to deliver cost-effective packet switching capability. In addition, the S1700 provides multi-service access capabilities, excellent extensibility, Quality of Service (QoS) guarantee, powerful multicast replication, and carrier-class security, and can be used to build ring topologies of high reliability. The S1700 series switches are applicable to various scenarios, for example, GE access to enterprise networks and GE-to-desktop, building future-oriented IT networks for enterprises.

This document applies to the S1700 managed switches listed in **Table 3-1**.

NOTICE

S1700 managed switches are class A products. The switches that are operating may cause radio interference. Customers need to take prevention measures.

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Table 3-1 S1700 managed switches

Port Type	Product Model	Matching Software Version
100M access, 1000M uplink	S1700-28FR-2T2P-AC	V100R007C00
	S1700-52FR-2T2P-AC	V100R007C00
GE uplink and downlink	S1728GWR-4P	V100R006C00
	S1720-20GFR-4TP	V200R006C10, V200R009C00, V200R010C00, V200R011C00, V200R011C10, and V200R012C00 versions
	S1720-28GFR-4TP	V200R006C10, V200R009C00, V200R010C00, V200R011C00, V200R011C10, and V200R012C00 versions
	S1700-28GFR-4P-AC	V100R007C00
	S1700-52GFR-4P-AC	V100R007C00
	S1720-10GW-2P	V200R010C00 and later versions
	S1720-10GW-2P-E	V200R010C00 and later versions
	S1720-10GW-PWR-2P	V200R010C00 and later versions
	S1720-10GW-PWR-2P-E	V200R010C00 and later versions
	S1720-28GWR-4P	V200R010C00 and later versions
	S1720-28GWR-4P-E	V200R010C00 and later versions
	S1720-28GWR-PWR-4P	V200R010C00 and later versions
	S1720-28GWR-PWR-4P-E	V200R010C00 and later versions
	S1720-52GWR-4P	V200R010C00 and later versions
	S1720-52GWR-4P-E	V200R010C00 and later versions

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Port Type	Product Model	Matching Software Version
	S1720-52GWR-PWR-4P	V200R010C00 and later versions
	S1720-52GWR-PWR-4P-E	V200R010C00 and later versions
	S1720-28GWR-PWR-4TP	V200R010C00 and later versions
	S1720-28GWR-PWR-4TP-E	V200R010C00 and later versions
	S1720-10GF-2P	V200R012C20 and later versions
	S1720-10GF-PWR-2P	V200R012C20 and later versions
	S1720-28GFR-4P	V200R012C20 and later versions
	S1720-28GFR-PWR-4P	V200R012C20 and later versions
	S1720-52GFR-4P	V200R012C20 and later versions
	S1720-52GFR-PWR-4P	V200R012C20 and later versions
	S1730S-S24T4S-A	V200R019C00 and later versions
	S1730S-S24T4S-MA	V200R019C10SPC500 and later versions
	S1730S-S24P4S-A	V200R019C00 and later versions
	S1730S-S24P4S-MA	V200R019C10SPC500 and later versions
	S1730S-S48T4S-A	V200R019C00 and later versions
	S1730S-S48P4S-A	V200R019C10 and later versions
	S1730S-H24T4S-A	V200R019C10 and later versions
	S1730S-H48T4S-A	V200R019C10 and later versions

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Port Type	Product Model	Matching Software Version
	S1730S-S8T4S-A1	V200R020C10 and later versions
	S1730S-S8P4S-A1	V200R020C10 and later versions
	S1730S-S24T4S-A1	V200R020C10 and later versions
	S1730S-S24P4S-A1	V200R020C10 and later versions
	S1730S-S48T4S-A1	V200R020C10 and later versions
	S1730S-S48P4S-A1	V200R020C10 and later versions
1000M access, 10GE uplink	S1720-28GWR-4X	V200R010C00 and later versions
	S1720-28GWR-4X-E	V200R010C00 and later versions
	S1720-28GWR-PWR-4X	V200R010C00 and later versions
	S1720-28GWR-PWR-4X-E	V200R010C00 and later versions
	S1720-52GWR-4X	V200R010C00 and later versions
	S1720-52GWR-4X-E	V200R010C00 and later versions
	S1720-52GWR-PWR-4X	V200R010C00 and later versions
	S1720-52GWR-PWR-4X-E	V200R010C00 and later versions
	S1730S-S24T4X-A	V200R019C10 and later versions
	S1730S-S24T4X-A1	V200R020C10 and later versions
	S1730S-S48T4X-A1	V200R020C10 and later versions
10GE uplink and downlink	S1720X-16XWR	V200R011C00 to V200R019C10 versions

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Port Type	Product Model	Matching Software Version
	S1720X-16XWR-E	V200R011C00 to V200R019C10 versions
	S1720X-32XWR	V200R011C00 to V200R019C10 versions
	S1720X-32XWR-E	V200R011C00 to V200R019C10 versions

3.2 Product Features

Various Management Methods

Huawei S1700 switches support various management and maintenance methods, such as Simple Network Management Protocol (SNMP), web, command line interface (only supported by the S1720GF, S1720GFR-P, S1720GFR-TP, S1720GW-E, S1720GWR-E, S1720X-E, S1730S-S, S1730S-S1, and S1730S-H), and console port (only supported by the S1720GFR-TP, S1730S-S, S1730S-S1, and S1730S-H), and provide user-friendly configuration interface.

NOTE

The S1730S-S and S1730S-S1 support only some commands. For the supported commands, see the *S1700 Web User Guide* of the corresponding software version.

The S1720X, S1720GW, and S1720GWR models can provide the same functions as the S1720X-E, S1720GW-E, and S1720GWR-E models and can be managed using SNMP or the CLI after Telnet or SSH login if a license is loaded and activated and the models are restarted

Table 3-2 Management methods for S1700 managed switches

Method	Product Sub-series	Product Model
Web	-	S1728GWR-4P
	S1720GW	S1720-10GW-2P
		S1720-10GW-PWR-2P
	S1720GWR	S1720-28GWR-4P
		S1720-28GWR-PWR-4P
		S1720-52GWR-4P
		S1720-52GWR-PWR-4P
		S1720-28GWR-PWR-4TP
		S1720-28GWR-4X

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Method	Product Sub-series	Product Model
		S1720-28GWR-PWR-4X
		S1720-52GWR-4X
		S1720-52GWR-PWR-4X
	S1720X	S1720X-16XWR
		S1720X-32XWR
	S1730S-S	S1730S-S24T4S-A
		S1730S-S24T4S-MA
		S1730S-S24P4S-A
		S1730S-S24P4S-MA
		S1730S-S48T4S-A
		S1730S-S24T4X-A
		S1730S-S48P4S-A
	S1730S-S1	S1730S-S8T4S-A1
		S1730S-S8P4S-A1
		S1730S-S24T4S-A1
		S1730S-S24P4S-A1
		S1730S-S48T4S-A1
		S1730S-S48P4S-A1
		S1730S-S24T4X-A1
		S1730S-S48T4X-A1
Web + SNMP	S1700FR	S1700-28FR-2T2P-AC
		S1700-52FR-2T2P-AC
	S1700GFR	S1700-28GFR-4P-AC
		S1700-52GFR-4P-AC
Web + SNMP + CLI	S1720GF	S1720-10GF-2P
		S1720-10GF-PWR-2P
	S1720GFR-P	S1720-28GFR-4P
		S1720-28GFR-PWR-4P
		S1720-52GFR-4P

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Method	Product Sub-series	Product Model
		S1720-52GFR-PWR-4P
	S1720GFR-TP	S1720-20GFR-4TP
		S1720-28GFR-4TP
	S1720GW-E	S1720-10GW-2P-E
		S1720-10GW-PWR-2P-E
	S1720GWR-E	S1720-28GWR-4P-E
		S1720-28GWR-PWR-4P-E
		S1720-52GWR-4P-E
		S1720-52GWR-PWR-4P-E
		S1720-28GWR-PWR-4TP-E
		S1720-28GWR-4X-E
		S1720-28GWR-PWR-4X-E
		S1720-52GWR-4X-E
		S1720-52GWR-PWR-4X-E
	S1720X-E	S1720X-16XWR-E
		S1720X-32XWR-E
	S1730S-H	S1730S-H24T4S-A
		S1730S-H48T4S-A

Flexible Networking Capability

- The S1700 managed switch provides 10/100/1000BASE-T, 1000BASE-X, and 10GE SFP+ ports. It supports multiple interface types such as access, trunk, and hybrid.
- The S1700 managed switch provides swappable Small Form-Factor Pluggable (SFP) optical modules for GE optical fiber connections and swappable Small Form-Factor Pluggable plus (SFP+) optical modules for 10GE optical fiber connections. The length of optical fibers can be selected according to the transmission distance.
- The S1700 managed switch supports the Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP) (supported only by fully-managed switches) to prevent loops and provide rapid switchover.

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Comprehensive Security Measures

- The S1700 managed switch supports port-based MAC address filtering to prevent hackers from attacking user terminals or networks by forging MAC addresses.
- The S1700 managed switch supports Remote Authentication Dial In User Service (RADIUS) authentication, 802.1x authentication, and MAC address authentication to prevent unauthorized users from accessing the enterprise network.
- The S1700 fully-managed switch supports the DHCP snooping function, which generates user binding entries based on MAC addresses, IP addresses, IP address leases, VLAN IDs, and interface numbers of users. This function protects networks against common attacks such as bogus IP packet, man-in-the-middle, and bogus DHCP server attacks.

Comprehensive QoS Policies

- The S1700 managed switch can classify traffic based on 802.1p fields, VLAN IDs (only fully-managed switches), MAC addresses (only fully-managed switches), and ACL (only fully-managed switches).
- Each port of an S1700 managed switch supports up to 8 queues (each port of S1728GWR-4P supports up to 4 queues). In addition, the S1700 managed switch supports weighted round robin (WRR), Priority Queuing (PQ), WRR + PQ (only S1720 and S1730S), Weighted Deficit Round Robin (WDRR) (only S1720 and S1730S), and PQ + WDRR (only S1720 and S1730S) queue scheduling algorithms to effectively ensure high-quality voice, video, and data services.

Energy-Saving Design

- Some models of the S1700 use natural heat dissipation, which avoids power consumption and noise of fans.
- The chip changes to the power saving mode when a service port is idle (no connected device is detected).
- The switch uses energy-saving chips. With the help of the intelligent device management system, the chips not only improve system performance but also greatly reduce power consumption of the entire system.

Cutting-Edge Surge Protection Capability

The S1700 managed switch adopts the Huawei patented surge protection technology to protect the equipment. This strong surge protection capability greatly reduces the probability of damage caused by lightning, even when the equipment cannot be grounded.

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4 Application Scenarios

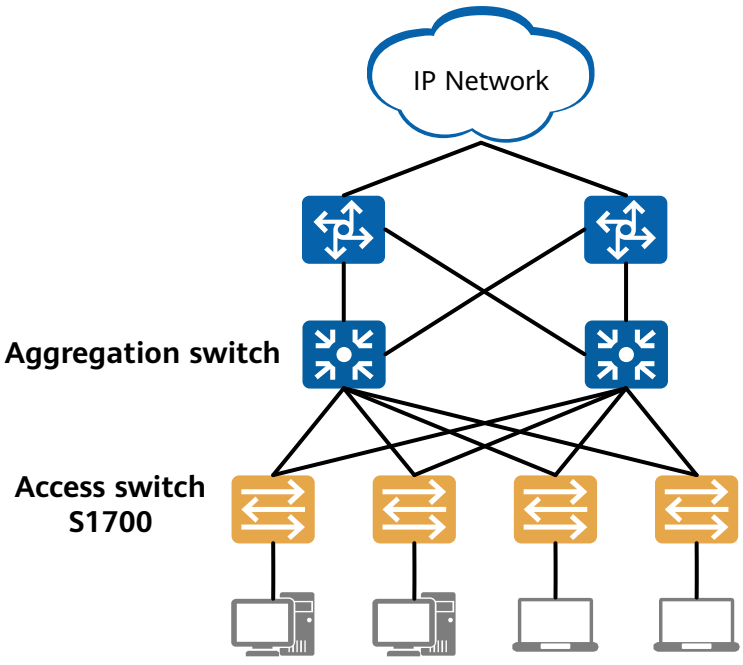
4.1 Enterprise Network Access

4.2 Desktop Access

4.1 Enterprise Network Access

On an enterprise network, the S1700 managed switches connect to terminals through 100M/1000M electrical interfaces, and connect to aggregation switches through GE optical, GE electrical, or 10GE optical interfaces. The aggregation switches connect to the backbone network by bundling GE interfaces or through 10G interfaces. The network provides 10 Gbit/s rate for the backbone layer and 100 Mbit/s access rate for terminals, meeting high bandwidth and multi-service requirements.

Figure 4-1 S1700 at the access layer of enterprise network



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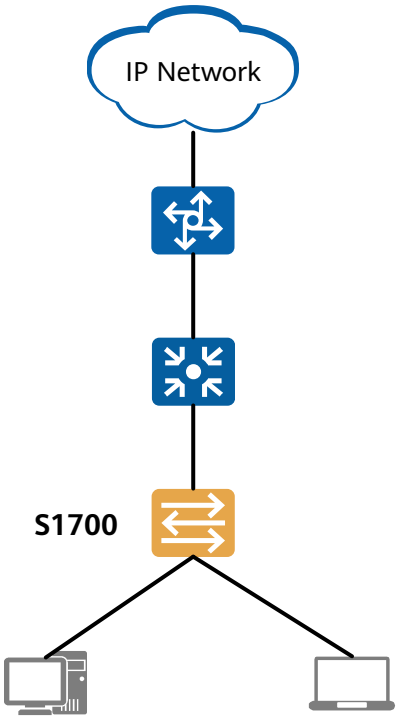
4.2 Desktop Access

The S1700 managed switch provides the functions such as voice VLAN and various desktop access functions with its compact design.

Figure 4-2 Desktop access



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NOTE

The S1730S-S24T4S-A, S1730S-S24T4S-MA, and S1730S-H24T4S-A switches adopt natural heat dissipation, and heat is dissipated from the bottom shell, leading to a high temperature of the shell even at ambient temperature. To prevent injuries, do not touch the bottom shell. Additionally, you must install these switches in a well-ventilated area with restricted access (not accessible to unskilled personnel), instead of on a desk or in an airtight cabinet. It is recommended that the switches be installed in a well-ventilated network box or cabinet.

Some switch models support security slot. To determine whether a security lock can be installed, check for the security slot marked with a padlock icon on the chassis. See **Figure 4-3**. If there is no security slot on the switch, it means that the security lock is not supported.

The security slot is 7 mm long and 3 mm wide. The maximum radius of its four round corners is 1 mm.

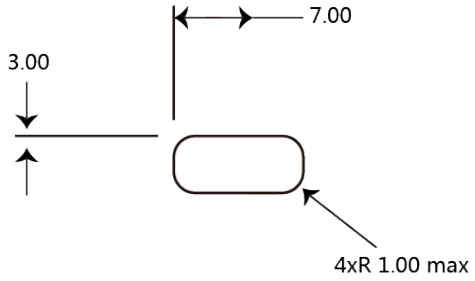
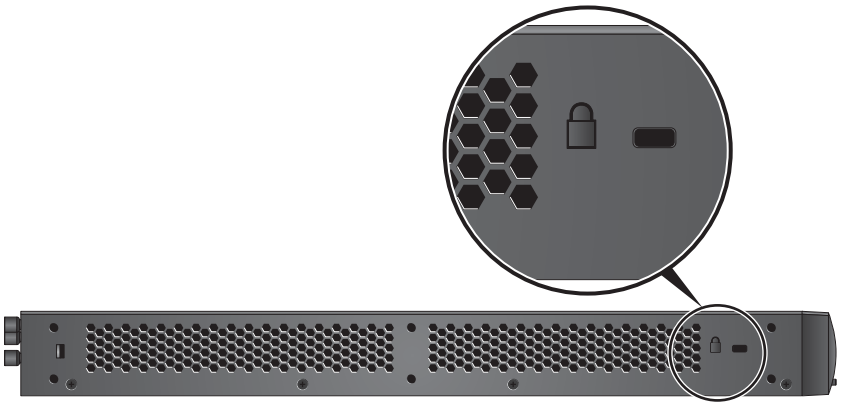


Figure 4-3 Security slot marked with padlock icon



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5 Hardware Structure

NOTE

The S1720GW-E, S1720GWR-E, and S1720X-E models have the same hardware structure, including appearance and indicators, as the S1720GW, S1720GWR, and S1720X models, respectively. The S1720GW, S1720GWR, and S1720X models are used as examples in this chapter.

Some switch models have nameplates attached on their bottom sides.

5.1 S1700

5.2 S1720

5.3 S1730S-S

5.4 S1730S-H

5.5 S1730S-S1

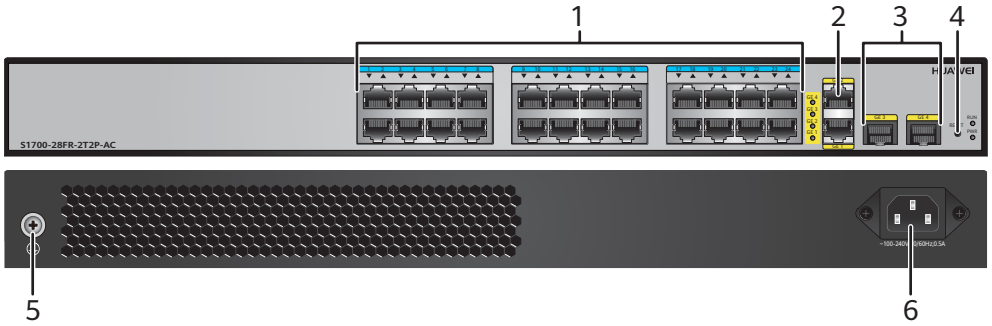
5.1 S1700

5.1.1 S1700-28FR-2T2P-AC

Appearance

Figure 5-1 shows the appearance of an S1700-28FR-2T2P-AC.

Figure 5-1 Appearance of an S1700-28FR-2T2P-AC



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1	Twenty-four 10/100BASE-TX ports	2	Two 10/100/1000BASE-T ports
3	Two 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module**	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** No ground cable is delivered with the switch.	6	AC power socket **NOTE** It is used with an AC power cable.

Indicators

Figure 5-2 Indicators on the S1700-28FR-2T2P-AC

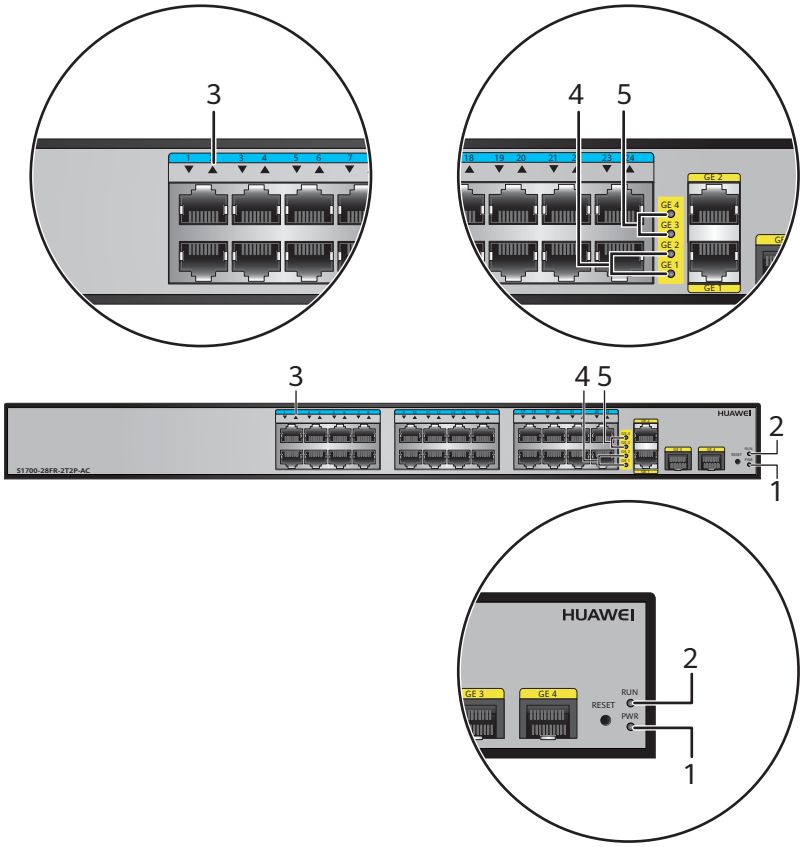

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Table 5-1 Description of indicators on the S1700-28FR-2T2P-AC

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
2	RUN	System status indicator	-	Off	The system is not running.
			Green	Steady on	The switch is starting or working abnormally.
			Green	Blinking	The switch is working properly.
3	-	10/100BASE-TX port indicator	-	Off	The port is not connected.
			Green	Steady on	The port is connected at the rate of 10/100 Mbit/s.
			Green	Blinking	The port is transmitting data.
4	-	GE1-GE2 electrical port indicator	-	Off	The port is not connected.
			Green	Steady on	The port is connected at the rate of 1000 Mbit/s.
			Green	Blinking	The port is connected at the rate of 1000 Mbit/s and transmitting data.
			Yellow	Steady on	The port is connected at the rate of 10/100 Mbit/s.
			Yellow	Blinking	The port is connected at the rate of 10/100 Mbit/s and transmitting data.
5	-	GE3-GE4 optical port indicator	-	Off	The port is not connected.
			Green	Steady on	The port is connected at the rate of 1000 Mbit/s.
			Green	Blinking	The port is connected at the rate of 1000 Mbit/s and transmitting data.

Power Supply Configuration

The S1700-28FR-2T2P-AC has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1700-28FR-2T2P-AC has no fans and uses natural heat dissipation.

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Technical Specifications

Table 5-2 lists technical specifications of the S1700-28FR-2T2P-AC.

Table 5-2 Technical specifications

Item	Description
Memory (RAM)	128 MB
Flash	16 MB
Mean time between failures (MTBF)	24.65 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	< 3 kg (6.62 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	25 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** When the altitude is 1800-2000 m (5906-6562 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature	-20°C to +70°C (-4°F to +158°F)

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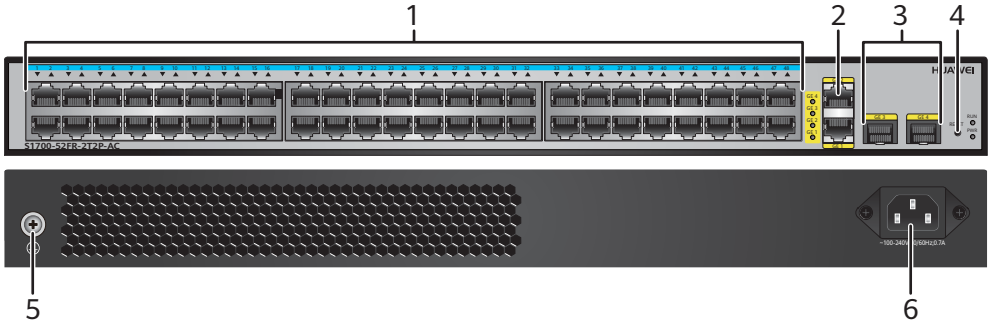
Item	Description
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	10% to 90%, noncondensing
Operating altitude	0-2000 m (0-6562 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010460

5.1.2 S1700-52FR-2T2P-AC

Appearance

Figure 5-3 shows the appearance of an S1700-52FR-2T2P-AC.

Figure 5-3 Appearance of an S1700-52FR-2T2P-AC



1	Forty-eight 10/100BASE-TX ports	2	Two 10/100/1000BASE-T ports

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3	Two 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module**	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** No ground cable is delivered with the switch.	6	AC power socket **NOTE** It is used with an AC power cable.

Indicators

The indicator description for S1700-52FR-2T2P-AC is the same as that for S1700-28FR-2T2P-AC. For details, see the indicator description for S1700-28FR-2T2P-AC.

Power Supply Configuration

The S1700-52FR-2T2P-AC has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1700-52FR-2T2P-AC has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-3 lists technical specifications of the S1700-52FR-2T2P-AC.

Table 5-3 Technical specifications

Item	Description
Memory (RAM)	128 MB
Flash	16 MB
Mean time between failures (MTBF)	24.65 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999

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Item	Description
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	< 3 kg (6.62 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	35 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** When the altitude is 1800-2000 m (5906-6562 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature	-20°C to +70°C (-4°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	10% to 90%, noncondensing
Operating altitude	0-2000 m (0-6562 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010461

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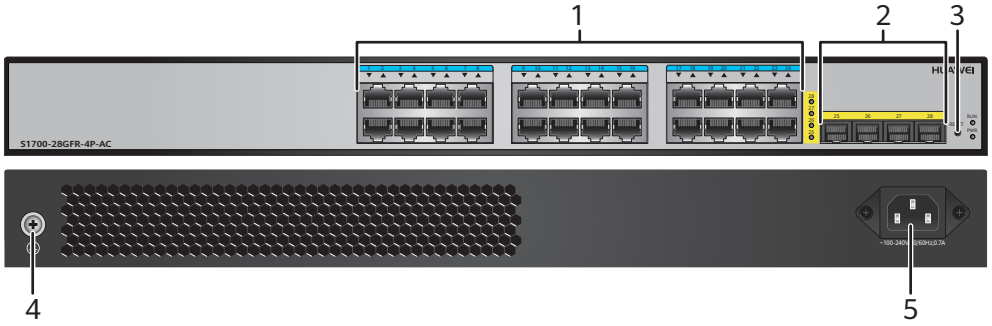
5.1.3 S1700-28GFR-4P-AC

Appearance

Figure 5-4 shows the appearance of an S1700-28GFR-4P-AC.

Figure 5-4 Appearance of an S1700-28GFR-4P-AC



1	Twenty-four 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module**
3	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	4	Ground screw **NOTE** No ground cable is delivered with the switch.
5	AC power socket **NOTE** It is used with an AC power cable.	-	-

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Indicators

Figure 5-5 Indicators on the S1700-28GFR-4P-AC

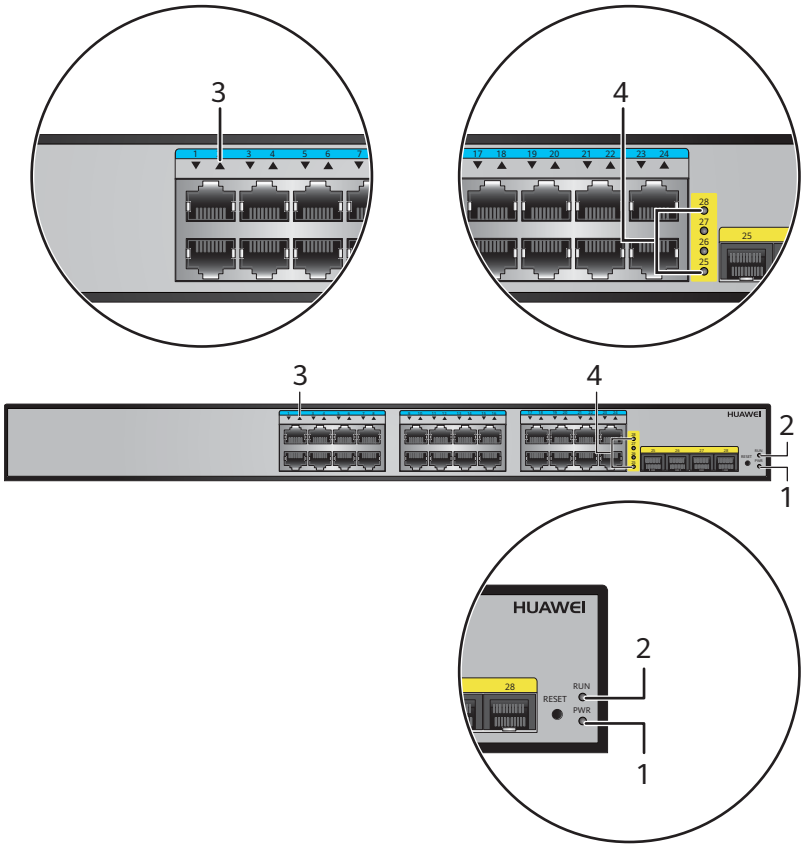

Table 5-4 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
2	RUN	System status indicator	-	Off	The system is not running.
			Green	Steady on	The switch is starting or working abnormally.
			Green	Blinking	The switch is working properly.
3	-	10/100/1000BASE-T port indicator	-	Off	The port is not connected.
			Green	Steady on	The port is connected at the rate of 1000 Mbit/s.
			Green	Blinking	The port is connected at the rate of 1000 Mbit/s and transmitting data.

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No.	Indicator	Name	Color	Status	Description
			Yellow	Steady on	The port is connected at the rate of 10/100 Mbit/s.
			Yellow	Blinking	The port is connected at the rate of 10/100 Mbit/s and transmitting data.
4	-	GE1-GE4 optical port indicator	-	Off	The port is not connected.
			Green	Steady on	The port is connected at the rate of 1000 Mbit/s.
			Green	Blinking	The port is connected at the rate of 1000 Mbit/s and transmitting data.

Power Supply Configuration

The S1700-28GFR-4P-AC has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1700-28GFR-4P-AC has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-5 lists technical specifications of the S1700-28GFR-4P-AC.

Table 5-5 Technical specifications

Item	Description
Memory (RAM)	128 MB
Flash	16 MB
Mean time between failures (MTBF)	24.65 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	< 3 kg (6.62 lb)

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Item	Description
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	30 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** When the altitude is 1800-2000 m (5906-6562 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature	-20°C to +70°C (-4°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	10% to 90%, noncondensing
Operating altitude	0-2000 m (0-6562 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010458

5.1.4 S1700-52GFR-4P-AC

Appearance

Figure 5-6 shows the appearance of an S1700-52GFR-4P-AC.

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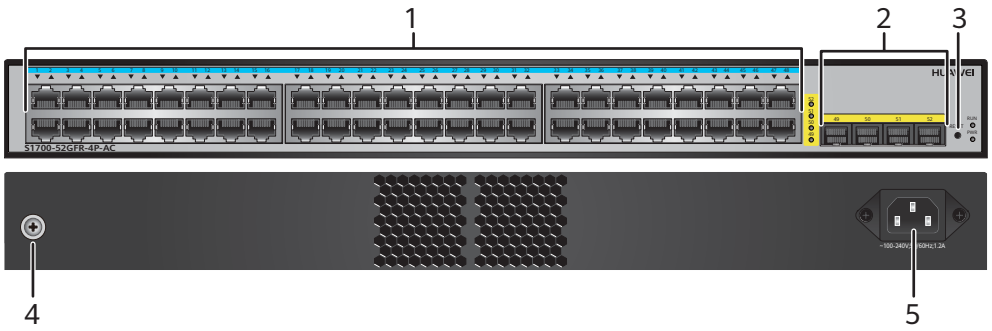
Figure 5-6 Appearance of an S1700-52GFR-4P-AC



1	Forty-eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module**
3	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	4	Ground screw **NOTE** No ground cable is delivered with the switch.
5	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The indicator description for S1700-52GFR-4P-AC is the same as that for S1700-28GFR-4P-AC. For details, see the indicator description for S1700-28GFR-4P-AC.

Power Supply Configuration

The S1700-52GFR-4P-AC has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1700-52GFR-4P-AC has built-in fans for forced air cooling. Air flows in from the left side and right side, and exhausts from the rear panel.

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Technical Specifications

Table 5-6 lists technical specifications of the S1700-52GFR-4P-AC.

Table 5-6 Technical specifications

Item	Description
Memory (RAM)	128 MB
Flash	16 MB
Mean time between failures (MTBF)	24.65 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	< 4 kg (8.82 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	55 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** When the altitude is 1800-2000 m (5906-6562 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature	-20°C to +70°C (-4°F to +158°F)

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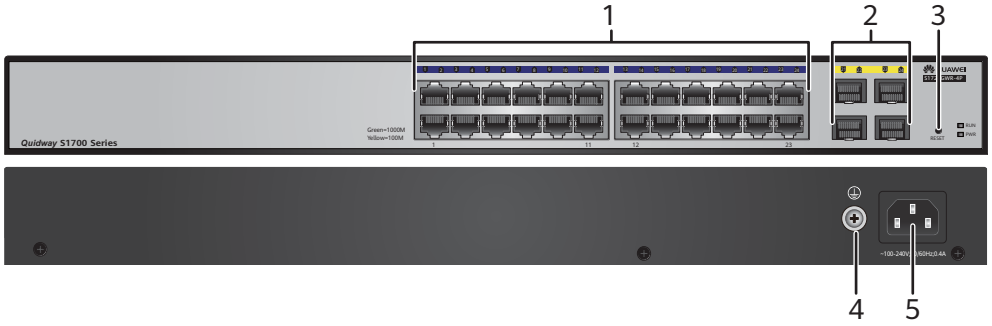
Item	Description
Noise under normal temperature (27°C, sound power)	< 63 dB(A)
Relative humidity	10% to 90%, noncondensing
Operating altitude	0-2000 m (0-6562 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010459

5.1.5 S1728GWR-4P

Appearance

Figure 5-7 shows the appearance of an S1728GWR-4P.

Figure 5-7 Appearance of an S1728GWR-4P



1	Twenty-four 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module**

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3	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	4	Ground screw **NOTE** No ground cable is delivered with the switch.
5	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The indicator description for S1728GWR-4P is the same as that for S1700-28GFR-4P-AC. For details, see the indicator description for S1700-28GFR-4P-AC.

Power Supply Configuration

The S1728GWR-4P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1728GWR-4P has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-7 lists technical specifications of the S1728GWR-4P.

Table 5-7 Technical specifications

Item	Description
Memory (RAM)	128 MB
Flash	32 MB
Mean time between failures (MTBF)	24.65 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999

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Item	Description
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	< 3 kg (6.62 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	15 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** When the altitude is 1800-2000 m (5906-6562 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-2000 m (0-6562 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010435

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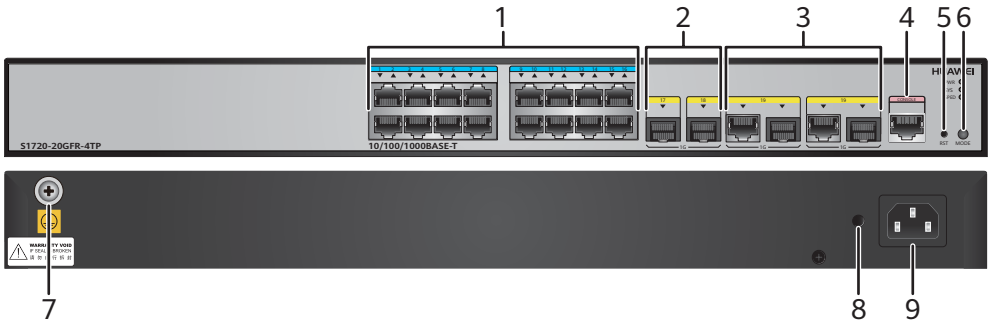
5.2 S1720

5.2.1 S1720-20GFR-4TP

Appearance

Figure 5-8 shows the appearance of an S1720-20GFR-4TP.

Figure 5-8 Appearance of an S1720-20GFR-4TP



1	Sixteen 10/100/1000BASE-T ports	2	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	Two combo ports (10/100/1000BASE-T + 100/1000BASE-X) Modules applicable to combo optical ports: • **FE optical module** • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module**	4	One console port **NOTE** It is used with a console cable. The console cable is not delivered with the switch and needs to be separately purchased if needed.

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5	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	6	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.
7	Ground screw **NOTE** The ground cable is not delivered with the switch.	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

Figure 5-9 shows the indicators on an S1720-20GFR-4TP.

Figure 5-9 Indicators on an S1720-20GFR-4TP

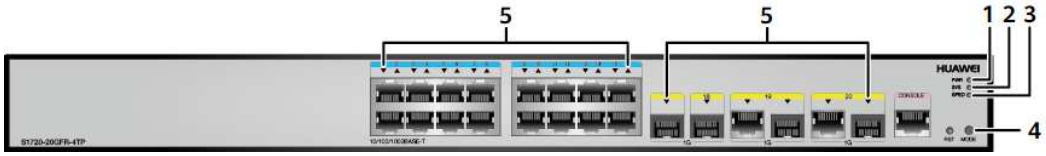

Table 5-8 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
			Yellow or red	Steady on	The built-in power module has failed.

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No.	Indicator	Name	Color	Status	Description
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a temperature alarm has been generated.
3	SPED	Speed indicator	-	Off	The speed mode is not selected.
			Green	Steady on	The service port indicators show the port speeds. After 45 seconds, the service port indicators automatically restore to the status mode.
4	MODE	Mode switching button	-	-	• When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. • When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.
5	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-9**.		

Table 5-9 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Status	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.

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Display Mode	Color	Status	Description
	Green	Blinking	The port is sending or receiving data.
Speed	-	Off	The port is not connected or has been shut down.
	Green	Steady on	The port is operating at 10/100 Mbit/s.
	Green	Blinking	The port is operating at 1000 Mbit/s.

Power Supply Configuration

The S1720-20GFR-4TP has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-20GFR-4TP has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-10 lists technical specifications of the S1720-20GFR-4TP.

Table 5-10 Technical specifications

Item	Description
Memory (RAM)	256 MB
Flash	200 MB
Mean time between failures (MTBF)	67 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±6 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	3.5 kg (7.72 lb)

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Item	Description
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	20.7 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010545

5.2.2 S1720-28GFR-4TP

Appearance

Figure 5-10 shows the appearance of an S1720-28GFR-4TP.

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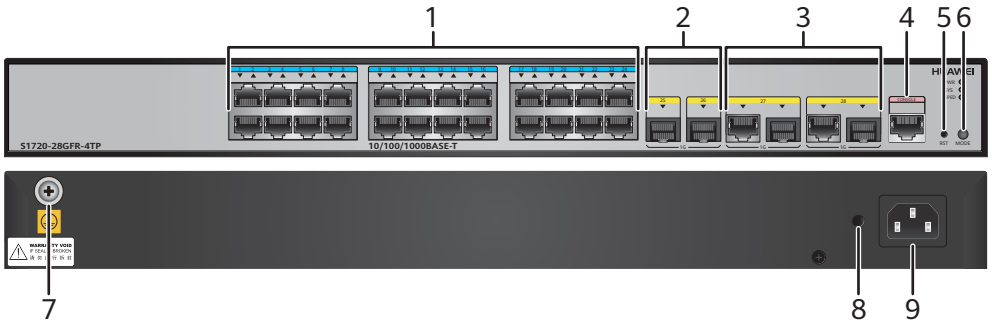
Figure 5-10 Appearance of an S1720-28GFR-4TP



1	Twenty-four 10/100/1000BASE-T ports	2	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	Two combo ports (10/100/1000BASE-T + 100/1000BASE-X) Modules applicable to combo optical ports: • **FE optical module** • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module**	4	One console port **NOTE** It is used with a console cable. The console cable is not delivered with the switch and needs to be separately purchased if needed.
5	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	6	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.

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7	Ground screw **NOTE** The ground cable is not delivered with the switch.	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The indicator description for S1720-28GFR-4TP is the same as that for S1720-20GFR-4TP. For details, see the indicator description for S1720-20GFR-4TP.

Power Supply Configuration

The S1720-28GFR-4TP has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-28GFR-4TP has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-11 lists technical specifications of the S1720-28GFR-4TP.

Table 5-11 Technical specifications

Item	Description
Memory (RAM)	256 MB
Flash	200 MB
Mean time between failures (MTBF)	65.66 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±6 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.)
Weight (including packaging)	3.6 kg (7.94 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	24.3 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010546

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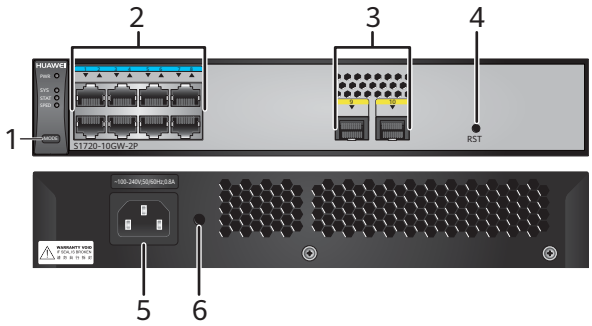
5.2.3 S1720-10GW-2P/S1720-10GW-2P-E

This section uses S1720-10GW-2P as an example. S1720-10GW-2P-E has the same hardware structure as S1720-10GW-2P.

Appearance

Figure 5-11 shows the appearance of an S1720-10GW-2P.

Figure 5-11 Appearance of an S1720-10GW-2P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Eight 10/100/1000BASE-T ports

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3	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** (the maximum transmission distance cannot exceed 40 km) • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	AC power socket **NOTE** It is used with an AC power cable.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.

Indicators

The S1720-10GW-2P does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-10GW-PWR-2P.

Power Supply Configuration

The S1720-10GW-2P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-10GW-2P has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-12 lists technical specifications of the S1720-10GW-2P.

Table 5-12 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	23.8 years

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Item	Description
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 250.0 mm x 180.0 mm (1.72 in. x 9.84 in. x 7.09 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 250.0 mm x 186.7 mm (1.72 in. x 9.84 in. x 7.35 in.)
Weight (including packaging)	1.3 kg (2.87 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	11.86 W
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	10.2 W

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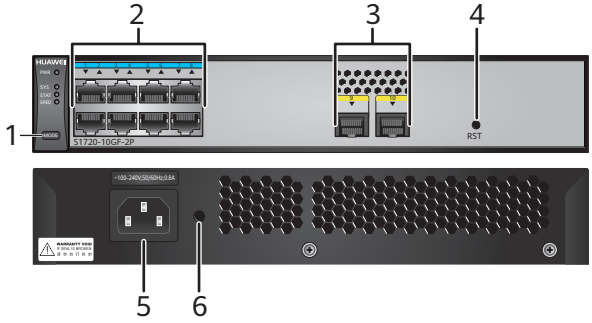
Item	Description
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). The operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-10GW-2P: 98010574 • S1720-10GW-2P-E: 98010753

5.2.4 S1720-10GF-2P

Appearance

Figure 5-12 shows the appearance of an S1720-10GF-2P.

Figure 5-12 Appearance of an S1720-10GF-2P



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1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Eight 10/100/1000BASE-T ports
3	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** (the maximum transmission distance cannot exceed 40 km) • **GE copper transceiver module** • **GPON optical module** **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	AC power socket **NOTE** It is used with an AC power cable.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.

Indicators

The S1720-10GF-2P does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-10GW-PWR-2P.

Power Supply Configuration

The S1720-10GF-2P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-10GF-2P has no fans and uses natural heat dissipation.

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Technical Specifications

Table 5-13 lists technical specifications of the S1720-10GF-2P.

Table 5-13 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	23.8 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 250.0 mm x 180.0 mm (1.72 in. x 9.84 in. x 7.09 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 250.0 mm x 186.7 mm (1.72 in. x 9.84 in. x 7.35 in.)
Weight (including packaging)	1.3 kg (2.87 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	11.86 W

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Item	Description
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	10.2 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010846

5.2.5 S1720-10GW-PWR-2P/S1720-10GW-PWR-2P-E

This section uses S1720-10GW-PWR-2P as an example. S1720-10GW-PWR-2P-E has the same hardware structure as S1720-10GW-PWR-2P.

Appearance

Figure 5-13 shows the appearance of an S1720-10GW-PWR-2P.

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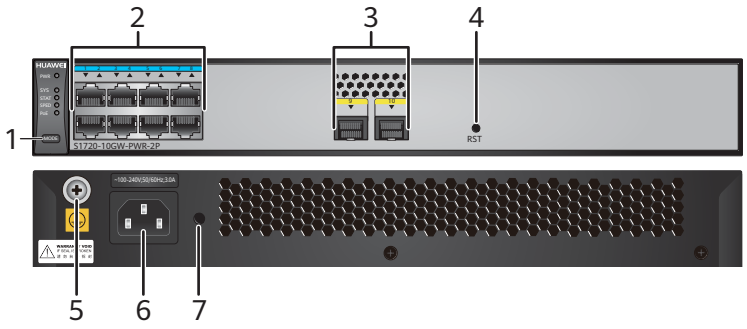
Figure 5-13 Appearance of an S1720-10GW-PWR-2P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Eight PoE+ 10/100/1000BASE-T ports
3	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** (the maximum transmission distance cannot exceed 40 km) • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

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5	Ground screw	6	AC power socket **NOTE** It is used with an AC power cable.
7	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.	-	-

Indicators

Figure 5-14 shows the indicators on an S1720-10GW-PWR-2P.

Figure 5-14 Indicators on an S1720-10GW-PWR-2P

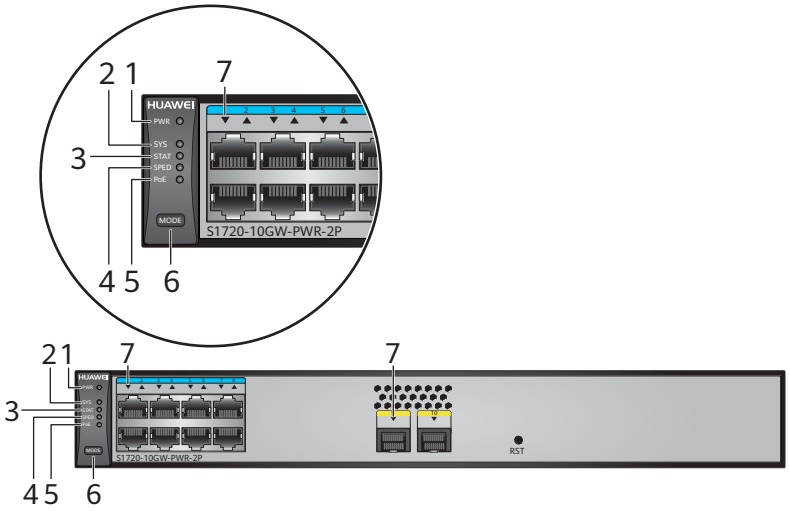

Table 5-14 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
			Yellow or red	Steady on	The built-in power supply is faulty.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.

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No.	Indicator	Name	Color	Status	Description
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a temperature alarm has been generated.
3	STAT	Status indicator	-	Off	The status mode is not selected.
			Green	Steady on	The status mode (default mode) is selected. If the status mode is selected, the service port indicator shows the port link or activity state.
4	SPED	Speed indicator	-	Off	The speed mode is not selected.
			Green	Steady on	The service port indicators show the port speeds. After 45 seconds, the service port indicators automatically restore to the status mode.
5	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The service port indicators show the PoE status. After 45 seconds, the service port indicators automatically restore to the status mode.
6	MODE	Mode switching button	-	-	• When you press this button once, the service port indicators show the speed of each service port. • When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. • When you press this button a third time, the STAT indicator turns green and the service port indicators restore to the default mode. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPED and PoE indicators are off.

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No.	Indicator	Name	Color	Status	Description
7	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-15**.		

Table 5-15 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Status	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
Speed	-	Off	The port is not connected or has been shut down.
	Green	Steady on	The port is operating at 10/100 Mbit/s.
	Green	Blinking	The port is operating at 1000 Mbit/s.
PoE	-	Off	The port is not providing power to a PD.
	Green	Steady on	The port is providing power to a PD.
	Yellow	Steady on	The PoE function is disabled on the port.
	Yellow	Blinking	The port stops providing PoE power because of an exception (for example, an incompatible PD is connected to the port).
	Green and yellow	Blinking green and yellow alternately	• The power of the PD exceeds the maximum power or power threshold of the port. • The total power consumption of PDs has reached the maximum power of the switch. • The manual power management mode is used and the port is not enabled to provide power to the PD.

Power Supply Configuration

The S1720-10GW-PWR-2P has a built-in power module and does not support pluggable power modules. The built-in power module can provide 124 W PoE

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power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation

The S1720-10GW-PWR-2P has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-16 lists technical specifications of the S1720-10GW-PWR-2P.

Table 5-16 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	23.8 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 320.0 mm x 220.0 mm (1.72 in. x 12.60 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 320.0 mm x 228.3 mm (1.72 in. x 12.60 in. x 8.99 in.)
Weight (including packaging)	2.2 kg (4.85 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz

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Item	Description
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	• Without PoE: 14.63 W • 100% PoE loads: 159.2 W (system power consumption: 36 W, PoE: 123.2 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	13.3 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-10GW-PWR-2P: 98010576 • S1720-10GW-PWR-2P-E: 98010754

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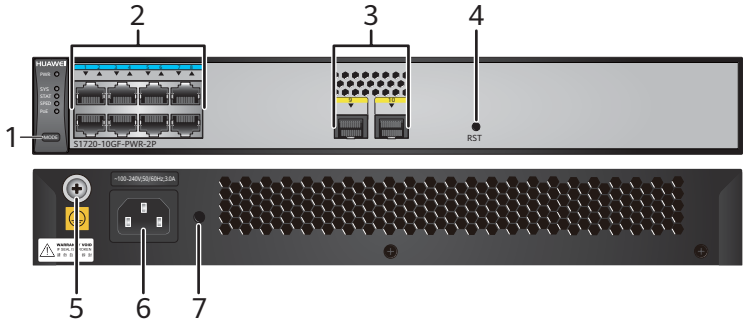
5.2.6 S1720-10GF-PWR-2P

Appearance

Figure 5-15 shows the appearance of an S1720-10GF-PWR-2P.

Figure 5-15 Appearance of an S1720-10GF-PWR-2P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Eight PoE+ 10/100/1000BASE-T ports

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3	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** (the maximum transmission distance cannot exceed 40 km) • **GE copper transceiver module** • **GPON optical module** **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw	6	AC power socket **NOTE** It is used with an AC power cable.
7	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.	-	-

Indicators

The indicator description for S1720-10GF-PWR-2P is the same as that for S1720-10GW-PWR-2P. For details, see the indicator description for S1720-10GW-PWR-2P.

Power Supply Configuration

The S1720-10GF-PWR-2P has a built-in power module and does not support pluggable power modules. The built-in power module can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation

The S1720-10GF-PWR-2P has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-17 lists technical specifications of the S1720-10GF-PWR-2P.

Table 5-17 Technical specifications

Item	Description
Memory (RAM)	512 MB

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Item	Description
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	23.8 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 320.0 mm x 220.0 mm (1.72 in. x 12.60 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 320.0 mm x 228.3 mm (1.72 in. x 12.60 in. x 8.99 in.)
Weight (including packaging)	2.2 kg (4.85 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	• Without PoE: 14.63 W • 100% PoE loads: 159.2 W (system power consumption: 36 W, PoE: 123.2 W)

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Item	Description
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	13.3 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010847

5.2.7 S1720-28GWR-4P/S1720-28GWR-4P-E

This section uses S1720-28GWR-4P as an example. The S1720-28GWR-4P-E has the same hardware structure as S1720-28GWR-4P.

Appearance

Figure 5-16 shows the appearance of an S1720-28GWR-4P.

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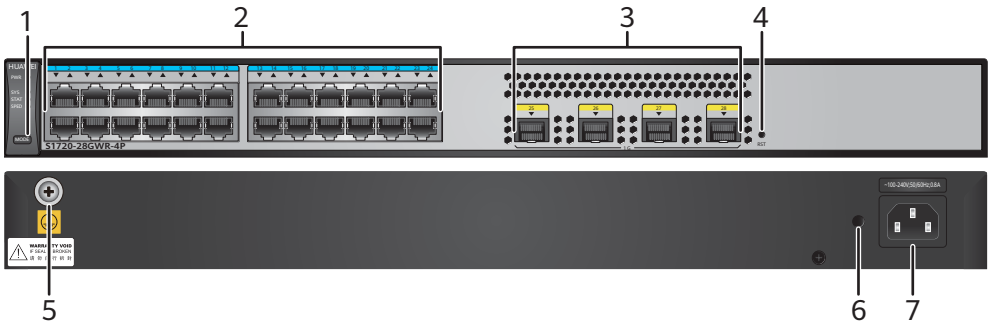
Figure 5-16 Appearance of an S1720-28GWR-4P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Twenty-four 10/100/1000BASE-T ports
3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.

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7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720-28GWR-4P does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-28GWR-4P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-28GWR-4P has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-18 lists technical specifications of the S1720-28GWR-4P.

Table 5-18 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	45 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)

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Item	Description
Weight (including packaging)	3.9 kg (8.6 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	20.2 W
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	16.1 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km or longer transmission distances.

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Item	Description
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-28GWR-4P: 98010580 • S1720-28GWR-4P-E: 98010744

5.2.8 S1720-28GFR-4P

Appearance

Figure 5-17 shows the appearance of an S1720-28GFR-4P.

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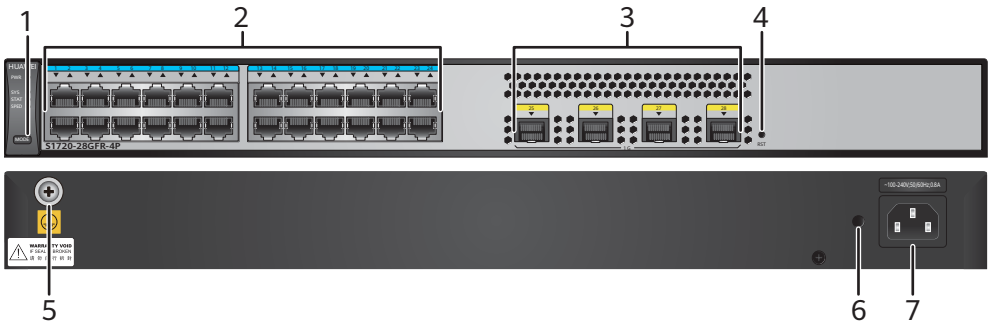
Figure 5-17 Appearance of an S1720-28GFR-4P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Twenty-four 10/100/1000BASE-T ports
3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** No ground cable is delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.

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7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720-28GFR-4P does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-28GFR-4P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-28GFR-4P has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-19 lists technical specifications of the S1720-28GFR-4P.

Table 5-19 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	45 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)

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Item	Description
Weight (including packaging)	3.9 kg (8.6 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	20.2 W
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	16.1 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km or longer transmission distances.

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Item	Description
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010848

5.2.9 S1720-28GWR-4X/S1720-28GWR-4X-E

This section uses S1720-28GWR-4X as an example. The S1720-28GWR-4X-E has the same hardware structure as S1720-28GWR-4X.

Appearance

Figure 5-18 shows the appearance of an S1720-28GWR-4X.

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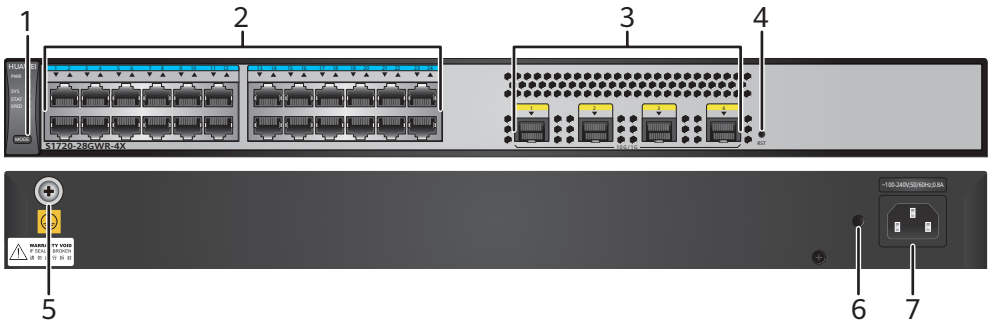
Figure 5-18 Appearance of an S1720-28GWR-4X



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Twenty-four 10/100/1000BASE-T ports
3	Four 10GE SFP+ Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **10GE SFP+ optical module** (maximum transmission distance ≤ 10 km) • **GPON optical module** (applicable in V200R012C00 and later versions) • 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables • 3 m and 10 m SFP+ AOC cables **NOTE** If a port uses a GPON optical module, other 10GE SFP+ optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

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5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720-28GWR-4X does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-28GWR-4X has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-28GWR-4X has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-20 lists technical specifications of the S1720-28GWR-4X.

Table 5-20 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	45 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)
Weight (including packaging)	3.9 kg (8.6 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	27.9 W
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	19.6 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km or longer transmission distances.

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Item	Description
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-28GWR-4X: 98010587 • S1720-28GWR-4X-E: 98010745

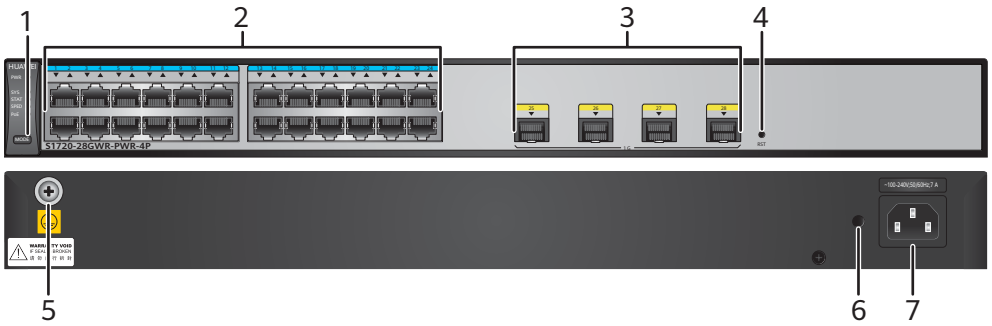
5.2.10 S1720-28GWR-PWR-4P/S1720-28GWR-PWR-4P-E

This section uses S1720-28GWR-PWR-4P as an example. S1720-28GWR-PWR-4P-E has the same hardware structure as S1720-28GWR-PWR-4P.

Appearance

Figure 5-19 shows the appearance of an S1720-28GWR-PWR-4P.

Figure 5-19 Appearance of an S1720-28GWR-PWR-4P



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1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Twenty-four PoE + 10/100/1000BASE-T ports
3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

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Indicators

The indicator description for S1720-28GWR-PWR-4P is the same as that for S1720-28GWR-PWR-4X. For details, see the indicator description for S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-28GWR-PWR-4P has a built-in power module and does not support pluggable power modules. The built-in power module can provide 370 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1720-28GWR-PWR-4P has two built-in fans for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-21 lists technical specifications of the S1720-28GWR-PWR-4P.

Table 5-21 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	41 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 314.8 mm (1.72 in. x 17.40 in. x 12.39 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 323.8 mm (1.72 in. x 17.40 in. x 12.75 in.)

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Item	Description
Weight (including packaging)	5.2 kg (11.45 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 40.4 W • 100% PoE loads: 446.7 W (system power consumption: 77.1 W, PoE: 369.6 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	26 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 49.1 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-28GWR-PWR-4P: 98010592 • S1720-28GWR-PWR-4P-E: 98010748

5.2.11 S1720-28GFR-PWR-4P

Appearance

Figure 5-20 shows the appearance of an S1720-28GFR-PWR-4P.

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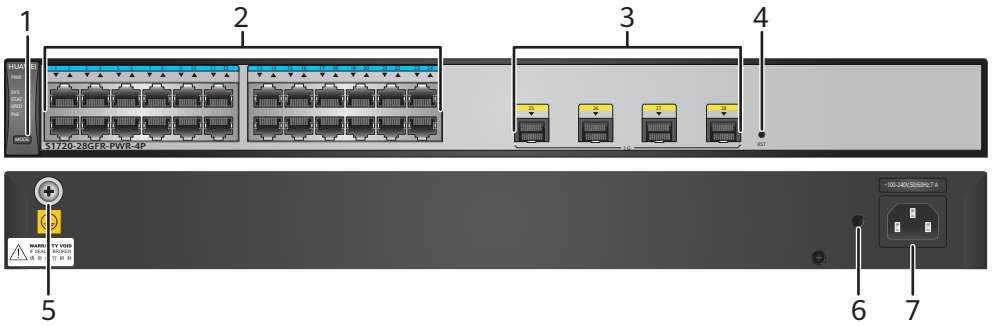
Figure 5-20 Appearance of an S1720-28GFR-PWR-4P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Twenty-four PoE + 10/100/1000BASE-T ports
3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

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5	Ground screw	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The indicator description for S1720-28GFR-PWR-4P is the same as that for S1720-28GWR-PWR-4X. For details, see the indicator description for S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-28GFR-PWR-4P has a built-in power module and does not support pluggable power modules. The built-in power module can provide 370 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1720-28GFR-PWR-4P has two built-in fans for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-22 lists technical specifications of the S1720-28GFR-PWR-4P.

Table 5-22 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	41 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV

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Item	Description
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 314.8 mm (1.72 in. x 17.40 in. x 12.39 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 323.8 mm (1.72 in. x 17.40 in. x 12.75 in.)
Weight (including packaging)	5.2 kg (11.45 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 40.4 W • 100% PoE loads: 446.7 W (system power consumption: 77.1 W, PoE: 369.6 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	26 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 49.1 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010849

5.2.12 S1720-28GWR-PWR-4X/S1720-28GWR-PWR-4X-E

This section uses S1720-28GWR-PWR-4X as an example. S1720-28GWR-PWR-4X-E has the same hardware structure as S1720-28GWR-PWR-4X.

Appearance

Figure 5-21 shows the appearance of an S1720-28GWR-PWR-4X.

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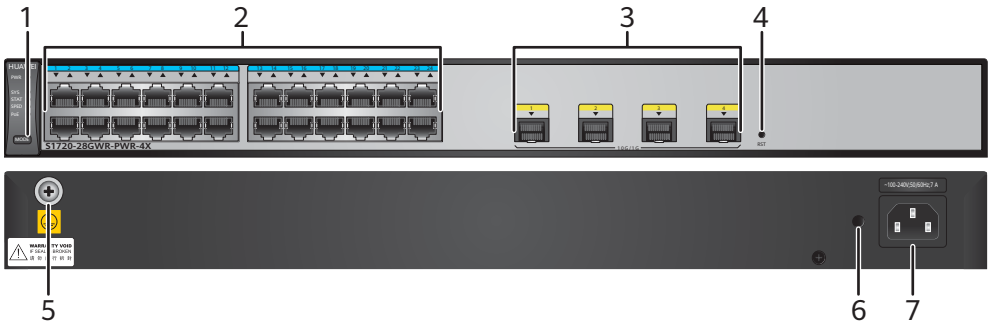
Figure 5-21 Appearance of an S1720-28GWR-PWR-4X



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Twenty-four PoE + 10/100/1000BASE-T ports

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3	Four 10GE SFP+ Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **10GE SFP+ optical module** • **10GE-CWDM SFP+ optical module** • **10GE-DWDM SFP+ optical module** • **GPON optical module** (applicable in V200R012C00 and later versions) • 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables • 3 m and 10 m SFP+ AOC cables **NOTE** If a port uses a GPON optical module, other 10GE SFP+ optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

Figure 5-22 shows the indicators on an S1720-28GWR-PWR-4X.

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Figure 5-22 Indicators on an S1720-28GWR-PWR-4X

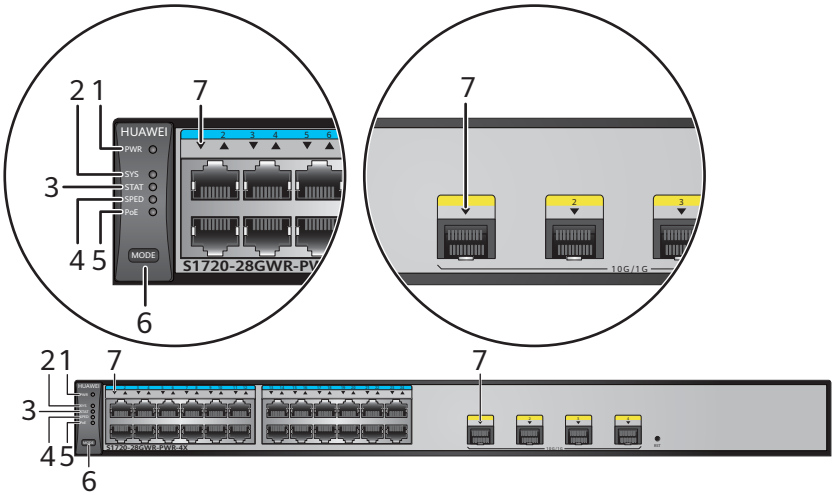

Table 5-23 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
			Yellow or red	Steady on	The built-in power supply is faulty.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a temperature alarm has been generated.
3	STAT	Status indicator	-	Off	The status mode is not selected.
			Green	Steady on	The status mode (default mode) is selected. If the status mode is selected, the service port indicator shows the port link or activity state.
4	SPED	Speed indicator	-	Off	The speed mode is not selected.

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No.	Indicator	Name	Color	Status	Description
			Green	Steady on	The service port indicators show the port speeds. After 45 seconds, the service port indicators automatically restore to the status mode.
5	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The service port indicators show the PoE status. After 45 seconds, the service port indicators automatically restore to the status mode.
6	MODE	Mode switching button	-	-	• When you press this button once, the service port indicators show the speed of each service port. • When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. • When you press this button a third time, the STAT indicator turns green and the service port indicators restore to the default mode. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPED and PoE indicators are off.
7	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-24**.		

Table 5-24 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Status	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.

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Display Mode	Color	Status	Description
Speed	-	Off	The port is not connected or has been shut down.
	Green	Steady on	10M/100M/1000M port: The port is operating at 10/100 Mbit/s. 1000M/10GE port: The port is operating at 1000 Mbit/s.
	Green	Blinking	10M/100M/1000M port: The port is operating at 1000 Mbit/s. 1000M/10GE port: The port is operating at 10 Gbit/s.
PoE	-	Off	The port is not providing power to a PD.
	Green	Steady on	The port is providing power to a PD.
	Yellow	Steady on	The PoE function is disabled on the port.
	Yellow	Blinking	The port stops providing PoE power because of an exception (for example, an incompatible PD is connected to the port).
	Green and yellow	Blinking green and yellow alternately	• The power of the PD exceeds the maximum power or power threshold of the port. • The total power consumption of PDs has reached the maximum power of the switch. • The manual power management mode is used and the port is not enabled to provide power to the PD.

Power Supply Configuration

The S1720-28GWR-PWR-4X has a built-in power module and does not support pluggable power modules. The built-in power module can provide 370 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1720-28GWR-PWR-4X has two built-in fans for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-25 lists technical specifications of the S1720-28GWR-PWR-4X.

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Table 5-25 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	41 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 314.8 mm (1.72 in. x 17.40 in. x 12.39 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 323.8 mm (1.72 in. x 17.40 in. x 12.75 in.)
Weight (including packaging)	5.2 kg (11.45 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 42.7 W • 100% PoE loads: 448.5 W (system power consumption: 78.9 W, PoE: 369.6 W)

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Item	Description
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	29.5 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 49.1 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)

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Item	Description
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-28GWR-PWR-4X: 98010599 • S1720-28GWR-PWR-4X-E: 98010749

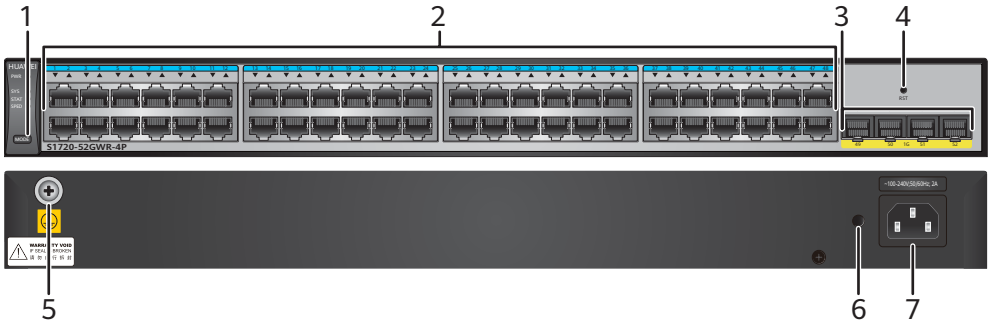
5.2.13 S1720-52GWR-4P/S1720-52GWR-4P-E

This section uses S1720-52GWR-4P as an example. S1720-52GWR-4P-E has the same hardware structure as S1720-52GWR-4P.

Appearance

Figure 5-23 shows the appearance of an S1720-52GWR-4P.

Figure 5-23 Appearance of an S1720-52GWR-4P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Forty-eight 10/100/1000BASE-T ports

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3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720-52GWR-4P does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-52GWR-4P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-52GWR-4P has a built-in fan for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-26 lists technical specifications of the S1720-52GWR-4P.

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Table 5-26 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	41 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)
Weight (including packaging)	4.4 kg (9.7 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	47.3 W

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Item	Description
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	29.9 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 44.5 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)

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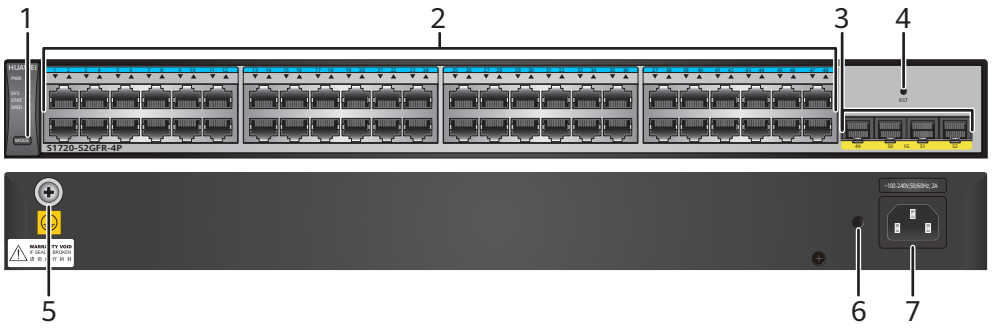
Item	Description
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-52GWR-4P: 98010610 • S1720-52GWR-4P-E: 98010746

5.2.14 S1720-52GFR-4P

Appearance

Figure 5-24 shows the appearance of an S1720-52GFR-4P.

Figure 5-24 Appearance of an S1720-52GFR-4P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Forty-eight 10/100/1000BASE-T ports

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3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720-52GFR-4P does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-52GFR-4P has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-52GFR-4P has a built-in fan for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-27 lists technical specifications of the S1720-52GFR-4P.

Table 5-27 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers

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Item	Description
Mean time between failures (MTBF)	41 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)
Weight (including packaging)	4.4 kg (9.7 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	47.3 W

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Item	Description
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	29.9 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 44.5 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)

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Item	Description
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010850

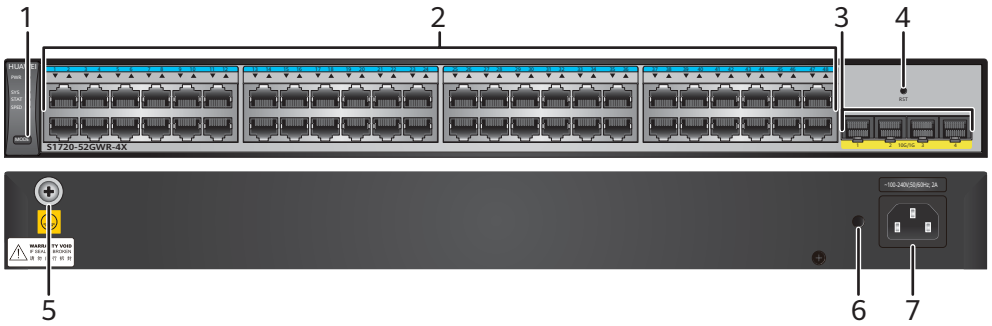
5.2.15 S1720-52GWR-4X/S1720-52GWR-4X-E

This section uses S1720-52GWR-4X as an example. S1720-52GWR-4X-E has the same hardware structure as S1720-52GWR-4X.

Appearance

Figure 5-25 shows the appearance of an S1720-52GWR-4X.

Figure 5-25 Appearance of an S1720-52GWR-4X



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Forty-eight 10/100/1000BASE-T ports

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3	Four 10GE SFP+ Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **10GE SFP+ optical module** • **10GE-CWDM SFP+ optical module** • **10GE-DWDM SFP+ optical module** • **GPON optical module** (applicable in V200R012C00 and later versions) • 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables • 3 m and 10 m SFP+ AOC cables **NOTE** If a port uses a GPON optical module, other 10GE SFP+ optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720-52GWR-4X does not have the PoE indicator. The meanings of other indicators are the same as those on the S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-52GWR-4X has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720-52GWR-4X has a built-in fan for forced air cooling. The airflow direction is left-to-right.

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Technical Specifications

Table 5-28 lists technical specifications of the S1720-52GWR-4X.

Table 5-28 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	41 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)
Weight (including packaging)	4.4 kg (9.7 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz

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Item	Description
Maximum power consumption (100% throughput, full speed of fans)	50.3 W
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	31.6 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)

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Item	Description
Noise under normal temperature (27°C, sound power)	< 44.5 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-52GWR-4X: 98010611 • S1720-52GWR-4X-E: 98010747

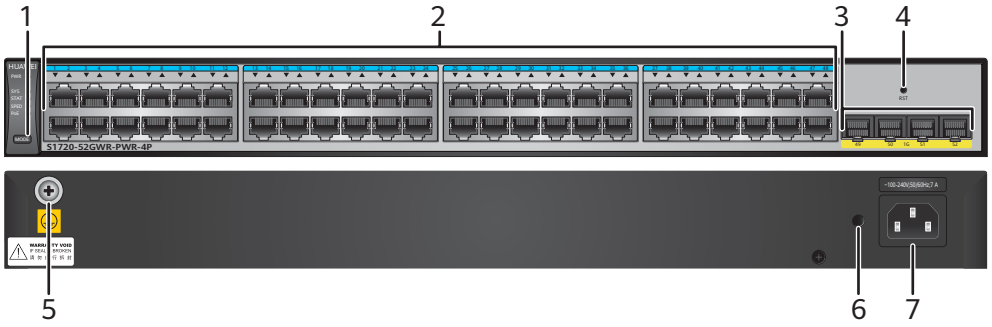
5.2.16 S1720-52GWR-PWR-4P/S1720-52GWR-PWR-4P-E

This section uses S1720-52GWR-PWR-4P as an example. S1720-52GWR-PWR-4P-E has the same hardware structure as S1720-52GWR-PWR-4P.

Appearance

Figure 5-26 shows the appearance of an S1720-52GWR-PWR-4P.

Figure 5-26 Appearance of an S1720-52GWR-PWR-4P



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1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Forty-eight PoE+ 10/100/1000BASE-T ports
3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

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Indicators

The indicator description for S1720-52GWR-PWR-4P is the same as that for S1720-28GWR-PWR-4X. For details, see the indicator description for S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-52GWR-PWR-4P has a built-in power module and does not support pluggable power modules. The built-in power module can provide 370 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1720-52GWR-PWR-4P has two built-in fans for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-29 lists technical specifications of the S1720-52GWR-PWR-4P.

Table 5-29 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	38 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 314.8 mm (1.72 in. x 17.40 in. x 12.39 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 323.8 mm (1.72 in. x 17.40 in. x 12.75 in.)

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Item	Description
Weight (including packaging)	5.6 kg (12.35 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 61.7 W • 100% PoE loads: 461.8 W (system power consumption: 92.2 W, PoE: 369.6 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	42 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).

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Item	Description
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 48.3 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-52GWR-PWR-4P: 98010623 • S1720-52GWR-PWR-4P-E: 98010750

5.2.17 S1720-52GFR-PWR-4P

Appearance

Figure 5-27 shows the appearance of an S1720-52GFR-PWR-4P.

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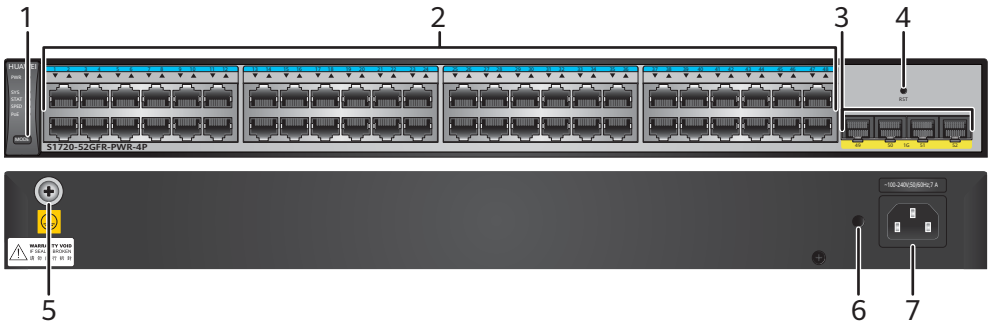
Figure 5-27 Appearance of an S1720-52GFR-PWR-4P



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Forty-eight PoE+ 10/100/1000BASE-T ports
3	Four 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **GPON optical module** **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

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5	Ground screw	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The indicator description for S1720-52GFR-PWR-4P is the same as that for S1720-28GWR-PWR-4X. For details, see the indicator description for S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-52GFR-PWR-4P has a built-in power module and does not support pluggable power modules. The built-in power module can provide 370 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1720-52GFR-PWR-4P has two built-in fans for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-30 lists technical specifications of the S1720-52GFR-PWR-4P.

Table 5-30 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	38 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV

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Item	Description
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 314.8 mm (1.72 in. x 17.40 in. x 12.39 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 323.8 mm (1.72 in. x 17.40 in. x 12.75 in.)
Weight (including packaging)	5.6 kg (12.35 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 61.7 W • 100% PoE loads: 461.8 W (system power consumption: 92.2 W, PoE: 369.6 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	42 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).

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Item	Description
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 48.3 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010851

5.2.18 S1720-52GWR-PWR-4X/S1720-52GWR-PWR-4X-E

This section uses S1720-52GWR-PWR-4X as an example. S1720-52GWR-PWR-4X-E has the same hardware structure as S1720-52GWR-PWR-4X.

Appearance

Figure 5-28 shows the appearance of an S1720-52GWR-PWR-4X.

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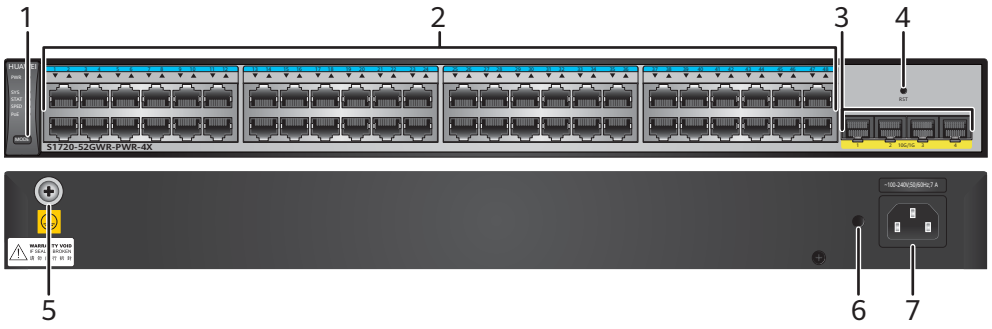
Figure 5-28 Appearance of an S1720-52GWR-PWR-4X



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Forty-eight PoE+ 10/100/1000BASE-T ports

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3	Four 10GE SFP+ Ethernet ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **10GE SFP+ optical module** • **10GE-CWDM SFP+ optical module** • **10GE-DWDM SFP+ optical module** • **GPON optical module** (applicable in V200R012C00 and later versions) • 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables • 3 m and 10 m SFP+ AOC cables **NOTE** If a port uses a GPON optical module, other 10GE SFP+ optical ports cannot be used.	4	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
5	Ground screw	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The indicator description for S1720-52GWR-PWR-4X is the same as that for S1720-28GWR-PWR-4X. For details, see the indicator description for S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-52GWR-PWR-4X has a built-in power module and does not support pluggable power modules. The built-in power module can provide 370 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

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Heat Dissipation

The S1720-52GWR-PWR-4X has two built-in fans for forced air cooling. The airflow direction is left-to-right.

Technical Specifications

Table 5-31 lists technical specifications of the S1720-52GWR-PWR-4X.

Table 5-31 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	38 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 314.8 mm (1.72 in. x 17.40 in. x 12.39 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 323.8 mm (1.72 in. x 17.40 in. x 12.75 in.)
Weight (including packaging)	5.6 kg (12.35 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz

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Item	Description
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 63.5 W • 100% PoE loads: 464.3 W (system power consumption: 94.7 W, PoE: 369.6 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	42.2 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)

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Item	Description
Noise under normal temperature (27°C, sound power)	< 48.3 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-52GWR-PWR-4X: 98010624 • S1720-52GWR-PWR-4X-E: 98010751

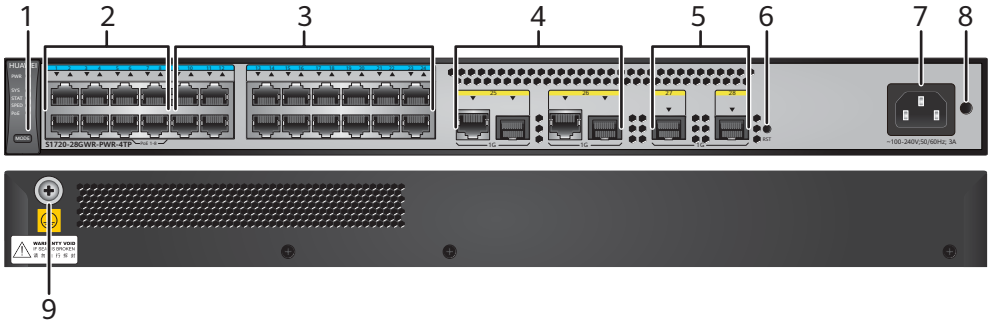
5.2.19 S1720-28GWR-PWR-4TP/S1720-28GWR-PWR-4TP-E

This section uses S1720-28GWR-PWR-4TP as an example. S1720-28GWR-PWR-4TP-E has the same hardware structure as S1720-28GWR-PWR-4TP.

Appearance

Figure 5-29 shows the appearance of an S1720-28GWR-PWR-4TP.

Figure 5-29 Appearance of an S1720-28GWR-PWR-4TP



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1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED and PoE indicators are off.	2	Eight PoE+ 10/100/1000BASE-T ports
3	Sixteen 10/100/1000BASE-T ports	4	Two combo ports (10/100/1000BASE-T + 100/1000BASE-X) Modules applicable to combo optical ports: • **FE optical module** • **GE optical module** (maximum transmission distance ≤ 40 km)
5	Two 1000BASE-X Ethernet ports Applicable modules: • **GE optical module** (the maximum transmission distance cannot exceed 40 km) • **GE copper transceiver module** • **GPON optical module** (applicable in V200R012C00 and later versions) **NOTE** If a port uses a GPON optical module, other 1000BASE-X optical ports cannot be used.	6	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

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7	AC power socket **NOTE** It is used with an AC power cable.	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	Ground screw	-	-

Indicators

The indicator description for S1720-28GWR-PWR-4TP is the same as that for S1720-28GWR-PWR-4X. For details, see the indicator description for S1720-28GWR-PWR-4X.

Power Supply Configuration

The S1720-28GWR-PWR-4TP has a built-in power module and does not support pluggable power modules. The built-in power module can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation

The S1720-28GWR-PWR-4TP has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-32 lists technical specifications of the S1720-28GWR-PWR-4TP.

Table 5-32 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	42 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 224.8 mm (1.72 in. x 17.40 in. x 8.85 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 233.8 mm (1.72 in. x 17.40 in. x 9.20 in.)
Weight (including packaging)	4.5 kg (9.92 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput)	• Without PoE: 24.4 W • 100% PoE loads: 165.6 W (system power consumption: 42.4 W, PoE: 123.2 W)
Typical power consumption (30% of traffic load) • Tested according to ATIS standard • EEE enabled • No PoE power consumption	19.4 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 operating temperature of the switch is 0°C to 40°C (32°F to 104°F) when it uses GE SFP optical modules with 40 km transmission distances.

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Item	Description
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720-28GWR-PWR-4TP: 98010636 • S1720-28GWR-PWR-4TP-E: 98010752

5.2.20 S1720X-16XWR/S1720X-16XWR-E

The S1720X-16XWR-E and S1720X-16XWR switches have the same hardware structure. S1720X-16XWR is used as an example here.

Appearance

Figure 5-30 Appearance of an S1720X-16XWR

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1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Sixteen 10GE SFP+ ports Applicable modules and cables: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** (100M/1000M auto-sensing) • **10GE SFP+ optical module** • **10GE-CWDM SFP+ optical module** • **10GE-DWDM SFP+ optical module** • 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables • 3 m and 10 m SFP+ AOC cables
3	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	4	ETH management port
5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

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Indicators

Figure 5-31 Indicators on the S1720X-16XWR

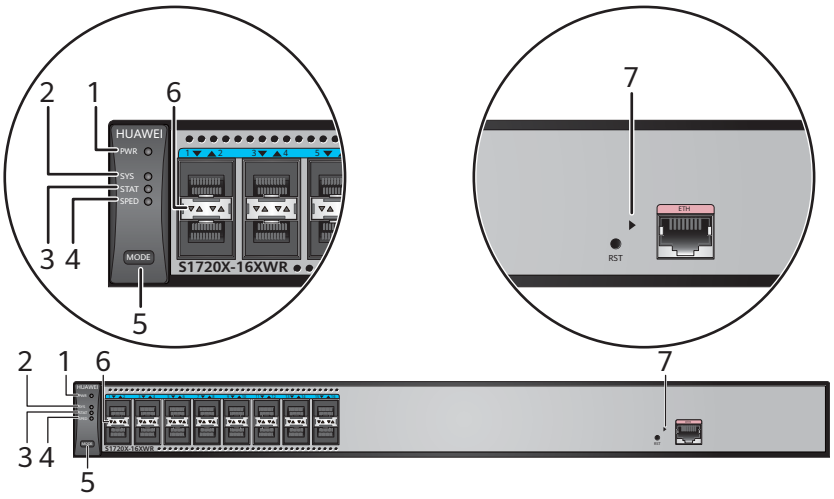

Table 5-33 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
			Yellow or red	Steady on	The built-in power supply is faulty.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or temperature alarm has been generated.
3	STAT	Status indicator	-	Off	The status mode is not selected.

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No.	Indicator	Name	Color	Status	Description
			Green	Steady on	The status mode (default mode) is selected. If the status mode is selected, the service port indicator shows the port link or activity state.
4	SPED	Speed indicator	-	Off	The speed mode is not selected.
			Green	Steady on	The service port indicators show the port speeds. After 45 seconds, the service port indicators automatically restore to the status mode.
5	MODE	Mode switching button	-	-	• When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. • When you press this button again, the service port indicators restore to the default mode, and the STAT indicator turns green. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPED indicator is off.
6	-	10GE service port indicator (two indicators for each port)	Meanings of service port indicators vary in different modes. For details, see **Table 5-34**.		
7	-	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The ETH port is sending or receiving data.

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Table 5-34 Description of 10GE service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Status	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Yellow	Blinking	The port is sending or receiving data.
Speed	-	Off	The port is not connected or has been shut down.
	Green and yellow	Steady on	1000M/10GE port: The port is operating at 1000 Mbit/s.
	Green and yellow	Blinking	1000M/10GE port: The port is operating at 10 Gbit/s.

Power Supply Configuration

The S1720X-16XWR has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720X-16XWR has three built-in fans for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-35 lists technical specifications of the S1720X-16XWR.

Table 5-35 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	37.9 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999

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Item	Description
Service port surge protection	N/A
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 225.0 mm (1.72 in. x 17.40 in. x 8.86 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 234.4 mm (1.72 in. x 17.40 in. x 9.23 in.)
Weight (including packaging)	4.1 kg (9.04 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	63.1 W
Typical power consumption (30% of traffic load, tested according to ATIS standard)	41.2 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).

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Item	Description
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 46.5 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720X-16XWR: 98010689 • S1720X-16XWR-E: 98010760

5.2.21 S1720X-32XWR/S1720X-32XWR-E

The S1720X-32XWR-E and S1720X-32XWR switches have the same hardware structure. S1720X-32XWR is used as an example here.

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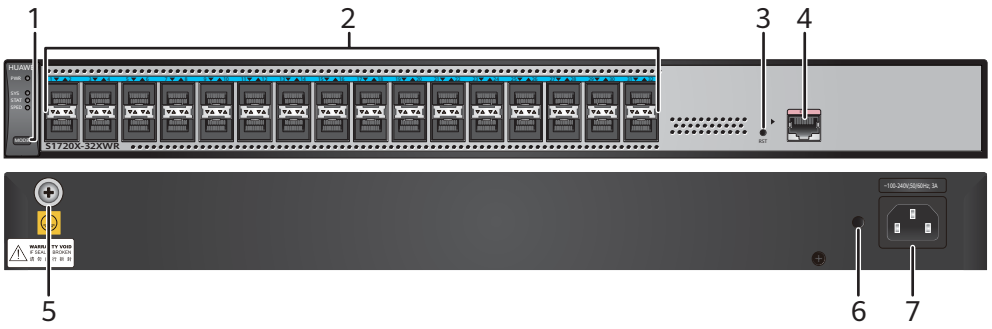
Appearance

Figure 5-32 Appearance of an S1720X-32XWR



1	Mode switching button **NOTE** Press this button to change the mode of service port indicators: When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. When you press this button again, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press this button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPED indicator is off.	2	Thirty-two 10GE SFP+ ports Applicable modules and cables: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** (100M/1000M auto-sensing) • **10GE SFP+ optical module** • **10GE-CWDM SFP+ optical module** • **10GE-DWDM SFP+ optical module** • 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables • 3 m and 10 m SFP+ AOC cables
3	Reset button **NOTICE** To restore the factory settings of a switch, hold down the Reset button for at least 6 seconds. This operation will not reset the switch. To reset a switch, press the Reset button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.	4	ETH management port

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5	Ground screw **NOTE** The ground cable is not delivered with the switch.	6	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicators

The S1720X-32XWR have the same types of indicators as the S1720X-16XWR. For details, see the S1720X-16XWR indicator description.

Power Supply Configuration

The S1720X-32XWR has a built-in power module and does not support pluggable power modules.

Heat Dissipation

The S1720X-32XWR has three built-in fans for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-36 lists technical specifications of the S1720X-32XWR.

Table 5-36 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total, 240 MB available for customers
Mean time between failures (MTBF)	42.8 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	N/A
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 225.0 mm (1.72 in. x 17.40 in. x 8.86 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 234.4 mm (1.72 in. x 17.40 in. x 9.23 in.)
Weight (including packaging)	4.3 kg (9.48 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum power consumption (100% throughput, full speed of fans)	103.6 W
Typical power consumption (30% of traffic load, tested according to ATIS standard)	67.5 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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.).

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Item	Description
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 45°C (113°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 45°C (113°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 46.4 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	• S1720X-32XWR: 98010697 • S1720X-32XWR-E: 98010761

5.3 S1730S-S

5.3.1 S1730S-S24T4S-A

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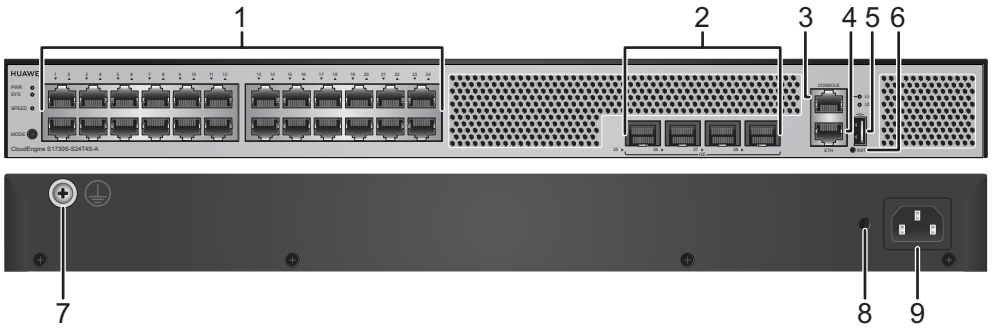
Appearance

Figure 5-33 Appearance of an S1730S-S24T4S-A



1	Twenty-four 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

Port Description

10/100/1000BASE-T port

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A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-37** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-37 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-38** describes the attributes of a 1000BASE-X port.

Table 5-38 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-39** describes the attributes of the console port.

Table 5-39 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232

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Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-40** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-40 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

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Indicators

The S1730S-S24T4S-A has similar indicators to those of the S1730S-S24P4S-A except that the S1730S-S24T4S-A does not have a PoE mode indicator. For details, see **Indicators**.

Power Supply Configuration

The S1730S-S24T4S-A has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation

The S1730S-S24T4S-A has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-41 lists technical specifications of the S1730S-S24T4S-A.

Table 5-41 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	92.82 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.08 kg (8.99 lb)

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Item	Description
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput)	34 W
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	28 W
Operating temperature	-5°C to +45°C (23°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F). The operating temperature of the switch is -5°C to +40°C (23°F to 104°F) when it uses GE SFP optical modules with 40 km or longer transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)

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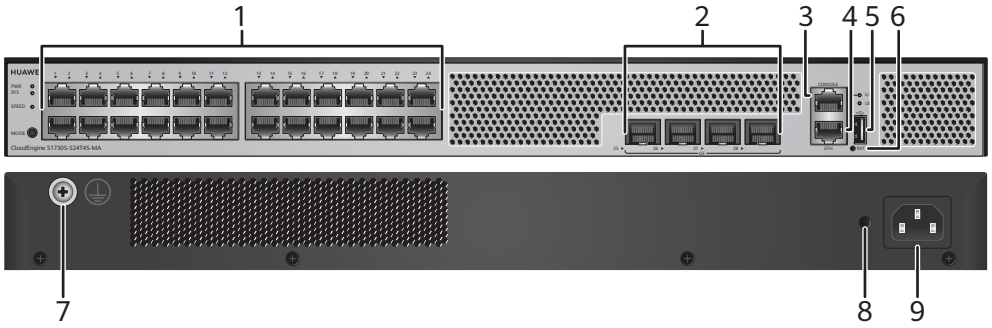
Item	Description
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010900

5.3.2 S1730S-S24T4S-MA

Appearance

Figure 5-34 Appearance of an S1730S-S24T4S-MA



1	Twenty-four 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

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7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

Port Description

10/100/1000BASE-T port

A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-42** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-42 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-43** describes the attributes of a 1000BASE-X port.

Table 5-43 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

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Console port

The console port is connected to a console for on-site configuration. **Table 5-44** describes the attributes of the console port.

Table 5-44 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-45** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-45 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

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The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

Indicators

The S1730S-S24T4S-MA has similar indicators to those of the S1730S-S24P4S-A except that the S1730S-S24T4S-MA does not have a PoE mode indicator. For details, see **Indicators**.

Power Supply Configuration

The S1730S-S24T4S-MA has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation

The S1730S-S24T4S-MA has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-46 lists technical specifications of the S1730S-S24T4S-MA.

Table 5-46 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	92.82 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.08 kg (8.99 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput)	34 W
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	28 W
Operating temperature	-5°C to +45°C (23°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F). The operating temperature of the switch is -5°C to +40°C (23°F to 104°F) when it uses GE SFP optical modules with 40 km or longer transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)

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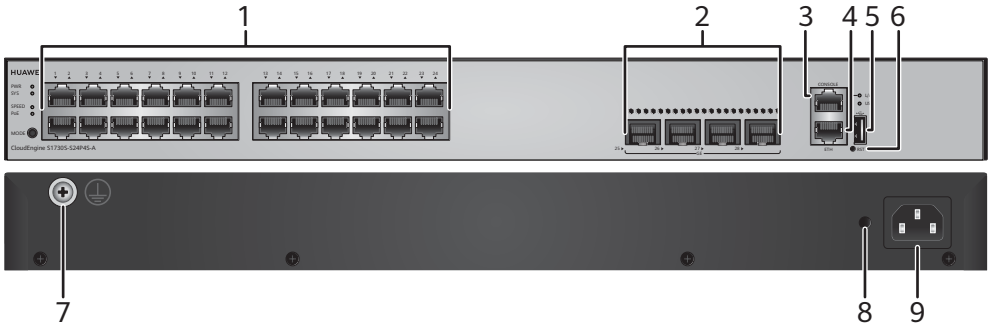
Item	Description
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010973

5.3.3 S1730S-S24P4S-A

Appearance

Figure 5-35 Appearance of an S1730S-S24P4S-A



1	Twenty-four PoE + 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port

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5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

Port Description

10/100/1000BASE-T port

A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-47** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-47 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-48** describes the attributes of a 1000BASE-X port.

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Table 5-48 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-49** describes the attributes of the console port.

Table 5-49 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-50** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-50 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45

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Attribute	Description
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

Indicators

NOTE

Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur:

- If the switch has no configuration file, the system attempts to enter the web initial login mode. In this mode, the status of mode indicators is as follows:
  - If the system enters the web initial login mode successfully, all mode indicators turn green and stay on for a maximum of 10 minutes.
  - If the system fails to enter the initial login mode, all mode indicators fast blink for 10 seconds and then restore the default status.
- If the switch has a configuration file, the system cannot enter the web initial login mode. In this case, all mode indicators fast blink for 10s, and then return to the default states.

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Figure 5-36 Indicators on an S1730S-S24P4S-A

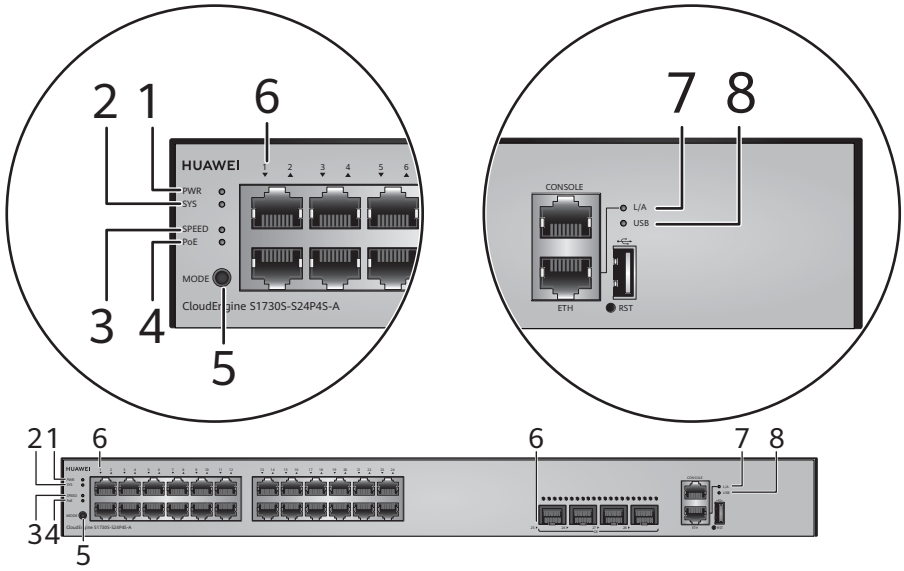

Table 5-51 Description of indicators on an S1730S-S24P4S-A

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The switch is powered on.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	In the system startup preparation phase, the SYS indicator is steady green for no more than 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or temperature alarm has been generated.
3	SPEED	Speed indicator	-	Off	The speed mode is not selected.
			Green	Steady on	The speed mode is selected, and service port indicators show the speed of each port.

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No.	Indicator	Name	Color	Status	Description
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
5	MODE	Mode switching button	-	-	• When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. • When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. • When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPEED and PoE indicators are off.
6	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-52**.		
7	L/A	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The ETH port is sending or receiving data.
8	USB	USB-based deployment indicator	-	Off	• No USB flash drive is connected to the switch. • The USB port is damaged. • The indicator is damaged. • The USB flash drive does not have any configuration file and cannot be used for deployment. • The switch has been upgraded using the USB flash drive and is restarting.

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No.	Indicator	Name	Color	Status	Description
			Green	Steady on	A USB-based deployment has been completed.
			Green	Blinking	The system is reading data from a USB flash drive.
			Yellow	Steady on	The switch has copied all the required files and completed the file check. The USB flash drive can be removed from the switch.
			Red	Blinking	An error has occurred when the system is executing the configuration file or reading data from the USB flash drive.

Table 5-52 Description of service port indicators in different modes

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green or yellow	Blinking	The port is sending or receiving data.
Speed	-	Off	The port is not connected or has been shut down.
	Green or yellow	Steady on	10M/100M/1000M port: The port is operating at 10/100 Mbit/s. 1000M/10GE port: The port is operating at 1000 Mbit/s.
	Green or yellow	Blinking	10M/100M/1000M port: The port is operating at 1000 Mbit/s. 1000M port: The port is operating at 1000 Mbit/s. 1000M/10GE port: The port is operating at 10 Gbit/s.
PoE	-	Off	The port is not providing power to a PD.
	Green	Steady on	The port is providing power to a PD.

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Display Mode	Color	Status	Description
	Yellow	Steady on	The PoE function is disabled on the port.
	Yellow	Blinking	The port stops providing PoE power because of an exception (for example, an incompatible PD is connected to the port).
	Green and yellow	Blinking green and yellow alternately	• The power of the PD exceeds the maximum power or power threshold of the port. • The total power consumption of PDs has reached the maximum power of the switch. • The manual power management mode is used and the port is not enabled to provide power to the PD.

Power Supply Configuration

The S1730S-S24P4S-A has a built-in power module and does not support pluggable power modules. The built-in power module can provide 380 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1730S-S24P4S-A has two built-in fans for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-53 lists technical specifications of the S1730S-S24P4S-A.

Table 5-53 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	92.2 years

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Item	Description
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.31 kg (9.50 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 53 W • 100% PoE loads: 451 W (PoE: 380 W)
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	39 W

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Item	Description
Operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F).
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 57.7 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010901

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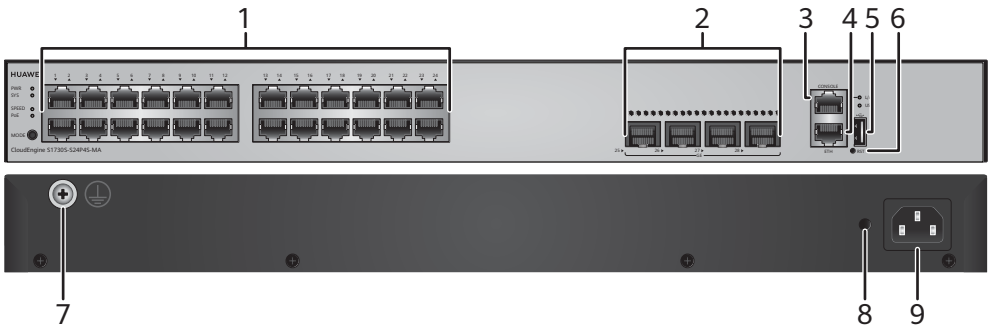
5.3.4 S1730S-S24P4S-MA

Appearance

Figure 5-37 Appearance of an S1730S-S24P4S-MA



1	Twenty-four PoE + 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

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Port Description

10/100/1000BASE-T port

A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-54** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-54 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-55** describes the attributes of a 1000BASE-X port.

Table 5-55 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-56** describes the attributes of the console port.

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Table 5-56 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-57** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-57 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

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NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

Indicators

The S1730S-S24P4S-MA has the same indicators as the S1730S-S24P4S-A. For details, see **Indicators**.

Power Supply Configuration

The S1730S-S24P4S-MA has a built-in power module and does not support pluggable power modules. The built-in power module can provide 380 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation

The S1730S-S24P4S-MA has two built-in fans for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-58 lists technical specifications of the S1730S-S24P4S-MA.

Table 5-58 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	92.2 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.31 kg (9.50 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 53 W • 100% PoE loads: 451 W (PoE: 380 W)
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	39 W
Operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 57.7 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010974

5.3.5 S1730S-S48T4S-A

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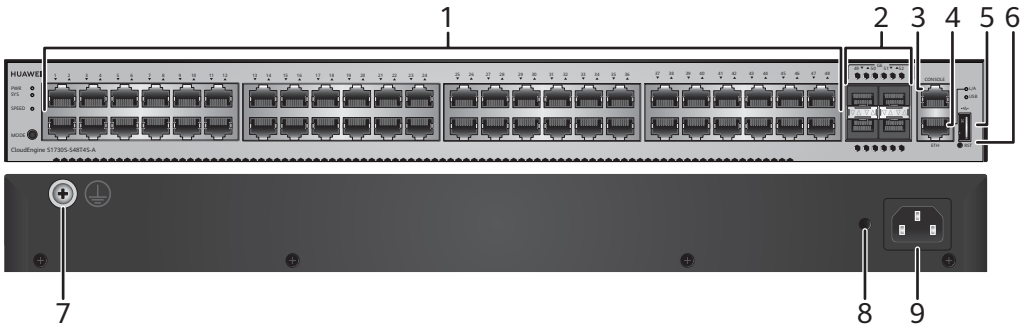
Appearance

Figure 5-38 Appearance of an S1730S-S48T4S-A



1	Forty-eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

Port Description

10/100/1000BASE-T port

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A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-59** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-59 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-60** describes the attributes of a 1000BASE-X port.

Table 5-60 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-61** describes the attributes of the console port.

Table 5-61 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232

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Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-62** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-62 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

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Description of indicators on an S1730S-S48T4S-A

The S1730S-S48T4S-A has similar indicators to those of the S1730S-S24P4S-A except that the S1730S-S48T4S-A does not have a PoE mode indicator. For details, see **Indicators**.

Power Supply Configuration

The S1730S-S48T4S-A has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation

The S1730S-S48T4S-A has one built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-63 lists technical specifications of the S1730S-S48T4S-A.

Table 5-63 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	46.36 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.42 kg (9.74 lb)

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Item	Description
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput, full speed of fans)	53 W
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	37 W
Operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 53.3 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010902

5.3.6 S1730S-S24T4X-A

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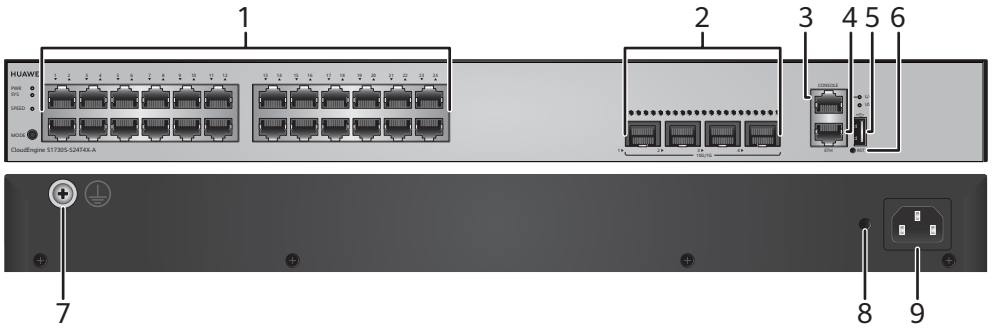
Appearance

Figure 5-39 Appearance of an S1730S-S24T4X-A



1	Twenty-four 10/100/1000BASE-T ports	2	Four 10GE SFP+ optical ports Applicable modules and cables: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module** • **10GE SFP+ optical module** • **10GE-CWDM SFP+ optical module** • **10GE-DWDM SFP+ optical module** • 1 m and 3 m SFP+ copper cables • 3 m and 10 m SFP+ AOC cables
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.

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9	AC power socket	-	-

Port Description

10/100/1000BASE-T port

A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-64** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-64 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

10GE SFP+ port

A 10GE SFP+ Ethernet optical port supports auto-negotiation to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s. **Table 5-65** describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 5-65 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the optical module used
Standards compliance	IEEE802.3ae
Working mode	10GE/GE auto-negotiation

Console port

The console port is connected to a console for on-site configuration. **Table 5-66** describes the attributes of the console port.

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Table 5-66 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-67** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-67 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

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NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

Indicators

The S1730S-S24T4X-A has similar indicators to those of the S1730S-S24P4S-A except that the S1730S-S24T4X-A does not have a PoE mode indicator. For details, see **Indicators**.

Power Supply Configuration

The S1730S-S24T4X-A has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation

The S1730S-S24T4X-A has one built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-68 lists technical specifications of the S1730S-S24T4X-A.

Table 5-68 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	50.68 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4 kg (8.8 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput, full speed of fans)	43 W
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	27 W
Operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 47.3 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010953

5.3.7 S1730S-S48P4S-A

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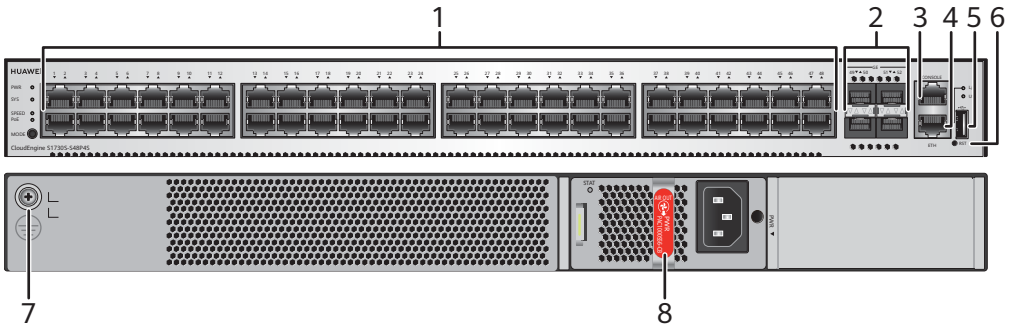
Appearance

Figure 5-40 Appearance of an S1730S-S48P4S-A



1	Forty-eight 10/100/1000BASE-T PoE + ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Power module slot **NOTE** Supported power module: **6.1 1000 W AC PoE Power Module (PAC1000S56-CB)**

Port Description

10/100/1000BASE-T port

A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-69** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

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Table 5-69 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-70** describes the attributes of a 1000BASE-X port.

Table 5-70 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-71** describes the attributes of the console port.

Table 5-71 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

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Attribute	Description
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-72** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-72 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

Indicators

The S1730S-S48P4S-A has the same indicators as the S1730S-S24P4S-A. For details, see **Indicators**.

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Power Supply Configuration

The S1730S-S48P4S-A is a PoE switch. It provides one power module slot that can have a 1000 W PoE power module installed. **Table 5-73** lists power supply configurations.

Table 5-73 Power supply configurations

Power Module	Available PoE Power	Maximum Number of Ports (Fully Loaded)
1000 W (220 V)	874 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 29
1000 W (110 V)	779 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 25

Heat Dissipation

The S1730S-S48P4S-A has two built-in fans for forced air cooling. Air flows in from the left, right, and front sides, and exhausts from the rear panel.

Technical Specifications

Table 5-74 lists technical specifications of the S1730S-S48P4S-A.

Table 5-74 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	61.7 years
Mean time to repair (MTTR)	2
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 444.2 mm (1.72 in. x 17.40 in. x 17.49 in.)
Weight (including packaging)	8.7 kg (19.2 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported
Rated voltage range	• 100 V AC to 130 V AC, 200 V AC to 240 V AC; 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 290 V AC, 45 Hz to 65 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput, full speed of fans)	• Without PoE: 75 W • 100% PoE loads: 911 W (PoE: 874 W)
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	58 W
Operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 58.9 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010955

5.4 S1730S-H

5.4.1 S1730S-H24T4S-A

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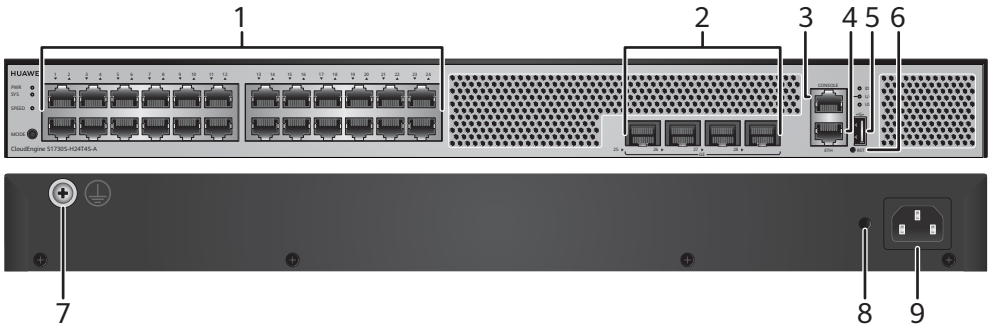
Appearance

Figure 5-41 Appearance of an S1730S-H24T4S-A



1	Twenty-four 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

Port Description

10/100/1000BASE-T port

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A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-75** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-75 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-76** describes the attributes of a 1000BASE-X port.

Table 5-76 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-77** describes the attributes of the console port.

Table 5-77 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232

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Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-78** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-78 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

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Indicators

NOTE

Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur:

- If the switch has no configuration file, the system attempts to enter the web initial login mode. In this mode, the status of mode indicators is as follows:
  - If the system enters the web initial login mode successfully, all mode indicators turn green and stay on for a maximum of 10 minutes.
  - If the system fails to enter the initial login mode, all mode indicators fast blink for 10 seconds and then restore the default status.
- If the switch has a configuration file, the system cannot enter the web initial login mode. In this case, all mode indicators fast blink for 10s, and then return to the default states.

Figure 5-42 Indicators on an S1730S-H24T4S-A

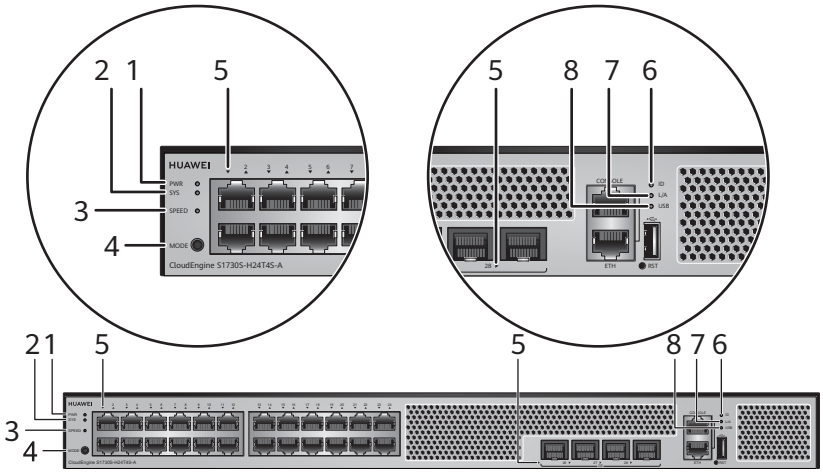

Table 5-79 Description of indicators on an S1730S-H24T4S-A

No.	Indicator	Name	Color	Status	Description
1	PWR	Power indicator	-	Off	The switch is powered off.
			Green	Steady on	The switch is powered on.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	In the system startup preparation phase, the SYS indicator is steady green for no more than 30 seconds.

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No.	Indicator	Name	Color	Status	Description
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or temperature alarm has been generated.
3	SPEED	Speed indicator	-	Off	The speed mode is not selected.
			Green	Steady on	The speed mode is selected, and service port indicators show the speed of each port.
4	MODE	Mode switching button	-	-	• When you press this button once, the service port indicators change to the speed mode and show the speed of each service port. • When you press this button a third time, the service port indicators restore to the default mode and show the connection status of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPEED indicator is off.
5	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-80**.		
6	ID	ID indicator	-	Off	The ID indicator is disabled (default status).
			Blue	Steady on	The ID indicator is enabled remotely by O&M personnel for fault locating.
7	L/A	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The ETH port is sending or receiving data.

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No.	Indicator	Name	Color	Status	Description
8	USB	USB-based deployment indicator	-	Off	• No USB flash drive is connected to the switch. • The USB port is damaged. • The indicator is damaged. • The USB flash drive does not have any configuration file and cannot be used for deployment. • The switch has been upgraded using the USB flash drive and is restarting.
			Green	Steady on	A USB-based deployment has been completed.
			Green	Blinking	The system is reading data from a USB flash drive.
			Yellow	Steady on	The switch has copied all the required files and completed the file check. The USB flash drive can be removed from the switch.
			Red	Blinking	An error has occurred when the system is executing the configuration file or reading data from the USB flash drive.

Table 5-80 Description of service port indicators in different modes

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
Speed	-	Off	The port is not connected or has been shut down.
	Green	Steady on	10M/100M/1000M port: The port is operating at 10/100 Mbit/s.
	Green	Blinking	10M/100M/1000M port: The port is operating at 1000 Mbit/s.

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Power Supply Configuration

The S1730S-H24T4S-A has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation

The S1730S-H24T4S-A has no fans and uses natural heat dissipation.

Technical Specifications

Table 5-81 lists technical specifications of the S1730S-H24T4S-A.

Table 5-81 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	92.82 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.08 kg (8.99 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported

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Item	Description
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput)	34 W
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	28 W
Operating temperature	-5°C to +45°C (23°F to 113°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F). The operating temperature of the switch is -5°C to +40°C (23°F to 104°F) when it uses GE SFP optical modules with 40 km or longer transmission distances.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	Noise-free (no fans)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010952

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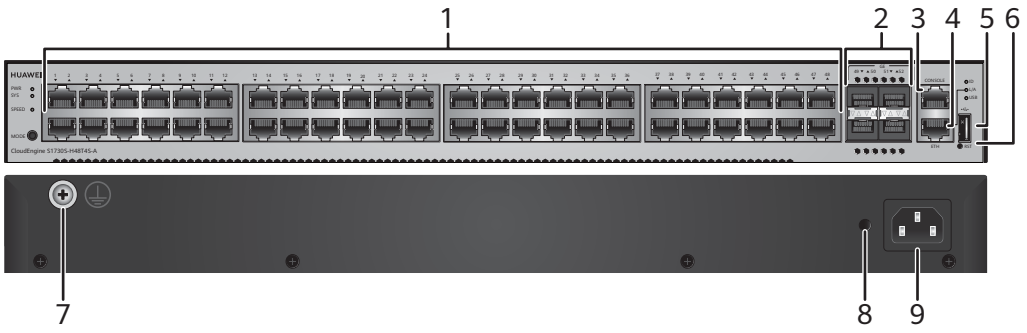
5.4.2 S1730S-H48T4S-A

Appearance

Figure 5-43 Appearance of an S1730S-H48T4S-A



1	Forty-eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports Applicable modules: • **GE optical module** • **GE-CWDM optical module** • **GE-DWDM optical module** • **GE copper transceiver module**
3	One console port	4	One ETH management port
5	One USB port	6	One RST button **NOTICE** If you hold down the Reset button for at least 6 seconds, the switch restores factory settings and then is reset. If you press the Reset button, the switch is reset. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw	8	Jack reserved for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
9	AC power socket	-	-

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Port Description

10/100/1000BASE-T port

A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. **Table 5-82** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 5-82 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3, IEEE802.3u, IEEE802.3ab
Working mode	10/100/1000 Mbit/s auto-sensing
Maximum transmission distance	100 m

1000BASE-X port

When a 1000BASE-X port uses a GE optical module, it can only transmit and receive data at 1000 Mbit/s and does not support the 100 Mbit/s transmission speed. When a 1000BASE-X port uses a GE copper module, it can transmit and receive data at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. **Table 5-83** describes the attributes of a 1000BASE-X port.

Table 5-83 Attributes of a 1000BASE-X port

Attribute	Description
Connector type	LC/PC
Optical port attributes	Depend on the module used
Standards compliance	IEEE802.3z

Console port

The console port is connected to a console for on-site configuration. **Table 5-84** describes the attributes of the console port.

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Table 5-84 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS-232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s, 19200 bit/s, 38400 bit/s, 57600 bit/s, or 115200 bit/s Default value: 9600 bit/s

ETH management port

You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely. **Table 5-85** describes the attributes of an ETH management port. You can log in to the switch that contains the ETH management port for the first time through the ETH management port. For details, see "First Login to a Switch" in the *Configuration Guide - Basic Configuration*. If you have logged in to the switch for the first time by pressing and holding the MODE button for 6 seconds or longer and saved the configuration, the default configuration on the ETH management port will be cleared. In this case, you cannot log in to the switch for the first time through the ETH management port. You are advised to log in to the switch for the first time through the ETH management port.

Table 5-85 Attributes of an ETH management port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3
Working mode	10/100 Mbit/s auto-sensing
Maximum transmission distance	100 m

USB port

The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0.

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NOTE

USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.

Indicators

The S1730S-H48T4S-A has the same indicators as the S1730S-H24T4S-A. For details, see **Indicators**.

Power Supply Configuration

The S1730S-H48T4S-A has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation

The S1730S-H48T4S-A has one built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

Technical Specifications

Table 5-86 lists technical specifications of the S1730S-H48T4S-A.

Table 5-86 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	512 MB in total. To view the available flash memory size, run the **display version** command.
Mean time between failures (MTBF)	46.36 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	Common mode: ±7 kV
Power supply surge protection	±6 kV in differential mode, ±6 kV in common mode

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Item	Description
Dimensions (H x W x D)	• Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.40 in. x 8.66 in.) • Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.40 in. x 8.94 in.)
Weight (including packaging)	4.42 kg (9.74 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Not supported
Rated voltage range	• 100 V AC to 240 V AC, 50/60 Hz • High-voltage DC input: 240 V DC
Maximum voltage range	• 90 V AC to 264 V AC, 47 Hz to 63 Hz • High-voltage DC input: 190 V DC to 290 V DC
Maximum power consumption (100% throughput, full speed of fans)	53 W
Typical power consumption (30% of traffic load, tested according to ATIS standard, with EEE enabled)	37 W
Operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment cannot start when the temperature is lower than 0°C (32°F).

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Item	Description
Short-term operating temperature	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.) **NOTE** 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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: • The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. • The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature	-40°C to +70°C (-40°F to +158°F)
Noise under normal temperature (27°C, sound power)	< 53.3 dB(A)
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	• EMC certification • Safety certification • Manufacturing certification
Part number	98010956

5.5 S1730S-S1

5.5.1 S1730S-S8T4S-A1

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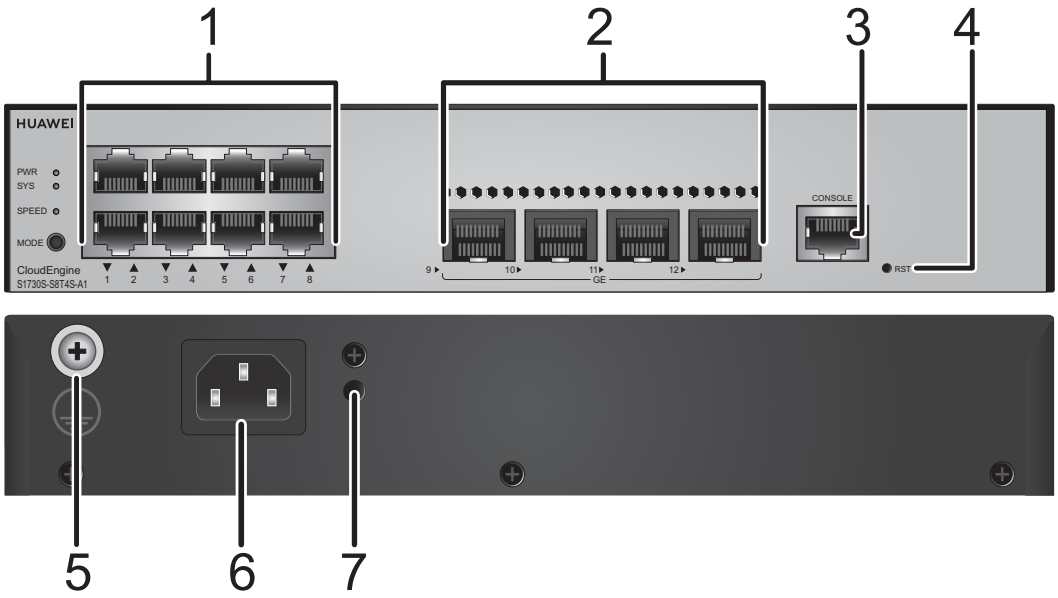
Overview

Table 5-87 Basic information about the S1730S-S8T4S-A1

Item	Details
Description	S1730S-S8T4S-A1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
Part Number	98011286
Model	S1730S-S8T4S-A1
First supported version	V200R020C10

Components

Figure 5-44 S1730S-S8T4S-A1 appearance



1	Eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports

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3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	AC socket
7	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.	-	-

Ports

Table 5-88 Ports on the S1730S-S8T4S-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable

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Port	Connector Type	Description	Available Components
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module** • **Industrial optical modules (only optical modules with 1 Gbit/s transmission speed and transmission distances less than or equal to 10 km are supported)**
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

The S1730S-S8T4S-A1 has similar indicators to those on the S1730S-S24P4S-A1 except that the S1730S-S8T4S-A1 does not have a PoE mode indicator. For details, see the S1730S-S24P4S-A1.

Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation System

The switch has a built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

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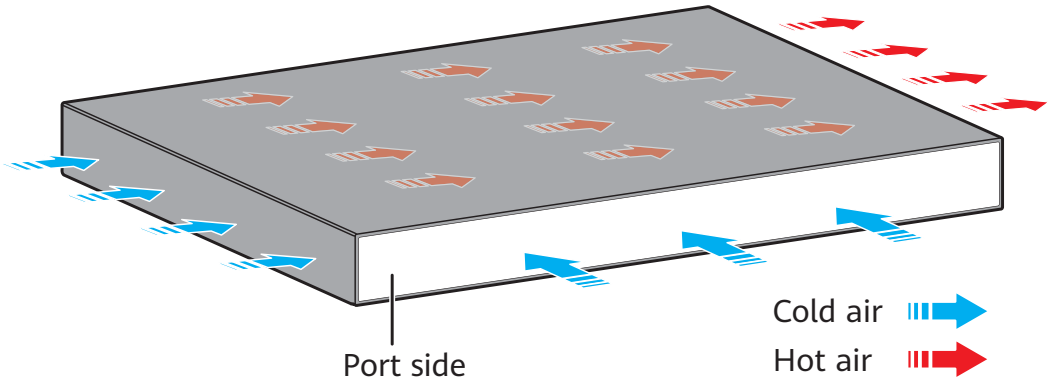
When working properly at a normal temperature, the device meets the desktop-class noise requirements. However, the fan speed may be high and the noise may be loud during device startup.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

Technical Specifications

Table 5-89 Technical specifications of the S1730S-S8T4S-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 250.0 mm x 180.0 mm (1.72 in. x 9.84 in. x 7.1 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 250.0 mm x 187.0 mm (1.72 in. x 9.84 in. x 7.36 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 370.0 mm x 380.0 mm (3.54 in. x 14.57 in. x 14.96 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	1.38 kg (3.04 lb)
Weight with packaging [kg(lb)]	2.02 kg (4.45 lb)
Typical power consumption [W]	21.2 W
Typical heat dissipation [BTU/hour]	72.34 BTU/hour
Maximum power consumption [W]	29.7 W
Maximum heat dissipation [BTU/hour]	101.34 BTU/hour
MTBF [year]	71.82 year

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Item	Specification
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	43 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) (0 m to 1800 m altitude, non-industrial optical modules) -5°C to +55°C (23°F to 131°F) (0 m to 1800 m altitude, industrial optical modules with transmission distances less than or equal to 10 km)
Short-term operating temperature [°C(°F)]	Not supported
Restriction on the operating temperature variation rate [°C(°F)]	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). The operating temperature ranges from -5°C to +45°C (23°F to 113°F) when optical modules with transmission distances greater than or equal to 70 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz

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Item	Specification
Input voltage range [V]	AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz
Maximum input current [A]	0.8 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.2 S1730S-S8P4S-A1

Overview

Table 5-90 Basic information about the S1730S-S8P4S-A1

Item	Details
Description	S1730S-S8P4S-A1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
Part Number	98011297

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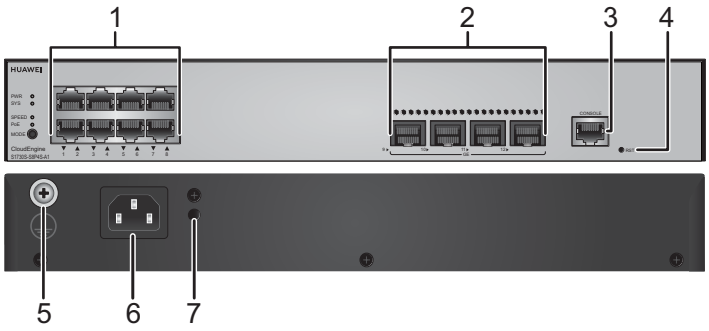
Item	Details
Model	S1730S-S8P4S-A1
First supported version	V200R020C10

Components

Figure 5-45 S1730S-S8P4S-A1 appearance



1	Eight 10/100/1000BASE-T PoE+ ports	2	Four 1000BASE-X ports
3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	AC socket
7	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.	-	-

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Ports

Table 5-91 Ports on the S1730S-S8P4S-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T PoE+ port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module** • **Industrial optical modules (only optical modules with 1 Gbit/s transmission speed and transmission distances less than or equal to 10 km are supported)**
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

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Indicators and Buttons

The S1730S-S8P4S-A1 has the same types of indicators as the S1730S-S24P4S-A1. For details, see the S1730S-S24P4S-A1.

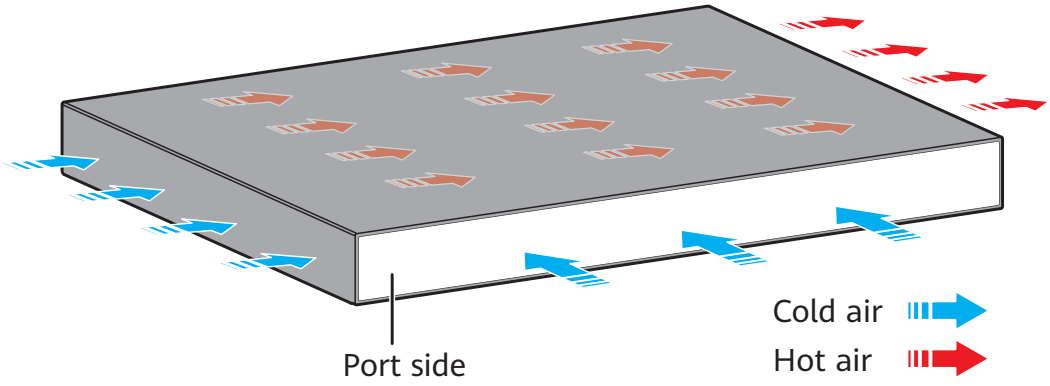
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation System

The switch has a built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

When working properly at a normal temperature, the device meets the desktop-class noise requirements. However, the fan speed may be high and the noise may be loud during device startup.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

Technical Specifications

Table 5-92 Technical specifications of the S1730S-S8P4S-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 300.0 mm x 220.0 mm (1.72 in. x 11.8 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 300.0 mm x 227.0 mm (1.72 in. x 11.8 in. x 8.94 in.)

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Item	Specification
Dimensions with packaging (H x W x D) [mm(in.)]	110.0 mm x 435.0 mm x 360.0 mm (4.33 in. x 17.13 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.25 kg (4.96 lb)
Weight with packaging [kg(lb)]	3.17 kg (7 lb)
Typical power consumption [W]	28.4 W
Typical heat dissipation [BTU/hour]	96.9 BTU/hour
Maximum power consumption [W]	• Not providing the PoE function: 38.6 W • 100% PoE loads: 162.6 W (PoE: 124 W)
Maximum heat dissipation [BTU/hour]	• Not providing the PoE function: 131.71 • 100% PoE loads: 554.81
MTBF [year]	66.56 year
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	42.2 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) (0 m to 1800 m altitude, non-industrial optical modules) -5°C to +55°C (23°F to 131°F) (0 m to 1800 m altitude, industrial optical modules with transmission distances less than or equal to 10 km)
Short-term operating temperature [°C(°F)]	Not supported

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Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	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). The operating temperature ranges from -5°C to +45°C (23°F to 113°F) when optical modules with transmission distances greater than or equal to 70 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz
Maximum input current [A]	3 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment

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Item	Specification
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.3 S1730S-S24T4S-A1

Overview

Table 5-93 Basic information about the S1730S-S24T4S-A1

Item	Details
Description	S1730S-S24T4S-A1 (24*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
Part Number	98011308
Model	S1730S-S24T4S-A1
First supported version	V200R020C10

Components

Figure 5-46 S1730S-S24T4S-A1 appearance

1	Twenty-four 10/100/1000BASE-T ports	2	Four 1000BASE-X ports

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3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC socket	-	-

Ports

Table 5-94 Ports on the S1730S-S24T4S-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable

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Port	Connector Type	Description	Available Components
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module** • **Industrial optical modules (only optical modules with 1 Gbit/s transmission speed and transmission distances less than or equal to 10 km are supported)**
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

The S1730S-S24T4S-A1 has similar indicators to those on the S1730S-S24P4S-A1 except that the S1730S-S8T4S-A1 does not have a PoE mode indicator. For details, see the S1730S-S24P4S-A1.

Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation System

The switch has a built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

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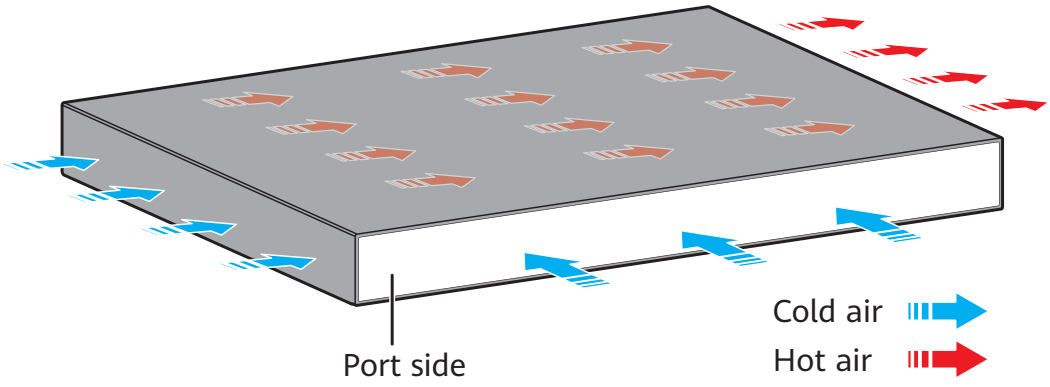
When working properly at a normal temperature, the device meets the desktop-class noise requirements. However, the fan speed may be high and the noise may be loud during device startup.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

Technical Specifications

Table 5-95 Technical specifications of the S1730S-S24T4S-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.45 kg (5.4 lb)
Weight with packaging [kg(lb)]	3.34 kg (7.36 lb)
Typical power consumption [W]	32.7 W
Typical heat dissipation [BTU/hour]	111.58 BTU/hour
Maximum power consumption [W]	47.6 W
Maximum heat dissipation [BTU/hour]	162.42 BTU/hour
MTBF [year]	66.16 year

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Item	Specification
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	39 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) (0 m to 1800 m altitude, non-industrial optical modules) -5°C to +55°C (23°F to 131°F) (0 m to 1800 m altitude, industrial optical modules with transmission distances less than or equal to 10 km)
Short-term operating temperature [°C(°F)]	Not supported
Restriction on the operating temperature variation rate [°C(°F)]	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). The operating temperature ranges from -5°C to +45°C (23°F to 113°F) when optical modules with transmission distances greater than or equal to 70 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz

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Item	Specification
Input voltage range [V]	AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz
Maximum input current [A]	2 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.4 S1730S-S24P4S-A1

Overview

Table 5-96 Basic information about the S1730S-S24P4S-A1

Item	Details
Description	S1730S-S24P4S-A1 (24*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
Part Number	98011323

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Item	Details
Model	S1730S-S24P4S-A1
First supported version	V200R020C10

Components

Figure 5-47 S1730S-S24P4S-A1 appearance

1	Twenty-four 10/100/1000BASE-T PoE+ ports	2	Four 1000BASE-X ports
3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC socket	-	-

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Ports

Table 5-97 Ports on the S1730S-S24P4S-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T PoE+ port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module**
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

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Indicators and Buttons

Figure 5-48 Indicators on the S1730S-S24P4S-A1

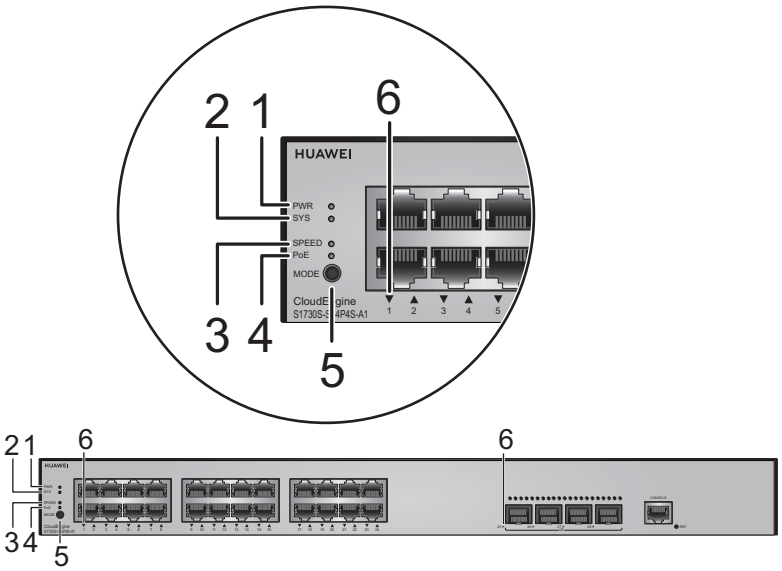

Table 5-98 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	SPEED	Speed indicator	-	Off	The speed mode is not selected.

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No.	Indicator	Name	Color	Status	Description
			Green	Steady on	The speed mode is selected, and service port indicators show the speed of each port.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

5	MODE	Mode switch button	-	-	• When you press this button once, the service port indicators change to the speed mode and show the speed of each service port.
					• When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port.
					• When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port.
					If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPEED and PoE indicators are off.
					NOTE
					Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur:
					• If the switch has no configuration file, the system attempts to enter the web initial login mode. In this mode, the status of mode indicators is as follows:
					  • If the system enters the web initial login mode successfully, all mode indicators turn green and stay on for a maximum of 10 minutes.
					  • If the system fails to enter the initial login mode, all mode indicators fast blink for 10 seconds and then restore the default status.
					• If the switch has a configuration file, the system cannot enter the web initial login mode. In this case, all mode indicators fast blink for 10s, and then return to the default states.

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No.	Indicator	Name	Color	Status	Description
6	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-99**. **NOTE** If a power failure occurs on a device's PCB board, indicators of the last four optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.		

Table 5-99 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
Speed mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	10M/100M/1000M port: The port is operating at 10 Mbit/s or 100 Mbit/s. 1000M/10GE port: The port is operating at 1000 Mbit/s.
	Green	Blinking	10M/100M/1000M port: The port is operating at 1000 Mbit/s. 1000M port: The port is operating at 1000 Mbit/s. 1000M/10GE port: The port is operating at 10 Gbit/s.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

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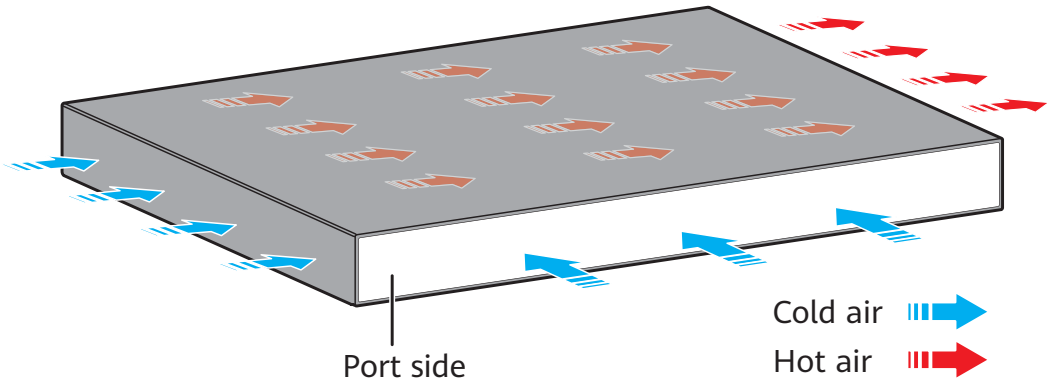
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 380 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation System

The switch has two built-in fans for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

Technical Specifications

Table 5-100 Technical specifications of the S1730S-S24P4S-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.94 kg (6.48 lb)

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Item	Specification
Weight with packaging [kg(lb)]	3.91 kg (8.62 lb)
Typical power consumption [W]	41.7 W
Typical heat dissipation [BTU/hour]	142.29 BTU/hour
Maximum power consumption [W]	• Not providing the PoE function: 53.2 W • 100% PoE loads: 433.2 W (PoE: 380 W)
Maximum heat dissipation [BTU/hour]	• Not providing the PoE function: 181.52 • 100% PoE loads: 1478.12
MTBF [year]	55.72 year
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	50 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.)
Short-term operating temperature [°C(°F)]	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.)

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Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: ● The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	● AC input: 100 V AC to 240 V AC, 50/60 Hz ● High-Voltage DC input: 240 V DC
Input voltage range [V]	● AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz ● High-Voltage DC input: 190 V DC to 290 V DC

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Item	Specification
Maximum input current [A]	6 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.5 S1730S-S24T4X-A1

Overview

Table 5-101 Basic information about the S1730S-S24T4X-A1

Item	Details
Description	S1730S-S24T4X-A1 (24*10/100/1000BASE-T ports, 4*XGE SFP+ ports, AC power)
Part Number	98011311
Model	S1730S-S24T4X-A1
First supported version	V200R020C10

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Components

Figure 5-49 S1730S-S24T4X-A1 appearance

1	Twenty-four 10/100/1000BASE-T ports	2	Four 10GE SFP+ ports
3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC socket	-	-

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Ports

Table 5-102 Ports on the S1730S-S24T4X-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable

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Port	Connector Type	Description	Available Components
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module** • **10GE SFP+ optical modules (OSXD22N00 not supported)** • **10GE-CWDM SFP+ optical modules** • **10GE-DWDM SFP+ optical modules** • **Industrial optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)** • **1 m and 3 m SFP+ high-speed copper cables** • **3 m and 10 m SFP+ AOC cables**
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

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Indicators and Buttons

The S1730S-S24T4X-A1 has similar indicators to those on the S1730S-S24P4S-A1 except that the S1730S-S8T4S-A1 does not have a PoE mode indicator. For details, see the S1730S-S24P4S-A1.

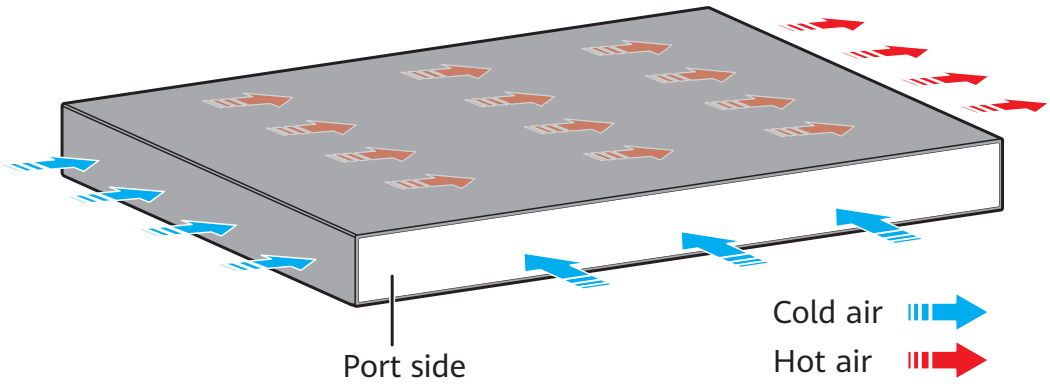
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation System

The switch has a built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.

When working properly at a normal temperature, the device meets the desktop-class noise requirements. However, the fan speed may be high and the noise may be loud during device startup.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

Technical Specifications

Table 5-103 Technical specifications of the S1730S-S24T4X-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)

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Item	Specification
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.45 kg (5.4 lb)
Weight with packaging [kg(lb)]	3.34 kg (7.36 lb)
Typical power consumption [W]	32.7 W
Typical heat dissipation [BTU/hour]	111.58 BTU/hour
Maximum power consumption [W]	47.6 W
Maximum heat dissipation [BTU/hour]	162.42 BTU/hour
MTBF [year]	64.3 year
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	39 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) (0 m to 1800 m altitude, non-industrial optical modules) -5°C to +55°C (23°F to 131°F) (0 m to 1800 m altitude, industrial optical modules with transmission distances less than or equal to 10 km)
Short-term operating temperature [°C(°F)]	Not supported

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Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	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). The operating temperature ranges from -5°C to +45°C (23°F to 113°F) when optical modules with transmission distances greater than or equal to 70 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz
Maximum input current [A]	2 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment

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Item	Specification
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.6 S1730S-S48T4S-A1

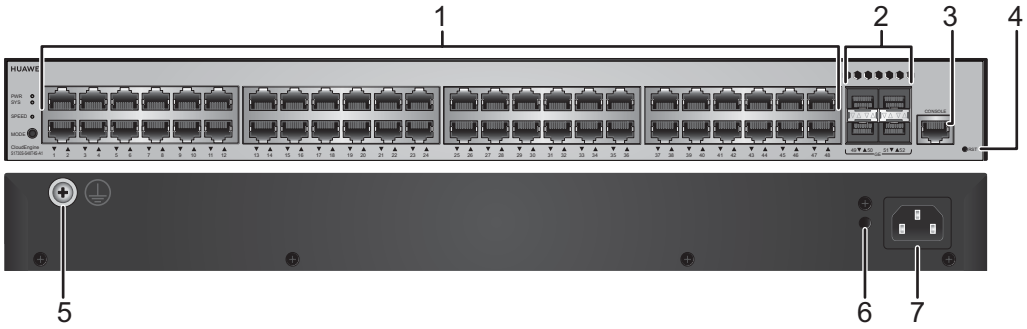
Overview

Table 5-104 Basic information about the S1730S-S48T4S-A1

Item	Details
Description	S1730S-S48T4S-A1 (48*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
Part Number	98011336
Model	S1730S-S48T4S-A1
First supported version	V200R020C10

Components

Figure 5-50 S1730S-S48T4S-A1 appearance



1	Forty-eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports

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3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC socket	-	-

Ports

Table 5-105 Ports on the S1730S-S48T4S-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module**

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Port	Connector Type	Description	Available Components
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

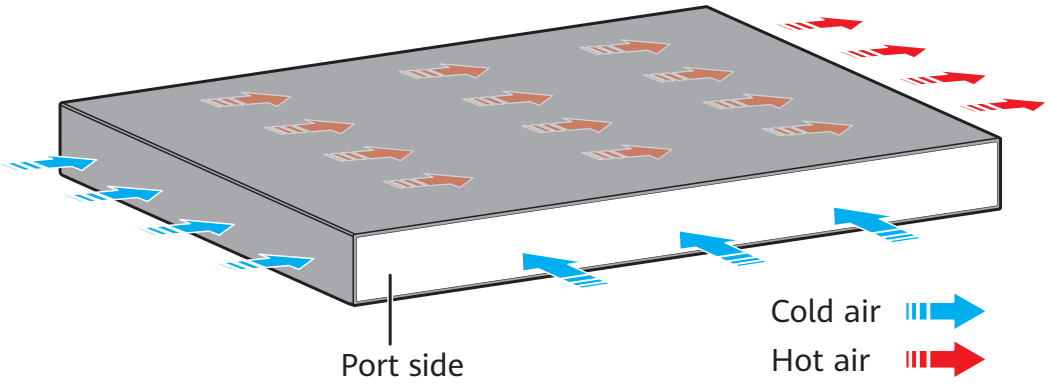
The S1730S-S48T4S-A1 has similar indicators to those on the S1730S-S48P4S-A1 except that the S1730S-S48T4S-A1 does not have USB and PoE mode indicators. For details, see the S1730S-S48P4S-A1.

Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation System

The switch has a built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

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Technical Specifications

Table 5-106 Technical specifications of the S1730S-S48T4S-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.76 kg (6.09 lb)
Weight with packaging [kg(lb)]	3.74 kg (8.25 lb)
Typical power consumption [W]	43.3 W
Typical heat dissipation [BTU/hour]	147.74 BTU/hour
Maximum power consumption [W]	50.4 W
Maximum heat dissipation [BTU/hour]	171.97 BTU/hour
MTBF [year]	56.7 year
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	48 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.)
Short-term operating temperature [°C(°F)]	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.)

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Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	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). The operating temperature ranges from -5°C to +45°C (23°F to 113°F) when optical modules with transmission distances greater than or equal to 70 km are used. The equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: ● The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in

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Item	Specification
Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum input current [A]	2 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.7 S1730S-S48P4S-A1

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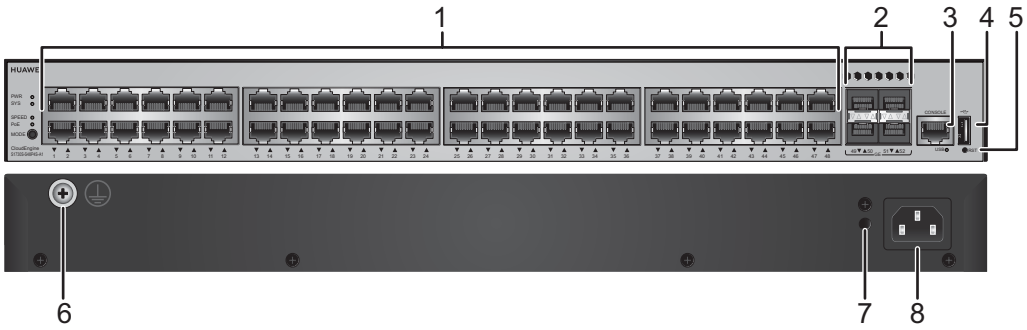
Overview

Table 5-107 Basic information about the S1730S-S48P4S-A1

Item	Details
Description	S1730S-S48P4S-A1 (48*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
Part Number	98011347
Model	S1730S-S48P4S-A1
First supported version	V200R020C10

Components

Figure 5-51 S1730S-S48P4S-A1 appearance



1	Forty-eight 10/100/1000BASE-T PoE + ports	2	Four 1000BASE-X ports
3	One console port	4	One USB port
5	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.	6	Ground screw

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7	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.	8	AC socket

Ports

Table 5-108 Ports on the S1730S-S48P4S-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T PoE+ port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module**
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

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Port	Connector Type	Description	Available Components
USB port	USB 2.0 Type A	The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0. USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor. Switches support a maximum of 128 GB USB flash drives.	USB flash drive

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Indicators and Buttons

Figure 5-52 Indicators on the S1730S-S48P4S-A1

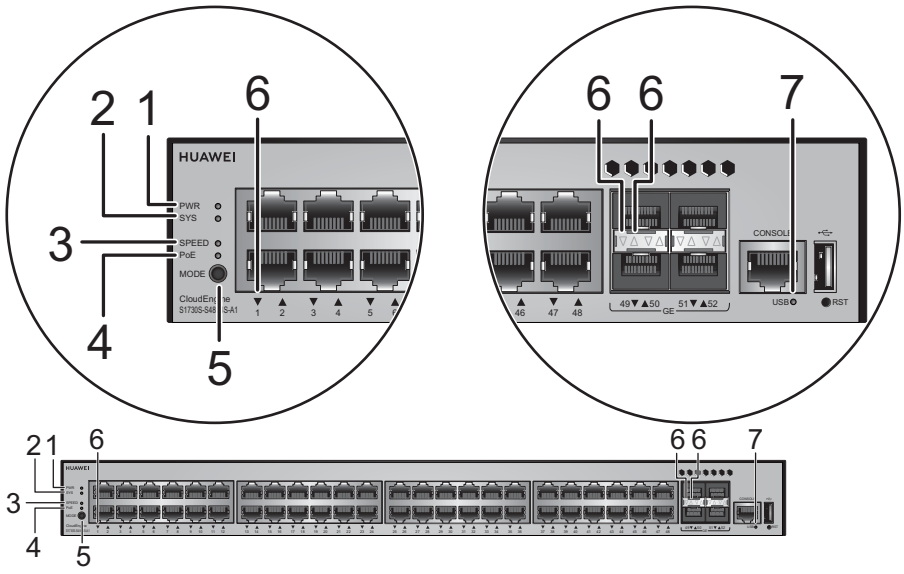

Table 5-109 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The system power supply is normal.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	SPEED	Speed indicator	-	Off	The speed mode is not selected.

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No.	Indicator	Name	Color	Status	Description
			Green	Steady on	The speed mode is selected, and service port indicators show the speed of each port.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

5	MODE	Mode switch button	-	-	• When you press this button once, the service port indicators change to the speed mode and show the speed of each service port.
					• When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port.
					• When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port.
					If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the SPEED and PoE indicators are off.
					NOTE
					Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur:
					• If the switch has no configuration file, the system attempts to enter the web initial login mode. In this mode, the status of mode indicators is as follows:
					  • If the system enters the web initial login mode successfully, all mode indicators turn green and stay on for a maximum of 10 minutes.
					  • If the system fails to enter the initial login mode, all mode indicators fast blink for 10 seconds and then restore the default status.
					• If the switch has a configuration file, the system cannot enter the web initial login mode. In this case, all mode indicators fast blink for 10s, and then return to the default states.

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No.	Indicator	Name	Color	Status	Description
6	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 5-110** and **Table 5-111**. **NOTE** If a power failure occurs on a device's PCB board, indicators of the last four optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.		
7	USB	USB-based deployment indicator	-	Off	• No USB flash drive is connected to the switch. • The USB port is damaged. • The indicator is damaged. • The USB flash drive does not have any configuration file and cannot be used for deployment. • The switch has been upgraded using the USB flash drive and is restarting.
			Green	Steady on	A USB-based deployment has been completed.
			Green	Fast blinking	The system is reading data from a USB flash drive.
			Green	Slow blinking	The switch has copied all the required files and completed the file check. The USB flash drive can be removed from the switch.
			Red	Fast blinking	An error has occurred when the system is executing the configuration file or reading data from the USB flash drive.

Table 5-110 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.

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Display Mode	Color	Status	Description
Speed mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	10M/100M/1000M port: The port is operating at 10 Mbit/s or 100 Mbit/s.
	Green	Blinking	10M/100M/1000M port: The port is operating at 1000 Mbit/s.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 5-111 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Yellow	Blinking	The port is sending or receiving data.
Speed mode	-	Off	The port is not connected or has been shut down.
	Green and yellow	Steady on	1000M/10GE port: The port is operating at 1000 Mbit/s.
	Green and yellow	Blinking	1000M/10GE port: The port is operating at 10 Gbit/s. 1000M port: The port is operating at 1000 Mbit/s.

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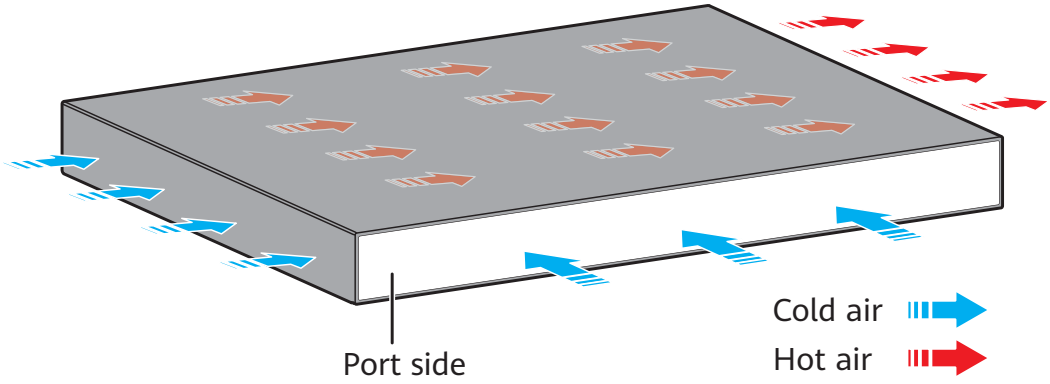
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 380 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 12 ports in compliance with 802.3at.

Heat Dissipation System

The switch has two built-in fans for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

Technical Specifications

Table 5-112 Technical specifications of the S1730S-S48P4S-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	3.23 kg (7.12 lb)
Weight with packaging [kg(lb)]	4.28 kg (9.44 lb)
Typical power consumption [W]	58.7 W

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Item	Specification
Typical heat dissipation [BTU/hour]	200.29 BTU/hour
Maximum power consumption [W]	• Not providing the PoE function: 76.1 W • 100% PoE loads: 456.1 W (PoE: 380 W)
Maximum heat dissipation [BTU/hour]	• Not providing the PoE function: 259.66 • 100% PoE loads: 1556.26
MTBF [year]	44.9 year
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	50 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.)
Short-term operating temperature [°C(°F)]	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.)

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Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	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 equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: ● The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	● AC input: 100 V AC to 240 V AC, 50/60 Hz ● High-Voltage DC input: 240 V DC
Input voltage range [V]	● AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz ● High-Voltage DC input: 190 V DC to 290 V DC

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Item	Specification
Maximum input current [A]	6 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

5.5.8 S1730S-S48T4X-A1

Overview

Table 5-113 Basic information about the S1730S-S48T4X-A1

Item	Details
Description	S1730S-S48T4X-A1 (48*10/100/1000BASE-T ports, 4*10GE SFP+ ports, AC power)
Part Number	98011339
Model	S1730S-S48T4X-A1
First supported version	V200R020C10

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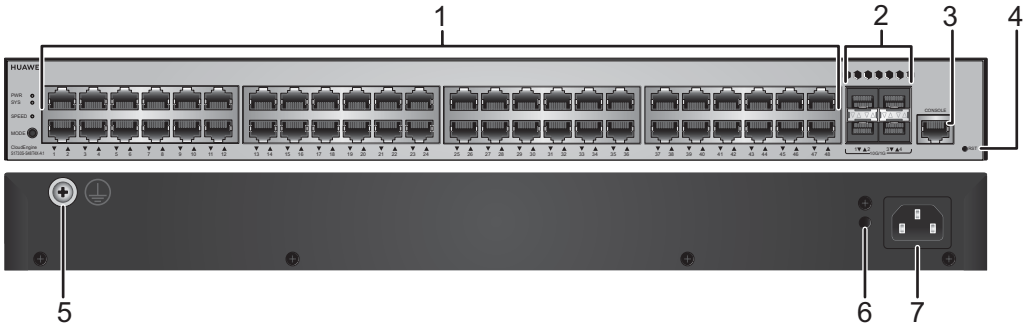
Components

Figure 5-53 S1730S-S48T4X-A1 appearance



1	Forty-eight 10/100/1000BASE-T ports	2	Four 10GE SFP+ ports
3	One console port	4	One RST button **NOTICE** To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the button.
5	Ground screw	6	Jack for AC power cable locking strap **NOTE** The AC power cable locking strap is not delivered with the switch.
7	AC socket	-	-

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Ports

Table 5-114 Ports on the S1730S-S48T4X-A1

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• **GE eSFP optical modules** • **GE-CWDM eSFP optical modules** • **GE-DWDM eSFP optical modules** • **GE SFP copper module** • **10GE SFP+ optical modules (OSXD22N00 not supported)** • **10GE-CWDM SFP+ optical modules** • **10GE-DWDM SFP+ optical modules** • **1 m and 3 m SFP+ high-speed copper cables** • **3 m and 10 m SFP+ AOC cables**

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Port	Connector Type	Description	Available Components
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

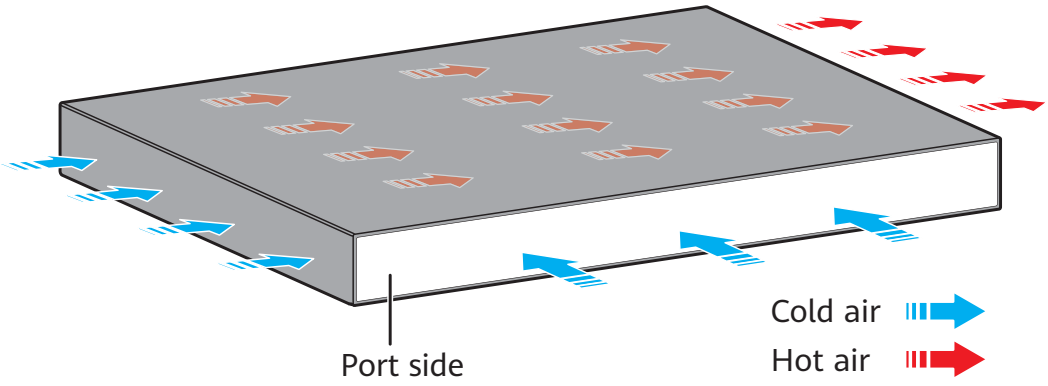
The S1730S-S48T4X-A1 has similar indicators to those on the S1730S-S48P4S-A1 except that the S1730S-S48T4S-A1 does not have USB and PoE mode indicators. For details, see the S1730S-S48P4S-A1.

Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules.

Heat Dissipation System

The switch has a built-in fan for forced air cooling. Air flows in from the left side and front panel, and exhausts from the right side.



NOTE

This figure only shows the airflow direction and does not depict the actual device.

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Technical Specifications

Table 5-115 Technical specifications of the S1730S-S48T4X-A1

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.7 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.76 kg (6.09 lb)
Weight with packaging [kg(lb)]	3.74 kg (8.25 lb)
Typical power consumption [W]	43.3 W
Typical heat dissipation [BTU/hour]	147.74 BTU/hour
Maximum power consumption [W]	50.4 W
Maximum heat dissipation [BTU/hour]	171.97 BTU/hour
MTBF [year]	55.33 year
MTTR [hour]	2 hour
Availability	>0.99999
Noise at normal temperature (acoustic power) [dB(A)]	48 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5906 ft.)
Short-term operating temperature [°C(°F)]	-5°C to +55°C (23°F to 131°F) at an altitude of 0-1800 m (0-5906 ft.)

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Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	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). The operating temperature ranges from -5°C to +45°C (23°F to 113°F) when optical modules with transmission distances greater than or equal to 70 km are used. The equipment can operate beyond the normal operating temperature range for a short-term period, but the following conditions must be met: ● The equipment operates at a temperature of over 50°C (122°F) consecutively for at most 96 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for a total of no more than 360 hours in one year. ● The equipment operates at a temperature of over 50°C (122°F) for no more in 15 times in one year. The equipment may be damaged or experience unexpected exceptions if any of the preceding limits is exceeded. The equipment cannot start when the temperature is lower than 0°C (32°F). The maximum distance of optical modules used in these conditions cannot exceed 10 km.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% to 95%, noncondensing
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in

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Item	Specification
Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz
Maximum input current [A]	2 A
Memory	512 MB
Flash memory	512 MB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	±6 kV in differential mode, ±6 kV in common mode
Types of fans	Built-in
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

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6 Power Modules

6.1 1000 W AC PoE Power Module (PAC1000S56-CB)

6.1 1000 W AC PoE Power Module (PAC1000S56-CB)

Product Support

Table 6-1 lists the switch models supporting a 1000 W AC PoE power module.

Table 6-1 Product support for a 1000 W AC PoE power module

Power Module Name	Product Support
PAC1000S56-CB	S1730S-S48P4S-A

Appearance

Figure 6-1 Appearance of a 1000 W AC PoE power module (PAC1000S56-CB)

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Function

Table 6-2 describes the functions of a 1000 W AC PoE power module.

Table 6-2 Functions of a 1000 W AC PoE power module

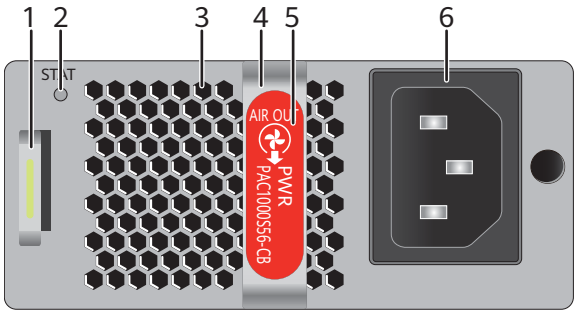
Function	Description
PoE power supply	Provides PoE power.
Input protection	Provides protection against input overvoltage, input undervoltage, and input overcurrent.
Output protection	Provides protection against output overvoltage, output overcurrent, and output short circuit.
Overtemperature protection	When the temperature of the power module exceeds a specified threshold, the power module stops supplying power. When the temperature falls into the normal range, the power module automatically resumes power supply.
Hot swapping	Supported

NOTE

When a power module enters overtemperature protection state, take measures to lower the ambient temperature. The power module can automatically start supplying power again when the temperature falls within the normal range.

Panel

Figure 6-2 Panel of a 1000 W AC PoE power module (PAC1000S56-CB)



1. Lock	2. Indicator	3. Fan air vent	4. Handle
5. Airflow flag (air out)	6. AC power socket	-	-

Table 6-3 describes the indicator on a 1000 W AC PoE power module.

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Table 6-3 Description of the indicator on a 1000 W AC PoE power module

Indicator	Color	Description
STATUS	Green	• Off: The power input is abnormal (for example, no input, overvoltage, or undervoltage) or the power output is abnormal (for example, overvoltage or overtemperature). • Steady on: The power module is working normally.

Specifications

Table 6-4 lists specifications of a 1000 W AC PoE power module.

Table 6-4 Specifications of a 1000 W AC PoE power module

Item	Description
Dimensions (H x W x D)	40 mm x 90 mm x 215 mm (1.57 in. x 3.54 in. x 8.46 in.)
Weight	1.1 kg (2.4 lb)
Rated input voltage range	100 V AC to 130 V AC, 50/60 Hz 200 V AC to 240 V AC, 50/60 Hz 240 V DC
Maximum input voltage range	90 V AC to 290 V AC, 45 Hz to 65 Hz 190 V DC to 290 V DC
Input current	100 V AC to 130 V AC: 12 A 200 V AC to 240 V AC: 8 A 240 V DC: 8 A
Maximum output current	100 V AC to 130 V AC input: 16.08 A 200 V AC to 240 V AC input and 240 V DC input: 17.86 A
Output voltage	56V DC
Maximum output power	100 V AC to 130 V AC input: • PoE: 779 W • Total power: 900 W 200 V AC to 240 V AC input and 240 V DC input: • PoE: 874 W • Total power: 1000 W

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Item	Description
Operating altitude	100 V AC to 130 V AC: 0-3000 m (0-9483 ft.) 200 V AC to 240 V AC: 0-5000 m (0-16404 ft.) 240 V DC: 0-5000 m (0-16404 ft.)
Part number	02312KND

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7 Product Features

For the features and specifications supported by the S1700 models, download their brochures or feature lists from **Huawei official website**. (If your account is unauthorized, contact Huawei's support team).

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8 Technical Specifications

8.1 Interface Specifications

8.1 Interface Specifications

Table 8-1 Interface Specifications

Product Model	Downlink Port	Uplink Port
S1700-28FR-2T2P-AC	Twenty-four 10/100BASE-TX ports	• Two 10/100/1000BASE-T ports • Two 1000BASE-X ports
S1700-52FR-2T2P-AC	Forty-eight 10/100BASE-TX ports	• Two 10/100/1000BASE-T ports • Two 1000BASE-X ports
S1700-28GFR-4P-AC	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1700-52GFR-4P-AC	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1728GWR-4P	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports

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Product Model	Downlink Port	Uplink Port
S1720-20GFR-4TP	Sixteen 10/100/1000BASE-T ports	• Two 1000BASE-X ports • Two combo ports (10/100/1000BASE-T + 100/1000BASE-X)
S1720-28GFR-4TP	Twenty-four 10/100/1000BASE-T ports	• Two 1000BASE-X ports • Two combo ports (10/100/1000BASE-T + 100/1000BASE-X)
S1720-10GW-2P	Eight 10/100/1000BASE-T ports	Two 1000BASE-X ports
S1720-10GW-2P-E	Eight 10/100/1000BASE-T ports	Two 1000BASE-X ports
S1720-10GF-2P	Eight 10/100/1000BASE-T ports	Two 1000BASE-X ports
S1720-10GW-PWR-2P	Eight 10/100/1000BASE-T ports	Two 1000BASE-X ports
S1720-10GW-PWR-2P-E	Eight 10/100/1000BASE-T ports	Two 1000BASE-X ports
S1720-10GF-PWR-2P	Eight 10/100/1000BASE-T ports	Two 1000BASE-X ports
S1720-28GWR-4P	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-28GWR-4P-E	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-28GFR-4P	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-28GWR-4X	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-28GWR-4X-E	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-28GWR-PWR-4P	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports

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Product Model	Downlink Port	Uplink Port
S1720-28GWR-PWR-4P-E	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-28GFR-PWR-4P	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-28GWR-PWR-4X	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-28GWR-PWR-4X-E	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-52GWR-4P	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-52GWR-4P-E	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-52GFR-4P	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-52GWR-4X	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-52GWR-4X-E	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-52GWR-PWR-4P	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-52GWR-PWR-4P-E	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-52GFR-PWR-4P	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-52GWR-PWR-4X	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports

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Product Model	Downlink Port	Uplink Port
S1720-52GWR-PWR-4X-E	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1720-28GWR-PWR-4TP	Twenty-four 10/100/1000BASE-T ports	• Two 1000BASE-X ports • Two combo ports (10/100/1000BASE-T + 100/1000BASE-X)
S1720-28GWR-PWR-4TP-E	Twenty-four 10/100/1000BASE-T ports	• Two 1000BASE-X ports • Two combo ports (10/100/1000BASE-T + 100/1000BASE-X)
S1720X-16XWR	Sixteen 10GE SFP+ optical ports	
S1720X-16XWR-E	Sixteen 10GE SFP+ optical ports	
S1720X-32XWR	Thirty-two 10GE SFP+ optical ports	
S1720X-32XWR-E	Thirty-two 10GE SFP+ optical ports	
S1730S-S24T4S-A	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24T4S-MA	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24P4S-A	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24P4S-MA	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S48T4S-A	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24T4X-A	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1730S-S48P4S-A	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports

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Product Model	Downlink Port	Uplink Port
S1730S-H24T4S-A	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-H48T4S-A	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S8T4S-A1	Eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S8P4S-A1	Eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24T4S-A1	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24P4S-A1	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S48T4S-A1	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S48P4S-A1	Forty-eight 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1730S-S24T4X-A1	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports
S1730S-S48T4X-A1	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ optical ports

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9 Cables

9.1 Console Cable
9.2 AC Power Cable
9.3 Ground Cable
9.4 Ethernet Cable
9.5 Optical Fiber
9.6 Copper Cable

9.1 Console Cable

Appearance and Structure

Figure 9-1 and **Figure 9-2** show the appearance and structure of a console cable.

Figure 9-1 Appearance of a console cable

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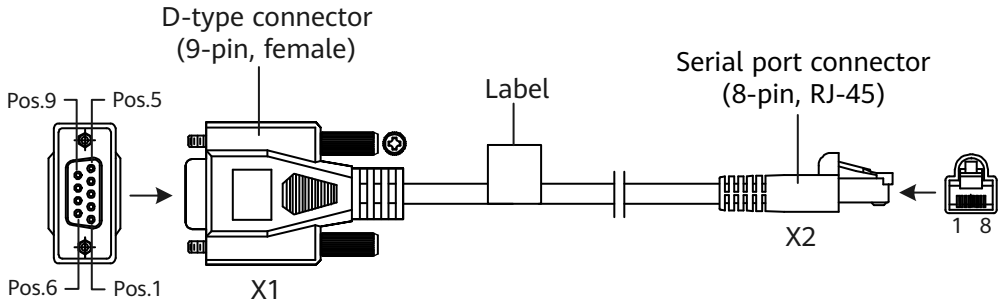
Figure 9-2 Structure of a console cable



Pin Assignments

Table 9-1 lists the pin assignments of console cable connectors.

Table 9-1 Pin assignments of console cable connectors

Connector	X1 (DB9)	X2 (RJ45)
Pin assignment	2	3
	3	6
	5	5

Connection

A console cable connects the console port of the device to the serial port of an operation terminal to transmit configuration data. A shielded cable or an unshielded cable can be used according to the onsite situation.

A console cable connects the device and terminal as follows:

- The 8-pin RJ45 connector is inserted into the console port of the device.
- The DB9 connector is inserted into the terminal serial port.

9.2 AC Power Cable

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Appearance and Structure

Figure 9-3 C13 straight female to PI straight male AC power cable

Figure 9-4 C13 straight female to C14 straight male AC power cable

NOTE

The AC power cables used in different countries and regions may have different specifications. **Figure 9-3** shows the AC power cable complying with China's national standard. The power cable and plug delivered with the chassis can only be used on this chassis, and cannot be used on other devices.

Types of AC Power Cables

Select AC power cables based on the power supply system in your equipment room. Standard and country-specific AC power cables can be directly connected to power modules.

- Standard power cables: used to transmit power from a PDU. **Figure 9-5** shows the structure of a C14 straight male to C13 straight female AC power cable.

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- Country-specific power cables: used to transmit power from a country-specific power strip. The cables are delivered in compliance with standards of the destination country or region. For example, PI straight male to C13 straight female AC power cable (**Figure 9-6**) is used in China.
- The AC power cables connected to a power distribution box must have cord end terminals. **Figure 9-7** shows the structure of a cord end to C13 straight female AC power cable.

Figure 9-5 Structure of a C14 straight male to C13 straight female AC power cable

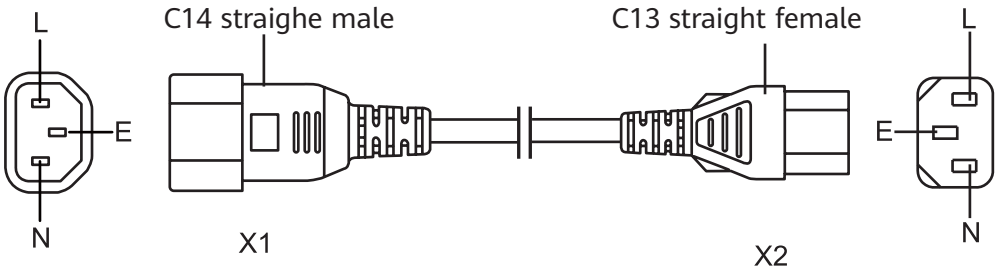


Figure 9-6 Structure of a PI straight male to C13 straight female AC power cable (used in China)

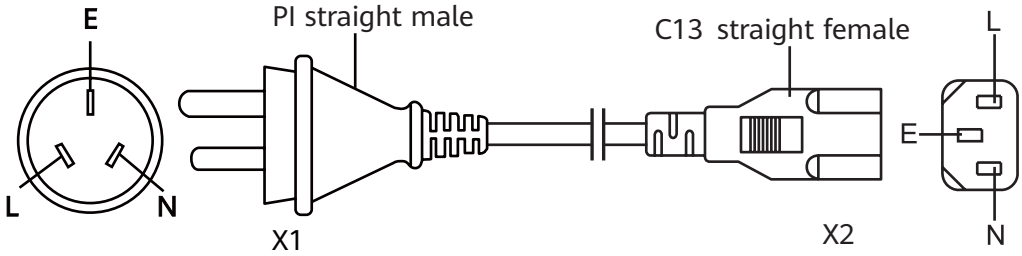
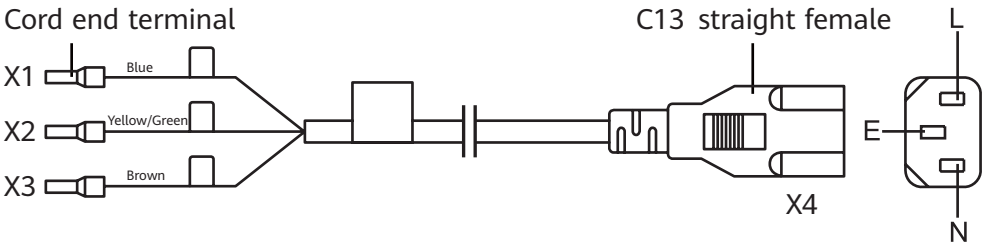


Figure 9-7 Structure of a Cord end to C13 straight female AC power cable (used in China)



Connection

Table 9-2 shows connections of various AC power cables.

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Table 9-2 Connections of AC power cables

Power Cable Type	Connector Type and Connection	
C14 straight male to C13 straight female AC power cable	C14 straight male connector: connected to a PDU	C13 straight female connector: connected to the AC power socket on the switch. The current rating of the power cable is 10 A.
PI straight male to C13 straight female AC power cable (used in China)	PI straight male connector: connected to a country-specific power strip	
Cord end to C13 straight female AC power cable (used in China)	Cord end terminal: connected to a power distribution box or power distribution frame. Connect the brown wire to the L terminal, blue wire to the N terminal, and the yellow/green wire to the ground terminal. Different AC power cables may be delivered in compliance with local regulations or customer requirements.	

9.3 Ground Cable

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Appearance and Structure

Figure 9-8 shows the appearance of a typical ground cable.

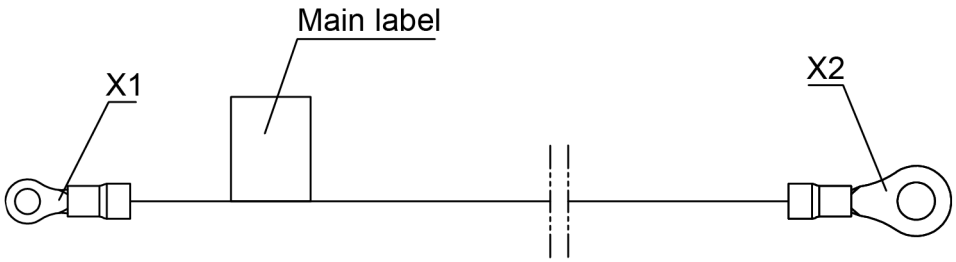
NOTE

Other types of ground cables are similar to the example shown in the figure, except for their cross-sectional area, size of the cable lugs, and cable length.

Figure 9-8 Appearance of a ground cable

Figure 9-9 shows the structure of a ground cable.

Figure 9-9 Structure of a ground cable



Pin Assignments

Table 9-3 lists the pin assignments of a ground cable.

Table 9-3 Pin assignments of a ground cable

X1	X2	Wire Color	Conductor Cross-Sectional Area	Length
OT-4	OT-6	Green-yellow	4 mm^2	0.4 m

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Connection

A ground cable grounds a device to protect it from lightning and electromagnetic interference. A ground cable is connected to a chassis in the following way:

- The OT-4 naked crimping connector connects to the ground point on the chassis.
- The OT-6 naked crimping connector connects to the ground point on the cabinet.

9.4 Ethernet Cable

Types of Ethernet Cables

An Ethernet cable connects a maintenance terminal to the console port on the device for local or remote maintenance.

Ethernet cables are classified into straight-through cables and crossover cables.

- Straight-through cable: The twisted pairs in the RJ45 connectors at both ends are crimped in the same sequence. A straight-through cable connects two devices of different types, for example, a PC and a switch.
- Crossover cable: The twisted pairs in the RJ45 connectors at two ends are crimped in different sequences. A crossover cable connects two devices or interfaces of the same type, for example, two PCs.

Crossover and straight cables only differ in wire sequences, and function the same when transmitting data.

Huawei switches support both straight-through and crossover cables and their ports are adaptive to the cable types.

Use shielded Ethernet cables when switches complying with EN 50121-4 are used in environments that meet EN 50121-4 requirements.

Appearance and Structure

NOTE

The straight-through cable and the crossover cable have the same appearance and use the RJ45 connector.

Figure 9-10 shows the appearance of an Ethernet cable.

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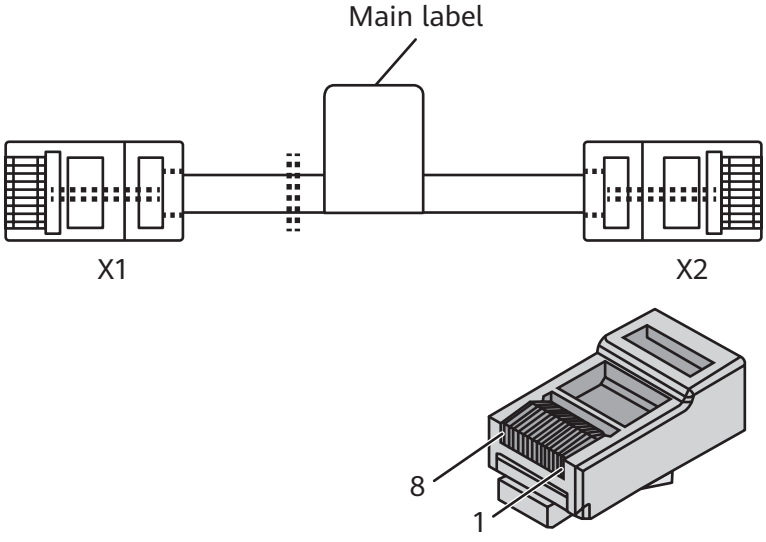
Figure 9-10 Appearance of an Ethernet cable

Figure 9-11 shows the structure of an Ethernet cable.

Figure 9-11 Structure of an Ethernet cable



Pin Assignments

Table 9-4 shows the pin assignments of a straight-through cable.

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Table 9-4 Pin assignments of a straight-through cable

X1 Pin	Wire Color	X2 Pin
1	White and orange	1
2	Orange	2
3	White and green	3
4	Blue	4
5	White and blue	5
6	Green	6
7	White and brown	7
8	Brown	8

Table 9-5 shows the pin assignments of a crossover cable.

Table 9-5 Pin assignments of a crossover cable

X1 Pin	Wire Color	X2 Pin
1	White and orange	3
2	Orange	6
3	White and green	1
4	Blue	4
5	White and blue	5
6	Green	2
7	White and brown	7
8	Brown	8

NOTE

To achieve the best electrical transmission performance, ensure that the wires connected to pins 1 and 2 and to pins 3 and 6 are twisted pairs.

9.5 Optical Fiber

Active Optical Cable

An active optical cable (AOC) is an optical fiber with optical modules at both ends, making it easy to use.

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Figure 9-12 SFP+ to SFP+ AOC cable

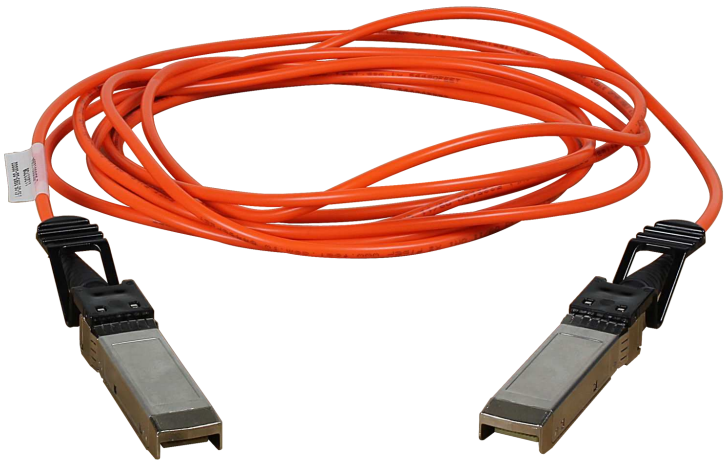

Table 9-6 lists the models and attributes of AOC cables.

Table 9-6 Attributes of AOC cables

Model	Length	Bend Radius	Connector Type	Part Number	Operating Temperature
SFP-10G-AOC3M	3 m	30 mm	SFP+ connectors at both ends	02310QWG	0°C to 70°C
SFP-10G-AOC10M	10 m	30 mm	SFP+ connectors at both ends	02310QWH	0°C to 70°C

Fiber Jumper

A fiber jumper consists of one or more fibers of a certain length and the optical connectors at both ends. A fiber jumper connects an optical module to a fiber terminal box.

Figure 9-13 shows a single-mode LC/PC fiber jumper.

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Figure 9-13 Single-mode LC/PC fiber jumper

Figure 9-14 shows a multimode LC/PC fiber jumper.

Figure 9-14 Multimode LC/PC fiber jumper

Figure 9-15 shows a single-mode SC/PC fiber jumper.

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Figure 9-15 Single-mode SC/PC fiber jumper

Comply with the following rules when selecting fiber jumpers:

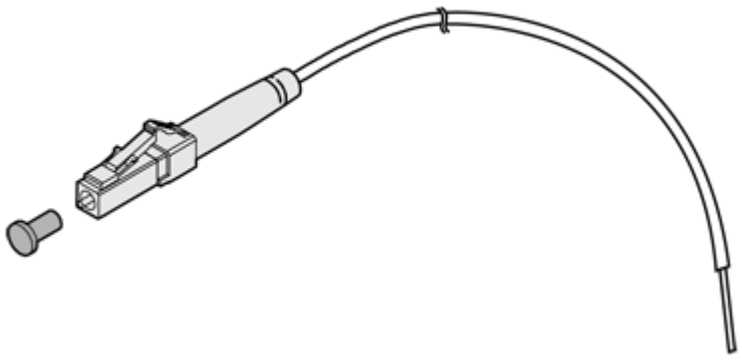
1. Determine the length of fiber jumpers based on the onsite cabling distance.
2. Determine the fiber type based on the optical module type.
   - Use a multimode fiber jumper for a multimode optical module.
   - Use a single-mode fiber jumper for a single-mode optical module.
3. Determine the optical connector type based on the interface type.

   Ensure that the optical connector at each end of a fiber jumper is the same type as the interface to which it will be connected.

Fiber Pigtail

A fiber pigtail is an optical fiber that has an optical connector on one end and a piece of exposed fiber at the other end. The exposed fiber can be fused to another optical fiber. Fiber pigtails are commonly used to connect optical fibers to optical modules in fiber terminal boxes (couplers and jumpers are also used). **Figure 9-16** shows the structure of a fiber pigtail.

Figure 9-16 Structure of a fiber pigtail



Fiber pigtails are classified into single-mode and multimode fiber pigtails and are used for short-distance connections.

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Optical Fiber, Optical Connector, and Fiber Adapter

Optical Fibers

Optical fibers are classified into single-mode fibers and multimode fibers.

- Single-mode fibers have a diameter of 5-10 μm and transmit laser in one mode under a specified wavelength. These fibers support a wide frequency band and a large transmission capacity, so they are used for long-distance transmission. Most single-mode fibers are yellow, as shown in **Figure 9-13**.
- Multimode fibers have a diameter of 50 μm or 62.5 μm and transmit laser light in multiple modes under a specified wavelength. These fibers have a lower transmission capacity than single-mode fibers and are used for short-distance transmission. Modal dispersion occurs during transmission over multimode fibers.

  In the latest cabling infrastructure of ISO/IEC 11801, multimode fibers are classified into four categories: OM1, OM2, OM3, and OM4.

  - OM1: traditional 62.5/125 μm multimode fibers. OM1 fibers have a large core diameter and numerical aperture, and provide high light gathering ability and bending resistance.
  - OM2: traditional 50/125 μm multimode fibers. OM2 fibers have a small core diameter and numerical aperture. Compared with OM1 fibers, OM2 fibers provide higher bandwidth because they significantly reduce the modal dispersion. When transmitting data at 1 Gbit/s with 850 nm wavelength, OM1 and OM2 fibers support maximum link lengths of 220 m and 550 m, respectively. OM1 and OM2 fibers can provide sufficient bandwidth within a distance of 300 m. Generally, OM1 and OM2 fibers are orange, as shown in **Figure 9-14**.
  - OM3: new-generation multimode fibers, with longer transmission distances than OM1 and OM2 fibers.
  - OM4: laser optimized multimode fibers with 50 μm core diameter. OM4 is an improvement to OM3 and only increases the modal bandwidth. OM4 fibers provide 4700 MHz*km of modal bandwidth, whereas OM3 fibers provide only 2000 MHz*km of modal bandwidth. Generally, OM3 and OM4 fibers are light green. You can identify OM3 and OM4 fibers by their labels or printed marks.

Optical Connector

Optical connectors are used to connect optical fibers of the same type. **Table 9-7** lists common optical connectors.

Table 9-7 Common optical connectors

Connector Type	Optical Connector			
Square connector	SC/PC connector	LC/PC connector	MTRJ/PC connector	MPO connector

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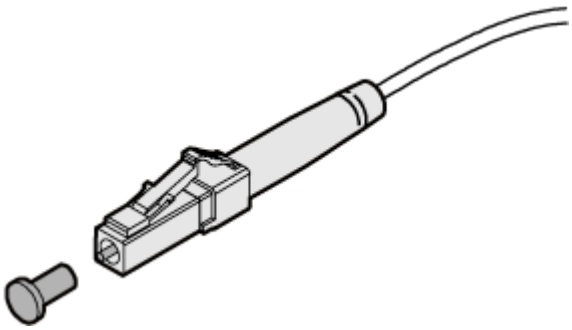
Connector Type	Optical Connector			
Round connector	FC/PC connector	ST/PC connector	-	-

Figure 9-17 shows an LC/PC optical connector.

Figure 9-17 LC/PC optical connector



NOTICE

When connecting or removing an LC/PC optical connector, align the connector with the optical port and do not rotate the fiber. Pay attention to the following points:

- To connect a fiber, align the optical connector with the optical port and gently insert the optical fiber into the port.
- To remove a fiber, press the clip on the connector and pull the fiber out.

Fiber Adapter

A fiber adapter (also called a flange) is a fiber connection component. Two fiber connectors need to be connected using a fiber adapter. Fiber adapters are widely used in optical distribution frames (ODFs), fiber transmission equipment, and optical instruments.

9.6 Copper Cable

Types of Copper Cables

Table 9-8 shows the types of copper cables.

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Table 9-8 Types of copper cables

Model	Length	Electrical attribute	Bend Radius	Connector Type	Part Number
SFP-10G-CU1M	1 m	Passive	25 mm	SFP+ to SFP+	02310MUN
SFP-10G-CU3M	3 m	Passive	25 mm	SFP+ to SFP+	02310MUP
SFP-10G-CU5M	5 m	Passive	30 mm	SFP+ to SFP+	02310QPR
SFP-10G-AC10M	10 m	Active	25 mm	SFP+ to SFP+	02310MUQ

NOTICE

The two ends of a copper cable must be covered by electrostatic discharge (ESD) caps.

When used for data transmission between service ports, copper cables can only connect Huawei switches of the same subseries. These copper cables cannot be used between Huawei switches of different subseries or between Huawei switches and other devices such as PCs, hosts, servers, or routers.

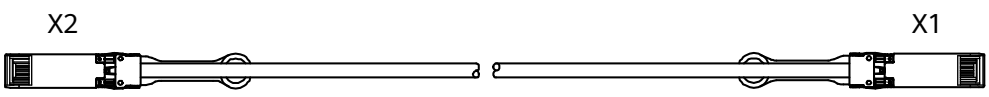
Appearance and Structure

Figure 9-18 shows the appearance of an SFP/SFP+ copper cable.

Figure 9-18 Appearance of an SFP/SFP+ copper cable

Figure 9-19 shows the structure of an SFP/SFP+ copper cable.

Figure 9-19 Structure of an SFP/SFP+ copper cable



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10 Optical Modules

10.1 Optical Modules Dedicated for Hybrid Cables
10.2 Understanding Optical Modules
10.3 Understanding Copper Modules
10.4 FE SFP/eSFP Optical Modules
10.5 GE eSFP Optical Modules
10.6 GE-CWDM eSFP Optical Modules
10.7 GE-DWDM eSFP Optical Modules
10.8 GE SFP Copper Modules
10.9 10GE SFP+ Optical Modules
10.10 10GE-CWDM SFP+ Optical Modules
10.11 10GE-DWDM SFP+ Optical Modules
10.12 GPON Optical Modules
10.13 Industrial Optical Modules

10.1 Optical Modules Dedicated for Hybrid Cables

10.1.1 SFP-10G-iLR-S

Table 10-1 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10GE

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Item	Description
Center wavelength (nm)	1310
Standards compliance	10GBASE-iLR (non-standard)
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 1.4 km
Transmit power (dBm)	-8.2 to 0.5
Maximum receiver sensitivity (dBm)	-14.4
Overload power (dBm)	0.5
Extinction ratio (dB)	3.5
Operating temperature	–40ºC to +85ºC (–40°F to 185°F)
Part number	02313CBJ

NOTE

This optical module can be used together only with a hybrid cable.

10.2 Understanding Optical Modules

10.2.1 What Is an Optical Module

On an optical network, a sender needs to convert electrical signals into optical signals before sending them to a receiver, and the receiver needs to convert received optical signals into electrical signals. An optical module is a component that completes electrical/optical conversion on an optical network. **Figure 10-1** shows the structure of an optical module.

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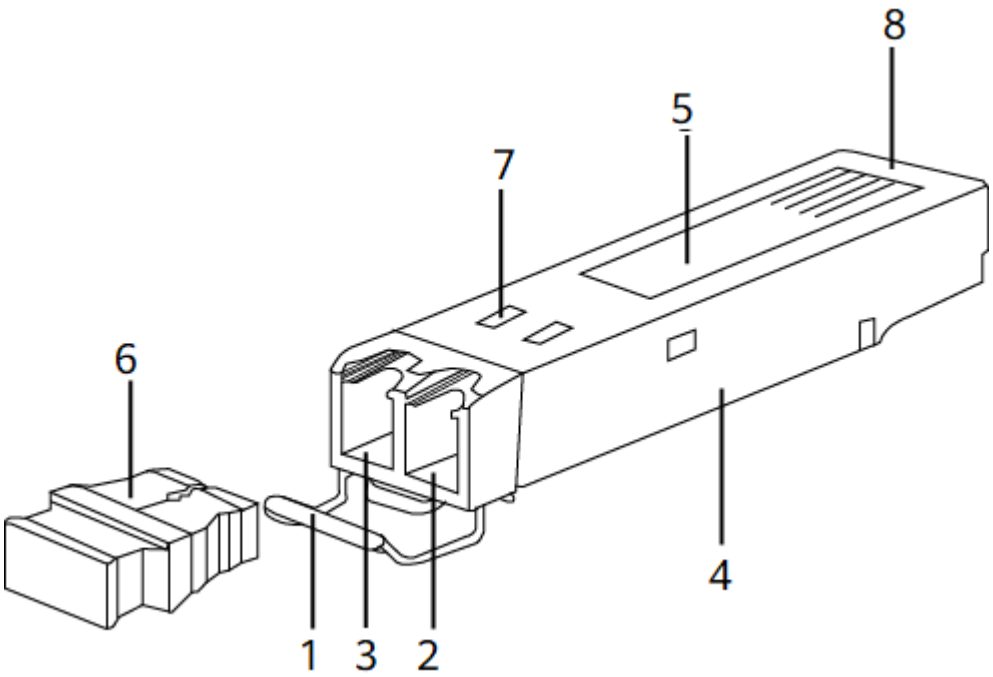
Figure 10-1 Structure of an optical module (using an SFP/eSFP optical module as an example)



1. Handle	2. Receiver	3. Transmitter
4. Shell	5. Label	6. Dust plug
7. Spring	8. Connector	-

Figure 10-2 shows an SFP/eSFP optical module.

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Figure 10-2 SFP/eSFP optical module

Figure 10-3 shows the appearance of an SFP+ optical module.

Figure 10-3 Appearance of an SFP+ optical module

Figure 10-4 shows the appearance of an SFP28 optical module.

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Figure 10-4 SFP28 optical module

Figure 10-5 and **Figure 10-6** show the appearance of a QSFP+ optical module.

Figure 10-5 Appearance of a QSFP+ optical module (for LC optical fibers)

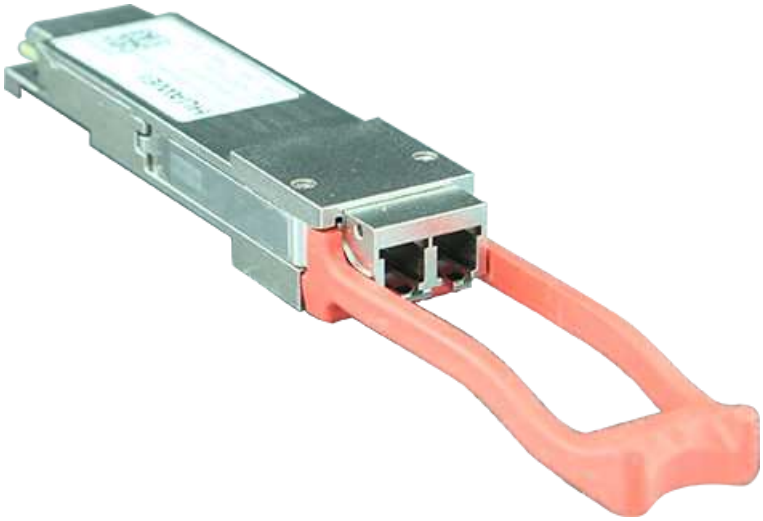

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Figure 10-6 Appearance of a QSFP+ optical module (for MPO optical fibers)

NOTICE

The side with an L-shaped notch close to the connector is the top of a QSFP+ optical module, as shown in **Figure 10-5**. When connecting a QSFP+ optical module to a port, keep the top side upward. Do not insert the QSFP+ optical module upside down.

Currently, there is no formal standard for 40G Ethernet. Therefore, a device may not display complete diagnostic information about 40GE optical modules. This is an acceptable fact in the telecommunications industry and does not affect functions of 40GE optical modules.

Figure 10-7 shows the appearance of a CSFP optical module.

Figure 10-7 Appearance of a CSFP optical module

Figure 10-8 shows the appearance of an XFP module.

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Figure 10-8 Appearance of an XFP optical module

NOTE

The SFP+ and XFP optical modules are 10GE hot-swappable optical modules. Compared with the SFP+ optical modules, the XFP optical modules have a larger caliber.

Figure 10-9 and **Figure 10-10** show CFP optical modules for different optical fibers.

Figure 10-9 CFP 100GE optical module (for LC optical fibers)

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Figure 10-10 CFP 100GE optical module (for MPO optical fibers)

Figure 10-11 and **Figure 10-12** show the appearance of a QSFP28 optical module.

Figure 10-11 Appearance of a QSFP28 optical module (for MPO optical fibers)

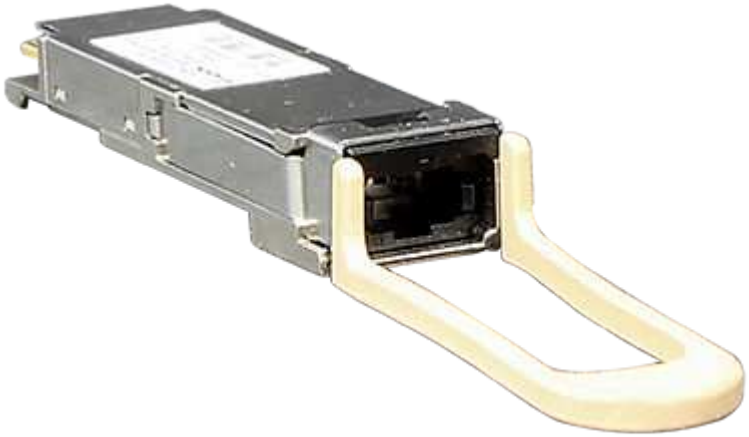

Figure 10-12 Appearance of a QSFP28 optical module (for LC optical fibers)

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10.2.2 Types of Optical Modules

Optical modules are available in various types to meet diversified requirements.

- **Classified by transmission rates**

  Depending on transmission rates, optical modules are classified into 100GE, 40GE, 25GE, 10GE, FE, and GE optical modules.

- **Classified by encapsulation types**

  The higher transmission rate an optical module provides, the more complex structure it has. Optical modules are encapsulated in different modes to provide different structures. Huawei switches support optical modules of the following encapsulation types: CFP, QSFP+, QSFP28, XFP, SFP, eSFP, and SFP+. All optical modules are hot swappable.

  - SFP: small form-factor pluggable. SFP optical modules support LC fiber connectors.
  - eSFP: enhanced small form-factor pluggable. An eSFP module is an SFP module that supports monitoring of voltage, temperature, bias current, transmit optical power, and receive optical power. Therefore, eSFP is also called SFP sometimes.
  - SFP+: small form-factor pluggable plus, SFP with a higher rate.
  - XFP: 10 Gigabit small form-factor pluggable. X is the Roman numeral 10, meaning that all XFP optical modules provide a 10 Gbit/s transmission rate. XFP optical modules support LC fiber connectors. They are wider and longer than SFP+ optical modules.
  - SFP28: with the same interface size as an SFP+ module. An SFP28 interface can use a 25GE SFP28 optical module.
  - QSFP+: quad small form-factor pluggable. QSFP+ optical modules support MPO fiber connectors and are larger than SFP+ optical modules.
  - CFP: centum form-factor pluggable. The dimensions of a CFP optical module are 144.75 mm x 82 mm x 13.6 mm (L x W x H). CFP is a new optical module standard that can be used in data communication and telecommunications fields.
  - QSFP28: with the same interface size as a QSFP+ module. A QSFP28 interface can use a 100GE QSFP28 optical module or a 40GE QSFP+ optical module.

- **Classified by physical layer standards**

  Different physical layer standards are defined to allow data transmission in different modes. Therefore, different types of optical modules are produced to comply with these standards. For details, see **Standards compliance** of the specific optical module.

- **Classified by modes**

  Optical fibers are classified into single-mode and multimode fibers. Therefore, optical modules are also classified into single-mode and multimode modules to support different optical fibers.

  - Single-mode optical modules are used with single-mode fibers. Single-mode fibers support a wide band and large transmission capacity, and are used for long-distance transmission.

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- Multimode optical modules are used with multimode fibers. Multimode fibers have lower transmission performance than single-mode fibers because of modal dispersion, but their costs are also lower. They are used for small-capacity, short-distance transmission.

Wavelength division multiplexing modules differ from other optical modules in center wavelengths. A common optical module has a center wavelength of 850 nm, 1310 nm, or 1550 nm, whereas a wavelength division multiplexing module transmits lights with different center wavelengths. Wavelength division multiplexing modules are classified into two types: coarse wavelength division multiplexing (CWDM) and dense wavelength division multiplexing (DWDM). Within the same band, DWDM modules are available in more types and use wavelength resources more efficiently than CWDM modules. DWDM and CWDM modules allow lights with different center wavelengths to be transmitted on one fiber without interfering each other. Therefore, a passive multiplexer can be used to combine the lights into one channel, which is then split into multiple channels by a demultiplexer on the remote end. This reduces the optical fibers required. DWDM and CWDM modules are used for long-distance transmission.

The transmit power of a long-distance optical module is often larger than its overload power. Therefore, when using such optical modules, select optical fibers of an appropriate length to ensure that the actual receive power is smaller than the overload power. If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce the receive power on the remote optical module. Otherwise, the remote optical module may be burnt. Generally, an optical attenuator is required if an optical module supporting a transmission distance longer than 10 km is used together with short optical fibers.

10.2.3 Parameter Description

Transmit optical power	Output optical power of an optical module when it is working properly. When two optical modules are connected, the transmit optical power of one end must be within the range of receive optical power on the other end.
Receive optical power	Average input optical power that the receiver of an optical module can receive within a range of bit error rate (BER = 10^{-12}). The upper limit of this parameter is the overload optical power and the lower limit is the maximum receiver sensitivity. When two optical modules are connected, the receive optical power on one end determines the range of transmit optical power on the other end.
Maximum receiver sensitivity	Minimum average input optical power that the receiver of an optical module can receive within a range of bit error rate (BER = 10^{-12}). When two optical modules are connected, the maximum receiver sensitivity on one end determines the minimum value of transmit optical power on the other end.
Overload optical power	Maximum average input optical power that the receiver of an optical module can receive within a range of bit error rate (BER = 10^{-12}). When two optical modules are connected, the overload optical power on one end determines the maximum transmit optical power on the other end.

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Extinction ratio	Minimum ratio of the average optical power with signals transmitted against the average optical power without signals transmitted in complete modulation mode. The extinction ratio indicates the capability of an optical module to identify signal 0 and signal 1. This parameter is a quality indicator for optical modules. Optical modules with a large extinction ratio may not have good quality. Qualified optical modules should have an extinction ratio complying with IEEE 802.3.
Fiber mode	Mode of optical fibers defined based on core diameters and features of optical fibers. Optical fibers are classified into single-mode and multimode fibers. Generally, multimode fibers have large core diameters and severe dispersion, so they transmit optical signals over short distances. Single-mode fibers have low dispersion and can transmit optical signals over long distances.
Modal bandwidth	Bandwidth measured at a point with transmit power several dB lower than that of the point with the peak center wavelength. Modal bandwidth reflects spectrum characteristics of multimode fibers. The higher modal bandwidth a multimode fiber has, the longer transmission distance the fiber supports.
Fiber diameter	Diameter of the core of a fiber. According to international standards for optical fibers, the diameter of a multimode fiber is 62.5 um or 50 um, and the diameter of a single-mode fiber is 9 um. Select optical fibers with diameters supported by the optical modules.
Fiber class	Optical signals with different wavelengths have their best working windows in different optical fibers. To help efficiently adjust wavelengths or dispersion features of optical fibers and change their refractive indexes, the following fiber classes are defined: multimode fiber (G.651), common single-mode fiber (G.652), shifted dispersion fiber (G.653), and non-zero shifted dispersion fiber (G.655). G.651 and G.652 are commonly used fiber classes. Optical fibers of higher classes support longer transmission distances. When selecting optical fibers for optical modules, determine the classes of fibers based on the required transmission distances.
Connector type	Type of the interface on an optical module to accommodate a fiber. Commonly used connector types are LC (applicable to all the SFP, SFP+, and XFP modules), SC, and MPO (applicable to 150 m QSFP+ and CXP modules). Select optical fibers with connectors supported by the optical modules.
Transmission distance	Maximum distance over which optical signals can transmit. Optical signals sent from different types of sources can transmit over different distances due to negative effects of optical fibers, such as dispersion and attenuation. When connecting optical interfaces, select optical modules and fibers based on the maximum signal transmission distance.

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Interface rate	Maximum rate of electrical signals that an optical component can transmit without bit errors. The interface rates defined in Ethernet standards include 125 Mbit/s, 1.25 Gbit/s, 10.3125 Gbit/s, and 41.25 Gbit/s. When connecting optical interfaces, select optical modules and fibers based on the maximum signal transmission rate.
Center wavelength	Wavelength measured at the midpoint of the half-amplitude line in the transmit spectrum. Two connected optical modules must have the same center wavelength.
MSA	Multi-Source Agreement, a non-profit organization jointly established by optical module manufacturers. This agreement defines the structure and dimensions of optical transceivers by referring to Optical Internetworking Forum (OIF) and International Telecommunication Union (ITU) standards.

10.2.4 How to View Optical Module Parameters

Viewing the Hardware Description

If you know the model or type of an optical module, you can view the section "Pluggable Modules for Interfaces" in the *Hardware Description* to look up parameters of the optical module, including the center wavelength, transmission distance, fiber types supported, receive optical power, and transmit optical power.

Using a Command

If an optical module is installed in a running switch, you can run the **display transceiver** command to view parameters of the optical module, including the center wavelength, transmission distance, fiber types supported, receive optical power, and transmit optical power.

10.2.5 Rules for Optical Module Interoperation

Interoperation Rules

Optical modules with the same standards can interoperate with each other. The standards define the rate, wavelength, and transmission distance of optical modules, but not their encapsulation modes (two interoperated optical modules can have different encapsulation modes).

If you need to achieve interoperability between optical modules with different standards, contact technical support personnel.

When S series switches are connected to other products such as routers, comply with the preceding optical module interoperation rules.

Standards Description

The following describes the standards, using 1000BASE-LX10 as an example:

- 1000 indicates the rate (1000 Mbit/s, in this case). Other rates include 10 Mbit/s, 100 Mbit/s, 10 Gbit/s, 40 Gbit/s, and 100 Gbit/s.

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- BASE indicates baseband transmission.
- L represents a center wavelength of the laser. Currently, the following center wavelengths are available: S (short wavelength: 850 nm), L (long wavelength: 1310 nm), E (extra long wavelength: 1550 nm), and B (single-fiber bidirectional long wavelength).
- X represents the encoding format. The encoding formats include T (twisted pair), X (8B/10B), R (64B/66B), and W (WIS).
- 10 indicates the number of channels. Currently, the value can be 4 or 10. If there is no number, the value is 1.

NOTE

This example provides the definitions in IEEE standards, which are not applicable to all optical modules, for example, non-standard optical modules.

The following organizations or agreements define standards related to optical modules:

- IEEE 802.3, which defines MAC and PHY standards
- Small Form Factor (SFF) committee or Multi-Source Agreements (MSAs), which define optical module hardware, software, and structure standards

Interoperability of 40GE and 100GE Optical Modules

S series switches support the following types of 40GE and 100GE optical modules:

- 40GE QSFP+ optical modules
- 40GE CFP optical modules
- 100GE CFP optical modules
- 100GE QSFP28 optical modules

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Figure 10-13 Interoperability of 40GE optical modules in different encapsulation modes

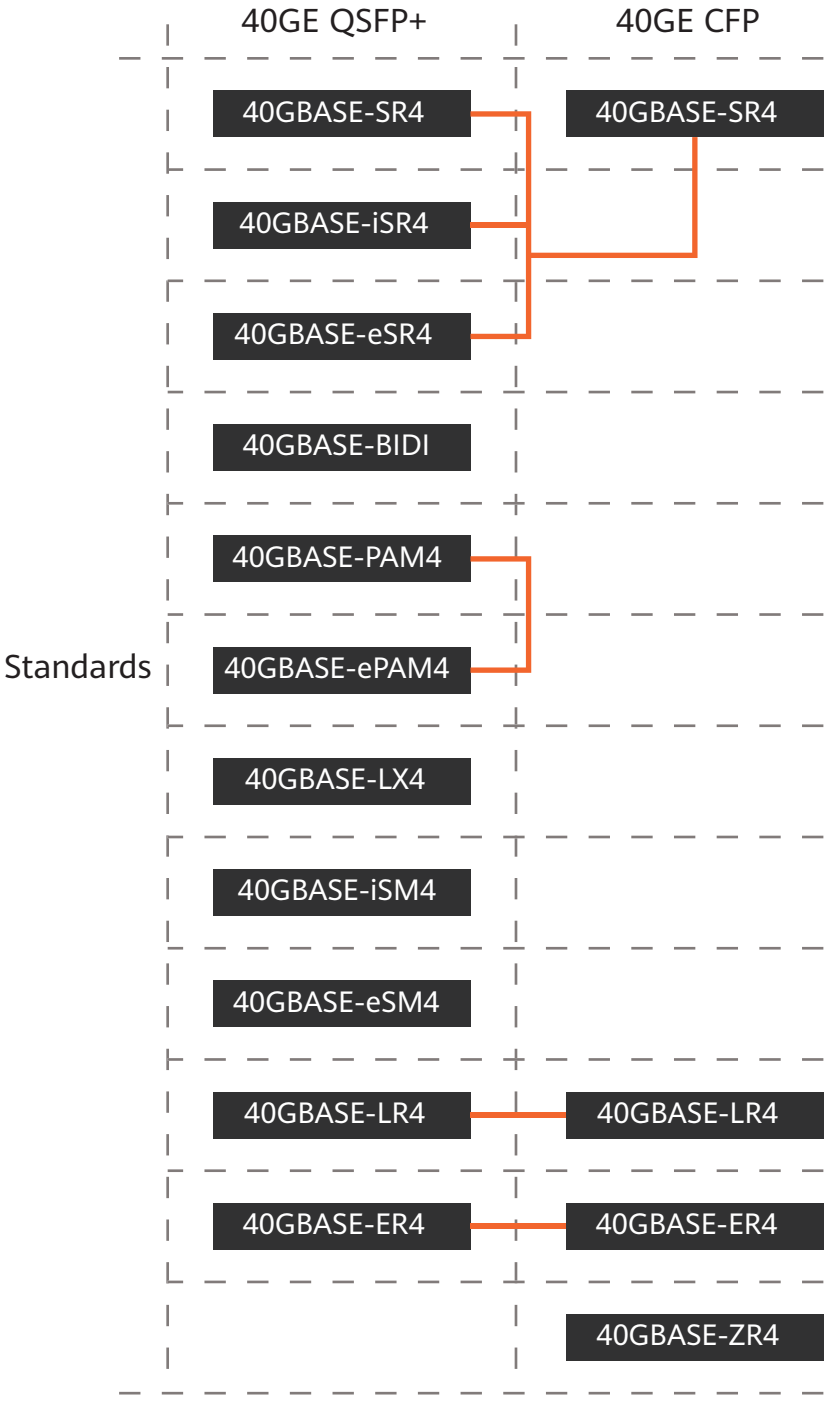

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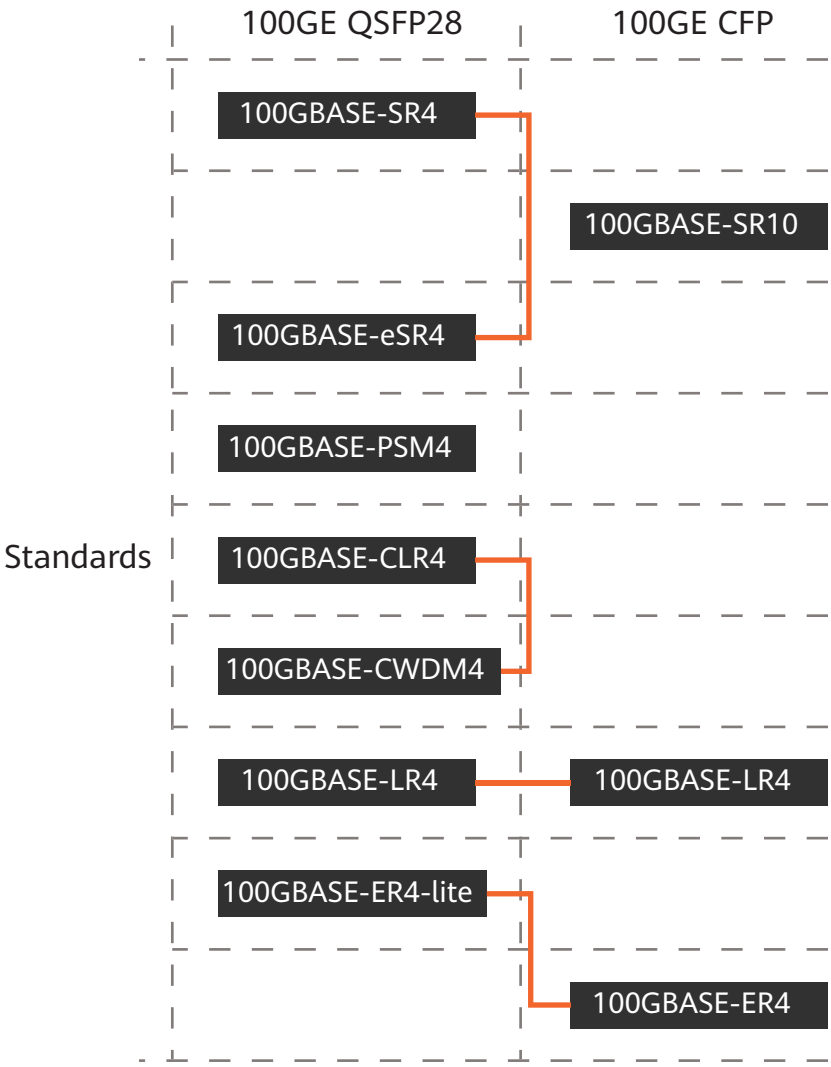
Figure 10-14 Interoperability of 100GE optical modules in different encapsulation modes



NOTE

Optical modules complying with the standards connected in the preceding figures can interoperate with each other.

iSR4 and eSR4 are non-standard formats derived from SR4, and support interoperation with SR4.

A 40GBASE-PAM4 optical module can interoperate with a 40GBASE-ePAM4 optical module.

A 100GBASE-CLR4 optical module can interoperate with a 100GBASE-CWDM4 optical module.

A 100GBASE-ER4-lite optical module can interoperate with a 100GBASE-ER4 optical module, at a maximum distance of 30 km.

10.3 Understanding Copper Modules

Copper modules are also called RJ45 modules. Unlike optical modules, copper modules do not perform electrical-optical conversion. When two optical interfaces

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have copper modules installed, the interfaces can be connected using a copper cable. Currently, Huawei offers only GE copper modules with RJ45 interfaces. GE copper modules work with Category 5 network cables, comply with 1000BASE-T (IEEE 802.3ab), and support a maximum transmission distance of 100 m.

Figure 10-15 shows a GE SFP copper module.

Figure 10-15 Appearance of a GE SFP copper module

10.4 FE SFP/eSFP Optical Modules

10.4.1 S-SFP-FE-LH40-SM1310

Table 10-2 S-SFP-FE-LH40-SM1310 Specifications

Item	Value
Basic Information	
Module name	S-SFP-FE-LH40-SM1310
Part Number	02317344
Model	S-SFP-FE-LH40-SM1310
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100 Mbit/s

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Item	Value
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	10.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-37.0 dBm
Overload power [dBm]	-10.0 dBm

10.4.2 S-SFP-FE-LH80-SM1550

Table 10-3 S-SFP-FE-LH80-SM1550 Specifications

Item	Value
Basic Information	
Module name	S-SFP-FE-LH80-SM1550
Part Number	02317345
Model	S-SFP-FE-LH80-SM1550
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	10.5 dB

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Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-37.0 dBm
Overload power [dBm]	-10.0 dBm

10.4.3 SFP-FE-LX-SM1310-BIDI

Table 10-4 SFP-FE-LX-SM1310-BIDI Specifications

Item	Value
Basic Information	
Module name	SFP-FE-LX-SM1310-BIDI
Part Number	02315203
Model	SFP-FE-LX-SM1310-BIDI
Form factor	eSFP
Application standard	100BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-8.0 dBm
Minimum Tx optical power [dBm]	-15.0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-32.0 dBm
Overload power [dBm]	-8.0 dBm

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Item	Value
NOTE This module supports the single-fiber bidirectional function. BIDI optical modules must be used in pairs. For example, SFP-FE-LX-SM1310-BIDI must be used with SFP-FE-LX-SM1550-BIDI.	

10.4.4 SFP-FE-LX-SM1550-BIDI

Table 10-5 SFP-FE-LX-SM1550-BIDI Specifications

Item	Value
Basic Information	
Module name	SFP-FE-LX-SM1550-BIDI
Part Number	02315202
Model	SFP-FE-LX-SM1550-BIDI
Form factor	eSFP
Application standard	100BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1550 nm (TX)
Maximum Tx optical power [dBm]	-8.0 dBm
Minimum Tx optical power [dBm]	-15.0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-32.0 dBm
Overload power [dBm]	-8.0 dBm
NOTE This module supports the single-fiber bidirectional function. BIDI optical modules must be used in pairs. For example, SFP-FE-LX-SM1550-BIDI must be used with SFP-FE-LX-SM1310-BIDI.	

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10.4.5 SFP-FE-SX-MM1310

Table 10-6 SFP-FE-SX-MM1310 Specifications

Item	Value
Basic Information	
Module name	SFP-FE-SX-MM1310
Part Number	02315233
Model	SFP-FE-SX-MM1310
Form factor	SFP
Application standard	100BASE-FX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Multimode fiber (50 μm or 62.5 μm diameter): 2 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-14.0 dBm
Minimum Tx optical power [dBm]	-19.0 dBm
Minimum extinction ratio [dB]	10 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-30.0 dBm
Overload power [dBm]	-14.0 dBm

10.4.6 eSFP-FE-LX-SM1310

Table 10-7 eSFP-FE-LX-SM1310 Specifications

Item	Value
Basic Information	
Module name	eSFP-FE-LX-SM1310
Part Number	02315205

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Item	Value
Model	eSFP-FE-LX-SM1310
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-8.0 dBm
Minimum Tx optical power [dBm]	-15.0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-8.0 dBm

10.5 GE eSFP Optical Modules

10.5.1 LE2MGSC40DE0

Table 10-8 LE2MGSC40DE0 Specifications

Item	Value
Basic Information	
Module name	LE2MGSC40DE0
Part Number	02310KVV
Model	LE2MGSC40DE0
Form factor	eSFP
Application standard	1000BASE-BX
Connector type	LC

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Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	3.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, LE2MGSC40DE0 must be used with LE2MGSC40ED0.	

10.5.2 LE2MGSC40ED0

Table 10-9 LE2MGSC40ED0 Specifications

Item	Value
Basic Information	
Module name	LE2MGSC40ED0
Part Number	02310KVU
Model	LE2MGSC40ED0
Form factor	eSFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

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Item	Value
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	3.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, LE2MGSC40ED0 must be used with LE2MGSC40DE0.	

10.5.3 S-SFP-GE-LH40-SM1310

Table 10-10 S-SFP-GE-LH40-SM1310 Specifications

Item	Value
Basic Information	
Module name	S-SFP-GE-LH40-SM1310
Part Number	02317346
Model	S-SFP-GE-LH40-SM1310
Form factor	eSFP
Application standard	1000BASE-EX (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km

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Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm

10.5.4 S-SFP-GE-LH40-SM1550

Table 10-11 S-SFP-GE-LH40-SM1550 Specifications

Item	Value
Basic Information	
Module name	S-SFP-GE-LH40-SM1550
Part Number	02317347
Model	S-SFP-GE-LH40-SM1550
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	

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Item	Value
Rx sensitivity [dBm]	-22 dBm
Overload power [dBm]	-3.0 dBm

10.5.5 S-SFP-GE-LH80-SM1550

Table 10-12 S-SFP-GE-LH80-SM1550 Specifications

Item	Value
Basic Information	
Module name	S-SFP-GE-LH80-SM1550
Part Number	02317348
Model	S-SFP-GE-LH80-SM1550
Form factor	eSFP
Application standard	1000BASE-ZX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm

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10.5.6 SFP-GE-BXU1-SC

Table 10-13 SFP-GE-BXU1-SC Specifications

Item	Value
Basic Information	
Module name	SFP-GE-BXU1-SC
Part Number	02310TQH
Model	SFP-GE-BXU1-SC
Form factor	eSFP
Application standard	Non-standard
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE This module supports the single-fiber bidirectional function.	

10.5.7 SFP-GE-EX-C

Table 10-14 SFP-GE-EX-C Specifications

Item	Value
Basic Information	

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Item	Value
Module name	SFP-GE-EX-C
Part Number	02312UUD
Model	SFP-GE-EX-C
Form factor	eSFP
Application standard	1000BASE-EX (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm

10.5.8 SFP-GE-LX-SM1310

Table 10-15 SFP-GE-LX-SM1310 Specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1310
Part Number	02315200
Model	SFP-GE-LX-SM1310
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC

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Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20.0 dBm
Overload power [dBm]	-3.0 dBm

10.5.9 SFP-GE-LX-SM1310-BIDI

Table 10-16 SFP-GE-LX-SM1310-BIDI Specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1310-BIDI
Part Number	02315285
Model	SFP-GE-LX-SM1310-BIDI
Form factor	eSFP
Application standard	1000BASE-BX10
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	

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Item	Value
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	6 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1310-BIDI must be used with SFP-GE-LX-SM1490-BIDI.	

10.5.10 SFP-GE-LX-SM1490-BIDI

Table 10-17 SFP-GE-LX-SM1490-BIDI Specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1490-BIDI
Part Number	02315286
Model	SFP-GE-LX-SM1490-BIDI
Form factor	eSFP
Application standard	1000BASE-BX10
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm

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Item	Value
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	6 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1490-BIDI must be used with SFP-GE-LX-SM1310-BIDI.	

10.5.11 SFP-GE-LX10-C

Table 10-18 SFP-GE-LX10-C Specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX10-C
Part Number	02312UUC
Model	SFP-GE-LX10-C
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	

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Item	Value
Rx sensitivity [dBm]	-20.0 dBm
Overload power [dBm]	-3.0 dBm

10.5.12 SFP-GE-SX-C

Table 10-19 SFP-GE-SX-C Specifications

Item	Value
Basic Information	
Module name	SFP-GE-SX-C
Part Number	02312UUB
Model	SFP-GE-SX-C
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.22 km Multimode fiber (OM1): 0.275 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.5 km Multimode fiber (OM2): 0.55 km Multimode fiber (OM3): 1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-9.5 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	

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Item	Value
Rx sensitivity [dBm]	-17.0 dBm
Overload power [dBm]	0 dBm

10.5.13 SFP-GE-ZBXD1

Table 10-20 SFP-GE-ZBXD1 Specifications

Item	Value
Basic Information	
Module name	SFP-GE-ZBXD1
Part Number	02311DDB
Model	SFP-GE-ZBXD1
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1570 nm (TX)
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-3.0 dBm

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Item	Value
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R008C00 or a later version. A switch running an earlier version may fail to obtain information about this module. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-ZBXD1 must be used with SFP-GE-ZBXU1.	

10.5.14 SFP-GE-ZBXU1

Table 10-21 SFP-GE-ZBXU1 Specifications

Item	Value
Basic Information	
Module name	SFP-GE-ZBXU1
Part Number	02311DDC
Model	SFP-GE-ZBXU1
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1570 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-3.0 dBm

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Item	Value
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R008C00 or a later version. A switch running an earlier version may fail to obtain information about this module. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-ZBXU1 must be used with SFP-GE-ZBXD1.	

10.5.15 eSFP-GE-SX-MM850

Table 10-22 eSFP-GE-SX-MM850 Specifications

Item	Value
Basic Information	
Module name	eSFP-GE-SX-MM850
Part Number	02315204
Model	eSFP-GE-SX-MM850
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.22 km Multimode fiber (OM1): 0.275 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.5 km Multimode fiber (OM2): 0.55 km Multimode fiber (OM3): 1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-9.5 dBm
Minimum extinction ratio [dB]	9 dB

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Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm
Overload power [dBm]	0 dBm

10.5.16 eSFP-GE-ZX100-SM1550

Table 10-23 eSFP-GE-ZX100-SM1550 Specifications

Item	Value
Basic Information	
Module name	eSFP-GE-ZX100-SM1550
Part Number	02315206
Model	eSFP-GE-ZX100-SM1550
Form factor	eSFP
Application standard	1000BASE-ZX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 100 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	9.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-30.0 dBm
Overload power [dBm]	-9.0 dBm

10.6 GE-CWDM eSFP Optical Modules

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10.6.1 CWDM-SFPGE-1471

Table 10-24 CWDM-SFPGE-1471 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1471
Part Number	02310LPN
Model	CWDM-SFPGE-1471
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1471 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.2 CWDM-SFPGE-1491

Table 10-25 CWDM-SFPGE-1491 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1491
Part Number	02310LPK

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Item	Value
Model	CWDM-SFPGE-1491
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1491 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.3 CWDM-SFPGE-1511

Table 10-26 CWDM-SFPGE-1511 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1511
Part Number	02310LPH
Model	CWDM-SFPGE-1511
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

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Item	Value
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1511 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.4 CWDM-SFPGE-1531

Table 10-27 CWDM-SFPGE-1531 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1531
Part Number	02310LPL
Model	CWDM-SFPGE-1531
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1531 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm

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Item	Value
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.5 CWDM-SFPGE-1551

Table 10-28 CWDM-SFPGE-1551 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1551
Part Number	02312AXN
Model	CWDM-SFPGE-1551
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1551 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

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10.6.6 CWDM-SFPGE-1571

Table 10-29 CWDM-SFPGE-1571 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1571
Part Number	02312AXM
Model	CWDM-SFPGE-1571
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1571 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.7 CWDM-SFPGE-1591

Table 10-30 CWDM-SFPGE-1591 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1591
Part Number	02312AXK

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Item	Value
Model	CWDM-SFPGE-1591
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1591 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.8 CWDM-SFPGE-1611

Table 10-31 CWDM-SFPGE-1611 Specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1611
Part Number	02310LPJ
Model	CWDM-SFPGE-1611
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

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Item	Value
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1611 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.7 GE-DWDM eSFP Optical Modules

10.7.1 DWDM-SFPGE-1560-61

Table 10-32 DWDM-SFPGE-1560-61 Specifications

Item	Value
Basic Information	
Module name	DWDM-SFPGE-1560-61
Part Number	02310LLE
Model	DWDM-SFPGE-1560-61
Form factor	eSFP
Application standard	GE-DWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 120 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1560.61 nm

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Item	Value
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-8.0 dBm

10.8 GE SFP Copper Modules

10.8.1 SFP-1000BaseT

Table 10-33 SFP-1000BaseT Specifications

Item	Value
Basic Information	
Module name	SFP-1000BaseT
Part Number	02314171
Model	SFP-1000BaseT
Form factor	SFP
Application standard	1000BASE-T
Connector type	RJ45
Optical fiber type	-
Transmission rate [bit/s]	10 Mbit/s 100 Mbit/s 1 Gbit/s
Target transmission distance [km]	Ethernet cable: 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	-
Maximum Tx optical power [dBm]	-
Minimum Tx optical power [dBm]	-
Minimum extinction ratio [dB]	-

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Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-
Overload power [dBm]	-
NOTE The transmission speed varies depending on the port where the copper transceiver module is used. Surge protection: ± 1 kV in common mode.	

10.9 10GE SFP+ Optical Modules

10.9.1 OMXD30000

Table 10-34 OMXD30000 Specifications

Item	Value
Basic Information	
Module name	OMXD30000
Part Number	02318169
Model	OMXD30000
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.026 km Multimode fiber (OM1): 0.033 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.066 km Multimode fiber (OM2): 0.082 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.4 km

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Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.9.2 OSX010000

Table 10-35 OSX010000 Specifications

Item	Value
Basic Information	
Module name	OSX010000
Part Number	02318170
Model	OSX010000
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	

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Item	Value
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.9.3 OSX040N01

Table 10-36 OSX040N01 Specifications

Item	Value
Basic Information	
Module name	OSX040N01
Part Number	02310CNF
Model	OSX040N01
Form factor	SFP+
Application standard	10GBASE-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-4.7 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.1 dBm
Overload power [dBm]	-1.0 dBm

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10.9.4 OSXD22N00

Table 10-37 OSXD22N00 Specifications

Item	Value
Basic Information	
Module name	OSXD22N00
Part Number	02310CRM
Model	OSXD22N00
Form factor	SFP+
Application standard	10GBASE-LRM
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.1 km Multimode fiber (with modal bandwidth of 500 MHz*km and diameter of 62.5 μm): 0.22 km Multimode fiber (OM1, OM2, OM3): 0.22 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-6.5 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-6.5 dBm
Overload power [dBm]	1.5 dBm

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10.9.5 SFP-10G-BXD1 (02310QDT)

Table 10-38 SFP-10G-BXD1 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-BXD1
Part Number	02310QDT
Model	SFP-10G-BXD1
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (RX) 1330 nm (TX)
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXD1 must be used with SFP-10G-BXU1.	

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10.9.6 SFP-10G-BXU1 (02310QBJ)

Table 10-39 SFP-10G-BXU1 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-BXU1
Part Number	02310QBJ
Model	SFP-10G-BXU1
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (RX) 1270 nm (TX)
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXU1 must be used with SFP-10G-BXD1.	

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10.9.7 SFP-10G-ER-1310

Table 10-40 SFP-10G-ER-1310 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-1310
Part Number	02311RLX
Model	SFP-10G-ER-1310
Form factor	SFP+
Application standard	Non-standard and compatible with the 10Gbase-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20 dBm
Overload power [dBm]	-7.0 dBm
NOTE If the SFP-10G-ER-1310 is connected to a 10Gbase-ER standard optical module (1550nm, 10GE, 40km), the maximum transmission distance is only 20km due to different specifications such as wavelength and receiving sensitivity. This module can only be used on a switch running V200R010C00 or a later version.	

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10.9.8 SFP-10G-ER-C

Table 10-41 SFP-10G-ER-C Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-C
Part Number	02312UUH
Model	SFP-10G-ER-C
Form factor	SFP+
Application standard	10GBASE-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-4.7 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.1 dBm
Overload power [dBm]	-1.0 dBm

10.9.9 SFP-10G-ER-SM1270-BIDI

Table 10-42 SFP-10G-ER-SM1270-BIDI Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-SM1270-BIDI
Part Number	02311BJC

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Item	Value
Model	SFP-10G-ER-SM1270-BIDI
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (RX) 1270 nm (TX)
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-18 dBm
Overload power [dBm]	-9 dBm
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R009C00 or a later version. A switch running an earlier version may fail to obtain information about this module. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-ER-SM1270-BIDI must be used with SFP-10G-ER-SM1330-BIDI.	

10.9.10 SFP-10G-ER-SM1330-BIDI

Table 10-43 SFP-10G-ER-SM1330-BIDI Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-SM1330-BIDI
Part Number	02311BJB
Model	SFP-10G-ER-SM1330-BIDI

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Item	Value
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (RX) 1330 nm (TX)
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-18 dBm
Overload power [dBm]	-9 dBm
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R009C00 or a later version. A switch running an earlier version may fail to obtain information about this module. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-ER-SM1330-BIDI must be used with SFP-10G-ER-SM1270-BIDI.	

10.9.11 SFP-10G-LR-C

Table 10-44 SFP-10G-LR-C Specifications

Item	Value
Basic Information	
Module name	SFP-10G-LR-C
Part Number	02312UUG
Model	SFP-10G-LR-C
Form factor	SFP+

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Item	Value
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.9.12 SFP-10G-SR-C

Table 10-45 SFP-10G-SR-C Specifications

Item	Value
Basic Information	
Module name	SFP-10G-SR-C
Part Number	02312UUE
Model	SFP-10G-SR-C
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s

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Item	Value
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.026 km Multimode fiber (OM1): 0.033 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.066 km Multimode fiber (OM2): 0.082 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.9.13 SFP-10G-USR

Table 10-46 SFP-10G-USR Specifications

Item	Value
Basic Information	
Module name	SFP-10G-USR
Part Number	02310MNW
Model	SFP-10G-USR
Form factor	SFP+
Application standard	10GBASE-USR (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s

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Item	Value
Target transmission distance [km]	Multimode fiber (OM3): 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.7 dBm
Overload power [dBm]	0.5 dBm

10.9.14 SFP-10G-ZR

Table 10-47 SFP-10G-ZR Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZR
Part Number	02310SNN
Model	SFP-10G-ZR
Form factor	SFP+
Application standard	10GBASE-ZR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	9 dB

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Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-24.0 dBm
Overload power [dBm]	-7.0 dBm

10.9.15 SFP-10G-iLR (02311BJJ)

Table 10-48 SFP-10G-iLR Specifications

Item	Value
Basic Information	
Module name	SFP-10G-iLR
Part Number	02311BJJ
Model	SFP-10G-iLR
Form factor	SFP+
Application standard	10GBASE-iLR (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module can only be used on a switch running V200R008C00 or a later version. A switch running an earlier version may fail to obtain information about this module.	

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10.9.16 SFP-10G-iLR-C (02312UUF)

Table 10-49 SFP-10G-iLR-C Specifications

Item	Value
Basic Information	
Module name	SFP-10G-iLR-C
Part Number	02312UUF
Model	SFP-10G-iLR-C
Form factor	SFP+
Application standard	10GBASE-iLR (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module can only be used on a switch running V200R008C00 or a later version. A switch running an earlier version may fail to obtain information about this module.	

10.10 10GE-CWDM SFP+ Optical Modules

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10.10.1 SFP-10G-ZCW1471

Table 10-50 SFP-10G-ZCW1471 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1471
Part Number	02310SSG
Model	SFP-10G-ZCW1471
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1471 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.2 SFP-10G-ZCW1491

Table 10-51 SFP-10G-ZCW1491 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1491
Part Number	02310SSF

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Item	Value
Model	SFP-10G-ZCW1491
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1491 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.3 SFP-10G-ZCW1511

Table 10-52 SFP-10G-ZCW1511 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1511
Part Number	02310SSE
Model	SFP-10G-ZCW1511
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

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Item	Value
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1511 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.4 SFP-10G-ZCW1531

Table 10-53 SFP-10G-ZCW1531 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1531
Part Number	02310SSD
Model	SFP-10G-ZCW1531
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1531 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm

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Item	Value
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.5 SFP-10G-ZCW1551

Table 10-54 SFP-10G-ZCW1551 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1551
Part Number	02310SSC
Model	SFP-10G-ZCW1551
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1551 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

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10.10.6 SFP-10G-ZCW1571

Table 10-55 SFP-10G-ZCW1571 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1571
Part Number	02310SSB
Model	SFP-10G-ZCW1571
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1571 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.7 SFP-10G-ZCW1591

Table 10-56 SFP-10G-ZCW1591 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1591
Part Number	02310SSA

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Item	Value
Model	SFP-10G-ZCW1591
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1591 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.8 SFP-10G-ZCW1611

Table 10-57 SFP-10G-ZCW1611 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1611
Part Number	02310SRY
Model	SFP-10G-ZCW1611
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

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Item	Value
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1611 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.11 10GE-DWDM SFP+ Optical Modules

10.11.1 SFP-10G-ZDWT

Table 10-58 SFP-10G-ZDWT Specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZDWT
Part Number	02310YUT
Model	SFP-10G-ZDWT
Form factor	SFP+
Application standard	10GBASE-DWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 60 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1529.16 nm - 1560.61 nm

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Item	Value
Maximum Tx optical power [dBm]	3 dBm
Minimum Tx optical power [dBm]	-1 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-24 dBm
Overload power [dBm]	-1 dBm
NOTE This module can only be used on a switch running V200R009C00 or a later version. A switch running an earlier version may fail to obtain information about this module. The optical module takes a long time to start. Therefore, a low optical power alarm may be generated when such an optical module is installed on a switch.	

10.12 GPON Optical Modules

10.12.1 H87MMA5671A2

Table 10-59 H87MMA5671A2 Specifications

Item	Value
Basic Information	
Module name	H87MMA5671A2
Part Number	03031QHU
Model	H87MMA5671A2
Form factor	eSFP
Application standard	GPON CLASS B+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	Rx: 2.488 Gbit/s Tx: 1.244 Gbit/s
Target transmission distance [km]	Single-mode fiber: 20 km
Transmitter Optical Characteristics	

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Item	Value
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0.5 dBm
Minimum extinction ratio [dB]	10 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-27 dBm
Overload power [dBm]	-8.0 dBm
NOTE Ensure that the optical power is not overloaded. Otherwise, the optical module may be burnt. This module can only be used on a switch running V200R012C00 or a later version. In practice, the maximum upstream service bandwidth is 1.1 Gbit/s and downlink service bandwidth is 2.3 Gbit/s.	

10.13 Industrial Optical Modules

10.13.1 OGSC10DD0

Table 10-60 OGSC10DD0 Specifications

Item	Value
Basic Information	
Module name	OGSC10DD0
Part Number	02310LJH
Model	OGSC10DD0
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km

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Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19 dBm
Overload power [dBm]	-3.0 dBm

10.13.2 OGSC40DD0

Table 10-61 OGSC40DD0 Specifications

Item	Value
Basic Information	
Module name	OGSC40DD0
Part Number	02310LJJ
Model	OGSC40DD0
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	

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Item	Value
Rx sensitivity [dBm]	-22.5 dBm
Overload power [dBm]	-3.0 dBm

10.13.3 OGSM01880

Table 10-62 OGSM01880 Specifications

Item	Value
Basic Information	
Module name	OGSM01880
Part Number	02310LJG
Model	OGSM01880
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.22 km Multimode fiber (OM1): 0.275 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.5 km Multimode fiber (OM2): 0.55 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-10 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm

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Item	Value
Overload power [dBm]	0 dBm

10.13.4 SFP+10GE-LH10-SM1310

Table 10-63 SFP+10GE-LH10-SM1310 Specifications

Item	Value
Basic Information	
Module name	SFP+10GE-LH10-SM1310
Part Number	02311MUU
Model	SFP+10GE-LH10-SM1310
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm

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10.13.5 SFP-10G-BXD1 (02310QDT)

Table 10-64 SFP-10G-BXD1 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-BXD1
Part Number	02310QDT
Model	SFP-10G-BXD1
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (RX) 1330 nm (TX)
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXD1 must be used with SFP-10G-BXU1.	

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10.13.6 SFP-10G-BXU1 (02310QBJ)

Table 10-65 SFP-10G-BXU1 Specifications

Item	Value
Basic Information	
Module name	SFP-10G-BXU1
Part Number	02310QBJ
Model	SFP-10G-BXU1
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (RX) 1270 nm (TX)
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXU1 must be used with SFP-10G-BXD1.	

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10.13.7 SFP-10G-SR

Table 10-66 SFP-10G-SR Specifications

Item	Value
Basic Information	
Module name	SFP-10G-SR
Part Number	02311SKW
Model	SFP-10G-SR
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 85°C (32°F to 185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.3 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.13.8 SFP-10G-iLR (02311BJJ)

Table 10-67 SFP-10G-iLR Specifications

Item	Value
Basic Information	
Module name	SFP-10G-iLR
Part Number	02311BJJ

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Item	Value
Model	SFP-10G-iLR
Form factor	SFP+
Application standard	10GBASE-iLR (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module can only be used on a switch running V200R008C00 or a later version. A switch running an earlier version may fail to obtain information about this module.	

10.13.9 SFP-10G-iLR-C (02312UUF)

Table 10-68 SFP-10G-iLR-C Specifications

Item	Value
Basic Information	
Module name	SFP-10G-iLR-C
Part Number	02312UUF
Model	SFP-10G-iLR-C
Form factor	SFP+
Application standard	10GBASE-iLR (non-standard)
Connector type	LC

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Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE This module can only be used on a switch running V200R008C00 or a later version. A switch running an earlier version may fail to obtain information about this module.	

10.13.10 SFP-GE-BX-D1-I

Table 10-69 SFP-GE-BX-D1-I Specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX-D1-I
Part Number	02311DMA
Model	SFP-GE-BX-D1-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km

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Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3 dBm
Minimum Tx optical power [dBm]	-9 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3 dBm
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R012C00 or a later version. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX-D1-I must be used with SFP-GE-BX-U1-I.	

10.13.11 SFP-GE-BX-U1-I

Table 10-70 SFP-GE-BX-U1-I Specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX-U1-I
Part Number	02311DMF
Model	SFP-GE-BX-U1-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	

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Item	Value
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-3 dBm
Minimum Tx optical power [dBm]	-9 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3 dBm
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R012C00 or a later version. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX-D1-I must be used with SFP-GE-BX-U1-I.	

10.13.12 SFP-GE-BX40-D-I

Table 10-71 SFP-GE-BX40-D-I Specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX40-D-I
Part Number	02312TMC
Model	SFP-GE-BX40-D-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)

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Item	Value
Maximum Tx optical power [dBm]	6.5 dBm
Minimum Tx optical power [dBm]	1.5 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-7 dBm
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R019C00 or a later version. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX40-D-I must be used with SFP-GE-BX40-U-I.	

10.13.13 SFP-GE-BX40-U-I

Table 10-72 SFP-GE-BX40-U-I Specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX40-U-I
Part Number	02312TMB
Model	SFP-GE-BX40-U-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	6.5 dBm
Minimum Tx optical power [dBm]	1.5 dBm

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Item	Value
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-7 dBm
NOTE This module supports the single-fiber bidirectional function. This module can only be used on a switch running V200R019C00 or a later version. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX40-U-I must be used with SFP-GE-BX40-D-I.	

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