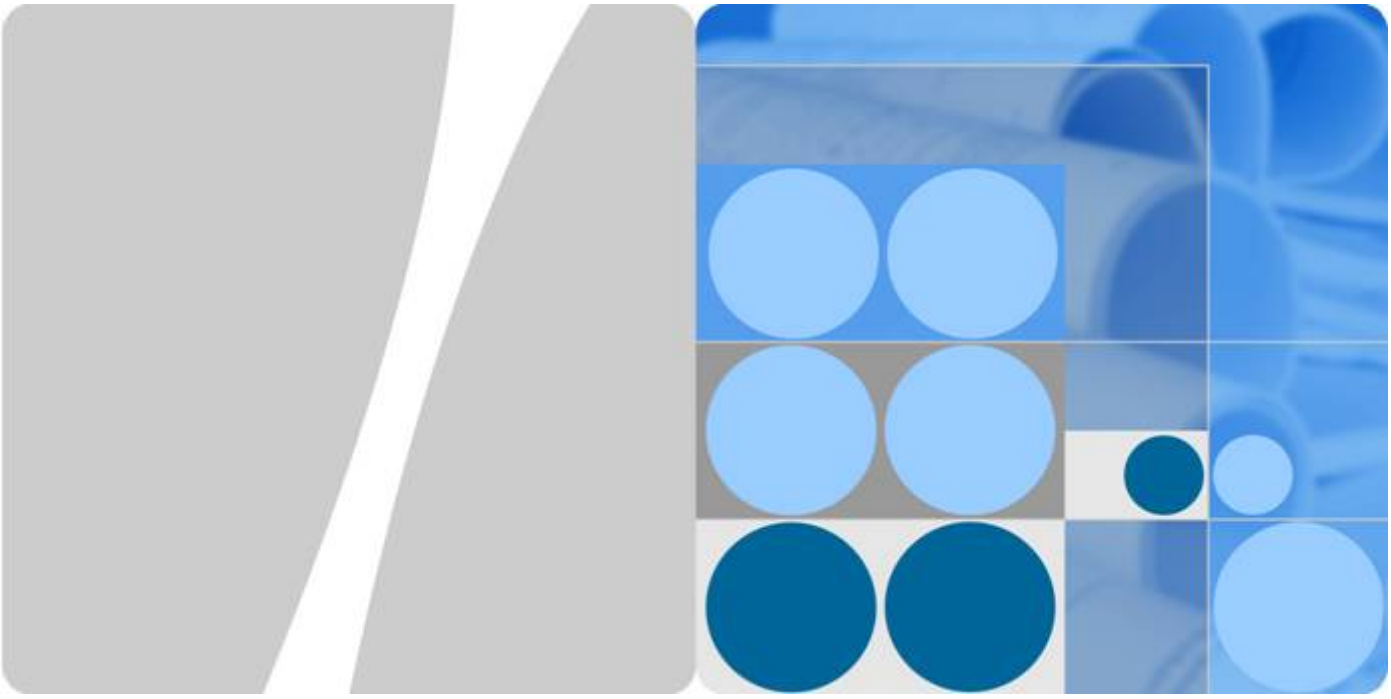

S1700 Managed Series Ethernet Switches

Product Description

Issue 07

Date 2017-08-25

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Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: http://e.huawei.com

About This Document

Intended Audience

Depending on management types, S1700 series switches are classified into unmanaged switches, Web managed switches, and SNMP managed switches.

This document describes the S1700 Web managed and SNMP managed switches, including positioning, features, hardware structure, application scenarios, and technical specifications.

This document is intended for:

- Network planning engineers
- Hardware installation engineers
- Software commissioning engineers
- Data configuration engineers
- On-site maintenance engineers
- Network monitoring engineers
- System maintenance engineers

Symbol Conventions

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

Symbol	Description
DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

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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	Calls attention to important information, best practices and tips. 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 configuration files. When configuring your device, alter the configuration depending on your use case.

The specifications provided in this document are tested in lab environment (for example, the tested device has been installed with a certain type of boards or only one protocol is run on the device). Results may differ from the listed specifications when you attempt to obtain the maximum values with multiple functions enabled on the device.

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 user privacy policies of your company, to ensure that the data of users is fully protected.

Change History

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made in previous issues.

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Issue 07 (2017-08-25)

The S1720 series and their descriptions are modified.

Issue 06 (2017-06-30)

The S1720 series and their descriptions are modified.

Issue 05 (2017-05-04)

The S1720X and S1720X-E series are available and their descriptions are added.

Issue 04 (2017-02-14)

The S1720-E series are available and their descriptions are added.

Issue 03 (2016-11-09)

The S1720-10GWR series are available and their descriptions are added.

Issue 02 (2016-08-12)

Two new models S1720-10GW-2P and S1720-10GW-PWR-2P are available and their descriptions are added.

Issue 01 (2015-06-20)

Initial release.

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1 S1700 Naming Conventions

Figure 1-1 shows the S1700 managed switch naming conventions.

Figure 1-1 S1700 managed switch naming conventions

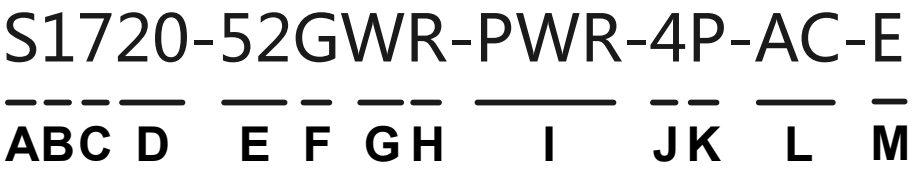

Table 1-1 explains the S1700 managed switch naming conventions.

Table 1-1 Naming conventions

Identifier	Meaning	Description
A	Product series (1 letter)	S: switch series
B	Fixed switch type (1 digit)	1: switch for small- and medium-sized business (SMB)
C	Target market (1 digit)	7: enterprise network market

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Identifier	Meaning	Description
D	Switch series (2 digits)	The leftmost digit indicates the product generation, for example, 10/20/50. The second digit indicates a specification upgrade, for example, 01/02/03. The letter following the digits (or left blank) is an extension field. For example, X indicates an all-10GE switch model.
E	Number of ports (2 digits)	Total number of uplink and downlink ports
F	Downlink port type (1 letter)	None: 100M downlink port G: 1000M downlink port X: 10GE downlink port
G	Network management type (1 letter)	None: unmanaged W: Web managed F: SNMP managed
H	Installation type (1 letter)	None: desktop R: rack installed
I	PoE type (3 letters)	None: Non-PoE switch PWR: PoE switch
J	Number of ports (1 digit)	Number of uplink ports
K	Uplink port type (1 letter)	P: Uplink SFP T: Uplink RJ45 TP: Uplink Combo X: Uplink SFP+ **NOTE** If uplink ports of a switch include both SFP optical ports and combo ports, its product name contains only TP.
L	Power type (2 letters)	None: AC by default AC: alternating current
M	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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2 Product Overview

About This Chapter

2.1 Product Positioning

2.2 Product Features

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2.1 Product Positioning

S1700 managed switches are classified into Web managed and SNMP managed switches.

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 2-1**.

NOTICE

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

Table 2-1 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, and later versions
	S1720-28GFR-4TP	V200R006C10, V200R009C00, and later 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

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Port Type	Product Model	Matching Software Version
	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
	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
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

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Port Type	Product Model	Matching Software Version
10GE uplink and downlink	S1720X-16XWR	V200R011C00 and later versions
	S1720X-16XWR-E	V200R011C00 and later versions
	S1720X-32XWR	V200R011C00 and later versions
	S1720X-32XWR-E	V200R011C00 and later versions

2.2 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 S1720GFR, S1720X-E, S1720GW-E, and S1720GWR-E), and Console port (only supported by S1720GFR), and provides user-friendly configuration interface.

Table 2-2 Management methods for S1700 managed switches

Method	Sub Product Series	Applicable 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
		S1720-28GWR-PWR-4X
		S1720-52GWR-4X
		S1720-52GWR-PWR-4X
	S1720X	S1720X-16XWR

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Method	Sub Product Series	Applicable Model
		S1720X-32XWR
Web + SNMP	S1700FR	S1700-28FR-2T2P-AC
		S1700-52FR-2T2P-AC
	S1700GFR	S1700-28GFR-4P-AC
		S1700-52GFR-4P-AC
	S1720GFR	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

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) (only SNMP managed S1700) 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 SNMP 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 SNMP managed S1700), MAC addresses (only SNMP managed S1700), and ACL (only SNMP managed S1700).
- 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), Deficit Round Robin (DRR) (only S1720), and PQ + DRR (only S1720) queue scheduling algorithms to effectively ensure high-quality voice, video, and data services.

Energy-Saving Design

- The S1700 managed switches (except S1700-52GFR-4P-AC, S1720-28GWR-PWR-4P, S1720-28GWR-PWR-4P-E, S1720-28GWR-PWR-4X, S1720-28GWR-PWR-4X-E, S1720-52GWR-4P, S1720-52GWR-4P-E, S1720-52GWR-4X, S1720-52GWR-4X-E, S1720-52GWR-PWR-4P, S1720-52GWR-PWR-4P-E, S1720-52GWR-PWR-4X, S1720-52GWR-PWR-4X-E, S1720X-16XWR, S1720X-32XWR, S1720X-16XWR-E, and S1720X-32XWR-E) use natural heat dissipation, which avoids power consumption and noise of fans.

  NOTE

  The S1700-52GFR-4P-AC, S1720-28GWR-PWR-4P, S1720-28GWR-PWR-4P-E, S1720-28GWR-PWR-4X, S1720-28GWR-PWR-4X-E, S1720-52GWR-4P, S1720-52GWR-4P-E, S1720-52GWR-4X, S1720-52GWR-4X-E, S1720-52GWR-PWR-4P, S1720-52GWR-PWR-4P-E, S1720-52GWR-PWR-4X, S1720-52GWR-PWR-4X-E, S1720X-16XWR, S1720X-32XWR, S1720X-16XWR-E, and S1720X-32XWR-E have fans and use forced air cooling.
- 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. The 6kV or 7KV surge protection capability (only the S1720GW, S1720GWR, S1720GW-E, and S1720GWR-E series) reduces the probability of damage caused by lightning, even when the equipment cannot be grounded.

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3 Application Scenarios

About This Chapter

3.1 Enterprise Network Access

3.2 Desktop Access

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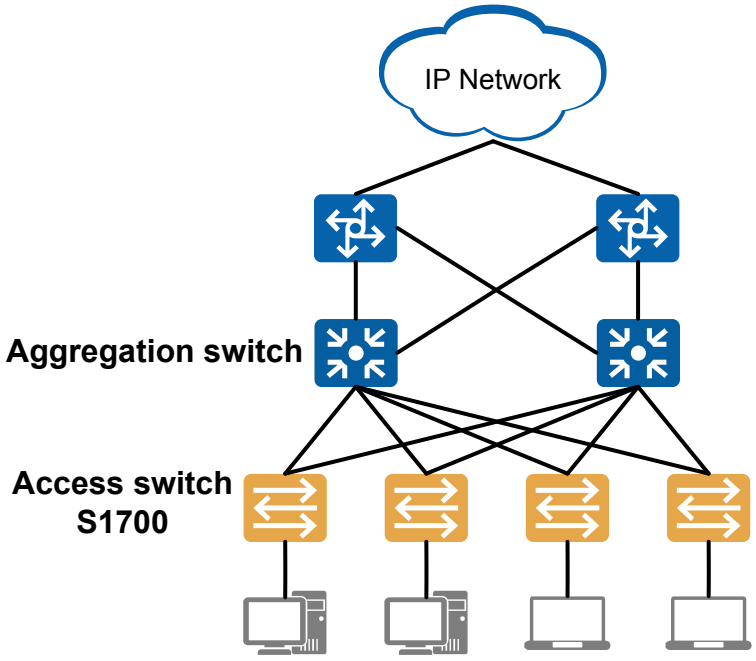
3.1 Enterprise Network Access

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 3-1 S1700 at the access layer of enterprise network



3.2 Desktop Access

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

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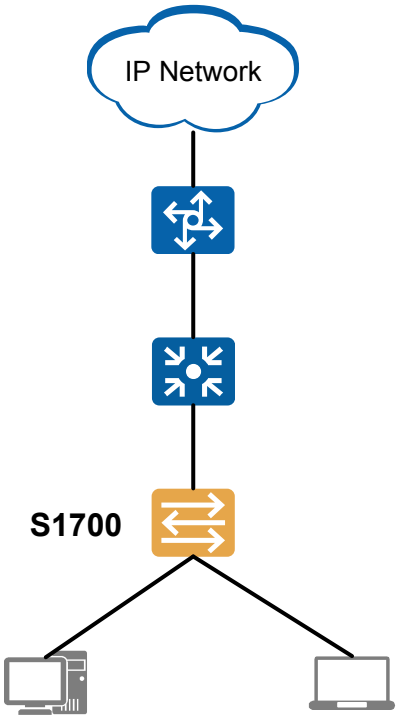
Figure 3-2 Desktop access



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4 Hardware Structure

About This Chapter

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. The S1720GW, S1720GWR, and S1720X models are used as examples in this chapter.

4.1 S1700-28FR-2T2P-AC

4.2 S1700-52FR-2T2P-AC

4.3 S1700-28GFR-4P-AC

4.4 S1700-52GFR-4P-AC

4.5 S1728GWR-4P

4.6 S1720-20GFR-4TP

4.7 S1720-28GFR-4TP

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

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

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

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

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

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

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

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

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

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

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

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4.19 S1720X-16XWR/S1720X-16XWR-E

4.20 S1720X-32XWR/S1720X-32XWR-E

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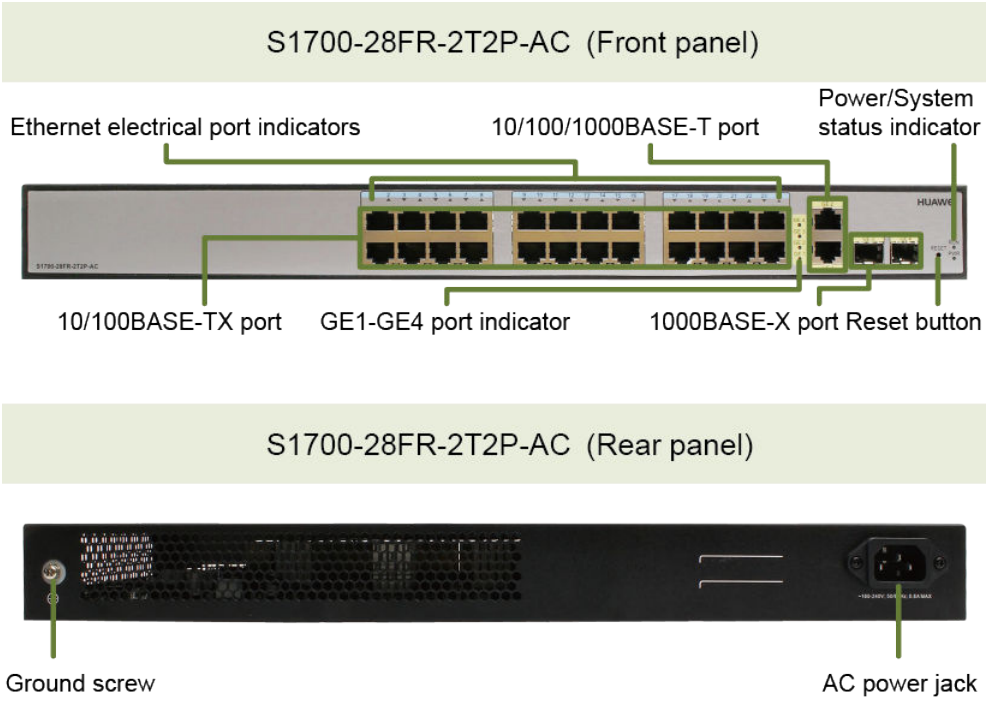
4.1 S1700-28FR-2T2P-AC

Appearance

The **Figure 4-1** shows appearance of an S1700-28FR-2T2P-AC.

Figure 4-1 Appearance of an S1700-28FR-2T2P-AC



Reset button: This button is used to reset the switch. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

- To restore the factory settings, hold down the button for at least 6 seconds.
- To reset the system, press the button.

Indicator

Table 4-1 Indicators of S1700-28FR-2T2P-AC

Indicator	Status	Description
Power indicator	Steady green	The switch is powered on.
	Off	The switch is powered off.
System status indicator	Steady green	The switch is starting or working abnormally.
	Blinking green	The switch is working properly.
	Off	The switch is not started.

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Indicator	Status	Description
10/100BASE-TX indicator	Steady green	The port is connected at the rate of 10/100 Mbit/s.
	Blinking green	The port is transmitting data.
	Off	The port is not connected.
GE1-GE2 electrical port indicator	Steady green	The port is connected at the rate of 1000 Mbit/s.
	Blinking green	The port is connected at the rate of 1000 Mbit/s and transmitting data.
	Steady yellow	The port is connected at the rate of 10/100 Mbit/s.
	Blinking yellow	The port is connected at the rate of 10/100 Mbit/s and transmitting data.
	Off	The port is not connected.
GE3-GE4 optical port indicator	Steady green	The port is connected at the rate of 1000 Mbit/s.
	Blinking green	The port is connected at the rate of 1000 Mbit/s and transmitting data.
	Off	The port is not connected.

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.

Technical Specifications

Table 4-2 lists technical specifications of the S1700-28FR-2T2P-AC.

Table 4-2 Technical specifications

Item	Description
Memory (RAM)	128 MB
Flash	16 MB
Mean time between failures (MTBF)	24.65 years

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Item	Description
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	< 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 (0-5096 ft.) **NOTE** When the altitude is 1800-2000 m (5096-6562 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	98010460

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Optical Module

Table 4-3 Optical modules supported by S1700-28FR-2T2P-AC

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611

4.2 S1700-52FR-2T2P-AC

Appearance

The **Figure 4-2** shows appearance of an S1700-52FR-2T2P-AC.

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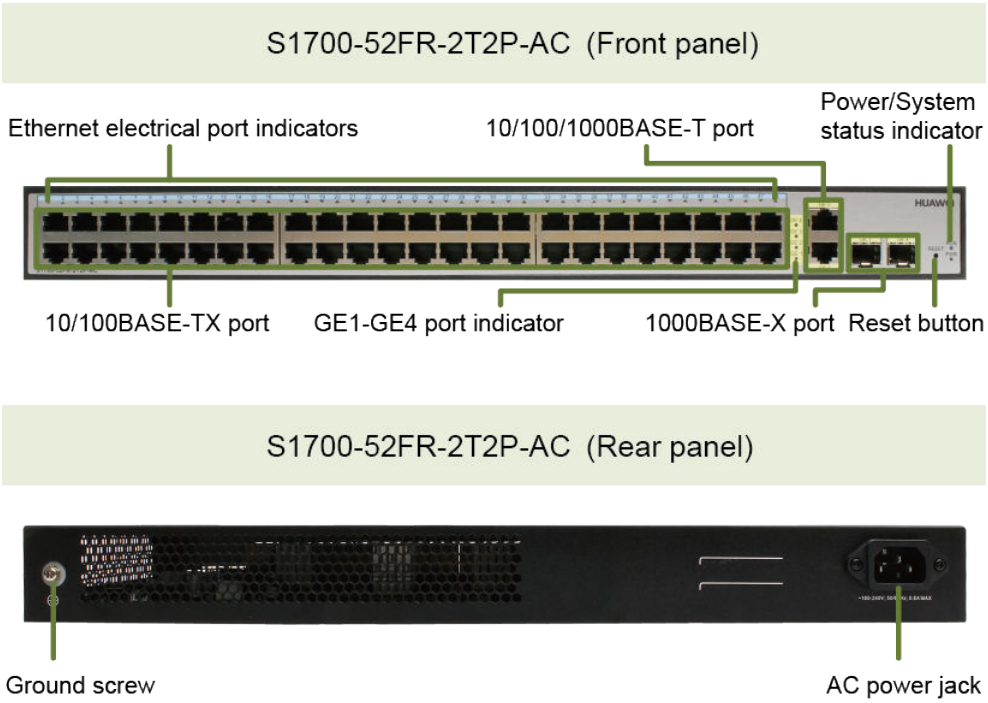
Figure 4-2 Appearance of an S1700-52FR-2T2P-AC



Reset button: This button is used to reset the switch. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

- To restore the factory settings, hold down the button for at least 6 seconds.
- To reset the system, press the button.

Indicator

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 4-4 lists technical specifications of the S1700-52FR-2T2P-AC.

Table 4-4 Technical specifications

Item	Description
Memory (RAM)	128 MB

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Item	Description
Flash	16 MB
Mean time between failures (MTBF)	24.65 years
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	< 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 (0-5096 ft.) **NOTE** When the altitude is 1800-2000 m (5096-6562 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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Optical Module

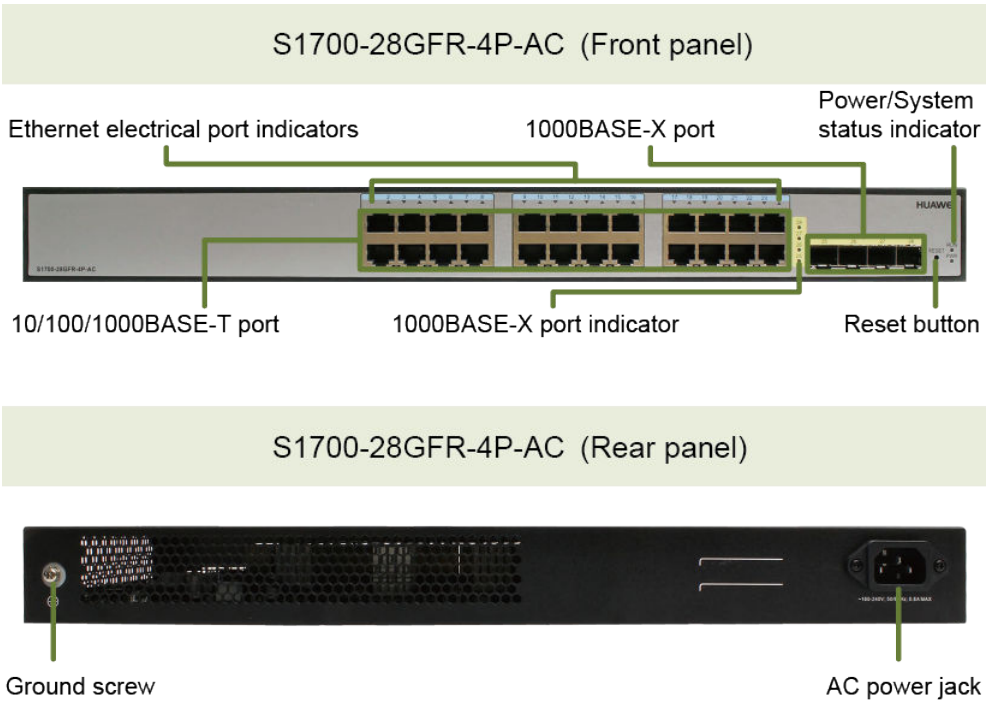
The optical modules supported by S1700-52FR-2T2P-AC are the same as those supported by S1700-28FR-2T2P-AC. For details, see the optical modules supported by S1700-28FR-2T2P-AC.

4.3 S1700-28GFR-4P-AC

Appearance

The **Figure 4-3** shows appearance of an S1700-28GFR-4P-AC.

Figure 4-3 Appearance of an S1700-28GFR-4P-AC



Reset button: This button is used to reset the switch. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

- To restore the factory settings, hold down the button for at least 6 seconds.
- To reset the system, press the button.

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Indicator

Table 4-5 Indicators of S1700-28GFR-4P-AC

Indicator	Status	Description
Power indicator	Steady green	The switch is powered on.
	Off	The switch is powered off.
System status indicator	Steady green	The switch is starting or working abnormally.
	Blinking green	The switch is working properly.
	Off	The switch is not started.
10/100/1000BASE-T Ethernet port indicator	Steady green	The port is connected at the rate of 1000 Mbit/s.
	Blinking green	The port is connected at the rate of 1000 Mbit/s and transmitting data.
	Steady yellow	The port is connected at the rate of 10/100 Mbit/s.
	Blinking yellow	The port is connected at the rate of 10/100 Mbit/s and transmitting data.
	Off	The port is not connected.
GE1-GE4 optical port indicator	Steady green	The port is connected at the rate of 1000 Mbit/s.
	Blinking green	The port is connected at the rate of 1000 Mbit/s and transmitting data.
	Off	The port is not connected.

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 4-6 lists technical specifications of the S1700-28GFR-4P-AC.

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Table 4-6 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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	< 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)	30 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5096 ft.) **NOTE** When the altitude is 1800-2000 m (5096-6562 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.)

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Item	Description
Certification	● EMC certification ● Safety certification ● Manufacturing certification
Part number	98010458

Optical Module

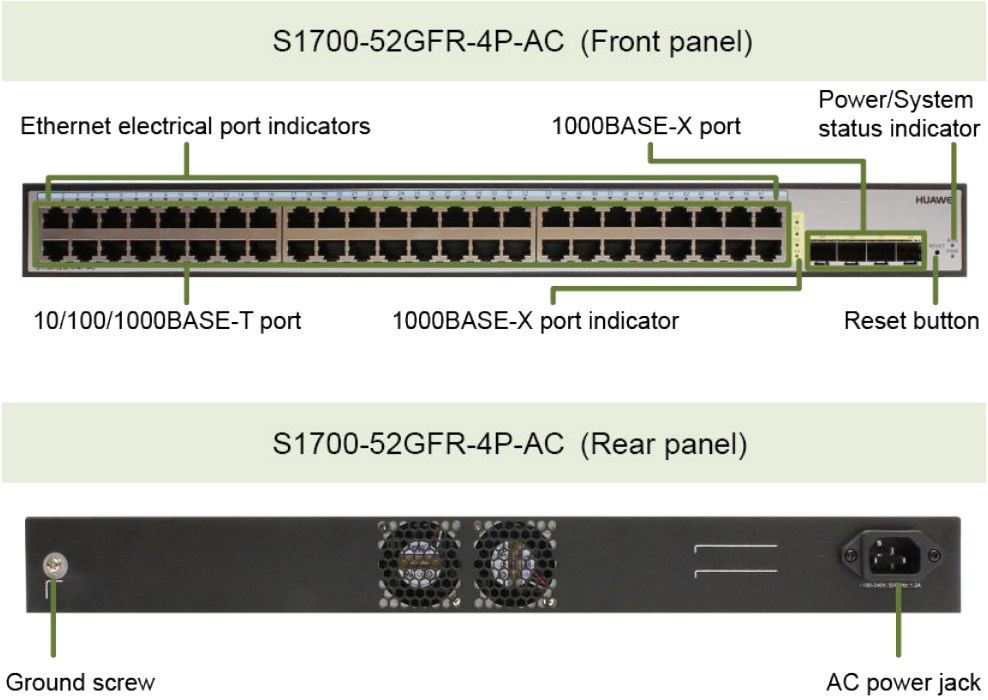
The optical modules supported by S1700-28GFR-4P-AC are the same as those supported by S1700-28FR-2T2P-AC. For details, see the optical modules supported by S1700-28FR-2T2P-AC.

4.4 S1700-52GFR-4P-AC

Appearance

The **Figure 4-4** shows appearance of an S1700-52GFR-4P-AC.

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



Reset button: This button is used to reset the switch. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

- To restore the factory settings, hold down the button for at least 6 seconds.
- To reset the system, press the button.

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Indicator

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.

Technical Specifications

Table 4-7 lists technical specifications of the S1700-52GFR-4P-AC.

Table 4-7 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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	< 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

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Item	Description
Maximum power consumption (100% throughput)	55 W
Operating temperature	0°C to 45°C (32°F to 113°F) at an altitude of 0-1800 m (0-5096 ft.) **NOTE** When the altitude is 1800-2000 m (5096-6562 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)	< 63 dBA
Relative humidity	10% to 90%, noncondensing
Operating altitude	0-2000 m (0-6562 ft.)
Certification	● EMC certification ● Safety certification ● Manufacturing certification
Part number	98010459

Optical Module

The optical modules supported by S1700-52GFR-4P-AC are the same as those supported by S1700-28FR-2T2P-AC. For details, see the optical modules supported by S1700-28FR-2T2P-AC.

4.5 S1728GWR-4P

Appearance

The **Figure 4-5** shows appearance of an S1728GWR-4P.

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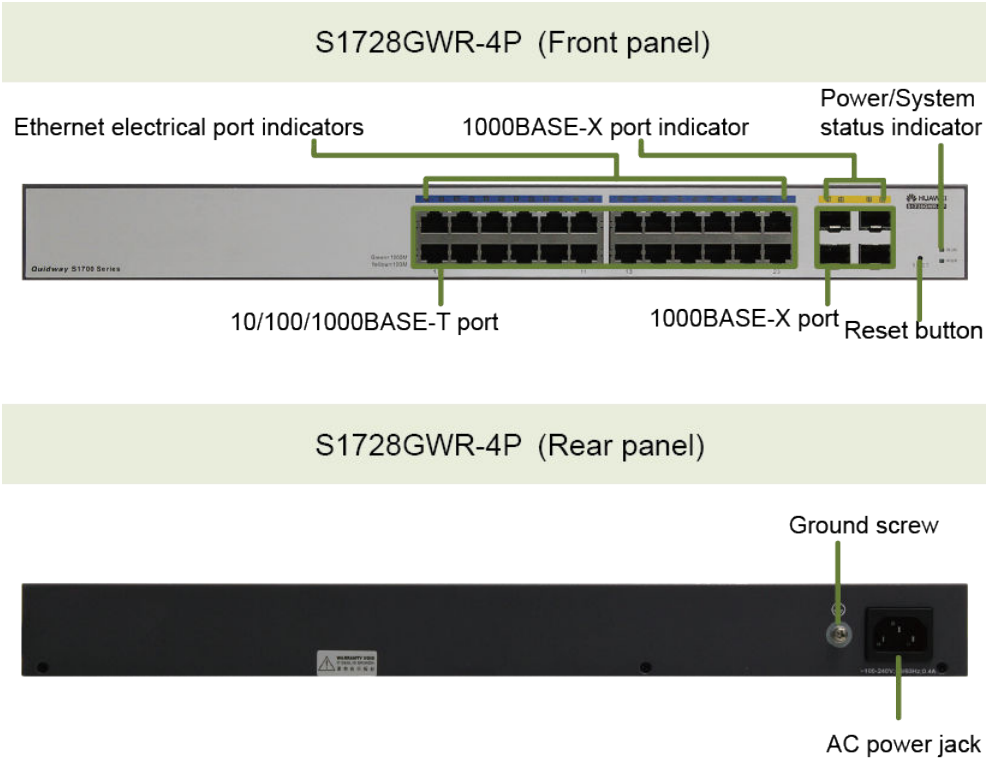
Figure 4-5 Appearance of an S1728GWR-4P



Reset button: This button is used to reset the switch. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.

- To restore the factory settings, hold down the button for at least 6 seconds.
- To reset the system, press the button.

An S1728GWR-4P has a built-in AC power supply, which provides power for the entire switch.

Indicator

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 4-8 lists technical specifications of the S1728GWR-4P.

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Table 4-8 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
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	< 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 (0-5096 ft.) **NOTE** When the altitude is 1800-2000 m (5096-6562 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.)

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Item	Description
Certification	● EMC certification ● Safety certification ● Manufacturing certification
Part number	98010435

Optical Module

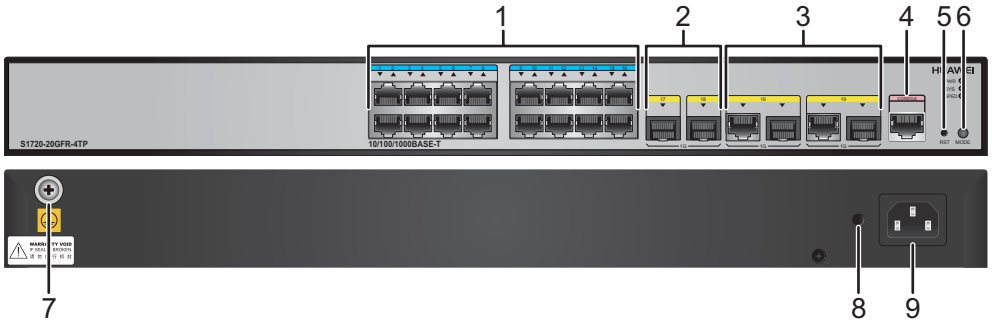
The optical modules supported by S1728GWR-4P are the same as those supported by S1700-28FR-2T2P-AC. For details, see the optical modules supported by S1700-28FR-2T2P-AC.

4.6 S1720-20GFR-4TP

Appearance

The **Figure 4-6** shows the appearance of an S1720-20GFR-4TP.

Figure 4-6 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

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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** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
9	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

The **Figure 4-7** shows the indicators on an S1720-20GFR-4TP.

Figure 4-7 Indicators on an S1720-20GFR-4TP

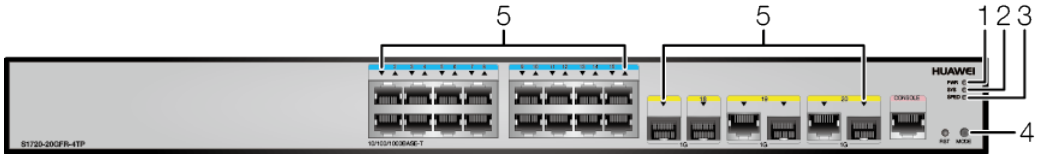

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Table 4-9 Indicators of S1720-20GFR-4TP

No.	Indicator/ Button	Color	Status and Meaning
1	PWR: power indicator	Off	The switch is powered off.
		Green	Steady on: The power module is supplying power normally.
2	SYS: system status indicator	Off	The system is not running.
		Green	● Fast blinking: The system is starting. ● 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 speed mode is selected. In this mode, service port indicators show port speeds. After 45 seconds, the service port indicators automatically restore to the status mode.
4	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 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 4-10**.	

Table 4-10 Service port indicators in various modes

Service Port Indicator Mode	Indicator Color	Status and Meaning
Default mode	Off	No connection is set up on the port or the port has been shut down.
	Green	● Steady on: The port is connected. ● Blinking: The port is transmitting or receiving data.

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Service Port Indicator Mode	Indicator Color	Status and Meaning
Speed mode	Green	● Off: The port is not connected or has been shut down. ● Steady on: The port is operating at 10/100 Mbit/s. ● 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 4-11 lists technical specifications of the S1720-20GFR-4TP.

Table 4-11 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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	3.5 kg (7.72 lb)
Stack ports	Not supported

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Item	Description
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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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

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Optical Module

Table 4-12 Optical modules supported by S1720-20GFR-4TP

Port	Optical Module
Combo optical port	SFP-FE-SX-MM1310 eSFP-FE-LX-SM1310 S-SFP-FE-LH40-SM1310 S-SFP-FE-LH80-SM1550 SFP-FE-LX-SM1310-BIDI SFP-FE-LX-SM1550-BIDI eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61

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Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT)

4.7 S1720-28GFR-4TP

Appearance

The **Figure 4-8** shows the appearance of an S1720-28GFR-4TP.

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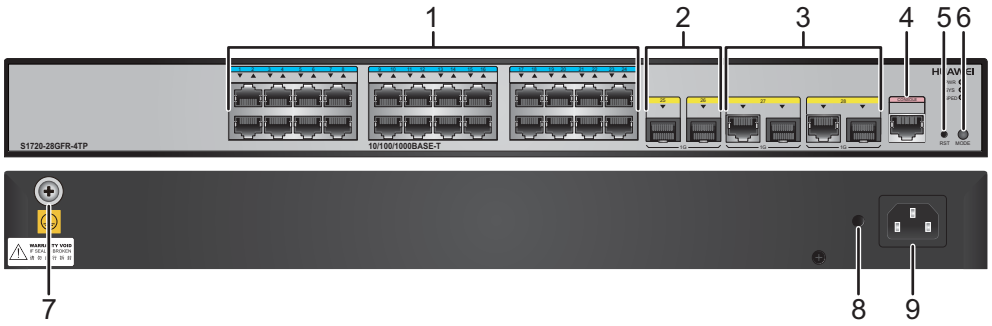
Figure 4-8 Appearance of an S1720-28GFR-4TP



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** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
9	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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 4-13 lists technical specifications of the S1720-28GFR-4TP.

Table 4-13 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
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)

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Item	Description
Weight (including packaging materials)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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

Optical Module

The optical modules supported by S1720-28GFR-4TP are the same as those supported by S1720-20GFR-4TP. For details, see the optical modules supported by S1720-20GFR-4TP.

4.8 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.

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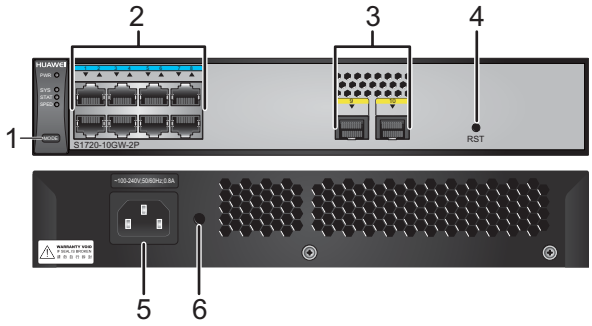
Appearance

The **Figure 4-9** shows the appearance of an S1720-10GW-2P.

Figure 4-9 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
3	Two 1000BASE-X Ethernet ports Applicable modules: ● GE optical module (the maximum transmission distance cannot exceed 40 km) ● GE copper transceiver module	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.

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Indicator

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 4-14 lists technical specifications of the S1720-10GW-2P.

Table 4-14 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	250.0 mm x 180.0 mm x 43.6 mm (9.8 in. x 7.1 in. x 1.72 in.)
Weight (including packaging materials)	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

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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)	11.86 W
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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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

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Optical Module

Table 4-15 Optical modules supported by S1720-10GW-2P

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) GE copper transceiver module (SFP-1000BaseT)

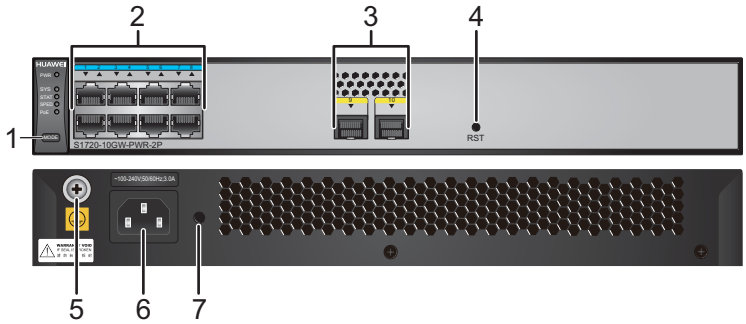
4.9 S1720-10GW-PWR-2P/S1720-10GW-PWR-2P-E

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

The **Figure 4-10** shows the appearance of an S1720-10GW-PWR-2P.

Figure 4-10 Appearance of an S1720-10GW-PWR-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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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	AC power socket **NOTE** It is used with an AC power cable.
7	Jack reserved for AC terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.	-	-

Indicator

The **Figure 4-11** shows the indicators on an S1720-10GW-PWR-2P.

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Figure 4-11 Indicators on an S1720-10GW-PWR-2P

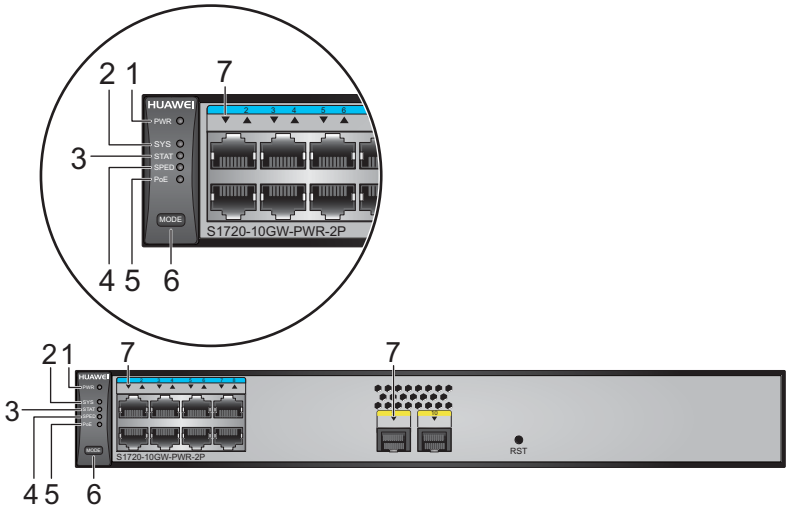

Table 4-16 Indicators on an S1720-10GW-PWR-2P

No.	Indicator/Button	Color	Status and Meaning
1	PWR: power indicator	Off	The switch is powered off.
		Green	Steady on: The power module is supplying power normally.
2	SYS: system status indicator	Off	The system is not running.
		Green	● Fast blinking: The system is starting. ● 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	The status mode (default mode) is selected, and service port indicators show the link connection states and link activity on ports.
4	SPED: speed indicator	Off	The speed mode is not selected.
		Green	Steady on: The speed mode is selected. In this mode, service port indicators show 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 PoE mode is selected. The service port indicators show the PoE status. After 45 seconds, the service port indicators automatically restore to the status mode.

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No.	Indicator/Button	Color	Status and Meaning
6	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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports.
			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.
7	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 4-17**.	

Table 4-17 Service port indicators in various modes

Service Port Indicator Mode	Indicator Color	Status and Meaning
Default mode	Off	No connection is set up on the port or the port has been shut down.
	Green	● Steady on: The port is connected. ● Blinking: The port is transmitting or receiving data.
Speed mode	Green	● Off: The port is not connected or has been shut down. ● Steady on: The port is operating at 10/100 Mbit/s. ● Blinking: The port is operating at 1000 Mbit/s.
PoE mode	-	Off: The port does not provide PoE power.
	Green	Steady on: The port is providing PoE power.
	Yellow	● Steady on: The PoE function is disabled on the port. ● Blinking: A PoE fault has occurred. For example, an incompatible PD is connected to the port.

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Service Port Indicator Mode	Indicator Color	Status and Meaning
	Green and yellow	Blinking green and yellow alternately: ● The port cannot provide power to a PD. The possible reasons include: ● 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 power, which ensures full PoE power on 8 ports in compliance in 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 4-18 lists technical specifications of the S1720-10GW-PWR-2P.

Table 4-18 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	320.0 mm x 220.0 mm x 43.6 mm (12.6 in. x 8.7 in. x 1.72 in.)

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Item	Description
Weight (including packaging materials)	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)
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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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

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Item	Description
Part number	● S1720-10GW-PWR-2P: 98010576 ● S1720-10GW-PWR-2P-E: 98010754

Optical Module

Table 4-19 Optical modules supported by S1720-10GW-PWR-2P

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) GE copper transceiver module (SFP-1000BaseT)

4.10 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

The **Figure 4-12** shows the appearance of an S1720-28GWR-4P.

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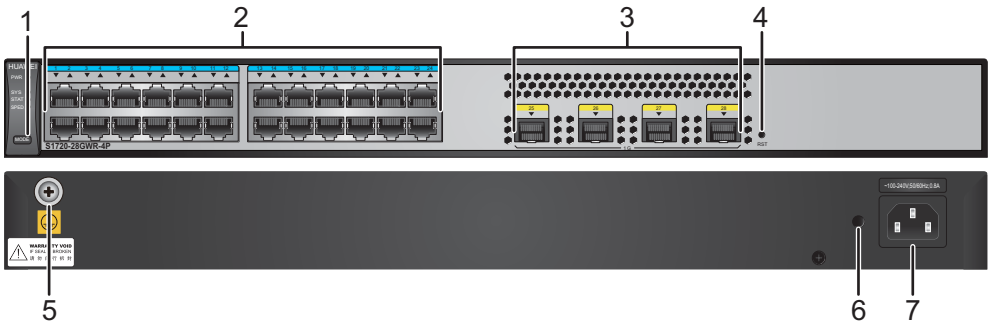
Figure 4-12 Appearance of an S1720-28GWR-4P



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	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

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Indicator

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 4-20 lists technical specifications of the S1720-28GWR-4P.

Table 4-20 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	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

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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)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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.
Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5096 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)

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Item	Description
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

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Optical Module

Table 4-21 Optical modules supported by S1720-28GWR-4P

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT)

4.11 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.

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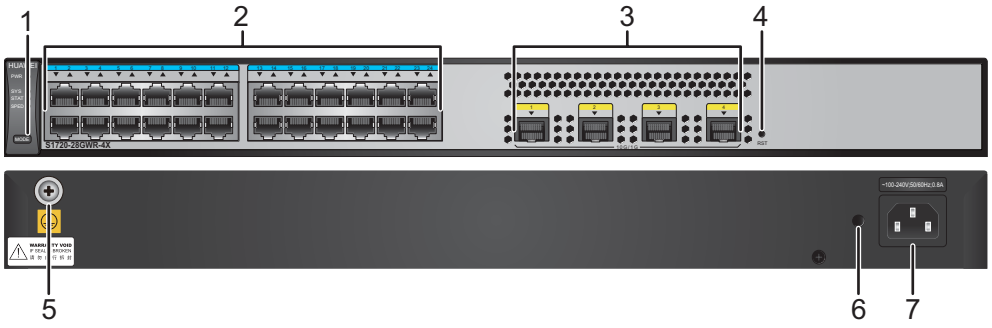
Appearance

The **Figure 4-13** shows the appearance of an S1720-28GWR-4X.

Figure 4-13 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) ● 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables ● 3 m and 10 m AOC cables	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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 4-22 lists technical specifications of the S1720-28GWR-4X.

Table 4-22 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)

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Item	Description
Weight (including packaging materials)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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.
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	● S1720-28GWR-4X: 98010587 ● S1720-28GWR-4X-E: 98010745

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Optical Module

Table 4-23 Optical modules supported by S1720-28GWR-4X

Port	Optical Module
10GE SFP+ Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT) SFP-10G-USR OMXD30000 SFP-10G-iLR OSX010000 SFP-10G-BXU1 (single-mode bidirectional fiber)

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Port	Optical Module
	SFP-10G-BXD1 (single-mode bidirectional fiber)

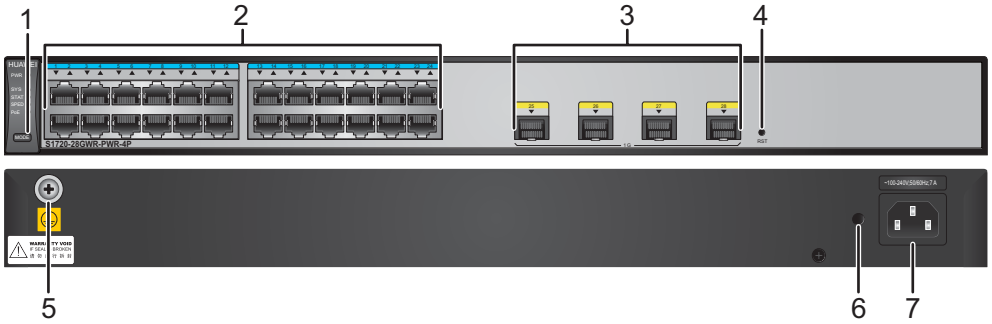
4.12 S1720-28GWR-PWR-4P/S1720-28GWR-PWR-4P-E

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

The **Figure 4-14** shows the appearance of an S1720-28GWR-PWR-4P.

Figure 4-14 Appearance of an S1720-28GWR-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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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 1000BASE-X Ethernet ports Applicable modules: ● GE optical module ● GE-CWDM optical module ● GE-DWDM optical module ● GE copper transceiver module	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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 in 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 4-24 lists technical specifications of the S1720-28GWR-PWR-4P.

Table 4-24 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
Mean time between failures (MTBF)	41 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 (W x D x H)	442.0 mm x 310.0 mm x 43.6 mm (17.4 in. x 12.2 in. x 1.72 in.)
Weight (including packaging materials)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 49.1 dBA
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

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Optical Module

Table 4-25 Optical modules supported by S1720-28GWR-PWR-4P

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT)

4.13 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.

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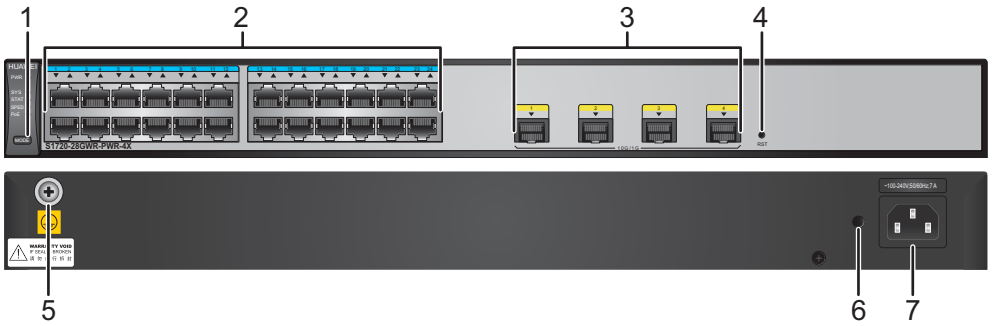
Appearance

The **Figure 4-15** shows the appearance of an S1720-28GWR-PWR-4X.

Figure 4-15 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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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 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 ● 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables ● 3 m and 10 m AOC cables	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

The **Figure 4-16** shows the indicators on an S1720-28GWR-PWR-4X.

Figure 4-16 Indicators on an S1720-28GWR-PWR-4X

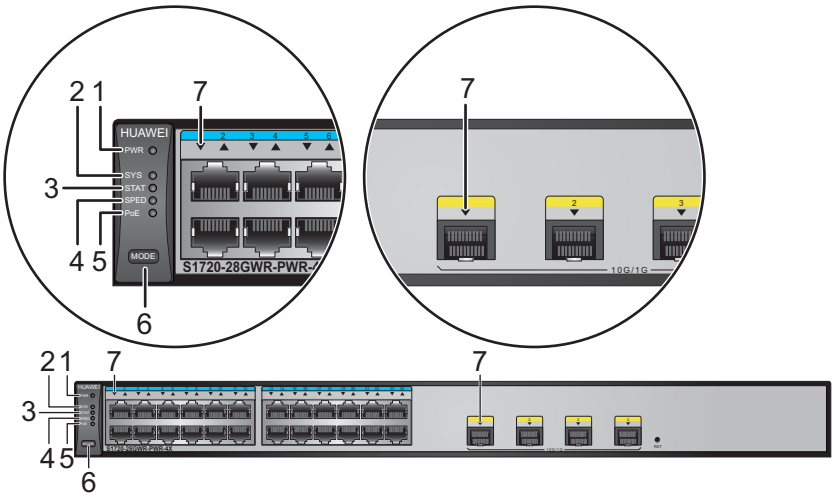

Table 4-26 Indicators on an S1720-28GWR-PWR-4X

No.	Indicator/ Button	Color	Status and Meaning
1	PWR: power indicator	Off	The switch is powered off.
		Green	Steady on: The power module is supplying power normally.
2	SYS: system status indicator	Off	The system is not running.
		Green	● Fast blinking: The system is starting. ● Slow blinking: The system is running normally.
		Red	Steady on: The system does not work normally after registration, or a fan or temperature alarm has been generated.

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No.	Indicator/ Button	Color	Status and Meaning
3	STAT: status indicator	Off	The status mode is not selected.
		Green	The status mode (default mode) is selected, and service port indicators show the link connection states and link activity on ports.
4	SPED: speed indicator	Off	The speed mode is not selected.
		Green	Steady on: The speed mode is selected. In this mode, service port indicators show 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 PoE mode is selected. The service port indicators show the PoE status. After 45 seconds, the service port indicators automatically restore to the status mode.
6	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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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.
7	Service port indicator	Meanings of service port indicators vary in different modes. For details, see **Table 4-27**.	

Table 4-27 Service port indicators in various modes

Service Port Indicator Mode	Indicator Color	Status and Meaning
Default mode	Off	No connection is set up on the port or the port has been shut down.
	Green	● Steady on: The port is connected. ● Blinking: The port is transmitting or receiving data.

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Service Port Indicator Mode	Indicator Color	Status and Meaning
Speed mode	Green	Off: The port is not connected or has been shut down. 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. 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 mode	Off	The port does not provide PoE power.
	Green	Steady on: The port is providing PoE power.
	Yellow	● Steady on: The PoE function is disabled on the port. ● Blinking: A PoE fault has occurred. For example, an incompatible PD is connected to the port.
	Green and yellow	Blinking green and yellow alternately: ● The port cannot provide power to a PD. The possible reasons include: ● 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 in 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 4-28 lists technical specifications of the S1720-28GWR-PWR-4X.

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Table 4-28 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	442.0 mm x 310.0 mm x 43.6 mm (17.4 in. x 12.2 in. x 1.72 in.)
Weight (including packaging materials)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 49.1 dBA
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	● EMC certification ● Safety certification ● Manufacturing certification

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Item	Description
Part number	● S1720-28GWR-PWR-4X: 98010599 ● S1720-28GWR-PWR-4X-E: 98010749

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Optical Module

Table 4-29 Optical modules supported by S1720-28GWR-PWR-4X

Port	Optical Module
10GE SFP+ Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT) SFP-10G-USR OMXD30000 SFP-10G-iLR OSX010000 OSX040N01 SFP-10G-ER-1310

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Port	Optical Module
	SFP-10G-ZR SFP-10G-BXU1 (single-mode bidirectional fiber) SFP-10G-BXD1 (single-mode bidirectional fiber) SFP-10G-ER-SM1330-BIDI (single-mode bidirectional fiber) SFP-10G-ER-SM1270-BIDI (single-mode bidirectional fiber) 10GE-CWDM SFP+ Optical Modules SFP-10G-ZDWT

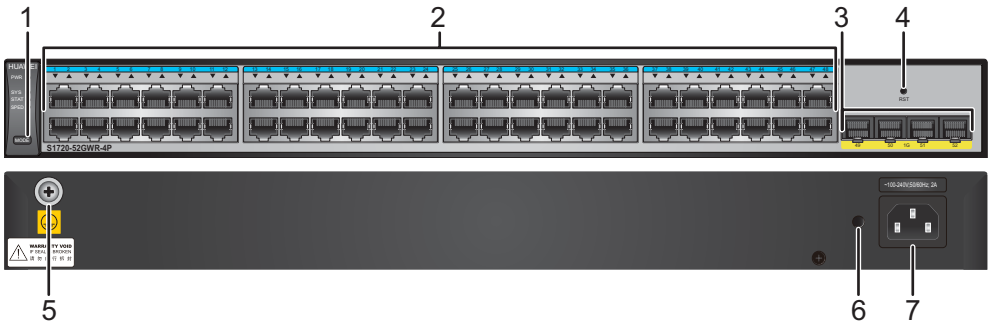
4.14 S1720-52GWR-4P/S1720-52GWR-4P-E

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

Appearance

The **Figure 4-17** shows the appearance of an S1720-52GWR-4P.

Figure 4-17 Appearance of an S1720-52GWR-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 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
3	Four 1000BASE-X Ethernet ports Applicable modules: ● GE optical module ● GE-CWDM optical module ● GE-DWDM optical module ● GE copper transceiver module	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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.

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Technical Specifications

Table 4-30 lists technical specifications of the S1720-52GWR-4P.

Table 4-30 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 44.5 dBA
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	● EMC certification ● Safety certification ● Manufacturing certification

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Item	Description
Part number	● S1720-52GWR-4P: 98010610 ● S1720-52GWR-4P-E: 98010746

Optical Module

Table 4-31 Optical modules supported by S1720-52GWR-4P

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT)

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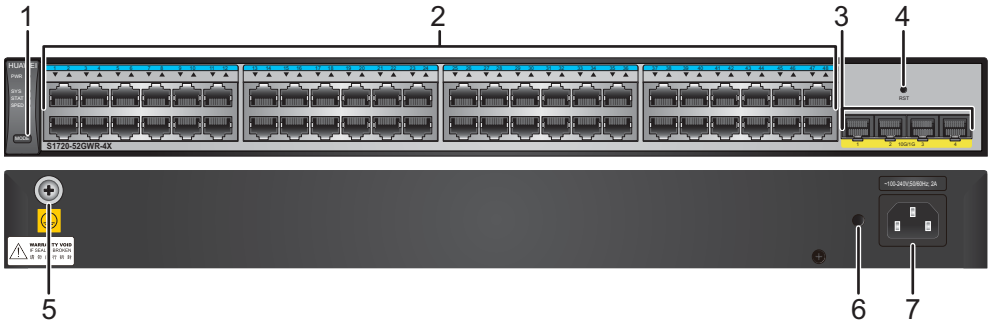
4.15 S1720-52GWR-4X/S1720-52GWR-4X-E

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

Appearance

The **Figure 4-18** shows the appearance of an S1720-52GWR-4X.

Figure 4-18 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 ● 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables ● 3 m and 10 m AOC cables	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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.

Technical Specifications

Table 4-32 lists technical specifications of the S1720-52GWR-4X.

Table 4-32 Technical specifications

Item	Description
Memory (RAM)	512 MB

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Item	Description
Flash	240 MB
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 (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	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)	50.3 W
Typical power consumption (30% of traffic load) ● Tested according to ATIS standard ● EEE enabled ● No PoE power consumption	31.6 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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 44.5 dBA
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

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Optical Module

Table 4-33 Optical modules supported by S1720-52GWR-4X

Port	Optical Module
10GE SFP+ Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT) SFP-10G-USR OMXD30000 SFP-10G-iLR OSX010000 OSX040N01 SFP-10G-ER-1310

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Port	Optical Module
	SFP-10G-ZR SFP-10G-BXU1 (single-mode bidirectional fiber) SFP-10G-BXD1 (single-mode bidirectional fiber) SFP-10G-ER-SM1330-BIDI (single-mode bidirectional fiber) SFP-10G-ER-SM1270-BIDI (single-mode bidirectional fiber) 10GE-CWDM SFP+ Optical Modules SFP-10G-ZDWT

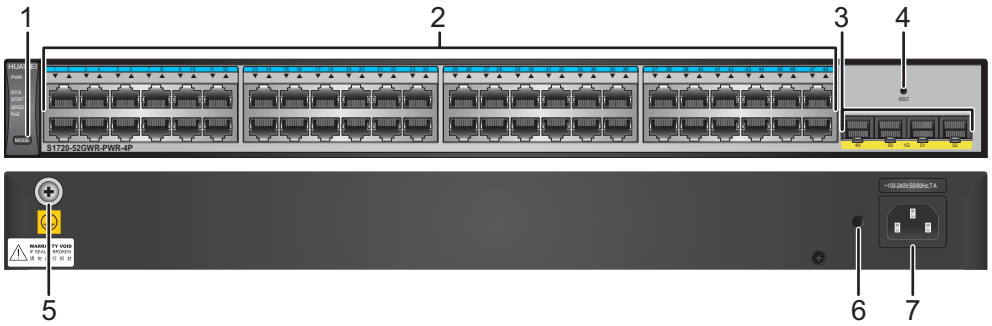
4.16 S1720-52GWR-PWR-4P/S1720-52GWR-PWR-4P-E

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

The **Figure 4-19** shows the appearance of an S1720-52GWR-PWR-4P.

Figure 4-19 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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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 in 802.3af or on 12 ports in compliance with 802.3at.

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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 4-34 lists technical specifications of the S1720-52GWR-PWR-4P.

Table 4-34 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	442.0 mm x 310.0 mm x 43.6 mm (17.4 in. x 12.2 in. x 1.72 in.)
Weight (including packaging materials)	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)

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Item	Description
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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 48.3 dBA
Relative humidity	5% to 95%, noncondensing
Operating altitude	0-5000 m (0-16404 ft.)
Certification	● EMC certification ● Safety certification ● Manufacturing certification

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Item	Description
Part number	● S1720-52GWR-PWR-4P: 98010623 ● S1720-52GWR-PWR-4P-E: 98010750

Optical Module

Table 4-35 Optical modules supported by S1720-52GWR-PWR-4P

Port	Optical Module
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT)

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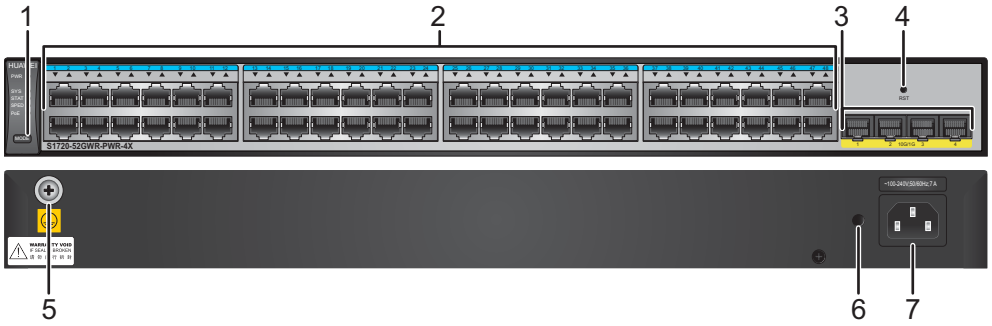
4.17 S1720-52GWR-PWR-4X/S1720-52GWR-PWR-4X-E

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

The **Figure 4-20** shows the appearance of an S1720-52GWR-PWR-4X.

Figure 4-20 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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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 ● 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables ● 3 m and 10 m AOC cables	4	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the 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 terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
7	AC power socket **NOTE** It is used with an AC power cable.	-	-

Indicator

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 in 802.3af or on 12 ports in compliance with 802.3at.

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 4-36 lists technical specifications of the S1720-52GWR-PWR-4X.

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Table 4-36 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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 (W x D x H)	442.0 mm x 310.0 mm x 43.6 mm (17.4 in. x 12.2 in. x 1.72 in.)
Weight (including packaging materials)	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: 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

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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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 48.3 dBA
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

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Optical Module

Table 4-37 Optical modules supported by S1720-52GWR-PWR-4X

Port	Optical Module
10GE SFP+ Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-ZBXD1 (single-mode bidirectional fiber) SFP-GE-ZBXU1 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper transceiver module (SFP-1000BaseT) SFP-10G-USR OMXD30000 SFP-10G-iLR OSX010000 OSX040N01 SFP-10G-ER-1310

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Port	Optical Module
	SFP-10G-ZR SFP-10G-BXU1 (single-mode bidirectional fiber) SFP-10G-BXD1 (single-mode bidirectional fiber) SFP-10G-ER-SM1330-BIDI (single-mode bidirectional fiber) SFP-10G-ER-SM1270-BIDI (single-mode bidirectional fiber) 10GE-CWDM SFP+ Optical Modules SFP-10G-ZDWT

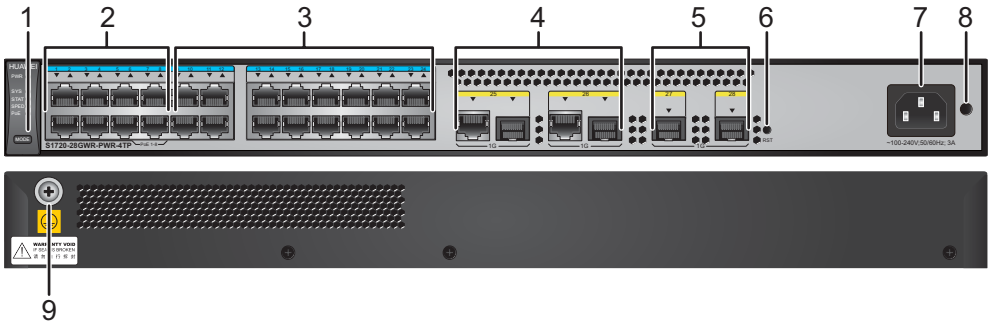
4.18 S1720-28GWR-PWR-4TP/S1720-28GWR-PWR-4TP-E

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

The **Figure 4-21** shows the appearance of an S1720-28GWR-PWR-4TP.

Figure 4-21 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 the button a second time, the service port indicators change to PoE mode and show the PoE status of ports. 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 (maximum transmission distance ≤ 40 km) ● GE copper transceiver module	6	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the Reset button.
7	Ground screw **NOTE** The ground cable is not delivered with the switch.	8	Jack reserved for AC terminal locking latch **NOTE** The AC terminal locking latch is not delivered with the switch.
9	AC power socket **NOTE** It is used with an AC power cable.	-	-

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Indicator

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 in 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 4-38 lists technical specifications of the S1720-28GWR-PWR-4TP.

Table 4-38 Technical specifications

Item	Description
Memory (RAM)	512 MB
Flash	240 MB
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
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including packaging materials)	4.5 kg (9.92 lb)
Stack ports	Not supported
RTC	Not supported
RPS	Not supported
PoE	Supported

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Item	Description
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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 distance.
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

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Optical Module

Table 4-39 Optical modules supported by S1720-28GWR-PWR-4TP

Port	Optical Module
Combo optical port	SFP-FE-SX-MM1310 eSFP-FE-LX-SM1310 S-SFP-FE-LH40-SM1310 S-SFP-FE-LH80-SM1550 SFP-FE-LX-SM1310-BIDI SFP-FE-LX-SM1550-BIDI eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber)
1000BASE-X Ethernet port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 SFP-GE-LX-SM1310-BIDI (single-mode bidirectional fiber) SFP-GE-LX-SM1490-BIDI (single-mode bidirectional fiber) LE2MGSC40DE0 (single-mode bidirectional fiber) LE2MGSC40ED0 (single-mode bidirectional fiber) SFP-GE-BXU1-SC (single-mode bidirectional fiber) GE copper transceiver module (SFP-1000BaseT)

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4.19 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 4-22 S1720X-16XWR appearance

1	Mode switch 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 and activity of each service port. If you do not press this button within 45s, 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 module (100M/1000M auto-sensing) ● 10GE SFP+ optical module ● 10GE-CWDM optical module ● 10GE-DWDM optical module ● 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables ● 3 m and 10 m SFP+ AOC cables
3	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press this button. Resetting the system will interrupt services. Exercise caution when performing this operation.	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.	-	-

Indicator

Figure 4-23 Indicators on the S1720X-16XWR

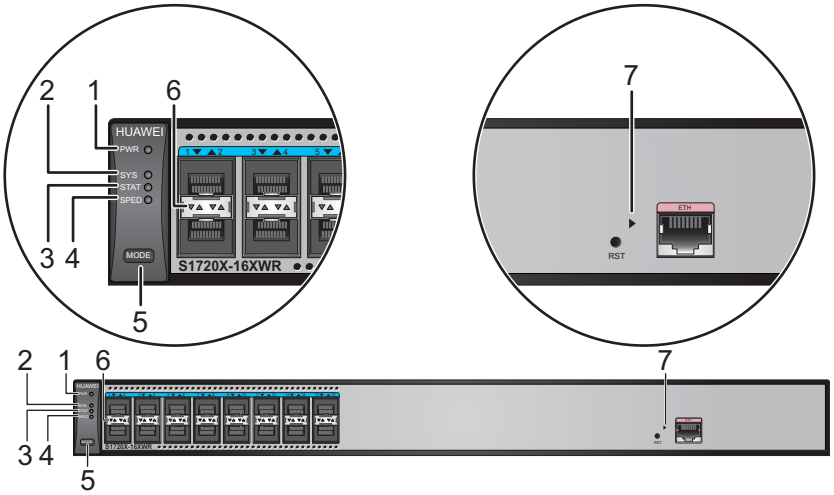

Table 4-40 Indicator description

No.	Indicator	Color	Description
1	PWR: built-in 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. ● 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.

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No.	Indicator	Color	Description
3	STAT: status indicator	Green	● Off: The status mode is not selected. ● Steady on: The status mode (default mode) is selected. In this mode, service port indicators show the port link or activity state.
4	SPED: speed indicator	Green	● Off: The speed mode is not selected. ● Steady on: The speed mode is selected. In this mode, service port indicators show port speeds. After 45 seconds, the service port indicators automatically restore to the status mode.
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 again, the service port indicators restore to the default mode, and the STAT indicator turns green. If you do not press the button within 45 seconds, the indicators restore to the default status. That is, the STAT indicator turns green, and the SPED indicator is off.
6	10GE service port indicator (two indicators for each port) **NOTE** Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.	Meanings of service port indicators vary in different modes. For details, see **Table 4-41**.	
7	ETH port indicator	Green	● Off: The ETH management port is not connected. ● Steady on: The ETH management port is connected. ● Blinking: The port is sending or receiving data.

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Table 4-41 Description of 10GE service port indicators in different modes (two indicators for each port)

Display Mode	Color	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	Green and yellow	● Off: The port is not connected or has been shut down. ● Both steady on: 1000M/10GE port: The port is working at 1000 Mbit/s. ● Both blinking: 1000M/10GE port: The port is working 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 4-42 lists technical specifications of the S1720X-16XWR.

Table 4-42 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	240 MB
Mean time between failures (MTBF)	37.9 years

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Item	Description
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	NA
Power supply surge protection	±6 kV in differential mode, ± 6 kV in common mode
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including package)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 46.5 dBA
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

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Optical Module

Table 4-43 Optical modules for the S1720X-16XWR

Port	Applicable Optical Module
10GE SFP+ port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-fiber bidirectional) SFP-GE-LX-SM1490-BIDI (single-fiber bidirectional) LE2MGSC40DE0 (single-fiber bidirectional) LE2MGSC40ED0 (single-fiber bidirectional) SFP-GE-ZBXD1 (single-fiber bidirectional) SFP-GE-ZBXU1 (single-fiber bidirectional) SFP-GE-BXU1-SC (single-fiber bidirectional) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper module (SFP-1000BaseT) SFP-10G-USR OMXD30000 SFP-10G-iLR OSX010000 OSX040N01 SFP-10G-ER-1310 SFP-10G-ZR SFP-10G-BXU1 (single-fiber bidirectional) SFP-10G-BXD1 (single-fiber bidirectional)

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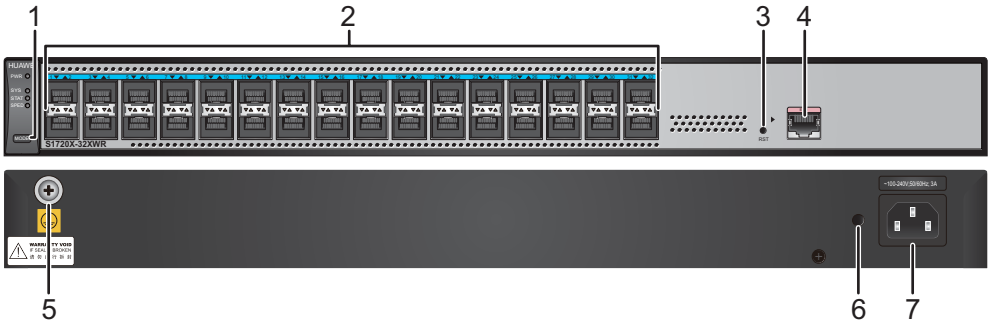
Port	Applicable Optical Module
	SFP-10G-ER-SM1330-BIDI (single-fiber bidirectional) SFP-10G-ER-SM1270-BIDI (single-fiber bidirectional) 10GE-CWDM SFP+ optical module SFP-10G-ZDWT

4.20 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.

Appearance

Figure 4-24 S1720X-32XWR appearance



1	Mode switch 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 and activity of each service port. If you do not press this button within 45s, 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 module (100M/1000M auto-sensing) ● 10GE SFP+ optical module ● 10GE-CWDM optical module ● 10GE-DWDM optical module ● 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables ● 3 m and 10 m SFP+ AOC cables

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3	Reset button **NOTICE** This button is used to reset the switch. To restore the factory settings, hold down the button for at least 6 seconds. To reset the system, press this button. Resetting the system will interrupt services. Exercise caution when performing this operation.	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.	-	-

Indicator

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 4-44 lists technical specifications of the S1720X-32XWR.

Table 4-44 Technical specifications

Item	Description
Memory (RAM)	1 GB
Flash	240 MB
Mean time between failures (MTBF)	42.8 years

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Item	Description
Mean time to repair (MTTR)	2 hours
Availability	> 0.99999
Service port surge protection	NA
Power supply surge protection	±6 kV in differential mode, ± 6 kV in common mode
Dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.4 in. x 8.7 in. x 1.72 in.)
Weight (including package)	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 (0-5096 ft.) **NOTE** When the altitude is 1800-5000 m (5096-16404 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 (0-5096 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)	less than 46.4 dBA
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

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Optical Module

Table 4-45 Optical modules for the S1720X-32XWR

Port	Applicable Optical Module
10GE SFP+ port	eSFP-GE-SX-MM850 SFP-GE-LX-SM1310 S-SFP-GE-LH40-SM1310 S-SFP-GE-LH40-SM1550 S-SFP-GE-LH80-SM1550 eSFP-GE-ZX100-SM1550 SFP-GE-LX-SM1310-BIDI (single-fiber bidirectional) SFP-GE-LX-SM1490-BIDI (single-fiber bidirectional) LE2MGSC40DE0 (single-fiber bidirectional) LE2MGSC40ED0 (single-fiber bidirectional) SFP-GE-ZBXD1 (single-fiber bidirectional) SFP-GE-ZBXU1 (single-fiber bidirectional) SFP-GE-BXU1-SC (single-fiber bidirectional) CWDM-SFPGE-1471 CWDM-SFPGE-1491 CWDM-SFPGE-1511 CWDM-SFPGE-1531 CWDM-SFPGE-1551 CWDM-SFPGE-1571 CWDM-SFPGE-1591 CWDM-SFPGE-1611 DWDM-SFPGE-1560-61 GE copper module (SFP-1000BaseT) SFP-10G-USR OMXD30000 SFP-10G-iLR OSX010000 OSX040N01 SFP-10G-ER-1310 SFP-10G-ZR SFP-10G-BXU1 (single-fiber bidirectional) SFP-10G-BXD1 (single-fiber bidirectional)

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Port	Applicable Optical Module
	SFP-10G-ER-SM1330-BIDI (single-fiber bidirectional) SFP-10G-ER-SM1270-BIDI (single-fiber bidirectional) 10GE-CWDM SFP+ optical module SFP-10G-ZDWT

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5 Product Features

About This Chapter

NOTE

Unless otherwise specified in this document, this document describes matching hardware and software performance of the switch in the latest version.

5.1 Web-Managed S1700

5.2 SNMP Managed S1700

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5.1 Web-Managed S1700

Web-managed S1700 switches include the S1728GWR-4P, S1720GW, S1720GWR, and S1720X series. **Table 5-1** describes the major features supported by the web-managed switches.

Table 5-1 Major features of the web-managed S1700 switches

Feature		Description
Ethernet	LLDP	Link Layer Discovery Protocol (LLDP) in compliance to IEEE 802.1ab
		Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED)
	Link aggregation	Link aggregation in manual mode or static Link Aggregation Control Protocol (LACP) mode
	Spanning tree protocols	Spanning Tree Protocol (STP)/Rapid Spanning Tree Protocol (RSTP), preventing infinite packet increasing and transmission on network
	VLAN	● VLAN assignment based on access, trunk, and hybrid ports ● VLAN IDs ranging from 1 to 4093 ● Voice VLAN
Interface and link management	Interface configuration	● Logical interface: Trunk ● Physical interface: FE/GE/10GE
	Link-layer protocol	Ethernet
	Management and maintenance	Administrator authentication
	Web network management	Device management using a web browser
Multicast	IGMP	IGMP Snooping

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Feature		Description
QoS	Scheduling mode	S1728GWR-4P: ● Priority queue (PQ) and WRR ● Four queues on each port ● Inbound queue scheduling based on 802.1p fields ● Inbound queue scheduling based on Differentiated Services Code Point (DSCP) fields ● Interface priority setting S1720GW, S1720GWR, and S1720X: ● PQ, Deficit Round Robin (DRR), PQ + DRR, WRR, PQ + WRR ● Eight queues on each port ● Inbound queue scheduling based on 802.1p fields ● Inbound queue scheduling based on Differentiated Services Code Point (DSCP) fields ● Interface priority setting
	Port rate limiting	Rate limiting for outgoing traffic on an interface
Security	Mirroring	● Mirroring for incoming traffic on an interface ● Mirroring for outgoing traffic on an interface ● Local observing port
	Port isolation	Layer 2 isolation for clients in a broadcast domain
	Authentication	Local authentication and RADIUS server authentication
		Port-based 802.1x authentication
	Broadcast storm suppression	Broadcast, multicast, and unknown unicast storm suppression

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5.2 SNMP Managed S1700

Table 5-2 Features of S1700-28FR-2T2P-AC, S1700-52FR-2T2P-AC, S1700-28GFR-4P-AC and S1700-52GFR-4P-AC

Feature Name		Description
System management	Basic management capability	● Recovery to factory settings ● Switch restart by command ● System software upgrade and file management ● Operation and management on the management interface ● Configuration saving
Ethernet	LLDP	Link Layer Discovery Protocol (LLDP) in compliance to IEEE 802.1ab
		Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED)
	Link aggregation	Link aggregation in manual mode or static Link Aggregation Control Protocol (LACP) mode
	Spanning tree	Multiple Spanning Tree Protocol (MSTP)/RSTP/STP, preventing infinite packet increasing and transmission on network
	VLAN	● VLAN assignment based on access, trunk, and hybrid ports ● VLAN IDs ranging from 1 to 4094 ● Voice VLAN ● MAC VLAN
Interface and link management	Interface configuration	● Logical interface: trunk ● Physical interface: FE/GE
	Port rate limiting	Rate limiting for incoming and outgoing traffic on an interface
	Link-layer protocol	Ethernet
	Management and maintenance	Administrator authentication
	Web network management	Device management using a web browser
Multicast	Internet Group Management Protocol (IGMP)	IGMP v1/v2/v3 Snooping

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Feature Name		Description
QoS	QoS interface	Trusted priority (802.1p, DSCP, or IP precedence) and Canonical Format Indicator (CFI) mapping
	Mapping	● Class of Service (CoS)-to-queue mapping ● 802.1p mapping ● DSCP mapping ● IP precedence mapping
	Scheduling mode	● Priority queue (PQ) and WRR ● Eight queues on each port
	Congestion avoidance	Simple Random Early Detection (SRED)-based congestion avoidance
	Traffic shaping	Traffic shaping for queues
	Traffic management	QoS control using traffic policies
ACL	Time range	ACLs taking effective in specified time ranges
	ACL template	Creation and deletion of ACL templates
		ACL applied to physical interfaces or certain VLANs
	HTTP ACL	ACL applied to HTTP packets
Routing	Routing	IPv4 and IPv6 static route management
Security	User management	Management of common users and privilege users and online user information display
	802.1x	802.1x
	Guest VLAN	Guest VLAN
	Port security	Port security
	MAC address authentication	MAC address authentication
	Anti-DoS	Anti-DoS
	DHCP Snooping	DHCP Snooping
	IP Source Guard (IPSG)	IPSG
	Dynamic ARP Inspection (DAI)	DAI
	Defense against MAC address attack	Defense against MAC address attack
	Port isolation	Layer 2 isolation for clients in a broadcast domain

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Feature Name		Description
	Authentication	Local authentication and RADIUS server authentication
		Port-based 802.1x authentication
	AAA	AAA local authentication, RADIUS server authentication, and RADIUS accounting
	RADIUS	RADIUS accounting and dynamic authorization
	SSL	SSL
	Broadcast storm suppression	Broadcast, multicast, and unknown unicast storm suppression
Network management	SNMP	SNMP
	Remote Monitor (RMON)	RMON
Device management	Electronic label	Electronic label status
	Loopback detection	Loopback detection
	Cable test	Cable test
	Optical power test	Optical power test
	Information center	Information center
	Energy-saving management	● The S1700-28GFR-4P-AC and S1700-52GFR-4P-AC support Energy Efficient Ethernet (EEE, defined in IEEE 802.3az) and power saving. ● The S1700-28FR-2T2P-AC and S1700-52FR-2T2P-AC support power saving.
	Mirroring	● Mirroring for incoming traffic on an interface ● Mirroring for outgoing traffic on an interface
	Tool	Ping, tracert, and one-key information collection

Table 5-3 Features of S1720-20GFR-4TP and S1720-28GFR-4TP

Feature Name		Description
Ethernet features	Ethernet	Operating modes of full duplex, half duplex, and auto-negotiation
		Rates of an Ethernet interface: 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, and auto-negotiation
		Flow control on interfaces

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Feature Name		Description
		Jumbo frames
		Link aggregation
		Load balancing among links of a trunk
		Transparent transmission of Layer 2 protocol packets
		Device Link Detection Protocol (DLDP)
		LLDP
		LLDP-MED
		Interface isolation and forwarding restriction
		Broadcast storm suppression
	VLAN	Link-type negotiation protocol (LNP) and multiple access methods such as Access, Trunk, Hybrid, and QinQ
		Default VLAN
		VLAN assignment based on interfaces, MAC addresses, protocol types, and IP subnets
		VLAN assignment based on the following policies: ● MAC address + IP address ● MAC address + IP address + interface number
		VLAN mapping.
		Selective QinQ
		Multiplex (MUX) VLAN
		Voice VLAN
		Guest VLAN
	GVRP	Generic Attribute Registration Protocol (GARP)
		GARP VLAN Registration Protocol (GVRP)
	VCMP	VLAN Central Management Protocol (VCMP)
	MAC	Automatic learning and aging of MAC address entries
		Static, dynamic, and blackhole MAC address entries
		Interface-based MAC address learning limiting
		Sticky MAC address entries

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Feature Name		Description
		MAC address flapping detection
	ARP	Static and dynamic ARP entries
		Aging of ARP entries
Ethernet loop protection	MSTP	STP
		RSTP
		MSTP
		VLAN-based Spanning Tree (VBST)
		BPDU protection, root protection, loop protection
		Topology Change (TC)-Bridge Protocol Data Unit (BPDU) attack defense
		STP Loop-detection
	Loopback-detect	Loop detection on an interface
IPv4/IPv6 forwarding	IPv4 and unicast routes	IPv4 static route
		DHCP client
		DHCP server
		DHCP Relay
	IPv6 features	IPv6 protocol stack
		Neighbor Discovery (ND) and ND Snooping
		DHCPv6 Snooping
Layer 2 multicast features	-	IGMP V1/V2/V3 Snooping
		Fast leave
		Multicast Listener Discovery (MLD) Snooping
		Interface-based multicast traffic suppression
		Inter-VLAN multicast replication
		Controllable multicast
QoS	Traffic classifier	Traffic classification based on ACLs
		Traffic classification based on outer 802.1p fields, outer VLAN IDs, source MAC addresses, and Ethernet types
	Traffic behavior	Access control after traffic classification
		Traffic policing based on traffic classifier

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Feature Name		Description
		Re-marking based on traffic classifiers
		Associating traffic classifiers with traffic behaviors
	Traffic policing	Rate limiting on inbound and outbound interfaces
	Traffic shaping	Traffic shaping based on interfaces and queues
	Congestion avoidance	Tail drop
	Congestion management	Queue mapping
		PQ
		Deficit Round Robin (DRR)
		PQ + DRR
		WRR
		PQ + WRR
Configuration and maintenance	Login and configuration management	Command line interface (CLI) configuration
		Error message and help information in English and Chinese
		Login through Console and Telnet terminals
		SSH1.5/SSH2
		Send function and data communication between terminal users
		Hierarchical user authority management and commands
		SNMP-based network management system (eSight)
		Web-based configuration and management
	File system	File system
		Directory and file management
		File upload and download through FTP, TFTP, SFTP, Secure Copy Protocol (SCP), and File Transfer Protocol over SSL (FTPS)
	Monitoring and maintenance	Hardware monitoring
		Reporting alarms on abnormal device temperature
		Second-time fault detection to prevent detection errors caused by instant interference
		Version matching check

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Feature Name		Description
		Information center and unified management over logs, alarms, and debugging information
		Electronic labels, and command line query and backup
		Virtual cable test (VCT)
		User operation logs
		Detailed debugging information for network faults
		Network test tools such as traceroute and ping commands
		Port mirroring, flow mirroring, and remote mirroring
		Energy saving
	Version upgrade	Device software loading and online software loading
		BootROM online upgrade
		Remote in-service upgrade
		In-service patching
User Access and Authentication	AAA	Local authentication and authorization
		RADIUS authentication, authorization, and accounting
		HWTACACS authentication, authorization, and accounting
	NAC	802.1x authentication
		MAC address authentication
		Portal authentication
Security	ARP security	DAI and Static ARP Inspection (SAI)
		Egress ARP Inspection (EAI)
		ARP packet suppression based on source IP addresses, interfaces, and VLANs, as well as global ARP packet suppression
	IP security	Defense against Internet Control Message Protocol (ICMP) attacks
		IP Source Guard
	Local attack defense	CPU-DEFEND

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Feature Name		Description
	MFF	MAC-Forced Forwarding (MFF)
	DHCP Snooping	DHCP Snooping
		Option 82 and dynamic DHCP packet rate limiting
	Attack defense	Defense against flood attacks without IP payloads, attacks from IGMP null payload packets, LAND attacks, Smurf attacks, and attacks from packets with invalid TCP flag bits
		Defense against attacks from many fragments, attacks from many packets with offsets, attacks from repeated packet fragments, as well as Tear Drop, Syndrop, NewTear, Bonk, Nesta, Rose, Fawx, Ping of Death, and Jolt attacks
		Defense against TCP SYN flood attacks, UDP flood attacks (including Fraggle attacks and UDP diagnosis port attacks), and ICMP flood attacks
Network management	-	ICMP Ping and traceroute
		Network Time Protocol (NTP)
		HTTP
		HTTPS
		SNMPv1/v2/v3
		Standard MIB
		RMON
		NQA

Table 5-4 Features of S1720GW-E and S1720GWR-E series

Feature Name		Description
Ethernet features	Ethernet	Operating modes of full duplex, half duplex, and auto-negotiation
		Rates of an Ethernet interface: 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, 10 Gbit/s, and auto-negotiation
		Flow control on interfaces
		Jumbo frames
		Link aggregation

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Feature Name		Description
		Load balancing among links of a trunk
		Transparent transmission of Layer 2 protocol packets
		Device Link Detection Protocol (DLDP)
		LLDP
		LLDP-MED
		Interface isolation and forwarding restriction
		Broadcast storm suppression
	VLAN	Link-type negotiation protocol (LNP) and multiple access methods such as Access, Trunk, Hybrid, and QinQ
		Default VLAN
		VLAN assignment based on interfaces, MAC addresses, protocol types, and IP subnets
		VLAN assignment based on the following policies: ● MAC address + IP address ● MAC address + IP address + interface number
		VLAN mapping.
		Selective QinQ
		Multiplex (MUX) VLAN
		Voice VLAN
		Guest VLAN
	GVRP	Generic Attribute Registration Protocol (GARP)
		GARP VLAN Registration Protocol (GVRP)
	VCMP	VLAN Central Management Protocol (VCMP)
	MAC	Automatic learning and aging of MAC address entries
		Static, dynamic, and blackhole MAC address entries
		Interface-based MAC address learning limiting
		Sticky MAC address entries
		MAC address flapping detection
	ARP	Static and dynamic ARP entries

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Feature Name		Description
		Aging of ARP entries
Ethernet loop protection	MSTP	STP
		RSTP
		MSTP
		VLAN-based Spanning Tree (VBST)
		BPDU protection, root protection, loop protection
		Topology Change (TC)-Bridge Protocol Data Unit (BPDU) attack defense
		STP Loop-detection
	Loopback-detect	Loop detection on an interface
	Smart Ethernet Protection (SEP)	
	RRPP	
	ERPS	
IPv4/IPv6 forwarding	IPv4 and unicast routes	IPv4 static route
		DHCP client
		DHCP server
		DHCP Relay
	IPv6 features	IPv6 protocol stack
		Neighbor Discovery (ND) and ND Snooping
		DHCPv6 Snooping
Layer 2 multicast features	-	IGMP V1/V2/V3 Snooping
		Fast leave
		Multicast Listener Discovery (MLD) Snooping
		Interface-based multicast traffic suppression
		Inter-VLAN multicast replication
		Controllable multicast
QoS	Traffic classifier	Traffic classification based on ACLs
		Traffic classification based on outer 802.1p fields, outer VLAN IDs, source MAC addresses, and Ethernet types
	Traffic behavior	Access control after traffic classification

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Feature Name		Description
		Traffic policing based on traffic classifier
		Re-marking based on traffic classifiers
		Associating traffic classifiers with traffic behaviors
	Traffic policing	Rate limiting on inbound and outbound interfaces
	Traffic shaping	Traffic shaping based on interfaces and queues
	Congestion avoidance	Tail drop
	Congestion management	Queue mapping
		PQ
		Deficit Round Robin (DRR)
		PQ + DRR
		WRR
		PQ + WRR
Configuration and maintenance	Login and configuration management	Command line interface (CLI) configuration
		Error message and help information in English and Chinese
		Login through Telnet terminal
		SSH1.5/SSH2
		Send function and data communication between terminal users
		Hierarchical user authority management and commands
		SNMP-based network management system
		Web-based configuration and management
	File system	File system
		Directory and file management
		File upload and download through FTP, TFTP, SFTP, Secure Copy Protocol (SCP), and File Transfer Protocol over SSL (FTPS)
	Monitoring and maintenance	Hardware monitoring
		Reporting alarms on abnormal device temperature
		Second-time fault detection to prevent detection errors caused by instant interference

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Feature Name		Description
		Version matching check
		Information center and unified management over logs, alarms, and debugging information
		Electronic labels, and command line query and backup
		Virtual cable test (VCT)
		User operation logs
		Detailed debugging information for network faults
		Network test tools such as traceroute and ping commands
		Port mirroring, flow mirroring, and remote mirroring
		Energy saving
	Version upgrade	Device software loading and online software loading
		Remote in-service upgrade
		In-service patching
User Access and Authentication	AAA	Local authentication and authorization
		RADIUS authentication, authorization, and accounting
		HWTACACS authentication, authorization, and accounting
	NAC	802.1x authentication
		MAC address authentication
		Portal authentication
	Policy Association	Policy Association
Security	ARP security	DAI and Static ARP Inspection (SAI)
		Egress ARP Inspection (EAI)
		ARP packet suppression based on source IP addresses, interfaces, and VLANs, as well as global ARP packet suppression
	IP security	Defense against Internet Control Message Protocol (ICMP) attacks
		IP Source Guard

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Feature Name		Description
	Local attack defense	CPU-DEFEND
	MFF	MAC-Forced Forwarding (MFF)
	DHCP Snooping	DHCP Snooping
		Option 82 and dynamic DHCP packet rate limiting
	Attack defense	Defense against flood attacks without IP payloads, attacks from IGMP null payload packets, LAND attacks, Smurf attacks, and attacks from packets with invalid TCP flag bits
		Defense against attacks from many fragments, attacks from many packets with offsets, attacks from repeated packet fragments, as well as Tear Drop, Syndrop, NewTear, Bonk, Nesta, Rose, Fawx, Ping of Death, and Jolt attacks
		Defense against TCP SYN flood attacks, UDP flood attacks (including Fraggle attacks and UDP diagnosis port attacks), and ICMP flood attacks
Network management	-	ICMP Ping and traceroute
		Network Time Protocol (NTP)
		HTTP
		HTTPS
		SNMPv1/v2/v3
		Standard MIB
		RMON
		sFlow
		NQA

Table 5-5 Features of S1720X-E series

Feature Name		Description
Ethernet features	Ethernet	Operating modes of full duplex and auto-negotiation
		Rates of an Ethernet interface: 100 Mbit/s, 1000 Mbit/s, 10 Gbit/s, and auto-negotiation
		Flow control on interfaces
		Jumbo frames

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Feature Name		Description
		Link aggregation
		Load balancing among links of a trunk
		Transparent transmission of Layer 2 protocol packets
		Device Link Detection Protocol (DLDP)
		LLDP
		LLDP-MED
		Interface isolation and forwarding restriction
		Broadcast storm suppression
	VLAN	Link-type negotiation protocol (LNP) and multiple access methods such as Access, Trunk, Hybrid, and QinQ
		Default VLAN
		VLAN assignment based on interfaces, MAC addresses, protocol types, and IP subnets
		VLAN assignment based on the following policies: ● MAC address + IP address ● MAC address + IP address + interface number
		VLAN mapping.
		Selective QinQ
		Multiplex (MUX) VLAN
		Voice VLAN
		Guest VLAN
	GVRP	Generic Attribute Registration Protocol (GARP)
		GARP VLAN Registration Protocol (GVRP)
	VCMP	VLAN Central Management Protocol (VCMP)
	MAC	Automatic learning and aging of MAC address entries
		Static, dynamic, and blackhole MAC address entries
		Interface-based MAC address learning limiting
		Sticky MAC address entries
		MAC address flapping detection

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Feature Name		Description
	ARP	Static and dynamic ARP entries
		Aging of ARP entries
Ethernet loop protection	MSTP	STP
		RSTP
		MSTP
		VLAN-based Spanning Tree (VBST)
		BPDU protection, root protection, loop protection
		Topology Change (TC)-Bridge Protocol Data Unit (BPDU) attack defense
		STP Loop-detection
	Loopback-detect	Loop detection on an interface
	Smart Ethernet Protection (SEP)	
	RRPP	
	ERPS	
IPv4/IPv6 forwarding	IPv4 and unicast routes	IPv4 static route
		DHCP client
		DHCP server
		DHCP Relay
	IPv6 features	IPv6 protocol stack
		Neighbor Discovery (ND) and ND Snooping
		DHCPv6 Snooping
Layer 2 multicast features	-	IGMP V1/V2/V3 Snooping
		Fast leave
		Multicast Listener Discovery (MLD) Snooping
		Interface-based multicast traffic suppression
		Inter-VLAN multicast replication
		Controllable multicast
QoS	Traffic classifier	Traffic classification based on ACLs
		Traffic classification based on outer 802.1p fields, outer VLAN IDs, source MAC addresses, and Ethernet types

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Feature Name		Description
	Traffic behavior	Access control after traffic classification
		Traffic policing based on traffic classifier
		Re-marking based on traffic classifiers
		Associating traffic classifiers with traffic behaviors
	Traffic policing	Rate limiting on inbound and outbound interfaces
	Traffic shaping	Traffic shaping based on interfaces and queues
	Congestion avoidance	Tail drop
	Congestion management	Queue mapping
		PQ
		Deficit Round Robin (DRR)
		PQ + DRR
		WRR
		PQ + WRR
Configuration and maintenance	Login and configuration management	Command line interface (CLI) configuration
		Error message and help information in English and Chinese
		Login through ETH and Telnet terminal
		SSH1.5/SSH2
		Send function and data communication between terminal users
		Hierarchical user authority management and commands
		SNMP-based network management system
		Web-based configuration and management
	File system	File system
		Directory and file management
		File upload and download through FTP, TFTP, SFTP, Secure Copy Protocol (SCP), and File Transfer Protocol over SSL (FTPS)
	Monitoring and maintenance	Hardware monitoring
		Reporting alarms on abnormal device temperature

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Feature Name		Description
		Second-time fault detection to prevent detection errors caused by instant interference
		Version matching check
		Information center and unified management over logs, alarms, and debugging information
		Electronic labels, and command line query and backup
		Virtual cable test (VCT)
		User operation logs
		Detailed debugging information for network faults
		Network test tools such as traceroute and ping commands
		Port mirroring, flow mirroring, and remote mirroring
		Energy saving
	Version upgrade	Device software loading and online software loading
		Remote in-service upgrade
		In-service patching
User Access and Authentication	AAA	Local authentication and authorization
		RADIUS authentication, authorization, and accounting
		HWTACACS authentication, authorization, and accounting
	NAC	802.1x authentication
		MAC address authentication
		Portal authentication
	Policy Association	Policy Association
Security	ARP security	DAI and Static ARP Inspection (SAI)
		Egress ARP Inspection (EAI)
		ARP packet suppression based on source IP addresses, interfaces, and VLANs, as well as global ARP packet suppression

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Feature Name		Description
	IP security	Defense against Internet Control Message Protocol (ICMP) attacks
		IP Source Guard
	Local attack defense	CPU-DEFEND
	MFF	MAC-Forced Forwarding (MFF)
	DHCP Snooping	DHCP Snooping
		Option 82 and dynamic DHCP packet rate limiting
	Attack defense	Defense against flood attacks without IP payloads, attacks from IGMP null payload packets, LAND attacks, Smurf attacks, and attacks from packets with invalid TCP flag bits
		Defense against attacks from many fragments, attacks from many packets with offsets, attacks from repeated packet fragments, as well as Tear Drop, Syndrop, NewTear, Bonk, Nesta, Rose, Fawx, Ping of Death, and Jolt attacks
		Defense against TCP SYN flood attacks, UDP flood attacks (including Fraggle attacks and UDP diagnosis port attacks), and ICMP flood attacks
Network management	-	ICMP Ping and traceroute
		Network Time Protocol (NTP)
		HTTP
		HTTPS
		SNMPv1/v2/v3
		Standard MIB
		RMON
		sFlow
		NQA

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6 Technical Specifications

About This Chapter

6.1 Interface Specifications

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6.1 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
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
S1720-10GW-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
S1720-28GWR-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

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Product Model	Downlink Port	Uplink Port
S1720-28GWR-4X	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ ports
S1720-28GWR-4X-E	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ ports
S1720-28GWR-PWR-4P	Twenty-four 10/100/1000BASE-T ports	Four 1000BASE-X ports
S1720-28GWR-PWR-4P-E	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+ ports
S1720-28GWR-PWR-4X-E	Twenty-four 10/100/1000BASE-T ports	Four 10GE SFP+ 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
S1720-52GWR-4X	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ ports
S1720-52GWR-4X-E	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ 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
S1720-52GWR-PWR-4X	Forty-eight 10/100/1000BASE-T ports	Four 10GE SFP+ 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+ 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+ ports	
S1720X-16XWR-E	Sixteen 10GE SFP+ ports	
S1720X-32XWR	Thirty-two 10GE SFP+ ports	
S1720X-32XWR-E	Thirty-two 10GE SFP+ ports	

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7 Optical Module

About This Chapter

7.1 FE SFP/eSFP Optical Modules
7.2 GE eSFP Optical Modules
7.3 GE-CWDM eSFP Optical Modules
7.4 GE-DWDM eSFP Optical Modules
7.5 GE SFP Copper Modules
7.6 10GE SFP+ Optical Modules
7.7 10GE-CWDM SFP+ Optical Modules
7.8 10GE-DWDM SFP+ Optical Modules

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7.1 FE SFP/eSFP Optical Modules

7.1.1 SFP-FE-SX-MM1310

Table 7-1 Technical specifications

Item	Description
Transceiver form factor	SFP
Transmission speed	FE
Center wavelength (nm)	1310
Standard compliance	100base-FX
Connector type	LC
Applicable cable and maximum transmission distance	Multimode fiber (50 μm or 62.5 μm diameter): 2 km
Transmit power (dBm)	-19.0 to -14.0
Maximum receiver sensitivity (dBm)	-30.0
Overload power (dBm)	-14.0
Extinction ratio (dB)	10
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315233

7.1.2 eSFP-FE-LX-SM1310

Table 7-2 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	100 Mbit/s
Center wavelength (nm)	1310
Standard compliance	100base-LX
Connector type	LC

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Item	Description
Applicable cable and maximum transmission distance	Single-mode fiber: 15 km
Transmit power (dBm)	-15.0 to -8.0
Maximum receiver sensitivity (dBm)	-31.0
Overload power (dBm)	-8.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315205

7.1.3 S-SFP-FE-LH40-SM1310

Table 7-3 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	100 Mbit/s
Center wavelength (nm)	1310
Standard compliance	NA
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	-5.0 to 0
Maximum receiver sensitivity (dBm)	-37.0
Overload power (dBm)	-10.0
Extinction ratio (dB)	10.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02317344

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7.1.4 S-SFP-FE-LH80-SM1550

Table 7-4 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	100 Mbit/s
Center wavelength (nm)	1550
Standard compliance	NA
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	-5.0 to 0
Maximum receiver sensitivity (dBm)	-37.0
Overload power (dBm)	-10.0
Extinction ratio (dB)	10.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02317345

7.1.5 SFP-FE-LX-SM1310-BIDI (Single-Fiber-Bidirectional Module)

Table 7-5 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	100 Mbit/s
Center wavelength (nm)	Rx: 1550/Tx: 1310
Standard compliance	100base-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 15 km

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Item	Description
Transmit power (dBm)	-15.0 to -8.0
Maximum receiver sensitivity (dBm)	-32.0
Overload power (dBm)	-8.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315203

NOTE

BIDI optical modules must be used in pairs. For example, SFP-FE-LX-SM1310-BIDI must be used with SFP-FE-LX-SM1550-BIDI.

7.1.6 SFP-FE-LX-SM1550-BIDI (Single-Fiber-Bidirectional Module)

Table 7-6 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	FE
Center wavelength (nm)	Rx: 1310/Tx: 1550
Standard compliance	100base-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 15 km
Transmit power (dBm)	-15.0 to -8.0
Maximum receiver sensitivity (dBm)	-32.0
Overload power (dBm)	-8.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315202

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NOTE

BIDI optical modules must be used in pairs. For example, SFP-FE-LX-SM1550-BIDI must be used with SFP-FE-LX-SM1310-BIDI.

7.2 GE eSFP Optical Modules

7.2.1 eSFP-GE-SX-MM850

Table 7-7 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	850
Standard compliance	1000base-SX
Connector type	LC
Applicable cable and maximum transmission distance	● 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
Transmit power (dBm)	-9.5 to -2.5
Maximum receiver sensitivity (dBm)	-17.0
Overload power (dBm)	0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315204

7.2.2 SFP-GE-LX-SM1310

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Table 7-8 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1310
Standard compliance	1000base-LX10/LH
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 km
Transmit power (dBm)	-9.0 to -3.0
Maximum receiver sensitivity (dBm)	-20.0
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315200

7.2.3 S-SFP-GE-LH40-SM1310

Table 7-9 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1310
Standard compliance	1000base-EX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	-5.0 to 0
Maximum receiver sensitivity (dBm)	-23

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Item	Description
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02317346

7.2.4 S-SFP-GE-LH40-SM1550

Table 7-10 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1550
Standard compliance	NA
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	-5.0 to 0
Maximum receiver sensitivity (dBm)	-22
Overload power (dBm)	-3.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02317347

7.2.5 S-SFP-GE-LH80-SM1550

Table 7-11 Technical specifications

Item	Description
Transceiver type	eSFP

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Item	Description
Transmission speed	1 Gbit/s
Center wavelength (nm)	1550
Standard compliance	1000base-ZX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	-2.0 to 5.0
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02317348

7.2.6 eSFP-GE-ZX100-SM1550

Table 7-12 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1550
Standard compliance	1000base-ZX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 100 km
Transmit power (dBm)	0-5
Maximum receiver sensitivity (dBm)	-30.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	9.5

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Item	Description
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315206

7.2.7 SFP-GE-LX-SM1310-BIDI (Single-Fiber-Bidirectional Module)

Table 7-13 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	Rx: 1490/Tx: 1310
Standard compliance	1000base-BX10
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 km
Transmit power (dBm)	-9.0 to -3.0
Maximum receiver sensitivity (dBm)	-19.5
Overload power (dBm)	-3.0
Extinction ratio (dB)	6
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315285

NOTE

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.

7.2.8 SFP-GE-LX-SM1490-BIDI (Single-Fiber-Bidirectional Module)

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Table 7-14 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	Rx: 1310/Tx: 1490
Standard compliance	1000base-BX10
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 km
Transmit power (dBm)	-9.0 to -3.0
Maximum receiver sensitivity (dBm)	-19.5
Overload power (dBm)	-3.0
Extinction ratio (dB)	6
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02315286

NOTE

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.

7.2.9 LE2MGSC40DE0 (Single-Fiber-Bidirectional Module)

Table 7-15 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	Rx: 1490/Tx: 1310
Standard compliance	1000base-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km

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Item	Description
Transmit power (dBm)	-2.0 to +3.0
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310KVV

NOTE

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, LE2MGSC40DE0 must be used with LE2MGSC40ED0.

7.2.10 LE2MGSC40ED0 (Single-Fiber-Bidirectional Module)

Table 7-16 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	Rx: 1310/Tx: 1490
Standard compliance	1000base-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	-2.0 to +3.0
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310KVU

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NOTE

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, LE2MGSC40ED0 must be used with LE2MGSC40DE0.

7.2.11 SFP-GE-ZBXD1 (Single-Fiber-Bidirectional Module)

Table 7-17 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	Rx: 1490/Tx: 1570
Standard compliance	1000base-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	-2.0 to +4.0
Maximum receiver sensitivity (dBm)	-26
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02311DDB

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.

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-ZBXD1 must be used with SFP-GE-ZBXU1.

7.2.12 SFP-GE-ZBXU1 (Single-Fiber-Bidirectional Module)

Table 7-18 Technical specifications

Item	Description
Transceiver type	eSFP
Transmission speed	1 Gbit/s

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Item	Description
Center wavelength (nm)	Rx: 1570/Tx: 1490
Standard compliance	1000base-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	-2.0 to +4.0
Maximum receiver sensitivity (dBm)	-26
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02311DDC

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.

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-ZBXU1 must be used with SFP-GE-ZBXD1.

7.2.13 SFP-GE-BXU1-SC (Single-Fiber-Bidirectional Module)

Table 7-19 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	Rx: 1310/Tx: 1490
Standard compliance	1000base-BX
Connector type	SC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 km
Transmit power (dBm)	-9.0 to -3.0

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Item	Description
Maximum receiver sensitivity (dBm)	-19.5
Overload power (dBm)	-3.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310TQH

7.3 GE-CWDM eSFP Optical Modules

7.3.1 CWDM-SFPGE-1471

Table 7-20 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1471
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LPN

7.3.2 CWDM-SFPGE-1491

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Table 7-21 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1491
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LPK

7.3.3 CWDM-SFPGE-1511

Table 7-22 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1511
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0

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Item	Description
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LPH

7.3.4 CWDM-SFPGE-1531

Table 7-23 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1531
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LPL

7.3.5 CWDM-SFPGE-1551

Table 7-24 Technical specifications

Item	Description
Transceiver form factor	eSFP

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Item	Description
Transmission speed	1 Gbit/s
Center wavelength (nm)	1551
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LPG

7.3.6 CWDM-SFPGE-1571

Table 7-25 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1571
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5

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Item	Description
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LNS

7.3.7 CWDM-SFPGE-1591

Table 7-26 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1591
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LNT

7.3.8 CWDM-SFPGE-1611

Table 7-27 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	1 Gbit/s
Center wavelength (nm)	1611

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Item	Description
Standard compliance	GE-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-5.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-9.0
Extinction ratio (dB)	8.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LPJ

7.4 GE-DWDM eSFP Optical Modules

7.4.1 DWDM-SFPGE-1560-61

Table 7-28 Technical specifications

Item	Description
Transceiver form factor	eSFP
Transmission speed	Gbit/s
Center wavelength (nm)	1560.61
Standard compliance	GE-DWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 120 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-28.0
Overload power (dBm)	-8.0
Extinction ratio (dB)	8.2

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Item	Description
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310LLE

7.5 GE SFP Copper Modules

7.5.1 SFP-1000BaseT

Table 7-29 Technical specifications

Item	Description
Transceiver form factor	SFP
Transmission speed	The transmission speed varies depending on the port where the copper transceiver module is used.
Standard compliance	1000Base-T
Connector type	RJ45
Surge protection	Common mode: ±1 kV
Applicable cable and maximum transmission distance	Ethernet cable: 0.1 km
Part number	02314171

7.6 10GE SFP+ Optical Modules

7.6.1 SFP-10G-USR

Table 7-30 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	850
Standard compliance	10Gbase-USR

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Item	Description
Connector type	LC
Applicable cable and maximum transmission distance	Multimode fiber (OM3): 0.1 km
Transmit power (dBm)	-7.3 to -1.0
Maximum receiver sensitivity (dBm)	-10.7
Overload power (dBm)	0.5
Extinction ratio (dB)	3.0
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310MNW

7.6.2 OMXD30000

Table 7-31 Technical Specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	850
Standard compliance	10Gbase-SR
Connector type	LC
Applicable cable and maximum transmission distance	● 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
Transmit power (dBm)	-7.3 to -1.0
Maximum receiver sensitivity (dBm)	-11.1
Overload power (dBm)	-1.0

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Item	Description
Extinction ratio (dB)	3.0
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02318169

7.6.3 SFP-10G-iLR

Table 7-32 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1310
Standard compliance	10Gbase-iLR
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	-40°C to +85°C (-40°F to +185°F)
Part number	02311BJJ

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.

7.6.4 OSX010000

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Table 7-33 Technical Specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1310
Standard compliance	10Gbase-LR
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 km
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-12.6
Overload power (dBm)	0.5
Extinction ratio (dB)	3.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02318170

7.6.5 OSX040N01

Table 7-34 Technical Specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1550
Standard compliance	10Gbase-ER
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	-4.7 to 4.0
Maximum receiver sensitivity (dBm)	-14.1

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Item	Description
Overload power (dBm)	-1.0
Extinction ratio (dB)	3.0
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310CNF

7.6.6 SFP-10G-ER-1310

Table 7-35 Technical Specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1310
Standard compliance	10Gbase-ER
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	-2.0 to 4.0
Maximum receiver sensitivity (dBm)	-20
Overload power (dBm)	-7.0
Extinction ratio (dB)	3.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02311RLX

NOTE

When connected to a 10Gbase-ER standard optical module (1550 nm, 10 Gbit/s, 40 km), an SFP-10G-ER-1310 optical module supports only 20 km of maximum transmission distance.

This module can only be used on a switch running V200R010C00 or a later version.

7.6.7 SFP-10G-ZR

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Table 7-36 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1550
Standard compliance	10Gbase-ZR
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-24.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	9
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SNN

7.6.8 SFP-10G-BXU1 (Single-Fiber-Bidirectional Module)

Table 7-37 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	Rx: 1330/Tx: 1270
Standard compliance	10Gbase-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 km
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-14.4

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Item	Description
Overload power (dBm)	0.5
Extinction ratio (dB)	3.5
Operating temperature	-40°C to +85°C (-40°F to +185°F)
Part number	02310QBJ

NOTE

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXU1 must be used with SFP-10G-BXD1.

7.6.9 SFP-10G-BXD1 (Single-Fiber-Bidirectional Module)

Table 7-38 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	Rx: 1270/Tx: 1330
Standard compliance	10Gbase-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 10 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	-40°C to +85°C (-40°F to +185°F)
Part number	02310QDT

NOTE

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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7.6.10 SFP-10G-ER-SM1330-BIDI (Single-Fiber-Bidirectional Module)

Table 7-39 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	Rx: 1270/Tx: 1330
Standard compliance	10Gbase-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	0-5
Maximum receiver sensitivity (dBm)	-18
Overload power (dBm)	-9
Extinction ratio (dB)	3.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02311BJB

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.

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.

7.6.11 SFP-10G-ER-SM1270-BIDI (Single-Fiber-Bidirectional Module)

Table 7-40 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	Rx: 1330/Tx: 1270

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Item	Description
Standard compliance	10Gbase-BX
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Transmit power (dBm)	0-5
Maximum receiver sensitivity (dBm)	-18
Overload power (dBm)	-9
Extinction ratio (dB)	3.5
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02311BJC

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.

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.

7.7 10GE-CWDM SFP+ Optical Modules

7.7.1 SFP-10G-ZCW1471

Table 7-41 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1471
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km

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Item	Description
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSG

7.7.2 SFP-10G-ZCW1491

Table 7-42 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1491
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSF

7.7.3 SFP-10G-ZCW1511

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Table 7-43 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1511
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSE

7.7.4 SFP-10G-ZCW1531

Table 7-44 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1531
Standard compliance	CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0

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Item	Description
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSD

7.7.5 SFP-10G-ZCW1551

Table 7-45 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1551
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSC

7.7.6 SFP-10G-ZCW1571

Table 7-46 Technical specifications

Item	Description
Transceiver form factor	SFP+

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Item	Description
Transmission speed	10 Gbit/s
Center wavelength (nm)	1571
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSB

7.7.7 SFP-10G-ZCW1591

Table 7-47 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1591
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2

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Item	Description
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SSA

7.7.8 SFP-10G-ZCW1611

Table 7-48 Technical specifications

Item	Description
Transceiver form factor	SFP+
Transmission speed	10 Gbit/s
Center wavelength (nm)	1611
Standard compliance	10G-CWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 70 km
Transmit power (dBm)	0-4.0
Maximum receiver sensitivity (dBm)	-23.0
Overload power (dBm)	-7.0
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310SRY

7.8 10GE-DWDM SFP+ Optical Modules

7.8.1 SFP-10G-ZDWT

Table 7-49 Technical specifications

Item	Description
Transceiver form factor	SFP+

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Item	Description
Transmission speed	10 Gbit/s
Center wavelength (nm)	1529.16 to 1560.61
Standard compliance	10G-DWDM
Connector type	LC
Applicable cable and maximum transmission distance	Single-mode fiber: 80 km
Transmit power (dBm)	-1 to +3
Maximum receiver sensitivity (dBm)	-24
Overload power (dBm)	-1
Extinction ratio (dB)	8.2
Operating temperature	0°C to 70°C (32°F to 158°F)
Part number	02310YUT

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.

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