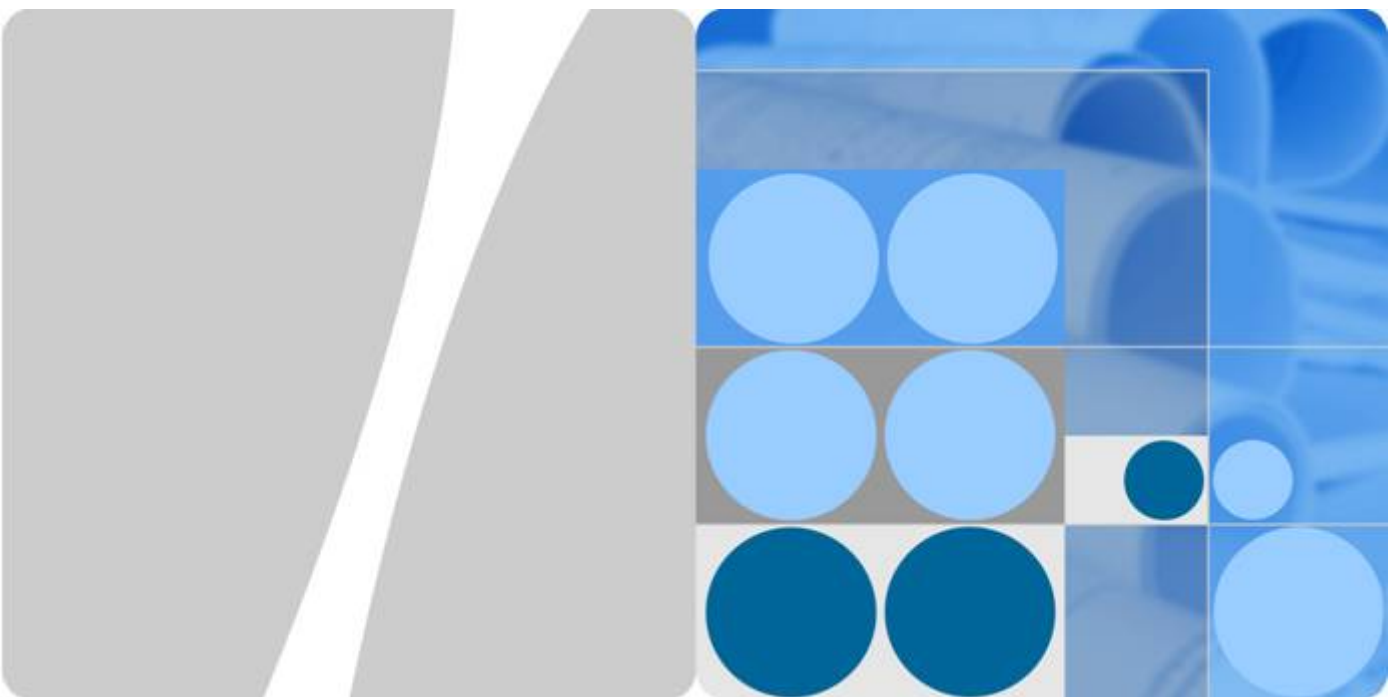




S110, S220, S310, S530, and S620 Series Switches

Hardware Description

Issue 03
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Contents

1 About This Document..... 1

2 Using the Info-Finder.....4

3 Version Requirements for Components.....6

4 Chassis..... 7

4.1 Chassis Overview..... 7

4.2 Naming Conventions..... 7

4.3 Port Numbering Conventions (Applicable to S110 Devices).....9

4.4 Port Numbering Conventions (Applicable to S220, S310, S530, and S620 Devices).....10

4.5 S110..... 11

4.5.1 S110-8T2ST..... 11

4.5.2 S110-8P2ST (98012195)..... 16

4.5.3 S110-8P2ST (98012269)..... 22

4.5.4 S110-16T2S..... 27

4.5.5 S110-16LP2SR..... 33

4.5.6 S110-24T2SR..... 39

4.5.7 S110-24LP2SR..... 44

4.6 S220..... 50

4.6.1 S220-8T4S..... 50

4.6.2 S220-8P4S..... 58

4.6.3 S220-24T4X..... 66

4.6.4 S220-24P4X..... 74

4.6.5 S220-48T4S..... 82

4.6.6 S220-48T4X..... 91

4.6.7 S220-48P4S..... 100

4.6.8 S220-48P4X..... 109

4.7 S310..... 119

4.7.1 S310-24T4S..... 119

4.7.2 S310-24P4S..... 129

4.7.3 S310-48T4S..... 138

4.7.4 S310-24T4X..... 147

4.7.5 S310-24P4X..... 157

4.7.6 S310-24ST4X..... 167

4.7.7 S310-24PN4X.....	178
4.7.8 S310-48T4X.....	191
4.7.9 S310-48P4S.....	202
4.7.10 S310-48P4X.....	214
4.8 S530.....	225
4.8.1 S530-24T4XE.....	225
4.8.2 S530-24ST4XE.....	236
4.8.3 S530-48S4XE.....	251
4.9 S620.....	262
4.9.1 S620-24T16X8Y2CZ.....	262
5 Power Modules.....	276
5.1 PAC80S12-CN (80W AC Power Module(66mm Width Case, No Fans)).....	277
5.2 PAC180S12-CN (180W AC&240 V DC Power Module (66 mm Width case, No Fans)).....	281
5.3 PDC240S12-CN (240W DC Power Module (66 mm Width case, No Fans)).....	285
5.4 PDC400S12-CB (400W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust)).....	289
5.5 PAC600S12-PB (600W AC &240 V DC Power Module(66 mm Width Case, Back to Front, Power panel side exhaust)).....	294
5.6 PDC1K2S12-CE (1200W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust)).....	298
6 Independent Power.....	304
6.1 HW-120100D0D (Adapter,-40degC,55degC,90V,300V,12V/1A,C8 2pin/2.1*5.5*9.5 H Plug,Desktop adapter,black).....	304
6.2 AD-540278D0D (Adapter Power-AD-540278D0D-Desktop-150W-ErP 6-White).....	306
6.3 HW-560268D0D (Adapter-HW-560268D0D-Tabletop-150W-ERP6).....	307
7 Fan Modules.....	310
7.1 FAN-031A-B (Fan Box (B, Fan Panel Side Exhaust)).....	310
8 Cards.....	314
8.1 HSIC-X08S000 (HSIC-X08S000 (Interface card with 8*10GE SFP+ ports or 4*25GE SFP28 ports (only ports 1 to 4 support 25GE))).....	314
9 Cables.....	320
9.1 Ground Cable.....	320
9.2 Optical Fiber.....	321
9.3 Ethernet Cable.....	333
9.4 AC Power Cable.....	335
9.5 Console Cable.....	340
9.6 Dedicated Stack Cable.....	341
9.7 Copper Cable.....	342
10 Pluggable Modules for Interfaces.....	345
10.1 Important Notes About Using Optical Modules Certified for Huawei Switches.....	345
10.1.1 How to Identify Huawei-Certified Switch Optical Modules.....	345

10.1.2 Risks of Using Non-Huawei-Certified Switch Optical Modules..... 347

10.2 Understanding Optical Modules..... 348

10.2.1 What Is an Optical Module..... 348

10.2.2 Parameter Description..... 349

10.2.3 How to View Optical Module Parameters..... 351

10.2.4 Rules for Optical Module Interoperation..... 351

10.3 Understanding Copper Modules..... 352

10.4 FE SFP/eSFP Optical Modules..... 353

10.4.1 S-SFP-FE-LH40-SM1310..... 353

10.4.2 S-SFP-FE-LH80-SM1550..... 354

10.4.3 SFP-FE-LX-SM1310-BIDI..... 354

10.4.4 SFP-FE-LX-SM1550-BIDI..... 355

10.4.5 SFP-FE-SX-MM1310..... 356

10.4.6 eSFP-FE-LX-SM1310..... 357

10.5 GE eSFP Optical Modules..... 358

10.5.1 LE2MGSC40DE0..... 358

10.5.2 LE2MGSC40ED0..... 359

10.5.3 S-SFP-GE-LH40-SM1310..... 360

10.5.4 S-SFP-GE-LH40-SM1550..... 361

10.5.5 S-SFP-GE-LH80-SM1550..... 362

10.5.6 SFP-GE-BXU1-SC..... 363

10.5.7 SFP-GE-EX-C..... 364

10.5.8 SFP-GE-LX-SM1310 (02315200)..... 364

10.5.9 SFP-GE-LX-SM1310-BIDI (02315285)..... 365

10.5.10 SFP-GE-LX-SM1490-BIDI (02315286)..... 366

10.5.11 SFP-GE-LX10-C..... 367

10.5.12 SFP-GE-SX-C (02312UUB)..... 368

10.5.13 SFP-GE-ZBXD1..... 369

10.5.14 SFP-GE-ZBXU1..... 370

10.5.15 eSFP-GE-SX-MM850 (02315204)..... 371

10.5.16 eSFP-GE-ZX100-SM1550..... 372

10.5.17 OGSC10DD0..... 373

10.5.18 OGSC40DD0..... 374

10.5.19 OGSM01880..... 375

10.5.20 SFP-GE-BX-D1-I..... 376

10.5.21 SFP-GE-BX-U1-I..... 377

10.5.22 SFP-GE-BX40-D-I..... 378

10.5.23 SFP-GE-BX40-U-I..... 379

10.5.24 eSFP-GE-SX-MM850 (02313URD)..... 380

10.5.25 SFP-GE-LX-SM1310 (02313URF)..... 381

10.5.26 SFP-GE-SX-C (02314KKF)..... 381

10.5.27 SFP-GE-LX-SM1310-BIDI (02314KKJ)..... 383

10.5.28 SFP-GE-LX-SM1490-BIDI (02314KKH)..... 384

10.6 GE-CWDM eSFP Optical Modules..... 384

10.6.1 CWDM-SFPGE-1471..... 385

10.6.2 CWDM-SFPGE-1491..... 385

10.6.3 CWDM-SFPGE-1511..... 386

10.6.4 CWDM-SFPGE-1531..... 387

10.6.5 CWDM-SFPGE-1551..... 388

10.6.6 CWDM-SFPGE-1571..... 389

10.6.7 CWDM-SFPGE-1591..... 390

10.6.8 CWDM-SFPGE-1611..... 390

10.7 GE-DWDM eSFP Optical Modules..... 391

10.7.1 DWDM-SFPGE-1560-61..... 391

10.8 GE SFP Copper Modules..... 392

10.8.1 SFP-1000BaseT (02314171)..... 392

10.8.2 SFP-1000BaseT (02313URG)..... 393

10.8.3 SFP-1000BaseT-G2..... 394

10.9 2.5GE eSFP Optical Modules..... 395

10.9.1 SFP-2.5G-FR..... 395

10.9.2 SFP-2.5G-SR-I..... 396

10.9.3 eSFP-2.5G-iLR-BXD1..... 397

10.10 10GE SFP+ Optical Modules..... 398

10.10.1 OMXD30000 (02318169)..... 398

10.10.2 OSX010000 (02318170)..... 399

10.10.3 OSX040N01 (02310CNF)..... 400

10.10.4 SFP-10G-ER-1310..... 401

10.10.5 SFP-10G-ER-C..... 402

10.10.6 SFP-10G-ER-SM1270-BIDI..... 403

10.10.7 SFP-10G-ER-SM1330-BIDI..... 404

10.10.8 SFP-10G-LR-C (02312UUG)..... 405

10.10.9 SFP-10G-SR-C..... 405

10.10.10 SFP-10G-USR (02310MNW)..... 406

10.10.11 SFP-10G-ZR..... 407

10.10.12 OMXD30000 (02313URC)..... 408

10.10.13 OSX010000 (02313URK)..... 409

10.10.14 SFP-10G-USR (02313URN)..... 410

10.10.15 SFP+10GE-LH10-SM1310..... 411

10.10.16 SFP-10G-BXD1..... 412

10.10.17 SFP-10G-BXU1..... 413

10.10.18 SFP-10G-SR..... 414

10.10.19 SFP-10G-iLR..... 414

10.10.20 SFP-10G-iLR-C..... 415

10.10.21 SFP-10G-LR-I (02313ABG)..... 416

10.10.22 OSX040N01 (02314KKG).....	417
10.10.23 SFP-10G-LR-C (02314KKE).....	418
10.10.24 SFP-10G-LR-I (02314LBW).....	419
10.11 10GE SFP+ Copper Modules.....	419
10.11.1 SFP-10GBaseT-SR.....	420
10.12 10GE-CWDM SFP+ Optical Modules.....	421
10.12.1 SFP-10G-ZCW1471.....	421
10.12.2 SFP-10G-ZCW1491.....	422
10.12.3 SFP-10G-ZCW1511.....	423
10.12.4 SFP-10G-ZCW1531.....	423
10.12.5 SFP-10G-ZCW1551.....	424
10.12.6 SFP-10G-ZCW1571.....	425
10.12.7 SFP-10G-ZCW1591.....	426
10.12.8 SFP-10G-ZCW1611.....	427
10.13 10GE-DWDM SFP+ Optical Modules.....	428
10.13.1 SFP-10G-ZDWT.....	428
10.14 25GE SFP28 Optical Modules.....	429
10.14.1 SFP-25G-LR.....	429
10.14.2 SFP-25G-SR.....	430
10.14.3 SFP-25G-ESR.....	431
10.14.4 SFP-25G-LR-BXU1-I.....	432
10.14.5 SFP-25G-LR-BXD1-I.....	432
10.14.6 SFP-25G-eLR-BXD1-I.....	433
10.14.7 SFP-25G-eLR-BXU1-I.....	434
10.15 40GE QSFP+ Optical Modules.....	435
10.15.1 QSFP-40G-ER4.....	435
10.15.2 QSFP-40G-LR4 (02310MHS).....	436
10.15.3 QSFP-40G-LX4.....	437
10.15.4 QSFP-40G-SDLC-PAM.....	438
10.15.5 QSFP-40G-SR-BD.....	439
10.15.6 QSFP-40G-SR4.....	440
10.15.7 QSFP-40G-eSDLC-PAM.....	441
10.15.8 QSFP-40G-eSM4.....	442
10.15.9 QSFP-40G-eSR4 (02310RMB).....	442
10.15.10 QSFP-40G-iSM4.....	444
10.15.11 QSFP-40G-iSR4 (02310MHR).....	444
10.15.12 QSFP-40G-LR4-Lite (02311YVB).....	445
10.15.13 QSFP-40G-LX4-MM.....	446
10.16 100GE QSFP28 Optical Modules.....	447
10.16.1 QSFP-100G-CLR4.....	447
10.16.2 QSFP-100G-CWDM4.....	448
10.16.3 QSFP-100G-ER4-Lite.....	449

10.16.4 QSFP-100G-eSR4.....	450
10.16.5 QSFP28-100G-10KM.....	451
10.16.6 QSFP28-100G-LR4 (02311KNU).....	452
10.16.7 QSFP28-100G-PSM4.....	452
10.16.8 QSFP28-100G-SR4 (02311GBW).....	453
10.16.9 QSFP-100G-ER4 (02313HLU).....	454
10.16.10 QSFP-100G-FR1.....	455
10.16.11 QSFP28-100G-DR.....	456
10.16.12 QSFP-100G-BIDI-G2.....	457
10.16.13 QSFP-100G-CWDM4-Lite.....	458
10.16.14 QSFP28-100G-SR4 (02313URQ).....	459
10.16.15 QSFP-100G-LX4-MM.....	459
10.16.16 QSFP-100G-LR1 (02314LBY).....	461
10.16.17 QSFP-100G-SWDM4 (02314LCB).....	461

1 About This Document

Intended Audience

This document provides an overall description of the switch hardware, helping you obtain detailed information about each chassis and optical module.

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

Symbol Conventions

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

Symbol	Description
	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
	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.

Symbol	Description
 NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Command Conventions

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

Convention	Description
Boldface	The keywords of a command line are in boldface .
<i>Italic</i>	Command arguments are in <i>italics</i> .
[]	Items (keywords or arguments) in brackets [] are optional.
{ x y ... }	Optional items are grouped in braces and separated by vertical bars. One item is selected.
[x y ...]	Optional items are grouped in brackets and separated by vertical bars. One item is selected or no item is selected.
{ x y ... }*	Optional items are grouped in braces and separated by vertical bars. A minimum of one item or a maximum of all items can be selected.
[x y ...]*	Optional items are grouped in brackets and separated by vertical bars. Several items or no item can be selected.
&<1-n>	The parameter before the & sign can be repeated 1 to n times.
#	A line starting with the # sign is comments.

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

Device Dimension Conventions

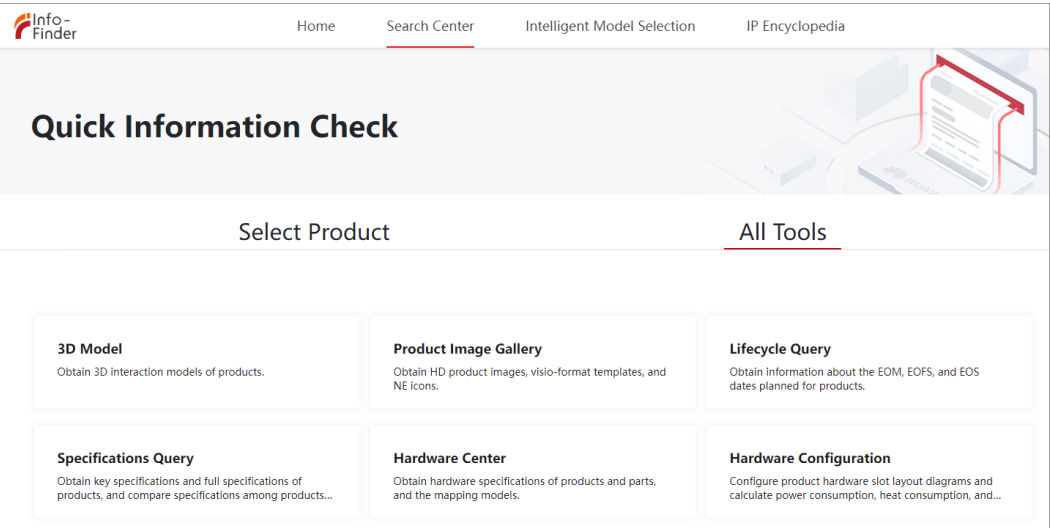
The dimensions described in this document are theoretically typical dimensions and do not include dimension tolerances.

2 Using the Info-Finder

Info-Finder is a tool platform, as shown in **Figure 2-1**. It allows you to search for key product information by product series and model. The key product information includes basic information such as the software specifications, life cycles, and hardware information, and operation and maintenance information such as the licenses, alarms, logs, commands, and MIBs. The hardware-related tools are as follows:

- **Product Image Gallery:** provides product photos and network element icons for you to produce design drawings and networking diagrams.
- **Hardware Configuration:** automatically generates hardware configuration diagrams after you select components are required and calculates the weight, power consumption, and heat consumption.
- **Hardware Center:** provides the technical specifications of devices and components, as well as the mapping between devices, components, and versions.
- **3D Model:** provides the product images, product overview, component installation and removal video, and related component information, helping you quickly gain full product information in one-stop mode.

Figure 2-1 Info-Finder Graphical User Interface (GUI)



 NOTE

The heat consumption of a device can be calculated as follows based on its power consumption:

Heat consumption (BTU/hour) = Power consumption (W) x 3.4121

3 Version Requirements for Components

This document describes all the device models and modules supported in a version. To obtain accurate subscription information, visit <https://e.huawei.com> or contact Huawei local sales offices. You can also pay attention to the product change notices (PCNs) and lifecycle management bulletins on this website.

The appearances of devices and modules are subject to actually delivered products. The figures in this document are for reference only.

4 Chassis

- 4.1 Chassis Overview
- 4.2 Naming Conventions
- 4.3 Port Numbering Conventions (Applicable to S110 Devices)
- 4.4 Port Numbering Conventions (Applicable to S220, S310, S530, and S620 Devices)
- 4.5 S110
- 4.6 S220
- 4.7 S310
- 4.8 S530
- 4.9 S620

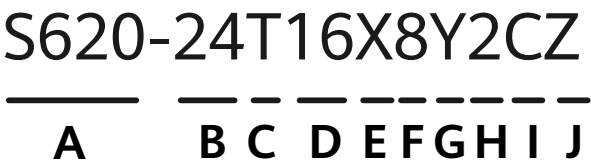
4.1 Chassis Overview

The S series fixed Ethernet switches integrate the access and transmission functions to provide reliable access/aggregation and high-quality transmission of services on enterprise networks. The switches are built on an integrated hardware platform, and their hardware system consists of the chassis, power module, fan module, and Switch Control Unit (SCU).

The S110 series are unmanaged switches and do not support web-based or SNMP-based management.

4.2 Naming Conventions

Figure 4-1 Switch naming conventions



 NOTE

The device name in this figure is used as an example and does not represent a specific device.

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

Table 4-1 Switch naming convention description

Identifier	Description
A	Product series (4 or 5 characters) • S110: S110 series • S220: S220 series • S220S: S220S series • S310: S310 series • S310S: S310S series • S530: S530 series • S620: S620 series
B	Number of downlink ports of type 1 (1 or 2 characters)
C	Downlink port type 1 (1 or 2 characters) • T: GE electrical port • S: GE optical port • P: GE electrical port, supporting PoE+ • PN: 2.5GE electrical port, supporting PoE+ • LP: GE electrical port, supporting PoE+ and low PoE power • ST: GE optical port and GE combo port • X: 10GE optical port
D	Number of downlink ports of type 2 (0 or 1 character)
E	Downlink port type 2 (0 or 1 character) • X: 10GE optical port • S: GE optical port • J: 2.5GE optical port
F	Number of uplink ports of type 1 (1 character)

Identifier	Description
G	Uplink port type 1 (1 or 2 characters) • S: GE optical port • ST: GE optical port and GE electrical port • X: 10GE optical port • J: 2.5GE optical port • JX: 2.5GE optical port and 10GE optical port • Y: 25GE optical port
H	Number of uplink ports of type 2 (0 or 1 character)
I	Uplink port of type 2 (0, 1, or 2 characters) • X: 10GE optical port • C: 100GE optical port
J	Special function type (0 or 1 character) • By default, this field is left empty. • R: indicates a rack-mounted model, which is involved only in the S110 series. • E: the switch supports independent stack ports. • Z: the switch supports pluggable cards.

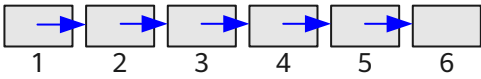
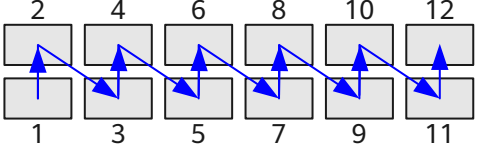
4.3 Port Numbering Conventions (Applicable to S110 Devices)

Physical ports are numbered in the following way:

A single switch uses slot ID/subcard ID/port sequence number to identify physical ports.

- Slot ID: indicates the slot where the switch is located. The value is 0.
- Subcard ID: indicates the ID of a subcard. The default value is 0 for models without subcards.
- Port sequence number: indicates the sequence number of a port on the switch.

Table 4-2 Port numbering conventions

Port Numbering Diagram	Description
	There is one rows of service ports on the device. These ports are numbered from left to right, starting from 1.
	There are two rows of service ports on the device. These ports are numbered from bottom to top and left to right, starting from 1. For example, the port on the top left is numbered 0/0/2.

4.4 Port Numbering Conventions (Applicable to S220, S310, S530, and S620 Devices)

Physical ports are numbered in the following way:

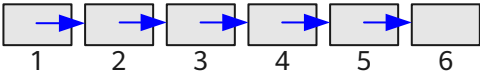
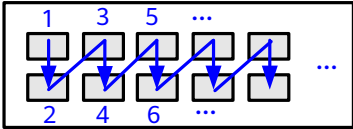
A single switch uses slot ID/subcard ID/port sequence number to identify physical ports.

- Slot ID: indicates the slot where the switch is located. The value is 1.
- Subcard ID: indicates the ID of a subcard. The default value is 0 for models without subcards.
- Port sequence number: indicates the sequence number of a port on the switch.

A stacked switch uses stack ID/subcard ID/port sequence number to identify physical ports.

- Stack ID: indicates the ID of a stacked switch. The value ranges from 1 to 9.
- Subcard ID: indicates the ID of a subcard. The default value is 0 for models without subcards.
- Port sequence number: indicates the sequence number of a port on the switch.

Table 4-3 Port numbering conventions

Port Numbering Diagram	Description
	There is one rows of service ports on the device. These ports are numbered from left to right, starting from 1. Ports of different speeds are numbered separately. For example, the first GE port is numbered GE1/0/1, the first 10GE port is numbered 10GE1/0/1. Ports with the same rate are numbered in ascending order.
	There are two rows of service ports on the device. These ports are numbered from top to bottom and left to right, starting from 1. For example, the port on the top left is numbered 1/0/1. Ports of different speeds are numbered separately. For example, the first GE port is numbered GE1/0/1, the first 10GE port is numbered 10GE1/0/1. Ports with the same rate are numbered in ascending order.

4.5 S110

4.5.1 S110-8T2ST

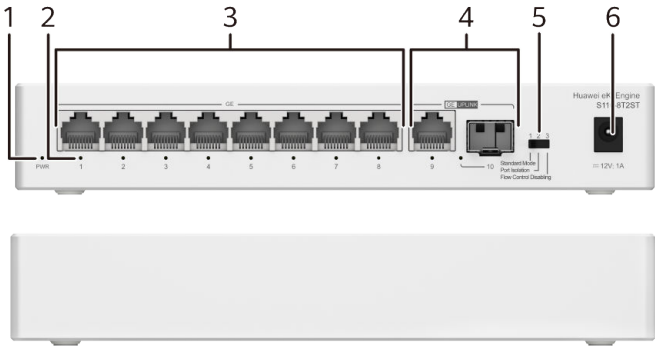
Overview

Table 4-4 Basic information about the S110-8T2ST

Item	Details
Description	S110-8T2ST (8*10/100/1000BASE-T ports, 1*GE SFP port, 1*10/100/1000BASE-T port, with 1*AC power adapter, fanless)
Part Number	98012199
Model	S110-8T2ST

Components

Figure 4-2 S110-8T2ST appearance



1	PWR indicator	2	Port indicator
3	Eight GE electrical ports	4	One GE electrical port and one GE optical port
5	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. Uplink ports are not isolated or aggregated. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.	6	Power adapter socket NOTE Use the power adapter (12 V 1 A) delivered with the device.

Ports

Table 4-5 Ports on the S110-8T2ST

Port	Connector Type	Description	Available Components
GE electrical port	RJ45	A GE electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	- FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) - GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-6 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator	-	Off	The port is not connected or has been shut down.

Indicator	Color	Status	Description
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.
	Green	Blinking	The port is sending or receiving data.

Power Supply System

The device is powered by the power adapter delivered with the device.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-7 Technical specifications of the S110-8T2ST

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 35 mm x 210.0 mm x 130.0 mm (1.38 in. x 8.27 in. x 5.12 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 36.5 mm x 210.0 mm x 131.7 mm (1.44 in. x 8.27 in. x 5.19 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 285.0 mm x 180.0 mm (3.54 in. x 11.22 in. x 7.09 in.)
Chassis height [U]	0.8 U
Chassis material	PC+ABS
Weight without packaging [kg(lb)]	0.46 kg (1.01 lb)
Weight with packaging [kg(lb)]	0.70 kg (1.54 lb)
Typical power consumption [W]	8 W
Typical heat dissipation [BTU/hour]	27.30 BTU/hour
Maximum power consumption [W]	8.4 W
Maximum heat dissipation [BTU/hour]	28.66 BTU/hour

Item	Specification
Static power consumption [W]	2 W
MTBF [years]	86.16 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0
Working mode	- Standard mode - Port isolation - Flow control disabling
MAC address entry	2K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	Power adapter
Rated input voltage [V]	Power adapter input: 100-240 V AC; 50/60 Hz Power adapter output: 12 V DC
Input voltage range [V]	Power adapter input: 90 V AC to 264 V AC; 47 Hz to 63 Hz
Maximum input current [A]	1 A

Item	Specification
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 4 kV
Power supply surge protection [kV]	± 2 kV in differential mode, ± 4 kV in common mode
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.5.2 S110-8P2ST (98012195)

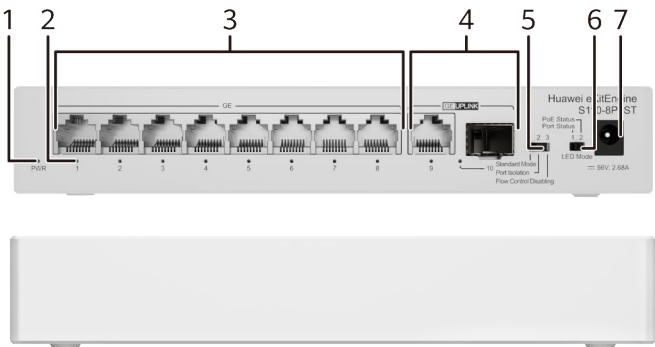
Overview

Table 4-8 Basic information about the S110-8P2ST

Item	Details
Description	S110-8P2ST (8*10/100/1000BASE-T ports, PoE+, 1*GE SFP port, 1*10/100/1000BASE-T port, AC power, power adapter)
Part Number	98012195
Model	S110-8P2ST

Components

Figure 4-3 S110-8P2ST appearance



1	PWR indicator	2	Port indicator
3	Eight GE PoE+ electrical ports	4	One GE electrical port and one GE optical port
5	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. Uplink ports are not isolated or aggregated. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.	6	Port indicator status switch button NOTE Port status: The port indicator indicates the data transmission status of the port. PoE status: The port indicator indicates the PoE status of the port.
7	Power adapter socket NOTE Use the power adapter (56 V 2.68 A) delivered with the device.	-	-

Ports

Table 4-9 Ports on the S110-8P2ST

Port	Connector Type	Description	Available Components
GE PoE+ electrical port	RJ45	A GE PoE+ electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable
GE electrical port	RJ45	A GE electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	- FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) - GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-10 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator (Port status)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.
	Green	Blinking	The port is sending or receiving data.
Port indicator (PoE status)	-	Off	The port is not supplying PoE power.
	Green	Steady on	The port is supplying power to the connected PD.
	Green	Blinking	The PoE power of the device is insufficient, and the port cannot provide power to the PD.

Power Supply System

The device uses the power adapter delivered with the device to supply power to the device and the connected PD. The power adapter can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-11 Technical specifications of the S110-8P2ST

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 35 mm x 210.0 mm x 130.0 mm (1.38 in. x 8.27 in. x 5.12 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 36.5 mm x 210.0 mm x 131.7 mm (1.44 in. x 8.27 in. x 5.19 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	150.0 mm x 270.0 mm x 200.0 mm (5.91 in. x 10.63 in. x 7.87 in.)
Chassis height [U]	0.8 U
Chassis material	PC+ABS
Weight without packaging [kg(lb)]	1.11 kg (2.45 lb)
Weight with packaging [kg(lb)]	1.46 kg (3.22 lb)
Typical power consumption [W]	11 W
Typical heat dissipation [BTU/hour]	37.53 BTU/hour
Maximum power consumption [W]	Without PoE: 11 W Full PoE load: 155 W (PoE: 124 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 37.53 - Full PoE load: 528.88
Static power consumption [W]	4 W
MTBF [years]	78.77 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0

Item	Specification
Working mode	• Standard mode • Port isolation • Flow control disabling
MAC address entry	2K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	Power adapter
Rated input voltage [V]	Power adapter input: 100-240 V AC; 50/60 Hz Power adapter output: 56 V DC
Input voltage range [V]	Power adapter input: 90 V AC to 264 V AC; 47 Hz to 63 Hz
Maximum input current [A]	2.68 A
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±4 kV
Power supply surge protection [kV]	Differential mode: ±6 kV; common mode: ±6 kV

Item	Specification
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.5.3 S110-8P2ST (98012269)

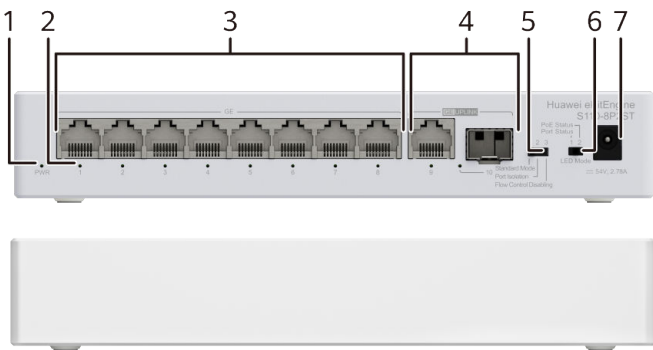
Overview

Table 4-12 Basic information about the S110-8P2ST

Item	Details
Description	S110-8P2ST (8*10/100/1000BASE-T ports, PoE+, 1*GE SFP port, 1*10/100/1000BASE-T port, AC power, power adapter)
Part Number	98012269
Model	S110-8P2ST

Components

Figure 4-4 S110-8P2ST appearance



 NOTE

The power adapter of this device has been upgraded, and the power input specification has been changed from 56 V, 2.68 A to 54 V, 2.78 A. Devices delivered over different periods may have different appearances.

1	PWR indicator	2	Port indicator
3	Eight GE PoE+ electrical ports	4	One GE electrical port and one GE optical port
5	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. Uplink ports are not isolated or aggregated. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.	6	Port indicator status switch button NOTE Port status: The port indicator indicates the data transmission status of the port. PoE status: The port indicator indicates the PoE status of the port.
7	Power adapter socket NOTE Use the power adapter (54 V 2.78 A) delivered with the device.	-	-

Ports

Table 4-13 Ports on the S110-8P2ST

Port	Connector Type	Description	Available Components
GE PoE+ electrical port	RJ45	A GE PoE+ electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable

Port	Connector Type	Description	Available Components
GE electrical port	RJ45	A GE electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	- FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) - GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-14 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator (Port status)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.

Indicator	Color	Status	Description
	Green	Blinking	The port is sending or receiving data.
Port indicator (PoE status)	-	Off	The port is not supplying PoE power.
	Green	Steady on	The port is supplying power to the connected PD.
	Green	Blinking	The PoE power of the device is insufficient, and the port cannot provide power to the PD.

Power Supply System

The device uses the power adapter delivered with the device to supply power to the device and the connected PD. The power adapter can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-15 Technical specifications of the S110-8P2ST

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 35 mm x 210.0 mm x 130.0 mm (1.38 in. x 8.27 in. x 5.12 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 36.5 mm x 210.0 mm x 131.7 mm (1.44 in. x 8.27 in. x 5.19 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	150.0 mm x 270.0 mm x 200.0 mm (5.91 in. x 10.63 in. x 7.87 in.)
Chassis height [U]	0.8 U
Chassis material	PC+ABS
Weight without packaging [kg(lb)]	0.91 kg (2.01 lb)
Weight with packaging [kg(lb)]	1.46 kg (3.22 lb)
Typical power consumption [W]	11 W

Item	Specification
Typical heat dissipation [BTU/hour]	37.53 BTU/hour
Maximum power consumption [W]	Without PoE: 11 W Full PoE load: 155 W (PoE: 124 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 37.53 - Full PoE load: 528.88
Static power consumption [W]	3 W
MTBF [years]	78.77 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0
Working mode	- Standard mode - Port isolation - Flow control disabling
MAC address entry	2K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	Power adapter

Item	Specification
Rated input voltage [V]	Power adapter input: 170 V AC to 240 V AC; 50/60 Hz Power adapter output: 54 V DC
Input voltage range [V]	Power adapter input: 170 V AC to 264 V AC; 47 Hz to 63 Hz
Maximum input current [A]	2.78 A
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 4 kV
Power supply surge protection [kV]	± 4 kV in differential mode and ± 4 kV in common mode
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.5.4 S110-16T2S

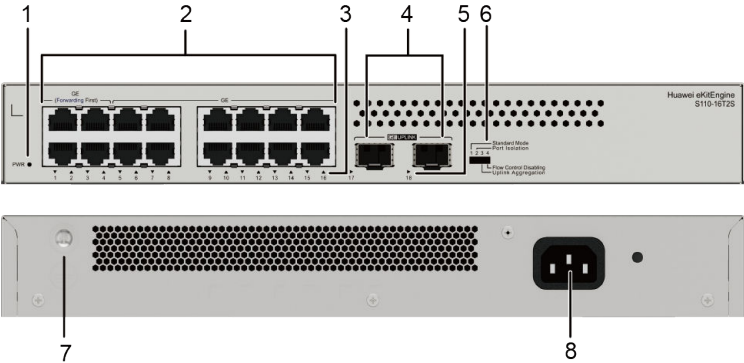
Overview

Table 4-16 Basic information about the S110-16T2S

Item	Details
Description	S110-16T2S (16*10/100/1000BASE-T ports, 2*GE SFP ports, built-in AC power, fanless)
Part Number	98012200
Model	S110-16T2S

Components

Figure 4-5 S110-16T2S appearance



1	PWR indicator	2	Sixteen GE electrical ports NOTE This function is available on ports 1 to 4. With this function, traffic on ports 1 to 4 is preferentially forwarded when traffic congestion occurs on uplink ports.
3	Electrical port indicator	4	Two GE optical ports

5	Optical port indicator	6	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. (The last two downlink electrical ports are not isolated.) Uplink ports are not isolated or aggregated. Uplink Aggregation: Two uplink optical ports are aggregated into a trunk interface. Eth-Trunk supports load balancing only based on source physical ports. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.
7	Ground screw	8	AC socket NOTE Use the power cable delivered with the device.

Ports

Table 4-17 Ports on the S110-16T2S

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

Port	Connector Type	Description	Available Components
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	• FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) • GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-18 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.
	Green	Blinking	The port is sending or receiving data.

Power Supply System

The device is powered by the power cable delivered with the device.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-19 Technical specifications of the S110-16T2S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 320.0 mm x 210.0 mm (1.72 in. x 12.6 in. x 8.27 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 320.0 mm x 217.0 mm (1.72 in. x 12.6 in. x 8.54 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 460.0 mm x 280.0 mm (3.54 in. x 18.11 in. x 11.02 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	1.74 kg (3.84 lb)
Weight with packaging [kg(lb)]	2.30 kg (5.07 lb)
Typical power consumption [W]	11.0 W
Typical heat dissipation [BTU/hour]	37.5 BTU/hour
Maximum power consumption [W]	12 W
Maximum heat dissipation [BTU/hour]	40.9 BTU/hour
Static power consumption [W]	3 W
MTBF [years]	78.75 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0

Item	Specification
Working mode	- Standard mode - Port isolation - Uplink aggregation - Flow control disabling
MAC address entry	8K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100-240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	1 A
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±6 kV
Power supply surge protection [kV]	±2 kV in differential mode, ±4 kV in common mode

Item	Specification
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.5.5 S110-16LP2SR

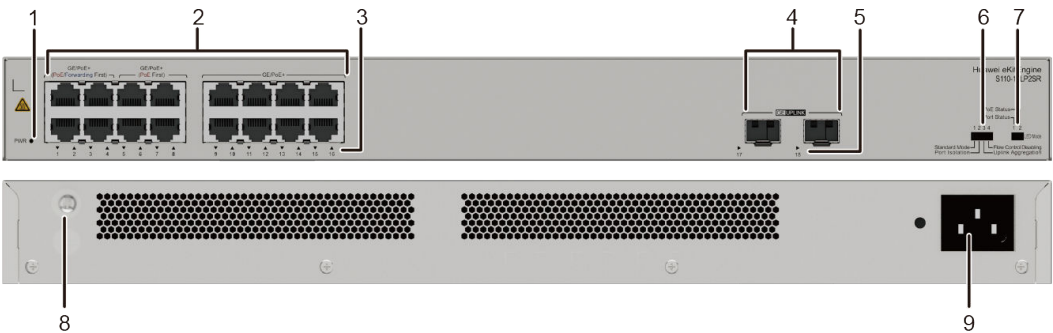
Overview

Table 4-20 Basic information about the S110-16LP2SR

Item	Details
Description	S110-16LP2SR (16*10/100/1000BASE-T ports, 2*GE SFP ports, PoE+, AC power)
Part Number	98012197
Model	S110-16LP2SR

Components

Figure 4-6 S110-16LP2SR appearance



 NOTE

To offer better experience, this model has had changes to its functions and appearance. On the new model, some ports support the Forwarding First (with the Forwarding First silkscreen on the front panel) and PoE First (with the PoE First silkscreen on the front panel) functions. The old model (without these silkscreens) does not support the two functions.

1	PWR indicator	2	Sixteen GE PoE+ electrical ports NOTE Only the new model with the Forwarding First and PoE First silkscreens on the front panel supports the following functions: Forwarding First: This function is available on ports 1 to 4. With this function, traffic on ports 1 to 4 is preferentially forwarded when traffic congestion occurs on uplink ports. PoE First: This function is available on ports 1 to 8. With this function, terminals connected to other ports will not preempt the power of ports 1 to 8 when the device cannot supply full PoE power to connected terminals; additionally, the power of these ports will be preferentially restored after the device restarts.
3	Electrical port indicator	4	Two GE optical ports
5	Optical port indicator	6	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. (The last two downlink electrical ports are not isolated.) Uplink ports are not isolated or aggregated. Uplink Aggregation: Two uplink optical ports are aggregated into a trunk interface. Eth-Trunk supports load balancing only based on source physical ports. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.

7	Port indicator status switch button NOTE Port status: The port indicator indicates the data transmission status of the port. PoE status: The port indicator indicates the PoE status of the port.	8	Ground screw
9	AC socket NOTE Use the power cable delivered with the device.	-	-

Ports

Table 4-21 Ports on the S110-16LP2SR

Port	Connector Type	Description	Available Components
GE PoE+ electrical port	RJ45	A GE PoE+ electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	- FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) - GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-22 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator (Port status)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.
	Green	Blinking	The port is sending or receiving data.
Port indicator (PoE status)	-	Off	The port is not supplying PoE power.
	Green	Steady on	The port is supplying power to the connected PD.
	Green	Blinking	The PoE power of the device is insufficient, and the port cannot provide power to the PD.

Power Supply System

The device uses the power adapter delivered with the device to supply power to the device and the connected PD. The power adapter can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-23 Technical specifications of the S110-16LP2SR

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 260.0 mm (1.72 in. x 17.40 in. x 10.24 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 267.0 mm (1.72 in. x 17.40 in. x 10.51 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 555.0 mm x 400.0 mm (3.54 in. x 21.85 in. x 15.75 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	3.0 kg (6.61 lb)
Weight with packaging [kg(lb)]	3.7 kg (8.16 lb)
Typical power consumption [W]	22.0 W
Typical heat dissipation [BTU/hour]	75.07 BTU/hour
Maximum power consumption [W]	Without PoE: 22.0 W Full PoE load: 160.0 W (PoE: 124 W)
Maximum heat dissipation [BTU/hour]	Without PoE: 75.07 Full PoE load: 545.94
Static power consumption [W]	12.0 W
MTBF [years]	57.77 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0

Item	Specification
Working mode	• Standard mode • Port isolation • Uplink aggregation • Flow control disabling
MAC address entry	8K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100-240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 300 V AC; 47 Hz to 63 Hz
Maximum input current [A]	3 A
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±4 kV
Power supply surge protection [kV]	Differential mode: ±6 kV; common mode: ±6 kV

Item	Specification
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.5.6 S110-24T2SR

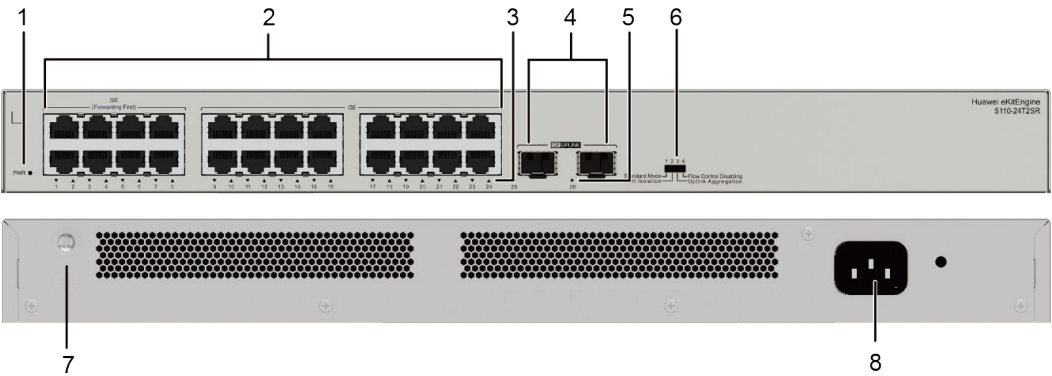
Overview

Table 4-24 Basic information about the S110-24T2SR

Item	Details
Description	S110-24T2SR (24*10/100/1000BASE-T ports, 2*GE SFP ports, AC power)
Part Number	98012196
Model	S110-24T2SR

Components

Figure 4-7 S110-24T2SR appearance



1	PWR indicator	2	Twenty-four GE electrical ports NOTE Only the new model with the Forwarding First silkscreen on the front panel supports the Forwarding First function. This function is available on ports 1 to 8. With this function, traffic on ports 1 to 8 is preferentially forwarded when traffic congestion occurs on uplink ports.
3	Electrical port indicator	4	Two GE optical ports
5	Optical port indicator	6	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. (The last two downlink electrical ports are not isolated.) Uplink ports are not isolated or aggregated. Uplink Aggregation: Two uplink optical ports are aggregated into a trunk interface. Eth-Trunk supports load balancing only based on source physical ports. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.
7	Ground screw	8	AC socket NOTE Use the power cable delivered with the device.

Ports

Table 4-25 Ports on the S110-24T2SR

Port	Connector Type	Description	Available Components
GE electrical port	RJ45	A GE electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	- FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) - GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-26 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator	-	Off	The port is not connected or has been shut down.

Indicator	Color	Status	Description
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.
	Green	Blinking	The port is sending or receiving data.

Power Supply System

The device is powered by the power cable delivered with the device.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-27 Technical specifications of the S110-24T2SR

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 160.0 mm (1.72 in. x 17.40 in. x 6.30 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 167.0 mm (1.72 in. x 17.40 in. x 6.57 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 260.0 mm (3.54 in. x 21.65 in. x 10.24 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	1.8 kg (3.97 lb)
Weight with packaging [kg(lb)]	2.3 kg (5.07 lb)
Typical power consumption [W]	16 W
Typical heat dissipation [BTU/hour]	54.6 BTU/hour
Maximum power consumption [W]	17 W

Item	Specification
Maximum heat dissipation [BTU/hour]	58 BTU/hour
Static power consumption [W]	5 W
MTBF [years]	76.10 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0
Working mode	• Standard mode • Port isolation • Uplink aggregation • Flow control disabling
MAC address entry	8K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100-240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz

Item	Specification
Maximum input current [A]	0.8 A
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 1 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.5.7 S110-24LP2SR

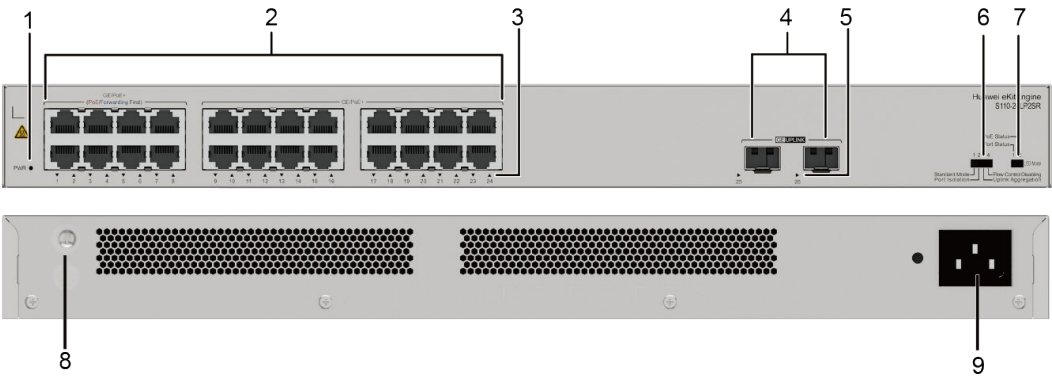
Overview

Table 4-28 Basic information about the S110-24LP2SR

Item	Details
Description	S110-24LP2SR (24*10/100/1000BASE-T ports, 2*GE SFP ports, PoE+, AC power)
Part Number	98012198
Model	S110-24LP2SR

Components

Figure 4-8 S110-24LP2SR appearance



1	PWR indicator	2	Twenty-four GE PoE+ electrical ports NOTE Only the new model with the Forwarding First and PoE First silkscreens on the front panel supports the following functions: Forwarding First: This function is available on ports 1 to 8. With this function, traffic on ports 1 to 8 is preferentially forwarded when traffic congestion occurs on uplink ports. PoE First: This function is available on ports 1 to 8. With this function, terminals connected to other ports will not preempt the power of ports 1 to 8 when the device cannot supply full PoE power to connected terminals; additionally, the power of these ports will be preferentially restored after the device restarts.
3	Electrical port indicator	4	Two GE optical ports

5	Optical port indicator	6	Port mode switch button NOTE Standard Mode: All ports are in the same VLAN, and the flow control function is enabled. Port Isolation: All downlink ports are isolated from each other and cannot communicate with each other. Downlink ports can communicate only with uplink ports. (The last two downlink electrical ports are not isolated.) Uplink ports are not isolated or aggregated. Uplink Aggregation: Two uplink optical ports are aggregated into a trunk interface. Eth-Trunk supports load balancing only based on source physical ports. Flow Control Disabling: All ports are in the same VLAN and flow control is disabled.
7	Port indicator status switch button NOTE Port status: The port indicator indicates the data transmission status of the port. PoE status: The port indicator indicates the PoE status of the port.	8	Ground screw
9	AC socket NOTE Use the power cable delivered with the device.	-	-

Ports

Table 4-29 Ports on the S110-24LP2SR

Port	Connector Type	Description	Available Components
GE PoE+ electrical port	RJ45	A GE PoE+ electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable

Port	Connector Type	Description	Available Components
GE optical port	SFP	A GE optical port can send and receive data at 100/1000 Mbit/s.	• FE SFP/eSFP optical modules (only optical modules with transmission distances less than or equal to 15 km are supported) • GE eSFP optical modules (only optical modules with transmission distances less than or equal to 10 km are supported)

Indicators and Buttons

Table 4-30 Description of indicators on the device

Indicator	Color	Status	Description
PWR indicator	-	Off	The device is powered off.
	Green	Steady on	The power supply is normal.
Port indicator (Port status)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port. NOTE During device startup, all port indicators are steady green for about 2 seconds and then off, indicating that service initialization is complete.
	Green	Blinking	The port is sending or receiving data.
Port indicator (PoE status)	-	Off	The port is not supplying PoE power.
	Green	Steady on	The port is supplying power to the connected PD.

Indicator	Color	Status	Description
	Green	Blinking	The PoE power of the device is insufficient, and the port cannot provide power to the PD.

Power Supply System

The device uses the power adapter delivered with the device to supply power to the device and the connected PD. The power adapter can provide 124 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation System

The device has no fans and uses natural heat dissipation.

Technical Specifications

Table 4-31 Technical specifications of the S110-24LP2SR

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 260.0 mm (1.72 in. x 17.40 in. x 10.24 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 267.0 mm (1.72 in. x 17.40 in. x 10.51 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 555.0 mm x 400.0 mm (3.54 in. x 21.85 in. x 15.75 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	3.2 kg (7.1 lb)
Weight with packaging [kg(lb)]	3.7 kg (8.16 lb)
Typical power consumption [W]	24 W
Typical heat dissipation [BTU/hour]	81.89 BTU/hour
Maximum power consumption [W]	Without PoE: 24 W Full PoE load: 165 W (PoE: 124 W)

Item	Specification
Maximum heat dissipation [BTU/hour]	Without PoE: 81.89 Full PoE load: 563
Static power consumption [W]	13 W
MTBF [years]	42.92 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	Noise-free (no fans), < 30
Noise at normal temperature (acoustic pressure) [dB(A)]	Noise-free (no fans), < 20
Number of card slots	0
Number of power slots	0
Number of fans modules	0
Working mode	• Standard mode • Port isolation • Uplink aggregation • Flow control disabling
MAC address entry	8K
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	0°C to 40°C (32°F to 104°F) at an altitude of 0-1800 m (0-5906 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800-5000 m (5906-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100-240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 300 V AC; 47 Hz to 63 Hz

Item	Specification
Maximum input current [A]	3 A
Memory	-
Flash memory	-
Console port	Not supported
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 4 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	None
Heat dissipation mode	Natural heat dissipation
Airflow direction	-
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.6 S220

4.6.1 S220-8T4S

Overview

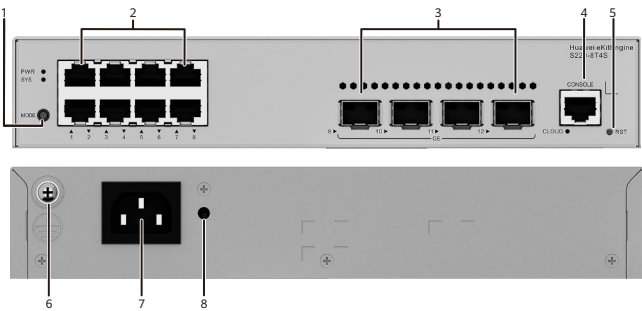
Table 4-32 Basic information about the S220-8T4S

Item	Details
Description	S220-8T4S(8*10/100/1000BASE-T ports, 4*GE SFP ports, built-in AC power)

Item	Details
Part Number	98012551
Model	S220-8T4S
First supported version	V600R023C10SPC600

Components

Figure 4-9 S220-8T4S appearance



1	One MODE button	2	Eight 10/100/1000BASE-T ports
3	Four 1000BASE-X ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	AC socket NOTE It is used with an AC power cable .	8	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.

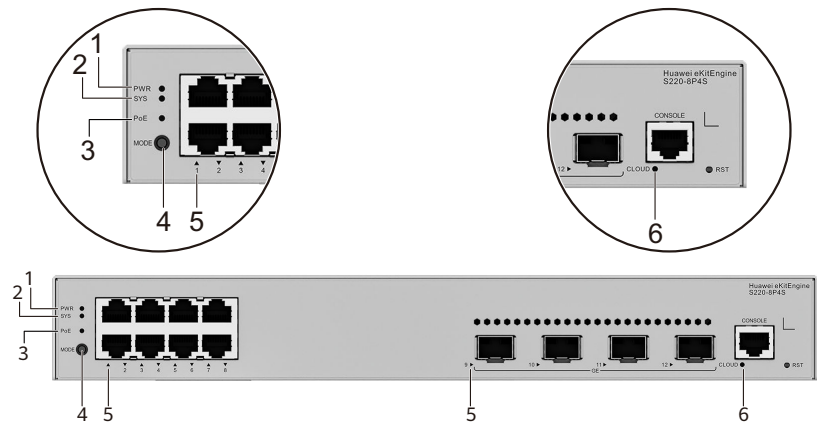
Ports

Table 4-33 Ports on the S220-8T4S

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

Indicators and Buttons

Figure 4-10 Indicators on the Switch



NOTE

The S220-8P4S model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-34 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
			Yellow	Steady on	The power supply is abnormal.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.

No.	Indicator	Name	Color	Status	Description
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator (one indicator for each port)	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 4-35. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-35 Description of service port indicators in different modes (one indicator for each port)

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

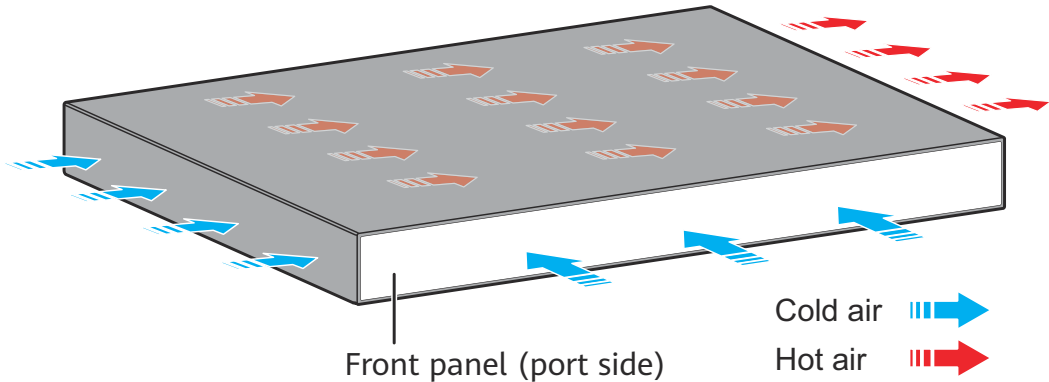
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-36 Technical specifications of the S220-8T4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 250.0 mm x 180.0 mm (1.72 in. x 9.84 in. x 7.09 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 250.0 mm x 187.0 mm (1.72 in. x 9.84 in. x 7.36 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 370.0 mm x 380.0 mm (3.54 in. x 14.57 in. x 14.96 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	1.41 kg (3.11 lb)
Weight with packaging [kg(lb)]	2.22 kg (4.89 lb)
Typical power consumption [W]	15.95 W
Typical heat dissipation [BTU/hour]	54.42 BTU/hour

Item	Specification
Maximum power consumption [W]	21.52 W
Maximum heat dissipation [BTU/hour]	73.43 BTU/hour
Static power consumption [W]	10.52 W
MTBF [years]	75.32 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	44.5 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	32.5 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	0.8 A
Memory	2 GB

Item	Specification
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.2 S220-8P4S

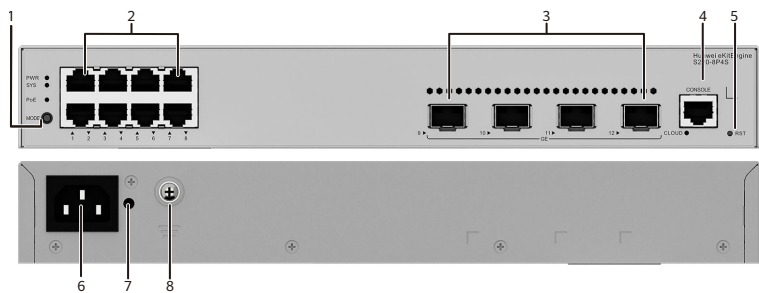
Overview

Table 4-37 Basic information about the S220-8P4S

Item	Details
Description	S220-8P4S(8*10/100/1000BASE-T ports(125W PoE+),4*GE SFP ports, built-in AC power)
Part Number	98012552
Model	S220-8P4S
First supported version	V600R023C10SPC600

Components

Figure 4-11 S220-8P4S appearance



1	One MODE button	2	Eight 10/100/1000BASE-T PoE+ ports
3	Four 1000BASE-X ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	AC socket NOTE It is used with an AC power cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	Ground screw NOTE It is used with a ground cable .

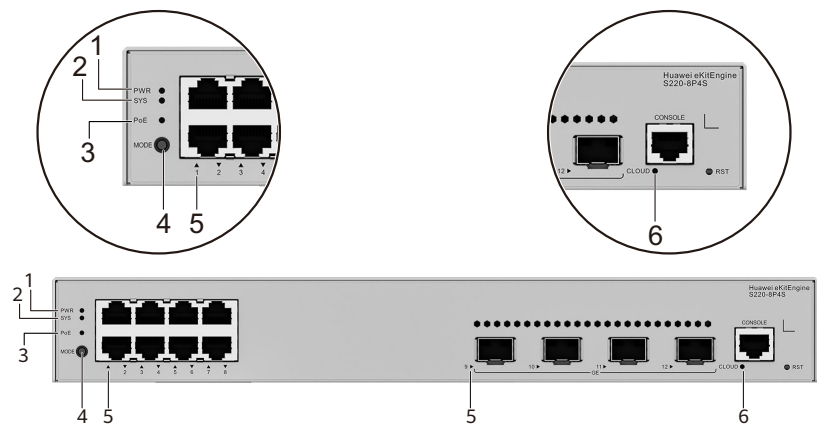
Ports

Table 4-38 Ports on the S220-8P4S

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

Indicators and Buttons

Figure 4-12 Indicators on the Switch



NOTE

The S220-8P4S model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-39 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
			Yellow	Steady on	The power supply is abnormal.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.

No.	Indicator	Name	Color	Status	Description
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator (one indicator for each port)	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 4-40. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-40 Description of service port indicators in different modes (one indicator for each port)

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

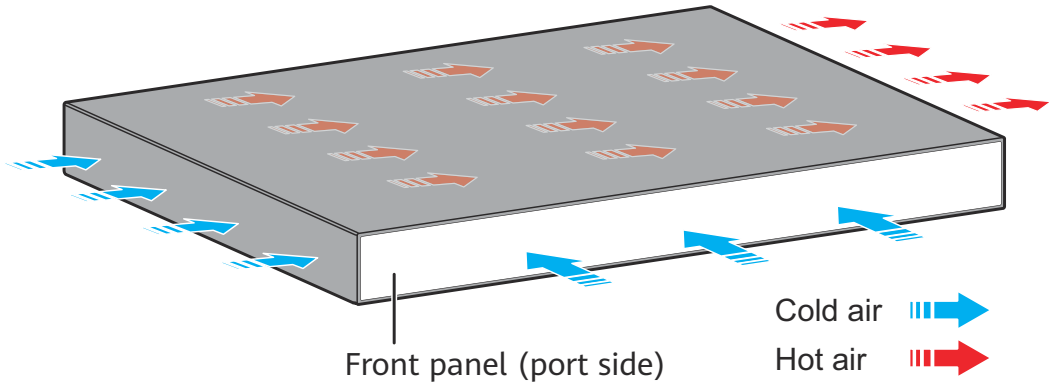
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 125 W PoE power, which ensures full PoE power on 8 ports in compliance with 802.3af or on 4 ports in compliance with 802.3at.

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-41 Technical specifications of the S220-8P4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 320.0 mm x 210.0 mm (1.72 in. x 12.6 in. x 8.27 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 320.0 mm x 217.0 mm (1.72 in. x 12.6 in. x 8.54 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 465.0 mm x 380.0 mm (3.54 in. x 18.31 in. x 14.96 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.5 kg (5.51 lb)
Weight with packaging [kg(lb)]	3.05 kg (6.72 lb)
Typical power consumption [W]	19.99 W
Typical heat dissipation [BTU/hour]	68.21 BTU/hour

Item	Specification
Maximum power consumption [W]	- Without PoE: 25.09 W - Full PoE load: 166.65 W (PoE: 125 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 85.61 - Full PoE load: 568.63
Static power consumption [W]	17.19 W
MTBF [years]	69.71 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	47 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	35 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 300 V AC; 47 Hz to 63 Hz

Item	Specification
Maximum input current [A]	3 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.3 S220-24T4X

Overview

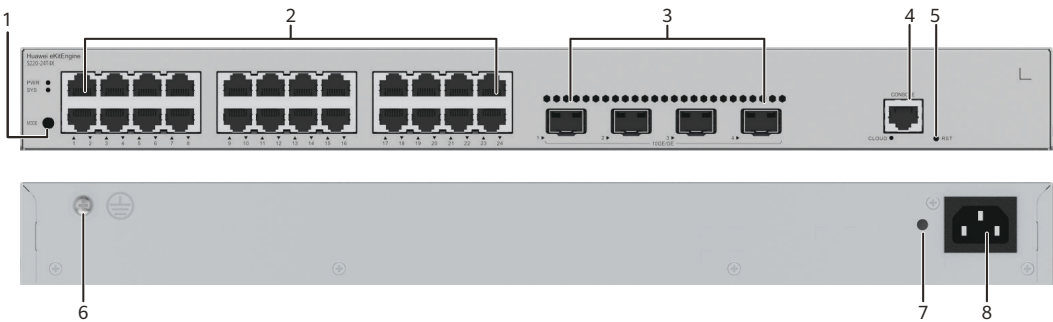
Table 4-42 Basic information about the S220-24T4X

Item	Details
Description	S220-24T4X (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, built-in AC power)
Part Number	98012375

Item	Details
Model	S220-24T4X
First supported version	V600R023C00

Components

Figure 4-13 S220-24T4X appearance



1	One MODE button	2	Twenty-four 10/100/1000BASE-T ports
3	Four 10GE SFP+ ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

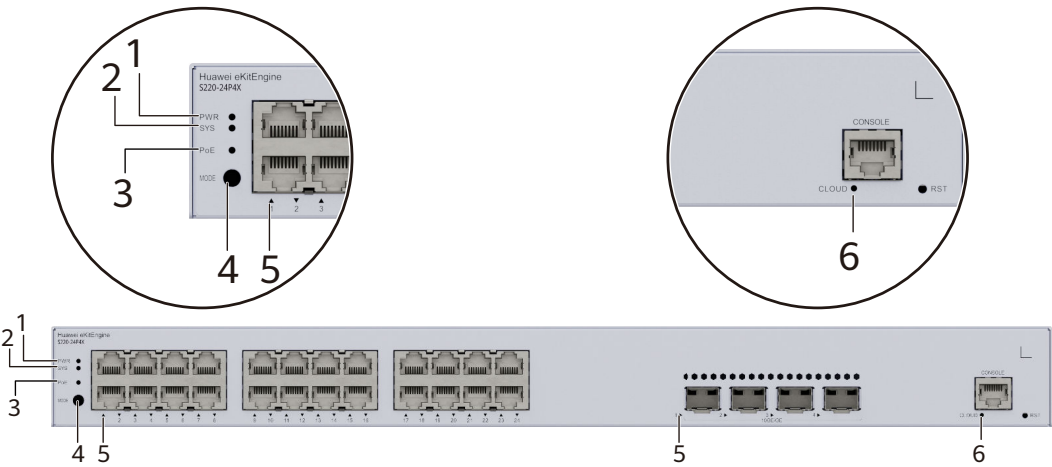
Ports

Table 4-43 Ports on the S220-24T4X

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	- GE eSFP optical modules - GE-CWDM eSFP optical modules - GE-DWDM eSFP optical modules - GE SFP copper module 10GE SFP+ optical modules 10GE-CWDM SFP+ optical modules 10GE-DWDM SFP+ optical modules 1 m and 3 m SFP+ high-speed copper cables 10 m SFP+ AOC cables
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-14 Indicators on the Switch



NOTE

The S220-24P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-44 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator (one indicator for each port)	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 4-45. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-45 Description of service port indicators in different modes (one indicator for each port)

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

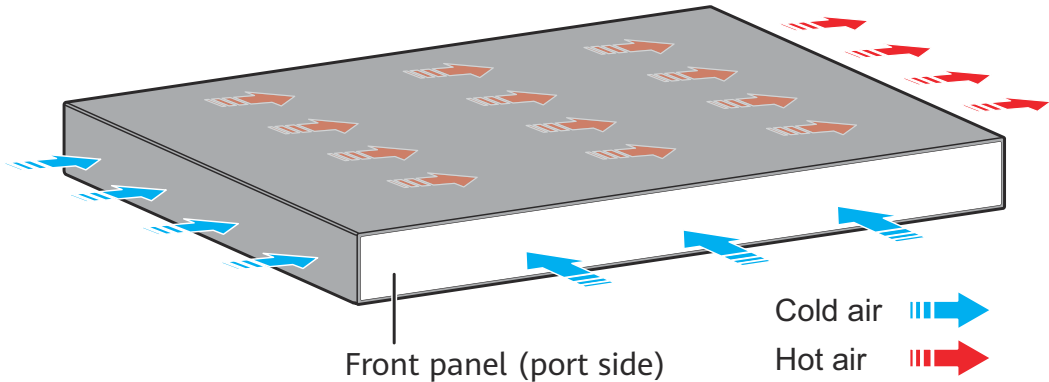
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-46 Technical specifications of the S220-24T4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.32 kg (5.11 lb)
Weight with packaging [kg(lb)]	3.44 kg (7.58 lb)
Typical power consumption [W]	27.27 W
Typical heat dissipation [BTU/hour]	93.05 BTU/hour

Item	Specification
Maximum power consumption [W]	35.04 W
Maximum heat dissipation [BTU/hour]	119.56 BTU/hour
Static power consumption [W]	19.00 W
MTBF [years]	70.75 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	47 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	35 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	0.8 A
Memory	2 GB

Item	Specification
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.4 S220-24P4X

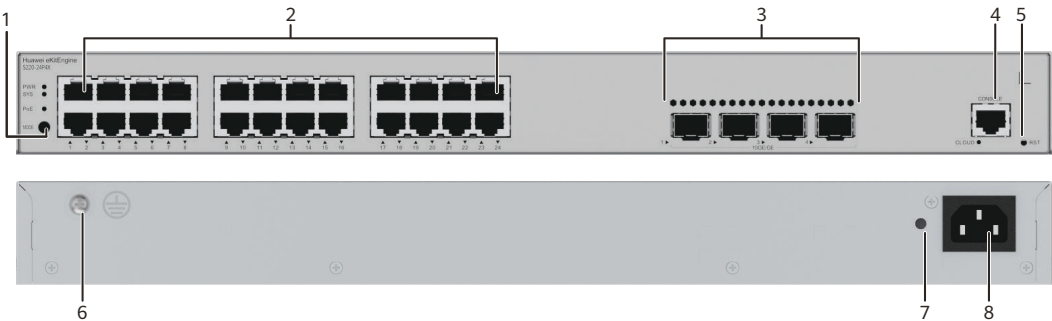
Overview

Table 4-47 Basic information about the S220-24P4X

Item	Details
Description	S220-24P4X (24*10/100/1000BASE-T ports(400W PoE+), 4*10GE SFP+ ports, built-in AC power)
Part Number	98012376
Model	S220-24P4X
First supported version	V600R023C00

Components

Figure 4-15 S220-24P4X appearance



1	One MODE button	2	Twenty-four 10/100/1000BASE-T PoE+ ports
3	Four 10GE SFP+ ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

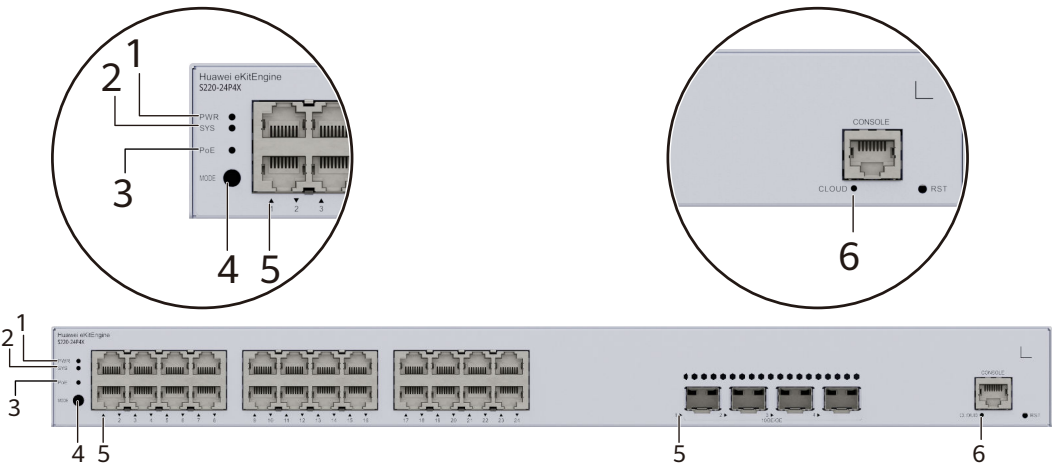
Ports

Table 4-48 Ports on the S220-24P4X

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
10GE SFP+ port port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	- GE eSFP optical modules - GE-CWDM eSFP optical modules - GE-DWDM eSFP optical modules - GE SFP copper module 10GE SFP+ optical modules 10GE-CWDM SFP+ optical modules 10GE-DWDM SFP+ optical modules 1 m and 3 m SFP+ high-speed copper cables 10 m SFP+ AOC cables
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-16 Indicators on the Switch



NOTE

The S220-24P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-49 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator (one indicator for each port)	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 4-50. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-50 Description of service port indicators in different modes (one indicator for each port)

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

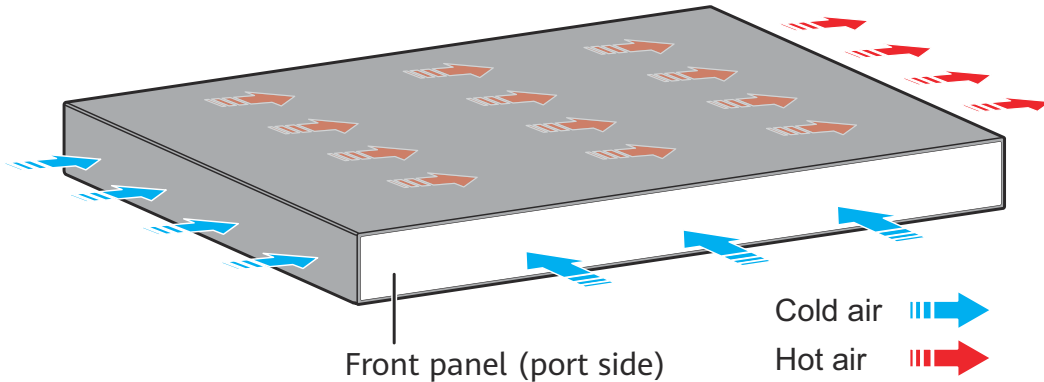
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 400 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 13 ports in compliance with 802.3at.

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-51 Technical specifications of the S220-24P4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.92 kg (6.44 lb)
Weight with packaging [kg(lb)]	3.79 kg (8.36 lb)
Typical power consumption [W]	37.12 W
Typical heat dissipation [BTU/hour]	126.65 BTU/hour

Item	Specification
Maximum power consumption [W]	- Without PoE: 44.35 W - Full PoE load: 485.91 W (PoE: 400 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 151.32 - Full PoE load: 1657.92
Static power consumption [W]	27.07 W
MTBF [years]	60.18 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC

Item	Specification
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.5 S220-48T4S

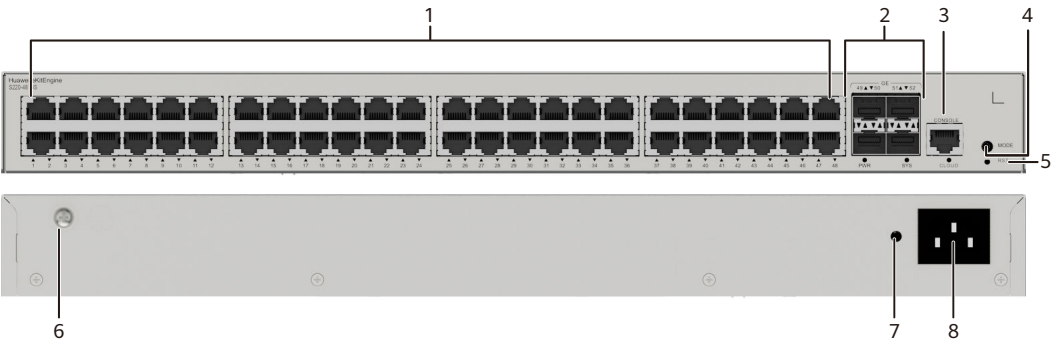
Overview

Table 4-52 Basic information about the S220-48T4S

Item	Details
Description	S220-48T4S (48*10/100/1000BASE-T ports, 4*GE SFP ports, built-in AC power)
Part Number	98012380
Model	S220-48T4S
First supported version	V600R023C00

Components

Figure 4-17 S220-48T4S appearance



1	Forty-eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports
3	One console port	4	One MODE button
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .

7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .
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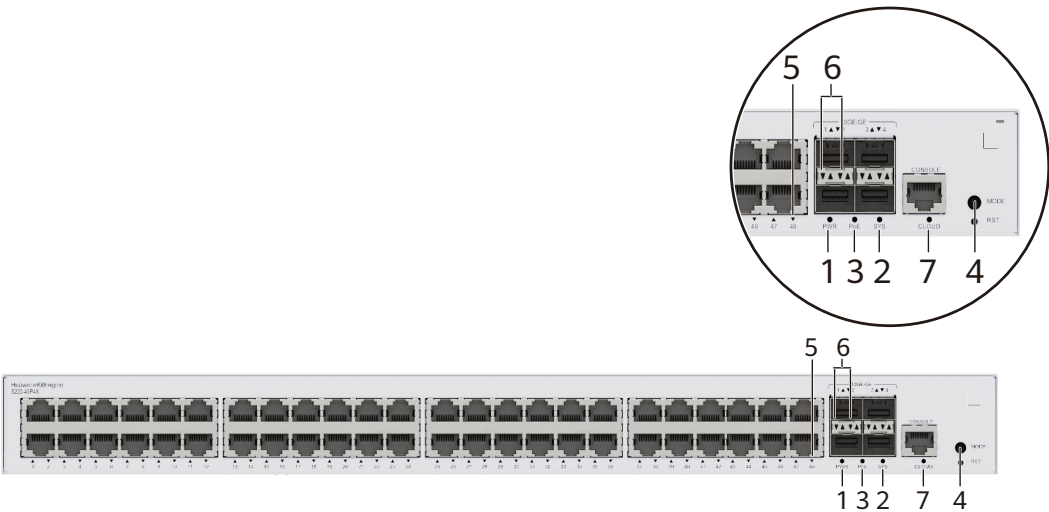
Ports

Table 4-53 Ports on the S220-48T4S

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

Indicators and Buttons

Figure 4-18 Indicators on the Switch



NOTE

The S220-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-54 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Electrical service port indicator (one indicator for each port)	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 4-55 and Table 4-56. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
7	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-55 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.

Display Mode	Color	Status	Description
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-56 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

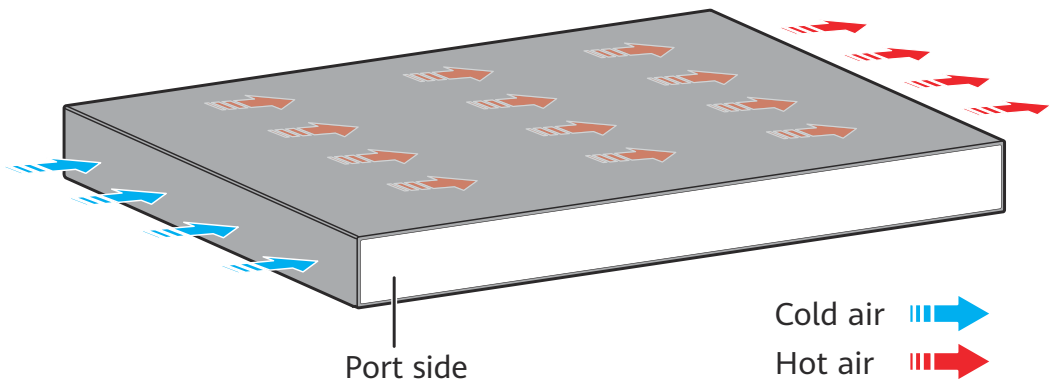
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-57 Technical specifications of the S220-48T4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.71 kg (5.97 lb)
Weight with packaging [kg(lb)]	3.59 kg (7.91 lb)
Typical power consumption [W]	36.15 W
Typical heat dissipation [BTU/hour]	123.35 BTU/hour
Maximum power consumption [W]	43.3 W
Maximum heat dissipation [BTU/hour]	147.74 BTU/hour
Static power consumption [W]	18.8 W
MTBF [years]	40.61 years
MTTR [hours]	2 hours

Item	Specification
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	46.6 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	34.6 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used. The device does not support dying gasp when the ambient temperature is higher than 40°C (104°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	1.6 A
Memory	2 GB

Item	Specification
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.6 S220-48T4X

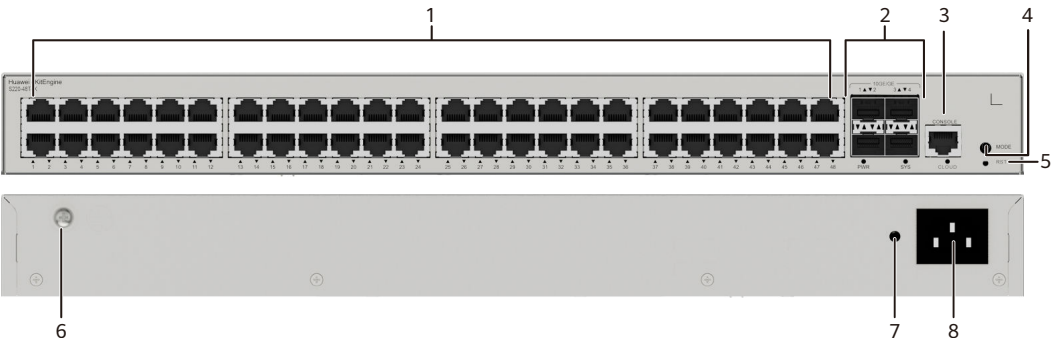
Overview

Table 4-58 Basic information about the S220-48T4X

Item	Details
Description	S220-48T4X (48*10/100/1000BASE-T ports, 4*10GE SFP+ ports, built-in AC power)
Part Number	98012377
Model	S220-48T4X
First supported version	V600R023C00

Components

Figure 4-19 S220-48T4X appearance



1	Forty-eight 10/100/1000BASE-T ports	2	Four 10GE SFP+ ports
3	One console port	4	One MODE button
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

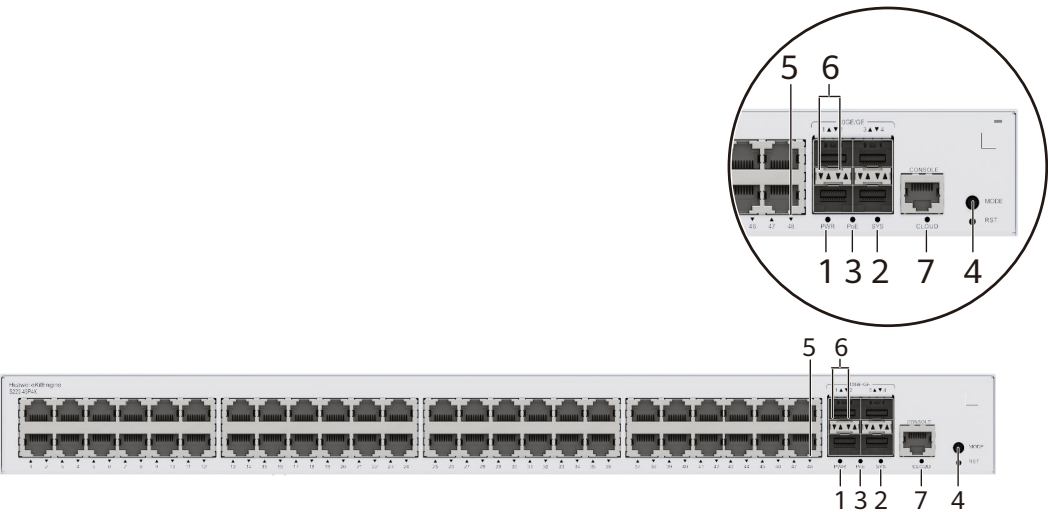
Ports

Table 4-59 Ports on the S220-48T4X

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	- GE eSFP optical modules - GE-CWDM eSFP optical modules - GE-DWDM eSFP optical modules - GE SFP copper module 10GE SFP+ optical modules 10GE-CWDM SFP+ optical modules 10GE-DWDM SFP+ optical modules 1 m and 3 m SFP+ high-speed copper cables 10 m SFP+ AOC cables
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-20 Indicators on the Switch



NOTE

The S220-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-60 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Electrical service port indicator (one indicator for each port)	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 4-61 and Table 4-62. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
7	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-61 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.

Display Mode	Color	Status	Description
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-62 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

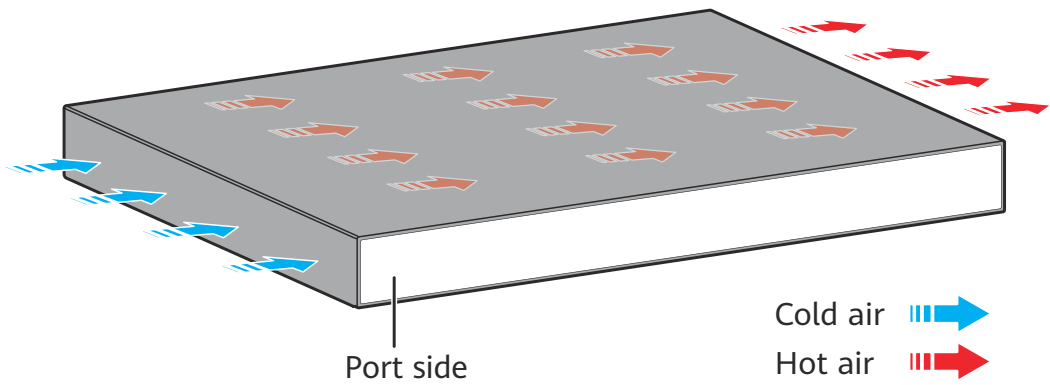
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-63 Technical specifications of the S220-48T4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.71 kg (5.97 lb)
Weight with packaging [kg(lb)]	3.59 kg (7.91 lb)
Typical power consumption [W]	36.95 W
Typical heat dissipation [BTU/hour]	126.07 BTU/hour
Maximum power consumption [W]	44.3 W
Maximum heat dissipation [BTU/hour]	151.15 BTU/hour
Static power consumption [W]	18.8 W
MTBF [years]	40.61 years
MTTR [hours]	2 hours

Item	Specification
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	46.6 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	34.6 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used. The device does not support dying gasp when the ambient temperature is higher than 40°C (104°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	1.6 A
Memory	2 GB

Item	Specification
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.7 S220-48P4S

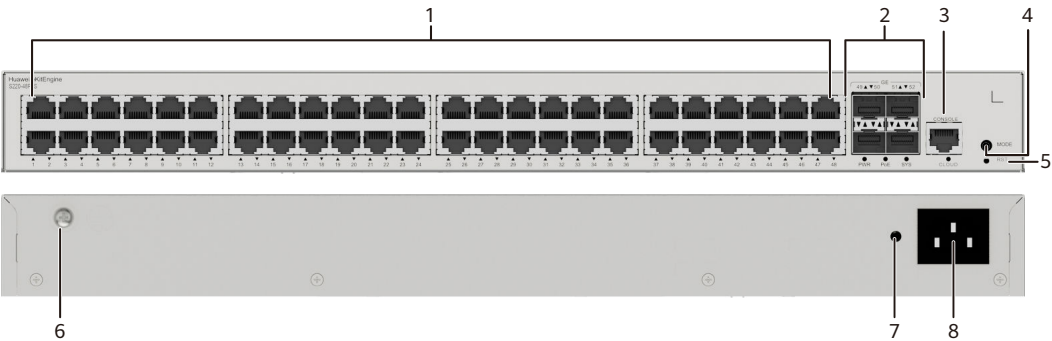
Overview

Table 4-64 Basic information about the S220-48P4S

Item	Details
Description	S220-48P4S (48*10/100/1000BASE-T ports(380W PoE+), 4*GE SFP ports, built-in AC power)
Part Number	98012379
Model	S220-48P4S
First supported version	V600R023C00

Components

Figure 4-21 S220-48P4S appearance



1	Forty-eight 10/100/1000BASE-T PoE + ports	2	Four 1000BASE-X ports
3	One console port	4	One MODE button
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

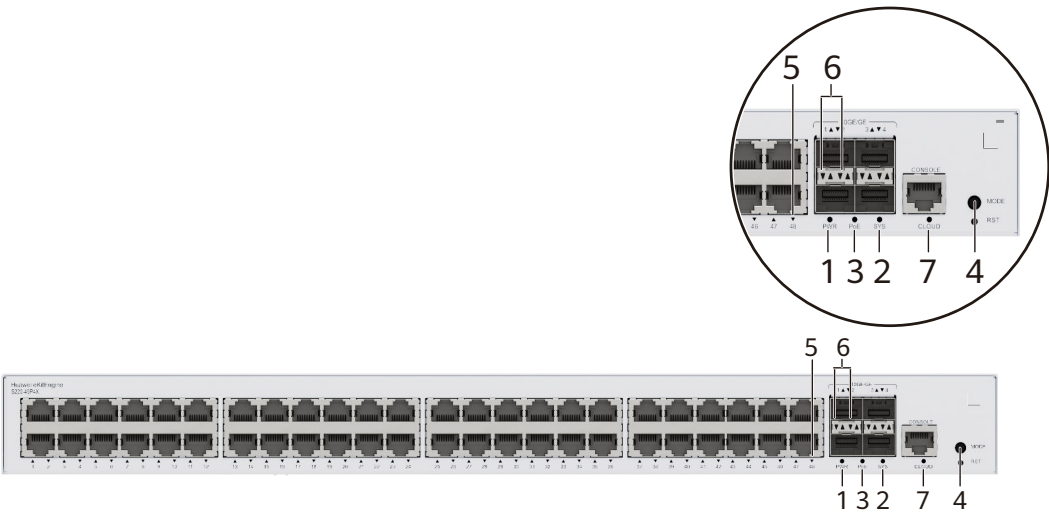
Ports

Table 4-65 Ports on the S220-48P4S

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

Indicators and Buttons

Figure 4-22 Indicators on the Switch



NOTE

The S220-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-66 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Electrical service port indicator (one indicator for each port)	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 4-67 and Table 4-68. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
7	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-67 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.

Display Mode	Color	Status	Description
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-68 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

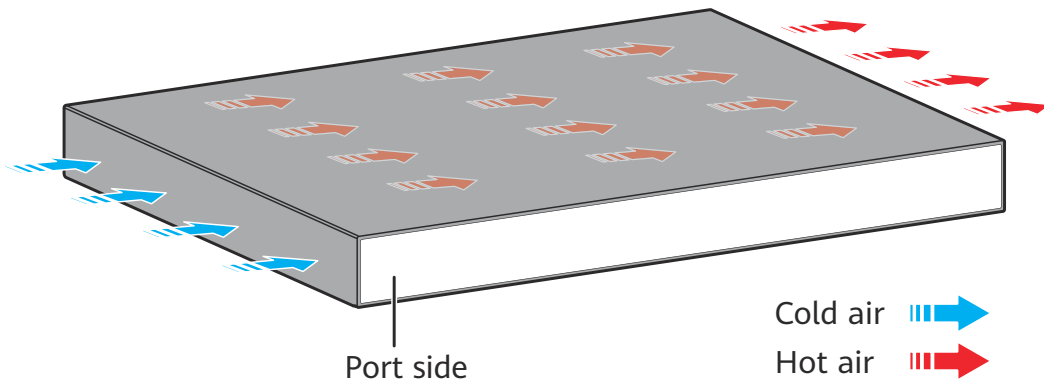
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-69 Technical specifications of the S220-48P4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	3.24 kg (7.14 lb)
Weight with packaging [kg(lb)]	4.29 kg (9.46 lb)
Typical power consumption [W]	48.64 W
Typical heat dissipation [BTU/hour]	165.96 BTU/hour
Maximum power consumption [W]	- Without PoE: 63.70 W - Full PoE load: 462.80 W (PoE: 380 W)

Item	Specification
Maximum heat dissipation [BTU/hour]	- Without PoE: 217.35 - Full PoE load: 1579.12
Static power consumption [W]	34.04 W
MTBF [years]	48.14 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC

Item	Specification
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.6.8 S220-48P4X

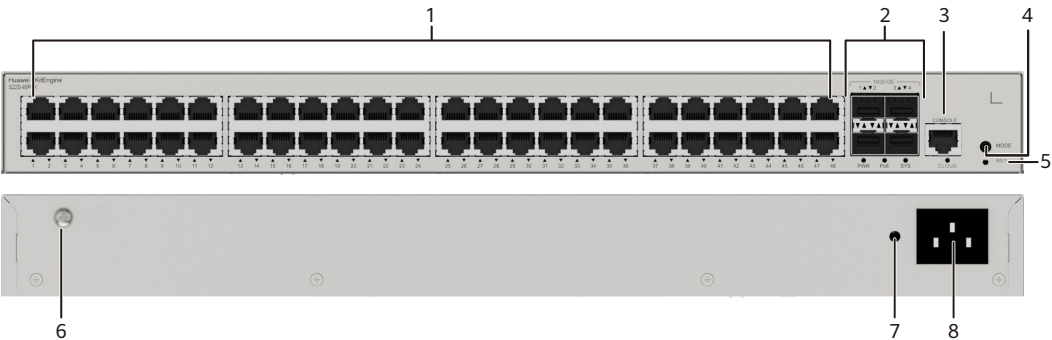
Overview

Table 4-70 Basic information about the S220-48P4X

Item	Details
Description	S220-48P4X (48*10/100/1000BASE-T ports(380W PoE+), 4*10GE SFP+ ports, built-in AC power)
Part Number	98012378
Model	S220-48P4X
First supported version	V600R023C00

Components

Figure 4-23 S220-48P4X appearance



1	Forty-eight 10/100/1000BASE-T PoE + ports	2	Four 10GE SFP+ ports
3	One console port	4	One MODE button
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .

7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .
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Ports

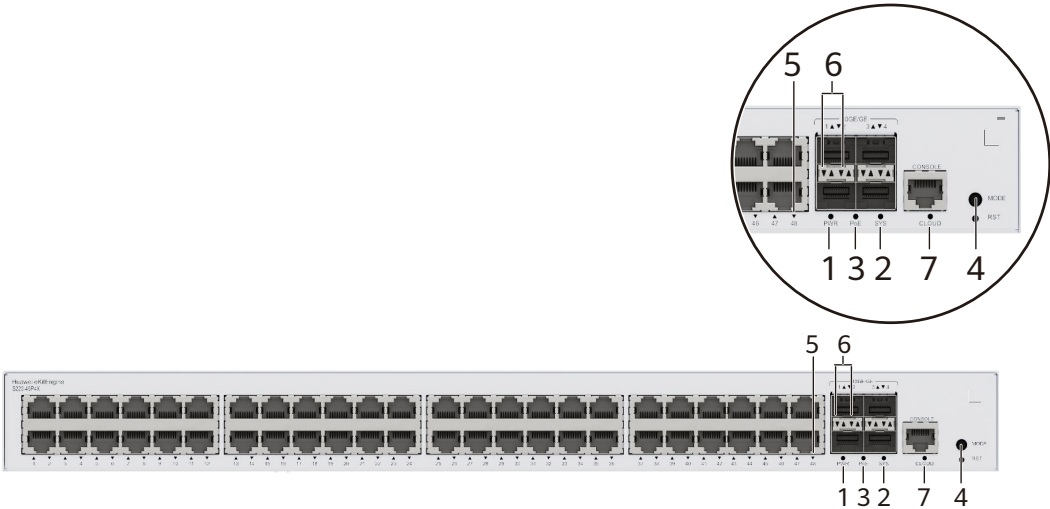
Table 4-71 Ports on the S220-48P4X

Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables

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

Indicators and Buttons

Figure 4-24 Indicators on the Switch



NOTE

The S220-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-72 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.

No.	Indicator	Name	Color	Status	Description
5	-	Electrical service port indicator (one indicator for each port)	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 4-73 and Table 4-74. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.
6	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		

No.	Indicator	Name	Color	Status	Description
7	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-73 Description of service port indicators in different modes (one indicator for each port)

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

Table 4-74 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

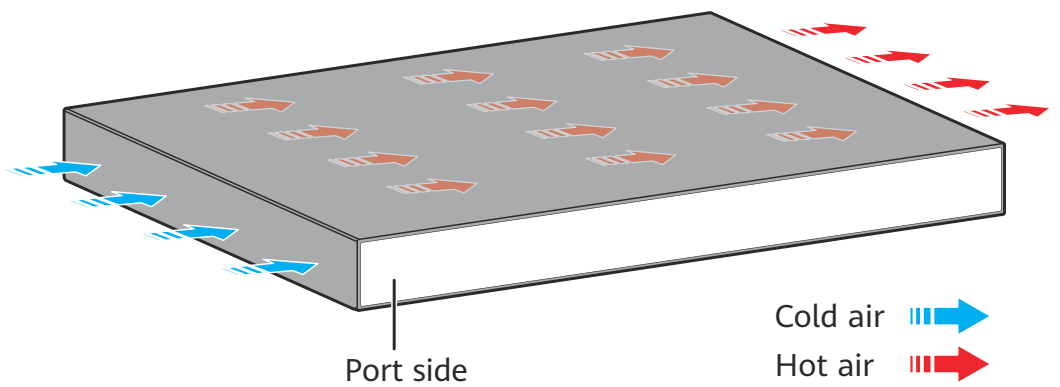
Power Supply System

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

Heat Dissipation System

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

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



 NOTE

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

Technical Specifications

Table 4-75 Technical specifications of the S220-48P4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	3.24 kg (7.14 lb)
Weight with packaging [kg(lb)]	4.29 kg (9.46 lb)
Typical power consumption [W]	49.44 W
Typical heat dissipation [BTU/hour]	168.69 BTU/hour
Maximum power consumption [W]	- Without PoE: 64.7 W - Full PoE load: 462.80 W (PoE: 380 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 220.76 - Full PoE load: 1579.12
Static power consumption [W]	34.04 W
MTBF [years]	48.14 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2

Item	Specification
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±7 kV

Item	Specification
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.7 S310

4.7.1 S310-24T4S

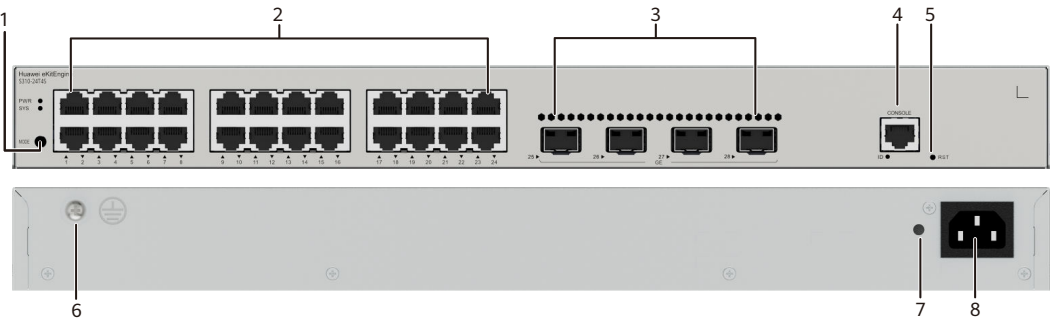
Overview

Table 4-76 Basic information about the S310-24T4S

Item	Details
Description	S310-24T4S (24*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
Part Number	98012202
Model	S310-24T4S
First supported version	V600R022C10

Components

Figure 4-25 S310-24T4S appearance



NOTE

This model has had changes to its appearance and branding (from CloudEngine to eKitEngine), and devices delivered over different periods may have different appearances but have no differences in functions.

1	One MODE button	2	Twenty-four 10/100/1000BASE-T ports
3	Four 1000BASE-X ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the PNP button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

Table 4-77 Ports on the S310-24T4S

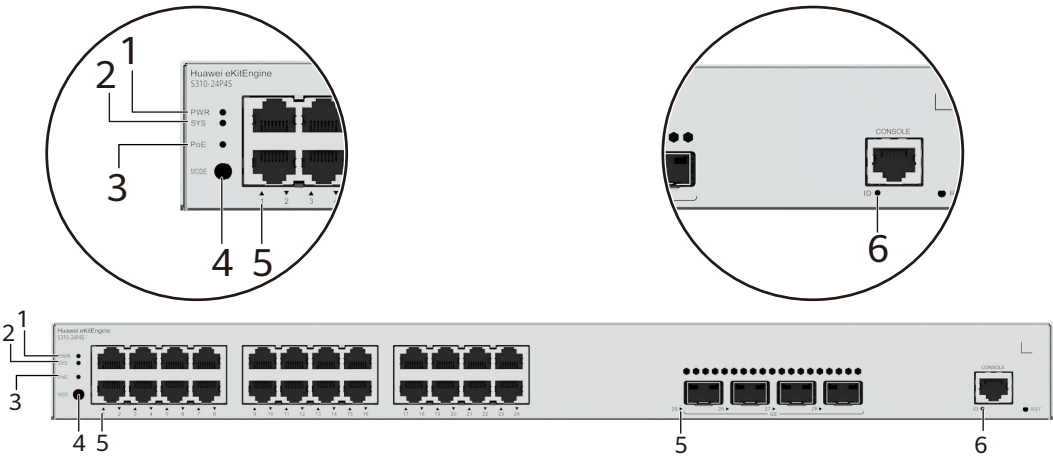
Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable

Port	Connector Type	Description	Available Components
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 10GE-CWDM SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 10GE-DWDM SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 1 m and 3 m SFP+ high-speed copper cables (only used for stack connection, supported in V600R023C00 and later versions)

Port	Connector Type	Description	Available Components
			10 m SFP+ AOC cables (only used for stack connection, supported in V600R023C00 and later versions) 0.5 m and 1.5 m SFP+ dedicated stack cables (only used for stack connection, supported in V600R023C00 and later versions)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-26 Indicators on the Switch



NOTE

The S310-24P4S model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-78 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE In V600R023C00 and later versions, hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see Table 4-79 .		
			NOTE If a power failure occurs on a device's PCB board, indicators of the last four optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.		
6	ID	ID indicator	-	Off	The ID indicator is not used (default state).
			Blue	Steady on	The indicator identifies the switch to maintain. The ID indicator can be turned on or off remotely to help field engineers find the switch to maintain.

Table 4-79 Description of service port indicators in different modes (one indicator for each port)

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

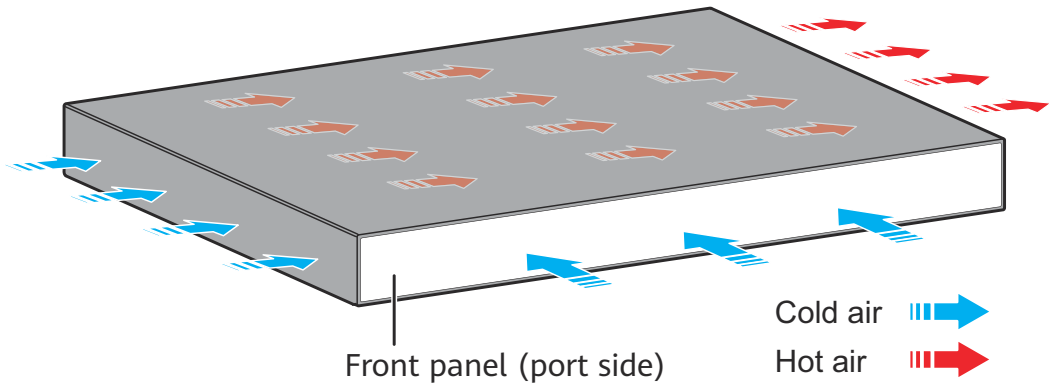
Power Supply System

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

Heat Dissipation System

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

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



 NOTE

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

Technical Specifications

Table 4-80 Technical specifications of the S310-24T4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.32 kg (5.11 lb)
Weight with packaging [kg(lb)]	3.44 kg (7.58 lb)
Typical power consumption [W]	26.37 W
Typical heat dissipation [BTU/hour]	89.98 BTU/hour
Maximum power consumption [W]	34.04 W
Maximum heat dissipation [BTU/hour]	116.15 BTU/hour
Static power consumption [W]	19.00 W
MTBF [years]	70.75 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	47 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	35 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1

Item	Specification
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	0.8 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	Differential mode: ±6 kV; common mode: ±6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment

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

4.7.2 S310-24P4S

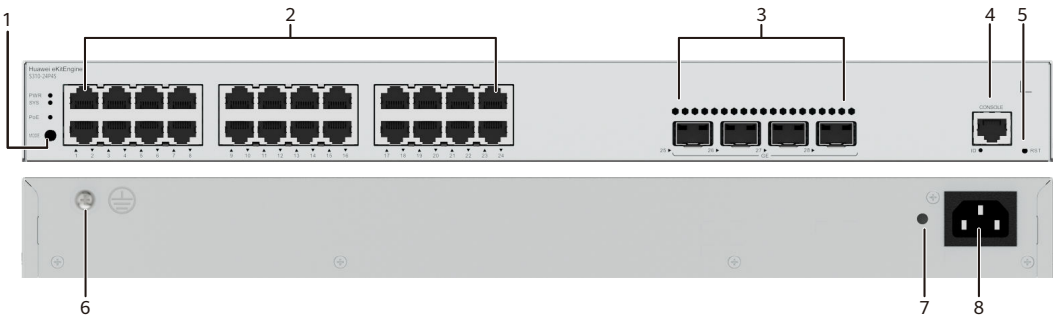
Overview

Table 4-81 Basic information about the S310-24P4S

Item	Details
Description	S310-24P4S (24*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power)
Part Number	98012201
Model	S310-24P4S
First supported version	V600R022C10

Components

Figure 4-27 S310-24P4S appearance



NOTE

This model has had changes to its appearance and branding (from CloudEngine to eKitEngine), and devices delivered over different periods may have different appearances but have no differences in functions.

1	One MODE button	2	Twenty-four 10/100/1000BASE-T PoE+ ports
3	Four 1000BASE-X ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the PNP button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

Table 4-82 Ports on the S310-24P4S

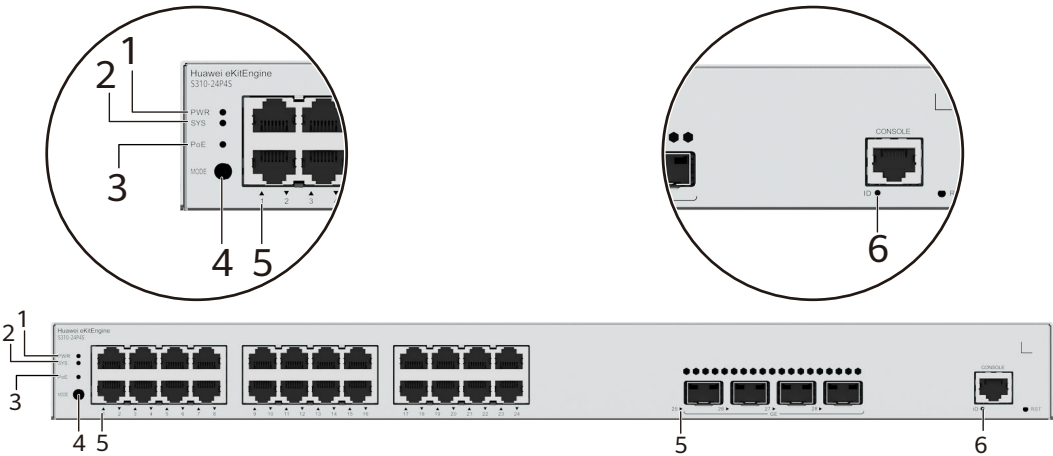
Port	Connector Type	Description	Available Components
10/100/1000BASE-T PoE+ port	RJ45	A 10/100/1000BASE-T PoE+ Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s. The port supports the PoE function.	Ethernet cable

Port	Connector Type	Description	Available Components
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 10GE-CWDM SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 10GE-DWDM SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 1 m and 3 m SFP+ high-speed copper cables (only used for stack connection, supported in V600R023C00 and later versions)

Port	Connector Type	Description	Available Components
			10 m SFP+ AOC cables (only used for stack connection, supported in V600R023C00 and later versions) 0.5 m and 1.5 m SFP+ dedicated stack cables (only used for stack connection, supported in V600R023C00 and later versions)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-28 Indicators on the Switch



NOTE

The S310-24P4S model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-83 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE In V600R023C00 and later versions, hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see Table 4-84 .		
			NOTE If a power failure occurs on a device's PCB board, indicators of the last four optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.		
6	ID	ID indicator	-	Off	The ID indicator is not used (default state).
			Blue	Steady on	The indicator identifies the switch to maintain. The ID indicator can be turned on or off remotely to help field engineers find the switch to maintain.

Table 4-84 Description of service port indicators in different modes (one indicator for each port)

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

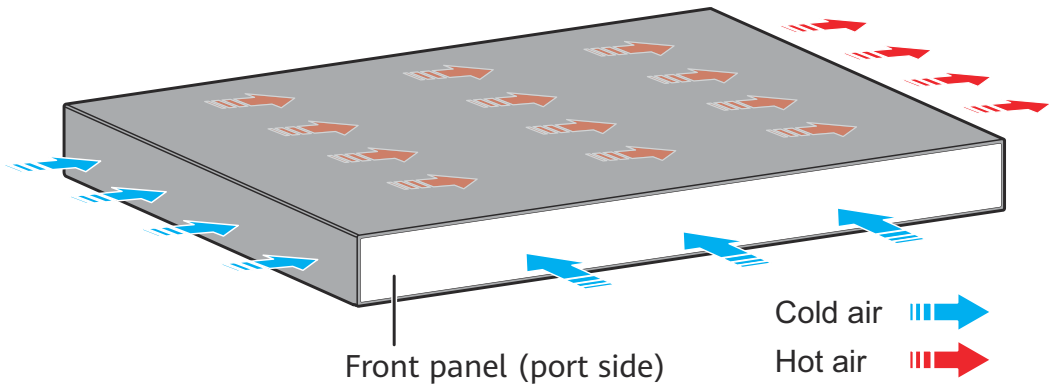
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 400 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 13 ports in compliance with 802.3at.

Heat Dissipation System

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

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



 NOTE

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

Technical Specifications

Table 4-85 Technical specifications of the S310-24P4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.92 kg (6.44 lb)
Weight with packaging [kg(lb)]	3.79 kg (8.36 lb)
Typical power consumption [W]	40.07 W
Typical heat dissipation [BTU/hour]	136.72 BTU/hour
Maximum power consumption [W]	- Without PoE: 47.1 W - Full PoE load: 491.66 W (PoE: 400 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 160.71 - Full PoE load: 1677.59
Static power consumption [W]	30.82 W
MTBF [years]	60.18 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)

Item	Specification
Number of card slots	0
Number of power slots	0
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±7 kV

Item	Specification
Power supply surge protection [kV]	Differential mode: ±6 kV; common mode: ±6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.3 S310-48T4S

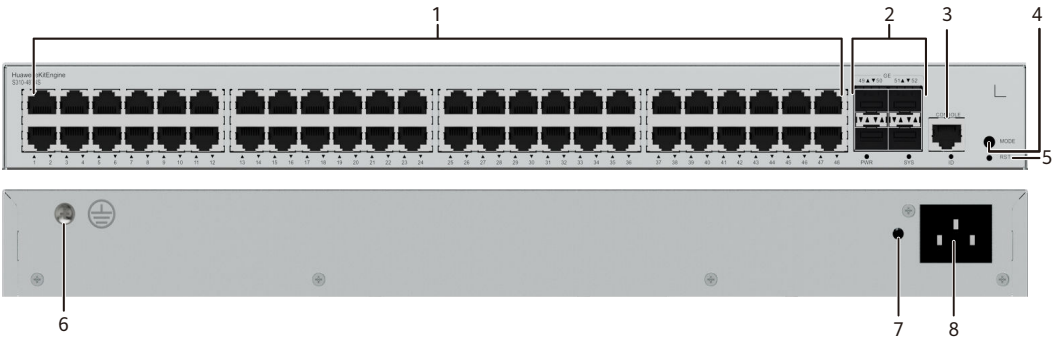
Overview

Table 4-86 Basic information about the S310-48T4S

Item	Details
Description	S310-48T4S (48*10/100/1000BASE-T ports, 4*GE SFP ports, AC power)
Part Number	98012203
Model	S310-48T4S
First supported version	V600R022C10

Components

Figure 4-29 S310-48T4S appearance



 NOTE

This model has had changes to its appearance and branding (from CloudEngine to eKitEngine), and devices delivered over different periods may have different appearances but have no differences in functions.

1	Forty-eight 10/100/1000BASE-T ports	2	Four 1000BASE-X ports
3	One console port	4	One MODE button
5	One RST button NOTICE To restore the factory settings and reset the switch, hold down the button for at least 6 seconds. To reset the switch, press the button. Resetting the switch will cause service interruption. Exercise caution when you press the PNP button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

Table 4-87 Ports on the S310-48T4S

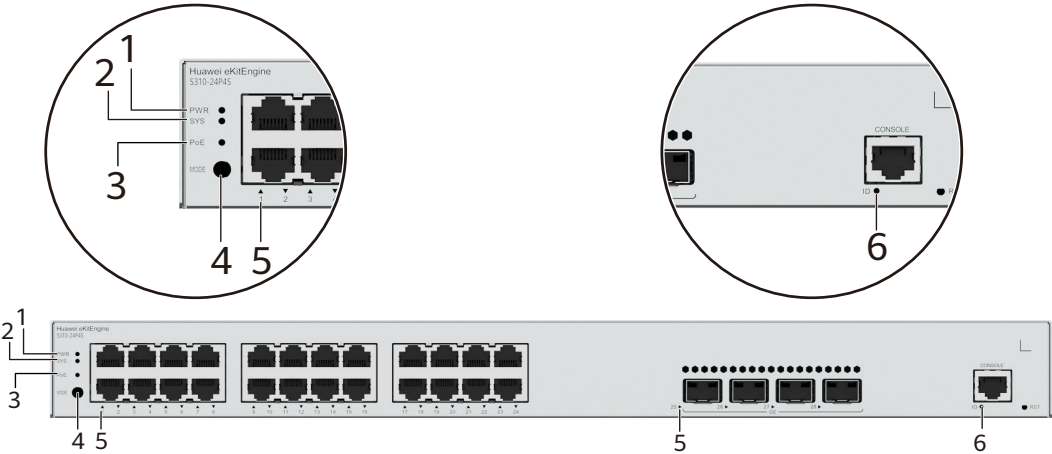
Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable

Port	Connector Type	Description	Available Components
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 10GE-CWDM SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 10GE-DWDM SFP+ optical modules (only used for stack connection, supported in V600R023C00 and later versions) • 1 m and 3 m SFP+ high-speed copper cables (only used for stack connection, supported in V600R023C00 and later versions)

Port	Connector Type	Description	Available Components
			10 m SFP+ AOC cables (only used for stack connection, supported in V600R023C00 and later versions) 0.5 m and 1.5 m SFP+ dedicated stack cables (only used for stack connection, supported in V600R023C00 and later versions)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-30 Indicators on the Switch



NOTE

The S310-24P4S model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-88 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE In V600R023C00 and later versions, hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator	Meanings of service port indicators vary in different modes. For details, see Table 4-89 .		
			NOTE If a power failure occurs on a device's PCB board, indicators of the last four optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.		
6	ID	ID indicator	-	Off	The ID indicator is not used (default state).
			Blue	Steady on	The indicator identifies the switch to maintain. The ID indicator can be turned on or off remotely to help field engineers find the switch to maintain.

Table 4-89 Description of service port indicators in different modes (one indicator for each port)

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

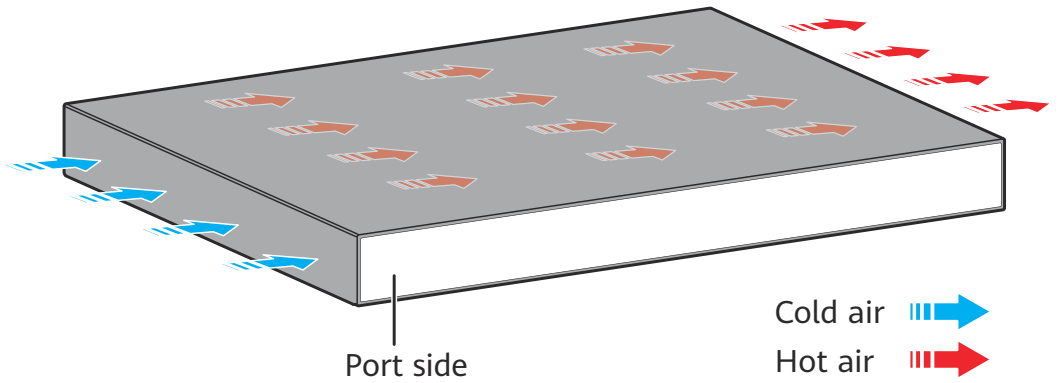
Power Supply System

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

Heat Dissipation System

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

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



 NOTE

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

Technical Specifications

Table 4-90 Technical specifications of the S310-48T4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.71 kg (5.97 lb)
Weight with packaging [kg(lb)]	3.59 kg (7.91 lb)
Typical power consumption [W]	44.9 W
Typical heat dissipation [BTU/hour]	153.2 BTU/hour
Maximum power consumption [W]	52.05 W
Maximum heat dissipation [BTU/hour]	177.6 BTU/hour
Static power consumption [W]	27.55 W
MTBF [years]	40.61 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	46.6 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	34.6 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1

Item	Specification
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used. The device does not support dying gasp when the ambient temperature is higher than 40°C (104°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	1.6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±7 kV

Item	Specification
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.4 S310-24T4X

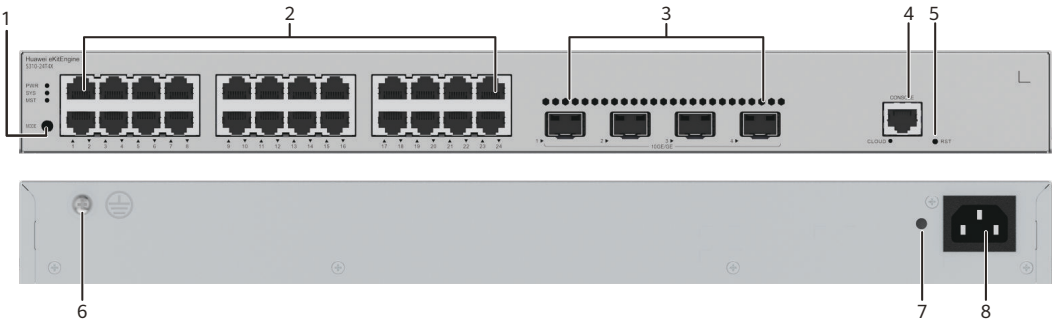
Overview

Table 4-91 Basic information about the S310-24T4X

Item	Details
Description	S310-24T4X (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, built-in AC power)
Part Number	98012381
Model	S310-24T4X
First supported version	V600R023C00

Components

Figure 4-31 S310-24T4X appearance



1	One MODE button	2	Twenty-four 10/100/1000BASE-T ports
3	Four 10GE SFP+ ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

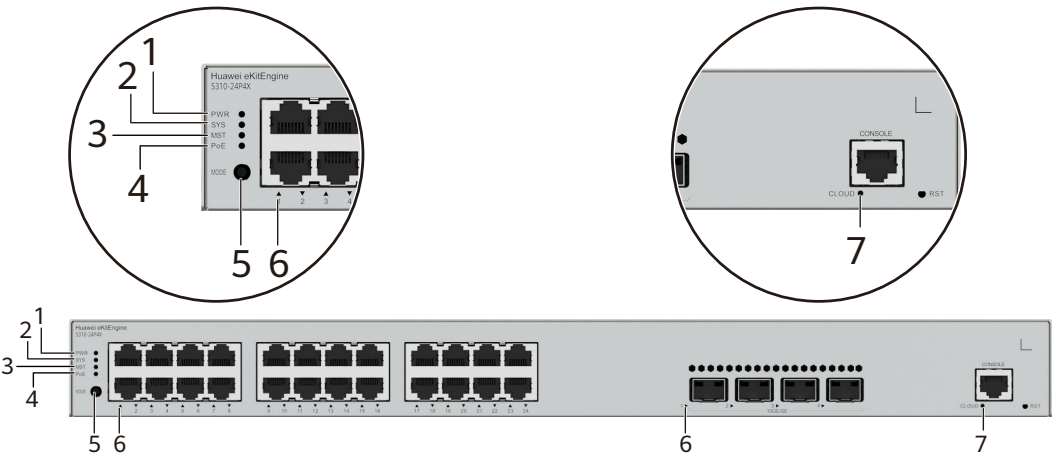
Table 4-92 Ports on the S310-24T4X

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

Port	Connector Type	Description	Available Components
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (zero-configuration stacking supported)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-32 Indicators on the Switch



NOTE

The S310-24P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-93 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

No.	Indicator	Name	Color	Status	Description
5	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
6	-	Service port indicator (one indicator for each port)	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 4-94. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-94 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.

Display Mode	Color	Status	Description
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

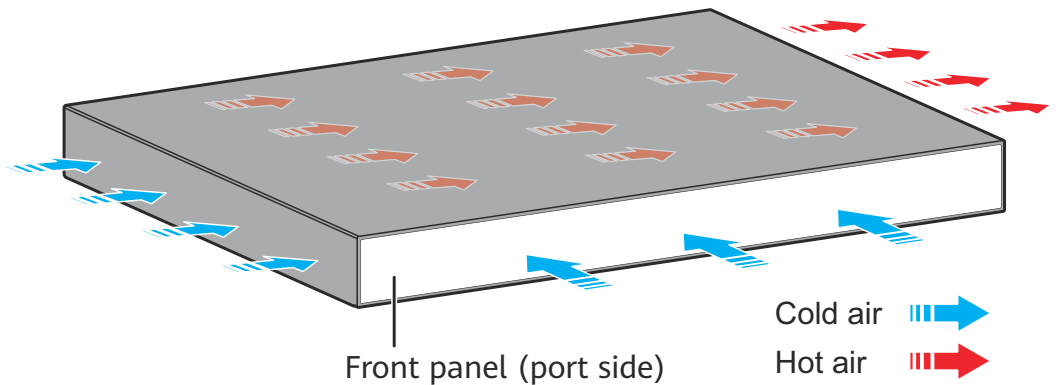
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-95 Technical specifications of the S310-24T4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.32 kg (5.11 lb)
Weight with packaging [kg(lb)]	3.44 kg (7.58 lb)
Typical power consumption [W]	27.27 W
Typical heat dissipation [BTU/hour]	93.05 BTU/hour
Maximum power consumption [W]	35.04 W
Maximum heat dissipation [BTU/hour]	119.56 BTU/hour
Static power consumption [W]	19.00 W
MTBF [years]	70.75 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	47 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	35 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported

Item	Specification
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	0.8 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	Differential mode: ±6 kV; common mode: ±6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment

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

4.7.5 S310-24P4X

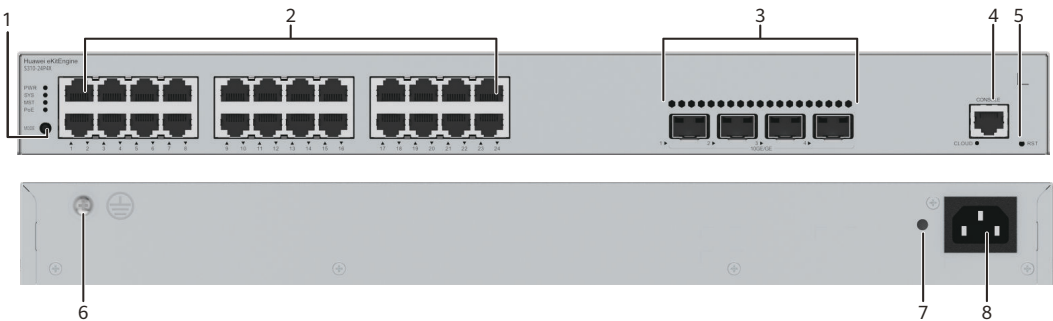
Overview

Table 4-96 Basic information about the S310-24P4X

Item	Details
Description	S310-24P4X (24*10/100/1000BASE-T ports(400W PoE+), 4*10GE SFP+ ports, built-in AC power)
Part Number	98012382
Model	S310-24P4X
First supported version	V600R023C00

Components

Figure 4-33 S310-24P4X appearance



1	One MODE button	2	Twenty-four 10/100/1000BASE-T PoE+ ports
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3	Four 10GE SFP+ ports	4	One console port
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

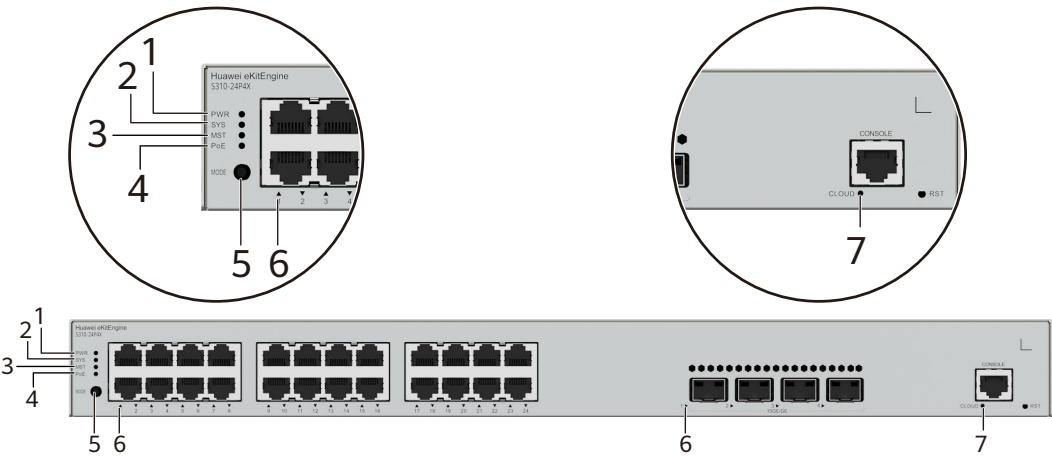
Table 4-97 Ports on the S310-24P4X

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

Port	Connector Type	Description	Available Components
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (zero-configuration stacking supported)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-34 Indicators on the Switch



NOTE

The S310-24P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-98 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

No.	Indicator	Name	Color	Status	Description
5	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
6	-	Service port indicator (one indicator for each port)	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 4-99. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-99 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.

Display Mode	Color	Status	Description
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

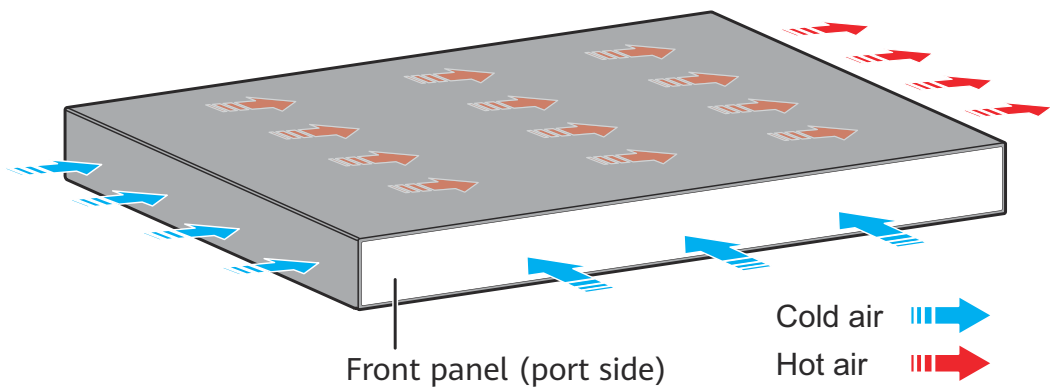
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 400 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 13 ports in compliance with 802.3at.

Heat Dissipation System

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

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



 NOTE

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

Technical Specifications

Table 4-100 Technical specifications of the S310-24P4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.92 kg (6.44 lb)
Weight with packaging [kg(lb)]	3.79 kg (8.36 lb)
Typical power consumption [W]	37.12 W
Typical heat dissipation [BTU/hour]	126.65 BTU/hour
Maximum power consumption [W]	- Without PoE: 44.35 W - Full PoE load: 485.91 W (PoE: 400 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 151.32 - Full PoE load: 1657.92
Static power consumption [W]	27.07 W
MTBF [years]	60.18 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2

Item	Specification
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ±7 kV
Power supply surge protection [kV]	Differential mode: ±6 kV; common mode: ±6 kV
Ingress protection level (dustproof/waterproof)	IP20

Item	Specification
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.6 S310-24ST4X

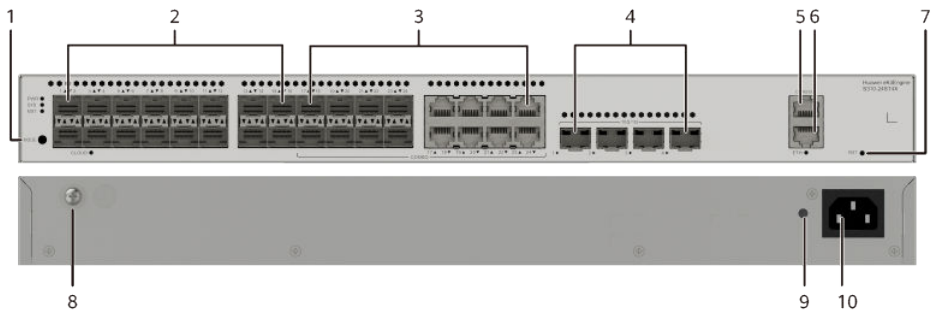
Overview

Table 4-101 Basic information about the S310-24ST4X

Item	Details
Description	S310-24ST4X(24*GE SFP ports, 8 of which are dual-purpose 10/100/1000 or SFP, 4*10GE SFP+ ports, built-in AC power)
Part Number	98012532
Model	S310-24ST4X
First supported version	V600R023C10SPC600

Components

Figure 4-35 S310-24ST4X appearance



1	One MODE button	2	Sixteen 100/1000BASE-X ports
3	Eight Combo ports (100/1000BASE-X optical ports and 10/100/1000BASE-T electrical ports) NOTE In the default working mode, the electrical ports in the combo ports are available.	4	Four 10GE SFP+ ports
5	One console port	6	One ETH management port
7	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	8	Ground screw NOTE It is used with a ground cable.
9	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	10	AC socket NOTE It is used with an AC power cable.

Ports

Table 4-102 Ports on the S310-24ST4X

Port	Connector Type	Description	Available Components
100/1000BASE-X port	SFP	A 100/1000BASE-X port can send and receive data at 100/1000 Mbit/s.	• FE SFP/eSFP optical modules • GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module
Combo port (10/100/1000BASE-T + 100/1000BASE-X)	RJ45/SFP	A combo port refers to a pair of ports consisting of an optical Ethernet port and an electrical Ethernet port on the panel. Each combo port matches only one internal forwarding port. A combo port can be configured as an electrical port or an optical port, but only one port can be active at a time. When one port is active, the other port is shut down.	• Ethernet cable • FE SFP/eSFP optical modules • GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules

Port	Connector Type	Description	Available Components
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m, 2 m, and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (only for zero-configuration stacking)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Port	Connector Type	Description	Available Components
ETH management port	RJ45	You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely.	Ethernet cable

Indicators and Buttons

Figure 4-36 Indicators on the Switch

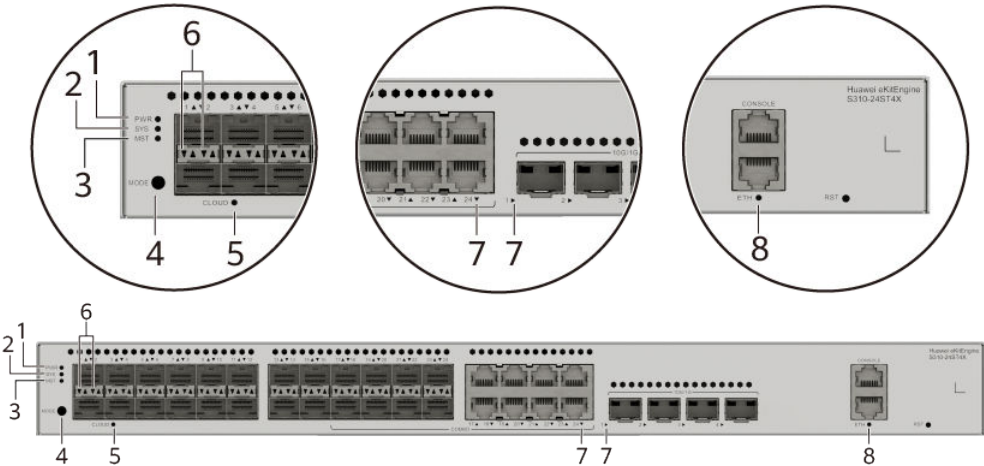


Table 4-103 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.

No.	Indicator	Name	Color	Status	Description
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
5	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

No.	Indicator	Name	Color	Status	Description
6	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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 4-104 and Table 4-105 . NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.
7	-	Electrical or optical service port indicator (one indicator for each port)	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.		
8	ETH	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The ETH port is sending or receiving data.

Table 4-104 Description of service port indicators in different modes (one indicator for each port)

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

Table 4-105 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.
MST stack mode (LINK indicator)	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
MST stack mode (ACT indicator)	-	Off	Port indicators do not show the stack ID of the switch.

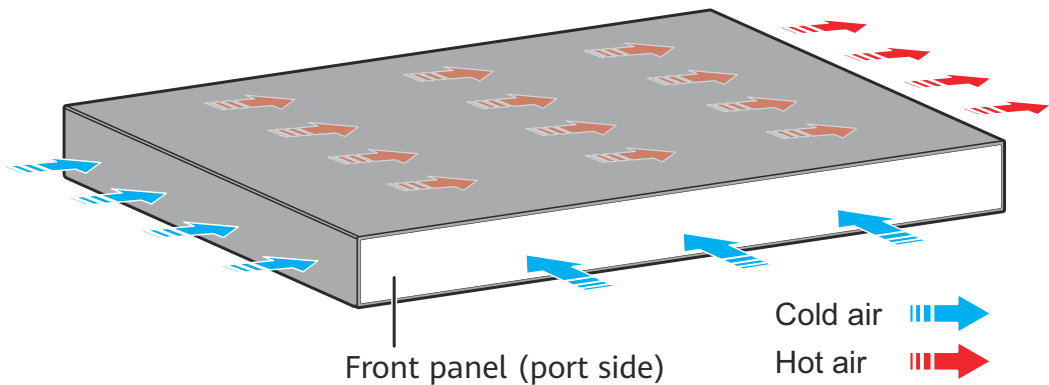
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-106 Technical specifications of the S310-24ST4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Weight without packaging [kg(lb)]	2.9 kg (6.39 lb)
Weight with packaging [kg(lb)]	3.55 kg (7.83 lb)

Item	Specification
Typical power consumption [W]	32.6 W
Typical heat dissipation [BTU/hour]	111.23 BTU/hour
Maximum power consumption [W]	41.7 W
Maximum heat dissipation [BTU/hour]	142.28 BTU/hour
Static power consumption [W]	17.57 W
MTBF [years]	47.39 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	38.1 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	26.1 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC; 50/60 Hz - High-voltage DC input: 110 V DC to 250 V DC

Item	Specification
Input voltage range [V]	- AC input: 90 V AC to 264 V AC; 47 Hz to 63 Hz - High-voltage DC input: 88 V DC to 300 V DC
Maximum input current [A]	2 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.7 S310-24PN4X

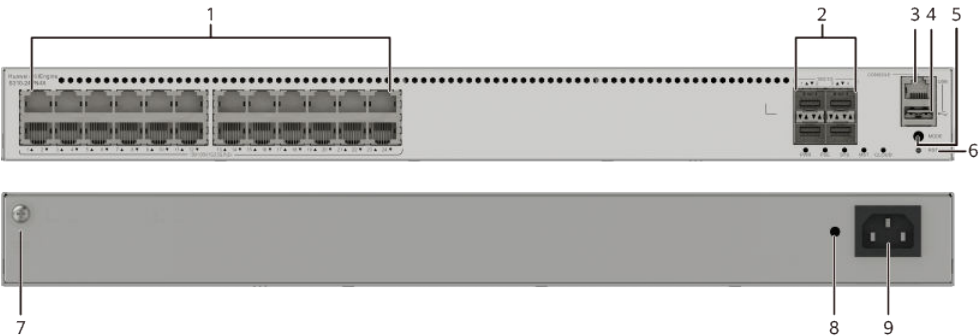
Overview

Table 4-107 Basic information about the S310-24PN4X

Item	Details
Description	S310-24PN4X(24*10/100/1000/2.5GBA SE-T ports(400W PoE+), 4*10GE SFP+ ports, built-in AC power)
Part Number	98012534
Model	S310-24PN4X
First supported version	V600R023C10SPC600

Components

Figure 4-37 S310-24PN4X appearance



1	Twenty-four 10M/100M/1000M/ 2.5GE BASE-T PoE+ ports (multi-GE ports)	2	Four 10GE SFP+ ports
3	One console port	4	One USB port
5	One MODE button	6	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.

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

Ports

Table 4-108 Maximum transmission distances of different cables on multi-GE ports

Cable Type (6-a-1 Bundle)	Multi-GE Port (Different Rates)	
	10M/100M/1000M	2.5GE
Category 5e unshielded twisted pair (Cat5e UTP)	100 m	100 m
Category 5e shielded twisted pair (Cat5e STP)	100 m	100 m
Category 6 unshielded twisted pair (Cat6 UTP)	100 m	100 m
Category 6 shielded twisted pair (Cat6 STP)	100 m	100 m
Category 6A unshielded twisted pair (Cat6A U/UTP)	100 m	100 m
Category 6A foiled/unshielded twisted pair (Cat6A F/UTP)	100 m	100 m
Category 6A shielded twisted pair (Cat6A STP)	100 m	100 m
Category 7 twisted pair (Cat7)	100 m	100 m

 NOTE

6-a-1 stands for the six-around-one cable bundle mode, with one cable in the center and six cables bundled evenly around it.

Table 4-109 Ports on the S310-24PN4X

Port	Connector Type	Description	Available Components
10M/100M/1G/ 2.5GE BASE-T PoE + port (multi-GE port)	RJ45	A 10M/100M/1G/ 2.5GE BASE-T PoE + port (multi-GE port) sends and receives service data at 10 Mbit/s, 100 Mbit/s, 1 Gbit/s, or 2.5 Gbit/s. The port supports the PoE function.	If the 2.5 Gbit/s speed is required, the port must use an Ethernet cable of Cat5e or higher category.
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (only for zero-configuration stacking)

Port	Connector Type	Description	Available Components
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable
USB port	USB 2.0 Type A	The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0. USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor.	USB flash drive

Indicators and Buttons

Figure 4-38 Indicators on the Switch

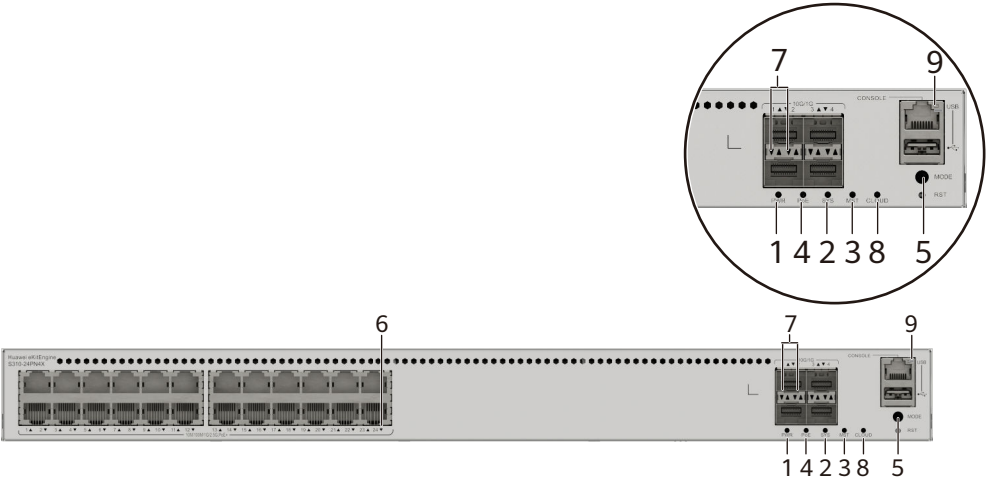


Table 4-110 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.

No.	Indicator	Name	Color	Status	Description
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

No.	Indicator	Name	Color	Status	Description
5	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
6	-	Electrical service port indicator (one indicator for each port)	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 4-111 and Table 4-112. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
8	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.
9	USB	USB-based deployment indicator	-	Off	No USB flash drive is installed, or the indicator fails.
			Green	Steady on	USB-based deployment succeeds. If there is no deployment configuration file, deployment will be repeatedly performed. In this case, the indicator is also steady green.

No.	Indicator	Name	Color	Status	Description
			Green	Blinking	USB-based deployment is in progress.
			Red	Steady on	USB-based deployment fails.

Table 4-111 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-112 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

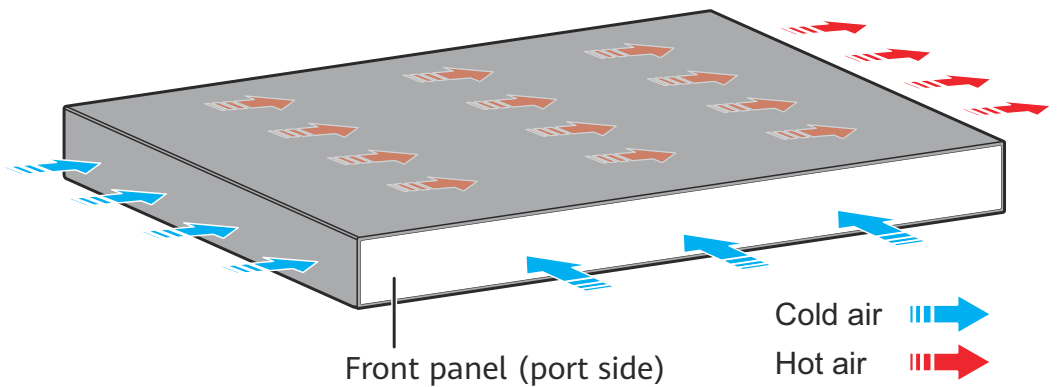
Power Supply System

The switch has a built-in AC power module and does not support pluggable power modules. The built-in power module can provide 400 W PoE power, which ensures full PoE power on 24 ports in compliance with 802.3af or on 13 ports in compliance with 802.3at.

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-113 Technical specifications of the S310-24PN4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 in. x 16.54 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 446.0 mm (1.72 in. x 17.4 in. x 17.56 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	185.0 mm x 650.0 mm x 550.0 mm (7.28 in. x 25.59 in. x 21.65 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	4.71 kg (10.38 lb)
Weight with packaging [kg(lb)]	6.89 kg (15.19 lb)
Typical power consumption [W]	54.8 W
Typical heat dissipation [BTU/hour]	186.98 BTU/hour
Maximum power consumption [W]	- Without PoE: 77.70 W - Full PoE load: 517.30 W (PoE: 400 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 265.12 - Full PoE load: 1765.08
Static power consumption [W]	37.1 W
MTBF [years]	54.48 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	47.9 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	34.22 dB(A)
Number of card slots	0
Number of power slots	0

Item	Specification
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	–5°C to +45°C (23°F to 113°F) at an altitude of 0 to 1800 m (0 to 5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from –5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used.
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Supported
RTC	Not supported

Item	Specification
RPS input	Not supported
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and front, air exhaustion from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.8 S310-48T4X

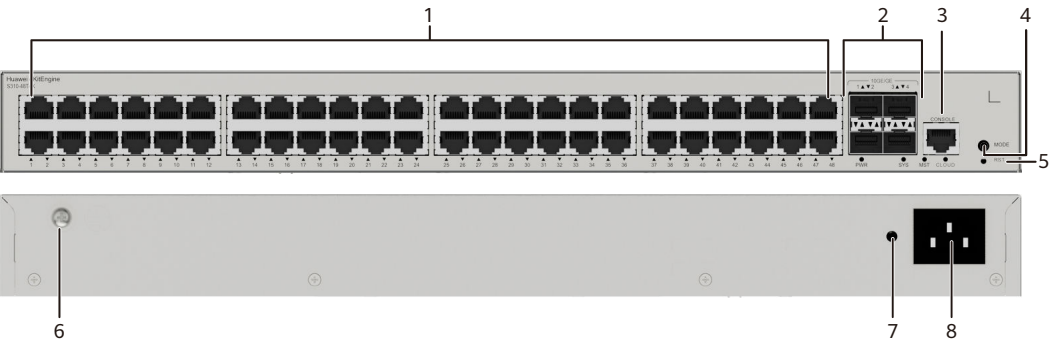
Overview

Table 4-114 Basic information about the S310-48T4X

Item	Details
Description	S310-48T4X (48*10/100/1000BASE-T ports, 4*10GE SFP+ ports, built-in AC power)
Part Number	98012383
Model	S310-48T4X
First supported version	V600R023C00

Components

Figure 4-39 S310-48T4X appearance



1	Forty-eight 10/100/1000BASE-T ports	2	Four 10GE SFP+ ports
3	One console port	4	One MODE button
5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

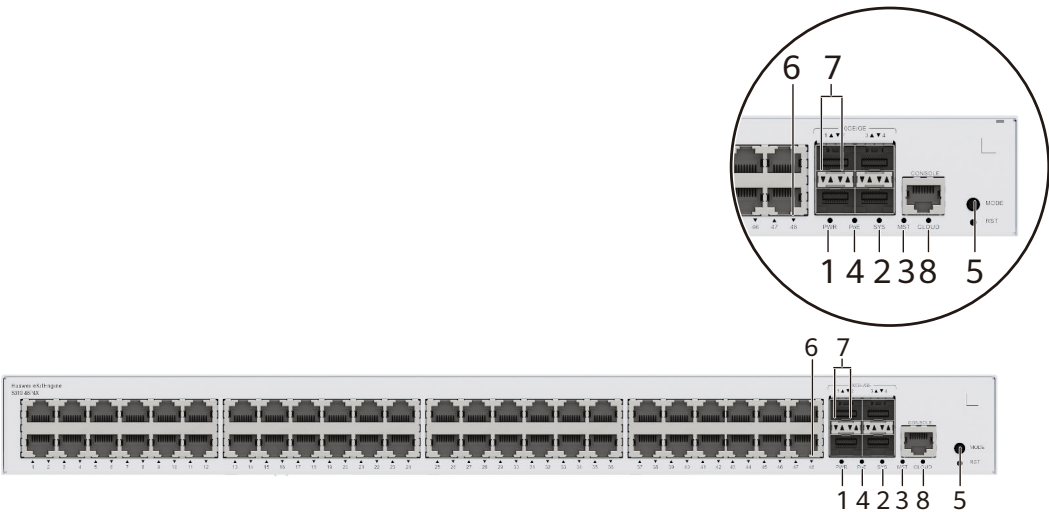
Table 4-115 Ports on the S310-48T4X

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

Port	Connector Type	Description	Available Components
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (zero-configuration stacking supported)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-40 Indicators on the Switch



NOTE

The S310-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-116 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

No.	Indicator	Name	Color	Status	Description
5	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
6	-	Electrical service port indicator (one indicator for each port)	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 4-117 and Table 4-118. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
8	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-117 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.

Display Mode	Color	Status	Description
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-118 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

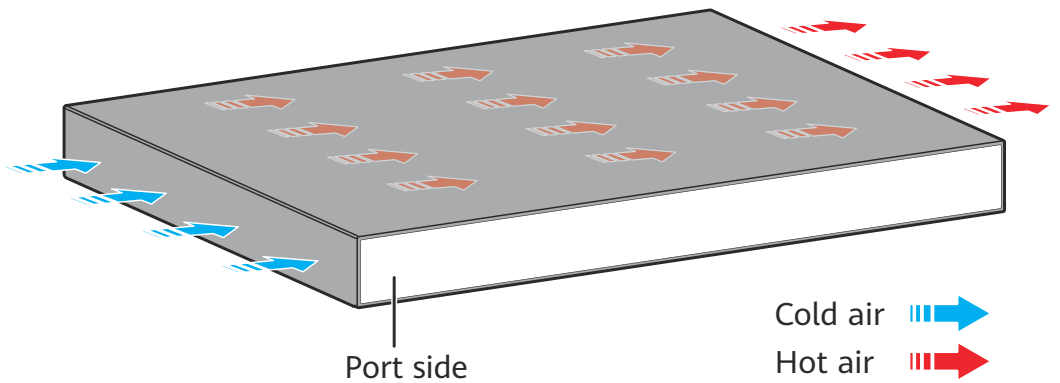
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-119 Technical specifications of the S310-48T4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	2.71 kg (5.97 lb)

Item	Specification
Weight with packaging [kg(lb)]	3.59 kg (7.91 lb)
Typical power consumption [W]	36.95 W
Typical heat dissipation [BTU/hour]	126.07 BTU/hour
Maximum power consumption [W]	44.3 W
Maximum heat dissipation [BTU/hour]	151.15 BTU/hour
Static power consumption [W]	18.8 W
MTBF [years]	40.61 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	46.6 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	34.6 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	1
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used. The device does not support dying gasp when the ambient temperature is higher than 40°C (104°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)

Item	Specification
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	AC input: 100–240 V AC; 50/60 Hz
Input voltage range [V]	AC input: 90 V AC to 264 V AC; 45 Hz to 65 Hz
Maximum input current [A]	1.6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.9 S310-48P4S

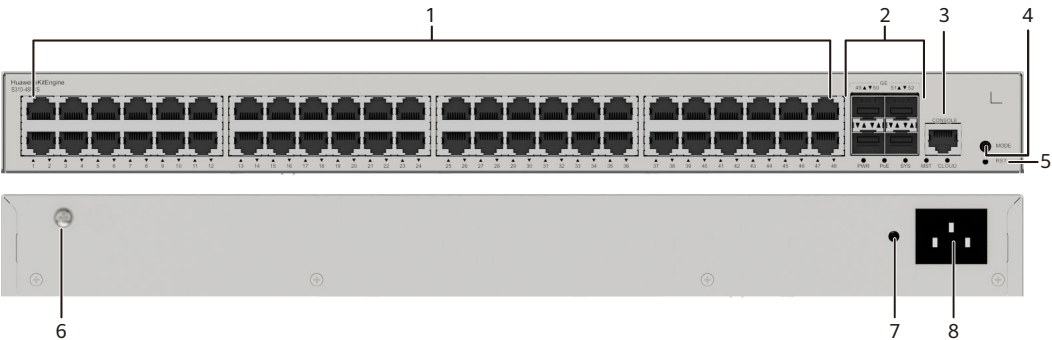
Overview

Table 4-120 Basic information about the S310-48P4S

Item	Details
Description	S310-48P4S (48*10/100/1000BASE-T ports(380W PoE+), 4*GE SFP ports, built-in AC power)
Part Number	98012384
Model	S310-48P4S
First supported version	V600R023C00

Components

Figure 4-41 S310-48P4S appearance



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

7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .
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Ports

Table 4-121 Ports on the S310-48P4S

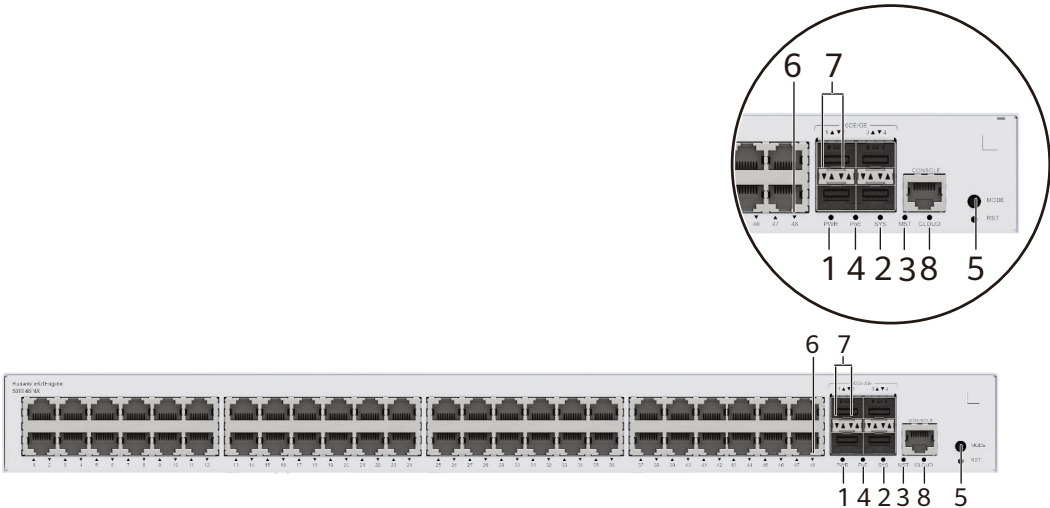
Port	Connector Type	Description	Available Components
10/100/1000BASE-T port	RJ45	A 10/100/1000BASE-T Ethernet electrical port sends and receives service data at 10/100/1000 Mbit/s.	Ethernet cable

Port	Connector Type	Description	Available Components
1000BASE-X port	SFP	A 1000BASE-X port can send and receive data at 1000 Mbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules (only used for stack connection) • 10GE-CWDM SFP+ optical modules (only used for stack connection) • 10GE-DWDM SFP+ optical modules (only used for stack connection) • 1 m and 3 m SFP+ high-speed copper cables (only used for stack connection) • 10 m SFP+ AOC cables (only used for stack connection) • 0.5 m and 1.5 m SFP+ dedicated stack cables (only used for stack connection; zero-configuration)

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

Indicators and Buttons

Figure 4-42 Indicators on the Switch



NOTE

The S310-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-122 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

No.	Indicator	Name	Color	Status	Description
5	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
6	-	Electrical service port indicator (one indicator for each port)	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 4-123 and Table 4-124. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
8	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-123 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.

Display Mode	Color	Status	Description
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-124 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

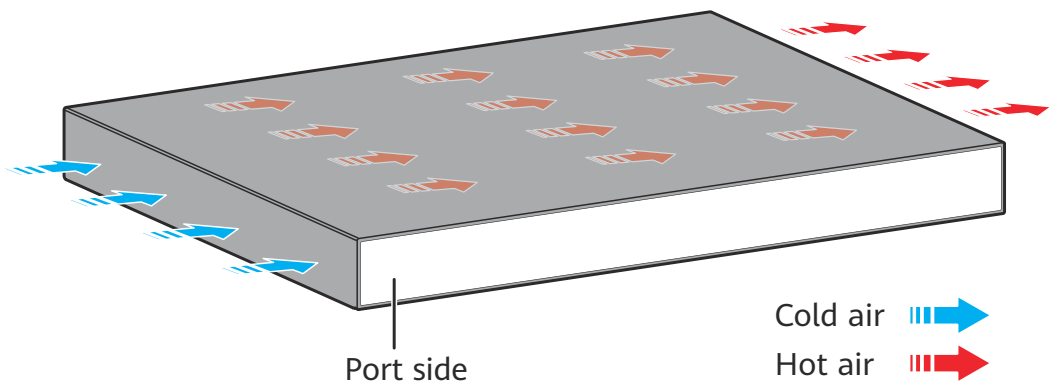
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-125 Technical specifications of the S310-48P4S

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal

Item	Specification
Weight without packaging [kg(lb)]	3.24 kg (7.14 lb)
Weight with packaging [kg(lb)]	4.29 kg (9.46 lb)
Typical power consumption [W]	48.64 W
Typical heat dissipation [BTU/hour]	165.96 BTU/hour
Maximum power consumption [W]	- Without PoE: 63.7 W - Full PoE load: 462.80 W (PoE: 380 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 217.34 - Full PoE load: 1579.12
Static power consumption [W]	34.04 W
MTBF [years]	48.14 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)

Item	Specification
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.7.10 S310-48P4X

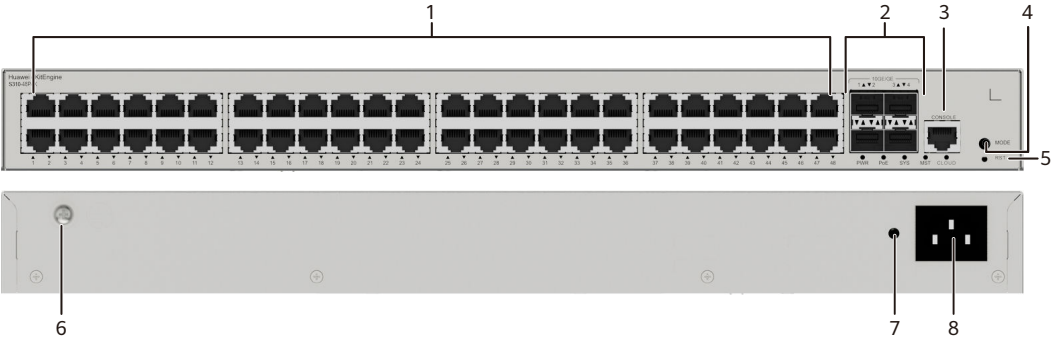
Overview

Table 4-126 Basic information about the S310-48P4X

Item	Details
Description	S310-48P4X (48*10/100/1000BASE-T ports(380W PoE+), 4*10GE SFP+ ports, built-in AC power)
Part Number	98012385
Model	S310-48P4X
First supported version	V600R023C00

Components

Figure 4-43 S310-48P4X appearance



1	Forty-eight 10/100/1000BASE-T PoE + ports	2	Four 10GE SFP+ ports
3	One console port	4	One MODE button

5	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	6	Ground screw NOTE It is used with a ground cable .
7	Jack for AC power cable locking strap NOTE The AC power cable locking strap is not delivered with the switch.	8	AC socket NOTE It is used with an AC power cable .

Ports

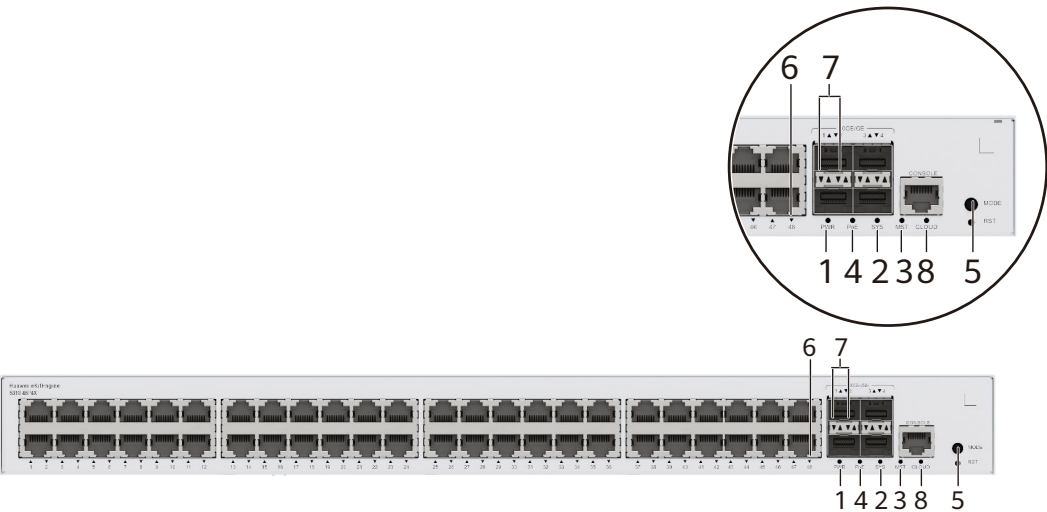
Table 4-127 Ports on the S310-48P4X

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

Port	Connector Type	Description	Available Components
10GE SFP+ port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (zero-configuration stacking supported)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable

Indicators and Buttons

Figure 4-44 Indicators on the Switch



NOTE

The S310-48P4X model is used as an example. Non-PoE models do not have PoE indicator and PoE mode.

Table 4-128 Description of indicators on the switch

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

No.	Indicator	Name	Color	Status	Description
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.
4	PoE	PoE indicator	-	Off	The PoE mode is not selected.
			Green	Steady on	The PoE mode is selected, and service port indicators show the PoE status of each port.

No.	Indicator	Name	Color	Status	Description
5	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators change to the PoE mode and show the PoE status of each service port. - When you press this button a third time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the PoE indicator is off. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
6	-	Electrical service port indicator (one indicator for each port)	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 4-129 and Table 4-130. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.		
8	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.

Table 4-129 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.

Display Mode	Color	Status	Description
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
PoE mode	-	Off	The port is not providing power to a powered device (PD).
	Green	Steady on	The port is providing power to a PD.
	Green	Blinking	The power of the PD connected to the port exceeds the power capacity of the port or the power threshold configured on the port. Alternatively, the PD does not comply with IEEE standards.

Table 4-130 Description of service port indicators in different modes (two indicators for each port)

Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

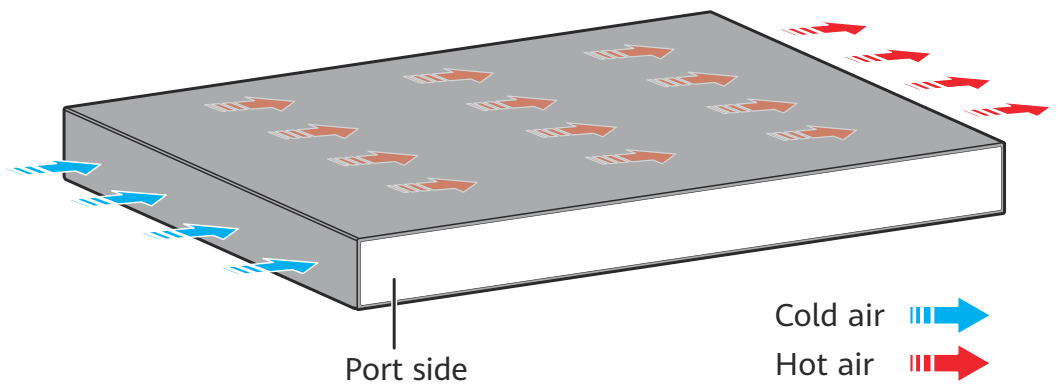
Power Supply System

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

Heat Dissipation System

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

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



NOTE

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

Technical Specifications

Table 4-131 Technical specifications of the S310-48P4X

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 220.0 mm (1.72 in. x 17.4 in. x 8.66 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 227.0 mm (1.72 in. x 17.4 in. x 8.94 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	90.0 mm x 550.0 mm x 360.0 mm (3.54 in. x 21.65 in. x 14.17 in.)
Chassis height [U]	1 U
Chassis material	Metal

Item	Specification
Weight without packaging [kg(lb)]	3.24 kg (7.14 lb)
Weight with packaging [kg(lb)]	4.29 kg (9.46 lb)
Typical power consumption [W]	49.44 W
Typical heat dissipation [BTU/hour]	168.69 BTU/hour
Maximum power consumption [W]	- Without PoE: 64.7 W - Full PoE load: 462.80 W (PoE: 380 W)
Maximum heat dissipation [BTU/hour]	- Without PoE: 220.76 - Full PoE load: 1579.12
Static power consumption [W]	34.04 W
MTBF [years]	48.14 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	49.3 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	37.3 dB(A)
Number of card slots	0
Number of power slots	0
Number of fans modules	2
Redundant power supply	Not supported
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F). The operating temperature ranges from -5°C (23°F) to +45°C (113°F) when optical modules with transmission distances greater than or equal to 60 km are used.
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)

Item	Specification
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	AC built-in
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC, 50/60 Hz - High-voltage DC input: 240 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	6 A
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Not supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	Differential mode: ± 6 kV; common mode: ± 6 kV
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left and air exhaust from right
PoE	Supported
Certification	EMC certification Safety certification Manufacturing certification

4.8 S530

4.8.1 S530-24T4XE

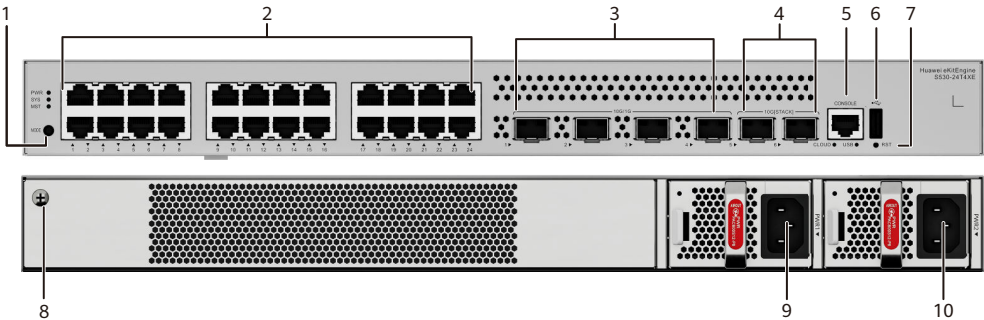
Overview

Table 4-132 Basic information about the S530-24T4XE

Item	Details
Description	S530-24T4XE(24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, 2*10GE stack ports, with 1*AC power module)
Part Number	98012554
Model	S530-24T4XE
First supported version	V600R023C10SPC600

Components

Figure 4-45 S530-24T4XE appearance



1	One MODE button	2	Twenty-four 10/100/1000BASE-T ports
3	Four 10GE SFP+ ports	4	Two stack ports NOTE These stack ports are available only in CLI-based O&M scenarios.
5	One console port	6	One USB port

7	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	8	Ground screw NOTE It is used with a ground cable .
9	Power module slot 1 NOTE Applicable power modules: • PAC80S12-CN • PAC180S12-CN • PDC240S12-CN (available since V600R024C00 version) • PAC600S12-PB • PDC1K2S12-CE	10	Power module slot 2 NOTE Applicable power modules: • PAC80S12-CN • PAC180S12-CN • PDC240S12-CN (available since V600R024C00 version) • PAC600S12-PB • PDC1K2S12-CE

Ports

Table 4-133 Ports on the S530-24T4XE

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

Port	Connector Type	Description	Available Components
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (only for zero-configuration stacking)

Port	Connector Type	Description	Available Components
Stack port	SFP+	A stack port connects multiple switches through stack cables and virtualize them into one switch logically. It is used only in stacking scenarios and does not need to be configured. These stack ports are available only in CLI-based O&M scenarios.	• 1 m SFP+ high-speed copper cables • 0.5 m and 1.5 m SFP+ dedicated stack cables
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable
USB port	USB 2.0 Type A	The USB port can have a USB flash drive connected to upgrade the switch, or transfer configuration files or other files. The USB port can only connect to a USB flash drive that complies with USB 2.0. USB flash drives from different vendors differ in model compatibility and drivers. If a USB flash drive cannot be used, try to replace it with another one from a mainstream vendor.	USB flash drive

Indicators and Buttons

Figure 4-46 Indicators on the Switch

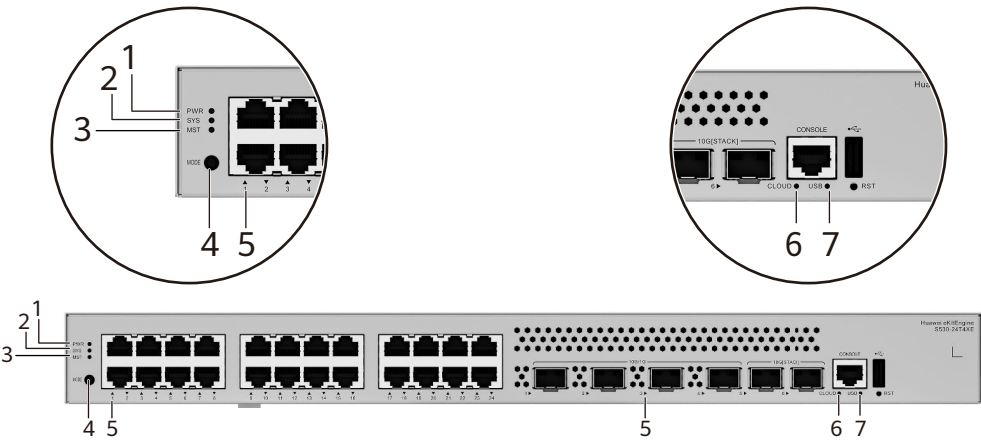


Table 4-134 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
			Yellow	Steady on	The switch has multiple power modules installed. Any of the following situations occurs in a power module slot: - A power module is available in this slot but it is not connected to a power source. - The power module in this slot has failed.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.

No.	Indicator	Name	Color	Status	Description
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. After 45 seconds, the service port indicators automatically restore to the status mode.

No.	Indicator	Name	Color	Status	Description
4	MODE	Mode switch button	-	-	- When you press this button once, the service port indicators change to the stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.
5	-	Service port indicator (one indicator for each port)	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 4-135. NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
6	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.
7	USB	USB-based deployment indicator	-	Off	No USB flash drive is installed, or the indicator fails.
			Green	Steady on	USB-based deployment succeeds. If there is no deployment configuration file, deployment will be repeatedly performed. In this case, the indicator is also steady green.
			Green	Blinking	USB-based deployment is in progress.
			Red	Steady on	USB-based deployment fails.

Table 4-135 Description of service port indicators in different modes (one indicator for each port)

Display Mode	Color	Status	Description
Default mode	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
	Green	Blinking	The port is sending or receiving data.
MST stack mode	-	Off	Port indicators do not show the stack ID of the switch.

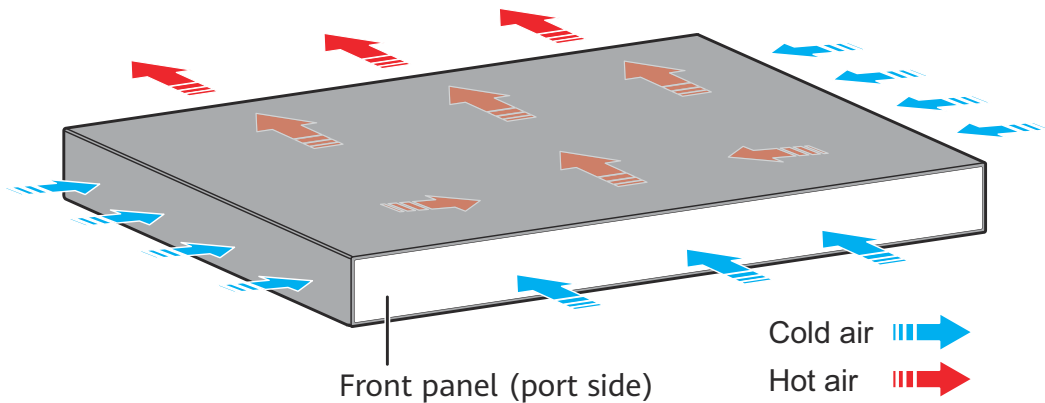
Display Mode	Color	Status	Description
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.

Power Supply System

The switch can use a single power module or two power modules for 1+1 power redundancy. The power modules with natural heat dissipation and the power modules with fan cannot be used at the same time.

Heat Dissipation System

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



NOTE

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

Technical Specifications

Table 4-136 Technical specifications of the S530-24T4XE

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 446.0 mm (1.72 in. x 17.40 in. x 17.56 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	185.0 mm x 650.0 mm x 550.0 mm (7.28 in. x 25.59 in. x 21.65 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	5.4 kg (11.9 lb)
Weight with packaging [kg(lb)]	7.3 kg (16.09 lb)
Typical power consumption [W]	26.20 W
Typical heat dissipation [BTU/hour]	89.40 BTU/hour
Maximum power consumption [W]	33.10 W (with two 80 W AC power modules) 45.75 W (with two 180 W AC power modules) 85.20 W (with two 1200 W DC power modules)
Maximum heat dissipation [BTU/hour]	112.94 (with two 80 W AC power modules) 156.10 (with two 180 W AC power modules) 290.71 (with two 1200 W DC power modules)
Static power consumption [W]	23.2 W
MTBF [years]	168.93 years
MTTR [hours]	2 hours
Availability	> 0.99999

Item	Specification
Noise at normal temperature (acoustic power) [dB(A)]	47 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	35 dB(A)
Number of card slots	0
Number of power slots	2
Number of fans modules	1
Redundant power supply	1+1 Power modules without fans and power modules with fans cannot be installed in the same chassis.
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	Pluggable power supply
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC; 50/60 Hz - High-voltage DC input: 240 V DC - DC input: -48 V DC to -60 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45–65 Hz - High-voltage DC input: 190 V DC to 290 V DC - DC input: -38.4 V DC to -72 V DC
Maximum input current [A]	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.

Item	Specification
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Not supported
USB	Supported
RTC	Not supported
RPS input	Not supported
Service port surge protection [kV]	Common mode: ± 7 kV
Power supply surge protection [kV]	- Configured with AC power modules: ± 6 kV in differential mode and ± 6 kV in common mode - Configured with DC power modules: ± 2 kV in differential mode and ± 4 kV in common mode
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left, front, and right and air exhaust from rear
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.8.2 S530-24ST4XE

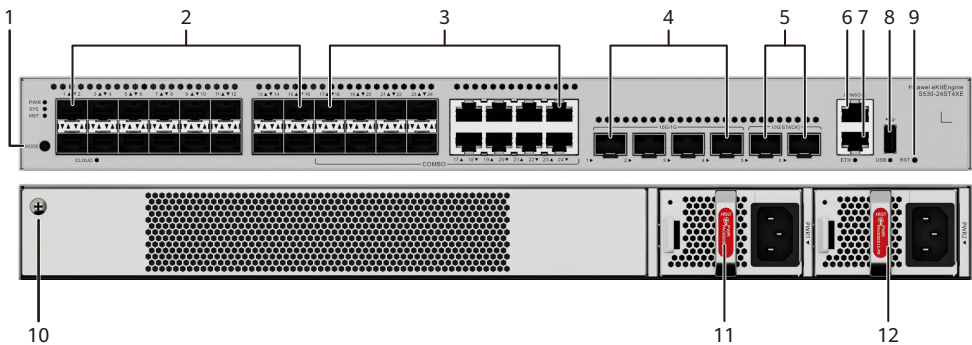
Overview

Table 4-137 Basic information about the S530-24ST4XE

Item	Details
Description	S530-24ST4XE(24*GE SFP ports, 8 of which are dual-purpose 10/100/1000 or SFP, 4*10GE SFP+ ports, 2*10GE stack ports, with 1*AC power module)
Part Number	98012556
Model	S530-24ST4XE
First supported version	V600R023C10SPC600

Components

Figure 4-47 S530-24ST4XE appearance



1	One MODE button	2	Sixteen 100/1000BASE-X ports
3	Eight Combo ports (100/1000BASE-X optical ports and 10/100/1000BASE-T electrical ports) NOTE In the default working mode, the electrical ports in the combo ports are available.	4	Four 10GE SFP+ ports
5	Two stack ports NOTE These stack ports are available only in CLI-based O&M scenarios.	6	One console port
7	One ETH management port	8	One USB port

9	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	1 0	Ground screw NOTE It is used with a ground cable .
1 1	Power module slot 1 NOTE Applicable power modules: • PAC80S12-CN • PAC180S12-CN • PDC240S12-CN (available since V600R024C00 version) • PAC600S12-PB • PDC1K2S12-CE	1 2	Power module slot 2 NOTE Applicable power modules: • PAC80S12-CN • PAC180S12-CN • PDC240S12-CN (available since V600R024C00 version) • PAC600S12-PB • PDC1K2S12-CE

Ports

Table 4-138 Ports on the S530-24ST4XE

Port	Connector Type	Description	Available Components
100/1000BASE-X port	SFP	A 100/1000BASE-X port can send and receive data at 100/1000 Mbit/s.	• FE SFP/eSFP optical modules • GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module

Port	Connector Type	Description	Available Components
Combo port (10/100/1000BAS E-T + 100/1000BASE-X)	RJ45/SFP	A combo port refers to a pair of ports consisting of an optical Ethernet port and an electrical Ethernet port on the panel. Each combo port matches only one internal forwarding port. A combo port can be configured as an electrical port or an optical port, but only one port can be active at a time. When one port is active, the other port is shut down.	• Ethernet cable • FE SFP/eSFP optical modules • GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules

Port	Connector Type	Description	Available Components
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m, 2 m, and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (only for zero-configuration stacking)

Port	Connector Type	Description	Available Components
Stack port	SFP+	A stack port connects multiple switches through stack cables and virtualize them into one switch logically. It is used only in stacking scenarios and does not need to be configured. These stack ports are available only in CLI-based O&M scenarios.	• 1 m SFP+ high-speed copper cables • 0.5 m and 1.5 m SFP+ dedicated stack cables
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable
ETH management port	RJ45	You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely.	Ethernet cable

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

Indicators and Buttons

Figure 4-48 Indicators on the Switch

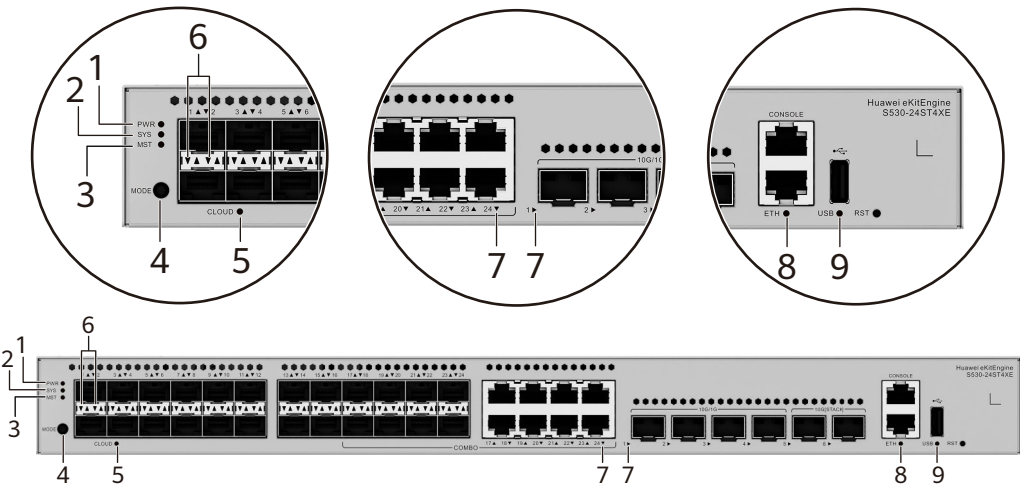


Table 4-139 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
			Yellow	Steady on	The switch has multiple power modules installed. Any of the following situations occurs in a power module slot: - A power module is available in this slot but it is not connected to a power source. - The power module in this slot has failed.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	MST	Stack indicator	-	Off	- If you are not changing the indicator mode (default): The switch is a standby or slave switch in a stack or the stacking function is not enabled on the switch. - If you are changing the indicator mode: The stack mode is not selected.
			Green	Steady on	The stack mode is selected. The switch is a standby or slave switch in a stack, and the service port indicators show the stack ID of the switch.

No.	Indicator	Name	Color	Status	Description
			Green	Blinking	- If you are not changing the indicator mode (default): The switch is the master switch in a stack or a standalone switch with the stacking function enabled. - If you are changing the indicator mode: The stack mode is selected. The switch is the master switch in a stack or a standalone switch, and the service port indicators show the stack ID of the master switch. 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 stack mode and show the stack ID of the local switch. - When you press this button a second time, the service port indicators restore to the default mode and show the connection status and link activity of each service port. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. NOTE Hold down the mode switch button for 6s and release it to start the web initial login mode. Either of the following situations will occur: - If the switch has no configuration file, the system attempts to enter the web initial login mode. If the system enters the web initial login mode successfully, the MST mode indicator turn green and stay on for a maximum of 45 seconds. - If the login fails, check whether the device uses factory default settings.

No.	Indicator	Name	Color	Status	Description
5	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.
6	-	Optical service port indicator (two indicators for each port)	Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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 4-140 and Table 4-141 . NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.

No.	Indicator	Name	Color	Status	Description
7	-	Electrical or optical service port indicator (one indicator for each port)	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.		
8	ETH	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The ETH port is sending or receiving data.
9	USB	USB-based deployment indicator	-	Off	No USB flash drive is installed, or the indicator fails.
			Green	Steady on	USB-based deployment succeeds. If there is no deployment configuration file, deployment will be repeatedly performed. In this case, the indicator is also steady green.
			Green	Blinking	USB-based deployment is in progress.
			Red	Steady on	USB-based deployment fails.

Table 4-140 Description of service port indicators in different modes (one indicator for each port)

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

Table 4-141 Description of service port indicators in different modes (two indicators for each port)

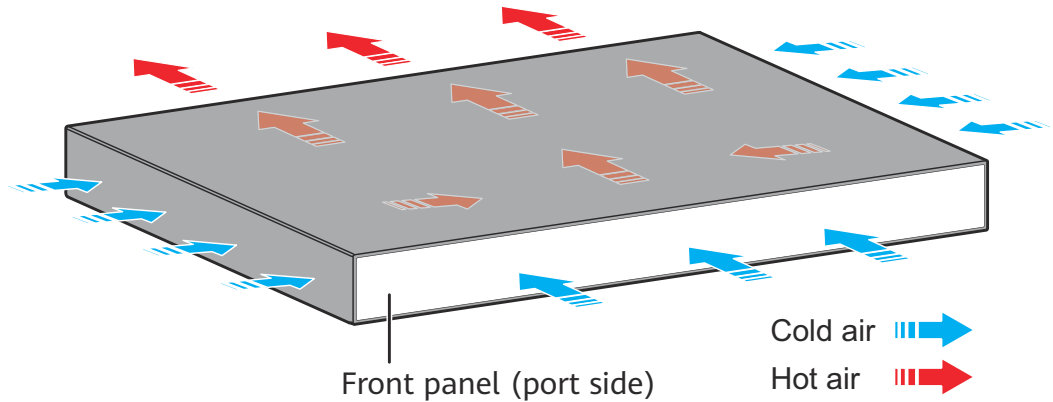
Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.
MST stack mode (LINK indicator)	-	Off	Port indicators do not show the stack ID of the switch.
	Green	Steady on	The switch is not the master switch in a stack. If the indicator of a port is steady on, the number of this port is the stack ID of the switch.
	Green	Blinking	The switch is the master switch in a stack. If the indicator of a port is blinking, the number of this port is the stack ID of the switch.
MST stack mode (ACT indicator)	-	Off	Port indicators do not show the stack ID of the switch.

Power Supply System

The switch can use a single power module or two power modules for 1+1 power redundancy. The power modules with natural heat dissipation and the power modules with fan cannot be used at the same time.

Heat Dissipation System

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



 NOTE

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

Technical Specifications

Table 4-142 Technical specifications of the S530-24ST4XE

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 446.0 mm (1.72 in. x 17.40 in. x 17.56 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	185.0 mm x 650.0 mm x 550.0 mm (7.28 in. x 25.59 in. x 21.65 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	5.6 kg (12.35 lb)
Weight with packaging [kg(lb)]	7.4 kg (16.31 lb)
Typical power consumption [W]	31.6 W
Typical heat dissipation [BTU/hour]	107.82 BTU/hour
Maximum power consumption [W]	48.70 W (with two 80 W AC power modules) 85.78 W (with two 1200 W DC power modules)

Item	Specification
Maximum heat dissipation [BTU/hour]	166.17 (with two 80 W AC power modules) 292.69 (with two 1200 W DC power modules)
Static power consumption [W]	14 W
MTBF [years]	112.03 years
MTTR [hours]	2 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	38.1 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	26.1 dB(A)
Number of card slots	0
Number of power slots	2
Number of fans modules	2
Redundant power supply	1+1 Power modules without fans and power modules with fans cannot be installed in the same chassis.
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	Pluggable power supply

Item	Specification
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC; 50/60 Hz - High-voltage DC input: 240 V DC - DC input: -48 V DC to -60 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45–65 Hz - High-voltage DC input: 190 V DC to 290 V DC - DC input: -38.4 V DC to -72 V DC
Maximum input current [A]	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Supported
USB	Supported
RTC	Not supported
RPS input	Not supported
Power supply surge protection [kV]	- Configured with AC power modules: ± 6 kV in differential mode and ± 6 kV in common mode - Configured with DC power modules: ± 2 kV in differential mode and ± 4 kV in common mode
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left, front, and right and air exhaust from rear
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.8.3 S530-48S4XE

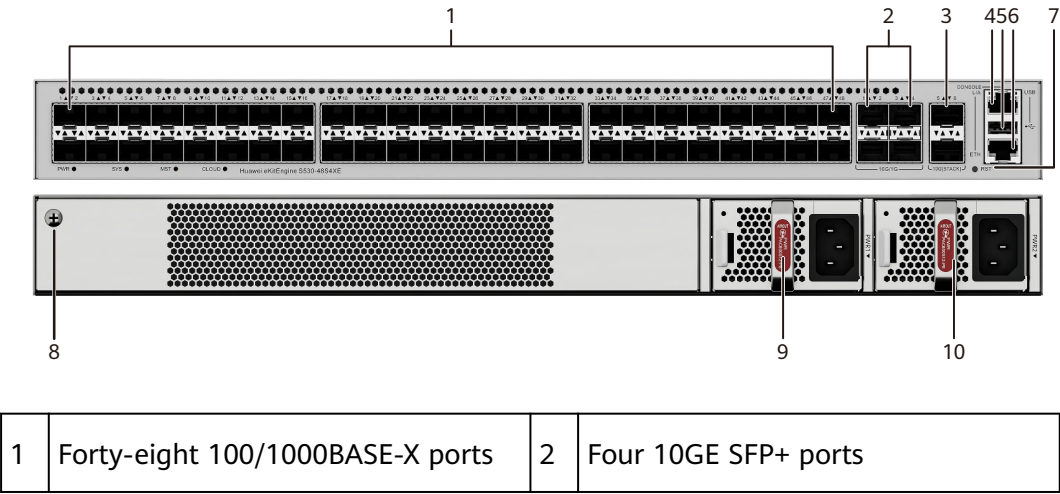
Overview

Table 4-143 Basic information about the S530-48S4XE

Item	Details
Description	S530-48S4XE(48*GE SFP ports, 4*10GE SFP+ ports, 2*10GE stack ports, with 1*AC power module)
Part Number	98012558
Model	S530-48S4XE
First supported version	V600R023C10SPC600
Remarks	- When 25 or more GE optical modules with a transmission distance of 40 km or longer are installed on 1000BASE-X optical ports, power modules with at least 180 W power are required. - Copper modules can be installed on a maximum of 24 1000BASE-X optical ports.

Components

Figure 4-49 S530-48S4XE appearance



3	Two stack ports NOTE These stack ports are available only in CLI-based O&M scenarios.	4	One console port
5	One USB port	6	One ETH management port
7	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	8	Ground screw NOTE It is used with a ground cable .
9	Power module slot 1 NOTE Applicable power modules: • PAC80S12-CN • PAC180S12-CN • PDC240S12-CN (available since V600R024C00 version) • PAC600S12-PB • PDC1K2S12-CE When 1000BASE-X Ethernet optical ports use 25 or more GE optical modules with a distance of 40 km or longer, a power module with a minimum power of 180 W is required.	10	Power module slot 2 NOTE Applicable power modules: • PAC80S12-CN • PAC180S12-CN • PDC240S12-CN (available since V600R024C00 version) • PAC600S12-PB • PDC1K2S12-CE When 1000BASE-X Ethernet optical ports use 25 or more GE optical modules with a distance of 40 km or longer, a power module with a minimum power of 180 W is required.

Ports

Table 4-144 Ports on the S530-48S4XE

Port	Connector Type	Description	Available Components
100/1000BASE-X port	SFP	A 100/1000BASE-X port can send and receive data at 100/1000 Mbit/s.	• FE SFP/eSFP optical modules • GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module

Port	Connector Type	Description	Available Components
10GE SFP+ optical port	SFP+	A 10GE SFP+ Ethernet optical port supports auto-sensing to 1000 Mbit/s. It sends and receives service data at 1000 Mbit/s or 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 1 m, 2 m, and 3 m SFP+ high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (only for zero-configuration stacking)

Port	Connector Type	Description	Available Components
Stack port	SFP+	A stack port connects multiple switches through stack cables and virtualize them into one switch logically. It is used only in stacking scenarios and does not need to be configured. These stack ports are available only in CLI-based O&M scenarios.	• 1 m SFP+ high-speed copper cables • 0.5 m and 1.5 m SFP+ dedicated stack cables
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable
ETH management port	RJ45	You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely.	Ethernet cable

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

Indicators and Buttons

Figure 4-50 Indicators on the Switch

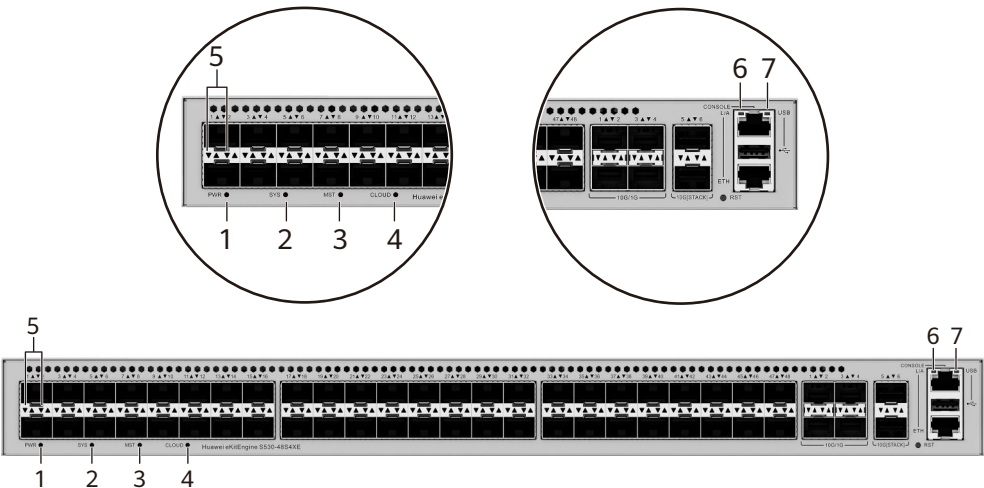


Table 4-145 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
			Yellow	Steady on	The switch has multiple power modules installed. Any of the following situations occurs in a power module slot: - A power module is available in this slot but it is not connected to a power source. - The power module in this slot has failed.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	The system does not work normally after registration, or a fan alarm or a temperature alarm has been generated.
3	MST	Stack indicator	-	Off	The switch is not the master switch in a stack.
			Green	Blinking	The switch is the master switch in a stack or a standalone switch.

No.	Indicator	Name	Color	Status	Description
4	CLOUD	Cloud indicator NOTE In versions earlier than V600R024C00, this indicator is reserved.	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.
5	-	Service port indicator (two indicators for each port) NOTE Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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 4-146 . NOTE If a power failure occurs on a device's PCB board, indicators of the last four GE or 10GE optical ports on the device's front panel blink green cyclically at an interval of 1 second, with each indicator illuminating for 0.25 seconds.
6	L/A	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The ETH port is sending or receiving data.
7	USB	USB-based deployment indicator	-	Off	No USB flash drive is installed, or the indicator fails.
			Green	Steady on	USB-based deployment succeeds. If there is no deployment configuration file, deployment will be repeatedly performed. In this case, the indicator is also steady green.
			Green	Blinking	USB-based deployment is in progress.
			Red	Steady on	USB-based deployment fails.

Table 4-146 Description of service port indicators in different modes (two indicators for each port)

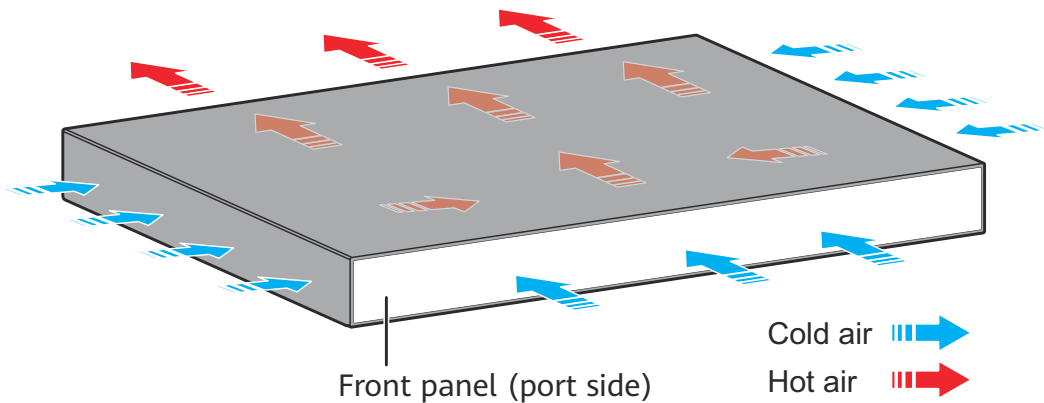
Display Mode	Color	Status	Description
Default mode (LINK indicator)	-	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	-	Off	The port is not connected or has been shut down, or no data is transmitted or received.
	Yellow	Blinking	The port is sending or receiving data.

Power Supply System

The switch can use a single power module or two power modules for 1+1 power redundancy. The power modules with natural heat dissipation and the power modules with fan cannot be used at the same time.

Heat Dissipation System

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



 NOTE

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

Technical Specifications

Table 4-147 Technical specifications of the S530-48S4XE

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 446.0 mm (1.72 in. x 17.40 in. x 17.56 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	185.0 mm x 650.0 mm x 550.0 mm (7.28 in. x 25.59 in. x 21.65 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	6.0 kg (13.23 lb)
Weight with packaging [kg(lb)]	7.9 kg (17.42 lb)
Typical power consumption [W]	72.3 W
Typical heat dissipation [BTU/hour]	246.69 BTU/hour
Maximum power consumption [W]	96.40 W (with two 80 W AC power modules) 104.70 W (with two 180 W AC power modules) 130.05 W (with two 1200 W DC power modules)
Maximum heat dissipation [BTU/hour]	328.93 (with two 80 W AC power modules) 357.25 (with two 180 W AC power modules) 443.74 (with two 1200 W DC power modules)
Static power consumption [W]	31.5 W
MTBF [years]	78.95 years
MTTR [hours]	2 hours
Availability	> 0.99999

Item	Specification
Noise at normal temperature (acoustic power) [dB(A)]	43.8 dB(A)
Noise at normal temperature (acoustic pressure) [dB(A)]	31.80 dB(A)
Number of card slots	0
Number of power slots	2
Number of fans modules	2
Redundant power supply	1+1 Power modules without fans and power modules with fans cannot be installed in the same chassis.
Long-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Devices cannot start when the temperature is lower than 0°C (32°F).
Storage temperature [°C(°F)]	-40°C to +70°C (-40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0-5000 m (0-16404 ft.)
Power supply mode	Pluggable power supply
Rated input voltage [V]	- AC input: 100 V AC to 240 V AC; 50/60 Hz - High-voltage DC input: 240 V DC - DC input: -48 V DC to -60 V DC
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45–65 Hz - High-voltage DC input: 190 V DC to 290 V DC - DC input: -38.4 V DC to -72 V DC
Maximum input current [A]	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.

Item	Specification
Memory	2 GB
Flash memory	Physical space: 1 GB
Console port	RJ45
Eth Management port	Supported
USB	Supported
RTC	Not supported
RPS input	Not supported
Power supply surge protection [kV]	- Configured with AC power modules: ± 6 kV in differential mode and ± 6 kV in common mode - Configured with DC power modules: ± 2 kV in differential mode and ± 4 kV in common mode
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Built-in
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from left, front, and right and air exhaust from rear
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

4.9 S620

4.9.1 S620-24T16X8Y2CZ

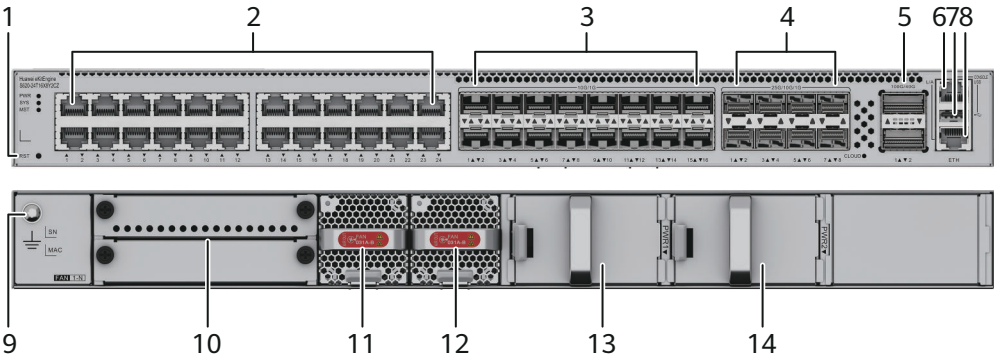
Overview

Table 4-148 Basic information about the S620-24T16X8Y2CZ

Item	Details
Description	S620-24T16X8Y2CZ (24*10/100/1000BASE-T ports, 16*10GE SFP+ ports, 8*25GE SFP28 ports, 2*100GE QSFP28 ports, expansion card slot, with 1*AC power module)
Part Number	98012536
Model	S620-24T16X8Y2CZ
First supported version	V600R024C00
Remarks	When cards are used, power modules with a power of 240 W or higher must be used.

Components

Figure 4-51 S620-24T16X8Y2CZ appearance



1	One RST button NOTICE To restore the factory settings and reset the device, hold down the button for at least 6 seconds. To reset the device, press the button. Resetting the device will cause service interruption. Exercise caution when you press the button.	2	Twenty-four 10/100/1000BASE-T ports
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3	Sixteen FE/GE/2.5GE/10GE SFP+ optical ports	4	Eight GE/2.5GE/10GE/25GE SFP28 optical ports
5	Two 40GE/100GE QSFP28 optical ports	6	One console port
7	One USB port	8	One ETH management port
9	Ground screw NOTE It is used with a ground cable .	10	One card slot NOTE Applicable card: HSIC-X08S000
11	Fan module slot 1 NOTE Applicable fan module: 7.1 FAN-031A-B (Fan Box (B, Fan Panel Side Exhaust))	12	Fan module slot 2 NOTE Applicable fan module: 7.1 FAN-031A-B (Fan Box (B, Fan Panel Side Exhaust))
13	Power module slot 1 NOTE Applicable power modules: • PAC180S12-CN • PDC240S12-CN • PDC400S12-CB • PAC600S12-PB	14	Power module slot 2 NOTE Applicable power modules: • PAC180S12-CN • PDC240S12-CN • PDC400S12-CB • PAC600S12-PB

Ports

Table 4-149 Ports on the S620-24T16X8Y2CZ

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

Port	Connector Type	Description	Available Components
FE/GE/2.5GE/ 10GE SFP+ optical port	SFP+	A FE/GE/2.5GE/10GE SFP+ optical port sends and receives service data at 100 Mbit/s, 1 Gbit/s, 2.5 Gbit/s, or 10 Gbit/s. When a 10GE optical module is connected to a port, the port can automatically adjust its rate to 10 Gbit/s. When a GE optical module is connected to a port, the port can automatically adjust its rate to 1 Gbit/s. When a FE optical module is connected to a port, the port can automatically adjust its rate to 100 Mbit/s. Before installing a 2.5GE optical module on a port, run the port mode 2.5ge command to configure the port to work at 2.5 Gbit/s.	• FE SFP/eSFP optical modules • GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 2.5GE eSFP optical modules • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 10GE SFP+ copper modules • 1 m, 3 m, 5 m, and 10 m SFP + high-speed copper cables • 3 m and 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables

Port	Connector Type	Description	Available Components
GE/2.5GE/10GE/25GE SFP28 optical port	SFP28	A GE/2.5GE/10GE/25GE SFP28 optical port sends and receives service data at 1 Gbit/s, 2.5 Gbit/s, 10 Gbit/s, or 25 Gbit/s. When a 25GE optical module is connected to a port, the port can automatically adjust its rate to 25 Gbit/s. When a 10GE optical module is connected to a port, the port can automatically adjust its rate to 10 Gbit/s. Before installing a 2.5GE optical module on a port, run the port mode 2.5ge command to configure the port to work at 2.5 Gbit/s. Before installing a GE optical module or GE copper module on a port, run the port mode ge command to configure the port to work at 1 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 2.5GE eSFP optical modules • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 10GE SFP+ copper modules • 25GE SFP28 optical modules • 1 m, 3 m, 5 m, and 10 m SFP + high-speed copper cables • 3 m and 10 m SFP+ AOC cables • 1 m and 3 m SFP28 high-speed copper cables • 3 m, 5 m, 7 m, and 10 m SFP28 AOC cables

Port	Connector Type	Description	Available Components
40GE/100GE QSFP28 optical port	QSFP28	A QSFP28 Ethernet optical port is a 100GE port by default and supports auto-sensing to 40GE. An interface can be split into four 25GE ports using commands. The interface can be automatically converted into four 10GE ports using one-to-four QSFP+ optical modules or AOC optical cables.	• 40GE QSFP+ optical modules • 1 m, 3 m, and 5 m QSFP+ to QSFP+ high-speed copper cables • 10 m QSFP+ AOC cable • 100GE QSFP28 optical modules • 1 m and 3 m QSFP28 to QSFP28 high-speed copper cables • 10 m QSFP28 AOC cable • 2 m QSFP28 dedicated stack cable (only for zero-configuration stacking)
Console port	RJ45	The console port is connected to a console for on-site configuration.	Console cable
ETH management port	RJ45	You can connect a switch to a configuration terminal or network management workstation through the ETH management port to configure the switch locally or remotely.	Ethernet cable

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

Indicators and Buttons

Figure 4-52 Indicators on the switch

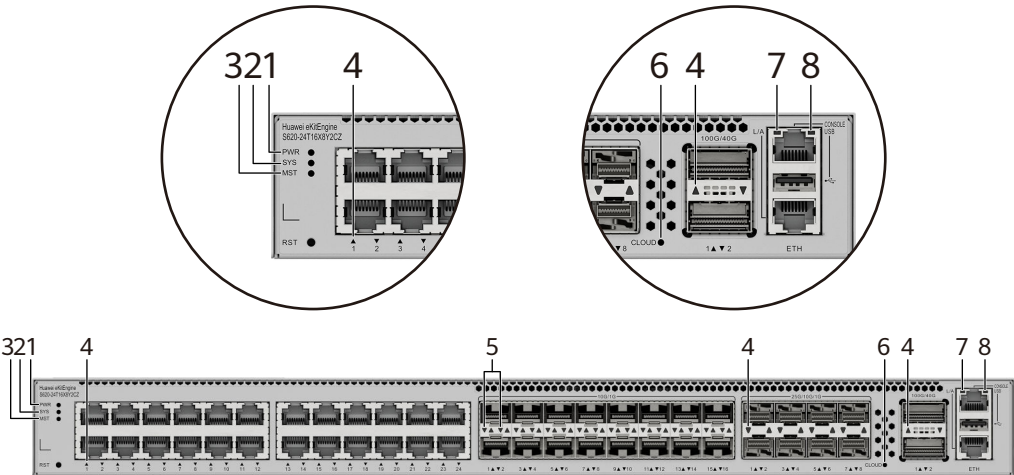


Table 4-150 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	PWR	Power module indicator	-	Off	The switch is powered off.
			Green	Steady on	The power supply is normal.
			Yellow	Steady on	The switch has multiple power modules installed. Any of the following situations occurs in a power module slot: • A power module is available in this slot but it is not connected to a power source. • The power module in this slot has failed.
2	SYS	System status indicator	-	Off	The system is not running.
			Green	Fast blinking	The system is starting.
			Green	Steady on	During the system startup preparation phase, the SYS indicator is steady green, which lasts for a maximum of 30 seconds.
			Green	Slow blinking	The system is running normally.
			Red	Steady on	A fault that affects services has occurred and it cannot be rectified automatically (critical alarm about hardware).
3	MST	Stack indicator	-	Off	The switch is not the master switch in a stack.
			Green	Blinking	The switch is the master switch in a stack or a standalone switch.
4	-	Service port indicator (one indicator for each port) NOTE Each optical port has one single-color indicator. Arrowheads show the positions of ports.		Meanings of service port indicators vary in different modes. For details, see Table 4-151 and Table 4-152 .	

No.	Indicator	Name	Color	Status	Description
5	-	Service port indicator (two indicators for each port) NOTE Each optical port has two single-color indicators. The one on the left is the ACT indicator (yellow), and the one on the right is the LINK indicator (green). 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.			
6	CLOUD	Cloud indicator	-	Off	The management VLAN of the device does not obtain an IP address.
			Blue	Steady on	The network is connected, and the management VLAN of the device obtains an IP address.
			Blue	Fast blinking	The device is connecting to the cloud.
			Blue	Slow blinking	The device is in the cloud management state.
7	L/A	ETH port indicator	-	Off	The ETH port is not connected.
			Green	Steady on	The ETH port is connected.
			Green	Blinking	The Eth port is sending or receiving data.
8	USB	USB-based deployment indicator	-	Off	No USB flash drive is installed, or the indicator fails.
			Green	Steady on	USB-based deployment succeeds. If there is no deployment configuration file, deployment will be repeatedly performed. In this case, the indicator is also steady green.
			Green	Blinking	USB-based deployment is in progress.
			Red	Steady on	USB-based deployment fails.

Table 4-151 Description of service port indicators in different modes (one indicator for each port)

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

Table 4-152 Description of service port indicators in different modes (two indicators for each port)

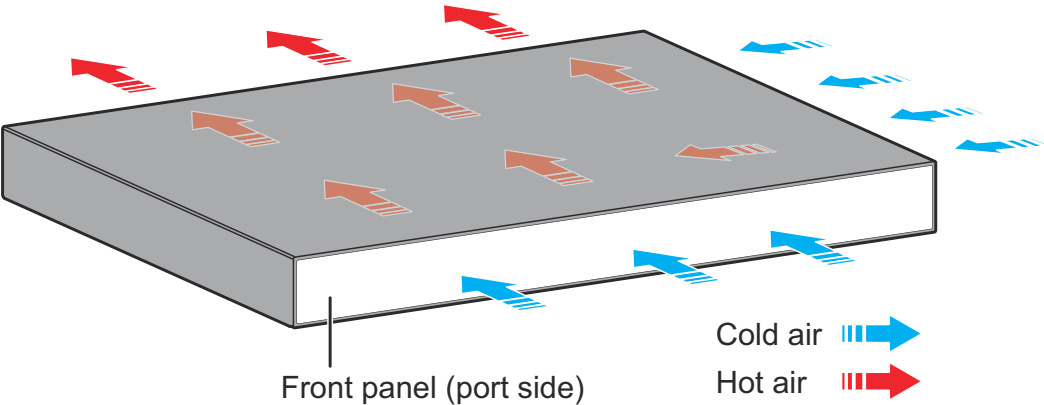
Display Mode	Color	Status	Description
Default mode (LINK indicator)	Green	Off	The port is not connected or has been shut down.
	Green	Steady on	A link has been established on the port.
Default mode (ACT indicator)	Yellow	Off	The port is not sending or receiving data.
	Yellow	Blinking	The port is sending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

Power Supply System

The switch can use a single power module or two power modules for 1+1 power redundancy. The power modules with natural heat dissipation and the power modules with fan cannot be used at the same time.

Heat Dissipation System

The switch uses pluggable fan modules for forced air cooling. Air flows in from the right and front sides, and exhausts from the rear panel.



 NOTE

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

Technical Specifications

Table 4-153 Technical specifications of the S620-24T16X8Y2CZ

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the parts protruding from the rear panel): 43.6 mm x 442.0 mm x 454.0 mm (1.72 in. x 17.4 in. x 17.87 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	145.0 mm x 650.0 mm x 550.0 mm (5.71 in. x 25.59 in. x 21.65 in.)
Chassis height [U]	1 U
Chassis material	Metal
Weight without packaging [kg(lb)]	6.31 kg (13.91 lb)
Weight with packaging [kg(lb)]	8.76 kg (19.31 lb)
Typical power consumption [W]	30% traffic under the ATIS standard and dual power modules: • 122 W (with two 180 W AC power modules) • 118 W (with two 240 W DC power modules)
Typical heat dissipation [BTU/hour]	30% traffic under the ATIS standard and dual power modules: • 416.26 (with two 180 W AC power modules) • 402.61 (with two 240 W DC power modules)
Maximum power consumption [W]	100% traffic under the ATIS standard and dual power modules: • 127 W (with two 180 W AC power modules) • 123 W (with two 240 W DC power modules)

Item	Specification
Maximum heat dissipation [BTU/hour]	100% traffic under the ATIS standard and dual power modules: • 433.32 (with two 180 W AC power modules) • 419.67 (with two 240 W DC power modules)
Static power consumption [W]	77 W
MTBF [years]	47.17 years
MTTR [hours]	2.54 hours
Availability	> 0.99999
Noise at normal temperature (acoustic power) [dB(A)]	54.2 dBA
Noise at normal temperature (acoustic pressure) [dB(A)]	41.2 dBA
Number of card slots	2
Number of power slots	2
Number of fans modules	2
Redundant power supply	1+1 Pluggable AC and DC power modules can be used together on the same device. NOTE Power modules with fans and power modules without fans cannot be installed on the same device.
Long-term operating temperature [°C(°F)]	-5°C to +45°C (23°F to 113°F) at an altitude of 0 to 1800 m (0 to 5905.44 ft.)
Short-term operating temperature [°C(°F)]	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)

Item	Specification
Restriction on the operating temperature variation rate [°C(°F)]	When the altitude is 1800–5000 m (5906–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). The device can work for a short period of time when the operating temperature is beyond the normal range, but the following conditions must be met: • The operating temperature can exceed 45°C (113°F) for a maximum of 96 consecutive hours in a year. • The total time when the operating temperature exceeds 45°C (113°F) in a year is less than or equal to 360 hours. • The number of times the operating temperature exceeds 45°C (113°F) is less than or equal to 15 in one year. If any of the preceding conditions is not met, the device may be damaged or an unknown error may occur. Devices cannot start when the temperature is lower than 0°C (32°F). The maximum transmission distance of an optical module used for short-term operation cannot exceed 10 km.
Storage temperature [°C(°F)]	–40°C to +70°C (–40°F to +158°F)
Long-term operating relative humidity [RH]	5% RH to 95% RH (non-condensing)
Long-term operating altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Storage altitude [m(ft.)]	0–5000 m (0–16404 ft.)
Power supply mode	Pluggable power supply
Rated input voltage [V]	• AC input: 100 V AC to 130 V AC, 200 V AC to 240 V AC; 50/60 Hz • High-voltage DC input: 240 V DC • DC input: –48 V DC to –60 V DC

Item	Specification
Input voltage range [V]	- AC input: 90 V AC to 290 V AC; 45 Hz to 66 Hz - High-voltage DC input: 190 V DC to 290 V DC - DC input: -38.4 V DC to -72 V DC
Maximum input current [A]	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.
Memory	4 GB
Flash memory	Physical space: 2 GB
Console port	RJ45
Eth Management port	RJ45
USB	Supported
RTC	Supported
RPS input	Not supported
Power supply surge protection [kV]	- Configured with AC power modules: ± 6 kV in differential mode and ± 6 kV in common mode - Configured with DC power modules: ± 2 kV in differential mode and ± 4 kV in common mode
Ingress protection level (dustproof/waterproof)	IP20
Types of fans	Pluggable
Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment
Airflow direction	Air intake from front and right and air exhaust from rear
PoE	Not supported
Certification	EMC certification Safety certification Manufacturing certification

5 Power Modules

NOTICE

- All power modules are hot swappable, but it is highly recommended that you power off a switch before removing or installing a power module in the switch to protect personal and equipment safety.
 - Before replacing a power module in a switch, make sure that the switch can be powered by the other power module after the power module is removed. Otherwise, services on the switches will be interrupted by a power failure when the power module is removed.
 - Before powering off a switch, shut down all of its power supply units.
 - A switch can only use power modules matching its chassis model. Using unsupported power modules will cause unexpected risks.
 - If a switch has two power modules for 1+1 power redundancy and one of them is powered off, the indicator of this power module will not turn off immediately. This is a normal situation.
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5.1 PAC80S12-CN (80W AC Power Module(66mm Width Case, No Fans))

5.2 PAC180S12-CN (180W AC&240 V DC Power Module (66 mm Width case, No Fans))

5.3 PDC240S12-CN (240W DC Power Module (66 mm Width case, No Fans))

5.4 PDC400S12-CB (400W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust))

5.5 PAC600S12-PB (600W AC &240 V DC Power Module(66 mm Width Case, Back to Front, Power panel side exhaust))

5.6 PDC1K2S12-CE (1200W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust))

5.1 PAC80S12-CN (80W AC Power Module(66mm Width Case, No Fans))

Overview

Table 5-1 Basic information about the PAC80S12-CN

Item	Details
Description	80W AC Power Module(66mm Width Case, No Fans)
Part Number	02131835
Model	PAC80S12-CN

Appearance

Figure 5-1 Appearance of the PAC80S12-CN



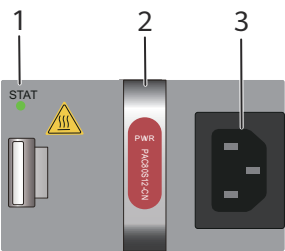
Version Mapping

Table 5-2 Mappings between PAC80S12-CN and product models

Product	Product Model	First Supported Version	Limitations
S530	S530-24ST4XE (98012556)	V600R023C10SPC 600	-
S530	S530-24T4XE (98012554)	V600R023C10SPC 600	-
S530	S530-48S4XE (98012558)	V600R023C10SPC 600	-

Panel

Figure 5-2 Panel of the PAC80S12-CN



1. Power indicator (STAT)	2. Handle	3. Power socket	-
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Table 5-3 Indicators on the PAC80S12-CN

Silkscreen	Name	Color	Status	Description
STAT	Running status indicator	-	Steady off	The power input is abnormal (for example, no input, overvoltage, or undervoltage) or the power output is abnormal (for example, overvoltage, overcurrent, short circuit occurs, undervoltage, or overtemperature).
		Green	Steady on	The power module is working normally.

Functions and Features

Table 5-4 Functions of an 80 W AC power module

Function		Description
Input protection	Input undervoltage protection	In this protection state, the power module stops supplying power. When the input voltage restores to the normal range, the power module automatically resumes power supply.
	Input overvoltage protection	In this protection state, the power module stops supplying power. When the input voltage restores to the normal range, the power module automatically resumes power supply.
	Input overcurrent protection	In this protection state, the power module stops supplying power and cannot automatically resume power supply when the input current restores to the normal range.

Function		Description
Output protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the output voltage restores to the normal range, the power module automatically resumes power supply.
	Output overcurrent protection	In this protection state, the power module supplies power intermittently. When the output current is within a range, the power module automatically resumes power supply.
	Output short-circuit protection	In this protection state, the power module supplies power intermittently. When the short circuit is removed, the power module automatically resumes power supply.
Overtemperature protection		When the temperature of the power module exceeds a specified threshold, the power module stops supplying power. When the temperature falls into the normal range, the power module automatically resumes power supply.
Hot swapping		Supported

 NOTE

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

Technical Specifications

Table 5-5 Technical specifications of the PAC80S12-CN

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.6 mm x 66 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.)
Weight without packaging [kg(lb)]	1.2 kg (2.65 lb)
Number of inputs	1
Rated input voltage [V]	100 V AC to 240 V AC, 50/60 Hz
Input voltage range [V]	90 V AC to 290 V AC; 45 Hz to 66 Hz
Maximum input current [A]	2 A
Rated output voltage [V]	12 V
Rated output current [A]	6.67 A

Item	Specification
Rated output power [W]	80 W
Power dissipation Mode	Natural heat dissipation without fans
Hot swapping	Supported

5.2 PAC180S12-CN (180W AC&240 V DC Power Module (66 mm Width case, No Fans))

Overview

Table 5-6 Basic information about the PAC180S12-CN

Item	Details
Description	180W AC&240 V DC Power Module (66 mm Width case, No Fans)
Part Number	02131754
Model	PAC180S12-CN

Appearance

Figure 5-3 Appearance of the PAC180S12-CN



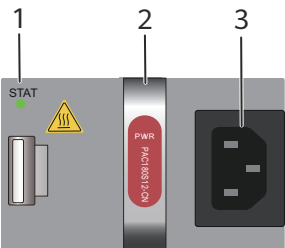
Version Mapping

Table 5-7 Mappings between PAC180S12-CN and product models

Product	Product Model	First Supported Version	Limitations
S530	S530-24ST4XE (98012556)	V600R023C10SPC 600	-
S530	S530-24T4XE (98012554)	V600R023C10SPC 600	-
S530	S530-48S4XE (98012558)	V600R023C10SPC 600	-
S620	S620-24T16X8Y2C Z (98012536)	V600R024C00	When cards are used, power modules with a power of 240 W or higher must be used.

Panel

Figure 5-4 Panel of the PAC180S12-CN



1. Power indicator (STAT)	2. Handle	3. Power socket	-
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Table 5-8 Indicators on the PAC180S12-CN

Silkscreen	Name	Color	Status	Description
STAT	Running status indicator	-	Steady off	The power input is abnormal (for example, no input, overvoltage, or undervoltage) or the power output is abnormal (for example, overvoltage, overcurrent, short circuit occurs, undervoltage, or overtemperature).
		Green	Steady on	The power module is working normally.

Functions and Features

Table 5-9 Functions of a 180 W AC power module

Function		Description
Input protection	Input undervoltage protection	In this protection state, the power module stops supplying power. When the input voltage restores to the normal range, the power module automatically resumes power supply.
	Input overvoltage protection	In this protection state, the power module stops supplying power. When the input voltage restores to the normal range, the power module automatically resumes power supply.
	Input overcurrent protection	In this protection state, the power module stops supplying power and cannot automatically resume power supply when the input current restores to the normal range.

Function		Description
Output protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the output voltage restores to the normal range, the power module automatically resumes power supply.
	Output overcurrent protection	In this protection state, the power module supplies power intermittently. When the output current is within a range, the power module automatically resumes power supply.
	Output short-circuit protection	In this protection state, the power module supplies power intermittently. When the short circuit is removed, the power module automatically resumes power supply.
Overtemperature protection		When the temperature of the power module exceeds a specified threshold, the power module stops supplying power. When the temperature falls into the normal range, the power module automatically resumes power supply.
Hot swapping		Supported

 NOTE

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

Technical Specifications

Table 5-10 Technical specifications of the PAC180S12-CN

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.6 mm x 66 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.)
Weight without packaging [kg(lb)]	1.2 kg (2.65 lb)
Number of inputs	1
Rated input voltage [V]	100 V AC to 240 V AC, 50 Hz/60 Hz 240 V DC
Input voltage range [V]	90 V AC to 290 V AC; 45 Hz~66 Hz 190 V DC to 290 V DC
Maximum input current [A]	3 A
Rated output voltage [V]	12 V

Item	Specification
Rated output current [A]	15 A
Rated output power [W]	180 W
Power dissipation Mode	Natural heat dissipation without fans
Hot swapping	Supported

5.3 PDC240S12-CN (240W DC Power Module (66 mm Width case, No Fans))

Overview

Table 5-11 Basic information about the PDC240S12-CN

Item	Details
Description	240W DC Power Module (66 mm Width case, No Fans)
Part Number	02314VUJ
Model	PDC240S12-CN

Appearance

Figure 5-5 Appearance of the PDC240S12-CN



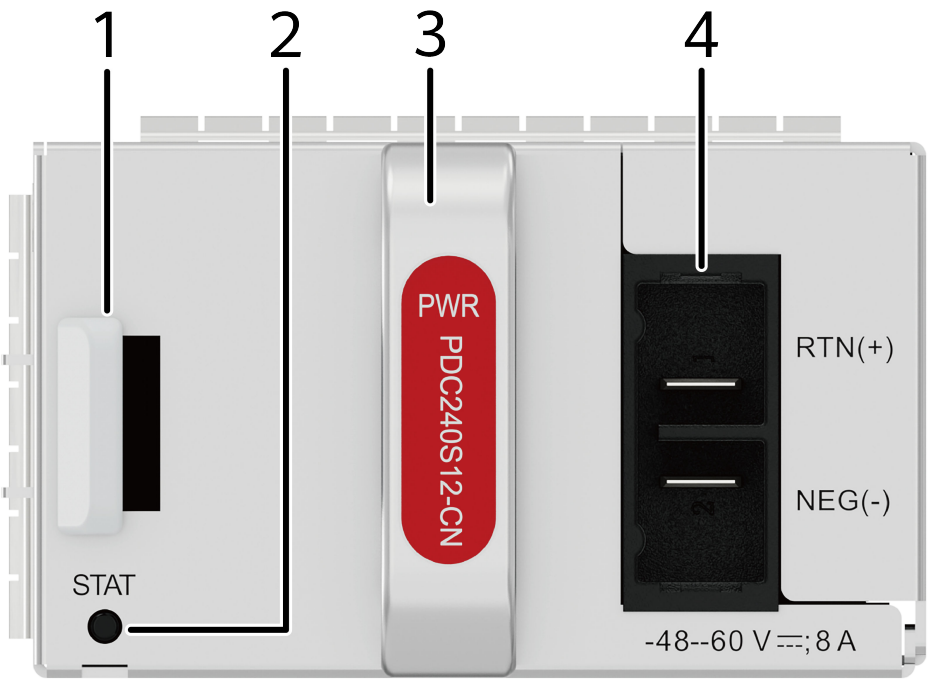
Version Mapping

Table 5-12 Mappings between PDC240S12-CN and product models

Product	Product Model	First Supported Version	Limitations
S530	S530-24ST4XE (98012556)	V600R024C00	-
S530	S530-24T4XE (98012554)	V600R024C00	-
S530	S530-48S4XE (98012558)	V600R024C00	-
S620	S620-24T16X8Y2C Z (98012536)	V600R024C00	-

Panel

Figure 5-6 Panel of the PDC240S12-CN



1. Lock	2. Indicator	3. Handle	4. Power socket
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Table 5-13 Indicators on the PDC240S12-CN

Silkscreen	Name	Color	Status	Description
STAT	Power status indicator	Green	Steady on	The power module is working normally.
		Green	Blinking	The power module is in loading.
		-	Off	The power input is abnormal (for example, no input, overvoltage, or undervoltage) or the power output is abnormal (for example, overcurrent, overvoltage, short circuit, or undervoltage) .

Functions and Features

Table 5-14 Functions and features of the PDC240S12-CN

Functions and Features	Description
Input undervoltage protection	Stops power output and automatically restores power output after the input voltage becomes normal.
Input overvoltage protection	Stops power output and automatically restores power output after the input voltage becomes normal.
Input overcurrent protection	Stops power output and does not automatically restore power output after the input current becomes normal.

Functions and Features	Description
Output current limiting protection	Intermittently provides output and automatically restores normal output after the output current falls within a normal range.
Output overvoltage protection	Intermittently stops output and automatically restores output after the overvoltage condition is removed.
Output short circuit protection	Intermittently provides output and automatically restores normal output after the output short circuit is removed.
Overtemperature protection	When the temperature of the power module reaches a preset threshold, the power module stops power output and will automatically restore power output after the temperature drops back to the normal range.
Heat dissipation	The heat dissipation is provided by the fan of the power module.
Hot swap	The device has power module redundancy. You can hot-swap a power module without interrupting device operation.

 NOTE

When a power module enters the overtemperature protection state, take measures to lower its temperature. The power module can automatically resume power supply when its temperature returns to within the normal range.

Technical Specifications

Table 5-15 Technical specifications of the PDC240S12-CN

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.6 mm x 66.0 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.)
Weight without packaging [kg(lb)]	1.5 kg (3.31 lb)
Number of inputs	1
Rated input voltage [V]	+48 V DC -48 V DC to -60 V DC

Item	Specification
Input voltage range [V]	+40 V DC to +57 V DC -38.4 V DC to -72 V DC
Maximum input current [A]	7 A
Rated output voltage [V]	20 V
Rated output power [W]	240 W
Power dissipation Mode	Natural heat dissipation
Hot swapping	Supported

5.4 PDC400S12-CB (400W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust))

Overview

Table 5-16 Basic information about the PDC400S12-CB

Item	Details
Description	400W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust)
Part Number	02314VUG
Model	PDC400S12-CB

Appearance

Figure 5-7 Appearance of the PDC400S12-CB



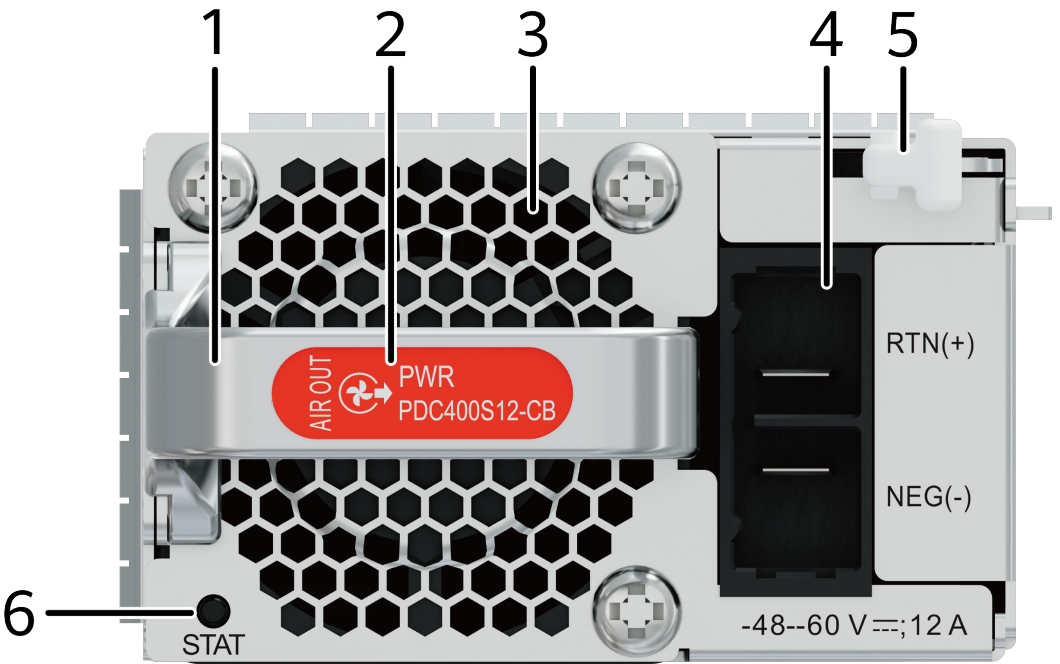
Version Mapping

Table 5-17 Mappings between PDC400S12-CB and product models

Product	Product Model	First Supported Version	Limitations
S620	S620-24T16X8Y2C Z (98012536)	V600R024C00	-

Panel

Figure 5-8 Panel of the PDC400S12-CB



1. Handle	2. Airflow flag (air out)	3. Air vent	4. Power socket
5. Lock	6. Indicator	-	-

Table 5-18 Indicators on the PDC400S12-CB

Silkscreen	Name	Color	Status	Description
STAT	Running status indicator	Green	Steady off	The power input is abnormal (for example, no input or undervoltage) , or the power output is abnormal (for example, overvoltage or undervoltage) .

Silkscreen	Name	Color	Status	Description
		Green	Steady on	The power module is working properly.
		Green	Blinking (4 Hz)	Online loading

Functions and Features

Table 5-19 Functions and features of the PDC400S12-CB

Functions and Features	Description
Input overvoltage protection and undervoltage protection	In this protection state, the power module stops supplying power. When the input voltage restores to the normal range, the power module automatically resumes power supply.
Input overcurrent protection	In this protection state, the power module stops supplying power and cannot automatically resume power supply when the input current restores to the normal range.
Output overvoltage protection	In this protection state, the power adapter stops supplying power intermittently. When the output voltage restores to the normal range, the power adapter automatically resumes power supply.
Output overcurrent protection	In this protection state, the power module supplies power intermittently. When the output current is limited within a range, the power module automatically resumes power supply.
Output short-circuit protection	In this protection state, the power module supplies power intermittently. When the short circuit is removed, the power module automatically resumes power supply.

Functions and Features	Description
Overtemperature protection	When the temperature of the power module exceeds a specified threshold, the power module stops supplying power. When the temperature falls into the normal range, the power module automatically resumes power supply.
Heat dissipation	The heat dissipation is provided by the fan of the power module.
Hot swap	The device has power module redundancy. You can hot-swap a power module without interrupting device operation.

 NOTE

When a power module enters the overtemperature protection state, take measures to lower its temperature. The power module can automatically resume power supply when its temperature returns to within the normal range.

Technical Specifications

Table 5-20 Technical specifications of the PDC400S12-CB

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.6 mm x 66.0 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.)
Weight without packaging [kg(lb)]	0.844 kg (1.86 lb)
Number of inputs	1
Rated input voltage [V]	+48 V DC -48 V DC to -60 V DC
Input voltage range [V]	+40 V DC to +57 V DC -38.4 V DC to -72 V DC
Maximum input current [A]	11 A
Rated output voltage [V]	12 V
Rated output current [A]	8.33 A
Rated output power [W]	400 W
Power dissipation Mode	Heat dissipation with fan
Hot swapping	Supported

5.5 PAC600S12-PB (600W AC &240 V DC Power Module(66 mm Width Case, Back to Front, Power panel side exhaust))

Overview

Table 5-21 Basic information about the PAC600S12-PB

Item	Details
Description	600W AC &240 V DC Power Module(66 mm Width Case, Back to Front, Power panel side exhaust)
Part Number	02313BUS
Model	PAC600S12-PB

Appearance

Figure 5-9 Appearance of the PAC600S12-PB



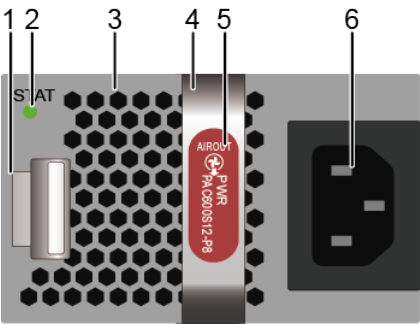
Version Mapping

Table 5-22 Mappings between PAC600S12-PB and product models

Product	Product Model	First Supported Version	Limitations
S530	S530-24ST4XE (98012556)	V600R023C10SPC 600	-
S530	S530-24T4XE (98012554)	V600R023C10SPC 600	-
S530	S530-48S4XE (98012558)	V600R023C10SPC 600	-
S620	S620-24T16X8Y2C Z (98012536)	V600R024C00	-

Panel

Figure 5-10 Panel of the PAC600S12-PB



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

Table 5-23 Indicators on the PAC600S12-PB

Silkscreen	Name	Color	Status	Description
STAT	Power status indicator	Green	Steady on	The output of the AC power module is normal.

Silkscreen	Name	Color	Status	Description
		-	Off	• The input of the AC power module is out of range. For example, no AC input, AC input overvoltage, or AC input undervoltage has occurred. • The output of the AC power module is out of range. For example, undervoltage, or overtemperature has occurred.

Functions and Features

Table 5-24 Functions and features of the PAC600S12-PB

Functions and Features	Description
Input undervoltage protection	Stops power output and automatically restores power output after the input voltage becomes normal.
Input overvoltage protection	Stops power output and automatically restores power output after the input voltage becomes normal.
Input overcurrent protection	Stops power output and does not automatically restore power output after the input current becomes normal.

Functions and Features	Description
Output current limiting protection	Intermittently provides output and automatically restores normal output after the output current falls within a normal range.
Output overvoltage protection	Intermittently stops output and automatically restores output after the overvoltage condition is removed.
Output short circuit protection	Intermittently provides output and automatically restores normal output after the output short circuit is removed.
Overtemperature protection	When the temperature of the power module reaches a preset threshold, the power module stops power output and will automatically restore power output after the temperature drops back to the normal range.
Heat dissipation	The heat dissipation is provided by the fan of the power module.
Hot swap	The device has power module redundancy. You can hot-swap a power module without interrupting device operation.

 NOTE

When a power module enters the overtemperature protection state, take measures to lower its temperature. The power module can automatically resume power supply when its temperature returns to within the normal range.

Technical Specifications

Table 5-25 Technical specifications of the PAC600S12-PB

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.6 mm x 66.0 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.)
Weight without packaging [kg(lb)]	1 kg (2.20 lb)
Number of inputs	1
Rated input voltage [V]	- AC input: 100 V to 240 V, 50 Hz/60 Hz - High-voltage DC input: 240 V DC

Item	Specification
Input voltage range [V]	- AC input: 90 V to 290 V, 45 Hz to 65 Hz - High-voltage DC input: 190 V DC to 290 V DC
Maximum input current [A]	100 V AC to 240 V AC: 8 A 240 V DC: 4 A
Rated output voltage [V]	12 V
Rated output current [A]	50 A
Rated output power [W]	600 W
Power dissipation Mode	Heat dissipation with fan
Hot swapping	Supported

5.6 PDC1K2S12-CE (1200W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust))

Overview

Table 5-26 Basic information about the PDC1K2S12-CE

Item	Details
Description	1200W DC Power Module (66 mm Width case, Back to Front, Power panel side exhaust)
Part Number	02270205
Model	PDC1K2S12-CE

Appearance

Figure 5-11 Appearance of the PDC1K2S12-CE



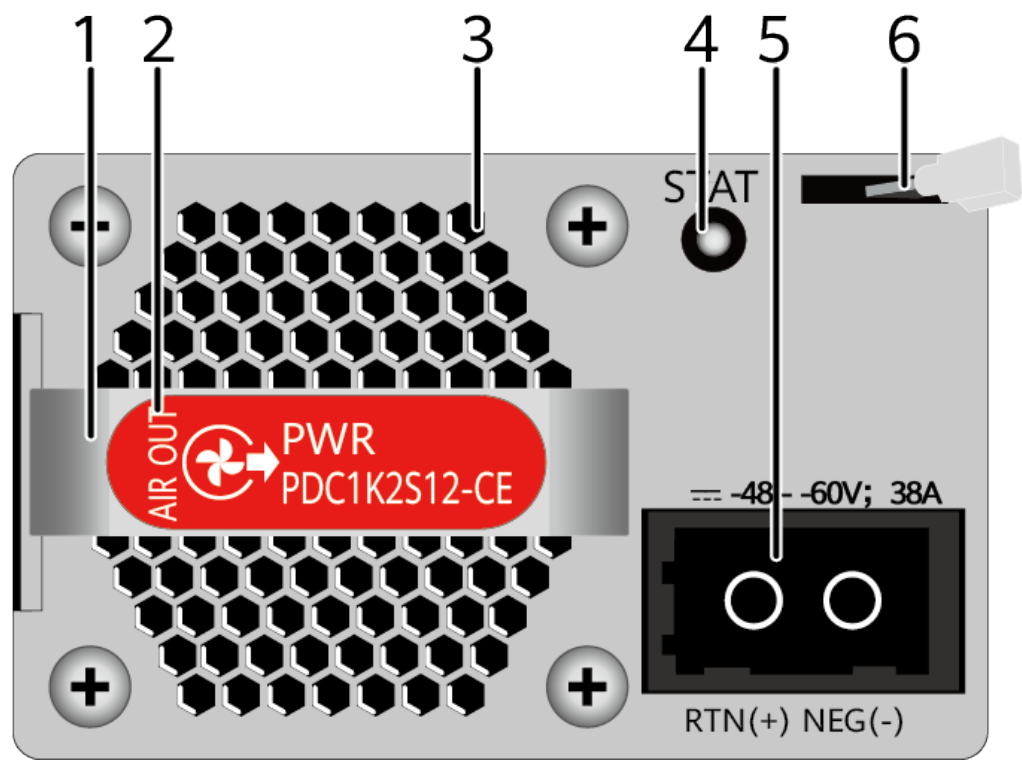
Version Mapping

Table 5-27 Mappings between PDC1K2S12-CE and product models

Product	Product Model	First Supported Version	Limitations
S530	S530-24ST4XE (98012556)	V600R023C10SPC 600	-
S530	S530-24T4XE (98012554)	V600R023C10SPC 600	-
S530	S530-48S4XE (98012558)	V600R023C10SPC 600	-

Panel

Figure 5-12 Panel of the PDC1K2S12-CE



1. Handle NOTE Each power module is delivered with a velcro strap on the handle. This velcro strap is used to strap the power cable to the handle.	2. Airflow flag (air out)	3. Air vent	4. Indicator
5. Power socket	6. Lock	-	-

Table 5-28 Indicators on the PDC1K2S12-CE

Silkscreen	Name	Color	Status	Description
STAT	Power status indicator	Green	Steady on	The power module is working normally.

Silkscreen	Name	Color	Status	Description
		Green	Blinking	The power module is in loading.
		-	Off	The power input is abnormal (for example, no input, overvoltage, or undervoltage) or the power output is abnormal (for example, overcurrent, overvoltage, short circuit, or undervoltage).

Functions and Features

Table 5-29 Functions and features of the PDC1K2S12-CE

Functions and Features	Description
Input undervoltage protection	Stops power output and automatically restores power output after the input voltage becomes normal.
Input overvoltage protection	Stops power output and automatically restores power output after the input voltage becomes normal.
Input overcurrent protection	Stops power output and does not automatically restore power output after the input current becomes normal.
Output current limiting protection	Intermittently provides output and automatically restores normal output after the output current falls within a normal range.
Output overvoltage protection	Intermittently stops output and automatically restores output after the overvoltage condition is removed.

Functions and Features	Description
Output short circuit protection	Intermittently provides output and automatically restores normal output after the output short circuit is removed.
Overtemperature protection	When the temperature of the power module reaches a preset threshold, the power module stops power output and will automatically restore power output after the temperature drops back to the normal range.
Heat dissipation	The heat dissipation is provided by the fan of the power module.
Hot swap	The device has power module redundancy. You can hot-swap a power module without interrupting device operation.

 NOTE

When a power module enters the overtemperature protection state, take measures to lower its temperature. The power module can automatically resume power supply when its temperature returns to within the normal range.

Technical Specifications

Table 5-30 Technical specifications of the PDC1K2S12-CE

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.6 mm x 66.0 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.)
Weight without packaging [kg(lb)]	1.5 kg (3.31 lb)
Number of inputs	1
Rated input voltage [V]	+48 V DC -48 V DC to -60 V DC
Input voltage range [V]	+40 V DC to +57 V DC -38.4 V DC to -72 V DC
Maximum input current [A]	38 A
Rated output voltage [V]	12 V
Rated output power [W]	1200 W

Item	Specification
Power dissipation Mode	Heat dissipation with fan
Hot swapping	Supported

6 Independent Power

6.1 HW-120100D0D (Adapter,-40degC,55degC,90V,300V,12V/1A,C8 2pin/
2.1*5.5*9.5 H Plug,Desktop adapter,black)

6.2 AD-540278D0D (Adapter Power-AD-540278D0D-Desktop-150W-ErP 6-White)

6.3 HW-560268D0D (Adapter-HW-560268D0D-Tabletop-150W-ERP6)

6.1 HW-120100D0D (Adapter,-40degC,55degC,90V,300V,12V/1A,C8 2pin/ 2.1*5.5*9.5 H Plug,Desktop adapter,black)

Overview

Table 6-1 Basic information about the HW-120100D0D

Item	Details
Description	Adapter,-40degC,55degC,90V,300V,12V/1A,C8 2pin/2.1*5.5*9.5 H Plug,Desktop adapter,black
Part Number	02221222
Model	HW-120100D0D

Appearance

Figure 6-1 Appearance of the HW-120100D0D



Version Mapping

Table 6-2 Mappings between HW-120100D0D and product models

Product	Product Model	First Supported Version	Limitations
S110	S110-8T2ST (98012199)	V200R023C10	-

Technical Specifications

Table 6-3 Technical specifications of the HW-120100D0D

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	30 mm x 46 mm x 96 mm (1.18 in. x 1.81 in. x 3.78 in.)
Weight without packaging [kg(lb)]	0.1 kg (0.22 lb)
Number of inputs	1
Rated input voltage [V]	100 V AC to 240 V AC, 50/60 Hz
Input voltage range [V]	90 V AC to 300 V AC; 47 Hz to 63 Hz
Maximum input current [A]	0.5 A
Rated output voltage [V]	12 V
Rated output current [A]	1 A
Rated output power [W]	12 W

Item	Specification
Power dissipation Mode	Natural heat dissipation without fans

6.2 AD-540278D0D (Adapter Power-AD-540278D0D-Desktop-150W-ErP 6-White)

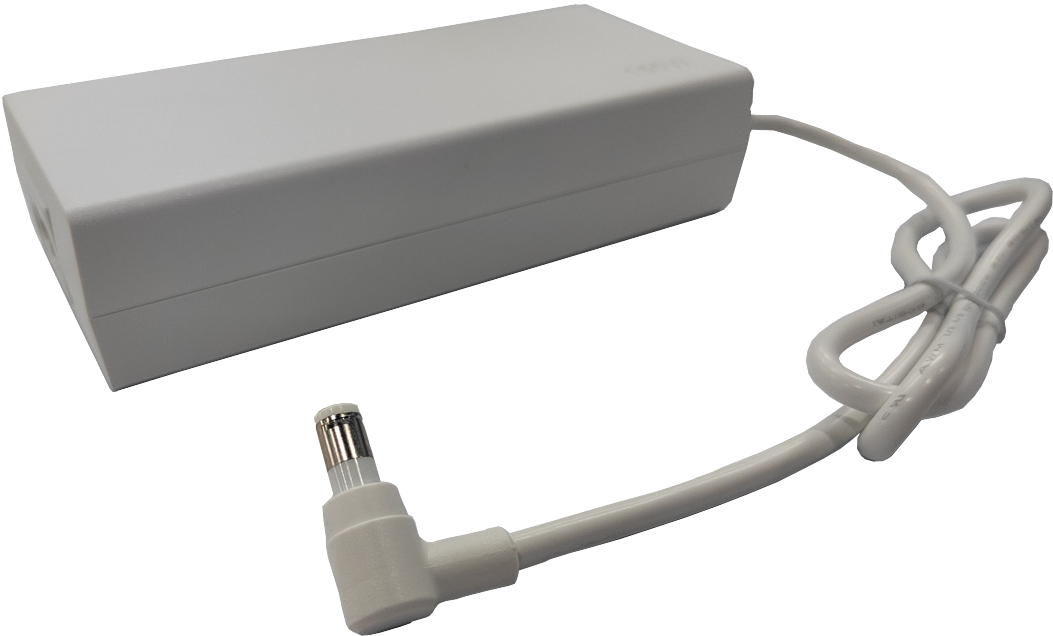
Overview

Table 6-4 Basic information about the AD-540278D0D

Item	Details
Description	Adapter Power-AD-540278D0D-Desktop-150W-ErP 6-White
Part Number	02222067
Model	AD-540278D0D

Appearance

Figure 6-2 Appearance of the AD-540278D0D



Version Mapping

Table 6-5 Mappings between AD-540278D0D and product models

Product	Product Model	First Supported Version	Limitations
S110	S110-8P2ST (98012269)	V200R023C10	-

Technical Specifications

Table 6-6 Technical specifications of the AD-540278D0D

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	35 mm x 70 mm x 150 mm (1.38 in. x 2.76 in. x 5.91 in.)
Weight without packaging [kg(lb)]	0.4 kg (0.88 lb)
Number of inputs	1
Rated input voltage [V]	170 V AC to 240 V AC; 50/60 Hz
Input voltage range [V]	170 V AC to 264 V AC; 47 Hz to 63 Hz
Maximum input current [A]	2 A
Rated output voltage [V]	54 V
Rated output current [A]	2.78 A
Rated output power [W]	150 W
Power dissipation Mode	Natural heat dissipation without fans

6.3 HW-560268D0D (Adapter-HW-560268D0D-Tabletop-150W-ERP6)

Overview

Table 6-7 Basic information about the HW-560268D0D

Item	Details
Description	Adapter-HW-560268D0D-Tabletop-150W-ERP6

Item	Details
Part Number	02221024
Model	HW-560268D0D

Appearance

Figure 6-3 Appearance of the HW-560268D0D



Version Mapping

Table 6-8 Mappings between HW-560268D0D and product models

Product	Product Model	First Supported Version	Limitations
S110	S110-8P2ST (98012195)	V200R023C10	-

Technical Specifications

Table 6-9 Technical specifications of the HW-560268D0D

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	41.5 mm x 80 mm x 180 mm (1.63 in. x 3.15 in. x 7.09 in.)
Weight without packaging [kg(lb)]	0.8 kg (1.76 lb)
Number of inputs	1
Rated input voltage [V]	100 V AC to 240 V AC, 50/60 Hz

Item	Specification
Input voltage range [V]	90 V AC to 290 V AC, 47 Hz to 63 Hz
Maximum input current [A]	2 A
Rated output voltage [V]	56 V
Rated output current [A]	2.68 A
Rated output power [W]	150 W
Power dissipation Mode	Natural heat dissipation without fans
Hot swapping	Supported

7 Fan Modules

 NOTE

If one fan module (including the built-in fan module) of a switch is faulty, the other fan modules run at full speed to ensure proper heat dissipation and normal operation of the system.

Fan modules are delivered with the switch by default.

[7.1 FAN-031A-B \(Fan Box \(B, Fan Panel Side Exhaust\)\)](#)

7.1 FAN-031A-B (Fan Box (B, Fan Panel Side Exhaust))

Overview

Table 7-1 Basic information about the FAN-031A-B

Item	Details
Description	Fan Box (B, Fan Panel Side Exhaust)
Part Number	02352CAB
Model	FAN-031A-B

Appearance

Figure 7-1 Appearance of the FAN-031A-B



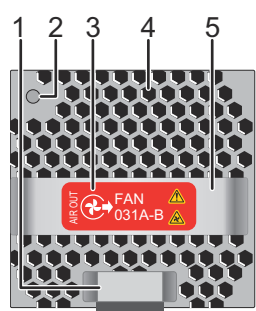
Version Mapping

Table 7-2 Mappings between FAN-031A-B and product models

Product	Product Model	First Supported Version
S620	S620-24T16X8Y2CZ (98012536)	V600R024C00

Panel

Figure 7-2 Panel of the FAN-031A-B



1. Lock	2. Indicator	3. Airflow flag (air out)	4. Fan air vent	5. Handle
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Table 7-3 Indicators on the FAN-031A-B

Silkscreen	Name	Color	Status	Description
-	Fan status indicator	-	Off	The fan module is not running.
		Green	Steady on	The fan module is starting.
		Green	Slow blinking	The fan module is working properly.
		Red	Steady on	The fan module has a hardware fault and must be replaced. Common causes include short circuits, fan blades blocked, and faults of the fan module.

Functions and Features

Table 7-4 Functions and features of the FAN-031A-B

Functions and Features	Description
Basic function	The fan module has only one fan to cool the chassis.
Hot swapping	Supported

Technical Specifications

Table 7-5 Technical specifications of the FAN-031A-B

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	40 mm x 40 mm x 100.3 mm (1.57 in. x 1.57 in. x 3.95 in.)
Weight without packaging [kg(lb)]	0.1 kg (0.22 lb)
Number of fans	1
Maximum power consumption [W]	21.6 W
Maximum heat dissipation [BTU/hour]	73.7 BTU/hour
Maximum fan speed [RPM]	24500 ± 10 %
Maximum airflow [CFM]	31 CFM
Airflow direction	Air exhausted from the panel side of the fan tray

8 Cards

8.1 HSIC-X08S000 (HSIC-X08S000 (Interface card with 8*10GE SFP+ ports or 4*25GE SFP28 ports (only ports 1 to 4 support 25GE)))

8.1 HSIC-X08S000 (HSIC-X08S000 (Interface card with 8*10GE SFP+ ports or 4*25GE SFP28 ports (only ports 1 to 4 support 25GE)))

Overview

Table 8-1 Basic information about the HSIC-X08S000

Item	Details
Description	HSIC-X08S000 (Interface card with 8*10GE SFP+ ports or 4*25GE SFP28 ports (only ports 1 to 4 support 25GE))
Part Number	02314VYH
Model	HSIC-X08S000
Card Type	Flexible card

Appearance

Figure 8-1 Appearance of the HSIC-X08S000



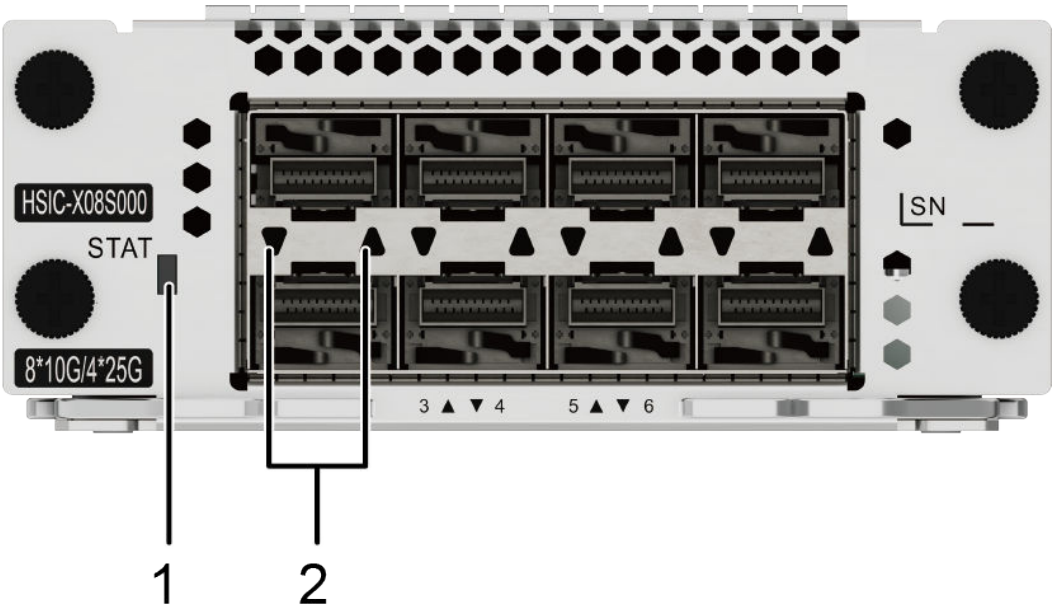
Version Mapping

Table 8-2 Mappings between HSIC-X08S000 and product models

Product	Product Model	First Supported Version	Limitations
S620	S620-24T16X8Y2C Z (98012536)	V600R024C00	-

Indicators

Figure 8-2 Indicators on the HSIC-X08S000



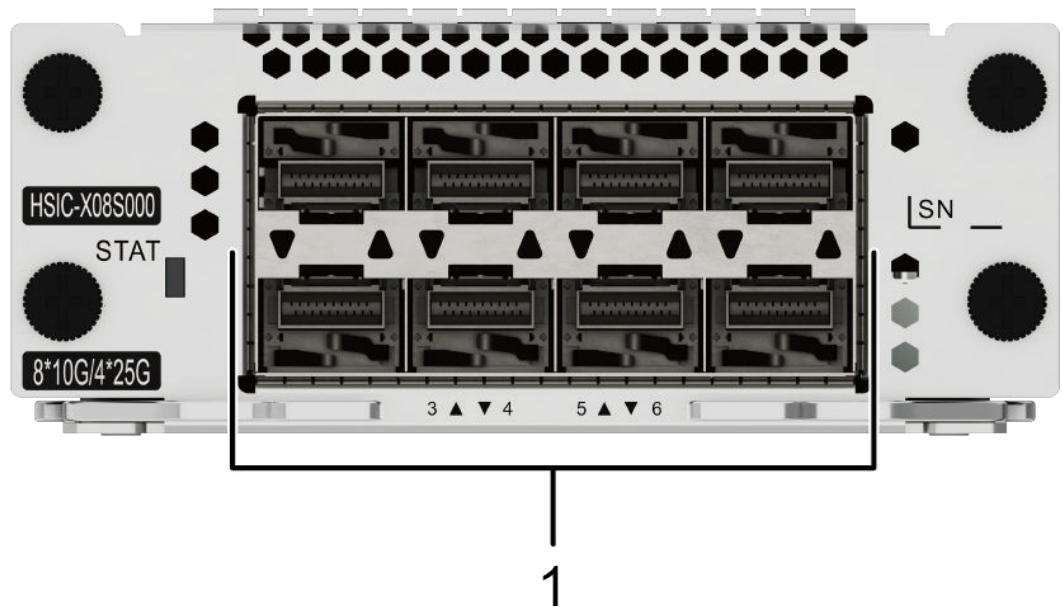
1. STAT: running status indicator	2. LINK/ACT indicators of ports
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Table 8-3 Indicators on the HSIC-X08S000

Silkscreen	Name	Color	Status	Description
STAT	Card status indicator	Green	Off	The system software is not running.
		Green	Fast blinking	The system is starting.
		Green	Slow blinking	The system is running properly.
		Red	Steady on	A fault that affects services has occurred. The fault cannot be rectified automatically and requires manual intervention.
-	Service port indicator	Green	Steady on	A link is established on the port.
		Green	Blinking	The port is sending or receiving data.
		Green	Off	No link is established on the port.

Ports

Figure 8-3 Ports on the HSIC-X08S000



1. Eight 10GE SFP+ or four 25GE SFP28 optical ports

Table 8-4 Ports on the HSIC-X08S000

Port	Connector Type	Description	Available Components
10GE SFP+ optical port	SFP+	The 10GE SFP+ optical port supports GE/10GE. When a GE optical module or copper module is connected to a 10GE SFP+ optical port, the port can automatically adjust its rate to 1 Gbit/s. You can run the port combination-mode card command to change the port mode. After this command is configured, the first four ports are 10GE/25GE SFP28 optical ports, and the last four ports become unavailable. When a 10GE optical module, copper module or cable is connected to a 25GE SFP28 optical port, the port can automatically adjust its rate to 10 Gbit/s.	• GE eSFP optical modules • GE-CWDM eSFP optical modules • GE-DWDM eSFP optical modules • GE SFP copper module • 10GE SFP+ optical modules • 10GE-CWDM SFP+ optical modules • 10GE-DWDM SFP+ optical modules • 10GE SFP+ copper module • 1 m, 3 m, 5 m, and 10 m SFP + high-speed copper cables • 10 m SFP+ AOC cables • 0.5 m and 1.5 m SFP+ dedicated stack cables (only for zero-configuration stacking) • 25GE SFP28 optical modules • 1 m, 3 m, and 5 m SFP28 high-speed copper cables • 3 m, 5 m, 7 m, and 10 m

Port	Connector Type	Description	Available Components
			SFP28 AOC cables

Functions and Features

Table 8-5 Functions and features of the HSIC-X08S000

Functions and Features	Description
Basic function	Provides eight GE/10GE SFP+ optical ports for data access and line-rate switching by default. You can run the port combination-mode card command to change the port mode. After this command is configured, the first 4 ports are 10GE/25GE ports and the last 4 ports become unavailable.
Hot swapping	Supported
Service port stacking	Supported

Technical Specifications

Table 8-6 Technical specifications of the HSIC-X08S000

Item	Specification
Dimensions without packaging (H x W x D) [mm(in.)]	39.1 mm x 100.1 mm x 220 mm (1.54 in. x 3.94 in. x 8.66 in.)
Dimensions with packaging (H x W x D) [mm(in.)]	80 mm x 160 mm x 305 mm (3.15 in. x 6.30 in. x 12.01 in.)
Weight without packaging [kg(lb)]	0.44 kg (0.97 lb)
Maximum power consumption [W]	38.5 W
Maximum heat dissipation [BTU/hour]	131.37 BTU/hour

9 Cables

- [9.1 Ground Cable](#)
- [9.2 Optical Fiber](#)
- [9.3 Ethernet Cable](#)
- [9.4 AC Power Cable](#)
- [9.5 Console Cable](#)
- [9.6 Dedicated Stack Cable](#)
- [9.7 Copper Cable](#)

9.1 Ground Cable

Appearance and Structure

Figure 9-1 shows the appearance of a typical ground cable.

NOTE

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

Figure 9-1 Appearance of a ground cable



Figure 9-2 shows the structure of a ground cable.

Figure 9-2 Structure of a ground cable



Pin Assignments

Table 9-1 lists the pin assignments of a ground cable.

Table 9-1 Pin assignments of a ground cable

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

Connection

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

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

9.2 Optical Fiber

AOC

An active optical cable (AOC) is a fixed-length optical fiber with optical modules at both ends. It can be directly connected to an optical port on a device. In short-distance connection scenarios, AOCs can replace optical modules and optical fibers.

Figure 9-3 SFP+ to SFP+ or SFP28 to SFP28 AOC

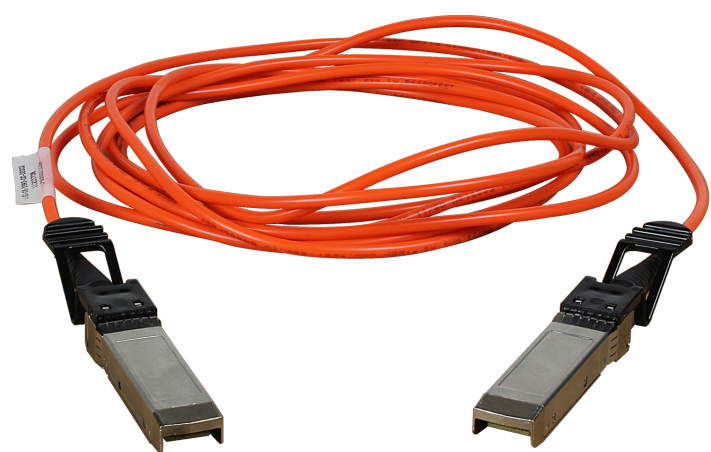


Figure 9-4 QSFP+ to QSFP+ or QSFP28 to QSFP28 AOC



Figure 9-5 QSFP+ to 4*SFP+ AOC



Table 9-2 lists the models and attributes of AOCs.

Table 9-2 Attributes of AOCs

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

Model	Length	Bend Radius	Connector Type	Part Number	Operating Temperature
SFP-10G-AOC10M	10 m	30 mm	SFP+ to SFP+	02310QWH	0°C to 70°C
QSFP-H40G-AOC10M	10 m	25 mm	QSFP+ to QSFP+	02310SSH	0°C to 70°C
QSFP-4SFP10-AOC10M	10 m	25 mm	QSFP+ to 4*SFP+	02310SSJ	0°C to 70°C
QSFP-100G-AOC-10M	10 m	25 mm	QSFP28 to QSFP28	02311KNQ	0°C to 70°C
SFP-25G-AOC-3M	3 m	30 mm	SFP28 to SFP28	02311MPE	0°C to 70°C
SFP-25G-AOC-5M	5 m	30 mm	SFP28 to SFP28	02311MPD	0°C to 70°C
SFP-25G-AOC-7M	7 m	30 mm	SFP28 to SFP28	02311MPC	0°C to 70°C
SFP-25G-AOC-10M	10 m	30 mm	SFP28 to SFP28	02311KNT	0°C to 70°C
SFP-25G-AOC-3M-A	3 m	30 mm	SFP28 to SFP28	02314QWG	0°C to 70°C
SFP-25G-AOC-5M-A	5 m	30 mm	SFP28 to SFP28	02311YJH	0°C to 70°C
SFP-25G-AOC-7M-A	7 m	30 mm	SFP28 to SFP28	02311YJK	0°C to 70°C
SFP-25G-AOC-10M-A	10 m	30 mm	SFP28 to SFP28	02311YJM	0°C to 70°C

Fiber Jumper

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

NOTE

- The MPO-MPO and MPO-2*MPO fibers have similar appearances except for the number of MPO connectors at the other end (1 and 2, respectively). The following figures show an MPO-MPO fiber for example.
- The MPO-4*DLC and MPO-10*DLC fibers have similar appearances except for the number of DLC connectors at the other end (4 pairs and 10 pairs, respectively).
- The MPO-MPO fibers for S series devices use type B connectors (key Up/key Up).

Figure 9-6 Single-mode LC/PC fiber jumper



Figure 9-7 Multimode LC/PC fiber jumper



Figure 9-8 Single-mode SC/PC fiber jumper



Figure 9-9 MPO-MPO fiber jumper



Figure 9-10 MPO-4*DLC fiber jumper



Comply with the following rules when selecting fiber jumpers:

1. Determine the length of fiber jumpers based on the onsite cabling distance.

2. Determine the fiber type based on the optical module type.
 - Use a multimode fiber jumper for a multimode optical module.
 - Use a single-mode fiber jumper for a single-mode optical module.
3. Determine the optical connector type based on the interface type.

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

Figure 9-11 Structure of an 8-strand MPO-MPO fiber jumper

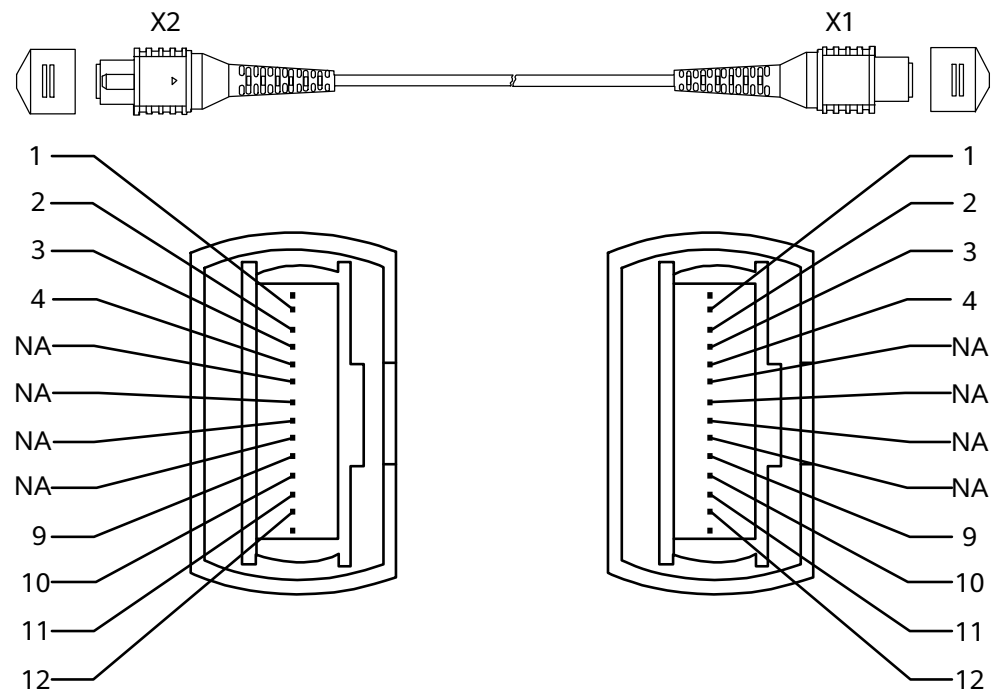


Figure 9-12 Structure of a 12-strand MPO-MPO fiber jumper

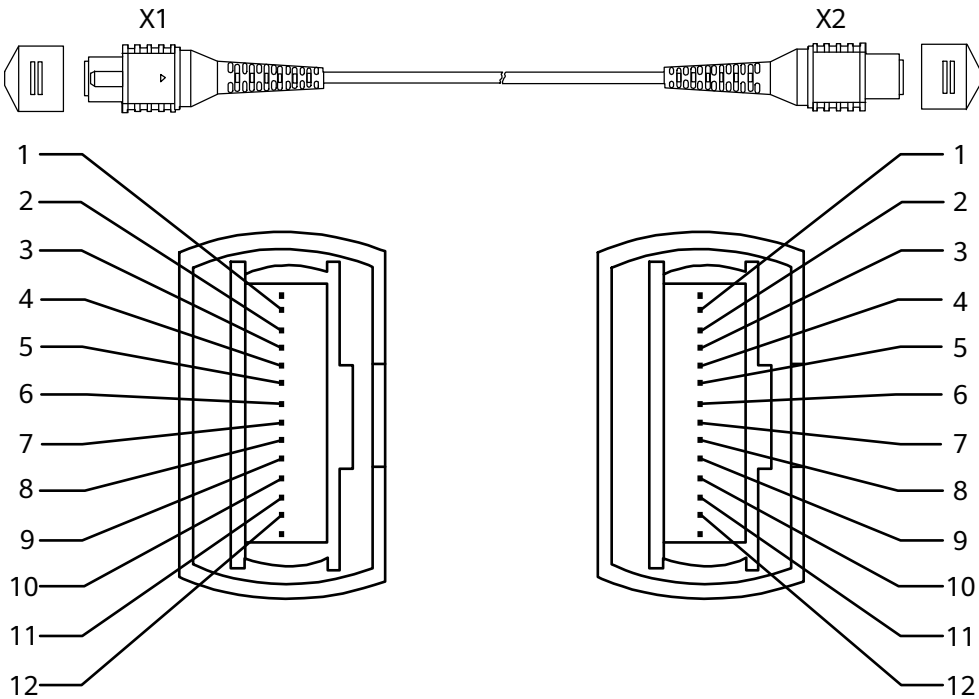


Figure 9-13 Structure of a 24-strand MPO-MPO fiber jumper

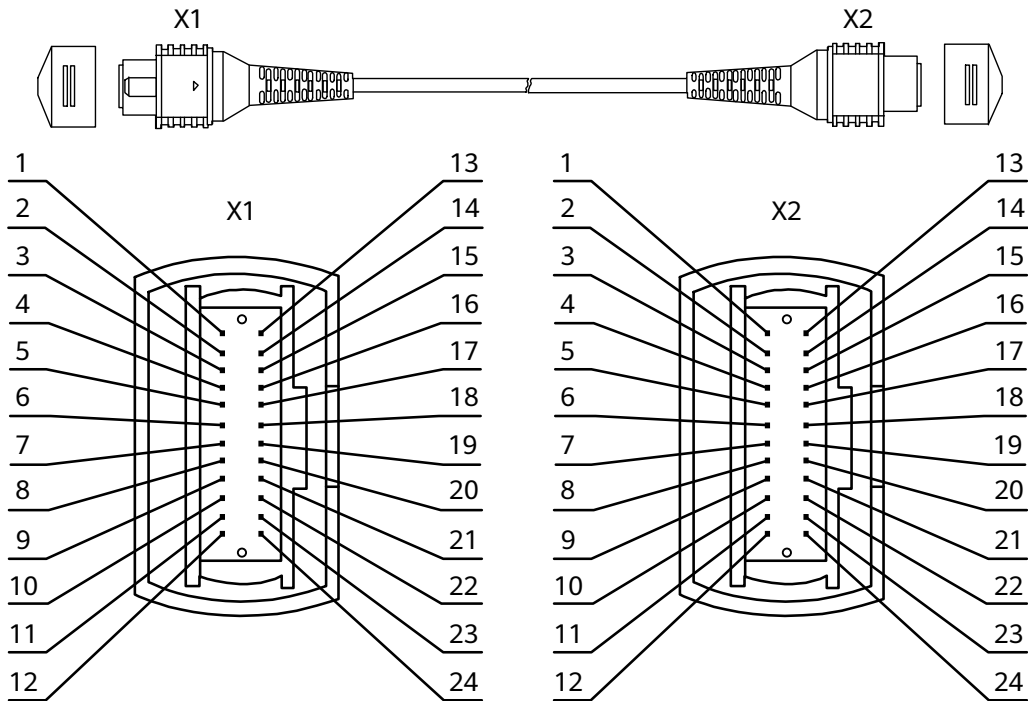


Figure 9-14 Structure of an MPO-4*DLC fiber jumper

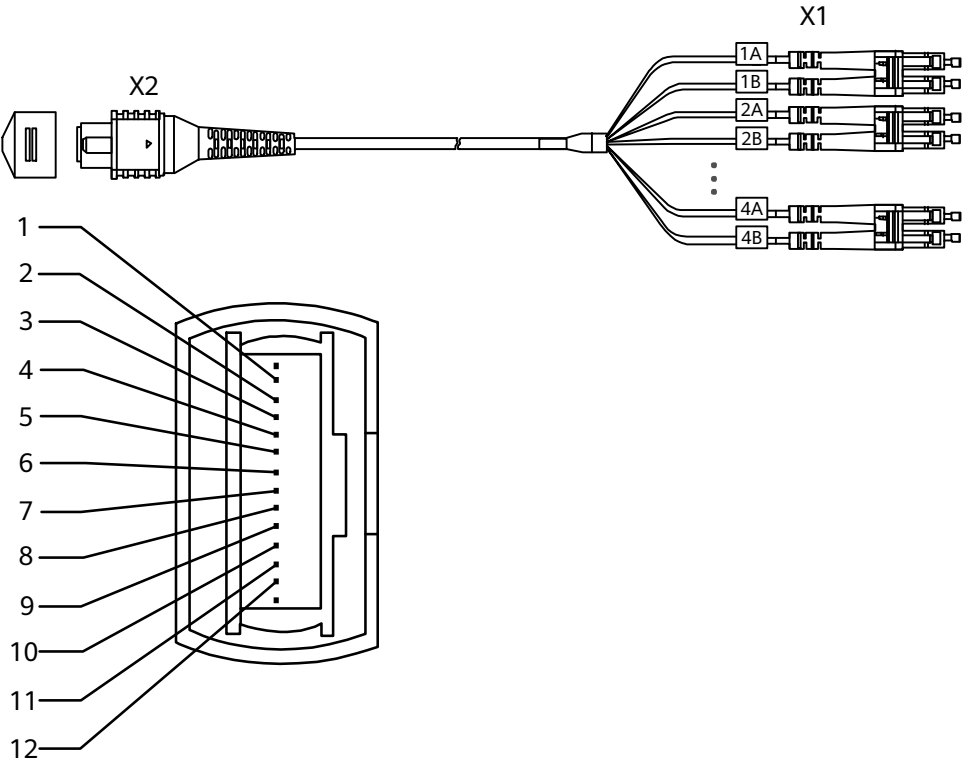


Table 9-3 Pin assignments of an 8-strand MPO-MPO fiber jumper

X1 Pin	X2 Pin
1	12
2	11
3	10
4	9
NA	NA
NA	NA
NA	NA
NA	NA
9	4
10	3
11	2
12	1

Table 9-4 Pin assignments of a 12-strand MPO-MPO fiber jumper

X1 Pin	X2 Pin
1	12
2	11
3	10
4	9
5	8
6	7
7	6
8	5
9	4
10	3
11	2
12	1

Table 9-5 Pin assignments of a 24-strand MPO-MPO fiber jumper

X1 Pin	X2 Pin	X1 Pin	X2 Pin
1	24	13	12
2	23	14	11
3	22	15	10
4	21	16	9
5	20	17	8
6	19	18	7
7	18	19	6
8	17	20	5
9	16	21	4
10	15	22	3
11	14	23	2
12	13	24	1

Table 9-6 Pin assignments of an MPO-4*DLC fiber jumper

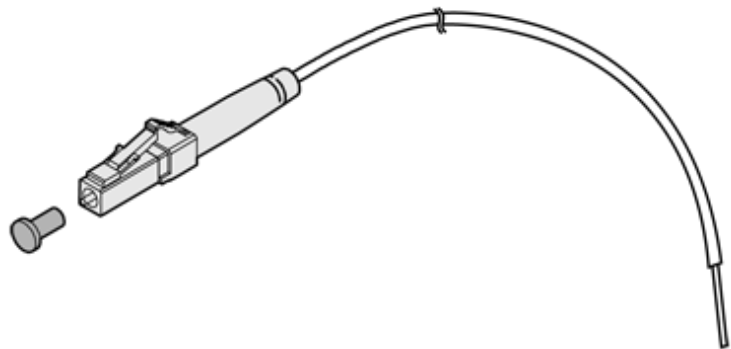
X2 Pin	X1 Pin
1	1A
2	2A
3	3A
4	4A
9	4B
10	3B
11	2B
12	1B

Fiber Pigtail

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

[Figure 9-15](#) shows the structure of a fiber pigtail.

Figure 9-15 Structure of a fiber pigtail



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

Optical Fiber, Optical Connector, and Fiber Adapter

Optical Fiber

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

- Single-mode fibers have a diameter of 5-10 μm and transmit laser in one mode under a specified wavelength. These fibers support a wide frequency band and a large transmission capacity, so they are used for long-distance transmission. Most single-mode fibers are yellow, as shown in [Figure 9-6](#).

- Multimode fibers have a diameter of 50 μm or 62.5 μm and transmit laser light in multiple modes under a specified wavelength. These fibers have a lower transmission capacity than single-mode fibers and are used for short-distance transmission. Modal dispersion occurs during transmission over multimode fibers.

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

- OM1: traditional 62.5/125 μm multimode fibers. OM1 fibers have a large core diameter and numerical aperture, and provide high light gathering ability and bending resistance.
- OM2: traditional 50/125 μm multimode fibers. OM2 fibers have a small core diameter and numerical aperture. Compared with OM1 fibers, OM2 fibers provide higher bandwidth because they significantly reduce the modal dispersion. When transmitting data at 1 Gbit/s with 850 nm wavelength, OM1 and OM2 fibers support maximum link lengths of 220 m and 550 m, respectively. OM1 and OM2 fibers can provide sufficient bandwidth within a distance of 300 m. Generally, OM1 and OM2 fibers are orange, as shown in [Figure 9-7](#).
- OM3: new-generation multimode fibers, with longer transmission distances than OM1 and OM2 fibers.
- OM4: laser optimized multimode fibers with 50 μm core diameter. OM4 is an improvement to OM3 and only increases the modal bandwidth. OM4 fibers provide 4700 MHz*km of modal bandwidth, whereas OM3 fibers provide only 2000 MHz*km of modal bandwidth. Generally, OM3 and OM4 fibers are light green. You can identify OM3 and OM4 fibers by their labels or printed marks.

MPO fibers are used for 40G and 100G optical modules. An MPO fiber consists of multiple multi-mode fiber strands, and each multi-mode fiber strand provides one laser transmission channel. Some fiber suppliers produce 8-strand MPO optical fibers, while some suppliers produce 12-strand or 24-strand MPO fibers.

- A 40G optical module uses four channels to transmit laser and four channels to receive laser. That is, a total of eight channels are required for a 40G optical module. 8-strand and 12-strand MPO fibers use the same definition of fiber channels. Therefore, they are equivalent in functionality when connecting to 40G optical modules.
- When 100G optical modules are used, choose MPO fibers according to the following rules:
 - For CFP optical modules, choose 24-strand fibers for the CFP-100G-SR10 module and 8-strand or 12-strand fibers for other modules.
 - Choose 8-strand or 12-strand fibers for QSFP28 modules.

Optical Connector

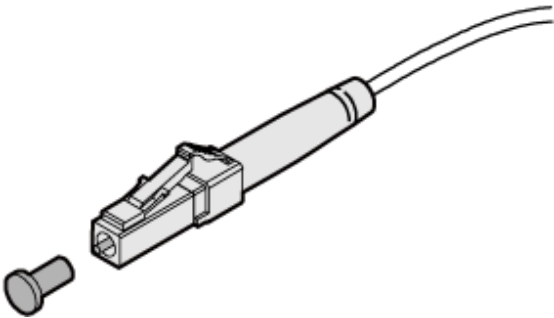
Optical connectors are used to connect optical fibers of the same type. [Table 9-7](#) lists common optical connectors.

Table 9-7 Common optical connectors

Connect or Type	Optical Connector			
Square connector	SC/PC connector 	LC/PC connector 	MTRJ/PC connector 	MPO connector 
Round connector	FC/PC connector 	ST/PC connector 	-	-

Figure 9-16 shows an LC/PC optical connector.

Figure 9-16 LC/PC optical connector



NOTICE

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

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

Fiber Adapter

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

9.3 Ethernet Cable

Types of Ethernet Cables

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

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

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

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

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

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

Appearance and Structure

NOTE

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

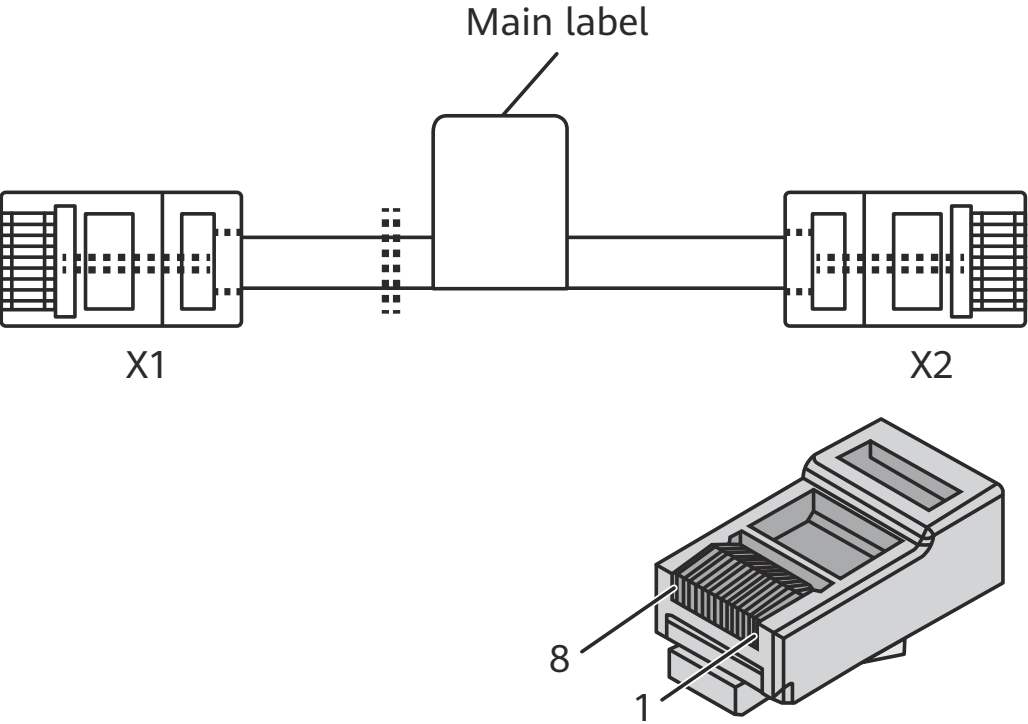
Figure 9-17 shows the appearance of an Ethernet cable.

Figure 9-17 Appearance of an Ethernet cable



Figure 9-18 shows the structure of an Ethernet cable.

Figure 9-18 Structure of an Ethernet cable



Pin Assignments

Table 9-8 lists pin assignments of a straight-through cable.

Table 9-8 Pin assignments of a straight-through cable

Connector X1	Connector X2	Color	Relationship
X1.2	X2.2	Orange	Twisted pair
X1.1	X2.1	White/Orange	
X1.6	X2.6	Green	Twisted pair
X1.3	X2.3	White/Green	
X1.4	X2.4	Blue	Twisted pair
X1.5	X2.5	White/Blue	
X1.8	X2.8	Brown	Twisted pair
X1.7	X2.7	White/Brown	

Table 9-9 lists pin assignments of a crossover cable.

Table 9-9 Pin assignments of a crossover cable

Connector X1	Connector X2	Color	Relationship
X1.6	X2.2	Orange	Twisted pair
X1.3	X2.1	White/Orange	
X1.2	X2.6	Green	Twisted pair
X1.1	X2.3	White/Green	
X1.4	X2.4	Blue	Twisted pair
X1.5	X2.5	White/Blue	
X1.8	X2.8	Brown	Twisted pair
X1.7	X2.7	White/Brown	

 NOTE

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

9.4 AC Power Cable

Appearance and Structure

Figure 9-19 C13 straight female to PI straight male AC power cable (used in China)



Figure 9-20 C13 straight female to C14 straight male AC power cable (China)



Figure 9-21 Appearance of a power adapter (black)



Figure 9-22 C7 straight female to PG curving male AC power cable (used in Britain)



Figure 9-23 Appearance of a power adapter (white)



Figure 9-24 C7 straight female to PA straight male AC power cable (used in China)



NOTE

The AC power cables used in different countries and regions have different connector types. [Figure 9-19](#) , [Figure 9-23](#) and [Figure 9-22](#) use Chinese and Britain AC power cables as examples. The power cable and plug delivered with the chassis can only be used on this chassis, and cannot be used on other devices.

The color and appearance of the power adapter vary according to the model. The preceding figures are only examples. The color and appearance of the power adapter are subject to the actual delivery.

Types of AC Power Cables

Select power cables based on the power supply system in your equipment room. When the device uses 240 V high-voltage DC input or 110 V/220 V AC input, use the C13 straight-female AC power cable. Standard and country-specific AC power cables can be directly connected to power modules.

- Standard power cables: used to transmit power from a PDU. [Figure 9-25](#) shows the structure of a C14 straight male to C13 straight female AC power cable.
- Country-specific power cables: used to transmit power from a country-specific power strip. The cables are delivered in compliance with standards of the destination country or region. For example, PI straight male to C13 straight female AC power cable ([Figure 9-26](#)) is used in China.
- The AC power cables connected to a power distribution box must have cord end terminals. [Figure 9-27](#) shows the structure of a cord end to C13 straight female AC power cable.

Figure 9-25 Structure of a C14 straight male to C13 straight female AC power cable

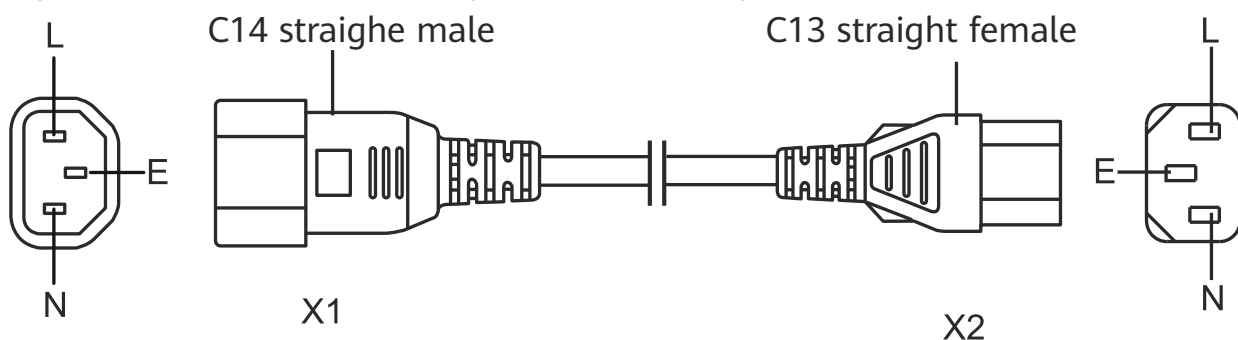


Figure 9-26 Structure of a PI straight male to C13 straight female AC power cable (used in China)

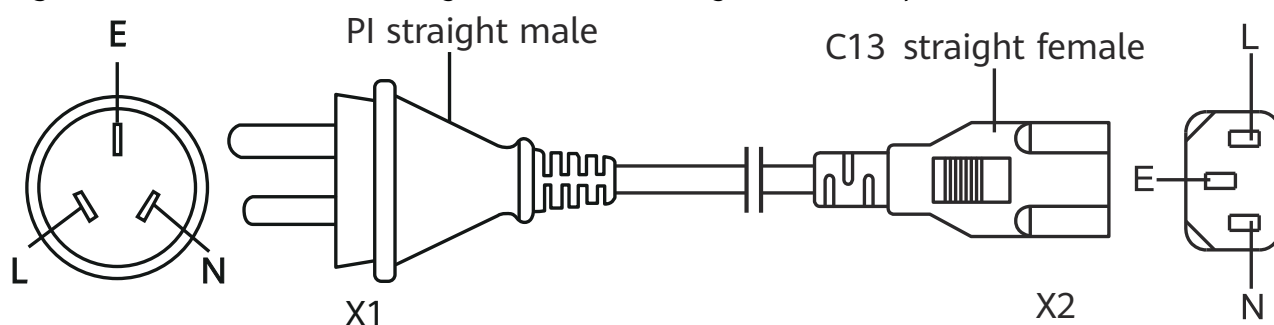
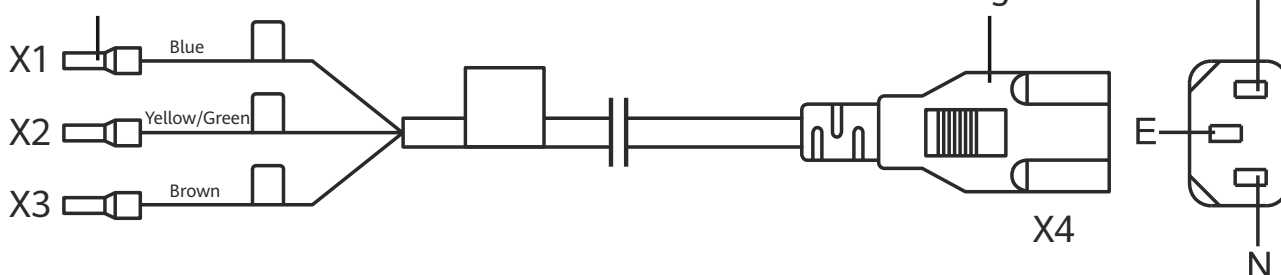


Figure 9-27 Structure of a Cord end to C13 straight female AC power cable (used in China)



Connection

Table 9-10 shows connections of various AC power cables.

Table 9-10 Connections of AC power cables

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

Power Cable Type	Connector Type and Connection	
C7 straight female to country-specific AC power cable	Country-specific connector: connected to a country-specific power strip	C7 straight female connector: connected to the power input port on the power adapter.

9.5 Console Cable

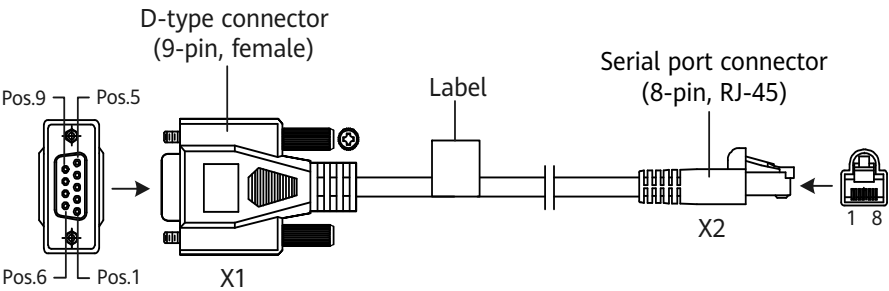
Appearance and Structure

Figure 9-28 and Figure 9-29 show the appearance and structure of a console cable.

Figure 9-28 Appearance of a console cable



Figure 9-29 Structure of a console cable



Pin Assignments

Table 9-11 lists the pin assignments of console cable connectors.

Table 9-11 Pin assignments of console cable connectors

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

Connection

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

A console cable connects the device and terminal as follows:

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

9.6 Dedicated Stack Cable

Types of Dedicated Stack Cables

Dedicated stack cables are also copper cables, which are used for device stacking. Stacking using stack cables removes the need of configurations.

Table 9-12 lists the applicable dedicated stack cables.

Table 9-12 Dedicated stack cables

Model	Length	Electrical Attribute	Bend Radius	Connector Type	Part Number
SFP+STACK-CU0M5	0.5 m	Passive	25 mm	SFP+ to SFP+	02311VGK
SFP+STACK-CU1M5	1.5 m	Passive	25 mm	SFP+ to SFP+	02311VGN
QSFP-100G-CU2M	2 m	Passive	45 mm	QSFP28 to QSFP28	02313HVK

Appearance and Structure

Figure 9-30 Dedicated stack cable appearance

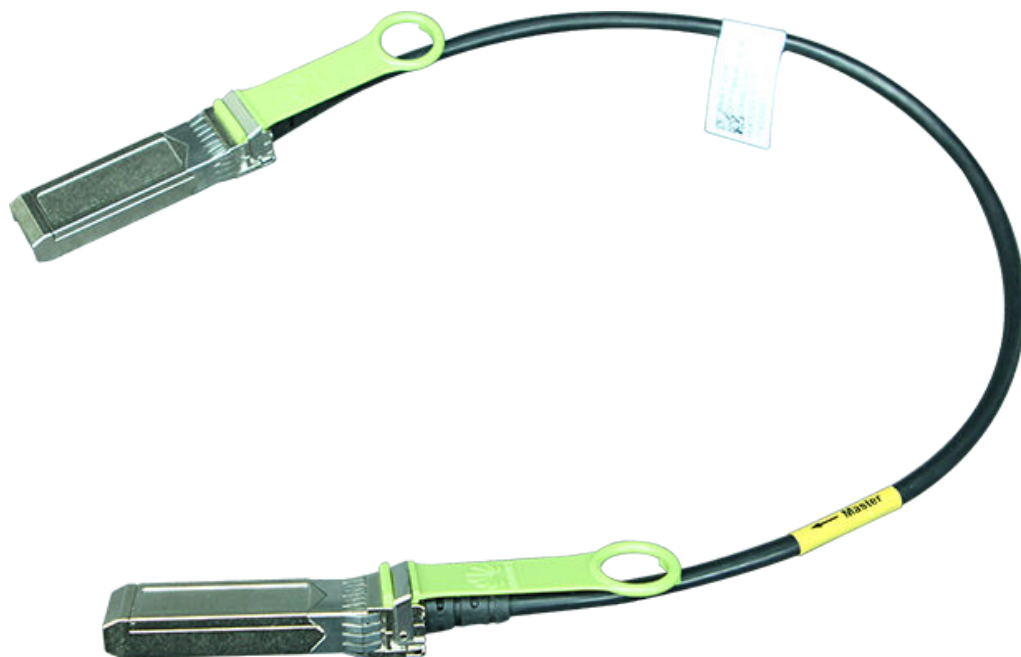
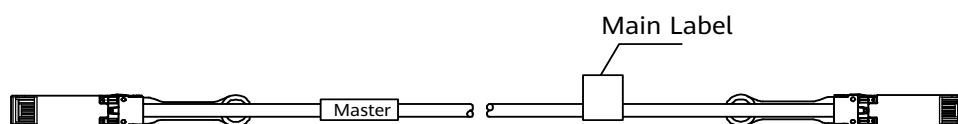


Figure 9-31 shows the structure of a dedicated stack cable.

Figure 9-31 Dedicated stack cable structure



9.7 Copper Cable

Types of Copper Cables

A copper cable, also known as the Direct Attach Copper (DAC) cable, consists of connectors and copper wires and is easy to use. It can directly connect to an optical port on a device. The difference between copper cables and AOC cables is that copper cables use copper wires to transmit signals, whereas AOC cables use optical fibers to transmit signals.

Table 9-13 shows the types of copper cables.

Table 9-13 Types of copper cables

Model	Length	Electrical attribute	Bend Radius	Connector Type	Part Number
SFP-10G-CU1M	1 m	Passive	25 mm	SFP+ to SFP+	02310MUN
SFP-10G-CU2M	2 m	Passive	25 mm	SFP+ to SFP+	02311JFJ
SFP-10G-CU3M	3 m	Passive	25 mm	SFP+ to SFP+	02310MUP
SFP-10G-CU5M	5 m	Passive	30 mm	SFP+ to SFP+	02310QPR
SFP-10G-AC10M	10 m	Active	25 mm	SFP+ to SFP+	02310MUQ
QSFP-40G-CU1M	1 m	Passive	35 mm	QSFP+ to QSFP+	02310MUG
QSFP-40G-CU3M	3 m	Passive	40 mm	QSFP+ to QSFP+	02310MUH
QSFP-40G-CU5M	5 m	Passive	45 mm	QSFP+ to QSFP+	02310MUJ
QSFP28-100G-CU1M	1 m	Passive	70 mm	QSFP28 to QSFP28	02311KNW
QSFP28-100G-CU3M	3 m	Passive	70 mm	QSFP28 to QSFP28	02311KNX
SFP-25G-CU1M	1 m	Passive	35 mm	SFP28 to SFP28	02311NKS
SFP-25G-CU3M	3 m	Passive	35 mm	SFP28 to SFP28	02311NKV
SFP-25G-CU3M-N	3 m	Passive	40 mm	SFP28 to SFP28	02311MNV

NOTICE

The two ends of a copper cable must be covered by electrostatic discharge (ESD) caps.

Copper cables can be used to connect Huawei S switches of the same subseries. AOC optical cables or optical modules can be used to connect to all Huawei S switches. In versions earlier than V600R023C00, copper cables cannot be used for data transmission on service ports.

Appearance and Structure

Figure 9-32 shows the appearance of an SFP/SFP+/SFP28 copper cable.

Figure 9-32 Appearance of an SFP/SFP+/SFP28 copper cable



Figure 9-33 shows the appearance of a QSFP+/QSFP28 copper cable.

Figure 9-33 Appearance of a QSFP+/QSFP28 copper cable



Figure 9-34 shows the structure of an SFP/SFP+/SFP28 copper cable.

Figure 9-34 Structure of an SFP/SFP+/SFP28 copper cable

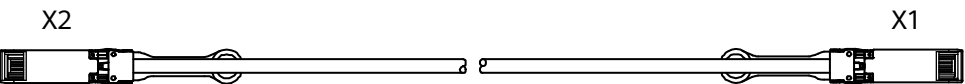
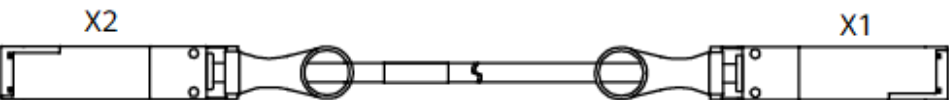


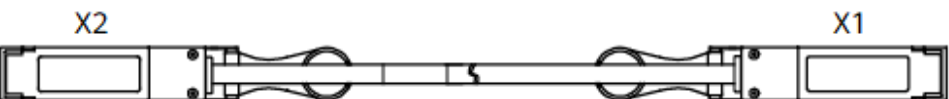
Figure 9-35 shows the structure of a QSFP+/QSFP28 copper cable.

Figure 9-35 Structure of a QSFP+/QSFP28 copper cable

Front view:



Rear view:



10 Pluggable Modules for Interfaces

- [10.1 Important Notes About Using Optical Modules Certified for Huawei Switches](#)
- [10.2 Understanding Optical Modules](#)
- [10.3 Understanding Copper Modules](#)
- [10.4 FE SFP/eSFP Optical Modules](#)
- [10.5 GE eSFP Optical Modules](#)
- [10.6 GE-CWDM eSFP Optical Modules](#)
- [10.7 GE-DWDM eSFP Optical Modules](#)
- [10.8 GE SFP Copper Modules](#)
- [10.9 2.5GE eSFP Optical Modules](#)
- [10.10 10GE SFP+ Optical Modules](#)
- [10.11 10GE SFP+ Copper Modules](#)
- [10.12 10GE-CWDM SFP+ Optical Modules](#)
- [10.13 10GE-DWDM SFP+ Optical Modules](#)
- [10.14 25GE SFP28 Optical Modules](#)
- [10.15 40GE QSFP+ Optical Modules](#)
- [10.16 100GE QSFP28 Optical Modules](#)

10.1 Important Notes About Using Optical Modules Certified for Huawei Switches

10.1.1 How to Identify Huawei-Certified Switch Optical Modules

NOTICE

- A switch must use optical or copper modules that have been certified for use on Huawei S switches. Non-certified optical or copper modules cannot ensure transmission reliability and may affect service stability. Huawei is not liable for any problem caused by the use of non-certified optical or copper modules and will not fix such problems.
- The methods provided here are only for reference. To confirm whether optical modules you are using have been certified for use on Huawei S switches, contact Huawei technical support.

10GE or Lower Speed Optical Modules

Huawei started certification on 10GE or lower speed optical modules for S switch products on July 1, 2013.

To determine whether optical modules delivered for Huawei S switches before July 1, 2013 are certified ones, contact Huawei technical support.

If your optical modules are delivered after July 1, 2013, use either of the following methods to determine whether they have been certified by Huawei.

Method 1: Check for "HUAWEI" on the label

If an optical module has been certified by Huawei, its label contains "HUAWEI", as shown in [Figure 10-1](#).

Figure 10-1 "HUAWEI" on the label of a Huawei-certified S switch optical module



Method 2: Run the command

An optical module has received Huawei S switch certification if it meets the following conditions:

For a device running V200 version:

- In the **display elabel** command output, the **Manufactured** field displays a date later than 2013-07-01.
- In the **display version** command output, the displayed version is V200R001C00 or later.
- In the **display transceiver** command output, the **Vendor Name** field displays **HUAWEI**.

For a device running V600 version:

- In the **display device elabel** command output, the **Manufactured** field displays a date later than 2013-07-01.
- In the **display version** command output, the displayed version is V600R021C00 or later.
- In the **display interface transceiver** command output, the **Vendor Name** field displays **HUAWEI**.

 NOTE

The SFP-FE-SX-MM1310 (part number: 02315233) is a Huawei-certified 100M optical module. However, the **Vendor Name** field displays the original manufacturer name, instead of **HUAWEI**.

For copper modules, the **Vendor Name** field also displays the original manufacturer name, instead of **HUAWEI**.

10.1.2 Risks of Using Non-Huawei-Certified Switch Optical Modules

During certification of optical modules for Huawei switches, Huawei completes comprehensive functionality verification to ensure quality of optical modules. The verified items include optical module plug/unplug, transmit optical power, receive optical power, signal transmission quality, data reading, error tolerance, compatibility, electromagnetic compatibility (EMC), and environmental parameters.

Non-Huawei-certified switch optical modules may cause the following problems:

- Non-standard structure and size cause failures to install optical modules on adjacent optical interfaces.
Structures or sizes of some non-Huawei-certified optical modules do not comply with the Multi-Source Agreement (MSA). When such an optical module is installed on an optical interface, the size of this optical module hinders optical module installation on adjacent optical interfaces.
- Data bus defects cause suspension of a switch's data bus.
Some non-Huawei-certified optical modules have defects in data bus designs. Using such an optical module on a switch causes suspension of the connected data bus on the switch. As a result, data on the suspended bus cannot be read.
- Improper edge connector size damages electronic devices of optical interfaces.
If a non-Huawei-certified switch optical module with improper edge connector size is used on an optical interface, electronic devices of the optical interface will be damaged by short circuits.
- Unnormalized temperature monitoring causes incorrect alarms.
The temperature monitoring systems of some non-Huawei-certified switch optical modules do not comply with industry standards and report temperature values higher than the real temperature. When such optical modules are used on a switch, the system will report incorrect temperature alarms.
- Improper register settings cause errors or failures in reading parameters or diagnostic information.
Some non-Huawei-certified switch optical modules have improper register values on page A0, which can cause errors or failures when the system attempts to read parameters or diagnostic information from a data bus.
- Some non-Huawei-certified switch optical modules are not designed in compliance with EMC standards and have low anti-interference capability. Additionally, they bring electromagnetic interference to nearby devices.

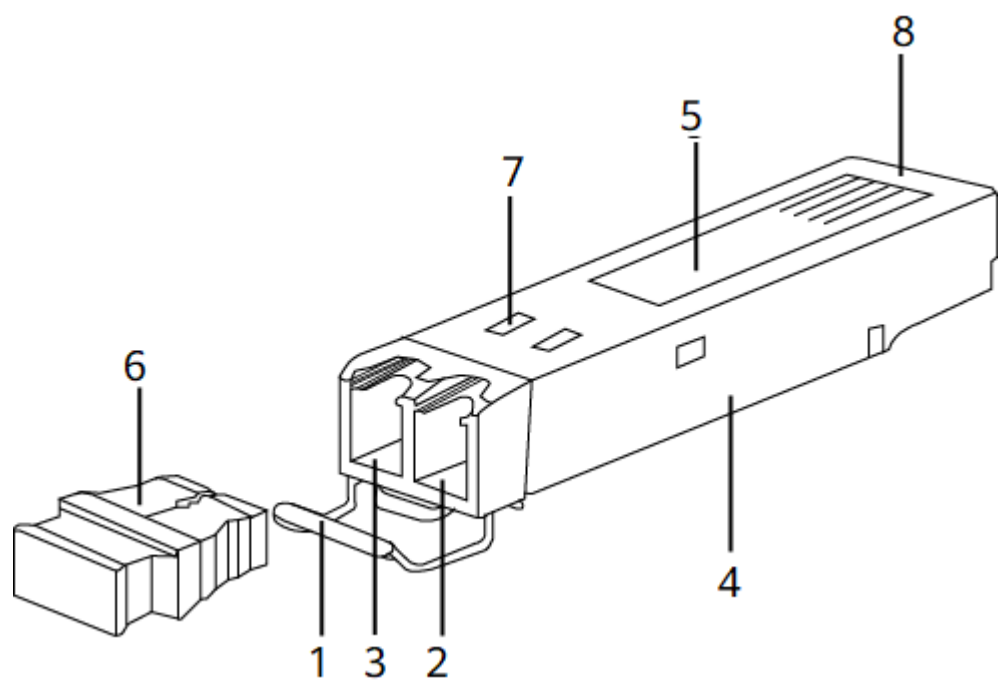
- The operating temperature ranges of non-Huawei-certified switch optical modules cannot meet service requirements. When they are used under relatively high temperature, the optical power decreases, resulting in service interruption.

10.2 Understanding Optical Modules

10.2.1 What Is an Optical Module

On an optical network, a sender needs to convert electrical signals into optical signals before sending them to a receiver, and the receiver needs to convert received optical signals into electrical signals. An optical module is a component that completes electrical/optical conversion on an optical network. [Figure 10-2](#) shows the structure of an optical module.

Figure 10-2 Structure of an optical module (using an SFP/eSFP optical module as an example)



1. Handle	2. Receiver	3. Transmitter
4. Shell	5. Label	6. Dust plug
7. Spring	8. Connector	-

[Figure 10-3](#) shows an SFP/eSFP optical module.

Figure 10-3 SFP/eSFP optical module



10.2.2 Parameter Description

Transmit optical power	Output optical power of an optical module when it is working properly. When two optical modules are connected, the transmit optical power of one end must be within the range of receive optical power on the other end.
Receive optical power	Average input optical power that the receiver of an optical module can receive within a range of bit error rate ($BER = 10^{-12}$). The upper limit of this parameter is the overload optical power and the lower limit is the maximum receiver sensitivity. When two optical modules are connected, the receive optical power on one end determines the range of transmit optical power on the other end.
Maximum receiver sensitivity	Minimum average input optical power that the receiver of an optical module can receive within a range of bit error rate ($BER = 10^{-12}$). When two optical modules are connected, the maximum receiver sensitivity on one end determines the minimum value of transmit optical power on the other end.
Overload optical power	Maximum average input optical power that the receiver of an optical module can receive within a range of bit error rate ($BER = 10^{-12}$). When two optical modules are connected, the overload optical power on one end determines the maximum transmit optical power on the other end.

Extinction ratio	Minimum ratio of the average optical power with signals transmitted against the average optical power without signals transmitted in complete modulation mode. The extinction ratio indicates the capability of an optical module to identify signal 0 and signal 1. This parameter is a quality indicator for optical modules. Optical modules with a large extinction ratio may not have good quality. Qualified optical modules should have an extinction ratio complying with IEEE 802.3.
Fiber mode	Mode of optical fibers defined based on core diameters and features of optical fibers. Optical fibers are classified into single-mode and multimode fibers. Generally, multimode fibers have large core diameters and severe dispersion, so they transmit optical signals over short distances. Single-mode fibers have low dispersion and can transmit optical signals over long distances.
Modal bandwidth	Bandwidth measured at a point with transmit power several dB lower than that of the point with the peak center wavelength. Modal bandwidth reflects spectrum characteristics of multimode fibers. The higher modal bandwidth a multimode fiber has, the longer transmission distance the fiber supports.
Fiber diameter	Diameter of the core of a fiber. According to international standards for optical fibers, the diameter of a multimode fiber is 62.5 μm or 50 μm , and the diameter of a single-mode fiber is 9 μm . Select optical fibers with diameters supported by the optical modules.
Fiber class	Optical signals with different wavelengths have their best working windows in different optical fibers. To help efficiently adjust wavelengths or dispersion features of optical fibers and change their refractive indexes, the following fiber classes are defined: multimode fiber (G.651), common single-mode fiber (G.652), shifted dispersion fiber (G.653), and non-zero shifted dispersion fiber (G.655). G.651 and G.652 are commonly used fiber classes. Optical fibers of higher classes support longer transmission distances. When selecting optical fibers for optical modules, determine the classes of fibers based on the required transmission distances.
Connector type	Type of the interface on an optical module to accommodate a fiber. Commonly used connector types are LC (applicable to all the SFP, SFP+, and XFP modules), SC, and MPO (applicable to 150 m QSFP+ and CXP modules). Select optical fibers with connectors supported by the optical modules.
Transmission distance	Maximum distance over which optical signals can transmit. Optical signals sent from different types of sources can transmit over different distances due to negative effects of optical fibers, such as dispersion and attenuation. When connecting optical interfaces, select optical modules and fibers based on the maximum signal transmission distance.

Interface rate	Maximum rate of electrical signals that an optical component can transmit without bit errors. The interface rates defined in Ethernet standards include 125 Mbit/s, 1.25 Gbit/s, 10.3125 Gbit/s, and 41.25 Gbit/s. When connecting optical interfaces, select optical modules and fibers based on the maximum signal transmission rate.
Center wavelength	Wavelength measured at the midpoint of the half-amplitude line in the transmit spectrum. Two connected optical modules must have the same center wavelength.
MSA	Multi-Source Agreement, a non-profit organization jointly established by optical module manufacturers. This agreement defines the structure and dimensions of optical transceivers by referring to Optical Internetworking Forum (OIF) and International Telecommunication Union (ITU) standards.

10.2.3 How to View Optical Module Parameters

Viewing the Hardware Description

If you know the model or type of an optical module, you can view the section "Pluggable Modules for Interfaces" in the *Hardware Description* to look up parameters of the optical module, including the center wavelength, transmission distance, fiber types supported, receive optical power, and transmit optical power.

Using a Command

If an optical module is installed in a running device, you can run the **display interface transceiver** command to view parameters of the optical module, including the center wavelength, transmission distance, fiber types supported, receive optical power, and transmit optical power.

10.2.4 Rules for Optical Module Interoperation

Interoperation Rules

Optical modules with the same standards can interoperate with each other. The standards define the rate, wavelength, and transmission distance of optical modules, but not their encapsulation modes (two interoperated optical modules can have different encapsulation modes).

If you need to achieve interoperability between optical modules with different standards, contact technical support personnel.

When S series devices are connected to other products such as routers, comply with the preceding optical module interoperation rules.

Standards Description

The following describes the standards, using 1000BASE-LX10 as an example:

- 1000 indicates the rate (1000 Mbit/s, in this case). Other rates include 10 Mbit/s, 100 Mbit/s, 10 Gbit/s, 40 Gbit/s, and 100 Gbit/s.

- BASE indicates baseband transmission.
- L represents a center wavelength of the laser. Currently, the following center wavelengths are available: S (short wavelength: 850 nm), L (long wavelength: 1310 nm), E (extra long wavelength: 1550 nm), and B (single-fiber bidirectional long wavelength).
- X represents the encoding format. The encoding formats include T (twisted pair), X (8B/10B), R (64B/66B), and W (WIS).
- 10 indicates the number of channels. Currently, the value can be 4 or 10. If there is no number, the value is 1.

 NOTE

This example provides the definitions in IEEE standards, which are not applicable to all optical modules, for example, non-standard optical modules.

The following organizations or agreements define standards related to optical modules:

- IEEE 802.3, which defines MAC and PHY standards
- Small Form Factor (SFF) committee or Multi-Source Agreements (MSAs), which define optical module hardware, software, and structure standards

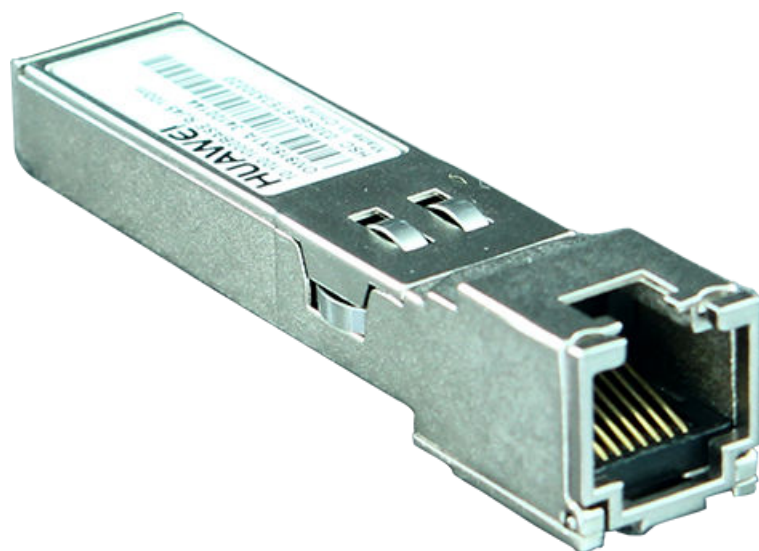
10.3 Understanding Copper Modules

Copper modules are also called RJ45 modules. Unlike optical modules, copper modules do not perform electrical-optical conversion. When two optical interfaces have copper modules installed, the interfaces can be connected using a copper cable.

Huawei copper modules can work properly only after the switch software supports them. Therefore, it is not recommended that Huawei copper modules be used on third-party switches. If you need to use this module, notify the third-party switch vendor to adapt to this module in advance.

Figure 10-4 shows a copper module.

Figure 10-4 Appearance of a copper module



10.4 FE SFP/eSFP Optical Modules

10.4.1 S-SFP-FE-LH40-SM1310

Table 10-1 S-SFP-FE-LH40-SM1310 specifications

Item	Value
Basic Information	
Module name	S-SFP-FE-LH40-SM1310
Part Number	02317344
Model	S-SFP-FE-LH40-SM1310
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	10.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-37.0 dBm
Overload power [dBm]	-10.0 dBm

10.4.2 S-SFP-FE-LH80-SM1550

Table 10-2 S-SFP-FE-LH80-SM1550 specifications

Item	Value
Basic Information	
Module name	S-SFP-FE-LH80-SM1550
Part Number	02317345
Model	S-SFP-FE-LH80-SM1550
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	10.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-37.0 dBm
Overload power [dBm]	-10.0 dBm

10.4.3 SFP-FE-LX-SM1310-BIDI

Table 10-3 SFP-FE-LX-SM1310-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-FE-LX-SM1310-BIDI

Item	Value
Part Number	02315203
Model	SFP-FE-LX-SM1310-BIDI
Form factor	eSFP
Application standard	100BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-8.0 dBm
Minimum Tx optical power [dBm]	-15.0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-32.0 dBm
Overload power [dBm]	-8.0 dBm
NOTE Supports the single-fiber bidirectional function. BIDI optical modules must be used in pairs. For example, SFP-FE-LX-SM1310-BIDI must be used with SFP-FE-LX-SM1550-BIDI.	

10.4.4 SFP-FE-LX-SM1550-BIDI

Table 10-4 SFP-FE-LX-SM1550-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-FE-LX-SM1550-BIDI
Part Number	02315202

Item	Value
Model	SFP-FE-LX-SM1550-BIDI
Form factor	eSFP
Application standard	100BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1550 nm (TX)
Maximum Tx optical power [dBm]	-8.0 dBm
Minimum Tx optical power [dBm]	-15.0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-32.0 dBm
Overload power [dBm]	-8.0 dBm
NOTE Supports the single-fiber bidirectional function. BIDI optical modules must be used in pairs. For example, SFP-FE-LX-SM1550-BIDI must be used with SFP-FE-LX-SM1310-BIDI.	

10.4.5 SFP-FE-SX-MM1310

Table 10-5 SFP-FE-SX-MM1310 specifications

Item	Value
Basic Information	
Module name	SFP-FE-SX-MM1310
Part Number	02315233
Model	SFP-FE-SX-MM1310

Item	Value
Form factor	SFP
Application standard	100BASE-FX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Not supported
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Multimode fiber (50 μm or 62.5 μm diameter): 2 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-14.0 dBm
Minimum Tx optical power [dBm]	-19.0 dBm
Minimum extinction ratio [dB]	10 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-30.0 dBm
Overload power [dBm]	-14.0 dBm

10.4.6 eSFP-FE-LX-SM1310

Table 10-6 eSFP-FE-LX-SM1310 specifications

Item	Value
Basic Information	
Module name	eSFP-FE-LX-SM1310
Part Number	02315205
Model	eSFP-FE-LX-SM1310
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF

Item	Value
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Mbit/s
Target transmission distance [km]	Single-mode fiber: 15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-8.0 dBm
Minimum Tx optical power [dBm]	-15.0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-8.0 dBm

10.5 GE eSFP Optical Modules

10.5.1 LE2MGSC40DE0

Table 10-7 LE2MGSC40DE0 specifications

Item	Value
Basic Information	
Module name	LE2MGSC40DE0
Part Number	02310KVV
Model	LE2MGSC40DE0
Form factor	eSFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s

Item	Value
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	3.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm
NOTE Supports the single-wire bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, LE2MGSC40DE0 must be used with LE2MGSC40ED0.	

10.5.2 LE2MGSC40ED0

Table 10-8 LE2MGSC40ED0 specifications

Item	Value
Basic Information	
Module name	LE2MGSC40ED0
Part Number	02310KVU
Model	LE2MGSC40ED0
Form factor	eSFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km

Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	3.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, LE2MGSC40ED0 must be used with LE2MGSC40DE0.	

10.5.3 S-SFP-GE-LH40-SM1310

Table 10-9 S-SFP-GE-LH40-SM1310 specifications

Item	Value
Basic Information	
Module name	S-SFP-GE-LH40-SM1310
Part Number	02317346
Model	S-SFP-GE-LH40-SM1310
Form factor	eSFP
Application standard	1000BASE-EX (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	

Item	Value
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm

10.5.4 S-SFP-GE-LH40-SM1550

Table 10-10 S-SFP-GE-LH40-SM1550 specifications

Item	Value
Basic Information	
Module name	S-SFP-GE-LH40-SM1550
Part Number	02317347
Model	S-SFP-GE-LH40-SM1550
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	

Item	Value
Rx sensitivity [dBm]	-22 dBm
Overload power [dBm]	-3.0 dBm

10.5.5 S-SFP-GE-LH80-SM1550

Table 10-11 S-SFP-GE-LH80-SM1550 specifications

Item	Value
Basic Information	
Module name	S-SFP-GE-LH80-SM1550
Part Number	02317348
Model	S-SFP-GE-LH80-SM1550
Form factor	eSFP
Application standard	1000BASE-ZX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm

10.5.6 SFP-GE-BXU1-SC

Table 10-12 SFP-GE-BXU1-SC specifications

Item	Value
Basic Information	
Module name	SFP-GE-BXU1-SC
Part Number	02310TQH
Model	SFP-GE-BXU1-SC
Form factor	eSFP
Application standard	Non-standard
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE This module supports the single-fiber bidirectional function.	

10.5.7 SFP-GE-EX-C

Table 10-13 SFP-GE-EX-C specifications

Item	Value
Basic Information	
Module name	SFP-GE-EX-C
Part Number	02312UUD
Model	SFP-GE-EX-C
Form factor	eSFP
Application standard	1000BASE-EX (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23 dBm
Overload power [dBm]	-3.0 dBm

10.5.8 SFP-GE-LX-SM1310 (02315200)

Table 10-14 SFP-GE-LX-SM1310 specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1310

Item	Value
Part Number	02315200
Model	SFP-GE-LX-SM1310
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20.0 dBm
Overload power [dBm]	-3.0 dBm

10.5.9 SFP-GE-LX-SM1310-BIDI (02315285)

Table 10-15 SFP-GE-LX-SM1310-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1310-BIDI
Part Number	02315285
Model	SFP-GE-LX-SM1310-BIDI
Form factor	eSFP
Application standard	1000BASE-BX10
Connector type	LC

Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	6 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1310-BIDI must be used with SFP-GE-LX-SM1490-BIDI.	

10.5.10 SFP-GE-LX-SM1490-BIDI (02315286)

Table 10-16 SFP-GE-LX-SM1490-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1490-BIDI
Part Number	02315286
Model	SFP-GE-LX-SM1490-BIDI
Form factor	eSFP
Application standard	1000BASE-BX10
Connector type	LC
Optical fiber type	SMF

Item	Value
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	6 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1490-BIDI must be used with SFP-GE-LX-SM1310-BIDI.	

10.5.11 SFP-GE-LX10-C

Table 10-17 SFP-GE-LX10-C specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX10-C
Part Number	02312UUC
Model	SFP-GE-LX10-C
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

Item	Value
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20.0 dBm
Overload power [dBm]	-3.0 dBm

10.5.12 SFP-GE-SX-C (02312UUB)

Table 10-18 SFP-GE-SX-C specifications

Item	Value
Basic Information	
Module name	SFP-GE-SX-C
Part Number	02312UUB
Model	SFP-GE-SX-C
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	-20°C to +85°C (-4°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s

Item	Value
Target transmission distance [km]	Multimode optical fiber (modal bandwidth: 160 MHz*km; diameter: 62.5 μm): 0.22 km Multimode optical fiber (OM1): 0.275 km Multimode optical fiber (modal bandwidth: 400 MHz*km; diameter: 50 μm): 0.5 km Multimode optical fiber (OM2): 0.55 km Multimode optical fiber (OM3): 1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-9.5 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm
Overload power [dBm]	0 dBm

10.5.13 SFP-GE-ZBXD1

Table 10-19 SFP-GE-ZBXD1 specifications

Item	Value
Basic Information	
Module name	SFP-GE-ZBXD1
Part Number	02311DDB
Model	SFP-GE-ZBXD1
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

Item	Value
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1570 nm (TX)
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-3.0 dBm
NOTE Single-fiber bidirectional transmission is supported. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-ZBXD1 must be used with SFP-GE-ZBXU1.	

10.5.14 SFP-GE-ZBXU1

Table 10-20 SFP-GE-ZBXU1 specifications

Item	Value
Basic Information	
Module name	SFP-GE-ZBXU1
Part Number	02311DDC
Model	SFP-GE-ZBXU1
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported

Item	Value
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1570 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-3.0 dBm
NOTE Single-fiber bidirectional transmission is supported. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-ZBXU1 must be used with SFP-GE-ZBXD1.	

10.5.15 eSFP-GE-SX-MM850 (02315204)

Table 10-21 eSFP-GE-SX-MM850 specifications

Item	Value
Basic Information	
Module name	eSFP-GE-SX-MM850
Part Number	02315204
Model	eSFP-GE-SX-MM850
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	-20°C to +85°C (-4°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s

Item	Value
Target transmission distance [km]	Multimode optical fiber (modal bandwidth: 160 MHz*km; diameter: 62.5 μm): 0.22 km Multimode optical fiber (OM1): 0.275 km Multimode optical fiber (modal bandwidth: 400 MHz*km; diameter: 50 μm): 0.5 km Multimode optical fiber (OM2): 0.55 km Multimode optical fiber (OM3): 1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-9.5 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm
Overload power [dBm]	0 dBm

10.5.16 eSFP-GE-ZX100-SM1550

Table 10-22 eSFP-GE-ZX100-SM1550 specifications

Item	Value
Basic Information	
Module name	eSFP-GE-ZX100-SM1550
Part Number	02315206
Model	eSFP-GE-ZX100-SM1550
Form factor	eSFP
Application standard	1000BASE-ZX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

Item	Value
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 100 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	9.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-30.0 dBm
Overload power [dBm]	-9.0 dBm

10.5.17 OGSC10DD0

Table 10-23 OGSC10DD0 specifications

Item	Value
Basic Information	
Module name	OGSC10DD0
Part Number	02310LJH
Model	OGSC10DD0
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm

Item	Value
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19 dBm
Overload power [dBm]	-3.0 dBm

10.5.18 OGSC40DD0

Table 10-24 OGSC40DD0 specifications

Item	Value
Basic Information	
Module name	OGSC40DD0
Part Number	02310LJJ
Model	OGSC40DD0
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0 dBm
Minimum Tx optical power [dBm]	-5.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-22.5 dBm

Item	Value
Overload power [dBm]	-3.0 dBm

10.5.19 OGSM01880

Table 10-25 OGSM01880 specifications

Item	Value
Basic Information	
Module name	OGSM01880
Part Number	02310LJG
Model	OGSM01880
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.22 km Multimode fiber (OM1): 0.275 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.5 km Multimode fiber (OM2): 0.55 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-10 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm

Item	Value
Overload power [dBm]	0 dBm

10.5.20 SFP-GE-BX-D1-I

Table 10-26 SFP-GE-BX-D1-I specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX-D1-I
Part Number	02311DMA
Model	SFP-GE-BX-D1-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3 dBm
Minimum Tx optical power [dBm]	-9 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX-D1-I must be used with SFP-GE-BX-U1-I.	

10.5.21 SFP-GE-BX-U1-I

Table 10-27 SFP-GE-BX-U1-I specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX-U1-I
Part Number	02311DMF
Model	SFP-GE-BX-U1-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-3 dBm
Minimum Tx optical power [dBm]	-9 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3 dBm
NOTE	
Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX-D1-I must be used with SFP-GE-BX-U1-I.	

10.5.22 SFP-GE-BX40-D-I

Table 10-28 SFP-GE-BX40-D-I specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX40-D-I
Part Number	02312TMC
Model	SFP-GE-BX40-D-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	6.5 dBm
Minimum Tx optical power [dBm]	1.5 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-7 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX40-D-I must be used with SFP-GE-BX40-U-I.	

10.5.23 SFP-GE-BX40-U-I

Table 10-29 SFP-GE-BX40-U-I specifications

Item	Value
Basic Information	
Module name	SFP-GE-BX40-U-I
Part Number	02312TMB
Model	SFP-GE-BX40-U-I
Form factor	SFP
Application standard	1000BASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	6.5 dBm
Minimum Tx optical power [dBm]	1.5 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-7 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-BX40-U-I must be used with SFP-GE-BX40-D-I.	

10.5.24 eSFP-GE-SX-MM850 (02313URD)

Table 10-30 eSFP-GE-SX-MM850 specifications

Item	Value
Basic Information	
Module name	eSFP-GE-SX-MM850
Part Number	02313URD
Model	eSFP-GE-SX-MM850
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	-20°C to +85°C (-4°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Multimode optical fiber (modal bandwidth: 160 MHz*km; diameter: 62.5 μm): 0.22 km Multimode optical fiber (OM1): 0.275 km Multimode optical fiber (modal bandwidth: 400 MHz*km; diameter: 50 μm): 0.5 km Multimode optical fiber (OM2): 0.55 km Multimode optical fiber (OM3): 1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-9.5 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm
Overload power [dBm]	0 dBm

10.5.25 SFP-GE-LX-SM1310 (02313URF)

Table 10-31 SFP-GE-LX-SM1310 specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1310
Part Number	02313URF
Model	SFP-GE-LX-SM1310
Form factor	eSFP
Application standard	1000BASE-LX10/LH
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20.0 dBm
Overload power [dBm]	-3.0 dBm

10.5.26 SFP-GE-SX-C (02314KKF)

Table 10-32 SFP-GE-SX-C specifications

Item	Value
Basic Information	
Module name	SFP-GE-SX-C

Item	Value
Part Number	02314KKF
Model	SFP-GE-SX-C
Form factor	eSFP
Application standard	1000BASE-SX
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	-20°C to +85°C (-4°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Multimode optical fiber (modal bandwidth: 160 MHz*km; diameter: 62.5 μm): 0.22 km Multimode optical fiber (OM1): 0.275 km Multimode optical fiber (modal bandwidth: 400 MHz*km; diameter: 50 μm): 0.5 km Multimode optical fiber (OM2): 0.55 km Multimode optical fiber (OM3): 1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-2.5 dBm
Minimum Tx optical power [dBm]	-9.5 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17.0 dBm
Overload power [dBm]	0 dBm

10.5.27 SFP-GE-LX-SM1310-BIDI (02314KKJ)

Table 10-33 SFP-GE-LX-SM1310-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1310-BIDI
Part Number	02314KKJ
Model	SFP-GE-LX-SM1310-BIDI
Form factor	eSFP
Application standard	1000BASE-BX10
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1490 nm (RX) 1310 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	6 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1310-BIDI must be used with SFP-GE-LX-SM1490-BIDI.	

10.5.28 SFP-GE-LX-SM1490-BIDI (02314KKH)

Table 10-34 SFP-GE-LX-SM1490-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-GE-LX-SM1490-BIDI
Part Number	02314KKH
Model	SFP-GE-LX-SM1490-BIDI
Form factor	eSFP
Application standard	1000BASE-BX10
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	-3.0 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	6 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-3.0 dBm
NOTE	
Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1490-BIDI must be used with SFP-GE-LX-SM1310-BIDI.	

10.6 GE-CWDM eSFP Optical Modules

10.6.1 CWDM-SFPGE-1471

Table 10-35 CWDM-SFPGE-1471 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1471
Part Number	02310LPN
Model	CWDM-SFPGE-1471
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1471 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.2 CWDM-SFPGE-1491

Table 10-36 CWDM-SFPGE-1491 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1491

Item	Value
Part Number	02310LPK
Model	CWDM-SFPGE-1491
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1491 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.3 CWDM-SFPGE-1511

Table 10-37 CWDM-SFPGE-1511 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1511
Part Number	02310LPH
Model	CWDM-SFPGE-1511
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC

Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1511 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.4 CWDM-SFPGE-1531

Table 10-38 CWDM-SFPGE-1531 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1531
Part Number	02310LPL
Model	CWDM-SFPGE-1531
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km

Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1531 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.5 CWDM-SFPGE-1551

Table 10-39 CWDM-SFPGE-1551 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1551
Part Number	02312AXN
Model	CWDM-SFPGE-1551
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1551 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB

Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.6 CWDM-SFPGE-1571

Table 10-40 CWDM-SFPGE-1571 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1571
Part Number	02312AXM
Model	CWDM-SFPGE-1571
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1571 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.7 CWDM-SFPGE-1591

Table 10-41 CWDM-SFPGE-1591 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1591
Part Number	02312AXK
Model	CWDM-SFPGE-1591
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1591 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.6.8 CWDM-SFPGE-1611

Table 10-42 CWDM-SFPGE-1611 specifications

Item	Value
Basic Information	
Module name	CWDM-SFPGE-1611

Item	Value
Part Number	02310LPJ
Model	CWDM-SFPGE-1611
Form factor	eSFP
Application standard	GE-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1611 nm
Maximum Tx optical power [dBm]	5.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-9.0 dBm

10.7 GE-DWDM eSFP Optical Modules

10.7.1 DWDM-SFPGE-1560-61

Table 10-43 DWDM-SFPGE-1560-61 specifications

Item	Value
Basic Information	
Module name	DWDM-SFPGE-1560-61
Part Number	02310LLE
Model	DWDM-SFPGE-1560-61
Form factor	eSFP

Item	Value
Application standard	GE-DWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s
Target transmission distance [km]	Single-mode fiber: 120 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1560.61 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-28.0 dBm
Overload power [dBm]	-8.0 dBm

10.8 GE SFP Copper Modules

10.8.1 SFP-1000BaseT (02314171)

Table 10-44 SFP-1000BaseT specifications

Item	Value
Basic Information	
Module name	SFP-1000BaseT
Part Number	02314171
Model	SFP-1000BaseT
Form factor	SFP
Application standard	1000BASE-T
Connector type	RJ45
Optical fiber type	-

Item	Value
Digital diagnostic monitoring (DDM)	Not supported
Transmission rate [bit/s]	10 Mbit/s 100 Mbit/s 1 Gbit/s
Target transmission distance [km]	Ethernet cable: 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	-
Maximum Tx optical power [dBm]	-
Minimum Tx optical power [dBm]	-
Minimum extinction ratio [dB]	-
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-
Overload power [dBm]	-

 NOTE

The supported rate depends on the port.

This module does not support the rate of 10 Mbit/s when it is used on a 10GE optical port of a switch running V600 version, and does not support the rate of 10 Mbit/s or 100 Mbit/s when it is used on a 25GE optical port of a switch running V600 version.

10.8.2 SFP-1000BaseT (02313URG)

Table 10-45 SFP-1000BaseT specifications

Item	Value
Basic Information	
Module name	SFP-1000BaseT
Part Number	02313URG
Model	SFP-1000BaseT
Form factor	SFP
Application standard	1000BASE-T
Connector type	RJ45
Optical fiber type	-

Item	Value
Digital diagnostic monitoring (DDM)	Not supported
Transmission rate [bit/s]	10 Mbit/s 100 Mbit/s 1 Gbit/s
Target transmission distance [km]	Ethernet cable: 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	-
Maximum Tx optical power [dBm]	-
Minimum Tx optical power [dBm]	-
Minimum extinction ratio [dB]	-
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-
Overload power [dBm]	-

 NOTE

The supported rate depends on the port.

This module does not support the rate of 10 Mbit/s when it is used on a 10GE optical port of a switch running V600 version, and does not support the rate of 10 Mbit/s or 100 Mbit/s when it is used on a 25GE optical port of a switch running V600 version.

10.8.3 SFP-1000BaseT-G2

Table 10-46 SFP-1000BaseT-G2 specifications

Item	Value
Basic Information	
Module name	SFP-1000BaseT-G2
Part Number	02314BDD
Model	SFP-1000BaseT-G2
Form factor	SFP
Application standard	1000BASE-T
Connector type	RJ45
Optical fiber type	-

Item	Value
Digital diagnostic monitoring (DDM)	Not supported
Transmission rate [bit/s]	10 Mbit/s 100 Mbit/s 1 Gbit/s
Target transmission distance [km]	Ethernet cable: 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	-
Maximum Tx optical power [dBm]	-
Minimum Tx optical power [dBm]	-
Minimum extinction ratio [dB]	-
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-
Overload power [dBm]	-

 NOTE

The supported rate depends on the port.

This module does not support the rate of 10 Mbit/s when it is used on a 10GE optical port of a switch running V600 version, and does not support the rate of 10 Mbit/s or 100 Mbit/s when it is used on a 25GE optical port of a switch running V600 version.

10.9 2.5GE eSFP Optical Modules

10.9.1 SFP-2.5G-FR

Table 10-47 SFP-2.5G-FR specifications

Item	Value
Basic Information	
Module name	SFP-2.5G-FR
Part Number	02314LBD
Model	SFP-2.5G-FR
Form factor	eSFP
Application standard	1000BASE-LX/2.5G_FR

Item	Value
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 75°C (32°F to 167°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	1 Gbit/s 2.5 Gbit/s
Target transmission distance [km]	Single-mode fiber: - 2.5GE: 2 km - GE: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	-3 dBm
Minimum Tx optical power [dBm]	-9 dBm
Minimum extinction ratio [dB]	2.5GE: 6.0 GE: 8.0
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-18 dBm
Overload power [dBm]	-3 dBm

10.9.2 SFP-2.5G-SR-I

Table 10-48 SFP-2.5G-SR-I specifications

Item	Value
Basic Information	
Module name	SFP-2.5G-SR-I
Part Number	02314LBB
Model	SFP-2.5G-SR-I
Form factor	eSFP
Application standard	2.5G_SR
Connector type	LC
Optical fiber type	MMF

Item	Value
Working case temperature [°C(°F)]	-40°C to +85°C (-40.00°F to +185.00°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	2.5 Gbit/s
Target transmission distance [km]	Multimode fiber (OM1): 0.032 km Multimode fiber (OM2): 0.12 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.3 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1 dBm
Minimum Tx optical power [dBm]	-9 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-17 dBm
Overload power [dBm]	-1 dBm

10.9.3 eSFP-2.5G-iLR-BXD1

Table 10-49 eSFP-2.5G-iLR-BXD1 specifications

Item	Value
Basic Information	
Module name	eSFP-2.5G-iLR-BXD1
Part Number	02314VYF
Model	eSFP-2.5G-iLR-BXD1
Form factor	eSFP
Application standard	Non-standard
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported

Item	Value
Transmission rate [bit/s]	2.5 Gbit/s
Target transmission distance [km]	Single-mode fiber: 2 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm (RX) 1490 nm (TX)
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-26 dBm
Overload power [dBm]	-3.0 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, eSFP-2.5G-iLR-BXD1 must be used with eSFP-2.5G-iLR-BXU1.	

10.10 10GE SFP+ Optical Modules

10.10.1 OMXD30000 (02318169)

Table 10-50 OMXD30000 specifications

Item	Value
Basic Information	
Module name	OMXD30000
Part Number	02318169
Model	OMXD30000
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

Item	Value
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.026 km Multimode fiber (OM1): 0.033 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.066 km Multimode fiber (OM2): 0.082 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.10.2 OSX010000 (02318170)

Table 10-51 OSX010000 specifications

Item	Value
Basic Information	
Module name	OSX010000
Part Number	02318170
Model	OSX010000
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF

Item	Value
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.10.3 OSX040N01 (02310CNF)

Table 10-52 OSX040N01 specifications

Item	Value
Basic Information	
Module name	OSX040N01
Part Number	02310CNF
Model	OSX040N01
Form factor	SFP+
Application standard	10GBASE-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	

Item	Value
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-4.7 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.1 dBm
Overload power [dBm]	-1.0 dBm

10.10.4 SFP-10G-ER-1310

Table 10-53 SFP-10G-ER-1310 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-1310
Part Number	02311RLX
Model	SFP-10G-ER-1310
Form factor	SFP+
Application standard	Non-standard and compatible with the 10Gbase-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-2.0 dBm
Minimum extinction ratio [dB]	3.5 dB

Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20 dBm
Overload power [dBm]	-7.0 dBm
NOTE If an SFP-10G-ER-1310 optical module is connected to a 10GBase-ER optical module (1550 nm, 10GE, 40 km), the maximum transmission distance is only 20 km due to different specifications such as the wavelength and receiver sensitivity.	

10.10.5 SFP-10G-ER-C

Table 10-54 SFP-10G-ER-C specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-C
Part Number	02312UUH
Model	SFP-10G-ER-C
Form factor	SFP+
Application standard	10GBASE-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-4.7 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.1 dBm

Item	Value
Overload power [dBm]	-1.0 dBm

10.10.6 SFP-10G-ER-SM1270-BIDI

Table 10-55 SFP-10G-ER-SM1270-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-SM1270-BIDI
Part Number	02311BJC
Model	SFP-10G-ER-SM1270-BIDI
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (RX) 1270 nm (TX)
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-18 dBm
Overload power [dBm]	-9 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-ER-SM1270-BIDI must be used with SFP-10G-ER-SM1330-BIDI.	

10.10.7 SFP-10G-ER-SM1330-BIDI

Table 10-56 SFP-10G-ER-SM1330-BIDI specifications

Item	Value
Basic Information	
Module name	SFP-10G-ER-SM1330-BIDI
Part Number	02311BJB
Model	SFP-10G-ER-SM1330-BIDI
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (RX) 1330 nm (TX)
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-18 dBm
Overload power [dBm]	-9 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-ER-SM1330-BIDI must be used with SFP-10G-ER-SM1270-BIDI.	

10.10.8 SFP-10G-LR-C (02312UUG)

Table 10-57 SFP-10G-LR-C specifications

Item	Value
Basic Information	
Module name	SFP-10G-LR-C
Part Number	02312UUG
Model	SFP-10G-LR-C
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.10.9 SFP-10G-SR-C

Table 10-58 SFP-10G-SR-C specifications

Item	Value
Basic Information	
Module name	SFP-10G-SR-C

Item	Value
Part Number	02312UUE
Model	SFP-10G-SR-C
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.026 km Multimode fiber (OM1): 0.033 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.066 km Multimode fiber (OM2): 0.082 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.10.10 SFP-10G-USR (02310MNW)

Table 10-59 SFP-10G-USR specifications

Item	Value
Basic Information	

Item	Value
Module name	SFP-10G-USR
Part Number	02310MNW
Model	SFP-10G-USR
Form factor	SFP+
Application standard	10GBASE-USR (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.7 dBm
Overload power [dBm]	0.5 dBm

10.10.11 SFP-10G-ZR

Table 10-60 SFP-10G-ZR specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZR
Part Number	02310SNN
Model	SFP-10G-ZR
Form factor	SFP+
Application standard	10GBASE-ZR

Item	Value
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 80 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	9 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-24.0 dBm
Overload power [dBm]	-7.0 dBm

10.10.12 OMXD30000 (02313URC)

Table 10-61 OMXD30000 specifications

Item	Value
Basic Information	
Module name	OMXD30000
Part Number	02313URC
Model	OMXD30000
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s

Item	Value
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.026 km Multimode fiber (OM1): 0.033 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.066 km Multimode fiber (OM2): 0.082 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.10.13 OSX010000 (02313URK)

Table 10-62 OSX010000 specifications

Item	Value
Basic Information	
Module name	OSX010000
Part Number	02313URK
Model	OSX010000
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported

Item	Value
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.10.14 SFP-10G-USR (02313URN)

Table 10-63 SFP-10G-USR specifications

Item	Value
Basic Information	
Module name	SFP-10G-USR
Part Number	02313URN
Model	SFP-10G-USR
Form factor	SFP+
Application standard	10GBASE-USR (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm

Item	Value
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.7 dBm
Overload power [dBm]	0.5 dBm

10.10.15 SFP+10GE-LH10-SM1310

Table 10-64 SFP+10GE-LH10-SM1310 specifications

Item	Value
Basic Information	
Module name	SFP+10GE-LH10-SM1310
Part Number	02311MUU
Model	SFP+10GE-LH10-SM1310
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm

10.10.16 SFP-10G-BXD1

Table 10-65 SFP-10G-BXD1 specifications

Item	Value
Basic Information	
Module name	SFP-10G-BXD1
Part Number	02310QDT
Model	SFP-10G-BXD1
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (RX) 1330 nm (TX)
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXD1 must be used with SFP-10G-BXU1.	

10.10.17 SFP-10G-BXU1

Table 10-66 SFP-10G-BXU1 specifications

Item	Value
Basic Information	
Module name	SFP-10G-BXU1
Part Number	02310QBJ
Model	SFP-10G-BXU1
Form factor	SFP+
Application standard	10GBASE-BX
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (RX) 1270 nm (TX)
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm
NOTE Supports the single-fiber bidirectional function. Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXU1 must be used with SFP-10G-BXD1.	

10.10.18 SFP-10G-SR

Table 10-67 SFP-10G-SR specifications

Item	Value
Basic Information	
Module name	SFP-10G-SR
Part Number	02311SKW
Model	SFP-10G-SR
Form factor	SFP+
Application standard	10GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 85°C (32°F to 185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.3 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	-1.0 dBm
Minimum Tx optical power [dBm]	-7.3 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	-1.0 dBm

10.10.19 SFP-10G-iLR

Table 10-68 SFP-10G-iLR specifications

Item	Value
Basic Information	
Module name	SFP-10G-iLR

Item	Value
Part Number	02311BJJ
Model	SFP-10G-iLR
Form factor	SFP+
Application standard	10GBASE-iLR (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode optical fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm

10.10.20 SFP-10G-iLR-C

Table 10-69 SFP-10G-iLR-C specifications

Item	Value
Basic Information	
Module name	SFP-10G-iLR-C
Part Number	02312UUF
Model	SFP-10G-iLR-C
Form factor	SFP+
Application standard	10GBASE-iLR (non-standard)
Connector type	LC

Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode optical fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm

10.10.21 SFP-10G-LR-I (02313ABG)

Table 10-70 SFP-10G-LR-I specifications

Item	Value
Basic Information	
Module name	SFP-10G-LR-I
Part Number	02313ABG
Model	SFP-10G-LR-I
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km

Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm

10.10.22 OSX040N01 (02314KKG)

Table 10-71 OSX040N01 specifications

Item	Value
Basic Information	
Module name	OSX040N01
Part Number	02314KKG
Model	OSX040N01
Form factor	SFP+
Application standard	10GBASE-ER
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1550 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	-4.7 dBm
Minimum extinction ratio [dB]	3.0 dB

Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.1 dBm
Overload power [dBm]	-1.0 dBm

10.10.23 SFP-10G-LR-C (02314KKE)

Table 10-72 SFP-10G-LR-C specifications

Item	Value
Basic Information	
Module name	SFP-10G-LR-C
Part Number	02314KKE
Model	SFP-10G-LR-C
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.10.24 SFP-10G-LR-I (02314LBW)

Table 10-73 SFP-10G-LR-I specifications

Item	Value
Basic Information	
Module name	SFP-10G-LR-I
Part Number	02314LBW
Model	SFP-10G-LR-I
Form factor	SFP+
Application standard	10GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14.4 dBm
Overload power [dBm]	0.5 dBm

10.11 10GE SFP+ Copper Modules

10.11.1 SFP-10GBaseT-SR

Table 10-74 SFP-10GBaseT-SR specifications

Item	Value
Basic Information	
Module name	SFP-10GBaseT-SR
Part Number	02314PHV
Model	SFP-10GBaseT-SR
Form factor	SFP+
Application standard	10GBASE-T
Connector type	RJ45
Optical fiber type	-
Working case temperature [°C(°F)]	-5°C to +85°C (23°F to 185°F) When a switch uses this module, the ambient temperature must range from -5°C to +50°C (23°F to 122°F)
Digital diagnostic monitoring (DDM)	Not supported
Transmission rate [bit/s]	100 Mbit/s 1 Gbit/s 2.5 Gbit/s 5 Gbit/s 10 Gbit/s
Target transmission distance [km]	10 Gbit/s: 30 m (Cat6A S/FTP or above) 2.5 Gbit/s or 5 Gbit/s: 30 m (Cat5E STP or above) 100 Mbit/s or 1 Gbit/s: 100 m (Cat5E or above)
Transmitter Optical Characteristics	
Center wavelength [nm]	-
Maximum Tx optical power [dBm]	-
Minimum Tx optical power [dBm]	-
Minimum extinction ratio [dB]	-
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-

Item	Value
Overload power [dBm]	-
NOTE When a switch uses this module, the ambient temperature must range from 0°C to 45°C (32°F to 113°F).	

 NOTE

The supported rate depends on the port.
This module does not support the rate of 100 Mbit/s or 1000 Mbit/s when it is used on a 25GE optical port of a switch running V600 version.

10.12 10GE-CWDM SFP+ Optical Modules

10.12.1 SFP-10G-ZCW1471

Table 10-75 SFP-10G-ZCW1471 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1471
Part Number	02310SSG
Model	SFP-10G-ZCW1471
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1471 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm

Item	Value
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.2 SFP-10G-ZCW1491

Table 10-76 SFP-10G-ZCW1491 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1491
Part Number	02310SSF
Model	SFP-10G-ZCW1491
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1491 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.3 SFP-10G-ZCW1511

Table 10-77 SFP-10G-ZCW1511 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1511
Part Number	02310SSE
Model	SFP-10G-ZCW1511
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1511 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.4 SFP-10G-ZCW1531

Table 10-78 SFP-10G-ZCW1531 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1531

Item	Value
Part Number	02310SSD
Model	SFP-10G-ZCW1531
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1531 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.5 SFP-10G-ZCW1551

Table 10-79 SFP-10G-ZCW1551 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1551
Part Number	02310SSC
Model	SFP-10G-ZCW1551
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC

Item	Value
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1551 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.6 SFP-10G-ZCW1571

Table 10-80 SFP-10G-ZCW1571 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1571
Part Number	02310SSB
Model	SFP-10G-ZCW1571
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km

Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1571 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.7 SFP-10G-ZCW1591

Table 10-81 SFP-10G-ZCW1591 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1591
Part Number	02310SSA
Model	SFP-10G-ZCW1591
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1591 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB

Item	Value
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.12.8 SFP-10G-ZCW1611

Table 10-82 SFP-10G-ZCW1611 specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZCW1611
Part Number	02310SRY
Model	SFP-10G-ZCW1611
Form factor	SFP+
Application standard	10G-CWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 70 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1611 nm
Maximum Tx optical power [dBm]	4.0 dBm
Minimum Tx optical power [dBm]	0 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-23.0 dBm
Overload power [dBm]	-7.0 dBm

10.13 10GE-DWDM SFP+ Optical Modules

10.13.1 SFP-10G-ZDWT

Table 10-83 SFP-10G-ZDWT specifications

Item	Value
Basic Information	
Module name	SFP-10G-ZDWT
Part Number	02310YUT
Model	SFP-10G-ZDWT
Form factor	SFP+
Application standard	10GBASE-DWDM
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	Single-mode fiber: 60 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1529.16 nm - 1560.61 nm
Maximum Tx optical power [dBm]	3 dBm
Minimum Tx optical power [dBm]	-1 dBm
Minimum extinction ratio [dB]	8.2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-24 dBm
Overload power [dBm]	-1 dBm
NOTE The startup of the optical module takes a long time. Therefore, when the optical module is just installed into a switch port, the switch may incorrectly report an alarm indicating that the transmit optical power is low.	

10.14 25GE SFP28 Optical Modules

10.14.1 SFP-25G-LR

Table 10-84 SFP-25G-LR specifications

Item	Value
Basic Information	
Module name	SFP-25G-LR
Part Number	02312LSE
Model	SFP-25G-LR
Form factor	SFP28
Application standard	25GBASE-LR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	25 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	2 dBm
Minimum Tx optical power [dBm]	-7 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.3 dBm
Overload power [dBm]	2 dBm

10.14.2 SFP-25G-SR

Table 10-85 SFP-25G-SR specifications

Item	Value
Basic Information	
Module name	SFP-25G-SR
Part Number	02311KNR
Model	SFP-25G-SR
Form factor	SFP28
Application standard	25GBASE-SR
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	25 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): - Disables the RS-FEC function: 0.03 km - Enables the RS-FEC function: 0.07 km Multimode fiber (OM4): - Disables the RS-FEC function: 0.04 km - Enables the RS-FEC function: 0.1 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-8.4 dBm
Minimum extinction ratio [dB]	2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.3 dBm
Overload power [dBm]	2.4 dBm

10.14.3 SFP-25G-ESR

Table 10-86 SFP-25G-ESR specifications

Item	Value
Basic Information	
Module name	SFP-25G-ESR
Part Number	02313JFQ
Model	SFP-25G-ESR
Form factor	SFP28
Application standard	25GBASE-ESR (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	10/25 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.2 km Multimode fiber (OM4): 0.3 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-4.4 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.3 dBm
Overload power [dBm]	2.4 dBm
NOTE When the optical module is used on a 25GE port, you can set the speed to 10 Gbit/s using a command. When the optical module works at 25 Gbit/s, the maximum transmission distance of the optical module depends on the quality of optical fibers.	

10.14.4 SFP-25G-LR-BXU1-I

Table 10-87 SFP-25G-LR-BXU1-I specifications

Item	Value
Basic Information	
Module name	SFP-25G-LR-BXU1-I
Part Number	02314LBS
Model	SFP-25G-LR-BXU1-I
Form factor	SFP28
Application standard	25GBASE-LR BiDi
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	25 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (TX) 1330 nm (RX)
Maximum Tx optical power [dBm]	2 dBm
Minimum Tx optical power [dBm]	-4 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12 dBm
Overload power [dBm]	2 dBm

10.14.5 SFP-25G-LR-BXD1-I

Table 10-88 SFP-25G-LR-BXD1-I specifications

Item	Value
Basic Information	
Module name	SFP-25G-LR-BXD1-I

Item	Value
Part Number	02314LBU
Model	SFP-25G-LR-BXD1-I
Form factor	SFP28
Application standard	25GBASE-LR BiDi
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	25 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (TX) 1270 nm (RX)
Maximum Tx optical power [dBm]	2 dBm
Minimum Tx optical power [dBm]	-4 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12 dBm
Overload power [dBm]	2 dBm

10.14.6 SFP-25G-eLR-BXD1-I

Table 10-89 SFP-25G-eLR-BXD1-I specifications

Item	Value
Basic Information	
Module name	SFP-25G-eLR-BXD1-I
Part Number	02314LCK
Model	SFP-25G-eLR-BXD1-I
Form factor	SFP28

Item	Value
Application standard	25GBASE-LR BiDi 20 km (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	25 Gbit/s
Target transmission distance [km]	Single-mode fiber: 20 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1330 nm (TX) 1270 nm (RX)
Maximum Tx optical power [dBm]	3 dBm
Minimum Tx optical power [dBm]	-3 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14 dBm
Overload power [dBm]	3 dBm

10.14.7 SFP-25G-eLR-BXU1-I

Table 10-90 SFP-25G-eLR-BXU1-I specifications

Item	Value
Basic Information	
Module name	SFP-25G-eLR-BXU1-I
Part Number	02314LCJ
Model	SFP-25G-eLR-BXU1-I
Form factor	SFP28
Application standard	25GBASE-LR BiDi 20 km (non-standard)
Connector type	LC
Optical fiber type	SMF

Item	Value
Working case temperature [°C(°F)]	-40°C to +85°C (-40°F to +185°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	25 Gbit/s
Target transmission distance [km]	Single-mode fiber: 20 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1270 nm (TX) 1330 nm (RX)
Maximum Tx optical power [dBm]	3 dBm
Minimum Tx optical power [dBm]	-3 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-14 dBm
Overload power [dBm]	3 dBm

10.15 40GE QSFP+ Optical Modules

10.15.1 QSFP-40G-ER4

Table 10-91 QSFP-40G-ER4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-ER4
Part Number	02311BKT
Model	QSFP-40G-ER4
Form factor	QSFP+
Application standard	40GBASE-ER4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported

Item	Value
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Single-mode fiber: 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	4.5 dBm
Minimum Tx optical power [dBm]	-2.7 dBm
Minimum extinction ratio [dB]	5.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-19.5 dBm
Overload power [dBm]	-4.5 dBm

10.15.2 QSFP-40G-LR4 (02310MHS)

Table 10-92 QSFP-40G-LR4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-LR4
Part Number	02310MHS
Model	QSFP-40G-LR4
Form factor	QSFP+
Application standard	40GBASE-LR4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	2.3 dBm

Item	Value
Minimum Tx optical power [dBm]	-7.0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.5 dBm
Overload power [dBm]	3.3 dBm

10.15.3 QSFP-40G-LX4

Table 10-93 QSFP-40G-LX4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-LX4
Part Number	02311HNP
Model	QSFP-40G-LX4
Form factor	QSFP+
Application standard	40GBASE-LX4
Connector type	LC
Optical fiber type	• SMF • MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Single-mode fiber: 2 km Multimode fiber (OM3): 0.15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	2.3 dBm
Minimum Tx optical power [dBm]	-7.0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	

Item	Value
Rx sensitivity [dBm]	-11.5 dBm
Overload power [dBm]	2.3 dBm
NOTE When QSFP-40G-LX4 optical modules use multimode optical fibers, the fibers cannot be connected through multiple optical distribution frames (ODFs).	

10.15.4 QSFP-40G-SDLC-PAM

Table 10-94 QSFP-40G-SDLC-PAM specifications

Item	Value
Basic Information	
Module name	QSFP-40G-SDLC-PAM
Part Number	02311PUU
Model	QSFP-40G-SDLC-PAM
Form factor	QSFP+
Application standard	40GBASE-PAM4 (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 100 m Multimode fiber (OM4): 150 m
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-2.5 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-8.0 dBm
Overload power [dBm]	2.4 dBm

Item	Value
NOTE Unidirectional single-fiber communication is not supported.	

10.15.5 QSFP-40G-SR-BD

Table 10-95 QSFP-40G-SR-BD specifications

Item	Value
Basic Information	
Module name	QSFP-40G-SR-BD
Part Number	02311FPA
Model	QSFP-40G-SR-BD
Form factor	QSFP+
Application standard	40GBASE-BIDI (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	10°C to 70°C (50°F to 158°F) Note: When the operating temperature is lower than 10°C (50°F), intermittent disconnection or packet loss may occur on ports.
Digital diagnostic monitoring (DDM)	Not supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.1 km Multimode fiber (OM4): 0.15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm,900 nm
Maximum Tx optical power [dBm]	5 dBm
Minimum Tx optical power [dBm]	-4 dBm
Minimum extinction ratio [dB]	4.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-4.5 dBm

Item	Value
Overload power [dBm]	5 dBm
NOTE The QSFP-40G-SR-BD optical module does not support some digital diagnostic monitoring (DDM) functions. The QSFP-40G-SR-BD optical module does not support unidirectional single-fiber communication.	

10.15.6 QSFP-40G-SR4

Table 10-96 QSFP-40G-SR4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-SR4
Part Number	02310MHQ
Model	QSFP-40G-SR4
Form factor	QSFP+
Application standard	40GBASE-SR4
Connector type	MPO/PC (8-strand or 12-strand, type B, female connector)
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.1 km Multimode fiber (OM4): 0.15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-7.6 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-5.4 dBm

Item	Value
Overload power [dBm]	2.4 dBm

10.15.7 QSFP-40G-eSDLC-PAM

Table 10-97 QSFP-40G-eSDLC-PAM specifications

Item	Value
Basic Information	
Module name	QSFP-40G-eSDLC-PAM
Part Number	02311QTR
Model	QSFP-40G-eSDLC-PAM
Form factor	QSFP+
Application standard	40GBASE-ePAM4 (non-standard)
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 100 m Multimode fiber (OM4): 300 m
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-2 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-8.0 dBm
Overload power [dBm]	2.4 dBm
NOTE Unidirectional single-fiber communication is not supported.	

10.15.8 QSFP-40G-eSM4

Table 10-98 QSFP-40G-eSM4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-eSM4
Part Number	02311DTR
Model	QSFP-40G-eSM4
Form factor	QSFP+
Application standard	40GBASE-eSM4 (non-standard)
Connector type	MPO/APC (8-strand or 12-strand, type B, female connector)
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Single-mode fiber: 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-12.6 dBm
Overload power [dBm]	0.5 dBm

10.15.9 QSFP-40G-eSR4 (02310RMB)

Table 10-99 QSFP-40G-eSR4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-eSR4

Item	Value
Part Number	02310RMB
Model	QSFP-40G-eSR4
Form factor	QSFP+
Application standard	40GBASE-eSR4 (non-standard)
Connector type	MPO/PC (8-strand or 12-strand, type B, female connector)
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (with modal bandwidth of 160 MHz*km and diameter of 62.5 μm): 0.026 km Multimode fiber (OM1): 0.033 km Multimode fiber (with modal bandwidth of 400 MHz*km and diameter of 50 μm): 0.066 km Multimode fiber (OM2): 0.082 km Multimode fiber (OM3): 0.3 km Multimode fiber (OM4): 0.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-7.6 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.1 dBm
Overload power [dBm]	2.4 dBm

10.15.10 QSFP-40G-iSM4

Table 10-100 QSFP-40G-iSM4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-iSM4
Part Number	02311DRW
Model	QSFP-40G-iSM4
Form factor	QSFP+
Application standard	40GBASE-iSM4 (non-standard)
Connector type	MPO/APC (8-strand or 12-strand, type B, female connector)
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Single-mode fiber: 1.4 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-8.2 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.5 dBm
Overload power [dBm]	0.5 dBm

10.15.11 QSFP-40G-iSR4 (02310MHR)

Table 10-101 QSFP-40G-iSR4 specifications

Item	Value
Basic Information	
Module name	QSFP-40G-iSR4

Item	Value
Part Number	02310MHR
Model	QSFP-40G-iSR4
Form factor	QSFP+
Application standard	40GBASE-SR4 40GBASE-iSR4 (non-standard)
Connector type	MPO/PC (8-strand or 12-strand, type B, female connector)
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 0.1 km Multimode fiber (OM4): 0.15 km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	0.5 dBm
Minimum Tx optical power [dBm]	-7.6 dBm
Minimum extinction ratio [dB]	3.0 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-9.5 dBm
Overload power [dBm]	2.4 dBm

10.15.12 QSFP-40G-LR4-Lite (02311YVB)

Table 10-102 QSFP-40G-LR4-Lite specifications

Item	Value
Basic Information	
Module name	QSFP-40G-LR4-Lite
Part Number	02311YVB
Model	QSFP-40G-LR4-Lite
Form factor	QSFP+

Item	Value
Application standard	40GBASE-LR4 Lite
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652, diameter: 9 μm): 2 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	2.3 dBm
Minimum Tx optical power [dBm]	-9.0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.5 dBm
Overload power [dBm]	2.3 dBm

10.15.13 QSFP-40G-LX4-MM

Table 10-103 QSFP-40G-LX4-MM specifications

Item	Value
Basic Information	
Module name	QSFP-40G-LX4-MM
Part Number	02313NUG
Model	QSFP-40G-LX4-MM
Form factor	QSFP+
Application standard	40GBASE-LX4
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

Item	Value
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	40 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3, diameter: 50 μm): 150 m Multimode fiber (OM4, diameter: 50 μm): 150 m
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	2.3 dBm
Minimum Tx optical power [dBm]	-7.0 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.5 dBm
Overload power [dBm]	3.5 dBm
NOTE Limitations: - In actual applications, the number of connectors in an optical fiber link cannot exceed 4. - This module is sensitive to fiber link contamination. During deployment, ensure that the fiber end face meets the fiber application standard. For details, refer to the requirements for single-mode connectors in the end face requirements for fiber ceramic ferrules under "Cables" > "Fiber Jumpers."	

10.16 100GE QSFP28 Optical Modules

10.16.1 QSFP-100G-CLR4

Table 10-104 QSFP-100G-CLR4 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-CLR4
Part Number	02311MNP
Model	QSFP-100G-CLR4
Form factor	QSFP28

Item	Value
Application standard	100GBASE-CLR4 (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): 2 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	2.5 dBm
Minimum Tx optical power [dBm]	-6.5 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.7 dBm
Overload power [dBm]	2.5 dBm

10.16.2 QSFP-100G-CWDM4

Table 10-105 QSFP-100G-CWDM4 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-CWDM4
Part Number	02311MNN
Model	QSFP-100G-CWDM4
Form factor	QSFP28
Application standard	100GBASE-CWDM4 (non-standard)
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported

Item	Value
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): 2 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	2.5 dBm
Minimum Tx optical power [dBm]	-6.5 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-9.8 dBm
Overload power [dBm]	2.5 dBm

10.16.3 QSFP-100G-ER4-Lite

Table 10-106 QSFP-100G-ER4-Lite specifications

Item	Value
Basic Information	
Module name	QSFP-100G-ER4-Lite
Part Number	02311YXR
Model	QSFP-100G-ER4-Lite
Form factor	QSFP28
Application standard	Non-standard and compatible with the 100GBASE-ER4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): Disables the RS-FEC function: 30 km Enables the RS-FEC function: 40 km
Transmitter Optical Characteristics	

Item	Value
Center wavelength [nm]	1295 nm,1300 nm,1304 nm,1309 nm
Maximum Tx optical power [dBm]	2.9 dBm
Minimum Tx optical power [dBm]	-2.5 dBm
Minimum extinction ratio [dB]	8 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-18.4 dBm
Overload power [dBm]	-3.5 dBm

10.16.4 QSFP-100G-eSR4

Table 10-107 QSFP-100G-eSR4 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-eSR4
Part Number	02311PSH
Model	QSFP-100G-eSR4
Form factor	QSFP28
Application standard	100GBase-eSR4 (non-standard)
Connector type	MPO/PC (8-strand or 12-strand, type B, female connector)
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 200 m Multimode fiber (OM4): 300 m
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-8.4 dBm

Item	Value
Minimum extinction ratio [dB]	2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-9.2 dBm
Overload power [dBm]	2.4 dBm

10.16.5 QSFP28-100G-10KM

Table 10-108 QSFP28-100G-10KM specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-10KM
Part Number	02311SYT
Model	QSFP28-100G-10KM
Form factor	QSFP28
Application standard	100GBASE-LR4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1295 nm,1300 nm,1304 nm,1309 nm
Maximum Tx optical power [dBm]	4.5 dBm
Minimum Tx optical power [dBm]	-4.3 dBm
Minimum extinction ratio [dB]	4 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-8.6 dBm
Overload power [dBm]	4.5 dBm

10.16.6 QSFP28-100G-LR4 (02311KNU)

Table 10-109 QSFP28-100G-LR4 specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-LR4
Part Number	02311KNU
Model	QSFP28-100G-LR4
Form factor	QSFP28
Application standard	100GBASE-LR4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1295 nm,1300 nm,1304 nm,1309 nm
Maximum Tx optical power [dBm]	4.5 dBm
Minimum Tx optical power [dBm]	-4.3 dBm
Minimum extinction ratio [dB]	4 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-8.6 dBm
Overload power [dBm]	4.5 dBm

10.16.7 QSFP28-100G-PSM4

Table 10-110 QSFP28-100G-PSM4 specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-PSM4

Item	Value
Part Number	02311MNM
Model	QSFP28-100G-PSM4
Form factor	QSFP28
Application standard	100GBASE-PSM4 (non-standard)
Connector type	MPO/APC (8-strand or 12-strand, type B, female connector)
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): 500 m
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	2 dBm
Minimum Tx optical power [dBm]	-9.4 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.35 dBm
Overload power [dBm]	2.2 dBm

10.16.8 QSFP28-100G-SR4 (02311GBW)

Table 10-111 QSFP28-100G-SR4 specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-SR4
Part Number	02311GBW
Model	QSFP28-100G-SR4
Form factor	QSFP28
Application standard	100GBASE-SR4

Item	Value
Connector type	MPO/PC (8-strand or 12-strand, type B, female connector)
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 70 m Multimode fiber (OM4): 100 m
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-8.4 dBm
Minimum extinction ratio [dB]	2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-8.5 dBm
Overload power [dBm]	2.4 dBm

10.16.9 QSFP-100G-ER4 (02313HLU)

Table 10-112 QSFP-100G-ER4 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-ER4
Part Number	02313HLU
Model	QSFP-100G-ER4
Form factor	QSFP28
Application standard	100GBASE-ER4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)

Item	Value
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652): 40 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1295 nm,1300 nm,1304 nm,1309 nm
Maximum Tx optical power [dBm]	2.9 dBm
Minimum Tx optical power [dBm]	-2.9 dBm
Minimum extinction ratio [dB]	8 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-20.9 dBm
Overload power [dBm]	-3.5 dBm
NOTE The RS-FEC function can be enabled.	

10.16.10 QSFP-100G-FR1

Table 10-113 QSFP-100G-FR1 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-FR1
Part Number	02314BDE
Model	QSFP-100G-FR1
Form factor	QSFP28
Application standard	100GBASE-FR1
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652, diameter: 9 μm): 2 km

Item	Value
Transmitter Optical Characteristics	
Center wavelength [nm]	1311 nm
Maximum Tx optical power [dBm]	4 dBm
Minimum Tx optical power [dBm]	-3.1 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-7.1 dBm
Overload power [dBm]	4 dBm

10.16.11 QSFP28-100G-DR

Table 10-114 QSFP28-100G-DR specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-DR
Part Number	02312VSP
Model	QSFP28-100G-DR
Form factor	QSFP28
Application standard	100GBase-DR
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652, diameter: 9 μm): 500 m
Transmitter Optical Characteristics	
Center wavelength [nm]	1311 nm
Maximum Tx optical power [dBm]	4 dBm
Minimum Tx optical power [dBm]	-2.9 dBm

Item	Value
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-5.9 dBm
Overload power [dBm]	4 dBm

10.16.12 QSFP-100G-BIDI-G2

Table 10-115 QSFP-100G-BIDI-G2 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-BIDI-G2
Part Number	02314DBW
Model	QSFP-100G-BIDI-G2
Form factor	QSFP28
Application standard	100G-BIDI
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3, diameter: 50 μm): 70 m Multimode fiber (OM4, diameter: 50 μm): 100 m
Transmitter Optical Characteristics	
Center wavelength [nm]	850,910 nm
Maximum Tx optical power [dBm]	4 dBm
Minimum Tx optical power [dBm]	-4.4 dBm
Minimum extinction ratio [dB]	3 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	max (-6.6, SECQ - 8)

Item	Value
Overload power [dBm]	3.5 dBm

10.16.13 QSFP-100G-CWDM4-Lite

Table 10-116 QSFP-100G-CWDM4-Lite specifications

Item	Value
Basic Information	
Module name	QSFP-100G-CWDM4-Lite
Part Number	02312UJN
Model	QSFP-100G-CWDM4-Lite
Form factor	QSFP28
Application standard	100GBASE-CWDM4
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652, diameter: 9 μm): 0.5 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1310 nm
Maximum Tx optical power [dBm]	2.5 dBm
Minimum Tx optical power [dBm]	-6.5 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-9.8 dBm
Overload power [dBm]	2.5 dBm

10.16.14 QSFP28-100G-SR4 (02313URQ)

Table 10-117 QSFP28-100G-SR4 specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-SR4
Part Number	02313URQ
Model	QSFP28-100G-SR4
Form factor	QSFP28
Application standard	100GBASE-SR4
Connector type	MPO/PC (8-strand or 12-strand, type B, female connector)
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Multimode fiber (OM3): 70 m Multimode fiber (OM4): 100 m
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	2.4 dBm
Minimum Tx optical power [dBm]	-8.4 dBm
Minimum extinction ratio [dB]	2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.3 dBm
Overload power [dBm]	2.4 dBm

10.16.15 QSFP-100G-LX4-MM

Table 10-118 QSFP-100G-LX4-MM specifications

Item	Value
Basic Information	

Item	Value
Module name	QSFP-100G-LX4-MM
Part Number	02314DBX
Model	QSFP-100G-LX4-MM
Form factor	QSFP28
Application standard	100G-LX4
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100Gbit/s
Target transmission distance [km]	Multimode (OM3) fiber (diameter: 50 μm): 100 m Multimode (OM4) fiber (diameter: 50 μm): 100 m
Transmitter Optical Characteristics	
Center wavelength [nm]	1271 nm,1291 nm,1311 nm,1331 nm
Maximum Tx optical power [dBm]	4.5 dBm
Minimum Tx optical power [dBm]	-3 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-11.5 dBm
Overload power [dBm]	4.5 dBm
NOTE Limitations: - In actual applications, the number of connectors in an optical fiber link cannot exceed 4. - This module is sensitive to fiber link contamination. During deployment, ensure that the fiber end face meets the fiber application standard. For details, refer to the requirements for single-mode connectors in the end face requirements for fiber ceramic ferrules under "Cables" > "Fiber Jumpers."	

10.16.16 QSFP-100G-LR1 (02314LBY)

Table 10-119 QSFP-100G-LR1 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-LR1
Part Number	02314LBY
Model	QSFP-100G-LR1
Form factor	QSFP28
Application standard	100GBASE-LR1
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Single-mode (G.652) optical fiber (diameter: 9 μm): 10 km
Transmitter Optical Characteristics	
Center wavelength [nm]	1311 nm
Maximum Tx optical power [dBm]	4.8 dBm
Minimum Tx optical power [dBm]	-1.9 dBm
Minimum extinction ratio [dB]	3.5 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	Max(-6.1,TECQ-7.5)
Overload power [dBm]	4.8 dBm

10.16.17 QSFP-100G-SWDM4 (02314LCB)

Table 10-120 QSFP-100G-SWDM4 specifications

Item	Value
Basic Information	
Module name	QSFP-100G-SWDM4

Item	Value
Part Number	02314LCB
Model	QSFP-100G-SWDM4
Form factor	QSFP28
Application standard	100G-SWDM4 MSA
Connector type	LC
Optical fiber type	MMF
Working case temperature [°C(°F)]	0°C to 70°C (32°F to 158°F)
Digital diagnostic monitoring (DDM)	Supported
Transmission rate [bit/s]	100 Gbit/s
Target transmission distance [km]	Multimode (OM3) optical fiber (diameter: 50 μm): 75 m Multimode (OM4) optical fiber (diameter: 50 μm): 100 m
Modal bandwidth [MHz*km]	Multimode (OM3) optical fiber: 2000 MHz*km Multimode (OM4) optical fiber: 4700 MHz*km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power [dBm]	3.4 dBm
Minimum Tx optical power [dBm]	-7.5 dBm
Minimum extinction ratio [dB]	2 dB
Receiver Optical Characteristics	
Rx sensitivity [dBm]	-10.5 dBm
Overload power [dBm]	2.4 dBm