H3C S7500X Switch Series

Hardware Information and Specifications

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Preface

This document describes hardware information and specifications for H3C S7500X switch series, including chassis views and technical specifications, FRUs and compatibility matrixes, LEDs, and cables.

This preface includes the following topics about the documentation:

Audience

This documentation is intended for:

- Network planners.
- Field technical support and servicing engineers.
- Network administrators.

Conventions

The following information describes the conventions used in the documentation.

Command conventions

Convention	Description
Boldface	**Bold** text represents commands and keywords that you enter literally as shown.
Italic	*Italic* text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x | y | ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x | y | ...]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x | y | ... } *	Asterisk marked braces enclose a set of required syntax choices separated by vertical bars, from which you select a minimum of one.
[x | y | ...] *	Asterisk marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in Boldface. For example, the **New User** window opens; click **OK**.

Convention	Description
>	Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**.

Symbols

Convention	Description
WARNING!	An alert that calls attention to important information that if not understood or followed can result in personal injury.
CAUTION:	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
IMPORTANT:	An alert that calls attention to essential information.
NOTE:	An alert that contains additional or supplementary information.
TIP:	An alert that provides helpful information.

Network topology icons

Convention	Description
	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a wireless terminator unit.
	Represents a wireless terminator.
	Represents a mesh access point.
	Represents omnidirectional signals.
	Represents directional signals.
	Represents a security product, such as a firewall, UTM, multiservice security gateway, or load balancing device.
	Represents a security module, such as a firewall, load balancing, NetStream, SSL VPN, IPS, or ACG module.

Examples provided in this document

Examples in this document might use devices that differ from your device in hardware model, configuration, or software version. It is normal that the port numbers, sample output, screenshots, and other information in the examples differ from what you have on your device.

Documentation feedback

You can e-mail your comments about product documentation to info@h3c.com.

We appreciate your comments.

Contents

1 Chassis views and technical specifications

Chassis views

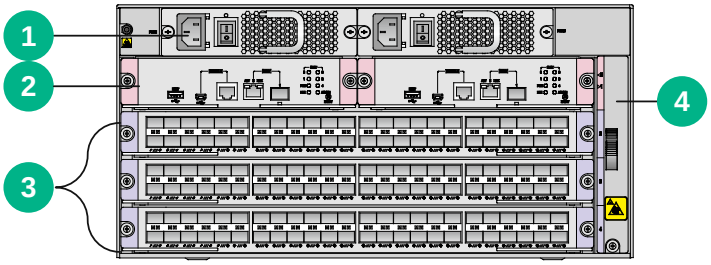
The S7500X switch series includes the following models:

- S7503X
- S7503X-PoE
- S7506X
- S7506X-PoE
- S7506X-S
- S7506X-S-MF
- S7510X
- S7510X-PoE

The figures in this section are for illustration only.

S7503X

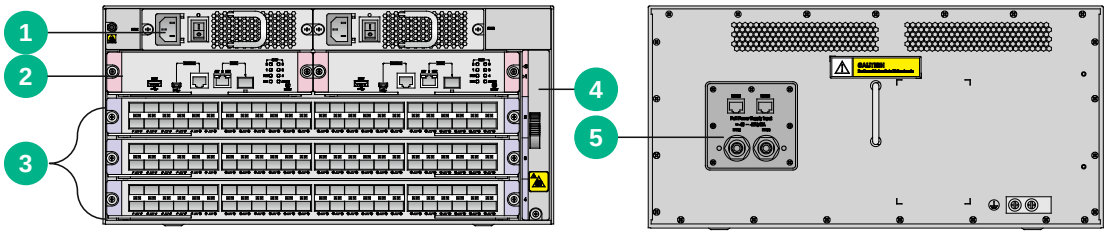
Figure1-1 S7503X front panel



(1) Power module section	(2) MPU section
(3) Service module section	(4) Fan tray section

S7503X-PoE

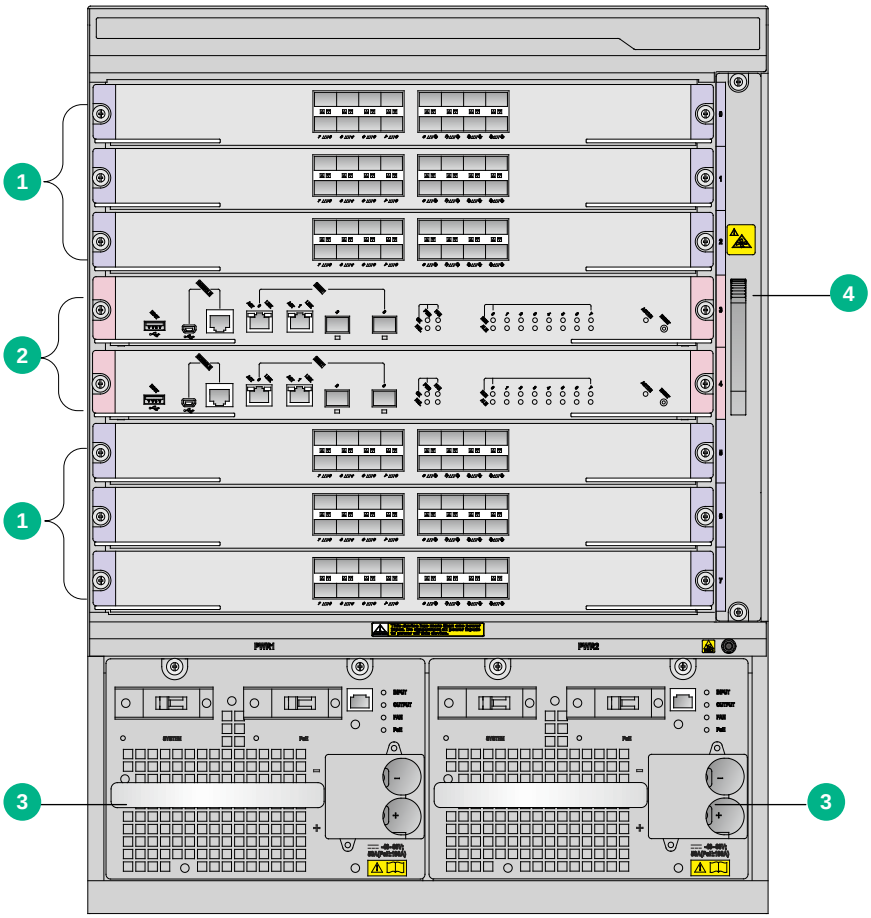
Figure1-2 S7503X-PoE front and rear panels



(1) Power module section	(2) MPU section	(3) Service module section
(4) Fan tray section	(5) PoE power input terminals (reserved)	

S7506X

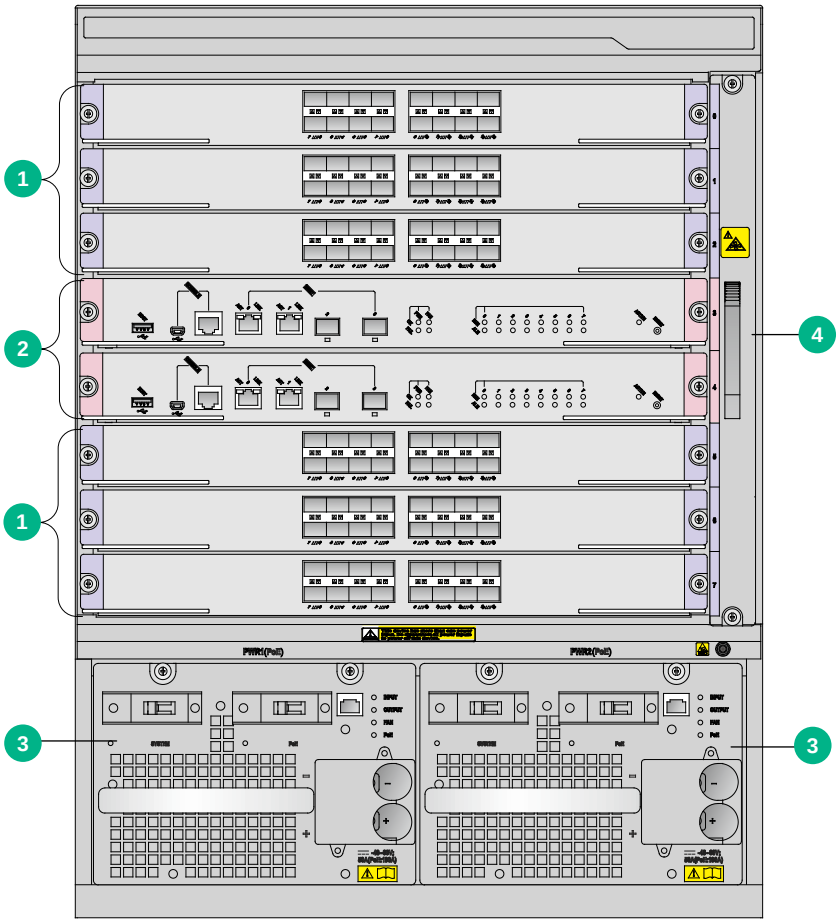
Figure1-3 S7506X front panel



(1) Service module section	(2) MPU section
(3) Power module section	(4) Fan tray section

S7506X-PoE

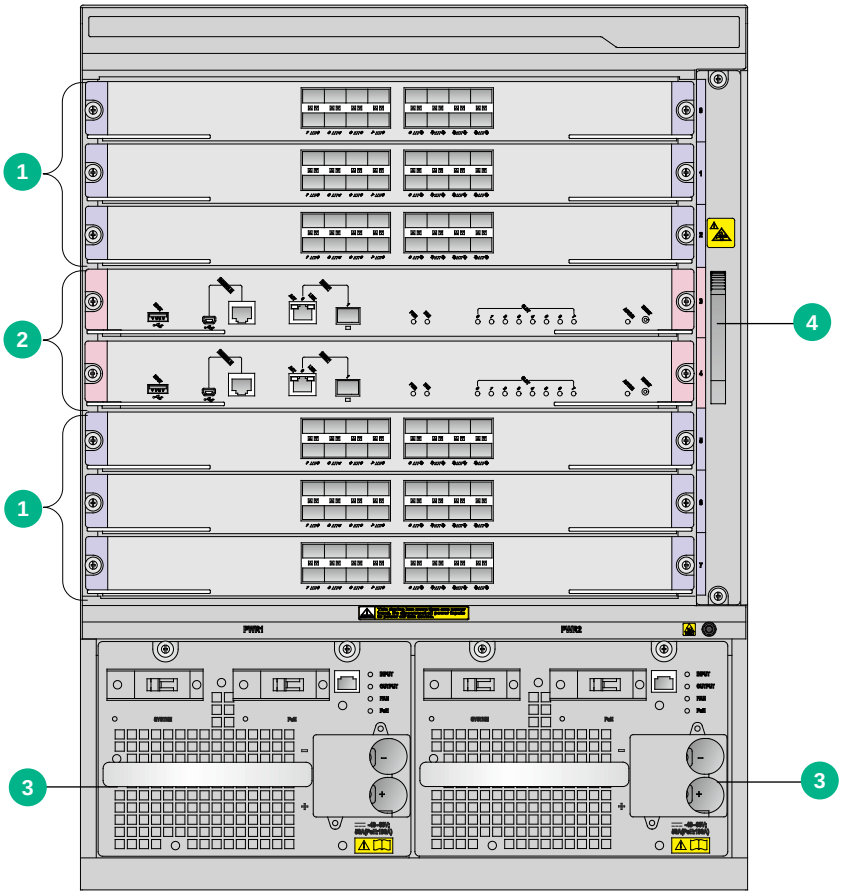
Figure1-4 S7506X-PoE front panel



(1) Service module section	(2) MPU section
(3) Power module section	(4) Fan tray section

S7506X-S

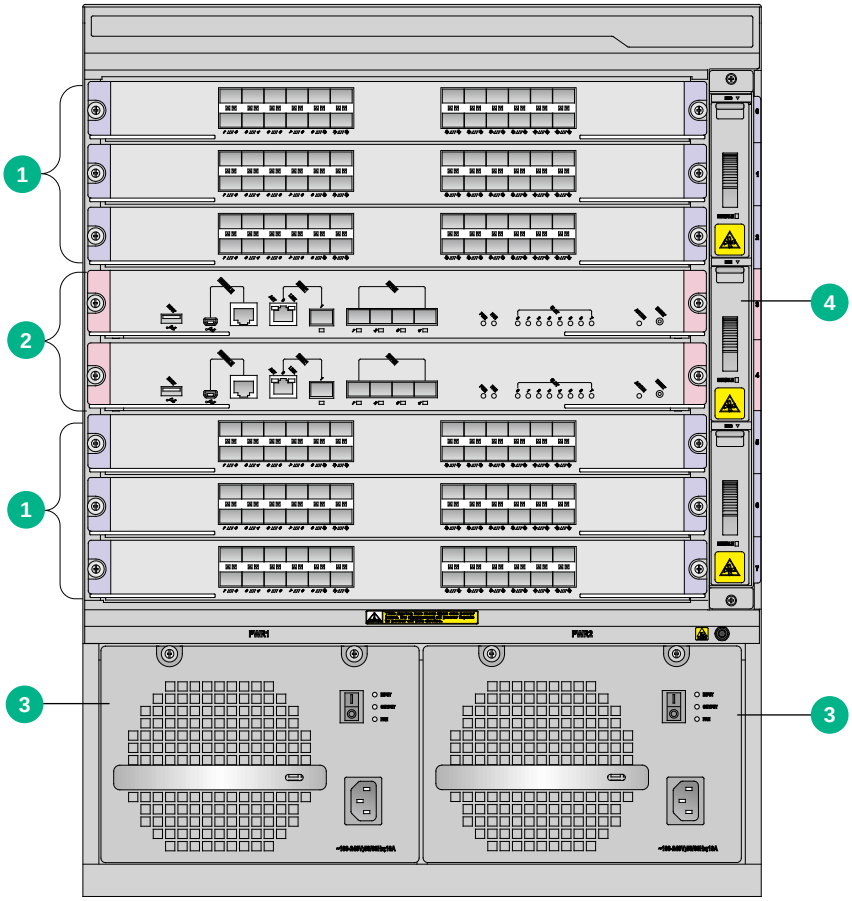
Figure1-5 S7506X-S front panel



(1) Service module section	(2) MPU section
(3) Power module section	(4) Fan tray section

S7506X-S-MF

Figure1-6 S7506X-S-MF front panel



(1) Service module section	(2) MPU section
(3) Power module section	(4) Fan tray section

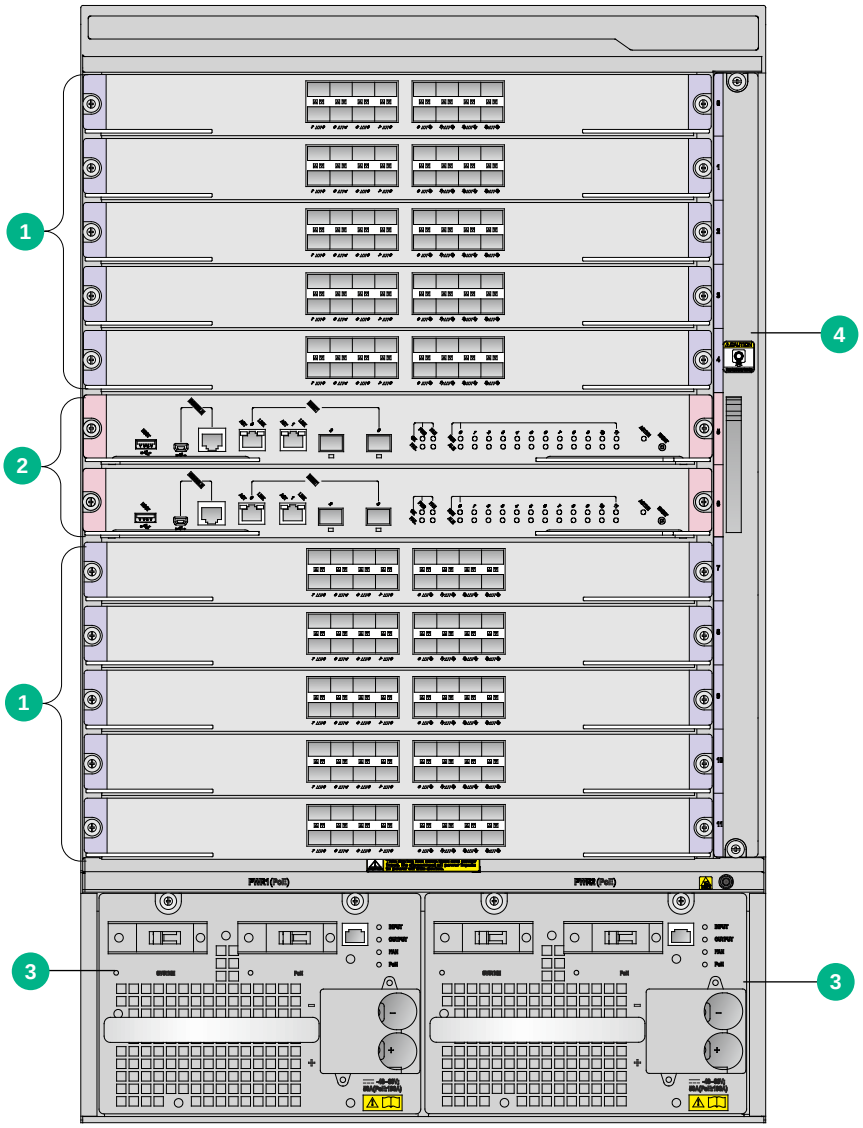
S7510X

Figure1-7 S7510X front panel

(1) Service module section	(2) MPU section
(3) Power module section	(4) Fan tray section

S7510X-PoE

Figure1-8 S7510X-PoE front panel



(1) Service module section	(2) MPU section
(3) Power module section	(4) Fan tray section

Technical specifications

Weights and dimensions

Table1-1 Chassis weights and dimensions

Model	Weight (fully configured)	Height	Width	Depth
S7503X	< 35 kg (77.16 lb)	216 mm (8.50 in)/5 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7503X-PoE	< 35 kg (77.16 lb)	216 mm (8.50 in)/5 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7506X	< 75 kg (165.34 lb)	575 mm (22.64 in)/13 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7506X-PoE	< 75 kg (165.34 lb)	575 mm (22.64 in)/13 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7506X-S	< 75 kg (165.34 lb)	575 mm (22.64 in)/13 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7506X-S-MF	< 75 kg (165.34 lb)	575 mm (22.64 in)/13 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7510X	< 95 kg (209.44 lb)	708 mm (27.87 in)/16 RUs	436 mm (17.17 in)	420 mm (16.54 in)
S7510X-PoE	< 95 kg (209.44 lb)	708 mm (27.87 in)/16 RUs	436 mm (17.17 in)	420 mm (16.54 in)

NOTE:

- A rack unit (RU) is 44.45 mm (1.75 in). It is a used as a measurement for the rack height.
- Net weight is the chassis weight, excluding the weights of cards, power modules and other removable modules.

Table1-2 Card weights and dimensions

Model	Weight	Height	Width	Depth
LSQM2SUPA0	1.35 kg (2.98 lb)	45 mm (1.77 in)	199 mm (7.83 in)	355 mm (13.98 in)
LSQM2SUPB0	1.45 kg (3.20 lb)	45 mm (1.77 in)	199 mm (7.83 in)	355 mm (13.98 in)
LSQM3SUPA0	1.35 kg (2.98 lb)	45 mm (1.77 in)	199 mm (7.83 in)	355 mm (13.98 in)
LSQM1MPUSA0	3.25 kg (7.16 lb)	45 mm (1.77 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1MPUSC0	3.70 kg (7.16 lb)	45 mm (1.77 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1SRP4Y06A0	2.90 kg (6.39 lb)	45 mm (1.77 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1MPUS06S0	3.25 kg (7.16 lb)	45 mm (1.77 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1MPUS10B0	3.40 kg (8.16 lb)	45 mm (1.77 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1MPUS10C0	3.70 kg (8.16 lb)	45 mm (1.77 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS24QSFD0	3.00 kg (6.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1CQGS12SG0	3.20 kg (7.05 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1CGS2FE0	2.82 kg (6.22 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)

Model	Weight	Height	Width	Depth
LSQM1QGS24RSG0	3.39 kg (7.47 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GT24PTSSC0	3.21 kg (7.08 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GT24TSSC0	2.95 kg (6.50 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM3GP44TSSC0	3.00 kg (6.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1GP40TS8FD0	3.20 kg (7.05 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GP40TS8FD0	3.10 kg (6.83 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GP44TSSC0	3.00 kg (6.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GP24TSSC0	2.85 kg (6.28 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS48RFE0	3.60 kg (7.94 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS48RSG0	3.50 kg (7.72 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2TGS48SG0	3.30 kg (7.28 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS16GPSA0	3.50 kg (7.72 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS24FD0	3.00 kg (6.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS16FD0	2.91 kg (6.42 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2TGS16SF0	3.05 kg (6.72 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GP24TSSA0	2.85 kg (6.28 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGS12EC0	3.30 kg (7.28 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1GP48FD0	3.10 kg (6.83 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1XPT12TSFD0	3.45 kg (7.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2XPT12TSFD0	3.45 kg (7.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1PT24TSSC0	2.90 kg (6.39 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1PT8TSSC0	2.75 kg (6.06 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GP48SA0	3.00 kg (6.61 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GP24SA0	2.81 kg (6.19 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1TGT24FD0	3.40 kg (7.50 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1GT48FD0	3.40 kg (7.50 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GT48SA0	3.18 kg (7.01 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2GT48SC0	3.18 kg (7.01 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM4GV48SA0	3.05 kg (6.72 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM4GV48SC0	3.05 kg (6.72 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSU1WCME0	4.00 kg (8.82 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSU3WCMD0	3.62 kg (7.98 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1WCMX20	4.00 kg (8.82 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1WCMX40	4.00 kg (8.82 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1FWDSC0	3.80 kg (8.38 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSU1FWCEA0	3.90 kg (8.60 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)

Model	Weight	Height	Width	Depth
LSU3FWCEA0	3.90 kg (8.60 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSUM1FWCEAB0	3.90 kg (8.60 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSU1NSCEA0	3.90 kg (8.60 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1NSDSC0	3.80 kg (8.38 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSU1IPSBEA0	3.90 kg (8.60 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1IPSDSC0	3.80 kg (8.38 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1ACGDSC0	3.80 kg (8.38 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1ADEDSC0	3.80 kg (8.38 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSU1ADECEA0	3.90 kg (8.60 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM2FWDSC0	3.30 kg (7.28 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1EPSB0	3.40 kg (8.16 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1SDNB0	3.40 kg (8.16 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)
LSQM1WBCZ720X	3.50 kg (7.72 lb)	40 mm (1.57 in)	399 mm (15.71 in)	355 mm (13.98 in)

NOTE:

- Card dimensions are expressed in the H × W × D format.
  - **H**—Height of the front panel of the card.
  - **W**—Width of the front panel of the card.
  - **D**—Depth from the front panel of the card to the connector.
- The card models listed in Table1-2 are marked on the card panels. They might be slightly different from the card models marked on the card packages. For example, LSU1WCME0 and LSUM1WCME0 identify the same card. LSU1WCME0 is marked on the card panel. When you order the card, you refer to it as LSUM1WCME0.

Table1-3 Power module adapter weights and dimensions

Model	Weight	Height	Width	Depth
LSQM1PWRSPB	4.95 kg (10.91 lb)	128 mm (5.04 in)	196 mm (7.72 in)	380 mm (14.96 in)

Table1-4 Power module weights and dimensions

Model	Weight	Height	Width	Depth
PSR320-A	2.00 kg (4.41 lb)	40 mm (1.57 in)/1 RU	140 mm (5.51 in)	350 mm (13.78 in)
PSR650-A	1.90 kg (4.19 lb)	40 mm (1.57 in)/1 RU	140 mm (5.51 in)	350 mm (13.78 in)
PSR650-D	3.20 kg (7.05 lb)	40 mm (1.57 in)/1 RU	140 mm (5.51 in)	350 mm (13.78 in)
PSR650C-12A	5.15 kg (11.35 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR650C-12D	4.20 kg (9.26 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR1200-A	2.56 kg (5.64 lb)	40 mm (1.57 in)/1 RU	140 mm (5.51 in)	350 mm (13.78 in)
PSR1200-D	2.51 kg (5.53 lb)	40 mm (1.57 in)/1 RU	140 mm (5.51 in)	350 mm (13.78 in)
PSR1400-A	8.30 kg (18.30 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR1400-12A1-F	4.30 kg (9.48 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)

Model	Weight	Height	Width	Depth
PSR1400-D	4.20 kg (9.26 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR1400-12D1	6.39 kg (14.09 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR2500-12AHD	5.45 kg (12.02 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR2500-12D	5.55 kg (12.24 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR2800-ACV	8.00 kg (17.64 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR2800-A1-F	5.45 kg (12.02 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)
PSR6000-ACV	12.16 kg (26.81 lb)	128 mm (5.04 in)/3 RUs	196 mm (7.72 in)	382 mm (15.04 in)

Table1-5 Fan tray weights and dimensions

Model	Weight	Height	Width	Depth
S7503X fan tray S7503X-PoE fan tray	1.00 kg (2.20 lb)	29 mm (1.14 in)	167 mm (6.57 in)	350 mm (13.78 in)
S7506X fan tray S7506X-PoE fan tray S7506X-S fan tray	2.20 kg (4.85 lb)	29 mm (1.14 in)	347 mm (13.66 in)	367 mm (14.45 in)
S7506X-S-MF fan tray	0.70 kg (1.54 lb)	27 mm (1.06 in)	100 mm (3.94 in)	347 mm (13.66 in)
S7510X fan tray S7510X-PoE fan tray	2.94 kg (6.48 lb)	28 mm (1.10 in)	497 mm (19.57 in)	351 mm (13.82 in)

Module power consumption

Card power consumption

A card has different power consumptions in static and dynamic states.

- **Static power consumption (min)**—Power consumed by the card when the following conditions exist:
  - The card is running but all ports on the card are down.
  - No transceiver modules are installed in the fiber ports on the card.
- **Dynamic power consumption (max)**—Power consumed by the card when all the ports on the card are link up and broadcast storm occurs.

Table1-6 Card power consumption

Model	Static power consumption (min)	Dynamic power consumption (max)
LSQM2SUPA0	9 W	18 W
LSQM2SUPB0	15 W	21 W
LSQM3SUPA0	9 W	16 W
LSQM1MPUSA0	60 W	100 W
LSQM1MPUSC0	103 W	168 W
LSQM1SRP4Y06A0	37 W	62 W
LSQM1MPUS06S0	27 W	42 W

Model	Static power consumption (min)	Dynamic power consumption (max)
LSQM1MPUS10B0	67 W	108 W
LSQM1MPUS10C0	93 W	182 W
LSQM1TGS24QSFD0	60 W	107 W
LSQM1CQGS12SG0	55 W	147 W
LSQM1CGS2FE0	55 W	77 W
LSQM1QGS24RSG0	65 W	198 W
LSQM2GT24PTSSC0	36 W	59 W
LSQM2GT24TSSC0	32 W	43 W
LSQM3GP44TSSC0	34 W	69 W
LSQM1GP40TS8FD0	47 W	96 W
LSQM2GP40TS8FD0	42 W	81 W
LSQM2GP44TSSC0	31 W	65 W
LSQM2GP24TSSC0	27 W	52 W
LSQM1TGS48RFE0	50 W	122 W
LSQM1TGS48RSG0	60 W	149 W
LSQM2TGS48SG0	67 W	152 W
LSQM1TGS16GPSA0	28 W	64 W
LSQM1TGS24FD0	50 W	104 W
LSQM1TGS16FD0	54 W	90 W
LSQM2TGS16SF0	52 W	75 W
LSQM2GP24TSSA0	25 W	49 W
LSQM1TGS12EC0	82 W	130 W
LSQM1GP48FD0	49 W	78 W
LSQM1XPT12TSFD0	100 W	162 W
LSQM2XPT12TSFD0	100 W	162 W
LSQM1PT24TSSC0	80 W	115 W
LSQM1PT8TSSC0	56 W	80 W
LSQM2GP48SA0	28 W	58 W
LSQM2GP24SA0	24 W	45 W
LSQM1TGT24FD0	60 W	112 W
LSQM1GT48FD0	48 W	65 W
LSQM2GT48SA0	35 W	45 W
LSQM2GT48SC0	38 W	48 W
LSQM4GV48SA0	34 W	44 W
LSQM4GV48SC0	38 W	48 W
LSU1WCME0	125 W	180 W

Model	Static power consumption (min)	Dynamic power consumption (max)
LSU3WCMD0	118 W	150 W
LSQM1WCMX20	125 W	180 W
LSQM1WCMX40	125 W	180 W
LSQM1FWDSC0	115 W	123 W
LSU1FWCEA0	109 W	157 W
LSU3FWCEA0	109 W	157 W
LSUM1FWCEAB0	109 W	157 W
LSU1NSCEA0	109 W	157 W
LSQM1NSDSC0	115 W	123 W
LSU1IPSBEA0	109 W	157 W
LSQM1IPSDSC0	116 W	124 W
LSQM1ACGDSC0	116 W	124 W
LSQM1ADEDSC0	116 W	124 W
LSU1ADECEA0	109 W	157 W
LSQM2FWDSC0	60 W	66 W
LSQM1EPSB0	102 W	124 W
LSQM1SDNB0	102 W	124 W
LSQM1WBCZ720X	160 W	210 W

Fan tray power consumption

The switch uses fan trays that can automatically adjust the fan speed based on the heat dissipation condition of the switch. The power consumed by a fan tray varies by fan speed. Table1-7 shows the power consumption of different fan trays.

Table1-7 Fan tray power consumption

Model	Min fan tray power consumption	Max fan tray power consumption
S7503X S7503X-PoE	7 W	11 W
S7506X S7506X-PoE S7506X-S	24.5 W	42.5 W
S7506X-S-MF	7.00 W	14.00 W
S7510X S7510X-PoE	28 W	48.5 W

Total power consumption

For the S7503X, S7506X, S7506X-S, S7506X-S-MF, and S7510X switches, the total power consumption equals the system power consumption.

For the S7503X-PoE, S7506X-PoE, and S7510X-PoE switches, the total power consumption equals the system power consumption plus the PoE power consumption.

System power consumption

The total power consumption of the switch is the power consumptions of all operating cards and fan trays. It varies by the type and number of the operating cards and the fan tray power consumption.

- The minimum system power consumption is the total static power consumption of all cards plus the minimum fan tray power consumption. For example, an S7506X switch is installed with two LSQM1MPUS10C0 MPUs, three LSQM1GP48FD0 interface modules, and one fan tray. The minimum system power consumption of the switch is 2 × 93 + 3 × 49 + 24.5 = 357.5 W.
- The maximum system power consumption is the total dynamic power consumption of all cards plus the maximum fan tray power consumption. For example, an S7506X switch is installed with two LSQM1MPUS10C0 MPUs, three LSQM1GP48FD0 interface modules, and one fan tray. The maximum system power consumption of the switch is 2 × 182 + 3 × 78 + 42.5 = 640.5 W.

PoE power consumption

The power over Ethernet (PoE) power consumption refers to the power that all powered devices (PDs) receive from the switch.

The maximum PoE power consumption refers to the sum of the power consumption of all PDs when all power interfaces (PIs) are connected to PDs and the maximum PI power is reached. The maximum PoE power consumption is decided by the following items:

- Number of the PoE cards installed on the switch.
- Number of the PIs that each PoE card provides.
- Maximum PoE power that each PoE card can provide.
- Maximum PoE power that each slot on the switch can provide.

  Each slot of the switch can provide a maximum PoE power of 1440 W.

Table1-8 shows the specifications for each PoE card model.

For example, an S7506X-PoE switch is installed with three LSQM4GV48SA0 PoE cards. The maximum PoE power consumption of the switch is 3 × 1440 = 4320 W.

Table1-8 PoE card specifications

Model	PI quantity	PI power	Maximum PSE power	Maximum number of PSEs for each switch model
LSQM4GV48SA0	48	0 to 30 W	1440 W	• S7503X-PoE: 3 • S7506X-PoE: 6 • S7510X-PoE: 10
LSQM4GV48SC0	48	0 to 30 W	1440 W	

NOTE:

- The PoE power consumption is 0 if the switch does not supply PoE.
- The maximum PoE power consumption of the S7510X switch is 10000 W.
- For more information about PoE power supply, see *H3C S7500X Switch Series Installation Guide*.

Heat dissipation

Heat dissipation is measured in BTU/h, and 1 W equals 3.4121 BTU/h.

The heat dissipation of a switch depends on its power consumption. To calculate heat dissipation of the switch, assume 90% power consumption is converted to heat, and the efficiency of the power

module is 90%. Heat dissipation/hour of the switch is 0.9 × (total power consumption of the cards plus power consumption of the fan tray)/0.9 × 3.4121.

Table1-9 shows the heat dissipation for each switch model.

Table1-9 Heat dissipation

Model	Heat dissipation (BTU/h)
S7503X S7503X-PoE	2187
S7506X S7506X-PoE	5347
S7506X-S S7506X-S-MF	4487
S7510X S7510X-PoE	8165

For the power consumption of the cards and fan trays available for the switch, see "Module power consumption."

Noise

The switch uses fan trays that can adjust the fan speed automatically based on the device temperature. The sound pressure levels vary by fan speed. For more information, see Table1-10.

Table1-10 Sound pressure levels

Model	Sound pressure level when the fan tray operates at low speed	Sound pressure level when the fan tray operates at middle speed	Sound pressure level when the fan tray operates at full speed
S7503X S7503X-PoE	52.2 dBA	54.0 dBA	56.0 dBA
S7506X S7506X-PoE S7506X-S S7506X-S-MF	53.6 dBA	56.2 dBA	57.7 dBA
S7510X S7510X-PoE	53.5 dBA	55.8 dBA	56.7 dBA

2 FRUs and compatibility matrixes

For the compatibility between transceiver modules and cards, see *H3C S7500X Switch Series Cards and Transceiver Modules Compatibility Matrixes*.

MPUs

You can install one MPU, or two MPUs for redundancy on the switch. When you install two MPUs, make sure the two MPUs are the same model.

Table2-1 MPU specifications

Model	Specifications			
	Flash memory	**NVRAM**	**SDRAM**	**Ports**
LSQM2SUPA0	2 GB	1 MB	2 GB	• 1 × console port • 1 × USB console port • 2 × management Ethernet ports (one 10/100/1000BASE-T copper port and one SFP port) • 1 × USB port
LSQM2SUPB0	4 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 2 × management Ethernet ports (one 10/100/1000BASE-T copper port and one SFP port) • 1 × USB port • 2 × SMB coaxial clock output ports • 2 × SMB coaxial clock input ports • 2 × high-precision time synchronization ports (Both ports are used for input by default. When both the ports are used for input, only port 1 is valid.)
LSQM3SUPA0	4 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 2 × management Ethernet ports (one 10/100/1000BASE-T copper port and one SFP port) • 1 × USB port
LSQM1MPUSA0	2 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 4 × management Ethernet ports (two 10/100/1000BASE-T copper ports and two SFP ports) • 1 × USB port
LSQM1MPUSC0	2 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 4 × management Ethernet ports (two 10/100/1000BASE-T copper ports and two SFP ports)

Model	Specifications			
	Flash memory	NVRAM	SDRAM	Ports
				• 1 × USB port
LSQM1SRP4Y06A0	2 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 2 × management Ethernet ports (one RJ-45 port and one SFP port) • 1 × USB port • 4 × SFP28 ports
LSQM1MPUS06S0	4 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 2 × management Ethernet ports (one RJ-45 port and one SFP port)
LSQM1MPUS10B0	2 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 4 × management Ethernet ports (two 10/100/1000BASE-T copper ports and two SFP ports) • 1 × USB port
LSQM1MPUS10C0	2 GB	1 MB	4 GB	• 1 × console port • 1 × USB console port • 4 × management Ethernet ports (two 10/100/1000BASE-T copper ports and two SFP ports) • 1 × USB port

NOTE:

- Among the management Ethernet ports on an MPU, only port 0 is available during the startup of the switch.
- To connect an SFP management Ethernet port on the MPUs, make sure the peer port operates at 1000 Mbps in full-duplex mode.
- The USB ports on the MPUs do not support USB extension cables.

Table2-2 MPU and switch compatibility matrix

MPU model	Switch model			
	S7503X S7503X-PoE	S7506X S7506X-PoE	S7506X-S S7506X-S-MF	S7510X S7510X-PoE
LSQM2SUPA0	Yes	No	No	No
LSQM2SUPB0	Yes	No	No	No
LSQM3SUPA0	Yes	No	No	No
LSQM1MPUSA0	No	Yes	No	No
LSQM1MPUSC0	No	Yes	No	No
LSQM1SRP4Y06A0	No	Yes	Yes	No
LSQM1MPUS06S0	No	Yes	Yes	No

MPU model	Switch model			
	S7503X S7503X-PoE	S7506X S7506X-PoE	S7506X-S S7506X-S-MF	S7510X S7510X-PoE
LSQM1MPUS10B0	No	No	No	Yes
LSQM1MPUS10C0	No	No	No	Yes

NOTE:

To verify compatibility of an MPU with the software version you are using, see the release notes for the device.

Service modules

Restrictions and guidelines

Follow these restrictions and guidelines to use service modules:

- For the switch models and system software versions that a service module is compatible with, see the service module manual.
- A combo interface is a logical interface that contains an SFP port and an RJ-45 Ethernet port. Only one of them can be activated at a time.
- After you convert 40G ports on an LSQM1CQGS12SG0 interface module to 100G ports, only ports 1, 4, 7, and 10 are available.
- Follow these guidelines to use services modules on an S7503X switch:
  - Do not use an LSQM1TGS16FD0 interface module with the following modules:
    - EC interface modules.
    - OAA modules: LSU1FWCEA0, LSU3FWCEA0, LSU3WCMD0, LSU1ADECEA0, LSU1NSCEA0, LSUM1FWCEAB0, LSU1IPSBEA0, LSU1WCME0, LSQM1WCMX40, and LSQM1WCMX20.
  - Do not use FD interface modules (except the LSQM1TGS16FD0) with the following modules:
    - SA interface modules.
    - EC interface modules.
    - OAA modules: LSU1FWCEA0, LSU3FWCEA0, LSU3WCMD0, LSU1ADECEA0, LSU1NSCEA0, LSUM1FWCEAB0, LSU1IPSBEA0, LSU1WCME0, LSQM1WCMX40, and LSQM1WCMX20.
  - Do not use an FE interface module, LSQM1EPSB0 module, or LSQM1SDNB0 module with the following modules:
    - SA interface modules.
    - EC interface modules.
    - OAA modules: LSU1FWCEA0, LSU3FWCEA0, LSU3WCMD0, LSU1ADECEA0, LSU1NSCEA0, LSUM1FWCEAB0, LSU1IPSBEA0, LSU1WCME0, LSQM1WCMX40, and LSQM1WCMX20.

Interface modules

Table2-3 Interface module specifications

Model	Port quantity	Port type	Available transceiver modules and network cables
LSQM1TGS24QSFD0	26	• 2 × 40GBASE-R-QSFP+ fiber ports or 1 × 100G QSFP28 fiber port • 24 × 10GBASE-R-SFP+ fiber ports	• QSFP28 transceiver module • QSFP28 DAC cable • QSFP+ transceiver module • QSFP+ DAC cable • QSFP+ to SFP+ DAC cable • 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM1CQGS12SG0	12	• 12 × 40GBASE-R QSFP+ fiber ports or 4 × 100GBASE-R QSFP28 fiber ports	• QSFP28 transceiver module • QSFP28 DAC cable • QSFP+ transceiver module • QSFP+ DAC cable • QSFP+ to SFP+ DAC cable
LSQM1CGS2FE0	2	100GBASE-R QSFP28 fiber port	• QSFP28 transceiver module • QSFP28 DAC cable
LSQM1QGS24RSG0	24	40GBASE-R QSFP+ fiber port	• QSFP+ transceiver module • QSFP+ DAC cable • QSFP+ to SFP+ DAC cable
LSQM2GT24PTSSC0	48	• 4 × 10GBASE-R SFP+/LC fiber ports • 20 × 1000BASE-X-SFP/LC fiber ports • 24 × 10/100/1000BASE-T-RJ45 copper ports	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • FE/GE SFP transceiver module • Category 5 twisted-pair cable
LSQM2GT24TSSC0	28	• 4 × 10GBASE-R SFP+/LC fiber ports • 24 × 10/100/1000BASE-T-RJ45 copper ports	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module • Category 5 twisted-pair cable
LSQM3GP44TSSC0	48	• 4 × 10GBASE-R-SFP+ fiber ports (support for MACsec) • 44 × 1000BASE-X-SFP fiber ports (support for MACsec)	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • FE/GE SFP transceiver module
LSQM1GP40TS8FD0	48	• 8 × 10GBASE-R SFP+/LC fiber ports • 40 × 1000BASE-X-SFP/LC fiber ports	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • FE/GE SFP transceiver module
LSQM2GP40TS8FD0	48	• 8 × 10GBASE-R SFP+/LC fiber ports • 40 × 1000BASE-X-SFP/LC	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable

Model	Port quantity	Port type	Available transceiver modules and network cables
		fiber ports	• FE/GE SFP transceiver module
LSQM2GP44TSSC0	48	• 4 × 10GBASE-R SFP+/LC fiber ports • 44 × 1000BASE-X-SFP/LC fiber ports	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • FE/GE SFP transceiver module
LSQM2GP24TSSC0	28	• 4 × 10GBASE-R SFP+/LC fiber ports • 24 × 1000BASE-X-SFP/LC fiber ports	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • FE/GE SFP transceiver module
LSQM1TGS48RFE0	48	10GBASE-R-SFP+ fiber port	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM1TGS48RSG0	48	10GBASE-R-SFP+ fiber port	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM2TGS48SG0	48	10GBASE-R SFP+/LC fiber port	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM1TGS16GPSA0	40	• 16 × 10GBASE-R-SFP+/LC fiber ports • 24 × 1000BASE-X-SFP/LC fiber ports	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM1TGS24FD0	24	10GBASE-R-SFP+ fiber port	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM1TGS16FD0	16	10GBASE-R SFP+/LC fiber port	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM2TGS16SF0	16	10GBASE-R SFP+/LC fiber port	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM2GP24TSSA0	28	• 4 × 10GBASE-R/ SFP+/LC fiber ports • 24 × 1000BASE-X-SFP/LC fiber ports	• 10-GE SFP+ transceiver module • FE/GE SFP transceiver module
LSQM1TGS12EC0	12	10GBASE-R SFP+/LC fiber port	10-GE SFP+ transceiver module
LSQM1GP48FD0	48	1000BASE-X-SFP/LC fiber port	GE SFP transceiver module

Model	Port quantity	Port type	Available transceiver modules and network cables
LSQM1XPT12TSFD0	20	• 12 × 10G EPON OLT/SC fiber ports • 8 × 10GBASE-R-SFP+/LC fiber ports	• XFP EPON transceiver module • 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM2XPT12TSFD0	20	• 12 × 10G EPON OLT/SC fiber ports • 8 × 10GBASE-R-SFP+/LC fiber ports	• SFP+ EPON transceiver module • 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable • GE SFP transceiver module
LSQM1PT24TSSC0	26	• 2 × 10GBASE-R SFP+/LC fiber ports • 24 × 1000BASE-PX-SFP/SC fiber ports	• SFP EPON transceiver module • GE SFP transceiver module • 10-GE SFP+ transceiver module
LSQM1PT8TSSC0	10	• 8 × 1000BASE-PX-SFP/SC fiber ports • 2 × 1000BASE-X-SFP/LC fiber ports	• SFP EPON transceiver module • GE SFP transceiver module • 10-GE SFP+ transceiver module
LSQM2GP48SA0	48	1000BASE-X-SFP/LC fiber port	FE/GE SFP transceiver module
LSQM2GP24SA0	24	1000BASE-X-SFP/LC fiber port	FE/GE SFP transceiver module
LSQM1TGT24FD0	24	10GBASE-T-RJ45 copper port	Category 6A/7 twisted-pair cable
LSQM1GT48FD0	48	10/100/1000BASE-T-RJ45 copper port	Category 5 twisted-pair cable
LSQM2GT48SA0	48	10/100/1000BASE-T-RJ45 copper port	Category 5 twisted-pair cable
LSQM2GT48SC0	48	10/100/1000BASE-T-RJ45 copper port	Category 5 twisted-pair cable
LSQM4GV48SA0	48	10/100/1000BASE-T-RJ45 copper port	Category 5 twisted-pair cable
LSQM4GV48SC0	48	10/100/1000BASE-T-RJ45 copper port	Category 5 twisted-pair cable

OAA modules

Table2-4 OAA module specifications

Model	Description	Ports	Compatible transceiver modules and network cables
LSU1WCME0	High-performance access controller module	• 1 × console port • 1 ×100/1000BASE-T out-of-band management Ethernet port	Category 5 or above twisted-pair cable

Model	Description	Ports	Compatible transceiver modules and network cables
LSU3WCMD0	High-performance access controller module	• 1 × console port • 1 × CF card slot (supporting 256-MB, 512-MB, and 1-GB CF cards) • 2 × USB ports • 2 × 10/100/1000BASE-T copper ports • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSQM1WCMX20	Access controller module	• 1 × console port • 1 × 10/100/1000BASE-T out-of-band management Ethernet port	Category 5 twisted-pair cable
LSQM1WCMX40	Access controller module	• 1 × console port • 1 × 10/100/1000BASE-T out-of-band management Ethernet port	Category 5 twisted-pair cable
LSQM1FWDSC0	Firewall module	• 1 × console port • 1 × USB port (reserved for future use) • 1 × GE Ethernet copper port • 1 × hard disk slot	Category 5 twisted-pair cable
LSU1FWCEA0	Firewall module	• 1 × console port • 1 × CF card slot (supporting 256-MB, 512-MB, and 1-GB CF cards) • 2 × USB ports (reserved) • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSU3FWCEA0	Firewall module	• 1 × console port • 1 × CF card slot (supporting 256-MB, 512-MB, and 1-GB CF cards) • 2 × USB ports • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSUM1FWCEAB0	Firewall module	• 1 × console port • 2 × USB ports • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSU1NSCEA0	10-GE high performance NetStream module	• 1 × console port • 2 × USB ports (reserved) • 2 × GE combo interfaces	• Category 5 or above twisted-pair cable • GE SFP transceiver module
LSQM1NSDSC0	NetStream module	• 1 × console port • 1 × USB port (reserved for future use) • 1 × GE Ethernet copper port • 1 × hard disk slot	Category 5 twisted-pair cable

Model	Description	Ports	Compatible transceiver modules and network cables
LSU1IPSBEA0	Intrusion prevention system module	• 1 × console port • 2 × USB ports • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSQM1IPSDSC0	Intrusion prevention system module	• 1 × console port • 1 × USB port (only for supplying power to a PFC) • 1 × 10/100/1000BASE-T copper port • 1 × hard disk slot	Category 5 twisted-pair cable
LSQ1SSLSC0	SSL VPN module	• 1 × console port • 1 × CF card slot (supporting 256-MB, 512-MB, and 1-GB CF cards) • 2 × USB ports	• Category 5 twisted-pair cable • GE SFP transceiver module
LSQ1ACGASC0	Application control gateway module	• 1 × console port • 1 × CF card slot (supporting 256-MB, 512-MB, and 1-GB CF cards) • 2 × USB ports • 2 × 10/100/1000BASE-T copper ports • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSQM1ACGDSC0	Application control gateway module	• 1 × console port • 1 × USB port (reserved) • 1 × 10/100/1000BASE-T copper port • 1 × hard disk slot	Category 5 twisted-pair cable
LSQM2ACGDSC0	Application control gateway module	• 1 × console port • 1 × USB port (only for supplying power to a PFC) • 1 × 10/100/1000BASE-T copper port • 1 × hard disk slot	Category 5 twisted-pair cable
LSQM1ADEDSC0	Application delivery engine module	• 1 × console port • 1 × USB port (only for supplying power to a PFC) • 1 × 10/100/1000BASE-T copper port • 1 × hard disk slot	Category 5 twisted-pair cable
LSU1ADECEA0	Application delivery engine module	• 1 × console port • 2 × USB ports • 2 × GE combo interfaces	• Category 5 twisted-pair cable • GE SFP transceiver module
LSQM2FWDSC0	High-performance service module	• 1 × console port • 2 × USB ports • 2 × GE combo interfaces • 4 × 10GBASE-R fiber	• Category 5 twisted-pair cable • GE SFP transceiver module

Model	Description	Ports	Compatible transceiver modules and network cables
		ports • 1 × hard disk	• 10-GE SFP+ transceiver module • 10-GE SFP+ DAC cable
LSQM1EPSB0	EPS endpoint security module	• 3 × USB 2.0 ports (only for debugging use) • 1 × VGA connector • 1 × 10/100/1000BASE-T management Ethernet port • 1 × console port (only for debugging use)	Category 5 twisted-pair cable
LSQM1SDNB0	SDN automation module	• 3 × USB 2.0 ports (only for debugging use) • 1 × VGA connector • 1 × 10/100/1000BASE-T management Ethernet port • 1 × console port (only for debugging use)	Category 5 twisted-pair cable
LSQM1WBCZ720X	Multiservice access controller module	• 3 × USB 2.0 ports (only for debugging use) • 1 × VGA connector • 1 × 1000BASE-T management Ethernet port • 1 × console port	Category 5 twisted-pair cable

Power system

Restrictions and guidelines

Follow these restrictions and guidelines to configure and use power modules for the switch:

- A chassis must be configured with a minimum of one power module. To improve power supply availability, you can configure a chassis with two power modules for redundancy.
- The power modules installed on the switch must be the same type (AC or DC) and model.
- Make sure the maximum output power of a power module is greater than the total power consumption of the switch. As a best practice, reserve 20% of the maximum output power. For more information about the system power consumption and PoE power consumption, see "Total power consumption."
- If you want the switch to provide PoE power for PDs, order a power module that can be used for setting up a PoE system. Make sure the maximum PoE power provided by the power module is greater than the PoE power consumption. The requirements for setting up a PoE system vary by switch model. For more information about setting up a PoE system, see *H3C S7500X Switch Series Installation Guide*.

Power modules

Table2-5 300 W power module specifications

Item	PSR320-A
Rated input voltage	100 VAC to 240 VAC @ 50 Hz or 60 Hz
Rated output voltage	12 VDC
Max input current	10 A
Max output current	25 A
Max system output power	300 W
Support for PoE	No
Max PoE output power	N/A

Table2-6 650 W power module specifications

Item	PSR650-A	PSR650C-12A	PSR650-D	PSR650C-12D
Rated input voltage	100 VAC to 240 VAC @ 50 Hz or 60 Hz	100 VAC to 240 VAC @ 50 Hz or 60 Hz	–48 VDC to –60 VDC	–48 VDC to –60 VDC
Rated output voltage	12 VDC			
Max input current	10 A	10 A	25 A	25 A
Max output current	54 A	54 A	• 12 V: 54 A • 3.3 V: 4 A	54 A
Max system output power	650 W			
Support for PoE	No			
Max PoE output power	N/A			

Table2-7 1200 W power module specifications

Item	PSR1200-A	PSR1200-D
Rated input voltage	100 VAC to 240 VAC @ 50 Hz or 60 Hz	–48 VDC to –60 VDC
Rated output voltage	• 12 VDC • 3.3 VDC	
Max input current	16 A	42 A
Max output current	• 12 V: 100 A • 3.3 V: 4 A	
Max system output power	1213 W	
Support for PoE	No	
Max PoE output power	N/A	

Table2-8 1400 W power module specifications

Item	PSR1400-A	PSR1400-12A1-F	PSR1400-D	PSR1400-12D1
Rated input voltage	100 VAC to 240 VAC @ 50 Hz or 60 Hz	100 VAC to 240 VAC @ 50 Hz or 60 Hz	–48 VDC to –60 VDC	–48 VDC to –60 VDC
Rated output voltage	12 VDC	12 VDC	• 12 VDC • PoE: 48 VDC	12 VDC
Max input current	16 A	16 A	190 A	50 A
Max output current	117 A	117 A	• 12 V output: 117 A • PoE: 140 A	117 A
Max system output power	1150 W (110 VAC) 1400 W (220 VAC)	1150 W (110 VAC) 1400 W (220 VAC or 270 VDC)	1400 W	1400 W
Support for PoE	No	No	Yes	No
Max PoE output power	N/A	N/A	6720 W	N/A

Table2-9 2500 W power module specifications

Item	PSR2500-12AHD	PSR2500-12D
Rated input voltage	• 100 VAC to 240 VAC @ 50 Hz or 60 Hz • 240 VDC to 380 VDC	–48 VDC to –60 VDC
Rated output voltage	12 VDC	
Max input current	16 A	85 A
Max output current	• 90 VAC to 180 VAC input: 100 A • 180 VAC to 290 VAC or 180 VDC to 400 VDC input: 208 A	208 A
Max system output power	2500 W	
Support for PoE	No	
Max PoE output power	N/A	

Table2-10 2800 W power module specifications

Item	PSR2800-ACV	PSR2800-A1-F
Rated input voltage	100 VAC to 240 VAC @ 50 Hz or 60 Hz	
Rated output voltage	• 12 VDC • PoE: –50 VDC	
Max input current	16 A	
Max output current	• 12 V output: 117 A • PoE: 28 A	
Max system output power	1150 W (110 VAC) 1400 W (220 VAC)	1150 W (110 VAC) 1400 W (220 VAC or 270 VDC)

Item	PSR2800-ACV	PSR2800-A1-F
Support for PoE	Yes	
Max PoE output power	1150 W (110 VAC) 1400 W (220 VAC)	1150 W (110 VAC) 1400 W (220 VAC or 270 VDC)

Table2-11 6000 W power module specifications

Item	PSR6000-ACV
Rated input voltage	100 VAC to 240 VAC @ 50 Hz or 60 Hz
Rated output voltage	• 12 VDC • PoE: 48 VDC
Max input current	16 A
Max output current	110 V input: • 12 VDC: 96 A • One PoE input: 23 A • Two PoE inputs: 46 A • Three PoE inputs: 69 A 220 V input: • 12 VDC: 117 A • One PoE input: 34 A • Two PoE inputs: 68 A • Three PoE inputs: 100 A
Max system output power	1150 W (110 VAC) 1400 W (220 VAC)
Support for PoE	Yes
Max PoE output power	110 V input: • One PoE input: 1200 W • Two PoE inputs: 2400 W • Three PoE inputs: 3600 W 220 V input: • One PoE input: 1800 W • Two PoE inputs: 3600 W • Three PoE inputs: 5300 W

NOTE:

The maximum PoE output power is 10000 W when the switch is fully configured with PSR1400-D or PSR6000-ACV power modules.

Table2-12 shows the compatibility between power modules and switches.

Table2-12 Power module and switch compatibility matrix

Power module	S7503X S7503X-PoE	S7506X S7506X-S S7506X-S-MF	S7506X-PoE	S7510X	S7510X-PoE
PSR320-A	●	—	—	—	—
PSR650-A	●	○	○	○	○

Power module	S7503X S7503X-PoE	S7506X S7506X-S S7506X-S-MF	S7506X-PoE	S7510X	S7510X-PoE
PSR650-D	●	○	○	○	○
PSR1200-A	—	○	○	○	○
PSR1200-D	—	○	○	○	○
PSR650C-12A	—	●	●	—	—
PSR650C-12D	—	●	●	—	—
PSR1400-A	—	●	●	●	●
PSR1400-D	—	●	●	●	●
PSR1400-12D1	—	●	●	●	●
PSR2500-12AHD	—	●	●	●	●
PSR2500-12D	—	●	●	●	●
PSR2800-ACV	—	—	●	—	●
PSR6000-ACV	—	—	●	—	●

NOTE:

- "●" indicates that the power module can be directly installed on the chassis.
- "○" indicates that you must first install a power module adapter on the chassis and then install the power module on the power module adapter. For more information about installing a power module and a power module adapter, see *H3C S7500X Switch Series Installation Guide*.
- "—" indicates that the power module cannot be installed on the chassis.

Power cords

DC power cords

A DC power cord connects a DC power module to an external DC power source.

Table2-13 DC power cords available for the power modules

DC power cord code	DC power cord length	DC power module
0404A06T	3 m (9.84 ft)	PSR650-D/PSR650C-12D
0404A01N	5 m (16.40 ft)	
0404A01P	10 m (32.81 ft)	
0404A073	20 m (65.62 ft)	
0404A0DU	3 m (9.84 ft)	PSR1200-D
0404A07G	3 m (9.84 ft)	PSR1400-D/PSR1400-12D1/PSR2500-12D
0404A08T	10 m (32.81 ft)	
0404A08U	20 m (65.62 ft)	
0404A072	25 m (82.02 ft)	
0404A0RL	3 m (9.84 ft)	PSR2500-12AHD (240 to 380 VDC)

AC power cords

AC power cords are used for connecting the AC power modules of the switch to the external AC power source. Before you order an AC power cord, make sure you have read the following restrictions and guidelines:

- Select AC power cords according to the power of the power module.
- The connector type varies by country or region. Select a compliant connector type as needed.
- For the PSR320-A, PSR650-A, and PSR650C-12A power modules, select 10A AC power cords.
- For the PSR1200-A, PSR1400-A, PSR1400-12A1-F, PSR2500-12AHD, PSR2800-ACV, PSR2800-A1-F, and PSR6000-ACV power modules, select 16A AC power cords.
- For the PSR2500-12AHD power module, select the 0404A0RP or 0404A0RQ AC power cord. The 0404A0RP and 0404A0RQ AC power cords can only be used for the PSR2500-12AHD power module.
- The type of the connector (connected to the power source) varies by country or region. Select a compliant connector type as needed. For the connector types of different countries or regions and the power cord codes, see *H3C Power Cords & Cables User Guide*.

(Optional) PoE power system

PoE DC power cords

A PoE DC power cord is used to connect a PoE power module on the switch to an external DC power source.

Table2-14 PoE DC power cords available for PoE power modules

PoE power module	PoE DC power cord	Cable length
PSR2800-ACV/PSR2800-A1-F/PSR6000-ACV	0404A05U	1 m (3.28 ft)
PSR1400-D	0404A07H	3 m (9.84 ft)

PoE AC power cords

The switch uses 16A PoE AC power cords. A PoE AC power cord is used to connect a PoE power module on the switch to an external AC power source.

Fan trays

Table2-15 Fan tray specifications

Fan tray	Number of fan trays	Number of fans	Fan diameter	Maximum air flow rate
S7503X fan tray S7503X-PoE fan tray	1	2	120 mm (4.72 in)	166 CFM (4.70 m^3/min)
S7506X fan tray S7506X-PoE fan tray S7506X-S fan tray	1	9	92 mm (3.62 in)	495 CFM (14.02 m^3/min)

Fan tray	Number of fan trays	Number of fans	Fan diameter	Maximum air flow rate
S7506X-S-MF fan tray	3	3 (one small fan and two large fans)	• Small fan: 80 mm (3.15 in) • Large fan: 92 mm (3.62 in)	130 CFM (3.68 m^3/min)
S7510X fan tray S7510X-PoE fan tray	1	6	92 mm (3.62 in)	662 CFM (18.75 m^3/min)
	1	4	120 mm (4.72 in)	662 CFM (18.75 m^3/min)

The switch comes with the fan tray installed. To replace the fan tray, make sure the new fan tray is compatible with the switch.

3 LEDs

The MPUs, service modules, and power modules available for the switch use multiple LEDs to indicate their operating status. The LED type and quantity vary by module model.

Table3-1 lists the LEDs on the MPUs, service modules, and power modules.

NOTE:

Unless otherwise specified, the flashing frequency of the LEDs in this section is 0.5 Hz.

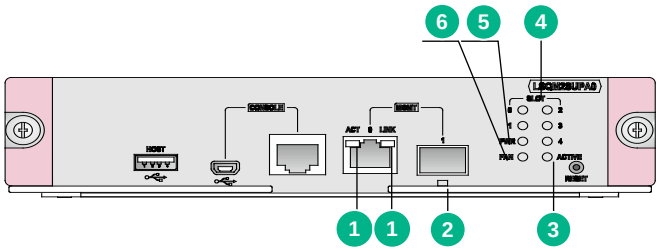
Table3-1 LEDs at a glance

LEDs
MPU LEDs • Management Ethernet port LEDs • Power module status LEDs • Fan tray status LEDs • Card status LEDs • Active/standby state LED • SFP28 port LEDs
Service module LEDs • RJ-45 Ethernet port LEDs • Combo interface LEDs • SFP port LEDs • SFP+ port LEDs • QSFP+ port LEDs • QSFP28 port LEDs • EPON port LEDs
Power module LEDs • PSR320-A • PSR650-A/PSR650-D/PSR1200-A/PSR1200-D • PSR650C-12A/PSR650C-12D/PSR1400-A/PSR1400-12A1-F/PSR2500-12AHD/PSR2500-12D • PSR1400-D • PSR1400-12D1 • PSR2800-ACV • PSR6000-ACV

MPU LEDs

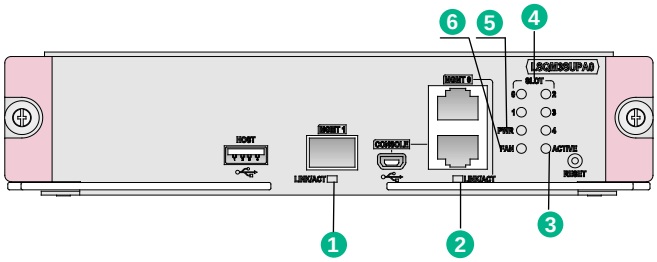
Multiple MPUs are available for the device. These MPUs provide different types and numbers of LEDs.

Figure3-1 LSQM2SUPA0 MPU LEDs



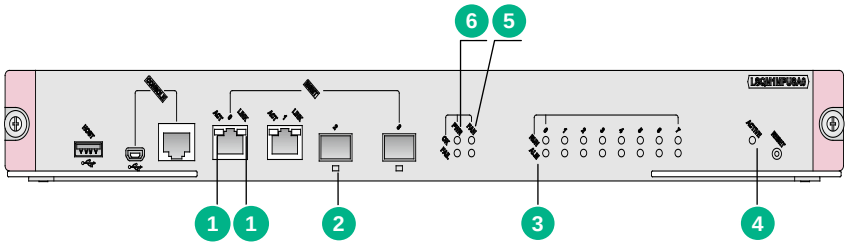
(1) Copper management Ethernet port LEDs	(2) Fiber management Ethernet port LED
(3) Active/standby state LED	(4) Card status LEDs
(5) Power module status LED	(6) Fan tray status LED (FAN)

Figure3-1 LSQM3SUPA0 MPU LEDs



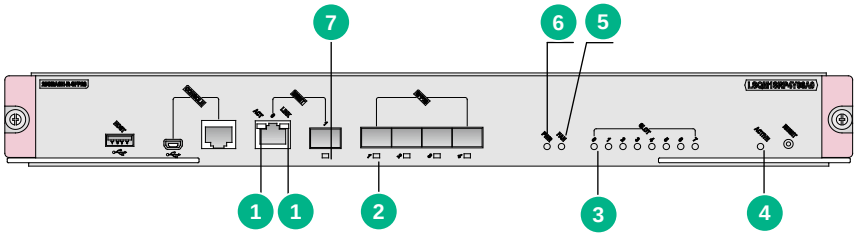
(1) Fiber management Ethernet port LED	(2) Copper management Ethernet port LED
(3) Active/standby state LED	(4) Card status LEDs
(5) Power module status LED	(6) Fan tray status LED (FAN)

Figure3-2 LSQM1MPUSA0 MPU LEDs



(1) Copper management Ethernet port LEDs	(2) Fiber management Ethernet port LED
(3) Card status LEDs	(4) Active/standby state LED
(5) Fan tray status LEDs	(6) Power module status LEDs

Figure3-3 LSQM1SRP4Y06A0 MPU LEDs



(1) Copper management Ethernet port LEDs	(2) SFP28 port LED

(1) Copper management Ethernet port LEDs	(2) SFP28 port LED
(3) Card status LEDs	(4) Active/standby state LED
(5) Fan tray status LED	(6) Power module status LED
(7) Fiber management Ethernet port LED	

Management Ethernet port LEDs

Fiber management Ethernet port LED

The MPUs provide a LED for each fiber management Ethernet port to indicate its link status and data forwarding status.

Table3-2 Fiber management Ethernet port LED description

LED status	Description
Flashing green	A link is present, and the port is receiving or sending data.
Steady green	A link is present.
Off	No link is present.

Copper management Ethernet port LEDs

The MPUs provide a pair of LEDs (LINK and ACT) for each copper management Ethernet port to indicate its link status and data forwarding status.

Table3-3 Copper management Ethernet port LED description

LINK LED status	ACT LED status	Description
On	Flashing	A link is present, and the port is receiving or sending data.
On	Off	A link is present.
Off	Off	No link is present.

Power module status LEDs

On the MPUs available for the device, two types of power module status LEDs exist.

- A pair of power module status LEDs (PWR OK and FAIL). See Table3-4 for the LED description.
- A single power module status LED (PWR). See Table3-5 for the LED description.

Table3-4 Description for the power module status LEDs

PWR OK LED status	PWR FAIL LED status	Description
On	Off	All power modules are operating correctly.
Off	On	A power module is not outputting power because one of the following conditions exists: • The power module is faulty or switched off. • The power cord is disconnected. • The power source is not supplying power.
Off	Off	• No power modules are installed in the chassis. • No power modules are outputting power because one of the

PWR OK LED status	PWR FAIL LED status	Description
		following conditions exists: ○ The power modules are faulty or switched off. ○ The power cords are disconnected. ○ The power source is not supplying power.

Table3-5 Description for the power module status LED

PWR LED status (OK/FAIL)	Description
Steady green	All power modules are operating correctly.
Steady red	A power module is not outputting power because one of the following conditions exists: • The power module is faulty or switched off. • The power cord is disconnected. • The power source is not supplying power.
Off	• No power modules are installed in the chassis. • No power modules are outputting power because one of the following conditions exists: ○ The power modules are faulty or switched off. ○ The power cords are disconnected. ○ The power source is not supplying power.

Fan tray status LEDs

On the MPUs available for the device, two types of fan tray status LEDs exist.

- A pair of fan tray status LEDs (FAN OK and FAIL). See Table3-6 for the LED description.
- A single fan tray status LED (FAN OK/FAIL). See Table3-7 for the LED description.

Table3-6 Description for the fan tray status LEDs

FAN OK LED status	FAN FAIL LED status	Description
On	Off	The fan tray is operating correctly.
Off	On	A fan problem has occurred or the fan tray is not in position.
Off	Off	The switch is not powered on.

Table3-7 Description for the fan tray status LED

FAN LED status (OK/FAIL)	Description
Steady green	The fan tray is operating correctly.
Steady red	A fan problem has occurred or the fan tray is not in position.
Off	The switch is not powered on.

Card status LEDs

On the MPUs available for the device, two types of card status LEDs exist.

- A single card status LED (SLOT RUN/ALM). See Table3-8 for the LED description.
- A pair of card status LEDs (RUN and ALM). See Table3-9 for the LED description.

Table3-8 Description for the card status LED

SLOT LED status (RUN/ALM)	Description
Flashing green	The card is operating correctly.
Flashing green (4 Hz)	The card is loading software. If the LED flashes continuously, the software versions of the switch and the card do not match.
Steady red	The card is starting up or faulty.
Flashing red	The temperature of the card has exceeded the upper warning threshold or has dropped below the lower warning threshold.
Off	No card is present.

Table3-9 Description for the card status LEDs

RUN LED status	ALM LED status	Description
Flashing (0.5 Hz)	Off	The card is operating correctly.
Fast flashing (4 Hz)	On	The card is loading software. If the LED flashes continuously, the software versions of the switch and the card do not match.
Flashing (0.5 Hz)	Slow flashing (0.25 Hz)	The temperature of the card has exceeded the upper warning threshold or has dropped below the lower warning threshold.
On	On	The card is starting up or faulty.
Off	Off	No card is present.

NOTE:

The ALM LED lights for a period of time at the initial phase of the system startup.

Active/standby state LED

The MPUs that support active/standby switchover provide an ACTIVE LED to indicate the active or standby state.

Table3-10 MPU active/standby state LED description

ACTIVE LED status	Description
On	The MPU is in active state.
Off	• The MPU is in standby state. • The MPU is faulty. Observe also the status LED for the MPU to determine whether the MPU is faulty.

SFP28 port LEDs

The MPUs provide a SFP28 port LED to indicate the link status and data receiving/forwarding status of the port.

Table3-11 SFP28 port LED description

LED status	Description
Flashing	The port is receiving or sending data.
On	A link is present.
Off	No link is present.

Service module LEDs

RJ-45 Ethernet port LEDs

The service modules provide a LED for each RJ-45 Ethernet port to indicate the link status and data receiving/forwarding status of the port.

Table3-12 RJ-45 Ethernet port LED description

LED status	Description
Flashing	The port is receiving or sending data.
On	A link is present.
Off	No link is present.

Combo interface LEDs

A combo interface contains an SFP port and an RJ-45 Ethernet port. Only one port of a combo interface is active at a time. By default, the port with the smaller number is active.

The service modules provide a LED for each combo interface to indicate the link status and data receiving/forwarding status of the interface.

Table3-13 Combo interface LED description

LED status	Description
Flashing	The interface is receiving or sending data.
On	A link is present.
Off	No link is present.

NOTE:

To use the inactive port of a combo interface, execute the **undo shutdown** command to activate the port. The other port of the combo interface is then automatically shut down and becomes inactive.

SFP port LEDs

The service modules provide a LED for each SFP port LED to indicate the link status and data receiving/forwarding status of the port.

Table3-14 SFP port LED description

LED status	Description
Flashing	The port is receiving or sending data.
On	A link is present.
Off	No link is present.

SFP+ port LEDs

The service modules provide a LED for each SFP+ port LED to indicate the link status and data receiving/forwarding status of the port.

Table3-15 SFP+ port LED description

Status	Description
Flashing green	The port is receiving or sending data at 10 Gbps.
Flashing yellow	The port is receiving or sending data at 1000 Mbps.
On	A link is present.
Off	No link is present.

QSFP+ port LEDs

The service modules provide a LED for each QSFP+ port to indicate the link status and data receiving/forwarding status of the port.

Table3-16 QSFP+ port LED description

Status	Description
Flashing	The port is receiving or sending data.
On	A link is present.
Off	No link is present.

NOTE:

The color of the QSFP+ port LED indicates support of the port for 100-GE/40-GE switchover as follows:

- **Yellow**—The port supports 100-GE/40-GE switchover.
- **Green**—The port does not support 100-GE/40-GE switchover.

QSFP28 port LEDs

The service modules provide a LED for each QSFP28 port to indicate the link status and data receiving/forwarding status of the port.

Table3-17 QSFP28 port LED description

LED status	Description
Flashing	The port is receiving or sending data.
On	A link is present.
Off	No link is present.

NOTE:

The color of the QSFP28 port LED indicates the port speed as follows:

- **Green**—100 Gbps.
- **Yellow**—Less than 100 Gbps.

EPON port LEDs

The service modules provide a LED for each EPON port to indicate the link status and data receiving/forwarding status of the port.

Table3-18 EPON port LED description

LED status	Description
On	The connected ONU has been successfully registered.
Off	The connected ONU is not registered, or no ONU is connected.

Power module LEDs

The switch supports many power module models. Each power module provides LEDs to indicate its operating status. The LEDs vary by power module model.

PSR320-A

A PSR320-A power module provides a status LED to indicate its operating status.

Table3-19 PSR320-A power module LED description

LED	Status	Description
Status LED	Green	Normal operation

LED	Status	Description
	Red	Abnormal operation. Possible reasons include: • A power module alarm (such as input undervoltage, output short-circuit, output overcurrent, output overvoltage, or overtemperature) has occurred and the power module has entered protection state. • A power module fan failure has occurred.
	Off	Abnormal power input. Possible reasons include: • The power module is faulty. • The power cord is disconnected. • The external power supply system is not available. The power module is switched off.

PSR650-A/PSR650-D/PSR1200-A/PSR1200-D

The PSR650-A, PSR650-D, PSR1200-A, and PSR1200-D power modules each provide a status LED to indicate their operating status.

Table3-20 PSR650-A/PSR650-D/PSR1200-A/PSR1200-D power module LEDs description

LED	Status	Description
Status LED	Green	Normal operation
	Red	Abnormal operation. Possible reasons include: • A power module alarm (such as input undervoltage, output short-circuit, output overcurrent, output overvoltage, or overtemperature) has occurred and the power module has entered protection state. • A power module fan failure has occurred.
	Off	Abnormal power input. Possible reasons include: • The power module is faulty. • The power cord is disconnected. • The external power supply system is not available. The power module is switched off.

PSR650C-12A/PSR650C-12D/PSR1400-A/PSR1400-12A1-F/PSR2500-12AHD/PSR2500-12D

The PSR650C-12A, PSR650C-12D, PSR1400-A, PSR1400-12A1-F, PSR2500-12AHD, and PSR2500-12D power modules each provide three LEDs INPUT, OUTPUT, and FAN to indicate their operating status.

Table3-21 PSR650C-12A/PSR650C-12D/PSR1400-A/PSR1400-12A1-F/PSR2500-12AHD/PSR2500-12D power module LEDs description

LED	Status	Description
INPUT	Green	Normal power input
	Red	Abnormal power input. The input voltage is out of the rated voltage range (input undervoltage or overvoltage).
	Off	• The power module is faulty.

LED	Status	Description

		• No power input. Possible reasons include:
		  ○ The power cord is disconnected.
		  ○ The external power supply system is not available.

OUTPUT	Green	Normal power output
	Red	Abnormal power output. Possible reasons include: • A power module alarm (such as input undervoltage, output short-circuit, output overcurrent, output overvoltage, overtemperature, or fan failure) has occurred and the power module has entered protection state. • The power module is switched off.

	Off	• The power module is faulty.
		• No power input. Possible reasons include:
		  ○ The power cord is disconnected.
		  ○ The external power supply system is not available.

FAN	Green	Normal fan operation
	Red	Abnormal fan operation. Possible reasons include: • A power module fan failure has occurred. • The power module is switched off.

	Off	• The power module is faulty.
		• The power module does not have power input. Possible reasons include:
		  ○ The power cord is disconnected.
		  ○ The external power supply system is not available.

PSR1400-D

A PSR1400-D power module provides four LEDs INPUT, OUTPUT, FAN, and PoE to indicate its operating status.

Table3-22 PSR1400-D power module LED description

LED	Status	Description
INPUT	Green	The power is being input correctly, and the system power output switch is turned on.
	Red	A power input problem has occurred because the input voltage is out of the rated voltage range.
	Off	One of the following conditions might exist: • The power module is faulty. • The power cord is disconnected. • The power source is not supplying power. • The system power output switch is turned off.
OUTPUT	Green	The power is being output correctly.
	Red	A power output problem has occurred because the power module generates an alarm and enters the protection state due to output short-circuit, output overcurrent, output overvoltage, or overtemperature.
	Off	One of the following conditions might exist: • The power module is faulty. • The power cord is disconnected.

LED	Status	Description
		• The power source is not supplying power. • The system power output switch is turned off.
FAN	Green	The fans are operating correctly.
	Red	The fans are operating incorrectly because a fan failure has occurred.
	Off	One of the following conditions might exist: • The power module is faulty. • The power cord is disconnected. • The power source is not supplying power. • The system power output switch is turned off.
PoE	Green	The PoE power is being output correctly.
	Red	A PoE power output problem has occurred because the PoE output voltage is out of the rated voltage range.
	Off	No PoE power is being output because one of the following conditions might exist: • The power module is faulty. • The power cord is disconnected. • The power source is not supplying power. • The PoE power output switch is turned off.

PSR1400-12D1

A PSR1400-12D1 power module provides three LEDs INPUT, OUTPUT, and FAN to indicate its operating status.

Table3-23 PSR1400-12D1 power module LEDs description

LED	Status	Description
INPUT	Green	Normal power input.
	Red	Abnormal power input. The input voltage is out of the rated voltage range.

	Off	• The power module is faulty.
		• No power input. Possible reasons include:
		  ○ The power cord is disconnected.
		  ○ The external power supply system is not available.
		• The system power output switch is turned off.

OUTPUT	Green	Normal power output
	Red	Abnormal power output. A power module alarm (such as output short-circuit, output overcurrent, output overvoltage, or overtemperature) has occurred and the power module has entered protection state.

	Off	• The power module is faulty.
		• No power input. Possible reasons include:
		  ○ The power cord is disconnected.
		  ○ The external power supply system is not available.
		• The system power output switch is turned off.

FAN	Green	Normal fan operation

LED	Status	Description
	Red	Abnormal fan operation. A power module fan failure has occurred.

	Off	• The power module is faulty.
		• The power module does have power input. Possible reasons include:
		  ○ The power cord is disconnected.
		  ○ The external power supply system is not available.
		• The system power output switch is turned off.

PSR2800-ACV/PSR2800-A1-F

The PSR2800-ACV and PSR2800-A1-F power modules each provide five LEDs INPUT, OUTPUT, FAN, PoE INPUT, and PoE OUTPUT to indicate the operating status.

Table3-24 PSR2800-ACV/PSR2800-A1-F power module LED description

LED	Status	Description
INPUT	Green	Normal power input.
	Red	Abnormal power input. The input voltage is out of the rated voltage range.

	Off	• The power module is faulty.
		• No power input. Possible reasons include:
		  ○ The system input power cord is disconnected.
		  ○ The external power supply system is not available.

OUTPUT	Green	Normal power output
	Red	Abnormal power output. Possible reasons include: • A power module alarm (such as input undervoltage, output short-circuit, output overcurrent, output overvoltage, or overtemperature) has occurred and the power module has entered protection state. • The system power switch is turned off.

	Off	• The power module is faulty.
		• No power input. Possible reasons include:
		  ○ The system input power cord is disconnected.
		  ○ The external power supply system is not available.

FAN	Green	Normal fan operation
	Red	Abnormal fan operation. Possible reasons include: • A power module fan failure has occurred. • The system power switch is turned off.

	Off	• The power module is faulty.
		• The power module does have power input. Possible reasons include:
		  ○ The system input power cord is disconnected.
		  ○ The external power supply system is not available.

PoE INPUT	Green	Normal PoE power input

LED	Status	Description
	Red	Abnormal PoE power input. The PoE input voltage is out of the rated voltage range.
	Off	No PoE power input. Possible reasons include: • The power module is faulty. • The PoE input power cord is disconnected. • The external power supply system is not available.
PoE OUTPUT	Green	Normal PoE power output
	Red	Abnormal PoE power output. Possible reasons include: • The PoE output voltage is out of the rated voltage range. • The PoE power switch is turned off.
	Off	No PoE power output. Possible reasons include: • The power module is faulty. • The PoE input power cord is disconnected. • The external power supply system is not available.

PSR6000-ACV

The PSR6000-ACV power module provides LEDs SYS IN, SYS OUT, SYS FAN, PoE IN1, PoE IN2, PoE IN3, PoE OUT, and PoE FAN to indicate its operating status.

Table3-25 PSR6000-ACV power module LED description

LED	Status	Description
SYS IN	Green	Normal system power input
	Red	Abnormal system power input. The system power input voltage is out of the rated voltage range.

	Off	• The power module is faulty.
		• No system power input. Possible reasons include:
		  ○ The system input power cord is disconnected.
		  ○ The external power supply system is not available.

SYS OUT	Green	Normal system power output
	Red	Abnormal system power output. Possible reasons include: • A power module alarm (such as output short-circuit, output overcurrent, output overvoltage, or overtemperature) has occurred and the power module has entered protection state. • The SYS power switch is turned off.

	Off	• The power module is faulty.
		• No system power input. Possible reasons include:
		  ○ The system input power cord is disconnected.
		  ○ The external power supply system is not available.

SYS FAN	Green	Normal system fan operation.
	Red	Abnormal system fan operation. Possible reasons include: • A system fan failure has occurred. • The SYS power switch is turned off.
	Off	• The power module is faulty. • No system power input. Possible reasons include:

LED	Status	Description
		○ The system input power cord is disconnected. ○ The external power supply system is not available.
PoE IN1	Green	Normal PoE1 power input.
	Red	Abnormal PoE1 power input. The PoE1 power input voltage is out of the rated voltage range.
	Off	No PoE1 power input. Possible reasons include: • The power module is faulty. • The PoE1 input power cord is disconnected. • The external power supply system is not available.
PoE IN2	Green	Normal PoE2 power input.
	Red	Abnormal PoE2 power input. The PoE2 power input voltage is out of the rated voltage range.
	Off	No PoE2 power input. Possible reasons include: • The power module is faulty. • The PoE2 input power cord is disconnected. • The external power supply system is not available.
PoE IN3	Green	Normal PoE3 power input.
	Red	Abnormal PoE3 power input. The PoE3 power input voltage is out of the rated voltage range.
	Off	No PoE3 power input. Possible reasons include: • The power module is faulty. • The PoE3 input power cord is disconnected. • The external power supply system is not available.
PoE OUT	Green	Normal PoE power output
	Red	Abnormal PoE power output. Possible reasons include: • A power module alarm (such as output short-circuit, output overcurrent, output overvoltage, or overtemperature) has occurred and the power module has entered protection state. • The PoE power switch is turned off.
	Off	No PoE power output. Possible reasons include: • The power module is faulty. • The PoE 1, PoE 2, and PoE 3 input power cords are all disconnected. • The external power supply system is not available.
PoE FAN	Green	Normal PoE fan operation
	Red	Abnormal PoE fan operation. Possible reasons include: • A PoE fan failure has occurred. • The PoE power switch is turned off.
	Off	No PoE power input. Possible reasons include: • The power module is faulty. • The PoE 1, PoE 2, and PoE 3 input power cords are all disconnected. • The external power supply system is not available.

4 Cables

This chapter describes the cables used for connecting network ports.

Table4-1 Cable description

Cable	Port type	Application
Console cable	Console port at one end and 9-pin serial port at the other end	Enables users to perform debugging, configuration, maintenance, management, and software loading on the device.
USB console cable	USB console port at one end and USB port at the other end	
Ethernet twisted pair cable	RJ-45 Ethernet ports	Connects RJ-45 Ethernet ports to transmit data.
Optical fiber	XFP/SFP+/SFP/QSFP+/ QSFP28/EPON ports	Connects the fiber ports to transmit data.
SFP+ DAC cable (see "SFP+ DAC/SFP28 DAC cable")	SFP+ ports	Connects SFP+ ports to transmit data.
SFP28 DAC cable (see "SFP+ DAC/SFP28 DAC cable")	SFP28 ports	Connects SFP28 ports to transmit data.
QSFP+ DAC cable (see "QSFP+ DAC/QSFP28 DAC cable")	QSFP+ ports	Connects QSFP+ ports to transmit data.
QSFP28 DAC cable (see "QSFP+ DAC/QSFP28 DAC cable")	QSFP28 ports	Connects QSFP28 ports to transmit data.
QSFP+ to SFP+ DAC cable	QSFP+ port at one end, and SFP+ port at the other end	Connects a QSFP+ port to an SFP+ port.
SFP28 AOC cable	SFP28 ports	Connects SFP28 ports to transmit data.

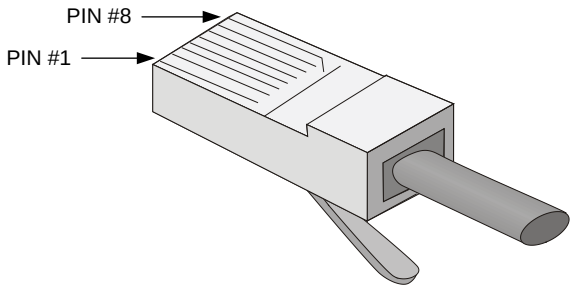
Ethernet twisted pair cable

An Ethernet twisted pair cable consists of four pairs of insulated wires twisted together. It mainly transmits analog signals and is advantageous in transmitting data over shorter distances. The maximum transmission distance is 100 m (328.08 ft).

RJ-45 connector

An Ethernet twisted pair cable connects network devices through the RJ-45 connectors at the two ends. Figure4-1 shows the pinouts of an RJ-45 connector.

Figure4-1 RJ-45 connector pinout diagram



Cable pinouts

EIA/TIA cabling specifications define two standards: 568A and 568B for cable pinouts.

- **Standard 568A**—Pin 1: white/green stripe, pin 2: green solid, pin 3: white/orange stripe, pin 4: blue solid, pin 5: white/blue stripe, pin 6: orange solid, pin 7: white/brown stripe, pin 8: brown solid.
- **Standard 568B**—Pin 1: white/orange stripe, pin 2: orange solid, pin 3: white/green stripe, pin 4: blue solid, pin 5: white/blue stripe, pin 6: green solid, pin 7: white/brown stripe, pin 8: brown solid.

Cable type

Based on performance

Ethernet cables can be classified into category 3, category 4, category 5, category 5e, category 6, and category 7 cable based on performance. In LANs, category 5, category 5e, and category 6 are commonly used.

Table4-2 Ethernet cable description

Type	Description
Category 5	Transmits data at a maximum speed of 100 Mbps, with a bandwidth of 100 MHz.
Category 5e	Transmits data at a maximum speed of 1000 Mbps, with a bandwidth of 100 MHz.
Category 6	Transmits data at a maximum speed of 10 Gbps, with a bandwidth of 250 MHz.

NOTE:

The RJ-45 Ethernet ports use category 5 or higher Ethernet twisted pair cables for connection.

Based on pinouts

Ethernet twisted pair cables can be classified into straight through and crossover cables based on their pinouts.

- **Straight-through**—The pinouts at both ends comply with standard 568B, as shown in Figure4-2.
- **Crossover**—The pinouts at one end comply with standard 568B, and those at the other end comply with standard 568A, as shown in Figure4-3.

Figure4-2 Straight-through cable

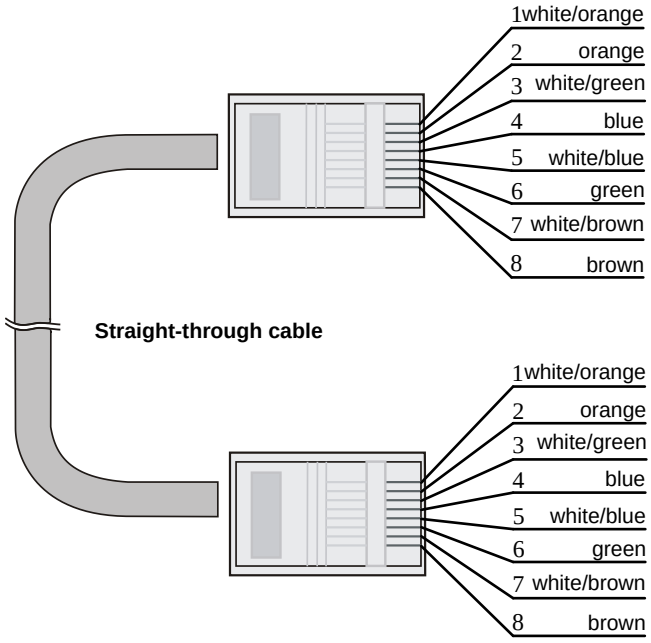
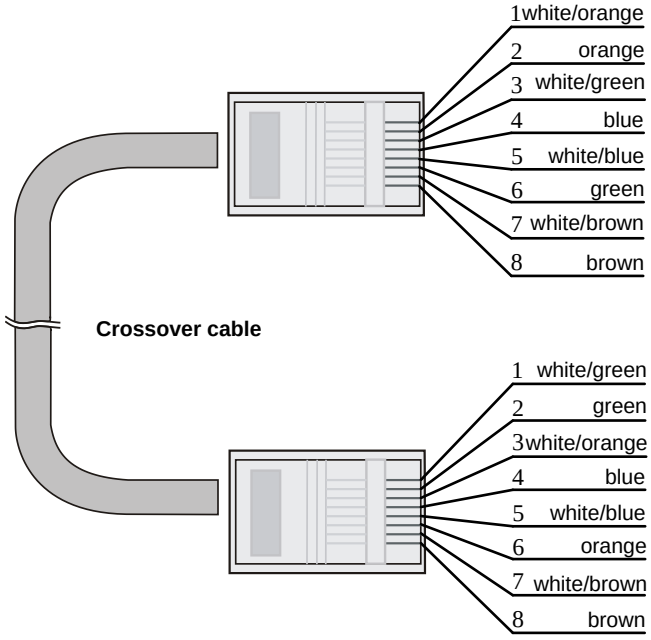


Figure4-3 Crossover cable



Pin assignments

Select an Ethernet twisted pair cable according to the RJ-45 Ethernet port type on your device. An RJ-45 Ethernet port can be MDI (for routers and PCs) or MDIX (for switches). For the pinouts of RJ-45 Ethernet ports, see Table4-3 and Table4-4.

Table4-3 RJ-45 MDI port pinouts

Pin	10BASE-T/100BASE-TX		1000BASE-T	
	Signal	Function	Signal	Function
1	Tx+	Send data	BIDA+	Bi-directional data cable A+
2	Tx-	Send data	BIDA-	Bi-directional data cable A-
3	Rx+	Receive data	BIDB+	Bi-directional data cable B+
4	Reserved	—	BIDC+	Bi-directional data cable C+
5	Reserved	—	BIDC-	Bi-directional data cable C
6	Rx-	Receive data	BIDB-	Bi-directional data cable B-
7	Reserved	—	BIDD+	Bi-directional data cable D+
8	Reserved	—	BIDD-	Bi-directional data cable D-

Table4-4 RJ-45 MDI-X port pinouts

Pin	10BASE-T/100BASE-TX		1000BASE-T	
	Signal	Function	Signal	Function
1	Rx+	Receive data	BIDB+	Bi-directional data cable B+
2	Rx-	Receive data	BIDB-	Bi-directional data cable B-
3	Tx+	Send data	BIDA+	Bi-directional data cable A+
4	Reserved	—	BIDD+	Bi-directional data cable D+
5	Reserved	—	BIDD-	Bi-directional data cable D-
6	Tx-	Send data	BIDA-	Bi-directional data cable A-
7	Reserved	—	BIDC+	Bi-directional data cable C+
8	Reserved	—	BIDC-	Bi-directional data cable C-

To ensure normal communication, the pins for sending data on one port should correspond to the pins for receiving data on the peer port. When both of the ports on the two devices are MDI or MDIX, a crossover Ethernet cable is needed. A cross-over cable connects devices of the same type. When one port is MDI and the other is MDIX, a straight-through Ethernet cable is needed. A straight-through cable connects devices of different types.

If an RJ-45 Ethernet port with MDI/MDIX autosensing enabled can automatically negotiate pin roles. The RJ-45 Ethernet ports on the switch support MDI/MDIX. By default, MDI/MDIX is enabled on a port.

Making an Ethernet twisted pair cable

1. Cut the cable to length with the crimping pliers.
2. Strip off an appropriate length of the cable sheath. The length is typically that of the RJ-45 connector.
3. Untwist the pairs so that they can lie flat, and arrange the colored wires based on the wiring specifications.

4. Cut the top of the wires even with one another. Insert the wires into the RJ-45 end and make sure the wires extend to the front of the RJ-45 end and make good contact with the metal contacts in the RJ-45 end and in the correct order.
5. Crimp the RJ-45 connector with the crimping plier until you hear a click.
6. Repeat the above steps with the other end of the cable.
7. Use a cable tester to verify the connectivity of the cable.

Optical fiber

CAUTION:

Use the same types of transceiver modules, pigtail cords, patch cords, and fiber cables. If you use single-mode optical fibers, the transceiver modules, pigtail cords, patch cords, and fiber cables must be single-mode.

Optical fiber

Optical fibers are widely used in fiber-optic communications, which are advantageous for long-distance communications.

Optical fibers can be classified into the following types:

- **Single mode fiber**—It has a core size of 10 μm, and has a lower modal dispersion. It carries only a single ray of light. It is mostly used for communication over longer distances.
- **Multi-mode fiber**—It has a core size of 50 μm or 62.5 μm or higher, and has a higher modal dispersion than single-mode optical fiber. It is mostly used for communication over shorter distances.

Table4-5 Allowed maximum tensile force and crush load

Period of force	Tensile load (N)	Crush load (N/mm)
Short period	150	500
Long term	80	100

Optical fiber cable

An optical fiber cable is a cable containing one or more optical fibers. The optical fiber elements are typically individually coated with plastic layers and contained in a protective tube. Optical fiber cables fall into single-mode and multi-mode.

Patch cord

A fiber that has connectors at both ends is called a patch cord. A patch cord connects one optical device to another for signal routing. Patch cords fall into single-mode and multi-mode patch cords.

- **Single-mode patch cord**—The jacket is yellow. It permits transmission over longer distances.
- **Multi-mode patch cord**—The jacket is orange. It permits transmission over shorter distances.

Patch cords are classified into SC, LC, and FC patch cords based on interface type. The length of a patch cord can be 0.5 m (1.64 ft), 1 m (3.28 ft), 2 m (6.56 ft), 3 m (9.84 ft), 5 m (16.40 ft), and 10 m (32.81 ft).

Pigtail cord

A pigtail cord is an optical fiber that has an optical connector on one end and a length of exposed fiber on the other. The end of the pigtail is fusion spliced to a fiber, connecting the fiber cable and transceiver.

Pigtail cords fall into single-mode (yellow) and multi-mode (orange), and can also be classified into SC, LC, and FC pigtail cords based on interface type.

Fiber connector

Fiber connectors are indispensable passive components in an optical fiber communication system. They allow the removable connection between optical channels, which makes the optical system debugging and maintenance more convenient and the transit dispatching of the system more flexible.

Figure4-4 SC connector

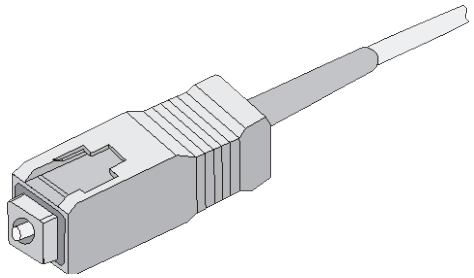
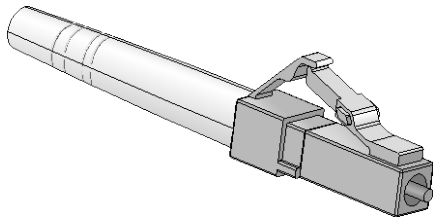


Figure4-5 LC connector

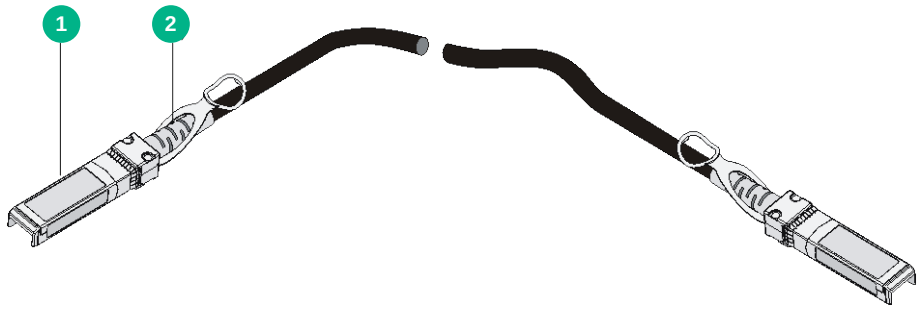


SFP+ DAC/SFP28 DAC cable

You can use SFP+ DAC cables to connect SFP+ ports. SFP+ DAC cables support the SFP+ standard and use 10-GE SFP+ Cu standard cables.

You can use SFP28 DAC cables to connect SFP28 ports. The SFP28 DAC cables are similar to SFP+ DAC cables in appearance.

Figure4-6 SFP+ DAC cable



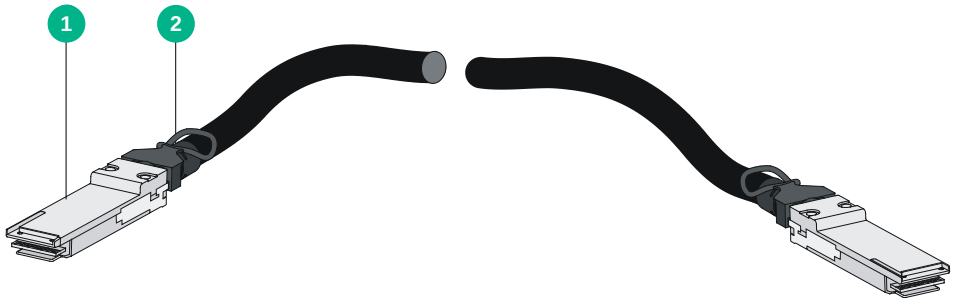
(1) Connector	(2) Pull latch

QSFP+ DAC/QSFP28 DAC cable

You can use QSFP+ DAC cables to connect QSFP+ ports.

You can use QSFP28 DAC cables to connect QSFP28 ports. The QSFP28 DAC cables are similar to QSFP+ DAC cables in appearance.

Figure4-7 QSFP+ DAC cable

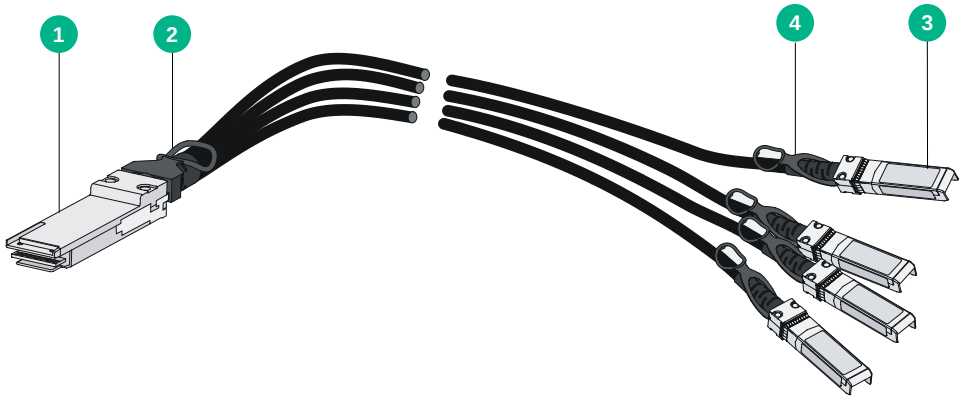


(1) Connector	(2) Pull latch

QSFP+ to SFP+ DAC cable

A QSFP+ to SFP+ DAC cable provides one QSFP+ connector at one end and four SFP+ connectors at the other end.

Figure4-8 QSFP+ to SFP+ DAC cable

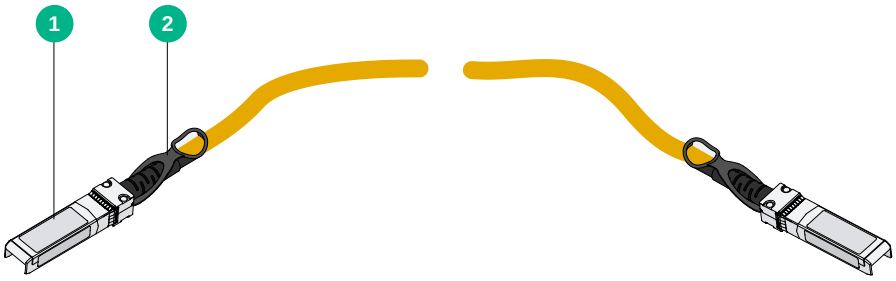


(1) QSFP+ connector	(2) QSFP+ pull latch
(3) SFP+ connector	(4) SFP+ pull latch

SFP28 AOC cable

You can use SFP28 AOC cables to connect SFP28 ports.

Figure4-9 SFP28 AOC cable



(1) Connector	(2) Pull latch