



CloudEngine 8800, 7800, 6800, and 5800 Series Switches

Hardware Description (Versions earlier than V200R020C00)

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About This Document

Intended Audience

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

Symbol Conventions

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

Symbol	Description
 DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
 NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
 NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

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.

Declaration

- This manual is only a reference for you to configure your devices. The contents in the manual, such as command line syntax, and command outputs, are based on the device conditions in the lab. The manual provides instructions for general scenarios, but do not cover all usage scenarios of all product models. The contents in the manual may be different from your actual device situations due to the differences in software versions, models, and configuration files. The manual will not list every possible difference. You should configure your devices according to actual situations.
- The specifications provided in this manual are tested in lab environment (for example, the tested device has been configured with a certain type of cards or only one protocol is run on the device). Results may differ from the listed specifications when you attempt to obtain the maximum values with multiple functions enabled on the device.
- In this document, public IP addresses may be used in feature introduction and configuration examples and are for reference only unless otherwise specified.

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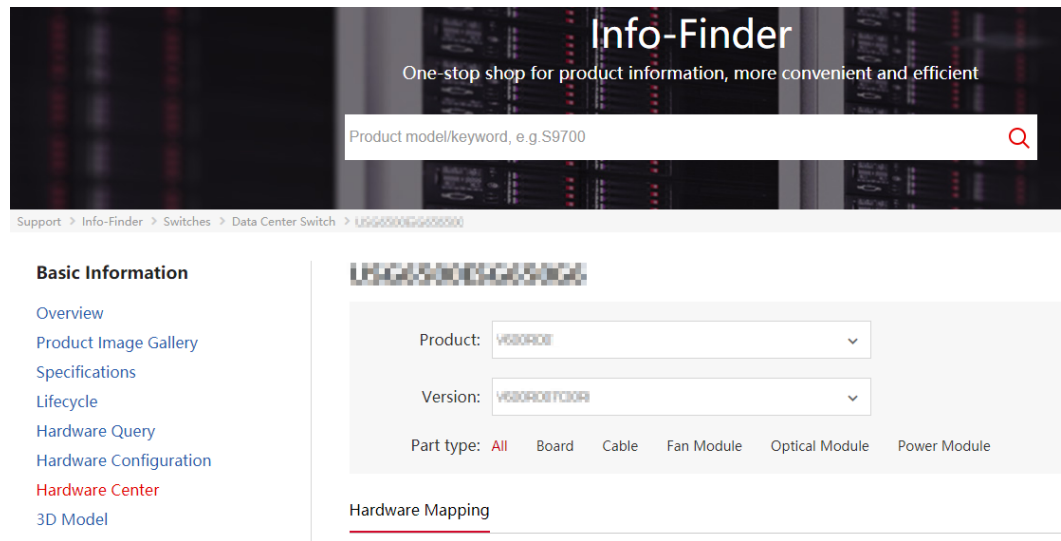
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1 Using the Info-Finder

Info-Finder is a tool platform, as shown in [Figure Info-Finder GUI](#). 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, Visio-format templates, and network element icons for you to produce design drawings and networking diagrams.
- **Hardware query:** Using this function, you can search for information by BOM code, product model, and module type to view the components including optical modules, fan modules, and optical modules supported by different device models and the detailed specifications.
- **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:** Using this function, you can query product images, product overview, and component insertion/removal videos, enabling you to quickly obtain product information in one-stop mode.

Figure 1-1 Info-Finder GUI



2 Chassis

[2.1 Naming Conventions](#)

[2.2 CE5800](#)

[2.3 CE6800](#)

[2.4 CE7800](#)

[2.5 CE8800](#)

2.1 Naming Conventions

Figure 2-1 shows the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions.

Figure 2-1 CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions

CE 6850U-48S 6Q-EI

A B C D E F

Table 2-1 describes the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions.

Table 2-1 CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions

Field	Meaning
A	CloudEngine series data center switches <ul style="list-style-type: none"> ● CE88: CE8800 series ● CE78: CE7800 series ● CE68: CE6800 series ● CE58: CE5800 series
B	Product model category: <ul style="list-style-type: none"> ● 10: basic model ● 20: standard model ● 50/51/55/56/80/81: advanced model ● 60/61/68: model with flexible cards ● 70/75: large-buffer model NOTE Among CE6800 series switches, the CE6860EI, CE6863, CE6865EI and CE6881E provide fixed 25GE ports.
C	Special function flag. This flag is not present if the product does not provide special functions. U : The product supports FC ports.
D	Number and type of downlink interfaces: <ul style="list-style-type: none"> ● T: GE/10GBase-T electrical interfaces ● S: GE/10GE SFP+ optical interfaces or 25GE SFP28 optical interfaces ● Q: 40GE quad small form-factor pluggable plus (QSFP+) optical interfaces ● xC: For a model supporting flexible service units, x stands for the number of slots and C is a slot identifier.
E	Number and types of uplink interfaces: <ul style="list-style-type: none"> ● T: GE/10GBase-T electrical interfaces ● S: GE/10GE SFP+ optical interfaces ● Q: 40GE QSFP+ optical interfaces ● CQ: 40GE/100GE QSFP28 optical interfaces NOTE This field is not present in the product name if the product has only fixed interfaces and the uplink and downlink interfaces are the same type or if the product supports flexible service units.
F	Product model type: <ul style="list-style-type: none"> ● LI: model providing basic functions ● EI: model providing enhanced functions ● HI: model providing advanced functions

2.2 CE5800

2.2.1 CE5810-24T4S-EI

Version Mapping

[Table 2-2](#) lists the mappings between the CE5810-24T4S-EI and software versions.

Table 2-2 Version mapping

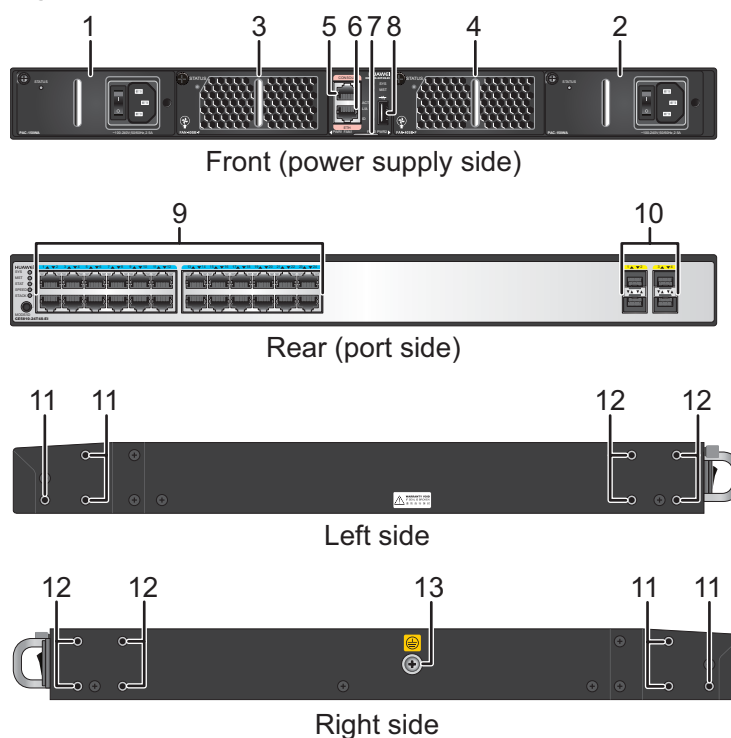
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5810	CE5810-24T4S-EI	CE5810EI	V100R002C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-2 CE5810-24T4S-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (PAC-150WA) • 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (PAC-150WA) • 350 W DC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40SB series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40SB series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Twenty-four 10/100/1000BASE-T Ethernet electrical ports	10	Four 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module • GE optical module • GE copper module (only works at 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable
11	Three port-side mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets
13	Ground screw	-	-

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).
 - When both power modules are working properly, they equally provide power for a chassis.

- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-3](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-4](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.
- When the fanless 150 W AC power module is used, the fan module with either of the airflow methods can be used.

Figure 2-3 Front-to-back airflow (air flows out from the port side)

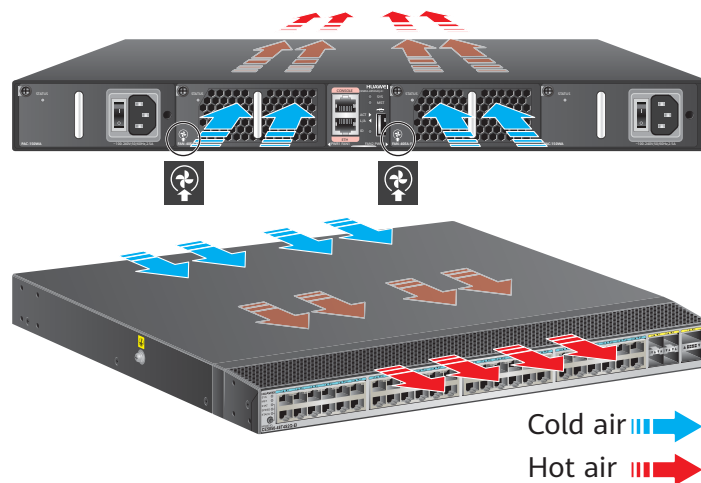
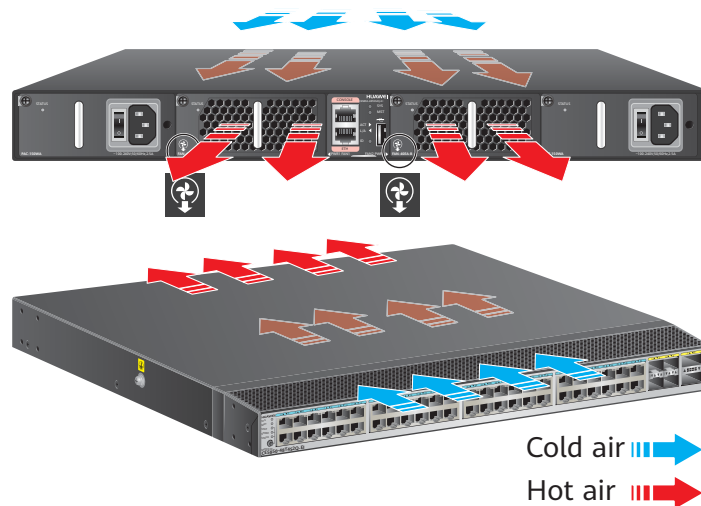


Figure 2-4 Back-to-front airflow (air flows into from the port side)



Indicators

The CE5810-24T4S-EI has no 40GE port indicators or 40GE Breakout indicators 1/2/3/4. Other indicators on the three models are the same as those on the CE5850-48T4S2Q-HI. The [CE5850-48T4S2Q-HI](#) is used as an example here to describe the indicators.

Ports

10/100/1000BASE-T Ethernet Electrical Port

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. [Table 2-3](#) describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-3 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-4](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-4 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-5](#) describes the attributes of the console port.

Table 2-5 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-6](#) describes the attributes of the ETH management port (RJ45).

Table 2-6 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-7](#) lists technical specifications of the CE5810-24T4S-EI switch.

Table 2-7 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.0 kg (17.64 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 43 dBA Front-to-back airflow: < 47 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 150 W AC power (PAC-150WA): 2.5 A (100 V AC to 240 V AC) 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	68 W
	Typical power consumption	58 W (100% throughput, 3 m Ethernet cables on 24 ports, SFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	232 BTU/hr

Item		Description
	Typical heat dissipation	198 BTU/hr (100% throughput, 3 m Ethernet cables on 24 ports, SFP+ cables on 4 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	70.3 years
	Mean time to repair (MTTR)	1.75 hours
	Availability	0.9999971525
Technical specifications	Processor	1.2 GHz, dual-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-8 provides the ordering information.

Table 2-8 Ordering information

Part Number	Part Model	Part Description
02356879	CE5810-24T4 S-EI	CE5810-24T4S-EI Switch (24-Port GE RJ45, 4-Port 10GE SFP+, Without Fan Box and Power Module)
02350EYF	CE5810-24T4 S-EI-F	CE5810-24T4S-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EYH	CE5810-24T4 S-EI-B	CE5810-24T4S-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02359082	CE5810-EI-B01	CE5810-24T4S-EI Switch (2*150W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EYN	CE5810-EI-B-B01	CE5810-24T4S-EI Switch (2*150W Power Module, 2*FAN Box, Port-side Intake)
02350BGP	CE5810-EI-B11	CE5810-24T4S-EI Bundle 11 (CE5810-24T4S-EI mainframe, 4*SFP-10G-USR, Without Fan Box and Power Module)

2.2.2 CE5810-48T4S-EI

Version Mapping

Table 2-9 lists the mappings between the CE5810-48T4S-EI and software versions.

Table 2-9 Version mapping

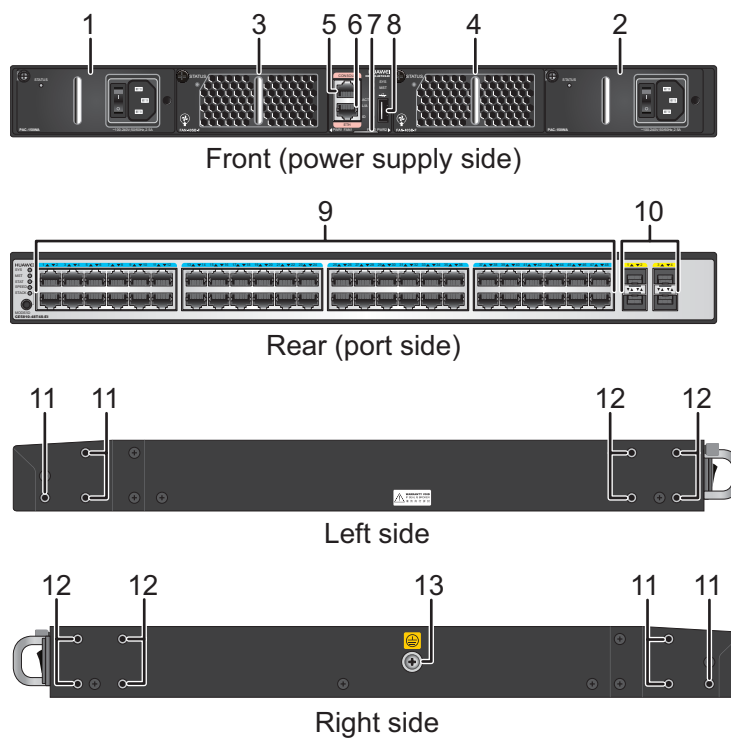
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5810	CE5810-48T4S-EI	CE5810EI	V100R002C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-5 CE5810-48T4S-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 150 W AC power module (PAC-150WA) 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 150 W AC power module (PAC-150WA) 350 W DC power module
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3	Fan slot 1 Applicable fan modules: • FAN-40SB series fan modules	4	Fan slot 2 Applicable fan modules: • FAN-40SB series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10/100/1000BASE-T Ethernet electrical ports	10	Four 10GE SFP+ Ethernet optical ports Applicable modules and cables: • 10GE optical module • GE optical module • GE copper module (only works at 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable
11	Three port-side mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets
13	Ground screw	-	-

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).
 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.
 All power modules are hot swappable.
- Fan slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ,

CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-6](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-7](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.
- When the fanless 150 W AC power module is used, the fan module with either of the airflow methods can be used.

Figure 2-6 Front-to-back airflow (air flows out from the port side)

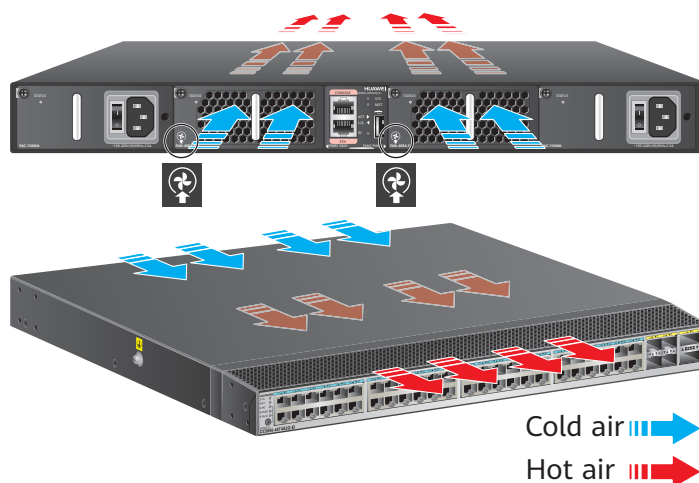
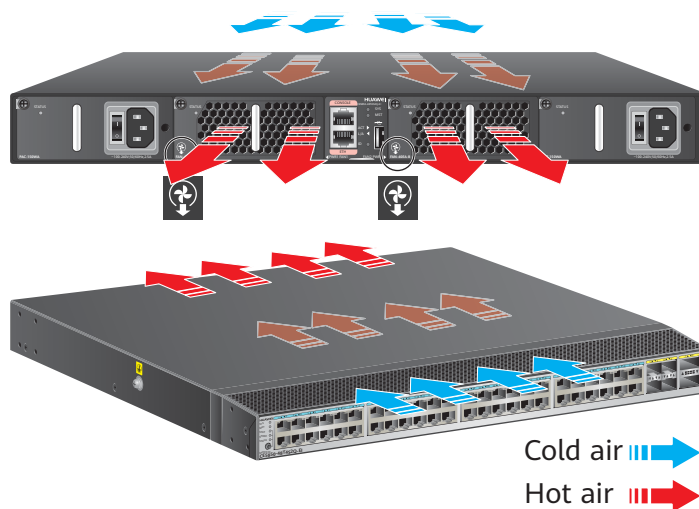


Figure 2-7 Back-to-front airflow (air flows into from the port side)



Indicators

The CE5810-48T4S-EI has no 40GE port indicators or 40GE Breakout indicators 1/2/3/4. Other indicators on the three models are the same as those on the CE5850-48T4S2Q-HI. The [CE5850-48T4S2Q-HI](#) is used as an example here to describe the indicators.

Ports

10/100/1000BASE-T Ethernet Electrical Port

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. [Table 2-10](#) describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-10 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-11](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-11 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-12](#) describes the attributes of the console port.

Table 2-12 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-13](#) describes the attributes of the ETH management port (RJ45).

Table 2-13 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-14](#) lists technical specifications of the CE5810-48T4S-EI switch.

Table 2-14 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.2 kg (18.08 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 43 dBA Front-to-back airflow: < 47 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 150 W AC power (PAC-150WA): 2.5 A (100 V AC to 240 V AC) 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	92 W
	Typical power consumption	80 W (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	314 BTU/hr

Item		Description
	Typical heat dissipation	273 BTU/hr (100% throughput, 3 m network cables on 48 ports and SFP+ cables on 4 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	60.48 years
	Mean time to repair (MTTR)	1.76 hours
	Availability	0.9999966753
Technical specifications	Processor	1.2 GHz, dual-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-15 provides the ordering information.

Table 2-15 Ordering information

Part Number	Part Model	Part Description
02356878	CE5810-48T4 S-EI	CE5810-48T4S-EI Switch (48-Port GE RJ45, 4-Port 10GE SFP+, Without Fan Box and Power Module)
02350EYW	CE5810-48T4 S-EI-F	CE5810-48T4S-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EYX	CE5810-48T4 S-EI-B	CE5810-48T4S-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02359081	CE5810-EI-B00	CE5810-48T4S-EI Switch (2*150W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EYP	CE5810-EI-B-B00	CE5810-48T4S-EI Switch (2*150W Power Module, 2*FAN Box, Port-side Intake)
02350BGQ	CE5810-EI-B10	CE5810-48T4S-EI Bundle 10 (CE5810-48T4S-EI mainframe, 8*SFP-10G-USR, Without Fan Box and Power Module)

2.2.3 CE5850-48T4S2Q-EI

Version Mapping

Table 2-16 lists the mappings between the CE5850-48T4S2Q-EI and software versions.

Table 2-16 Version mapping

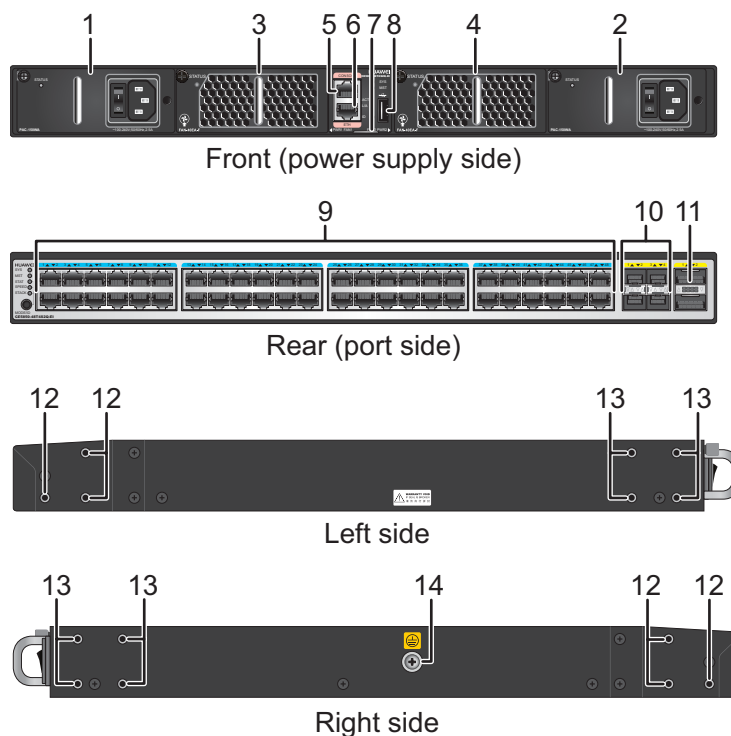
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5850	CE5850-48T4S2Q-EI	CE5850EI	V100R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-8 CE5850-48T4S2Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 150 W AC power module (PAC-150WA) 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 150 W AC power module (PAC-150WA) 350 W DC power module
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3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10/100/1000BASE-T Ethernet electrical ports	10	Four 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable
11	Two 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port cannot be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) 	12	Three port-side mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-9](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-10](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.
- When the fanless 150 W AC power module is used, the fan module with either of the airflow methods can be used.

Figure 2-9 Front-to-back airflow (air flows out from the port side)

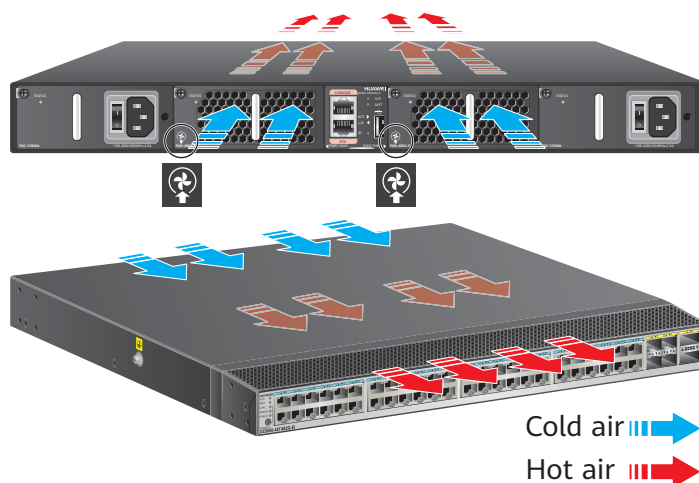
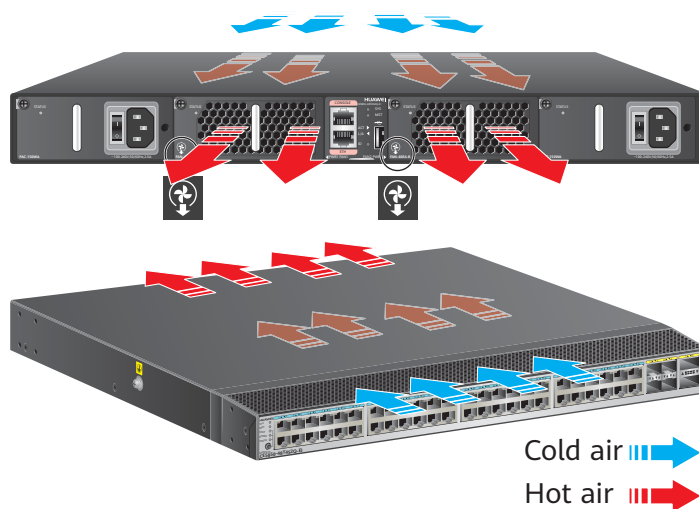


Figure 2-10 Back-to-front airflow (air flows into from the port side)



Indicators

The CE5850-48T4S2Q-EI has no 40GE Breakout indicators 1/2/3/4, and other indicators are the same as those on the CE5850-48T4S2Q-HI. The [CE5850-48T4S2Q-HI](#) is used as an example here to describe the indicators.

Ports

10/100/1000BASE-T Ethernet Electrical Port

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. [Table 2-17](#) describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-17 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-18](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-18 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

NOTE

A 5 m SFP+ high-speed cable cannot be used to connect 10GE optical ports between the CE5850EI (running a version prior to V100R005C10) and CE5855EI switches. To connect the 10GE optical ports of the two switches, use any of the following methods:

- Use a 1 m, 3 m, 7 m, or 10 m SFP+ high-speed cable.
- Use an active optical cable (AOC) or optical modules and optical fibers.
- Upgrade the system software of the CE5850EI switch to V100R005C10 or a later version.

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must

use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-19](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-19 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

 **NOTE**

A 5 m 1-to-4 QSFP+ high-speed cable cannot be used to connect a 40GE optical port (split into four 10GE ports) and 10GE optical ports between the CE5850EI (running a version prior to V100R005C10) and CE5855EI switches. To connect the 10GE and 40GE optical ports of the two switches, use any of the following methods:

- Use a 1 m or 3 m 1-to-4 QSFP+ high-speed cable.
- Use optical modules and optical fibers.
- Upgrade the system software of the CE5850EI switch to V100R005C10 or a later version.

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-20](#) describes the attributes of the console port.

Table 2-20 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a

Category 5 or higher category cable. [Table 2-21](#) describes the attributes of the ETH management port (RJ45).

Table 2-21 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-22](#) lists technical specifications of the CE5850-48T4S2Q-EI switch.

Table 2-22 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.85 kg (19.51 lb) 	
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F) 	
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)

Item		Description
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 45 dBA • Front-to-back airflow: < 45 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 150 W AC power (PAC-150WA): 2.5 A (100 V AC to 240 V AC) • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	133 W
	Typical power consumption	103 W (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	454 BTU/hr
	Typical heat dissipation	351 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	53.27 years
	Mean time to repair (MTTR)	2.0 hours
	Availability	0.9999947257
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	8 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-23 provides the ordering information.

Table 2-23 Ordering information

Part Number	Part Model	Part Description
02355272	CE5850-48T4 S2Q-EI	CE5850-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10GE SFP+, 2-Port 40GE QSFP+, Without Fan Box and Power Module)
02350EXX	CE5850-48T4 S2Q-EI-F	CE5850-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EXY	CE5850-48T4 S2Q-EI-B	CE5850-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02359104	CE5850-EI-B00	CE5850-48T4S2Q-EI Switch (2*150W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350FCK	CE5850-EI-B-B00	CE5850-48T4S2Q-EI Switch (2*150W Power Module, 2*FAN Box, Port-side Intake)

2.2.4 CE5850-48T4S2Q-HI

Version Mapping

Table 2-24 lists the mappings between the CE5850-48T4S2Q-HI and software versions.

Table 2-24 Version mapping

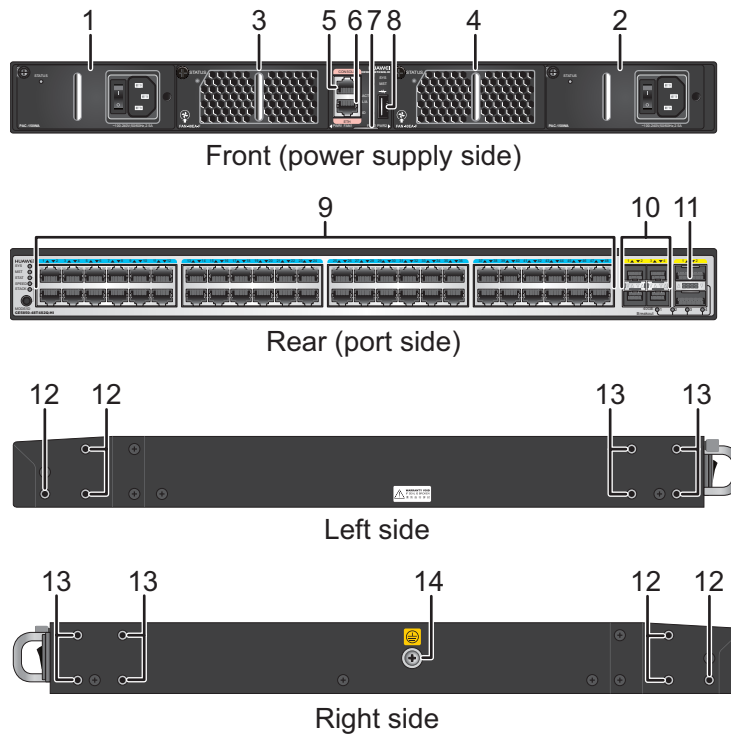
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5850	CE5850-48T4S2Q-HI	CE5850HI	V100R003C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-11 E5850-48T4S2Q-HI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (PAC-150WA) • 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (PAC-150WA) • 350 W DC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-eight 10/100/1000BASE-T Ethernet electrical ports	10	Four 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable
11	Two 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) 	12	Three port-side mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.



- Fan slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating. All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-12](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-13](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.
- When the fanless 150 W AC power module is used, the fan module with either of the airflow methods can be used.

Figure 2-12 Front-to-back airflow (air flows out from the port side)

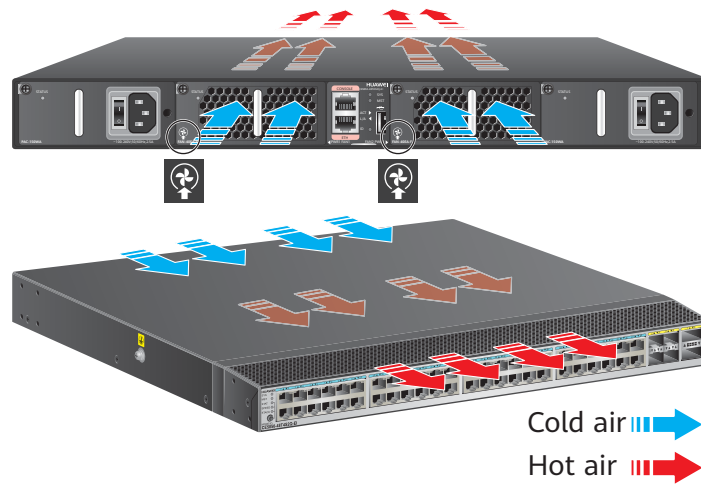
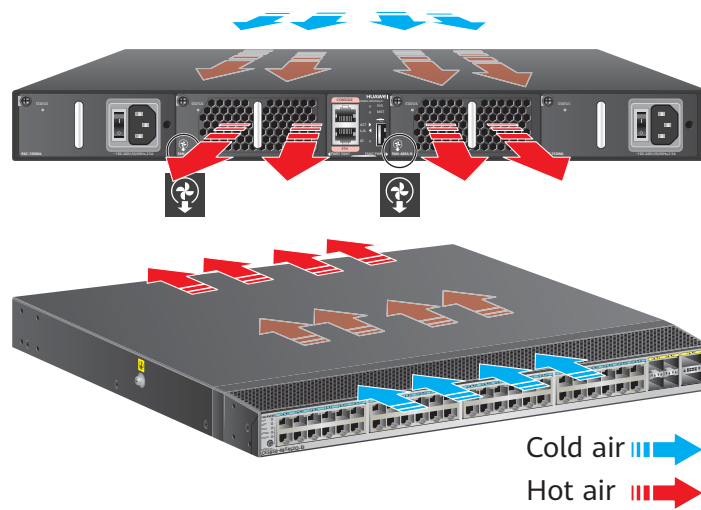


Figure 2-13 Back-to-front airflow (air flows into from the port side)



Indicators

Figure 2-14 Indicators on the CE5850-48T4S2Q-HI rear panel

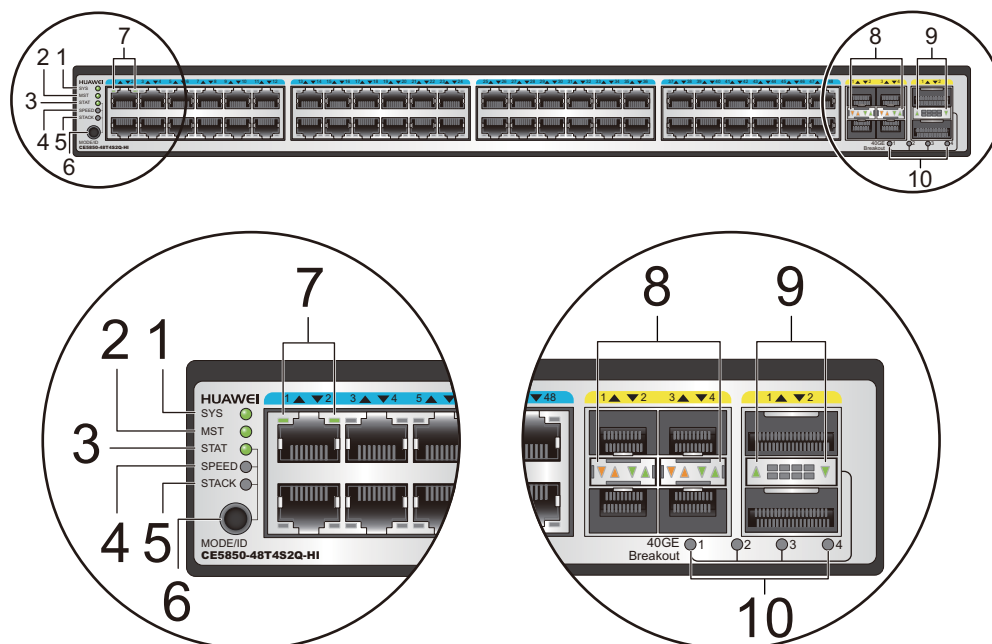


Figure 2-15 Indicators on the CE5850-48T4S2Q-HI front panel

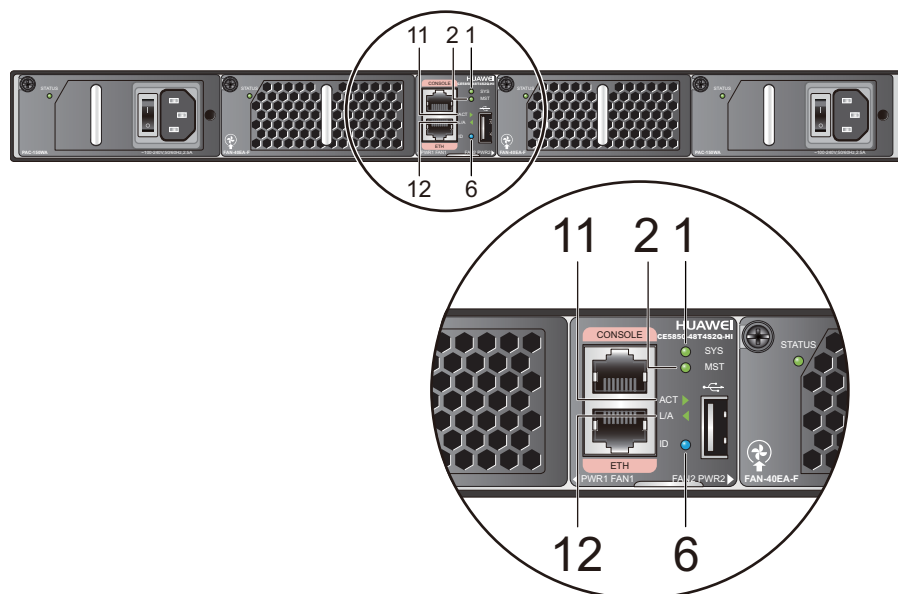


Table 2-25 Description of indicators on the switch

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MST	Stack master/slave indicator	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.
				Blinking	The switch is working in SVF mode. (Versions earlier than V100R005C10: Only the CE5810-24T4S-EI and CE5810-48T4S-EI support this indicator state. V100R005C10 and later versions: only the CE5810-24T4S-EI, CE5810-48T4S-EI, and CE5850-48T4S2Q-EI support this indicator state.)

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>	Yellow	Steady on NOTE This indicator state is not supported in V100R005C00 and later versions.	A master election error or another type of error has occurred in the stack.
3	STAT	STAT mode indicator	Green	Off	The STAT mode is not selected.
				Steady on	The STAT mode (default mode) is selected, and service port indicators show the link connection states and link activity on ports.

No.	Indicator	Name	Color	Status	Description
4	SPEED	SPEED mode indicator	Green	Off	The SPEED mode is not selected.
				Steady on	The SPEED mode is selected, and service port indicators show the speed of each port.
5	STACK	STACK mode indicator	Green	Off	The STACK mode is not selected.
				Steady on	The STACK mode is selected, and service port indicators show the stack member ID or leaf ID of the local switch. NOTE In V100R002C00 and later versions, if the indicator mode on any member switch of a stack or SVF system is changed to STACK by pressing the MODE button, all the other member switches in the stack or SVF system change the stack mode to STACK. In this case, service port indicators on the member switches show stack member IDs or leaf IDs of these switches.
6	MODE/ID	Mode switch button and ID indicator NOTE The mode switch button on the rear panel is integrated with the ID indicator. There is only an ID indicator and no mode switch button on the front panel.	Mode switch button: -	-	<ul style="list-style-type: none"> When you press the MODE button once, the SPEED indicator turns green and service port indicators show the speed of each port. When you press the MODE button a second time, the STACK indicator turns green and service port indicators show the stack member ID of the local switch. When you press the button a third time, the STAT indicator turns green (default mode) and service port indicators show the link connection states and link activity on ports. <p>If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPEED and STACK indicators are off.</p>
				ID indicator:	Off

No.	Indicator	Name	Color	Status	Description
			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.
7	-	Service port indicator (GE electrical port) NOTE The indicator on the left indicates the port at the top, and the indicator on the right indicates the port at the bottom.			The meaning of the service port indicators varies according to the current mode. For details, see Table 2-26 .

No.	Indicator	Name	Color	Status	Description
8	-	Service port indicator (10GE optical port) NOTE Each 10GE 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
9	-	Service port indicator (40GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.			The meaning of the service port indicators varies according to the current mode. For details, see Table 2-26 . When a 40GE port is configured as four 10GE ports, this indicator shows the status of a 10GE port. The sequence number of the indicated 10GE port is identified by indicators 40GE Breakout 1/2/3/4. NOTE Each 40GE port has a single-color indicator, which shows the status of the 40GE port by default. If a 40GE port is not split and is connected to four 10GE ports on a remote device using a one-to-four high-speed cable, the 40GE port cannot go Up and its indicator is off.
10	-	40GE Breakout indicators 1/2/3/4 (10GE ports converted from a 40GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.	Green	Off	Off: 40GE ports are not split into four 10GE ports.

No.	Indicator	Name	Color	Status	Description
				Steady on	<p>At least one 40GE port has been split into four 10GE ports.</p> <p>When one or more 40GE ports are configured as four 10GE ports, these indicators identify the sequence numbers of the 10GE ports. A 40GE port indicator (9 in Figure 2-14) shows the status of a 10GE port converted from the 40GE port:</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, each 40GE port indicator shows the status of the first 10GE port converted from the corresponding 40GE port. • When Breakout indicator 2 is on, each 40GE port indicator shows the status of the second 10GE port converted from the corresponding 40GE port. • When Breakout indicator 3 is on, each 40GE port indicator shows the status of the third 10GE port converted from the corresponding 40GE port. • When Breakout indicator 4 is on, each 40GE port indicator shows the status of the fourth 10GE port converted from the corresponding 40GE port. <p>The following is an example: The first 40GE port shown in Figure 2-14 is split into four 10GE ports, and the second 40GE port is not split.</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, the indicator of 40GE port 1 shows the status of the first 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2. • When Breakout indicator 2 is on, the indicator of 40GE port 1 shows the status of the second 10GE port converted from 40GE

No.	Indicator	Name	Color	Status	Description
					port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2.
11	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
12	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

Table 2-26 Service port indicators in various modes

Display Mode	Port	Color	Status	Description
STAT	GE electrical port	Green	Off	The port is not connected or has been shut down.
			Steady on	A link is established on the port.
			Blinking	The port is sending or receiving data.
	10GE optical port	Green	Off	The port is not connected or has been shut down.
			Steady on	A link is established on the port.
		Yellow	Off	The port is not sending or receiving data.

Display Mode	Port	Color	Status	Description
			Blinking	The port is sending or receiving data.
SPEED	GE electrical port	Green	Off	The port is not connected or has been shut down.
			Steady on	The port speed is 10/100 Mbit/s.
			Blinking	The port speed is 1000 Mbit/s.
	10GE optical port	Green	Off	The port is not connected or has been shut down.
			Steady on	The port speed is 1000 Mbit/s.
			Blinking	The port speed is 10 Gbit/s.
	40GE optical port NOTE The 40GE optical ports of the CE5850-48T4S2Q-EI cannot be split into four 10GE ports, so this indicator can only be off or blinking.	Green	Off	The port is not connected or has been shut down.
			Steady on	The 40GE port has been split into four 10GE ports.
			Blinking	The port is working as a 40GE port.
STACK	NOTE This row describes the states and meanings of port indicators on a switch working in stack mode.	Green	Off	Port indicators do not show the stack member ID of the switch.
			Steady on	If the indicator of a port is steady on, the port number is the stack member ID of the switch. NOTE In STACK mode, a 10GE optical port has only its LINK indicator on (green).
	NOTE This row describes the states and meanings of port indicators on a switch working in super virtual fabric (SVF) mode.	Green	Off	Port indicators do not show the leaf ID of the switch.

Display Mode	Port	Color	Status	Description
			Steady on	<p>If the indicator of a port is steady on, the port number indicates the leaf ID of the switch.</p> <p>NOTE The leaf ID range supported by a switch depends on the number of downlink ports on the switch:</p> <ul style="list-style-type: none"> On the CE5810-24T4S-EI, downlink ports 1 to 24 indicate leaf IDs 101 to 124. If the leaf ID of the switch is larger than 124, port indicators retain the original states before the switch changes to the SVF state and do not show the leaf ID. On the CE5810-48T4S-EI and CE5850-48T4S2Q-EI, downlink ports 1 to 48 indicate leaf IDs 101 to 148. If the leaf ID of the switch is larger than 148, port indicators retain the original states before the switch changes to the SVF state and do not show the leaf ID.

Ports

10/100/1000BASE-T Ethernet Electrical Port

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. [Table 2-27](#) describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-27 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-28](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-28 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-29](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-29 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-30](#) describes the attributes of the console port.

Table 2-30 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-31](#) describes the attributes of the ETH management port (RJ45).

Table 2-31 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-32](#) lists technical specifications of the CE5850-48T4S2Q-HI switch.

Table 2-32 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.8 kg (19.40 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 45 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 150 W AC power (PAC-150WA): 2.5 A (100 V AC to 240 V AC) • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	131 W

Item		Description
	Typical power consumption	109 W (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	447 BTU/hr
	Typical heat dissipation	372 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE5850HI chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	58.96 years
	Mean time to repair (MTTR)	2.0 hours
	Availability	0.9999961280

Item		Description
Technical specifications	Processor	1.2 GHz, dual-core.
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-33](#) provides the ordering information.

Table 2-33 Ordering information

Part Number	Part Model	Part Description
02358051	CE5850-48T4 S2Q-HI	CE5850-48T4S2Q-HI Switch (48-Port GE RJ45, 4-Port 10GE SFP+, 2-Port 40GE QSFP+, Without Fan Box and Power Module)
02350EYC	CE5850-48T4 S2Q-HI-F	CE5850-48T4S2Q-HI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EYD	CE5850-48T4 S2Q-HI-B	CE5850-48T4S2Q-HI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02359246	CE5850-HI-B00	CE5850-48T4S2Q-HI Switch (2*150W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350FCL	CE5850-HI-B-B00	CE5850-48T4S2Q-HI Switch (2*150W Power Module, 2*FAN Box, Port-side Intake)

2.2.5 CE5855-48T4S2Q-EI

Version Mapping

Table 2-34 lists the mappings between the CE5855-48T4S2Q-EI and software versions.

Table 2-34 Version mapping

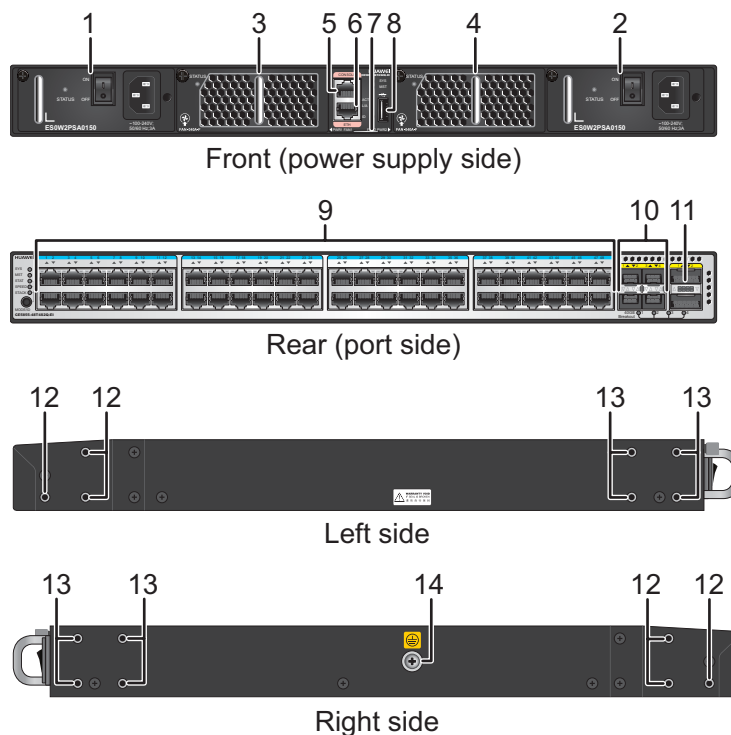
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5855	CE5855-48T4S2Q-EI	CE5855EI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-16 CE5855-48T4S2Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (ES0W2PSA0150) • 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (ES0W2PSA0150) • 350 W DC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-040A series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-040A series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10/100/1000BASE-T Ethernet electrical ports	10	Four 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable

1 1	Two 40GE QSFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) NOTE A 40GE QSFP+ port can be split into four 10GE ports.	1 2	Three port-side mounting holes for mounting brackets
1 3	Four power-supply-side mounting holes for mounting brackets	1 4	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

All fan modules are hot swappable.



Airflow

The cooling systems of the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the



power modules and fan modules required on the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

 **NOTE**

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-17](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-18](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.
- When the fanless 150 W AC power module is used, the fan module with either of the airflow methods can be used.

Figure 2-17 Front-to-back airflow (air flows out from the port side)

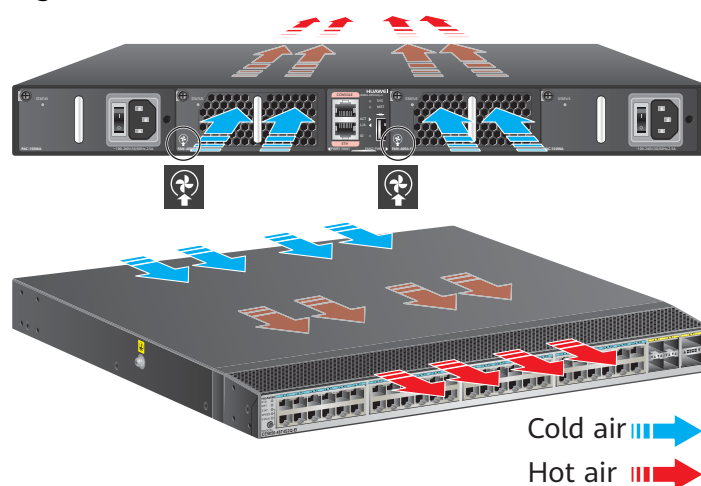
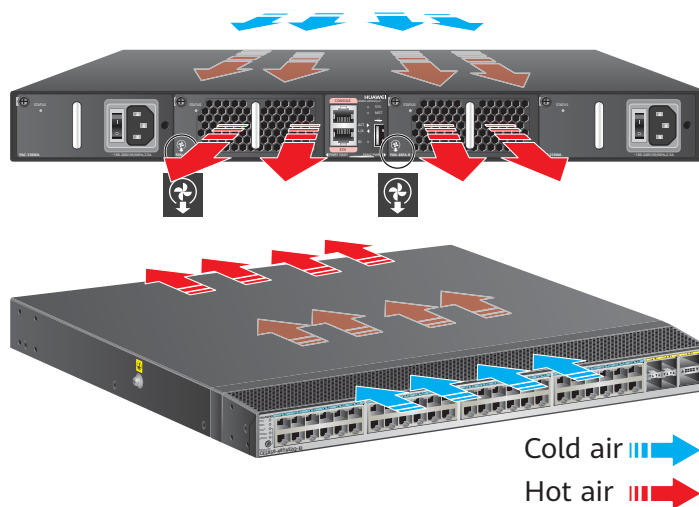


Figure 2-18 Back-to-front airflow (air flows into from the port side)



Indicators

Indicators on the CE5855-48T4S2Q-EI are the same as those on the CE5850-48T4S2Q-HI. The **CE5850-48T4S2Q-HI** is used as an example here to describe the indicators.

Ports

10/100/1000BASE-T Ethernet Electrical Port

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. **Table 2-35** describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-35 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-36](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-36 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

 **NOTE**

A 5 m SFP+ high-speed cable cannot be used to connect 10GE optical ports between the CE5855EI and CE5850EI (running a version prior to V100R005C10) switches. To connect the 10GE optical ports of the two switches, use any of the following methods:

- Use a 1 m, 3 m, 7 m, or 10 m SFP+ high-speed cable.
- Use an active optical cable (AOC) or optical modules and optical fibers.
- Upgrade the system software of the CE5850EI switch to V100R005C10 or a later version.

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-37](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-37 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

 **NOTE**

A 5 m 1-to-4 QSFP+ high-speed cable cannot be used to connect a 40GE optical port (split into four 10GE ports) and 10GE optical ports between the CE5855EI and CE5850EI (running a version prior to V100R005C10) switches. To connect the 10GE and 40GE optical ports of the two switches, use any of the following methods:

- Use a 1 m or 3 m 1-to-4 QSFP+ high-speed cable.
- Use optical modules and optical fibers.
- Upgrade the system software of the CE5850EI switch to V100R005C10 or a later version.

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-38](#) describes the attributes of the console port.

Table 2-38 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-39](#) describes the attributes of the ETH management port (RJ45).

Table 2-39 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-40 lists technical specifications of the CE5855-48T4S2Q-EI switch.

Table 2-40 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.4 kg (18.52 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 48 dBA Front-to-back airflow: < 55 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 264 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported

Item		Description
	Rated input current	<ul style="list-style-type: none"> 150 W AC power (ES0W2PSA0150): 3 A (100 V AC to 240 V AC) 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	103 W
	Typical power consumption	76 W (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	351 BTU/hr
	Typical heat dissipation	259 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE5855EI chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules

Item		Description
	Mean time between failures (MTBF)	55.08 years
	Mean time to repair (MTTR)	1.81 hours
	Availability	0.99999625521
Technical specifications	Processor	1 GHz, dual-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-41 provides the ordering information.

Table 2-41 Ordering information

Part Number	Part Model	Part Description
02350GTR	CE5855-48T4 S2Q-EI-F	CE5855-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350GTT	CE5855-48T4 S2Q-EI-B	CE5855-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)

Part Number	Part Model	Part Description
02350GTU	CE5855-EI-F-B00	CE5855-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350GTW	CE5855-EI-B-B00	CE5855-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350TJD	CE5855-48T4S2Q-EI	CE5855-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, Without Fan Box and Power Module)

2.2.6 CE5855-24T4S2Q-EI

Version Mapping

Table 2-42 lists the mappings between the CE5855-24T4S2Q-EI and software versions.

Table 2-42 Version mapping

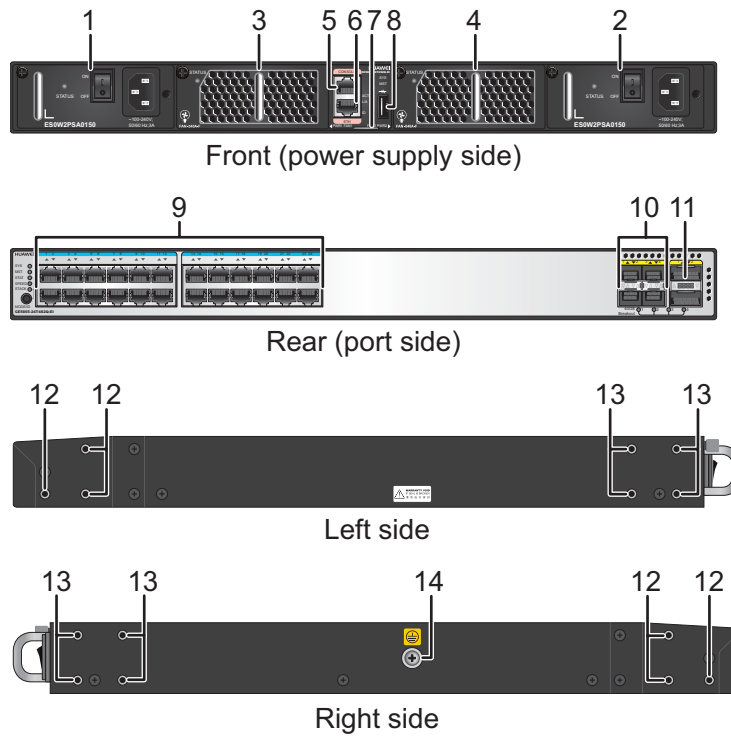
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5855	CE5855-24T4S2Q-EI	CE5855EI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-19 CE5855-24T4S2Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (ES0W2PSA0150) • 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 150 W AC power module (ES0W2PSA0150) • 350 W DC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-040A series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-040A series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Twenty-four 10/100/1000BASE-T Ethernet electrical ports	10	Four 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable
11	Two 40GE QSFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) <p>NOTE A 40GE QSFP+ port can be split into four 10GE ports.</p>	12	Three port-side mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).
 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-20](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-21](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.
- When the fanless 150 W AC power module is used, the fan module with either of the airflow methods can be used.

Figure 2-20 Front-to-back airflow (air flows out from the port side)

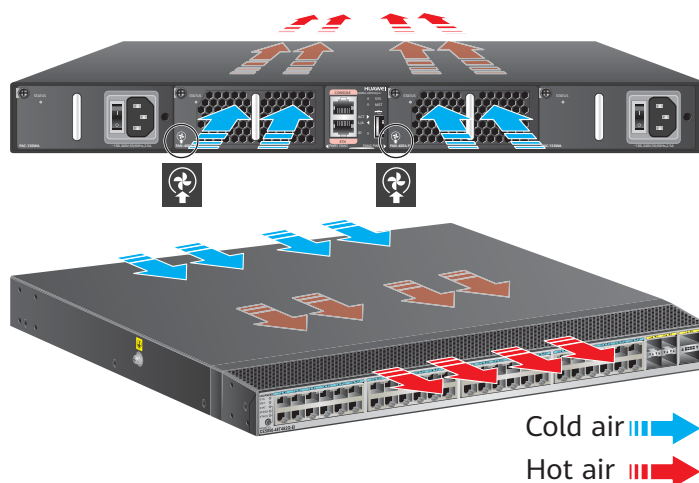
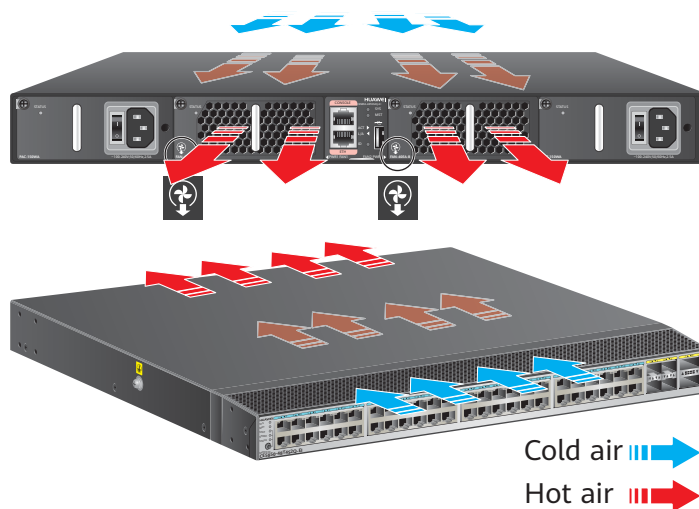


Figure 2-21 Back-to-front airflow (air flows into from the port side)



Indicators

Indicators on the CE5855-24T4S2Q-EI are the same as those on the CE5850-48T4S2Q-HI. The [CE5850-48T4S2Q-HI](#) is used as an example here to describe the indicators.

Ports

10/100/1000BASE-T Ethernet Electrical Port

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. [Table 2-43](#) describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-43 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-44](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-44 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

NOTE

A 5 m SFP+ high-speed cable cannot be used to connect 10GE optical ports between the CE5855EI and CE5850EI (running a version prior to V100R005C10) switches. To connect the 10GE optical ports of the two switches, use any of the following methods:

- Use a 1 m, 3 m, 7 m, or 10 m SFP+ high-speed cable.
- Use an active optical cable (AOC) or optical modules and optical fibers.
- Upgrade the system software of the CE5850EI switch to V100R005C10 or a later version.

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must

use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-45](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-45 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

 **NOTE**

A 5 m 1-to-4 QSFP+ high-speed cable cannot be used to connect a 40GE optical port (split into four 10GE ports) and 10GE optical ports between the CE5855EI and CE5850EI (running a version prior to V100R005C10) switches. To connect the 10GE and 40GE optical ports of the two switches, use any of the following methods:

- Use a 1 m or 3 m 1-to-4 QSFP+ high-speed cable.
- Use optical modules and optical fibers.
- Upgrade the system software of the CE5850EI switch to V100R005C10 or a later version.

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-46](#) describes the attributes of the console port.

Table 2-46 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a

Category 5 or higher category cable. [Table 2-47](#) describes the attributes of the ETH management port (RJ45).

Table 2-47 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-48](#) lists technical specifications of the CE5855-24T4S2Q-EI switch.

Table 2-48 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.1 kg (17.86 lb) 	
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F) 	
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)

Item		Description
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 48 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 264 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 150 W AC power (ES0W2PSA0150): 3 A (100 V AC to 240 V AC) • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	75 W
	Typical power consumption	48 W (100% throughput, 3 m Ethernet cables on 24 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	256 BTU/hr
	Typical heat dissipation	164 BTU/hr (100% throughput, 3 m Ethernet cables on 24 ports and SFP+ cables on 4 ports and QSFP+ cables on 2 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE5855E1 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	65.62 years
	Mean time to repair (MTTR)	1.77 hours
	Availability	0.99999690870
Technical specifications	Processor	1 GHz, dual-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To

obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-49 provides the ordering information.

Table 2-49 Ordering information

Part Number	Part Model	Part Description
02350GTX	CE5855-24T4 S2Q-EI-F	CE5855-24T4S2Q-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350GTY	CE5855-24T4 S2Q-EI-B	CE5855-24T4S2Q-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350GUA	CE5855-EI-F-B01	CE5855-24T4S2Q-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350GUB	CE5855-EI-B-B01	CE5855-24T4S2Q-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350TJC	CE5855-24T4 S2Q-EI	CE5855-24T4S2Q-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2-Port 40G QSFP+, Without Fan Box and Power Module)

2.2.7 CE5880-48T6Q-EI

Version Mapping

Table 2-50 lists the mappings between the CE5880-48T6Q-EI and software versions.

Table 2-50 Version mapping

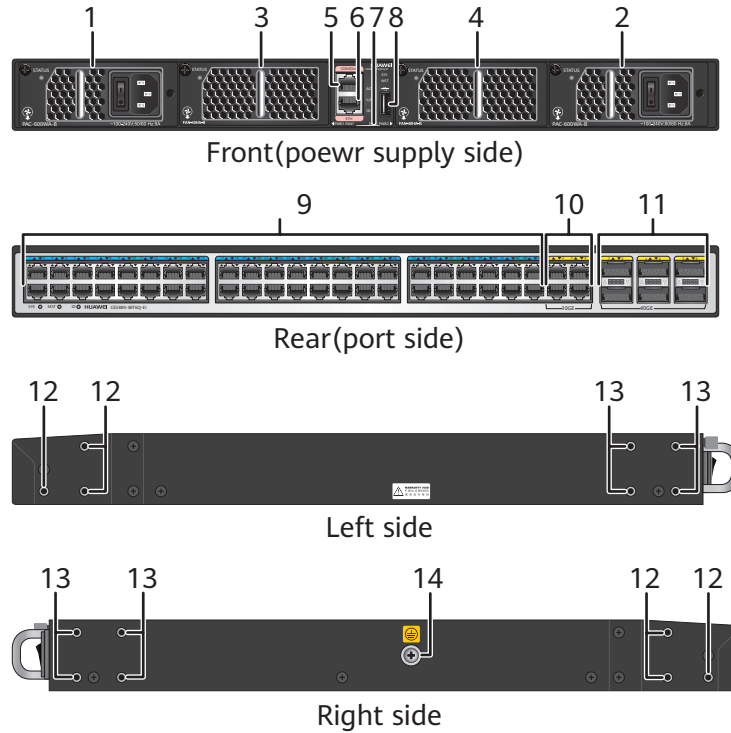
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5880	CE5880-48T6Q-EI	CE5880EI	V200R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-22 CE5880-48T6Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 3.6 600 W AC Power Module (PAC-600WA) • 3.11 600 W DC Power Module (PDC600S12) 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 3.6 600 W AC Power Module (PAC-600WA) • 3.11 600 W DC Power Module (PDC600S12)
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-four 100/1000BASE-T Ethernet electrical ports	10	Four 10GBASE-T Ethernet electrical ports
11	<p>Six 40GE QSFP+ Ethernet optical ports</p> <p>NOTE</p> <p>A 40GE interface with the number of 1 to 2 is configured to be split into four 10GE interfaces. The other 40GE interfaces cannot be split into four 10GE interfaces.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ to QSFP+ high-speed cable (only used as stack cable or the peer-link interface cable) 	12	Three port-side mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.
- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

All fan modules are hot swappable.



Airflow

The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow



direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

 **NOTE**

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-23](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-24](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-23 Front-to-back airflow (air flows out from the port side)

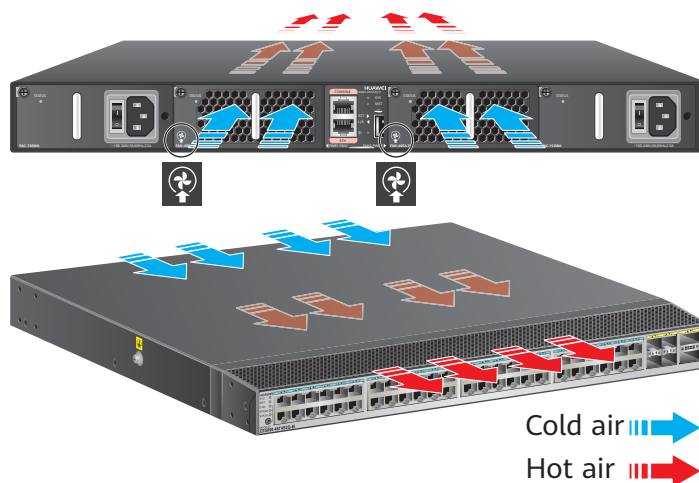
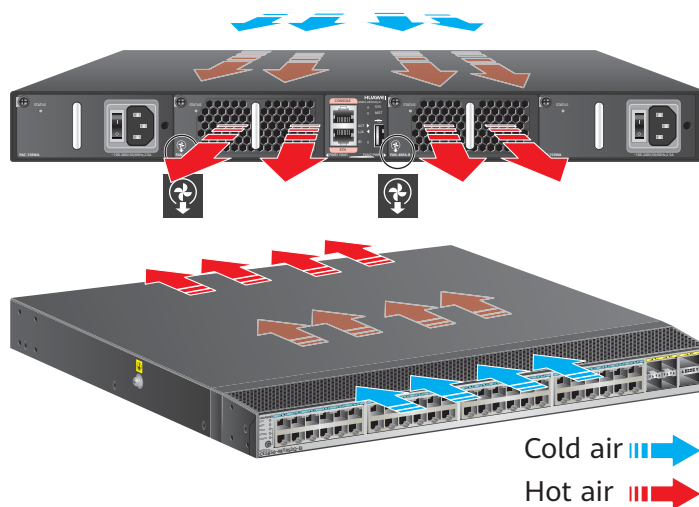




Figure 2-24 Back-to-front airflow (air flows in from the port side)





NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-25](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-26](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-25 Front-to-back airflow (air flows out from the port side)

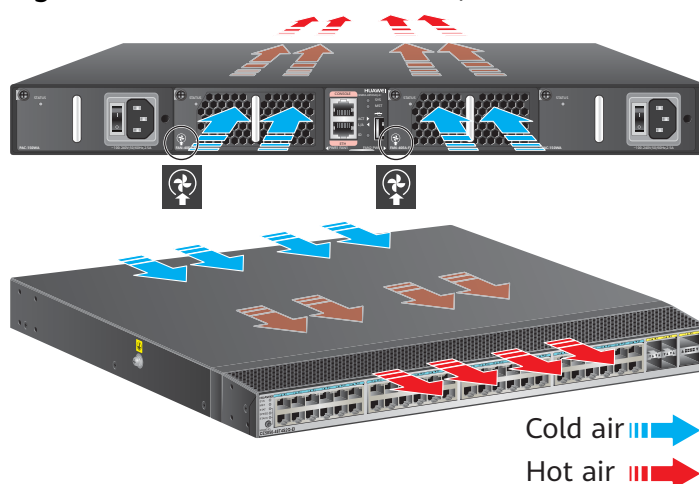
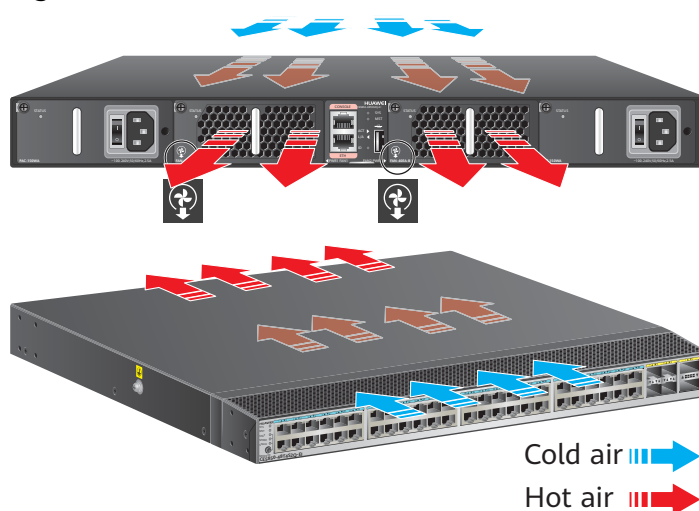


Figure 2-26 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE5880-48T6Q-EI are GE and 10GE electrical port indicators. There is no 40GE/100GE optical port. Other indicators are the same as those on the CE6880-24S4Q2CQ-EI. The [CE6880-24S4Q2CQ-EI](#) is used as an example here to describe the indicators.

Ports

100/1000BASE-T Ethernet Electrical Port

NOTE

The GE electrical interface on the CE5880-48T6Q-EI could not set the auto-negotiation rate of an Ethernet electrical interface to 10 Mbit/s.

A 10/100/1000BASE-T Ethernet electrical port receives and sends services at a rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. A 10/100/1000BASE-T Ethernet electrical port uses a Category 5 or higher category cable. [Table 2-51](#) describes the attributes of a 10/100/1000BASE-T Ethernet electrical port.

Table 2-51 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

Table 2-52 Attributes of a 10/100/1000BASE-T Ethernet electrical port

Attribute	Description
Connector	RJ45
Standards compliance	IEEE802.3ab
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-53](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-53 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az

Attribute	Description
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

Table 2-54 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-55](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-55 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Table 2-56 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector	LC/MPO
Optical attributes	Depending on the module or cable used
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-57](#) describes the attributes of the console port.

Table 2-57 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

Table 2-58 Attributes of the console port

Attribute	Description
Connector	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s - 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite

or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-59](#) describes the attributes of the ETH management port (RJ45).

Table 2-59 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

Table 2-60 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-61](#) lists technical specifications of the CE5880-48T6Q-EI switch.

Table 2-61 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 9.1 kg (20.06 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 64 dBA Front-to-back airflow: < 64 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC) 600 W DC power (PDC600S12 series): 20A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	244 W

Item		Description
	Typical power consumption	211 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules) 222 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ short-distance optical modules on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	833 BTU/hr
	Typical heat dissipation	720 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules) 757 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ short-distance optical modules on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE The CE5880-48T6Q-EI chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	49.14 years
	Mean time to repair (MTTR)	1.71 hours
	Availability	0.99999575382

Item		Description
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	2 GB
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	GE electrical ports, 10GE electrical ports, and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-62](#) provides the ordering information.

Table 2-62 Ordering information

Part Number	Part Model	Part Description
02352AXG	CE5880-48T6Q-EI	CE5880-48T6Q-EI Switch (44Port G RJ45, 4-Port 10G RJ45, 6-Port 40GE QSFP+, Without Fan and Power Module)
02352AXK	CE5880-EI-F-B00	CE5880-48T4Q2CQ-EI Switch (44Port G RJ45, 4-Port 10G RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02352AXL	CE5880-EI-B-B00	CE5880-48T4Q2CQ-EI Switch (44Port G RJ45, 4-Port 10G RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3 CE6800

NOTE

CE6880EI series switches are sold only in specified industries currently. For details about sales strategies, contact the equipment supplier.

2.3.1 CE6810-48S4Q-EI

Version Mapping

Table 2-63 lists the mappings between the CE6810-48S4Q-EI and software versions.

Table 2-63 Version mapping

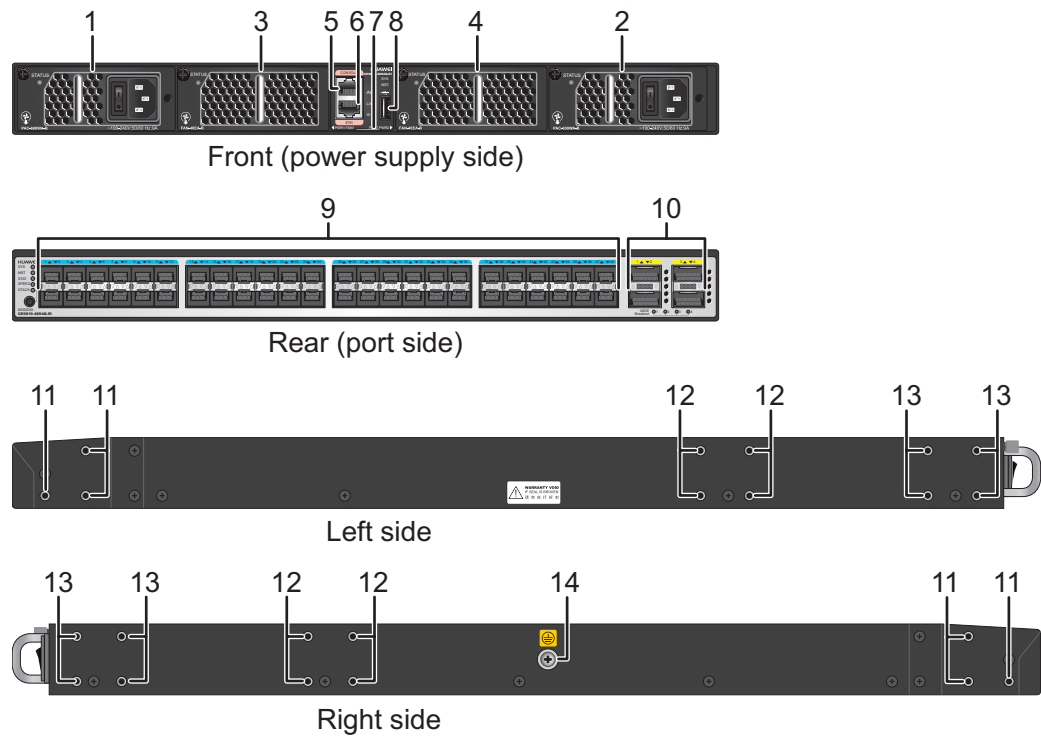
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-48S4Q-EI	CE6810EI	V100R003C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-27 CE6810-48S4Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	10	Four 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
11	Three port-side mounting holes for mounting brackets	12	Four middle mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can

be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-28](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-29](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-28 Front-to-back airflow (air flows out from the port side)

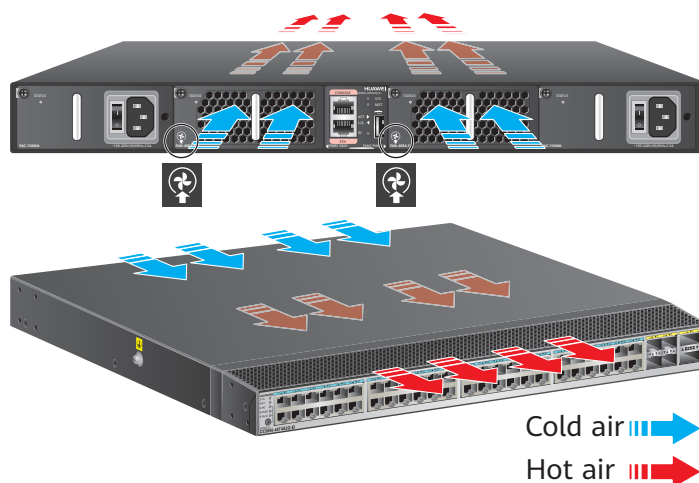
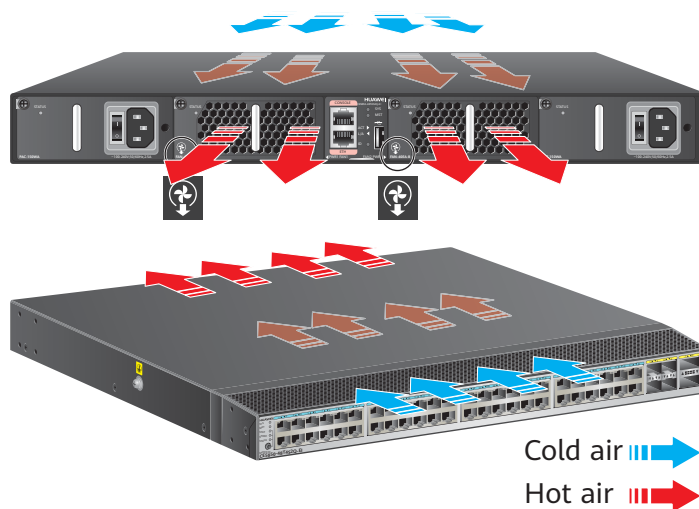


Figure 2-29 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6810-48S4Q-EI are 10GE optical port indicators, and other indicators on these models are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-64](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-64 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-65](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-65 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-66](#) describes the attributes of the console port.

Table 2-66 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

Attribute	Description
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-67](#) describes the attributes of the ETH management port (RJ45).

Table 2-67 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-68 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 10.4 kg (22.93 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 51 dBA Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	238 W
	Typical power consumption	101 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	812BTU/hr

Item		Description
	Typical heat dissipation	344 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	49.27 years
	Mean time to repair (MTTR)	2.0 hours
	Availability	0.99999536630
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-69 provides the ordering information.

Table 2-69 Ordering information

Part Number	Part Model	Part Description
02359247	CE6810-EI-B00	CE6810-48S4Q-EI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EXW	CE6810-EI-B-B0A	CE6810-48S4Q-EI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)
02350EXU	CE6810-48S4 Q-EI-F	CE6810-48S4Q-EI Switch (48-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EXV	CE6810-48S4 Q-EI-B	CE6810-48S4Q-EI Switch (48-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02358856	CE6810-48S4 Q-EI	CE6810-48S4Q-EI Switch (48-Port 10GE SFP+, 4-Port 40GE QSFP+, Without Fan Box and Power Module)

2.3.2 CE6810-48S4Q-LI

Version Mapping

Table 2-70 lists the mappings between the CE6810-48S4Q-LI and software versions.

Table 2-70 Version mapping

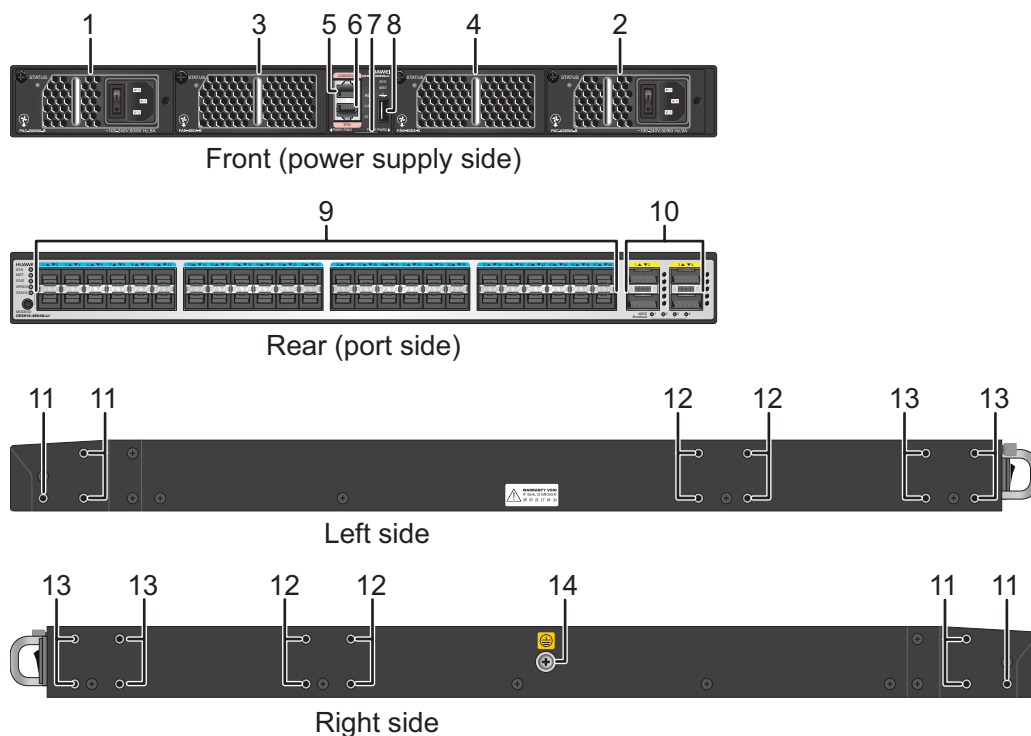
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-48S4Q-LI	CE6810LI	V100R003C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-30 CE6810-48S4Q-LI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 350 W DC power module 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 350 W DC power module 600 W AC power module
---	--	---	--

3	Fan slot 1 Applicable fan modules: • FAN-40EA series fan modules	4	Fan slot 2 Applicable fan modules: • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable	10	Four 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
11	Three port-side mounting holes for mounting brackets	12	Four middle mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.

- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-31](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-32](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-31 Front-to-back airflow (air flows out from the port side)

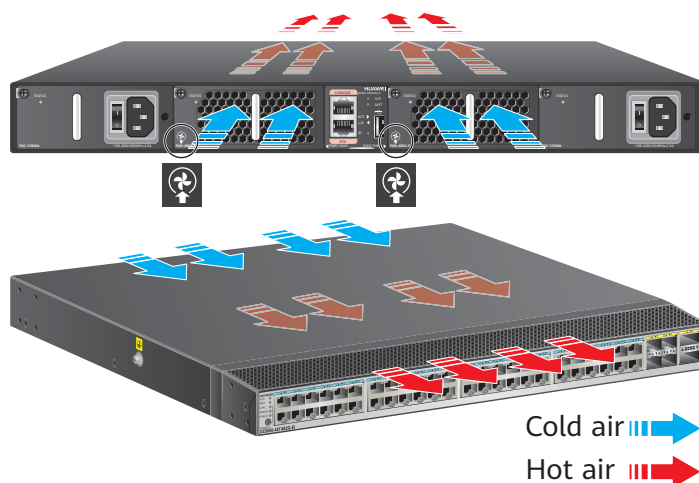
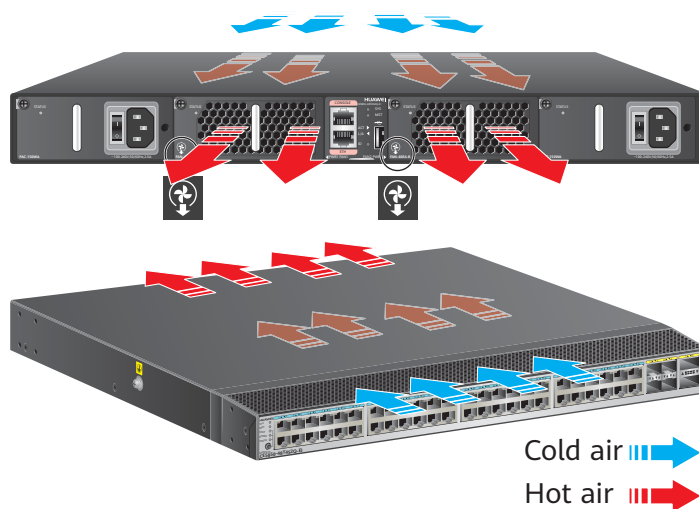


Figure 2-32 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6810-48S4Q-LI are 10GE optical port indicators, and other indicators on these models are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-71](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-71 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-72](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-72 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-73](#) describes the attributes of the console port.

Table 2-73 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

Attribute	Description
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-74](#) describes the attributes of the ETH management port (RJ45).

Table 2-74 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-75 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 10.4 kg (22.93 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 51 dBA Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	238 W
	Typical power consumption	101 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	812 BTU/hr

Item		Description
	Typical heat dissipation	344 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	49.33 years
	Mean time to repair (MTTR)	1.74 hours
	Availability	0.9999959688
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-76](#) provides the ordering information.

Table 2-76 Ordering information

Part Number	Part Model	Part Description
02350AQB	CE6810-LI-B00	CE6810-48S4Q-LI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EGX	CE6810-LI-B-B0A	CE6810-48S4Q-LI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)
02350EGV	CE6810-48S4 Q-LI-F	CE6810-48S4Q-LI Switch (48-Port 10G SFP+, 4-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EGW	CE6810-48S4 Q-LI-B	CE6810-48S4Q-LI Switch (48-Port 10G SFP+, 4-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350APY	CE6810-48S4 Q-LI	CE6810-48S4Q-LI Switch (48-Port 10GE SFP+, 4-Port 40GE QSFP+, Without Fan Box and Power Module)

2.3.3 CE6810-48S-LI

Version Mapping

[Table 2-77](#) lists the mappings between the CE6810-48S-LI and software versions.

Table 2-77 Version mapping

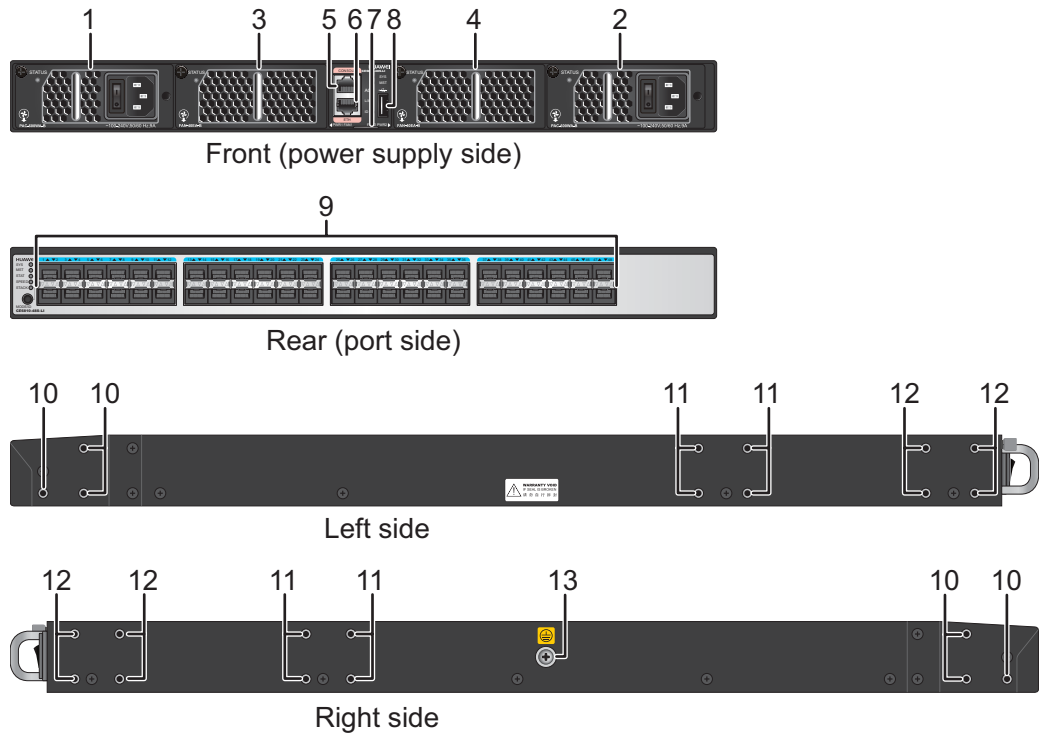
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-48S-LI	CE6810LI	V100R003C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-33 CE6810-48S-LI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 350 W DC power module 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 350 W DC power module 600 W AC power module
---	--	---	--

3	Fan slot 1 Applicable fan modules: • FAN-40EA series fan modules	4	Fan slot 2 Applicable fan modules: • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable	10	Three port-side mounting holes for mounting brackets
11	Four middle mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets
13	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot



The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating. All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-34](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-35](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-34 Front-to-back airflow (air flows out from the port side)

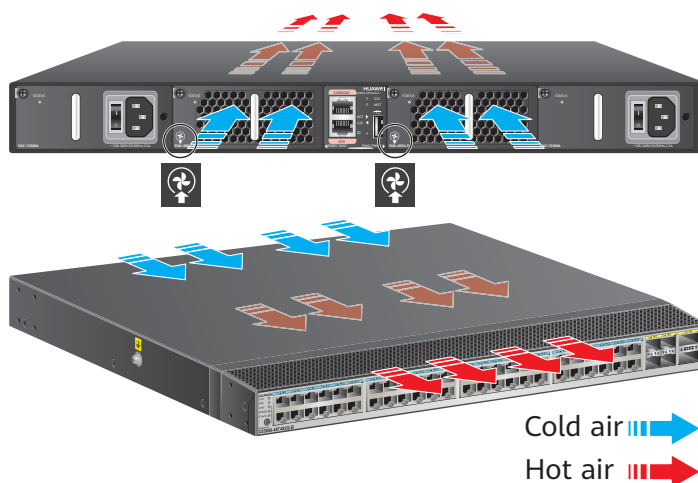
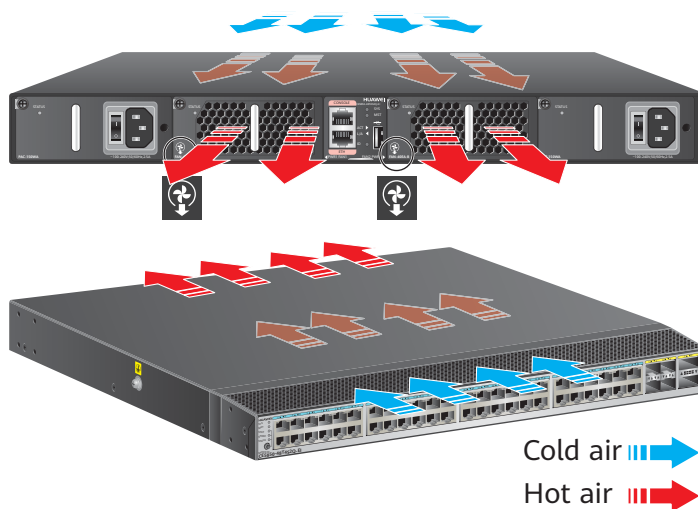


Figure 2-35 Back-to-front airflow (air flows in from the port side)



Indicators

Service port indicators of the CE6810-48S-LI are 10GE optical port indicators, and the CE6810-48S-LI has no 40GE port indicators or 40GE Breakout indicators 1/2/3/4. Other indicators on the CE6810-48S-LI are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-78](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-78 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-79](#) describes the attributes of the console port.

Table 2-79 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-80](#) describes the attributes of the ETH management port (RJ45).

Table 2-80 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab

Attribute	Description
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-81 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 10.2 kg (22.49 lb) 	
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 51 dBA Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC

Item		Description
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	178 W
	Typical power consumption	89 W (100% throughput, SFP+ cables on 48 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	607 BTU/hr
	Typical heat dissipation	302 BTU/hr (100% throughput, SFP+ cables on 48 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported

Item		Description
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	56.88 years
	Mean time to repair (MTTR)	1.8 hours
	Availability	0.9999963861
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-82](#) provides the ordering information.

Table 2-82 Ordering information

Part Number	Part Model	Part Description
02350AQC	CE6810-LI-B01	CE6810-48S-LI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EHB	CE6810-LI-B0B	CE6810-48S-LI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)

Part Number	Part Model	Part Description
02350EGY	CE6810-48S-LI-F	CE6810-48S-LI Switch (48-Port 10G SFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EHA	CE6810-48S-LI-B	CE6810-48S-LI Switch (48-Port 10G SFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350AQA	CE6810-48S-LI	CE6810-48S-LI Switch (48-Port 10GE SFP+, Without Fan Box and Power Module)

2.3.4 CE6810-32T16S4Q-LI

Version Mapping

Table 2-83 lists the mappings between the CE6810-32T16S4Q-LI and software versions.

Table 2-83 Version mapping

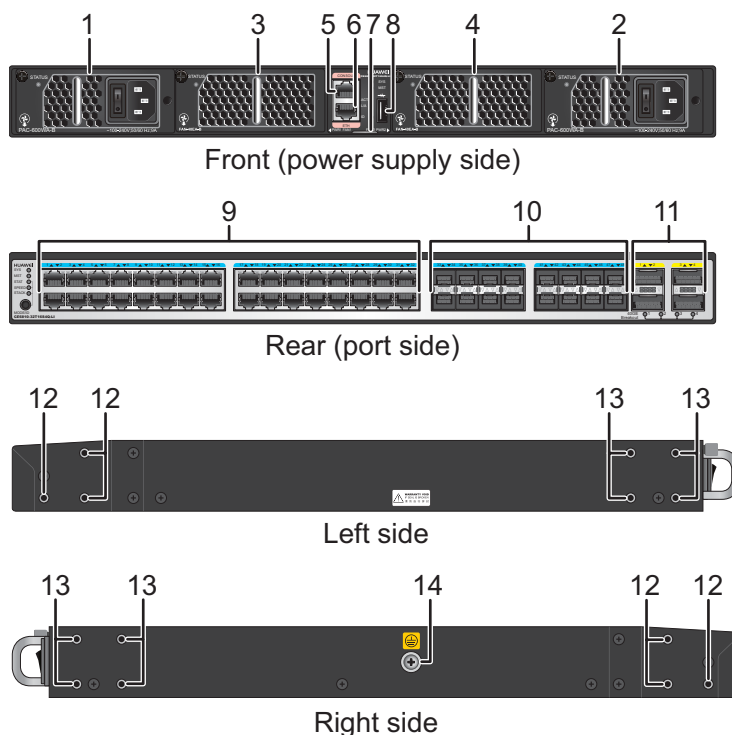
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-32T16S4Q-LI	CE6810LI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-36 CE6810-32T16S4Q-LI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Thirty-two 10GBASE-T Ethernet electrical ports	10	Sixteen 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable
11	Four 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) 	12	Three port-side mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.

- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-37](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-38](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-37 Front-to-back airflow (air flows out from the port side)

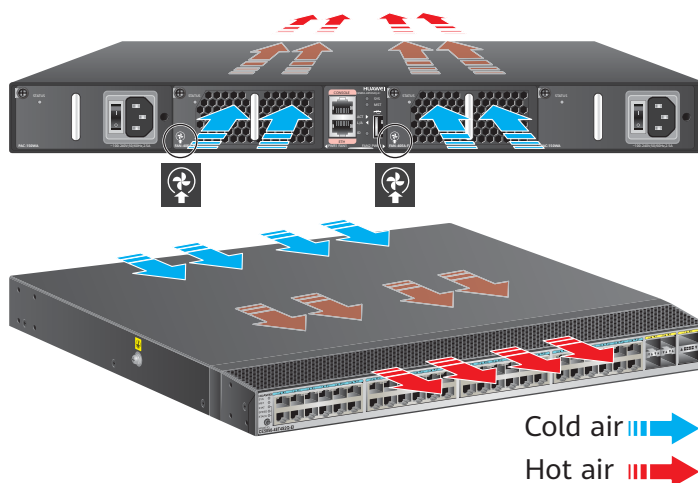
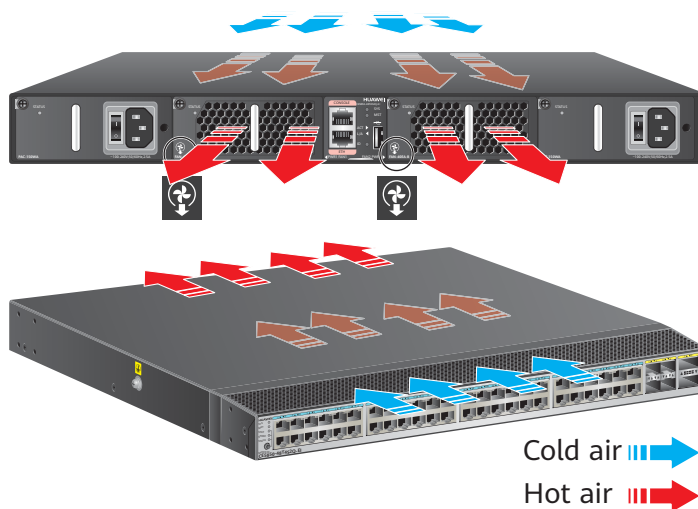


Figure 2-38 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6810-32T16S4Q-LI are 10GE electrical port indicators and 10GE optical indicators, and other indicators are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-84](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-84 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-85](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-85 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-86](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-86 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO

Attribute	Description
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-87](#) describes the attributes of the console port.

Table 2-87 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-88](#) describes the attributes of the ETH management port (RJ45).

Table 2-88 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-89 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.5 kg (18.74 lb) 	
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 51 dBA Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz

Item		Description
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	288 W
	Typical power consumption	204 W (100% throughput, 3 m Ethernet cables on 32 ports, SFP+ high-speed copper cables on 16 ports, and QSFP+ high-speed copper cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	983 BTU/hr
	Typical heat dissipation	696 BTU/hr (100% throughput, 3 m Ethernet cables on 32 ports, SFP+ high-speed copper cables on 16 ports, and QSFP+ high-speed copper cables on 4 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported

Item		Description
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	46.04 years
	Mean time to repair (MTTR)	1.84 hours
	Availability	0.99999544092
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE electrical ports, 10GE optical ports, and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-90](#) provides the ordering information.

Table 2-90 Ordering information

Part Number	Part Model	Part Description
02350EWD	CE6810-LI-F-B00	CE6810-32T16S4Q-LI Switch (32-Port 10G RJ45, 16-Port 10G SFP+, 4-Port 40G QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)

Part Number	Part Model	Part Description
02350EWE	CE6810-LI-B-B00	CE6810-32T16S4Q-LI Switch (32-Port 10G RJ45, 16-Port 10G SFP+, 4-Port 40G QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350EWB	CE6810-32T16S4Q-LI-F	CE6810-32T16S4Q-LI Switch (32-Port 10G RJ45, 16-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EWC	CE6810-32T16S4Q-LI-B	CE6810-32T16S4Q-LI Switch (32-Port 10G RJ45, 16-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350TJF	CE6810-32T16S4Q-LI	CE6810-32T16S4Q-LI Switch (32-Port 10G RJ45, 16-Port 10G SFP+, 4-Port 40G QSFP+, Without Fan Box and Power Module)

2.3.5 CE6810-24S2Q-LI

Version Mapping

Table 2-91 lists the mappings between the CE6810-24S2Q-LI and software versions.

Table 2-91 Version mapping

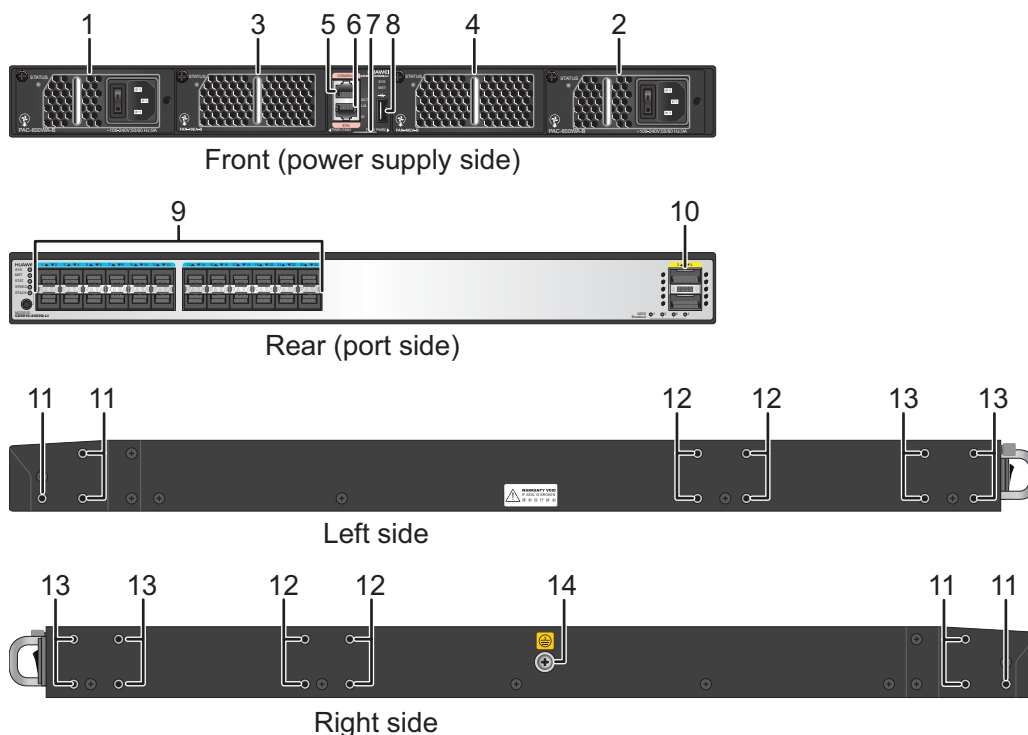
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-24S2Q-LI	CE6810LI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-39 CE6810-24S2Q-LI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Twenty-four 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	1 0	<p>Two 40GE QSFP+ Ethernet optical ports</p> <p>NOTE A 40GE QSFP+ port can be split into four 10GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
1 1	Three port-side mounting holes for mounting brackets	1 2	Four middle mounting holes for mounting brackets
1 3	Four power-supply-side mounting holes for mounting brackets	1 4	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

All fan modules are hot swappable.

- Power supply slot

The CE8800&7800&6800&5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CE8800&7800&6800&5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CE8800&7800&6800&5800 series switches (except the CE8850-64CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-40](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-41](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-40 Front-to-back airflow (air flows out from the port side)

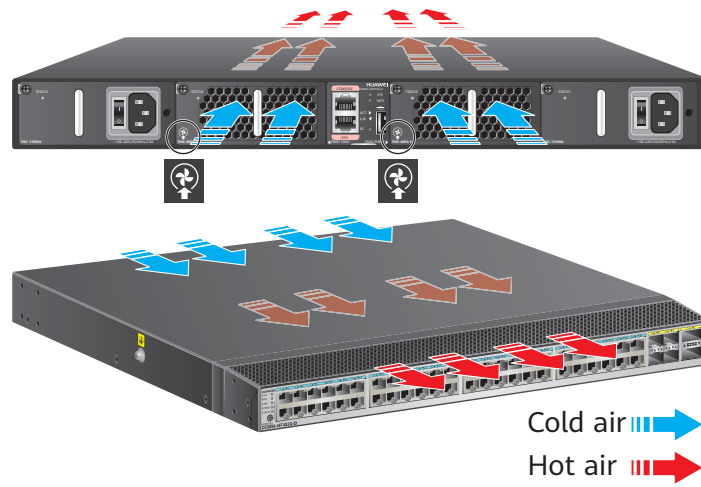
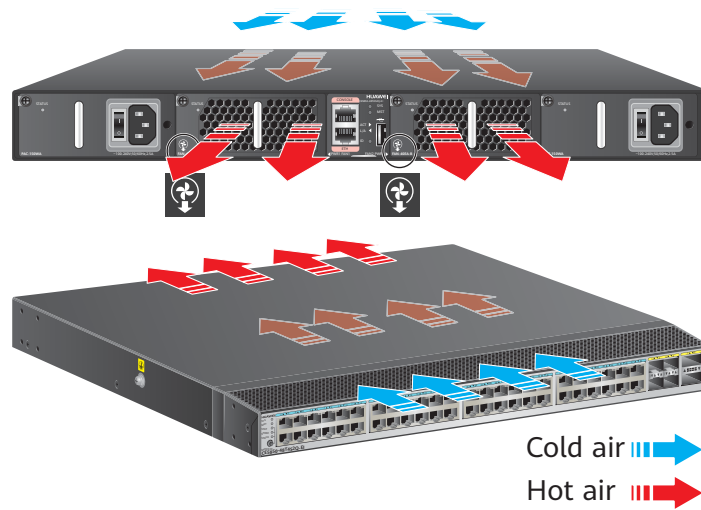




Figure 2-41 Back-to-front airflow (air flows in from the port side)





 NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-42](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-43](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-42 Front-to-back airflow (air flows out from the port side)

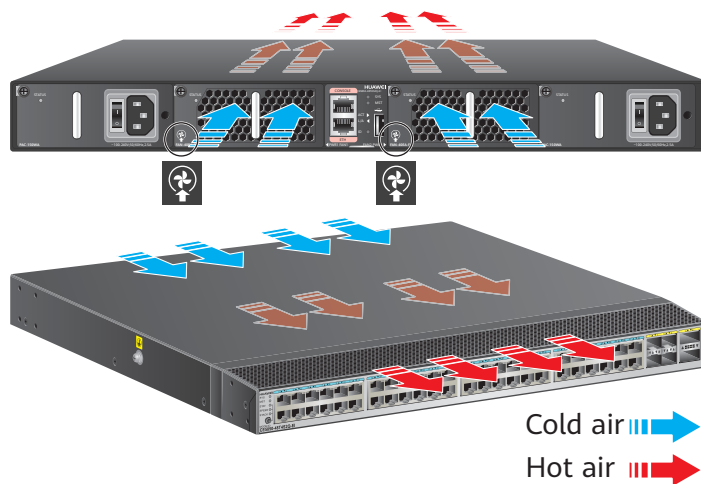
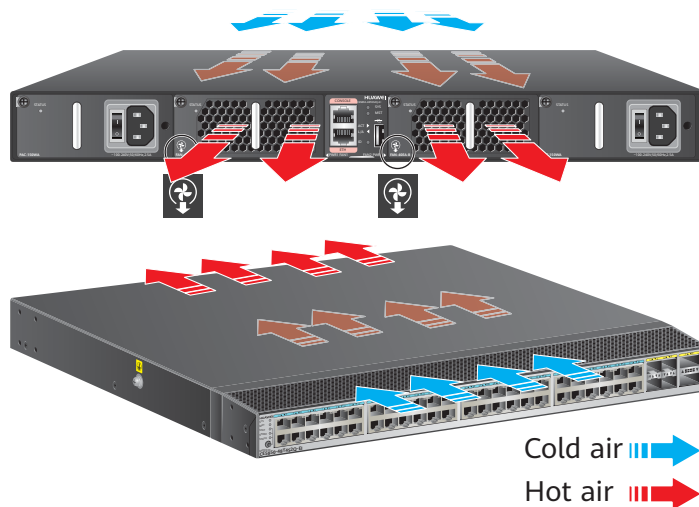


Figure 2-43 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6810-24S2Q-LI are 10GE optical port indicators, and other indicators on these models are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-92](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-92 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

Table 2-93 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s, 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-94](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-94 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Table 2-95 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector	LC/MPO
Optical attributes	Depending on the module or cable used
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-96](#) describes the attributes of the console port.

Table 2-96 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

Table 2-97 Attributes of the console port

Attribute	Description
Connector	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s - 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-98](#) describes the attributes of the ETH management port (RJ45).

Table 2-98 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

Table 2-99 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-100 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 10.1 kg (22.27 lb)
Environment parameters	<p>Temperature</p> <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)

Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) • 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	171 W
	Typical power consumption	88 W (100% throughput, SFP+ cables on 24 ports and QSFP+ cables on 2 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	583 BTU/hr
	Typical heat dissipation	300 BTU/hr (100% throughput, SFP+ cables on 24 ports and QSFP+ cables on 2 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	59.37 years
	Mean time to repair (MTTR)	1.79 hours
	Availability	0.99999655471
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	512 MB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-101 provides the ordering information.

Table 2-101 Ordering information

Part Number	Part Model	Part Description
02350GUE	CE6810-LI-F-B0C	CE6810-24S2Q-LI Switch (24-Port 10G SFP+, 2-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350GUF	CE6810-LI-B-B0C	CE6810-24S2Q-LI Switch (24-Port 10G SFP+, 2-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350GUC	CE6810-24S2Q-LI-F	CE6810-24S2Q-LI Switch (24-Port 10G SFP+, 2-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350GUD	CE6810-24S2Q-LI-B	CE6810-24S2Q-LI Switch (24-Port 10G SFP+, 2-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350TJE	CE6810-24S2Q-LI	CE6810-24S2Q-LI Switch (24-Port 10G SFP+, 2-Port 40GE QSFP+, 2*FAN Box, Without Fan Box and Power Module)

2.3.6 CE6820-48S6CQ

Version Mapping

Table 2-102 lists the mappings between the CE6820-48S6CQ and software versions.

Table 2-102 Version mapping

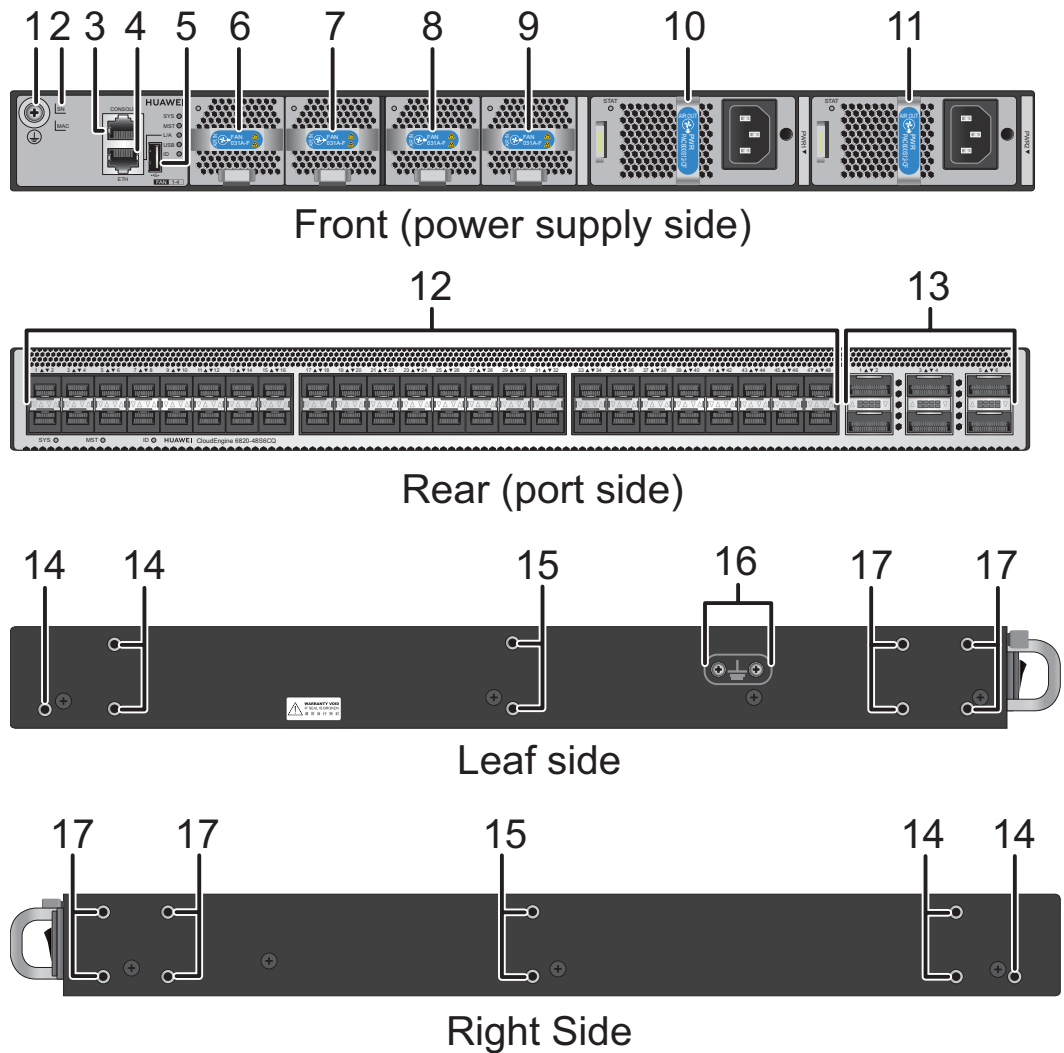
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6820	CE6820-48S6CQ	CE6820	V200R005C20 and later

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-44 CE6820-48S6CQ



1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules
7	Fan slot 2 Applicable fan modules: • FAN-031A series fan modules	8	Fan slot 3 Applicable fan modules: • FAN-031A series fan modules

9	<p>Fan slot 4</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	1 0	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)
1 1	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB) 	1 2	<p>Forty-eight 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • GE eSFP Optical Modules • GE SFP Copper Modules (works at 100 Mbit/s or 1000 Mbit/s) • 10GE SFP+ Optical Modules (OSXD22N00 and LE2MXSC80FF0 not supported) • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable

1 3	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) <p>NOTE</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port that works at the rate of 100 Gbit/s, the port supports only the 1 m QSFP28 high-speed cable.</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port and the speed 40000 command is run to set the rate to 40 Gbit/s, the port supports 1 m, 3 m, and 5 m QSFP28 high-speed cables.</p>	1 4	Three port-side mounting holes for mounting brackets
1 5	Two middle mounting holes for mounting brackets	1 6	<p>Equipotential bonding</p> <p>Ground screws for a ground cable with a two-hole OT terminal</p>
1 7	Four power-supply-side mounting holes for mounting brackets	-	-

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.

- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-45](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-46](#) (using a CE6863 chassis as an example).

Figure 2-45 Front-to-back airflow for port-side exhaust

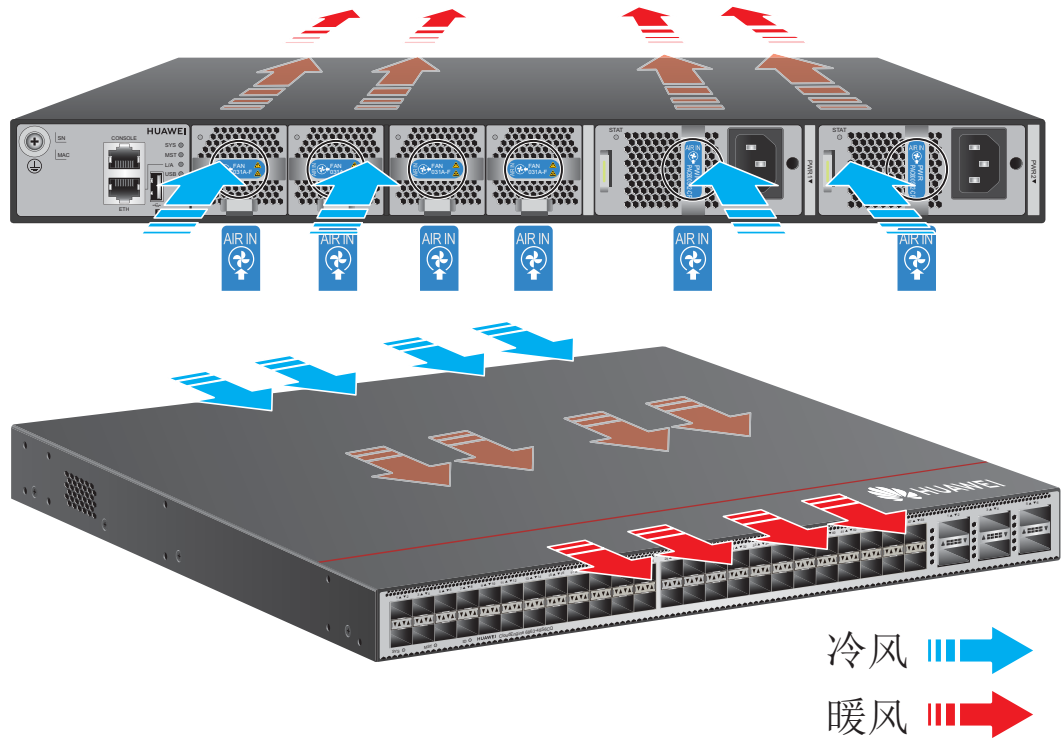
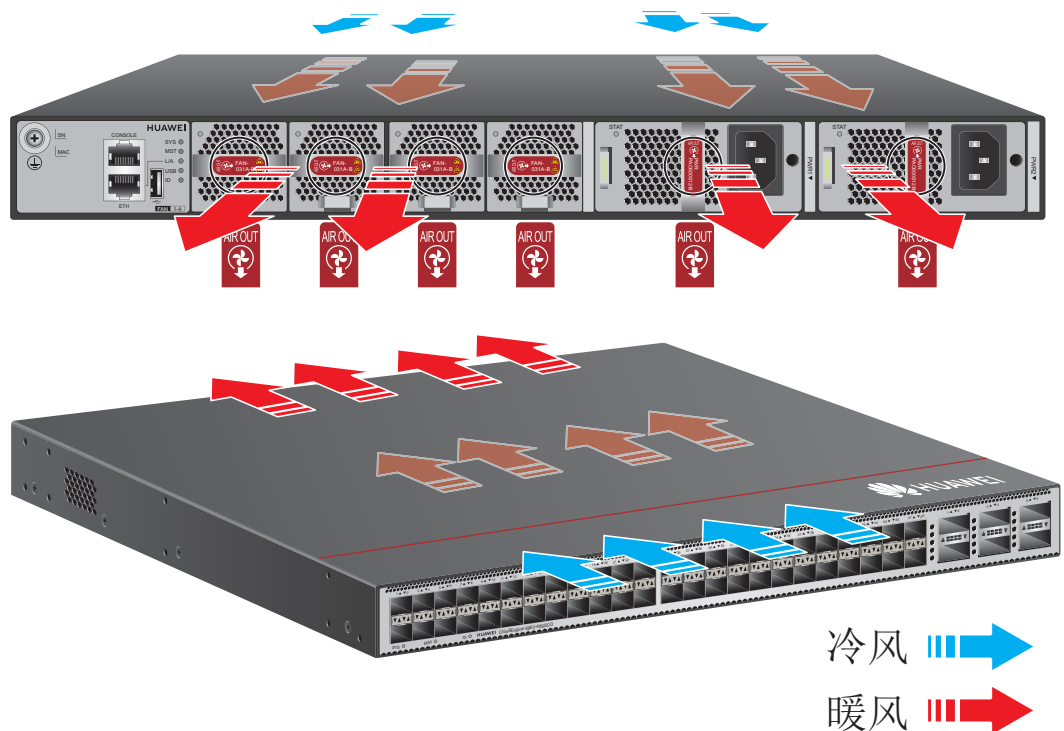


Figure 2-46 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

NOTE

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

The indicators on the CE6820-48S6CQ are the same as those on the CE6863-48S6CQ. The following figure uses the CE6863-48S6CQ as an example.

Figure 2-47 Indicators on the CE6820-48S6CQ rear panel

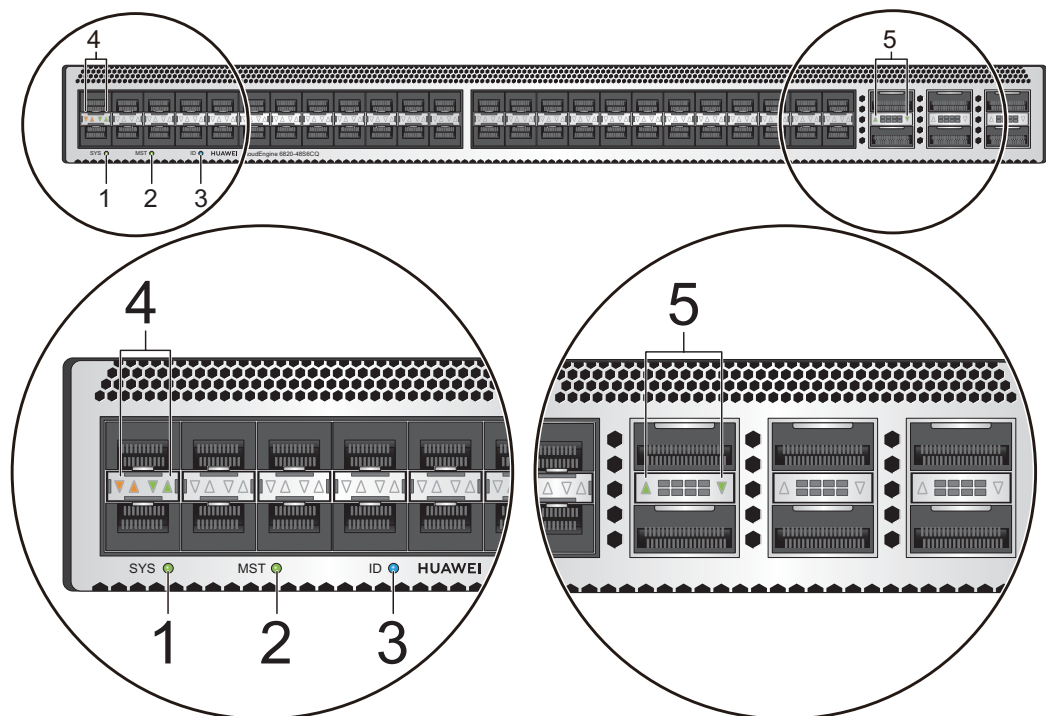


Figure 2-48 Indicators on the CE6820-48S6CQ front panel

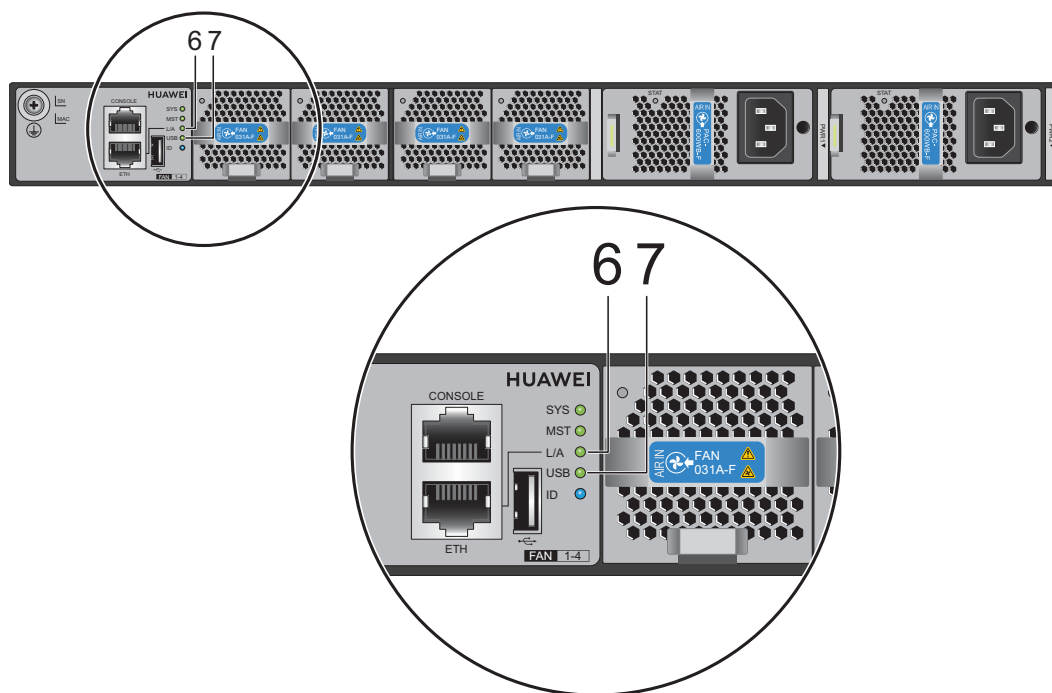


Table 2-103 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Steady on	In the system startup preparation stage, the SYS indicator is steady green for no more than 15 seconds.
			Slow blinking	The system is running normally.	
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MST	Stack master/slave indicator	Green	Off	The switch is not a stack master.

No.	Indica tor	Name	Color	Statu s	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE Each 10GE 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.</p>		Blinking	The port is sending or receiving data.
5	-	<p>Service port indicator (40GE/100GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
6	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

No.	Indicator	Name	Color	Status	Description
7	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-104](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-104 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-105](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-105 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba

Attribute	Description
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-106](#) describes the attributes of the console port.

Table 2-106 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-107](#) describes the attributes of the ETH management port (RJ45).

Table 2-107 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-108 lists technical specifications of the CE6820-48S6CQ switch.

Table 2-108 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (H x W x D) <ul style="list-style-type: none"> 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 16.5 in.) Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 446.1 mm (1.72 in. x 17.4 in. x 17.6 in.) Weight (with two AC power modules and four fan modules, calculated based on the heaviest model if multiple models are supported): 7.7 kg (16.98 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	≤ 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 55 dBA Front-to-back airflow: < 55 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz

Item		Description
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC Maximum voltage range: 190 V DC to 290 V DC 1200 W high-voltage DC power module (PHD1K2S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC to 380V DC Maximum voltage range: 190 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> 8 A (100 V AC to 240 V AC) 4 A (240V DC) 1000 W DC power module (PDC1000S12 series): 30 A (-48 V DC to -60 V DC) 1200 W high-voltage DC power module (PHD1K2S12 series): 8 A
Chassis power consumption	Maximum power consumption	282 W
	Typical power consumption	<ul style="list-style-type: none"> 162 W (100% throughput, SFP+ high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 196 W (100% throughput, short-distance optical modules on all optical ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	962 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> 553 BTU/hr (100% throughput, SFP+ high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 669 BTU/hr (100% throughput, short-distance optical modules on all optical ports, double power modules)

Item		Description
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode HVDC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	The device supports 3+1 backup of fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	45.48 years
	Mean time to repair (MTTR)	1.52 hours
	Availability	0.99999618
Technical specifications	Processor	1.4 GHz, four-core
	DRAM memory	4 GB
	NOR Flash	64 MB
	NAND Flash	2 GB
Stack	Service port supporting the stacking function	10GE optical ports, and 100GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-109](#) provides the ordering information.

Table 2-109 Ordering information

Part Number	Part Model	Part Description
02352TLE	CE6820-48S6 CQ	CE6820-48S6CQ switch (48*10G SFP+, 6*100G QSFP28, without fan and power modules)
02352TLJ	CE6820-48S6 CQ-F	CE6820-48S6CQ-F switch (48*10G SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side exhaust)
02352TLG	CE6820-48S6 CQ-B	CE6820-48S6CQ-B switch (48*10G SFP+, 6*100G QSFP28, 2*AC power modules, 4*fan modules, port-side intake)

2.3.7 CE6850-48S4Q-EI

Version Mapping

[Table 2-110](#) lists the mappings between the CE6850-48S4Q-EI and software versions.

Table 2-110 Version mapping

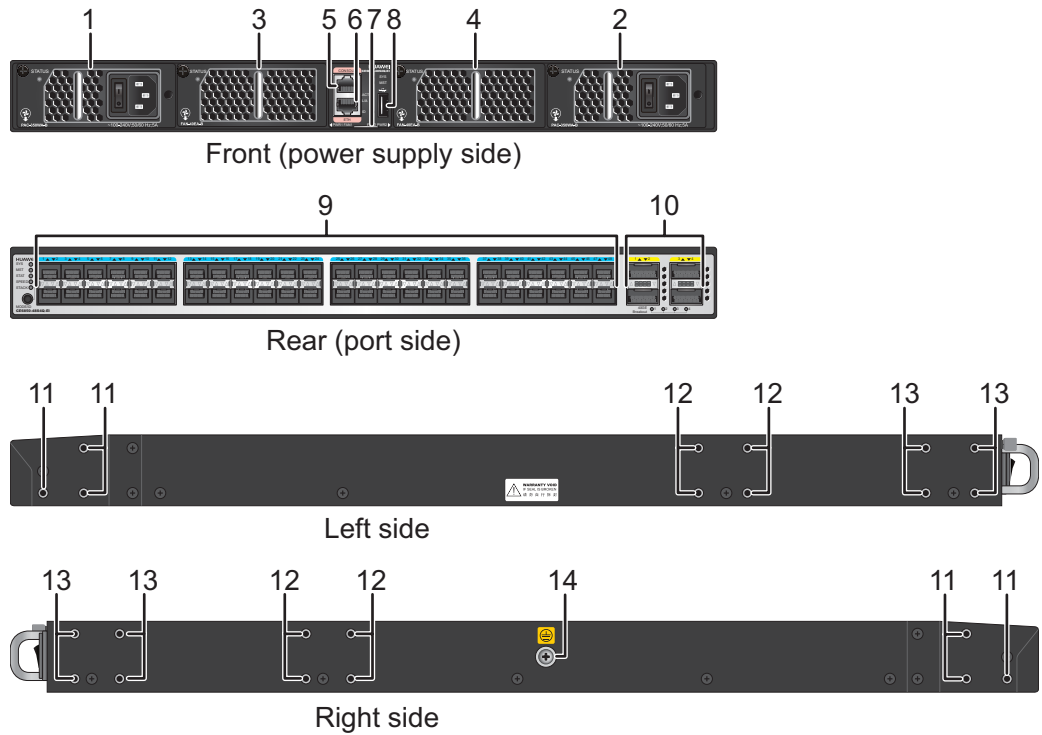
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6850-48S4Q-EI	CE6850EI	V100R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-49 CE6850-48S4Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W AC power module • 350 W DC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W AC power module • 350 W DC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	10	Four 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
11	Three port-side mounting holes for mounting brackets	12	Four middle mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

All fan modules are hot swappable.

- Power supply slot

The CE8800&7800&6800&5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CE8800&7800&6800&5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CE8800&7800&6800&5800 series switches (except the CE8850-64CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-50](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-51](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-50 Front-to-back airflow (air flows out from the port side)

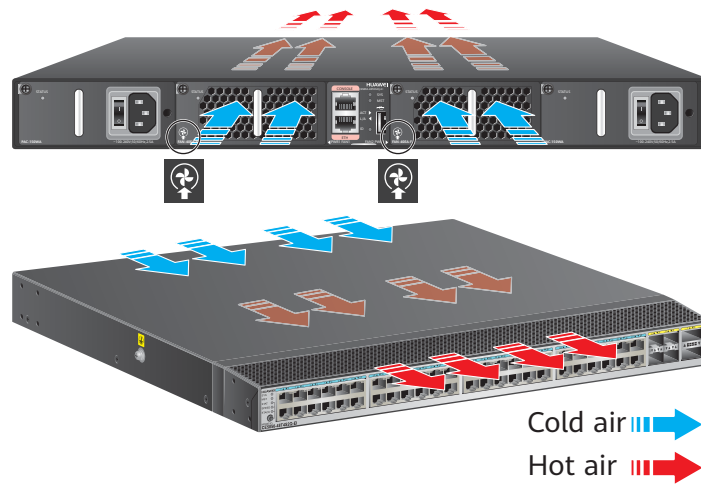
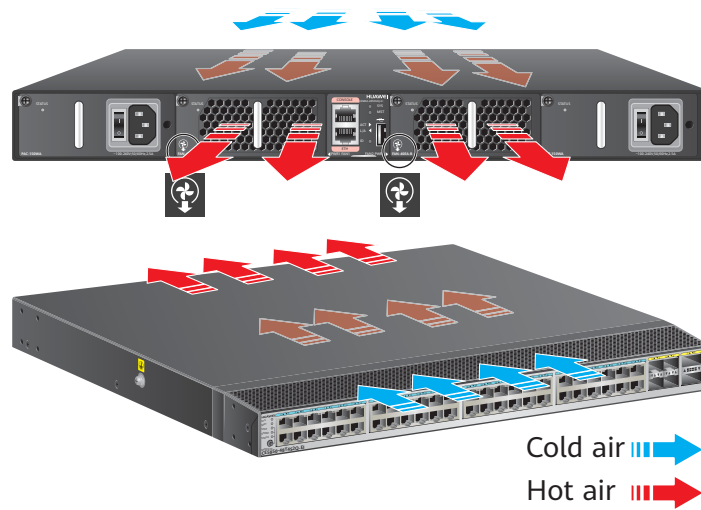




Figure 2-51 Back-to-front airflow (air flows in from the port side)





 NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-52](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-53](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-52 Front-to-back airflow (air flows out from the port side)

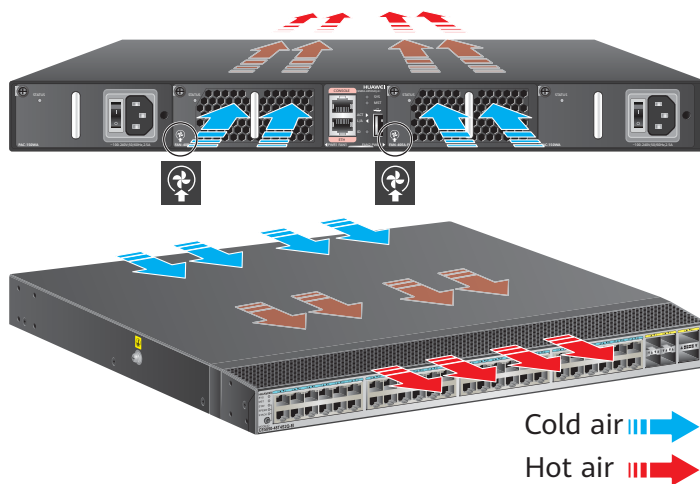
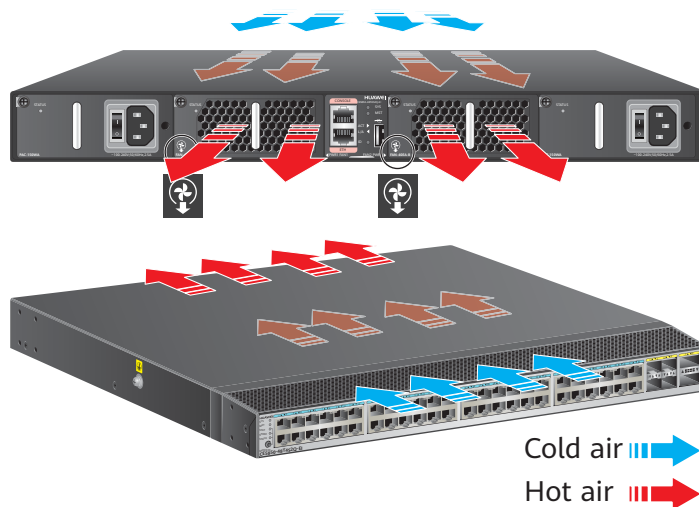


Figure 2-53 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6850-48S4Q-EI are 10GE optical port indicators, and other indicators on these models are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-111](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-111 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

Table 2-112 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s, 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-113](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-113 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Table 2-114 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector	LC/MPO
Optical attributes	Depending on the module or cable used
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-115](#) describes the attributes of the console port.

Table 2-115 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

Table 2-116 Attributes of the console port

Attribute	Description
Connector	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s - 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-117](#) describes the attributes of the ETH management port (RJ45).

Table 2-117 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

Table 2-118 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-119 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 11.05 kg (24.36 lb)
Environment parameters	<p>Temperature</p> <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)

Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 45 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 350 W AC power (PAC-350WA series): 5 A (100 V AC to 240 V AC) • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	272 W
	Typical power consumption	180 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	928 BTU/hr
	Typical heat dissipation	614 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	46.23 years
	Mean time to repair (MTTR)	2.0 hours
	Availability	0.9999941668
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	8 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-120 provides the ordering information.

Table 2-120 Ordering information

Part Number	Part Model	Part Description
02359083	CE6850-EI-B00	CE6850-48S4Q-EI Switch (2*350W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EXQ	CE6850-EI-B-B0A	CE6850-48S4Q-EI Switch (2*350W AC Power Module, 2*FAN Box, Port-side Intake)
02350EXD	CE6850-48S4Q-EI-F	CE6850-48S4Q-EI Switch (48-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EXE	CE6850-48S4Q-EI-B	CE6850-48S4Q-EI Switch (48-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02355264	CE6850-48S4Q-EI	CE6850-48S4Q-EI Switch (48-Port 10GE SFP+, 4-Port 40GE QSFP+, Without Fan Box and Power Module)

2.3.8 CE6850-48T4Q-EI

Version Mapping

Table 2-121 lists the mappings between the CE6850-48T4Q-EI and software versions.

Table 2-121 Version mapping

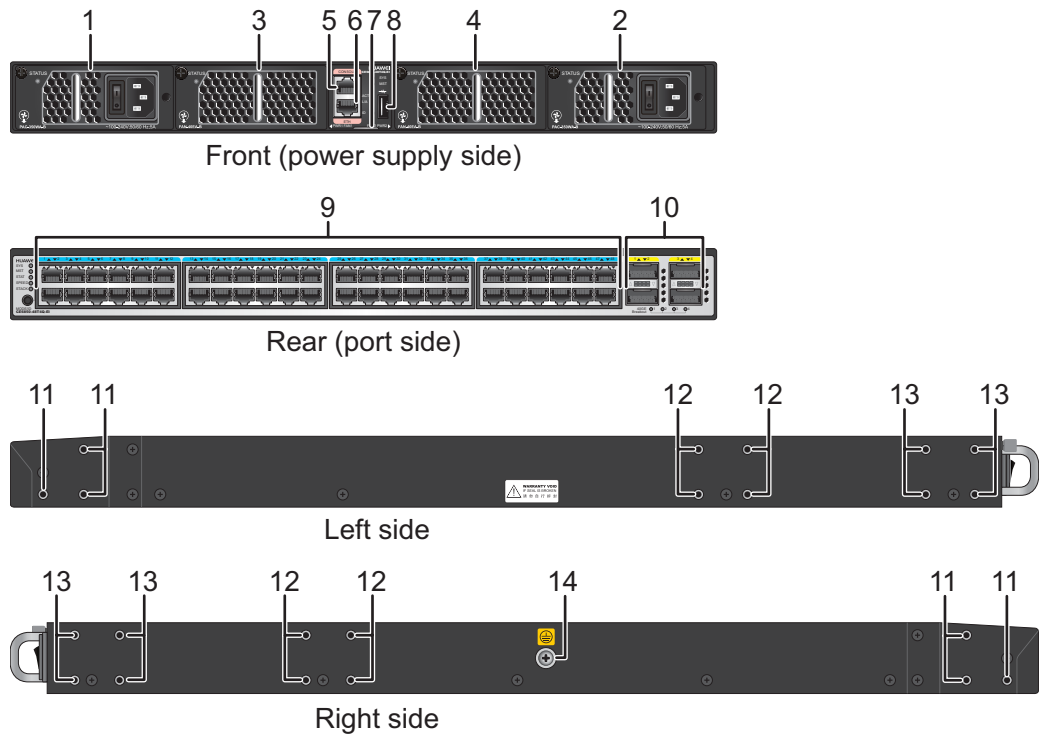
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6850-48T4Q-EI	CE6850EI	V100R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-54 CE6850-48T4Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W AC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W AC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-eight 10GBASE-T Ethernet electrical ports NOTE When a CE6850-48T4Q-EI switch uses 350 W AC power modules and all its ports are in use, the length of each network cable used on the switch cannot exceed 30 m.	10	Four 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
11	Three port-side mounting holes for mounting brackets	12	Four middle mounting holes for mounting brackets
13	Four power-supply-side mounting holes for mounting brackets	14	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

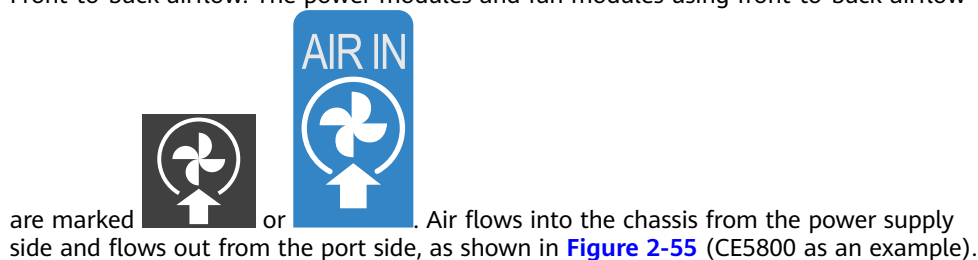
All fan modules are hot swappable.

Airflow

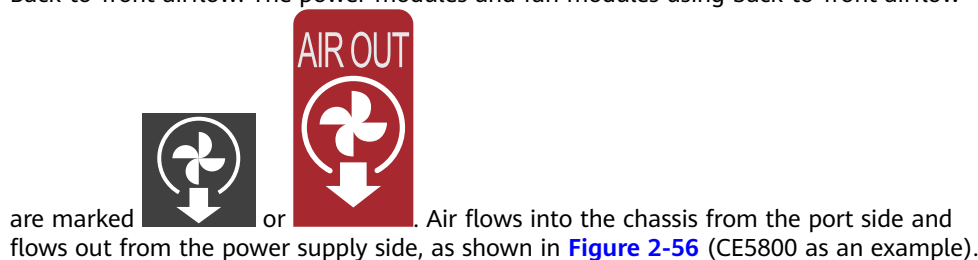
The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-55 Front-to-back airflow (air flows out from the port side)

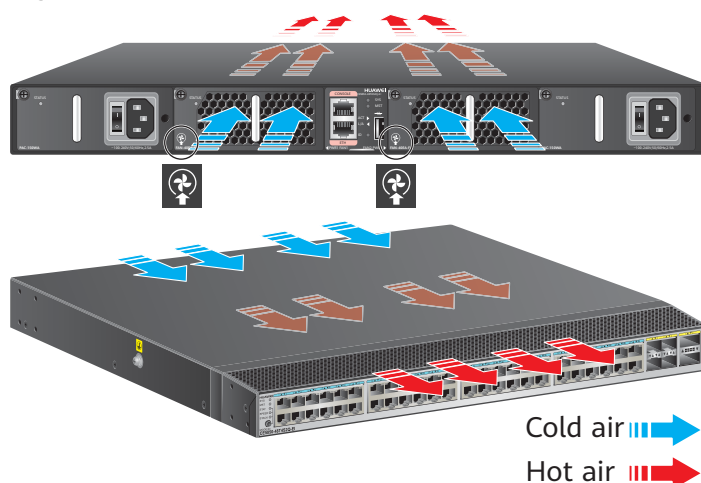
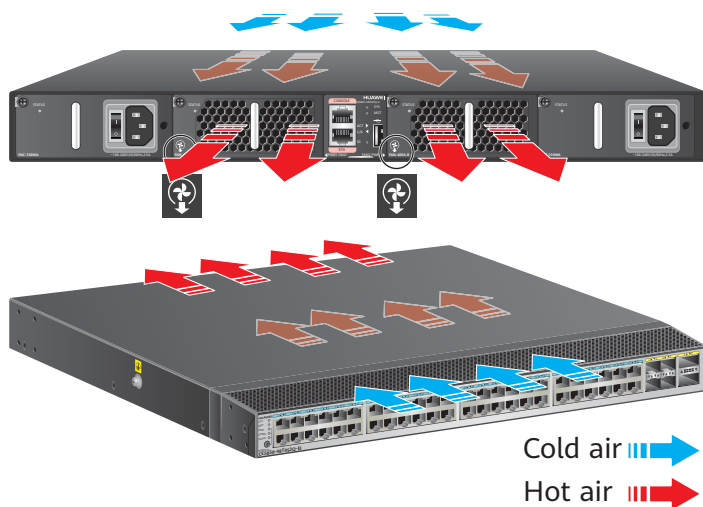


Figure 2-56 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-57 Indicators on the CE6850-48T4Q-EI rear panel

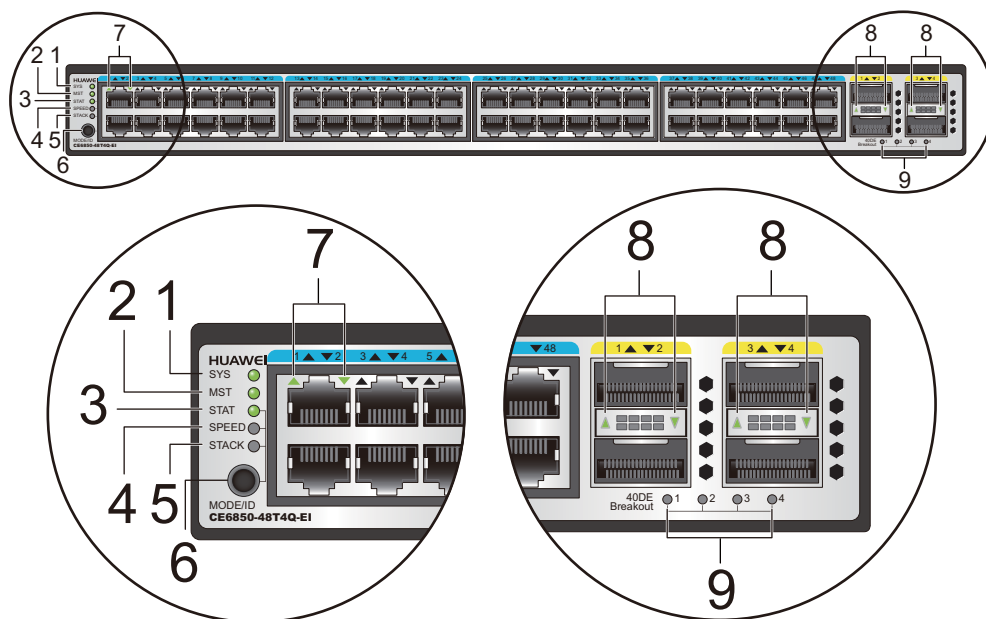


Figure 2-58 Indicators on the CE6850-48T4Q-EI front panel

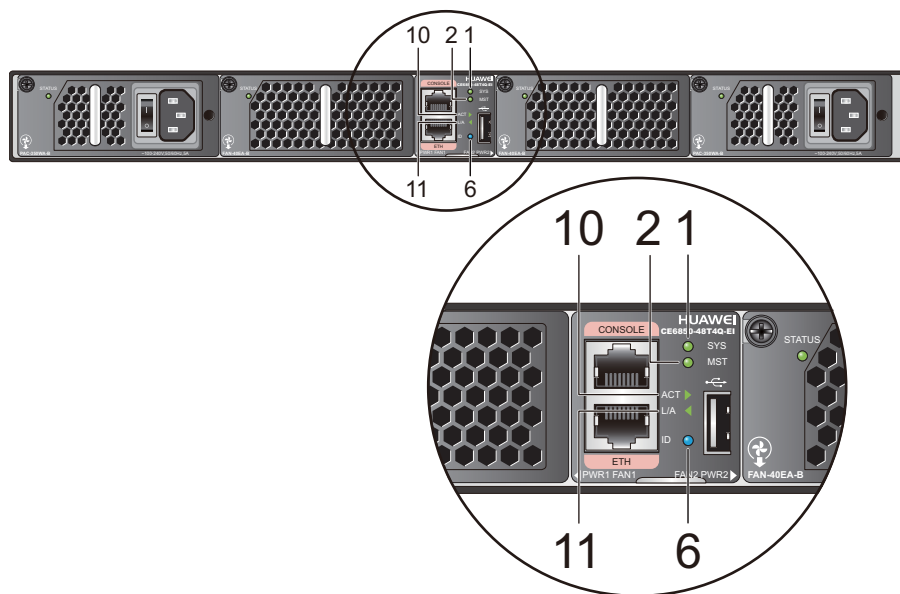


Table 2-122 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
2	MST	Stack master/slave indicator	Green	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally. The card power consumption exceeds the rated power of the power modules.
				Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status.</p> <p>After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Blinking	The switch is working in SVF mode. (Versions earlier than V100R005C00: Only the CE6810-48S4Q-EI supports this indicator state. V100R005C00: Only the CE6810-48S4Q-EI and CE6850-48T4Q-EI support this indicator state. V100R005C10 and later versions: Only the CE6810-48S4Q-EI, CE6810-48S4Q-LI, CE6810-48S-LI, CE6810-32T16S4Q-LI, CE6810-24S2Q-LI, and CE6850-48T4Q-EI support this indicator state.)
			Yellow	Steady on	A master election error or another type of error has occurred in the stack. NOTE This indicator state is not supported in V100R005C00 and later versions.
3	STAT	STAT mode indicator	Green	Off	The STAT mode is not selected.
				Steady on	The STAT mode (default mode) is selected, and service port indicators show the link connection states and link activity on ports.
4	SPEED	SPEED mode indicator	Green	Off	The SPEED mode is not selected.
				Steady on	The SPEED mode is selected, and service port indicators show the speed of each port.
5	STACK	STACK mode indicator	Green	Off	The STACK mode is not selected.

No.	Indicator	Name	Color	Status	Description
				Steady on	<p>The STACK mode is selected, and service port indicators show the stack member ID or leaf ID of the local switch.</p> <p>NOTE In V100R002C00 and later versions, if the indicator mode on any member switch of a stack or SVF system is changed to STACK by pressing the MODE button, all the other member switches in the stack or SVF system change the stack mode to STACK. In this case, service port indicators on the member switches show stack member IDs or leaf IDs of these switches.</p>
6	MODE/ID	<p>Mode switch button and ID indicator</p> <p>NOTE The mode switch button on the rear panel is integrated with the ID indicator. There is only an ID indicator and no mode switch button on the front panel.</p>	Mode switch button: -	-	<ul style="list-style-type: none"> When you press the MODE button once, the SPEED indicator turns green and service port indicators show the speed of each port. When you press the MODE button a second time, the STACK indicator turns green and service port indicators show the stack member ID of the local switch. When you press the button a third time, the STAT indicator turns green (default mode) and service port indicators show the link connection states and link activity on ports. <p>If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPEED and STACK indicators are off.</p>
				ID indicator: blue	Off
			ID indicator: 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.

No.	Indicator	Name	Color	Status	Description
7	-	Service port indicator (10GE electrical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.			Meanings of service port indicators vary in different modes. For details, see Table 2-123 .
8	-	Service port indicator (40GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.			Meanings of service port indicators vary in different modes. For details, see Table 2-123 . When a 40GE port is configured as four 10GE ports, this indicator shows the status of a 10GE port. The sequence number of the indicated 10GE port is identified by indicators 40GE Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE port has a single-color indicator, which shows the status of the 40GE port by default. If a 40GE port is not split and is connected to four 10GE ports on a remote device using a one-to-four high-speed cable, the 40GE port cannot go Up and its indicator is off.
9	-	40GE Breakout 1/2/3/4 (sequence number indicators of 10GE ports converted from a 40GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.	Green	Off	40GE ports are not split into four 10GE ports.

No.	Indica tor	Name	Color	Status	Description
				Steady on	<p>At least one 40GE port has been split into four 10GE ports.</p> <p>When one or more 40GE ports are configured as four 10GE ports, these indicators identify the sequence numbers of the 10GE ports. A 40GE port indicator (8 in Figure 2-57) shows the status of a 10GE port converted from the 40GE port:</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, each 40GE port indicator shows the status of the first 10GE port converted from the corresponding 40GE port. • When Breakout indicator 2 is on, each 40GE port indicator shows the status of the second 10GE port converted from the corresponding 40GE port. • When Breakout indicator 3 is on, each 40GE port indicator shows the status of the third 10GE port converted from the corresponding 40GE port. • When Breakout indicator 4 is on, each 40GE port indicator shows the status of the fourth 10GE port converted from the corresponding 40GE port. <p>The following is an example: The first 40GE port shown in Figure 2-57 is split into four 10GE ports, and the second 40GE port is not split.</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, the indicator of 40GE port 1 shows the status of the first 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2. • When Breakout indicator 2 is on, the indicator of 40GE port 1 shows the status of the second

No.	Indicator	Name	Color	Status	Description
					10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2.
10	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
11	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

Table 2-123 Service port indicators in various modes

Display Mode	Port	Color	Status	Description
STAT	10GE electrical port, and 40GE optical port	Green	Off	The port is not connected or has been shut down.
			Steady on	A link is established on the port.
			Blinking	The port is sending or receiving data.
	10GE optical port	Green	Off	The port is not connected or has been shut down.
			Steady on	A link is established on the port.
		Yellow	Off	The port is not sending or receiving data.

Display Mode	Port	Color	Status	Description
			Blinking	The port is sending or receiving data.
SPEED	10GE electrical port	Green	Off	The port is not connected or has been shut down.
			Steady on	The port speed is 100/1000 Mbit/s.
			Blinking	The port speed is 10 Gbit/s.
	10GE optical port	Green	Off	The port is not connected or has been shut down.
			Steady on	The port speed is 1000 Mbit/s.
			Blinking	The port speed is 10 Gbit/s.
	40GE optical port	Green	Off	The port is not connected or has been shut down.
			Steady on	The 40GE port has been split into four 10GE ports.
			Blinking	The port is working as a 40GE port.
STACK	NOTE This row describes the states and meanings of port indicators on a switch working in stack mode.	Green	Off	Port indicators do not show the stack member ID of the switch.
			Steady on	If the indicator of a port is steady on, the port number is the stack member ID of the switch. NOTE In STACK mode, a 10GE optical port has only its LINK indicator on (green).
	NOTE This row describes the states and meanings of port indicators on a switch working in super virtual fabric (SVF) mode.	Green	Off	Port indicators do not show the leaf ID of the switch.

Display Mode	Port	Color	Status	Description
			Steady on	<p>If the indicator of a port is steady on, the port number indicates the leaf ID of the switch.</p> <p>NOTE The leaf ID range supported by a switch depends on the number of downlink ports on the switch:</p> <ul style="list-style-type: none"> On the CE6810-24S2Q-LI, downlink ports 1 to 24 indicate leaf IDs 101 to 124. If the leaf ID of the switch is larger than 124, port indicators retain the original states before the switch changes to the SVF state and do not show the leaf ID. On the CE6810-48S4Q-EI, CE6810-48S4Q-LI, CE6810-48S-LI, CE6810-32T16S4Q-LI, and CE6850-48T4Q-EI downlink ports 1 to 48 indicate leaf IDs 101 to 148. If the leaf ID of the switch is larger than 148, port indicators retain the original states before the switch changes to the SVF state and do not show the leaf ID.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-124](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-124 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable

Attribute	Description
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-125](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-125 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-126](#) describes the attributes of the console port.

Table 2-126 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-127](#) describes the attributes of the ETH management port (RJ45).

Table 2-127 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-128 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 11.35 kg (25.02 lb)
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity

Item		Description
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 56 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	Not supported
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 350 W AC power (PAC-350WA series): 5 A (100 V AC to 240 V AC) • 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	380 W
	Typical power consumption	305 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1297 BTU/hr
	Typical heat dissipation	1041 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode AC Power module: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules

Item		Description
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	41.28 years
	Mean time to repair (MTTR)	2.0 hours
	Availability	0.9999933669
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	8 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE electrical ports (V100R002 and later versions) and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-129](#) provides the ordering information.

Table 2-129 Ordering information

Part Number	Part Model	Part Description
02359084	CE6850-EI-B01	CE6850-48T4Q-EI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EXT	CE6850-EI-B-B00	CE6850-48T4Q-EI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)
02350EXR	CE6850-48T4Q-EI-F	CE6850-48T4Q-EI Switch (48-Port 10G RJ45, 4-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EXS	CE6850-48T4Q-EI-B	CE6850-48T4Q-EI Switch (48-Port 10G RJ45, 4-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02355265	CE6850-48T4Q-EI	CE6850-48T4Q-EI Switch (48-Port 10GE RJ45, 4-Port 40GE QSFP+, Without Fan Box and Power Module)

2.3.9 CE6850-48S6Q-HI

Version Mapping

Table 2-130 lists the mappings between the CE6850-48S6Q-HI and software versions.

Table 2-130 Version mapping

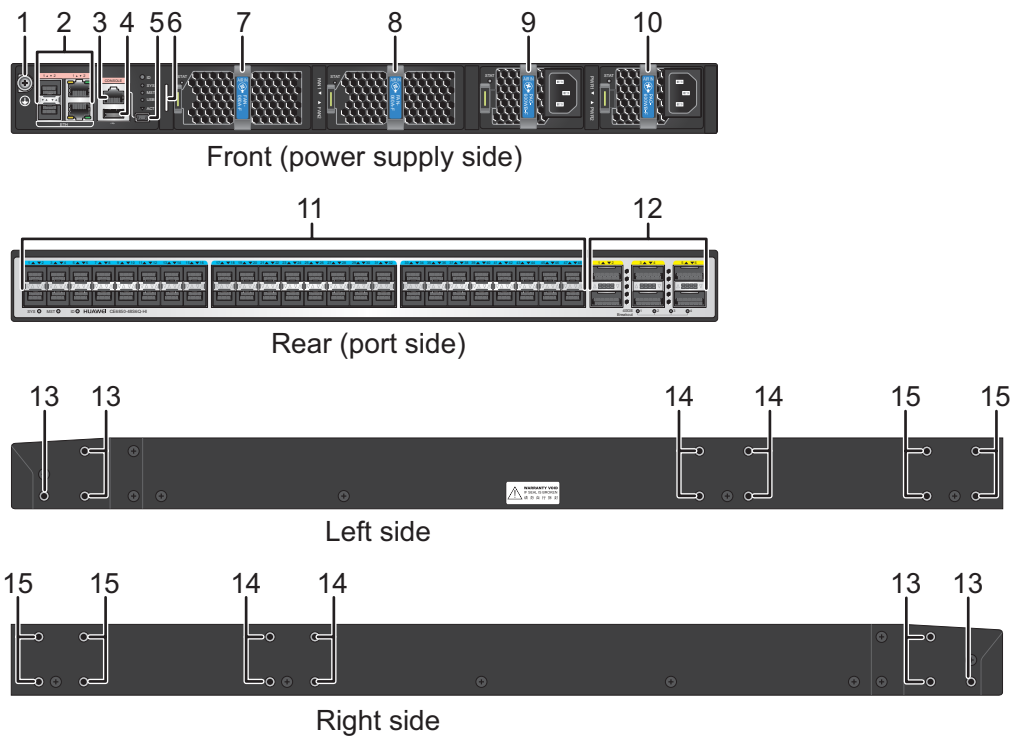
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6850-48S6Q-HI	CE6850HI	V100R005C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-59 CE6850-48S6Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE optical module • GE optical module NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4	USB port
5	Mini USB port	6	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules 	8	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules

9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 600 W AC&240 V DC power module 600 W high-voltage DC power module 1200 W DC power module 1200 W high-voltage DC power module 	10	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 600 W AC&240 V DC power module 600 W high-voltage DC power module 1200 W DC power module 1200 W high-voltage DC power module
111	Forty-eight 10GE SFP+ Ethernet optical ports Applicable transceiver modules and cables: <ul style="list-style-type: none"> 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) GE optical module GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) SFP+ AOC cable SFP+ high-speed cable 	12	Six 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> 40GE optical module QSFP+ AOC cable (QSFP+ to QSFP+) QSFP+ AOC cable (QSFP+ to 4*SFP+) QSFP+ high-speed cable (QSFP+ to 4*SFP+) QSFP+ high-speed cable (QSFP+ to QSFP+)
13	Three port-side mounting holes for mounting brackets	14	Four middle mounting holes for mounting brackets
15	Four power-supply-side mounting holes for mounting brackets	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-60](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-61](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-60 Front-to-back airflow (air flows out from the port side)

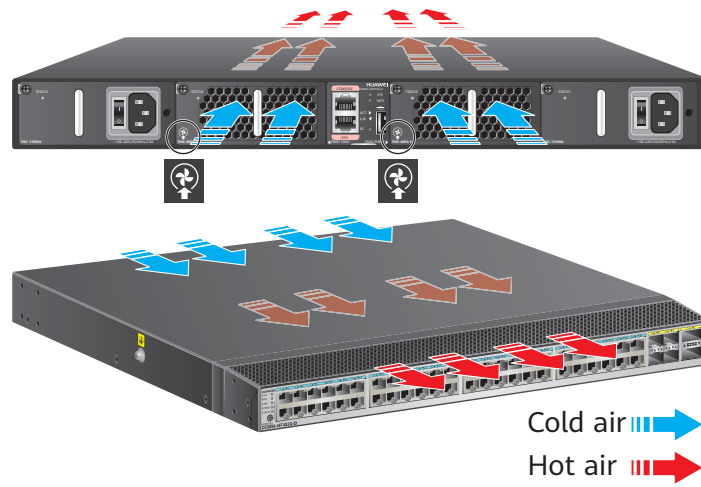
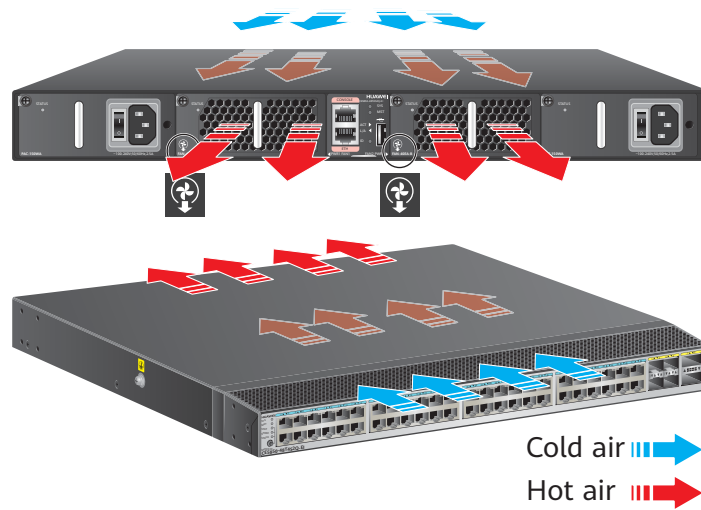


Figure 2-61 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-62 Indicators on the CE6850-48S6Q-HI rear panel

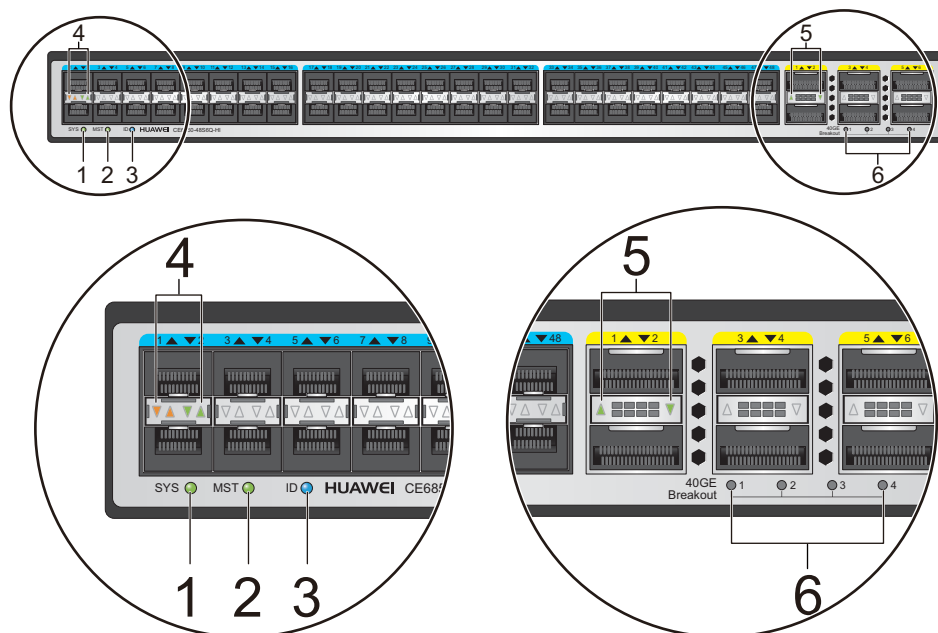


Figure 2-63 Indicators on the CE6850-48S6Q-HI front panel

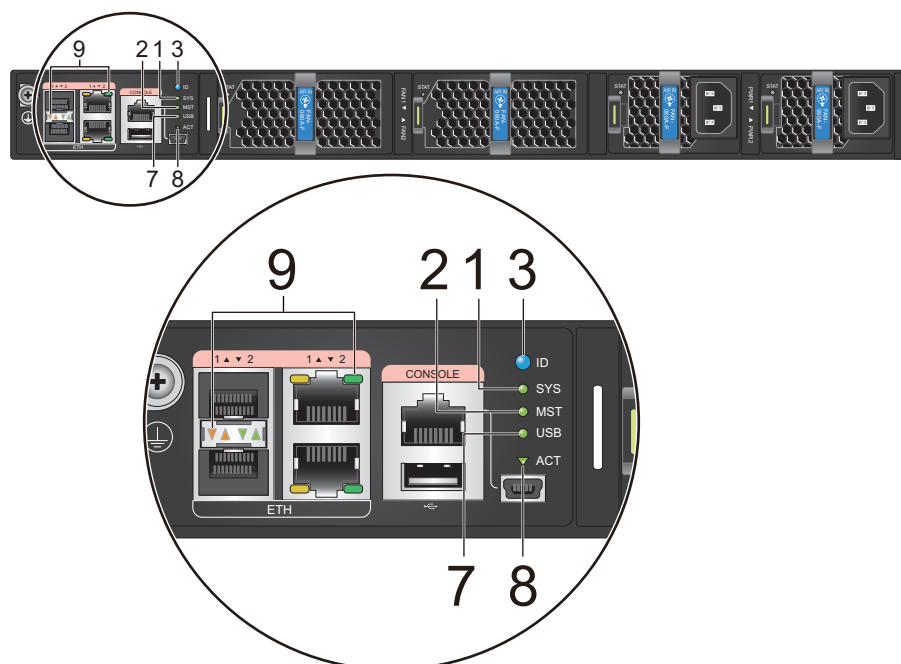


Table 2-131 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. A power module does not work normally. A fan module does not work normally.
2	MS T	Stack master/ slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.

No.	Indicator	Name	Color	Status	Description
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE optical port) NOTE Each 10GE 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.	Green	Off	The port is not connected or has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.
				Blinking	The port is sending or receiving data.
5	-	Service port indicator (40GE optical port)	Green	Off	The port is not connected or has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

No.	Indica tor	Name	Color	Statu s	Description
		<p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>			<p>When a 40GE port is configured as four 10GE ports, this indicator shows the status of a 10GE port. The sequence number of the indicated 10GE port is identified by indicators 40GE Breakout 1/2/3/4 on the lower right corner of the panel.</p> <p>NOTE Each 40GE port has a single-color indicator, which shows the status of the 40GE port by default. If a 40GE port is not split and is connected to four 10GE ports on a remote device using a one-to-four high-speed cable, the 40GE port cannot go Up and its indicator is off.</p>
6	-	<p>40GE Breakout 1/2/3/4 (sequence number indicators of 10GE ports converted from a 40GE port)</p> <p>NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.</p>	Green	Off	40GE ports are not split into four 10GE ports.

No.	Indica tor	Name	Color	Statu s	Description
				Steady on	<p>At least one 40GE port has been split into four 10GE ports.</p> <p>When one or more 40GE ports are configured as four 10GE ports, these indicators identify the sequence numbers of the 10GE ports. A port indicator (5 in Figure 2-62) shows the status of a 10GE port converted from the corresponding 40GE port:</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, each 40GE port indicator shows the status of the first 10GE port converted from the corresponding 40GE port. • When Breakout indicator 2 is on, each 40GE port indicator shows the status of the second 10GE port converted from the corresponding 40GE port. • When Breakout indicator 3 is on, each 40GE port indicator shows the status of the third 10GE port converted from the corresponding 40GE port. • When Breakout indicator 4 is on, each 40GE port indicator shows the status of the fourth 10GE port converted from the corresponding 40GE port. <p>The following is an example: The first 40GE port shown in Figure 2-62 is split into four 10GE ports, and the second 40GE port is not split.</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, the indicator of 40GE port 1 shows the status of the first 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2. • When Breakout indicator 2 is on, the indicator of 40GE port 1 shows the status of the second

No.	Indicator	Name	Color	Status	Description
					10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2.
7	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
			Red	Blinking	The system is reading data from a USB flash drive.
				Steady on	USB-based deployment has failed.
8	ACT	Mini USB port indicator	Green	Off	The Mini USB port is inactive, and the console port can be used.
				Steady on	The Mini USB port is active, and the console port cannot be used.
9	-	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
			Yellow	Blinking	The port is sending or receiving data.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-132](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-132 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae

Attribute	Description
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-133](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-133 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-134](#) describes the attributes of the console port.

Table 2-134 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

 **NOTE**

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable. [Table 2-135](#) describes the attributes of the combo electrical port.

Table 2-135 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-136](#) describes the attributes of the combo optical port.

Table 2-136 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z
Working mode	100/1000 Mbit/s Full-duplex

The CE6850-48S6Q-HI switches have two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6850-48S6Q-HI, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port

used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-137 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 11.6 kg (25.57 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 52 dBA Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC

Item		Description
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC. Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	272 W
	Typical power consumption	166 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	928 BTU/hr
	Typical heat dissipation	566 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules

Item		Description
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	56.21 years
	Mean time to repair (MTTR)	1.7 hours
	Availability	0.9999965570
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-138](#) provides the ordering information.

Table 2-138 Ordering information

Part Number	Part Model	Part Description
02359314	CE6850-HI-B00	CE6850-48S6Q-HI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EHE	CE6850-HI-B0A	CE6850-48S6Q-HI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)
02350EHC	CE6850-48S6Q-HI-F	CE6850-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EHD	CE6850-48S6Q-HI-B	CE6850-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02359313	CE6850-48S6Q-HI	CE6850-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, Without FAN Box and Power Module)

2.3.10 CE6850-48T6Q-HI

Version Mapping

Table 2-139 lists the mappings between the CE6850-48T6Q-HI and software versions.

Table 2-139 Version mapping

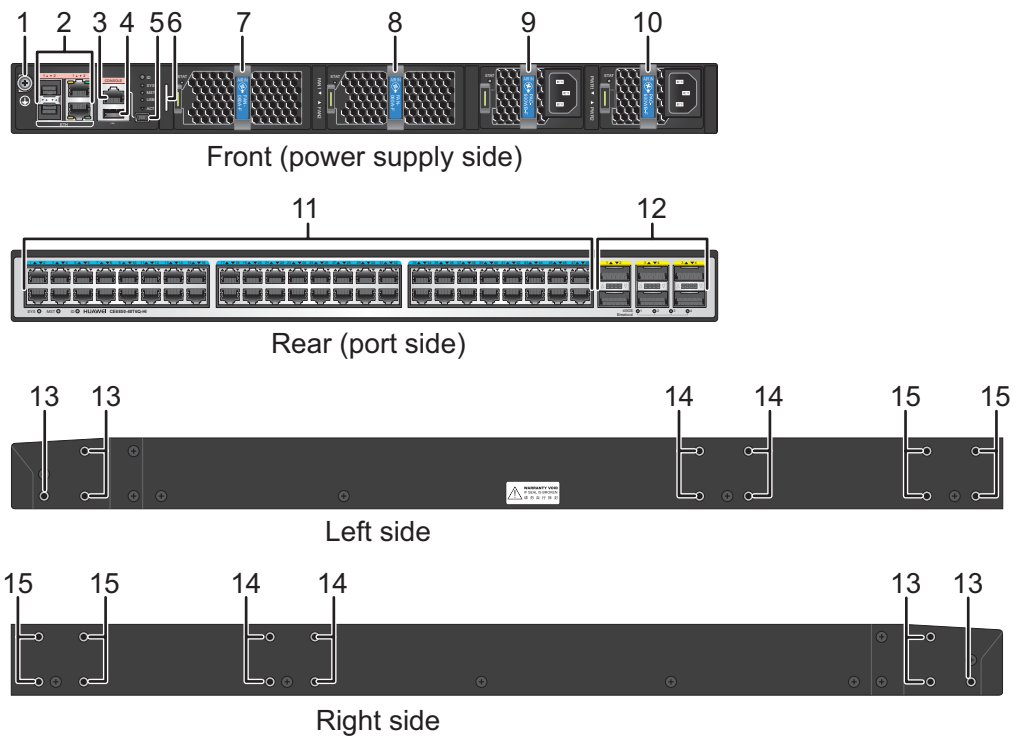
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6850-48T6Q-HI	CE6850HI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-64 CE6850-48T6Q-HI



1	Ground screw	2 Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE optical module • GE optical module NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4 USB port
5	Mini USB port	6 Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules 	8 Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules

9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 600 W AC&240 V DC power module 600 W high-voltage DC power module 1200 W DC power module 1200 W high-voltage DC power module 	10	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 600 W AC&240 V DC power module 600 W high-voltage DC power module 1200 W DC power module 1200 W high-voltage DC power module
11	Forty-eight 10GBASE-T Ethernet electrical ports	12	Six 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> 40GE optical module QSFP+ AOC cable (QSFP+ to QSFP+) QSFP+ AOC cable (QSFP+ to 4*SFP+) QSFP+ high-speed cable (QSFP+ to 4*SFP+) QSFP+ high-speed cable (QSFP+ to QSFP+)
13	Three port-side mounting holes for mounting brackets	14	Four middle mounting holes for mounting brackets
15	Four power-supply-side mounting holes for mounting brackets	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-65](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-66](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-65 Front-to-back airflow (air flows out from the port side)

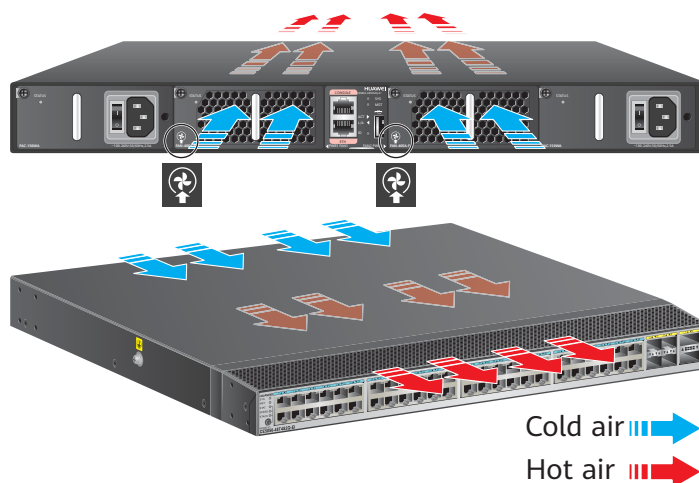
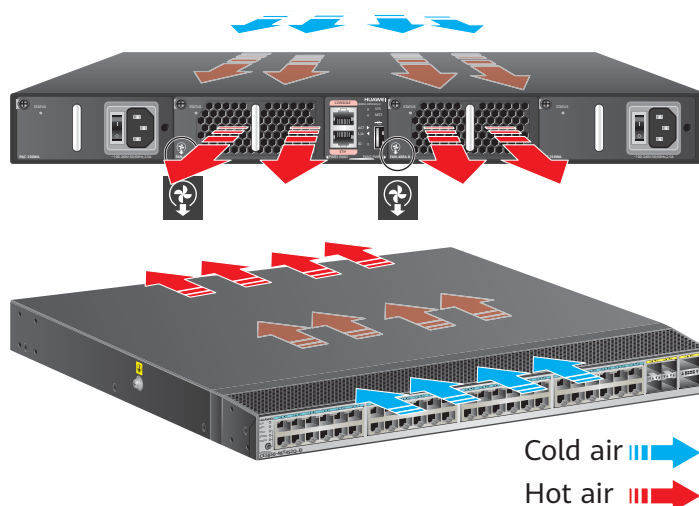


Figure 2-66 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6850-48T6Q-HI are 10GE electrical port indicators, and other indicators are the same as those on the CE6850-48S6Q-HI. The [CE6850-48S6Q-HI](#) is used as an example here to describe the indicators.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-140](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-140 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-141](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-141 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-142](#) describes the attributes of the console port.

Table 2-142 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

 **NOTE**

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable. [Table 2-143](#) describes the attributes of the combo electrical port.

Table 2-143 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-144](#) describes the attributes of the combo optical port.

Table 2-144 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z
Working mode	100/1000 Mbit/s Full-duplex

The CE6850-48T6Q-HI switches have two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6850-48T6Q-HI, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.

- If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
- If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-145 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 12.6 kg (27.78 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC/DC/high-voltage DC

Item		Description
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	379 W
	Typical power consumption	252 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1293 BTU/hr
	Typical heat dissipation	860 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)

Item		Description
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 4 kV in common mode and 2.5 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	54.48 years
	Mean time to repair (MTTR)	1.81 hours
	Availability	0.99999620929
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE electrical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-146 provides the ordering information.

Table 2-146 Ordering information

Part Number	Part Model	Part Description
02350EWK	CE6850-HI-F-B00	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EWL	CE6850-HI-B-B00	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350EWH	CE6850-48T6 Q-HI-F	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EWJ	CE6850-48T6 Q-HI-B	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350TJG	CE6850-48T6 Q-HI	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, Without FAN Box and Power Module)

2.3.11 CE6851-48S6Q-HI

Version Mapping

Table 2-147 lists the mappings between the CE6851-48S6Q-HI and software versions.

Table 2-147 Version mapping

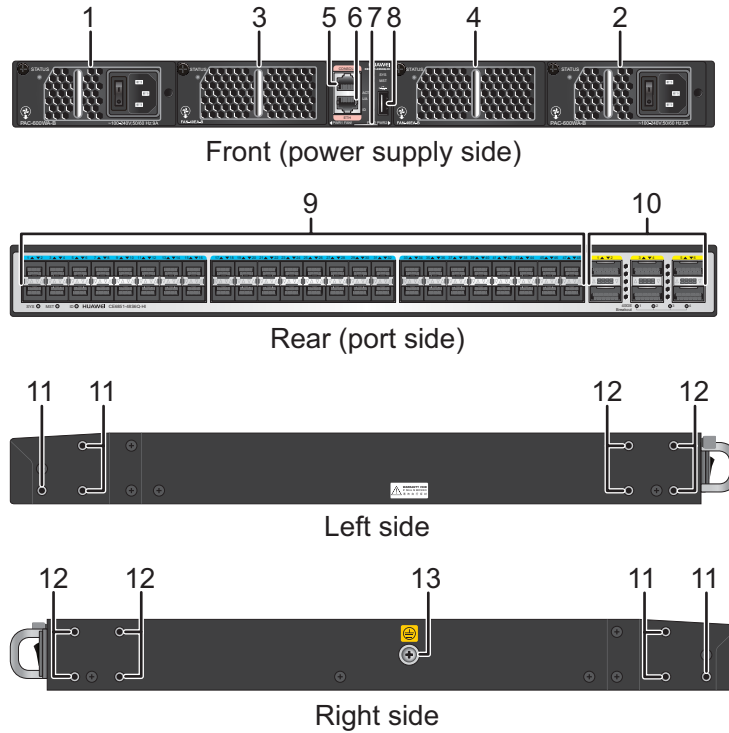
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6851-48S6Q-HI	CE6851HI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-67 CE6851-48S6Q-HI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	10	Six 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
11	Three port-side mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets
13	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

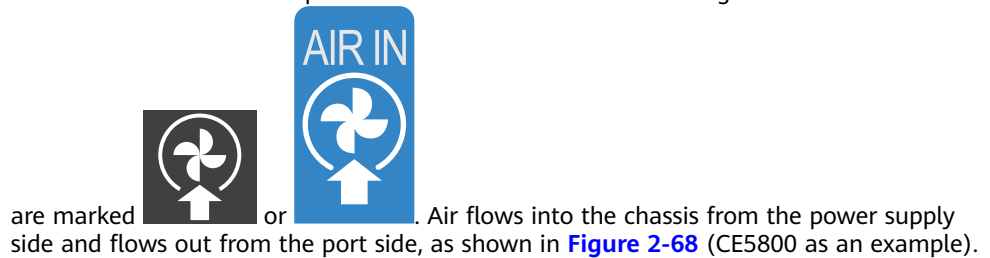
All fan modules are hot swappable.

Airflow

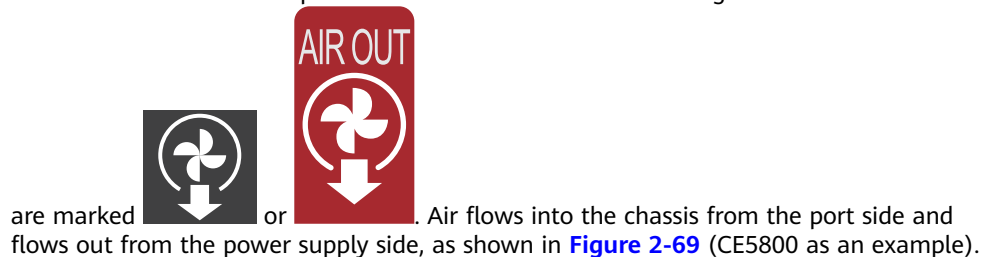
The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-68 Front-to-back airflow (air flows out from the port side)

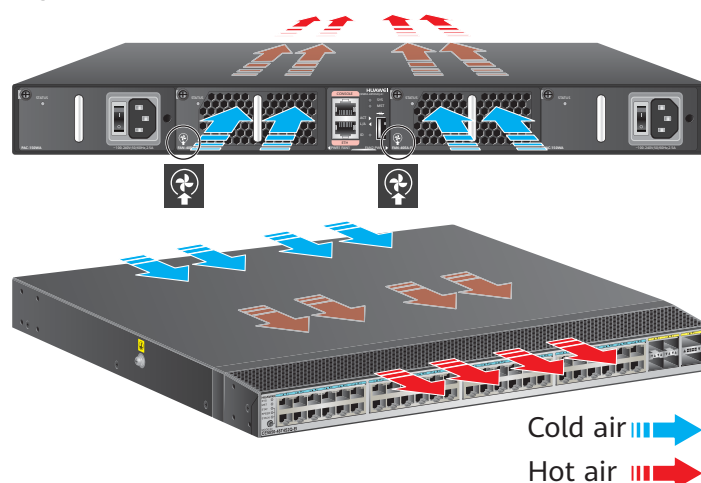
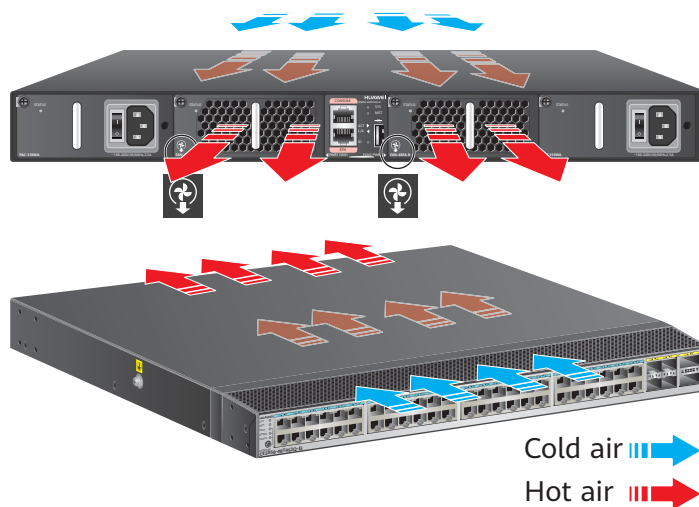


Figure 2-69 Back-to-front airflow (air flows in from the port side)



Indicators

The CE6851-48S6Q-HI does not have a mode switch button and the STAT/SPEED/STACK mode indicator. The downlink service port indicators of the CE6851-48S6Q-HI are 10GE optical port indicators, and other indicators on the CE6851-48S6Q-HI are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-148](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-148 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must

use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-149](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-149 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-150](#) describes the attributes of the console port.

Table 2-150 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-151](#) describes the attributes of the ETH management port (RJ45).

Table 2-151 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab

Attribute	Description
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-152 lists technical specifications of the CE6851-48S6Q-HI switch.

Table 2-152 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.7 kg (19.18 lb) 	
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Storage temperature: -40°C to +70°C (-40°F to +158°F) 	
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 56 dBA Front-to-back airflow: < 58 dBA
Power specifications	Power source type AC/DC	

Item		Description
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	245 W
	Typical power consumption	145 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	836 BTU/hr
	Typical heat dissipation	495 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup

Item		Description
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	49.08 years
	Mean time to repair (MTTR)	1.77 hours
	Availability	0.99999587522
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-153](#) provides the ordering information.

Table 2-153 Ordering information

Part Number	Part Model	Part Description
02350JAR	CE6851-HI-F-B0A	CE6851-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350JAS	CE6851-HI-B-B0A	CE6851-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350JAP	CE6851-48S6Q-HI-F	CE6851-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350JAQ	CE6851-48S6Q-HI-B	CE6851-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350TJJ	CE6851-48S6Q-HI-X	CE6851-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, Without FAN Box and Power Module)

2.3.12 CE6850U-24S2Q-HI

Version Mapping

Table 2-154 lists the mappings between the CE6850U-24S2Q-HI and software versions.

Table 2-154 Version mapping

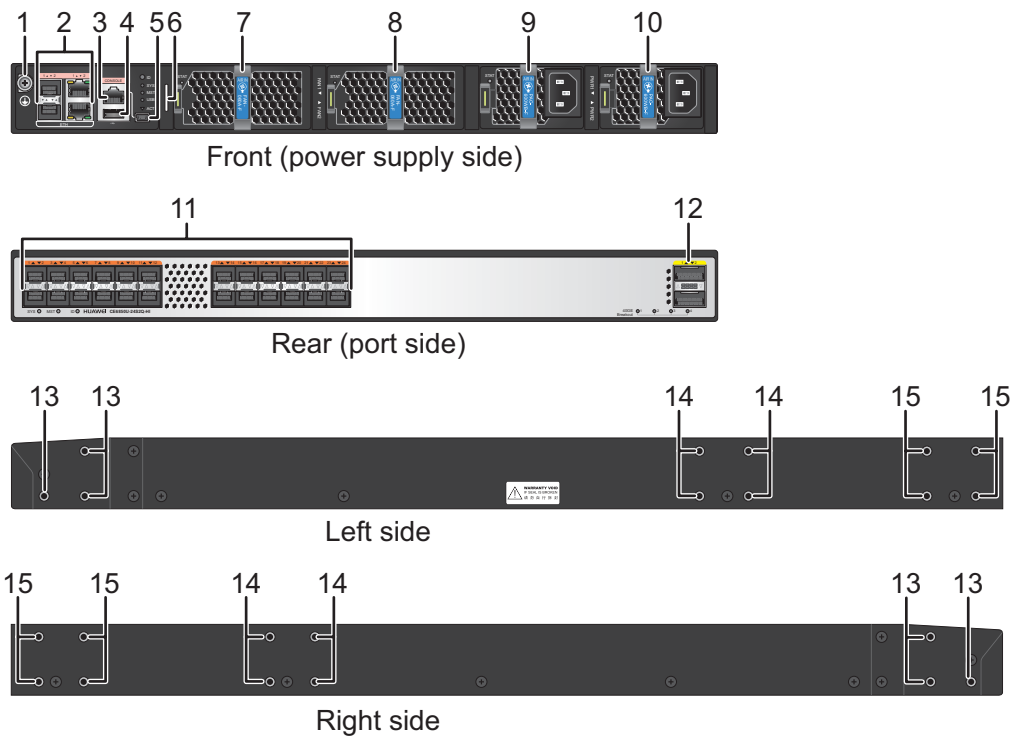
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6850U-24S2Q-HI	CE6850U-HI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-70 CE6850U-24S2Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE optical module • GE optical module NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4	USB port
5	Mini USB port	6	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules 	8	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules

9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 600 W AC&240 V DC power module 600 W high-voltage DC power module 1200 W DC power module 1200 W high-voltage DC power module 	10	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 600 W AC&240 V DC power module 600 W high-voltage DC power module 1200 W DC power module 1200 W high-voltage DC power module
11	Twenty-four 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> FC optical module 10GE optical module GE optical module GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) SFP+ AOC cable SFP+ high-speed cable 	12	Two 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: <ul style="list-style-type: none"> 40GE optical module QSFP+ AOC cable (QSFP+ to QSFP+) QSFP+ AOC cable (QSFP+ to 4*SFP+) QSFP+ high-speed cable (QSFP+ to 4*SFP+) QSFP+ high-speed cable (QSFP+ to QSFP+)
13	Three port-side mounting holes for mounting brackets	14	Four middle mounting holes for mounting brackets
15	Four power-supply-side mounting holes for mounting brackets	-	-

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).
 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-71](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-72](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-71 Front-to-back airflow (air flows out from the port side)

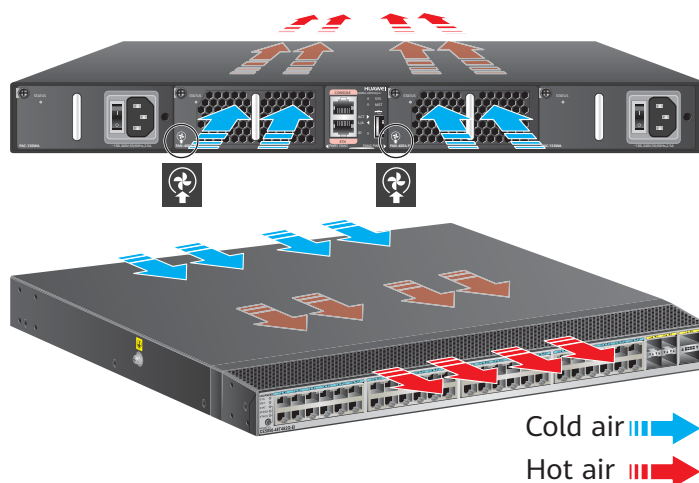
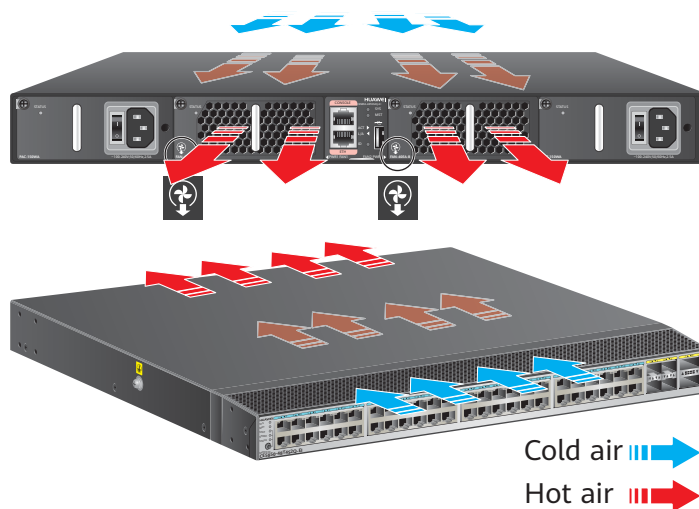


Figure 2-72 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE6850U-24S2Q-HI are the same as those on the CE6850-48S6Q-HI. The [CE6850-48S6Q-HI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-155](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-155 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

 **NOTE**

10GE SFP+ Ethernet optical ports of the CE6850U-24S2Q-HI can use 2G/4G/8G FC optical modules.

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-156](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-156 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-157](#) describes the attributes of the console port.

Table 2-157 Attributes of the console port

Attribute	Description
Connector type	RJ45

Attribute	Description
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

 **NOTE**

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable. [Table 2-158](#) describes the attributes of the combo electrical port.

Table 2-158 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-159](#) describes the attributes of the combo optical port.

Table 2-159 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z
Working mode	100/1000 Mbit/s Full-duplex

The CE6850U-24S2Q-HI switch has two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6850U-24S2Q-HI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.

- If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
- If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-160 lists technical specifications of the CE6850U-24S2Q-HI switch.

Table 2-160 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 12.3 kg (27.12 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC/high-voltage DC

Item		Description
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC. Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	282 W
	Typical power consumption	183 W (100% throughput, SFP+ cables on 24 ports and QSFP+ cables on 2 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	962 BTU/hr
	Typical heat dissipation	624 BTU/hr (100% throughput, SFP+ cables on 24 ports and QSFP+ cables on 2 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	61.53 years
	Mean time to repair (MTTR)	1.78 hours
	Availability	0.99999668947
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To

obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-161 provides the ordering information.

Table 2-161 Ordering information

Part Number	Part Model	Part Description
02350GTP	CE6850U-HI-F-B0B	CE6850U-24S2Q-HI Switch (24-Port 10GE SFP+, support 2/4/8G FC, 2-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350GTQ	CE6850U-HI-B-B0B	CE6850U-24S2Q-HI Switch (24-Port 10GE SFP+, support 2/4/8G FC, 2-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350GTM	CE6850U-24S2Q-HI-F	CE6850U-24S2Q-HI Switch (24-Port 10GE SFP+, support 2/4/8G FC, 2-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350GTN	CE6850U-24S2Q-HI-B	CE6850U-24S2Q-HI Switch (24-Port 10GE SFP+, support 2/4/8G FC, 2-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350TJH	CE6850U-24S2Q-HI	CE6850U-24S2Q-HI Switch (24-Port 10GE SFP+, support 2/4/8G FC, 2-Port 40GE QSFP+, Without FAN Box and Power Module)

2.3.13 CE6850U-48S6Q-HI

Version Mapping

Table 2-162 lists the mappings between the CE6850U-48S6Q-HI and software versions.

Table 2-162 Version mapping

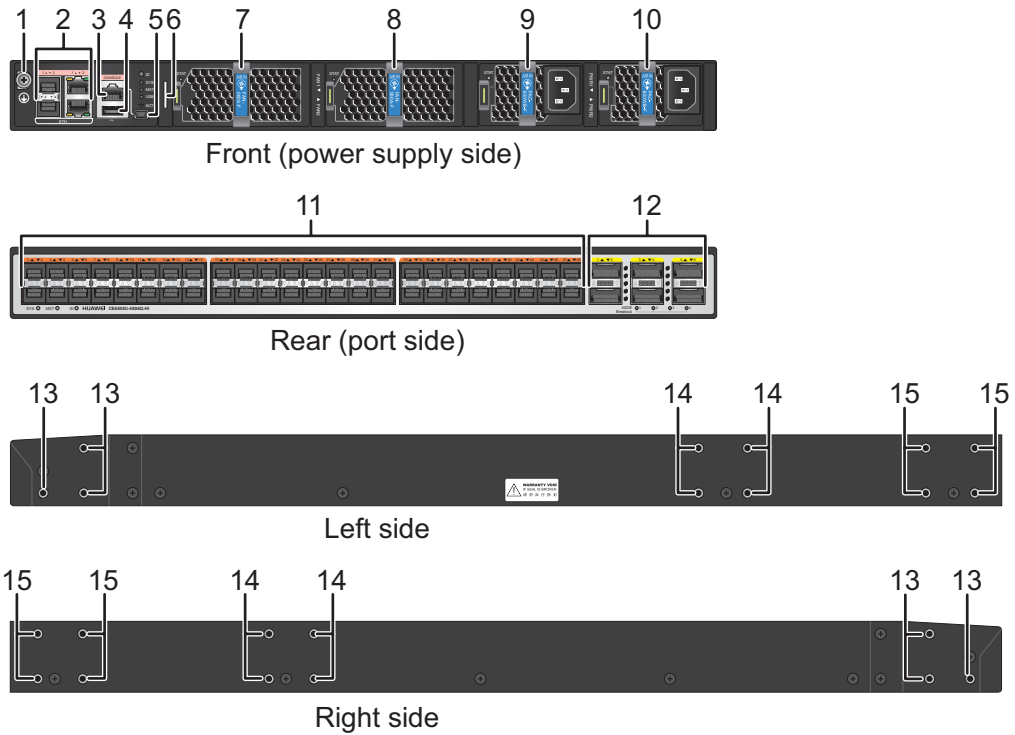
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6850	CE6850U-48S6Q-HI	CE6850U-HI	V100R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-73 CE6850U-48S6Q-HI



1	Ground screw	2 Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE optical module • GE optical module NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4 USB port

5	Mini USB port	6	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: • FAN-060A series fan modules	8	Fan slot 2 Applicable fan modules: • FAN-060A series fan modules
9	Power supply slot 1 Applicable power modules: • 600 W AC&240 V DC power module • 600 W high-voltage DC power module • 1200 W DC power module • 1200 W high-voltage DC power module	10	Power supply slot 2 Applicable power modules: • 600 W AC&240 V DC power module • 600 W high-voltage DC power module • 1200 W DC power module • 1200 W high-voltage DC power module
11	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • FC optical module • 10GE optical module • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable	12	Six 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. Applicable modules and cables: • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
13	Three port-side mounting holes for mounting brackets	14	Four middle mounting holes for mounting brackets
15	Four power-supply-side mounting holes for mounting brackets	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.
- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

 NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-74](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-75](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-74 Front-to-back airflow (air flows out from the port side)

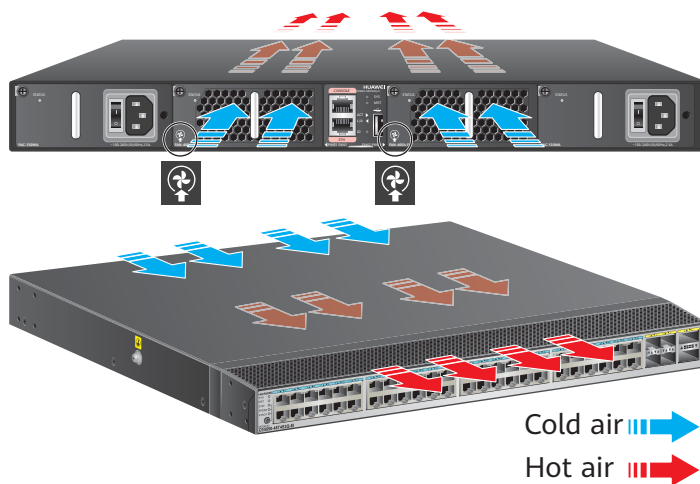
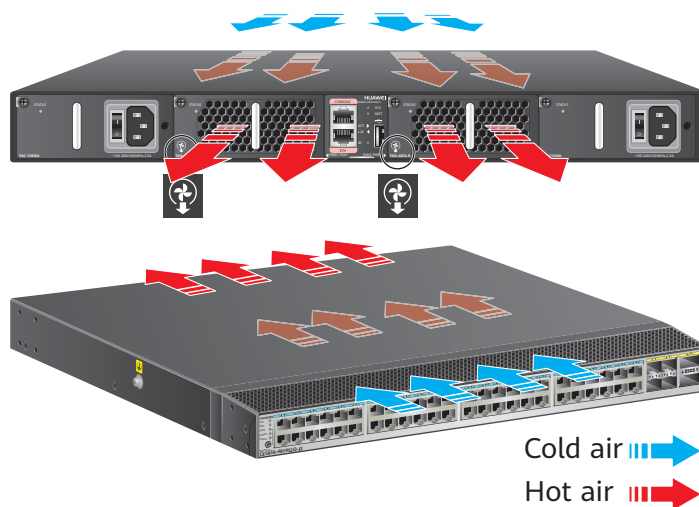


Figure 2-75 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE6850U-48S6Q-HI are the same as those on the CE6850-48S6Q-HI. The [CE6850-48S6Q-HI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-163](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-163 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

NOTE

10GE SFP+ Ethernet optical ports of the CE6850U-48S6Q-HI can use 2G/4G/8G FC optical modules.

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-164](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-164 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-165](#) describes the attributes of the console port.

Table 2-165 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

NOTE

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

NOTE

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable.

[Table 2-166](#) describes the attributes of the combo electrical port.

Table 2-166 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-167](#) describes the attributes of the combo optical port.

Table 2-167 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z
Working mode	100/1000 Mbit/s Full-duplex

The CE6850U-48S6Q-HI switch has two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6850U-48S6Q-HI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-168 lists technical specifications of the CE6850U-48S6Q-HI switch.

Table 2-168 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 12.6 kg (27.78 lb).
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 52 dBA Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC

Item		Description
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	339 W
	Typical power consumption	235 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1157 BTU/hr
	Typical heat dissipation	802 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules

Item		Description
	Mean time between failures (MTBF)	53.24 years
	Mean time to repair (MTTR)	1.81 hours
	Availability	0.99999611181
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-169 provides the ordering information.

Table 2-169 Ordering information

Part Number	Part Model	Part Description
02359312	CE6850U-HI-F-B0A	CE6850U-48S6Q-HI Switch (48-Port 10GE SFP+, support 2/4/8G FC, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EHH	CE6850U-HI-B-B0A	CE6850U-48S6Q-HI Switch (48-Port 10GE SFP+, support 2/4/8G FC, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)

Part Number	Part Model	Part Description
02350EHF	CE6850U-48S6Q-HI-F	CE6850U-48S6Q-HI Switch (48-Port 10GE SFP+, support 2/4/8G FC, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EHG	CE6850U-48S6Q-HI-B	CE6850U-48S6Q-HI Switch (48-Port 10GE SFP+, support 2/4/8G FC, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02359311	CE6850U-48S6Q-HI	CE6850U-48S6Q-HI Switch (48-Port 10GE SFP+, support 2/4/8G FC, 6-Port 40GE QSFP+, Without FAN Box and Power Module)

2.3.14 CE6855-48S6Q-HI

Version Mapping

Table 2-170 lists the mappings between the CE6855-48S6Q-HI and software versions.

Table 2-170 Version mapping

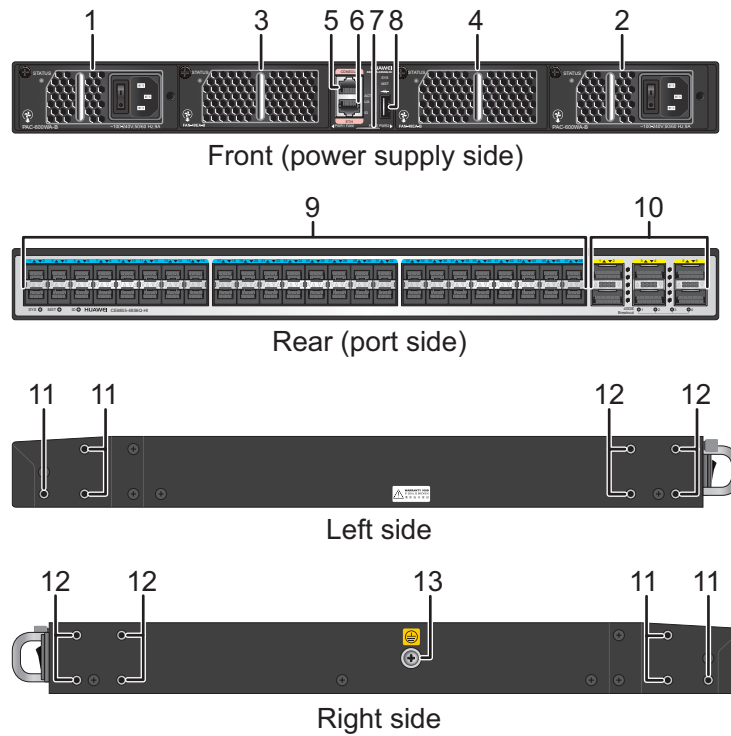
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6855	CE6855-48S6Q-HI	CE6855HI	V200R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-76 CE6855-48S6Q-HI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Forty-eight 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	1 0	<p>Six 40GE QSFP+ Ethernet optical ports</p> <p>NOTE</p> <p>A 40GE QSFP+ port can be split into four 10GE ports.</p> <p>In V200R005C00 and later versions, a QSA convertor can be installed on a 40GE interface that has been split. Installing a medium whose rate is 10 Gbit/s on the QSA convertor makes a 40GE interface function as a 10GE interface. Only the first split interface works and other three split interfaces are unavailable. If a QSA convertor is installed on an interface that is not split or a medium whose rate is not 10 Gbit/s is installed on the QSA convertor on an interface that has been split, the interface enters the Down(Transceiver type mismatch) status.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
1 1	Three port-side mounting holes for mounting brackets	1 2	Four power-supply-side mounting holes for mounting brackets
1 3	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.

- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-77](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-78](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-77 Front-to-back airflow (air flows out from the port side)

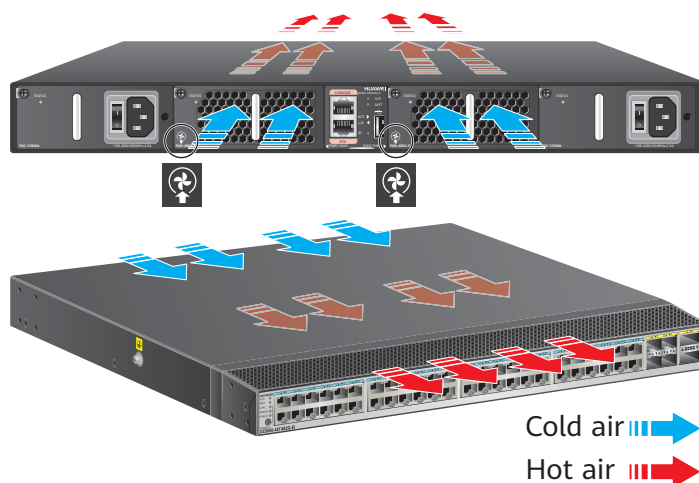
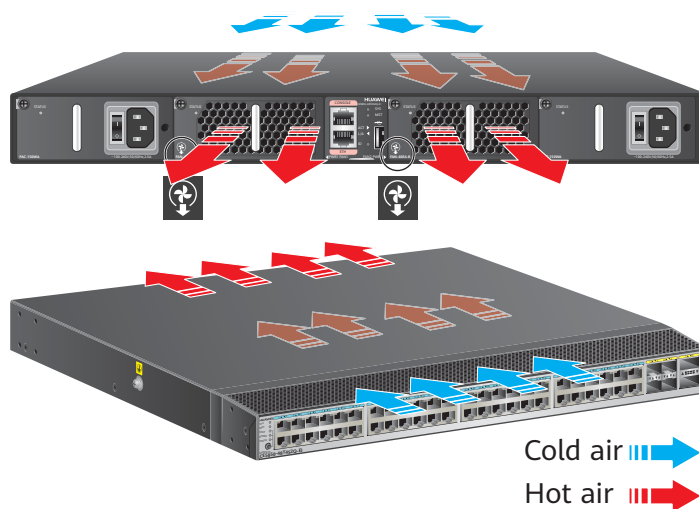


Figure 2-78 Back-to-front airflow (air flows in from the port side)



Indicators

The CE6855-48S6Q-HI does not have a mode switch button and the STAT/SPEED/STACK mode indicator. The downlink service port indicators of the CE6855-48S6Q-HI are 10GE optical port indicators, and other indicators on the CE6855-48S6Q-HI are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-171](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-171 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-172](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-172 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-173](#) describes the attributes of the console port.

Table 2-173 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

Attribute	Description
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-174](#) describes the attributes of the ETH management port (RJ45).

Table 2-174 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-175](#) lists technical specifications of the CE6855-48S6Q-HI switch.

Table 2-175 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.7 kg (19.18 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 56 dBA Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	216 W
	Typical power consumption	116 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	737 BTU/hr

Item		Description
	Typical heat dissipation	396 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	48.83 years
	Mean time to repair (MTTR)	1.73 hours
	Availability	0.99999595166
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-176](#) provides the ordering information.

Table 2-176 Ordering information

Part Number	Part Model	Part Description
02350RTC	CE6855-HI-B-B0A	CE6855-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350WVA	CE6855-HI-B-B0B	CE6855-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake, 4m Ground Wire)
02350RTB	CE6855-HI-F-B0A	CE6855-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SRQ	CE6855-48S6Q-HI	CE6855-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, Without Power Module and FAN Box)

2.3.15 CE6855-48T6Q-HI

Version Mapping

[Table 2-177](#) lists the mappings between the CE6855-48T6Q-HI and software versions.

Table 2-177 Version mapping

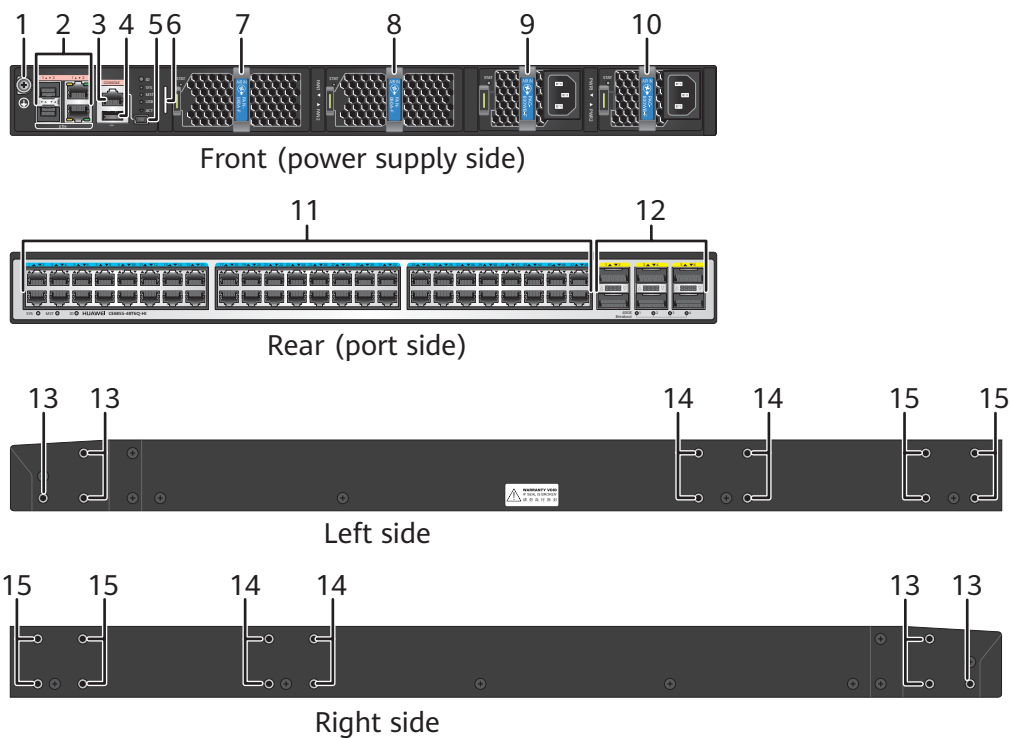
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6855	CE6855-48T6Q-HI	CE6855HI	V200R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-79 CE6855-48T6Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE optical module • GE optical module NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4	USB port
5	Mini USB port	6	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules 	8	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules
9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 600 W AC&240 V DC power module • 600 W high-voltage DC power module • 1200 W DC power module • 1200 W high-voltage DC power module 	10	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 600 W AC&240 V DC power module • 600 W high-voltage DC power module • 1200 W DC power module • 1200 W high-voltage DC power module

1 1	Forty-eight 10GBASE-T Ethernet electrical ports	1 2	Six 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. In V200R005C00 and later versions, a QSA convertor can be installed on a 40GE interface that has been split. Installing a medium whose rate is 10 Gbit/s on the QSA convertor makes a 40GE interface function as a 10GE interface. Only the first split interface works and other three split interfaces are unavailable. If a QSA convertor is installed on an interface that is not split or a medium whose rate is not 10 Gbit/s is installed on the QSA convertor on an interface that has been split, the interface enters the Down(Transceiver type mismatch) status. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
1 3	Three port-side mounting holes for mounting brackets	1 4	Four middle mounting holes for mounting brackets
1 5	Four power-supply-side mounting holes for mounting brackets	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.

- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-80](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-81](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-80 Front-to-back airflow (air flows out from the port side)

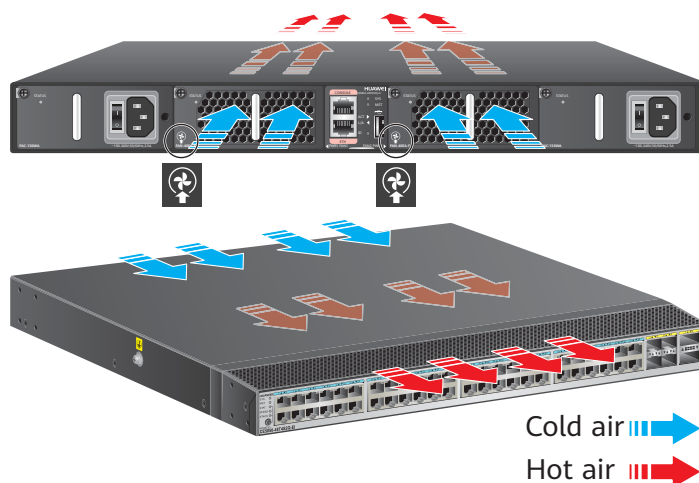
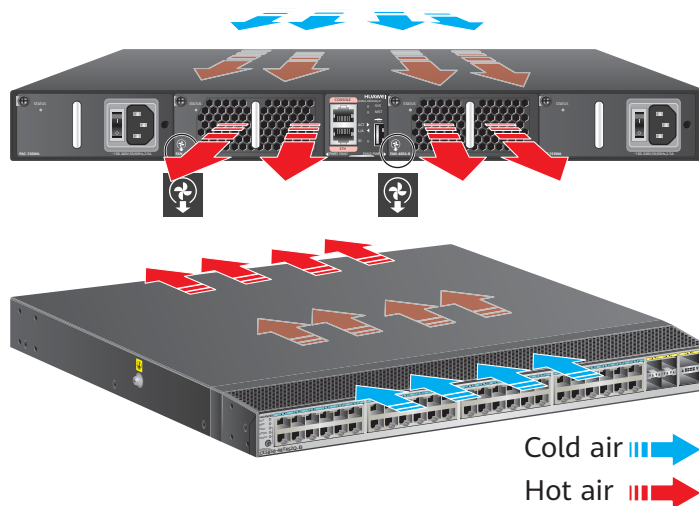


Figure 2-81 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6855-48T6Q-HI are 10GE electrical port indicators, and other indicators are the same as those on the CE6850-48S6Q-HI. The [CE6850-48S6Q-HI](#) is used as an example here to describe the indicators.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-178](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-178 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-179](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-179 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-180](#) describes the attributes of the console port.

Table 2-180 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

 **NOTE**

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable. [Table 2-181](#) describes the attributes of the combo electrical port.

Table 2-181 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-182](#) describes the attributes of the combo optical port.

Table 2-182 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z
Working mode	100/1000 Mbit/s Full-duplex

The CE6855-48T6Q-HI switch has two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6855-48T6Q-HI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.

- If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
- If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-183 lists technical specifications of the CE6855-48T6Q-HI switch.

Table 2-183 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 12.6 kg (27.78 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC/DC/high-voltage DC

Item		Description
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	346 W
	Typical power consumption	219 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1181 BTU/hr
	Typical heat dissipation	747 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)

Item		Description
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> • AC: 4 kV in common mode and 2.5 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	54.48 years
	Mean time to repair (MTTR)	1.81 hours
	Availability	0.99999620929
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	2 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE electrical ports and 40GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-184 provides the ordering information.

Table 2-184 Ordering information

Part Number	Part Model	Part Description
02350QAK	CE6855-HI-F-B00	CE6855-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350QAJ	CE6855-HI-B-B00	CE6855-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350WVD	CE6855-HI-B-B01	CE6855-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake, 4m Ground Wire)
02350SRN	CE6855-48T6Q-HI	CE6855-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, Without Power Module and FAN Box)

2.3.16 CE6856-48S6Q-HI

Version Mapping

Table 2-185 lists the mappings between the CE6856-48S6Q-HI and software versions.

Table 2-185 Version mapping

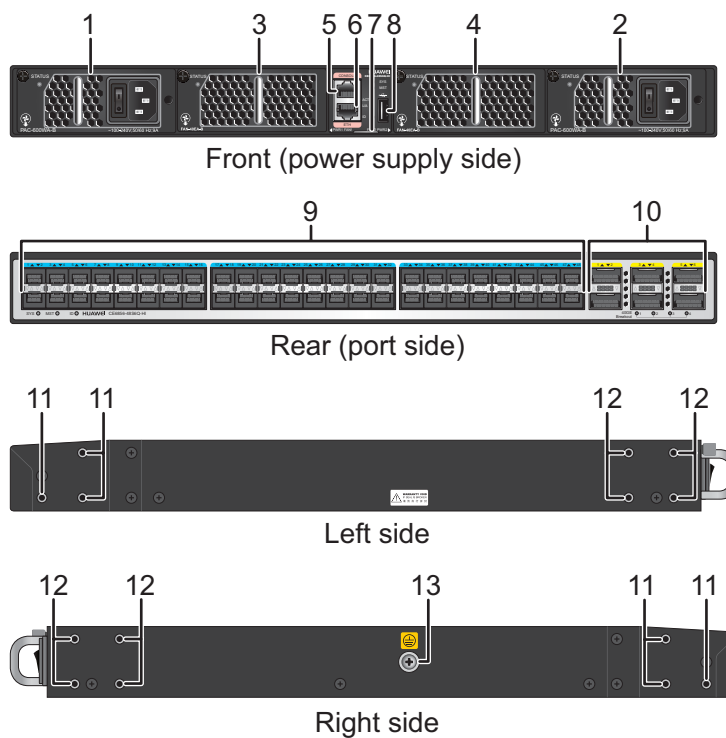
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6856	CE6856-48S6Q-HI	CE6856HI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-82 CE6856-48S6Q-HI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 350 W DC power module 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 350 W DC power module 600 W AC power module
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3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40EA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	10	Six 40GE QSFP+ Ethernet optical ports NOTE A 40GE QSFP+ port can be split into four 10GE ports. In V200R005C00 and later versions, a QSA convertor can be installed on a 40GE interface that has been split. Installing a medium whose rate is 10 Gbit/s on the QSA convertor makes a 40GE interface function as a 10GE interface. Only the first split interface works and other three split interfaces are unavailable. If a QSA convertor is installed on an interface that is not split or a medium whose rate is not 10 Gbit/s is installed on the QSA convertor on an interface that has been split, the interface enters the Down(Transceiver type mismatch) status. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+)
11	Three port-side mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets
13	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

 NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-83](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-84](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-83 Front-to-back airflow (air flows out from the port side)

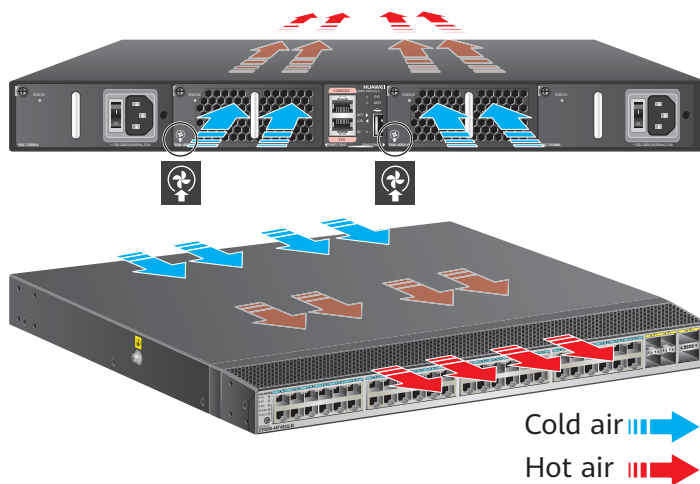
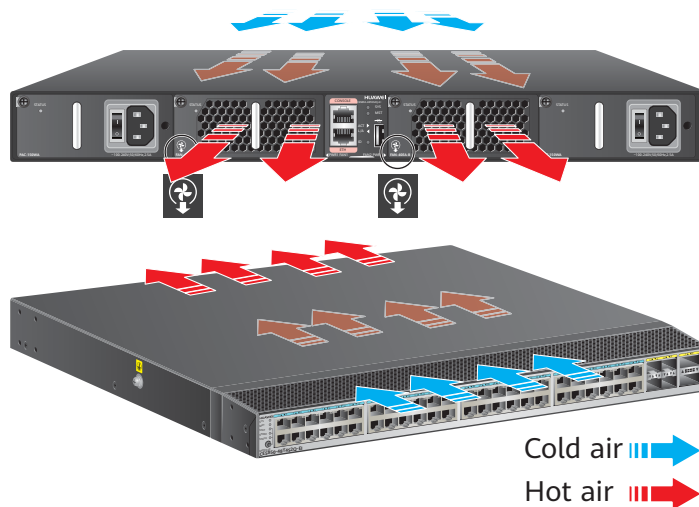


Figure 2-84 Back-to-front airflow (air flows in from the port side)



Indicators

The CE6856-48S6Q-HI does not have a mode switch button and the STAT/SPEED/STACK mode indicator. The downlink service port indicators of the CE6856-48S6Q-HI are 10GE optical port indicators, and other indicators on the CE6856-48S6Q-HI are the same as those on the CE6850-48T4Q-EI. The [CE6850-48T4Q-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-186](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-186 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must

use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-187](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-187 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-188](#) describes the attributes of the console port.

Table 2-188 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-189](#) describes the attributes of the ETH management port (RJ45).

Table 2-189 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab

Attribute	Description
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-190 lists technical specifications of the CE6856-48S6Q-HI switch.

Table 2-190 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.7 kg (19.18 lb) 	
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Storage temperature: -40°C to +70°C (-40°F to +158°F) 	
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 56 dBA Front-to-back airflow: < 58 dBA
Power specifications	Power source type AC/DC	

Item		Description
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	216 W
	Typical power consumption	116 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	737 BTU/hr
	Typical heat dissipation	396 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup

Item		Description
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	48.83 years
	Mean time to repair (MTTR)	1.73 hours
	Availability	0.99999595166
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-191 provides the ordering information.

Table 2-191 Ordering information

Part Number	Part Model	Part Description
02351LVA	CE6856-48S6Q-HI	CE6856-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, Without Power Module and FAN Box)
02351YPP	CE6856-HI-B-B0A	CE6856-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02351YPN	CE6856-HI-F-B0A	CE6856-48S6Q-HI Switch (48-Port 10G SFP+, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)

2.3.17 CE6856-48T6Q-HI

Version Mapping

Table 2-192 lists the mappings between the CE6856-48T6Q-HI and software versions.

Table 2-192 Version mapping

Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6856	CE6856-48T6Q-HI	CE6856HI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

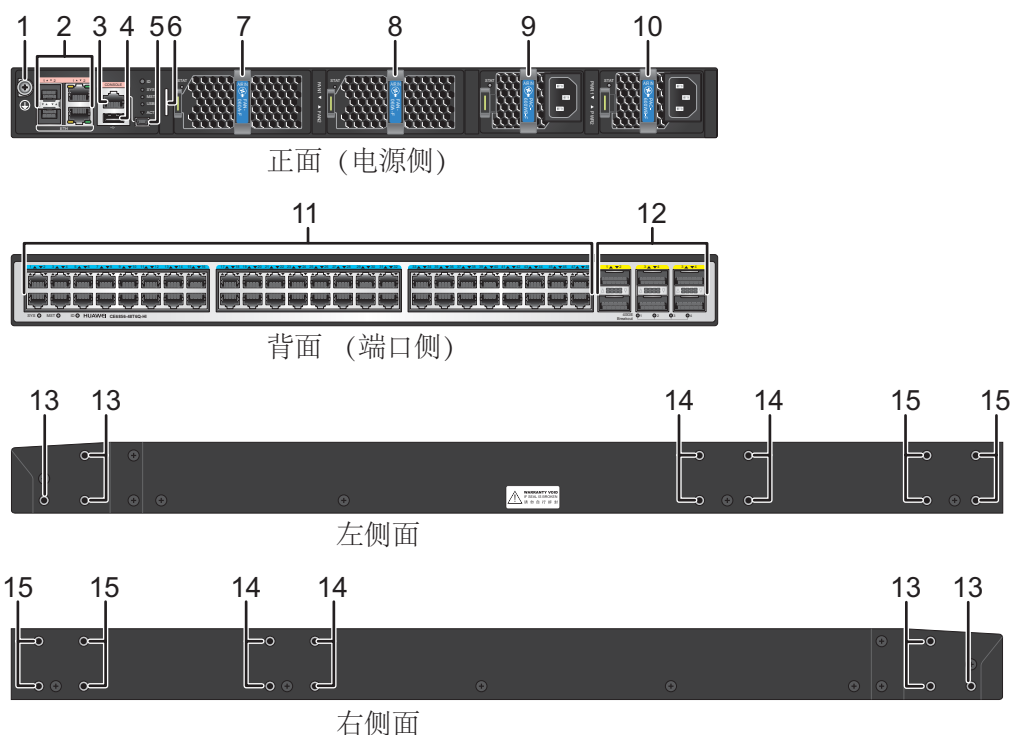
Appearance and Structure

 **NOTE**

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

CE6856-48T6Q-HI appearance

Figure 2-85 CE6856-48T6Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE SFP_eSFP Optical Modules • GE eSFP Optical Modules NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4	USB port
5	Mini USB port	6	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A Series Fan Modules 	8	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A Series Fan Modules

9	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 600 W AC&240 V DC power module (PAC-600WB) • 600 W High-Voltage DC Power Module • 1200 W DC Power Module (PDC-1K2WA) • 1200 W High-voltage DC Power Module (PHD-1K2WA) 	10	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 600 W AC&240 V DC power module (PAC-600WB) • 600 W High-Voltage DC Power Module • 1200 W DC Power Module (PDC-1K2WA) • 1200 W High-voltage DC Power Module (PHD-1K2WA)
11	<p>Forty-eight 10GBASE-T Ethernet electrical ports</p>	12	<p>Six 40GE QSFP+ Ethernet optical ports</p> <p>NOTE</p> <p>A 40GE QSFP+ port can be split into four 10GE ports.</p> <p>In V200R005C00 and later versions, a QSA convertor can be installed on a 40GE interface that has been split. Installing a medium whose rate is 10 Gbit/s on the QSA convertor makes a 40GE interface function as a 10GE interface. Only the first split interface works and other three split interfaces are unavailable. If a QSA convertor is installed on an interface that is not split or a medium whose rate is not 10 Gbit/s is installed on the QSA convertor on an interface that has been split, the interface enters the Down(Transceiver type mismatch) status.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • QSFP+ to QSFP+ AOC cable • QSFP+ to 4*SFP+ AOC cable • QSFP+ to 4*SFP+ High-Speed Cable • QSFP+ to QSFP+ High-Speed Cable
13	<p>Three port-side mounting holes for mounting brackets</p>	14	<p>Four middle mounting holes for mounting brackets</p>
15	<p>Four power-supply-side mounting holes for mounting brackets</p>	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

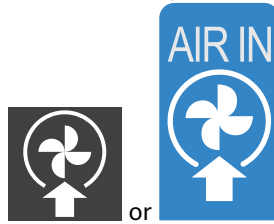
All fan modules are hot swappable.



Airflow

The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

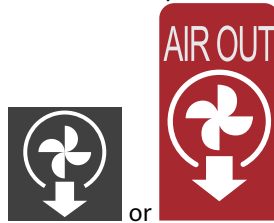
 NOTE



- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-86](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-86 Front-to-back airflow (air flows out from the port side)

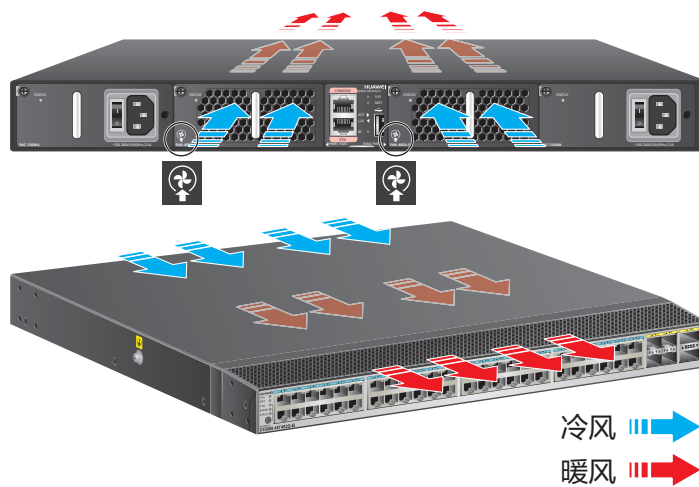
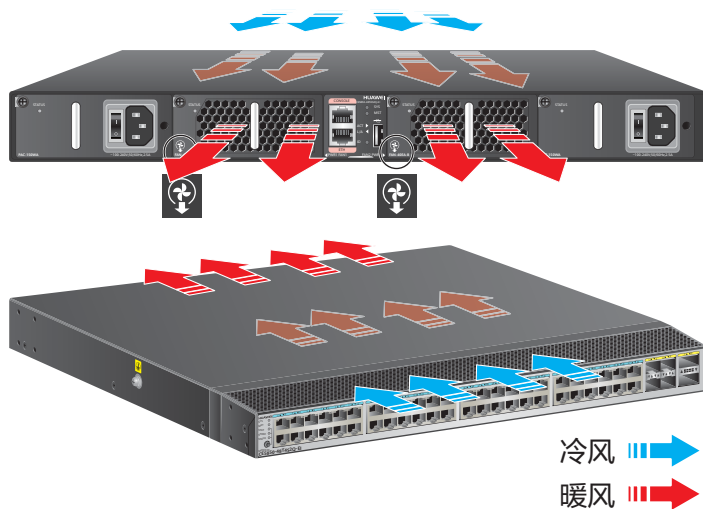


Figure 2-87 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6856-48T6Q-HI are 10GE electrical port indicators, and other indicators on the CE6856-48T6Q-HI are the same as those on the CE6850-48S6Q-HI. This figure shows the indicators on the CE6850-48S6Q-HI.

Figure 2-88 Indicators on the CE6850-48S6Q-HI rear panel

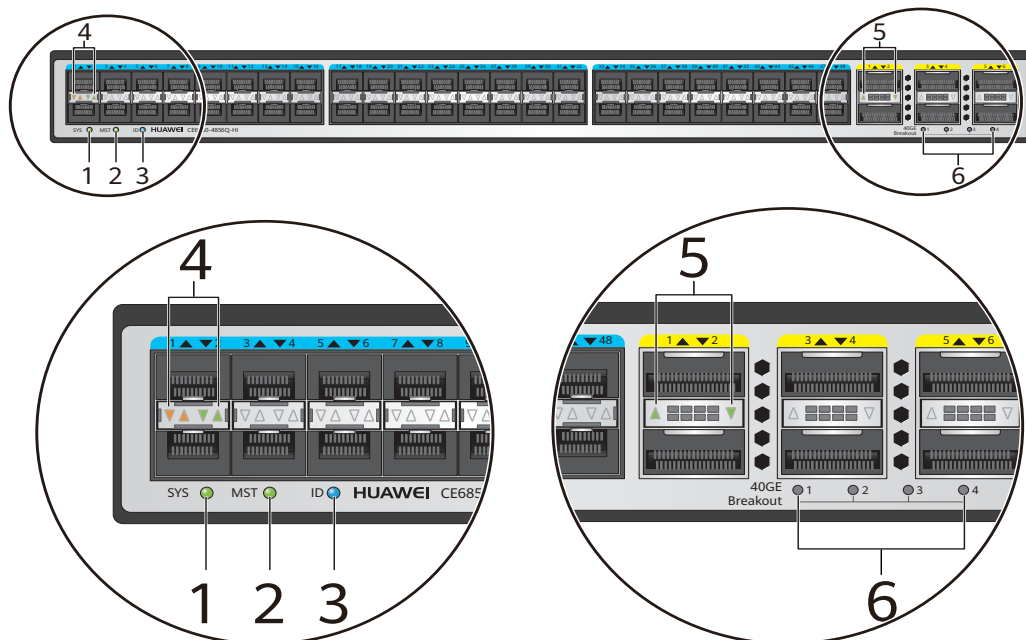


Figure 2-89 Indicators on the CE6850-48S6Q-HI front panel

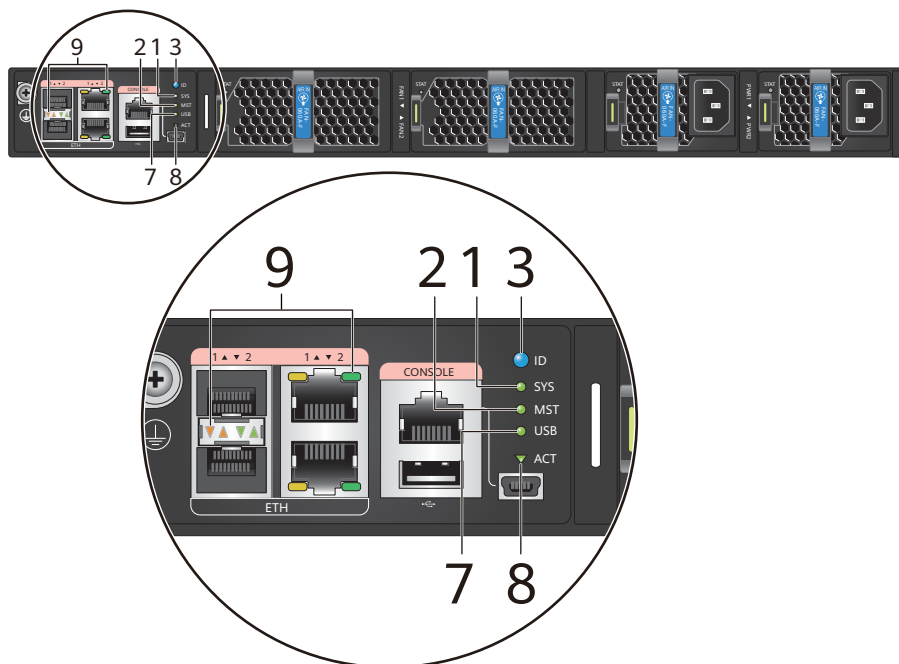


Table 2-193 Indicators on the CE6856-48T6Q-HI

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running properly.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work properly. At least one fan module does not work properly.
2	MST	Stack master/slave indicator	Green	Off	The device is not a stack master.

No.	Indica tor	Name	Color	Statu s	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Steady on	The device is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				Steady on	The ID indicator can be turned on or off remotely to help field engineers find the switch to be maintained.
4	-	Service port indicator (10GE electrical port)	Green	Off	The port is not connected or has been shut down.
				Steady on	The port is connected.
			Yellow	Off	The port is not sending or receiving data.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE Each 10GE electrical 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.</p>		Blinking	The port is sending or receiving data.
5	-	<p>Service port indicator (40GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	The port is not connected or has been shut down.
				Steady on	The port is connected.
				Blinking	The port is sending or receiving data.
<p>When a 40GE port is divided into four 10GE ports, this indicator shows the status of a 10GE port. The sequence number of the indicated port is identified by indicators 40GE Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE port has a single-color indicator, which shows the status of the 40GE port by default. If a 40GE port is not split and is connected to four 10GE ports on a remote device using a 1-to-4 cable, the 40GE port cannot go Up and its indicator is off.</p>					
6	-	40GE Breakout 1/2/3/4 (sequence number)	Green	Off	40GE ports are working in 40GE mode and no port is split into four 10GE ports.

No.	Indicator	Name	Color	Status	Description
		indicators of 10GE ports converted from a 40GE port) NOTE Indicators 1, 2, 3, and 4 turn on in cyclic order, with each indicator keeping on for 5s.		Steady on	At least one 40GE port is split into four 10GE ports and works in 10GE mode. When a 40GE port is divided into four 10GE ports, these indicators identify the sequence numbers of the 10GE ports together with the service port indicator (40GE optical port). A port indicator (5 in Figure 2-88) shows the status of a 10GE port converted from the corresponding 40GE port: <ul style="list-style-type: none"> • When Breakout indicator 1 is on, each 40GE port indicator shows the status of the first 10GE port converted from the corresponding 40GE port. • When Breakout indicator 2 is on, each 40GE port indicator shows the status of the second 10GE port converted from the corresponding 40GE port. • When Breakout indicator 3 is on, each 40GE port indicator shows the status of the third 10GE port converted from the corresponding 40GE port. • When Breakout indicator 4 is on, each 40GE port indicator shows the status of the fourth 10GE port converted from the corresponding 40GE port. Example: If the first 40GE port in Figure 2-88 is split into four 10GE ports and the second 40GE port is not split: <ul style="list-style-type: none"> • When Breakout indicator 1 is on, the indicator of 40GE port 1 shows the status of the first 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2. • When Breakout indicator 2 is on, the indicator of 40GE port 1

No.	Indicator	Name	Color	Status	Description
					shows the status of the second 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2.
7	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment is complete.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment fails.
8	ACT	Mini USB port indicator	Green	Off	The mini USB port is not activated and the current console port is available.
				Steady on	The mini USB port is activated and the current console port is unavailable.
9	-	Management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
			Yellow	Blinking	The port is sending or receiving data.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-194](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-194 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45

Attribute	Description
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-195](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-195 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-196](#) describes the attributes of the console port.

Table 2-196 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

Attribute	Description
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

 **NOTE**

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable. [Table 2-197](#) describes the attributes of the combo electrical port.

Table 2-197 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45

Attribute	Description
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-198](#) describes the attributes of the combo optical port.

Table 2-198 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z
Working mode	100/1000 Mbit/s Full-duplex

The CE6856-48T6Q-HI switch has two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6856-48T6Q-HI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.

- If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-199 lists technical specifications of the CE6856-48T6Q-HI switch.

Table 2-199 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 12.6 kg (27.78 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0–1800 m (0–5906 ft.) <p>NOTE When the altitude is 1800–5000 m (5096–16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz

Item		Description
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power module (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	346 W
	Typical power consumption	219 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1181 BTU/hr
	Typical heat dissipation	747 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling

Item		Description
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	54.48
	Mean time to repair (MTTR)	1.81
	Availability	0.99999620929
Technical specifications	Processor	1.2 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE electrical ports and 40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-200 provides the ordering information.

Table 2-200 Ordering information

Part Number	Part Model	Part Description
02351LVC	CE6856-48T6Q-HI	CE6856-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, Without Power Module and FAN Box)
02351YPR	CE6856-HI-F-B00	CE6856-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02351YPQ	CE6856-HI-B-B00	CE6856-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.18 CE6857-48S6CQ-EI

Version Mapping

Table 2-201 lists the mappings between the CE6857-48S6CQ-EI and software versions.

Table 2-201 Version mapping

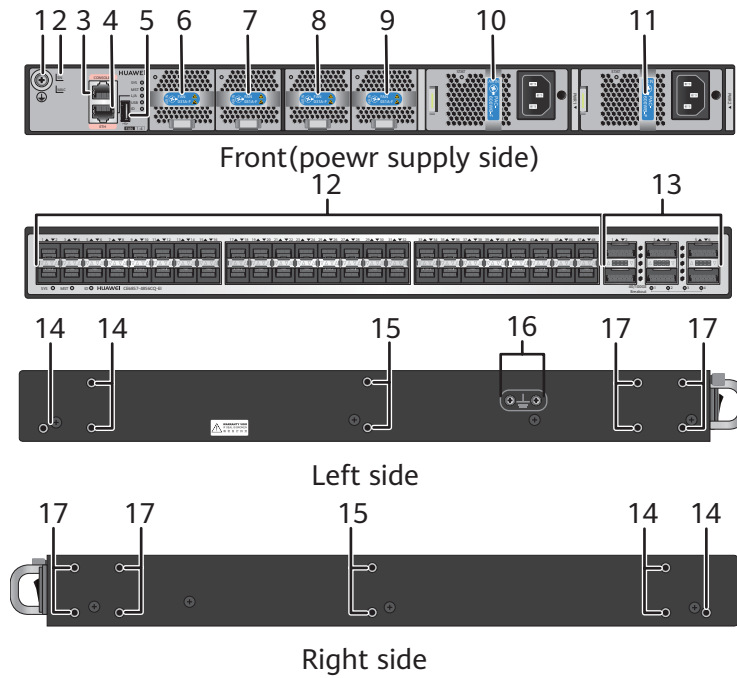
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6857	CE6857-48S6CQ-EI	CE6857EI	V200R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-90 CE6857-48S6CQ-EI



1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules
7	Fan slot 2 Applicable fan modules: • FAN-031A series fan modules	8	Fan slot 3 Applicable fan modules: • FAN-031A series fan modules
9	Fan slot 4 Applicable fan modules: • FAN-031A series fan modules	10	Power supply slot 1 Applicable power modules: • 350 W DC Power Module (PDC350S12) • 600 W AC Power Module (PAC600S12)

1 1	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC Power Module (PDC350S12) • 600 W AC Power Module (PAC600S12) 	1 2	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE SFP+ Optical Modules (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE eSFP Optical Modules(Auto-negotiation is not supported) • GE SFP Copper Modules (works at 1000 Mbit/s) • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable <p>NOTE A 10GE optical interface does not support auto-negotiation when it has a GE optical module installed. To connect the two interfaces at both ends of a link, disable auto-negotiation on the peer interface. Otherwise, one interface may go Up and the other may go Down.</p>
1 3	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules (QSFP28-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable 	1 4	Three port-side mounting holes for mounting brackets
1 5	Two middle mounting holes for mounting brackets	1 6	Equipotential junction Grounding screw used in dual OT scenarios.
1 7	Four power-supply-side mounting holes for mounting brackets	-	-

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.
- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-91](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-92](#) (using a CE6863 chassis as an example).

Figure 2-91 Front-to-back airflow for port-side exhaust

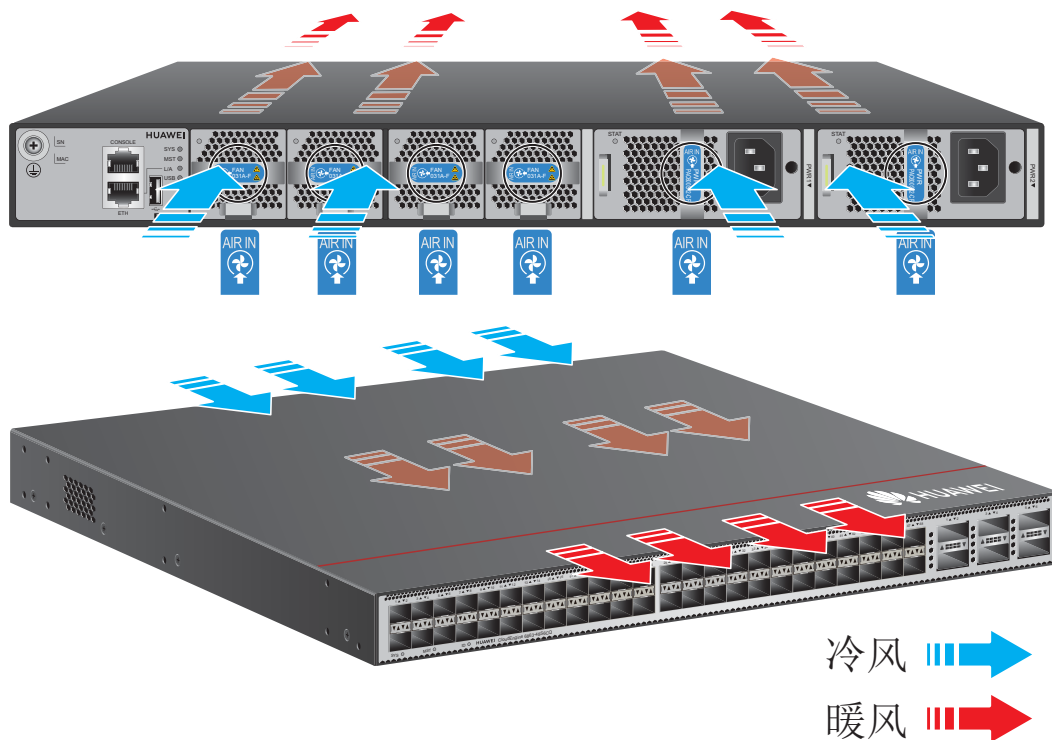
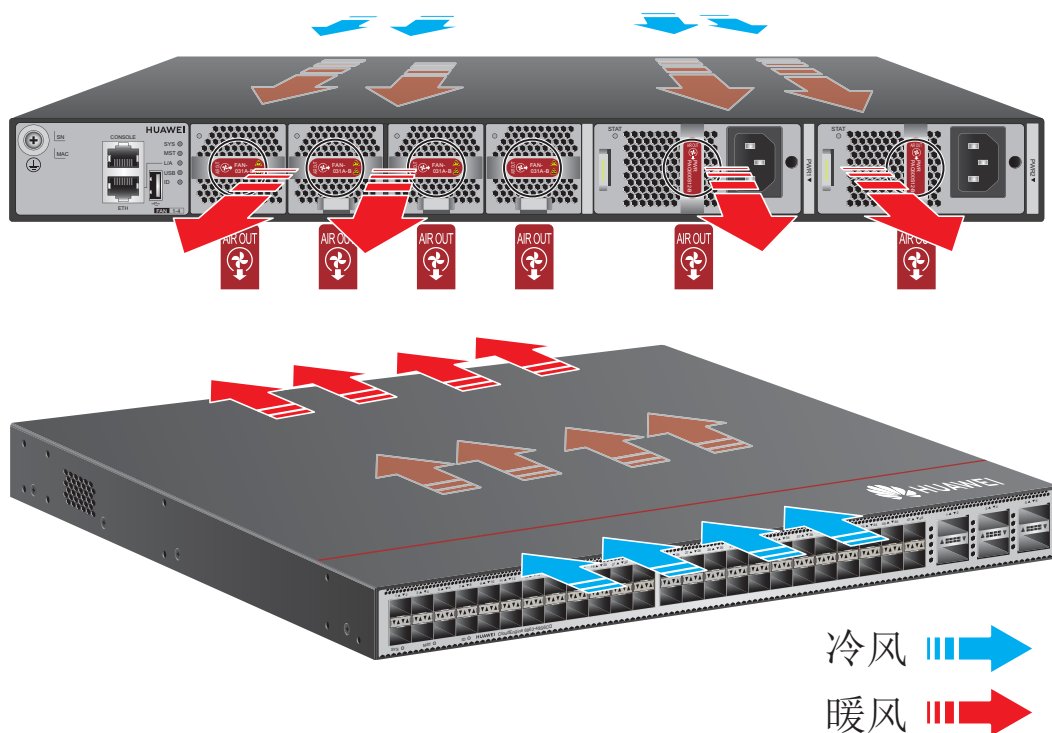


Figure 2-92 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

 **NOTE**

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

The CE6857-48S6CQ-EI switch does not have the ETH management port indicator. The service port indicators are 10GE and 40GE/100GE port indicators, and other indicators are the same as those on the CE6865-48S8CQ-EI. The [CE6865-48S8CQ-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-202](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-202 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-203](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-203 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-204](#) describes the attributes of the console port.

Table 2-204 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-205](#) describes the attributes of the ETH management port (RJ45).

Table 2-205 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-206](#) lists technical specifications of the CE6857-48S6CQ-EI switch.

Table 2-206 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 7.6 Kg (16.76 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 53 dBA Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC350S12 series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC600S12 series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	287 W

Item		Description
	Typical power consumption	152 W (100% throughput, SFP28 cables on 48 ports and QSFP28 cables on 6 ports, double power modules) 195 W (100% throughput, all optical interfaces on the switch are equipped with the short-distance optical modules, double power modules)
Chassis heat dissipation	Maximum heat dissipation	979 BTU/Hr
	Typical heat dissipation	519 BTU/Hr (100% throughput, SFP28 cables on 48 ports and QSFP28 cables on 6 ports, double power modules) 665 BTU/Hr (100% throughput, all optical interfaces on the switch are equipped with the short-distance optical modules, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	The device supports 3+1 backup of fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	45.3 years

Item		Description
	Mean time to repair (MTTR)	1.68 hours
	Availability	0.99999576002
Technical specifications	Processor	1.4 GHz, four-core
	DRAM Memory	4 GB
	NOR Flash	64 MB
	NAND Flash	2 GB
Stack	Service port supporting the stack function	10GE optical ports, 40GE optical ports, and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-207 provides the ordering information.

Table 2-207 Ordering information

Part Number	Part Model	Part Description
02352CHR	CE6857-EI-B-B0B	CE6857-48S6CQ-EI switch (48*10GE SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)
02352CHS	CE6857-EI-F-B0B	CE6857-48S6CQ-EI switch (48*10GE SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side exhaust)
02352CHQ	CE6857-48S6CQ-EI	CE6857-48S6CQ-EI switch (48*10GE SFP+, 6*100GE QSFP28, without fan and power modules)

2.3.19 CE6860-48S8CQ-EI

Version Mapping

Table 2-208 lists the mappings between the CE6860-48S8CQ-EI and software versions.

Table 2-208 Version mapping

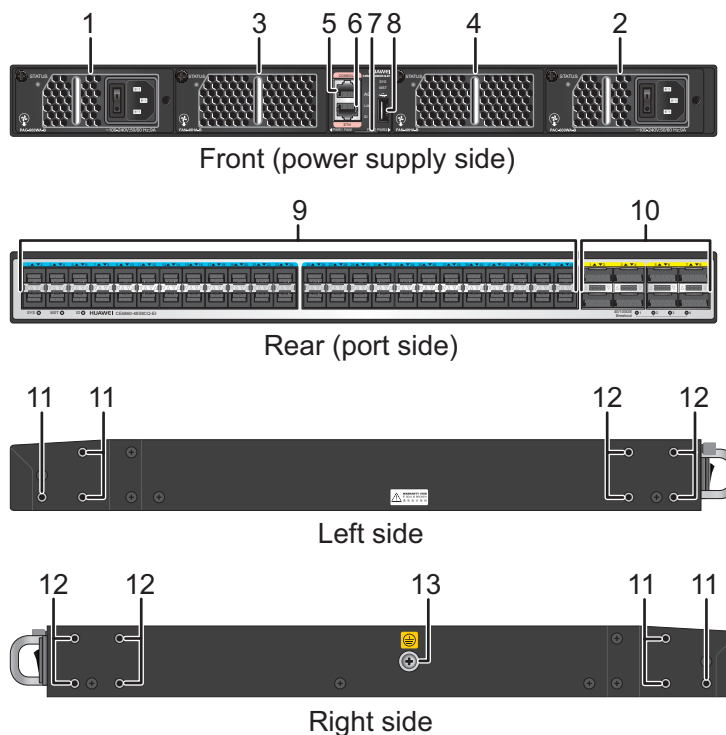
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6860	CE6860-48S8CQ-EI	CE6860EI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-93 CE6860-48S8CQ-EI



1	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module <p>NOTE</p> <p>At the ambient temperature of 0°C to 40°C, the 350 W DC module can be used only when all optical interfaces on the switch are equipped with the following short-distance optical modules: 25GBase-SR (power consumption ≤ 1 W) and 100GE optical modules (transmission distance ≤ 2 km; power consumption ≤ 3.5 W) such as 100GBase-SR4, 100GBase-CWDM4, 100GBase-CLR4, and 100GBase-PSM4.</p>	2	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module <p>NOTE</p> <p>At the ambient temperature of 0°C to 40°C, the 350 W DC module can be used only when all optical interfaces on the switch are equipped with the following short-distance optical modules: 25GBase-SR (power consumption ≤ 1 W) and 100GE optical modules (transmission distance ≤ 2 km; power consumption ≤ 3.5 W) such as 100GBase-SR4, 100GBase-CWDM4, 100GBase-CLR4, and 100GBase-PSM4.</p>
3	<p>Fan slot 1</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-40HA series fan modules 	4	<p>Fan slot 2</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-40HA series fan modules
5	<p>Console port</p>	6	<p>ETH management port (RJ45)</p>
7	<p>Barcode label</p> <p>NOTE</p> <p>This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.</p>	8	<p>USB port</p>

9	<p>Forty-eight 10GE/25GE SFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> ● 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) ● GE Optical Modules (supported from V200R005C00 version) ● GE copper module (supported from V200R005C00 version and only works at 1000 Mbit/s) ● 25GE optical module (only supports SFP-25G-SR) ● SFP+ AOC cable ● SFP28 AOC cable ● SFP+ high-speed cable ● SFP28 high-speed cable (1 m or 3 m) <p>NOTE</p> <p>A 25GE optical interface does not support auto-negotiation when it has a GE optical module installed. To connect the two interfaces at both ends of a link, disable auto-negotiation on the peer interface. Otherwise, one interface may go Up and the other may go Down.</p>	1 0	<p>Eight 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE</p> <p>A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> ● 40GE optical module ● 100GE optical module (QSFP28-100G-4WDM-40 not supported) ● QSFP+ to QSFP+ AOC cable ● QSFP+ to 4*SFP+ AOC cable ● QSFP+ to 4*SFP+ high-speed cable ● QSFP+ to QSFP+ high-speed cable ● QSFP28 to QSFP28 AOC cable ● QSFP28 to QSFP28 high-speed cable ● QSFP28 to 4*SFP28 high-speed cable (1 m or 3 m)
1 1	Three port-side mounting holes for mounting brackets	1 2	Four power-supply-side mounting holes for mounting brackets
1 3	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-94](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-95](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-94 Front-to-back airflow (air flows out from the port side)

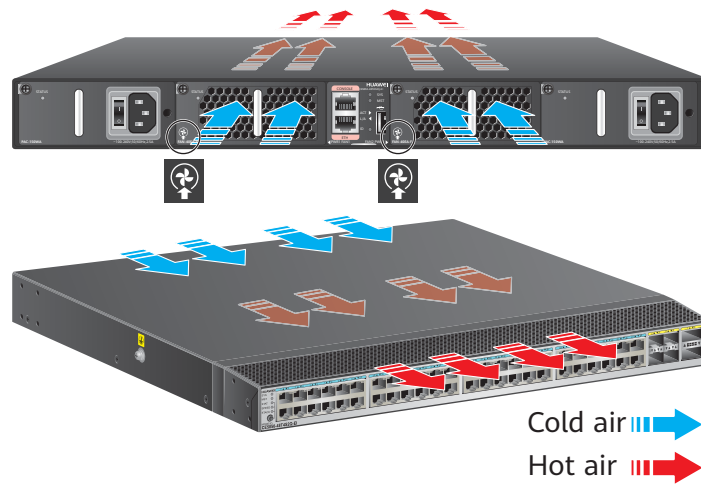
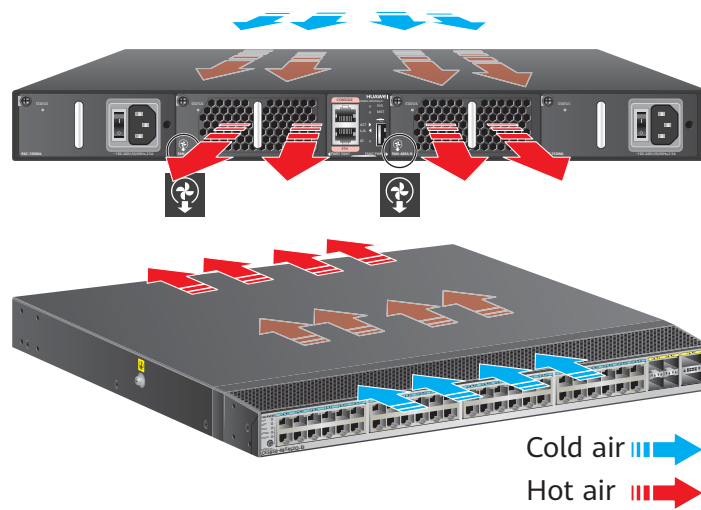


Figure 2-95 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-96 Indicators on the CE6860-48S8CQ-EI rear panel

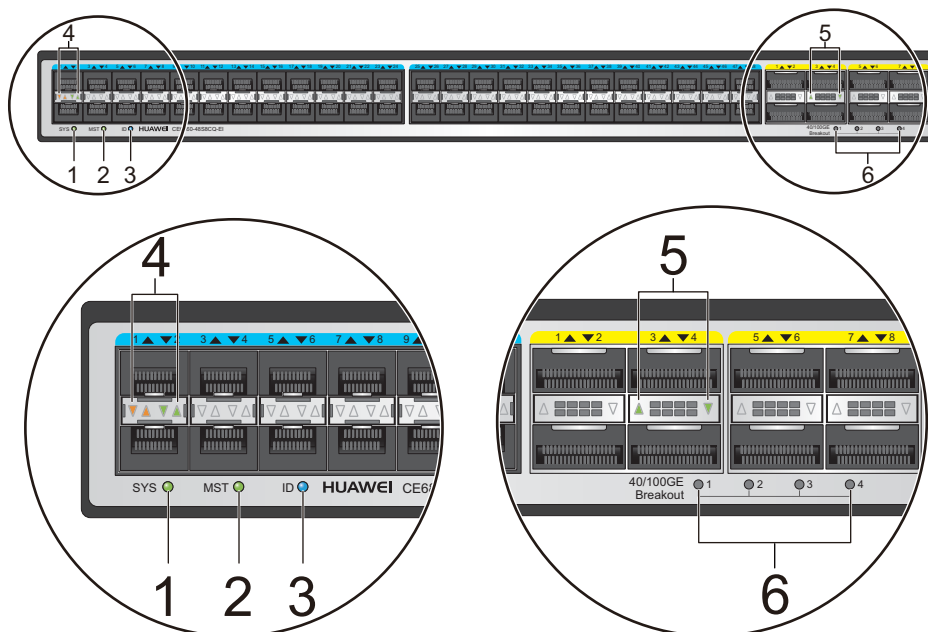


Figure 2-97 Indicators on the CE6860-48S8CQ-EI front panel

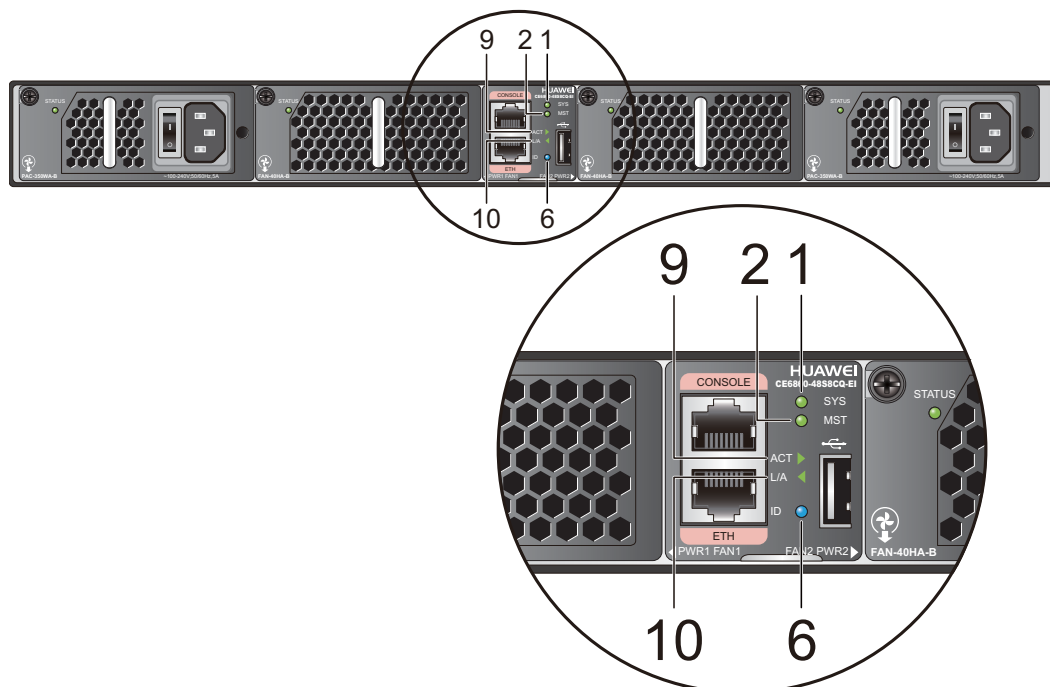


Table 2-209 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T:	Stack master/slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).

No.	Indicator	Name	Color	Status	Description
				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.
4	-	Service port indicator (10GE/25GE optical port) NOTE Each 10GE/25GE 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.	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.
				Blinking	The port is sending or receiving data.
5	-	Service port indicator (40GE/100GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
			When a 40GE/100GE port is configured as four 10GE ports or four 25GE ports, this indicator shows the status of a 10GE/25GE port. The sequence number of the indicated port is identified by indicators 40G/100G Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE/100GE port has a single-color indicator, which shows the status of the 40GE/100GE port by default.		

No.	Indicator	Name	Color	Status	Description
6	-	40G/100G Breakout 1/2/3/4 (sequence number indicators of 10GE/25GE ports converted from a 40GE/100GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.	Green	Off	40GE/100GE ports are working in 40GE or 100GE mode and not split into four 10GE ports or four 25GE ports.
				Steady on	At least one 40GE/100GE port has been split into four 10GE ports or four 25GE ports. When one or more 40GE/100GE ports are split into four 10GE ports or four 25GE ports, these indicators identify the sequence numbers of the 10GE/25GE ports. A port indicator (6 in Figure 2-96) shows the status of a 10GE/25GE port converted from the corresponding 40GE/100GE port: <ul style="list-style-type: none"> • When indicator 1 is on, each port indicator shows the status of the first 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 2 is on, each port indicator shows the status of the second 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 3 is on, each port indicator shows the status of the third 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 4 is on, each port indicator shows the status of the fourth 10GE/25GE port derived from the corresponding 40GE/100GE port.

No.	Indicator	Name	Color	Status	Description
7	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
8	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

Ports

10GE/25GE SFP28 Optical Port

10GE/25GE SFP28 optical ports cannot work at the rate of 100 Mbit/s. [Table 2-210](#) shows the attributes of a 10GE/25GE SFP28 optical port.

Table 2-210 Attributes of a 10GE/25GE SFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use

Attribute	Description
Port use constraints	<p>The 48 10GE/25GE SFP28 optical ports of a CE6860 switch work at the rate of 25 Gbit/s by default and do not support GE/10GE auto-sensing. You can set the port rate to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command, respectively. If GE mediums are installed on the first eight 25GE interfaces, you need to run the port mode ge command to configure the interfaces to work at the rate of 1 Gbit/s; if GE mediums are installed on the later 40 25GE interfaces, the port mode 10g command needs to be run, the interfaces automatically work at the rate of 1 Gbit/s, and the port mode ge command does not need to be run.</p> <p>The 48 10GE/25GE SFP28 optical ports are divided into 12 port groups, with four ports in each group (1-4, 5-8, 9-12...45-48).</p> <ul style="list-style-type: none"> • If the rate of any port in a port group is set to 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s, all the other ports in this group also work at the rate of 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s. • When the ports in a port group work at the rate of 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 10 Gbit/s, they support only 10GE or 25GE variable-rate modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used. • If the switch is running a version earlier than V200R002C50, the ports in a port group must use the same type of transmission medium (copper or fiber). This constraint does not apply to V200R002C50 and later versions.
Standards compliance	IEEE802.3by
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

Table 2-211 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-211 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. **Table 2-212** describes the attributes of the console port.

Table 2-212 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. **Table 2-213** describes the attributes of the ETH management port (RJ45).

Table 2-213 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-214](#) lists technical specifications of the CE6860-48S8CQ-EI switch.

Table 2-214 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.8 kg (19.40 lb) 	
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 51 dBA Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz

Item		Description
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	336 W
	Typical power consumption	214 W (100% throughput, SFP28 cables on 48 ports and QSFP28 cables on 8 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1146 BTU/hr
	Typical heat dissipation	731 BTU/hr (100% throughput, SFP28 cables on 48 ports and QSFP28 cables on 8 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 2 kV in common mode and 1 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.

Item		Description
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	51.50 years
	Mean time to repair (MTTR)	1.67 hours
	Availability	0.99999629199
Technical specifications	Processor	1.5 GHz, 8-core
	DRAM Memory	2 GB
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	25GE optical ports and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-215](#) provides the ordering information.

Table 2-215 Ordering information

Part Number	Part Model	Part Description
02350SRA	CE6860-48S8 CQ-EI	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, Without Fan and Power Module)

Part Number	Part Model	Part Description
02350SBQ	CE6860-EI-F-B0B	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SBR	CE6860-EI-B-B0B	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.20 CE6863-48S6CQ

Version Mapping

Table 2-216 lists the mappings between the CE6863-48S6CQ and software versions.

Table 2-216 Version mapping

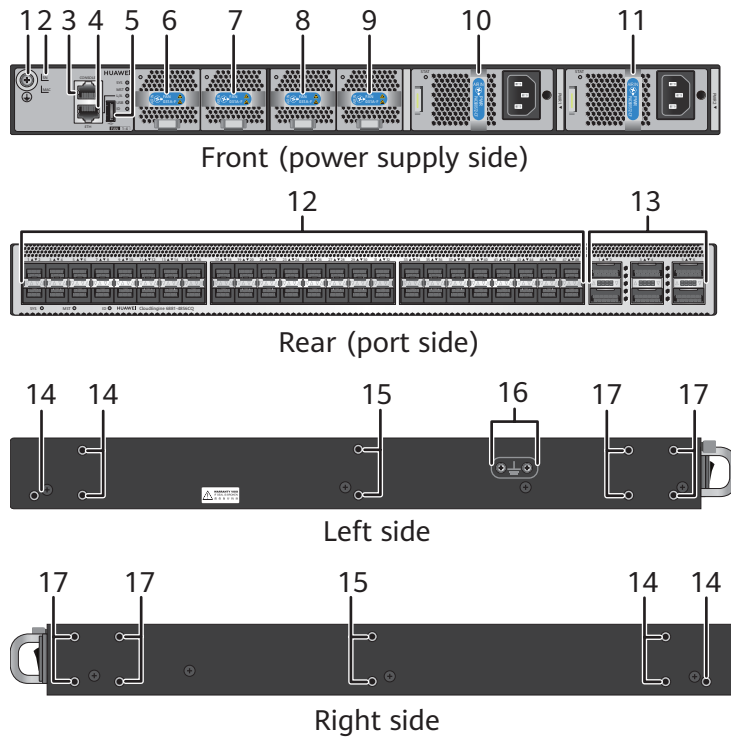
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6863	CE6863-48S6CQ	CE6863	V200R005C20 and later

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-98 CE6863-48S6CQ



1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules
7	Fan slot 2 Applicable fan modules: • FAN-031A series fan modules	8	Fan slot 3 Applicable fan modules: • FAN-031A series fan modules
9	Fan slot 4 Applicable fan modules: • FAN-031A series fan modules	10	Power supply slot 1 Applicable power modules: • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12)

1	Power supply slot 2	1	Forty-eight 10GE/25GE SFP28 Ethernet optical ports
1	<p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) 	2	<p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • GE eSFP Optical Modules • GE SFP Copper Modules(Only works at 1000 Mbit/s) • 10GE SFP+ Optical Modules (OSXD22N00 and LE2MXSC80FF0 not supported) • 25GE SFP28 Optical Modules • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable • SFP28 to SFP28 AOC Cable • SFP28 to SFP28 High-Speed Cable <p>NOTE</p> <p>When a port works at the rate of 25 Gbit/s, it supports only 1 m SFP28 high-speed cables, and these cables can only be used as stack cables or M-LAG peer-link interface cables.</p> <p>When an SFP28 high-speed cable is installed on a 25GE port and the port mode 10g command is run to set the rate to 10 Gbit/s, the port supports 1 m, 3 m, and 5 m SFP28 high-speed cables.</p>

1 3	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) <p>NOTE</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port that works at the rate of 100 Gbit/s, the port supports only the 1 m QSFP28 high-speed cable.</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port and the speed 40000 command is run to set the rate to 40 Gbit/s, the port supports 1 m, 3 m, and 5 m QSFP28 high-speed cables.</p>	1 4	Three port-side mounting holes for mounting brackets
1 5	Two middle mounting holes for mounting brackets	1 6	<p>Equipotential bonding</p> <p>Ground screws for a ground cable with a two-hole OT terminal</p>
1 7	Four power-supply-side mounting holes for mounting brackets	-	-

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.

- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-99](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-100](#) (using a CE6863 chassis as an example).

Figure 2-99 Front-to-back airflow for port-side exhaust

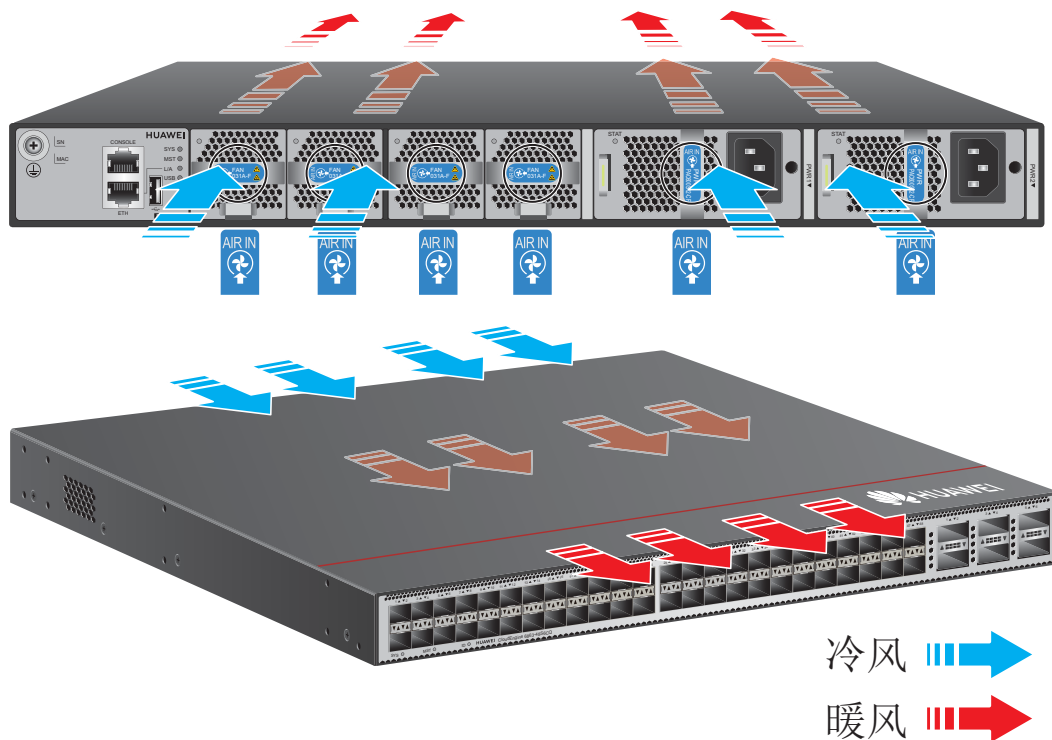
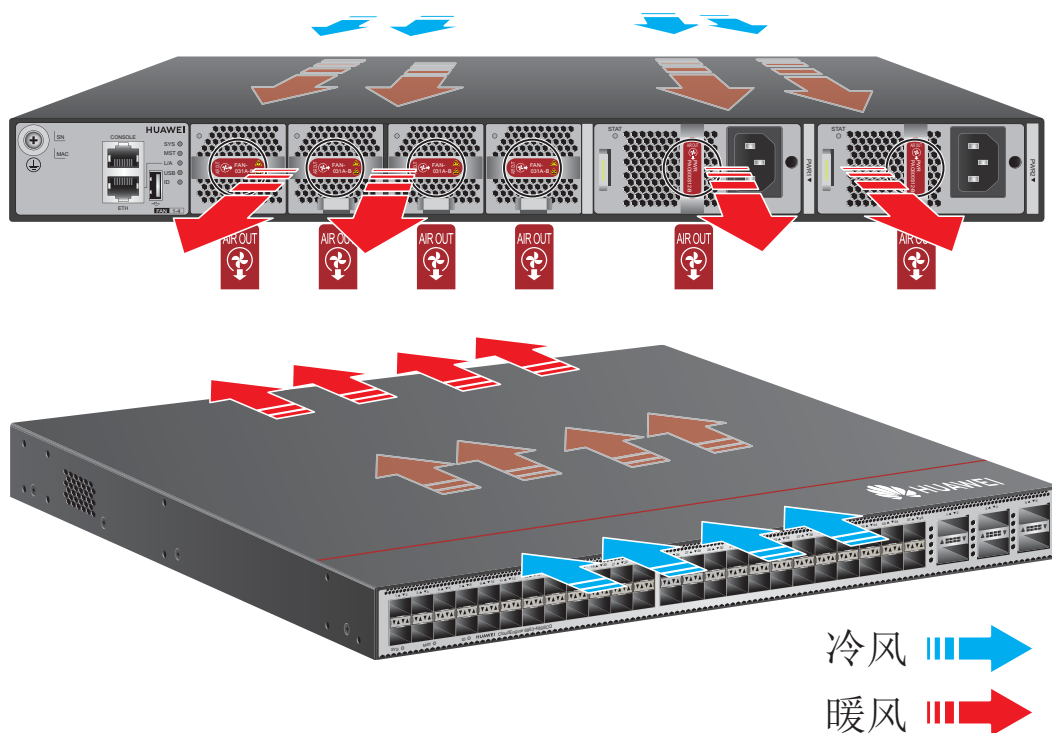


Figure 2-100 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

NOTE

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

Figure 2-101 Indicators on the CE6863-48S6CQ rear panel

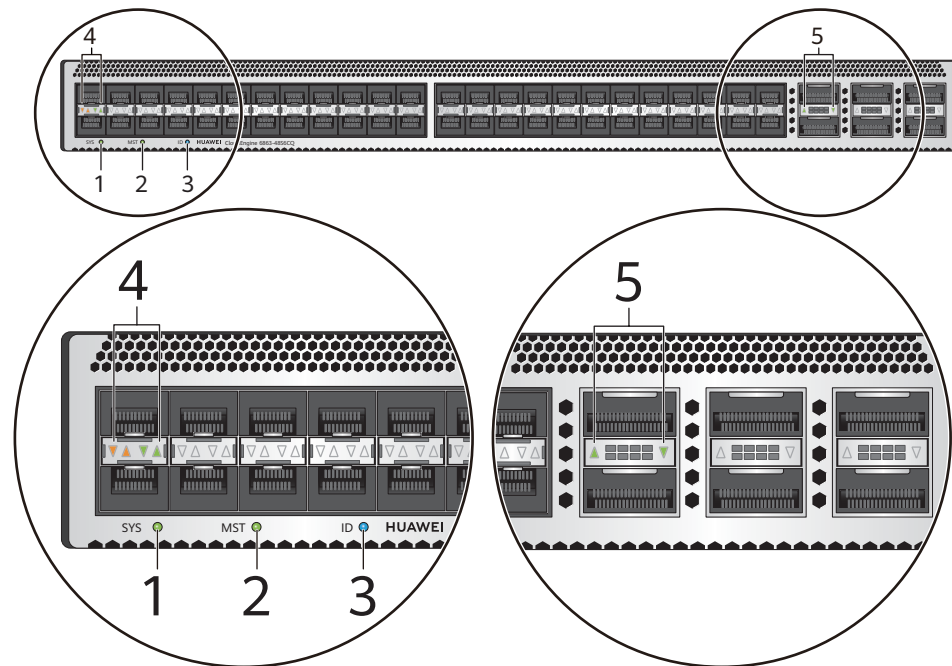


Figure 2-102 Indicators on the CE6863-48S6CQ front panel

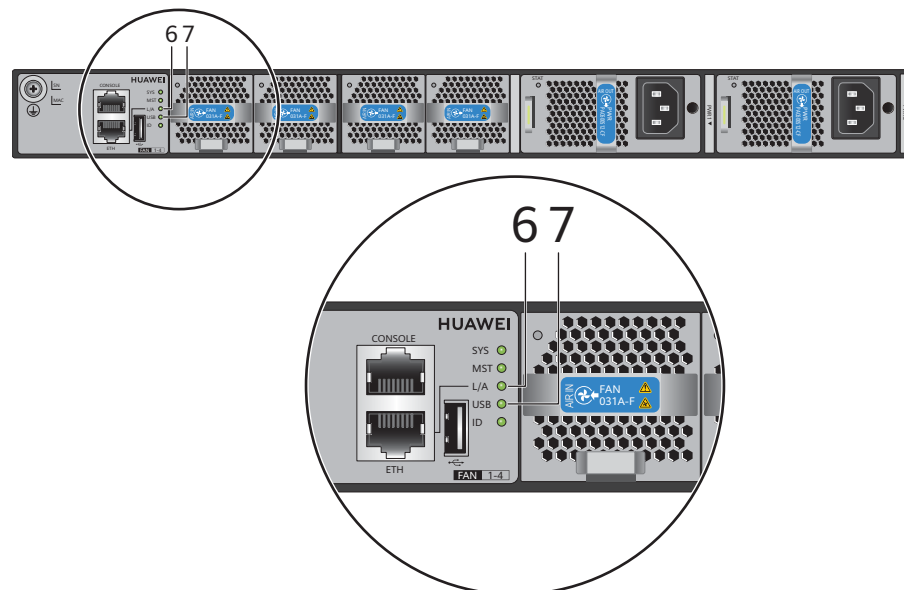


Table 2-217 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T	Stack master/slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.

No.	Indicator	Name	Color	Status	Description
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE/25GE optical port) NOTE Each 10GE/25GE 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.	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.
				Blinking	The port is sending or receiving data.
5	-	Service port indicator (40GE/100GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.

No.	Indicator	Name	Color	Status	Description
		NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.		Blinking	The port is sending or receiving data.
6	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
7	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.

Ports

10GE/25GE SFP28 Optical Port

10GE/25GE SFP28 optical ports cannot work at the rate of 100 Mbit/s. [Table 2-218](#) shows the attributes of a 10GE/25GE SFP28 optical port.

Table 2-218 Attributes of a 10GE/25GE SFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use

Attribute	Description
Port use constraints	<p>The 48 10GE/25GE SFP28 optical ports of a CE6863 switch work at the rate of 25 Gbit/s by default and do not support GE/10GE auto-sensing. You can set the port rate to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command, respectively.</p> <p>The 48 10GE/25GE SFP28 optical ports are divided into 12 port groups, with four ports in each group (1-4, 5-8, 9-12...45-48).</p> <ul style="list-style-type: none"> • If the rate of any port in a port group is set to 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s, all the other ports in this group also work at the rate of 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s. • When the ports in a port group work at the rate of 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 10 Gbit/s, they support only 10GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used.
Standards compliance	IEEE802.3by
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

Table 2-219 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-219 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-220](#) describes the attributes of the console port.

Table 2-220 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-221](#) describes the attributes of the ETH management port (RJ45).

Table 2-221 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-222](#) lists technical specifications of the CE6863-48S6CQ switch.

Table 2-222 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (H x W x D) <ul style="list-style-type: none"> - 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 16.5 in.) - Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 446.1 mm (1.72 in. x 17.4 in. x 17.6 in.) • Weight (with two AC power modules and four fan modules, calculated based on the heaviest model if multiple models are supported): 7.8 kg (17.20 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC

Item		Description
	High-voltage DC power input	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC Maximum voltage range: 190 V DC to 290 V DC 1200 W high-voltage DC power module (PHD1K2S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC to 380V DC Maximum voltage range: 190 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> 8 A (100 V AC to 240 V AC) 4 A (240V DC) 1000 W DC power module (PDC1000S12 series): 30 A (-48 V DC to -60 V DC) 1200 W high-voltage DC power module (PHD1K2S12 series): 8 A
Chassis power consumption	Maximum power consumption	384 W
	Typical power consumption	<ul style="list-style-type: none"> 226 W (100% throughput, SFP28 high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 261 W (100% throughput, short-distance optical modules on all optical ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1310 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> 771 BTU/hr (100% throughput, SFP28 high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 891 BTU/hr (100% throughput, short-distance optical modules on all optical ports, double power modules)

Item		Description
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode • HVDC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	The device supports 3+1 backup of fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	47.81 years
	Mean time to repair (MTTR)	1.95 hours
	Availability	0.9999962836
Technical specifications	Processor	1.4 GHz, four-core
	DRAM memory	4 GB
	NOR Flash	64 MB
	NAND Flash	4 GB
Stack	Service port supporting the stacking function	25GE optical ports, and 100GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-223](#) provides the ordering information.

Table 2-223 Ordering information

Part Number	Part Model	Part Description
02352NUN	CE6863-48S6 CQ	CE6863-48S6CQ switch (48*25GE SFP28, 6*100GE QSFP28, without fan and power modules)
02352NUP	CE6863-48S6 CQ-B	CE6863-48S6CQ switch (48*25GE SFP28, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)
02352NUQ	CE6863-48S6 CQ-F	CE6863-48S6CQ switch (48*25GE SFP28, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side exhaust)

2.3.21 CE6863-48S6CQ-K

Version Mapping

[Table 2-224](#) lists the mappings between the CE6863-48S6CQ-K and software versions.

Table 2-224 Version mapping

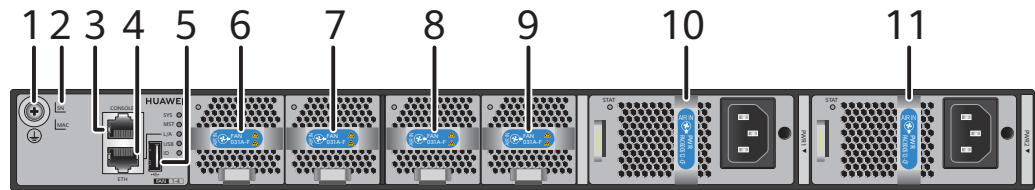
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6863	CE6863-48S6 CQ-K	CE6863K	V200R019C10 and later

Appearance and Structure

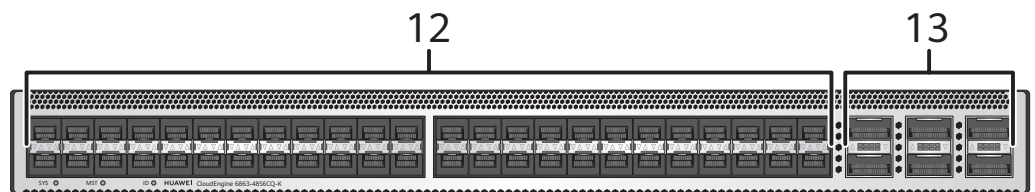
NOTE

The figures in this document are for reference only.

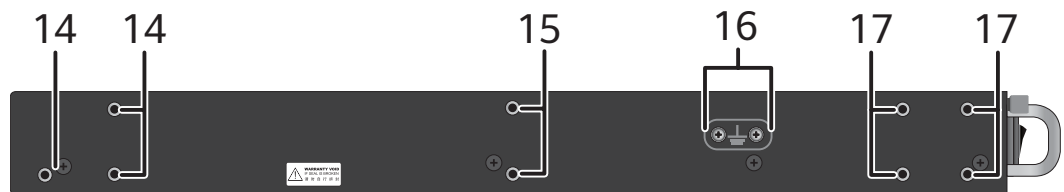
Figure 2-103 CE6863-48S6CQ-K



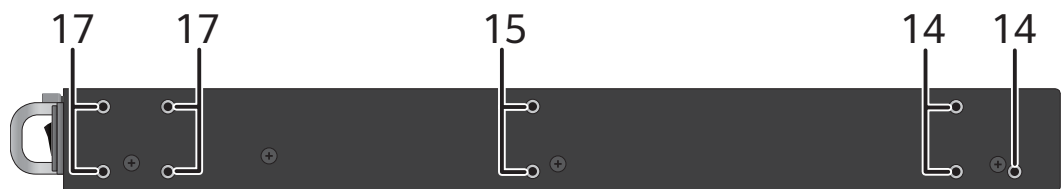
Front (power supply side)



Rear (port side)



Left side



Right side

1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules

7	<p>Fan slot 2</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	8	<p>Fan slot 3</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules
9	<p>Fan slot 4</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	10	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)
11	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB) 	12	<p>Forty-eight 10GE/25GE SFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • GE eSFP Optical Modules • GE SFP Copper Modules(Only works at 1000 Mbit/s) • 10GE SFP+ Optical Modules (OSXD22N00 and LE2MXSC80FF0 not supported) • 25GE SFP28 Optical Modules • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable • SFP28 to SFP28 AOC Cable • SFP28 to SFP28 High-Speed Cable <p>NOTE</p> <p>When a port works at the rate of 25 Gbit/s, it supports only 1 m SFP28 high-speed cables, and these cables can only be used as stack cables or M-LAG peer-link interface cables.</p> <p>When an SFP28 high-speed cable is installed on a 25GE port and the port mode 10g command is run to set the rate to 10 Gbit/s, the port supports 1 m, 3 m, and 5 m SFP28 high-speed cables.</p>

1 3	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) <p>NOTE</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port that works at the rate of 100 Gbit/s, the port supports only the 1 m QSFP28 high-speed cable.</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port and the speed 40000 command is run to set the rate to 40 Gbit/s, the port supports 1 m, 3 m, and 5 m QSFP28 high-speed cables.</p>	1 4	Three port-side mounting holes for mounting brackets
1 5	Two middle mounting holes for mounting brackets	1 6	<p>Equipotential bonding</p> <p>Ground screws for a ground cable with a two-hole OT terminal</p>
1 7	Four power-supply-side mounting holes for mounting brackets	-	-

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.

- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-104](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-105](#) (using a CE6863 chassis as an example).

Figure 2-104 Front-to-back airflow for port-side exhaust

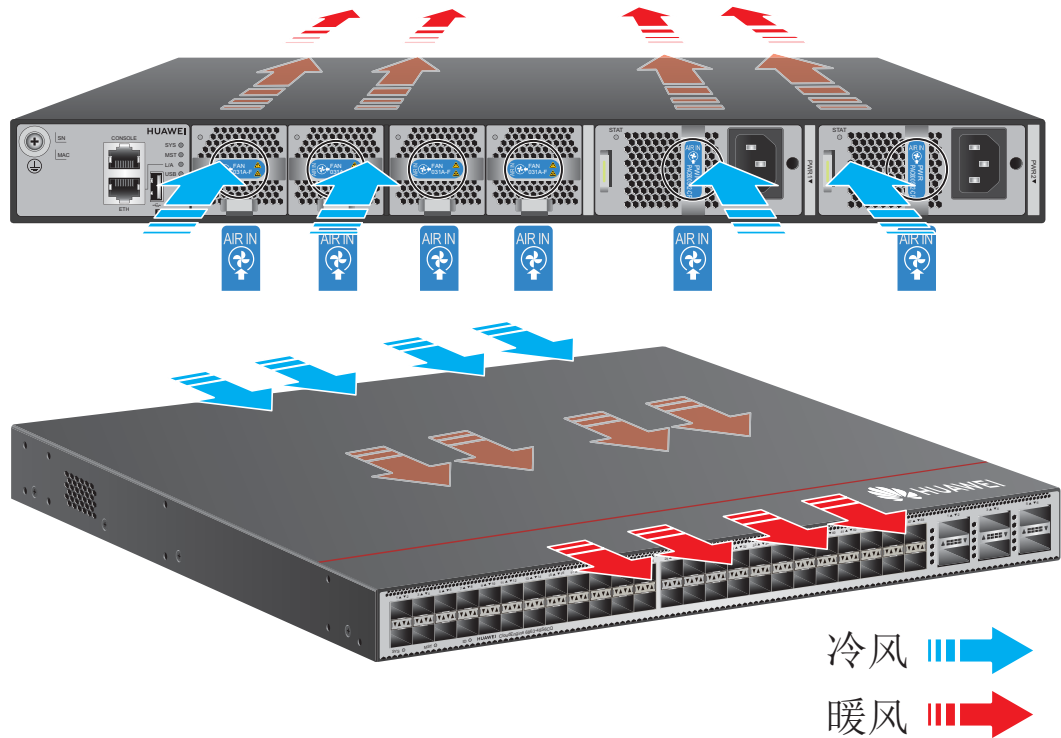
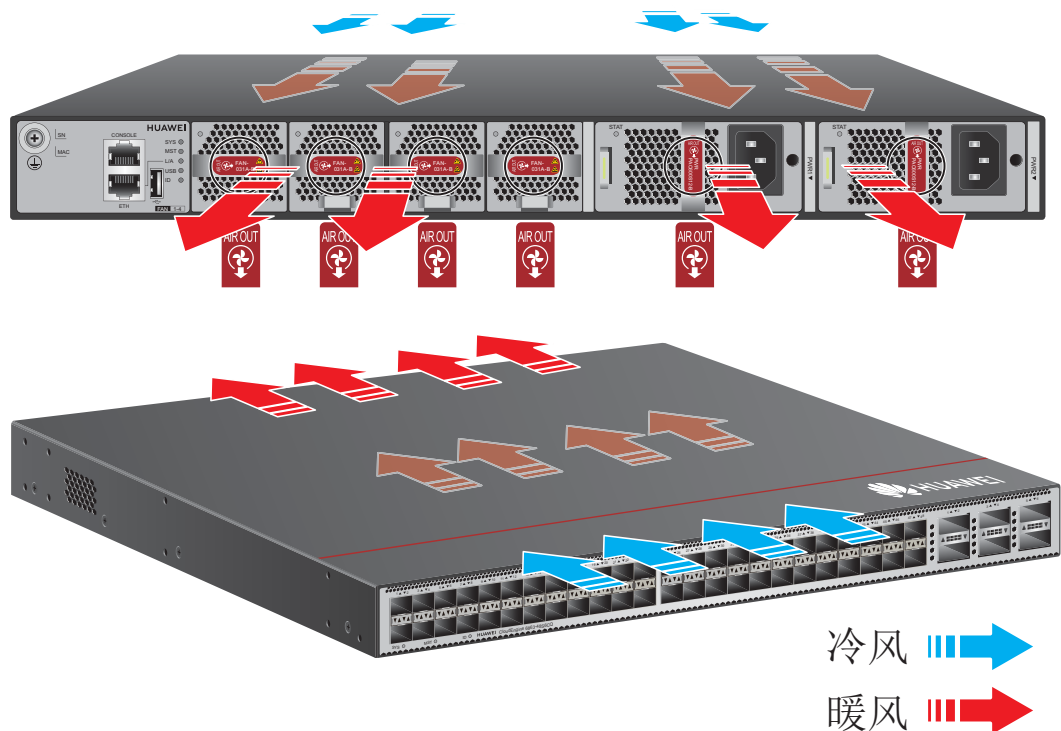


Figure 2-105 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

NOTE

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

Figure 2-106 Indicators on the CE6863-48S6CQ-K rear panel

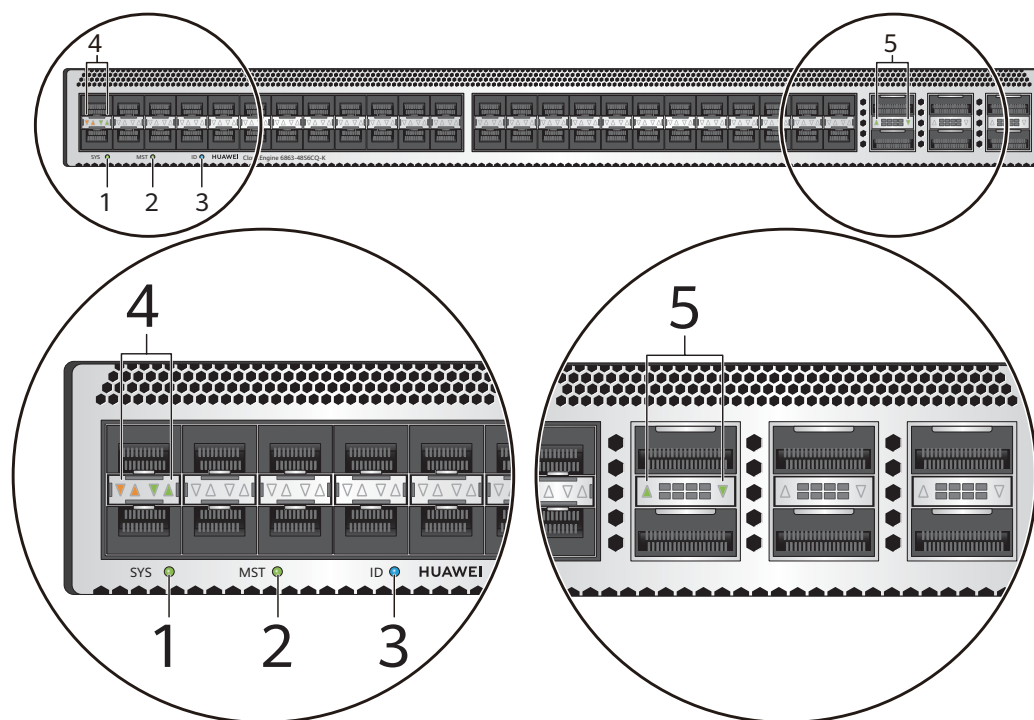


Figure 2-107 Indicators on the CE6863-48S6CQ-K front panel

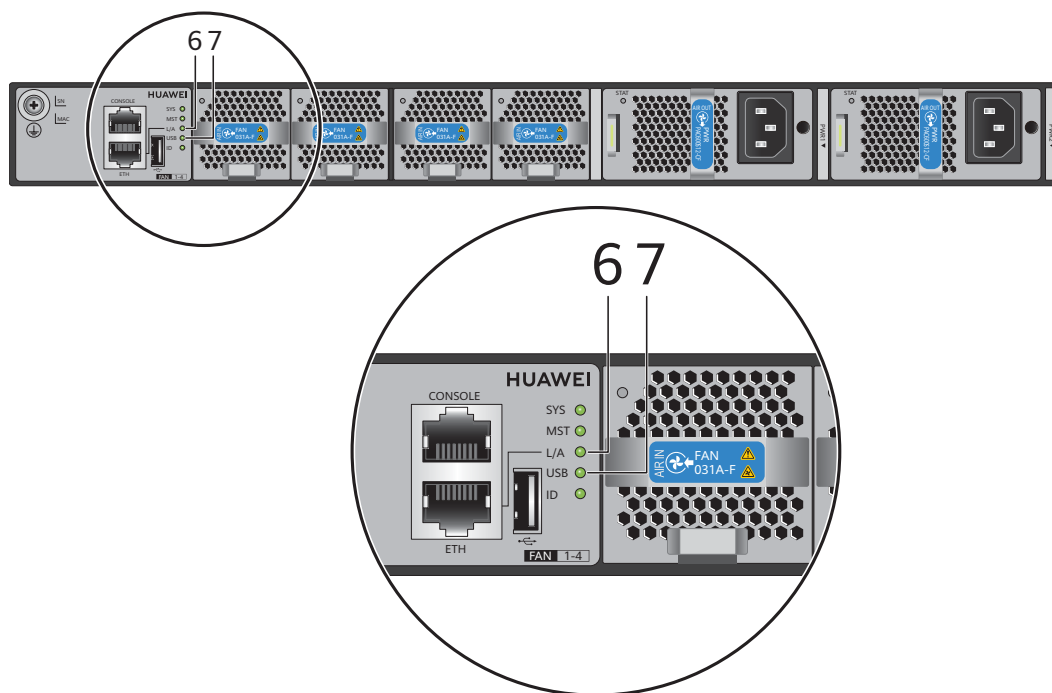


Table 2-225 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T	Stack master/slave indicator	Green	Off	The switch is not a stack master.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE/25GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE Each 10GE/25GE 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.</p>		Blinking	The port is sending or receiving data.
5	-	<p>Service port indicator (40GE/100GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
6	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

No.	Indicator	Name	Color	Status	Description
7	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.

Ports

10GE/25GE SFP28 Optical Port

10GE/25GE SFP28 optical ports cannot work at the rate of 100 Mbit/s. [Table 2-226](#) shows the attributes of a 10GE/25GE SFP28 optical port.

Table 2-226 Attributes of a 10GE/25GE SFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use

Attribute	Description
Port use constraints	<p>The 48 10GE/25GE SFP28 optical ports of a CE6863 switch work at the rate of 25 Gbit/s by default and do not support GE/10GE auto-sensing. You can set the port rate to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command, respectively.</p> <p>The 48 10GE/25GE SFP28 optical ports are divided into 12 port groups, with four ports in each group (1-4, 5-8, 9-12...45-48).</p> <ul style="list-style-type: none"> • If the rate of any port in a port group is set to 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s, all the other ports in this group also work at the rate of 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s. • When the ports in a port group work at the rate of 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 10 Gbit/s, they support only 10GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used.
Standards compliance	IEEE802.3by
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-227](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-227 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-228](#) describes the attributes of the console port.

Table 2-228 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-229](#) describes the attributes of the ETH management port (RJ45).

Table 2-229 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-230](#) lists technical specifications of the CE6863-48S6CQ-K switch.

Table 2-230 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (H x W x D) <ul style="list-style-type: none"> - 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 16.5 in.) - Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 446.1 mm (1.72 in. x 17.4 in. x 17.6 in.) • Weight (with two power modules and four fan modules, calculated based on the heaviest model if multiple models are supported): 7.8 kg (17.20 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> • Rated voltage range: 240 V DC • Maximum voltage range: 190 V DC to -290 V DC

Item		Description
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> 8 A (100 V AC to 240 V AC) 4 A (240V DC) 1000 W DC power module (PDC1000S12 series): 30 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	384 W
	Typical power consumption	<ul style="list-style-type: none"> 226 W (100% throughput, SFP28 high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 261 W (100% throughput, short-distance optical modules on all optical ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1310 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> 771 BTU/hr (100% throughput, SFP28 high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 891 BTU/hr (100% throughput, short-distance optical modules on all optical ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode HVDC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup

Item		Description
	Fan module backup	The device supports 3+1 backup of fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	47.81 years
	Mean time to repair (MTTR)	1.95 hours
	Availability	0.9999962836
Technical specifications	Processor	1.4 GHz, four-core
	DRAM memory	4 GB
	NOR Flash	64 MB
	NAND Flash	4 GB
Stack	Service port supporting the stacking function	25GE optical ports, and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-231](#) provides the ordering information.

Table 2-231 Ordering information

Part Number	Part Model	Part Description
02353JAK	CE6863-48S6 CQ-KB	CE6863-48S6CQ-K switch (48*25GE SFP28, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)

2.3.22 CE6865-48S8CQ-EI

Version Mapping

Table 2-232 lists the mappings between the CE6865-48S8CQ-EI and software versions.

Table 2-232 Version mapping

Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6865	CE6865-48S8CQ-EI	CE6865EI	V200R005C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

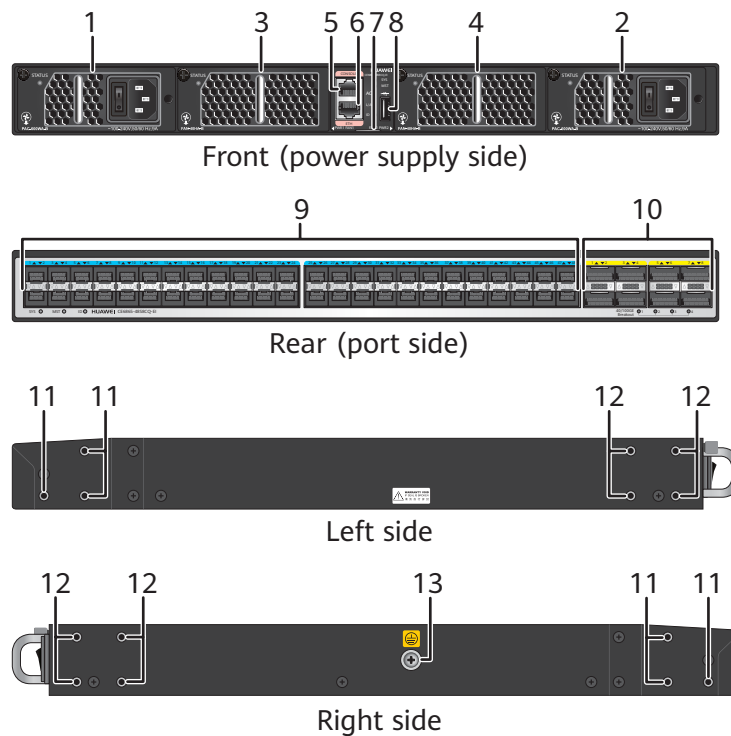
Appearance and Structure

 **NOTE**

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

CE6865-48S8CQ-EI appearance

Figure 2-108 CE6865-48S8CQ-EI



1	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 350 W DC Power Module (PDC-350WA) • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12) <p>NOTE</p> <p>At the ambient temperature of 0°C to 40°C, the 350 W DC module can be used only when all optical interfaces on the switch are equipped with the following short-distance optical modules: 25GBase-SR (power consumption ≤ 1 W) and 100GE optical modules (transmission distance ≤ 2 km; power consumption ≤ 3.5 W) such as 100GBase-SR4, 100GBase-CWDM4, 100GBase-CLR4, and 100GBase-PSM4.</p>	<p>2</p> <p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 350 W DC Power Module (PDC-350WA) • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12) <p>NOTE</p> <p>At the ambient temperature of 0°C to 40°C, the 350 W DC module can be used only when all optical interfaces on the switch are equipped with the following short-distance optical modules: 25GBase-SR (power consumption ≤ 1 W) and 100GE optical modules (transmission distance ≤ 2 km; power consumption ≤ 3.5 W) such as 100GBase-SR4, 100GBase-CWDM4, 100GBase-CLR4, and 100GBase-PSM4.</p>
3	<p>Fan slot 1</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-40HA Series Fan Modules 	<p>4</p> <p>Fan slot 2</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-40HA Series Fan Modules

5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10GE/25GE SFP28 Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> • 10GE SFP+ Optical Modules (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE SFP Copper Modules (supported from V200R005C00 version and only works at 1000 Mbit/s) • GE eSFP Optical Modules (supported from V200R005C00 version) • 25GE SFP28 Optical Modules (only supports SFP-25G-SR) • SFP+ to SFP+ AOC Cable • SFP28 to SFP28 AOC Cable • SFP+ to SFP+ High-Speed Cable • SFP28 to SFP28 High-Speed Cable NOTE A 25GE optical interface does not support auto-negotiation when it has a GE optical module installed. To connect the two interfaces at both ends of a link, disable auto-negotiation on the peer interface. Otherwise, one interface may go Up and the other may go Down.	10	Eight 40GE/100GE QSFP28 Ethernet optical ports NOTE A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules (QSFP-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to 4*SFP+ AOC cable • QSFP+ to 4*SFP+ High-Speed Cable • QSFP+ to QSFP+ High-Speed Cable • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable • QSFP28 to 4*SFP28 High-Speed Cable
11	Three port-side mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets
13	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.
- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

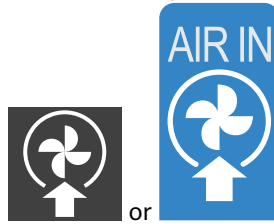
All fan modules are hot swappable.



Airflow

The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

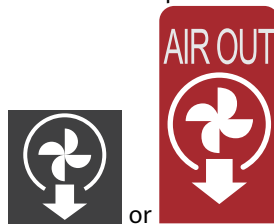
 NOTE



- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-109](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-109 Front-to-back airflow (air flows out from the port side)

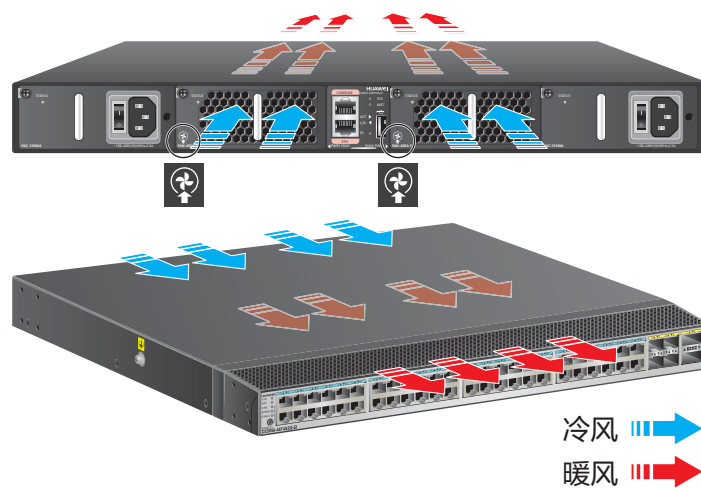
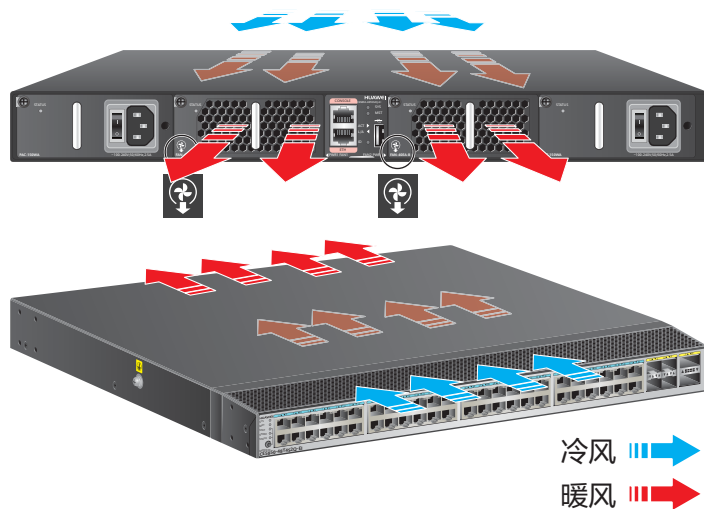


Figure 2-110 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-111 Indicators on the CE6865-48S8CQ-EI rear panel

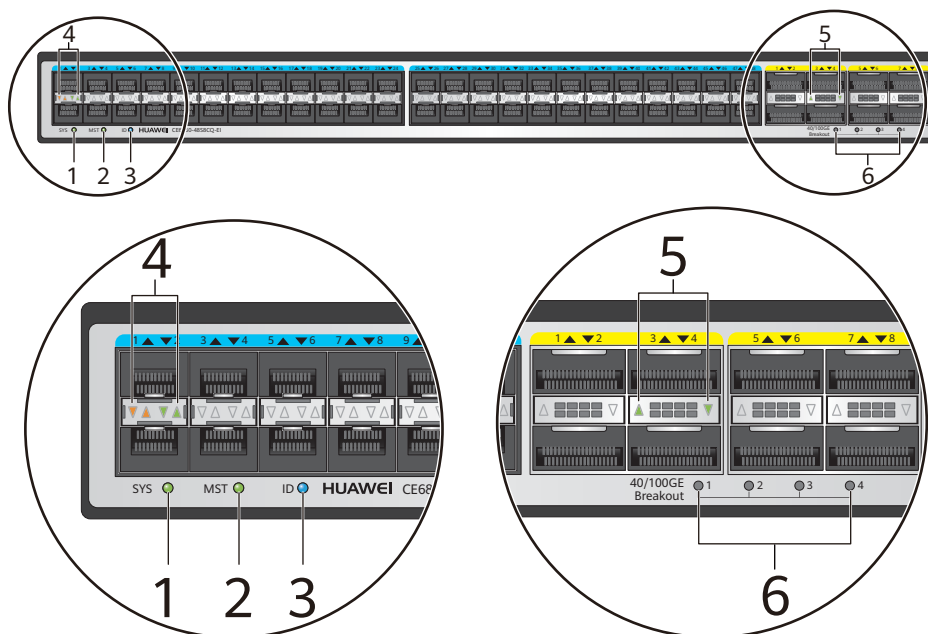


Figure 2-112 Indicators on the CE6865-48S8CQ-EI front panel

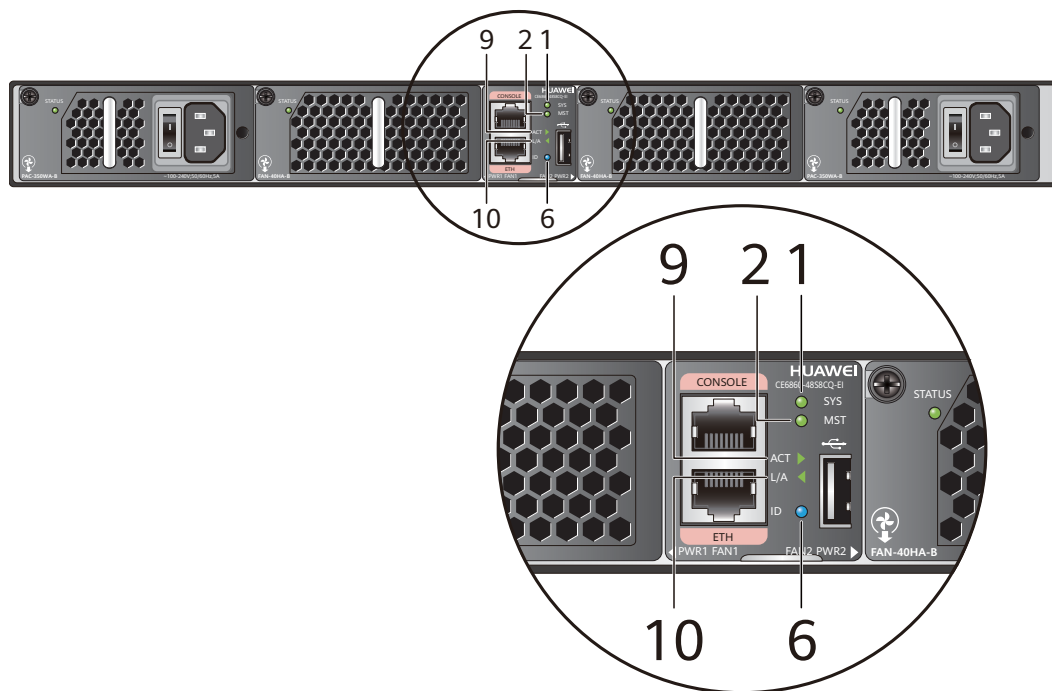


Table 2-233 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T	Stack master/slave indicator	Green	Off	The switch is not a stack master.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE/25GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE Each 10GE/25GE 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.</p>		Blinking	The port is sending or receiving data.
5	-	<p>Service port indicator (40GE/100GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
<p>When a 40GE/100GE port is configured as four 10GE ports or four 25GE ports, this indicator shows the status of a 10GE/25GE port. The sequence number of the indicated port is identified by indicators 40G/100G Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE/100GE port has a single-color indicator, which shows the status of the 40GE/100GE port by default.</p>					
6	-	40G/100G Breakout 1/2/3/4 (sequence number indicators of	Green	Off	40GE/100GE ports are working in 40GE or 100GE mode and not split into four 10GE ports or four 25GE ports.

No.	Indicator	Name	Color	Status	Description
		10GE/25GE ports converted from a 40GE/100GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.		Steady on	At least one 40GE/100GE port has been split into four 10GE ports or four 25GE ports. When one or more 40GE/100GE ports are split into four 10GE ports or four 25GE ports, these indicators identify the sequence numbers of the 10GE/25GE ports. A port indicator (5 in Figure 2-111) shows the status of a 10GE/25GE port converted from the corresponding 40GE/100GE port: <ul style="list-style-type: none"> • When indicator 1 is on, each port indicator shows the status of the first 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 2 is on, each port indicator shows the status of the second 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 3 is on, each port indicator shows the status of the third 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 4 is on, each port indicator shows the status of the fourth 10GE/25GE port derived from the corresponding 40GE/100GE port.
7	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
			Blinking	The system is reading data from a USB flash drive.	
			Red	Steady on	USB-based deployment has failed.
8	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.

No.	Indicator	Name	Color	Status	Description
				Blinking	The port is sending or receiving data.

Ports

10GE/25GE SFP28 Optical Port

10GE/25GE SFP28 optical ports cannot work at the rate of 100 Mbit/s. [Table 2-234](#) shows the attributes of a 10GE/25GE SFP28 optical port.

Table 2-234 Attributes of a 10GE/25GE SFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Port use constraints	<p>The 48 10GE/25GE SFP28 optical ports of a CE6865EI switch work at the rate of 25 Gbit/s by default and do not support GE/10GE auto-sensing. You can set the port rate to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command, respectively.</p> <p>The 48 10GE/25GE SFP28 optical ports are divided into 12 port groups, with four ports in each group (1-4, 5-8, 9-12...45-48).</p> <ul style="list-style-type: none"> If the rate of any port in a port group is set to 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s, all the other ports in this group also work at the rate of 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s. When the ports in a port group work at the rate of 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 10 Gbit/s, they support only 10GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used.
Standards compliance	IEEE802.3by

Attribute	Description
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

Table 2-235 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-235 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. **Table 2-236** describes the attributes of the console port.

Table 2-236 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. **Table 2-237** describes the attributes of the ETH management port (RJ45).

Table 2-237 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-238 lists technical specifications of the CE6865-48S8CQ-EI switch.

Table 2-238 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.8 kg (19.40 lb) 	
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Storage temperature: -40°C to +70°C (-40°F to +158°F) 	
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 65 dBA Front-to-back airflow: < 65 dBA

Item		Description
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC) 600 W DC power (PDC600S12 series): 20 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	420W
	Typical power consumption	259 W (100% throughput, SFP28 cables on 48 ports and QSFP28 cables on 8 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1433 BTU/hr
	Typical heat dissipation	884 BTU/hr (100% throughput, SFP28 cables on 48 ports and QSFP28 cables on 8 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 2 kV in common mode and 1 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	38.85
	Mean time to repair (MTTR)	1.48
	Availability	0.999997178
Technical specifications	Processor	1.5 GHz, 8-core
	DRAM Memory	4 GB
	NOR Flash	32 MB
	NAND Flash	2 GB
Stack	Service port supporting the stack function	25GE optical ports and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-239 provides the ordering information.

Table 2-239 Ordering information

Part Number	Part Model	Part Description
02351RFC	CE6865-48S8CQ-EI	CE6865-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, Without Fan and Power Module)
02351RFE	CE6865-EI-F-B0B	CE6865-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02351RFD	CE6865-EI-B-B0B	CE6865-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.23 CE6870-24S6CQ-EI

Version Mapping

Table 2-240 lists the mappings between the CE6870-24S6CQ-EI and software versions.

Table 2-240 Version mapping

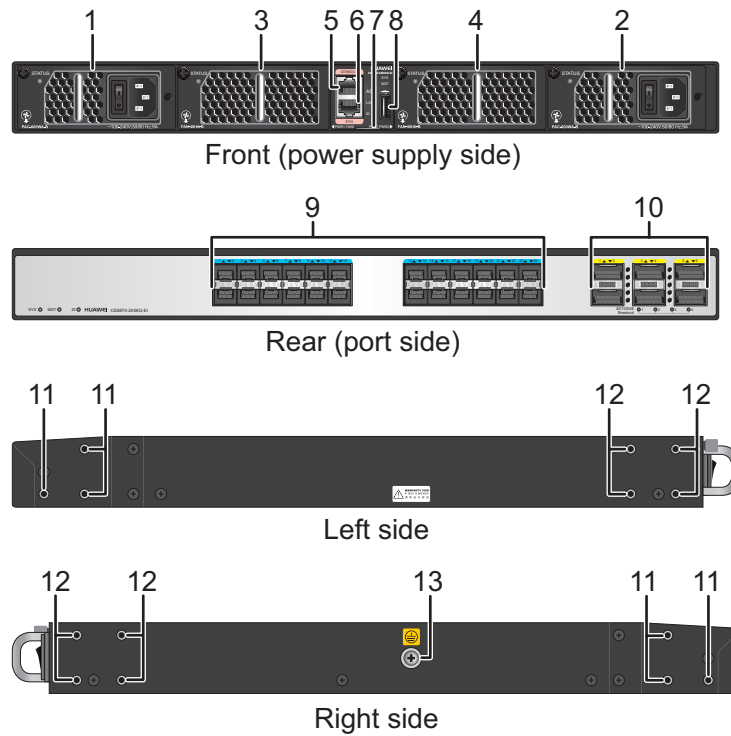
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6870	CE6870-24S6CQ-EI	CE6870EI	V200R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-113 CE6870-24S6CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Twenty-four 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module • GE copper module (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable 	10	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • 100GE optical module (QSFP28-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to 4*SFP+ AOC cable • QSFP+ to 4*SFP+ high-speed cable • QSFP+ to QSFP+ high-speed cable • QSFP28 to QSFP28 AOC cable • QSFP28 to QSFP28 high-speed cable • QSFP28 to 4*SFP28 high-speed cable
11	<p>Three port-side mounting holes for mounting brackets</p>	12	<p>Four power-supply-side mounting holes for mounting brackets</p>
13	<p>Ground screw</p>	-	-

Slot

- **Power supply slot**
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).
 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.
- **Fan slot**
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ,

CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-114](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-115](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-114 Front-to-back airflow (air flows out from the port side)

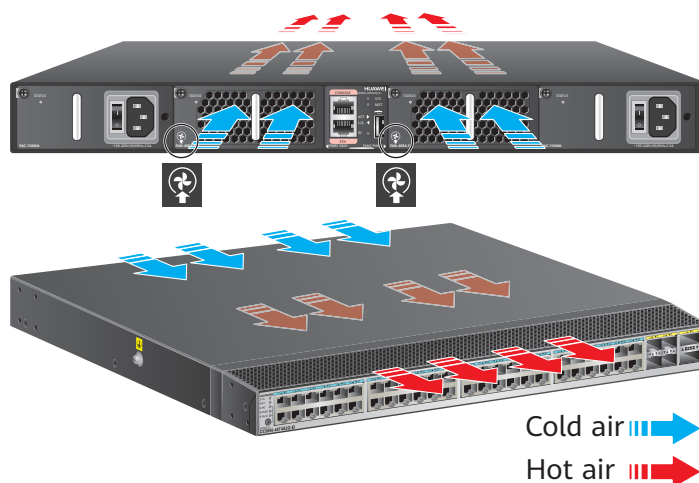
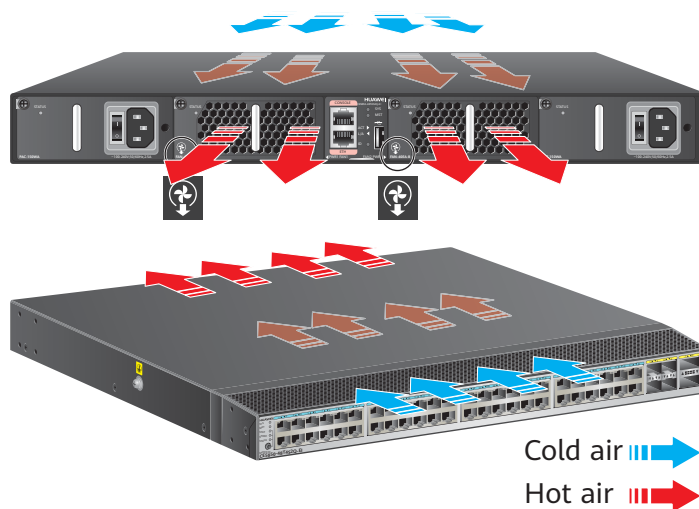


Figure 2-115 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE6870-24S6CQ-EI are the same as those on the CE6870-48S6CQ-EI. The [CE6870-48S6CQ-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-241](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-241 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

Table 2-242 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-242 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. **Table 2-243** describes the attributes of the console port.

Table 2-243 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-244](#) describes the attributes of the ETH management port (RJ45).

Table 2-244 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-245](#) lists technical specifications of the CE6870-24S6CQ-EI switch.

Table 2-245 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.4 kg (18.52 lb)
Environment parameters	<p>Temperature</p> <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)

Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 55 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) • 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	258 W
	Typical power consumption	151 W (100% throughput, SFP+ cables on 24 ports and QSFP28 cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	881 BTU/hr
	Typical heat dissipation	514 BTU/hr (100% throughput, SFP+ cables on 24 ports and QSFP28 cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

Item		Description
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	52.98 years
	Mean time to repair (MTTR)	1.66 hours
	Availability	0.99999641605
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To

obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-246 provides the ordering information.

Table 2-246 Ordering information

Part Number	Part Model	Part Description
02350SRV	CE6870-24S6CQ-EI	CE6870-24S6CQ-EI Switch (24-Port 10GE SFP+, 6-Port 100GE QSFP28, Without Fan and Power Module)
02350RXH	CE6870-EI-F-B0B	CE6870-24S6CQ-EI Switch (24-Port 10GE SFP+, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350RXJ	CE6870-EI-B-B0B	CE6870-24S6CQ-EI Switch (24-Port 10GE SFP+, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.24 CE6870-48S6CQ-EI

Version Mapping

Table 2-247 lists the mappings between the CE6870-48S6CQ-EI and software versions.

Table 2-247 Version mapping

Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6870	CE6870-48S6CQ-EI	CE6870EI	V200R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

CAUTION

The DDR of the CE6870-48S6CQ-EI has been optimized and upgraded since March 1, 2020. The switches that are manufactured on and after March 1, 2020 can only run V200R019C10SPC800 after the corresponding patch is load, as well as running V200R020C10 or later versions. (The year and month when the switches are manufactured can be determined based on the SN.)

The product SN consists of 20 characters.

- The thirteenth character indicates the year of production. A indicates 2010, B indicates 2011, C indicates 2012, D indicates 2013, E indicates 2014, F indicates 2015, G indicates 2016, H indicates 2017, J indicates 2018, K indicates 2019, and L indicates 2020. The letter I is not used. The letters increase with the year.
- The fourteenth character indicates the month of production. 1 indicates January, 2 indicates February, ..., 9 indicates September, A indicates October, B indicates November, and C indicates December.

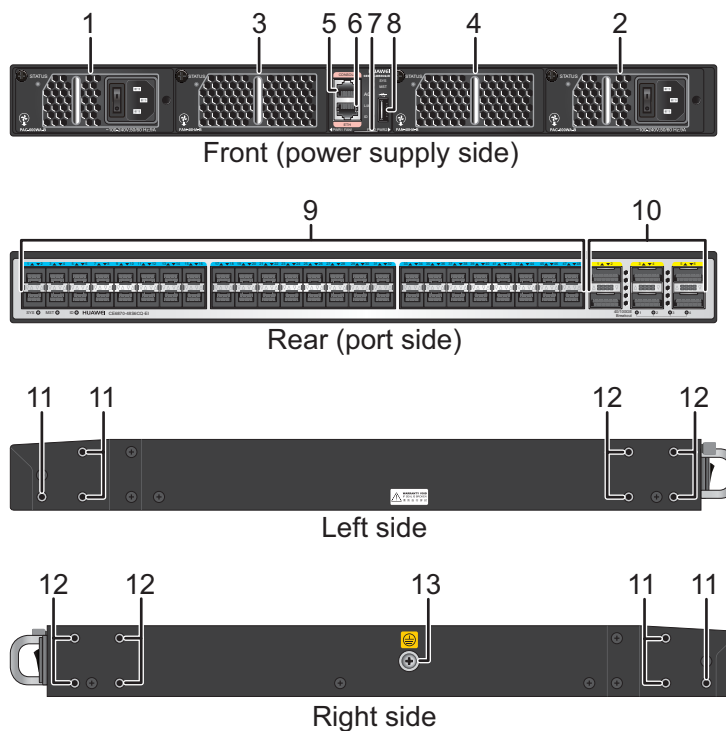
For example, if the SN of a switch is 2102XXXXXX10L3000XXX, the switch is manufactured in March 2020.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-116 CE6870-48S6CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 350 W DC Power Module (PDC-350WA) 600 W AC Power Module (PAC-600WA) 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 350 W DC Power Module (PDC-350WA) 600 W AC Power Module (PAC-600WA)
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> FAN-40HA Series Fan Modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> FAN-40HA Series Fan Modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port
9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: <ul style="list-style-type: none"> 10GE SFP+ Optical Modules (OSXD22N00 and LE2MXSC80FF0 not supported) GE eSFP Optical Modules GE SFP Copper Modules (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) SFP+ to SFP+ AOC Cable SFP+ to SFP+ High-Speed Cable 	10	Six 40GE/100GE QSFP28 Ethernet optical ports NOTE A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports. Applicable modules and cables: <ul style="list-style-type: none"> 40GE QSFP+ Optical Modules 100GE QSFP28 Optical Modules (QSFP28-100G-4WDM-40 not supported) QSFP+ to QSFP+ AOC cable QSFP+ to QSFP+ High-Speed Cable QSFP+ to 4*SFP+ AOC cable QSFP+ to 4*SFP+ High-Speed Cable QSFP28 to QSFP28 AOC Cable QSFP28 to QSFP28 High-Speed Cable QSFP28 to 4*SFP28 High-Speed Cable
11	Three port-side mounting holes for mounting brackets	12	Four power-supply-side mounting holes for mounting brackets

1	Ground screw	-	-
3			

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

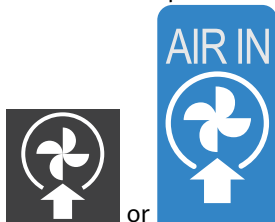
All fan modules are hot swappable.



Airflow

The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

 NOTE



- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-117](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-117 Front-to-back airflow (air flows out from the port side)

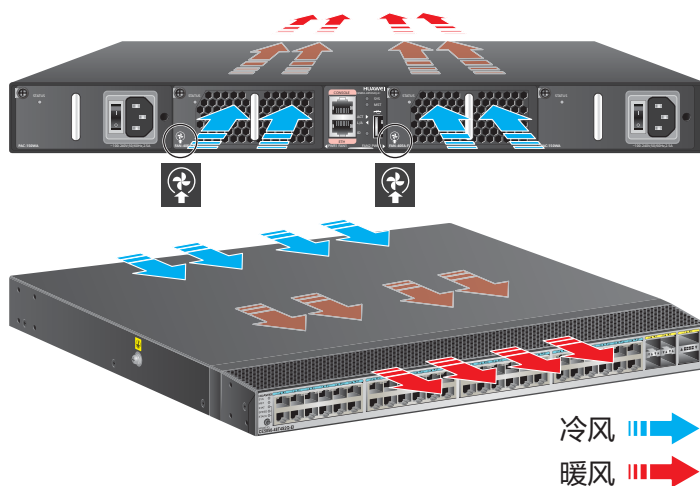
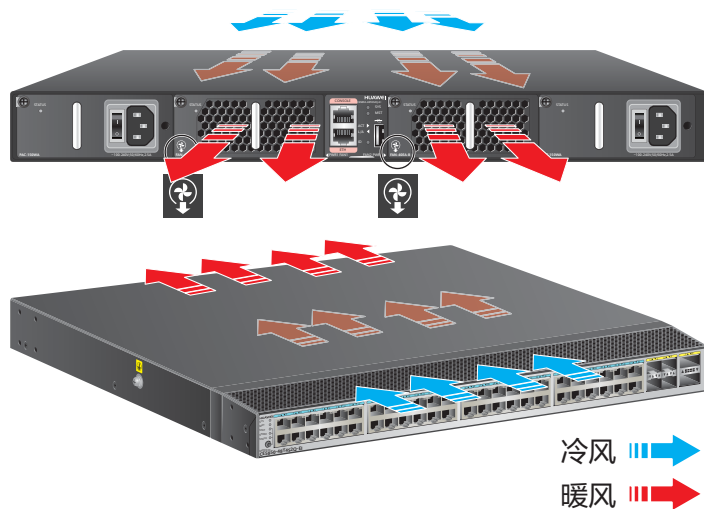


Figure 2-118 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-119 Indicators on the CE6870-48S6CQ-EI rear panel

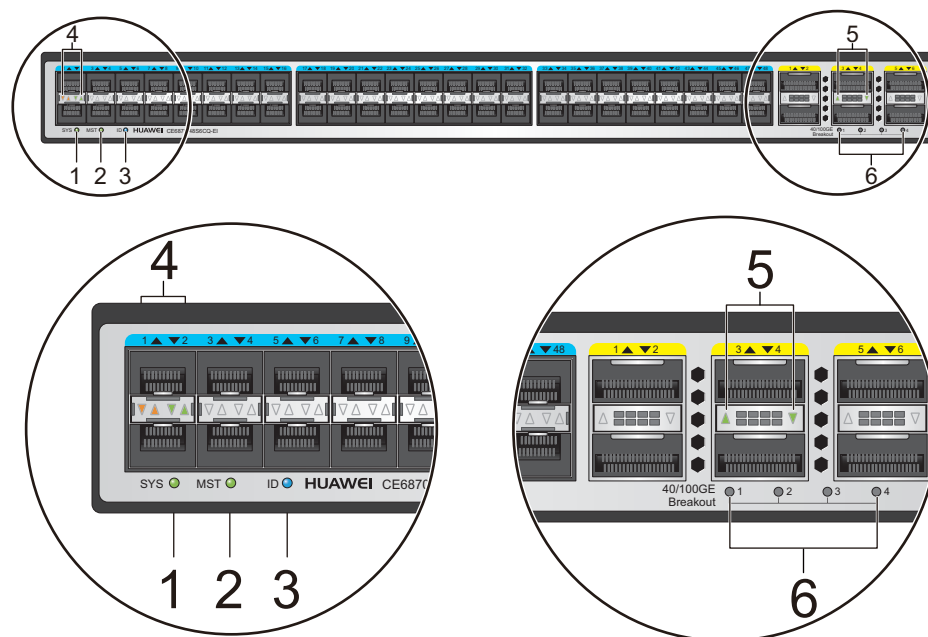


Figure 2-120 Indicators on the CE6870-48S6CQ-EI front panel

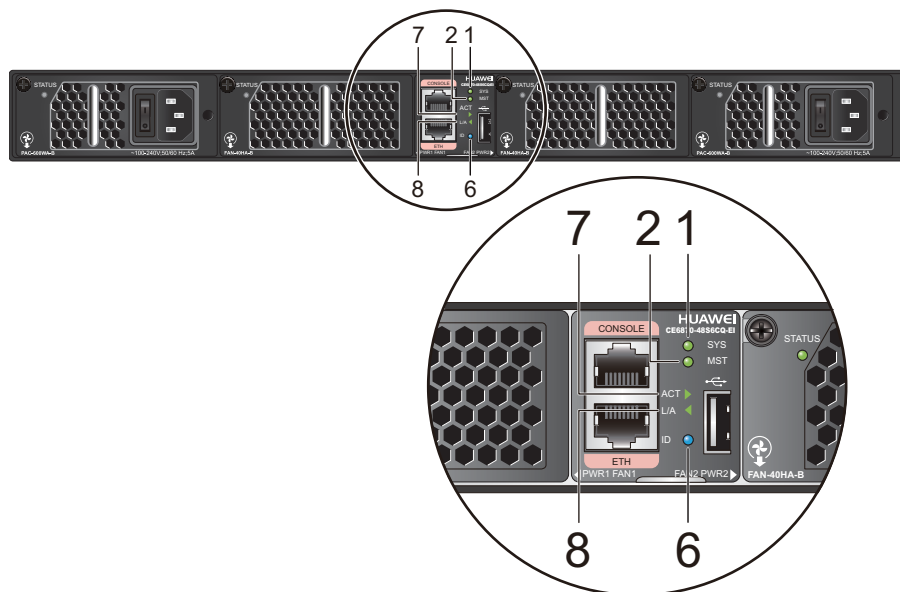


Table 2-248 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MST	Stack master/slave indicator	Green	Off	The switch is not a stack master.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE Each 10GE/25GE 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.</p>		Blinking	The port is sending or receiving data.
5	-	<p>Service port indicator (40GE/100GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
<p>When a 40GE/100GE port is configured as four 10GE ports or four 25GE ports, this indicator shows the status of a 10GE/25GE port. The sequence number of the indicated port is identified by indicators 40G/100G Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE/100GE port has a single-color indicator, which shows the status of the 40GE/100GE port by default.</p>					
6	-	40G/100G Breakout 1/2/3/4 (sequence number indicators of	Green	Off	40GE/100GE ports are working in 40GE or 100GE mode and not split into four 10GE ports or four 25GE ports.

No.	Indicator	Name	Color	Status	Description
		10GE/25GE ports converted from a 40GE/100GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.		Steady on	At least one 40GE/100GE port has been split into four 10GE ports or four 25GE ports. When one or more 40GE/100GE ports are split into four 10GE ports or four 25GE ports, these indicators identify the sequence numbers of the 10GE/25GE ports. A port indicator (5 in Figure 2-119) shows the status of a 10GE/25GE port converted from the corresponding 40GE/100GE port: <ul style="list-style-type: none"> • When indicator 1 is on, each port indicator shows the status of the first 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 2 is on, each port indicator shows the status of the second 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 3 is on, each port indicator shows the status of the third 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 4 is on, each port indicator shows the status of the fourth 10GE/25GE port derived from the corresponding 40GE/100GE port.
7	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
			Blinking	The system is reading data from a USB flash drive.	
			Red	Steady on	USB-based deployment has failed.
8	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.

No.	Indicator	Name	Color	Status	Description
				Blinking	The port is sending or receiving data.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-249](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-249 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-250](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-250 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-251](#) describes the attributes of the console port.

Table 2-251 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-252](#) describes the attributes of the ETH management port (RJ45).

Table 2-252 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-253](#) lists technical specifications of the CE6870-48S6CQ-EI switch.

Table 2-253 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.6 kg (18.96 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 55 dBA Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	333 W

Item		Description
	Typical power consumption	159 W (100% throughput, SFP+ cables on 48 ports and QSFP28 cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1135 BTU/hr
	Typical heat dissipation	543 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP28 cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	54.28 years
	Mean time to repair (MTTR)	1.66 hours
	Availability	0.99999651887
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB

Item		Description
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-254](#) provides the ordering information.

Table 2-254 Ordering information

Part Number	Part Model	Part Description
02350SRU	CE6870-48S6CQ-EI	CE6870-48S6CQ-EI Switch (48-Port 10GE SFP+, 6-Port 100GE QSFP28, Without Fan and Power Module)
02350RXD	CE6870-EI-F-B0A	CE6870-48S6CQ-EI Switch (48-Port 10GE SFP+, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350RXE	CE6870-EI-B-B0A	CE6870-48S6CQ-EI Switch (48-Port 10GE SFP+, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.25 CE6870-48T6CQ-EI

Version Mapping

[Table 2-255](#) lists the mappings between the CE6870-48T6CQ-EI and software versions.

Table 2-255 Version mapping

Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6870	CE6870-48T6CQ-EI	CE6870EI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

 **CAUTION**

The DDR of the CE6870-48T6CQ-EI has been optimized and upgraded since March 1, 2020. The switches that are manufactured on and after March 1, 2020 can only run V200R019C10SPC800 after the corresponding patch is load, as well as running V200R020C10 or later versions. (The year and month when the switches are manufactured can be determined based on the SN.)

The product SN consists of 20 characters.

- The thirteenth character indicates the year of production. A indicates 2010, B indicates 2011, C indicates 2012, D indicates 2013, E indicates 2014, F indicates 2015, G indicates 2016, H indicates 2017, J indicates 2018, K indicates 2019, and L indicates 2020. The letter I is not used. The letters increase with the year.
- The fourteenth character indicates the month of production. 1 indicates January, 2 indicates February, ..., 9 indicates September, A indicates October, B indicates November, and C indicates December.

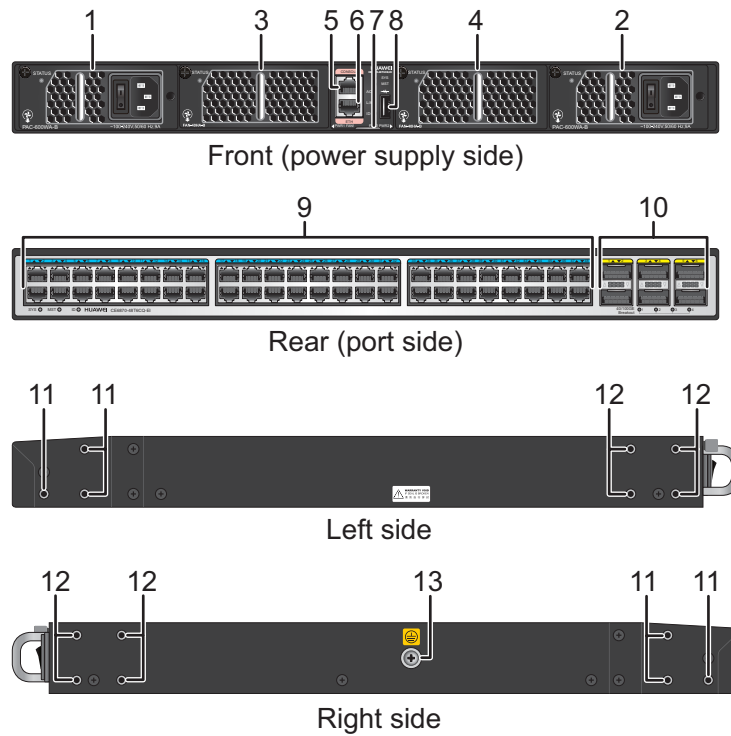
For example, if the SN of a switch is 2102XXXXXX10L3000XXX, the switch is manufactured in March 2020.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-121 CE6870-48T6CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 600 W AC Power Module (PAC-600WA) 600 W DC Power Module (PDC600S12) 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 600 W AC Power Module (PAC-600WA) 600 W DC Power Module (PDC600S12)
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> FAN-40HA Series Fan Modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> FAN-40HA Series Fan Modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-eight 10GBASE-T Ethernet electrical ports	1 0	Six 40GE/100GE QSFP28 Ethernet optical ports NOTE A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports. Applicable modules and cables: <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules (QSFP28-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable • QSFP+ to 4*SFP+ AOC cable • QSFP+ to 4*SFP+ High-Speed Cable • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable • QSFP28 to 4*SFP28 High-Speed Cable
1 1	Three port-side mounting holes for mounting brackets	1 2	Four power-supply-side mounting holes for mounting brackets
1 3	Ground screw	- -	

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).
 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.
All power modules are hot swappable.
- Fan slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ,

CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-122](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-122 Front-to-back airflow (air flows out from the port side)

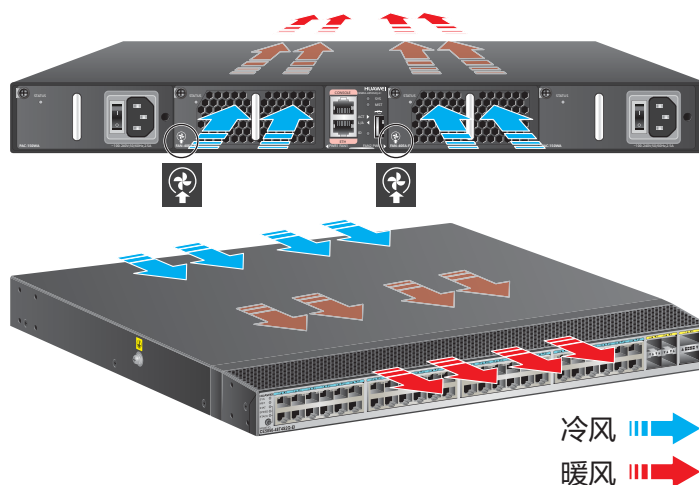
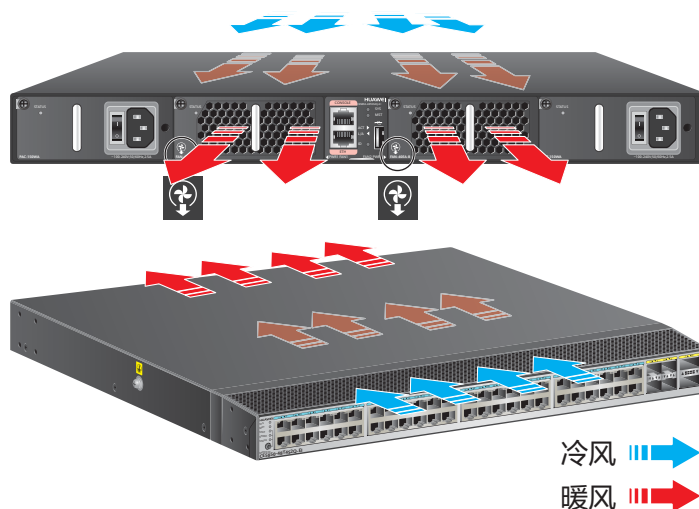


Figure 2-123 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6870-48T6CQ-EI are 10GE electrical port indicators, and other indicators are the same as those on the CE6870-48S6CQ-EI. The [CE6870-48S6CQ-EI](#) is used as an example here to describe the indicators.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-256](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-256 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE/100GE QSFP28 Optical Port

Table 2-257 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-257 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. **Table 2-258** describes the attributes of the console port.

Table 2-258 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-259](#) describes the attributes of the ETH management port (RJ45).

Table 2-259 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-260](#) lists technical specifications of the CE6870-48T6CQ-EI switch.

Table 2-260 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none">• Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.)• Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 9.8 kg (21.61 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 56 dBA Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC) 600 W DC power (PDC600S12 series): 20A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	405 W
	Typical power consumption	280 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1382 BTU/hr

Item		Description
	Typical heat dissipation	955 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	44.44 years
	Mean time to repair (MTTR)	1.76 hours
	Availability	0.99999548998
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	4 GB
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE electrical ports and 100GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-261](#) provides the ordering information.

Table 2-261 Ordering information

Part Number	Part Model	Part Description
02351GCL	CE6870-48T6CQ-EI	CE6870-48T6CQ-EI Switch (48-Port 10G RJ45, 6-Port 100GE QSFP28, Without Fan and Power Module)
02351GCJ	CE6870-EI-F-B00	CE6870-48T6CQ-EI Switch (48-Port 10G RJ45, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02351GCK	CE6870-EI-B-B00	CE6870-48T6CQ-EI Switch (48-Port 10G RJ45, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.26 CE6875-48S4CQ-EI

Version Mapping

[Table 2-262](#) lists the mappings between the CE6875-48S4CQ-EI and software versions.

Table 2-262 Version mapping

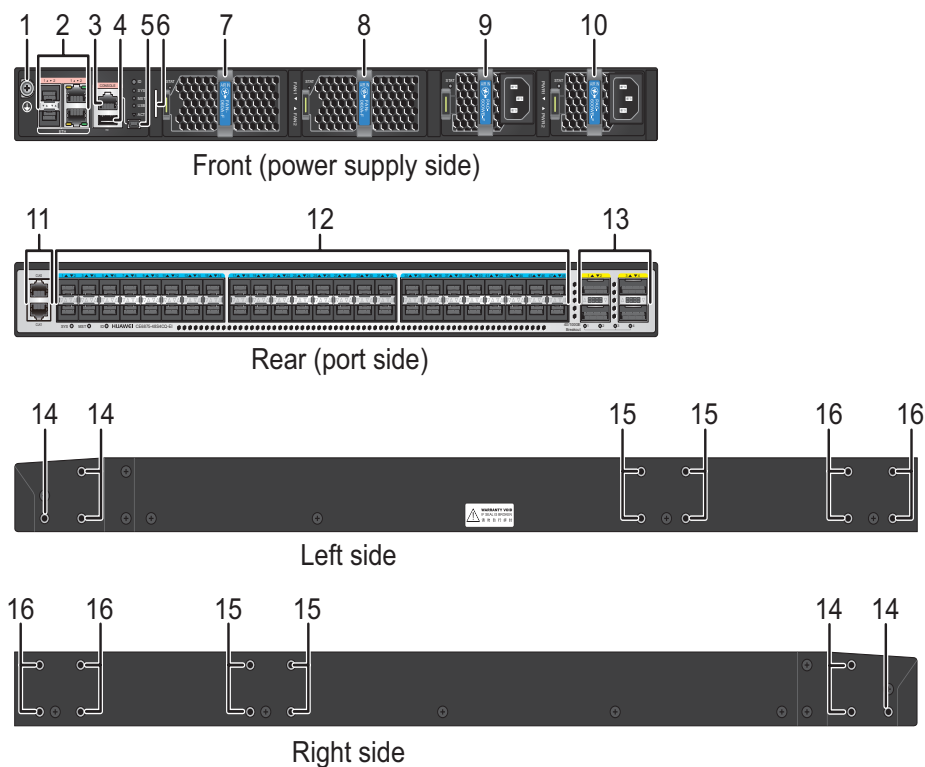
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6875	CE6875-48S4CQ-EI	CE6875EI	V200R003C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-124 CE6870-48S6CQ-EI



1	Ground screw	2 Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: <ul style="list-style-type: none"> • FE optical module • GE optical module NOTE The combo optical port uses a 100M or GE optical module and matching fibers. A 100M optical module can be used only after the switch starts successfully.
3	Console port	4 USB port

5	Mini USB port	6	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules 	8	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-060A series fan modules
9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 600 W AC&240 V DC power module • 600 W high-voltage DC power module • 1200 W DC power module • 1200 W high-voltage DC power module 	10	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 600 W AC&240 V DC power module • 600 W high-voltage DC power module • 1200 W DC power module • 1200 W high-voltage DC power module
11	Two BITS ports BITS ports on the device connect to BITS devices or BITS ports of other products to synchronize the time and clock. Functions of the two BITS ports are: <ul style="list-style-type: none"> • CLK0 is used for clock synchronization. • CLK1 is used for time synchronization. NOTE The CE6875-48S4CQ-EI switch does not support time and clock synchronization.	12	Forty-eight 10GE SFP+ Ethernet optical ports Applicable transceiver modules and cables: <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00 and LE2MXSC80FF0 not supported) • GE optical module • GE copper module (only works at 1000 Mbit/s) • SFP+ AOC cable • SFP+ high-speed cable

1 3	<p>Four 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE</p> <p>A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports.</p> <p>QSFP28 optical ports support QSFP28 high-speed cables of 1 m.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • 100GE optical module (QSFP28-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to 4*SFP+ AOC cable • QSFP28 to QSFP28 AOC cable • QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable and can also be used to connect a peer-link interface in an M-LAG.) • QSFP28 to QSFP28 high-speed cable (When a QSFP28 to QSFP28 high-speed cable is installed on the port, the cable can only be used as a stack cable and can also be used to connect a peer-link interface in an M-LAG.) 	1 4	<p>Three port-side mounting holes for mounting brackets</p>
1 5	<p>Four middle mounting holes for mounting brackets</p>	1 6	<p>Four power-supply-side mounting holes for mounting brackets</p>

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

 or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-125](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

 or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-126](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-125 Front-to-back airflow (air flows out from the port side)

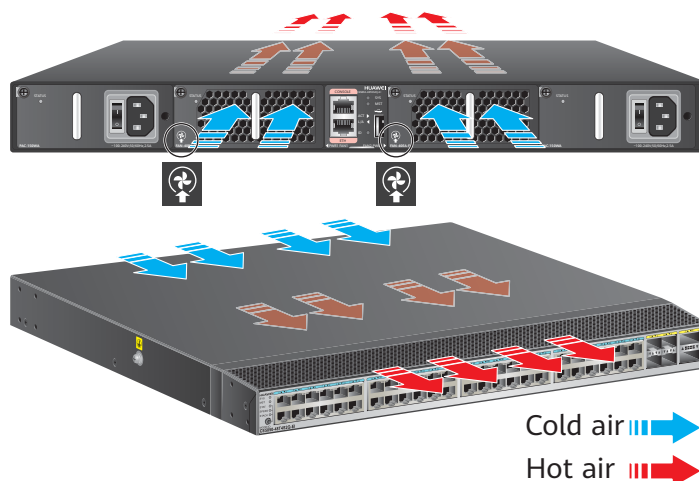
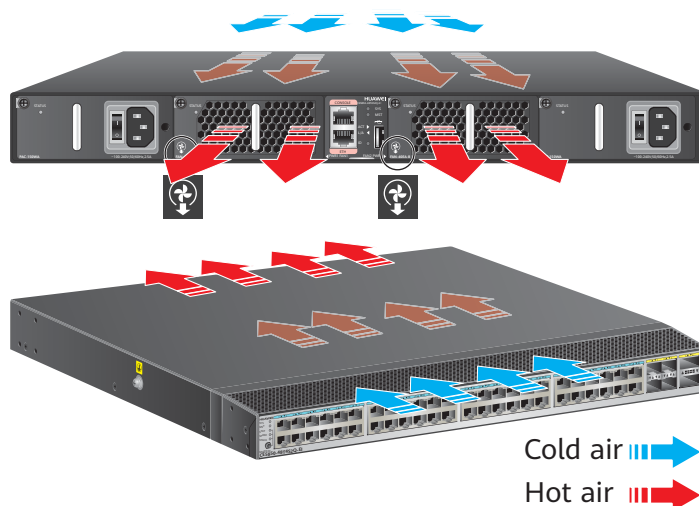


Figure 2-126 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE6875-48S4CQ-EI are the same as those on the CE6850-48S6Q-HI. The [CE6850-48S6Q-HI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-263](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-263 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC

Attribute	Description
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-264](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-264 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

BITS Port

Attribute	Description
Connector type	RJ45
Working mode	Clock synchronization mode: full-duplex Time synchronization mode: half-duplex
Frame format	Time synchronization: <ul style="list-style-type: none"> • 1 pps + Time of Day (ToD) Clock synchronization: <ul style="list-style-type: none"> • 2 MHz • 2 Mbit/s: HDB3 code

Attribute	Description
Standards compliance	<p>Time synchronization:</p> <ul style="list-style-type: none"> • 1 pps+ToD <ul style="list-style-type: none"> - NMEA-0183 - ToD standard of China Mobile <p>Clock synchronization:</p> <ul style="list-style-type: none"> • 2 MHz: G.703 standard • 2 Mbit/s: G.703 standard
Cables used	<p>Time synchronization mode: time synchronization network cable, which is a straight through network cable with the RS422 interface level</p> <p>Clock synchronization mode: E1/T1 cable, which is a 120-ohm balanced cable</p> <p>For details about cable parameters, see Clock Cable.</p>

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-265](#) describes the attributes of the console port.

Table 2-265 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (Combo)

The ETH management port (combo) consists of an electrical port and an optical port. You can connect the electrical or optical port to a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The electrical and optical ports are logically multiplexed, and only one of them can work at a time.

 **NOTE**

The combo port automatically selects the working mode as follows:

- If the optical port has no optical module installed and the electrical port has no network cable connected, the port type depends on which port is connected first. If the electrical port is connected by a network cable first, the electrical port is used for data switching. If the optical port has an optical module installed first, the optical port is used for data switching.
- If the electrical port has a network cable connected and is in Up state, the electrical port is still used for data switching when the optical port has an optical module installed.
- If the optical port has an optical module installed and is in Up state, the optical port is still used for data switching when the electrical port has a network cable connected.
- If the optical port has an optical module and optical fiber installed and the electrical port has a network cable connected, the optical port is used for data switching after the switch restarts.

The combo electrical port uses a Category 5 or higher category network cable.

[Table 2-266](#) describes the attributes of the combo electrical port.

Table 2-266 Attributes of the combo electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The combo optical port uses a 100M or GE optical module and matching optical fibers. A 100M optical module can be used only after the switch starts successfully. If a 10GE optical module is installed, the interface can go Up, but the system displays an alarm message, indicating that the interface does not support the optical module. If a GE copper module is installed and the remote interface also has a GE copper module installed, the local interface can go Up but does not support rate configuration. [Table 2-267](#) describes the attributes of the combo optical port.

Table 2-267 Attributes of the combo optical port

Attribute	Description
Connector type	LC
Standards compliance	IEEE802.3z

Attribute	Description
Working mode	100/1000 Mbit/s Full-duplex

The CE6875EI switches have two ETH management ports (combo). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE6875EI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-268](#) lists technical specifications of the CE6875-48S4CQ-EI switch.

Table 2-268 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 43.6 mm (17.4 in. x 23.6 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 12.6 kg (27.78 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 52 dBA Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC. Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC-600WB series): 8 A (100 V AC to 240 V AC)/4 A (240 V DC) 600 W high-voltage DC power module (PHD-600WA series): 4 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	407 W	

Item		Description
mp tion	Typical power consumption	273 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1389 BTU/hr
	Typical heat dissipation	932 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 4 kV in common mode and 2.5 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Not supported
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	36.8 years
	Mean time to repair (MTTR)	1.89 hours
	Availability	0.99999339538

Item		Description
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	8 GB
	NOR Flash	32 MB
	NAND Flash	2 GB
Stack	Service port supporting the stack function	10GE optical ports and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-269](#) provides the ordering information.

Table 2-269 Ordering information

Part Number	Part Model	Part Description
02351MEA	CE6875-48S4CQ-EI	CE6875-48S4CQ-EI Switch (48-Port 10GE SFP+, 4-Port 100GE QSFP28, Without Fan and Power Module)
02351MEC	CE6875-EI-F-B0A	CE6875-48S4CQ-EI Switch (48-Port 10GE SFP+, 4-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02351MEE	CE6875-EI-B-B0A	CE6875-48S4CQ-EI Switch (48-Port 10GE SFP+, 6-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.27 CE6880-24S4Q2CQ-EI

Version Mapping

Table 2-270 lists the mappings between the CE6880-24S4Q2CQ-EI and software versions.

Table 2-270 Version mapping

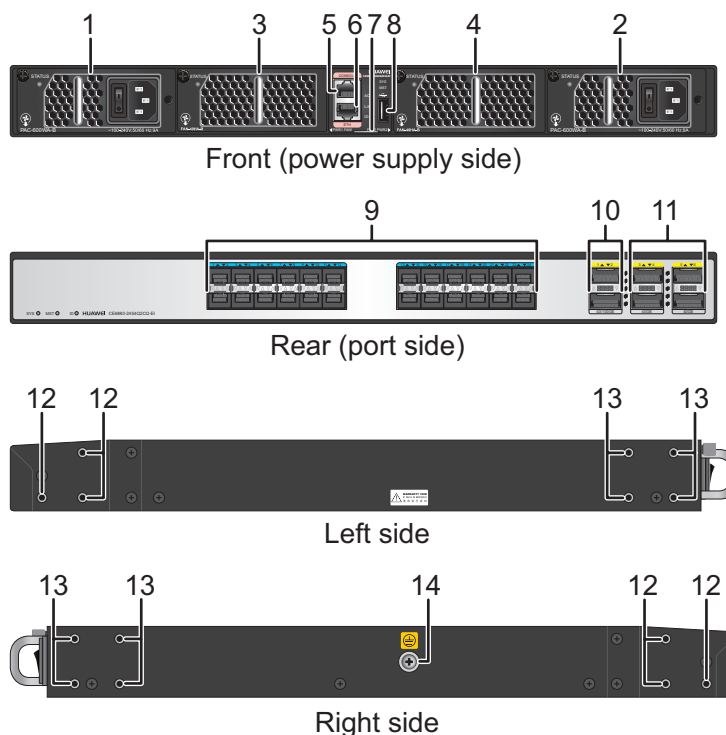
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6880	CE6880-24S4Q2CQ-EI	CE6880EI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-127 CE6880-24S4Q2CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none">• 350 W DC power module• 600 W AC power module	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none">• 350 W DC power module• 600 W AC power module
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none">• FAN-40HA series fan modules	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none">• FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Twenty-four 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none">• 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported)• GE optical module• GE copper module (works at 100 Mbit/s or 1000 Mbit/s)• SFP+ AOC cable• SFP+ high-speed cable	1 0	<p>Two 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE</p> <p>A QSFP28 Ethernet optical port can be split into four 10GE ports.</p> <p>The default rate of a QSFP28 Ethernet optical port is 40 Gbit/s, and you can use the port mode 100ge command to change the port speed to 100 Gbit/s.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none">• 40GE optical module• 100GE optical module (QSFP28-100G-4WDM-40 not supported)• QSFP+ to QSFP+ AOC cable• QSFP+ to 4*SFP+ AOC cable• QSFP+ to 4*SFP+ high-speed cable• QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable. In V200R005C10 and later versions, the cable can also be used to connect peer-link interfaces in an M-LAG)• QSFP28 to QSFP28 AOC cable• QSFP28 to QSFP28 high-speed cable
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1 1	<p>Four 40GE QSFP+ Ethernet optical ports</p> <p>NOTE A 40GE QSFP+ port cannot be split into four 10GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable. In V200R005C10 and later versions, the cable can also be used to connect peer-link interfaces in an M-LAG) 	1 2	Three port-side mounting holes for mounting brackets
1 3	Four power-supply-side mounting holes for mounting brackets	1 4	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

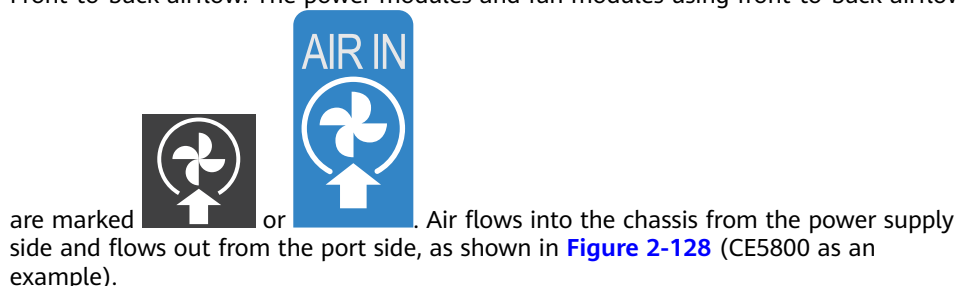
All fan modules are hot swappable.

Airflow

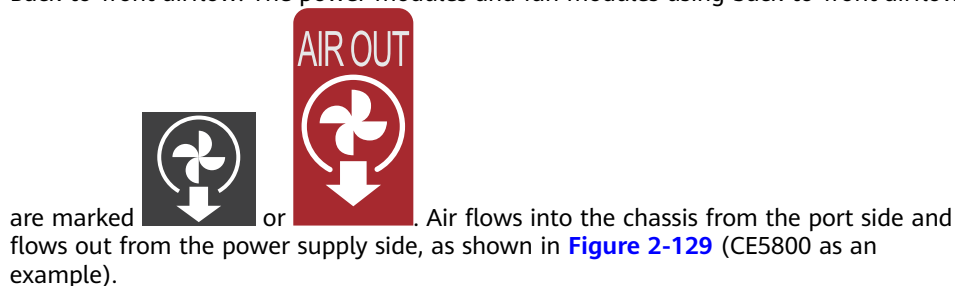
The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-128 Front-to-back airflow (air flows out from the port side)

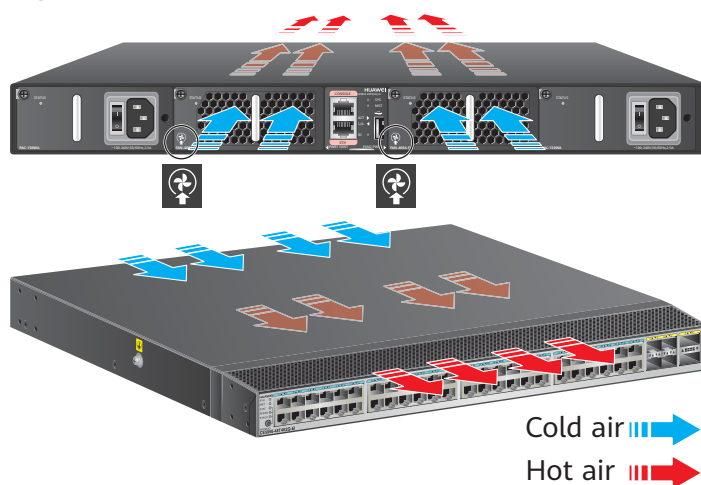
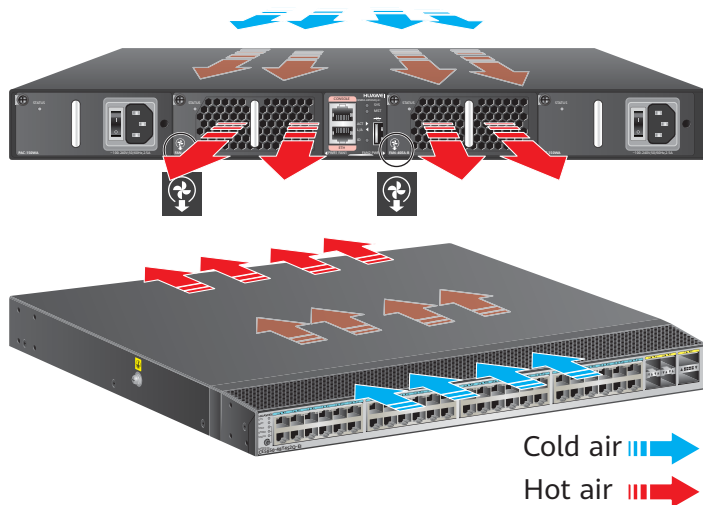


Figure 2-129 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-130 Indicators on the CE6880-24S4Q2CQ-EI rear panel

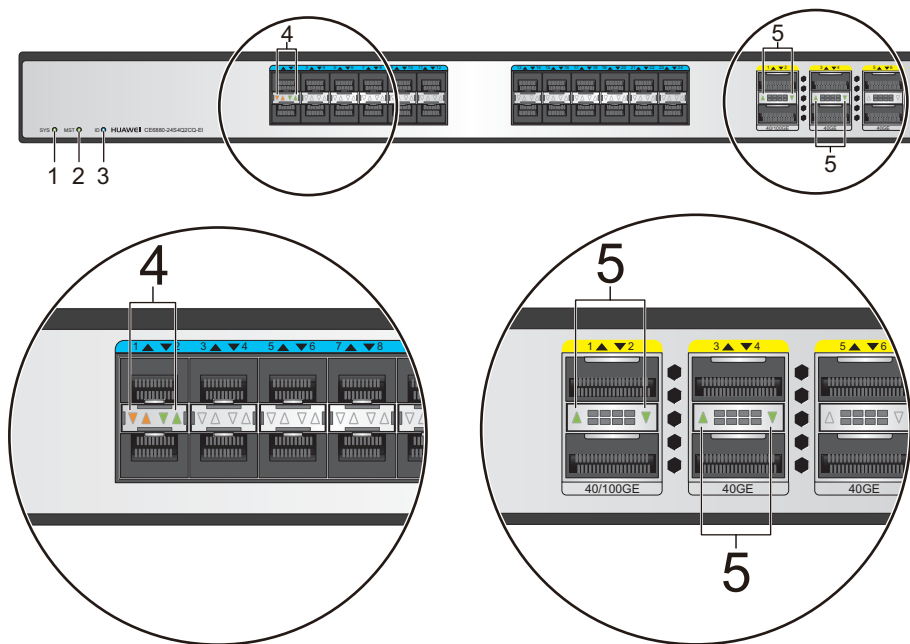


Figure 2-131 Indicators on the CE6880-24S4Q2CQ-EI front panel

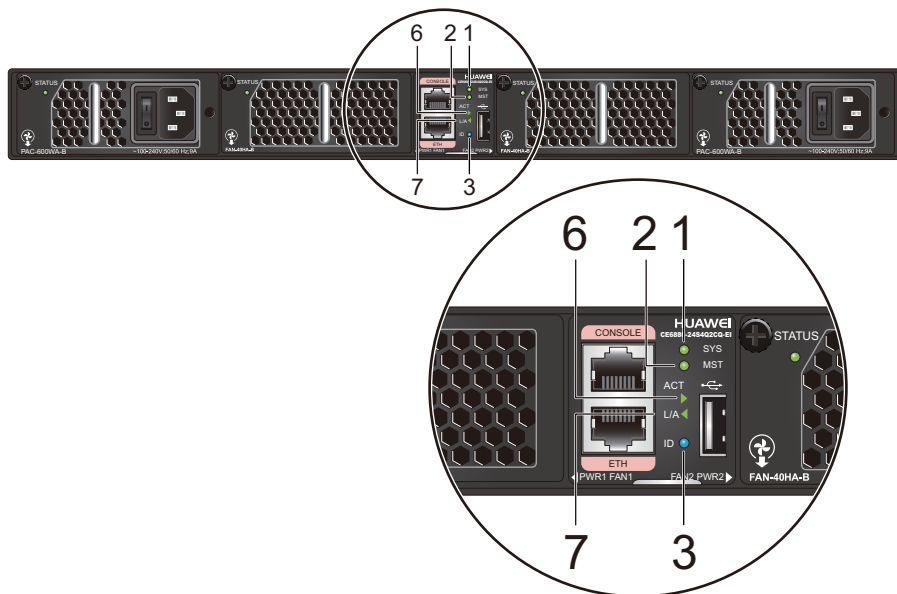


Table 2-271 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MST	Stack master/slave indicator	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).

No.	Indica tor	Name	Color	Statu s	Description
				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.
4	-	Service port indicator (10GE optical port) NOTE Each 10GE 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.	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.
				Blinking	The port is sending or receiving data.
5	-	Service port indicator (40GE and 40GE/100GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.

No.	Indicator	Name	Color	Status	Description
		NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.		Blinking	The port is sending or receiving data.
6	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
7	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-272](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-272 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use

Attribute	Description
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-273](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-273 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-274](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-274 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-275](#) describes the attributes of the console port.

Table 2-275 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-276](#) describes the attributes of the ETH management port (RJ45).

Table 2-276 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-277](#) lists technical specifications of the CE6880-24S4Q2CQ-EI switch.

Table 2-277 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.5 kg (18.74 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) • 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	224 W

Item		Description
	Typical power consumption	120 W (100% throughput, SFP+ cables on 24 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	765 BTU/hr
	Typical heat dissipation	409 BTU/hr (100% throughput, SFP+ cables on 24 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	61.41 years
	Mean time to repair (MTTR)	1.78 hours
	Availability	0.99999668259
Technical specifications	Processor	1.5 GHz, eight-core.
	DRAM Memory	2 GB

Item		Description
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports, 40GE optical ports, and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-278](#) provides the ordering information.

Table 2-278 Ordering information

Part Number	Part Model	Part Description
02350SRC	CE6880-24S4Q2CQ-EI	CE6880-24S4Q2CQ-EI Switch (24-Port 10GE SFP+, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, Without Fan and Power Module)
02350SRG	CE6880-EI-F-B0B	CE6880-24S4Q2CQ-EI Switch (24-Port 10GE SFP+, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SRH	CE6880-EI-B-B0B	CE6880-24S4Q2CQ-EI Switch (24-Port 10GE SFP+, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.28 CE6880-48S4Q2CQ-EI

Version Mapping

[Table 2-279](#) lists the mappings between the CE6880-48S4Q2CQ-EI and software versions.

Table 2-279 Version mapping

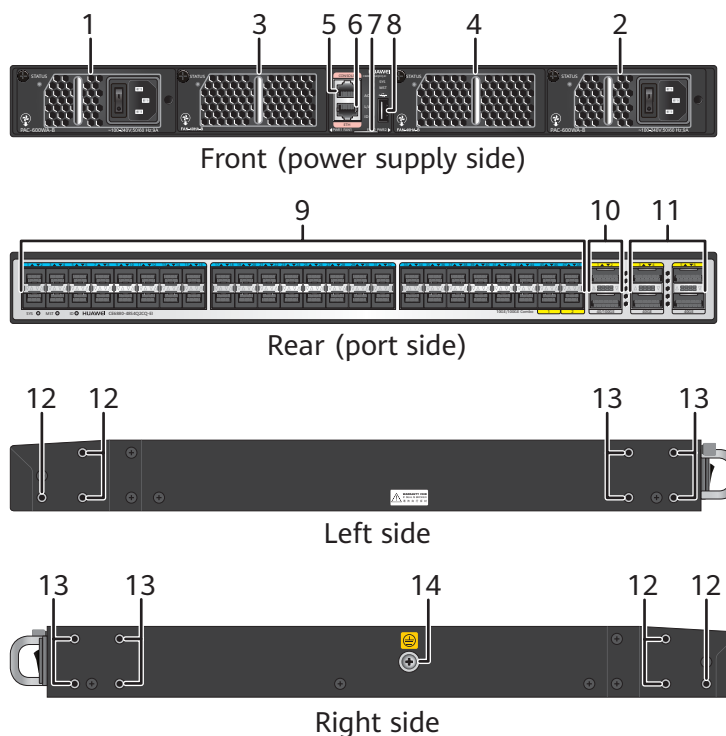
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6880	CE6880-48S4Q2CQ-EI	CE6880EI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-132 CE6880-48S4Q2CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 350 W DC power module • 600 W AC power module
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3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none">• FAN-40HA series fan modules	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none">• FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

<p>9 Forty-eight 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none">● 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported)● GE optical module● GE copper module (ports 1 to 12 support 10 Mbit/s, 100 Mbit/s, and 1000 Mbit/s rates, whereas ports 13 to 48 support only 100 Mbit/s and 1000 Mbit/s rates)● SFP+ AOC cable● SFP+ high-speed cable	<p>10 Two 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE</p> <ul style="list-style-type: none">● A QSFP28 Ethernet optical port can be split into four 10GE ports.● The default rate of a QSFP28 Ethernet optical port is 40 Gbit/s, and you can use the port mode 100ge command to change the port speed to 100 Gbit/s.● After the speed of 40GE1/0/1 is changed to 100 Gbit/s, ports 10GE1/0/45 and 10GE1/0/46 transition to Down (port unavailable) state. After the speed of 40GE1/0/2 is changed to 100 Gbit/s, ports 10GE1/0/47 and 10GE1/0/48 become unavailable. <p>Applicable modules and cables:</p> <ul style="list-style-type: none">● 40GE optical module● 100GE optical module (QSFP28-100G-4WDM-40 not supported)● QSFP+ to QSFP+ AOC cable● QSFP+ to 4*SFP+ AOC cable● QSFP+ to 4*SFP+ high-speed cable● QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable. In V200R005C10 and later versions, the cable can also be used to connect peer-link interfaces in an M-LAG)● QSFP28 to QSFP28 AOC cable● QSFP28 to QSFP28 high-speed cable
--	--

1 1	<p>Four 40GE QSFP+ Ethernet optical ports</p> <p>NOTE A 40GE QSFP+ port cannot be split into four 10GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable. In V200R005C10 and later versions, the cable can also be used to connect peer-link interfaces in an M-LAG) 	1 2	Three port-side mounting holes for mounting brackets
1 3	Four power-supply-side mounting holes for mounting brackets	1 4	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

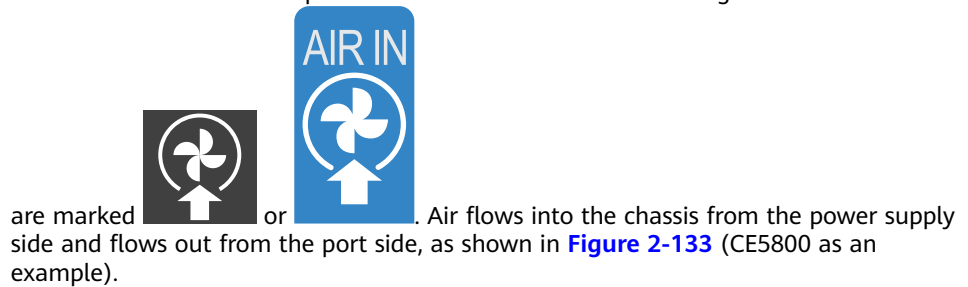
All fan modules are hot swappable.

Airflow

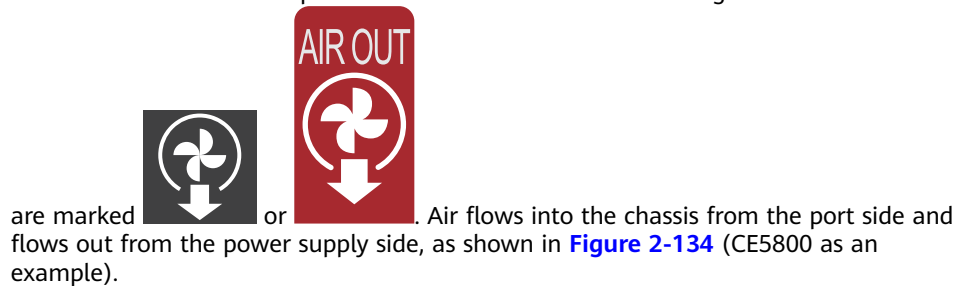
The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-133 Front-to-back airflow (air flows out from the port side)

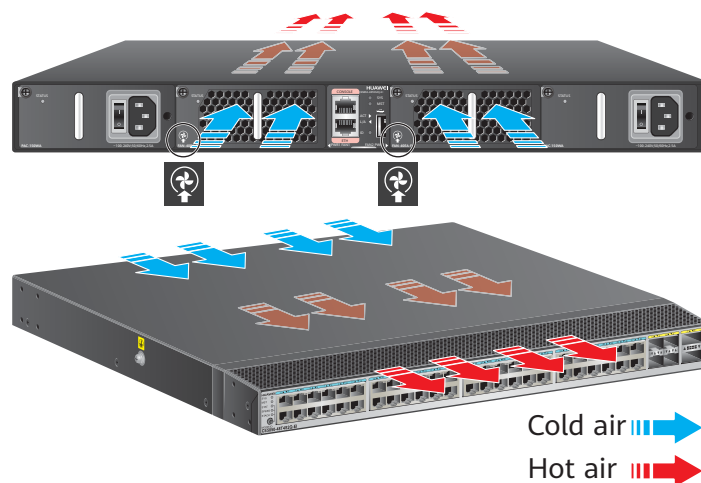
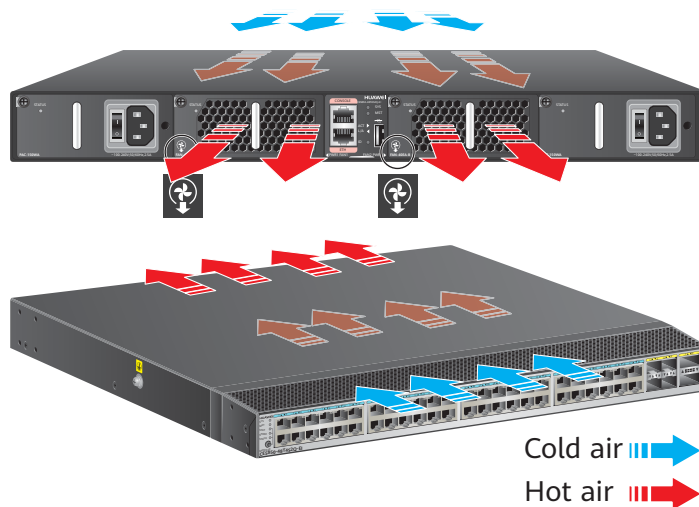


Figure 2-134 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE6880-48S4Q2CQ-EI are the same as those on the CE6880-24S4Q2CQ-EI. The [CE6880-48S4Q2CQ-EI](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-280](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-280 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-281](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-281 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

Table 2-282 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-282 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. **Table 2-283** describes the attributes of the console port.

Table 2-283 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite

or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-284](#) describes the attributes of the ETH management port (RJ45).

Table 2-284 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-285](#) lists technical specifications of the CE6880-48S4Q2CQ-EI switch.

Table 2-285 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 8.7 kg (19.18 lb)
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity

Item		Description
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> • 350 W DC power (PDC-350WA series): 11 A (-48 V DC to -60 V DC) • 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	267 W
	Typical power consumption	147 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	911 BTU/hr
	Typical heat dissipation	500 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling

Item		Description
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	54.65 years
	Mean time to repair (MTTR)	1.81 hours
	Availability	0.99999622209
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	2 GB
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports, 40GE optical ports, and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-286](#) provides the ordering information.

Table 2-286 Ordering information

Part Number	Part Model	Part Description
02350SRB	CE6880-48S4Q2CQ-EI	CE6880-48S4Q2CQ-EI Switch (48-Port 10GE SFP+, 6-Port 40GE QSFP+ or 44-Port 10GE SFP+, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, Without Fan and Power Module)
02350SRE	CE6880-EI-F-B0A	CE6880-48S4Q2CQ-EI Switch (48-Port 10GE SFP+, 6-Port 40GE QSFP+ or 44-Port 10GE SFP+, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SRF	CE6880-EI-B-B0A	CE6880-48S4Q2CQ-EI Switch (48-Port 10GE SFP+, 6-Port 40GE QSFP+ or 44-Port 10GE SFP+, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.29 CE6880-48T4Q2CQ-EI

Version Mapping

Table 2-287 lists the mappings between the CE6880-48T4Q2CQ-EI and software versions.

Table 2-287 Version mapping

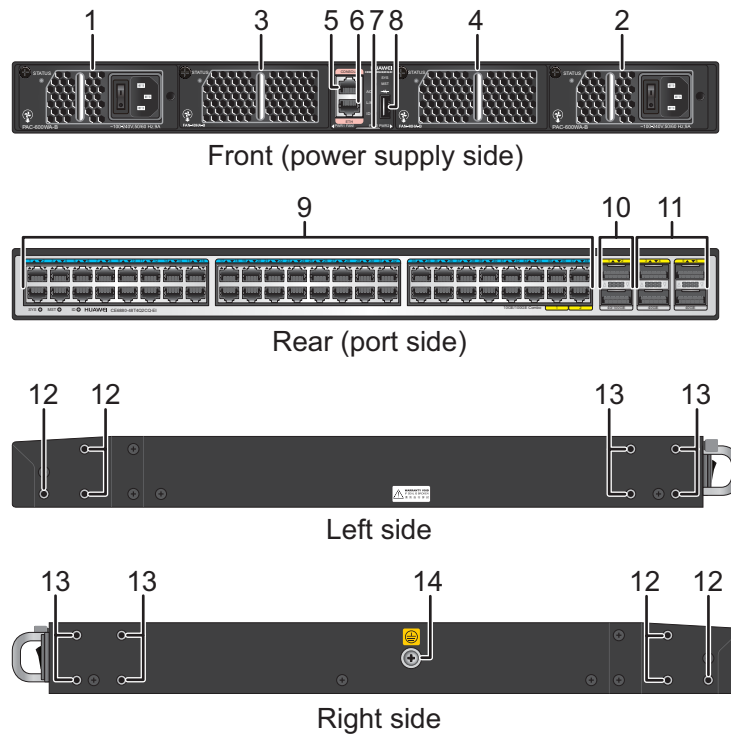
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6880	CE6880-48T4Q2CQ-EI	CE6880EI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-135 CE6880-48T4Q2CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 3.6 600 W AC Power Module (PAC-600WA) • 3.11 600 W DC Power Module (PDC600S12) 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> • 3.6 600 W AC Power Module (PAC-600WA) • 3.11 600 W DC Power Module (PDC600S12)
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	Forty-eight 10GBASE-T Ethernet electrical ports	1 0 NOTE <ul style="list-style-type: none">• A QSFP28 Ethernet optical port can be split into four 10GE ports.• The default rate of a QSFP28 Ethernet optical port is 40 Gbit/s, and you can use the port mode 100ge command to change the port speed to 100 Gbit/s.• After the speed of 40GE1/0/1 is changed to 100 Gbit/s, ports 10GE1/0/45 and 10GE1/0/46 transition to Down (port unavailable) state. After the speed of 40GE1/0/2 is changed to 100 Gbit/s, ports 10GE1/0/47 and 10GE1/0/48 become unavailable. <p>Applicable modules and cables:</p> <ul style="list-style-type: none">• 40GE optical module• 100GE optical module (QSFP28-100G-4WDM-40 not supported)• QSFP+ to QSFP+ AOC cable• QSFP+ to 4*SFP+ AOC cable• QSFP+ to 4*SFP+ high-speed cable• QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable. In V200R005C10 and later versions, the cable can also be used to connect peer-link interfaces in an M-LAG)• QSFP28 to QSFP28 AOC cable• QSFP28 to QSFP28 high-speed cable
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1 1	<p>Four 40GE QSFP+ Ethernet optical ports</p> <p>NOTE A 40GE QSFP+ port cannot be split into four 10GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ to QSFP+ high-speed cable (When a QSFP+ to QSFP+ high-speed cable is installed on the port, the cable can only be used as a stack cable. In V200R005C10 and later versions, the cable can also be used to connect peer-link interfaces in an M-LAG) 	1 2	Three port-side mounting holes for mounting brackets
1 3	Four power-supply-side mounting holes for mounting brackets	1 4	Ground screw

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

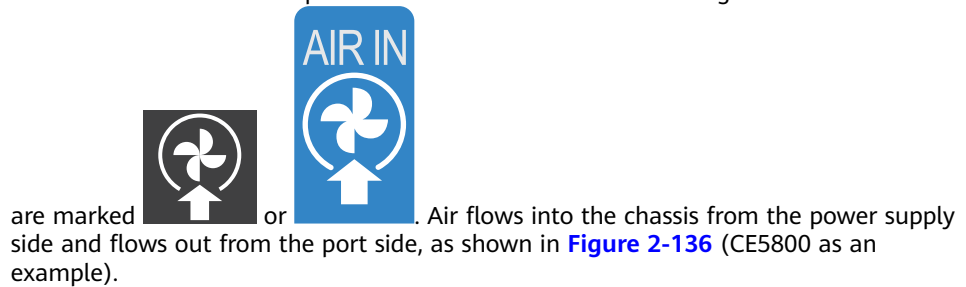
All fan modules are hot swappable.

Airflow

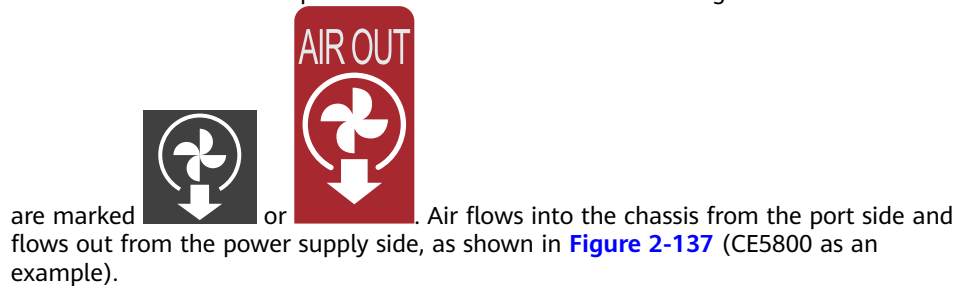
The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-136 Front-to-back airflow (air flows out from the port side)

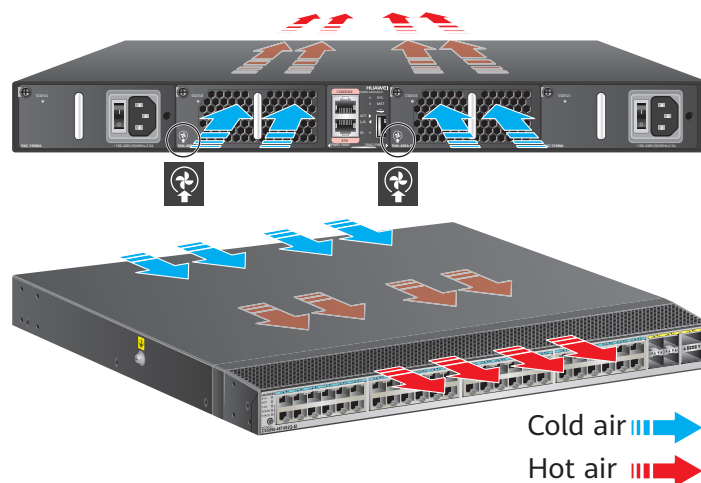
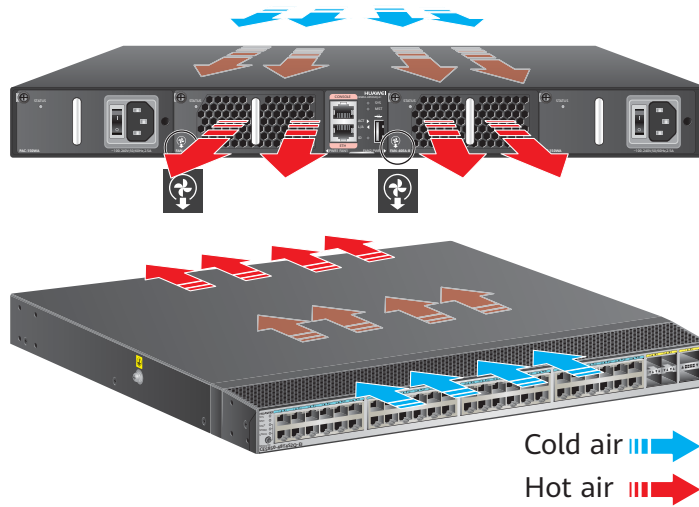


Figure 2-137 Back-to-front airflow (air flows in from the port side)



Indicators

The downlink service port indicators of the CE6880-48T4Q2CQ-EI are 10GE electrical port indicators, and other indicators are the same as those on the CE6880-24S4Q2CQ-EI. The [CE6880-24S4Q2CQ-EI](#) is used as an example here to describe the indicators.

Ports

10GBASE-T Ethernet Electrical Port

A 10GBASE-T Ethernet electrical port receives and sends service traffic at the rate of 100 Mbit/s, 1000 Mbit/s, or 10 Gbit/s. The port can work at the rate of 100 Mbit/s or 1000 Mbit/s through auto-sensing. 10GBASE-T Ethernet electrical ports must use Category 6A shielded Ethernet cables or higher Ethernet cables. [Table 2-288](#) shows the attributes of a 10GBASE-T Ethernet electrical port.

Table 2-288 Attributes of a 10GBASE-T Ethernet electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an and IEEE802.3az
Applicable cable	Straight-through cable and crossover cable
Working mode	Supported rate: 100/1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-289](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-289 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-290](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-290 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-291](#) describes the attributes of the console port.

Table 2-291 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

Attribute	Description
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-292](#) describes the attributes of the ETH management port (RJ45).

Table 2-292 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-293](#) lists technical specifications of the CE6880-48T4Q2CQ-EI switch.

Table 2-293 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 9.0 kg (19.84 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 53 dBA Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC) 600 W DC power (PDC600S12 series): 20A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	430 W
	Typical power consumption	266 W (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1466 BTU/hr

Item		Description
	Typical heat dissipation	906 BTU/hr (100% throughput, 3 m Ethernet cables on 48 ports and QSFP+ cables on 6 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE6800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	49.13 years
	Mean time to repair (MTTR)	1.83 hours
	Availability	0.99999575382
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	2 GB
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE electrical ports, 40GE optical ports, and 100GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-294](#) provides the ordering information.

Table 2-294 Ordering information

Part Number	Part Model	Part Description
02350SRD	CE6880-48T4 Q2CQ-EI	CE6880-48T4Q2CQ-EI Switch (48-Port 10G RJ45, 6-Port 40GE QSFP+ or 44-Port 10G RJ45, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, Without Fan and Power Module)
02350SRJ	CE6880-EI-F-B00	CE6880-48T4Q2CQ-EI Switch (48-Port 10G RJ45, 6-Port 40GE QSFP+ or 44-Port 10G RJ45, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SRK	CE6880-EI-B-B00	CE6880-48T4Q2CQ-EI Switch (48-Port 10G RJ45, 6-Port 40GE QSFP+ or 44-Port 10G RJ45, 4-Port 40GE QSFP+, 2-Port 100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.3.30 CE6881-48S6CQ

Version Mapping

[Table 2-295](#) lists the mappings between the CE6881-48S6CQ and software versions.

Table 2-295 Version mapping

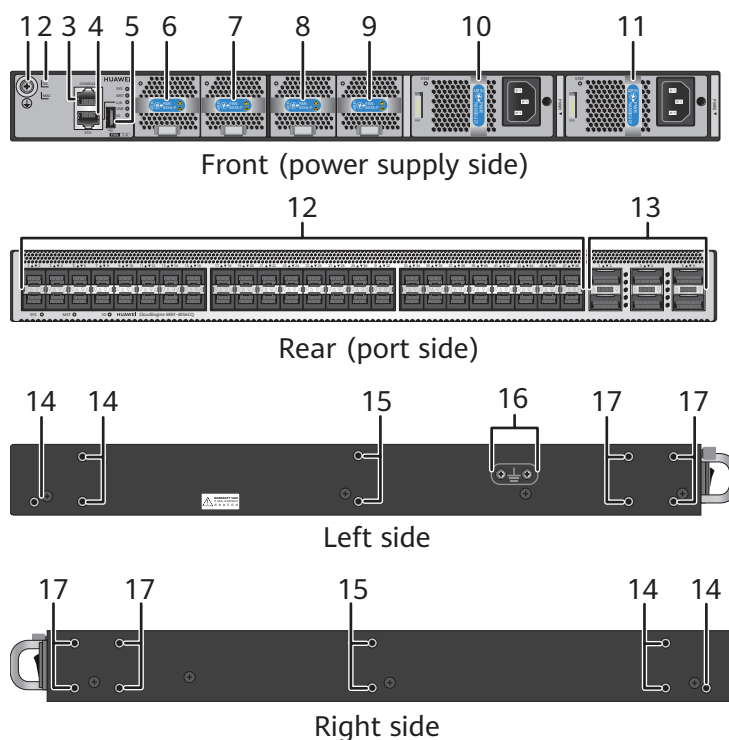
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6881	CE6881-48S6 CQ	CE6881	V200R005C20 and later

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-138 CE6881-48S6CQ



1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules

7	<p>Fan slot 2</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	8	<p>Fan slot 3</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules
9	<p>Fan slot 4</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	10	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)
11	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB) 	12	<p>Forty-eight 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • GE optical module • GE copper module (works at 100 Mbit/s or 1000 Mbit/s) • 10GE optical module (OSXD22N00 and LE2MXSC80FF0 not supported) • SFP+ AOC cable • SFP+ high-speed cable <p>NOTE</p> <p>GE media cannot be installed on 10GE ports numbered from 13 to 16 and from 25 to 28 on the CE6881 in V200R005C20. If GE medium is installed on such ports, the ports will be set to the Error-Down state. In V200R019C10 and later versions, after GE medium is installed on 10GE ports numbered from 13 to 16 and from 25 to 28, you need to run the speed 1000 command to change the port rate to 1000 Mbit/s so that the ports can go Up. The rate of such ports numbered from 13 to 16 or from 25 to 28 will be changed simultaneously. For example, if you run the speed 1000 command on port 13 that has a GE medium installed, the rate of ports 14, 15, and 16 will be changed simultaneously.</p>

1 3	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • 100GE optical module (QSFP28-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ high-speed cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) • QSFP28 to QSFP28 AOC cable • QSFP28 to QSFP28 high-speed cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) <p>NOTE</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port that works at the rate of 100 Gbit/s, the port supports only the 1 m QSFP28 high-speed cable.</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port and the speed 40000 command is run to set the rate to 40 Gbit/s, the port supports 1 m, 3 m, and 5 m QSFP28 high-speed cables.</p>	1 4	Three port-side mounting holes for mounting brackets
1 5	Two middle mounting holes for mounting brackets	1 6	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
1 7	Four power-supply-side mounting holes for mounting brackets	-	-

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.
- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-139](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-140](#) (using a CE6863 chassis as an example).

Figure 2-139 Front-to-back airflow for port-side exhaust

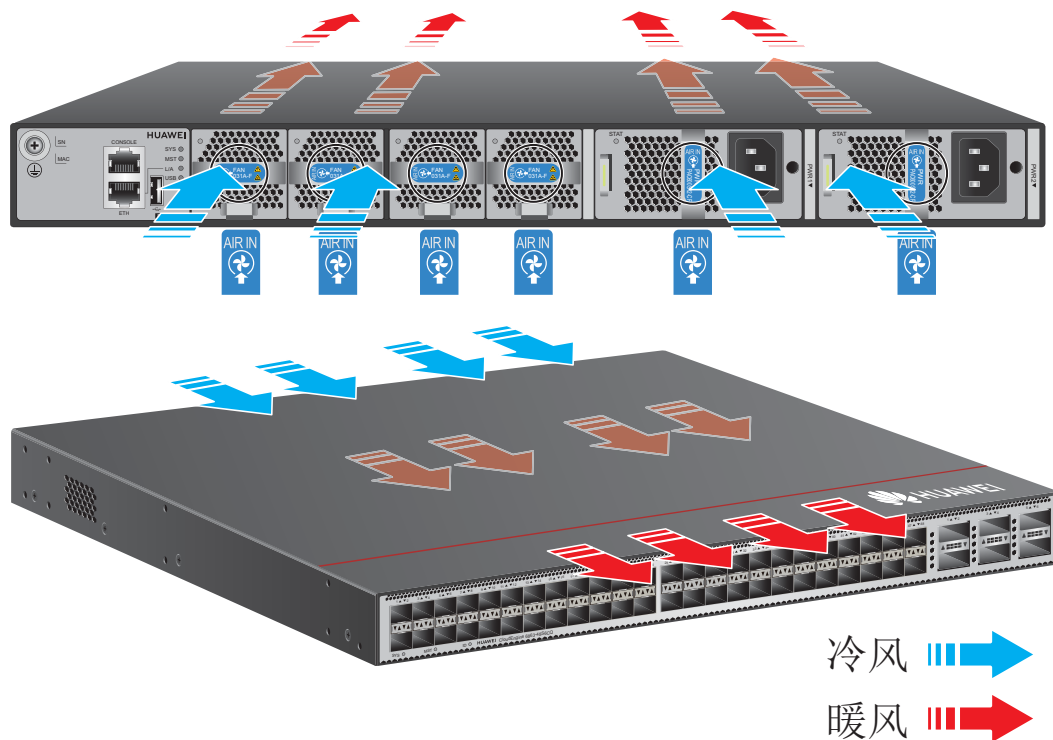
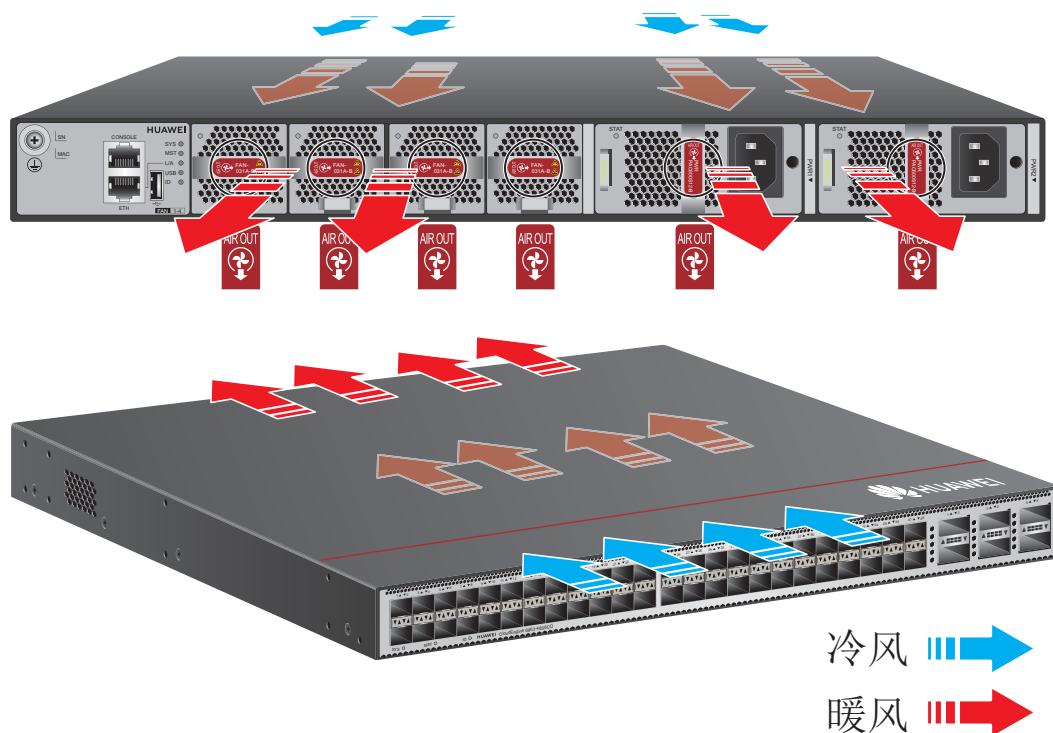


Figure 2-140 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

 **NOTE**

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

The downlink service port indicator on the CE6881-48S6CQ is the 10GE optical port indicator. The status and status meanings of other indicators are the same as those of the CE6863-48S6CQ. The [CE6863-48S6CQ](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-296](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-296 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-297](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-297 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-298](#) describes the attributes of the console port.

Table 2-298 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-299](#) describes the attributes of the ETH management port (RJ45).

Table 2-299 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-300](#) lists technical specifications of the CE6881-48S6CQ switch.

Table 2-300 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (H x W x D) <ul style="list-style-type: none"> - 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 16.5 in.) - Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 446.1 mm (1.72 in. x 17.4 in. x 17.6 in.) • Weight (with two AC power modules and four fan modules, calculated based on the heaviest model if multiple models are supported): 7.8 kg (17.20 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 57 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC

Item		Description
	High-voltage DC power input	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC Maximum voltage range: 190 V DC to 290 V DC 1200 W high-voltage DC power module (PHD1K2S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC to 380V DC Maximum voltage range: 190 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> 8 A (100 V AC to 240 V AC) 4 A (240V DC) 1000 W DC power module (PDC1000S12 series): 30 A (-48 V DC to -60 V DC) 1200 W high-voltage DC power module (PHD1K2S12 series): 8 A
Chassis power consumption	Maximum power consumption	349 W
	Typical power consumption	<ul style="list-style-type: none"> 194 W (100% throughput, SFP+ high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 240 W (100% throughput, short-distance optical modules on all optical ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1191 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> 662 BTU/hr (100% throughput, SFP+ high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 819 BTU/hr (100% throughput, short-distance optical modules on all optical ports, double power modules)

Item		Description
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode HVDC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	45.9 years
	Mean time to repair (MTTR)	1.57 hours
	Availability	0.9999960856
Technical specifications	Processor	1.4 GHz, four-core
	DRAM memory	4 GB
	NOR Flash	64 MB
	NAND Flash	4 GB
Stack	Service port supporting the stacking function	10GE optical ports and 100GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-301 provides the ordering information.

Table 2-301 Ordering information

Part Number	Part Model	Part Description
02352QGF	CE6881-48S6 CQ	CE6881-48S6CQ switch (48*10GE SFP+, 6*100GE QSFP28, without fan and power modules)
02352QGG	CE6881-48S6 CQ-B	CE6881-48S6CQ switch (48*10GE SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)
02352QGH	CE6881-48S6 CQ-F	CE6881-48S6CQ switch (48*10GE SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side exhaust)

2.3.31 CE6881-48S6CQ-K

Version Mapping

Table 2-302 lists the mappings between the CE6881-48S6CQ-K and software versions.

Table 2-302 Version mapping

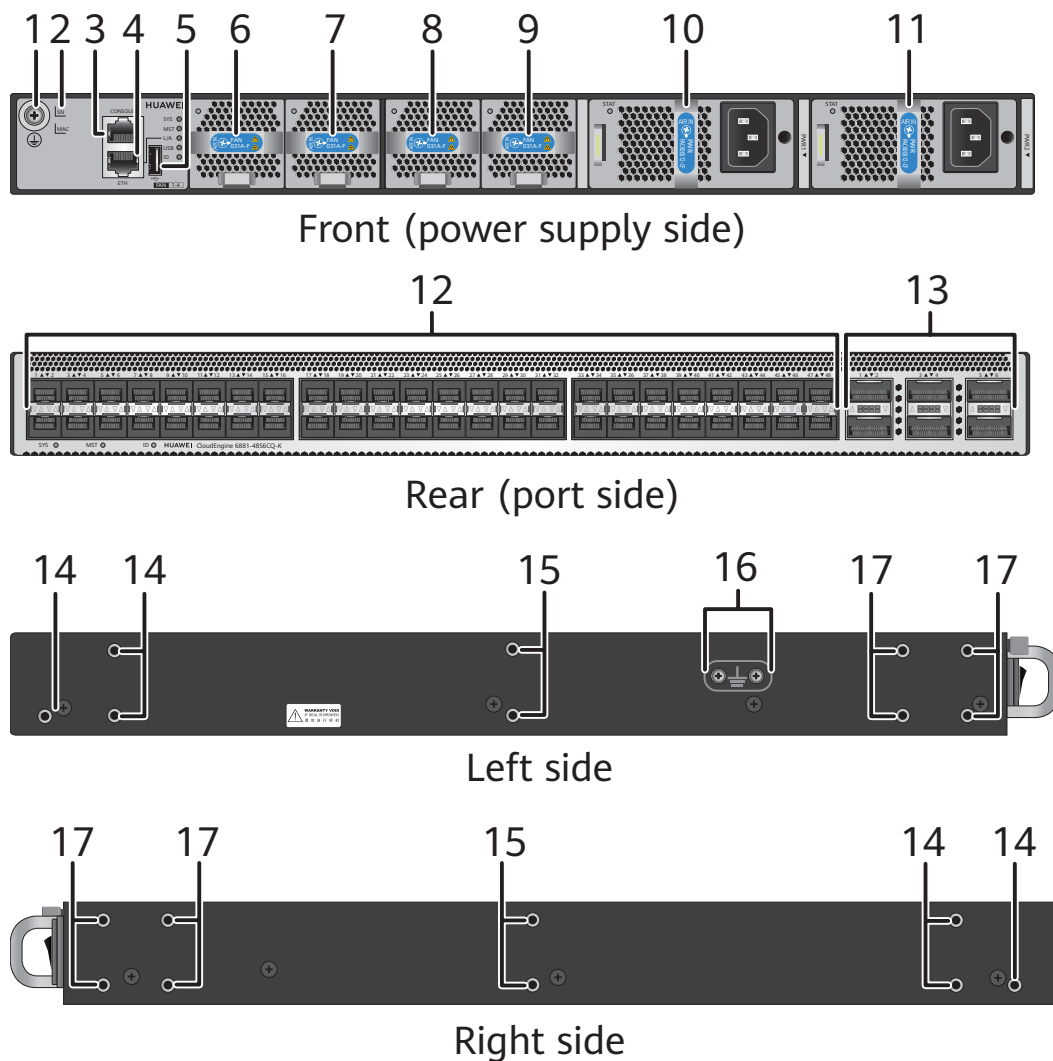
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6881	CE6881-48S6 CQ-K	CE6881K	V200R019C10 and later

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-141 CE6881-48S6CQ-K



1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules

7	<p>Fan slot 2</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	8	<p>Fan slot 3</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules
9	<p>Fan slot 4</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-031A series fan modules 	10	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)
11	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB) 	12	<p>Forty-eight 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • GE optical module • GE copper module (works at 100 Mbit/s or 1000 Mbit/s) • 10GE optical module (OSXD22N00 and LE2MXSC80FF0 not supported) • SFP+ AOC cable • SFP+ high-speed cable <p>NOTE</p> <p>After GE media are installed on 10GE ports numbered from 13 to 16 and from 25 to 28, you need to run the speed 1000 command to change the port rate to 1000 Mbit/s so that the ports can go Up. The rate of such ports numbered from 13 to 16 or from 25 to 28 will be changed simultaneously. For example, if you run the speed 1000 command on port 13 that has a GE medium installed, the rate of ports 14, 15, and 16 will be changed simultaneously.</p>

1 3	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • 100GE optical module • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ high-speed cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) • QSFP28 to QSFP28 AOC cable • QSFP28 to QSFP28 high-speed cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) <p>NOTE</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port that works at the rate of 100 Gbit/s, the port supports only the 1 m QSFP28 high-speed cable.</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port and the speed 40000 command is run to set the rate to 40 Gbit/s, the port supports 1 m, 3 m, and 5 m QSFP28 high-speed cables.</p>	1 4	Three port-side mounting holes for mounting brackets
1 5	Two middle mounting holes for mounting brackets	1 6	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
1 7	Four power-supply-side mounting holes for mounting brackets	-	-

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.

- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-142](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-143](#) (using a CE6863 chassis as an example).

Figure 2-142 Front-to-back airflow for port-side exhaust

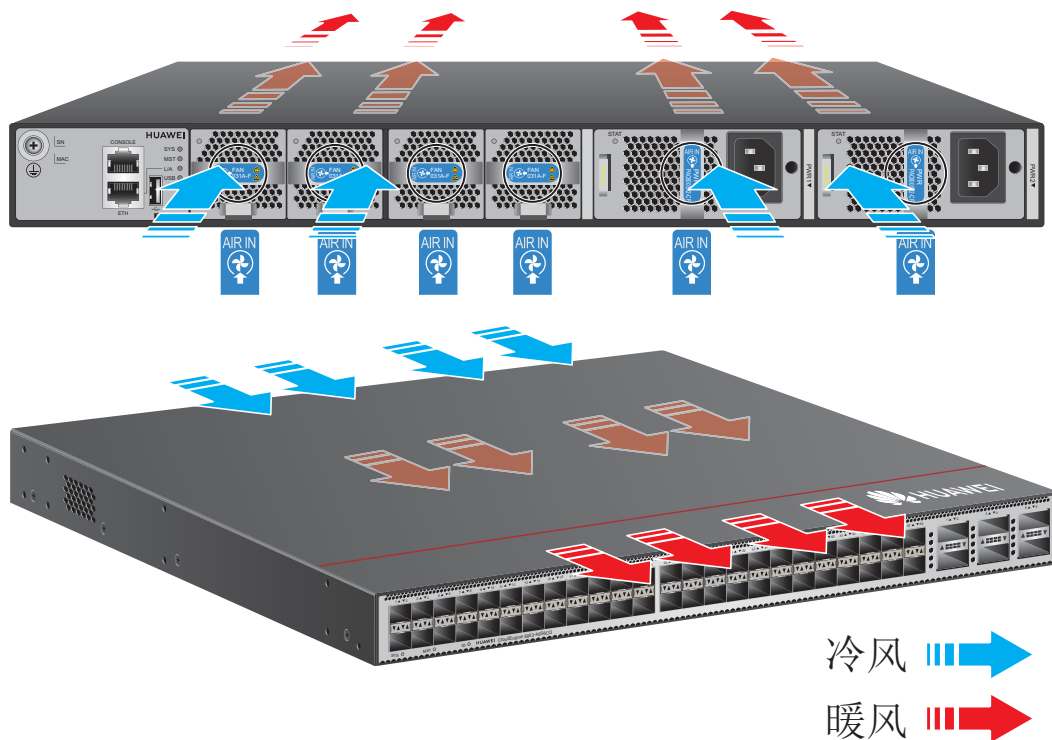
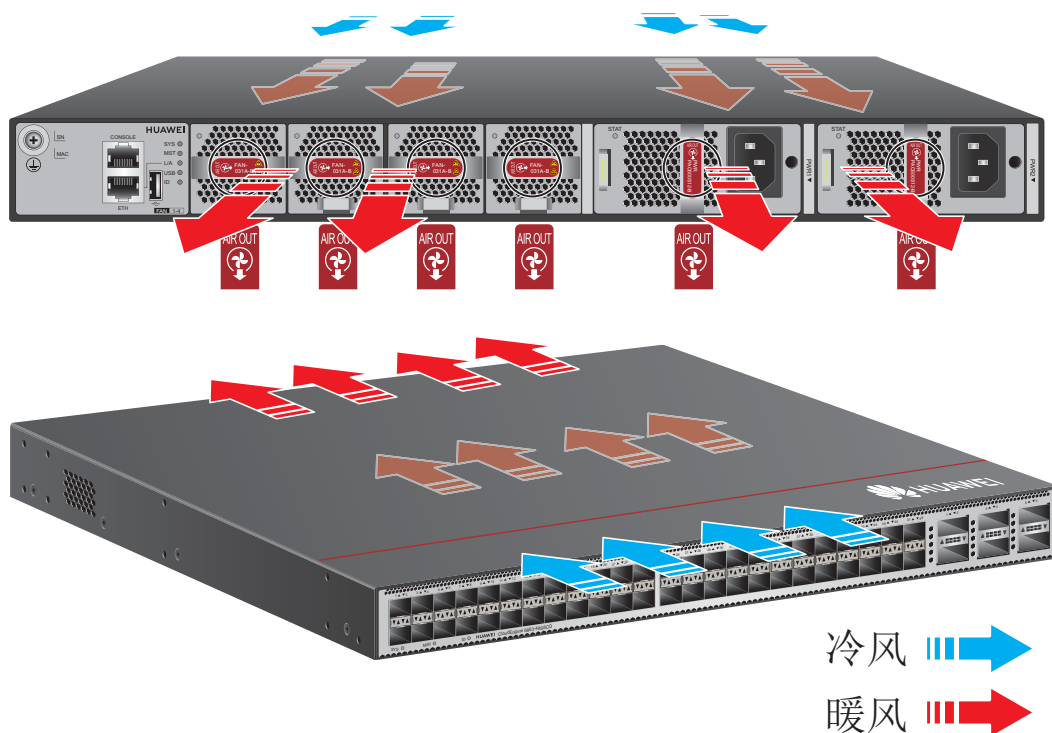


Figure 2-143 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

 **NOTE**

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

The downlink service port indicator on the CE6881-48S6CQ-K is the 10GE optical port indicator. The status and status meanings of other indicators are the same as those of the CE6863-48S6CQ. The [CE6863-48S6CQ](#) is used as an example here to describe the indicators.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-303](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-303 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-304](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-304 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-305](#) describes the attributes of the console port.

Table 2-305 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-306](#) describes the attributes of the ETH management port (RJ45).

Table 2-306 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-307](#) lists technical specifications of the CE6881-48S6CQ-K switch.

Table 2-307 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (H x W x D) <ul style="list-style-type: none"> - 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 16.5 in.) - Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 446.1 mm (1.72 in. x 17.4 in. x 17.6 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 7.8 kg (17.20 lb)
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 57 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> • Rated voltage range: 240 V DC • Maximum voltage range: 190 V DC to 290 V DC

Item		Description
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> 8 A (100 V AC to 240 V AC) 4 A (240V DC) 1000 W DC power module (PDC1000S12 series): 30 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	349 W
	Typical power consumption	<ul style="list-style-type: none"> 194 W (100% throughput, SFP+ high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 240 W (100% throughput, short-distance optical modules on all optical ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1191 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> 662 BTU/hr (100% throughput, SFP+ high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 819 BTU/hr (100% throughput, short-distance optical modules on all optical ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode HVDC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup

Item		Description
	Fan module backup	The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	45.9 years
	Mean time to repair (MTTR)	1.57 hours
	Availability	0.9999960856
Technical specifications	Processor	1.4 GHz, four-core
	DRAM memory	4 GB
	NOR Flash	64 MB
	NAND Flash	4 GB
Stack	Service port supporting the stacking function	10GE optical ports and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-308](#) provides the ordering information.

Table 2-308 Ordering information

Part Number	Part Model	Part Description
02353JAQ	CE6881-48S6 CQ-KB	CE6881-48S6CQ-K switch (48*10GE SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)

2.3.32 CE6881E-48S6CQ

Version Mapping

Table 2-309 lists the mappings between the CE6881E-48S6CQ and software versions.

Table 2-309 Version mapping

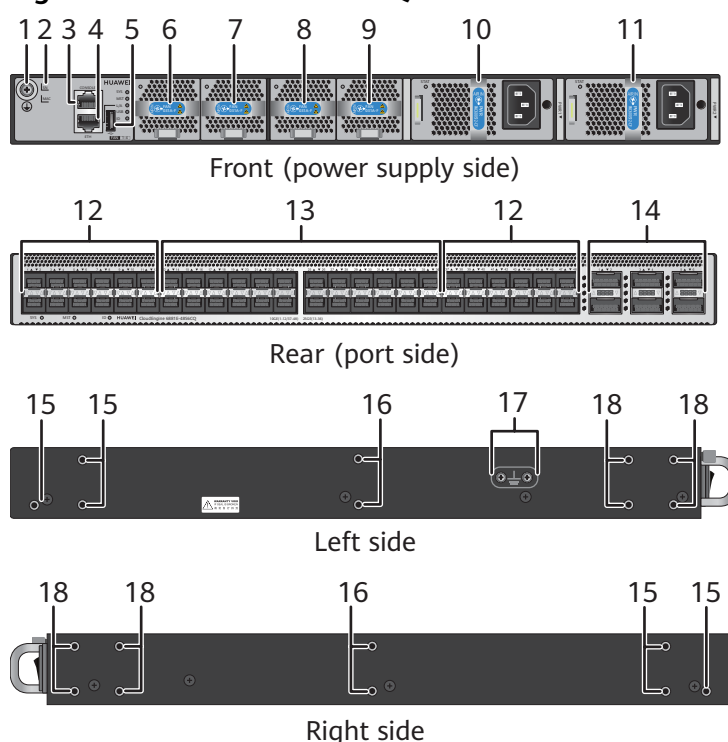
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6881E	CE6881E-48S 6CQ	CE6881E	V200R019C10 and later

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-144 CE6881E-48S6CQ



1	Ground screw	2	Equipment serial number (ESN) NOTE You can scan the code to view the ESN and MAC address of the switch.
3	Console port	4	ETH management port (RJ45)
5	USB port	6	Fan slot 1 Applicable fan modules: • FAN-031A series fan modules
7	Fan slot 2 Applicable fan modules: • FAN-031A series fan modules	8	Fan slot 3 Applicable fan modules: • FAN-031A series fan modules
9	Fan slot 4 Applicable fan modules: • FAN-031A series fan modules	10	Power supply slot 1 Applicable power modules: • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)
11	Power supply slot 2 Applicable power modules: • 3.9 600 W AC&240 V DC Power Module (PAC600S12) • 3.12 1000 W DC Power Module (PDC1000S12) • 3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)	12	Twenty-four 10GE SFP+ Ethernet optical ports Applicable modules and cables: • GE eSFP Optical Modules • GE SFP Copper Modules (works at 100 Mbit/s or 1000 Mbit/s) • 10GE SFP+ Optical Modules(OSXD22N00 and LE2MXSC80FF0 not supported) • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable

1 3	<p>Twenty-four 10GE/25GE SFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • GE eSFP Optical Modules • GE SFP Copper Modules (Only works at 1000 Mbit/s) • 10GE SFP+ Optical Modules (OSXD22N00 and LE2MXSC80FF0 not supported) • 25GE SFP28 Optical Modules • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable • SFP28 to SFP28 AOC Cable • SFP28 to SFP28 High-Speed Cable <p>NOTE</p> <p>When a port works at the rate of 25 Gbit/s, it supports only 1 m SFP28 high-speed cables, and these cables can only be used as stack cables or M-LAG peer-link interface cables.</p> <p>When an SFP28 high-speed cable is installed on a 25GE port and the port mode 10g command is run to set the rate to 10 Gbit/s, the port supports 1 m, 3 m, and 5 m SFP28 high-speed cables.</p>	1 4	<p>Six 40GE/100GE QSFP28 Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable (The cable can only be used as a stack cable or be used to connect peer-link interfaces in an M-LAG.) <p>NOTE</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port that works at the rate of 100 Gbit/s, the port supports only the 1 m QSFP28 high-speed cable.</p> <p>When a QSFP28 high-speed cable is installed on a 100GE port and the speed 40000 command is run to set the rate to 40 Gbit/s, the port supports 1 m, 3 m, and 5 m QSFP28 high-speed cables.</p>
1 5	<p>Three port-side mounting holes for mounting brackets</p>	1 6	<p>Two middle mounting holes for mounting brackets</p>
1 7	<p>Equipotential bonding</p> <p>Ground screws for a ground cable with a two-hole OT terminal</p>	1 8	<p>Four power-supply-side mounting holes for mounting brackets</p>

Slot Description

Power Slots

Each of the CloudEngine 6800 series switches has two power module slots and supports pluggable power modules. A chassis can use one or two power modules. In particular, dual power modules provide higher reliability.

The CloudEngine 6800 series switches support 1+1 backup of power modules.

- When both power modules are working properly, each of them provides half of the power required for the chassis.

- When one power module fails, the other one provides all power required for the chassis.

All power modules of the devices are hot swappable.

Fan Slots

Each of the CloudEngine 6800 series switches has four fan slots in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability.

It is recommended that four fan modules be properly installed on a switch to ensure normal switch operating. The device supports four pluggable fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.


All fan modules are hot swappable.

Heat Dissipation System

The cooling system of the CloudEngine 6800 series switches uses front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used.

- Front-to-back airflow: Power modules and fan modules with front-to-back



airflow are identified by . Air flows into the chassis from the power supply side and is exhausted from the port side, as shown in [Figure 2-145](#) (using a CE6863 chassis as an example).

- Back-to-front airflow: Power modules and fan modules with back-to-front




airflow are identified by . Air flows into the chassis from the port side and is exhausted from the power supply side, as shown in [Figure 2-146](#) (using a CE6863 chassis as an example).

Figure 2-145 Front-to-back airflow for port-side exhaust

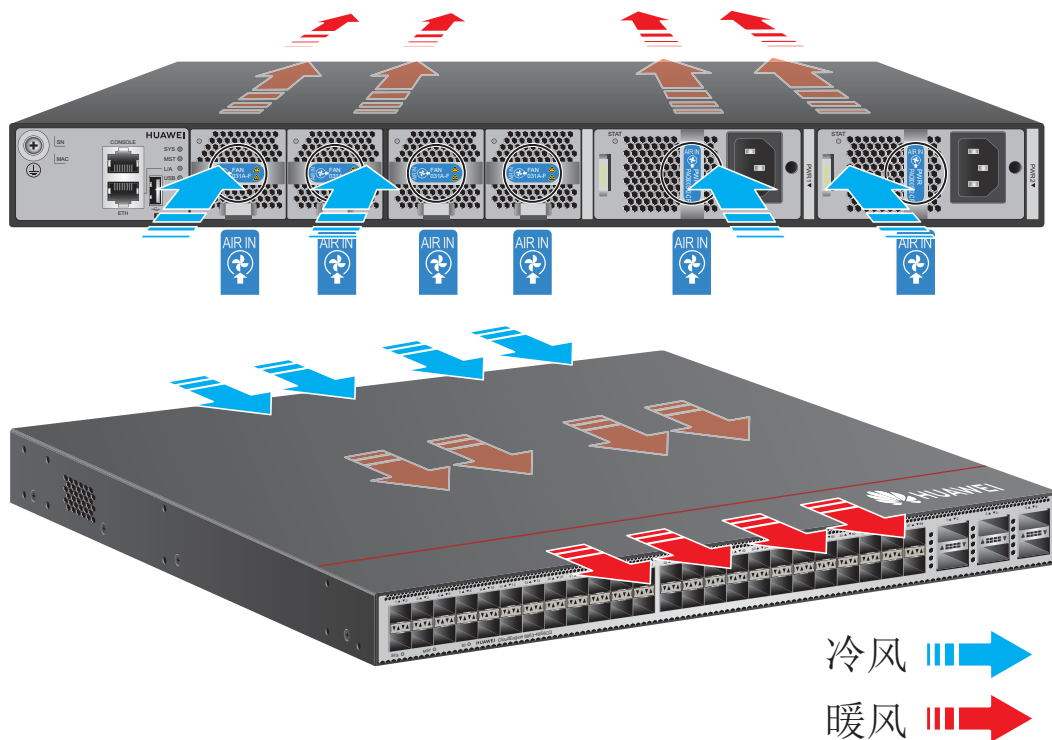
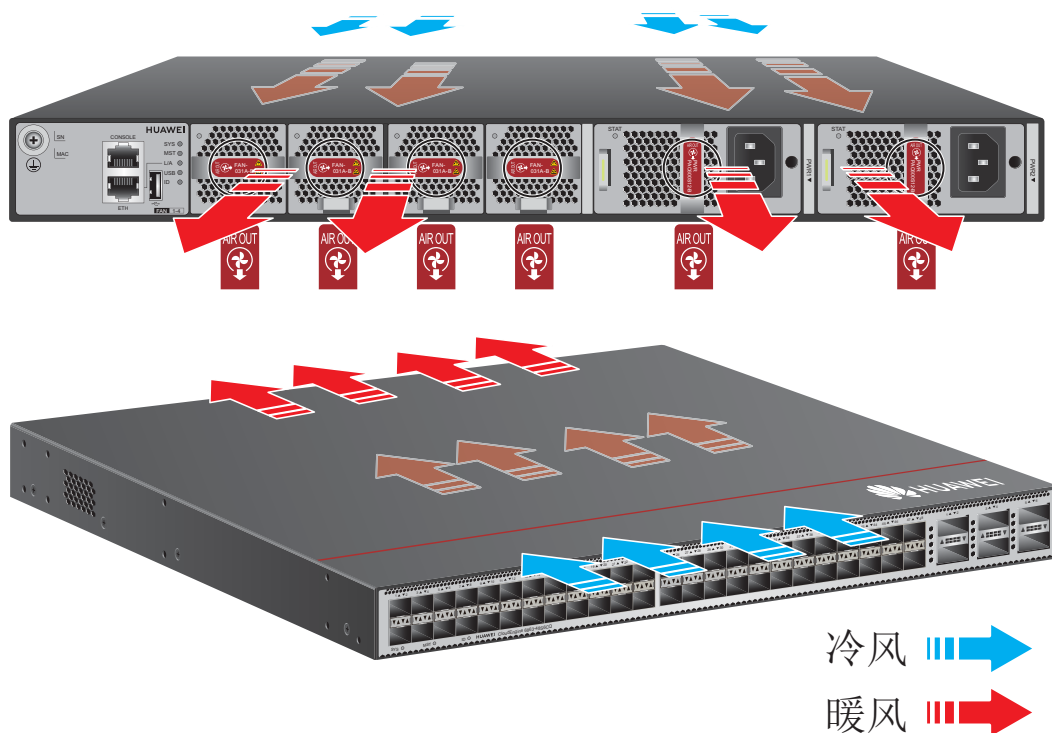


Figure 2-146 Back-to-front airflow for port-side intake



The airflow direction of the power modules and fan modules required on the CloudEngine 6800 series switches depends on how the device is installed in a cabinet. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If a switch is installed with the power supply

side facing the front and the port side facing the back, the switch needs to adopt fan modules and power modules with front-to-back airflow.

NOTE

Power modules and fan modules using forced air cooling on a switch must have the same airflow direction. If a switch adopts power modules with back-to-front airflow, the switch must use fan modules with back-to-front airflow as well.

Indicators

Figure 2-147 Indicators on the CE6881E-48S6CQ rear panel

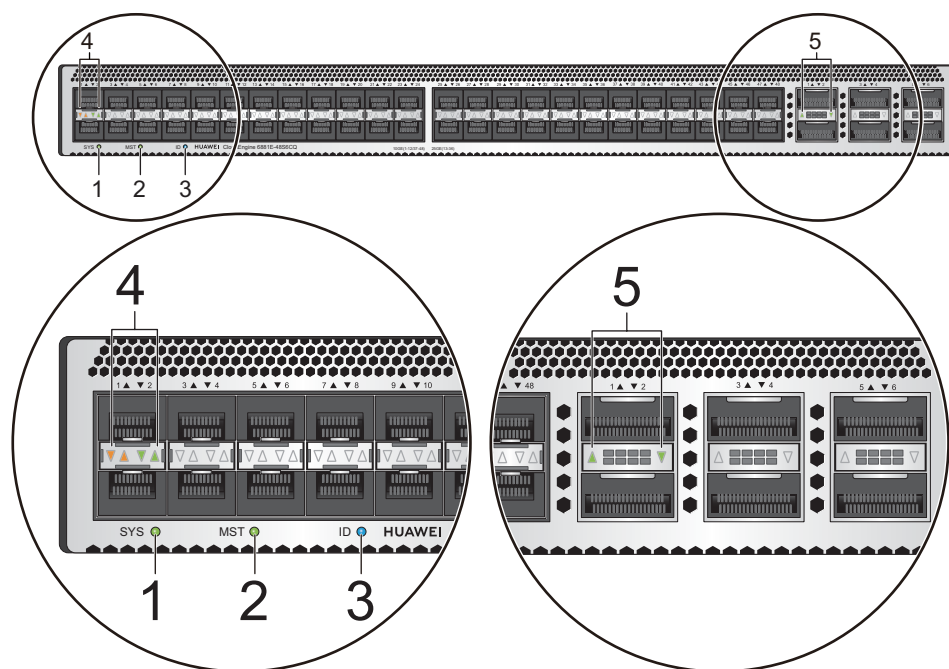


Figure 2-148 Indicators on the CE6881E-48S6CQ front panel

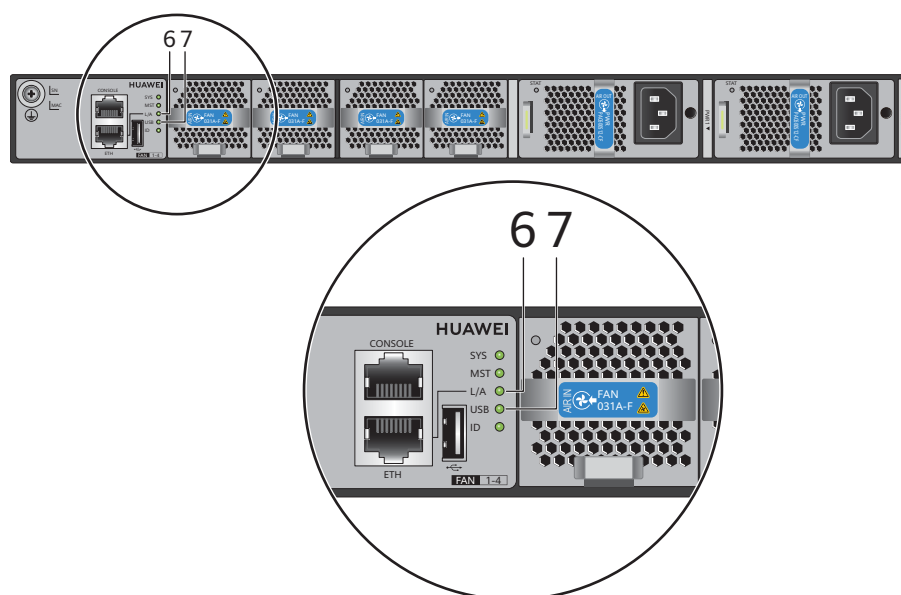


Table 2-310 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T	Stack master/ slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.

No.	Indicator	Name	Color	Status	Description
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	Service port indicator (10GE/25GE optical port) NOTE Each 10GE/25GE 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.	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
			Yellow	Off	The port is not sending or receiving data.
				Blinking	The port is sending or receiving data.
5	-	Service port indicator (40GE/100GE optical port)	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.

No.	Indicator	Name	Color	Status	Description
		NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.		Blinking	The port is sending or receiving data.
6	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
7	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-311](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-311 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use

Attribute	Description
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

10GE/25GE SFP28 Optical Port

10GE/25GE SFP28 optical ports cannot work at the rate of 100 Mbit/s. [Table 2-312](#) shows the attributes of a 10GE/25GE SFP28 optical port.

Table 2-312 Attributes of a 10GE/25GE SFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Port use constraints	<p>The 24 10GE/25GE SFP28 optical ports of a CE6881E switch work at the rate of 25 Gbit/s by default and do not support GE/10GE auto-sensing. You can set the port rate to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command, respectively.</p> <p>The 24 10GE/25GE SFP28 optical ports are divided into six port groups, each of which contains four ports, namely, ports 13 to 16, 17 to 20, 21 to 24, 25 to 28, 29 to 32, and 33 to 36.</p> <ul style="list-style-type: none"> • If the rate of any port in a port group is set to 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s, all the other ports in this group also work at the rate of 1 Gbit/s, 10 Gbit/s, or 25 Gbit/s. • When the ports in a port group work at the rate of 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 10 Gbit/s, they support only 10GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at the rate of 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used.
Standards compliance	IEEE802.3by

Attribute	Description
Working mode	Full-duplex

40GE/100GE QSFP28 Optical Port

Table 2-313 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-313 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. **Table 2-314** describes the attributes of the console port.

Table 2-314 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. **Table 2-315** describes the attributes of the ETH management port (RJ45).

Table 2-315 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-316 lists technical specifications of the CE6881E-48S6CQ switch.

Table 2-316 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none">• Dimensions (H x W x D)<ul style="list-style-type: none">– 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 16.5 in.)– Maximum dimensions (the depth is the distance from ports on the front panel to the handle on the rear panel): 43.6 mm x 442.0 mm x 446.1 mm (1.72 in. x 17.4 in. x 17.6 in.)• Weight (with two AC power modules and four fan modules, calculated based on the heaviest model if multiple models are supported): 7.8 kg (17.20 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 58 dBA Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC Maximum voltage range: 190 V DC to 290 V DC 1200 W high-voltage DC power module (PHD1K2S12 series): <ul style="list-style-type: none"> Rated voltage range: 240 V DC to 380V DC Maximum voltage range: 190 V DC to 400 V DC

Item		Description
	Rated input current	<ul style="list-style-type: none"> 600 W AC&240 V DC power module (PAC600S12 series): <ul style="list-style-type: none"> 8 A (100 V AC to 240 V AC) 4 A (240V DC) 1000 W DC power module (PDC1000S12 series): 30 A (-48 V DC to -60 V DC) 1200 W high-voltage DC power module (PHD1K2S12 series): 8 A
Chassis power consumption	Maximum power consumption	363 W
	Typical power consumption	<ul style="list-style-type: none"> 203 W (100% throughput, SFP28 high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 252 W (100% throughput, short-distance optical modules on all optical ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1239 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> 693 BTU/hr (100% throughput, SFP28 high-speed cables on 48 ports and QSFP28 high-speed cables on 6 ports, double power modules) 860 BTU/hr (100% throughput, short-distance optical modules on all optical ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode HVDC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup

Item		Description
	Fan module backup	The device supports 3+1 backup of fan modules that work in hot standby mode. The system can operate properly for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	47.81 years
	Mean time to repair (MTTR)	1.95 hours
	Availability	0.9999962836
Technical specifications	Processor	1.4 GHz, four-core
	DRAM memory	4 GB
	NOR Flash	64 MB
	NAND Flash	4 GB
Stack	Service port supporting the stacking function	10GE optical ports, 25GE optical ports, and 100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-317](#) provides the ordering information.

Table 2-317 Ordering information

Part Number	Part Model	Part Description
02353LHN	CE6881E-48S6CQ	CE6881E-48S6CQ switch (24*10GE SFP+, 24*25GE SFP28, 6*100GE QSFP28, without fan and power modules)
02353LHP	CE6881E-48S6CQ-B	CE6881E-48S6CQ switch (24*10GE SFP+, 24*25GE SFP28, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)
02353LHQ	CE6881E-48S6CQ-F	CE6881E-48S6CQ switch (24*10GE SFP+, 24*25GE SFP28, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side exhaust)

2.4 CE7800

2.4.1 CE7850-32Q-EI

Version Mapping

Table 2-318 lists the mappings between the CE7850-32Q-EI and software versions.

Table 2-318 Version mapping

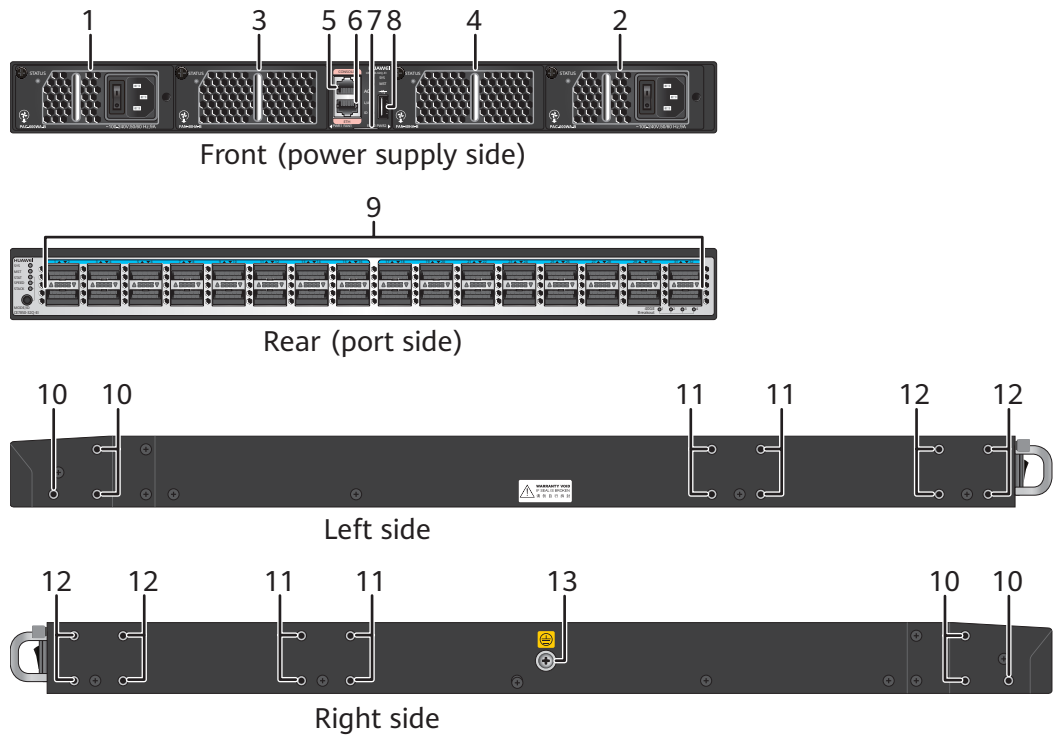
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE7800	CE7850	CE7850-32Q-EI	CE7850EI	V100R003C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-149 CE7850-32Q-EI



1	Power supply slot 1 Applicable power modules: • 600 W AC power module	2	Power supply slot 1 Applicable power modules: • 600 W AC power module
3	Fan slot 1 Applicable fan modules: • FAN-40HA series fan modules	4	Fan slot 2 Applicable fan modules: • FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch. This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Thirty-two 40GE QSFP+ Ethernet optical ports</p> <p>NOTE A 40GE QSFP+ port can be split into four 10GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) 	1 0	Three port-side mounting holes for mounting brackets
1 1	Four middle mounting holes for mounting brackets	1 2	Four power-supply-side mounting holes for mounting brackets
1 3	Ground screw	- -	

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.

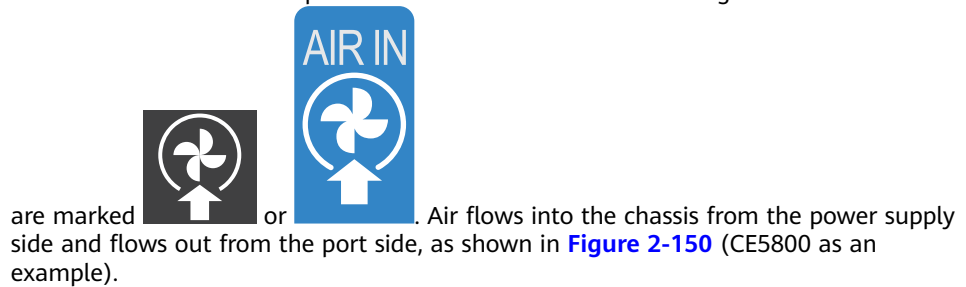
All fan modules are hot swappable.

Airflow

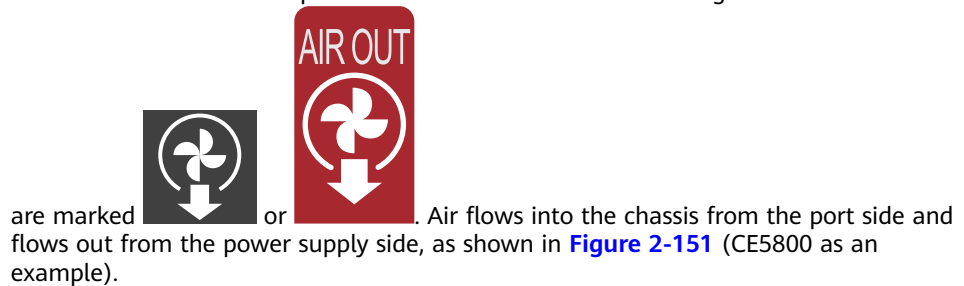
The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow



- Back-to-front airflow: The power modules and fan modules using back-to-front airflow



- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-150 Front-to-back airflow (air flows out from the port side)

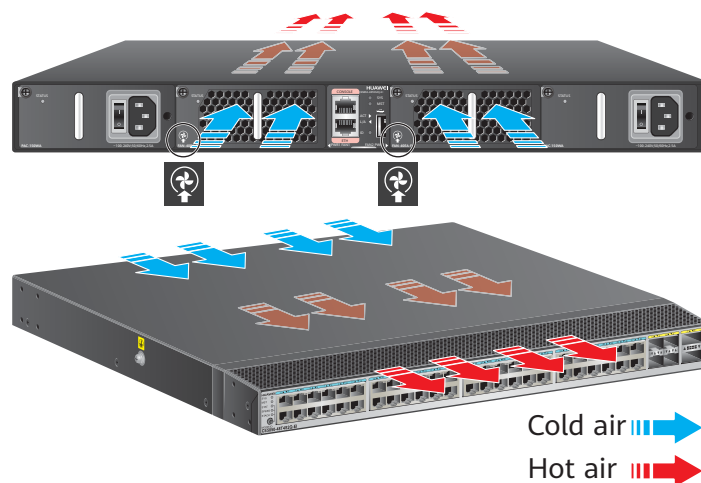
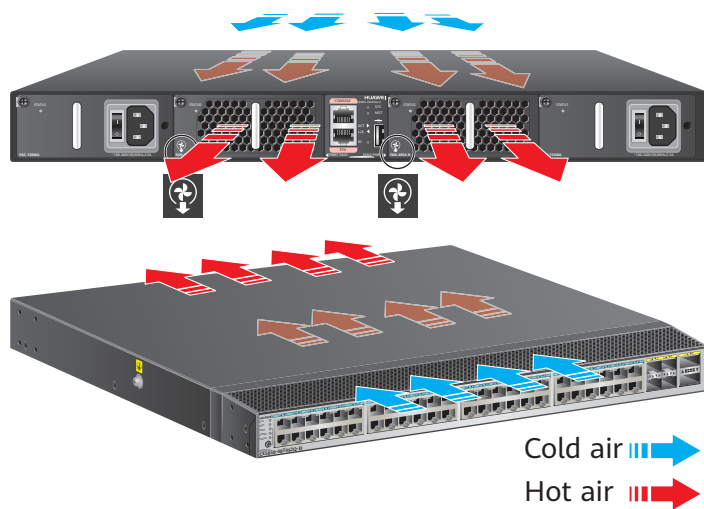


Figure 2-151 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-152 Indicators on the CE7850-32Q-EI rear panel

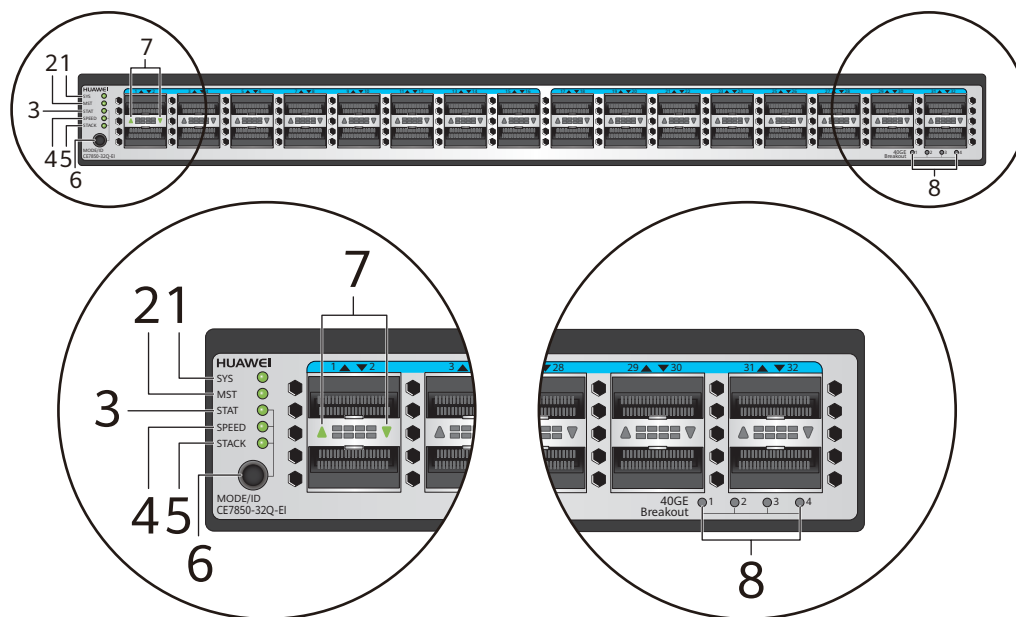


Figure 2-153 Indicators on the CE7850-32Q-EI front panel

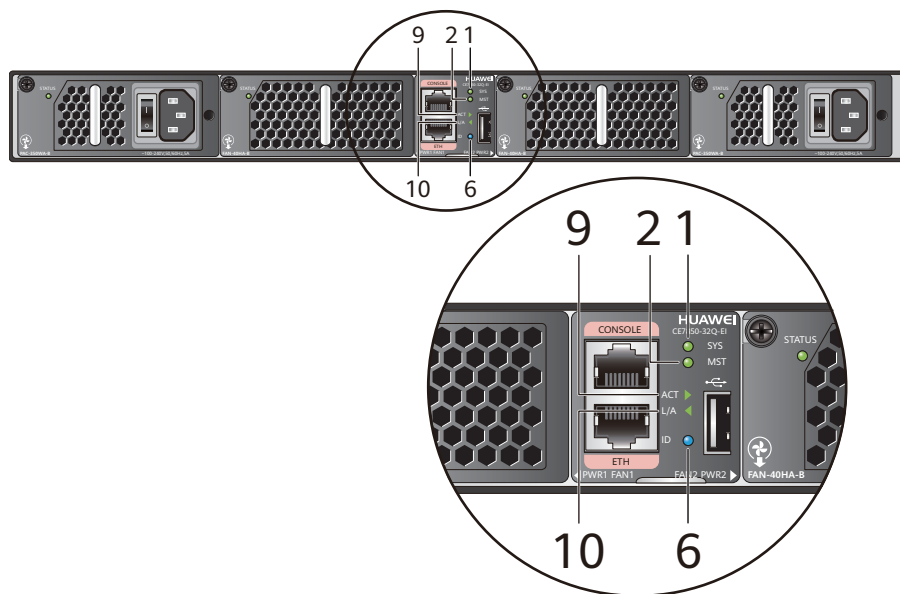


Table 2-319 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
2	MST	Stack master/slave indicator	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status.</p> <p>After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>	Yellow	Steady on	<p>A master election error or another type of error has occurred in the stack.</p> <p>NOTE This indicator state is not supported in V100R005C00 and later versions.</p>
3	STAT	STAT mode indicator	Green	Off	The STAT mode is not selected.
				Steady on	The STAT mode (default mode) is selected, and service port indicators show the link connection states and link activity on ports.
4	SPEED	SPEED mode indicator	Green	Off	The SPEED mode is not selected.
				Steady on	The SPEED mode is selected, and service port indicators show the speed of each port.
5	STACK	STACK mode indicator	Green	Off	The STACK mode is not selected.
				Steady on	The STACK mode is selected, and service port indicators show the stack member ID of the local switch.

No.	Indicator	Name	Color	Status	Description
6	MODE/ID	Mode switch button and ID indicator NOTE The mode switch button on the rear panel is integrated with the ID indicator. There is only an ID indicator and no mode switch button on the front panel.	Mode switch button	-	<ul style="list-style-type: none"> When you press the MODE button once, the SPEED indicator turns green and service port indicators show the speed of each port. When you press the MODE button a second time, the STACK indicator turns green and service port indicators show the stack member ID of the local switch. When you press the button a third time, the STAT indicator turns green (default mode) and service port indicators show the link connection states and link activity on ports. <p>If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPEED and STACK indicators are off.</p>
			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.
7	-	Service port indicator (40GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.	Meanings of service port indicators vary in different modes. For details, see Table 2-320 . When a 40GE port is configured as four 10GE ports, this indicator shows the status of a 10GE port. The sequence number of the indicated 10GE port is identified by indicators 40GE Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE port has a single-color indicator, which shows the status of the 40GE port by default. If a 40GE port is not split and is connected to four 10GE ports on a remote device using a one-to-four high-speed cable, the 40GE port cannot go Up and its indicator is off.		

No.	Indicator	Name	Color	Status	Description
8	-	40GE Breakout 1/2/3/4 (sequence number indicators of 10GE ports converted from a 40GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.	Green	Off	40GE ports are not split into four 10GE ports.

No.	Indica tor	Name	Color	Status	Description
				Steady on	<p>At least one 40GE port has been split into four 10GE ports.</p> <p>When one or more 40GE ports are configured as four 10GE ports, these indicators identify the sequence numbers of the 10GE ports. A 40GE port indicator (7 in Figure 2-152) shows the status of a 10GE port converted from the 40GE port:</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, each 40GE port indicator shows the status of the first 10GE port converted from the corresponding 40GE port. • When Breakout indicator 2 is on, each 40GE port indicator shows the status of the second 10GE port converted from the corresponding 40GE port. • When Breakout indicator 3 is on, each 40GE port indicator shows the status of the third 10GE port converted from the corresponding 40GE port. • When Breakout indicator 4 is on, each 40GE port indicator shows the status of the fourth 10GE port converted from the corresponding 40GE port. <p>The following is an example: The first 40GE port shown in Figure 2-152 is split into four 10GE ports, and the second 40GE port is not split.</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, the indicator of 40GE port 1 shows the status of the first 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2. • When Breakout indicator 2 is on, the indicator of 40GE port 1 shows the status of the second

No.	Indicator	Name	Color	Status	Description
					10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2.
9	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
10	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

Table 2-320 Service port indicators in various modes

Display Mode	Port	Color	Description
STAT	40GE optical port	-	Off: The port is not connected or has been shut down.
		Green	<ul style="list-style-type: none"> Steady on: A link is established on the port. Blinking: The port is sending or receiving data.

Display Mode	Port	Color	Description
SPEED	40GE optical port	-	Off: The port is not connected or has been shut down.
		Green	<ul style="list-style-type: none"> Steady on: The 40GE port has been split into four 10GE ports. Blinking: The port is working as a 40GE port.
STACK	Green		<ul style="list-style-type: none"> Off: Port indicators do not show the stack member ID of the switch. Steady on: If the indicator of a port is steady on, the port number is the stack member ID of the switch. <p>NOTE In STACK mode, a 10GE optical port has only its LINK indicator on (green).</p>
	Green		<ul style="list-style-type: none"> Off: Port indicators do not show the leaf ID of the switch. Steady on: If the indicator of a port is steady on, the port number indicates the leaf ID of the switch. <p>NOTE This row describes the states and meanings of port indicators on a switch working in super virtual fabric (SVF) mode.</p>

Ports

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-321](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-321 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-322](#) describes the attributes of the console port.

Table 2-322 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-323](#) describes the attributes of the ETH management port (RJ45).

Table 2-323 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-324 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 607.0 mm x 43.6 mm (17.4 in. x 23.9 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 11.2 kg (24.69 lb) 	
Environment parameters	Temperature <ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). Storage temperature: -40°C to +70°C (-40°F to +158°F) 	
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 55 dBA Front-to-back airflow: < 54 dBA

Item		Description
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	Not supported
	High-voltage DC power input	Not supported
	Rated input current	600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC)
Chassis power consumption	Maximum power consumption	431 W
	Typical power consumption	297 W (100% throughput, QSFP+ cables on 32 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1471 BTU/hr
	Typical heat dissipation	1013 BTU/hr (100% throughput, QSFP+ cables on 32 ports, double power modules)
Surge protection		AC Power module: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE CE7800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules

Item		Description
	Mean time between failures (MTBF)	42.20 years
	Mean time to repair (MTTR)	2.0 hours
	Availability	0.9999951387
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-325](#) provides the ordering information.

Table 2-325 Ordering information

Part Number	Part Model	Part Description
02358859	CE7850-32Q-EI	CE7850-32Q-EI Switch (32-Port 40GE QSFP+, Without Fan Box and Power Module)
02359250	CE7850-EI-B00	CE7850-32Q-EI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Exhaust)
02350EYY	CE7850-32Q-EI-F	CE7850-32Q-EI Switch (32-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)

Part Number	Part Model	Part Description
02350FAB	CE7850-32Q-EI-B	CE7850-32Q-EI Switch (32-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350EYQ	CE7850-EI-B-B0A	CE7850-32Q-EI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)

2.4.2 CE7855-32Q-EI

Version Mapping

Table 2-326 lists the mappings between the CE7855-32Q-EI and software versions.

Table 2-326 Version mapping

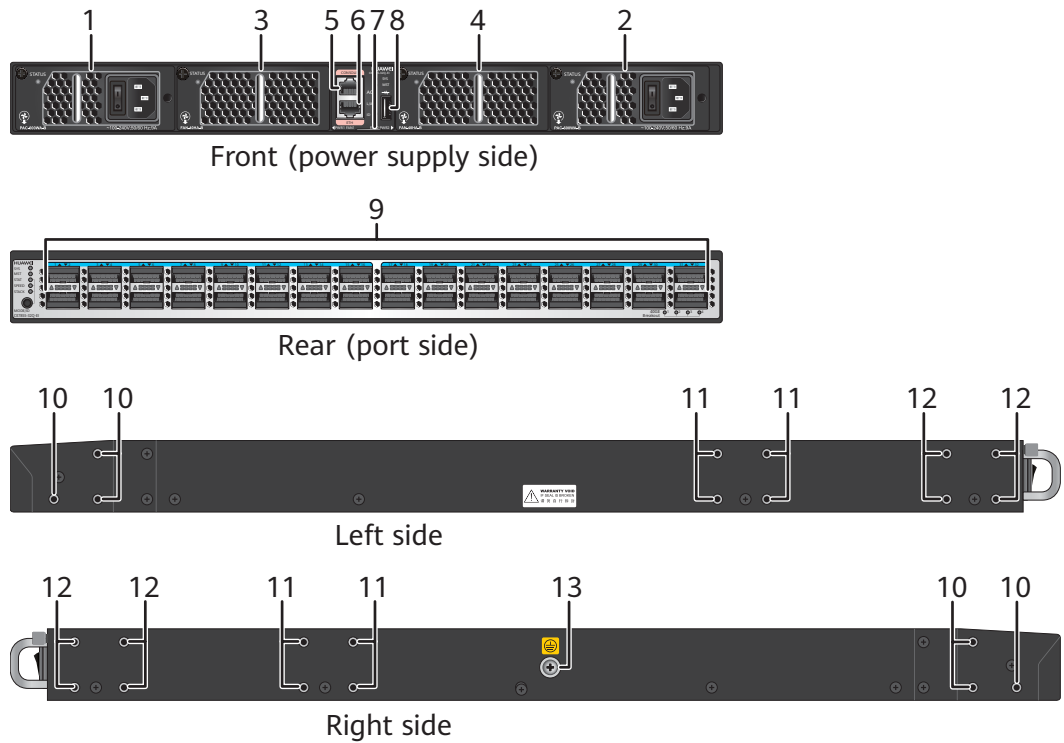
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE7800	CE7855	CE7855-32Q-EI	CE7855EI	V200R001C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-154 CE7855-32Q-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 3.6 600 W AC Power Module (PAC-600WA) • 3.11 600 W DC Power Module (PDC600S12) 	2	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> • 3.6 600 W AC Power Module (PAC-600WA) • 3.11 600 W DC Power Module (PDC600S12)
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> • FAN-40HA series fan modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch. This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Thirty-two 40GE QSFP+ Ethernet optical ports</p> <p>NOTE</p> <p>A 40GE QSFP+ port can be split into four 10GE ports.</p> <p>In V200R005C00 and later versions, a QSA convertor can be installed on a 40GE interface that has been split. Installing a medium whose rate is 10 Gbit/s on the QSA convertor makes a 40GE interface function as a 10GE interface. Only the first split interface works and other three split interfaces are unavailable. If a QSA convertor is installed on an interface that is not split or a medium whose rate is not 10 Gbit/s is installed on the QSA convertor on an interface that has been split, the interface enters the Down(Transceiver type mismatch) status.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE optical module • QSFP+ AOC cable (QSFP+ to QSFP+) • QSFP+ AOC cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to 4*SFP+) • QSFP+ high-speed cable (QSFP+ to QSFP+) 	1 0	Three port-side mounting holes for mounting brackets
1 1	Four middle mounting holes for mounting brackets	1 2	Four power-supply-side mounting holes for mounting brackets
1 3	Ground screw	- -	

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.

- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-155](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-156](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-155 Front-to-back airflow (air flows out from the port side)

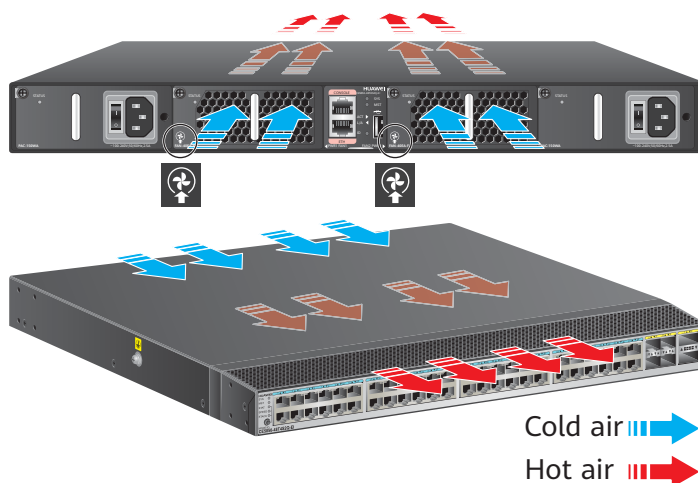
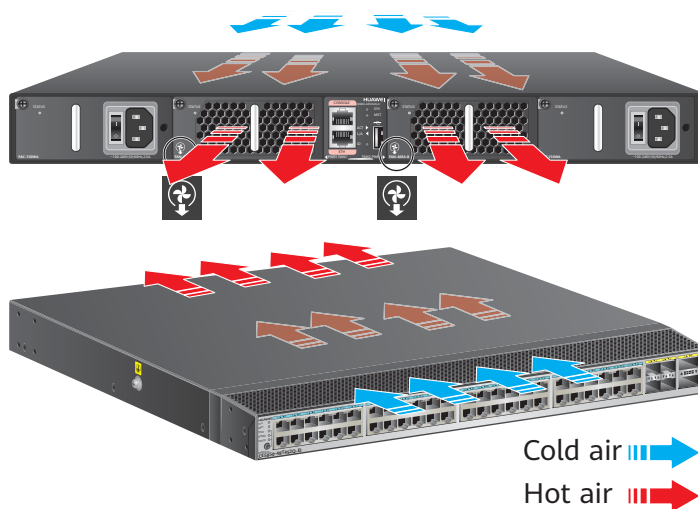


Figure 2-156 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE7855-32Q-EI are the same as those on the CE7850-32Q-EI. The [CE7850-32Q-EI](#) is used as an example here to describe the indicators.

Ports

40GE QSFP+ Ethernet Optical Port

A 40GE QSFP+ Ethernet optical port receives and sends services at the rate of 40 Gbit/s. If a 40GE QSFP+ Ethernet optical port is split into four 10GE ports, it must use 1-to-4 QSFP+ optical modules and optical fibers or 1-to-4 QSFP+ cables. [Table 2-327](#) describes the attributes of a 40GE QSFP+ Ethernet optical port.

Table 2-327 Attributes of a 40GE QSFP+ Ethernet optical port

Attribute	Description
Connector type	LC/MPO
Optical port attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-328](#) describes the attributes of the console port.

Table 2-328 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-329](#) describes the attributes of the ETH management port (RJ45).

Table 2-329 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex

Attribute	Description
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-330 Technical specifications

Item	Description	
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 607.0 mm x 43.6 mm (17.4 in. x 23.9 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 11.2 kg (24.69 lb) 	
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 55 dBA Front-to-back airflow: < 54 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz

Item		Description
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC) 600 W DC power (PDC600S12 series): 20A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	444 W
	Typical power consumption	262 W (100% throughput, QSFP+ cables on 32 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1515 BTU/hr
	Typical heat dissipation	895 BTU/hr (100% throughput, QSFP+ cables on 32 ports, double power modules)
Surge protection		AC Power module: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE CE7800 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	49.81 years

Item		Description
	Mean time to repair (MTTR)	1.81 hours
	Availability	0.99999584354
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	40GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-331](#) provides the ordering information.

Table 2-331 Ordering information

Part Number	Part Model	Part Description
02350SQX	CE7855-32Q-EI	CE7855-32Q-EI Switch (32-Port 40GE QSFP+, Without Fan Box and Power Module)
02350SBG	CE7855-EI-F-B0A	CE7855-32Q-EI Switch (32-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SBH	CE7855-EI-B-B0A	CE7855-32Q-EI Switch (32-Port 40GE QSFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.5 CE8800

2.5.1 CE8860-4C-EI

Version Mapping

[Table 2-332](#) lists the mappings between the CE8860-4C-EI and software versions.

Table 2-332 Version mapping

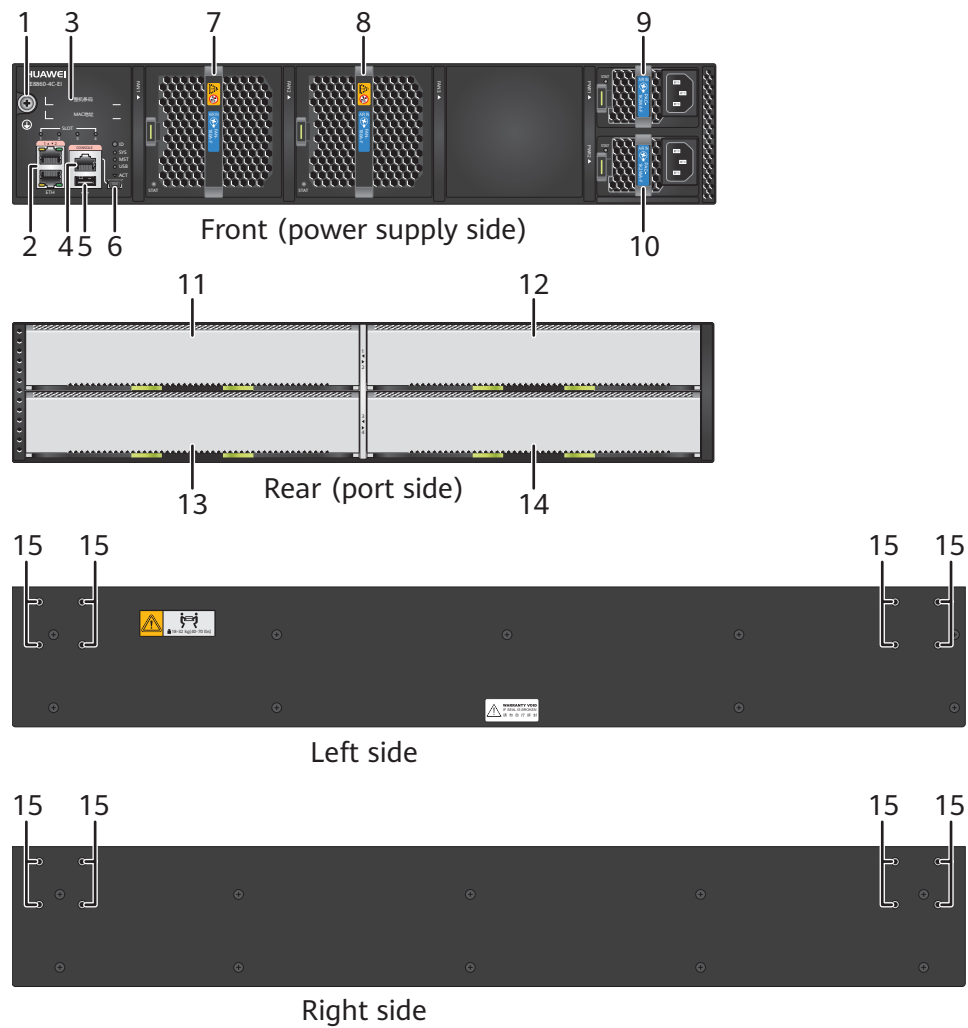
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE8800	CE8860	CE8860-4C-EI	CE8860EI	V100R006C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-157 CE8860-4C-EI



1	Ground screw	2	Two ETH management ports (RJ45)
3	ESN and MAC address label	4	Console port
5	USB port	6	Mini USB port
7	Fan slot 1 Applicable fan modules: • FAN-180A series fan modules	8	Fan slot 2 Applicable fan modules: • FAN-180A series fan modules

9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 1200 W AC&240 V DC power module 1200 W high-voltage DC power module 1200 W DC power module 	1 0	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 1200 W AC&240 V DC power module 1200 W high-voltage DC power module 1200 W DC power module
1 1	Extended card slot 1 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U 	1 2	Extended card slot 2 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U
1 3	Extended card slot 3 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U 	1 4	Extended card slot 4 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U
1 5	Mounting holes for mounting brackets	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-158](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-159](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-158 Front-to-back airflow (air flows out from the port side)

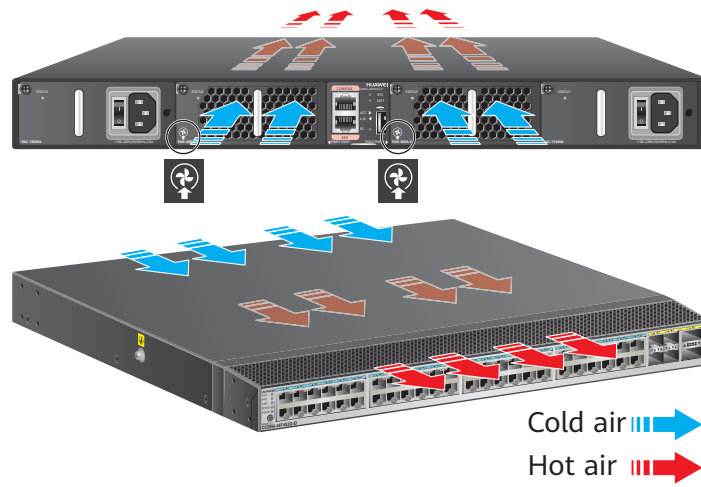
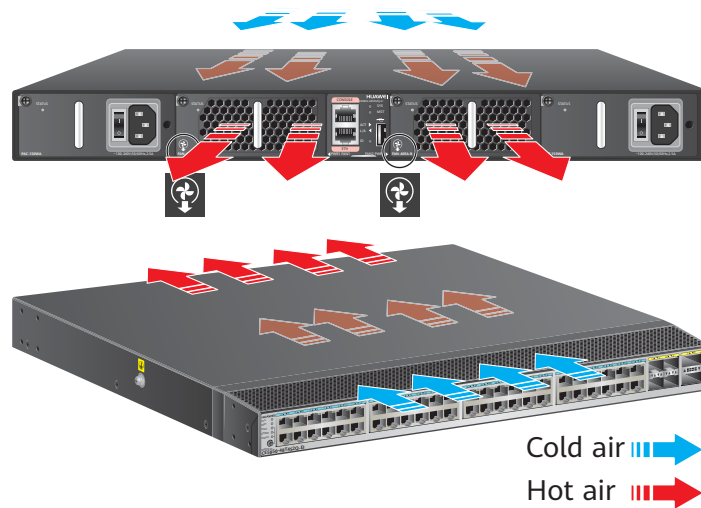
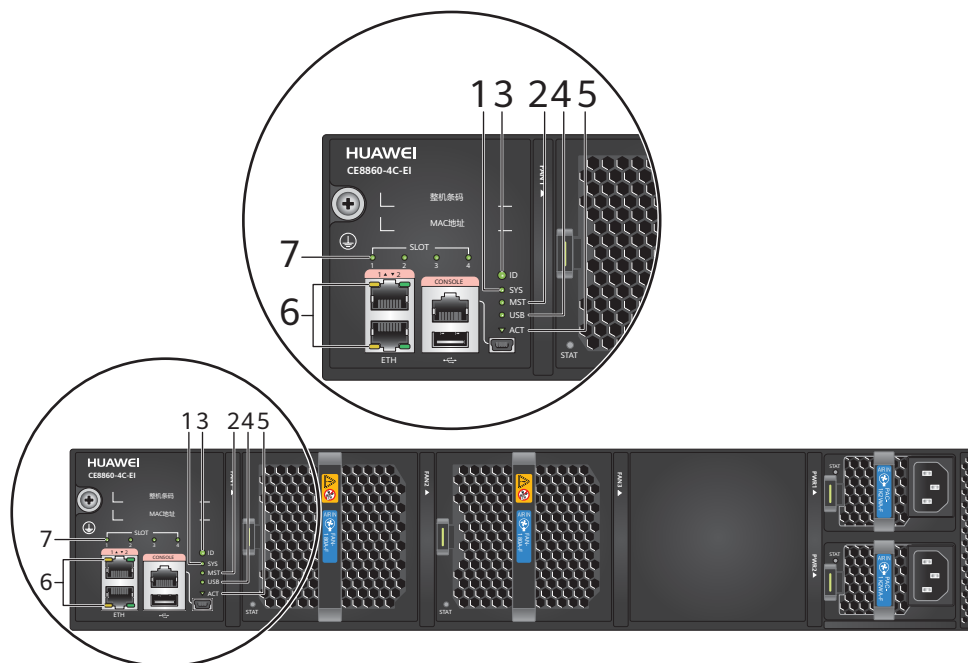


Figure 2-159 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-160 Indicators on the CE8860-4C-EI front panel



NOTE

The CE8860-4C-EI has four card slots at the rear of the chassis and has no indicators on the rear panel. For details about indicators on extended cards, see the indicator description for the specific cards.

Table 2-333 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.

No.	Indicator	Name	Color	Status	Description
2	MS T	Stack master/ slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/ slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	US B	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.

No.	Indicator	Name	Color	Status	Description
			Red	Steady on	USB-based deployment has failed.
5	ACT	Mini USB port indicator	Green	Off	The Mini USB port is inactive, and the console port can be used.
				Off	The Mini USB port is active, and the console port cannot be used.
6	-	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
			Yellow	Blinking	The port is sending or receiving data.
7	SLOT	Card status indicators NOTE Indicators 1, 2, 3, 4 show the status of cards in slots 1, 2, 3, 4, respectively.	Green	Off	No card is present in the slot, a card is present but is not powered on, or the system is not running.
				Slow blinking	The card is running normally.
				Fast blinking	The card is powering on or resetting.
				Red	Steady on

Ports

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-334](#) describes the attributes of the console port.

Table 2-334 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-335](#) describes the attributes of the ETH management port (RJ45).

Table 2-335 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The CE8860EI switches have two ETH management ports (RJ45). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.

- Before start of a CE8860EI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see Modify parameters in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-336 lists technical specifications of the CE8860-4C-EI switch.

Table 2-336 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 88.1 mm (17.4 in. x 23.6 in. x 3.47 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 21.2 kg
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing

Item		Description
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 130 V AC/200 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> • Rated voltage of 240 V high-voltage DC power input: 240 V DC • Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC • Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC • Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> • 1200 W AC&240 V DC power module (PAC-1K2WA series): 10 A (100 V AC to 130 V AC)/8 A (200 V AC to 240 V AC)/8 A (240 V DC) • 1200 W high-voltage DC power module (PHD-1K2WA series): 8 A (240 V DC to 380 V DC) • 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	<ul style="list-style-type: none"> • Fully configured with four CE88-D8CQ cards: 625 W • Fully configured with four CE88-D16Q cards: 585 W • Fully configured with four CE88-D24T2CQ cards: 750 W • Fully configured with four CE88-D24S2CQ cards: 602 W • Fully configured with four CE88-D24S2CQ-U cards: 718 W

Item		Description
	Typical power consumption	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 355 W (100% throughput, QSFP28 cables on 32 ports, double power modules) Fully configured with four CE88-D16Q cards: 340 W (100% throughput, QSFP+ cables on 64 ports, double power modules) Fully configured with four CE88-D24T2CQ cards: 522 W (100% throughput, 3 m Ethernet cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ cards: 399 W (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ-U cards: 505 W (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 2134 BTU/hr Fully configured with four CE88-D16Q cards: 1998 BTU/hr Fully configured with four CE88-D24T2CQ cards: 2561 BTU/hr Fully configured with four CE88-D24S2CQ cards: 2056 BTU/hr Fully configured with four CE88-D24S2CQ-U cards: 2450 BTU/hr

Item		Description
	Typical heat dissipation	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 1212 BTU/hr (100% throughput, QSFP28 cables on 32 ports, double power modules) Fully configured with four CE88-D16Q cards: 1161 BTU/hr (100% throughput, QSFP+ cables on 64 ports, double power modules) Fully configured with four CE88-D24T2CQ cards: 1783 BTU/hr (100% throughput, 3 m Ethernet cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ cards: 1363 BTU/hr (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ-U cards: 1723 BTU/hr (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, which is determined by features of fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Two fan modules, working in 1+1 backup mode when the temperature is below 35°C
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	40.88 years
	Mean time to repair (MTTR)	1.75 hours

Item		Description
	Availability	0.99999511530
Technical specifications	Processor	1.5 GHz, quad-core
	DRAM Memory	4 GB
	NOR Flash	16 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	See the description of ports on each card.
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-337 provides the ordering information.

Table 2-337 Ordering information

Part Number	Part Model	Part Description
02350SUK	CE8860-4C-EI	CE8860-4C-EI Mainframe (With 4 Subcard Slots, Without FAN Box and Power Module)
02350RMX	CE8860-EI-B-B0C	CE8860EI Bundle (CE8860-4C-EI Mainframe, 1*CE88-D24S2CQ Interface Card, 1*CE88-D16Q Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350RMW	CE8860-EI-F-B0C	CE8860EI Bundle (CE8860-4C-EI Mainframe, 1*CE88-D24S2CQ Interface Card, 1*CE88-D16Q Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350NBR	CE8860-EI-B-B00	CE8860EI Bundle (CE8860-4C-EI Mainframe, 4*CE88-D24T2CQ Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Intake)

Part Number	Part Model	Part Description
02350NBS	CE8860-EI-B-B0A	CE8860EI Bundle (CE8860-4C-EI Mainframe, 4*CE88-D24S2CQ Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350NBP	CE8860-EI-B-B0B	CE8860EI Bundle (CE8860-4C-EI Mainframe, 4*CE88-D16Q Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Intake)
02350NBM	CE8860-EI-F-B00	CE8860EI Bundle (CE8860-4C-EI Mainframe, 4*CE88-D24T2CQ Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350NBL	CE8860-EI-F-B0A	CE8860EI Bundle (CE8860-4C-EI Mainframe, 4*CE88-D24S2CQ Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350NBJ	CE8860-EI-F-B0B	CE8860EI Bundle (CE8860-4C-EI Mainframe, 4*CE88-D16Q Interface Card, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)

2.5.2 CE8861-4C-EI

Version Mapping

[Table 2-338](#) lists the mappings between the CE8861-4C-EI and software versions.

Table 2-338 Version mapping

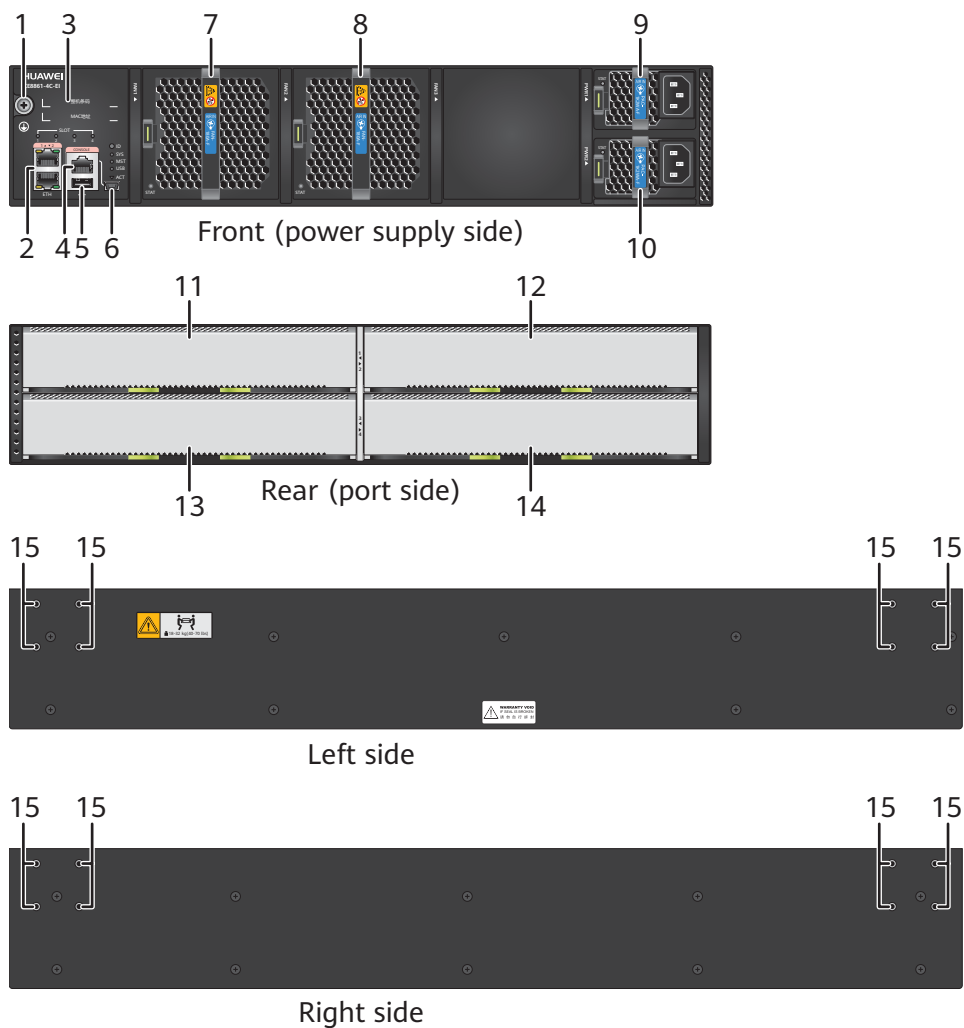
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE8800	CE8861	CE8861-4C-EI	CE8861EI	V200R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-161 CE8861-4C-EI



1	Ground screw	2	Two ETH management ports (RJ45)
3	ESN and MAC address label	4	Console port
5	USB port	6	Mini USB port
7	Fan slot 1 Applicable fan modules: • FAN-180A Series Fan Modules	8	Fan slot 2 Applicable fan modules: • FAN-180A Series Fan Modules

9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 1200 W AC&240 V DC Power Module (PAC-1K2WA) 1200 W High-voltage DC Power Module (PHD-1K2WA) 1200 W DC Power Module (PDC-1K2WA) 	1 0	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 1200 W AC&240 V DC Power Module (PAC-1K2WA) 1200 W High-voltage DC Power Module (PHD-1K2WA) 1200 W DC Power Module (PDC-1K2WA)
1 1	Extended card slot 1 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U 	1 2	Extended card slot 2 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U
1 3	Extended card slot 3 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U 	1 4	Extended card slot 4 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ CE88-D24S2CQ-U
1 5	Mounting holes for mounting brackets	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.


- Fan slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating. All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

 or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-162](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

 or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-162 Front-to-back airflow (air flows out from the port side)

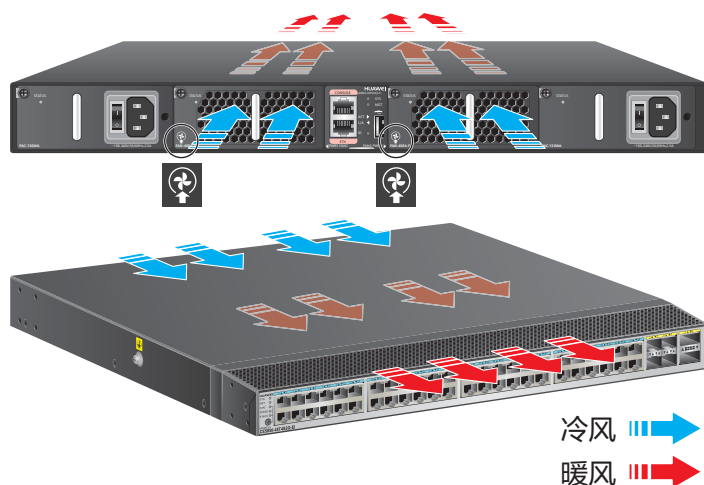
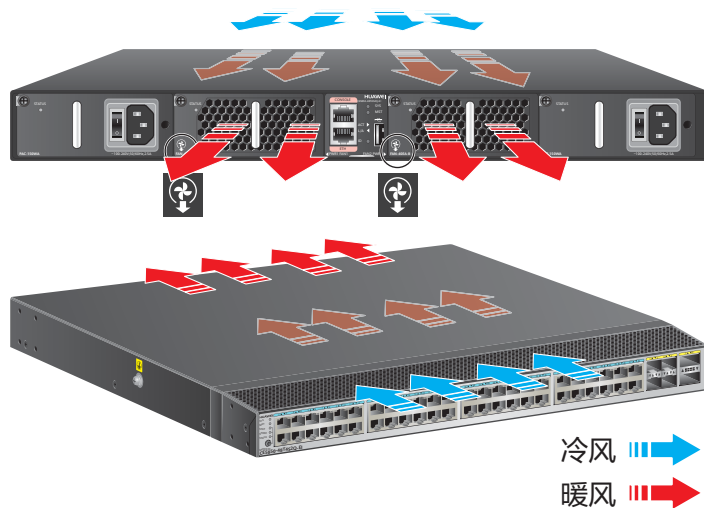


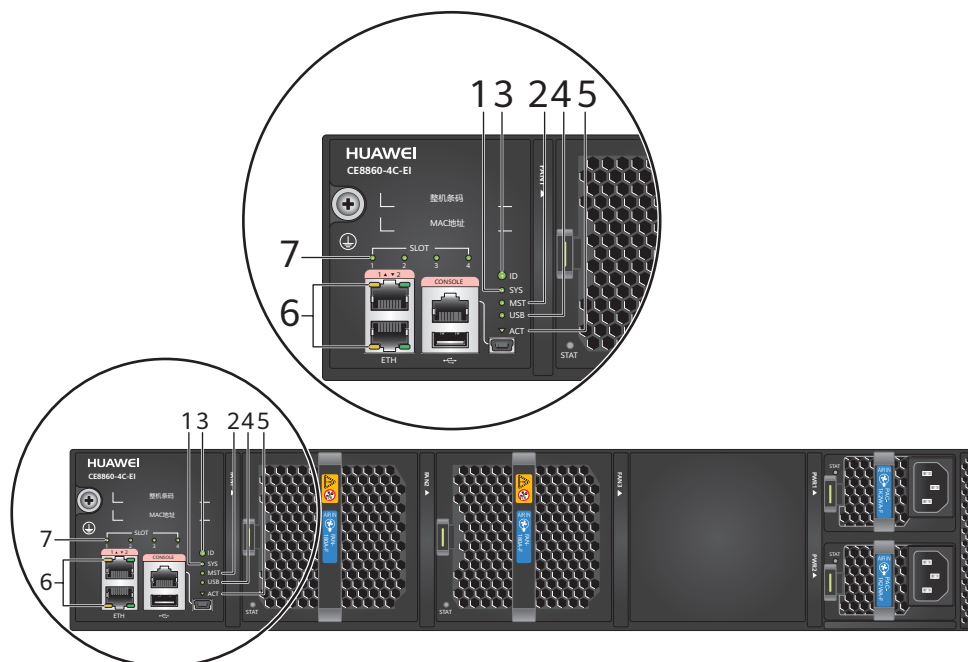
Figure 2-163 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE8861-4C-EI are the same as those on the CE8860-4C-EI. CE8860-4C-EI is used as an example.

Figure 2-164 Indicators on the CE8861-4C-EI front panel



NOTE

The CE8861-4C-EI has four card slots at the rear of the chassis and has no indicators on the rear panel. For details about indicators on extended cards, see the indicator description for the specific cards.

Table 2-339 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MST	Stack master/slave indicator	Green	Off	The switch is not a stack master.

No.	Indicator	Name	Color	Status	Description
		<p>NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.</p>		Steady on	The switch is a stack master or standalone switch.
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.

No.	Indicator	Name	Color	Status	Description
5	ACT	Mini USB port indicator	Green	Off	The Mini USB port is inactive, and the console port can be used.
				Off	The Mini USB port is active, and the console port cannot be used.
6	-	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
			Yellow	Blinking	The port is sending or receiving data.
7	SLOT	Card status indicators NOTE Indicators 1, 2, 3, 4 show the status of cards in slots 1, 2, 3, 4, respectively.	Green	Off	No card is present in the slot, a card is present but is not powered on, or the system is not running.
				Slow blinking	The card is running normally.
				Fast blinking	The card is powering on or resetting.
			Red	Steady on	A fault that affects services has occurred on the card. The fault cannot be rectified automatically and requires manual intervention.

Ports

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-340](#) describes the attributes of the console port.

Table 2-340 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)

Attribute	Description
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-341](#) describes the attributes of the ETH management port (RJ45).

Table 2-341 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The CE8861EI switches have two ETH management ports (RJ45). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE8861EI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.

- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-342](#) lists technical specifications of the CE8861-4C-EI switch.

Table 2-342 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 88.1 mm (17.4 in. x 23.6 in. x 3.47 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 21.3 kg
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)

Item		Description
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 130 V AC/200 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> • Rated voltage of 240 V high-voltage DC power input: 240 V DC • Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC • Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC • Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> • 1200 W AC&240 V DC power module (PAC-1K2WA series): 10 A (100 V AC to 130 V AC)/8 A (200 V AC to 240 V AC)/8 A (240 V DC) • 1200 W high-voltage DC power module (PHD-1K2WA series): 8 A (240 V DC to 380 V DC) • 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	<ul style="list-style-type: none"> • Fully configured with four CE88-D8CQ cards: 658 W • Fully configured with four CE88-D16Q cards: 620 W • Fully configured with four CE88-D24T2CQ cards: 747 W • Fully configured with four CE88-D24S2CQ cards: 674 W • Fully configured with four CE88-D24S2CQ-U cards: 795 W

Item		Description
	Typical power consumption	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 398 W (100% throughput, QSFP28 cables on 32 ports, double power modules) Fully configured with four CE88-D16Q cards: 383 W (100% throughput, QSFP+ cables on 64 ports, double power modules) Fully configured with four CE88-D24T2CQ cards: 532 W (100% throughput, 3 m Ethernet cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ cards: 437 W (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ-U cards: 525 W (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 2245 BTU/hr Fully configured with four CE88-D16Q cards: 2116 BTU/hr Fully configured with four CE88-D24T2CQ cards: 2549 BTU/hr Fully configured with four CE88-D24S2CQ cards: 2300 BTU/hr Fully configured with four CE88-D24S2CQ-U cards: 2713 BTU/hr

Item		Description
	Typical heat dissipation	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 1358 BTU/hr (100% throughput, QSFP28 cables on 32 ports, double power modules) Fully configured with four CE88-D16Q cards: 1307 BTU/hr (100% throughput, QSFP+ cables on 64 ports, double power modules) Fully configured with four CE88-D24T2CQ cards: 1815 BTU/hr (100% throughput, 3 m Ethernet cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ cards: 1491 BTU/hr (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ-U cards: 1791 BTU/hr (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, which is determined by features of fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Two fan modules, working in 1+1 backup mode when the temperature is below 35°C
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	36.02 years
	Mean time to repair (MTTR)	1.87 hours

Item		Description
	Availability	0.9999940608
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	4 GB
	NOR Flash	32 MB
	NAND Flash	2 GB
Stack	Service port supporting the stack function	See the description of ports on each card.
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-343](#) provides the ordering information.

Table 2-343 Ordering information

Part Number	Part Model	Part Description
02351SGW	CE8861-4C-EI	CE8861-4C-EI Mainframe (With 4 Subcard Slots, Without FAN Box and Power Module)
02351SHA	CE8861-4C-EI-F	CE8861-4C-EI Mainframe (With 4 Subcard Slots, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02351SGY	CE8861-4C-EI-B	CE8861-4C-EI Mainframe (With 4 Subcard Slots, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.5.3 CE8868-4C-EI

Version Mapping

[Table 2-344](#) lists the mappings between the CE8868-4C-EI and software versions.

Table 2-344 Version mapping

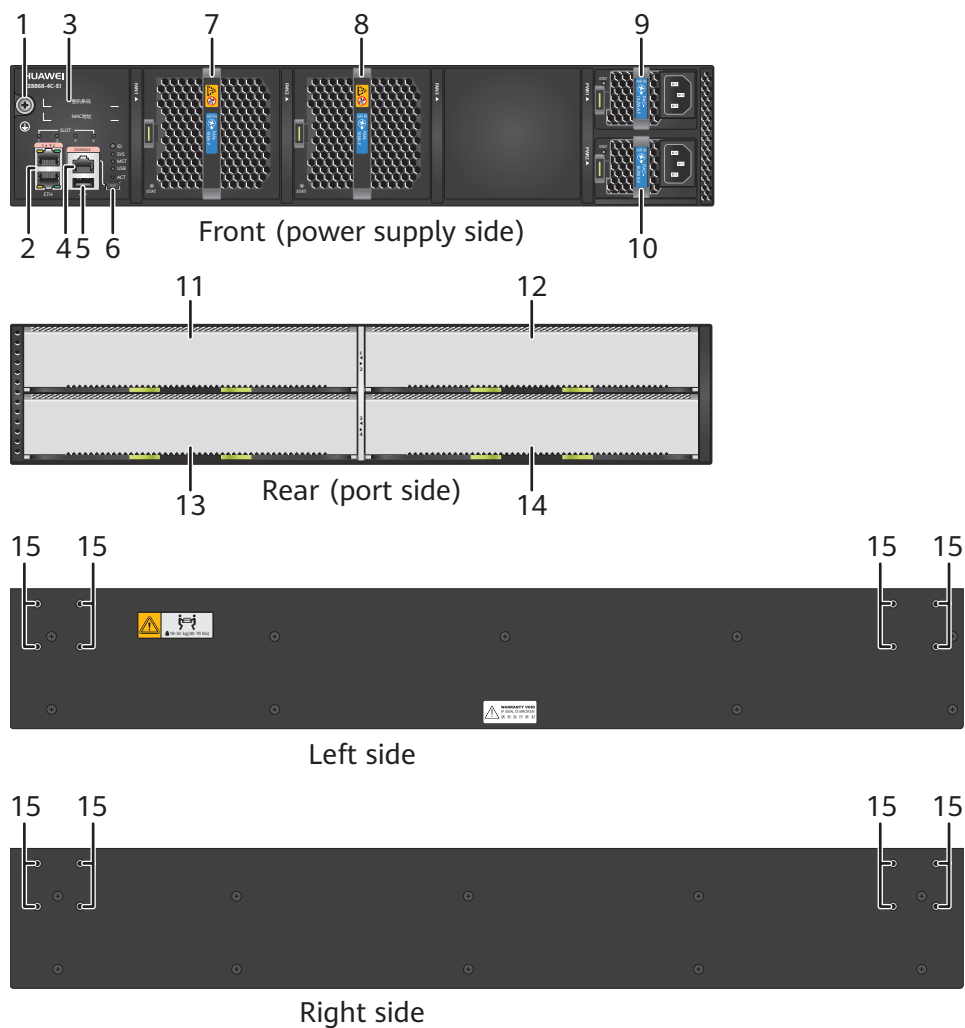
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE8800	CE8868	CE8868-4C-EI	CE8868EI	V200R005C10 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-165 CE8868-4C-EI



1	Ground screw	2	Two ETH management ports (RJ45)
3	ESN and MAC address label	4	Console port
5	USB port	6	Mini USB port
7	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> FAN-180A Series Fan Modules 	8	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> FAN-180A Series Fan Modules
9	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 1200 W AC&240 V DC Power Module (PAC-1K2WA) 1200 W High-voltage DC Power Module (PHD-1K2WA) 1200 W DC Power Module (PDC-1K2WA) 	10	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 1200 W AC&240 V DC Power Module (PAC-1K2WA) 1200 W High-voltage DC Power Module (PHD-1K2WA) 1200 W DC Power Module (PDC-1K2WA)
11	Extended card slot 1 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ 	12	Extended card slot 2 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ
13	Extended card slot 3 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ 	14	Extended card slot 4 Applicable cards: <ul style="list-style-type: none"> CE88-D8CQ CE88-D16Q CE88-D24T2CQ CE88-D24S2CQ
15	Mounting holes for mounting brackets	-	-

Slot

- Power supply slot
The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.

- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ, CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.



All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-166](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-166 Front-to-back airflow (air flows out from the port side)

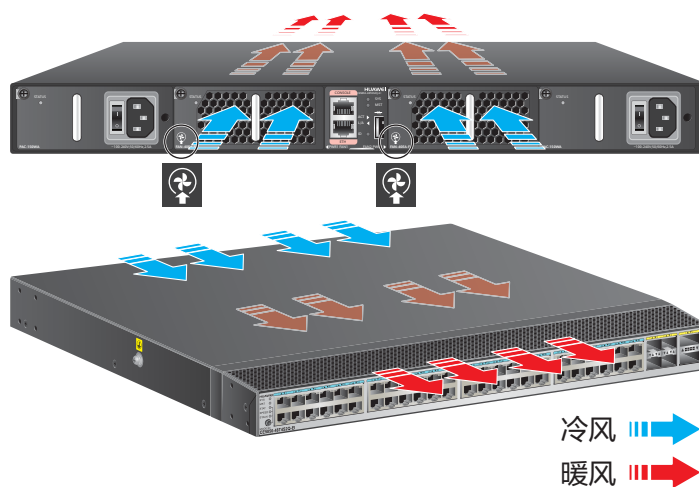
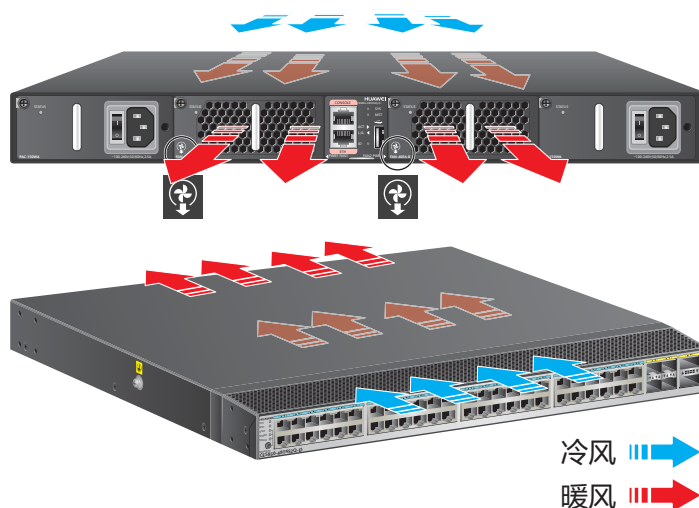


Figure 2-167 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE8868-4C-EI are the same as those on the CE8861-4C-EI. The [CE8861-4C-EI](#) is used as an example here to describe the indicators.

Ports

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-345](#) describes the attributes of the console port.

Table 2-345 Attributes of the console port

Attribute	Description
Connector type	RJ45

Attribute	Description
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

 **NOTE**

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-346](#) describes the attributes of the ETH management port (RJ45).

Table 2-346 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The CE8868EI switches have two ETH management ports (RJ45). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE8868EI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

Table 2-347 lists technical specifications of the CE8868-4C-EI switch.

Table 2-347 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> • Dimensions (W x D x H): 442.0 mm x 600.0 mm x 88.1 mm (17.4 in. x 23.6 in. x 3.47 in.) • Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 21.3 kg
Environment parameters	Temperature	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> • Storage temperature: -40°C to +70°C (-40°F to +158°F)

Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> • Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> • Rated input voltage range: 100 V AC to 130 V AC/200 V AC to 240 V AC, 50/60 Hz • Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> • Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> • Rated voltage of 240 V high-voltage DC power input: 240 V DC • Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC • Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC • Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC
	Rated input current	<ul style="list-style-type: none"> • 1200 W AC&240 V DC power module (PAC-1K2WA series): 10 A (100 V AC to 130 V AC)/8 A (200 V AC to 240 V AC)/8 A (240 V DC) • 1200 W high-voltage DC power module (PHD-1K2WA series): 8 A (240 V DC to 380 V DC) • 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	<ul style="list-style-type: none"> • Fully configured with four CE88-D8CQ cards: 658 W • Fully configured with four CE88-D16Q cards: 620 W • Fully configured with four CE88-D24T2CQ cards: 747 W • Fully configured with four CE88-D24S2CQ cards: 674 W

Item		Description
	Typical power consumption	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 398 W (100% throughput, QSFP28 cables on 32 ports, double power modules) Fully configured with four CE88-D16Q cards: 383 W (100% throughput, QSFP+ cables on 64 ports, double power modules) Fully configured with four CE88-D24T2CQ cards: 532 W (100% throughput, 3 m Ethernet cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ cards: 437 W (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 2245 BTU/hr Fully configured with four CE88-D16Q cards: 2116 BTU/hr Fully configured with four CE88-D24T2CQ cards: 2549 BTU/hr Fully configured with four CE88-D24S2CQ cards: 2300 BTU/hr
	Typical heat dissipation	<ul style="list-style-type: none"> Fully configured with four CE88-D8CQ cards: 1358 BTU/hr (100% throughput, QSFP28 cables on 32 ports, double power modules) Fully configured with four CE88-D16Q cards: 1307 BTU/hr (100% throughput, QSFP+ cables on 64 ports, double power modules) Fully configured with four CE88-D24T2CQ cards: 1815 BTU/hr (100% throughput, 3 m Ethernet cables on 96 ports and QSFP28 cables on 8 ports, double power modules) Fully configured with four CE88-D24S2CQ cards: 1491 BTU/hr (100% throughput, SFP28 cables on 96 ports and QSFP28 cables on 8 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling

Item		Description
	Airflow	Front-to-back or back-to-front, which is determined by features of fan modules and power modules
Reliability and availability	Power module backup	1+1 backup
	Fan module backup	Two fan modules, working in 1+1 backup mode when the temperature is below 35°C
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	36.02 years
	Mean time to repair (MTTR)	1.87 hours
	Availability	0.9999940608
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	4 GB
	NOR Flash	32 MB
	NAND Flash	2 GB
Stack	Service port supporting the stack function	See the description of ports on each card.
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-348](#) provides the ordering information.

Table 2-348 Ordering information

Part Number	Part Model	Part Description
02352CHJ	CE8868-4C-EI	CE8868-4C-EI Mainframe (With 4 Subcard Slots, Without FAN Box and Power Module)
02352CHN	CE8868-4C-EI-F	CE8868-4C-EI Mainframe (With 4 Subcard Slots, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02352CHM	CE8868-4C-EI-B	CE8868-4C-EI Mainframe (With 4 Subcard Slots, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.5.4 CE8850-32CQ-EI

Version Mapping

Table 2-349 lists the mappings between the CE8850-32CQ-EI and software versions.

Table 2-349 Version mapping

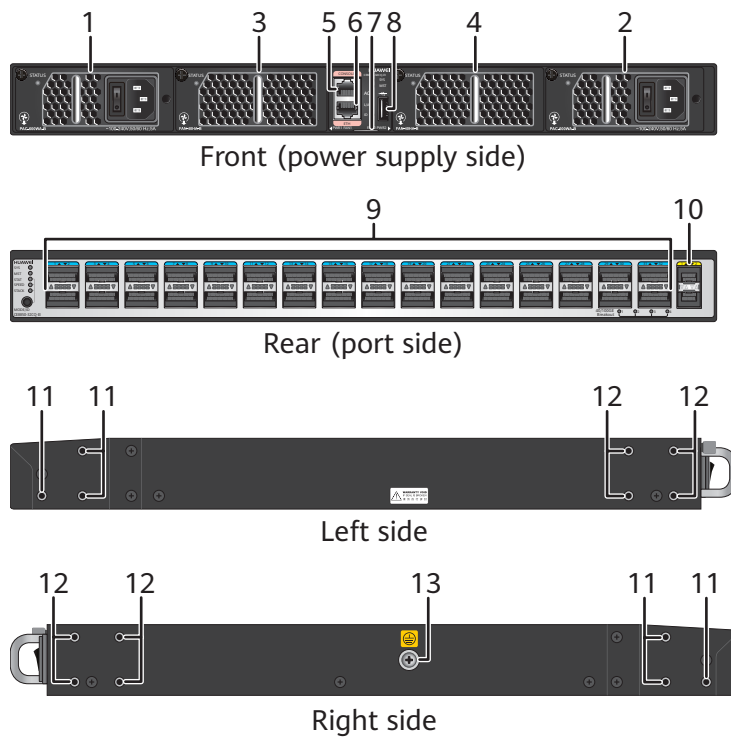
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE8800	CE8850	CE8850-32CQ-EI	CE8850EI	V200R002C50 to V200R019C10 NOTE This model is not supported in V200R005C20.

Appearance and Structure

 **NOTE**

The figures in this document are for reference only.

Figure 2-168 CE8850-32CQ-EI



1	Power supply slot 1 Applicable power modules: <ul style="list-style-type: none"> 600 W AC Power Module (PAC-600WA) 600 W DC Power Module (PDC600S12) 	2	Power supply slot 2 Applicable power modules: <ul style="list-style-type: none"> 600 W AC Power Module (PAC-600WA) 600 W DC Power Module (PDC600S12)
3	Fan slot 1 Applicable fan modules: <ul style="list-style-type: none"> FAN-40HA Series Fan Modules 	4	Fan slot 2 Applicable fan modules: <ul style="list-style-type: none"> FAN-40HA Series Fan Modules
5	Console port	6	ETH management port (RJ45)
7	Barcode label NOTE This label is drawable, and you can pull it outward to view the ESN barcode and MAC address of the switch.	8	USB port

9	<p>Thirty-two 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules (QSFP28-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to QSFP+ High-Speed Cable • QSFP+ to 4*SFP+ AOC cable • QSFP+ to 4*SFP+ High-Speed Cable • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable • QSFP28 to 4*SFP28 High-Speed Cable 	1 0	<p>Two 10GE SFP+ Ethernet optical ports</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 10GE SFP+ Optical Modules (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE eSFP Optical Modules • GE SFP Copper Modules (works at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s) • SFP+ to SFP+ AOC Cable • SFP+ to SFP+ High-Speed Cable
1 1	Three port-side mounting holes for mounting brackets	1 2	Four power-supply-side mounting holes for mounting brackets
1 3	Ground screw	-	-

Slot

- Power supply slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) have two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability.

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI) support double power modules (1+1 backup).

 - When both power modules are working properly, they equally provide power for a chassis.
 - When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.
- Fan slot

The CloudEngine 8800, 7800, 6800, and 5800 series switches (except the CE8850-64CQ-EI, CE6863-48S6CQ, CE6881-48S6CQ, CE6820-48S6CQ,

CE6863-48S6CQ-K, CE6881-48S6CQ-K, CE6881E-48S6CQ and CE6857-48S6CQ-EI) have two fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have two working fan modules to ensure normal operating.


All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-169](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-169 Front-to-back airflow (air flows out from the port side)

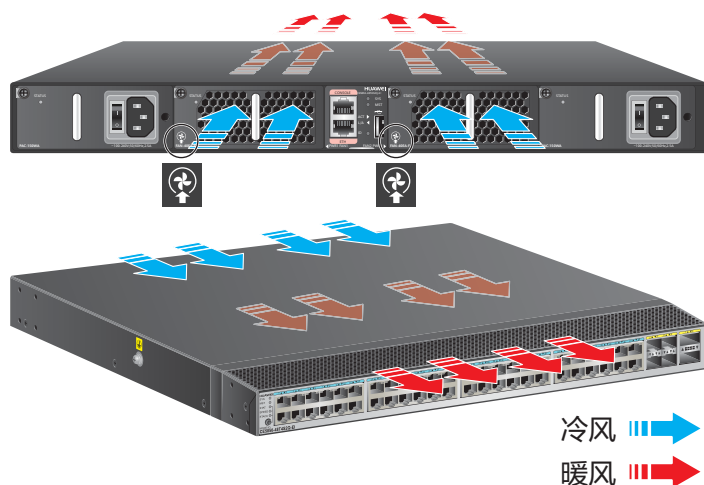
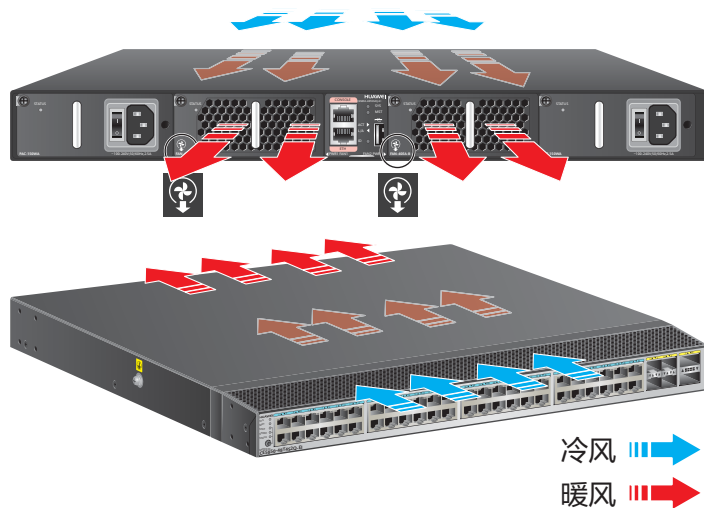


Figure 2-170 Back-to-front airflow (air flows in from the port side)



Indicators

Indicators on the CE8850-32CQ-EI are the same as those on the CE7850-32Q-EI. CE7850-32Q-EI is used as an example.

Figure 2-171 Indicators on the CE8850-32Q-EI rear panel

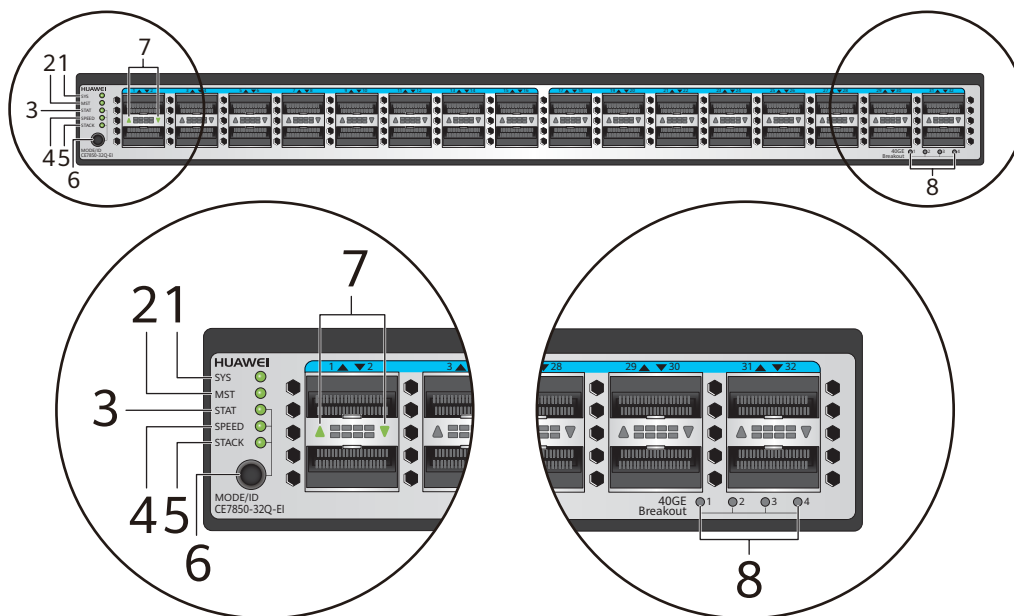


Figure 2-172 Indicators on the CE8850-32Q-EI front panel

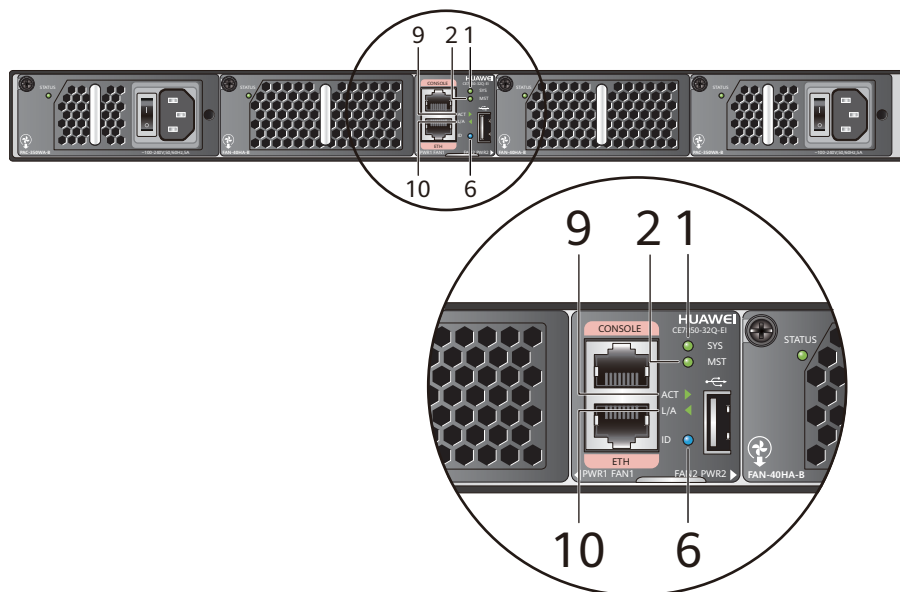


Table 2-350 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T	Stack master/ slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.
			Yellow	Steady on	<p>A master election error or another type of error has occurred in the stack.</p> <p>NOTE This indicator state is not supported in V100R005C00 and later versions.</p>
3	STAT	STAT mode indicator	Green	Off	The STAT mode is not selected.

No.	Indicator	Name	Color	Status	Description
				Steady on	The STAT mode (default mode) is selected, and service port indicators show the link connection states and link activity on ports.
4	SPEED	SPEED mode indicator	Green	Off	The SPEED mode is not selected.
				Steady on	The SPEED mode is selected, and service port indicators show the speed of each port.
5	STACK	STACK mode indicator	Green	Off	The STACK mode is not selected.
				Steady on	The STACK mode is selected, and service port indicators show the stack member ID of the local switch.
6	MODE/ID	Mode switch button and ID indicator NOTE The mode switch button on the rear panel is integrated with the ID indicator. There is only an ID indicator and no mode switch button on the front panel.	Mode switch button	-	<ul style="list-style-type: none"> When you press the MODE button once, the SPEED indicator turns green and service port indicators show the speed of each port. When you press the MODE button a second time, the STACK indicator turns green and service port indicators show the stack member ID of the local switch. When you press the button a third time, the STAT indicator turns green (default mode) and service port indicators show the link connection states and link activity on ports. If you do not press the MODE button within 45 seconds, the service port indicators restore to the default mode. In this case, the STAT indicator is steady green, the SPEED and STACK indicators are off.
				ID indicator: blue	Off

No.	Indicator	Name	Color	Status	Description
				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.
7	-	Service port indicator (40GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.			Meanings of service port indicators vary in different modes. For details, see Table 2-351 . When a 40GE port is configured as four 10GE ports, this indicator shows the status of a 10GE port. The sequence number of the indicated 10GE port is identified by indicators 40GE Breakout 1/2/3/4 on the lower right corner of the panel. NOTE Each 40GE port has a single-color indicator, which shows the status of the 40GE port by default. If a 40GE port is not split and is connected to four 10GE ports on a remote device using a one-to-four high-speed cable, the 40GE port cannot go Up and its indicator is off.
8	-	40GE Breakout 1/2/3/4 (sequence number indicators of 10GE ports converted from a 40GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.	Green	Off	40GE ports are not split into four 10GE ports.

No.	Indicator	Name	Color	Status	Description
				Steady on	<p>At least one 40GE port has been split into four 10GE ports.</p> <p>When one or more 40GE ports are configured as four 10GE ports, these indicators identify the sequence numbers of the 10GE ports. A 40GE port indicator (7 in Figure 2-171) shows the status of a 10GE port converted from the 40GE port:</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, each 40GE port indicator shows the status of the first 10GE port converted from the corresponding 40GE port. • When Breakout indicator 2 is on, each 40GE port indicator shows the status of the second 10GE port converted from the corresponding 40GE port. • When Breakout indicator 3 is on, each 40GE port indicator shows the status of the third 10GE port converted from the corresponding 40GE port. • When Breakout indicator 4 is on, each 40GE port indicator shows the status of the fourth 10GE port converted from the corresponding 40GE port. <p>The following is an example: The first 40GE port shown in Figure 2-171 is split into four 10GE ports, and the second 40GE port is not split.</p> <ul style="list-style-type: none"> • When Breakout indicator 1 is on, the indicator of 40GE port 1 shows the status of the first 10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2. • When Breakout indicator 2 is on, the indicator of 40GE port 1 shows the status of the second

No.	Indicator	Name	Color	Status	Description
					10GE port converted from 40GE port 1, and the indicator of 40GE port 2 still shows the status of 40GE port 2.
9	ACT	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
10	L/A	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.

Table 2-351 Service port indicators in various modes

Display Mode	Port	Color	Description
STAT	40GE optical port	-	Off: The port is not connected or has been shut down.
		Green	<ul style="list-style-type: none"> Steady on: A link is established on the port. Blinking: The port is sending or receiving data.

Display Mode	Port	Color	Description
SPEED	40GE optical port	-	Off: The port is not connected or has been shut down.
		Green	<ul style="list-style-type: none"> Steady on: The 40GE port has been split into four 10GE ports. Blinking: The port is working as a 40GE port.
STACK	Green		<ul style="list-style-type: none"> Off: Port indicators do not show the stack member ID of the switch. Steady on: If the indicator of a port is steady on, the port number is the stack member ID of the switch. <p>NOTE In STACK mode, a 10GE optical port has only its LINK indicator on (green).</p>
	Green		<ul style="list-style-type: none"> Off: Port indicators do not show the leaf ID of the switch. Steady on: If the indicator of a port is steady on, the port number indicates the leaf ID of the switch. <p>NOTE This row describes the states and meanings of port indicators on a switch working in super virtual fabric (SVF) mode.</p>

Ports

10GE SFP+ Ethernet Optical Port

A 10GE SFP+ Ethernet optical port supports auto-sensing to 1 Gbit/s, and can receive and send services at a rate of 1000 Mbit/s or 10 Gbit/s. [Table 2-352](#) describes the attributes of a 10GE SFP+ Ethernet optical port.

Table 2-352 Attributes of a 10GE SFP+ Ethernet optical port

Attribute	Description
Connector type	LC
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ae
Working mode	Supported rate: 1000 Mbit/s and 10 Gbit/s auto-sensing Full-duplex

40GE/100GE QSFP28 Optical Port

[Table 2-353](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-353 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

Console Port

The console port is connected to a console for onsite configuration. The port must use a [console cable](#). [Table 2-354](#) describes the attributes of the console port.

Table 2-354 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

Attribute	Description
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-355](#) describes the attributes of the ETH management port (RJ45).

Table 2-355 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

USB Port

A USB flash drive can be connected to the USB port for log backup, system software backup and uploading, or USB-based deployment.

Specifications

[Table 2-356](#) lists technical specifications of the CE8850-32CQ-EI switch.

Table 2-356 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> Dimensions (W x D x H): 442.0 mm x 420.0 mm x 43.6 mm (17.4 in. x 16.5 in. x 1.72 in.) Weight (with two power modules and two fan modules, calculated based on the heaviest model if multiple models are supported): 9.0 kg (19.84 lb)

Item		Description
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5096-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 52 dBA Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	Not supported
	Rated input current	<ul style="list-style-type: none"> 600 W AC power (PAC-600WA series): 9 A (100 V AC to 240 V AC) 600 W DC power (PDC600S12 series): 20A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	453 W
	Typical power consumption	219 W (100% throughput, SFP+ cables on 2 ports and QSFP28 cables on 32 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	1544 BTU/hr

Item		Description
	Typical heat dissipation	748 BTU/hr (100% throughput, SFP+ cables on 2 ports and QSFP28 cables on 32 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 6 kV in common mode and 6 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability	Power module backup	1+1 backup
	Fan module backup	1+1 backup not supported NOTE A CE8850E1 chassis uses two fan modules, with each fan module containing two fans. The four fans in the chassis work in 3+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	45.34 years
	Mean time to repair (MTTR)	1.68 hours
	Availability	0.99999576496
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	4 GB
	NOR Flash	32 MB
	NAND Flash	1 GB
Stack	Service port supporting the stack function	10GE optical ports and 100GE optical ports

Item	Description
Certification	<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

[Table 2-357](#) provides the ordering information.

Table 2-357 Ordering information

Part Number	Part Model	Part Description
02350SQW	CE8850-32CQ-EI	CE8850-32CQ-EI Switch (32-Port 10GE QSFP28, 2-Port 10GE QSFP+, Without Fan and Power Module)
02350SBC	CE8850-EI-F-B0A	CE8850-32CQ-EI Switch (32-Port 100GE QSFP28, 2-Port 10GE SFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02350SBD	CE8850-EI-B-B0A	CE8850-32CQ-EI Switch (32-Port 100GE QSFP28, 2-Port 10GE SFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)

2.5.5 CE8850-64CQ-EI

Version Mapping

[Table 2-358](#) lists the mappings between the CE8850-64CQ-EI and software versions.

Table 2-358 Version mapping

Device Series	Sub-series	Device Model	Short Name	Supported Version
CE8800	CE8850	CE8850-64CQ-EI	CE8850EI	V200R005C00 to V200R019C10 NOTE This model is not supported in V200R005C20.

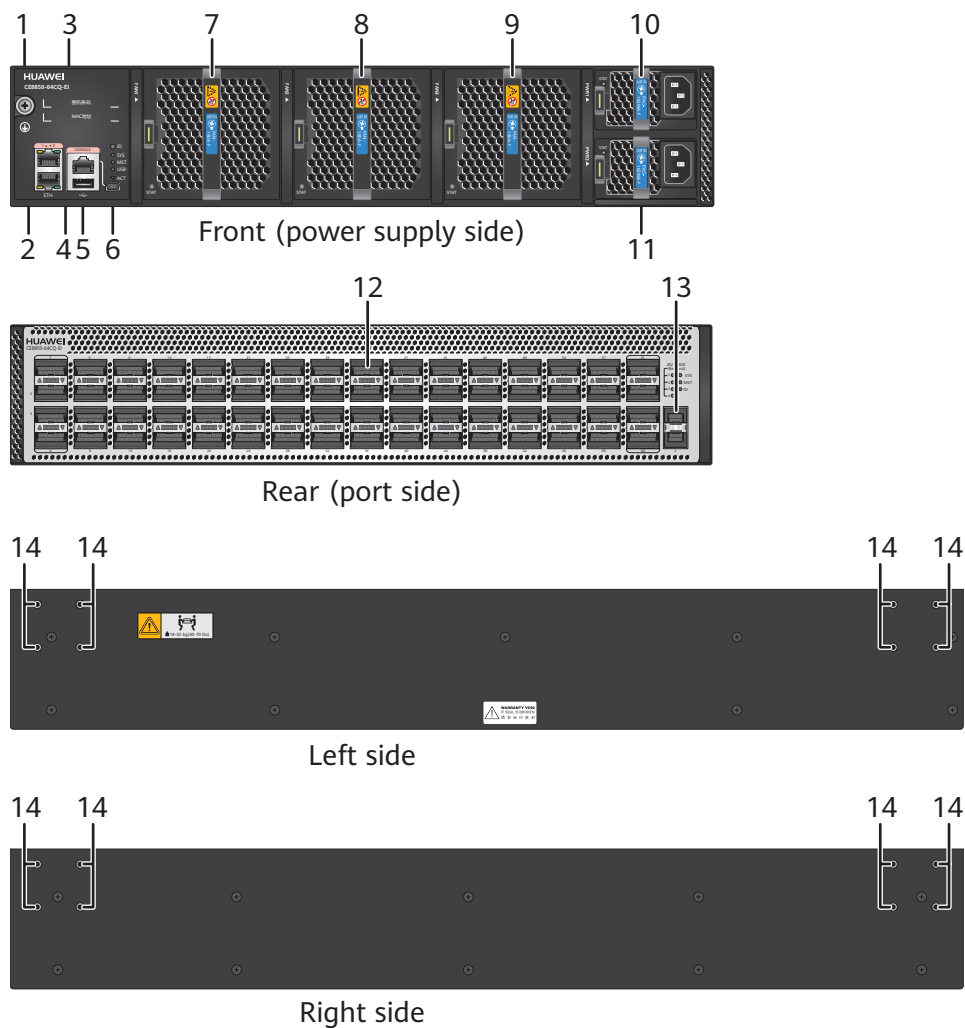
Appearance and Structure

NOTE

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

Appearance of the CE8850-64CQ-EI

Figure 2-173 CE8850-64CQ-EI



1	Ground screw	2	Two ETH management ports (RJ45)
3	ESN and MAC address label	4	Console port
5	USB port	6	Mini USB port

7	<p>Fan slot 1</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-180A Series Fan Modules 	8	<p>Fan slot 2</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-180A Series Fan Modules
9	<p>Fan slot 3</p> <p>Applicable fan modules:</p> <ul style="list-style-type: none"> • FAN-180A Series Fan Modules 	10	<p>Power supply slot 1</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 1200 W AC&240 V DC Power Module (PAC-1K2WA) • 1200 W High-voltage DC Power Module (PHD-1K2WA) • 1200 W DC Power Module (PDC-1K2WA) <p>NOTE</p> <p>If two 1200 W AC&240 V DC power modules are installed on the CE8850-64CQ-EI and 110 V AC power input is provided to the power modules, you are advised to perform the following operations:</p> <ol style="list-style-type: none"> 1. Use an external power source that provides 110 V input with double live wires. In this case, each power module provides 1200 W of rated output power and the power modules work in 1+1 redundancy mode. 2. If the external power source provides 110 V input with a single live wire, each power module provides 800 W of rated output power. In this case, two power modules must be configured. They power the switch at the same time and do not work in redundancy mode.

<p>1 1</p>	<p>Power supply slot 2</p> <p>Applicable power modules:</p> <ul style="list-style-type: none"> • 1200 W AC&240 V DC Power Module (PAC-1K2WA) • 1200 W High-voltage DC Power Module (PHD-1K2WA) • 1200 W DC Power Module (PDC-1K2WA) <p>NOTE</p> <p>If two 1200 W AC&240 V DC power modules are installed on the CE8850-64CQ-EI and 110 V AC power input is provided to the power modules, you are advised to perform the following operations:</p> <ol style="list-style-type: none"> 1. Use an external power source that provides 110 V input with double live wires. In this case, each power module provides 1200 W of rated output power and the power modules work in 1+1 redundancy mode. 2. If the external power source provides 110 V input with a single live wire, each power module provides 800 W of rated output power. In this case, two power modules must be configured. They power the switch at the same time and do not work in redundancy mode. 	<p>1 2</p> <p>Sixty-four 40GE/100GE QSFP28 Ethernet optical ports</p> <p>NOTE</p> <p>A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports.</p> <p>Applicable modules and cables:</p> <ul style="list-style-type: none"> • 40GE QSFP+ Optical Modules • 100GE QSFP28 Optical Modules (QSFP-100G-4WDM-40 not supported) • QSFP+ to QSFP+ AOC cable • QSFP+ to 4*SFP+ AOC cable • QSFP+ to 4*SFP+ High-Speed Cable • QSFP+ to QSFP+ High-Speed Cable • QSFP28 to QSFP28 AOC Cable • QSFP28 to QSFP28 High-Speed Cable • QSFP28 to 4*SFP28 High-Speed Cable
<p>1 3</p>	<p>Two 10GE SFP+ Ethernet optical ports</p> <p>These two ports are reserved for future function expansion and cannot be used currently.</p>	<p>1 4</p> <p>Mounting holes for mounting brackets</p>

Slot

- Power supply slot

The CE8850-64CQ-EI has two power supply slots, in which power modules can be installed to provide power to the chassis. A chassis can have one or two power modules. Double power modules can provide higher reliability. The CE8850-64CQ-EI supports double power modules (1+1 backup).

- When both power modules are working properly, they equally provide power for a chassis.
- When one power module fails, the other one provides all power required for a chassis.

All power modules are hot swappable.



- Fan slot
The CE8850-64CQ-EI has three fan slots, in which fan modules can be installed to cool the chassis, ensuring efficient heat dissipation and system stability. A chassis must have three working fan modules to ensure normal operating.
All fan modules are hot swappable.

Airflow



The cooling systems of the CloudEngine 8800, 7800, 6800, and 5800 series switches have front-to-back or back-to-front airflow depending on the airflow direction of the power modules and fan modules used. The airflow direction of the power modules and fan modules required on the CloudEngine 8800, 7800, 6800, and 5800 series switches depends on how the switches are installed in cabinets. Typically, cabinets in a data center have cold air flowing in from the front and hot air exhausted from the back. If CloudEngine 8800, 7800, 6800, and 5800 series switches are installed with the power supply side facing the front, you are advised to use fan modules and power modules with front-to-back airflow in the switches.

NOTE

- Front-to-back airflow: The power modules and fan modules using front-to-back airflow

are marked  or . Air flows into the chassis from the power supply side and flows out from the port side, as shown in [Figure 2-174](#) (CE5800 as an example).

- Back-to-front airflow: The power modules and fan modules using back-to-front airflow

are marked  or . Air flows into the chassis from the port side and flows out from the power supply side, as shown in [Figure 2-110](#) (CE5800 as an example).

- When the power module and fan module use forcible heat dissipation, they must use the same airflow method. For example, if the power module with back-to-front airflow is used, the fan module with back-to-front airflow must be used.

Figure 2-174 Front-to-back airflow (air flows out from the port side)

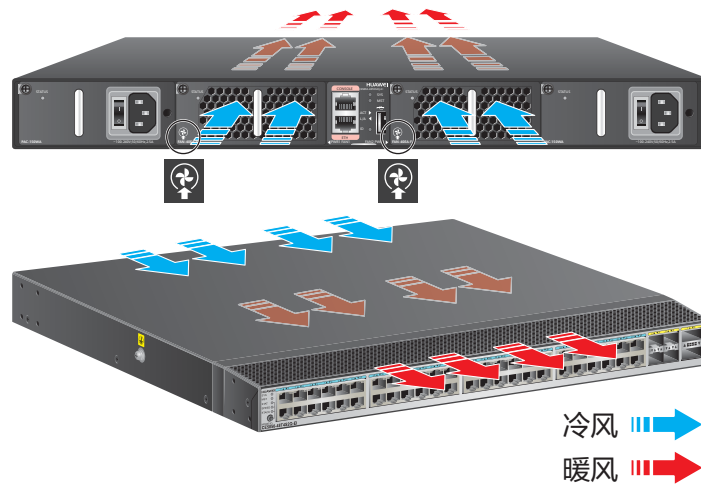
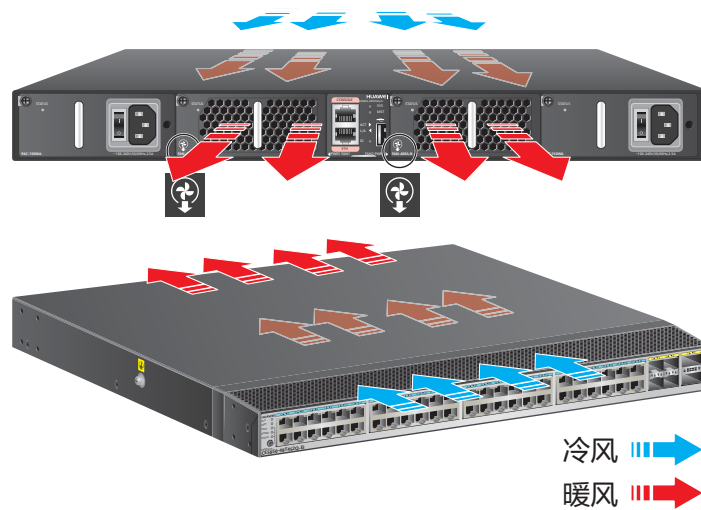


Figure 2-175 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-176 Indicators on the CE8850-64CQ-EI rear panel

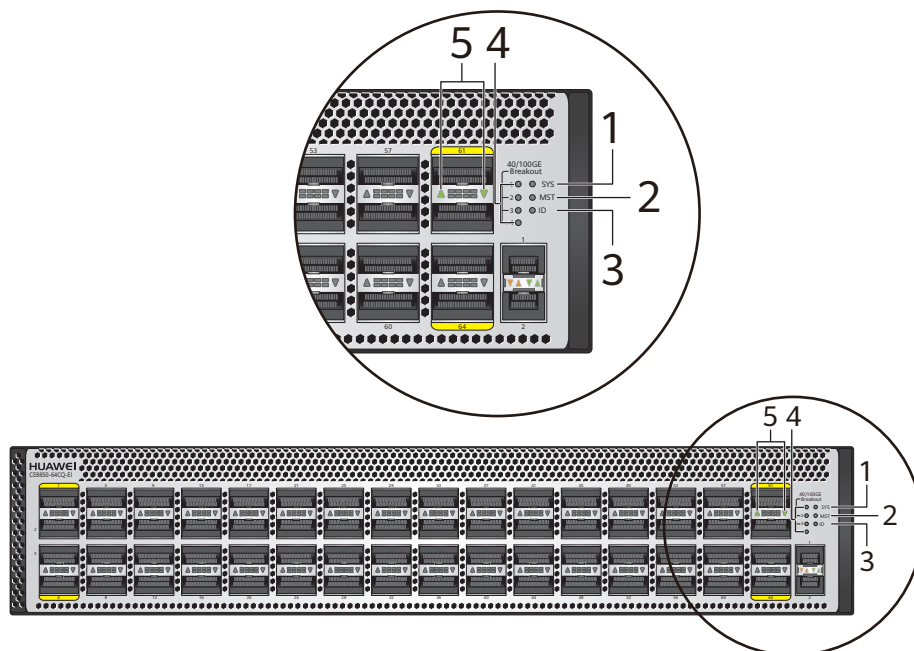


Figure 2-177 Indicators on the CE8850-64CQ-EI front panel

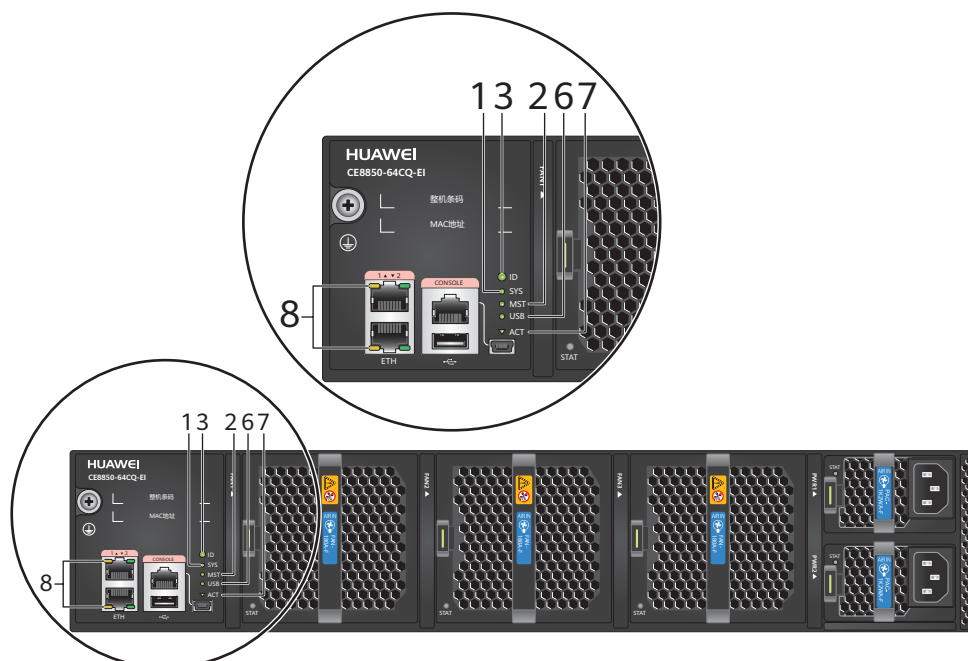


Table 2-359 Indicator description

No.	Indicator	Name	Color	Status	Description
1	SYS	System status indicator	Green	Off	The system is not running.
				Fast blinking	The system is starting.
				Slow blinking	The system is running normally.
			Red	Steady on	<ul style="list-style-type: none"> The system fails to start. At least one power module does not work normally. At least one fan module does not work normally.
2	MS T	Stack master/ slave indicator NOTE In V200R003C00 and later versions, you can use the dfs-master led enable command to enable the stack master/slave indicator to display the DFS group master and backup status. After the stack master/slave indicator is enabled to display the DFS group master and backup status, the stack master/slave indicator on the DFS master device is steady on and that on the DFS backup device is off.	Green	Off	The switch is not a stack master.
				Steady on	The switch is a stack master or standalone switch.

No.	Indicator	Name	Color	Status	Description
3	ID	ID indicator	Blue	Off	The ID indicator is not used (default state).
				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.
4	-	40G/100G Breakout 1/2/3/4 (sequence number indicators of 10GE/25GE ports converted from a 40GE/100GE port) NOTE Indicators 1, 2, 3, 4 turn on in cyclic order, with each indicator keeping on for 5s.	Green	Off	40GE/100GE ports are working in 40GE or 100GE mode and not split into four 10GE ports or four 25GE ports.
				Steady on	At least one 40GE/100GE port has been split into four 10GE ports or four 25GE ports. When one or more 40GE/100GE ports are split into four 10GE ports or four 25GE ports, these indicators identify the sequence numbers of the 10GE/25GE ports. A port indicator (5 in Figure 2-176) shows the status of a 10GE/25GE port converted from the corresponding 40GE/100GE port: <ul style="list-style-type: none"> • When indicator 1 is on, each port indicator shows the status of the first 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 2 is on, each port indicator shows the status of the second 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 3 is on, each port indicator shows the status of the third 10GE/25GE port derived from the corresponding 40GE/100GE port. • When indicator 4 is on, each port indicator shows the status of the fourth 10GE/25GE port derived from the corresponding 40GE/100GE port.

No.	Indicator	Name	Color	Status	Description
5	-	Service port indicator (40GE/100GE optical port) NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.	Green	Off	No link has been established on the port or the port has been shut down.
				Steady on	A link is established on the port.
				Blinking	The port is sending or receiving data.
6	USB	USB-based deployment indicator	Green	Off	USB-based deployment is disabled (default state).
				Steady on	USB-based deployment has been completed.
				Blinking	The system is reading data from a USB flash drive.
			Red	Steady on	USB-based deployment has failed.
7	ACT	Mini USB port indicator	Green	Off	The Mini USB port is inactive, and the console port can be used.
				Steady on	The Mini USB port is active, and the console port cannot be used.
8	-	ETH management port indicator	Green	Off	No link is established on the port.
				Steady on	A link is established on the port.
			Yellow	Blinking	The port is sending or receiving data.

Ports

40GE/100GE QSFP28 Optical Port

[Table 2-360](#) describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 2-360 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depending on the optical module
Optical attributes	Depending on the module or cable in use
Standards compliance	IEEE802.3ba
Working mode	Full-duplex

10GE SFP+ Optical Port

The two 10GE SFP+ optical ports are reserved for future function expansion and cannot be used currently.

Console Port

The console port is connected to a console for onsite configuration. The port must use a **console cable**. [Table 2-361](#) describes the attributes of the console port.

Table 2-361 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232
Working mode	Duplex Universal Asynchronous Receiver/Transmitter (UART)
Baud rate	9600 bit/s to 115200 bit/s Default value: 9600 bit/s

NOTE

- The console port and Mini USB port share one internal serial port. You can use the console port or Mini USB port as the serial port according to your needs. When the Mini USB is activated, the console port cannot be used.
- When both the console port and Mini-USB port have a cable connected, the Mini-USB port is used.

Mini USB Port

The Mini USB port can connect to a configuration terminal for onsite configuration of the system, but the configuration terminal must have a USB serial port driver installed. The Mini USB port is used as the serial port once a link is established on the port.

ETH Management Port (RJ45)

The ETH management port (RJ45) of a switch is connected to the network port of a configuration terminal or network management workstation to set up the onsite

or remote configuration environment. The ETH management port (RJ45) uses a Category 5 or higher category cable. [Table 2-362](#) describes the attributes of the ETH management port (RJ45).

Table 2-362 Attributes of the ETH management port (RJ45)

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3ab
Working mode	Supported rate: 10/100/1000 Mbit/s auto-sensing Full-duplex
Maximum transmission distance	100 m

The CE8850-64CQ-EI switch has two ETH management ports (RJ45). Pay attention to the following when using the two management ports:

- The two ports cannot be used together, and you must choose one of them to use.
- Before start of a CE8850-64CQ-EI switch, you can select interface 1 or interface 2 in the BIOS menu. Interface 1 is the default choice. For details, see "Modify parameters" in the *Basic Configuration Guide - BIOS Menu*.
- After registration of the switch succeeds:
 - If both the management ports have a cable connected and are in Up state, port 1 acts as the primary management port and port 2 becomes the backup automatically. The management interface number displayed on the command line interface is MEth0/0/0, regardless of which port is used.
 - If cables are connected to the two ETH management ports after successful registration of the switch, the port that is connected first is used as the primary management port.
 - If port 1 fails, the system switches management traffic to port 2 automatically. When port 1 recovers, management traffic cannot be switched back to port 1, unless port 2 fails or the switch restarts. You can observe indicators on the ETH management ports to determine which port is used currently. (The Link indicator of the ETH management port used is steady green. If data is being transmitted on this port, its ACT indicator is blinking yellow. The indicators of the backup port are off.)

Specifications

[Table 2-363](#) lists technical specifications of the CE8850-64CQ-EI switch.

Table 2-363 Technical specifications

Item		Description
Physical specifications		<ul style="list-style-type: none"> Dimensions (H x W x D): 88.1 mm x 442.0 mm x 600.0 mm (3.47 in. x 17.4 in. x 23.6 in.) Weight (with two power modules and three fan modules, calculated based on the heaviest model if multiple models are supported): 22.2 kg
Environment parameters	Temperature	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) at altitude of 0-1800 m (0-5906 ft.) <p>NOTE When the altitude is 1800-5000 m (5996-16404 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.).</p> <ul style="list-style-type: none"> Storage temperature: -40°C to +70°C (-40°F to +158°F)
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	<ul style="list-style-type: none"> Back-to-front airflow: < 64 dBA Front-to-back airflow: < 64 dBA
Power specifications	Power source type	AC/DC/high-voltage DC
	AC power input	<ul style="list-style-type: none"> Rated input voltage range: 100 V AC to 130 V AC/200 V AC to 240 V AC, 50/60 Hz Maximum input voltage range: 90 V AC to 290 V AC, 47 Hz to 63 Hz
	DC power input	<ul style="list-style-type: none"> Rated voltage range: -48 V DC to -60 V DC Maximum voltage range: -38.4 V DC to -72 V DC
	High-voltage DC power input	<ul style="list-style-type: none"> Rated voltage of 240 V high-voltage DC power input: 240 V DC Maximum voltage range of 240 V high-voltage DC power input: 188 V DC to 290 V DC Rated voltage range of 380 V high-voltage DC power input: 240 V DC to 380 V DC Maximum voltage range of 380 V high-voltage DC power input: 188 V DC to 400 V DC

Item		Description
	Rated input current	<ul style="list-style-type: none"> 1200 W AC&240 V DC power module (PAC-1K2WA series): 10 A (100 V AC to 130 V AC)/8 A (200 V AC to 240 V AC)/8 A (240 V DC) 1200 W high-voltage DC power module (PHD-1K2WA series): 8 A (240 V DC to 380 V DC) 1200 W DC power (PDC-1K2WA series): 38 A (-48 V DC to -60 V DC)
Chassis power consumption	Maximum power consumption	965W
	Typical power consumption	375 W (100% throughput, QSFP28 cables on 64 ports, double power modules)
Chassis heat dissipation	Maximum heat dissipation	3293BTU/hr
	Typical heat dissipation	1280 BTU/hr (100% throughput, QSFP28 cables on 64 ports, double power modules)
Surge protection		Power module: <ul style="list-style-type: none"> AC: 4 kV in common mode and 2.5 kV in differential mode DC: 4 kV in common mode and 2 kV in differential mode
Heat dissipation	Heat dissipation mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliability and availability	Power module backup	1+1 backup

Item		Description
	Fan module backup	The device supports 2+1 backup of fan modules. The system can operate normally for a short time after a single fan module fails. You are advised to replace the faulty fan module immediately. NOTE A CE8850EI chassis uses three fan modules, with each fan module containing one fan. The three fans in the chassis work in 2+1 backup mode.
	Hot swap	Supported by all power modules and fan modules
	Mean time between failures (MTBF)	45.34
	Mean time to repair (MTTR)	1.68
	Availability	0.999997043
Technical specifications	Processor	1.5 GHz, eight-core
	DRAM Memory	4GB
	NOR Flash	32MB
	NAND Flash	2GB
Stack	Service port supporting the stack function	100GE optical ports
Certification		<ul style="list-style-type: none"> • Safety standards compliance • EMC standards compliance • Environmental standards compliance

Ordering Information

Ordering information is subject to change without notice in the case of product upgrades. Ordering information provided in this manual is for reference only. To

obtain latest ordering information, contact Huawei switch distributors or local Huawei representative office.

Table 2-364 provides the ordering information.

Table 2-364 Ordering information

Part Number	Part Model	Part Description
02351RFF	CE8850-64CQ-EI	CE8850-64CQ-EI Switch (64-Port 100GE QSFP28, 2-Port 10GE SFP+, Without Fan and Power Modules)
02351RFJ	CE8850-EI-F-B0B	CE8850-64CQ-EI Switch (64-Port 100GE QSFP28, 2-Port 10GE SFP+, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
02351RFH	CE8850-EI-B-B0B	CE8850-64CQ-EI Switch (64-Port 100GE QSFP28, 2-Port 10GE SFP+, 2*AC Power Module, 2*FAN Box, Port-side Intake)

3 Power Module

NOTICE

- Power modules in a chassis must have the same power and same airflow direction.
- A switch must use the power modules it supports. Using unsupported power module may bring unknown risks to the switch.
- When two power modules work in 1+1 backup mode, you can hot swap one of them.
- When only one power module is installed in a chassis, install a filler panel on the vacant power supply slot.
- Before powering off a switch, turn off both power modules.

[3.1 150 W AC Power Module \(PAC-150WA\)](#)

[3.2 150 W AC Power Module \(ES0W2PSA0150\)](#)

[3.3 350 W AC Power Module](#)

[3.4 350 W DC Power Module \(PDC-350WA\)](#)

[3.5 350 W DC Power Module \(PDC350S12\)](#)

[3.6 600 W AC Power Module \(PAC-600WA\)](#)

[3.7 600 W AC Power Module \(PAC600S12\)](#)

[3.8 600 W AC&240 V DC Power Module](#)

[3.9 600 W AC&240 V DC Power Module \(PAC600S12\)](#)

[3.10 600 W High-Voltage DC Power Module](#)

[3.11 600 W DC Power Module \(PDC600S12\)](#)

[3.12 1000 W DC Power Module \(PDC1000S12\)](#)

[3.13 1200 W AC&240 V DC Power Module \(PAC-1K2WA\)](#)

[3.14 1200 W High-voltage DC Power Module \(PHD-1K2WA\)](#)

[3.15 1200 W High-Voltage DC Power Module \(PHD1K2S12-DB\)](#)

[3.16 1200 W DC Power Module \(PDC-1K2WA\)](#)

3.1 150 W AC Power Module (PAC-150WA)

Version Mapping

Table 3-1 describes the mapping between switch models and the PAC-150WA.

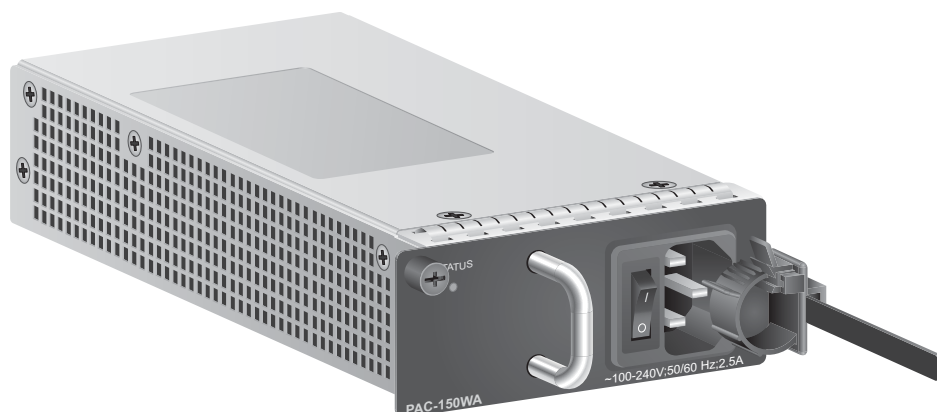
Table 3-1 Version mapping

Switch Model	PAC-150WA
CE5810-24T4S-EI CE5810-48T4S-EI	Supported in V100R002C00 version and later versions
CE5850-48T4S2Q-EI	Supported in V100R001C00 version and later versions
CE5850-48T4S2Q-HI	Supported in V100R003C00 version and later versions
Other models	Not supported

Appearance

Figure 3-1 shows the appearance of the PAC-150WA.

Figure 3-1 PAC-150WA



Function

Table 3-2 describes the functions of the PAC-150WA.

Table 3-2 Functions of the PAC-150WA

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 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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		Natural heat dissipation
Hot swap		Supported

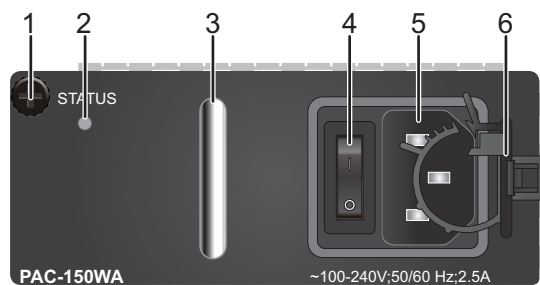
 **NOTE**

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

Panel

Figure 3-2 shows the panel of the PAC-150WA.

Figure 3-2 PAC-150WA panel



1. Captive screw	2. Indicator	3. Handle	4. Power switch
5. AC power socket	6. AC terminal locking latch	-	-

Table 3-3 describes the indicator on the PAC-150WA panel.

Table 3-3 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-4 lists technical specifications of the PAC-150WA.

Table 3-4 Technical specifications

Item	PAC-150WA
Dimensions (W x D x H)	100 mm x 205 mm x 40 mm (3.9 in. x 8.1 in. x 1.6 in.)
Weight	1 kg (2.20 lb)
Rated input voltage	100-240 V AC, 50/60 Hz
Maximum input voltage	90-290 V AC, 47-63 Hz
Rated input current	2.5 A

Item	PAC-150WA
Rated output current	12.5 A
Rated output voltage	12 V
Rated output power	150 W
Part Number	02130969

3.2 150 W AC Power Module (ES0W2PSA0150)

Version Mapping

Table 3-5 describes the mapping between switch models and the ES0W2PSA0150.

Table 3-5 Version mapping

Switch Model	ES0W2PSA0150
CE5855-48T4S2Q-EI CE5855-24T4S2Q-EI	Supported in V100R005C10 and later version
Other models	Not supported

NOTE

The ES0W2PSA0150 power module can only be used in the CE5855EI.

Appearance

Figure 3-3 shows the appearance of the ES0W2PSA0150 power module.

Figure 3-3 ES0W2PSA0150



Function

Table 3-6 describes the functions of the ES0W2PSA0150.

Table 3-6 Functions of the ES0W2PSA0150

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 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 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.
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		Natural heat dissipation
Hot swap		Supported

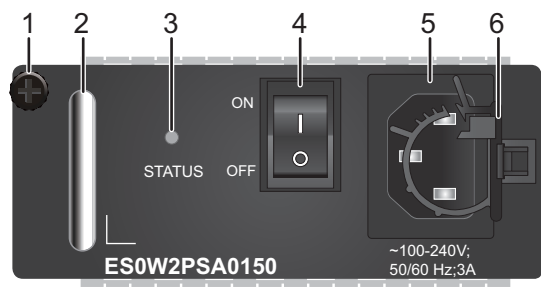
NOTE

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

Panel

Figure 3-4 shows the panel of the ES0W2PSA0150.

Figure 3-4 ES0W2PSA0150 panel



1. Captive screw	2. Handle	3. Indicator	4. Power switch
5. AC power socket	6. AC power cable locking strap	-	-

Table 3-7 describes the indicator on the ES0W2PSA0150 panel.

Table 3-7 Indicator description

Indicator	Color	Status	Description
STATUS: running status indicator	Green	Off	The power input is abnormal (for example, no input, overvoltage, or undervoltage) or the power output is abnormal (for example, undervoltage or overtemperature).
		Steady on	The power module is working normally.
		Blinking	The power output is abnormal (for example, output overvoltage, overcurrent, or short circuit).

Specifications

Table 3-8 lists technical specifications of the ES0W2PSA0150.

Table 3-8 Technical specifications

Item	Description
Dimensions (W x D x H)	100 mm x 205 mm x 40 mm (3.9 in. x 8.1 in. x 1.6 in.)
Weight	0.8 kg (1.76 lb)
Rated input voltage range	100-240 V AC, 50/60 Hz

Item	Description
Maximum input voltage	90-264 V AC, 47-63 Hz
Rated input current	3 A
Rated output current	12.5 A
Rated output voltage	12 V
Rated output power	150 W
Part Number	02310JFA

3.3 350 W AC Power Module

Version Mapping

350 W AC power modules include PAC-350WA-B (B: back-to-front airflow, air exhaust on power module panel) and PAC-350WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-9 describes the mapping between switch models and 350 W AC power modules.

Table 3-9 Version mapping

Switch Model	PAC-350WA-B	PAC-350WA-F
CE6850-4 8S4Q-EI	Supported in V100R001C00 version and later versions	Supported in V100R001C00 version and later versions
CE6850-4 8T4Q-EI	Supported in V100R001C00 version and later versions NOTE 600 W AC power modules are recommended for the CE6850-48T4Q-EI of V100R002C00 or a later version.	Supported in V100R001C00 version and later versions NOTE 600 W AC power modules are recommended for the CE6850-48T4Q-EI of V100R002C00 or a later version.
Other models	Not supported	Not supported

Appearance

Figure 3-5 shows the appearance of a PAC-350WA-B power module, and **Figure 3-6** shows the appearance of a PAC-350WA-F power module.

Figure 3-5 PAC-350WA-B



Figure 3-6 PAC-350WA-F



Function

PAC-350WA-B and PAC-350WA-F power modules use different airflow designs but have the same functions. **Table 3-10** describes the functions of a 350 W AC power module.

Table 3-10 Functions of a 350 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 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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		<ul style="list-style-type: none"> • PAC-350WA-B: back-to-front airflow • PAC-350WA-F: front-to-back airflow
Hot swap		Supported

 **NOTE**

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

Panel

Figure 3-7 and **Figure 3-8** show the panel of a 350 W AC power module.

Figure 3-7 PAC-350WA-B panel

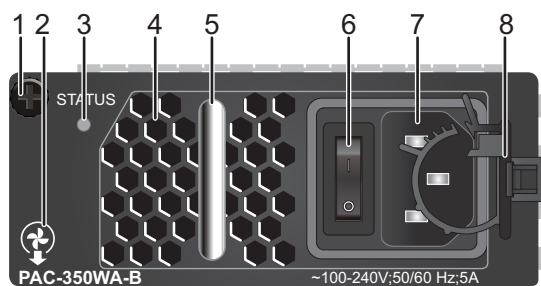
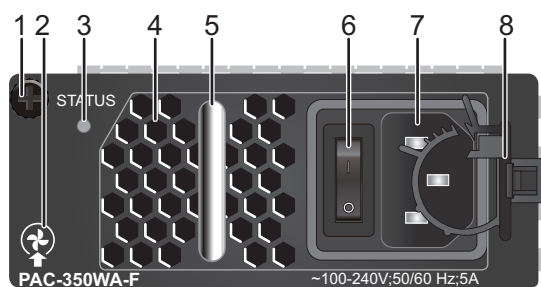


Figure 3-8 PAC-350WA-F panel





<p>1. Captive screw</p>	<p>2. Airflow flag</p> <ul style="list-style-type: none"> •  : back-to-front airflow •  : front-to-back airflow 	<p>3. Indicator</p>	<p>4. Fan air vent</p>
<p>5. Handle</p>	<p>6. Power switch</p>	<p>7. AC power socket</p>	<p>8. AC terminal locking latch</p>

Table 3-11 describes the indicator on the 350 W AC power module panel.

Table 3-11 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-12 lists technical specifications of 350 W AC power modules.

Table 3-12 Technical specifications

Item	PAC-350WA-B	PAC-350WA-F
Dimensions (width x depth x height)	100 mm x 205 mm x 40 mm (3.9 in. x 8.1 in. x 1.6 in.)	
Weight	0.92 kg (2.03 lb)	
Rated input voltage	100-240 V AC, 50/60 Hz	
Maximum input voltage	90-290 V AC, 47-63 Hz	
Rated input current	5 A	
Rated output current	29.17 A	
Rated output voltage	12 V	
Rated output power	350 W	
Part Number	02130971	02130970

3.4 350 W DC Power Module (PDC-350WA)

Version Mapping

350 W DC power modules include PDC-350WA-B (B: back-to-front airflow, air exhaust on power module panel) and PDC-350WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-13 describes the mapping between switch models and 350 W DC power modules.

Table 3-13 Version mapping

Switch Model	PDC-350WA-B	PDC-350WA-F
CE5810-2 4T4S-EI CE5810-4 8T4S-EI CE5850-4 8T4S2Q- EI CE6850-4 8S4Q-EI	Supported in V100R002C00 version and later versions	Supported in V100R002C00 version and later versions
CE5850-4 8T4S2Q- HI CE6810-4 8S4Q-EI	Supported in V100R003C00 version and later versions	Supported in V100R003C00 version and later versions
CE6810-4 8S4Q-LI CE6810-4 8S-LI	Supported in V100R003C10 version and later versions	Supported in V100R003C10 version and later versions
CE5855-4 8T4S2Q- EI CE5855-2 4T4S2Q- EI CE6810-3 2T16S4Q -LI CE6810-2 4S2Q-LI CE6851-4 8S6Q-HI	Supported in V100R005C10 version and later versions	Supported in V100R005C10 version and later versions
CE6855-4 8S6Q-HI CE6870-2 4S6CQ-EI CE6870-4 8S6CQ-EI	Supported in V200R001C00 version and later versions	Supported in V200R001C00 version and later versions

Switch Model	PDC-350WA-B	PDC-350WA-F
CE6856-4 8S6Q-HI CE6860-4 8S8CQ-EI CE6880-2 4S4Q2C Q-EI	Supported in V200R002C50 version and later versions	Supported in V200R002C50 version and later versions
CE6865-4 8S8CQ-EI	Supported in V200R005C00 version and later versions	Supported in V200R005C00 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-9 shows the appearance of a PDC-350WA-B power module, and **Figure 3-10** shows the appearance of a PDC-350WA-F power module.

Figure 3-9 PDC-350WA-B power module



Figure 3-10 PDC-350WA-F power module



Function

PDC-350WA-B and PDC-350WA-F power modules use different airflow designs but have the same functions. [Table 3-14](#) describes the functions of a 350 W DC power module.

Table 3-14 Functions of a 350 W DC 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 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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		<ul style="list-style-type: none"> ● PDC-350WA-B: back-to-front airflow ● PDC-350WA-F: front-to-back airflow
Hot swap		Supported

NOTE

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

Panel

Figure 3-11 and **Figure 3-12** show the panel of a 350 W DC power module.

Figure 3-11 Panel of a PDC-350WA-B DC power module

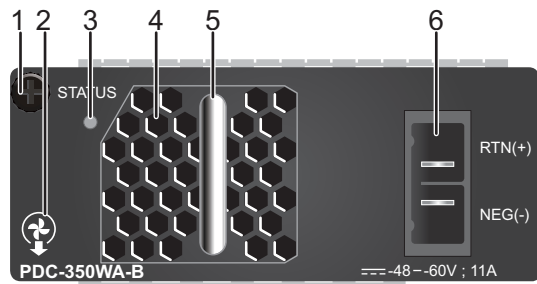
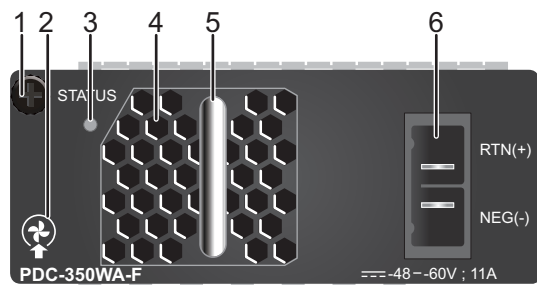


Figure 3-12 Panel of a PDC-350WA-F DC power module





1. Captive screw	2. Airflow flag  : back-to-front airflow  : front-to-back airflow	3. Indicator	4. Fan air vent
5. Handle	6. DC power socket	-	-

Table 3-15 describes the indicator on the 350 W DC power module panel.

Table 3-15 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-16 lists technical specifications of 350 W DC power modules.

Table 3-16 Technical specifications

Item	PDC-350WA-B	PDC-350WA-F
Dimensions (W x D x H)	100 mm x 205 mm x 40 mm (3.9 in. x 8.1 in. x 1.6 in.)	
Weight	0.72 kg (1.59 lb)	
Rated input voltage	-48 V DC to -60 V DC	
Maximum input voltage	-38.4 V DC to -72 V DC	
Rated input current	11 A	
Rated output current	29.17 A	
Rated output voltage	12 V	
Rated output power	350 W	
Part Number	02310PQN	02310PQP

3.5 350 W DC Power Module (PDC350S12)

Version Mapping

350 W DC Power Modules are classified into two types depending on the airflow designs: PDC350S12-CB (back-to-front airflow, air exhaust on power module panel) and PDC350S12-CF (F: front-to-back airflow, air intake on power module panel).

Table 3-17 describes the mapping between switch models and 350 W DC Power Modules.

Table 3-17 Version mapping

Switch Model	PDC350S12-CB	PDC350S12-CF
CE6857-4 8S6CQ-EI	Supported in V200R005C10 and later versions	Supported in V200R005C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-13 shows the appearance of a PDC350S12-CB power module, and **Figure 3-14** shows the appearance of a PDC350S12-CF power module.

Figure 3-13 PDC350S12-CB power module



Figure 3-14 PDC350S12-CF power module



Function

PDC350S12-CB and PDC350S12-CF power modules use different airflow designs but have the same functions. **Table 3-18** describes the functions of them.

Table 3-18 Functions of 350 W DC Power Modules

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the system recovers from output overvoltage, 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 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.
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		<ul style="list-style-type: none"> ● PDC350S12-CB: back-to-front airflow ● PDC350S12-CF: front-to-back airflow
Hot swap		Supported

 **NOTE**

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

Panel

Figure 3-15 and **Figure 3-16** show the panels of 350 W DC power modules.

Figure 3-15 PDC350S12-CB panel

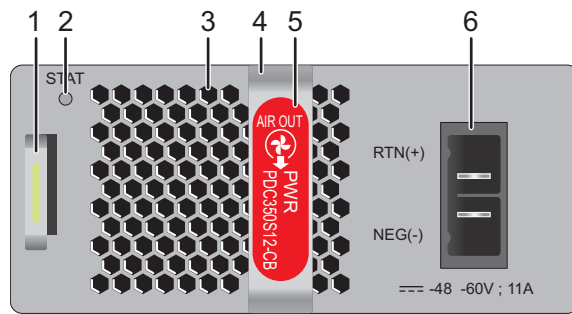
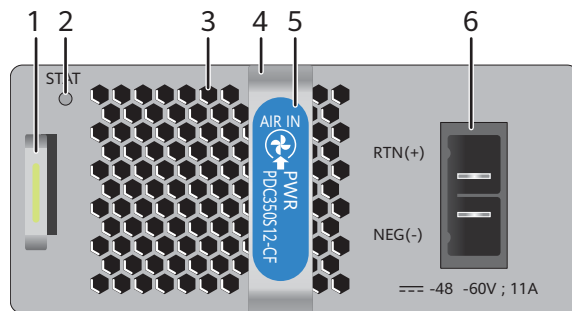


Figure 3-16 PDC350S12-CF panel





1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each 350 W DC power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
5. Airflow flag  • : back-to-front airflow  • : front-to-back airflow	6. Power socket	-	-

Table 3-19 describes the indicator on the 350 W DC power module panel.

Table 3-19 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-20 lists technical specifications of 350 W DC power modules.

Table 3-20 Technical specifications

Item	PDC350S12-CB	PDC350S12-CF
Dimensions (W x D x H)	99.0 mm x 215.0 mm x 39.8 mm (3.5 in. x 8.5 in. x 1.6 in.)	
Weight	0.9 kg (1.98 lb)	
Rated input voltage	-48 V DC to -60 V DC	
Maximum input voltage	-38.4 V DC to -72 V DC	
Rated input current	11 A	
Rated output current	29.17 A	
Rated output voltage	12 V	
Rated output power	350 W	
Part Number	02312GCH	02312EKC

3.6 600 W AC Power Module (PAC-600WA)

Version Mapping

600 W AC power modules include PAC-600WA-B (B: back-to-front airflow, air exhaust on power module panel) and PAC-600WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-21 describes the mapping between switch models and 600 W AC power modules.

Table 3-21 Version mapping

Switch Model	PAC-600WA-B	PAC-600WA-F
CE6850-4 8T4Q-EI	Supported in V100R002C00 version and later versions	Supported in V100R002C00 version and later versions
CE6810-4 8S4Q-EI CE7850-3 2Q-EI	Supported in V100R003C00 version and later versions	Supported in V100R003C00 version and later versions
CE6810-4 8S4Q-LI CE6810-4 8S-LI	Supported in V100R003C10 version and later versions	Supported in V100R003C10 version and later versions
CE6810-3 2T16S4Q -LI CE6810-2 4S2Q-LI CE6851-4 8S6Q-HI	Supported in V100R005C10 version and later versions	Supported in V100R005C10 version and later versions
CE6855-4 8S6Q-HI CE6870-2 4S6CQ-EI CE6870-4 8S6CQ-EI CE7855-3 2Q-EI	Supported in V200R001C00 version and later versions	Supported in V200R001C00 version and later versions

Switch Model	PAC-600WA-B	PAC-600WA-F
CE6856-4 8S6Q-HI CE6860-4 8S8CQ-EI CE6880-2 4S4Q2C Q-EI CE6880-4 8S4Q2C Q-EI CE6880-4 8T4Q2C Q-EI CE6870-4 8T6CQ-EI CE8850-3 2CQ-EI	Supported in V200R002C50 version and later versions	Supported in V200R002C50 version and later versions
CE6865-4 8S8CQ-EI	Supported in V200R005C00 version and later versions	Supported in V200R005C00 version and later versions
CE5880-4 8T6Q-EI	Supported in V200R005C10 version and later versions	Supported in V200R005C10 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-17 shows the appearance of a PAC-600WA-B power module, and **Figure 3-18** shows the appearance of a PAC-600WA-F power module.

Figure 3-17 PAC-600WA-B power module



Figure 3-18 PAC-600WA-F power module



Function

PAC-600WA-B and PAC-600WA-F power modules use different airflow designs but have the same functions. [Table 3-22](#) describes the functions of a 600 W AC power module.

Table 3-22 Functions of a 600 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 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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		<ul style="list-style-type: none"> ● PAC-600WA-B: back-to-front airflow ● PAC-600WA-F: front-to-back airflow
Hot swap		Supported

 **NOTE**

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

Panel

Figure 3-19 and **Figure 3-20** show the panels of 600 W AC power modules.

Figure 3-19 PAC-600WA-B panel

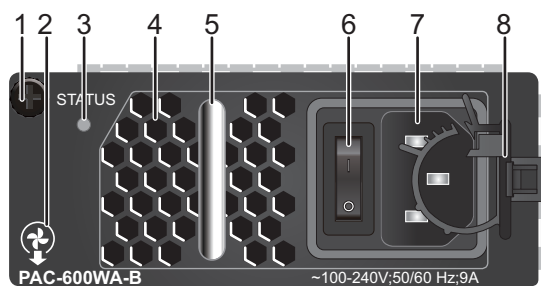
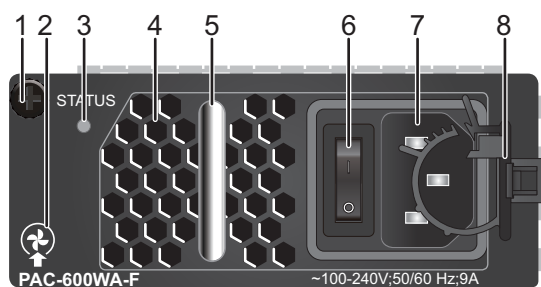


Figure 3-20 PAC-600WA-F panel





<p>1. Captive screw</p>	<p>2. Ventilation channel flag</p> <ul style="list-style-type: none"> •  : back-to-front airflow •  : front-to-back airflow 	<p>3. Indicator</p>	<p>4. Fan air vent</p>
<p>5. Handle</p>	<p>6. Power switch</p>	<p>7. AC power socket</p>	<p>8. AC terminal locking latch</p>

Table 3-23 describes the indicator on the 600 W AC power module panel.

Table 3-23 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-24 lists technical specifications of 600 W AC power modules.

Table 3-24 Technical specifications of 600 W AC power modules

Item	PAC-600WA-B	PAC-600WA-F
Dimensions (W x D x H)	100 mm x 205 mm x 40 mm (3.9 in. x 8.1 in. x 1.6 in.)	
Weight	1 kg (2.20 lb)	
Rated input voltage	100 V AC-240 V AC, 50/60 Hz	
Maximum input voltage	90 V AC-290 V AC, 47 Hz-63 Hz	
Rated input current	9 A	
Rated output current	50 A	
Rated output voltage	12 V	
Rated output power	600 W	
Part Number	02310PMH	02310PMJ

3.7 600 W AC Power Module (PAC600S12)

Version Mapping

600 W AC power modules include PAC600S12-B (B: back-to-front airflow, air exhaust on power module panel) and PAC600S12-F (F: front-to-back airflow, air intake on power module panel).

Table 3-25 describes the mapping between switch models and 600 W AC power modules.

Table 3-25 Version mapping

Switch Model	PAC600S12-B	PAC600S12-F
CE6857-4 8S6CQ-EI	Supported in V200R005C10 version and later versions	Supported in V200R005C10 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-21 shows the appearance of a PAC600S12-B power module, and **Figure 3-22** shows the appearance of a PAC600S12-F power module.

Figure 3-21 PAC600S12-B power module



Figure 3-22 PAC600S12-F power module



Function

PAC600S12-B and PAC600S12-F power modules use different airflow designs but have the same functions. **Table 3-26** describes the functions of a 600 W AC power module.

Table 3-26 Functions of a 600 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 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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		<ul style="list-style-type: none"> ● PAC600S12-B: back-to-front airflow ● PAC600S12-F: front-to-back airflow
Hot swap		Supported

 **NOTE**

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

Panel

Figure 3-23 and **Figure 3-24** show the panels of 600 W AC power modules.

Figure 3-23 PAC600S12-B panel

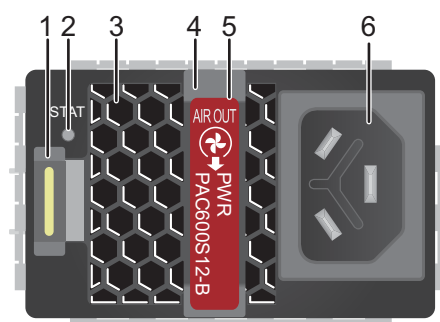
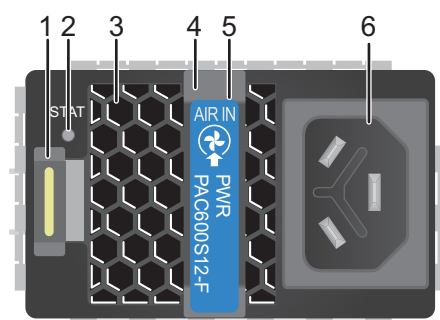


Figure 3-24 PAC600S12-F panel



1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each 600 W AC power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
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<p>5. Airflow flag</p>  <ul style="list-style-type: none"> • : back-to-front airflow  <ul style="list-style-type: none"> • : front-to-back airflow 	<p>6. Power socket</p>	<p>-</p>	<p>-</p>
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Table 3-27 describes the indicator on the 600 W AC power module panel.

Table 3-27 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-28 lists technical specifications of 600 W AC power modules.

Table 3-28 Technical specifications of 600 W AC power modules

Item	PAC600S12-B	PAC600S12-F
Dimensions (W x D x H)	90 mm x 215 mm x 39.8 mm (3.5 in. x 8.5 in. x 1.6 in.)	
Weight	0.9 kg (1.98 lb)	
Rated input voltage	100 V AC-240 V AC, 50/60 Hz	
Maximum input voltage	90 V AC-290 V AC, 47 Hz-63 Hz	

Item	PAC600S12-B	PAC600S12-F
Rated input current	9 A	
Rated output current	50 A	
Rated output voltage	12 V	
Rated output power	600 W	
Part Number	02312DUP	02312EJQ

3.8 600 W AC&240 V DC Power Module

Version Mapping

600 W AC&240 V DC power modules can receive AC inputs or 240 V high-voltage inputs. They are classified into two types depending on the airflow designs: PAC-600WB-B (back-to-front airflow, air exhaust on power module panel) and PAC-600WB-F (F: front-to-back airflow, air intake on power module panel).

Table 3-29 describes the mapping between switch models and 600 W AC&240 V DC power modules.

Table 3-29 Version mapping

Switch Model	PAC-600WB-B	PAC-600WB-F
CE6850-4 8S6Q-HI	Supported in V100R005C00 and later versions	Supported in V100R005C00 and later versions
CE6850U -48S6Q- HI CE6850-4 8T6Q-HI CE6850U -24S2Q- HI	Supported in V100R005C10 and later versions	Supported in V100R005C10 and later versions
CE6855-4 8T6Q-HI	Supported in V200R001C00 and later versions	Supported in V200R001C00 and later versions
CE6856-4 8T6Q-HI	Supported in V200R002C50 and later versions	Supported in V200R002C50 and later versions
CE6875-4 8S4CQ-EI	Supported in V200R003C00 and later versions	Supported in V200R003C00 and later versions

Appearance

Figure 3-25 shows the appearance of a PAC-600WB-B power module, and **Figure 3-26** shows the appearance of a PAC-600WB-F power module.

Figure 3-25 PAC-600WB-B power module



Figure 3-26 PAC-600WB-F power module



Function

PAC-600WB-B and PAC-600WB-F power modules use different airflow designs but have the same functions. **Table 3-30** describes the functions of them.

Table 3-30 Functions of a 600 W AC&240 V DC power module

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the system recovers from output overvoltage, 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 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.
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		<ul style="list-style-type: none"> ● PAC-600WB-B: back-to-front airflow ● PAC-600WB-F: front-to-back airflow
Hot swap		Supported

 **NOTE**

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

Panel

Figure 3-27 and **Figure 3-28** show the panels of 600 W AC&240 V DC power modules.

Figure 3-27 PAC-600WB-B panel

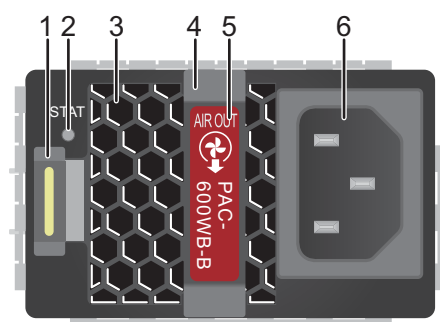
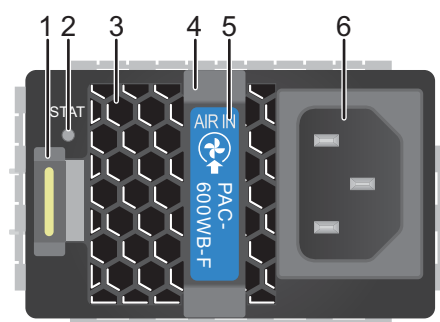


Figure 3-28 PAC-600WB-F panel



1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each 600 W AC&240 V DC power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
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<p>5. Airflow flag</p>  <ul style="list-style-type: none"> • : back-to-front airflow  <ul style="list-style-type: none"> • : front-to-back airflow 	<p>6. Power socket</p>	<p>-</p>	<p>-</p>
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Table 3-31 describes the indicator on a 600 W AC&240 V DC power module.

Table 3-31 Indicator description

Indicator	Color	Status	Description
STAT: running status indicator	Green	Off	The power module receives no power input.
		Steady on	The power module is working normally.
		Blinking	The power module is in loading or standby state, or the power cable has been connected but the power module is not installed in the switch.
	Red	Steady on	<ul style="list-style-type: none"> • Fans of the power module fail. • The power module is in overtemperature protection state. • The power input is abnormal (input undervoltage or input overvoltage). • The power output is abnormal (output overcurrent, output short-circuit, or output overvoltage).

Specifications

Table 3-32 lists technical specifications of 600 W AC&240 V DC power modules.

Table 3-32 Technical specifications

Item	PAC-600WB-B	PAC-600WB-F
Dimensions (W x D x H)	66.0 mm x 340.0 mm x 39.6 mm (2.6 in. x 13.4 in. x 1.6 in.)	
Weight	1.5 kg (3.31 lb)	
Rated AC input voltage range	100-240 V AC, 50/60 Hz	
Maximum AC input voltage range	90-290 V AC, 47-63 Hz	
Rated voltage range of 240 V high-voltage DC power input	240 V DC	
Maximum voltage range of 240 V high-voltage DC power input	188-290 V DC	
Rated input current	<ul style="list-style-type: none"> • 8 A (100 V AC to 240 V AC) • 4 A (240 V DC) 	
Rated output current	50 A	
Rated output voltage	12 V	
Rated output power	600 W	
Part Number	02310YQN	02310YQP

3.9 600 W AC&240 V DC Power Module (PAC600S12)

Version Mapping

600 W AC&240 V DC power modules can receive AC inputs or 240 V high-voltage DC inputs. They are classified into two types depending on the airflow designs: PAC600S12-CB (B: back-to-front airflow, air exhaust on power module panel) and PAC600S12-CF (F: front-to-back airflow, air intake on power module panel).

Table 3-33 describes the mapping between switch models and 600 W AC&240 V DC power modules.

Table 3-33 Version mapping

Switch Model	PAC600S12-CB	PAC600S12-CF
CE6863-48 S6CQ CE6881-48 S6CQ CE6820-48 S6CQ	Supported in V200R005C20 and later versions	Supported in V200R005C20 and later versions
CE6881-48 S6CQ-K CE6863-48 S6CQ-K CE6881E-4 8S6CQ	Supported in V200R019C10 and later versions	Supported in V200R019C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-29 shows the appearance of the PAC600S12-CB power module, and **Figure 3-30** shows the appearance of the PAC600S12-CF power module.

Figure 3-29 PAC600S12-CB power module



Figure 3-30 PAC600S12-CF power module



Function

PAC600S12-CB and PAC600S12-CF power modules use different airflow designs but have the same functions. [Table 3-34](#) describes the functions of them.

Table 3-34 Functions of a 600 W AC&240 V DC power module

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the system recovers from output overvoltage, 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 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.

Function	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	<ul style="list-style-type: none"> • PAC600S12-CB: back-to-front airflow • PAC600S12-CF: front-to-back airflow
Hot swap	Supported

 **NOTE**

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

Panel

Figure 3-31 and **Figure 3-32** show the panels of 600 W AC&240 V DC power modules.

Figure 3-31 Panel of the PAC600S12-CB power module

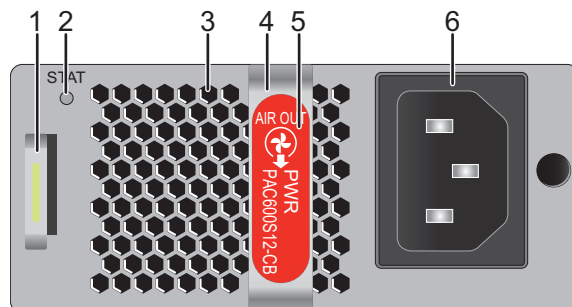
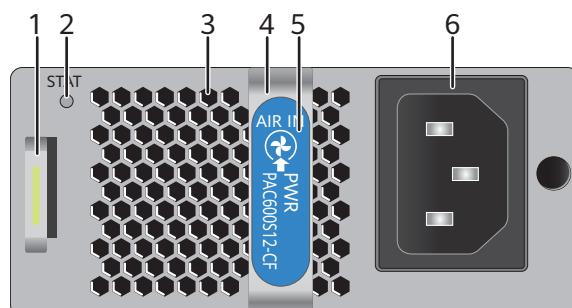


Figure 3-32 Panel of the PAC600S12-CF power module





1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
5. Airflow flag  <ul style="list-style-type: none">• : back-to-front airflow  <ul style="list-style-type: none">• : front-to-back airflow	6. Power socket	-	-

Table 3-35 describes the indicator on the panel of a 600 W AC&240 V DC power module.

Table 3-35 Indicator description

Indicator	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).
		Steady on	The power module is working properly.
		Blinking	The power output is abnormal (for example, overcurrent or short circuit).

Specifications

Table 3-36 lists technical specifications of 600 W AC&240 V DC power modules.

Table 3-36 Technical specifications

Item	PAC600S12-CB	PAC600S12-CF
Dimensions (H x W x D)	39.6 mm x 90.0 mm x 214.5 mm (1.56 in. x 3.54 in. x 8.44 in.)	
Weight	0.94 kg (2.07 lb)	
Rated AC input voltage range	100 V AC to 240 V AC, 50 Hz/60 Hz	
Maximum AC input voltage range	90 V AC to 290 V AC, 47 Hz to 63 Hz	
Rated voltage range of 240 V high-voltage DC power input	240 V DC	
Maximum voltage range of 240 V high-voltage DC power input	190 V DC to 290 V DC	
Rated input current	<ul style="list-style-type: none"> • 8 A (100 V AC to 240 V AC) • 4 A (240 V DC) 	
Rated output current	50 A	
Rated output voltage	12 V	
Rated output power	600 W	
Part Number	02312FFU	02312KNA

3.10 600 W High-Voltage DC Power Module

Version Mapping

600 W high-voltage DC power modules are classified into two types depending on the airflow designs: PHD-600WA-B (back-to-front airflow, air exhaust on power module panel) and PHD-600WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-37 describes the mapping between switch models and 600 W high-voltage DC power modules.

Table 3-37 Version mapping

Switch Model	PHD-600WA-B	PHD-600WA-F
CE6850-4 8S6Q-HI	Supported in V100R005C00 and later versions	Supported in V100R005C00 and later versions
CE6850U -48S6Q- HI CE6850-4 8T6Q-HI CE6850U -24S2Q- HI	Supported in V100R005C10 and later versions	Supported in V100R005C10 and later versions
CE6855-4 8T6Q-HI	Supported in V200R001C00 and later versions	Supported in V200R001C00 and later versions
CE6856-4 8T6Q-HI	Supported in V200R002C50 and later versions	Supported in V200R002C50 and later versions
CE6875-4 8S4CQ-EI	Supported in V200R003C00 and later versions	Supported in V200R003C00 and later versions

Appearance

Figure 3-33 shows the appearance of a PHD-600WA-B power module, and **Figure 3-34** shows the appearance of a PHD-600WA-F power module.

Figure 3-33 PHD-600WA-B power module



Figure 3-34 PHD-600WA-F power module



Function

PHD-600WA-B and PHD-600WA-F power modules use different airflow designs but have the same functions. [Table 3-38](#) describes the functions of them.

Table 3-38 Functions of 600 W high-voltage DC power modules

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the system recovers from output overvoltage, 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 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.

Function	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	<ul style="list-style-type: none"> PHD-600WA-B: back-to-front airflow PHD-600WA-F: front-to-back airflow
Hot swap	Supported

NOTE

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

Panel

Figure 3-35 and **Figure 3-36** show the panels of 600 W high-voltage DC power modules.

Figure 3-35 PHD-600WA-B panel

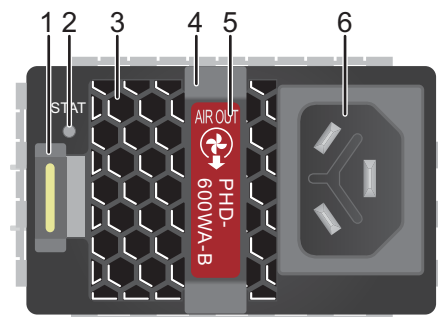
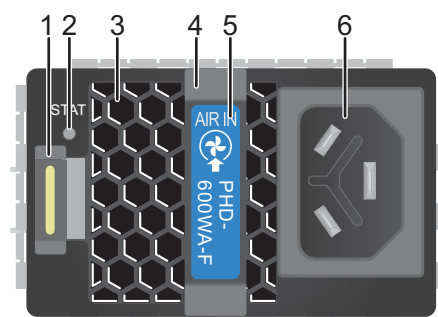


Figure 3-36 PHD-600WA-F panel







1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each 600 W high-voltage DC power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
5. Airflow flag  <ul style="list-style-type: none"> • : back-to-front airflow  <ul style="list-style-type: none"> • : front-to-back airflow 	6. Power socket	-	-

Table 3-39 describes the indicator on a 600 W high-voltage DC power module panel.

Table 3-39 Indicator description

Indicator	Color	Status	Description
STAT: running status indicator	Green	Off	The power module receives no power input.
		Steady on	The power module is working normally.
		Blinking	The power module is in loading or standby state, or the power cable has been connected but the power module is not installed in the switch.
	Red	Steady on	<ul style="list-style-type: none"> Fans of the power module fail. The power module is in overtemperature protection state. The power input is abnormal (input undervoltage or input overvoltage). The power output is abnormal (output overcurrent, output short-circuit, or output overvoltage).

Specifications

Table 3-40 lists technical specifications of 600 W high-voltage DC power modules.

NOTE

The PHD-600WA series are no longer sold since August 10, 2018.

Table 3-40 Technical specifications

Item	PHD-600WA-B	PHD-600WA-F
Dimensions (W x D x H)	66.0 mm x 340.0 mm x 39.6 mm (2.6 in. x 13.4 in. x 1.6 in.)	
Weight	1.5 kg (3.31 lb)	
Rated voltage range of 380 V high-voltage DC power input	240 V DC to 380 V DC	
Maximum voltage range of 380 V high-voltage DC power input	188 V DC to 400 V DC	
Rated input current	4 A	
Rated output current	50 A	
Rated output voltage	12 V	

Item	PHD-600WA-B	PHD-600WA-F
Rated output power	600 W	
Part Number	02310YQQ	02310YQR

3.11 600 W DC Power Module (PDC600S12)

Version Mapping

600 W DC power modules include PDC600S12-CB (B: back-to-front airflow, air exhaust on power module panel) and PDC600S12-CF (F: front-to-back airflow, air intake on power module panel).

Table 3-41 describes the mapping between switch models and 600 W DC Power Modules.

Table 3-41 Version mapping

Switch Model	PDC600S12-CB	PDC600S12-CF
CE6865-48S8C Q-EI CE6870-48T6 CQ-EI CE6880-48T4 Q2CQ-EI CE7855-32Q- EI CE8850-32CQ -EI CE5880-48T6 Q-EI	Supported in V200R019C00 and later versions	Supported in V200R019C00 and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-37 shows the appearance of a PDC600S12-CB power module, and **Figure 3-38** shows the appearance of a PDC600S12-CF power module.

Figure 3-37 PDC600S12-CB power module



Figure 3-38 PDC600S12-CF power module



Function

PDC600S12-CB and PDC600S12-CF power modules use different airflow designs but have the same functions. [Table 3-42](#) describes the functions of them.

Table 3-42 Functions of 600 W DC Power Modules

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.

Function		Description
	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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		<ul style="list-style-type: none"> • PDC600S12-CB: back-to-front airflow • PDC600S12-CF: front-to-back airflow
Hot swap		Supported

 NOTE

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

Panel

[Figure 3-39](#) and [Figure 3-40](#) show the panels of 600 W DC power modules.

Figure 3-39 Panel of a PDC600S12-CB DC power module

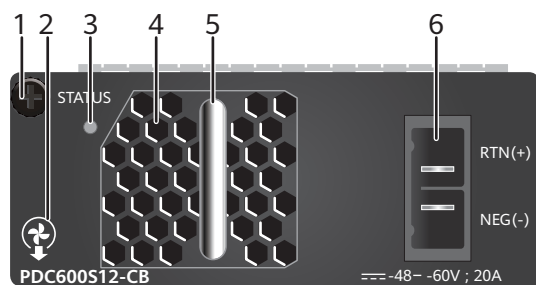
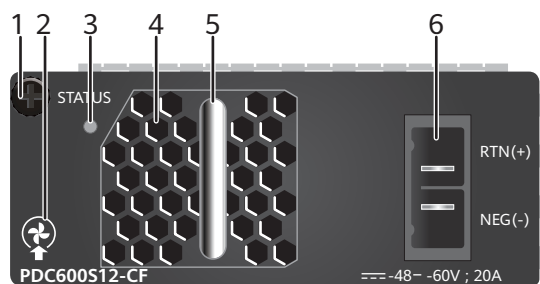


Figure 3-40 Panel of a PDC600S12-CF DC power module





1. Captive screw	2. Airflow flag  : back-to-front airflow  : front-to-back airflow	3. Indicator	4. Fan air vent
5. Handle	6. DC power socket	-	-

Table 3-43 describes the indicator on the 600 W DC power module panel.

Table 3-43 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-44 lists technical specifications of 600 W DC power modules.

Table 3-44 Technical specifications

Item	PDC600S12-CB	PDC600S12-CF
Dimensions (W x D x H)	100 mm x 205 mm x 40 mm (3.9 in. x 8.1 in. x 1.6 in.)	
Weight	0.73 kg (1.61 lb)	
Rated input voltage	-48 V DC to -60 V DC	
Maximum input voltage	-38.4 V DC to -72 V DC	
Rated input current	20 A	
Rated output current	50 A	
Rated output voltage	12 V	
Rated output power	600 W	
Part Number	02312GJU	02312GJV

3.12 1000 W DC Power Module (PDC1000S12)

Version Mapping

1000 W DC power modules are classified into two types depending on the airflow designs: PDC1000S12-DB (B: back-to-front airflow, air exhaust on power module panel) and PDC1000S12-DF (F: front-to-back airflow, air intake on power module panel).

Table 3-45 describes the mapping between switch models and 1000 W DC power modules.

Table 3-45 Version mapping

Switch Model	PDC1000S12-DB	PDC1000S12-DF
CE6863-48S 6CQ CE6881-48S 6CQ CE6820-48S 6CQ	Supported in V200R005C20 and later versions	Supported in V200R005C20 and later versions

Switch Model	PDC1000S12-DB	PDC1000S12-DF
CE6881-48S 6CQ-K CE6863-48S 6CQ-K CE6881E-48 S6CQ	Supported in V200R019C10 and later versions	Supported in V200R019C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-41 shows the appearance of the PDC1000S12-DB power module, and **Figure 3-42** shows the appearance of the PDC1000S12-DF power module.

Figure 3-41 PDC1000S12-DB power module



Figure 3-42 PDC1000S12-DF power module



Function

PDC1000S12-DB and PDC1000S12-DF power modules use different airflow designs but have the same functions. [Table 3-46](#) describes the functions of them.

Table 3-46 Functions of 1000 W DC power modules

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the system recovers from output overvoltage, 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 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.
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		<ul style="list-style-type: none"> ● PDC1000S12-DB: back-to-front airflow ● PDC1000S12-DF: front-to-back airflow
Hot swap		Supported

NOTE

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

Panel

Figure 3-43 and **Figure 3-44** show the panels of 1000 W DC power modules.

Figure 3-43 Panel of the PDC1000S12-DB power module

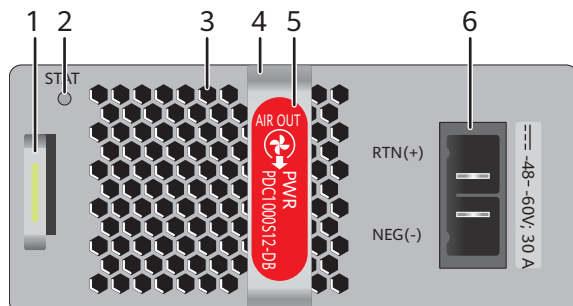
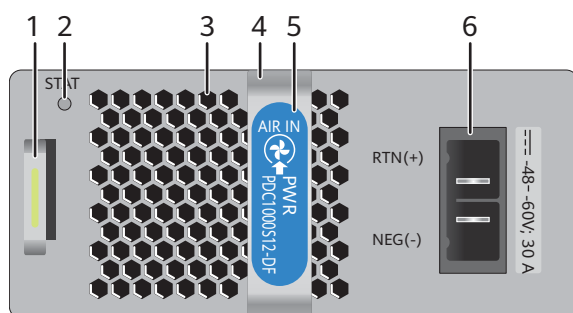


Figure 3-44 Panel of the PDC1000S12-DF power module



1. Lock	2. Indicator	3. Fan air vent	<p>4. Handle</p> <p>NOTE</p> <p>Each power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.</p>
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<p>5. Airflow flag</p>  <ul style="list-style-type: none"> • : back-to-front airflow • : front-to-back airflow 	<p>6. Power socket</p>	<p>-</p>	<p>-</p>
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Table 3-47 describes the indicator on the panel of a 1000 W DC power module.

Table 3-47 Indicator description

Indicator	Color	Status	Description
STAT: running status indicator	Green	Steady off	The power input is abnormal (for example, no input, overvoltage, or undervoltage), or the power module is in overtemperature protection state.
		Steady on	The power module is working properly.
		Blinking	The system software of the switch is being upgraded or downgraded, or the power output is abnormal (for example, overcurrent, short circuit, or overvoltage).

Specifications

Table 3-48 lists technical specifications of 1000 W DC power modules.

Table 3-48 Technical specifications

Item	PDC1000S12-DB	PDC1000S12-DF
Dimensions (H x W x D)	39.6 mm x 90.0 mm x 214.5 mm (1.56 in. x 3.54 in. x 8.44 in.)	
Weight	0.86 kg (1.90 lb)	

Item	PDC1000S12-DB	PDC1000S12-DF
Rated input voltage	-48 V DC to -60 V DC	
Maximum input voltage	-38.4 V DC to -72 V DC	
Rated input current	30 A	
Rated output current	83.3 A	
Rated output voltage	12 V	
Rated output power	1000 W	
Environment specifications	<ul style="list-style-type: none"> Operating temperature of PDC1000S12-DB: -25°C to +55°C (-13°F to +131°F) Operating temperature of PDC1000S12-DF: -25°C to +45°C (-13°F to +113°F) Operating relative humidity: 5% RH to 95% RH (noncondensing) Storage temperature: -40°C to +70°C (-40°F to +158°F) Storage relative humidity: 5% RH to 95% RH (noncondensing) 	
Part Number	02312QJK	02312QJL

3.13 1200 W AC&240 V DC Power Module (PAC-1K2WA)

Version Mapping

1200 W AC&240 V DC power modules can receive AC inputs or 240 V high-voltage inputs. They are classified into two types depending on the airflow designs: PAC-1K2WA-B (B: back-to-front airflow, air exhaust on power module panel) and PAC-1K2WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-49 describes the mapping between switch models and 1200 W AC&240 V DC power modules.

Table 3-49 Version mapping

Switch Model	PAC-1K2WA-B	PAC-1K2WA-F
CE8860-4 C-EI	Supported in V100R006C00 and later versions	Supported in V100R006C00 and later versions

Switch Model	PAC-1K2WA-B	PAC-1K2WA-F
CE8850-6 4CQ-EI	Supported in V200R005C00 and later versions	Supported in V200R005C00 and later versions
CE8861-4 C-EI CE8868-4 C-EI	Supported in V200R005C10 and later versions	Supported in V200R005C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-45 shows the appearance of a PAC-1K2WA-B power module, and **Figure 3-46** shows the appearance of a PAC-1K2WA-F power module.

Figure 3-45 PAC-1K2WA-B power module



Figure 3-46 PAC-1K2WA-F power module



Function

PAC-1K2WA-B and PAC-1K2WA-F use different airflow designs but have the same functions. [Table 3-50](#) describes the functions of them.

Table 3-50 Functions of a 1200 W AC&240 V DC power module

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	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.

Function	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	<ul style="list-style-type: none"> PAC-1K2WA-B: back-to-front airflow PAC-1K2WA-F: front-to-back airflow
Hot swap	Supported

NOTE

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

Panel

Figure 3-47 and **Figure 3-48** show the panels of 1200 W AC&240 V DC power modules.

Figure 3-47 PAC-1K2WA-B panel

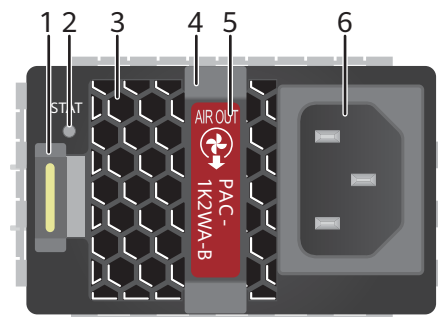
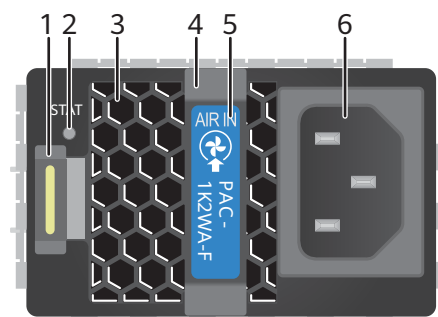


Figure 3-48 PAC-1K2WA-F panel





1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each 1200 W AC&240 V DC power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
5. Airflow flag  <ul style="list-style-type: none"> • : back-to-front airflow  <ul style="list-style-type: none"> • : front-to-back airflow 	6. Power socket	-	-

Table 3-51 describes the indicator on a 1200 W AC&240 V DC power module.

Table 3-51 Indicator description

Indicator	Color	Status	Description
STAT: running status indicator	Green	Off	The power module receives no power input.
		Steady on	The power module is working normally.
		Blinking	The power module is in loading or standby state, or the power cable has been connected but the power module is not installed in the switch.
	Red	Steady on	<ul style="list-style-type: none"> Fans of the power module fail. The power module is in overtemperature protection state. The power input is abnormal (input undervoltage or input overvoltage). The power output is abnormal (output overcurrent, output short-circuit, or output overvoltage).

Specifications

Table 3-52 lists technical specifications of 1200 W AC&240 V DC power modules.

Table 3-52 Technical specifications

Item	PAC-1K2WA-B	PAC-1K2WA-F
Dimensions (W x D x H)	66.0 mm x 340.0 mm x 39.6 mm	
Weight	1.5 kg	
Rated AC input voltage range	100-130 V AC, 50/60 Hz and 200-240 V AC, 50/60 Hz	
Maximum AC input voltage range	90-290 V AC, 47-63 Hz	
Rated voltage range of 240 V high-voltage DC power input:	240 V DC	
Maximum voltage range of 240 V high-voltage DC power input:	188-290 V DC	
Rated input current	<ul style="list-style-type: none"> 10 A (100-130 V AC) 8 A (200-240 V AC) 8 A (240 V DC) 	

Item	PAC-1K2WA-B	PAC-1K2WA-F
Rated output current	<ul style="list-style-type: none"> 67 A (100-130 V AC) 100 A (200-240 V AC) 100 A (240 V DC) 	
Rated output voltage	12 V	
Rated output power	<ul style="list-style-type: none"> 800 W (100-130V AC) 1200 W (200-240V AC) 1200 W (240 V DC) 	
Part number	02311GLM	02311GLL

3.14 1200 W High-voltage DC Power Module (PHD-1K2WA)

Version Mapping

1200 W high-voltage DC power modules are classified into two types depending on the airflow designs: PHD-1K2WA-B (back-to-front airflow, air exhaust on power module panel) and PHD-1K2WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-53 describes the mapping between switch models and 1200 W high-voltage DC power modules.

Table 3-53 Version mapping

Switch Model	PHD-1K2WA-B	PHD-1K2WA-F
CE8860-4 C-EI	Supported in V100R006C00 and later versions	Supported in V100R006C00 and later versions
CE8850-6 4CQ-EI	Supported in V200R005C00 and later versions	Supported in V200R005C00 and later versions

Switch Model	PHD-1K2WA-B	PHD-1K2WA-F
CE6850-4 8S6Q-HI CE6850U -48S6Q-HI CE6850-4 8T6Q-HI CE6850U -24S2Q-HI CE6855-4 8T6Q-HI CE6856-4 8T6Q-HI CE6875-4 8S4CQ-EI	Supported in V200R005C00 and later versions	Supported in V200R005C00 and later versions
CE8861-4 C-EI CE8868-4 C-EI	Supported in V200R005C10 and later versions	Supported in V200R005C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-49 shows the appearance of a PHD-1K2WA-B power module, and **Figure 3-50** shows the appearance of a PHD-1K2WA-F power module.

Figure 3-49 PHD-1K2WA-B power module



Figure 3-50 PHD-1K2WA-F power module



Function

PHD-1K2WA-B and PHD-1K2WA-F use different airflow designs but have the same functions. [Table 3-54](#) describes the functions of them.

Table 3-54 Functions of 1200 W high-voltage DC power modules

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	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.

Function	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	<ul style="list-style-type: none"> • PHD-1K2WA-B: back-to-front airflow • PHD-1K2WA-F: front-to-back airflow
Hot swap	Supported

NOTE

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

Panel

Figure 3-51 and **Figure 3-52** show the panels of 1200 W high-voltage DC power modules.

Figure 3-51 PHD-1K2WA-B panel

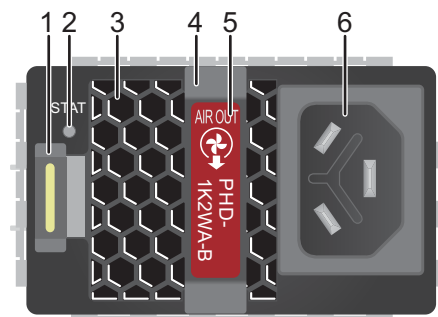
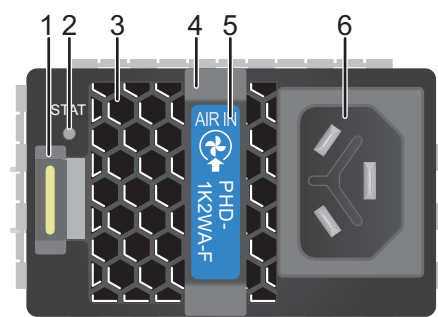


Figure 3-52 PHD-1K2WA-F panel





1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each 1200 W high-voltage power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
5. Airflow flag  <ul style="list-style-type: none"> • : back-to-front airflow  <ul style="list-style-type: none"> • : front-to-back airflow 	6. Power socket	-	-

Table 3-55 describes the indicator on a 1200 W high-voltage DC power module.

Table 3-55 Indicator description

Indicator	Color	Status	Description
STAT: running status indicator	Green	Off	The power module receives no power input.
		Steady on	The power module is working normally.
		Blinking	The power module is in loading or standby state, or the power cable has been connected but the power module is not installed in the switch.
	Red	Steady on	<ul style="list-style-type: none"> Fans of the power module fail. The power module is in overtemperature protection state. The power input is abnormal (input undervoltage or input overvoltage). The power output is abnormal (output overcurrent, output short-circuit, or output overvoltage).

Specifications

Table 3-56 lists technical specifications of 1200 W high-voltage DC power modules.

Table 3-56 Technical specifications

Item	PHD-1K2WA-B	PHD-1K2WA-F
Dimensions (W x D x H)	66.0 mm x 340.0 mm x 39.6 mm (2.6 in. x 13.4 in. x 1.6 in.)	
Weight	1.5 kg (3.31 lb)	
Rated voltage range of 380 V high-voltage DC power input:	240-380 V DC	
Maximum voltage range of 380 V high-voltage DC power input:	188-400 V DC	
Rated input current	8 A	
Rated output current	100 A	
Rated output voltage	12 V	

Item	PHD-1K2WA-B	PHD-1K2WA-F
Rated output power	1200 W	
Part number	02311GLP	02311GLN

3.15 1200 W High-Voltage DC Power Module (PHD1K2S12-DB)

Version Mapping

Only the PHD1K2S12-DB (B: back-to-front airflow, air exhaust on power module panel) 1200 W high-voltage DC power module is available.

Table 3-57 describes the mapping between switch models and the 1200 W high-voltage DC power module.

Table 3-57 Version mapping

Switch Model	PHD1K2S12-DB
CE6863-48S6CQ CE6881-48S6CQ CE6820-48S6CQ CE6881-48S6CQ-K CE6863-48S6CQ-K CE6881E-48S6CQ	Supported in V200R019C10 and later versions
Other models	Not supported

Appearance

Figure 3-53 shows the appearance of the PHD1K2S12-DB power module.

Figure 3-53 PHD1K2S12-DB power module



Function

Table 3-58 describes the functions of the PHD1K2S12-DB power module.

Table 3-58 Functions of the 1200 W high-voltage DC power module

Function		Description
Input protection	Input overvoltage protection and undervoltage protection	In either of the two protection states, 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 protection	Output overvoltage protection	In this protection state, the power module stops supplying power intermittently. When the system recovers from output overvoltage, 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 limited within a range, the power module automatically resumes power supply.

Function		Description
	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.
Heat dissipation		PHD1K2S12-DB: back-to-front airflow
Hot swap		Supported

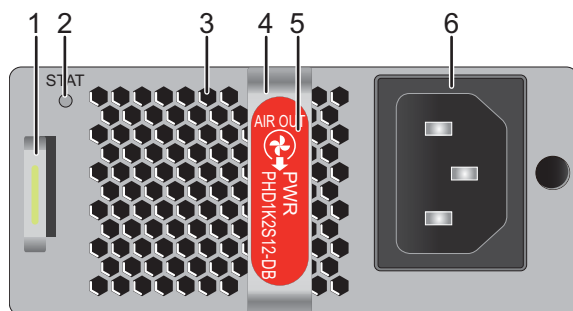
NOTE

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

Panel

Figure 3-54 shows the panel of the PHD1K2S12-DB power module.

Figure 3-54 Panel of the PHD1K2S12-DB power module



1. Lock	2. Indicator	3. Fan air vent	4. Handle NOTE Each power module is delivered with a velcro strap on the handle. This velcro strap is used to bundle the power cable to the handle.
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<p>5. Airflow flag</p>  <p>: back-to-front airflow</p>	<p>6. Power socket</p>	<p>-</p>	<p>-</p>
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Table 3-59 describes the indicator on the panel of the 1200 W high-voltage DC power module.

Table 3-59 Indicator description

Indicator	Color	Status	Description
STAT: running status indicator	Green	Steady off	The power input is abnormal (for example, no input, overvoltage, or undervoltage), or the power module is in overtemperature protection state.
		Steady on	The power module is working properly.
		Blinking	The system software of the switch is being upgraded or downgraded, or the power output is abnormal (for example, overcurrent, short circuit, or overvoltage).

Specifications

Table 3-60 lists technical specifications of 1200 W high-voltage DC power modules.

Table 3-60 Technical specifications

Item	PHD1K2S12-DB
Dimensions (H x W x D)	39.6 mm x 90.0 mm x 215.0 mm (1.56 in. x 3.54 in. x 8.46 in.)
Weight	1.5 kg (3.31 lb)
Rated voltage range of 380 V high-voltage DC power input	240-380 V DC
Maximum voltage range of 380 V high-voltage DC power input	190 V DC to 400 V DC

Item	PHD1K2S12-DB
Rated input current	8 A
Rated output current	100 A
Rated output voltage	12 V
Rated output power	1200 W
Environment specifications	<ul style="list-style-type: none">• Operating temperature: -25°C to +55°C (-13°F to 131°F)• Operating relative humidity: 5% RH to 95% RH (noncondensing)• Storage temperature: -40°C to +70°C (-40°F to +158°F)• Storage relative humidity: 5% RH to 95% RH (noncondensing)
Part number	02270183

3.16 1200 W DC Power Module (PDC-1K2WA)

Version Mapping

1200 W DC power modules include PDC-1K2WA-B (B: back-to-front airflow, air exhaust on power module panel) and PDC-1K2WA-F (F: front-to-back airflow, air intake on power module panel).

Table 3-61 describes the mapping between switch models and 1200 W DC power modules.

Table 3-61 Version mapping

Switch Model	PDC-1K2WA-B	PDC-1K2WA-F
CE6850-4 8S6Q-HI CE6850-4 8T6Q-HI CE6850U -24S2Q- HI CE6850U -48S6Q- HI CE6855-4 8T6Q-HI CE6856-4 8T6Q-HI CE6875-4 8S4CQ-EI CE8860-4 C-EI	Supported in V200R003C00 version and later versions	Supported in V200R003C00 version and later versions
CE8850-6 4CQ-EI	Supported in V200R005C00 version and later versions	Supported in V200R005C00 version and later versions
CE8861-4 C-EI CE8868-4 C-EI	Supported in V200R005C10 version and later versions	Supported in V200R005C10 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 3-55 shows the appearance of a PDC-1K2WA-B power module, and **Figure 3-56** shows the appearance of a PDC-1K2WA-F power module.

Figure 3-55 PDC-1K2WA-B power module



Figure 3-56 PDC-1K2WA-F power module



Function

PDC-1K2WA-B and PDC-1K2WA-F power modules use different airflow designs but have the same functions. [Table 3-62](#) describes the functions of a 1200 W DC power module.

Table 3-62 Functions of a 1200 W DC 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.

Function		Description
	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 protection	Output overvoltage protection	In this protection state, the power module supplies 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 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.
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		<ul style="list-style-type: none"> PDC-1K2WA-B: back-to-front airflow PDC-1K2WA-F: front-to-back airflow
Hot swap		Supported

NOTE

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

Panel

Figure 3-57 and **Figure 3-58** show the panel of a 1200 W DC power module.

Figure 3-57 Panel of a PDC-1K2WA-B DC power module

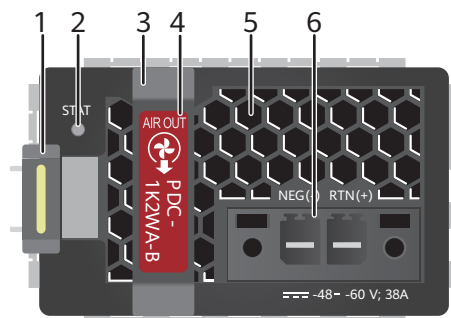
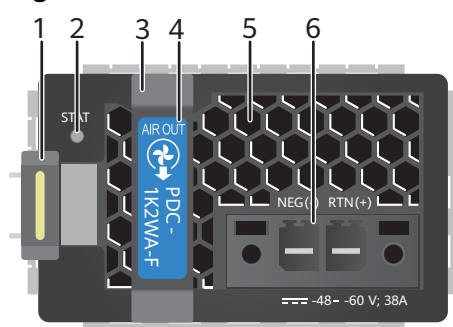


Figure 3-58 Panel of a PDC-1K2WA-F DC power module





1. Lock	2. Indicator	3. Handle	4. Airflow flag  : back-to-front airflow  : front-to-back airflow
5. Fan air vent	6. DC power socket	-	-

Table 3-63 describes the indicator on a 1200 W DC power module.

Table 3-63 Indicator description

Indicator	Color	Status	Description
STATUS: power indicator	Green	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, or overtemperature).
		Steady on	The power module is working normally.

Specifications

Table 3-64 lists technical specifications of 1200 W DC power modules.

Table 3-64 Technical specifications

Item	PDC-1K2WA-B	PDC-1K2WA-F
Dimensions (W x D x H)	66.0 mm x 350.0 mm x 39.6 mm (2.6 in. x 13.8 in. x 1.6 in.)	
Weight	1.5 kg (3.31 lb)	
Rated input voltage	-48 V DC to -60 V DC	
Maximum input voltage	-38.4 V DC to -72 V DC	
Rated input current	38 A	
Rated output current	100 A	
Rated output voltage	12 V	
Rated output power	1200 W	
Part Number	02311VRP	02311VRN

4 Fan Module

NOTICE

- A switch must use fan modules with the same airflow direction.
- A switch must use fan modules of the same series.
- A switch can work properly only when two fan modules are running. If one of fan modules is removed, reinstall it within 3 minutes.

[4.1 FAN-031A Series Fan Modules](#)

[4.2 FAN-40EA Series Fan Modules](#)

[4.3 FAN-40SB Series Fan Modules](#)

[4.4 FAN-40HA Series Fan Modules](#)

[4.5 FAN-040A Series Fan Modules](#)

[4.6 FAN-060A Series Fan Modules](#)

[4.7 FAN-180A Series Fan Modules](#)

4.1 FAN-031A Series Fan Modules

Version Mapping

The FAN-031A series fan modules are classified into two types depending on the airflow designs: FAN-031A-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-031A-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-1 describes the mapping between switch models and FAN-031A series fan modules.

Table 4-1 Version mapping

Switch Model	FAN-031A-B	FAN-031A-F
CE6857-48S6 CQ-EI	Supported in V200R005C10 and later versions	Supported in V200R005C10 and later versions
CE6881-48S6 CQ CE6863-48S6 CQ CE6820-48S6 CQ	Supported in V200R005C20 and later versions	Supported in V200R005C20 and later versions
CE6881-48S6 CQ-K CE6863-48S6 CQ-K CE6881E-48S6 6CQ	Supported in V200R019C10 and later versions	Supported in V200R019C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 4-1 shows the appearance of the FAN-031A-B fan module, and **Figure 4-2** shows the appearance of the FAN-031A-F fan module.

NOTE

Each FAN-031A fan module contains only one fan.

Figure 4-1 FAN-031A-B fan module



Figure 4-2 FAN-031A-F fan module



Function

A FAN-031A fan module consists of a fan tray, and a fan. FAN-031A-B and FAN-031A-F fan modules use different airflow designs but have the same functions. [Table 4-2](#) describes the functions of them.

Table 4-2 Functions of a FAN-031A fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of the fan based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none">FAN-031A-B: back-to-front airflowFAN-031A-F: front-to-back airflow

Panel

[Figure 4-3](#) and [Figure 4-4](#) show the panels of FAN-031A series fan modules.

Figure 4-3 FAN-031A-B panel

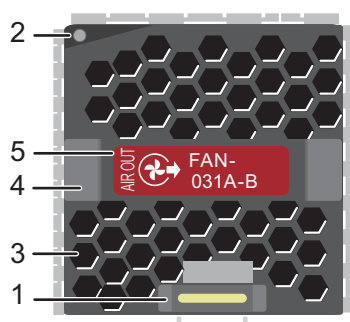
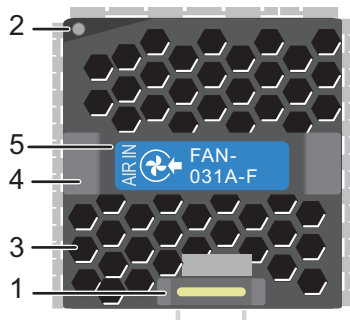


Figure 4-4 FAN-031A-F panel





1. Lock	2. Indicator	3. Fan air vent
4. Handle	5. Airflow flag  : back-to-front airflow  : front-to-back airflow	-

Table 4-3 describes the indicator on a FAN-031A fan module.

Table 4-3 Indicator description

Indicator	Color	Description
STAT: running status indicator	-	Off: The fan module is not running.
	Green	<ul style="list-style-type: none"> Slow blinking: The fan module is working properly and communicating normally with the system. Fast blinking: The fan module is working properly but has not established communication with the system.
	Red	<ul style="list-style-type: none"> Steady on: The fan module has a hardware fault and must be replaced. Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include short circuits, fan blades blocked, and fault of the fan module.

Specifications

Table 4-4 lists technical specifications of FAN-031A series fan modules.

Table 4-4 Technical specifications

Item	FAN-031A-B	FAN-031A-F
Dimensions (H x W x D)	40.0 mm x 40.0 mm x 100.3 mm (1.57 in. x 1.57 in. x 3.95 in.)	
Number of fans	1	
Weight	0.1 kg (0.22 lb)	
Maximum power consumption	21.6 W	
Maximum fan speed	26950±10% revolutions per minute (RPM)	
Maximum wind rate	31 cubic feet per minute (CFM)	
Part number	02352CAB	02352CAA

4.2 FAN-40EA Series Fan Modules

Version Mapping

The FAN-40EA series fan modules are classified into two types depending on the airflow designs: FAN-40EA-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-40EA-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-5 describes the mapping between switch models and FAN-40EA fan modules.

Table 4-5 Version mapping

Switch Model	FAN-40EA-B	FAN-40EA-F
CE5850-48T4S2Q-EI CE6850-48S4Q-EI CE6850-48T4Q-EI	Supported in V100R001C00 version and later versions	Supported in V100R001C00 version and later versions
CE5850-48T4S2Q-HI CE6810-48S4Q-EI	Supported in V100R003C00 version and later versions	Supported in V100R003C00 version and later versions
CE6810-48S4Q-LI CE6810-48S-LI	Supported in V100R003C10 version and later versions	Supported in V100R003C10 version and later versions
CE6810-32T16S4Q-LI CE6810-24S2Q-LI CE6851-48S6Q-HI	Supported in V100R005C10 version and later versions	Supported in V100R005C10 version and later versions
CE6855-48S6Q-HI	Supported in V200R001C00 version and later versions	Supported in V200R001C00 version and later versions
CE6856-48S6Q-HI	Supported in V200R002C50 version and later versions	Supported in V200R002C50 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 4-5 shows the appearance of a FAN-40EA-B fan module, and **Figure 4-6** shows the appearance of a FAN-40EA-F fan module.

NOTE

A FAN-40EA fan module consists of two fans.

Figure 4-5 FAN-40EA-B



Figure 4-6 FAN-40EA-F



Function

A FAN-40EA fan module consists of a fan tray, two fans, and a fan control unit. FAN-40EA-B and FAN-40EA-F fan modules use different airflow designs but have the same functions. [Table 4-6](#) describes the functions of them.

Table 4-6 Functions of a FAN-40EA fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of fans based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none">FAN-40EA-B: back-to-front airflowFAN-40EA-F: front-to-back airflow

Panel

[Figure 4-7](#) and [Figure 4-8](#) show the panels of the FAN-40EA series fan modules.

Figure 4-7 FAN-40EA-B panel

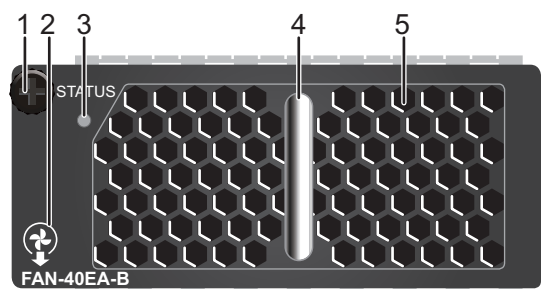
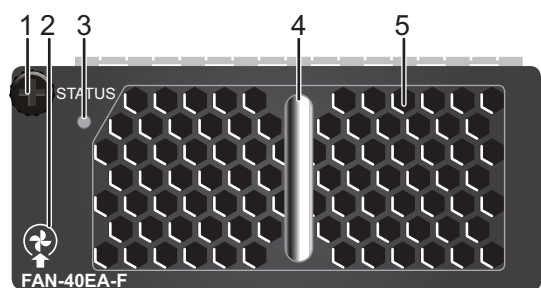


Figure 4-8 FAN-40EA-F panel





<p>1. Captive screw</p>	<p>2. Airflow flag</p> <ul style="list-style-type: none"> •  : back-to-front airflow •  : front-to-back airflow 	<p>3. Indicator</p>
<p>4. Handle</p>	<p>5. Fan air vent</p>	<p>-</p>

Table 4-7 describes the indicator on the panels of the FAN-40EA fan modules.

Table 4-7 Indicator description

Indicator	Color	Description
STATUS: fan indicator	-	Off: The fan module is not running.
	Green	<ul style="list-style-type: none"> Slow blinking: The fan module is working properly and communicating normally with the system. Fast blinking: The fan module is working properly but has not established communication with the system.
	Red	<ul style="list-style-type: none"> Steady on: The fan module has a hardware fault and must be replaced. Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include errors of dual in-line package (DIP) switches, short circuits, fan blades blocked, and fault of the fan module.

Specifications

[Table 4-8](#) lists technical specifications of the FAN-40EA series fan modules.

Table 4-8 Technical specifications

Item	FAN-40EA-B	FAN-40EA-F
Dimensions (W x D x H)	94.5 mm x 183.1 mm x 39.8 mm (3.72 in. x 7.21 in. x 1.57 in.)	
Number of fans	2	
Weight	0.325 kg (0.72 lb)	
Maximum power consumption	12.71 W	
Maximum fan speed	18500±10% revolutions per minute (RPM)	
Maximum wind rate	46 cubic feet per minute (CFM)	
Part Number	02355338	02355421

4.3 FAN-40SB Series Fan Modules

Version Mapping

The FAN-40SB series fan modules are classified into two types depending on the airflow designs: FAN-40SB-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-40SB-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-9 lists the mapping between switch models and FAN-40SB fan modules.

Table 4-9 Mapping between switch models and FAN-40SB fan modules

Switch Model	FAN-40SB-B	FAN-40SB-F
CE5810-24T4S-EI CE5810-48T4S-EI	Supported in V100R002C00 version and later versions	Supported in V100R002C00 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 4-9 shows the appearance of a FAN-40SB-B fan module, and **Figure 4-10** shows the appearance of a FAN-40SB-F fan module.

NOTE

A FAN-40SB fan module has only one fan.

Figure 4-9 FAN-40SB-B fan module

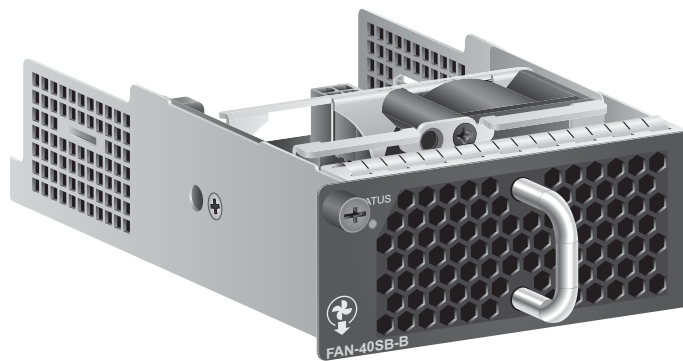
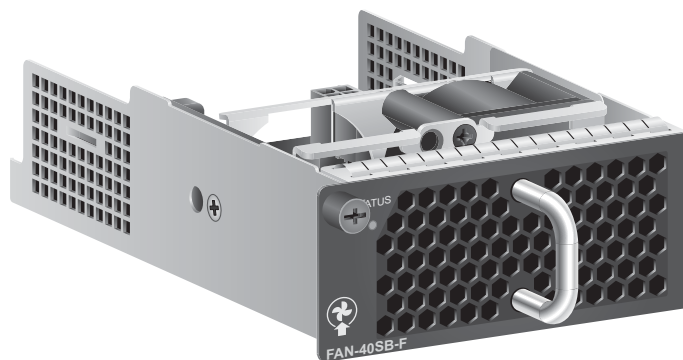


Figure 4-10 FAN-40SB-F fan module



Function

A FAN-40SB fan module consists of a fan tray, a fan, and a fan control unit. FAN-40SB-B and FAN-40SB-F fan modules use different airflow designs but have the same functions. [Table 4-10](#) describes the functions of them.

Table 4-10 Functions of a FAN-40SB fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of fans based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none">FAN-40SB-B: back-to-front airflowFAN-40SB-F: front-to-back airflow

Panel

[Figure 4-11](#) and [Figure 4-12](#) show the panels of the FAN-40SB fan modules.

Figure 4-11 FAN-40SB-B panel

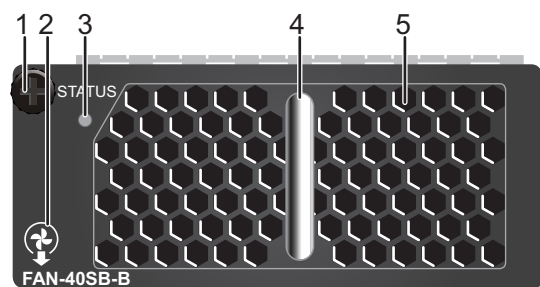
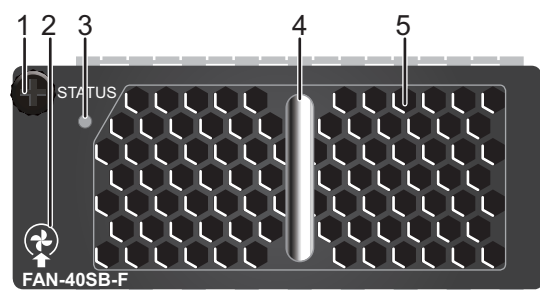


Figure 4-12 FAN-40SB-F panel





1. Captive screw	2. Airflow flag  : back-to-front airflow  : front-to-back airflow	3. Indicator
4. Handle	5. Fan air vent	-

Table 4-11 describes the indicator on the FAN-40SB fan modules.

Table 4-11 Indicator description

Indicator	Color	Description
STATUS: fan indicator	-	Off: The fan module is not running.
	Green	<ul style="list-style-type: none"> Slow blinking: The fan module is working properly and communicating normally with the system. Fast blinking: The fan module is working properly but has not established communication with the system.
	Red	<ul style="list-style-type: none"> Steady on: The fan module has a hardware fault and must be replaced. Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include errors of dual in-line package (DIP) switches, short circuits, fan blades blocked, and fault of the fan module.

Specifications

Table 4-12 lists technical specifications of the FAN-40SB fan modules.

Table 4-12 Technical specifications

Item	FAN-40SB-B	FAN-40SB-F
Dimensions (W x D x H)	94.5 mm x 183.1 mm x 39.8 mm (3.72 in. x 7.21 in. x 1.57 in.)	

Item	FAN-40SB-B	FAN-40SB-F
Number of fans	1	
Weight	0.3 kg (0.66 lb)	
Maximum power consumption	4.3 W	
Maximum fan speed	16000±10% revolutions per minute (RPM) NOTE RPM: revolutions per minute.	
Maximum wind rate	20 cubic feet per minute (CFM)	
Part Number	02356152	02356153

4.4 FAN-40HA Series Fan Modules

Version Mapping

The FAN-40HA series fan modules are classified into two types depending on the airflow designs: FAN-40HA-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-40HA-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-13 lists the mapping between switch models and FAN-40HA series fan modules.

Table 4-13 Version mapping

Switch Model	FAN-40HA-B	FAN-40HA-F
CE7850-3 2Q-EI	Supported in V100R003C00 version and later versions	Supported in V100R003C00 version and later versions
CE6870-2 4S6CQ-EI CE6870-4 8S6CQ-EI CE7855-3 2Q-EI	Supported in V200R001C00 version and later versions	Supported in V200R001C00 version and later versions

Switch Model	FAN-40HA-B	FAN-40HA-F
CE6860-4 8S8CQ-EI CE6880-2 4S4Q2C Q-EI CE6880-4 8S4Q2C Q-EI CE6880-4 8T4Q2C Q-EI CE6870-4 8T6CQ-EI CE8850-3 2CQ-EI	Supported in V200R002C50 version and later versions	Supported in V200R002C50 version and later versions
CE6865-4 8S8CQ-EI	Supported in V200R005C00 version and later versions	Supported in V200R005C00 version and later versions
CE5880-4 8T6Q-EI	Supported in V200R005C10 version and later versions	Supported in V200R005C10 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 4-13 shows the appearance of a FAN-40HA-B fan module, and **Figure 4-14** shows the appearance of a FAN-40HA-F fan module.

NOTE

A FAN-40HA fan module consists of two counter-rotating fans, and each fan has a pair of blades.

Figure 4-13 FAN-40HA-B



Figure 4-14 FAN-40HA-F



Function

A FAN-40HA fan module consists of a fan frame, two counter-rotating fans, and a fan control unit. FAN-40HA-B and FAN-40HA-F fan modules use different airflow designs but have the same functions. [Table 4-14](#) describes the functions of them.

Table 4-14 Functions of a FAN-40HA fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of fans based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none">FAN-40HA-B: back-to-front airflowFAN-40HA-F: front-to-back airflow

Panel

[Figure 4-15](#) and [Figure 4-16](#) show the panels of the FAN-40HA fan modules.

Figure 4-15 FAN-40HA-B panel

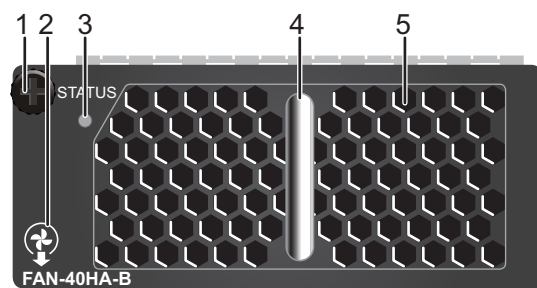
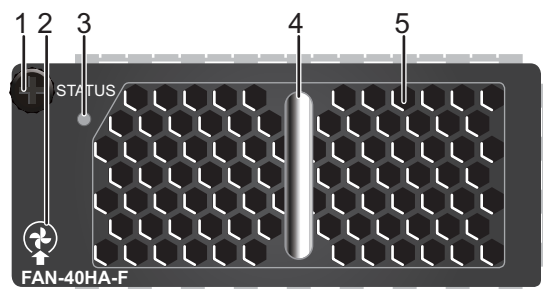


Figure 4-16 FAN-40HA-F panel





1. Captive screw	2. Airflow flag  : back-to-front airflow  : front-to-back airflow	3. Indicator
4. Handle	5. Fan air vent	-

Table 4-15 describes the indicator on the panels of the FAN-40HA fan modules.

Table 4-15 Indicator description

Indicator	Color	Description
STATUS: fan indicator	-	Off: The fan module is not running.
	Green	<ul style="list-style-type: none"> Slow blinking: The fan module is working properly and communicating normally with the system. Fast blinking: The fan module is working properly but has not established communication with the system.
	Red	<ul style="list-style-type: none"> Steady on: The fan module has a hardware fault and must be replaced. Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include errors of dual in-line package (DIP) switches, short circuits, fan blades blocked, and fault of the fan module.

Specifications

Table 4-16 lists technical specifications of the FAN-40HA fan modules.

Table 4-16 Technical specifications

Item	FAN-40HA-B	FAN-40HA-F
Dimensions (W x D x H)	94.5 mm x 183.1 mm x 39.8 mm (3.72 in. x 7.21 in. x 1.57 in.)	
Number of fans	Two counter-rotating fans, each of which has a pair of blades	
Weight	0.415 kg (0.91 lb)	
Maximum power consumption	40 W	
Maximum fan speed	19000±10% revolutions per minute (RPM)	
Maximum wind rate	64 cubic feet per minute (CFM)	
Part Number	02359097	02359096

4.5 FAN-040A Series Fan Modules

Version Mapping

The FAN-040A series fan modules are classified into two types depending on the airflow designs: FAN-040A-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-040A-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-17 describes the mapping between switch models and FAN-040A fan modules.

Table 4-17 Version mapping

Switch Model	FAN-040A-B	FAN-040A-F
CE5855-48T4S2Q-EI CE5855-24T4S2Q-EI	Supported in V100R005C10 version and later versions	Supported in V100R005C10 version and later versions
Other models	Not supported	Not supported

Appearance

Figure 4-17 shows the appearance of a FAN-040A-B fan module, and **Figure 4-18** shows the appearance of a FAN-040A-F fan module.

 **NOTE**

A FAN-040A fan module consists of two fans.

Figure 4-17 FAN-040A-B fan module



Figure 4-18 FAN-040A-F fan module



Function

A FAN-040A fan module consists of a fan tray, two fans, and a fan control unit. FAN-040A-B and FAN-040A-F fan modules use different airflow designs but have the same functions. [Table 4-18](#) describes the functions of them.

Table 4-18 Functions of a FAN-040A fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of fans based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none">FAN-040A-B: back-to-front airflowFAN-040A-F: front-to-back airflow

Panel

Figure 4-19 and **Figure 4-20** show the panels of the FAN-040A series fan modules.

Figure 4-19 FAN-040A-B panel

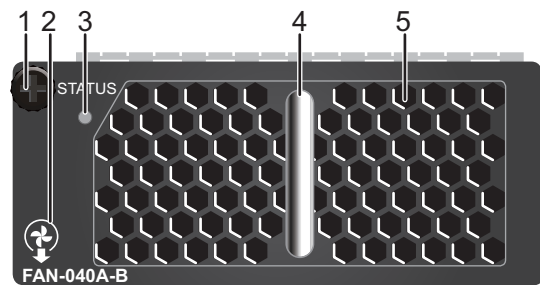
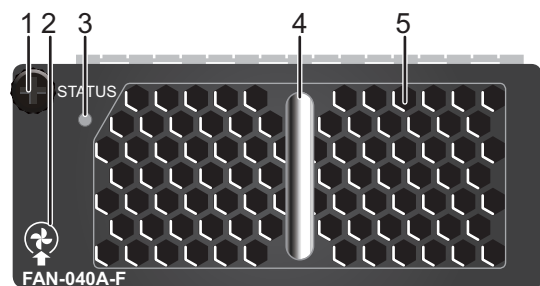


Figure 4-20 FAN-040A-F panel





1. Captive screw	2. Airflow flag  : back-to-front airflow  : front-to-back airflow	3. Indicator
4. Handle	5. Fan air vent	-

Table 4-19 describes the indicator on the FAN-040A fan modules.

Table 4-19 Indicator description

Indicator	Color	Description
STATUS: fan indicator	-	Off: The fan module is not running.
	Green	<ul style="list-style-type: none"> • Slow blinking: The fan module is working properly and communicating normally with the system. • Fast blinking: The fan module is working properly but has not established communication with the system.
	Red	<ul style="list-style-type: none"> • Steady on: The fan module has a hardware fault and must be replaced. • Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include errors of dual in-line package (DIP) switches, short circuits, fan blades blocked, and fault of the fan module.

Specifications

Table 4-20 lists technical specifications of the FAN-040A series fan modules.

Table 4-20 Technical specifications

Item	FAN-040A-B	FAN-040A-F
Dimensions (W x D x H)	94.5 mm x 183.1 mm x 39.8 mm (3.72 in. x 7.21 in. x 1.57 in.)	
Number of fans	2	
Weight	0.259 kg (0.57 lb)	
Maximum power consumption	12 W	
Maximum fan speed	16000±10% revolutions per minute (RPM)	
Maximum wind rate	40 cubic feet per minute (CFM)	
Part Number	02350JFA	02350JEY

4.6 FAN-060A Series Fan Modules

Version Mapping

The FAN-060A series fan modules are classified into two types depending on the airflow designs: FAN-060A-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-060A-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-21 describes the mapping between device models and FAN-060A series fan modules.

Table 4-21 Version mapping

Switch Model	FAN-060A-B	FAN-060A-F
CE6850-48S6Q-HI	Supported in V100R005C00 and later versions.	Supported in V100R005C00 and later versions
CE6850U-48S6Q-HI CE6850-48T6Q-HI CE6850U-24S2Q-HI	Supported in V100R005C10 and later versions	Supported in V100R005C10 and later versions
CE6855-48T6Q-HI	Supported in V200R001C00 and later versions.	Supported in V200R001C00 and later versions
CE6856-48T6Q-HI	Supported in V200R002C50 and later versions.	Supported in V200R002C50 and later versions.
CE6875-48S4CQ-EI	Supported in V200R003C00 and later versions.	Supported in V200R003C00 and later versions.

Appearance

Figure 4-21 shows the appearance of a FAN-060A-B fan module, and **Figure 4-22** shows the appearance of a FAN-060A-F fan module.

NOTE

Each FAN-060A fan module has two counter-rotating fans, and each fan has a pair of blades.

Figure 4-21 FAN-060A-B fan module



Figure 4-22 FAN-060A-F fan module



Function

A FAN-060A fan module consists of a fan tray, two counter-rotating fans, and a fan monitoring unit. FAN-060A-B and FAN-060A-F fan modules use different airflow designs but have the same functions. [Table 4-22](#) describes the functions of them.

Table 4-22 Functions of a FAN-060A fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of fans based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none"> FAN-060A-B: back-to-front airflow FAN-060A-F: front-to-back airflow

Panel

[Figure 4-23](#) and [Figure 4-24](#) show the panels of FAN-060A series fan modules.

Figure 4-23 FAN-060A-B panel

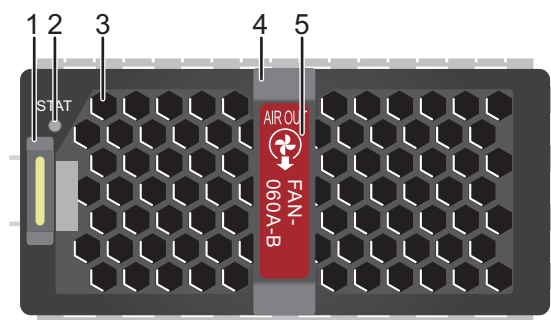
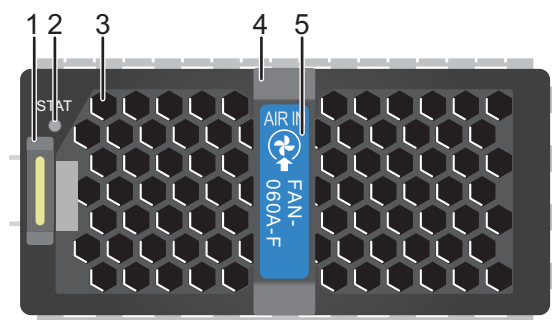


Figure 4-24 FAN-060A-F panel





1. Lock	2. Indicator	3. Fan air vent
4. Handle	5. Airflow flag  • : back-to-front airflow  • : front-to-back airflow	-

Table 4-23 describes the indicator on a FAN-060A fan module.

Table 4-23 Indicator description

Indicator	Color	Description
STAT: running status indicator	-	Off: The fan module is not running.
	Green	<ul style="list-style-type: none"> • Slow blinking: The fan module is working properly and communicating normally with the system. • Fast blinking: The fan module is working properly but has not established communication with the system.
	Red	<ul style="list-style-type: none"> • Steady on: The fan module has a hardware fault and must be replaced. • Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include short circuits, fan blades blocked, and fault of the fan module.

Specifications

Table 4-24 lists technical specifications of the FAN-060A series fan modules.

Table 4-24 Technical specifications

Item	FAN-060A-B	FAN-060A-F
Dimensions (W x D x H)	86.0 mm x 198.3 mm x 40.0 mm (3.4 in. x 7.8 in. x 1.6 in.)	
Number of fans	Two counter-rotating fans, each of which has a pair of blades	
Weight	0.478 kg (1.05 lb)	
Maximum power consumption	40 W	
Maximum fan speed	19000±10% revolutions per minute (RPM)	
Maximum wind rate	64 cubic feet per minute (CFM)	
Part Number	02359310	02359308

4.7 FAN-180A Series Fan Modules

Version Mapping

The FAN-180A series fan modules are classified into two types depending on the airflow designs: FAN-180A-B (B: back-to-front airflow, air exhaust on fan module panel) and FAN-180A-F (F: front-to-back airflow, air intake on fan module panel).

Table 4-25 describes the mapping between switch models and FAN-180A series fan modules.

Table 4-25 Version mapping

Switch Model	FAN-180A-B	FAN-180A-F
CE8850-6 4CQ-EI	Supported in V200R005C00 and later versions	Supported in V200R005C00 and later versions
CE8860-4 C-EI	Supported in V100R006C00 and later versions	Supported in V100R006C00 and later versions
CE8861-4 C-EI CE8868-4 C-EI	Supported in V200R005C10 and later versions	Supported in V200R005C10 and later versions
Other models	Not supported	Not supported

Appearance

Figure 4-25 shows the appearance of a FAN-180A-B fan module, and **Figure 4-26** shows the appearance of a FAN-180A-F fan module.

NOTE

Each FAN-180A fan module has one counter-rotating fan, which has a pair of blades.

Figure 4-25 FAN-180A-B fan module



Figure 4-26 FAN-180A-F fan module



Function

A FAN-180A fan module consists of a fan tray, a fan, and a fan monitoring unit. FAN-180A-B and FAN-180A-F fan modules use different airflow designs but have the same functions. [Table 4-26](#) describes the functions of them.

Table 4-26 Functions of a FAN-180A fan module

Function	Description
Automatic fan speed adjustment	After the fan module communicates normally with the switch, the switch controls the speed of the fan based on temperature of the chassis.
Hot swap	Supported
Heat dissipation	<ul style="list-style-type: none">• FAN-180A-B: back-to-front airflow• FAN-180A-F: front-to-back airflow

Panel

[Figure 4-27](#) and [Figure 4-28](#) show the panels of FAN-180A series fan modules.

Figure 4-27 FAN-180A-B panel

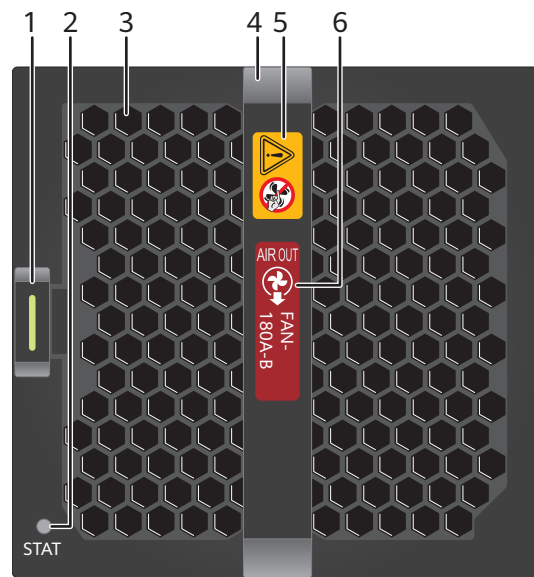
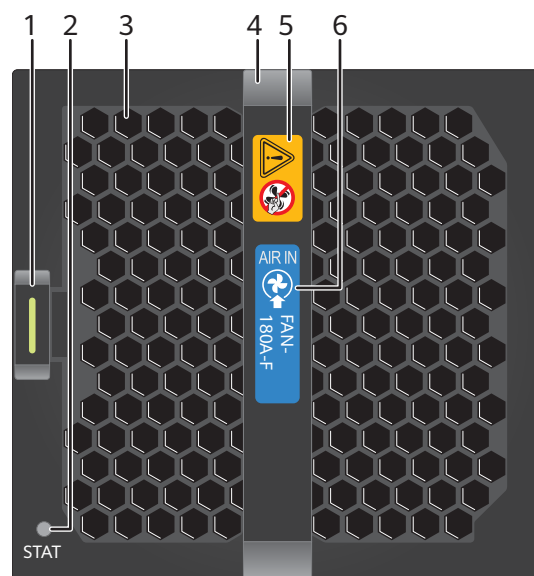




Figure 4-28 FAN-180A-F panel



1. Lock	2. Indicator	3. Fan air vent
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<p>4. Handle</p>	<p>5. Warning label</p> <p>CAUTION</p> <p>When you remove a running fan module from a switch, its fans will continue running. Do not touch the running fans.</p>	<p>6. Airflow flag</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <ul style="list-style-type: none"> • : back-to-front airflow </div> </div> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <ul style="list-style-type: none"> • : front-to-back airflow </div> </div> </div>
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[Table 4-27](#) describes the indicator on a FAN-180A fan module.

Table 4-27 Indicator description

Indicator	Color	Description
STAT: running status indicator	-	Off: The fan module is not running.
	Green	Blinking: The fan module is working properly.
	Red	<ul style="list-style-type: none"> • Steady on: The fan module has a hardware fault and must be replaced. • Blinking: An alarm has been generated, and you need to handle it accordingly. Common causes of this alarm include short circuits, fan blades blocked, and fault of the fan module.

Specifications

[Table 4-28](#) lists technical specifications of FAN-180A series fan modules.

Table 4-28 Technical specifications

Item	FAN-180A-B	FAN-180A-F
Dimensions (W x D x H)	85.4 mm x 178.8 mm x 82.5 mm (3.36 in. x 7.04 in. x 3.25 in.)	
Fans	One counter-rotating fan, which has a pair of blades	
Weight	0.887 kg (1.96 lb)	

Item	FAN-180A-B	FAN-180A-F
Maximum power consumption	86 W	
Maximum fan speed	12000 revolutions per minute (RPM)	
Maximum wind rate	180 cubic feet per minute (CFM)	
Part number	02350KJA	02350KHY

5 Cards

5.1 Card Classification

5.2 Card Naming Conventions

5.3 CE88-D8CQ (8-Port 40GE/100GE Interface Card (QSFP28))

5.4 CE88-D16Q (16-Port 40GE Interface Card (QSFP+))

5.5 CE88-D24T2CQ (24-Port GE/10GBASE-T (RJ45) and 2-Port 40GE/100GE (QSFP28) Interface Card)

5.6 CE88-D24S2CQ (24-Port 10GE/25GE (SFP28) and 2-Port 40GE/100GE (QSFP28) Interface Card)

5.7 CE88-D24S2CQ-U (24-Port 25GE/16G FC (SFP28) and 2-Port 40GE/100GE (QSFP28) Interface Card)

5.1 Card Classification

NOTE

This document describes all the cards supported by the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. The cards that can be supplied will be specified in the product change notices (PCNs). For details, contact the product manager of Huawei local office.

Among the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches, only CE8868EI, CE8861EI, and CE8860EI support pluggable cards, as listed in [Table 5-1](#).

Table 5-1 Cards supported by the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches

Card Name	Description	Hot Swap
CE88-D8CQ	8-port 40GE/100GE interface card (QSFP28)	Supported
CE88-D16Q	16-port 40GE interface card (QSFP+)	

Card Name	Description	Hot Swap
CE88-D24T2CQ	24-port GE/10GBASE-T (RJ45) and 2-port 40GE/100GE (QSFP28) interface card	
CE88-D24S2CQ	24-port 10GE/25GE (SFP28) and 2-port 40GE/100GE (QSFP28) interface card	
CE88-D24S2CQ-U	24-port 25GE/16G FC (SFP28) and 2-port 40GE/100GE (QSFP28) interface card	

5.2 Card Naming Conventions

Figure 5-1 shows the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions.

Figure 5-1 CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions

CE88-D24S2CQ-U

A B C D E

Table 5-2 describes the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions.

Table 5-2 CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions

Field	Description
A	CE88: cards for CE8860EI/CE8861EI/CE8868EI CE98: cards for CE9860EI
B	Cards for top of rack (ToR) switches

Field	Description
C	Number and type of downlink interfaces: <ul style="list-style-type: none"> • T: GE/10GBase-T electrical interfaces • S: 10GE SFP+/25GE SFP28 optical interfaces • Q: QSFP+ optical interfaces • CQ: QSFP28 optical interfaces
D	Number and type of uplink interfaces: <ul style="list-style-type: none"> • T: GE/10GBase-T electrical interfaces • S: 10GE SFP+/25GE SFP28 optical interfaces • Q: QSFP+ optical interfaces • CQ: QSFP28 optical interfaces <p>NOTE This field will not be included in a card's name if the uplink and downlink interfaces on the card are the same type.</p>
E	Special function flag. This flag is not present if the card does not provide special functions. U : The card supports FC ports.

5.3 CE88-D8CQ (8-Port 40GE/100GE Interface Card (QSFP28))

Version Mapping

Table 5-3 describes the mapping between the CE88-D8CQ card, switch models, and software versions.

Table 5-3 Version mapping

Switch Model	CE88-D8CQ
CE7800, CE6800, and CE5800 series switches and the CE8850EI	Not supported
CE8860-4C-EI	Supported in V100R006C00 and later versions

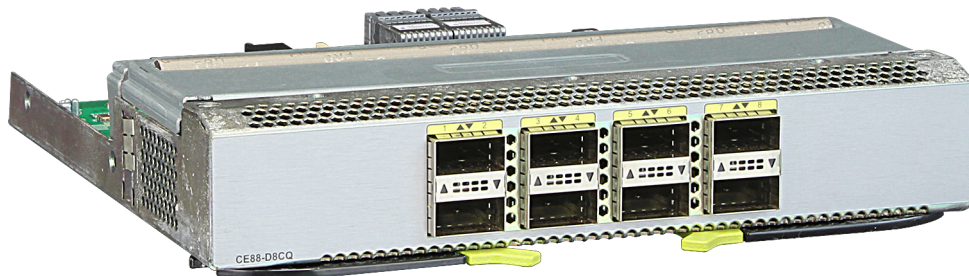
Switch Model	CE88-D8CQ
CE8861-4C-EI CE8868-4C-EI	Supported in V200R005C10 and later versions NOTE <ul style="list-style-type: none"> The registration and interface usage of the CE88-D8CQ subcards on the CE8868EI are controlled by licenses. By default, the CE88-D8CQ subcards on the CE8868EI are not enabled. To use these subcards on the CE8868EI, apply for and purchase the license from the equipment supplier. For the CE8868EI, after the above license is loaded, you need to run the active card-license command to enable the corresponding license in the specified subcard slot. The CE8868EI has four subcard slots. You can purchase licenses based on the number of required subcard slots.

Card Overview

The CE88-D8CQ card can be install in any slot of the CE8860-4C-EI, CE8861-4C-EI, or CE8868-4C-EI chassis.

Figure 5-2 shows the appearance of the CE88-D8CQ card.

Figure 5-2 CE88-D8CQ card



Functions and Features

Table 5-4 describes functions and features of the CE88-D8CQ card.

Table 5-4 Functions and features

Function and Feature	Item
Basic function	Provides data packet processing and traffic management on eight 40GE/100GE QSFP28 optical ports.

Function and Feature	Item
Port split	Each QSFP28 optical port can be split into four 25GE ports or four 10GE ports. Such 25GE or 10GE ports cannot work at 1 Gbit/s. With the port split function, each card can provide up to 32 25GE or 10GE optical ports. NOTE All the QSFP28 ports are independent, and each can be configured as four 10GE or 25GE ports.
Hot swap	Supported
Service port stacking	Ports on the card can be used as stack ports.

Indicators and Ports

Figure 5-3 shows indicators on the CE88-D8CQ panel.

Figure 5-3 Indicators on the CE88-D8CQ panel

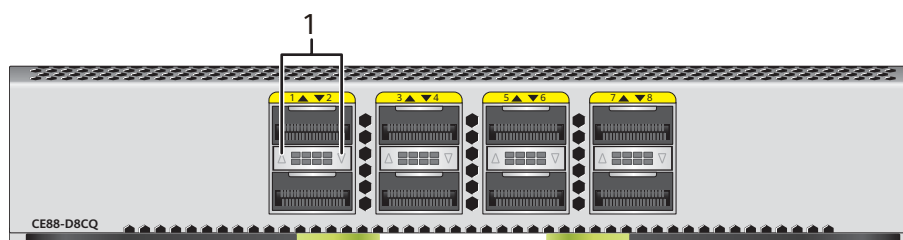


Table 5-5 describes indicators on the CE88-D8CQ panel.

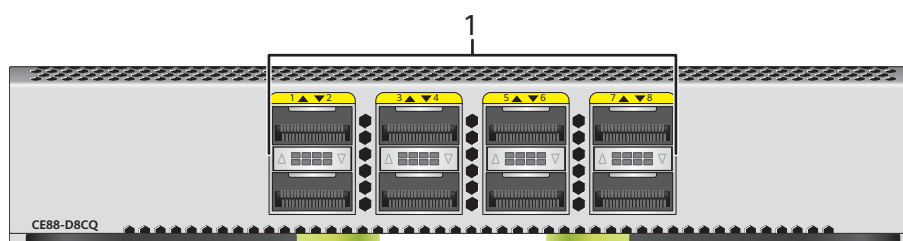
Table 5-5 Indicator description

Number	Indicator	Color	Status	Description
1	One single-color indicator for each interface	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.

Number	Indicator	Color	Status	Description
	<p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>		Blinking	The port is transmitting or receiving data.

Figure 5-4 shows the ports on the CE88-D8CQ card.

Figure 5-4 Ports on the CE88-D8CQ card



1. Eight 40GE/100GE QSFP28 optical ports

40GE/100GE QSFP28 optical port

Table 5-6 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 5-6 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depends on the optical module used.
Optical attributes	Depends on the QSFP+ or QSFP28 optical module used. See 40GE QSFP+ Optical Modules or 100GE QSFP28 Optical Modules.

Attribute	Description
Applicable cables	<p>When the port works in 100GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP28 optical module and MPO-MPO or LC-LC optical fiber (QSFP28-100G-4WDM-40 not supported) ● QSFP28 to QSFP28 high-speed cable ● QSFP28 to QSFP28 AOC cable
	<p>When the port works in 40GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP+ optical module and MPO-MPO or LC-LC optical fiber ● QSFP+ to QSFP+ high-speed cable ● QSFP+ to QSFP+ AOC cable
	<p>When the port works in 4*25GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP28 optical module and MPO-4*DLC or MPO-8*FC optical fiber (QSFP28-100G-4WDM-40 not supported) ● QSFP28 to 4*SFP28 high-speed cable <p>NOTE</p> <p>When a QSFP28-100G-SR4 optical module is installed on the port, the port cannot be connected to a port with an SFP-25G-SR optical module.</p> <p>When a QSFP28 to 4*SFP28 high-speed cable is installed on the port:</p> <ul style="list-style-type: none"> ● If auto-negotiation is disabled on the remote port, the local port supports only the QSFP-4SFP25G-CU1M or QSFP-4SFP25G-CU3M-N high-speed cable. ● If auto-negotiation is disabled and Base-R FEC is enabled on the remote port, the local port supports only the QSFP-4SFP25G-CU3M high-speed cable.
	<p>When the port works in 4*10GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP+ optical module and MPO-4*DLC or MPO-8*FC optical fiber ● QSFP+ to 4*SFP+ high-speed cable ● QSFP+ to 4*SFP+ AOC cable

Specifications

[Table 5-7](#) lists technical specifications of the CE88-D8CQ card.

Table 5-7 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> • Dimensions (W x D x H): 210.0 mm x 205.2 mm x 41.8 mm (8.3 in. x 8.1 in. x 1.6 in.) • Weight: 1.3 kg (2.87 lb) • Typical power consumption: 33 W • Maximum power consumption: 71 W • Typical heat dissipation: 113 BTU/hr • Maximum heat dissipation: 242 BTU/hr
Environment parameters	<ul style="list-style-type: none"> • Operating temperature: 0°C to 40°C (32°F to 104°F) • Relative humidity: 5% RH to 95% RH • Storage temperature: -40°C to +70°C (-40°F to +158°F)

Ordering Information

Table 5-8 provides the ordering information.

Table 5-8 Ordering information

Part Number	Card Model	Card Description
03023CRS	CE88-D8CQ	8-port 40GE/ 100GE interface card (QSFP28)

5.4 CE88-D16Q (16-Port 40GE Interface Card (QSFP+))

Version Mapping

Table 5-9 describes the mapping between the CE88-D16Q card, switch models, and software versions.

Table 5-9 Version mapping

Switch Model	CE88-D16Q
CE7800, CE6800, and CE5800 series switches and the CE8850EI	Not supported
CE8860-4C-EI	Supported in V100R006C00 and later versions

Switch Model	CE88-D16Q
CE8861-4C-EI CE8868-4C-EI	Supported in V200R005C10 and later versions NOTE <ul style="list-style-type: none"> The registration and interface usage of the CE88-D16Q subcards on the CE8868EI are controlled by licenses. By default, the CE88-D8CQ and CE88-D16Q subcards on the CE8868EI are not enabled. To use these subcards on the CE8868EI, apply for and purchase the license from the equipment supplier. For the CE8868EI, after the above license is loaded, you need to run the active card-license command to enable the corresponding license in the specified subcard slot. The CE8868EI has four subcard slots. You can purchase licenses based on the number of required subcard slots.

Card Overview

The CE88-D16Q card can be install in any slot of the CE8860-4C-EI, CE8861-4C-EI, or CE8868-4C-EI chassis.

[Figure 5-5](#) shows the appearance of the CE88-D16Q card.

Figure 5-5 CE88-D16Q card



Functions and Features

[Table 5-10](#) describes functions and features of the CE88-D16Q card.

Table 5-10 Functions and features

Function and Feature	Description
Basic function	Provides data packet processing and traffic management on 16 40GE QSFP+ optical ports.

Function and Feature	Description
Port split	<ul style="list-style-type: none"> Each QSFP+ optical port can be split into two 10GE ports. The two 10GE cannot work at 1 Gbit/s. With the port split function, each card can provide up to 32 10GE optical ports. <p>NOTE All the 40GE QSFP+ optical ports are independent, and each can be configured as two 10GE ports. For CE8861EI and CE8868EI, the two 40GE interfaces must be split simultaneously so that converted 10GE interfaces can work properly.</p>
Hot swap	Supported
Service port stacking	Ports on the card can be used as stack ports.

Indicators and Ports

Figure 5-6 shows indicators on the CE88-D16Q panel.

Figure 5-6 Indicators on the CE88-D16Q panel

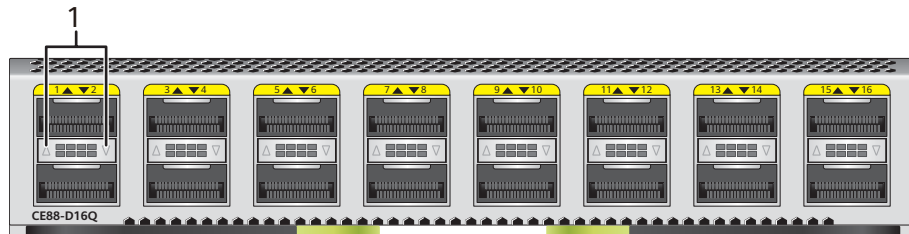


Table 5-11 describes indicators on the CE88-D16Q panel.

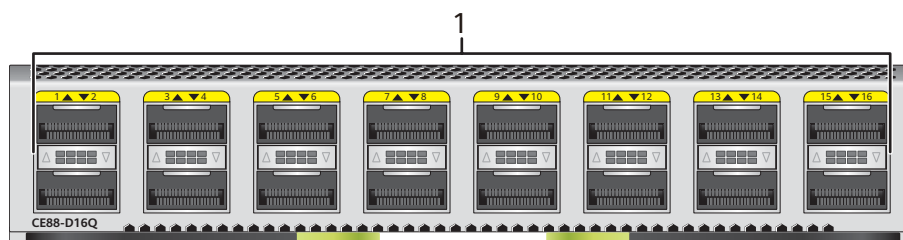
Table 5-11 Indicator description

Number	Indicator	Color	Status	Description
1	One single-color indicator for each interface	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.

Number	Indicator	Color	Status	Description
	<p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>		Blinking	The port is transmitting or receiving data.

Figure 5-7 shows the ports on the CE88-D16Q card.

Figure 5-7 Ports on the CE88-D16Q card



1. Sixteen 40GE QSFP+ optical ports

40GE QSFP+ optical port

Table 5-12 describes the attributes of a 40GE QSFP+ optical port.

Table 5-12 Attributes of a 40GE QSFP+ optical port

Attribute	Description
Connector type	Depends on the optical module used.
Optical attributes	Depends on the QSFP+ optical module used. See 40GE QSFP+ Optical Modules.

Attribute	Description
Applicable cables	<p>When the port works in 40GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP+ optical module and MPO-MPO or LC-LC optical fiber ● QSFP+ to QSFP+ high-speed cable ● QSFP+ to QSFP+ AOC cable <p>When the port works in 2*10GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP+ optical module and MPO-4*DLC or MPO-8*FC optical fiber (Among the four pairs of DLC or FC fibers, only the two pairs marked 1 and 2 can be used to connect to remote interfaces.) ● QSFP+ to 4*SFP+ high-speed cable (Among the four SFP+ wires, only the two marked A and B can be used to connect to remote interfaces.) ● QSFP+ to 4*SFP+ AOC cable (Among the four SFP+ wires, only the two marked 1 and 2 can be used to connect to remote interfaces.)

Specifications

[Table 5-13](#) lists technical specifications of the CE88-D16Q card.

Table 5-13 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> ● Dimensions (W x D x H): 210.0 mm x 205.2 mm x 41.8 mm (8.3 in. x 8.1 in. x 1.6 in.) ● Weight: 1.3 kg (2.87 lb) ● Typical power consumption: 27 W ● Maximum power consumption: 58 W ● Typical heat dissipation: 92 BTU/hr ● Maximum heat dissipation: 198 BTU/hr
Environment parameters	<ul style="list-style-type: none"> ● Operating temperature: 0°C to 40°C (32°F to 104°F) ● Relative humidity: 5% RH to 95% RH ● Storage temperature: -40°C to +70°C (-40°F to +158°F)

Ordering Information

[Table 5-14](#) provides the ordering information.

Table 5-14 Ordering information

Part Number	Card Model	Card Description
03023CRR	CE88-D16Q	16-port 40GE interface card (QSFP+)

5.5 CE88-D24T2CQ (24-Port GE/10GBASE-T (RJ45) and 2-Port 40GE/100GE (QSFP28) Interface Card)

Version Mapping

[Table 5-15](#) describes the mapping between the CE88-D24T2CQ card, switch models, and software versions.

Table 5-15 Version mapping

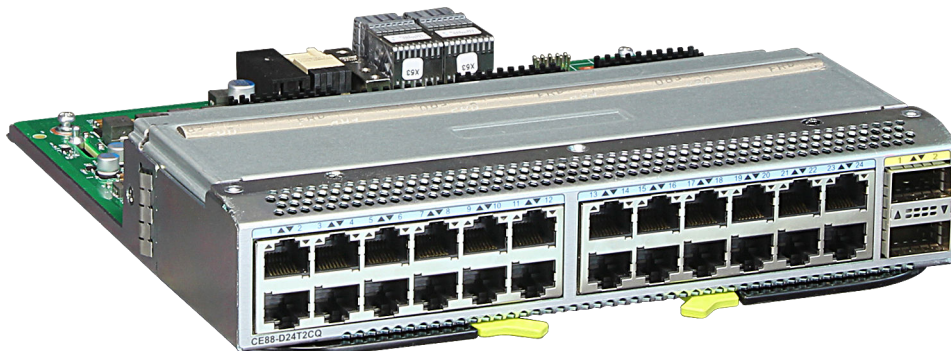
Switch Model	CE88-D24T2CQ
CE7800, CE6800, and CE5800 series switches and the CE8850EI	Not supported
CE8860-4C-EI	Supported in V100R006C00 and later versions
CE8861-4C-EI CE8868-4C-EI	Supported in V200R005C10 and later versions

Card Overview

The CE88-D24T2CQ card can be install in any slot of the CE8860-4C-EI, CE8861-4C-EI, or CE8868-4C-EI chassis.

[Figure 5-8](#) shows the appearance of the CE88-D24T2CQ card.

Figure 5-8 CE88-D24T2CQ card



Functions and Features

Table 5-16 describes functions and features of the CE88-D24T2CQ card.

Table 5-16 Functions and features

Function and Feature	Description
Basic function	Provides data packet processing and traffic management on 24 GE/10GBASE-T RJ45 electrical ports and 2 40GE/100GE QSFP28 optical ports.
Port split	Each QSFP28 optical port can be split into four 25GE ports or four 10GE ports. Such 25GE or 10GE ports cannot work at 1 Gbit/s. NOTE The two QSFP28 ports are independent, and each can be configured as four 10GE or 25GE ports.
Hot swap	Supported
Service port stacking	Ports on the card can be used as stack ports.

Indicators and Ports

Figure 5-9 shows indicators on the CE88-D24T2CQ panel.

Figure 5-9 Indicators on the CE88-D24T2CQ panel

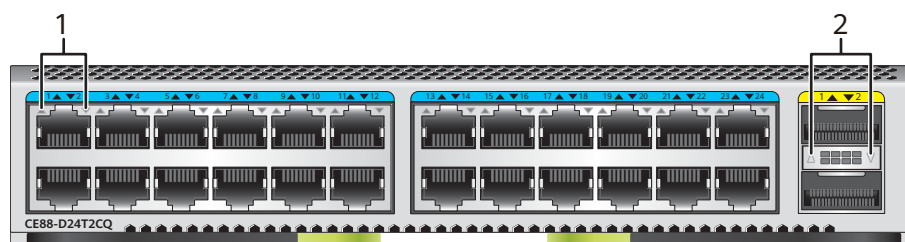


Table 5-17 describes indicators on the CE88-D24T2CQ panel.

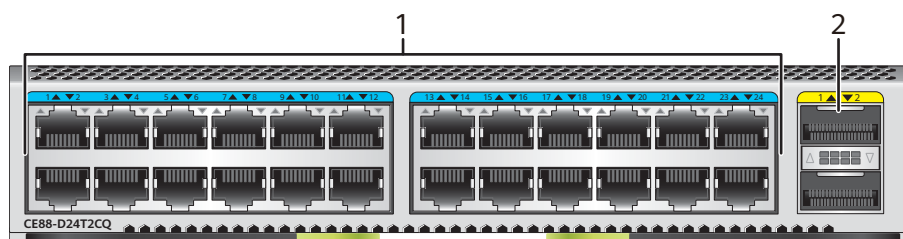
Table 5-17 Indicator description

Number	Indicator	Color	Status	Description
1	RJ45 electrical ports: one single-color indicator for each port NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.
			Blinking	The port is transmitting or receiving data.
2	QSFP28 optical ports: one single-color indicator for each port	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.

Number	Indicator	Color	Status	Description
	<p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>		Blinking	The port is transmitting or receiving data.

Figure 5-10 shows the ports on the CE88-D24T2CQ card.

Figure 5-10 Ports on the CE88-D24T2CQ card



1. Twenty-four GE/10GBASE-T RJ45 electrical ports	2. Two 40GE/100GE QSFP28 optical ports
---	--

GE/10GBASE-T RJ45 electrical port

The 24 GE/10GBASE-T RJ45 electrical ports on the CE88-D24T2CQ card can only transmit services at 1000 Mbit/s or 10 Gbit/s and cannot work at 100 Mbit/s. The ports must use Category 6A shielded twisted pair (STP) cables. [Table 5-18](#) describes attributes of a GE/10GBASE-T RJ45 electrical port.

Table 5-18 Attributes of a GE/10GBASE-T RJ45 electrical port

Attribute	Description
Connector type	RJ45
Standards compliance	IEEE802.3an, IEEE802.3az

Attribute	Description
Applicable cables	Straight-through cable and crossover cable
Working Mode	1000 Mbit/s or 10 Gbit/s Full-duplex
Maximum transmission distance	100 m

40GE/100GE QSFP28 optical port

Table 5-19 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 5-19 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depends on the optical module used.
Optical attributes	Depends on the QSFP+ or QSFP28 optical module used. See 40GE QSFP+ Optical Modules or 100GE QSFP28 Optical Modules.
Applicable cables	<p>When the port works in 100GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP28 optical module and MPO-MPO or LC-LC optical fiber (QSFP28-100G-4WDM-40 not supported) • QSFP28 to QSFP28 high-speed cable • QSFP28 to QSFP28 AOC cable <p>When the port works in 40GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP+ optical module and MPO-MPO or LC-LC optical fiber • QSFP+ to QSFP+ high-speed cable • QSFP+ to QSFP+ AOC cable

Attribute	Description
	<p>When the port works in 4*25GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP28 optical module and MPO-4*DLC or MPO-8*FC optical fiber (QSFP28-100G-4WDM-40 not supported) ● QSFP28 to 4*SFP28 high-speed cable <p>NOTE When a QSFP28-100G-SR4 optical module is installed on the port, the port cannot be connected to a port with an SFP-25G-SR optical module.</p> <p>When a QSFP28 to 4*SFP28 high-speed cable is installed on the port:</p> <ul style="list-style-type: none"> ● If auto-negotiation is disabled on the remote port, the local port supports only the QSFP-4SFP25G-CU1M or QSFP-4SFP25G-CU3M-N high-speed cable. ● If auto-negotiation is disabled and Base-R FEC is enabled on the remote port, the local port supports only the QSFP-4SFP25G-CU3M high-speed cable.
	<p>When the port works in 4*10GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP+ optical module and MPO-4*DLC or MPO-8*FC optical fiber ● QSFP+ to 4*SFP+ high-speed cable ● QSFP+ to 4*SFP+ AOC cable

Specifications

[Table 5-20](#) lists technical specifications of the CE88-D24T2CQ card.

Table 5-20 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> ● Dimensions (W x D x H): 210.0 mm x 205.2 mm x 41.8 mm (8.3 in. x 8.1 in. x 1.6 in.) ● Weight: 1.3 kg (2.87 lb) ● Typical power consumption: 72 W ● Maximum power consumption: 109 W ● Typical heat dissipation: 246 BTU/hr ● Maximum heat dissipation: 372 BTU/hr

Item	Description
Environment parameters	<ul style="list-style-type: none"> Operating temperature: 0°C to 40°C (32°F to 104°F) Relative humidity: 5% RH to 95% RH Storage temperature: -40°C to +70°C (-40°F to +158°F)

Ordering Information

[Table 5-21](#) provides the ordering information.

Table 5-21 Ordering information

Part Number	Card Model	Card Description
03023CRP	CE88-D24T2CQ	24-port GE/ 10GBASE-T (RJ45) and 2-port 40GE/ 100GE (QSFP28) interface card

5.6 CE88-D24S2CQ (24-Port 10GE/25GE (SFP28) and 2-Port 40GE/100GE (QSFP28) Interface Card)

Version Mapping

[Table 5-22](#) describes the mapping between the CE88-D24S2CQ card, switch models, and software versions.

Table 5-22 Version mapping

Switch Model	CE88-D24S2CQ
CE7800, CE6800, and CE5800 series switches and the CE8850EI	Not supported
CE8860-4C-EI	Supported in V100R006C00 and later versions

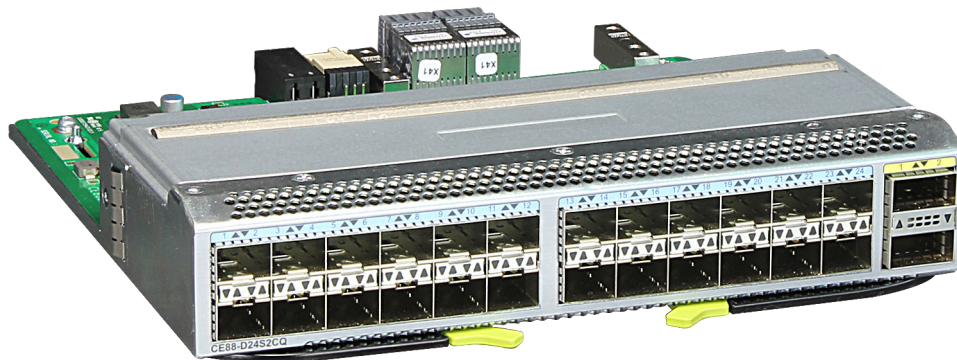
Switch Model	CE88-D24S2CQ
CE8861-4C-EI CE8868-4C-EI	Supported in V200R005C10 and later versions NOTE <ul style="list-style-type: none">• By default, the 25GE interfaces on the CE88-D24S2CQ subcard of the CE8868EI work at the rate of 10 Gbit/s. After the license is loaded, you can run the undo port mode 10g command to set the interface to work at the rate of 25 Gbit/s. To use the 25GE interfaces on these subcards of the CE8868EI, apply for and purchase the license from the equipment supplier.• For the CE8868EI, after the above license is loaded, you need to run the active card-license command to enable the corresponding license in the specified subcard slot. The CE8868EI has four subcard slots. You can purchase licenses based on the number of required subcard slots.

Card Overview

The CE88-D24S2CQ card can be install in any slot of the CE8860-4C-EI, CE8861-4C-EI, or CE8868-4C-EI chassis.

Figure 5-11 shows the appearance of the CE88-D24S2CQ card.

Figure 5-11 CE88-D24S2CQ card



Functions and Features

Table 5-23 describes functions and features of the CE88-D24S2CQ card.

Table 5-23 Functions and features

Function and Feature	Description
Basic function	Provides data packet processing and traffic management on 24 10GE/25GE SFP28 optical ports and 2 40GE/100GE QSFP28 optical ports.
Port split	Each QSFP28 optical port can be split into four 25GE ports or four 10GE ports. Such 25GE or 10GE ports cannot work at 1 Gbit/s.
Hot swap	Supported
Service port stacking	Ports on the card can be used as stack ports. NOTE SFP28 ports that have GE copper modules, GE optical modules, 10GE optical modules, 10GE high-speed cables, or 10GE AOC cables installed cannot be used for stack connections.

Indicators and Ports

Figure 5-12 shows indicators on the CE88-D24S2CQ panel.

Figure 5-12 Indicators on the CE88-D24S2CQ panel

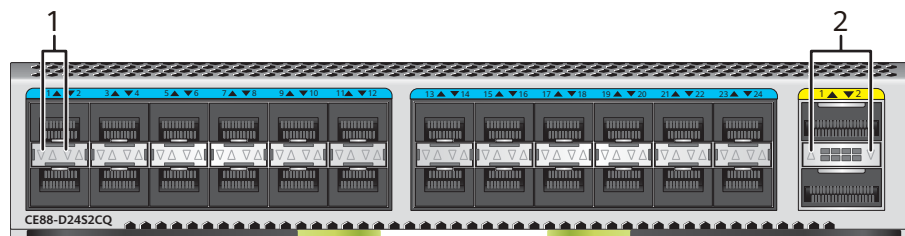


Table 5-24 describes indicators on the CE88-D24S2CQ panel.

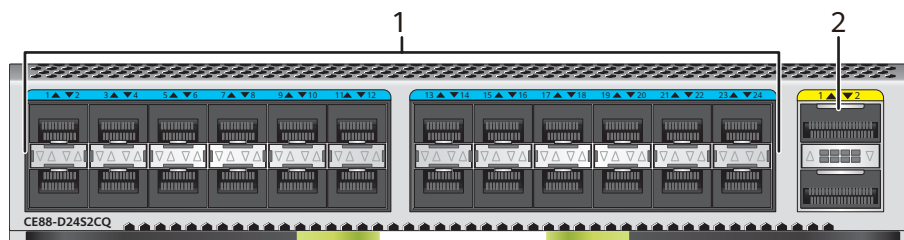
Table 5-24 Indicator description

Number	Indicator	Color	Status	Description
1	SFP28 optical ports: two single-color indicators	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.

Number	Indicator	Color	Status	Description
	for each port <ul style="list-style-type: none"> Steady green: LINK indicator Blinking yellow: ACT indicator <p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Yellow	Off	The port is not transmitting or receiving data.
			Blinking	The port is transmitting or receiving data.
2	QSFP28 optical ports: one single-color indicator for each port <p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.
			Blinking	The port is transmitting or receiving data.

Figure 5-13 shows the ports on the CE88-D24S2CQ card.

Figure 5-13 Ports on the CE88-D24S2CQ card



1. Twenty-four 10GE/25GE SFP28 optical ports	2. Two 40GE/100GE QSFP28 optical ports
--	--

10GE/25GE SFP28 optical port

Table 5-25 describes attributes of a 10GE/25GE SFP28 optical port.

Table 5-25 Attributes of a 10GE/25GE SFP28 optical port

Attribute	Description
Connector type	Depends on the optical module used.
Optical attributes	Depends on the optical module used.

Attribute	Description
Port use constraints	<p>The 24 10GE/25GE SFP28 optical ports on the CE88-D24S2CQ card of CE8868EI work at 10 Gbit/s by default. You can set the port speed to 1 Gbit/s using the port mode ge command. After the corresponding license is loaded, you can run the undo port mode 10g command to set the interface to work at the rate of 25 Gbit/s.</p> <p>In addition to CE8868EI, the 24 10GE/25GE SFP28 optical ports of a CE88-D24S2CQ card work at 25 Gbit/s by default. You can set the port speed to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command.</p> <p>The 24 10GE/25GE SFP28 optical ports are divided into 6 port groups, with four ports in each group (1-4, 5-8, 9-12...21-24).</p> <ul style="list-style-type: none">• If the speed of any port in a port group is set to 1 Gbit/s, 10G bit/s, or 25G bit/s, all the other ports in this group also work at 1 Gbit/s, 10G bit/s, or 25G bit/s.• When the ports in a port group work at 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at 10 Gbit/s, they support only 10GE or 25GE variable-rate modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used.• If the switch is running a version earlier than V200R002C50, the ports in a port group must use the same type of transmission medium (copper or fiber). This constraint does not apply to V200R002C50 and later versions.• A 25GE optical interface does not support auto-negotiation when it has a GE optical module installed. To connect the two interfaces at both ends of a link, disable auto-negotiation on the peer interface. Otherwise, one interface may go Up and the other may go Down.

Attribute	Description
<p>Applicable cables</p> <p>NOTE After a CE88-D24S2CQ card is installed on the CE8860EI, 10GE/25GE SFP28 optical ports on the card do not support SFP-25G-SR optical modules.</p>	<p>When the port works in GE or 10GE mode, it can use:</p> <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE optical module (supported from V200R005C00 version) • GE cooper module (supported from V200R005C00 version and only works at 1000 Mbit/s) • SFP+ to SFP+ high-speed cable • SFP+ to SFP+ AOC cable <p>When the port works in 25GE mode, it can use:</p> <ul style="list-style-type: none"> • SFP-25G-SR optical module • SFP28 to SFP28 AOC cable • SFP28 to SFP28 high-speed cable (1m or 3m) <p>NOTE The port supports the SFP28 to SFP28 AOC cable only when FEC is disabled on the remote port. When an SFP28 to SFP28 high-speed cable is installed on the port:</p> <ul style="list-style-type: none"> • If auto-negotiation is disabled on the remote port, the local port supports only the SFP-25G-CU1M or SFP-25G-CU3M-N high-speed cable. • If auto-negotiation is disabled and Base-R FEC is enabled on the remote port, the local port supports only the SFP-25G-CU3M high-speed cable.

40GE/100GE QSFP28 optical port

Table 5-26 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 5-26 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depends on the optical module used.
Optical attributes	Depends on the QSFP+ or QSFP28 optical module used. See 40GE QSFP+ Optical Modules or 100GE QSFP28 Optical Modules.

Attribute	Description
Applicable cables	<p>When the port works in 100GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP28 optical module and MPO-MPO or LC-LC optical fiber (QSFP28-100G-4WDM-40 not supported) • QSFP28 to QSFP28 high-speed cable • QSFP28 to QSFP28 AOC cable
	<p>When the port works in 40GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP+ optical module and MPO-MPO or LC-LC optical fiber • QSFP+ to QSFP+ high-speed cable • QSFP+ to QSFP+ AOC cable
	<p>When the port works in 4*25GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP28 optical module and MPO-4*DLC or MPO-8*FC optical fiber (QSFP28-100G-4WDM-40 not supported) • QSFP28 to 4*SFP28 high-speed cable <p>NOTE</p> <p>When a QSFP28-100G-SR4 optical module is installed on the port, the port cannot be connected to a port with an SFP-25G-SR optical module.</p> <p>When a QSFP28 to 4*SFP28 high-speed cable is installed on the port:</p> <ul style="list-style-type: none"> • If auto-negotiation is disabled on the remote port, the local port supports only the QSFP-4SFP25G-CU1M or QSFP-4SFP25G-CU3M-N high-speed cable. • If auto-negotiation is disabled and Base-R FEC is enabled on the remote port, the local port supports only the QSFP-4SFP25G-CU3M high-speed cable.
	<p>When the port works in 4*10GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP+ optical module and MPO-4*DLC or MPO-8*FC optical fiber • QSFP+ to 4*SFP+ high-speed cable • QSFP+ to 4*SFP+ AOC cable

Specifications

[Table 5-27](#) lists technical specifications of the CE88-D24S2CQ card.

Table 5-27 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none">• Dimensions (W x D x H): 210.0 mm x 205.2 mm x 41.8 mm (8.3 in. x 8.1 in. x 1.6 in.)• Weight: 1.4 kg (3.09 lb)• Typical power consumption: 43 W• Maximum power consumption: 71 W• Typical heat dissipation: 147 BTU/hr• Maximum heat dissipation: 243 BTU/hr
Environment parameters	<ul style="list-style-type: none">• Operating temperature: 0°C to 40°C (32°F to 104°F)• Relative humidity: 5% RH to 95% RH• Storage temperature: -40°C to +70°C (-40°F to +158°F)

Ordering Information

Table 5-28 provides the ordering information.

Table 5-28 Ordering information

Part Number	Card Model	Card Description
03023CRM	CE88-D24S2CQ	24-port 10GE/ 25GE (SFP28) and 2-port 40GE/ 100GE (QSFP28) interface card

5.7 CE88-D24S2CQ-U (24-Port 25GE/16G FC (SFP28) and 2-Port 40GE/100GE (QSFP28) Interface Card)

Version Mapping

Table 5-29 describes the mapping between the CE88-D24S2CQ-U card, switch models, and software versions.

Table 5-29 Version mapping

Switch Model	CE88-D24S2CQ-U
CE7800, CE6800, and CE5800 series switches, CE8850EI, and the CE8868-4C-EI	Not supported
CE8860-4C-EI	Supported in V200R003C00 and later version
CE8861-4C-EI	Supported in V200R005C10 and later version

Card Overview

The CE88-D24S2CQ-U card can be install in any slot of the CE8860-4C-EI or CE8861-4C-EI chassis.

Figure 5-14 shows the appearance of the CE88-D24S2CQ-U card.

Figure 5-14 CE88-D24S2CQ-U card



Functions and Features

Table 5-30 describes functions and features of the CE88-D24S2CQ-U card.

Table 5-30 Functions and features

Function and Feature	Description
Basic function	Provides data packet processing and traffic management on 24 25GE/10GE SFP28 optical ports and two 40GE/100GE QSFP28 optical ports. The 24 25GE/10GE SFP28 optical ports can be configured as 24 FC interfaces (supporting rates of 4 Gbit/s, 8 Gbit/s, and 16 Gbit/s).

Function and Feature	Description
Port split	Each QSFP28 optical port can be split into four 25GE ports or four 10GE ports. Such 25GE or 10GE ports cannot work at 1 Gbit/s.
Hot swap	Supported
Service port stacking	Ports on the card can be used as stack ports. NOTE 24 25GE/16G FC optical ports cannot be used for stack connections.

Indicators and Ports

Figure 5-15 shows indicators on the CE88-D24S2CQ-U panel.

Figure 5-15 Indicators on the CE88-D24S2CQ-U panel

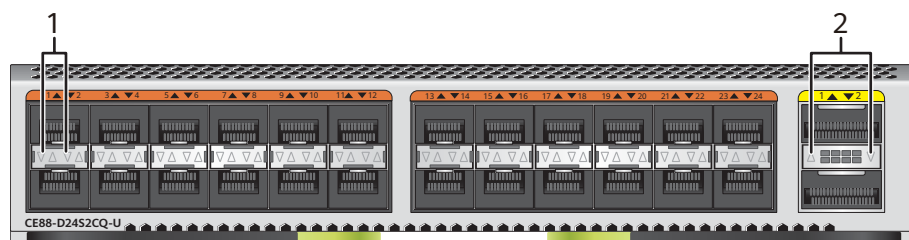


Table 5-31 describes indicators on the CE88-D24S2CQ-U panel.

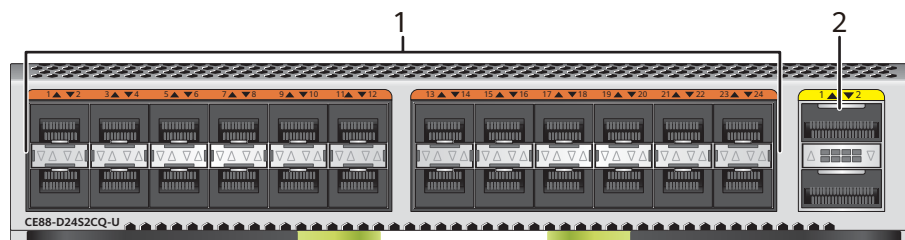
Table 5-31 Indicator description

Number	Indicator	Color	Status	Description
1	SFP28 optical ports: two single-color indicators for each port <ul style="list-style-type: none"> Steady green: LINK indicator 	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.
		Yellow	Off	The port is not transmitting or receiving data.

Number	Indicator	Color	Status	Description
	<ul style="list-style-type: none"> Blinking yellow: ACT indicator <p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>		Blinking	The port is transmitting or receiving data.
2	<p>QSFP28 optical ports: one single-color indicator for each port</p> <p>NOTE Arrowheads show the positions of ports. A down arrowhead indicates a port at the bottom, and an up arrowhead indicates a port at the top.</p>	Green	Off	No link is established on the port.
			Steady on	A link has been established on the port.
			Blinking	The port is transmitting or receiving data.

Figure 5-16 shows the ports on the CE88-D24S2CQ-U card.

Figure 5-16 Ports on the CE88-D24S2CQ-U card



1. 24 25GE/16G FC (SFP28) optical ports	2. Two 40GE/100GE QSFP28 optical ports
---	--

25GE/16G FC (SFP28) optical port

25GE/16G FC (SFP28) optical ports cannot work at 100 Mbit/s. [Table 5-32](#) describes attributes of a 25GE/16G FC (SFP28) optical port.

Table 5-32 Attributes of a 25GE/16G FC (SFP28) optical port

Attribute	Description
Connector type	Depending on the optical module used.
Optical attributes	Depending on the optical module used.

Attribute	Description
Port use constraints	<p>The 24 25GE/16G FC (SFP28) optical ports of the CE88-D24S2CQ-U work at 25 Gbit/s by default and do not support GE/10GE auto-sensing. You can set the port speed to 10 Gbit/s or 1 Gbit/s using the port mode 10g or port mode ge command.</p> <p>The 24 25GE/16G FC (SFP28) optical ports are divided into six port groups, each of which contains four ports (1-4, 5-8, 9-12...21-24).</p> <ul style="list-style-type: none"> • If the speed of any port in a port group is set to 1 Gbit/s, 10G bit/s, or 25G bit/s, all the other ports in this group also work at 1 Gbit/s, 10G bit/s, or 25G bit/s. • When the ports in a port group work at 25 Gbit/s, they support only 25GE modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at 10 Gbit/s, they support only 10GE or 25GE variable-rate modules or cables and will go Down if other types of modules or cables are used. When the ports in a port group work at 1 Gbit/s, they support only GE modules or cables and will go Down if other types of modules or cables are used. • The maximum rate supported by a 16GE FC optical port is 14 Gbit/s. • A 25GE optical interface does not support auto-negotiation when it has a GE optical module installed. To connect the two interfaces at both ends of a link, disable auto-negotiation on the peer interface. Otherwise, one interface may go Up and the other may go Down.
Applicable cables	<p>When the port works in 10GE mode, it can use:</p> <ul style="list-style-type: none"> • 10GE optical module (OSXD22N00, LE2MXSC80FF0 and SFP-10G-ZDWT-L not supported) • GE cooper module (supported from V200R005C100 version and only works at 1000 Mbit/s) • GE optical module (supported from V200R005C100 version) • SFP+ to SFP+ high-speed cable • SFP+ to SFP+ AOC cable

Attribute	Description
	<p>When the port works in 25GE mode, it can use:</p> <ul style="list-style-type: none"> • SFP-25G-SR optical module • SFP28 to SFP28 AOC cable • SFP28 to SFP28 high-speed cable (1m, 3m, or 5m)
	<p>When the port is configured as an FC port, it can use:</p> <ul style="list-style-type: none"> • 4G/8G/16G SFP optical module and LC optical fiber

40GE/100GE QSFP28 optical port

Table 5-33 describes the attributes of a 40GE/100GE QSFP28 optical port.

Table 5-33 Attributes of a 40GE/100GE QSFP28 optical port

Attribute	Description
Connector type	Depends on the optical module used.
Optical attributes	Depends on the QSFP+ or QSFP28 optical module used. See 40GE QSFP+ Optical Modules or 100GE QSFP28 Optical Modules.
Applicable cables	<p>When the port works in 100GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP28 optical module and MPO-MPO or LC-LC optical fiber (QSFP28-100G-4WDM-40 not supported) • QSFP28 to QSFP28 high-speed cable • QSFP28 to QSFP28 AOC cable <p>When the port works in 40GE mode, it can use:</p> <ul style="list-style-type: none"> • QSFP+ optical module and MPO-MPO or LC-LC optical fiber • QSFP+ to QSFP+ high-speed cable • QSFP+ to QSFP+ AOC cable

Attribute	Description
	<p>When the port works in 4*25GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP28 optical module and MPO-4*DLC or MPO-8*FC optical fiber (QSFP28-100G-4WDM-40 not supported) ● QSFP28 to 4*SFP28 high-speed cable <p>NOTE When a QSFP28-100G-SR4 optical module is installed on the port, the port cannot be connected to a port with an SFP-25G-SR optical module.</p> <p>When a QSFP28 to 4*SFP28 high-speed cable is installed on the port:</p> <ul style="list-style-type: none"> ● If auto-negotiation is disabled on the remote port, the local port supports only the QSFP-4SFP25G-CU1M or QSFP-4SFP25G-CU3M-N high-speed cable. ● If auto-negotiation is disabled and Base-R FEC is enabled on the remote port, the local port supports only the QSFP-4SFP25G-CU3M high-speed cable.
	<p>When the port works in 4*10GE mode, it can use:</p> <ul style="list-style-type: none"> ● QSFP+ optical module and MPO-4*DLC or MPO-8*FC optical fiber ● QSFP+ to 4*SFP+ high-speed cable ● QSFP+ to 4*SFP+ AOC cable

Specifications

[Table 5-34](#) lists technical specifications of the CE88-D24S2CQ-U card.

Table 5-34 Technical specifications

Item	Description
Physical specifications	<ul style="list-style-type: none"> ● Dimensions (W x D x H): 210.0 mm x 205.2 mm x 41.8 mm (8.3 in. x 8.1 in. x 1.6 in.) ● Weight: 1.4 kg (3.09 lb) ● Typical power consumption: 43 W ● Maximum power consumption: 71 W ● Typical heat dissipation: 147 BTU/hr ● Maximum heat dissipation: 243 BTU/hr

Item	Description
Environment parameters	<ul style="list-style-type: none">• Operating temperature: 0°C to 40°C (32°F to 104°F)• Relative humidity: 5% RH to 95% RH• Storage temperature: -40°C to +70°C (-40°F to +158°F)

Ordering Information

[Table 5-35](#) provides the ordering information.

Table 5-35 Ordering information

Part Number	Card Model	Card Description
03024GEG	CE88-D24S2CQ-U	24-port 25GE/16G FC (SFP28) and 2-port 40GE/100GE (QSFP28) interface card

6 Cables

- [6.1 AC Power Cable](#)
- [6.2 DC Power Cable](#)
- [6.3 380 V High-Voltage DC Power Cable](#)
- [6.4 Ground Cable](#)
- [6.5 Console Cable](#)
- [6.6 Ethernet Cable](#)
- [6.7 Clock Cable](#)
- [6.8 Optical Fiber](#)
- [6.9 AOC Cable](#)
- [6.10 High-Speed Cable](#)

6.1 AC Power Cable

Types of AC Power Cables

 NOTE

The AC power cables delivered must comply with the standards used in the delivery destination. This section uses the AC power cables complying with China's national standards as an example.

AC power cables are classified into two types: C13 straight female to PI straight male AC power cable and C13 straight female to C14 straight male AC power cable.

Appearance and Structure

Figure 6-1 shows the appearance of a C13 straight female to PI straight male AC power cable.

Figure 6-1 C13 straight female to PI straight male AC power cable



Figure 6-2 shows the appearance of a C13 straight female to C14 straight male AC power cable.

Figure 6-2 C13 straight female to C14 straight male AC power cable



Connection

An AC power cable is connected to the AC power module of the device:

- The C13 straight female connector is connected to the power socket of a power module.
- The PI straight male or C14 straight male connector is connected to a power source.

When a 600 W AC&240 V DC power module or 1200 W AC&240 V DC power module uses 240 V high-voltage power input, it must be connected to the power supply device using a C13 straight female to C14 straight male AC power cable. This power cable is connected as follows:

- The C13 straight female connector is connected to the power socket of the 600 W AC&240 V DC power module or 1200 W AC&240 V DC power module.
- The C14 straight male connector is connected to a high-voltage DC PDU. If a high-voltage DC power distribution box is used, make OT or cord end terminals for the cable. Cut the C14 straight male connector off and crimp OT or cord end terminals on the bare wires. Connect the blue wire to a positive terminal on the DC power distribution box, the brown wire to a negative terminal, and the yellow-green wire to a protection ground. If the switch fails to be powered on after you connect the power cable, swap the wires on the positive and negative terminals.

6.2 DC Power Cable

Appearance and Structure

DC power cables consist of the power cable for a 350 W/600 W DC power module, the power cable for a 1000 W DC power module, and the power cable for a 1200 W DC power module.

Figure 6-3 shows the appearance of the power cable for a 350 W/600 W DC power module.

Figure 6-3 Appearance of the power cable for a 350 W/600 W DC power module



Figure 6-4 shows the structure of the power cable for a 350 W/600 W DC power module.

Figure 6-4 Structure of the power cable for a 350 W/600 W DC power module

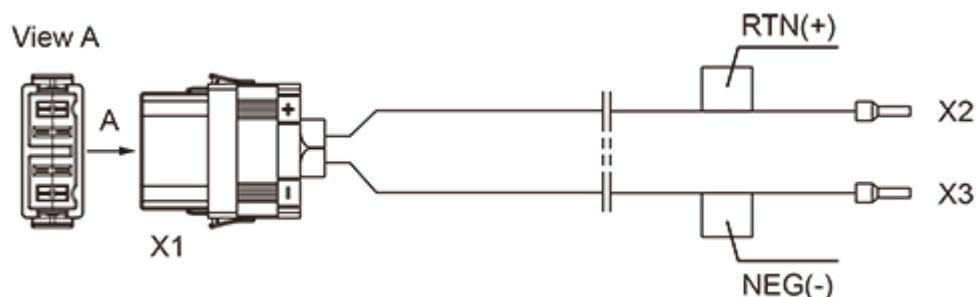


Figure 6-5 shows the appearance of the power cable for a 1000 W DC power module.

Figure 6-5 Appearance of the power cable for a 1000 W DC power module

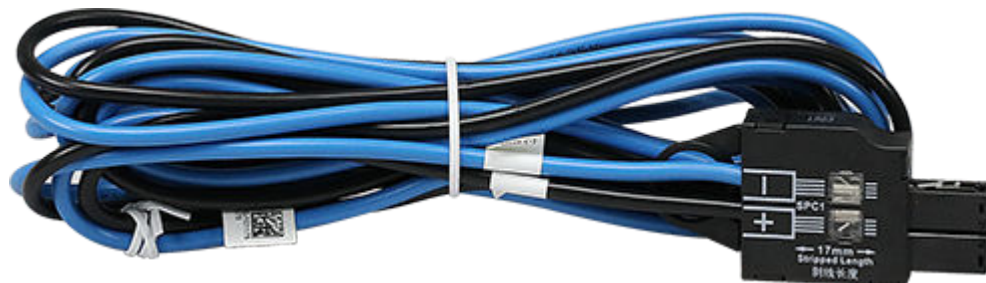


Figure 6-6 shows the structure of the power cable for a 1000 W DC power module.

Figure 6-6 Structure of the power cable for a 1000 W DC power module

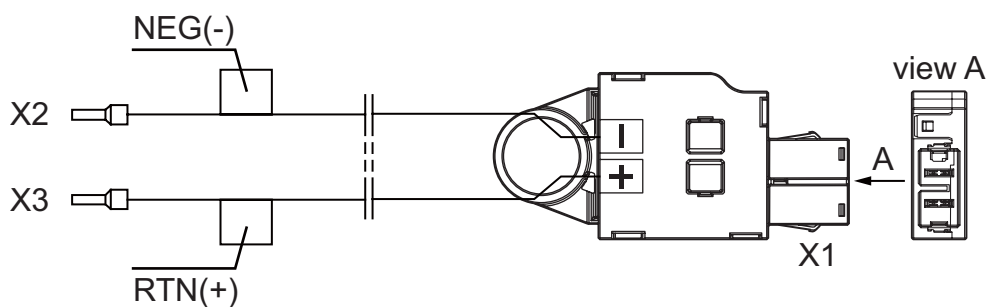


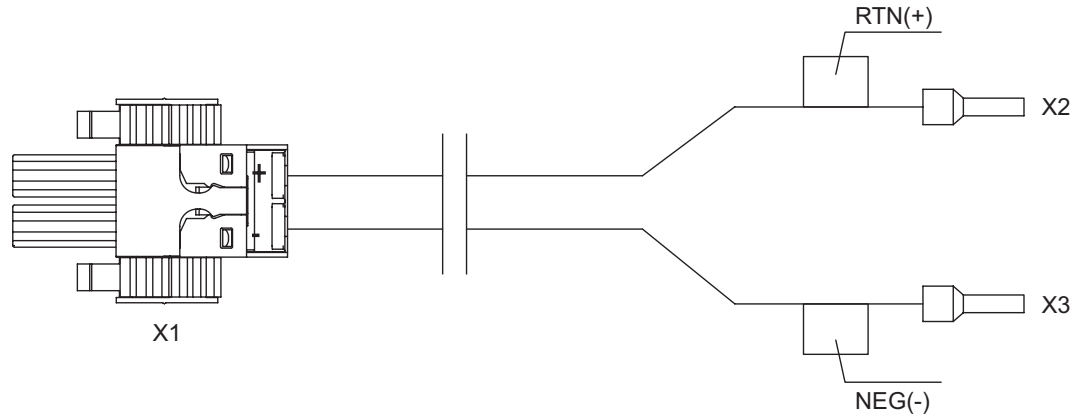
Figure 6-7 shows the appearance of the power cable for a 1200 W DC power module.

Figure 6-7 Appearance of the power cable for a 1200 W DC power module



Figure 6-8 shows the structure of the power cable for a 1200 W DC power module.

Figure 6-8 Structure of the power cable for a 1200 W DC power module



Pin Assignments

Table 6-1 lists the pin assignments of the power cable for a 350 W/600 W DC power module.

Table 6-1 Pin assignments of the power cable for a 350 W/600 W DC power module

X1	X2	X3	Length	Conductor Cross-Sectional Area
2 female	Cord end terminal 4^2 grey	Cord end terminal 4^2 grey	3 m	3.332 mm ² (12AWG)

Table 6-2 lists the pin assignments of the power cable for a 1000 W DC power module.

Table 6-2 Pin assignments of the power cable for a 1000 W DC power module

X1	X2	X3	Length	Conductor Cross-Sectional Area
2 female	Cord end terminal 4^2 grey	Cord end terminal 4^2 grey	3 m	4 mm ² (14AWG)

Table 6-3 lists the pin assignments of the power cable for a 1200 W DC power module.

Table 6-3 Pin assignments of the power cable for a 1200 W DC power module

X1	X2	X3	Length	Conductor Cross-Sectional Area
2 female	Cord end terminal 6 ² black	Cord end terminal 6 ² black	3 m	6 mm ² (10AWG)

Connection

A DC power cable connects to the DC power module of the device:

- X1 connector connects to the input port on the DC power module.
- X2/X3 cord end terminal connects to an external power module.

6.3 380 V High-Voltage DC Power Cable

Appearance and Structure

Figure 6-9 shows the appearance of a 380 V high-voltage DC power cable.

Figure 6-9 380 V high-voltage DC power cable (high-voltage DC straight female connector to bare wires)



Connection

A 380 V high-voltage DC power cable has a high-voltage DC straight female connector at one end and bare wires at the other end, and is used to connect a 600 W high-voltage DC power module or 1200 W high-voltage DC power module to a power supply device:

- The high-voltage DC straight female connector is connected to the power socket of the 600 W high-voltage DC power module or 1200 W high-voltage DC power module.
- The bare wires are connected to a 380 V high-voltage DC power distribution frame or power distribution box. Crimp OT or cord end terminals on the bare wires, and then connect the blue wire to a negative terminal, the brown wire to a positive terminal, and the yellow-green wire to a protection ground. If the switch fails to be powered on after you connect the power cable, swap the wires on the positive and negative terminals.

6.4 Ground Cable

Appearance and Structure

NOTE

Different types of ground cables have similar appearance, except for the cross-sectional area, size of the cable lugs, and cable length. The following figure is for reference.

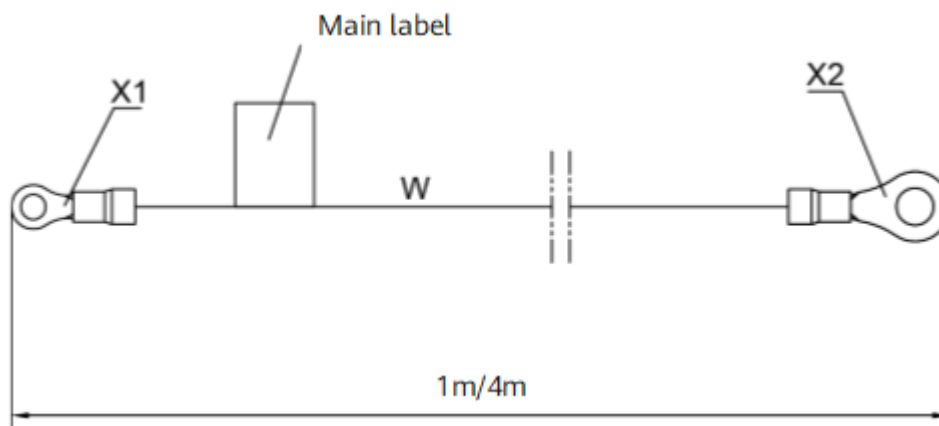
Figure 6-10 shows the appearance of a ground cable.

Figure 6-10 Ground cable appearance



Figure 6-11 shows the structure of a ground cable.

Figure 6-11 Ground cable structure



Pin Assignments

Table 6-4 lists the pin assignments of a ground cable.

Table 6-4 Pin assignments

X1	X2	Wire Color	Conductor Cross-Sectional Area	Length
OT6-4	OT6-6	Green-yellow	4 mm ²	1 m or 4 m NOTE The default ground cable delivered with a switch is 1 m long. You can also order a 4 m ground cable for a switch based on your installation environment.

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 OT6-4 naked crimping connector connects to the ground point on the chassis.
- The OT6-6 naked crimping connector connects to the ground point on the cabinet.

6.5 Console Cable

Appearance and Structure

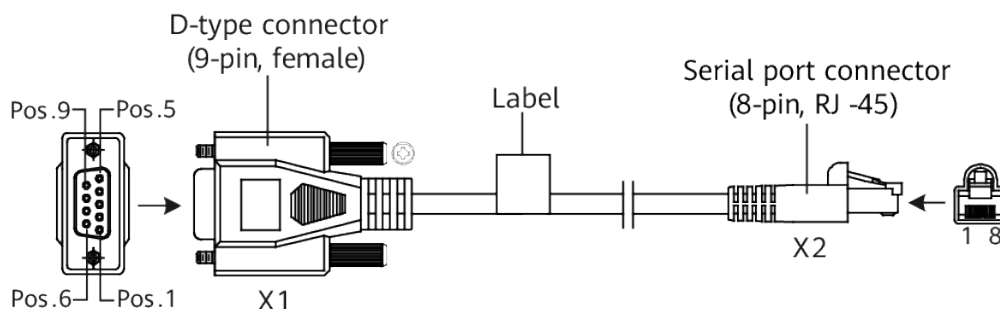
Figure 6-12 shows the appearance of a console cable.

Figure 6-12 Console cable appearance



Figure 6-13 shows the structure of a console cable.

Figure 6-13 Console cable structure



Pin Assignments

Table 6-5 lists the pin assignments of console cable connectors.

Table 6-5 Pin assignments

Connector	X1 (DB-9)	X2 (RJ45)
Pin assignment	2	3
	3	6
	5	5

Connection

A console cable connects the console port of a device to the serial port of an operation terminal, enabling users to commission or locally maintain the device.

A console cable connects a device and a console as follows:

- The 8-pin RJ45 connector is connected to the console port of the device.
- The DB-9 female connector is connected to a maintenance terminal, such as a computer.

6.6 Ethernet Cable

Types of Ethernet Cables

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

- Straight-through cable: The pin assignments of RJ45 connectors at both ends are shown in [Table 6-6](#).
- Crossover cable: The pin assignments of RJ45 connectors at both ends are shown in [Table 6-7](#).

Appearance and Structure

NOTE

- Straight-through cables and crossover cables are standard unshielded twisted pairs that use RJ45 connectors.
- A straight-through cable and a crossover cable have the same appearance.

[Figure 6-14](#) and [Figure 6-15](#) show the appearance of an Ethernet cable.

Figure 6-14 Ethernet cable appearance (1)

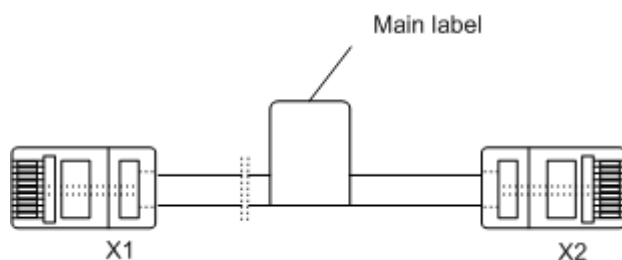


Figure 6-15 Ethernet cable appearance (2)



Figure 6-16 shows the structure of an Ethernet cable.

Figure 6-16 Ethernet cable structure



Pin Assignments

Table 6-6 lists the pin assignments of a straight-through cable.

Table 6-6 Pin assignments of a straight-through cable

X1 Pin	Wire Color	X2 Pin
1	White and orange	1
2	Orange	2
3	White and green	3
4	Blue	4
5	White and blue	5

X1 Pin	Wire Color	X2 Pin
6	Green	6
7	White and brown	7
8	Brown	8

Table 6-7 lists the pin assignments of a crossover cable.

Table 6-7 Pin assignments of a crossover cable

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

 **NOTE**

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

Connection

Ethernet cables connect network devices to each other to enable the devices to communicate or to allow local maintenance and remote access.

- A straight-through cable connects a terminal (such as a PC or switch) to a network device.
- A crossover cable connects two terminals (such as PCs and switches).

Supported Cabling Types for 10GBASE-T

Table 6-8 describes the supported cabling types for a 10GBASE-T Ethernet electrical port.

Table 6-8 Supported cabling types for 10GBASE-T

Item	Category 7 STP	Category 6A STP	Category 6A F/UTP	Category 6A U/UTP	Category 6 STP	Category 6 UTP
Cable Description	Category 7 shielded twisted pair (STP)	Category 6A shielded twisted pair	Category 6A foiled/unshielded twisted pair (Cat6A F/UTP)	Not supported	Not supported	Not supported
Type	Class F	Class Ea	Class Ea			
Maximum transmission distance	100 m	100 m	100 m			
Cabling system bandwidth	600 MHz NOTE The cabling system exceeds the requirements for IEEE 10GBASE-T performance	500 MHz NOTE The cabling system exceeds the requirements for IEEE 10GBASE-T performance.				

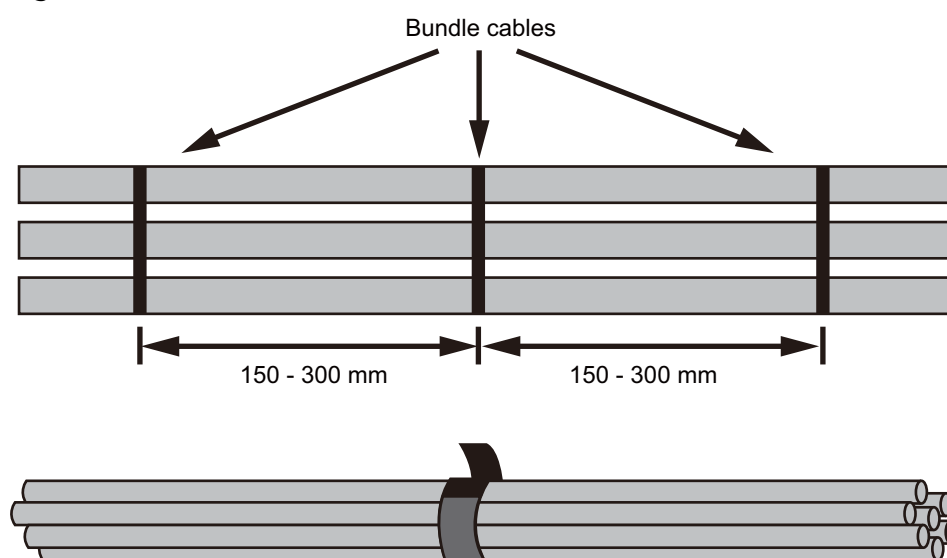
NOTE

- In a new built equipment room, Category 6A shielded twisted pairs or Category 7 twisted pairs are recommended. These cables can avoid alien crosstalk while having no special installation requirements. In addition, they can be used with other types of cables.
- If Category 6A foiled/unshielded twisted pairs are used in an equipment room and the cabling systems can meet requirements of TSB-155, follow these rules route these cables:
 - Separate these cables with other types of cables. If they must be routed in the same cable trough with other types of cables, separated them from other cables using a metal plate.
 - Separate cables as much as possible at the outlet and keep the cables parallel with each other. Most alien crosstalk appears within 20 m away from the outlet. To reduce alien crosstalk, do not bundle cables in the first 5 m to 20 m.
 - If cables need to be bundled, bundle cables with cable ties placed every 150 mm to 300 mm. See [Table 6-9](#). Bundle cables loosely, as shown in [Figure 6-17](#).
 - You are advised to add no more than 12 cables in a bundle. A bundle cannot have more than 24 cables.
- Strong interference may trigger the fast retrain function on 10GBASE-T Ethernet electrical ports, and a large number of bit errors occur for about 30 ms. To avoid this problem, keep the switch away from interference sources or take adequate interference shielding measures.

Table 6-9 Intervals between cable ties

Diameter of an Ethernet Cable Bundle (mm)	Interval Between Cable Ties (mm)
< 10	150
10-30	200
> 30	300

Figure 6-17 Method to bundle cables



6.7 Clock Cable

Overview

The external clock ports of a switch are used for clock and time synchronization.

A clock cable connects a switch to an external clock source or a time source device.

When a switch connects to external devices through clock cables, it provides the following functions:

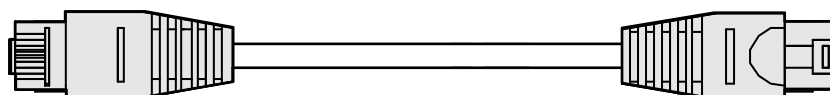
- Receives 2-channel 2.048 MHz or 2.048 Mbit/s clock signals from the upstream device and delivers 2-channel 2.048 MHz or 2.048 Mbit/s clock signals to the downstream device.
- Receives 2-channel ToD or DCLS time signals from the upstream device and delivers 2-channel ToD or DCLS time signals to the downstream device.

Appearance and Structure

RJ48 Cable

RJ48 cables applicable to the CE6875 switch are 120-ohm trunk cables (shielded cables), as shown in [Figure 6-18](#).

Figure 6-18 Structure of a 120-ohm trunk cable



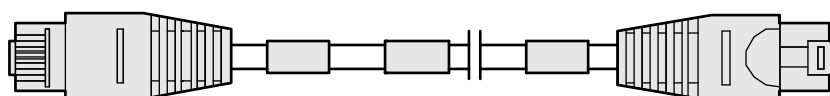
NOTE

An RJ48 cable can connect a CE6875 switch to a clock source device with an RJ45 interface.

RJ45 Cable

RJ45 cables applicable to the CE6875 switch are straight-through cables (shielded cables), as shown in [Figure 6-19](#).

Figure 6-19 Structure of a straight-through cable



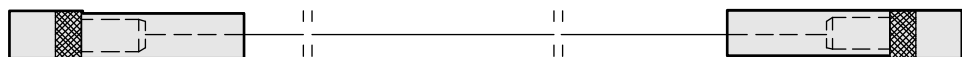
NOTE

An RJ45 cable can connect a CE6875 switch to a time source device with an RJ45 interface. To connect a switch to a clock source that has a sub-miniature B (SMB) or bayonet-neill-concelman (BNC) interface, use an RJ45 cable and a transmultiplexer.

SMB/SMB Trunk Cable

An SMB/SMB trunk cable is a 75-ohm trunk cable with SMB connectors at both ends, as shown in [Figure 6-20](#).

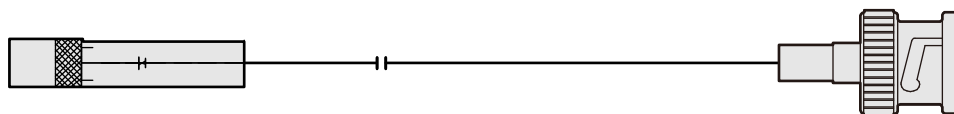
Figure 6-20 SMB/SMB trunk cable



SMB/BNC Trunk Cable

An SMB/BNC trunk cable is a 75-ohm trunk cable with an SMB connector and a BNC connector, as shown in [Figure 6-21](#).

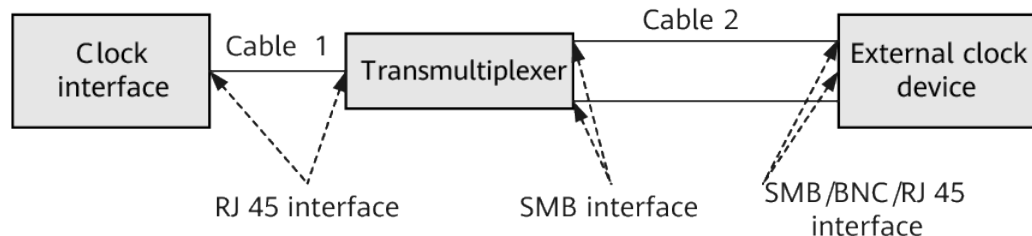
Figure 6-21 SMB/BNC trunk cable



Connection

One end of the clock cable is the RJ45 connector, which is connected to the BITS port on a CE6875 switch. The other end of the clock cable is connected to an external clock device. The connector type depends on the type of the external clock device. The external clock device can be a clock source that has an SMB, BNC, or RJ45 interface or a time source providing an RJ45 interface.

Figure 6-22 Clock cable connections



Based on the functions and interface types of the external clock device connected to the 6875 switch, the following cables can be selected:

- When the connected device is a clock source with an RJ45 interface:
Cable 1 can be an RJ48 cable. No transmultiplexer or cable 2 is required.
- When the connected device is a time source with an RJ45 interface:
Cable 1 can be an RJ45 cable. No transmultiplexer or cable 2 is required.
- When the connected device is a clock source with an SMB interface:
Cable 1 can be an RJ45 cable, and cable 2 can be an SMB/SMB trunk cable. A transmultiplexer is required.
- When the connected device is a clock source with a BNC interface:
Cable 1 can be an RJ45 cable, and cable 2 can be an SMB/BNC trunk cable. A transmultiplexer is required.

6.8 Optical Fiber

Appearance and Structure

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

 **NOTE**

The MPO-MPO fibers for CE series switches use type B connectors (key Up/key Up).

Figure 6-23 shows the appearance of an LC single-mode fiber.

Figure 6-23 LC single-mode fiber appearance



Figure 6-24 shows the appearance of an LC multi-mode fiber.

Figure 6-24 LC multi-mode fiber appearance



Figure 6-25 shows the appearance of an MPO-MPO fiber.

Figure 6-25 MPO-MPO fiber appearance



Figure 6-26 shows the appearance of an MPO-4*DLC fiber.

Figure 6-26 MPO-4*DLC fiber appearance



Figure 6-27 shows the appearance of an MPO-8*FC fiber.

Figure 6-27 MPO-8*FC fiber appearance



The following figures show structures of various optical fibers.

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 6-28 shows the structure of an 8-strand MPO-MPO fiber jumper.

Figure 6-28 Structure of an 8-strand MPO-MPO fiber jumper

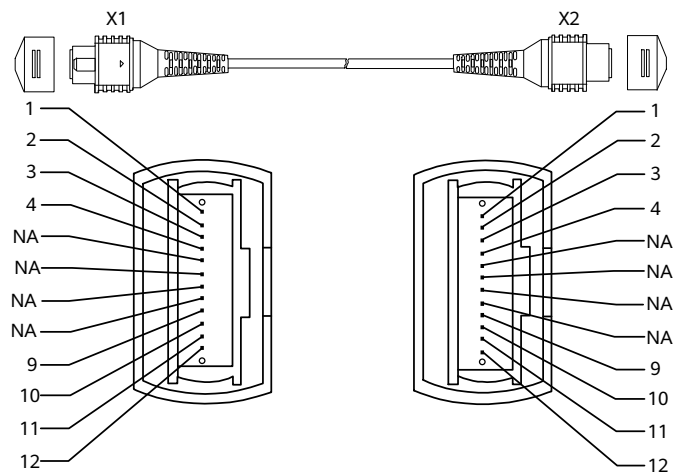


Figure 6-29 shows the structure of a 12-strand MPO-MPO fiber jumper.

Figure 6-29 Structure of a 12-strand MPO-MPO fiber jumper

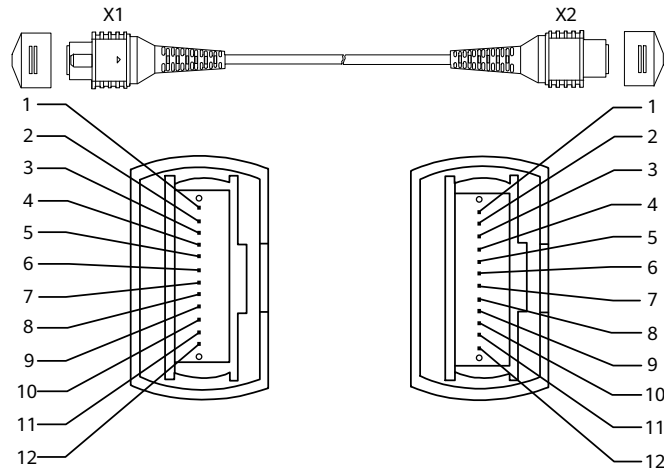


Figure 6-30 shows the structure of an MPO-4*DLC fiber.

Figure 6-30 MPO-4*4LC fiber structure

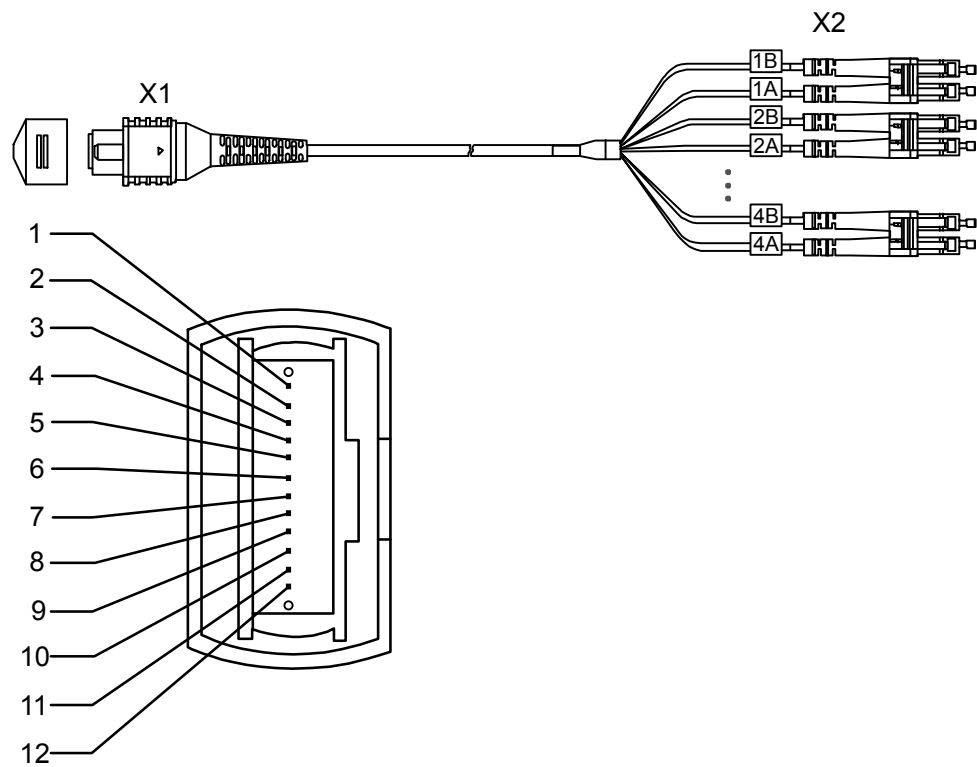
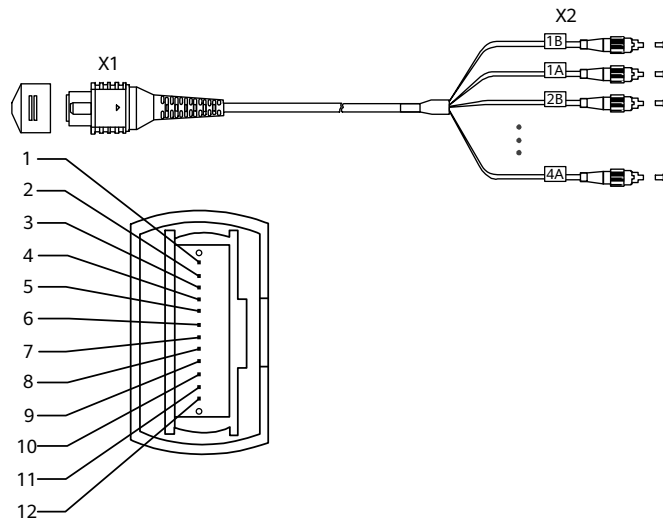


Figure 6-31 shows the structure of an MPO-8*FC fiber.

Figure 6-31 MPO-8*FC fiber structure



Pin Assignments

Table 6-10 lists the pin assignments of an 8-strand MPO-MPO fiber jumper.

Table 6-10 Pin assignments of an 8-strand MPO-MPO fiber jumper

X1 Pin	X2 Pin
1	12
2	11
3	10
4	9
9	4
10	3
11	2
12	1

Table 6-11 lists the pin assignments of a 12-strand MPO-MPO fiber jumper.

Table 6-11 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

MPO-4*DLC and MPO-8*FC fibers have the same pin assignments, as shown in **Table 6-12**.

Table 6-12 Pin assignments of MPO-4*DLC and MPO-8*FC fibers

X1 Pin	X2 Pin
1	1B
2	2B
3	3B
4	4B
9	4A
10	3A
11	2A
12	1A

Optical Fibers and Optical Connectors

Optical Fibers

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

- Single-mode fibers have a diameter of 5-10 μm and transmit laser in one mode under a specified wavelength. These fibers support a wide frequency band and a large transmission capacity, so they are used for long-distance transmission. Most single-mode fibers are yellow, as shown in [Figure 6-23](#).
- Multimode fibers have a diameter of 50 μm or 62.5 μm and transmit laser in multiple modes with a specified wavelength. They have a small capacity and their performance is inferior to that of single-mode fibers, making them suitable to short-distance transmission.

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 6-24](#).
- 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, as shown in [Figure 6-25](#). 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-core and 12-core 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 principles:
 - 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

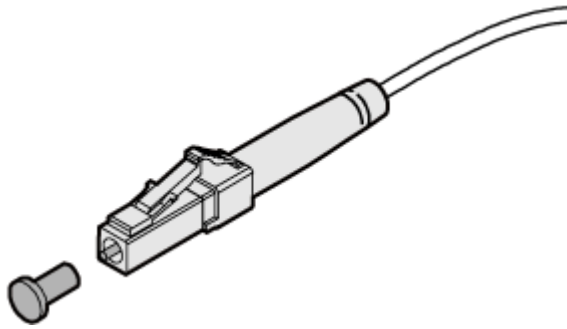
Optical connectors are used to connect optical fibers of the same type. [Table 6-13](#) lists common optical connectors.

Table 6-13 Common optical connectors

Common 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 6-32](#) shows an LC/PC optical connector.

Figure 6-32 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.

Ceramic Ferrule End Face

Based on the return loss, the end faces of the fiber's ceramic ferrule are classified into three types: PC, UPC, and APC, as shown in [Figure 6-33](#).

Figure 6-33 Polishing types of the fiber's ceramic ferrule end face

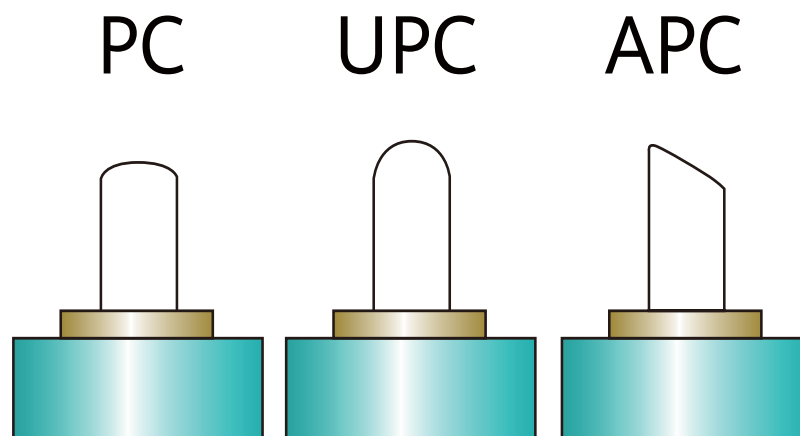


Table 6-14 Polishing types of the fiber's ceramic ferrule end face

Polishing Type	Return Loss	Characteristics	Application Scenario
PC	-35 dB	Polished with a slight curvature	Scenarios with no high requirements on return loss

Polishing Type	Return Loss	Characteristics	Application Scenario
UPC	-50 dB	Dome-shaped	Scenarios with high requirements on return loss
APC	-60 dB	Polished with an 8-degree angle	

NOTICE

In principle, optical fibers with different ceramic ferrule end faces cannot be directly connected through optical connectors. Interconnection between PC and UPC connectors does not cause permanent physical damage to them. The structure of APC end faces is totally different from that of PC end faces. Therefore, if fibers with APC end faces and fibers with PC end faces are connected through optical connectors, their ceramic ferrule end faces will be damaged. To connect them together, use a fiber jumper. This, however, adversely affects the transmission performance.

Figure 6-34 shows the requirements of different types of ceramic ferrule end face of fibers.

Figure 6-34 Fiber's ceramic ferrule end faces

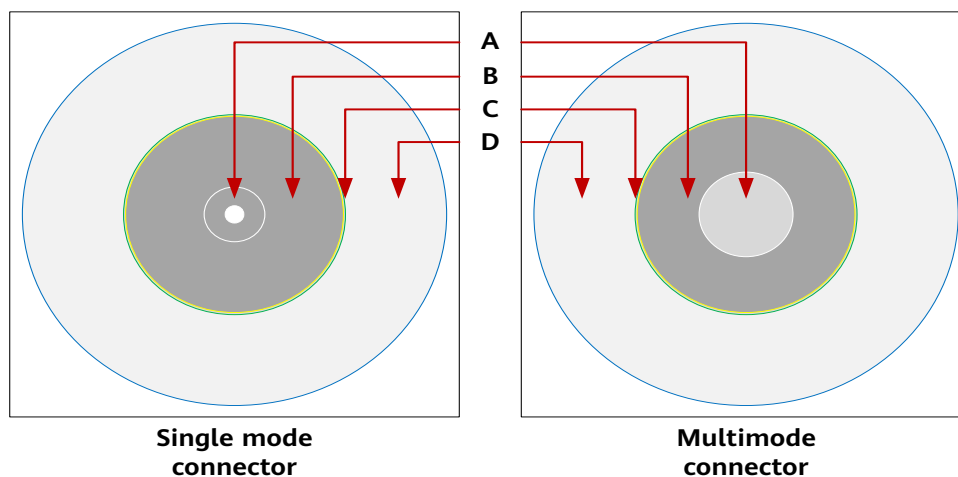


Table 6-15 End face requirements for fiber ceramic ferrules

Type	Zone	Diameter	Defects	Scratches
Single mode connector	A. Core	0-25 μm	None	None
	B. Cladding	25-120 μm	< 2 μm : no limit 2-5 μm : 5 > 5 μm : 0	\leq 3 μm : no limit > 3 μm : 0

Type	Zone	Diameter	Defects	Scratches
	C. Adhesive	120-130 μm	No limit	No limit
	D. Contact	130-250 μm	$\geq 10 \mu\text{m}$: 0	No limit
Multi mode connector	A. Core	0-65 μm	$\leq 5 \mu\text{m}$: 4 $> 5 \mu\text{m}$: 0	$\leq 5 \mu\text{m}$: no limit $> 5 \mu\text{m}$: 0
	B. Cladding	65-120 μm	$< 2 \mu\text{m}$: no limit 2-5 μm : 5 $> 5 \mu\text{m}$: 0	$\leq 5 \mu\text{m}$: no limit $> 5 \mu\text{m}$: 0
	C. Adhesive	120-130 μm	No limit	No limit
	D. Contact	130-250 μm	$\geq 10 \mu\text{m}$: 0	No limit

6.9 AOC Cable

Types of AOC Cables

An active optical cable (AOC) is an active optical fiber with optical modules at both ends, and therefore is easy to use. [Figure 6-35](#), [Figure 6-36](#), and [Figure 6-37](#) show different types of AOC cables.

Figure 6-35 SFP+ to SFP+/SFP28 to SFP28 AOC cable



Figure 6-36 QSFP+ to QSFP+/QSFP28 to QSFP28 AOC cable



Figure 6-37 QSFP+ to 4*SFP+ AOC cable



Table 6-16 lists the attributes of various AOC cables.

Table 6-16 Attributes of AOC cables

Model	Version Support	Length	Operating Wavelength	Connector Type	Part Number	Operating Temperature
SFP-10G-AOC-3M	V100R005C00 and later versions	3 m	850 nm	SFP+ connectors at both ends	02311BKP	0°C to 70°C
SFP-10G-AOC-5M	V200R001C00 and later versions	5 m	850 nm	SFP+ connectors at both ends	02311PQS	0°C to 70°C
SFP-10G-AOC-7M	V200R001C00 and later versions	7 m	850 nm	SFP+ connectors at both ends	02311PQT	0°C to 70°C
SFP-10G-AOC10M	V100R003C10 and later versions	10 m	850 nm	SFP+ connectors at both ends	02310QWH	0°C to 70°C
SFP-10G-AOC20M	V100R003C10 and later versions	20 m	850 nm	SFP+ connectors at both ends	02310SSK	0°C to 70°C

Model	Version Support	Length	Operating Wavelength	Connector Type	Part Number	Operating Temperature
QSFP-H40G-AOC10M	V100R005C00 and later versions	10 m	850 nm	QSFP+ connectors at both ends	02310SSH	0°C to 70°C
SFP-25G-AOC-3M	V200R001C00 and later versions	3 m	850 nm	SFP28 connectors at both ends	02311MPE	0°C to 70°C
SFP-25G-AOC-5M	V200R001C00 and later versions	5 m	850 nm	SFP28 connectors at both ends	02311MPD	0°C to 70°C
SFP-25G-AOC-7M	V200R001C00 and later versions	7 m	850 nm	SFP28 connectors at both ends	02311MPC	0°C to 70°C
SFP-25G-AOC-10M	V200R001C00 and later versions	10 m	850 nm	SFP28 connectors at both ends	02311KNT	0°C to 70°C
QSFP-4SFP10-AOC10M	V100R006C00 and later versions	10 m	850 nm	QSFP+ connector at one end and four SFP+ connectors at the other end	02310SSJ	0°C to 70°C
QSFP-100G-AOC-10M	V200R002C50 and later versions	10 m	850 nm	QSFP28 connectors at both ends	02311KNQ	0°C to 70°C

Model	Version Support	Length	Operating Wavelength	Connector Type	Part Number	Operating Temperature
QSFP-100G-AOC-30M	V200R002C50 and later versions	30 m	850 nm	QSFP28 connectors at both ends	02311RAH	0°C to 70°C

Connection

Table 6-17 describes usage scenarios of AOC cables and cable connections in these scenarios.

Table 6-17 AOC cable usage scenarios and connections

Cable Type	Connection
SFP+ to SFP+ AOC cable	<ul style="list-style-type: none"> Scenario 1: used for 10GE optical port connection or stacking between CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. Scenarios 2: used for 10GE connection between and CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. <p>Both ends connect to a 10GE optical port.</p>
QSFP+ to QSFP+ AOC cable	<ul style="list-style-type: none"> Scenario 1: used for 40GE/100GE optical port connection or stacking between CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. Scenarios 2: used for 40GE/100GE optical port connection between and CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches.
QSFP+ to 4*SFP+ AOC cable	<p>When a 40GE optical port is split into four 10GE optical ports:</p> <ul style="list-style-type: none"> Scenario 1: used for 10GE optical port connection or stacking between CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. Scenarios 2: used for 10GE connection between and CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. <p>One end connects to the 40GE optical port, and the other end connects to four 10GE optical ports.</p>

Cable Type	Connection
SFP28 to SFP28 AOC cable	Used for 25GE optical port connection or stacking between CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. Both ends connect to a 25GE optical port.
QSFP28 to QSFP28 AOC cable	Used for 100GE optical port connection or stacking between CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. Both ends connect to a 100GE optical port.

6.10 High-Speed Cable

Types of High-Speed Cables

[Table 6-18](#) shows the types of high-speed cables.

Table 6-18 Types of high-speed cables

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
SFP+ - SFP+ high-speed cable	1 m	SFP-10G-CU 1M	1 m	Passive	25 mm	<ul style="list-style-type: none"> Minimum clearance for cable routing: 60 mm Minimum bend radius: 35 mm 	SFP+ to SFP+	02310 MUN
	3 m	SFP-10G-CU 3M	3 m	Passive	25 mm		SFP+ to SFP+	02310 MUP

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
	5 m SFP + high-speed cable	SFP-10G-CU5M	5 m	Passive	30 mm		SFP+ to SFP+	02310 QPR
	7 m SFP + active high-speed cable	SFP-10G-AC7M	7 m	Active	25 mm		SFP+ to SFP+	02310 QPS
	10 m SFP + active high-speed cable	SFP-10G-AC10M	10 m	Active	25 mm		SFP+ to SFP+	02310 MUQ
SFP28 - SFP28 high-speed cable	1 m SFP28 high-speed cable	SFP-25G-CU1M	1 m	Passive	25 mm	<ul style="list-style-type: none"> Minimum clearance for cable routing: 70 mm Minimum bend radius: 40 mm 	SFP28 to SFP28	02311 NKS

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
	3 m SFP 28 high-speed cable	SFP-25G-CU3M	3 m	Passive	25 mm		SFP28 to SFP28	02311 NKV
	3 m SFP 28 high-speed cable	SFP-25G-CU3M-N	3 m	Passive	30 mm		SFP28 to SFP28	02311 MNV
	5 m SFP 28 high-speed cable	SFP-25G-CU5M	5 m	Passive	30 mm		SFP28 to SFP28	02311 MNW
	10 m SFP 28 high-speed cable	SFP-25G-AC10M	10 m	Active	30 mm		SFP28 to SFP28	02312L NP

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
QSFP+ - QSFP+ high-speed cable	1 m QSFP+ - QSFP+ high-speed cable	QSFP-40G-CU1M	1 m	Passive	35 mm	<ul style="list-style-type: none"> Minimum clearance for cable routing: 75 mm Minimum bend radius: 50 mm 	QSFP+ to QSFP+	02310 MUG
	3 m QSFP+ - QSFP+ high-speed cable	QSFP-40G-CU3M	3 m	Passive	40 mm		QSFP+ to QSFP+	02310 MUH
	5 m QSFP+ - QSFP+ high-speed cable	QSFP-40G-CU5M	5 m	Passive	45 mm		QSFP+ to QSFP+	02310 MUJ
QSFP+ - 4*SFP+ high-speed cable	1 m QSFP+ - 4*SFP+ high-speed cable	QSFP-4SF P10G-CU1M	1 m	Passive	25 mm	QSFP+ end: <ul style="list-style-type: none"> Minimum clearance for cable routing: 100 mm Minimum bend radius: 50 mm SFP+ end: <ul style="list-style-type: none"> Minimum clearance for 	QSFP+ to 4*SFP+	02310 MUK

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
	3 m QSF P+ - 4*SFP+ high-speed cable	QSF-4SFP10G-CU3M	3 m	Passive	25 mm	cable routing: 60 mm • Minimum bend radius: 35 mm	QSFP+ to 4*SFP+	02310 MUL
	5 m QSF P+ - 4*SFP+ high-speed cable	QSF-4SFP10G-CU5M	5 m	Passive	30 mm		QSFP+ to 4*SFP+	02310 MUM
QSF P28 to QSF P28 high-speed cable	1 m QSF P28 - QSF P28 high-speed cable	QSF28-100G-CU1M	1 m	Passive	70 mm	• Minimum clearance for cable routing: 90 mm • Minimum bend radius: 70 mm	QSFP28 to QSFP28	02311K NW

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
	3 m QSF P28 - QSF P28 high - speed cable	QSF28-100G-CU3M	3 m	Passive	70 mm		QSFP28 to QSFP28	02311K NX
	5 m QSF P28 - QSF P28 high - speed cable	QSF28-100G-CU5M	5 m	Passive	70 mm		QSFP28 to QSFP28	02311K NY
QSFP28 to 4*SF P28 high - speed cable	1 m QSF P28 - 4*SF P28 high - speed cable	QSF4SF25G-CU1M	1 m	Passive	35 mm	QSFP28 end: <ul style="list-style-type: none"> • Minimum clearance for cable routing: 100 mm • Minimum bend radius: 50 mm SFP28 end: <ul style="list-style-type: none"> • Minimum clearance for cable routing: 70 mm • Minimum bend radius: 40 mm 	QSFP28 to 4*SF P28	02311 MNX

Cable Type		Model	Length	Electrical attribute	Bend Radius	Minimum clearance for cable routing & Minimum bend radius	Connector Type	Part Number
	1 m QSFP28 - 4*SF P28 high-speed cable	QSFP-4SF P25 G-CU 3M	3 m	Passive	35 mm		QSFP28 to 4*SF P28	02311 MNY
	3 m QSFP28 - 4*SF P28 high-speed cable	QSFP-4SF P25 G-CU 3M -N	3 m	Passive	45 mm		QSFP28 to 4*SF P28	02311 MPA
	5 m QSFP28 - 4*SF P28 high-speed cable	QSFP-4SF P25 G-CU 5M	5 m	Passive	45 mm		QSFP28 to 4*SF P28	02311 MPB

Appearance and Structure

The following figures appearances various high-speed cables.

Figure 6-38 Appearance of an SFP+ to SFP+ or SFP28 to SFP28 high-speed cable



Figure 6-39 Appearance of a QSFP+ to QSFP+ or QSFP28 to QSFP28 high-speed cable



Figure 6-40 Appearance of a QSFP+ to 4*SFP+ or QSFP28 to 4*SFP28 high-speed cable



The following figures show structures of various high-speed cables.

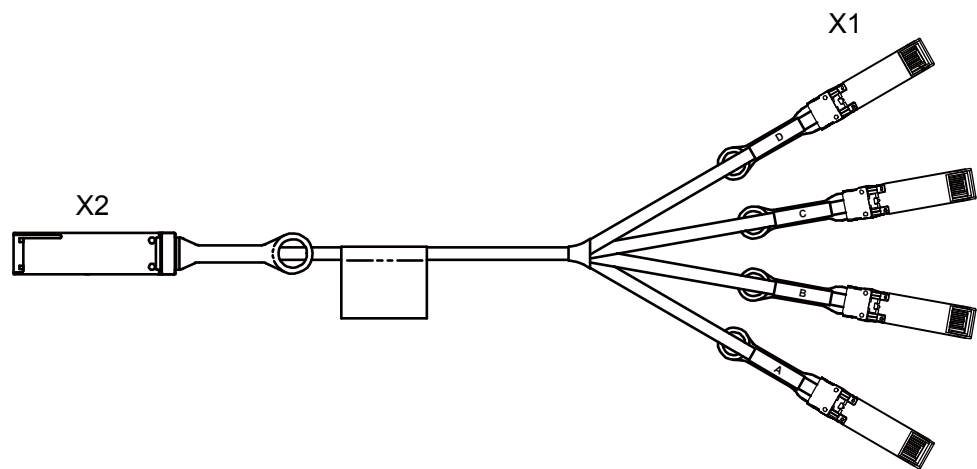
Figure 6-41 Structure of an SFP+ to SFP+ or SFP28 to SFP28 high-speed cable



Figure 6-42 Structure of a QSFP+ to QSFP+ or QSFP28 to QSFP28 high-speed cable



Figure 6-43 Structure of a QSFP+ to 4*SFP+ or QSFP28 to 4*SFP28 high-speed cable



7 Pluggable Modules for Interfaces

NOTE

- In this document, optical modules are classified based on encapsulation types, and optical modules of each encapsulation type are classified based on interface rates.
- The actual optical modules depend on the delivered ones. The appearance of optical modules in this document is for reference only.
- Use optical modules certified for the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches. Non-certified optical modules cannot ensure transmission reliability and may affect service stability on the switch. Huawei is not responsible for any problem caused by non-certified optical modules and will not fix such problems.
- All the optical modules listed in the documentation are Huawei certified optical modules.
- The transmit power of a long-distance optical module is often larger than its overload power. Therefore, when using such optical modules, select optical fibers of an appropriate length to ensure that the actual receive power is smaller than the overload power. If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce the receive power on the remote optical module. Otherwise, the remote optical module may be burnt.

[7.1 Understanding Optical Modules](#)

[7.2 Understanding Copper Modules](#)

[7.3 FE SFP/eSFP Optical Modules](#)

[7.4 GE eSFP Optical Modules](#)

[7.5 GE SFP Copper Modules](#)

[7.6 2G, 4G, 8G, and 16G SFP Optical Modules](#)

[7.7 10GE SFP+ Optical Modules](#)

[7.8 25GE SFP28 Optical Modules](#)

[7.9 40GE QSFP+ Optical Modules](#)

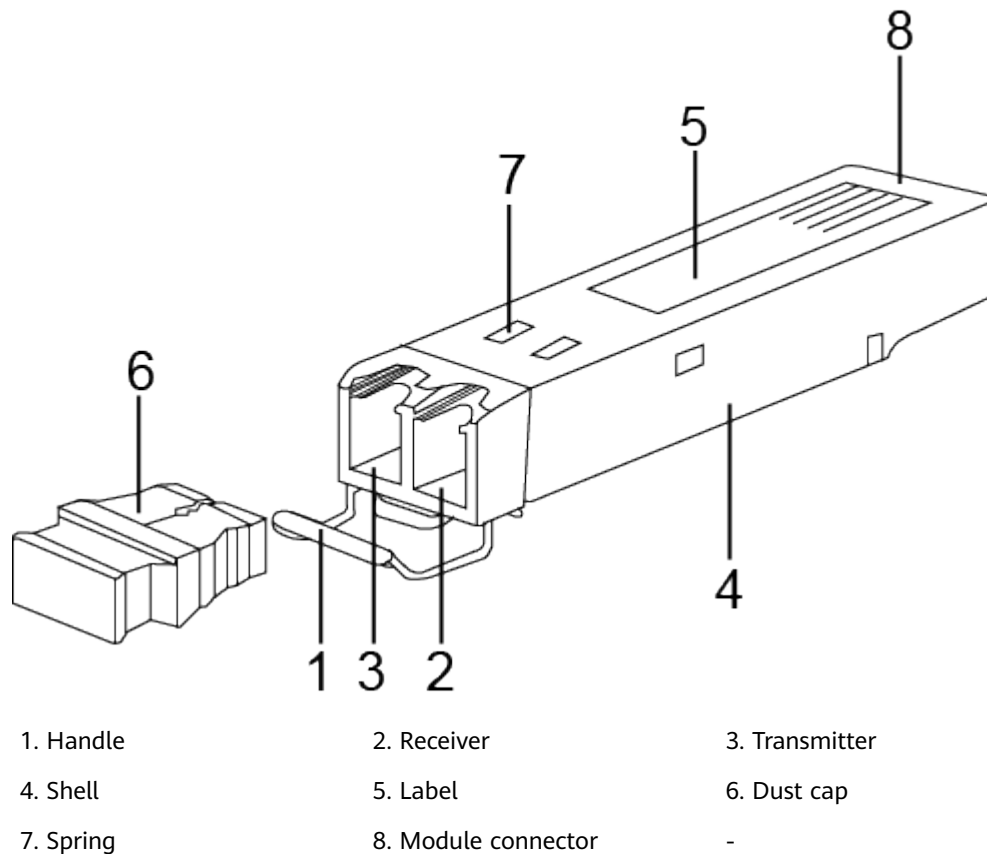
[7.10 100GE QSFP28 Optical Modules](#)

7.1 Understanding Optical Modules

7.1.1 Optical Module Appearance and Structure

Figure 7-1 shows the structure of an optical module.

Figure 7-1 Optical module structure (SFP module as an example)



The following figures show appearances of various transceiver modules.

Figure 7-2 SFP/SFP+ module



Figure 7-3 QSFP+ module



Figure 7-4 SFP28 optical module

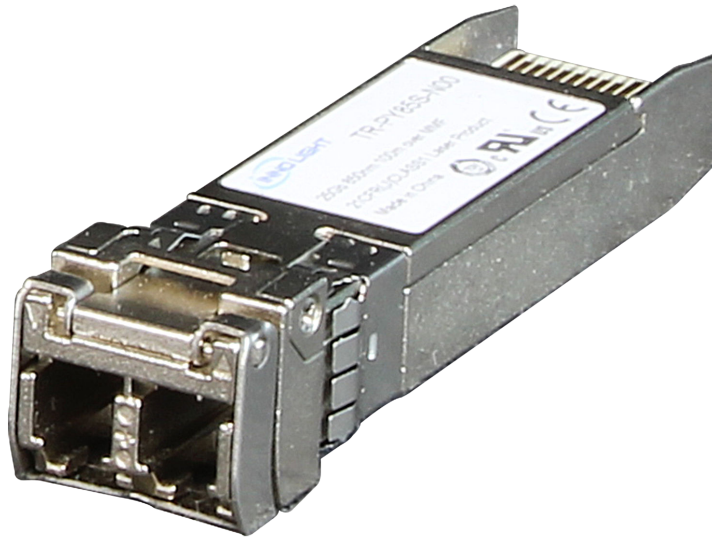
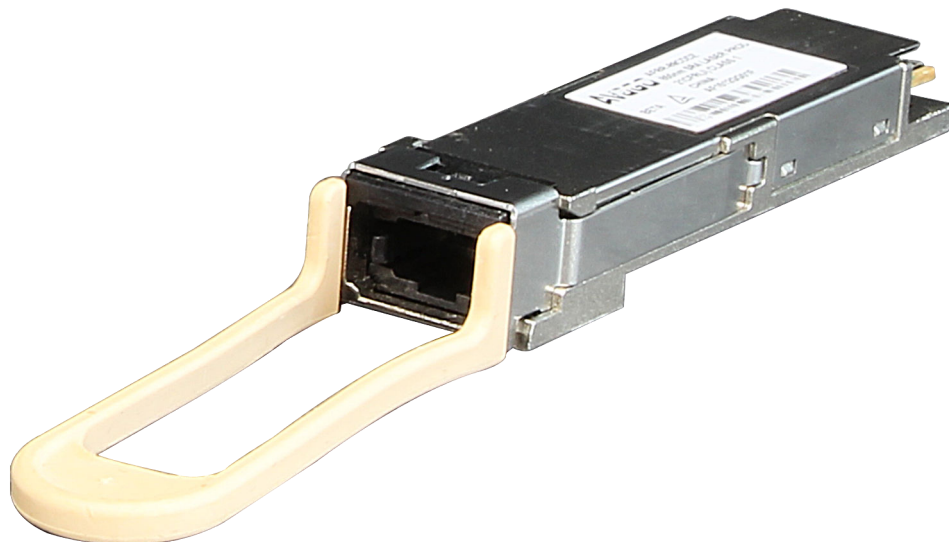


Figure 7-5 QSFP28 optical module



7.1.2 Types of Optical Modules

Optical modules are available in various types to meet diversified requirements.

- **Classified by transmission rates**

Depending on transmission rates, optical modules are classified into 100GE, 40GE, 25GE, 10GE, FE, and GE optical modules.

- **Classified by encapsulation types**

The higher transmission rate an optical module provides, the more complex structure it has. Optical modules are encapsulated in different modes to provide different structures. Huawei switches support optical modules of the following encapsulation types: SFP, eSFP, SFP+, XFP, SFP28, QSFP+, CXP, CFP, and QSFP28. All optical modules are hot swappable.

- SFP: small form-factor pluggable. SFP optical modules support LC fiber connectors.
 - eSFP: enhanced small form-factor pluggable. An eSFP module is an SFP module that supports monitoring of voltage, temperature, bias current, transmit optical power, and receive optical power. Because all the SFP optical modules support these monitoring functions, eSFP is also called SFP.
 - SFP+: small form-factor pluggable plus, SFP with a higher rate. SFP+ modules are more sensitive to electromagnetic interference (EMI) because they have a higher rate. To reduce EMI, SFP+ modules have more springs than SFP modules and the cages for SFP+ modules on a card are tighter.
 - XFP: 10 Gigabit small form-factor pluggable. X is the Roman numeral 10, meaning that all XFP optical modules provide a 10 Gbit/s transmission rate. XFP optical modules support LC fiber connectors. XFP optical modules are wider and longer than SFP+ optical modules.
 - SFP28: with the same interface size as an SFP+ module. An SFP28 interface can use a 25GE SFP28 optical module or 10GE SFP+ optical module.
 - QSFP+: quad small form-factor pluggable. QSFP+ optical modules support MPO fiber connectors and are larger than SFP+ modules.
 - CXP: hot-pluggable high-density parallel optics transceiver form factor, which provides 12 channels of traffic in each of the Tx and Rx directions. It applies only to short multimode links.
 - CFP: C form-factor pluggable, a new standard for high-speed, hot-pluggable optical transceivers that support data communication and telecommunication applications. Dimensions of a CFP optical module are 144.75 mm x 82 mm x 13.6 mm (W x D x H).
 - QSFP28: with the same interface size as a QSFP+ module. A QSFP28 interface can use a 100GE QSFP28 optical module or a 40GE QSFP+ optical module.
- **Classified by physical layer standards**

Different physical layer standards are defined to allow data transmission in different modes. Therefore, different types of optical modules are produced to comply with these standards. For details, see **Standards compliance** of the specific optical module.
 - **Classified by modes**

Optical fibers are classified into single-mode and multimode fibers. Therefore, optical modules are also classified into single-mode and multimode modules to support different optical fibers.

 - Single-mode optical modules are used with single-mode fibers. Single-mode fibers support a wide band and large transmission capacity, and are used for long-distance transmission.
 - Multimode optical modules are used with multimode fibers. Multimode fibers have lower transmission performance than single-mode fibers because of modal dispersion, but their costs are also lower. They are used for small-capacity, short-distance transmission.

Wavelength division multiplexing modules differ from other optical modules in center wavelengths. A common optical module has a center wavelength of 850

nm, 1310 nm, or 1550 nm, whereas a wavelength division multiplexing module transmits lights with different center wavelengths. Wavelength division multiplexing modules are classified into two types: coarse wavelength division multiplexing (CWDM) and dense wavelength division multiplexing (DWDM). Within the same band, DWDM modules are available in more types and use wavelength resources more efficiently than CWDM modules. DWDM and CWDM modules allow lights with different center wavelengths to be transmitted on one fiber without interfering each other. Therefore, a passive multiplexer can be used to combine the lights into one channel, which is then split into multiple channels by a demultiplexer on the remote end. This reduces the optical fibers required. DWDM and CWDM modules are used for long-distance transmission.

The transmit power of a long-distance optical module is often larger than its overload power. Therefore, when using such optical modules, select optical fibers of an appropriate length to ensure that the actual receive power is smaller than the overload power. If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce the receive power on the remote optical module. Otherwise, the remote optical module may be burnt.

7.1.3 Optical Module Terms

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.
Interface rate	Maximum rate of electrical signals that an optical device can transmit without bit errors. Various interface rates are defined in Ethernet standards, such as 125 Mbit/s, 1.25 Gbit/s, 10.3125 Gbit/s, 25.78125Gbit/s, and 41.25 Gbit/s.

Encapsulation type

Appearance type of an optical module. Encapsulation types of optical modules include SFP, eSFP, SFP+, XFP, QSFP+, SFP28, and QSFP28.

- SFP: small form-factor pluggable.
- eSFP: enhanced small form-factor pluggable. An eSFP module is an SFP module that supports monitoring of voltage, temperature, bias current, transmit optical power, and receive optical power. Because all the SFP optical modules support these monitoring functions, eSFP is also called SFP.
- SFP+: small form-factor pluggable plus, SFP with a higher rate. SFP+ modules are more sensitive to electromagnetic interference (EMI) because they have a higher rate. To reduce EMI, SFP+ modules have more springs than SFP modules.
- XFP: 10GE optical module. X is the Roman numeral 10.
- QSFP+: Quad SFP+, four-channel SFP+.
- SFP28: with the same interface size as an SFP+ module. An SFP28 interface can use a 25 GE SFP28 optical module or 10GE SFP+ optical module.
- QSFP28: with the same interface size as a QSFP+ module. A QSFP28 interface can use a 100GE QSFP28 optical module or a 40GE QSFP+ optical module.

Wavelength division multiplexing modules differ from other optical modules in center wavelengths. A common optical module has a center wavelength of 850 nm, 1310 nm, or 1550 nm, whereas a wavelength division multiplexing module transmits lights with different center wavelengths. Wavelength division multiplexing modules are classified into two types: coarse wavelength division multiplexing (CWDM) and dense wavelength division multiplexing (DWDM). Within the same band, DWDM modules are available in more types and use wavelength resources more efficiently than CWDM modules. DWDM and CWDM modules allow lights with different center wavelengths to be transmitted on one fiber without interfering each other. Therefore, a passive multiplexer can be used to combine the lights into one channel, which is then split into multiple channels by a demultiplexer on the remote end. This reduces the optical fibers required. DWDM and CWDM modules are used for long-distance transmission.

The transmit power of a long-distance optical module is often larger than its overload power. Therefore, when using such optical modules, select optical fibers of an appropriate length to ensure that the actual receive power is smaller than the overload power. If the optical fibers connected to a long-distance optical module are too short, use an optical attenuator to reduce the receive power on the remote optical module. Otherwise, the remote optical module may be burnt.

Center wavelength

Wavelength measured at the midpoint of the half-amplitude line in the transmit spectrum.

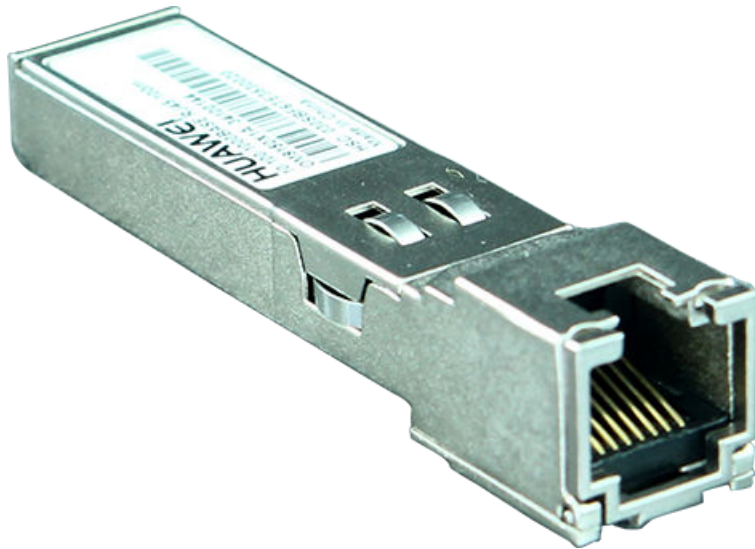
Fiber mode	Mode of fibers defining based on core diameters and features of optical fibers. Optical fibers are classified into single-mode fibers and multi-mode fibers. Generally, multi-mode fibers have large core diameters and severe dispersion, so they transmit optical signals over short distances when working with multi-mode optical modules. Single-mode fibers have small dispersion and can transmit optical signals over long distances when working with single-mode optical modules.
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 an optical module.
Fiber diameter	Diameter of the core of a fiber. According to international standards for optical fibers, the diameter of a multi-mode fiber is 62.5 μm or 50 μm , and the diameter of a single-mode fiber is 9 μm .
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 classes are defined: multi-mode fiber (G.651), common single-mode fiber (G.652), shifted dispersion fiber (G.653), and non-zero shifted dispersion fiber (G.655). Multi-mode fiber (G.651) and common single-mode fiber (G.652) are commonly used fiber classes.
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+, SFP28, and XFP modules) and MPO (applicable to some of QSFP+ and QSFP28 modules).
Transmit optical power	Output optical power of an optical module when it is working properly.
Maximum receiver sensitivity	Minimum average input optical power that the receiver of an optical module can receive within a range of bit error rate ($\text{BER} = 10^{-12}$).
Overload optical power	Maximum average input optical power that the receiver of an optical module can receive within a range of bit error rate ($\text{BER} = 10^{-12}$).
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.

7.2 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. Currently, Huawei offers only GE copper modules with RJ45 interfaces. GE copper modules work with Category 5 network cables, comply with 1000BASE-T (IEEE 802.3ab), and support a maximum transmission distance of 100 m.

Figure 7-6 shows a GE SFP copper module.

Figure 7-6 Appearance of a GE SFP copper module



7.3 FE SFP/eSFP Optical Modules

7.3.1 eSFP-FE-LX-SM1310

Table 7-1 Technical specifications

Item	Description
Part number	02315205
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	eSFP
Transmission speed	FE
Center wavelength (nm)	1310
Standards compliance	100BASE-LX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 15 km
Modal bandwidth	-

Item	Description
Transmit power (dBm)	-15 to -8
Maximum receiver sensitivity (dBm)	-31
Overload power (dBm)	-8
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

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

Table 7-2 Technical specifications

Item	Description
Part number	02315203
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	eSFP
Transmission speed	FE
Center wavelength (nm)	Tx1310/Rx1550
Standards compliance	100BASE-BX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 15 km
Modal bandwidth	-
Transmit power (dBm)	-15 to -8
Maximum receiver sensitivity (dBm)	-32
Overload power (dBm)	-8
Extinction ratio (dB)	≥ 8.5

Item	Description
Operating temperature	0°C to 70°C

 NOTE

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

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

Table 7-3 Technical specifications

Item	Description
Part number	02315202
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	eSFP
Transmission speed	FE
Center wavelength (nm)	Tx1550/Rx1310
Standards compliance	100BASE-BX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 15 km
Modal bandwidth	-
Transmit power (dBm)	-15 to -8
Maximum receiver sensitivity (dBm)	-32
Overload power (dBm)	-8
Extinction ratio (dB)	≥ 8.5
Operating temperature	0°C to 70°C

 NOTE

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

7.3.4 SFP-FE-SX-MM1310

Table 7-4 Technical specifications

Item	Description
Part number	02315233
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	SFP
Transmission speed	FE
Center wavelength (nm)	1310
Standards compliance	100BASE-FX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (OM1) (with diameter of 62.5 μm): 2 km • Multimode fiber (with diameter of 50 μm): 2 km • Multimode fiber (OM2) (with diameter of 50 μm): 2 km
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM1): 200 MHz*km • Multimode fiber: 400 MHz*km • Multimode fiber (OM2): 500 MHz*km
Transmit power (dBm)	-19 to -14
Maximum receiver sensitivity (dBm)	-30
Overload power (dBm)	-14
Extinction ratio (dB)	≥ 10
Operating temperature	0°C to 70°C

7.3.5 S-SFP-FE-LH40-SM1310

Table 7-5 Technical specifications

Item	Description
Part number	02317344
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	eSFP
Transmission speed	FE
Center wavelength (nm)	1310
Standards compliance	100BASE-EX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	-5 to 0
Maximum receiver sensitivity (dBm)	-37
Overload power (dBm)	-10
Extinction ratio (dB)	≥ 10.5
Operating temperature	0°C to 70°C

7.4 GE eSFP Optical Modules

7.4.1 eSFP-GE-SX-MM850

Table 7-6 Technical specifications

Item	Description
Part number	02315204
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP

Item	Description
Transmission speed	GE
Center wavelength (nm)	850
Standards compliance	1000BASE-SX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (with diameter of 62.5 μm): 220 m • Multimode fiber (OM1) (with diameter of 62.5 μm): 275 m • Multimode fiber (with diameter of 50 μm): 500 m • Multimode fiber (OM2) (with diameter of 50 μm): 550 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber: 160 MHz*km • Multimode fiber (OM1): 200 MHz*km • Multimode fiber: 400 MHz*km • Multimode fiber (OM2): 500 MHz*km
Transmit power (dBm)	-9.5 to -2.5
Maximum receiver sensitivity (dBm)	-17
Overload power (dBm)	0
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

7.4.2 eSFP-GE-ZX100-SM1550

Table 7-7 Technical specifications

Item	Description
Part number	02315206
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE

Item	Description
Center wavelength (nm)	1550
Standards compliance	-
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber: 100 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-30
Overload power (dBm)	-9
Extinction ratio (dB)	≥ 8
Operating temperature	0°C to 70°C

7.4.3 LE2MGSC40DE0 (Single-Fiber-Bidirectional Module)

Table 7-8 Technical specifications

Item	Description
Part number	02310KVV
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	Tx1310/Rx1490
Standards compliance	-
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Modal bandwidth	-
Transmit power (dBm)	-2 to +3
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

 **NOTE**

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

7.4.4 LE2MGSC40ED0 (Single-Fiber-Bidirectional Module)

Table 7-9 Technical specifications

Item	Description
Part number	02310KVU
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	Tx1490/Rx1310
Standards compliance	-
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber: 40 km
Modal bandwidth	-

Item	Description
Transmit power (dBm)	-2 to +3
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

 **NOTE**

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

7.4.5 SFP-GE-LX-SM1310

Table 7-10 Technical specifications

Item	Description
Part number	02315200
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1310
Standards compliance	1000BASE-LX10
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (OM1) (with diameter of 62.5 μm): 550 m • Multimode fiber (with diameter of 50 μm): 550 m • Multimode fiber (OM2) (with diameter of 50 μm): 550 m • Single-mode fiber (G.652) (with diameter of 9 μm): 10 km

Item	Description
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM1): 200/500 MHz*km • Multimode fiber: 400/400 MHz*km • Multimode fiber (OM2): 500/500 MHz*km • Single-mode fiber (G.652): -
Transmit power (dBm)	-9 to -3
Maximum receiver sensitivity (dBm)	-20
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

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

Table 7-11 Technical specifications

Item	Description
Part number	02315285
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	Tx1310/Rx1490
Standards compliance	1000BASE-BX10
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-9 to -3

Item	Description
Maximum receiver sensitivity (dBm)	-19.5
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 6
Operating temperature	0°C to 70°C

 **NOTE**

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1310-BIDI must be used with SFP-GE-LX-SM1490-BIDI.

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

Table 7-12 Technical specifications

Item	Description
Part number	02315286
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	Tx1490/Rx1310
Standards compliance	1000BASE-BX10
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-9 to -3
Maximum receiver sensitivity (dBm)	-19.5
Overload power (dBm)	-3

Item	Description
Extinction ratio (dB)	≥ 6
Operating temperature	0°C to 70°C

 **NOTE**

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1490-BIDI must be used with SFP-GE-LX-SM1310-BIDI.

7.4.8 S-SFP-GE-LH40-SM1310

Table 7-13 Technical specifications

Item	Description
Part number	02317346
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1310
Standards compliance	1000BASE-EX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	-5 to 0
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

7.4.9 S-SFP-GE-LH80-SM1550

Table 7-14 Technical specifications

Item	Description
Part number	02317348
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1550
Standards compliance	1000BASE-ZX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 80 km
Modal bandwidth	-
Transmit power (dBm)	-2 to +5
Maximum receiver sensitivity (dBm)	-23
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

7.4.10 CWDM-SFPGE-LH40-1471 (CWDM Optical Modules)

Table 7-15 Technical specifications

Item	Description
Part number	02312FWB
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP

Item	Description
Transmission speed	GE
Center wavelength (nm)	1471
Standards compliance	GE-CWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.11 CWDM-SFPGE-LH40-1491 (CWDM Optical Modules)

Table 7-16 Technical specifications

Item	Description
Part number	02312FVX
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1491
Standards compliance	GE-CWDM
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.12 CWDM-SFPGE-LH40-1511 (CWDM Optical Modules)

Table 7-17 Technical specifications

Item	Description
Part number	02312FWC
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1511
Standards compliance	GE-CWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5

Item	Description
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.13 CWDM-SFPGE-LH40-1531 (CWDM Optical Modules)

Table 7-18 Technical specifications

Item	Description
Part number	02312FWQ
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1531
Standards compliance	GE-CWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.14 CWDM-SFPGE-LH40-1551 (CWDM Optical Modules)

Table 7-19 Technical specifications

Item	Description
Part number	02312FWR
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1551
Standards compliance	GE-CWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.15 CWDM-SFPGE-LH40-1571 (CWDM Optical Modules)

Table 7-20 Technical specifications

Item	Description
Part number	02312FWS
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP

Item	Description
Transmission speed	GE
Center wavelength (nm)	1571
Standards compliance	GE-CWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.16 CWDM-SFPGE-LH40-1591 (CWDM Optical Modules)

Table 7-21 Technical specifications

Item	Description
Part number	02312FWT
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1591
Standards compliance	GE-CWDM
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.4.17 CWDM-SFPGE-LH40-1611 (CWDM Optical Modules)

Table 7-22 Technical specifications

Item	Description
Part number	02312FWU
Version support	Supported in V200R005C10 and later versions
Transceiver form factor	eSFP
Transmission speed	GE
Center wavelength (nm)	1611
Standards compliance	GE-CWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5

Item	Description
Maximum receiver sensitivity (dBm)	-19
Overload power (dBm)	-3
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.5 GE SFP Copper Modules

7.5.1 SFP-1000BaseT

Table 7-23 Technical specifications

Item	Description
Part number	02314171
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	SFP
Cable Type	CAT5 UTP/STP
Standards compliance	1000BASE-T (SFP-GE-T)
Connector type	RJ45
Transmission Distance	100 m

7.6 2G, 4G, 8G, and 16G SFP Optical Modules

7.6.1 SFP-FC2G-LW

Table 7-24 Technical specifications

Item	Description
Part number	02311BJG
Version support	V100R006C00 and later versions
Transceiver form factor	SFP

Item	Description
Transmission speed	2G
Center wavelength (nm)	1310
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 15 km
Modal bandwidth	-
Transmit power (dBm)	-5 to 0
Maximum receiver sensitivity (dBm)	-21
Overload power (dBm)	0
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C (32°F to 158°F)

7.6.2 SFP-FC2G-SW

Table 7-25 Technical specifications

Item	Description
Part number	02311BJH
Version support	V100R005C10 and later versions
Transceiver form factor	SFP
Transmission speed	2G
Center wavelength (nm)	850
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> Multimode fiber (OM2) (with diameter of 50 μm): 0.3 km Multimode fiber (OM3) (with diameter of 50 μm): 0.5 km
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM2): 500 MHz*km Multimode fiber (OM3): 2000 MHz*km
Transmit power (dBm)	-9.5 to -2.5
Maximum receiver sensitivity (dBm)	-17
Overload power (dBm)	0
Extinction ratio (dB)	≥ 9
Operating temperature	-20°C to 85°C (-4°F to 185°F)

7.6.3 SFP-FC4G-LW

Table 7-26 Technical specifications

Item	Description
Part number	02311BJE
Version support	V100R005C10 and later versions
Transceiver form factor	SFP
Transmission speed	2G/4G
Center wavelength (nm)	1310
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-8.4 to -1
Maximum receiver sensitivity (dBm)	-18

Item	Description
Overload power (dBm)	0
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C (32°F to 158°F)

7.6.4 SFP-FC4G-SW

Table 7-27 Technical specifications

Item	Description
Part number	02311BJF
Version support	V100R005C10 and later versions
Transceiver form factor	SFP
Transmission speed	2G/4G
Center wavelength (nm)	850
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Multimode fiber (OM3) (with diameter of 50 μm): 0.3 km
Modal bandwidth	Multimode fiber (OM3): 2000 MHz*km
Transmit power (dBm)	-9 to -1.5
Maximum receiver sensitivity (dBm)	-15
Overload power (dBm)	0
Extinction ratio (dB)	≥ 3
Operating temperature	-20°C to 85°C (-4°F to 185°F)

7.6.5 SFP-FC8G-LW

Table 7-28 Technical specifications

Item	Description
Part number	02311BJA
Version support	V100R005C10 and later versions
Transceiver form factor	SFP
Transmission speed	2G/4G/8G
Center wavelength (nm)	1310
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-8.4 to 0.5
Maximum receiver sensitivity (dBm)	-13.8
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C (32°F to 158°F)

7.6.6 SFP-FC8G-SW

Table 7-29 Technical specifications

Item	Description
Part number	02311BJL
Version support	V100R005C10 and later versions
Transceiver form factor	SFP
Transmission speed	2G/4G/8G
Center wavelength (nm)	850
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	2G: <ul style="list-style-type: none"> • Multimode fiber (OM2) (with diameter of 50 μm): 0.3 km • Multimode fiber (OM3) (with diameter of 50 μm): 0.5 km 4G: <ul style="list-style-type: none"> • Multimode fiber (OM2) (with diameter of 50 μm): 0.15 km • Multimode fiber (OM3) (with diameter of 50 μm): 0.38 km 8G: <ul style="list-style-type: none"> • Multimode fiber (OM2) (with diameter of 50 μm): 0.05 km • Multimode fiber (OM3) (with diameter of 50 μm): 0.15 km
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM2): 500 MHz*km • Multimode fiber (OM3): 2000 MHz*km
Transmit power (dBm)	-8.2 to -1.3
Maximum receiver sensitivity (dBm)	-11.2
Overload power (dBm)	0
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C (32°F to 158°F)

7.6.7 SFP-FC16G-SW

Table 7-30 Technical specifications

Item	Description
Part number	02311TPA
Version support	V200R003C00 and later versions
Transceiver form factor	SFP+
Transmission speed	4G/8G/16G

Item	Description
Center wavelength (nm)	850
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<p>4G:</p> <ul style="list-style-type: none"> Multimode fiber (OM2) (with diameter of 50 μm): 0.15 km Multimode fiber (OM3) (with diameter of 50 μm): 0.38 km <p>8G:</p> <ul style="list-style-type: none"> Multimode fiber (OM2) (with diameter of 50 μm): 0.05 km Multimode fiber (OM3) (with diameter of 50 μm): 0.15 km <p>16G:</p> <ul style="list-style-type: none"> Multimode fiber (OM2) (with diameter of 50 μm): 0.035 km Multimode fiber (OM3) (with diameter of 50 μm): 0.1 km
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM2): 500 MHz*km Multimode fiber (OM3): 2000 MHz*km
Transmit power (dBm)	-7.8 to 0
Maximum receiver sensitivity (dBm)	-10.5
Overload power (dBm)	0
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C (32°F to 158°F)

7.7 10GE SFP+ Optical Modules

7.7.1 LE2MXSC80FF0

Table 7-31 Technical specifications

Item	Description
Part number	02310JFE
Version support	Supported only in V100R001C00 and V100R002C00
Transceiver form factor	SFP+
Transmission speed	10G
Center wavelength (nm)	1550
Standards compliance	10GBASE-ZR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 80 km
Modal bandwidth	-
Transmit power (dBm)	0 to 4
Maximum receiver sensitivity (dBm)	-24
Overload power (dBm)	-7
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

7.7.2 OMXD30000

Table 7-32 Technical specifications

Item	Description
Part number	02318169
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	850

Item	Description
Standards compliance	10GBASE-SR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (with diameter of 62.5 μm): 26 m • Multimode fiber (OM1) (with diameter of 62.5 μm): 33 m • Multimode fiber (with diameter of 50 μm): 66 m • Multimode fiber (OM2) (with diameter of 50 μm): 82 m • Multimode fiber (OM3) (with diameter of 50 μm): 300 m • Multimode fiber (OM4) (with diameter of 50 μm): 400 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber: 160 MHz*km • Multimode fiber (OM1): 200 MHz*km • Multimode fiber: 400 MHz*km • Multimode fiber (OM2): 500 MHz*km • Multimode fiber (OM3): 2000 MHz*km • Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-7.3 to -1
Maximum receiver sensitivity (dBm)	-11.1
Overload power (dBm)	-1
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

7.7.3 OSX010000

Table 7-33 Technical specifications

Item	Description
Part number	02318170
Version support	Supported in V100R003C00 and later versions
Transceiver form factor	SFP+

Item	Description
Transmission speed	10GE
Center wavelength (nm)	1310
Standards compliance	10GBASE-LR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-12.6
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.7.4 OSX040N01

Table 7-34 Technical specifications

Item	Description
Part number	02310CNF
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1550
Standards compliance	10GBASE-ER
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	-4.7 to +4
Maximum receiver sensitivity (dBm)	-14.1
Overload power (dBm)	-1
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

7.7.5 OSXD22N00

Table 7-35 Technical specifications

Item	Description
Part number	02310CRM
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1310
Standards compliance	10GBASE-LRM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (with diameter of 62.5 μm): 220 m • Multimode fiber (OM1) (with diameter of 62.5 μm): 220 m • Multimode fiber (with diameter of 50 μm): 100 m • Multimode fiber (OM2) (with diameter of 50 μm): 220 m • Multimode fiber (OM3) (with diameter of 50 μm): 220 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber: 160/500 MHz*km • Multimode fiber (OM1): 200/500 MHz*km • Multimode fiber: 400/400 MHz*km • Multimode fiber (OM2): 500/500 MHz*km • Multimode fiber (OM3): 1500/500 MHz*km
Transmit power (dBm)	-6.5 to +0.5
Maximum receiver sensitivity (dBm)	-6.5
Overload power (dBm)	1.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

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

Table 7-36 Technical specifications

Item	Description
Part number	02310QDT
Version support	Supported in V100R006C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	Tx1330/Rx1270
Standards compliance	10GBASE-BX
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-14.4
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	-40°C to 85°C

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

Table 7-37 Technical specifications

Item	Description
Part number	02310QBJ
Version support	Supported in V100R006C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	Tx1270/Rx1330
Standards compliance	10GBASE-BX
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5

Item	Description
Maximum receiver sensitivity (dBm)	-14.4
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	-40°C to 85°C

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

Table 7-38 Technical specifications

Item	Description
Part number	02311BJC
Version support	Supported in V100R005C10 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	Tx1270/Rx1330
Standards compliance	10GBASE-BDER
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-18
Overload power (dBm)	-9
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

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

Table 7-39 Technical specifications

Item	Description
Part number	02311BJB
Version support	Supported in V100R005C10 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	Tx1330/Rx1270
Standards compliance	10GBASE-BDER
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	0 to 5
Maximum receiver sensitivity (dBm)	-18
Overload power (dBm)	-9
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.7.10 SFP-10G-ER-1310

Table 7-40 Technical specifications

Item	Description
Part number	02311RLX
Version support	Supported in V200R002C50 and later versions

Item	Description
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1310
Standards compliance	10GBASE-ER
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	-2.0 to +4.0
Maximum receiver sensitivity (dBm)	-20
Overload power (dBm)	-7.0
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

 **NOTE**

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

7.7.11 SFP-10G-iLR

Table 7-41 Technical specifications

Item	Description
Part number	02311BJJ
Version support	Supported in V100R005C10 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1310

Item	Description
Standards compliance	10GBASE-iLR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 1.4 km
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-14.4
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	-40°C to 85°C

7.7.12 SFP-10G-LR

Table 7-42 Technical specifications

Item	Description
Part number	02310QDJ
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1310
Standards compliance	10GBASE-LR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km

Item	Description
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-12.6
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.7.13 SFP-10G-USR

Table 7-43 Technical specifications

Item	Description
Part number	02310MNW
Version support	Supported in V100R002C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	850
Standards compliance	10GBASE-USR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (OM2) (with diameter of 50 μm): 30 m • Multimode fiber (OM3) (with diameter of 50 μm): 100 m • Multimode fiber (OM4) (with diameter of 50 μm): 150 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM2): 500 MHz*km • Multimode fiber (OM3): 2000 MHz*km • Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-7.3 to -1

Item	Description
Maximum receiver sensitivity (dBm)	-10.7
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

7.7.14 SFP-10G-ZR

Table 7-44 Technical specifications

Item	Description
Part number	02310SNN
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1550
Standards compliance	10GBASE-ZR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 80 km
Modal bandwidth	-
Transmit power (dBm)	0 to 4
Maximum receiver sensitivity (dBm)	-24
Overload power (dBm)	-7
Extinction ratio (dB)	≥ 9
Operating temperature	0°C to 70°C

7.7.15 SFP-10G-ZDWT-L

Table 7-45 Technical specifications

Item	Description
Part number	02312DAN
Version support	Supported in V200R003C00 and later versions
Transceiver form factor	SFP+
Transmission speed	10GE
Center wavelength (nm)	1529.16 to 1560.61
Standards compliance	10G-DWDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 60 km
Modal bandwidth	-
Transmit power (dBm)	-1 to +3
Maximum receiver sensitivity (dBm)	-24
Overload power (dBm)	-1
Extinction ratio (dB)	≥ 8.2
Operating temperature	0°C to 70°C

7.8 25GE SFP28 Optical Modules

7.8.1 SFP-25G-SR

Table 7-46 Technical specifications

Item	Description
Part number	02311KNR

Item	Description
Version support	V100R006C00 and later versions
Transceiver form factor	SFP28
Transmission speed	25GE
Center wavelength (nm)	850
Standards compliance	25GBase-SR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<p>When the bit error rate (BER) is 10^{-12}:</p> <ul style="list-style-type: none"> Multimode fiber (OM3) (with diameter of 50 μm): 30 m Multimode fiber (OM4) (with diameter of 50 μm): 40 m <p>When the BER is 5×10^{-5}:</p> <ul style="list-style-type: none"> Multimode fiber (OM3) (with diameter of 50 μm): 70 m Multimode fiber (OM4) (with diameter of 50 μm): 100 m
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-8.4 to +2.4
Maximum receiver sensitivity (dBm)	-10.3
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 2
Operating temperature	0°C to 70°C (32°F to 158°F)

7.8.2 SFP-25G-LR

Table 7-47 Technical specifications

Item	Description
Part number	02312LSE

Item	Description
Version support	V200R019C10 and later versions
Transceiver form factor	SFP28
Transmission speed	25GE
Center wavelength (nm)	1310
Standards compliance	25GBase-LR
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-7 to +2
Maximum receiver sensitivity (dBm)	-11.3
Overload power (dBm)	2
Extinction ratio (dB)	≥ 3.5
Operating temperature	-45°C to 85°C (-49°F to 185°F)

7.9 40GE QSFP+ Optical Modules

7.9.1 QSFP-40G-ER4

Table 7-48 Technical specifications

Item	Description
Part number	02311BKT
Version support	Supported in V100R005C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE

Item	Description
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	40GBASE-ER4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	-2.7 to +4.5
Maximum receiver sensitivity (dBm)	-19.5
Overload power (dBm)	-4.5
Extinction ratio (dB)	≥ 5.5
Operating temperature	0°C to 70°C

7.9.2 QSFP-40G-eSM4

Table 7-49 Technical specifications

Item	Description
Part number	02311DTR
Version support	Supported in V100R005C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	1310
Standards compliance	40GBASE-eSM4
Connector type	MPO
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	8-strand or 12-strand, type B, female connector Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-12.6
Overload power (dBm)	0.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.9.3 QSFP-40G-eSR4

Table 7-50 Technical specifications

Item	Description
Part number	02310RMB
Version support	Supported in V100R003C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	850
Standards compliance	40GBASE-eSR4 10GBASE-SR (four lanes)
Connector type	MPO
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	8-strand or 12-strand, type B, female connector <ul style="list-style-type: none"> • Multimode fiber (OM2) (with diameter of 50 μm): 82 m • Multimode fiber (OM3) (with diameter of 50 μm): 300 m • Multimode fiber (OM4) (with diameter of 50 μm): 400 m

Item	Description
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM2): 500 MHz*km Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-7.6 to +0.5
Maximum receiver sensitivity (dBm)	-11.1
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

7.9.4 QSFP-40G-iSM4

Table 7-51 Technical specifications

Item	Description
Part number	02311DRW
Version support	Supported in V100R005C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	1310
Standards compliance	40GBASE-iSM4
Connector type	MPO
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	8-strand or 12-strand, type B, female connector Single-mode fiber (G.652) (with diameter of 9 μm): 1.4 km
Modal bandwidth	-
Transmit power (dBm)	-8.2 to +0.5
Maximum receiver sensitivity (dBm)	-11.5
Overload power (dBm)	0.5

Item	Description
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.9.5 QSFP-40G-iSR4

Table 7-52 Technical specifications

Item	Description
Part number	02310MHR
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	850
Standards compliance	40GBASE-SR4 10GBASE-USR (four lanes)
Connector type	MPO
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	8-strand or 12-strand, type B, female connector <ul style="list-style-type: none"> • Multimode fiber (OM2) (with diameter of 50 μm): 30 m • Multimode fiber (OM3) (with diameter of 50 μm): 100 m • Multimode fiber (OM4) (with diameter of 50 μm): 150 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM2): 500 MHz*km • Multimode fiber (OM3): 2000 MHz*km • Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-7.6 to +0.5
Maximum receiver sensitivity (dBm)	-9.5
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 3

Item	Description
Operating temperature	0°C to 70°C

7.9.6 QSFP-40G-LR4

Table 7-53 Technical specifications

Item	Description
Part number	02310MHS
Version support	Supported in V100R001C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	40GBASE-LR4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-7 to +2.3
Maximum receiver sensitivity (dBm)	-11.5
Overload power (dBm)	3.3
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.9.7 QSFP-40G-LR4-Lite

Table 7-54 Technical specifications

Item	Description
Part number	02311YVB
Version support	Supported in V200R003C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	40GBASE-LR4 Lite
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 2 km
Modal bandwidth	-
Transmit power (dBm)	-9 to +2.3
Maximum receiver sensitivity (OAM) (dBm)	-10.5
Overload power (dBm)	2.3
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.9.8 QSFP-40G-LX4

Table 7-55 Technical specifications

Item	Description
Part number	02311HNP
Version support	Supported in V100R006C00 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE

Item	Description
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	40GBASE-LX4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (OM3) (with diameter of 50 μm): 150 m • Multimode fiber (OM4) (with diameter of 50 μm): 150 m • Single-mode fiber (G.652) (with diameter of 9 μm): 2 km
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM3): 2000 MHz*km • Multimode fiber (OM4): 4700 MHz*km • Single-mode fiber (G.652): -
Transmit power (dBm)	-7 to +2.3
Maximum receiver sensitivity (dBm)	-11.5
Overload power (dBm)	2.3
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C (32°F to 158°F)

 **NOTE**

- If optical distribution frames (ODFs) with MPO ports need to be used, route the fiber jumpers through one such ODF at most.
- If optical distribution frames (ODFs) with LC ports need to be used, route the fiber jumpers through two such ODFs at most.

7.9.9 QSFP-40G-SR-BD (Single-Fiber-Bidirectional Module)

Table 7-56 Technical specifications

Item	Description
Part number	02311FPA
Version support	Supported in V100R006C00 and later versions

Item	Description
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	850, 900
Standards compliance	40GBASE-BIDI NOTE The optical module has two 20-Gbit/s channels to transmit and receive signals simultaneously using single-fiber bidirectional technology and needs 2 LC interface multimode fiber.
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (OM3) (with diameter of 50 μm): 100 m • Multimode fiber (OM4) (with diameter of 50 μm): 150 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM3): 2000 MHz*km • Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-4 to +5
Maximum receiver sensitivity (dBm)	-4.5
Overload power (dBm)	5
Extinction ratio (dB)	≥ 4.5
Operating temperature	10°C to 70°C

7.9.10 QSFP-40G-eSDLC-PAM

Table 7-57 Technical specifications

Item	Description
Part number	02311QTR
Version support	Supported in V200R002C50 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE

Item	Description
Center wavelength (nm)	850
Standards compliance	40GBase-eSDLC-PAM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> Multimode fiber (OM3) (with diameter of 50 μm): 100 m Multimode fiber (OM4) (with diameter of 50 μm): 300 m
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-2 to +2.4
Maximum receiver sensitivity (dBm)	-8.0
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

7.9.11 QSFP-40G-SDLC-PAM

Table 7-58 Technical specifications

Item	Description
Part number	02311PUU
Version support	Supported in V200R002C50 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	850
Standards compliance	40GBase-SDLC-PAM4
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> • Multimode fiber (OM3) (with diameter of 50 μm): 100 m • Multimode fiber (OM4) (with diameter of 50 μm): 150 m
Modal bandwidth	<ul style="list-style-type: none"> • Multimode fiber (OM3): 2000 MHz*km • Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-2.5 to +2.4
Maximum receiver sensitivity (dBm)	-8.0
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

7.9.12 QSFP-40G-eSDLC-PAM-G2

Table 7-59 Technical specifications

Item	Description
Part number	02312ELG
Version support	Supported in V200R002C50 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	850
Standards compliance	40GBase-eSDLC-PAM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> Multimode fiber (OM3) (with the diameter of 50 μm): 100 m Multimode fiber (OM4) (with the diameter of 50 μm): 300 m
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-2 to +2.4
Maximum receiver sensitivity (dBm)	-8.0
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

 **NOTE**

The QSFP-40G-eSDLC-PAM optical module cannot be connected to the QSFP-40G-eSDLC-PAM-G2 optical module.

7.9.13 QSFP-40G-SDLC-PAM-G2

Table 7-60 Technical specifications

Item	Description
Part number	02312ELH
Version support	Supported in V200R002C50 and later versions
Transceiver form factor	QSFP+
Transmission speed	40GE
Center wavelength (nm)	850
Standards compliance	40GBase-SDLC-PAM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> Multimode fiber (OM3) (with the diameter of 50 μm): 100 m Multimode fiber (OM4) (with the diameter of 50 μm): 150 m
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-2.5 to +2.4
Maximum receiver sensitivity (dBm)	-8.0
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 3
Operating temperature	0°C to 70°C

 NOTE

The QSFP-40G-SDLC-PAM optical module cannot be connected to the QSFP-40G-SDLC-PAM-G2 optical module.

7.10 100GE QSFP28 Optical Modules

7.10.1 QSFP28-100G-LR4

Table 7-61 Technical specifications

Item	Description
Part number	02311KNU
Version support	Supported in V200R001C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1295, 1300, 1304, 1309
Standards compliance	100GBASE-LR4
Connector type	LC

Item	Description
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-4.3 to +4.5
Maximum receiver sensitivity (dBm)	-8.6
Overload power (dBm)	4.5
Extinction ratio (dB)	≥ 2
Operating temperature	0°C to 70°C

7.10.2 QSFP28-100G-PSM4

Table 7-62 Technical specifications

Item	Description
Part number	02311MNM
Version support	Supported in V200R001C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1310
Standards compliance	100GBASE-PSM4
Connector type	MPO
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	8-strand or 12-strand, type B, female connector Single-mode fiber (G.652) (with diameter of 9 μm): 500 m
Modal bandwidth	-

Item	Description
Transmit power (dBm)	-9.4 to +2
Maximum receiver sensitivity (dBm)	-11.35
Overload power (dBm)	2.2
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.10.3 QSFP28-100G-SR4

Table 7-63 Technical specifications

Item	Description
Part number	02311GBW
Version support	Supported in V200R001C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	850
Standards compliance	100GBASE-SR4
Connector type	MPO
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	8-strand or 12-strand, type B, female connector <ul style="list-style-type: none"> Multimode fiber (OM3) (with diameter of 50 μm): 70 m Multimode fiber (OM4) (with diameter of 50 μm): 100 m
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-8.4 to +2.4
Maximum receiver sensitivity (dBm)	-8.5
Overload power (dBm)	2.4

Item	Description
Extinction ratio (dB)	≥ 2
Operating temperature	0°C to 70°C

7.10.4 QSFP28-100G-SR4-MP

Table 7-64 QSFP28-100G-SR4-MP specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-SR4-MP
Part Number	02313FYX
Model	QSFP28-100G-SR4-MP
Form factor	QSFP28
Application standard/Type	100GBASE-SR4
Connector type	MPO
Optical fiber type	MMF
Type of the end face of the fiber ceramic ferrule	PC or UPC
Working case temperature [°C (°F)]	0°C to 70°C (32°F to 158°F)
Transmission rate [bit/s]	100Gbit/s
Target transmission distance [km]	8-strand or 12-strand, type B, female connector Multimode fiber (OM3) (with diameter of 50 μ m): 70 m Multimode fiber (OM4) (with diameter of 50 μ m): 100 m
Modal bandwidth [MHz*km]	Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power (AVG) [dBm]	2.4 dBm
Minimum Tx optical power (AVG) [dBm]	-8.4 dBm

Item	Value
Minimum extinction ratio [dBm]	2 dBm
Receiver Optical Characteristics	
Rx sensitivity (OMA) [dBm]	-8.5 dBm
Overload power (AVG) [dBm]	2.4 dBm

7.10.5 QSFP28-100G-BIDI

Table 7-65 QSFP28-100G-BIDI specifications

Item	Value
Basic Information	
Module name	QSFP28-100G-BIDI
Part Number	02313EEK
Model	QSFP28-100G-BIDI
Form factor	QSFP28
Application standard/Type	100G PAM4 BiDi
Connector type	LC
Optical fiber type	MMF
Type of the end face of the fiber ceramic ferrule	PC or UPC
Working case temperature [°C (°F)]	10°C to 70°C (50°F to 158°F)
DDM options	Supported
Transmission rate [bit/s]	100Gbit/s
Target transmission distance [km]	Multimode fiber (OM3) (with diameter of 50 μm): 70 m Multimode fiber (OM4) (with diameter of 50 μm): 100 m
Modal bandwidth [MHz*km]	Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Bit error ratio (BER)	1e-12
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm/910 nm

Item	Value
Maximum Tx optical power (AVG) [dBm]	4 dBm
Minimum Tx optical power (AVG) [dBm]	-4.4 dBm
Maximum Tx optical power (OMA) [dBm]	3 dBm
Minimum Tx optical power (OMA) [dBm]	-2.4 dBm
Minimum extinction ratio [dBm]	3 dBm
Receiver Optical Characteristics	
Rx sensitivity (AVG) [dBm]	-7.9 dBm
Rx sensitivity (OMA) [dBm]	-5.9 dBm
Overload power (AVG) [dBm]	3.5 dBm

 **NOTE**

- Version support:
 - V200R002C50, V200R005C10, V200R005C20 and V200R019C10 after the corresponding patch is installed
 - V200R020C10 and later versions
- Before installing a QSFP28-100G-BIDI optical module on a port, you need to disable the FEC function on the port. For example, if the RS-FEC function is enabled on a port that has a QSFP28-100G-BIDI optical module installed, the port status will become Down (Transceiver type mismatch).

7.10.6 QSFP28-100G-DR

Table 7-66 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/Type	100GBase-DR
Connector type	LC

Item	Value
Optical fiber type	SMF
Type of the end face of the fiber ceramic ferrule	PC or UPC
Working case temperature [°C (°F)]	0°C to 70°C (32°F to 158°F)
DDM options	Supported
Transmission rate [bit/s]	100Gbit/s
Target transmission distance [km]	Single-mode fiber (G.652) (with diameter of 9 μm): 500m
Transmitter Optical Characteristics	
Center wavelength [nm]	1311 nm
Maximum Tx optical power (AVG) [dBm]	4 dBm
Minimum Tx optical power (AVG) [dBm]	-2.9 dBm
Maximum Tx optical power (OMA) [dBm]	4.2 dBm
Minimum Tx optical power (OMA) [dBm]	-0.8 dBm
Minimum extinction ratio [dBm]	3.5 dBm
Receiver Optical Characteristics	
Rx sensitivity (AVG) [dBm]	-5.9 dBm
Rx sensitivity (OMA) [dBm]	Max(-3.9,SECQ-5.3)
Overload power (AVG) [dBm]	4 dBm

 **NOTE**

- A port that has a QSFP28-100G-DR optical module installed cannot be used for stack connection.
- Before installing a QSFP28-100G-DR optical module on a port, you need to disable the FEC function on the port. For example, if the RS-FEC function is enabled on a port that has a QSFP28-100G-DR optical module installed, the port status will become Down (Transceiver type mismatch).

7.10.7 QSFP28-100G-4WDM-40

Table 7-67 Technical specifications

Item	Description
Part number	02312QTL
Version support	Supported in V200R019C10 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1310
Standards compliance	100GBASE-4WDM
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 40 km
Modal bandwidth	-
Transmit power (dBm)	-2.5 to +6.5
Maximum receiver sensitivity (dBm)	-18.5
Overload power (dBm)	-3.5
Extinction ratio (dB)	≥4.5
Operating temperature	0°C to 70°C

7.10.8 QSFP-100G-CLR4

Table 7-68 Technical specifications

Item	Description
Part number	02311MNP
Version support	Supported in V200R001C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1271, 1291, 1311, 1331

Item	Description
Standards compliance	100GBASE-CLR4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 2 km
Modal bandwidth	-
Transmit power (dBm)	-6.5 to +2.5
Maximum receiver sensitivity (dBm)	-10.7
Overload power (dBm)	2.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.10.9 QSFP-100G-CWDM4

Table 7-69 Technical specifications

Item	Description
Part number	02311MNN
Version support	Supported in V200R001C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	100GBASE-CWDM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 2 km

Item	Description
Modal bandwidth	-
Transmit power (dBm)	-6.5 to +2.5
Maximum receiver sensitivity (dBm)	-9.8
Overload power (dBm)	2.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.10.10 QSFP-100G-CWDM4-500

Table 7-70 Technical specifications

Item	Description
Part number	02312UJN
Version support	Supported in V200R019C10 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	100GBASE-CWDM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 0.5 km
Modal bandwidth	-
Transmit power (dBm)	-6.5 to +2.5
Maximum receiver sensitivity (dBm)	-9.8
Overload power (dBm)	2.5
Extinction ratio (dB)	≥ 3.5

Item	Description
Operating temperature	0°C to 70°C

7.10.11 QSFP-100G-LR4-Lite

Table 7-71 Technical specifications

Item	Description
Part number	02311UPS
Version support	Supported in V200R002C50 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1295, 1300, 1304, 1309
Standards compliance	100GBASE-LR4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 2 km
Modal bandwidth	-
Transmit power (dBm)	-4.3 to +4.5
Maximum receiver sensitivity (dBm)	-8.6
Overload power (dBm)	4.5
Extinction ratio (dB)	≥ 4
Operating temperature	0°C to 70°C

7.10.12 QSFP-100G-eCWDM4

Table 7-72 Technical specifications

Item	Description
Part number	02312DAT
Version support	Supported in V200R001C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1271, 1291, 1311, 1331
Standards compliance	100GBASE-eCWDM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 10 km
Modal bandwidth	-
Transmit power (dBm)	-6.5 to +2.5
Maximum receiver sensitivity (dBm)	-13
Overload power (dBm)	2.5
Extinction ratio (dB)	≥ 3.5
Operating temperature	0°C to 70°C

7.10.13 QSFP-100G-ER4-Lite

Table 7-73 Technical specifications

Item	Description
Part number	02311YXR
Version support	Supported in V200R003C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	1295, 1300, 1304, 1309

Item	Description
Standards compliance	100GBASE-ER4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC
Applicable cable and maximum transmission distance	Single-mode fiber (G.652) (with diameter of 9 μm): 30 km (FEC OFF)/40 km (FEC ON)
Modal bandwidth	-
Transmit power (dBm)	-2.5 to +2.9
Maximum receiver sensitivity (dBm)	-18.4
Overload power (dBm)	-3.5
Extinction ratio (dB)	≥ 8
Operating temperature	0°C to 70°C

7.10.14 QSFP-100G-SWDM4

Table 7-74 Technical specifications

Item	Description
Part number	02311QUK
Version support	V200R003C00 and later versions
Transceiver form factor	QSFP28
Transmission speed	100GE
Center wavelength (nm)	850
Standards compliance	100G-SWDM4
Connector type	LC
Type of the end face of the fiber ceramic ferrule	PC or UPC

Item	Description
Applicable cable and maximum transmission distance	<ul style="list-style-type: none"> Multimode fiber (OM3) (with diameter of 50 μm): 75 m Multimode fiber (OM4) (with diameter of 50 μm): 100 m
Modal bandwidth	<ul style="list-style-type: none"> Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmit power (dBm)	-7.5 to +3.4
Maximum receiver sensitivity (dBm)	-10.5
Overload power (dBm)	2.4
Extinction ratio (dB)	≥ 2
Operating temperature	0°C to 70°C

7.10.15 QSFP-100G/40G-SR4

Table 7-75 QSFP-100G/40G-SR4 specifications

Item	Value
Basic Information	
Module name	QSFP-100G/40G-SR4
Part Number	02313FCH
Model	QSFP-100G/40G-SR4
Form factor	QSFP28
Application standard/Type	100Gbase-SR4
Connector type	MPO
Optical fiber type	MMF
Type of the end face of the fiber ceramic ferrule	PC or UPC
Working case temperature [°C (°F)]	0°C to 70°C (-23°F to 167°F)
DDM options	Supported
Transmission rate [bit/s]	40/100G

Item	Value
Target transmission distance [km]	Multimode fiber (OM3) (with diameter of 50 μm): 70 m Multimode fiber (OM4) (with diameter of 50 μm): 100 m
Modal bandwidth [MHz*km]	Multimode fiber (OM3): 2000 MHz*km Multimode fiber (OM4): 4700 MHz*km
Transmitter Optical Characteristics	
Center wavelength [nm]	850 nm
Maximum Tx optical power (AVG) [dBm]	2.4 dBm
Minimum Tx optical power (AVG) [dBm]	-8.4 dBm
Maximum Tx optical power (OMA) [dBm]	3 dBm
Minimum Tx optical power (OMA) [dBm]	-6.4 dBm
Minimum extinction ratio [dBm]	2 dBm
Receiver Optical Characteristics	
Rx sensitivity (OMA) [dBm]	-8.5 dBm
Overload power (AVG) [dBm]	2.4 dBm

 **NOTE**

Only the CE8850-64CQ-EI and CE8861-4C-EI switches support this optical module.