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

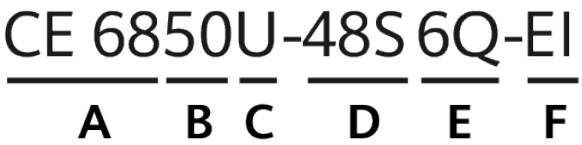

Table 2-1 describes the CloudEngine 9800, 8800, 7800, 6800, and 5800 series switches naming conventions.

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

Field	Meaning
A	CloudEngine series data center switches • **CE88**: CE8800 series • **CE78**: CE7800 series • **CE68**: CE6800 series • **CE58**: CE5800 series
B	Product model category: • **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: • **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: • **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: • **LI**: model providing basic functions • **EI**: model providing enhanced functions • **HI**: model providing advanced functions

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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

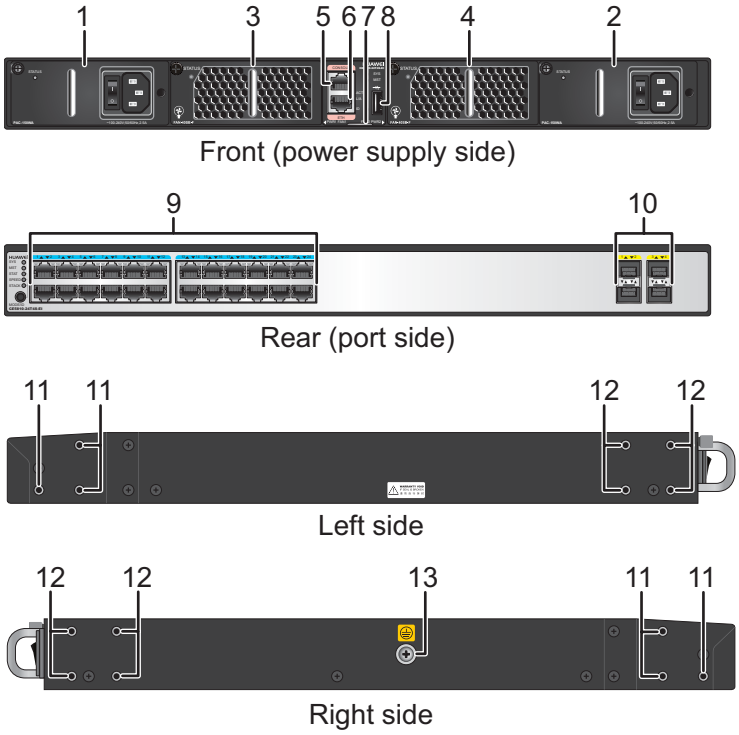
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5810	CE5810-24T4S-EI	CE5810EI	V100R002C00 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-2 CE5810-24T4S-EI



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1	Power supply slot 1 Applicable power modules: • **150 W AC power module (PAC-150WA)** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **150 W AC power module (PAC-150WA)** • **350 W DC power module**
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	Twenty-four 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.

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  - 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.

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

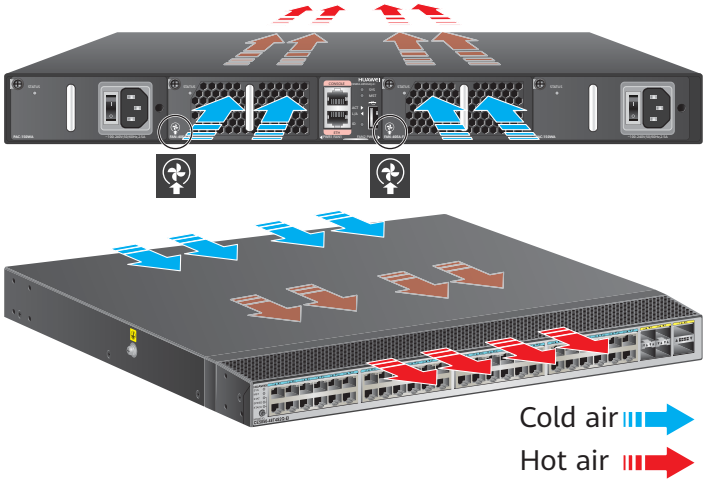
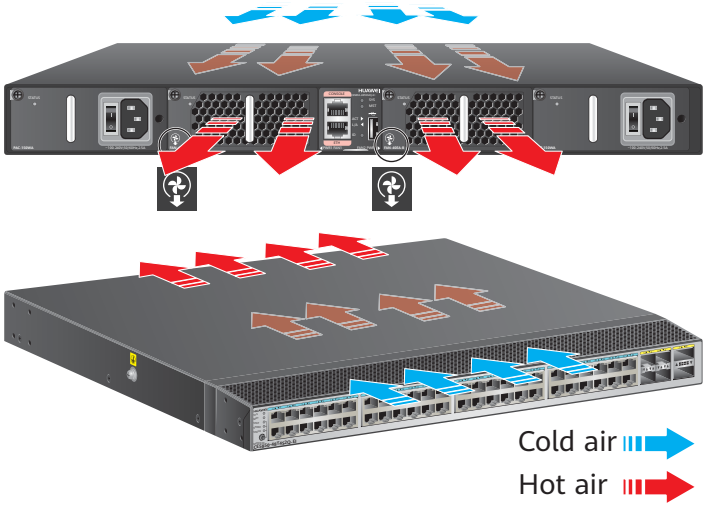


Figure 2-4 Back-to-front airflow (air flows into from the port side)



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.

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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

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 43 dBA • Front-to-back airflow: < 47 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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	CE5810-24T4S-EI	CE5810-24T4S-EI Switch (24-Port GE RJ45, 4-Port 10GE SFP+, Without Fan Box and Power Module)
02350EYF	CE5810-24T4S-EI-F	CE5810-24T4S-EI Switch (24-Port GE RJ45, 4-Port 10G SFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EYH	CE5810-24T4S-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.

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Table 2-9 Version mapping

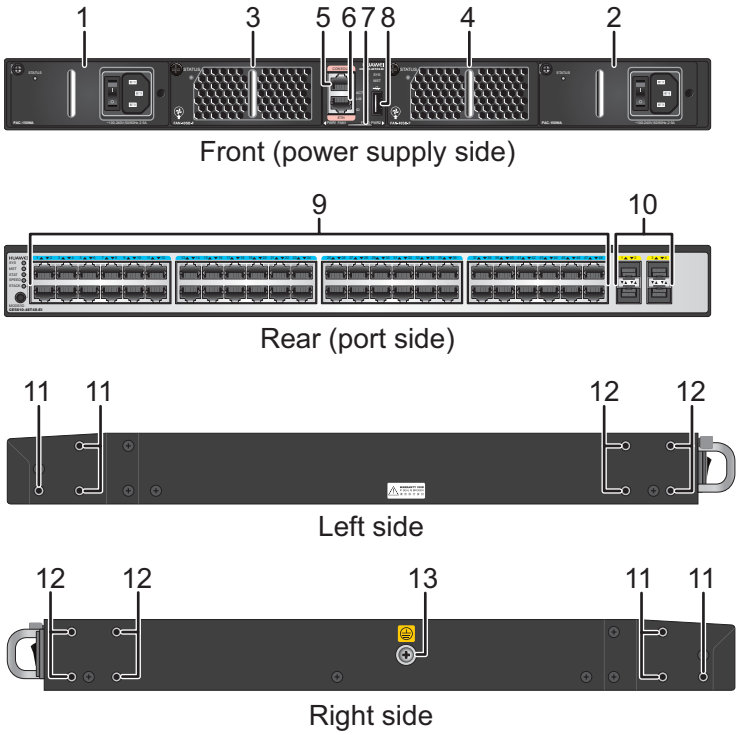
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5810	CE5810-48T4S-EI	CE5810EI	V100R002C00 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

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: • **150 W AC power module (PAC-150WA)** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **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,

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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.

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

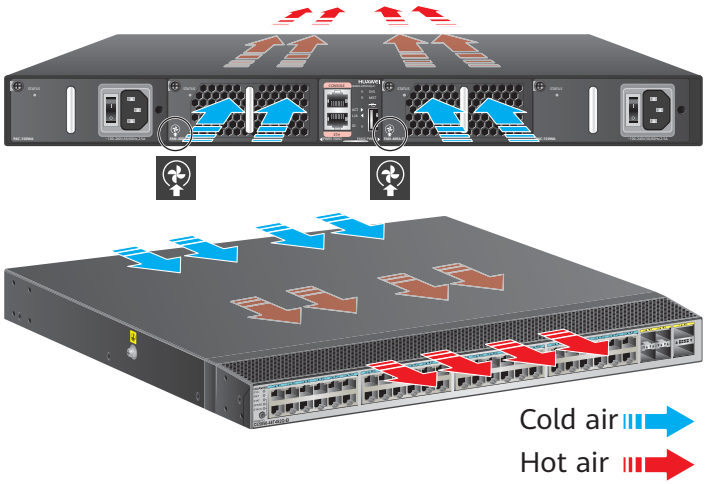
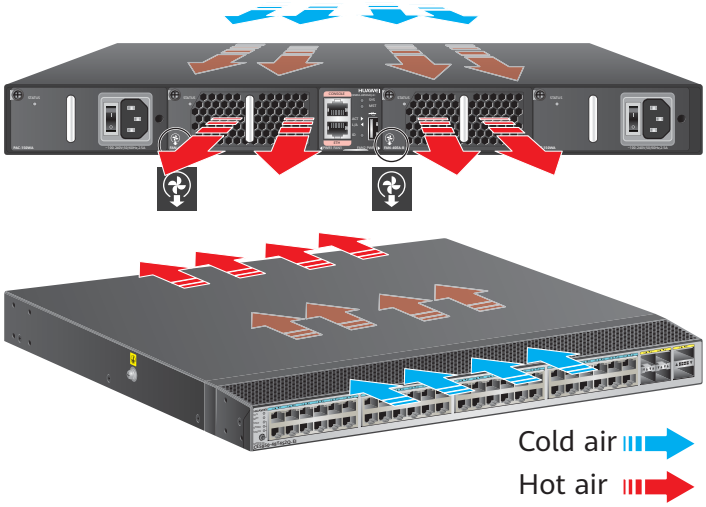


Figure 2-7 Back-to-front airflow (air flows into from the port side)



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.

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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

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 43 dBA • Front-to-back airflow: < 47 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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	CE5810-48T4S-EI	CE5810-48T4S-EI Switch (48-Port GE RJ45, 4-Port 10GE SFP+, Without Fan Box and Power Module)
02350EYW	CE5810-48T4S-EI-F	CE5810-48T4S-EI Switch (48-Port GE RJ45, 4-Port 10G SFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EYX	CE5810-48T4S-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.

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Table 2-16 Version mapping

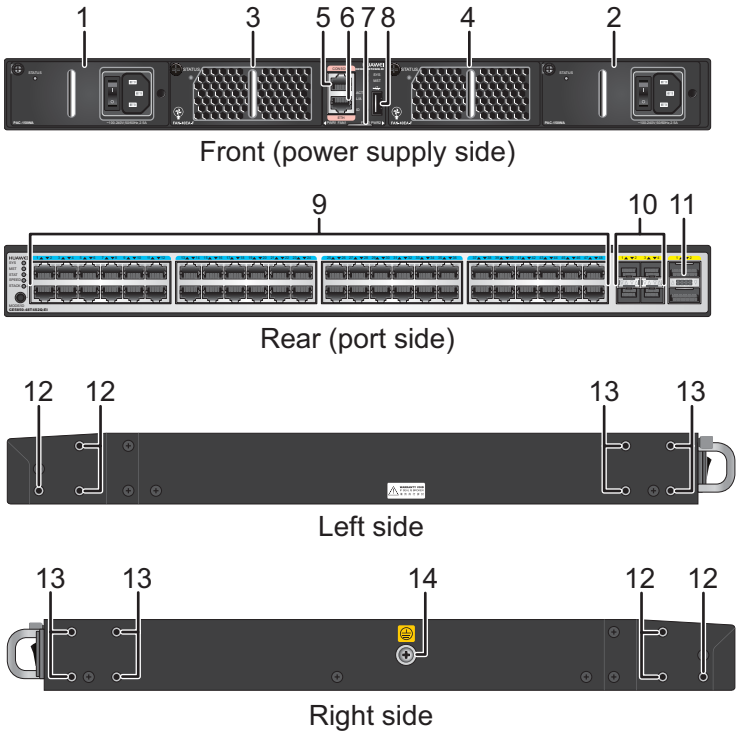
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5850	CE5850-48T4S2Q-EI	CE5850EI	V100R001C00 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

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: • **150 W AC power module (PAC-150WA)** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **150 W AC power module (PAC-150WA)** • **350 W DC power module**

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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 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** (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: • **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.

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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

. 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

. 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.

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

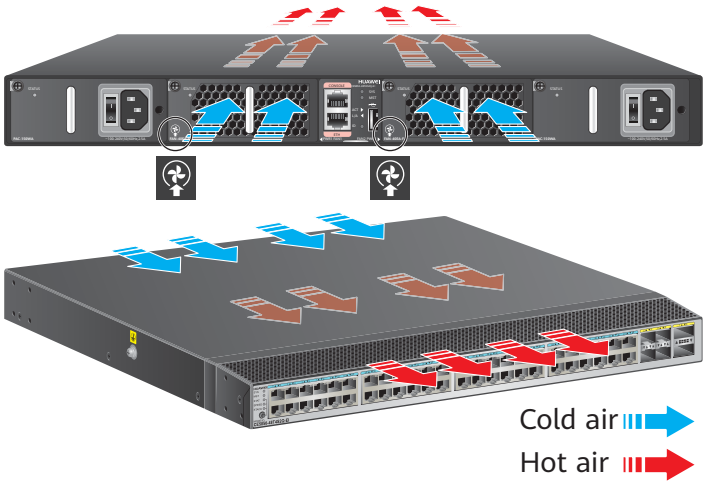
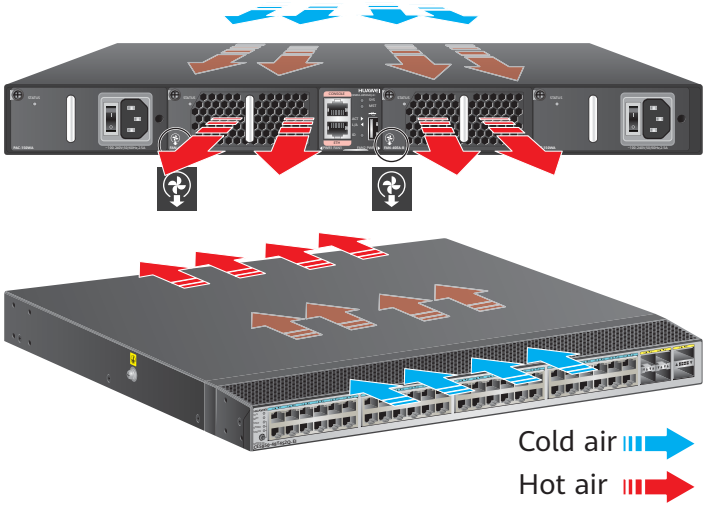


Figure 2-10 Back-to-front airflow (air flows into from the port side)



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.

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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

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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

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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		• 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	• 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.)

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Item		Description
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 45 dBA • Front-to-back airflow: < 45 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

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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		• 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.

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Table 2-23 provides the ordering information.

Table 2-23 Ordering information

Part Number	Part Model	Part Description
02355272	CE5850-48T4S2Q-EI	CE5850-48T4S2Q-EI Switch (48-Port GE RJ45, 4-Port 10GE SFP+, 2-Port 40GE QSFP+, Without Fan Box and Power Module)
02350EXX	CE5850-48T4S2Q-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	CE5850-48T4S2Q-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

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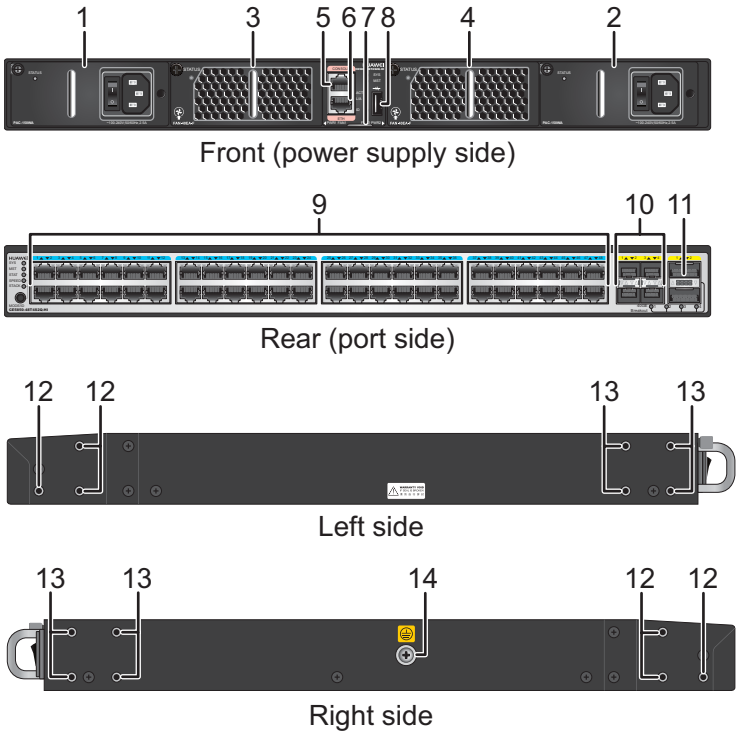
Figure 2-11 E5850-48T4S2Q-HI



1	Power supply slot 1 Applicable power modules: • **150 W AC power module (PAC-150WA)** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **150 W AC power module (PAC-150WA)** • **350 W DC 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

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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** (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: • **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.

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- 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.

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

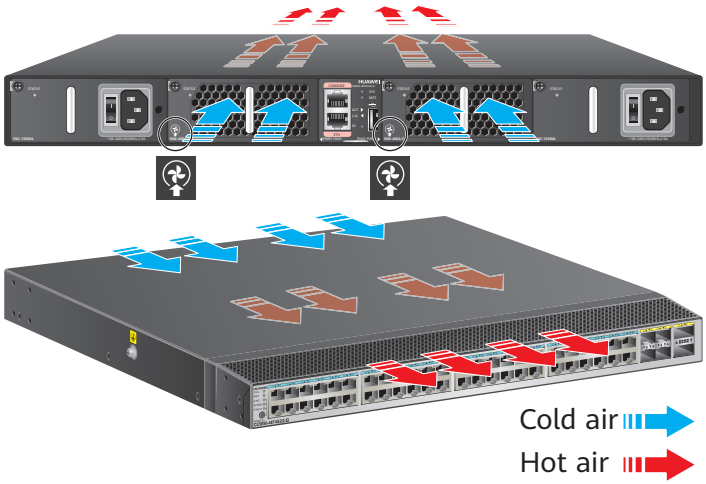
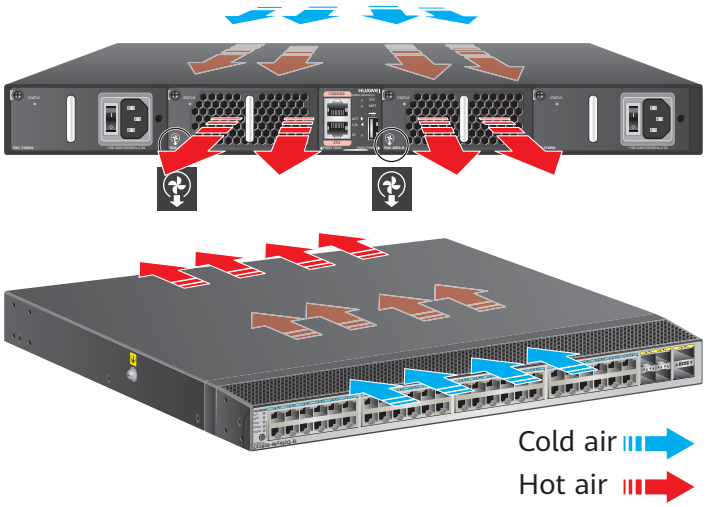


Figure 2-13 Back-to-front airflow (air flows into from the port side)



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Indicators

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

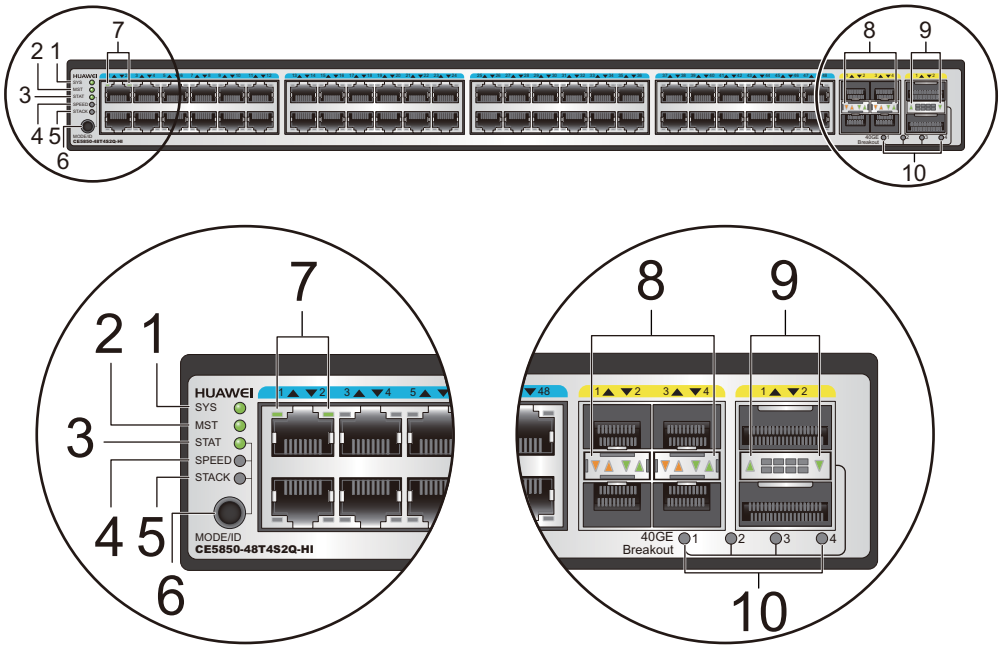

Figure 2-15 Indicators on the CE5850-48T4S2Q-HI front panel

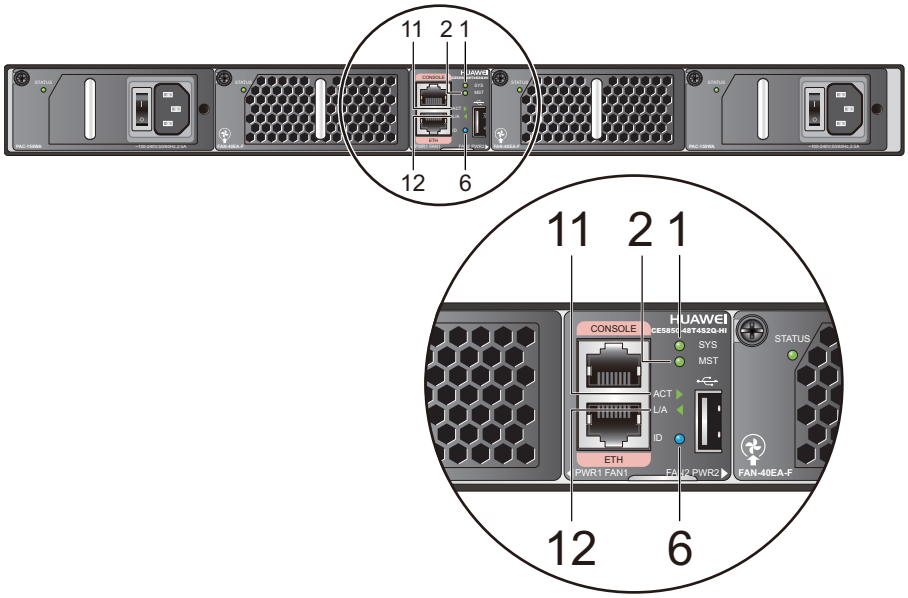

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Table 2-25 Description of indicators on the switch

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	• 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.)

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No.	Indicator	Name	Color	Status	Description
		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.	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.

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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: -	-	• 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:	Off	The ID indicator is not used (default state).

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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**.		

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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.			

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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.

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No.	Indicator	Name	Color	Status	Description
				Steady on	At least one 40GE port has been split into four 10GE ports. 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: • 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. 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. • 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

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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.

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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.

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Display Mode	Port	Color	Status	Description
			Steady on	If the indicator of a port is steady on, the port number indicates the leaf ID of the switch. **NOTE** The leaf ID range supported by a switch depends on the number of downlink ports on the switch: • 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

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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

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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.

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Table 2-32 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• Back-to-front airflow: < 45 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: ● 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

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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		• 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	CE5850-48T4S2Q-HI	CE5850-48T4S2Q-HI Switch (48-Port GE RJ45, 4-Port 10GE SFP+, 2-Port 40GE QSFP+, Without Fan Box and Power Module)
02350EYC	CE5850-48T4S2Q-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	CE5850-48T4S2Q-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)

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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

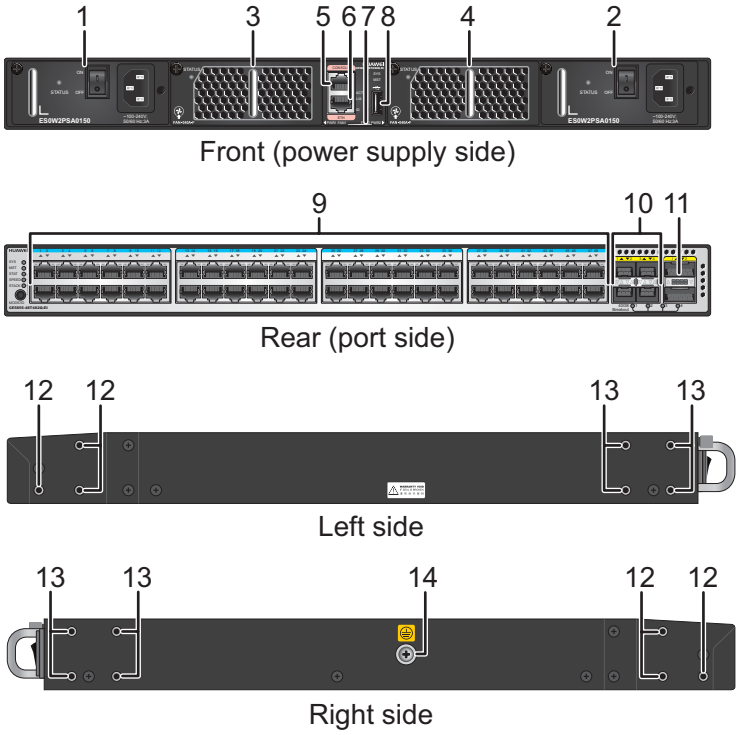
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE5800	CE5855	CE5855-48T4S2Q-EI	CE5855EI	V100R005C10 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-16 CE5855-48T4S2Q-EI



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1	Power supply slot 1 Applicable power modules: • **150 W AC power module (ES0W2PSA0150)** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **150 W AC power module (ES0W2PSA0150)** • **350 W DC power module**
3	Fan slot 1 Applicable fan modules: • **FAN-040A series fan modules**	4	Fan slot 2 Applicable fan modules: • **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: • **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**

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11	Two 40GE QSFP+ Ethernet optical 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+)** **NOTE** A 40GE QSFP+ port can be split into four 10GE ports.	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

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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)

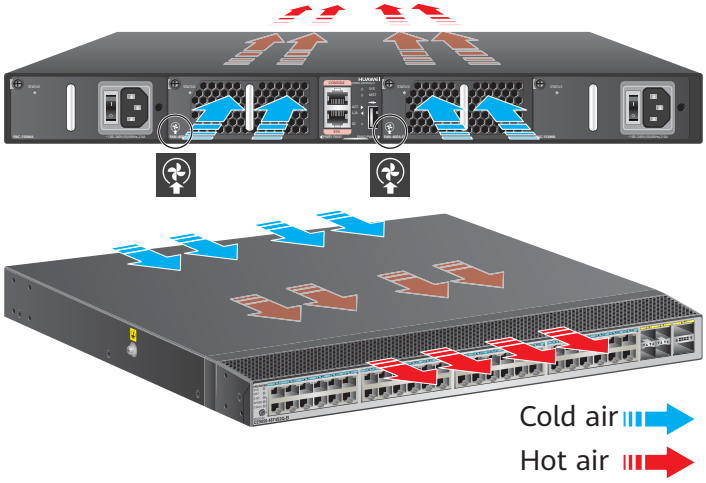

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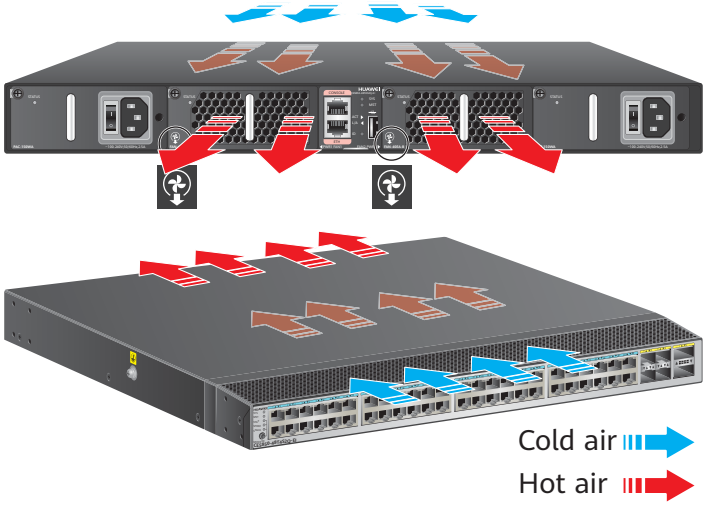
Figure 2-18 Back-to-front airflow (air flows into from the port side)



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

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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

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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

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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		• 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	• 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)	• Back-to-front airflow: < 48 dBA • Front-to-back airflow: < 55 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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

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Item		Description
	Rated input current	• 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: • 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

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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		• 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	CE5855-48T4S2Q-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	CE5855-48T4S2Q-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)

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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

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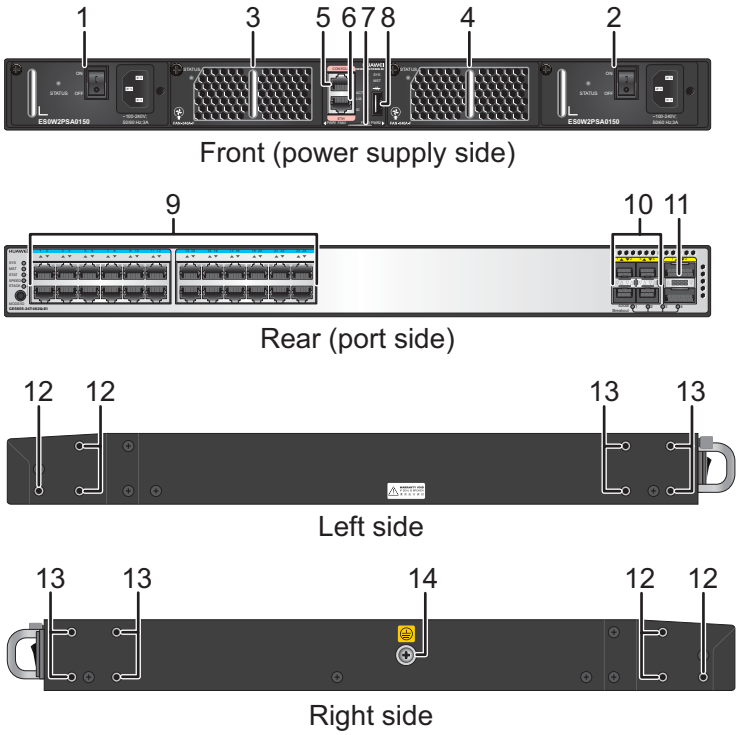
Figure 2-19 CE5855-24T4S2Q-EI



1	Power supply slot 1 Applicable power modules: • **150 W AC power module (ES0W2PSA0150)** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **150 W AC power module (ES0W2PSA0150)** • **350 W DC power module**
3	Fan slot 1 Applicable fan modules: • **FAN-040A series fan modules**	4	Fan slot 2 Applicable fan modules: • **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

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9	Twenty-four 10/100/1000BASE-T Ethernet electrical ports	10	Four 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**
11	Two 40GE QSFP+ Ethernet optical 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+)** **NOTE** A 40GE QSFP+ port can be split into four 10GE ports.	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.

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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.

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

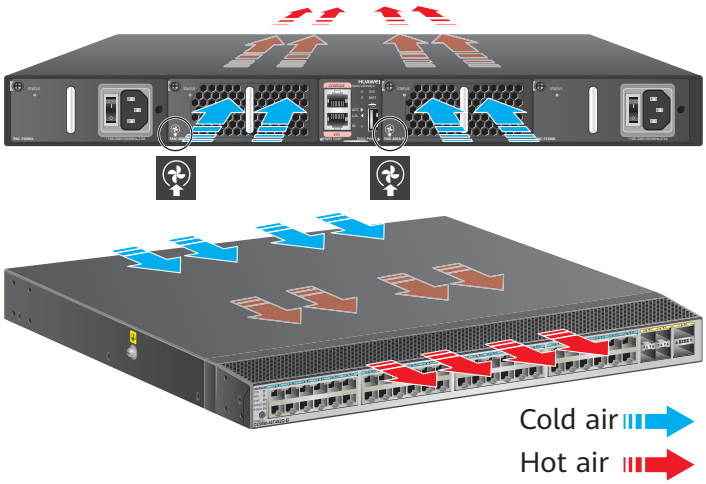
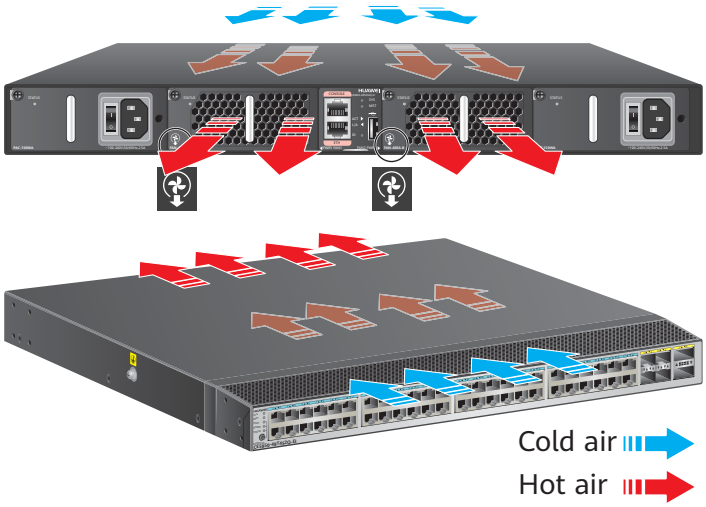


Figure 2-21 Back-to-front airflow (air flows into from the port side)



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.

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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

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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

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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		• 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	• 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.)

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Item		Description
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 48 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

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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 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
	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		• 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

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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	CE5855-24T4S2Q-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	CE5855-24T4S2Q-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	CE5855-24T4S2Q-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.

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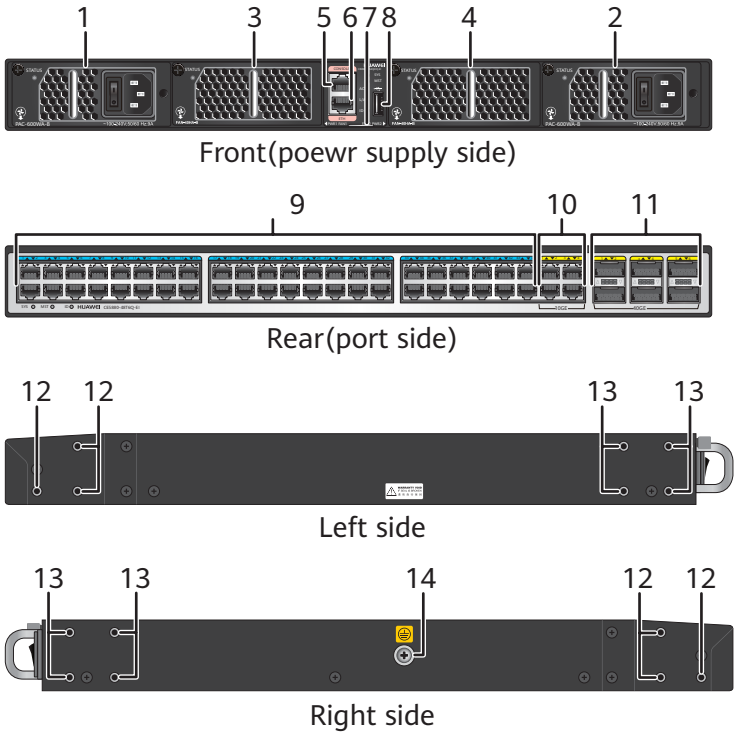
Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-22 CE5880-48T6Q-EI



1	Power supply slot 1 Applicable power modules: • **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: • **3.6 600 W AC Power Module (PAC-600WA)** • **3.11 600 W DC Power Module (PDC600S12)**
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.	8	USB port

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9	Forty-four 100/1000BASE-T Ethernet electrical ports	10	Four 10GBASE-T Ethernet electrical ports
11	Six 40GE QSFP+ Ethernet optical ports **NOTE** 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. Applicable modules and cables: • **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

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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)

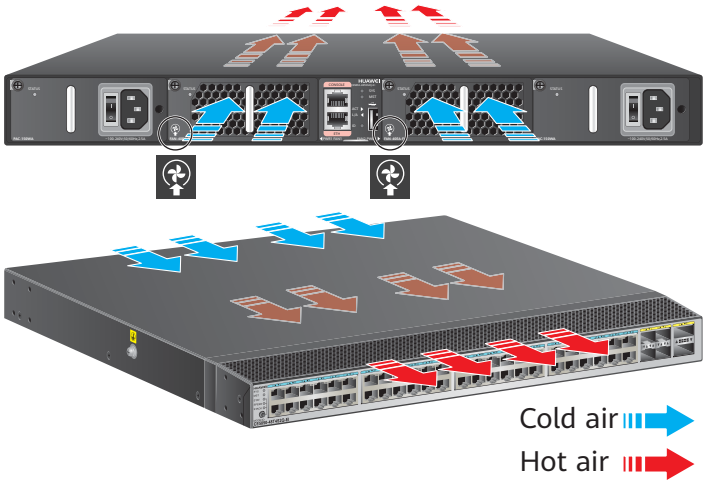

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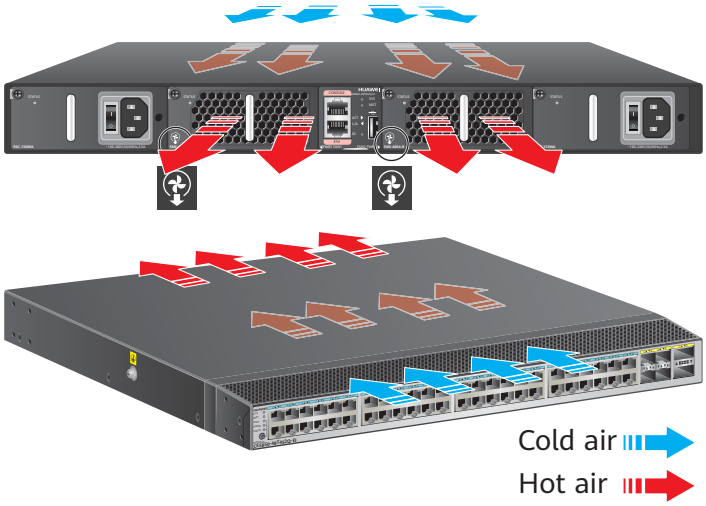
Figure 2-24 Back-to-front airflow (air flows in from the port side)



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.

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

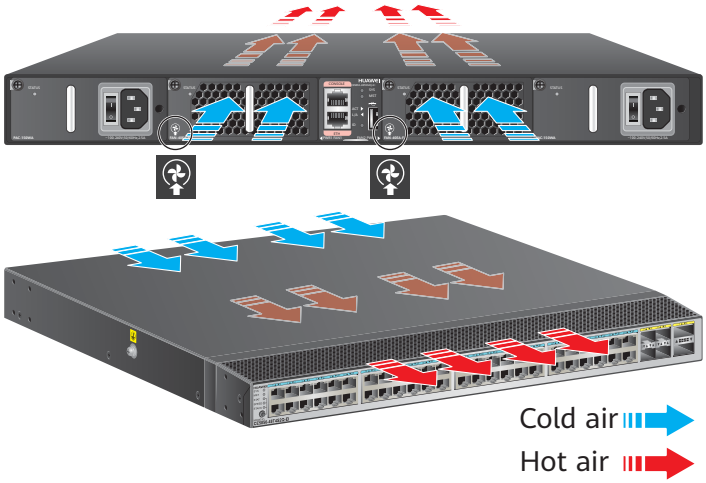
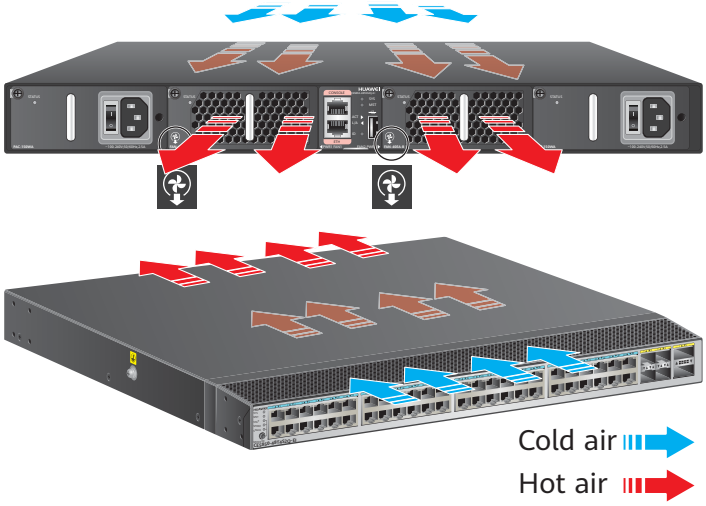


Figure 2-26 Back-to-front airflow (air flows in from the port side)



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.

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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

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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

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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

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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.

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Table 2-61 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• Back-to-front airflow: < 64 dBA • Front-to-back airflow: < 64 dBA
Power specifications	Power source type	AC
	AC power input	• 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	• 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	• 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

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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: • 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

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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		• 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.

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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

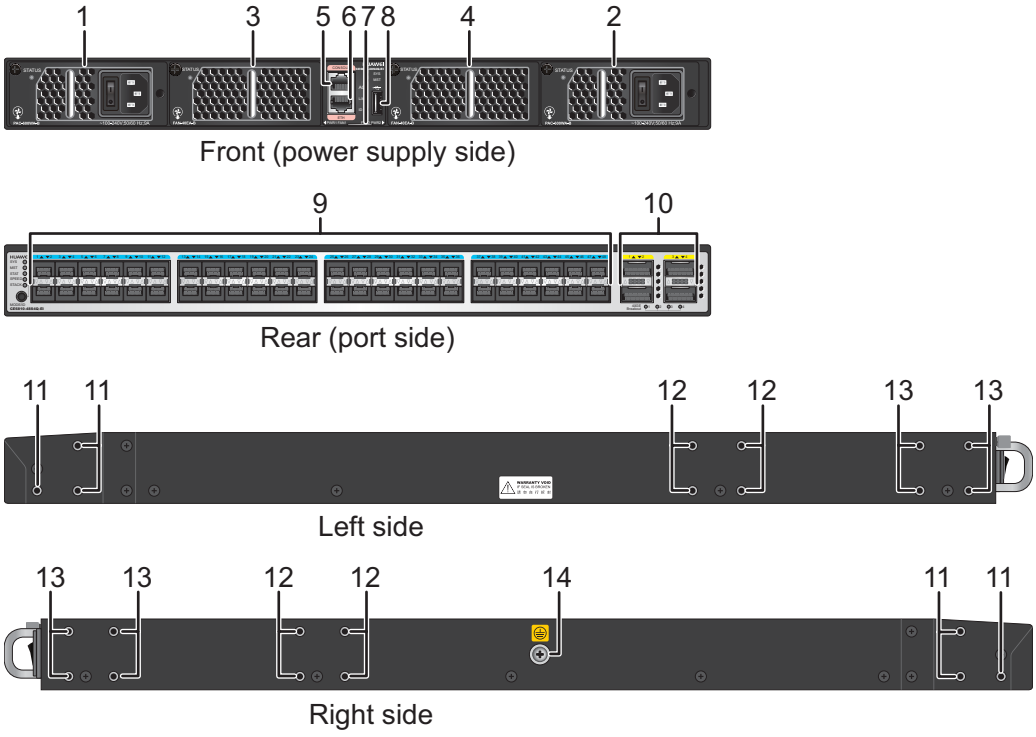
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-48S4Q-EI	CE6810EI	V100R003C00 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-27 CE6810-48S4Q-EI



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1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **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

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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.

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

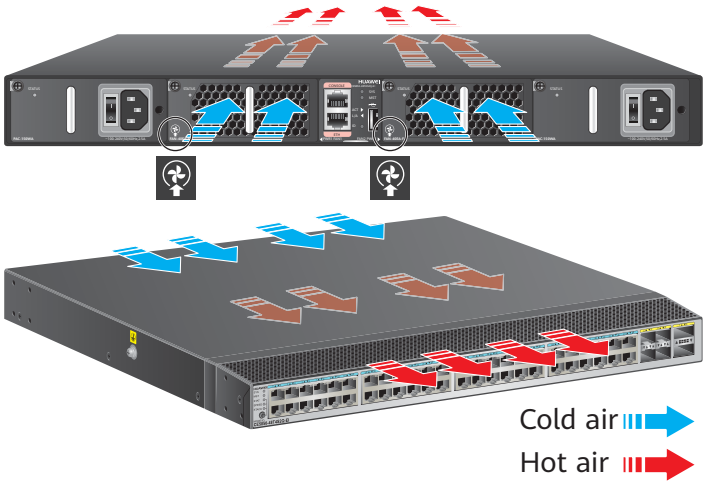
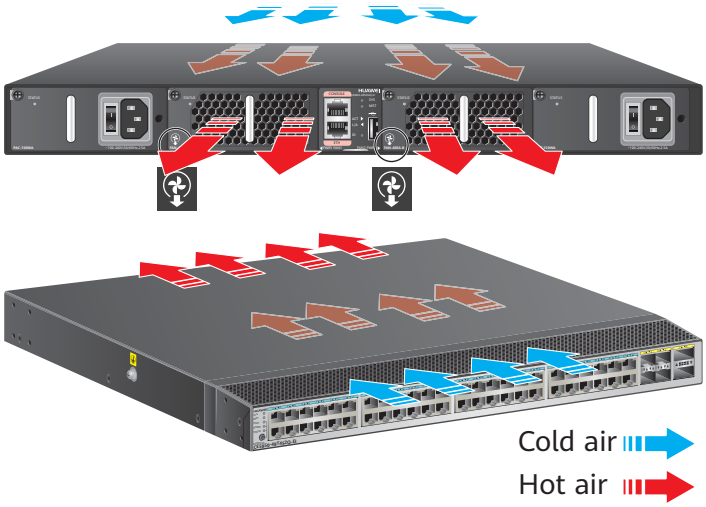


Figure 2-29 Back-to-front airflow (air flows in from the port side)



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.

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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)

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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	CE6810-48S4Q-EI-F	CE6810-48S4Q-EI Switch (48-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EXV	CE6810-48S4Q-EI-B	CE6810-48S4Q-EI Switch (48-Port 10G SFP+, 4-Port 40G QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02358856	CE6810-48S4Q-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.

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Table 2-70 Version mapping

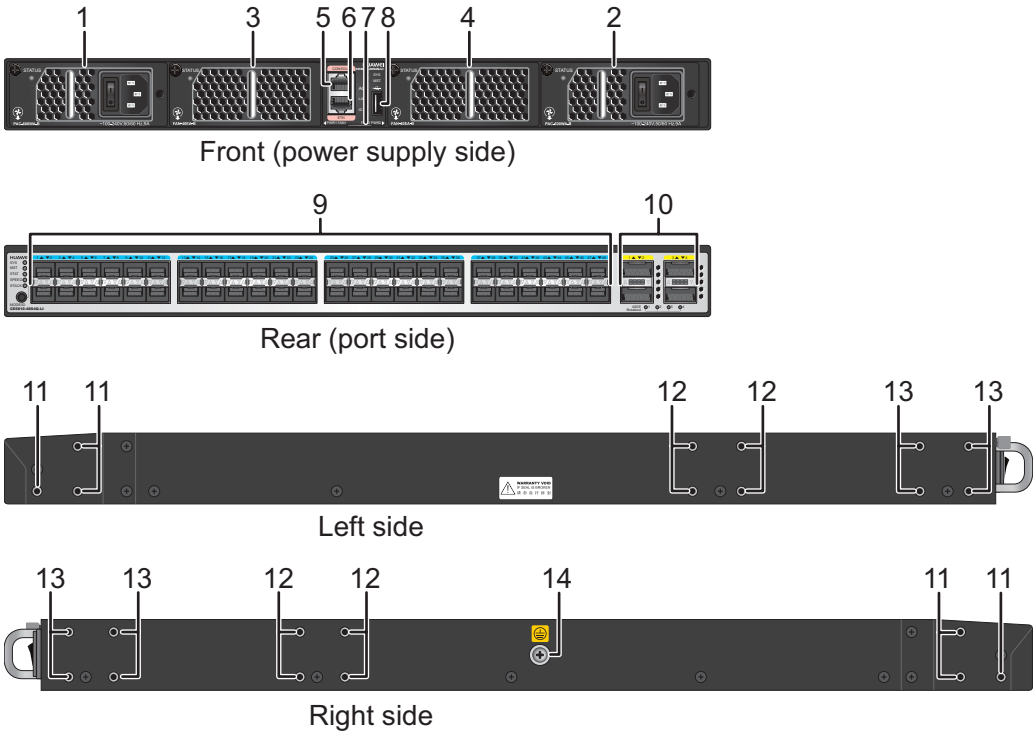
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-48S4Q-LI	CE6810LI	V100R003C10 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

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: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **600 W AC power module**

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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.

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  - 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.

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

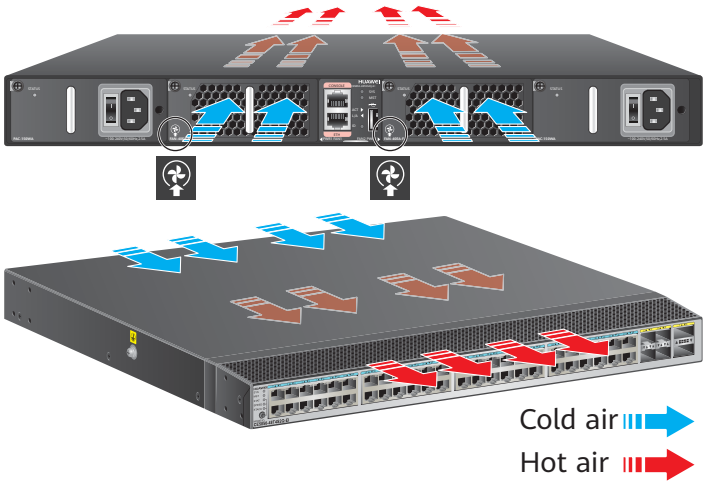
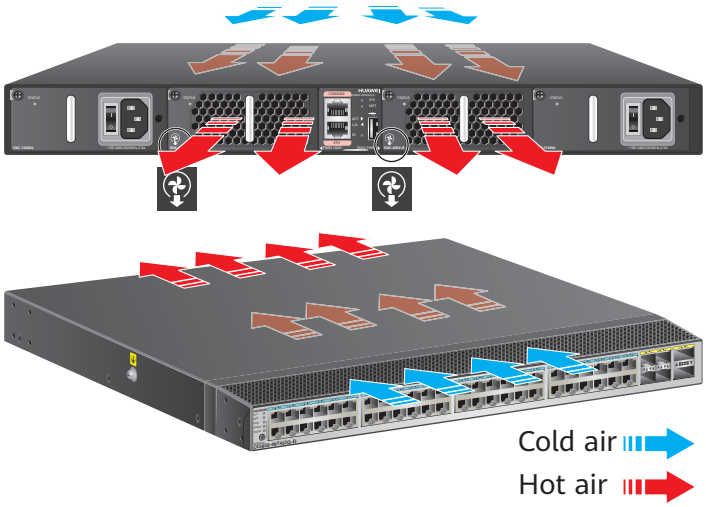


Figure 2-32 Back-to-front airflow (air flows in from the port side)



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.

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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)

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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	CE6810-48S4Q-LI-F	CE6810-48S4Q-LI Switch (48-Port 10G SFP+, 4-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EGW	CE6810-48S4Q-LI-B	CE6810-48S4Q-LI Switch (48-Port 10G SFP+, 4-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350APY	CE6810-48S4Q-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.

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Table 2-77 Version mapping

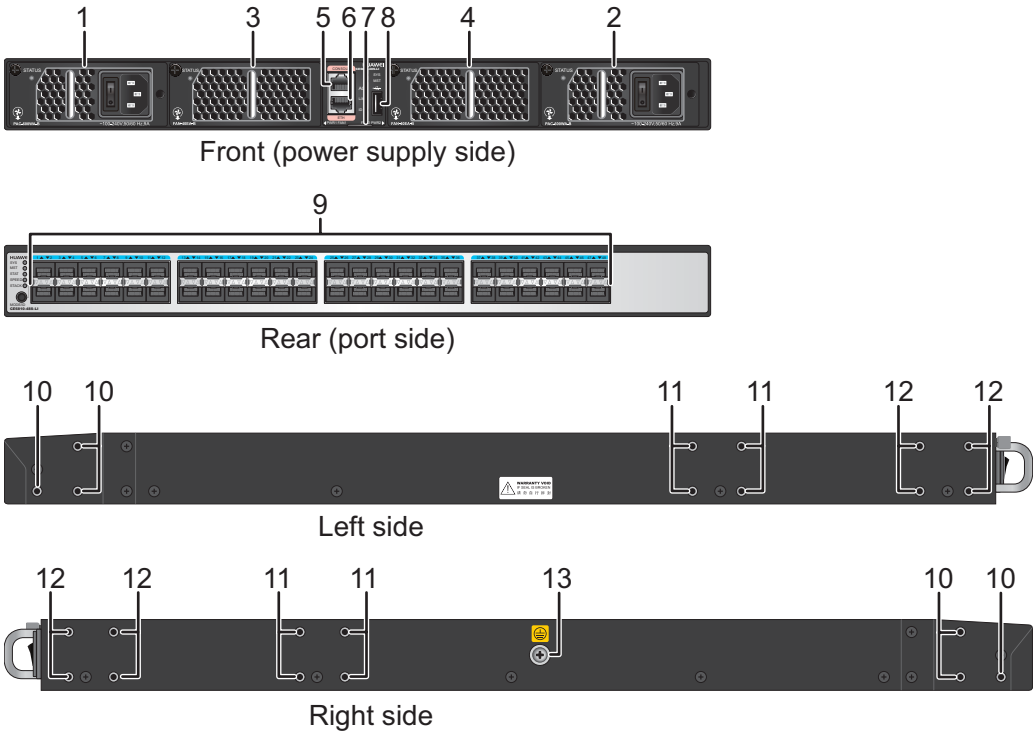
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6810	CE6810-48S-LI	CE6810LI	V100R003C10 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

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: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **600 W AC power module**

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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.

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- 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.

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

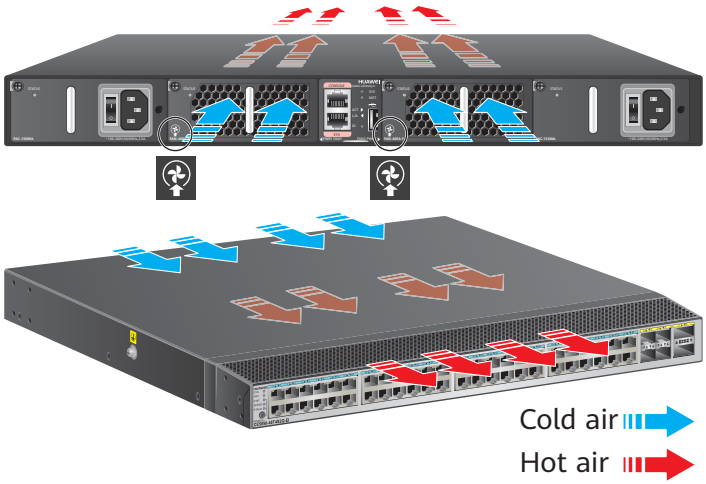
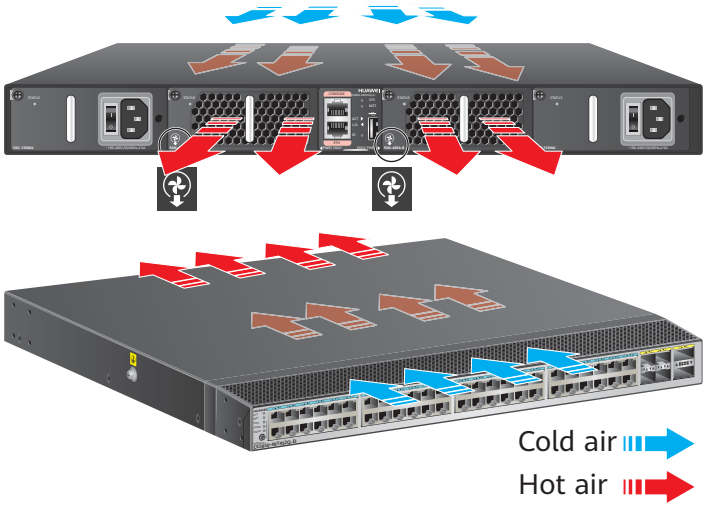


Figure 2-35 Back-to-front airflow (air flows in from the port side)



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.

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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

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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		• 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	• 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)	• Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC

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Item		Description
	AC power input	• 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	• 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	• 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: • 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

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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		• 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-B-B0B	CE6810-48S-LI Switch (2*600W AC Power Module, 2*FAN Box, Port-side Intake)

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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.

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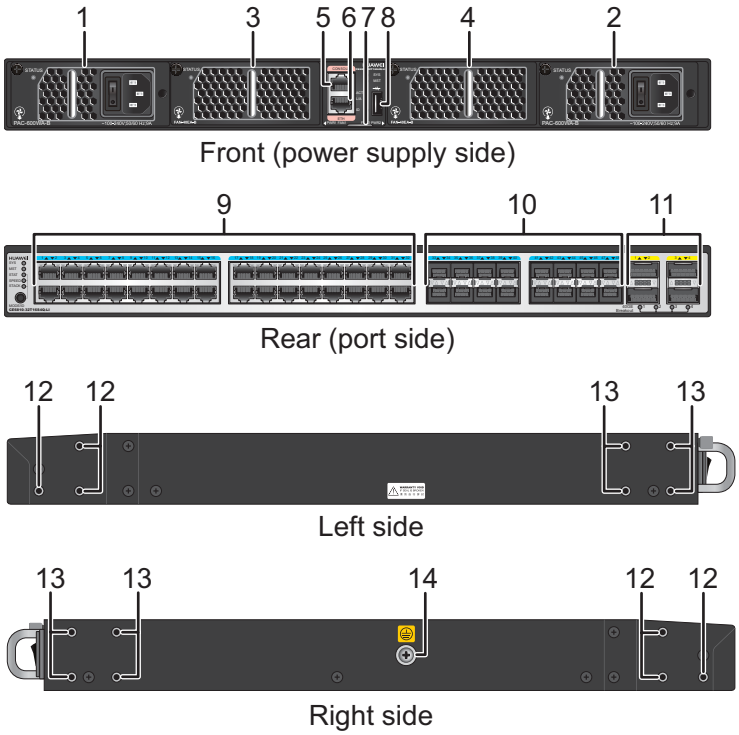
Figure 2-36 CE6810-32T16S4Q-LI



1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **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

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9	Thirty-two 10GBASE-T Ethernet electrical ports	10	Sixteen 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**
11	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+)**	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.

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  - 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.

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

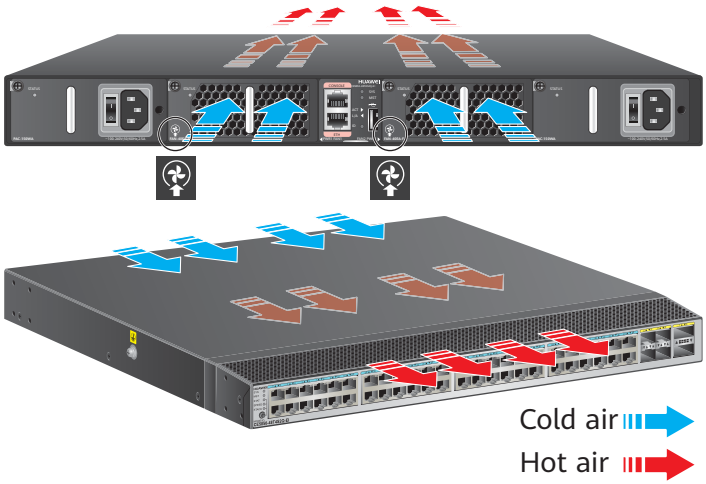
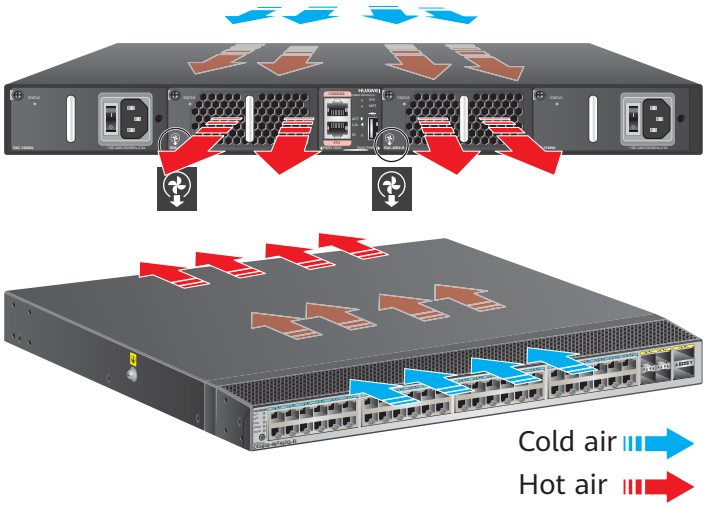


Figure 2-38 Back-to-front airflow (air flows in from the port side)



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.

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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

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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

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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		• 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	• 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)	• Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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

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Item		Description
	DC power input	• 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	• 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: • 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

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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		• 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)

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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

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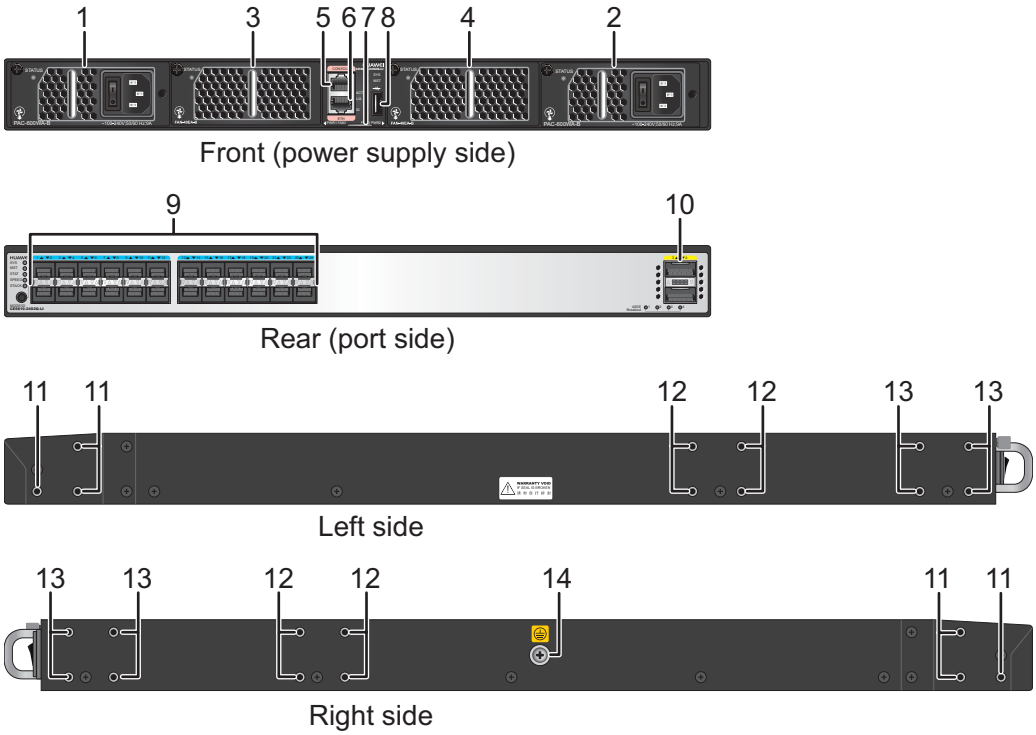
Figure 2-39 CE6810-24S2Q-LI



1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **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

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9	Twenty-four 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	Two 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.

- Power supply slot

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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.

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

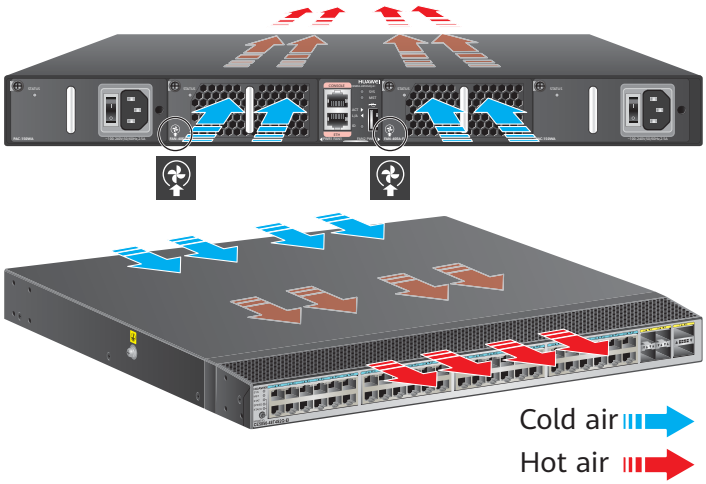
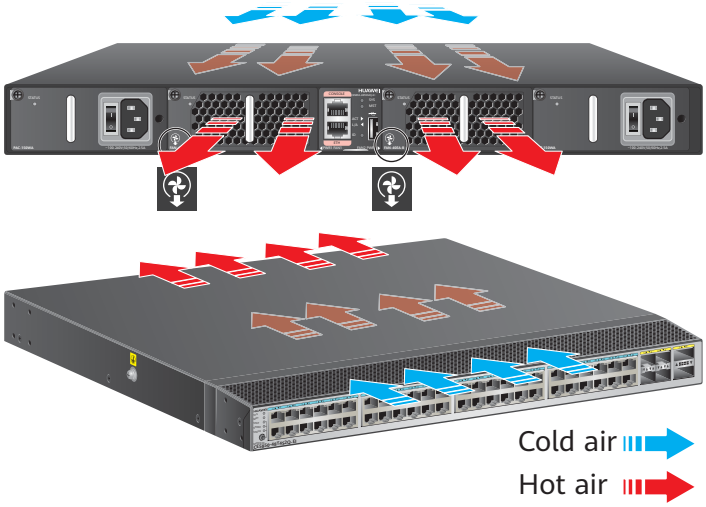


Figure 2-41 Back-to-front airflow (air flows in from the port side)



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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)

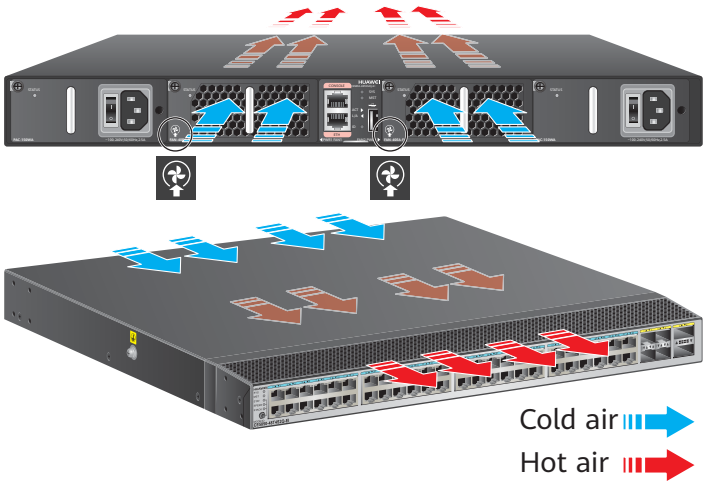

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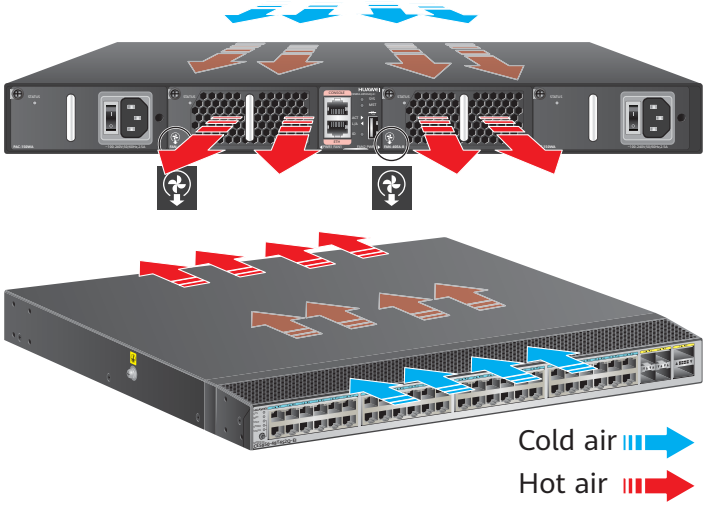
Figure 2-43 Back-to-front airflow (air flows in from the port side)



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

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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

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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

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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		• 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	Temperature	• 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)

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Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 48 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

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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		• 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.

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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

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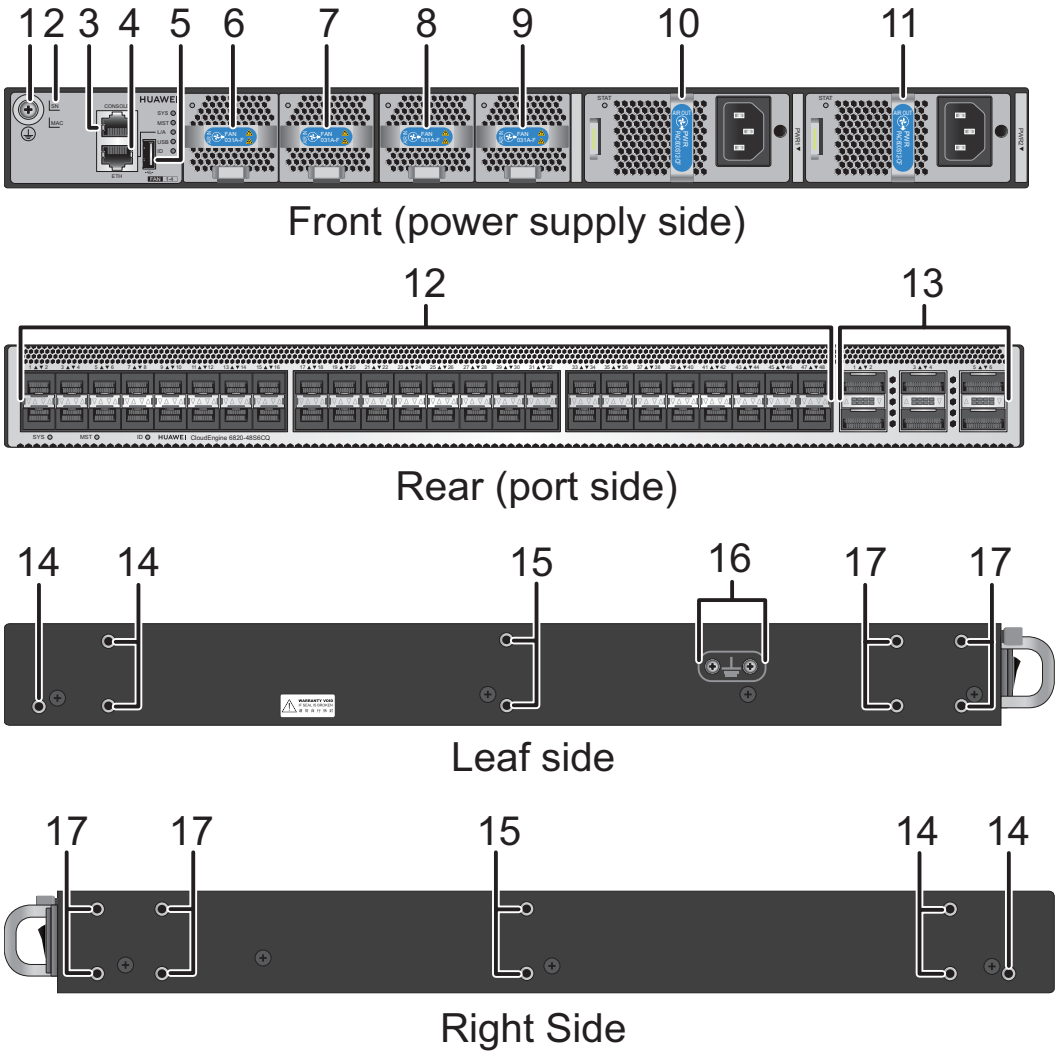
Figure 2-44 CE6820-48S6CQ



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**

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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	Forty-eight 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

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13	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • 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.) **NOTE** 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. 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.	14	Three port-side mounting holes for mounting brackets
15	Two middle mounting holes for mounting brackets	16	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
17	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.

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- 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).

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

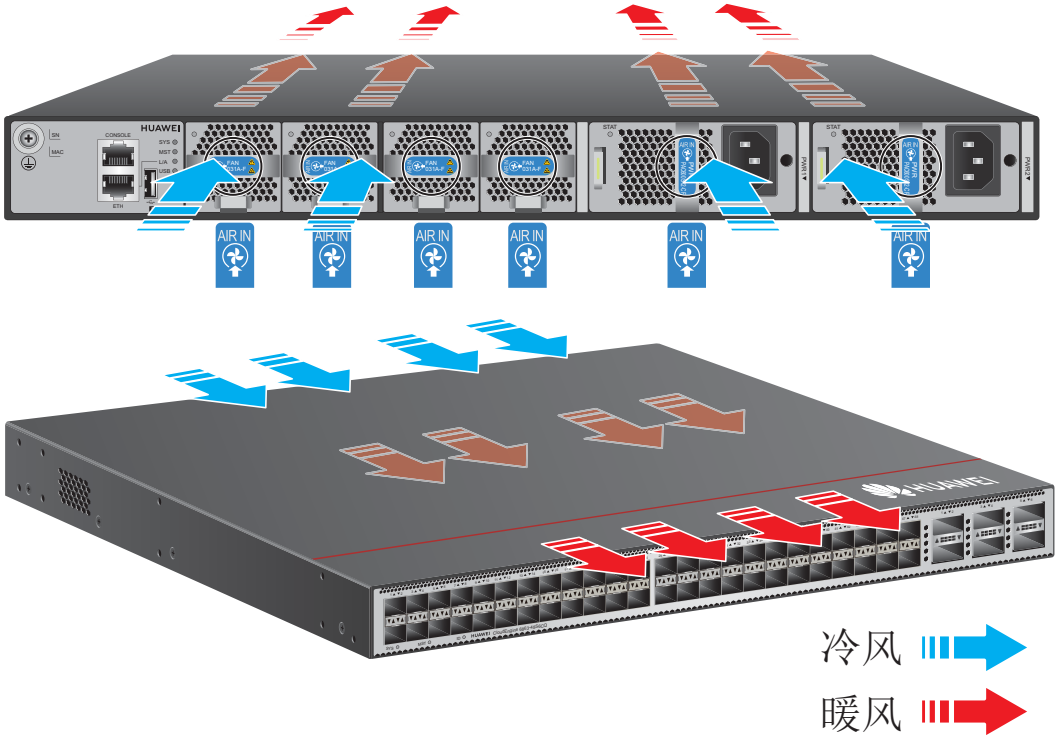
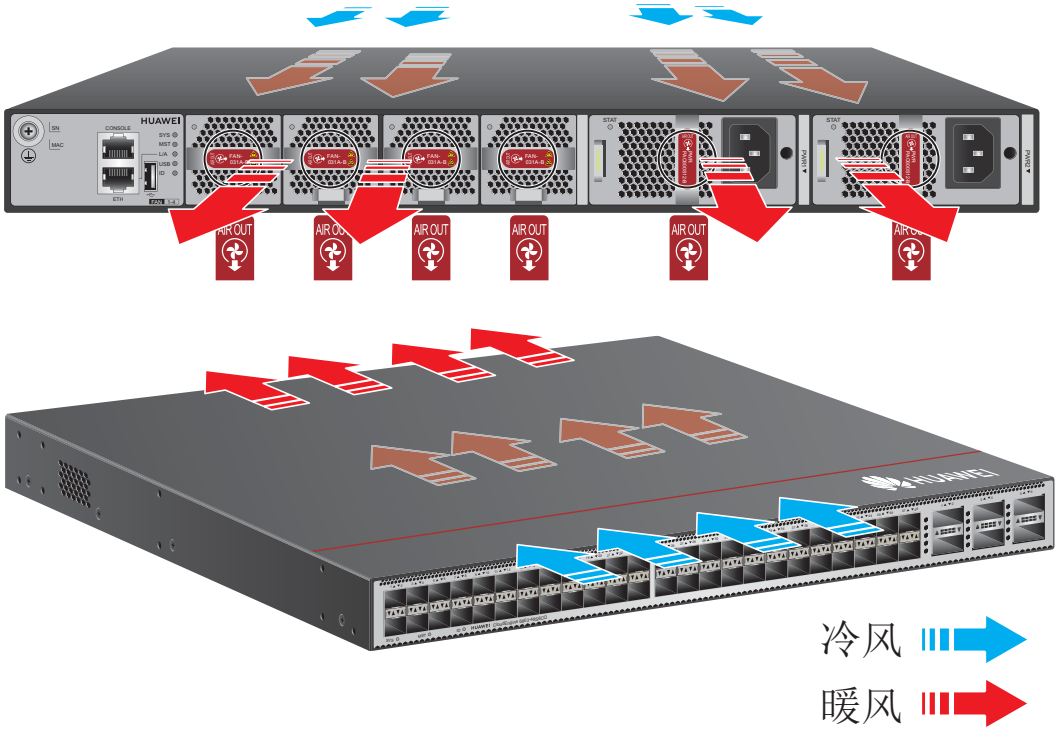


Figure 2-46 Back-to-front airflow for port-side intake



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

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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

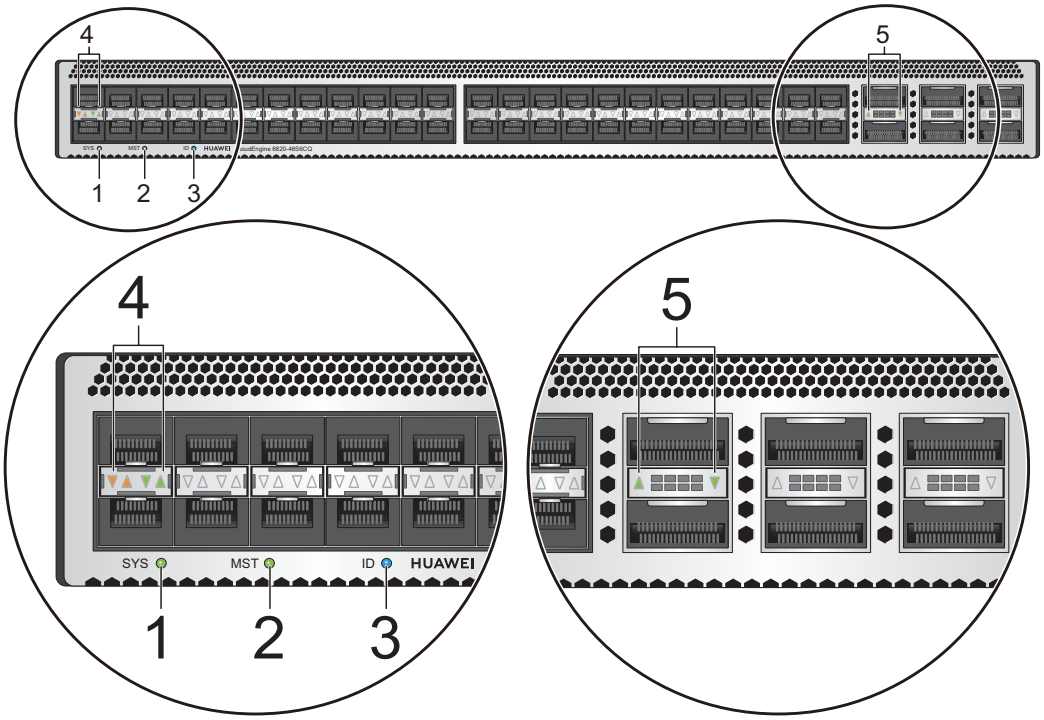

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Figure 2-48 Indicators on the CE6820-48S6CQ front panel

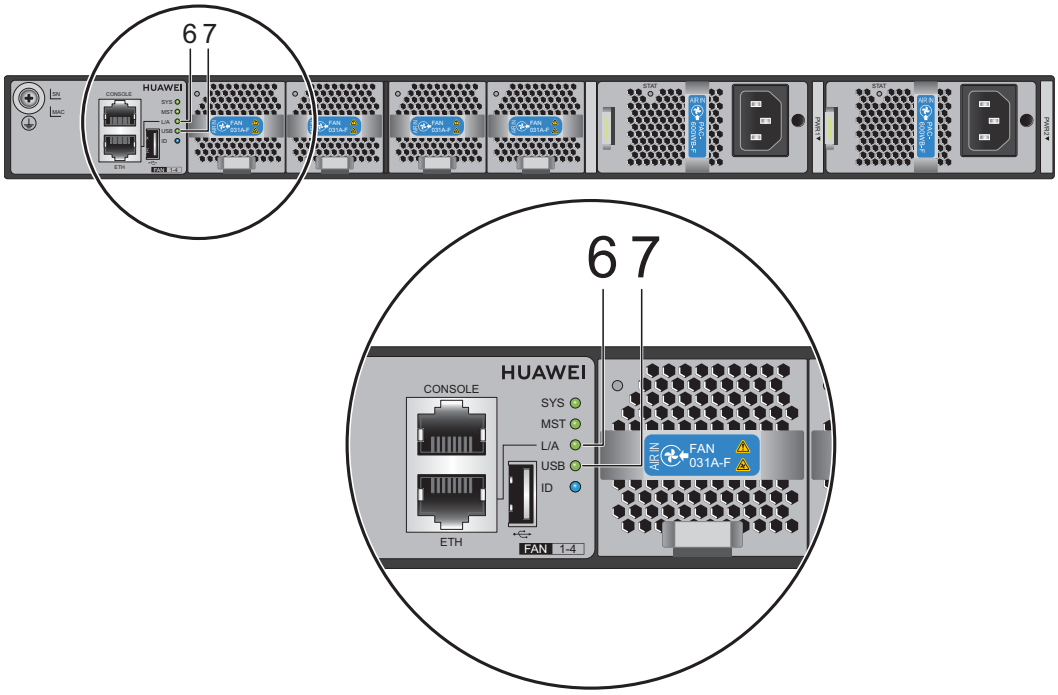

Table 2-103 Indicator description

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	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.
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.

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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

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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

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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		• Dimensions (H x W x D) – Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 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	• 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)	• Back-to-front airflow: < 55 dBA • Front-to-back airflow: < 55 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	• 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

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Item		Description
	DC power input	• 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	• 600 W AC&240 V DC power module (PAC600S12 series): – 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): – Rated voltage range: 240 V DC to 380V DC – Maximum voltage range: 190 V DC to 400 V DC
	Rated input current	• 600 W AC&240 V DC power module (PAC600S12 series): – 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	• 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	• 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)

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Item		Description
Surge protection		Power module: • 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

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Item	Description
Certification	• 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	CE6820-48S6CQ	CE6820-48S6CQ switch (48*10G SFP+, 6*100G QSFP28, without fan and power modules)
02352TLJ	CE6820-48S6CQ-F	CE6820-48S6CQ-F switch (48*10G SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side exhaust)
02352TLG	CE6820-48S6CQ-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.

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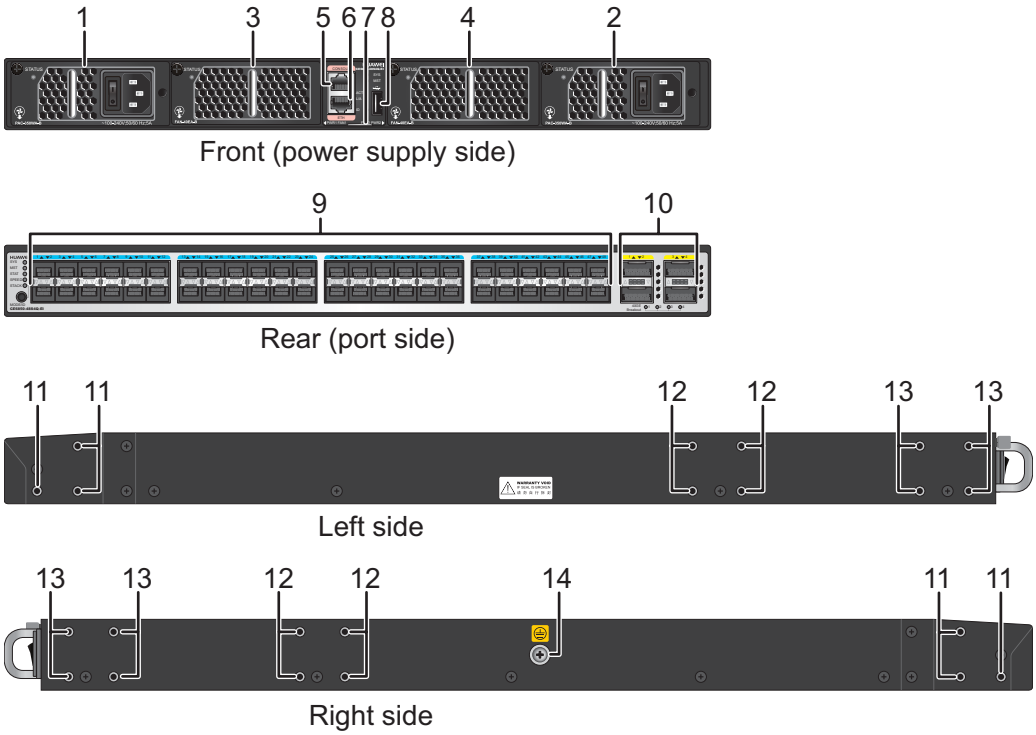
Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-49 CE6850-48S4Q-EI



1	Power supply slot 1 Applicable power modules: • **350 W AC power module** • **350 W DC power module**	2	Power supply slot 2 Applicable power modules: • **350 W AC power module** • **350 W DC 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

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9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • **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: • **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

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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.

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

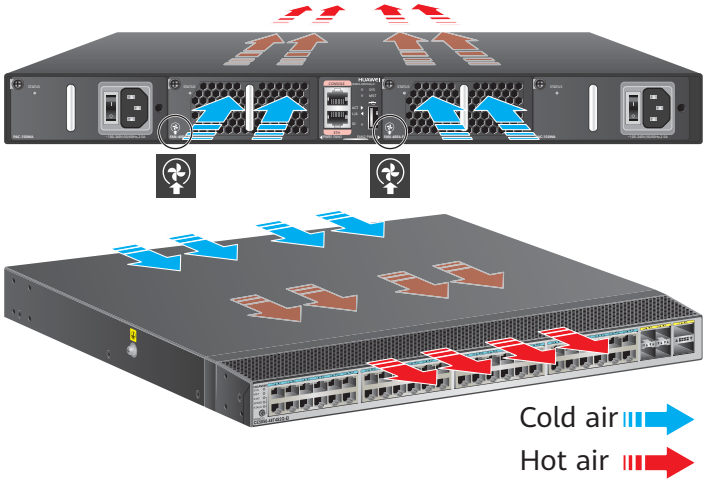
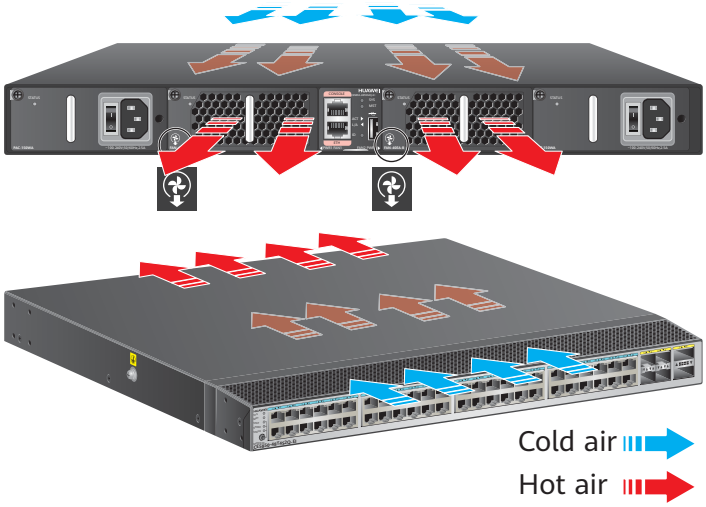


Figure 2-51 Back-to-front airflow (air flows in from the port side)



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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)

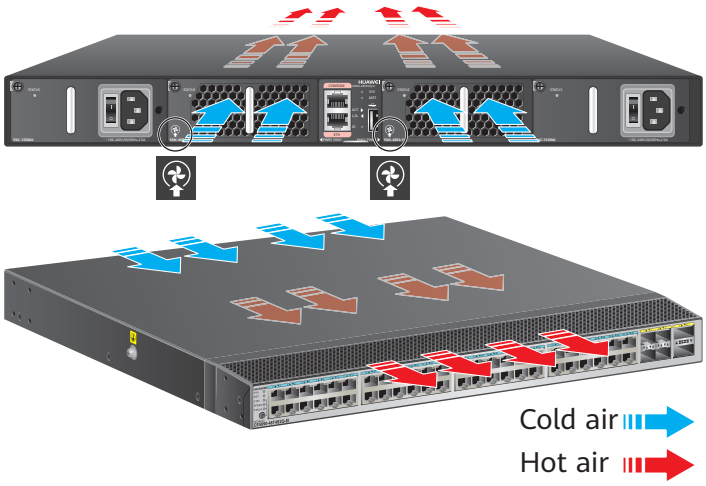

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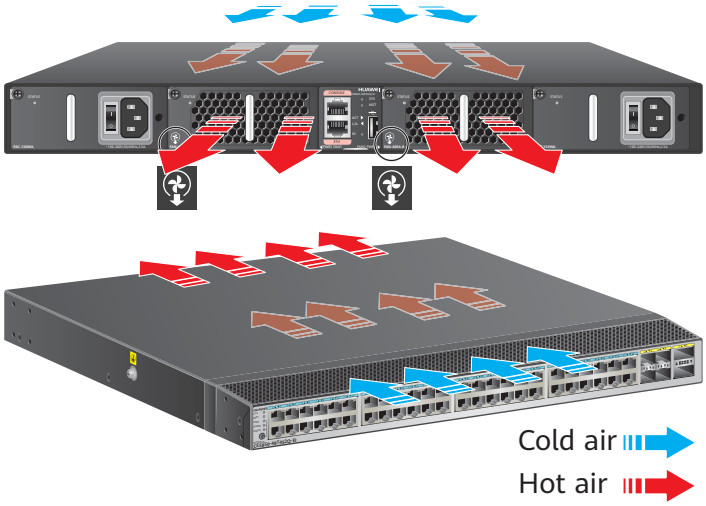
Figure 2-53 Back-to-front airflow (air flows in from the port side)



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

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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

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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

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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		• 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	Temperature	• 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)

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Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 45 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

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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		• 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.

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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

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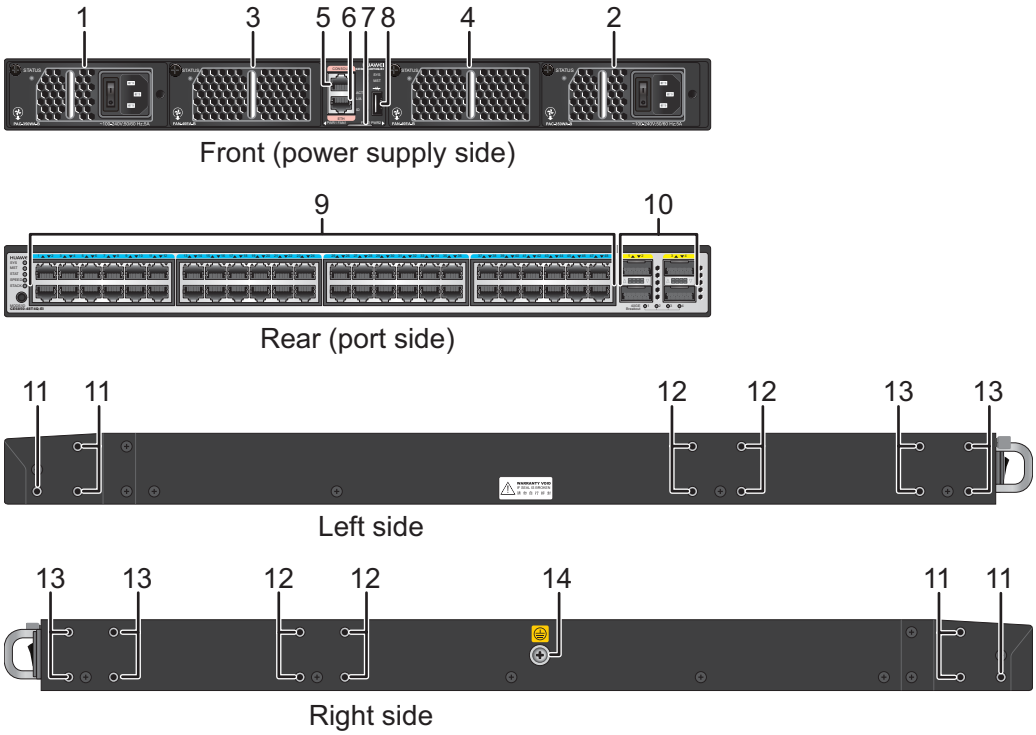
Figure 2-54 CE6850-48T4Q-EI



1	Power supply slot 1 Applicable power modules: • **350 W AC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W AC 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

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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: • **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

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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 2-55** (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 2-56** (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 2-55 Front-to-back airflow (air flows out from the port side)

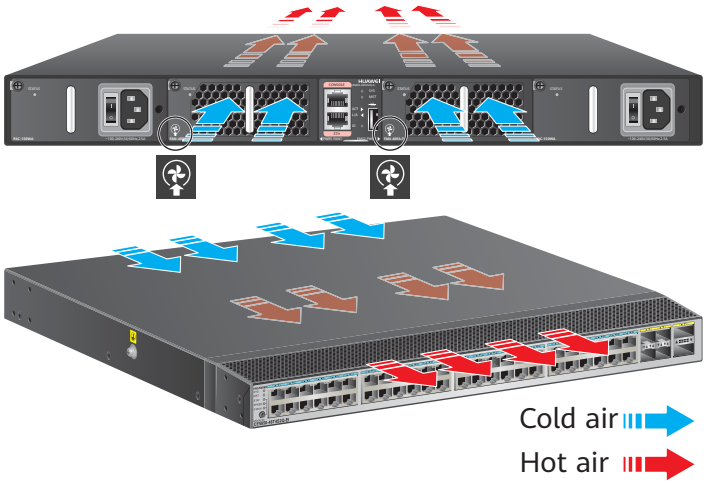

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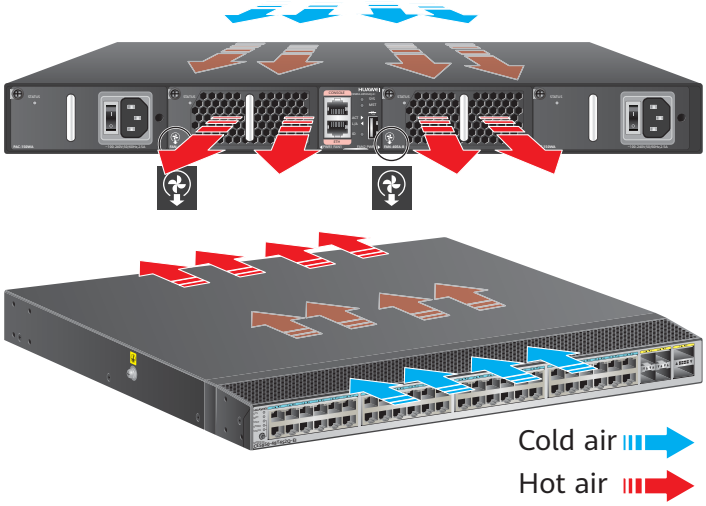
Figure 2-56 Back-to-front airflow (air flows in from the port side)



Indicators

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

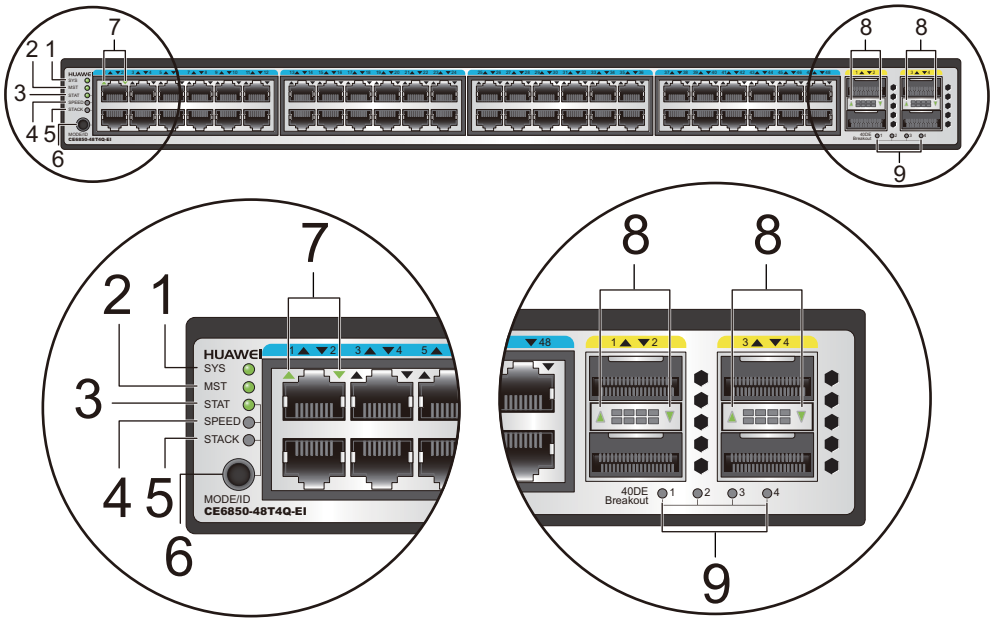


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Figure 2-58 Indicators on the CE6850-48T4Q-EI front panel

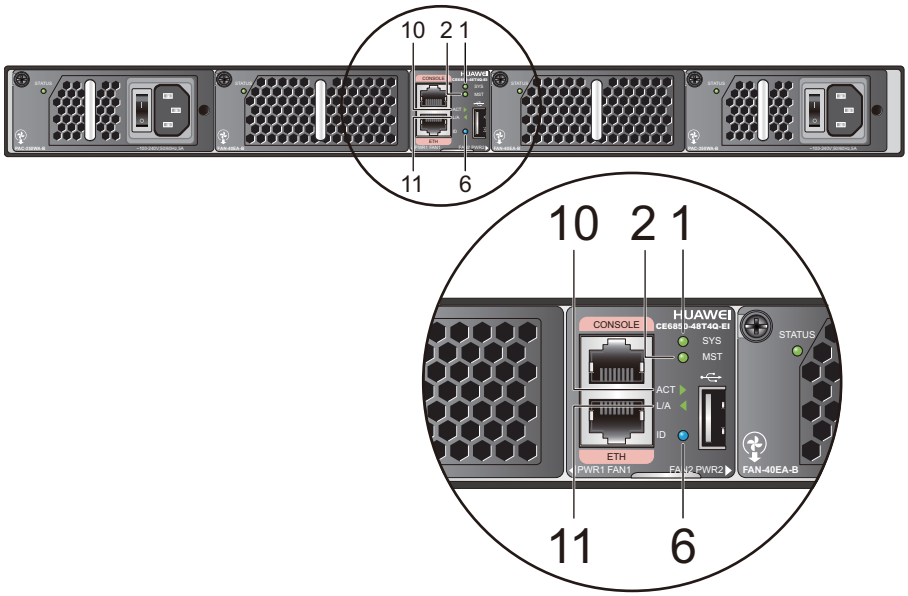

Table 2-122 Indicator description

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.
			Red	Steady on	• 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.
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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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No.	Indicator	Name	Color	Status	Description
				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: -	-	• 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	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.

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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.

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No.	Indicator	Name	Color	Status	Description
				Steady on	At least one 40GE port has been split into four 10GE ports. 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: • 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. 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. • 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

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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.

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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.

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Display Mode	Port	Color	Status	Description
			Steady on	If the indicator of a port is steady on, the port number indicates the leaf ID of the switch. **NOTE** The leaf ID range supported by a switch depends on the number of downlink ports on the switch: • 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

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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)

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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		• 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	• 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

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Item		Description
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 56 dBA • Front-to-back airflow: < 56 dBA
Power specifications	Power source type	AC
	AC power input	• 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	• 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

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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		• 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.

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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

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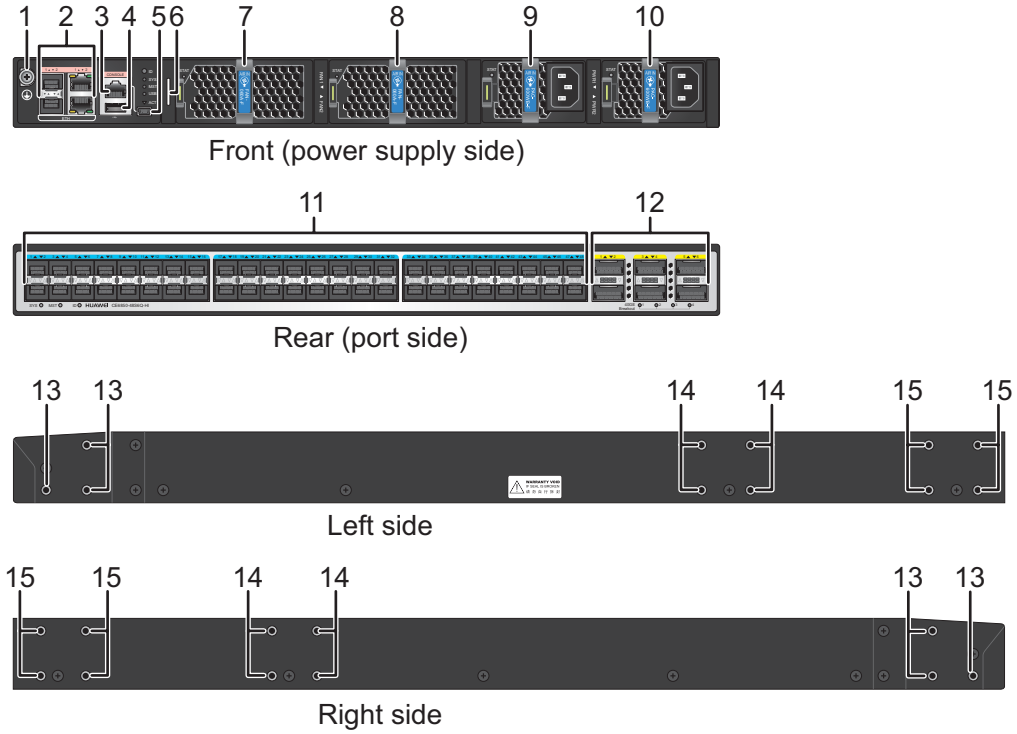
Figure 2-59 CE6850-48S6Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: • **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**

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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 transceiver 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**	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.

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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.

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

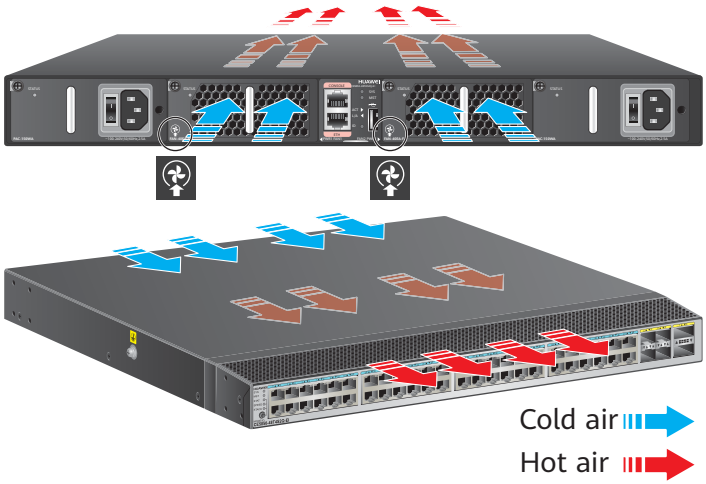
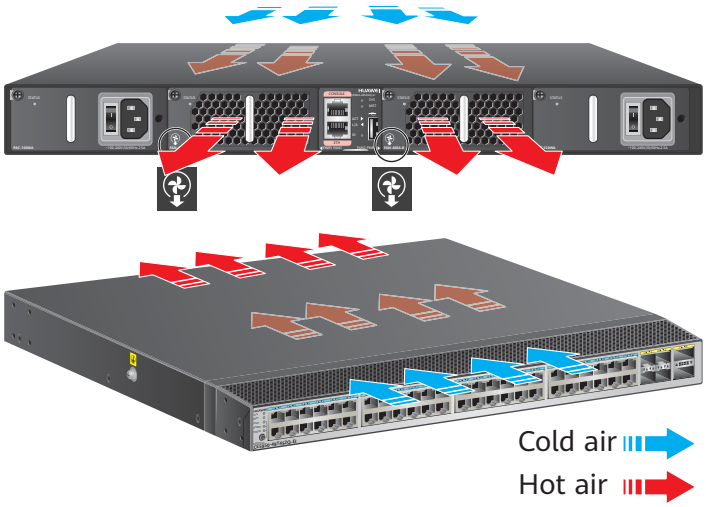


Figure 2-61 Back-to-front airflow (air flows in from the port side)



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Indicators

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

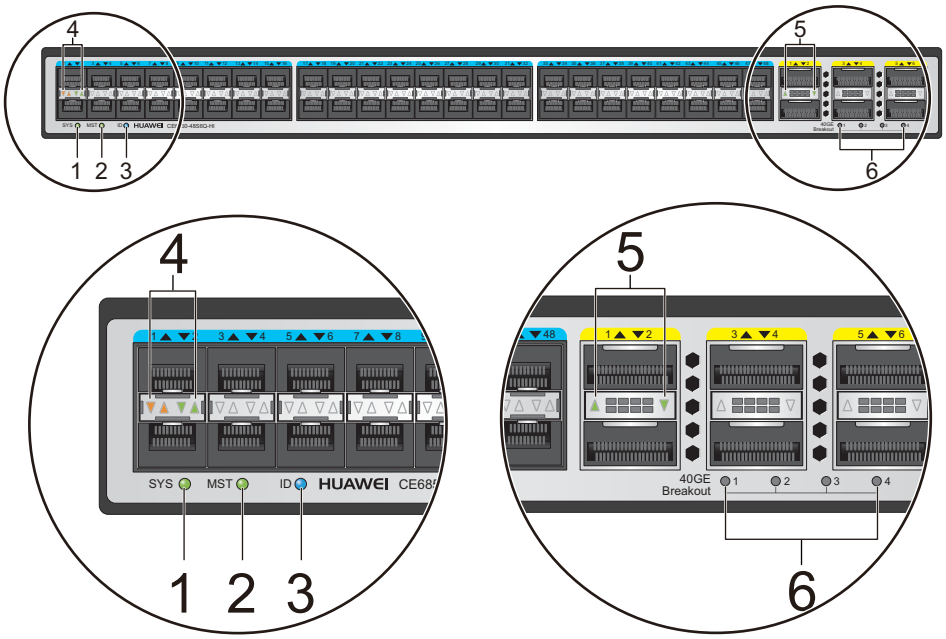

Figure 2-63 Indicators on the CE6850-48S6Q-HI front panel

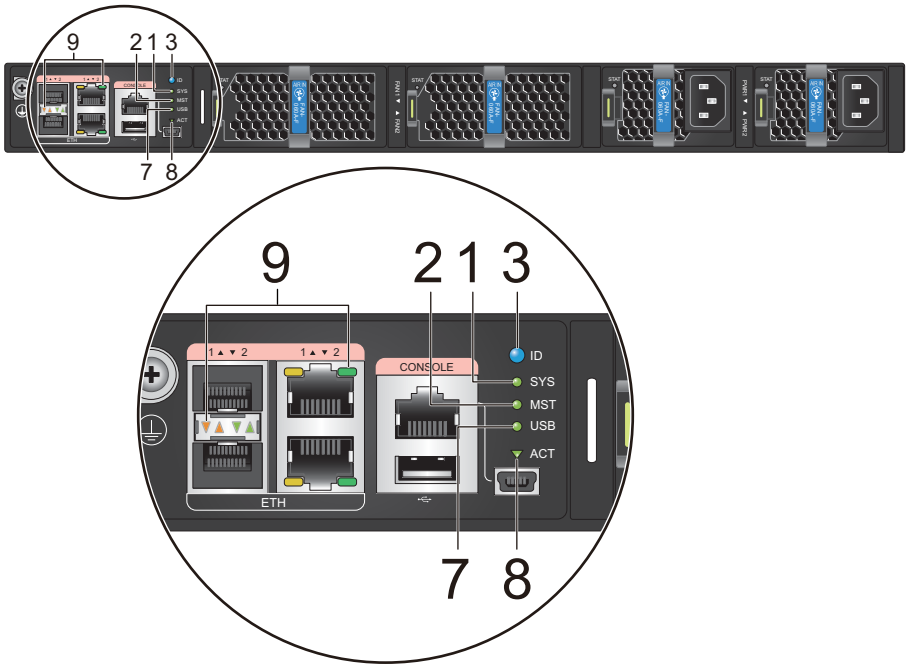

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Table 2-131 Indicator description

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	• The system fails to start. • A power module does not work normally. • A fan module does not work normally.
2	MST	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.

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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.

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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.	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.		
6	-	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.

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No.	Indicator	Name	Color	Status	Description
				Steady on	At least one 40GE port has been split into four 10GE ports. 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: • 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. 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. • 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

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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.
				Blinking	The system is reading data from a USB flash drive.
			Red	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

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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

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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

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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

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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		• 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	• 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)	• 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	• 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	• Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC

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Item		Description
	High-voltage DC power input	• 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	• 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: • 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

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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		• 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.

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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-B-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

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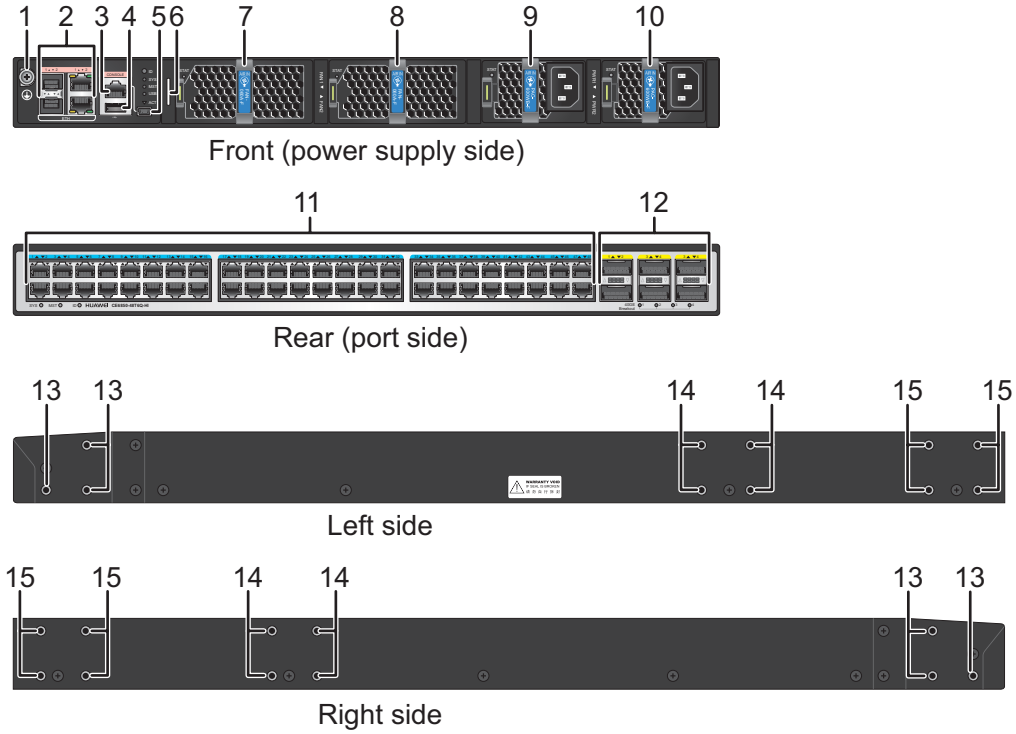
Figure 2-64 CE6850-48T6Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: • **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**

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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 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: • **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.

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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.

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

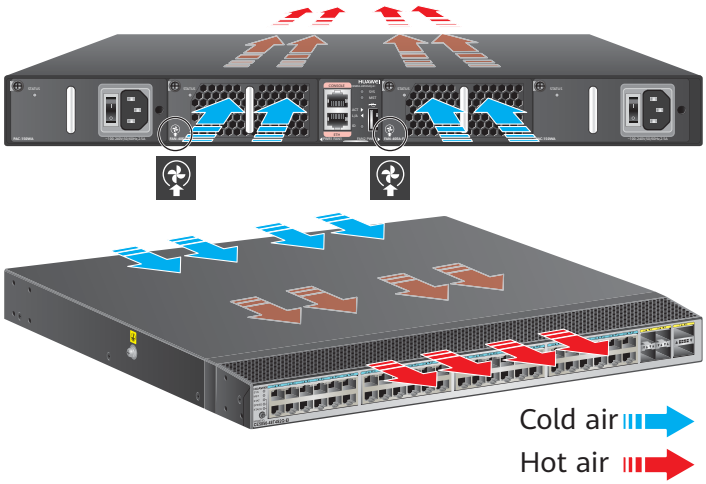
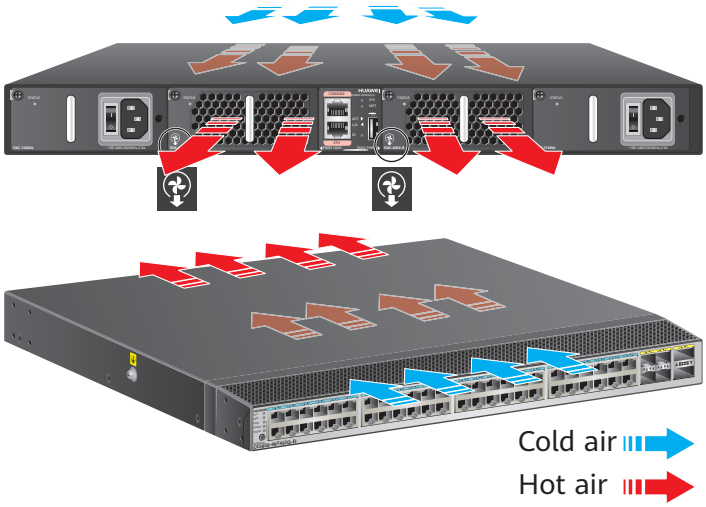


Figure 2-66 Back-to-front airflow (air flows in from the port side)



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.

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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

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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.

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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.

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- 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		• 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	• 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)	• Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC/DC/high-voltage DC

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Item		Description
	AC power input	• 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	• 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	• 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	• 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)

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Item		Description
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: ● 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		● Safety standards compliance ● EMC standards compliance ● Environmental standards compliance

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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	CE6850-48T6Q-HI-F	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Exhaust, Without Power Module)
02350EWJ	CE6850-48T6Q-HI-B	CE6850-48T6Q-HI Switch (48-Port 10GE RJ45, 6-Port 40GE QSFP+, 2*FAN Box, Port-side Intake, Without Power Module)
02350TJG	CE6850-48T6Q-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.

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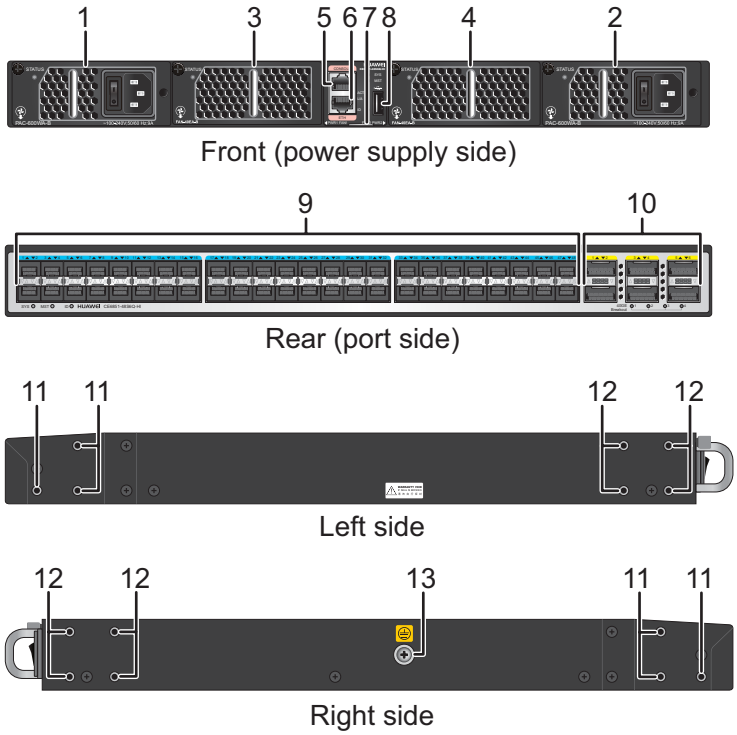
Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-67 CE6851-48S6Q-HI



1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **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

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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	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+)**
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

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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 2-68** (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 2-69** (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 2-68 Front-to-back airflow (air flows out from the port side)

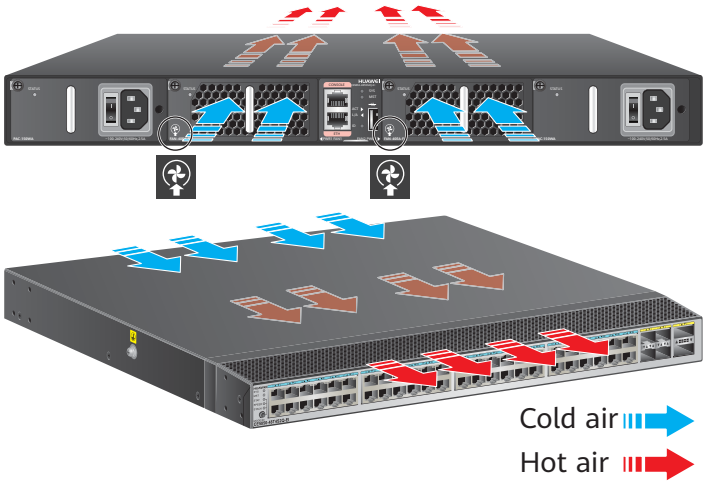

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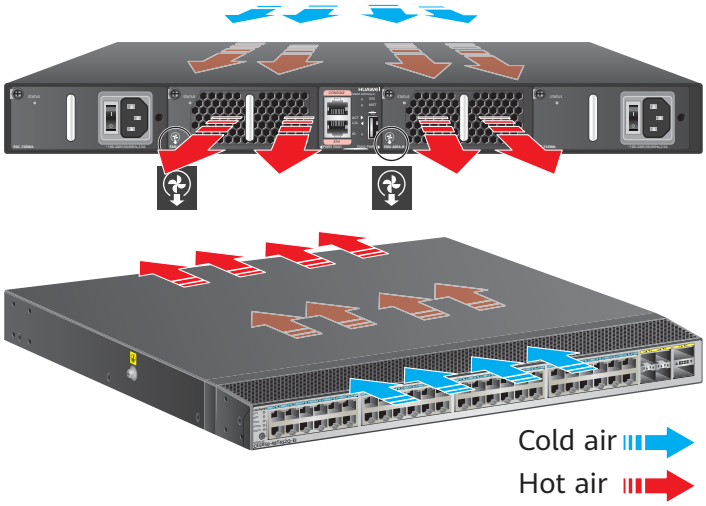
Figure 2-69 Back-to-front airflow (air flows in from the port side)



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

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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

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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		• 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	• 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)	• Back-to-front airflow: < 56 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC

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Item		Description
	AC power input	• 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	• 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	• 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: • 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

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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		• 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.

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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

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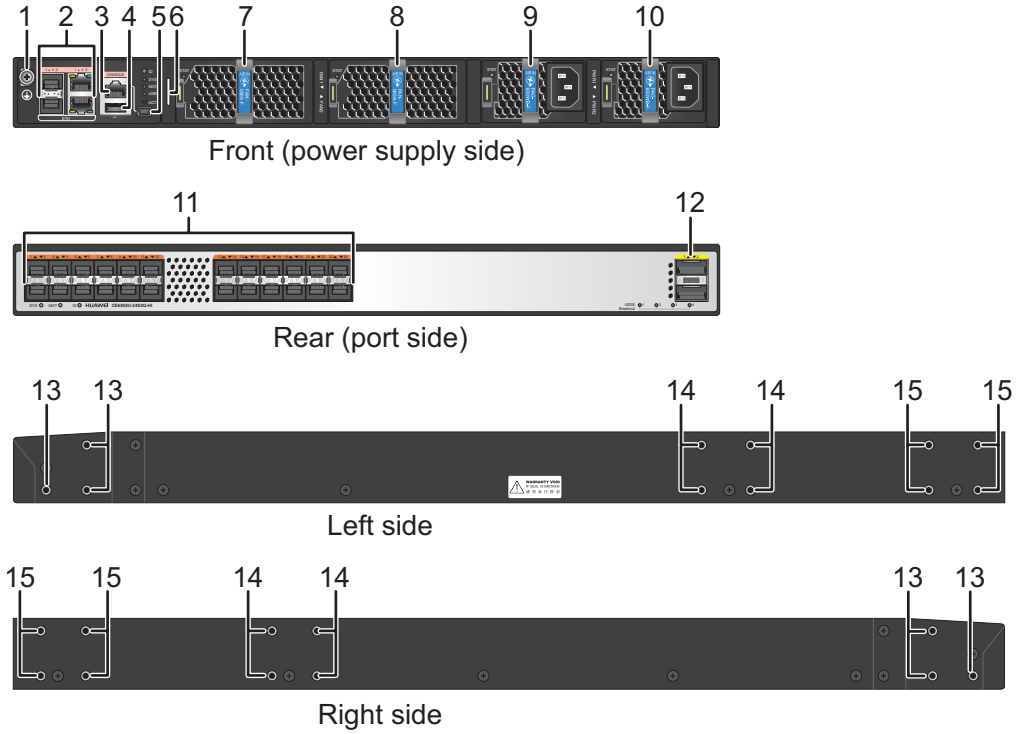
Figure 2-70 CE6850U-24S2Q-HI



1	Ground screw	2	Two ETH management ports (combo) Applicable transceiver modules for the GE optical port of the combo port: • **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**

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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	Twenty-four 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	Two 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.

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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.

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

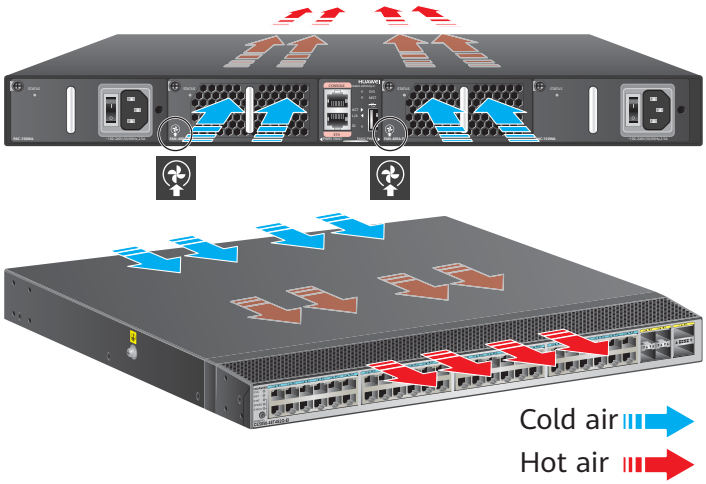
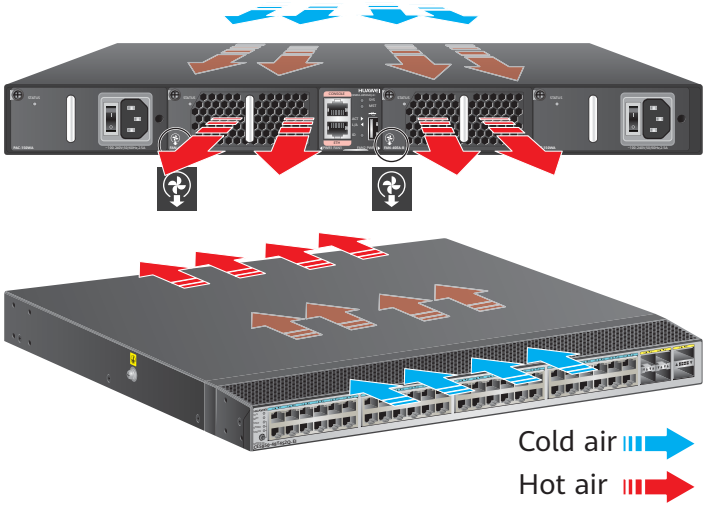


Figure 2-72 Back-to-front airflow (air flows in from the port side)



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.

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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

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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.

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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.

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- 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		• 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	• 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)	• Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC/high-voltage DC

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Item		Description
	AC power input	• 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	• 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	• 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	• 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: • 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

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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		• 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

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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.

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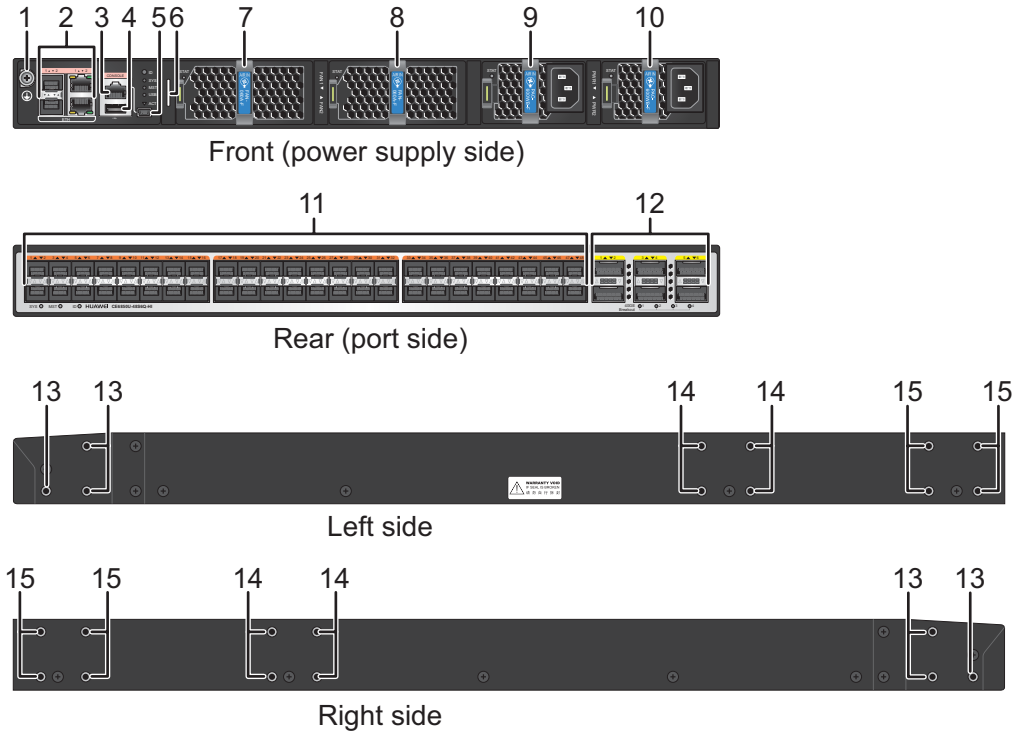
Appearance and Structure

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: • **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

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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

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- 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.

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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)

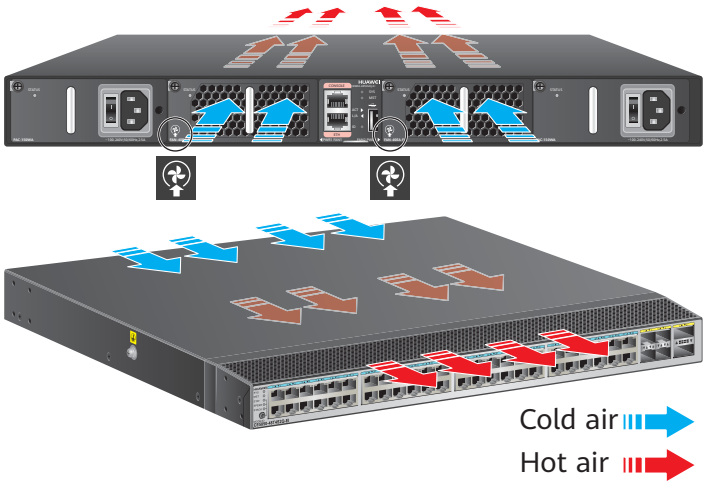

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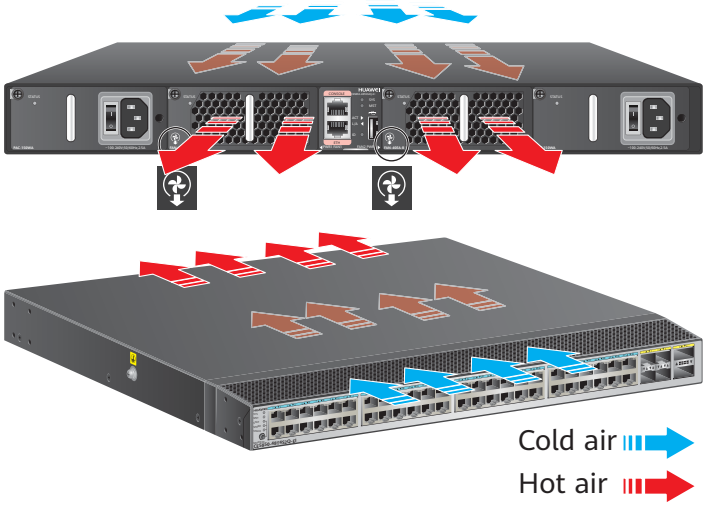
Figure 2-75 Back-to-front airflow (air flows in from the port side)



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

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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.

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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.

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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.

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Table 2-168 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• 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	• 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	• 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	• 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

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Item		Description
	Rated input current	• 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: • 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

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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		• 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)

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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

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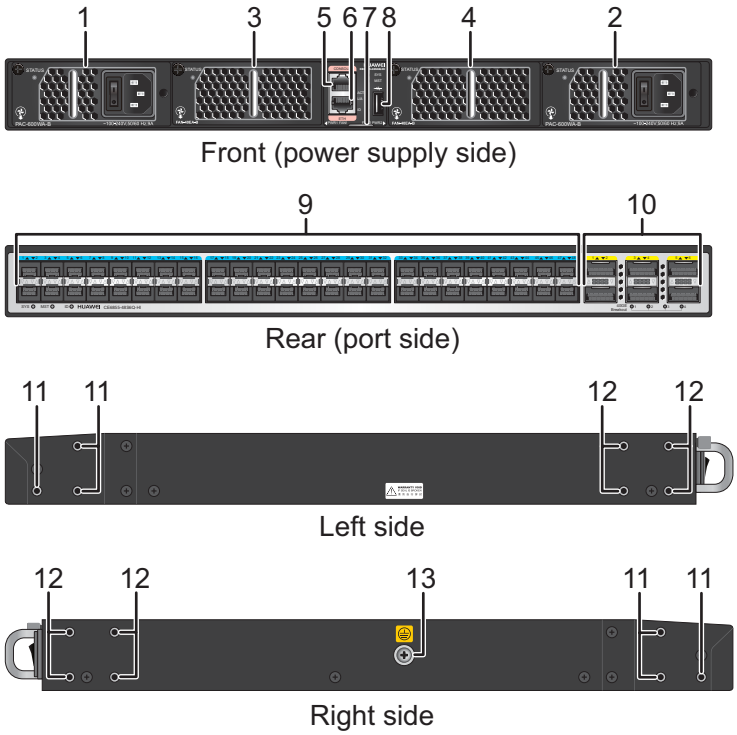
Figure 2-76 CE6855-48S6Q-HI



1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **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

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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	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: • **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.

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  - 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.

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Figure 2-77 Front-to-back airflow (air flows out from the port side)

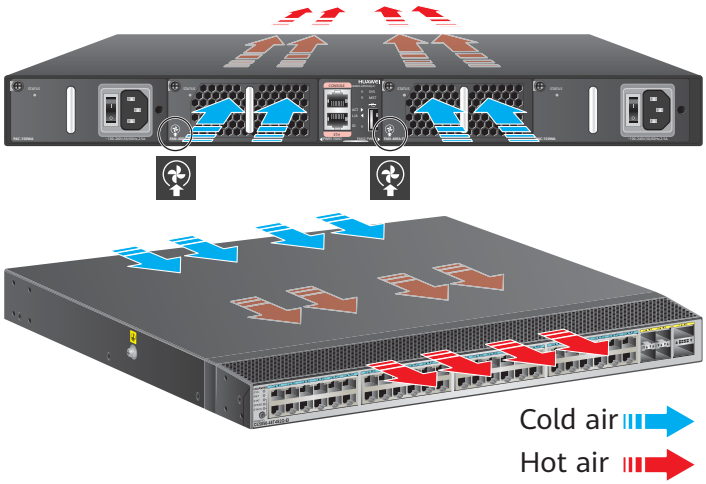
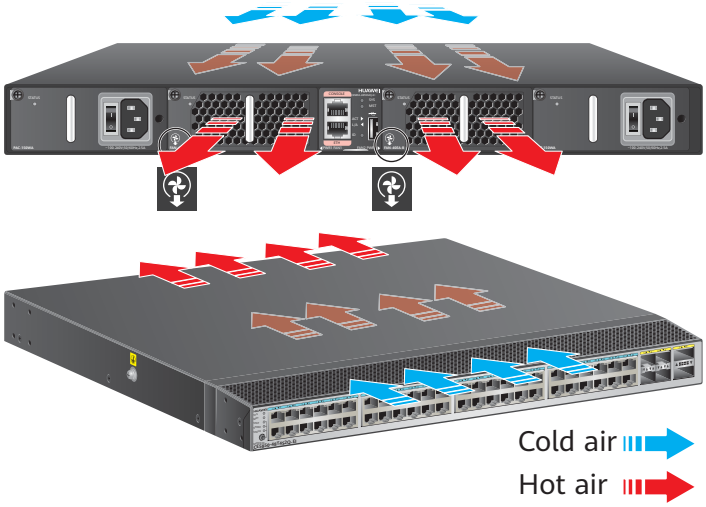


Figure 2-78 Back-to-front airflow (air flows in from the port side)



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.

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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)

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 56 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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.

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Table 2-177 Version mapping

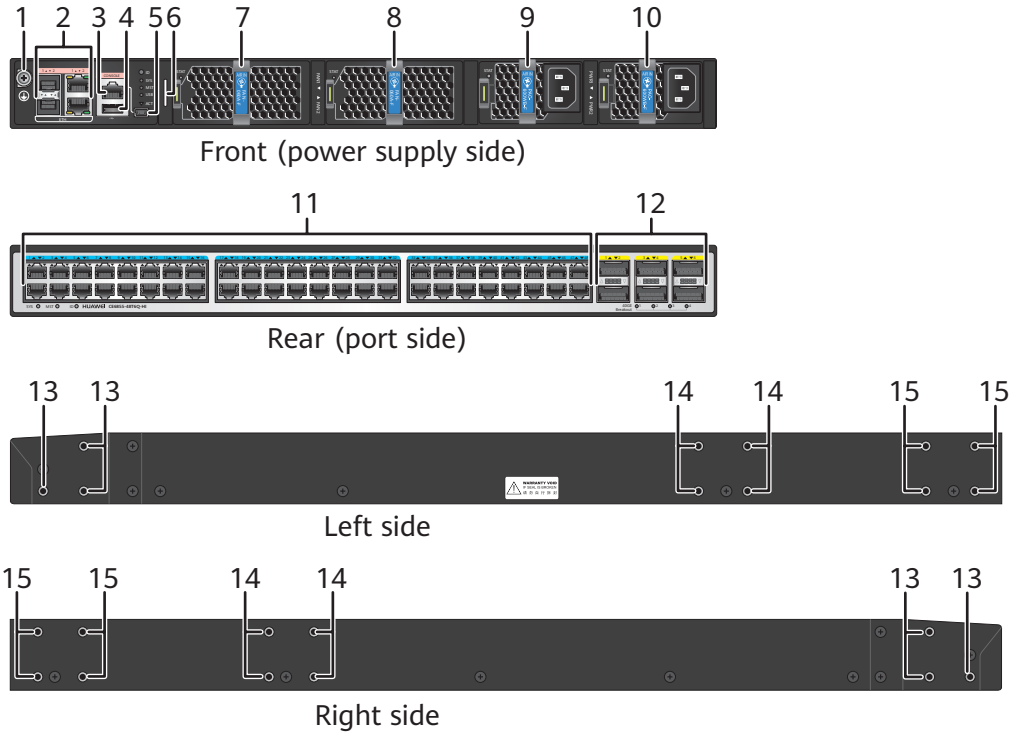
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6855	CE6855-48T6Q-HI	CE6855HI	V200R001C00 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-79 CE6855-48T6Q-HI



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1	Ground screw	2	Two ETH management ports (combo) Applicable modules for the GE optical port of the combo port: • **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**

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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. 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: • **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.

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  - 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.

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Figure 2-80 Front-to-back airflow (air flows out from the port side)

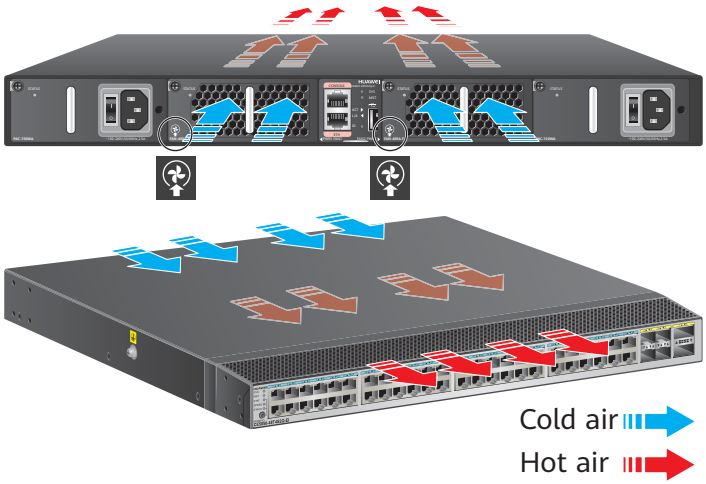
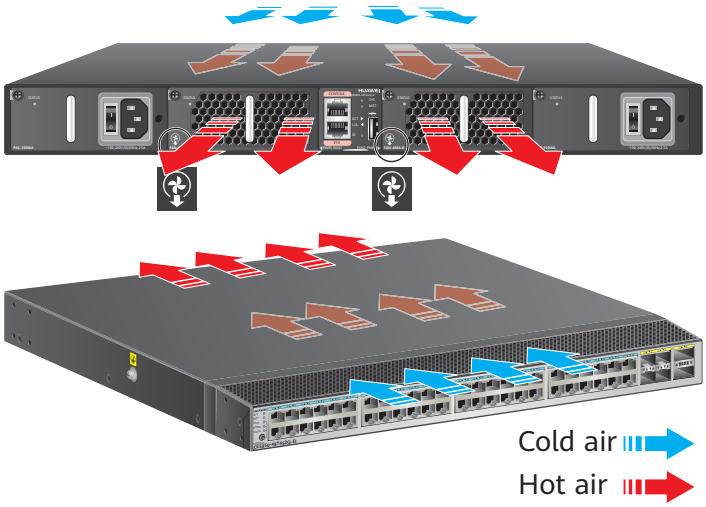


Figure 2-81 Back-to-front airflow (air flows in from the port side)



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.

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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

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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.

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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.

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- 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		• 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	• 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)	• Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC/DC/high-voltage DC

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Item		Description
	AC power input	• 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	• 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	• 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	• 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)

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Item		Description
Surge protection		Ethernet electrical ports: 2 kV in common mode Power module: • 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

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Item	Description
Certification	• 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.

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Table 2-185 Version mapping

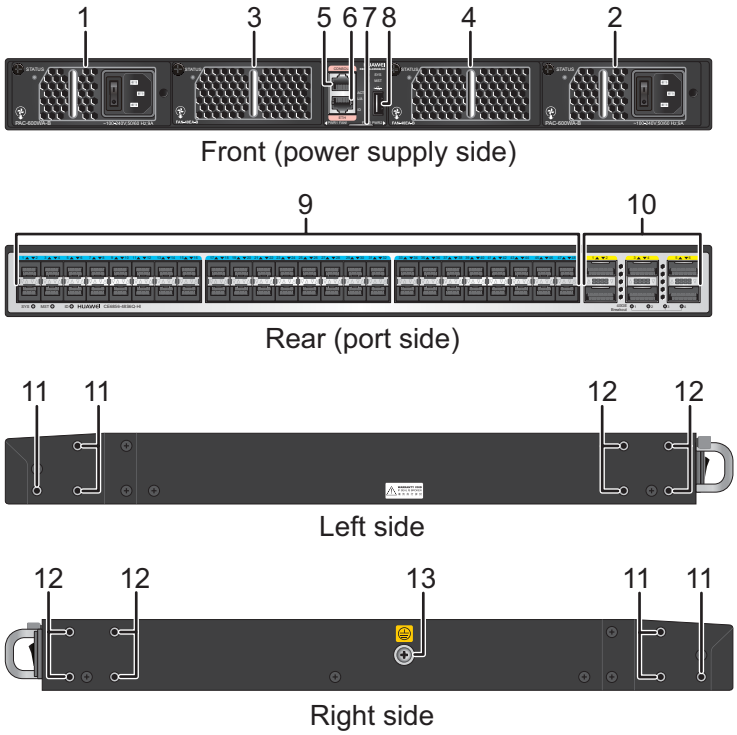
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6856	CE6856-48S6Q-HI	CE6856HI	V200R002C50 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

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: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **600 W AC power module**

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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	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: • **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	-	-

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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.

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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)

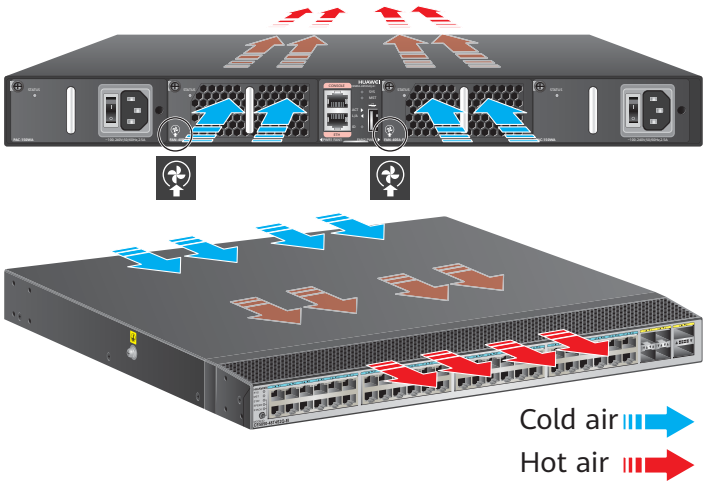

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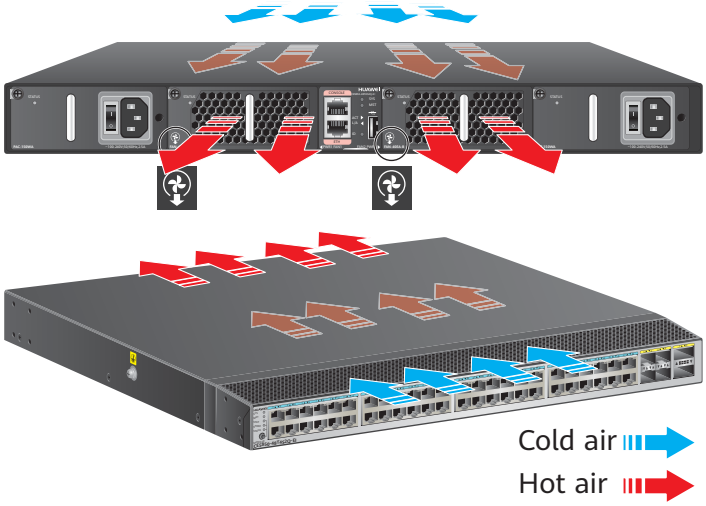
Figure 2-84 Back-to-front airflow (air flows in from the port side)



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

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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

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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		• 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	• 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)	• Back-to-front airflow: < 56 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC

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Item		Description
	AC power input	• 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	• 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	• 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: • 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

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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		• 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.

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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.

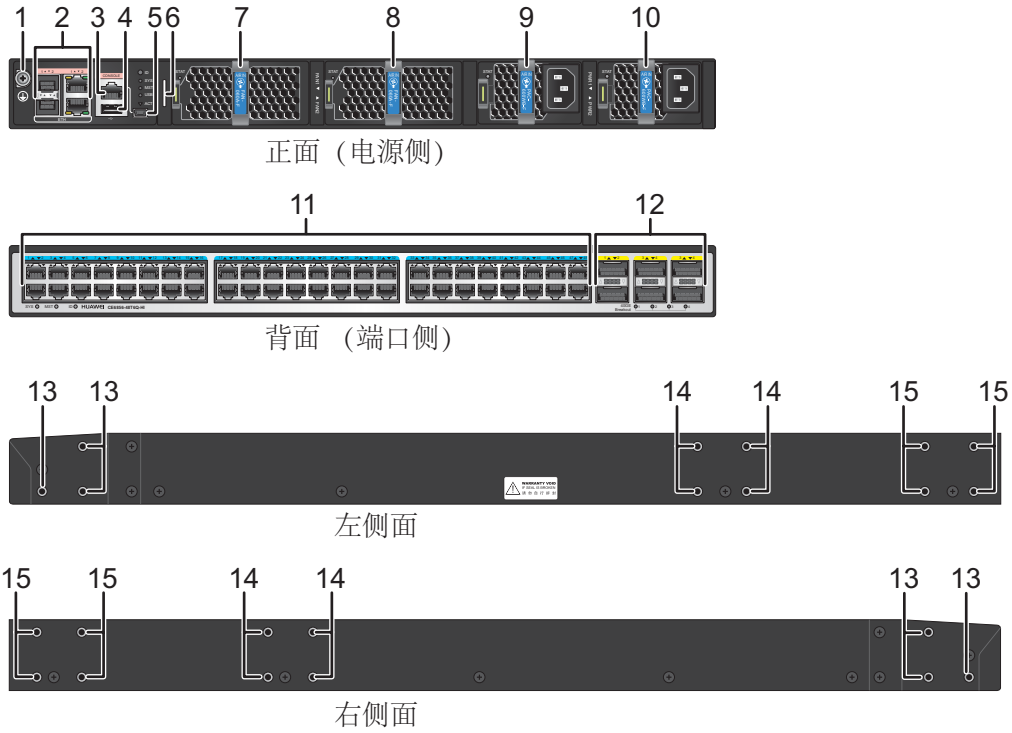
Appearance and Structure

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: • 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: • FAN-060A Series Fan Modules	8	Fan slot 2 Applicable fan modules: • FAN-060A Series Fan Modules

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9	Power supply slot 1 Applicable power modules: ● 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	Power supply slot 2 Applicable power modules: ● 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	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. 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: ● 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	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

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- 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.

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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)

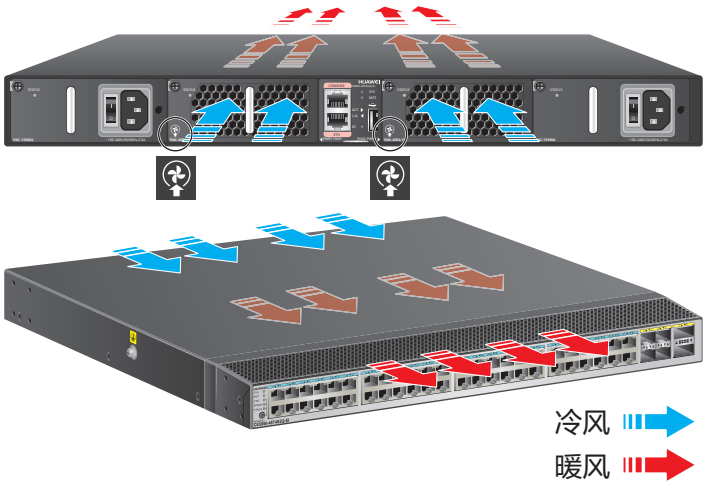

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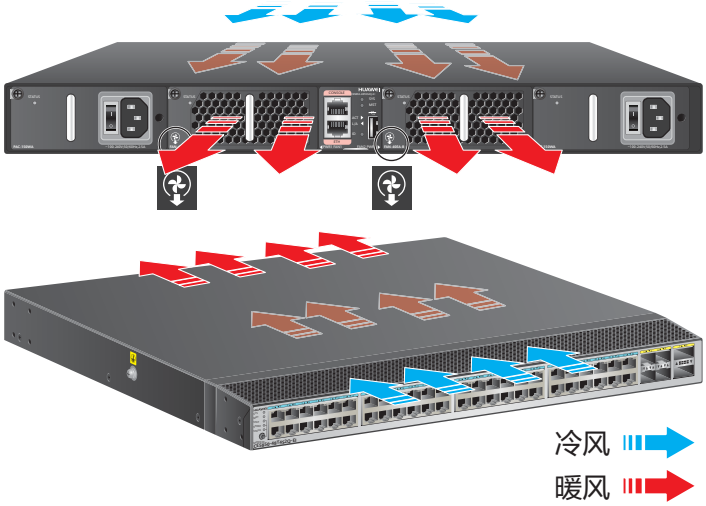
Figure 2-87 Back-to-front airflow (air flows in from the port side)



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

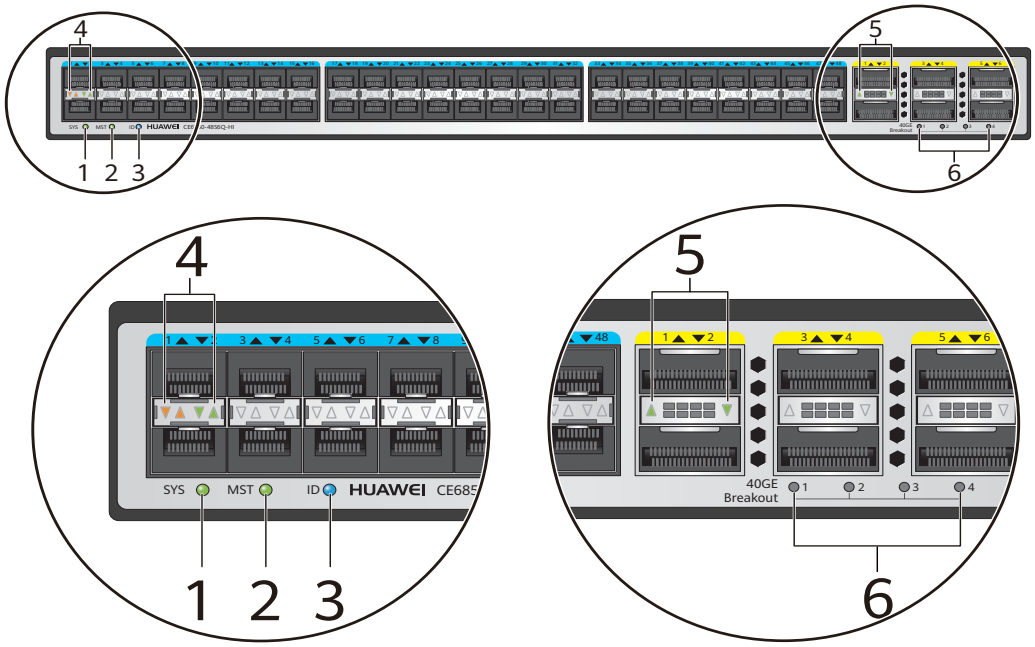


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Figure 2-89 Indicators on the CE6850-48S6Q-HI front panel

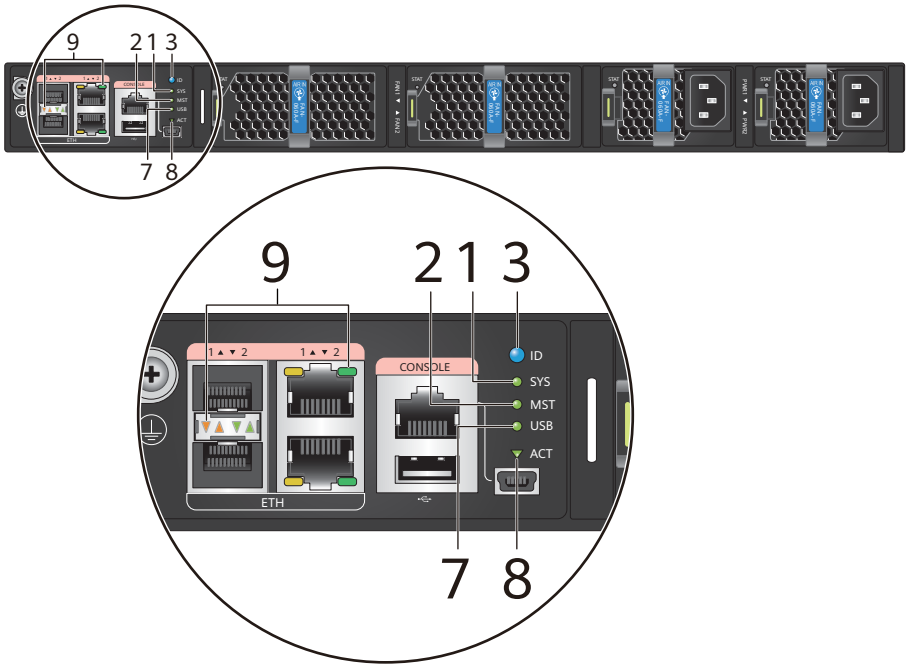

Table 2-193 Indicators on the CE6856-48T6Q-HI

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	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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No.	Indicator	Name	Color	Status	Description
		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.		Blinking	The port is sending or receiving data.
5	-	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.	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.
			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.		
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.

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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: • 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: • 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

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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

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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)

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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

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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.

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- 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		• 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	• 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)	• 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	• 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

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Item		Description
	DC power input	• 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	• 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	• 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: • 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

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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		• Safety standards compliance • EMC standards compliance • Environmental standards compliance

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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

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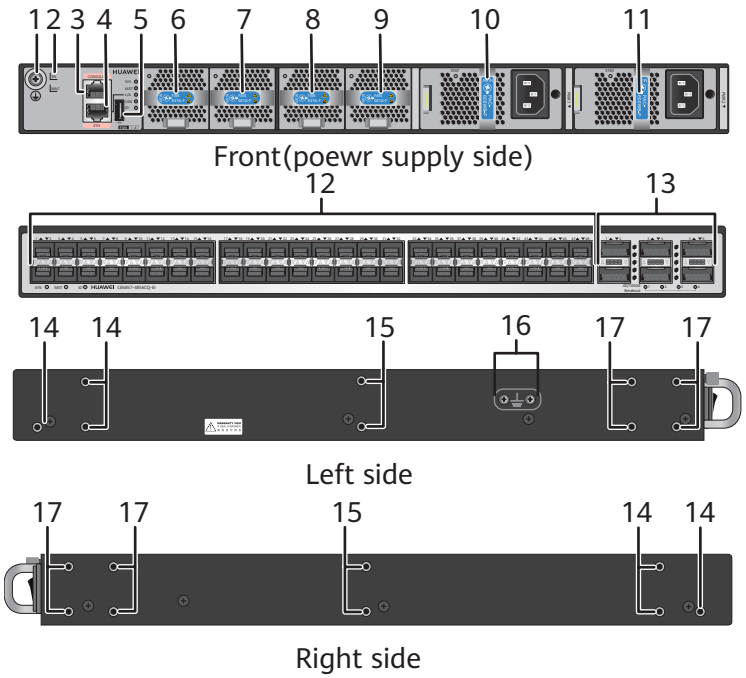
Figure 2-90 CE6857-48S6CQ-EI



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)

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11	Power supply slot 2 Applicable power modules: • 350 W DC Power Module (PDC350S12) • 600 W AC Power Module (PAC600S12)	12	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • 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 **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.
13	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • 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	14	Three port-side mounting holes for mounting brackets
15	Two middle mounting holes for mounting brackets	16	Equipotential junction Grounding screw used in dual OT scenarios.
17	Four power-supply-side mounting holes for mounting brackets	-	-

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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).

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Figure 2-91 Front-to-back airflow for port-side exhaust

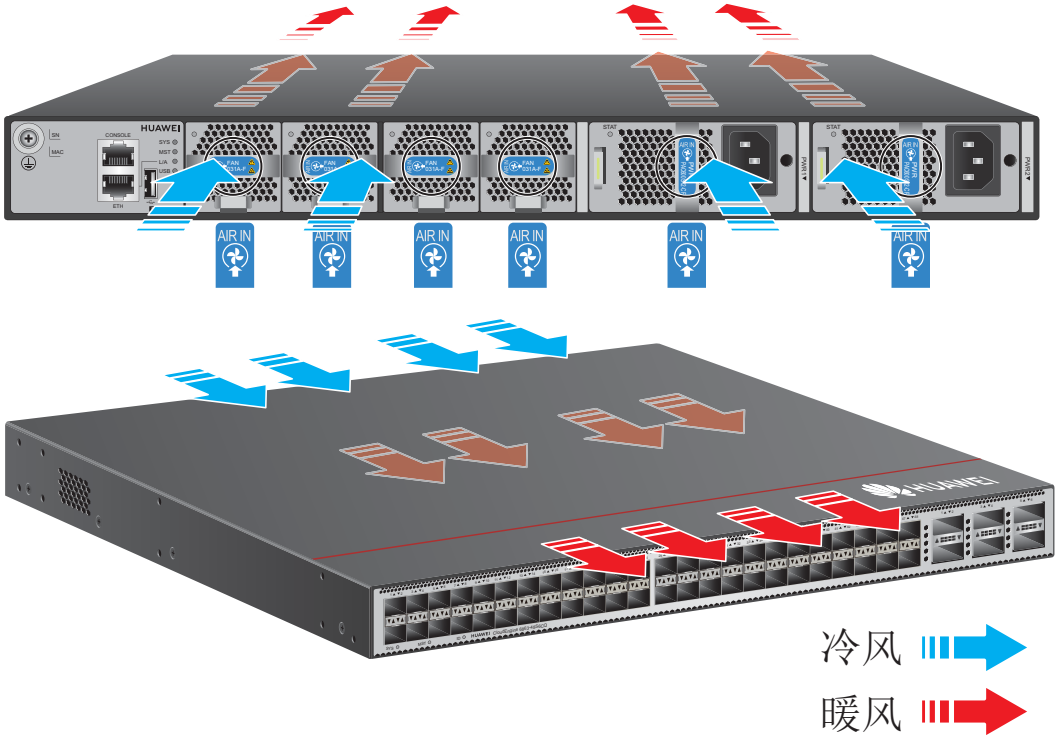
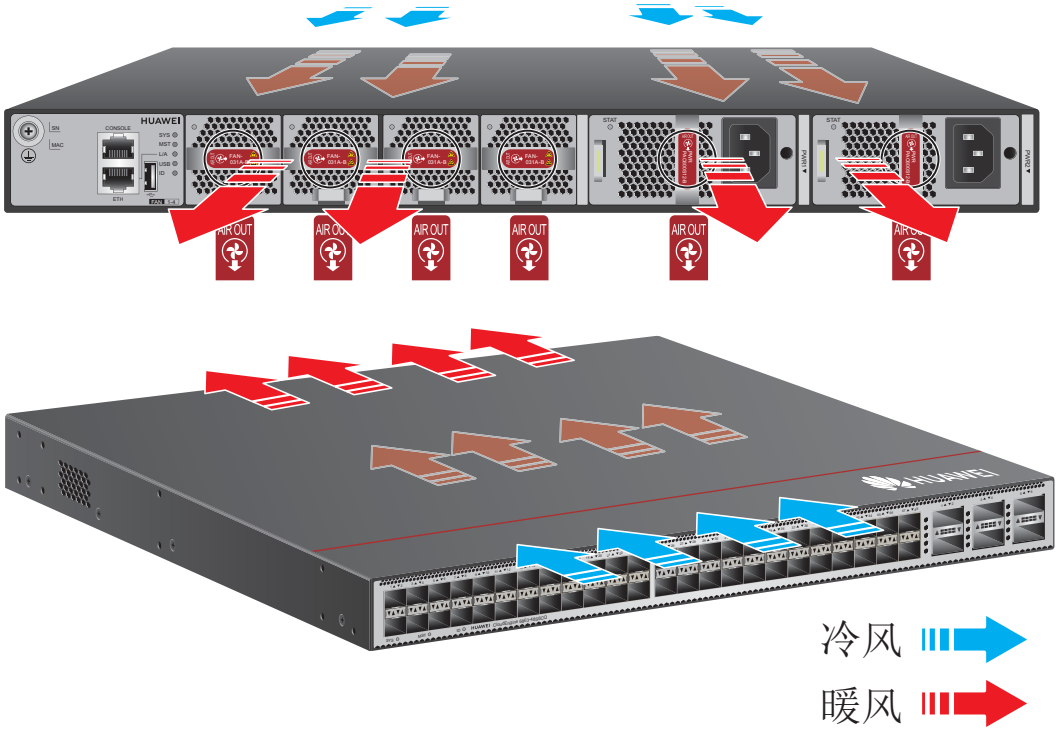


Figure 2-92 Back-to-front airflow for port-side intake



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

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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

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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.

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Table 2-206 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC
	AC power input	• 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	• 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	• 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

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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: • 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

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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		• 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)

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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

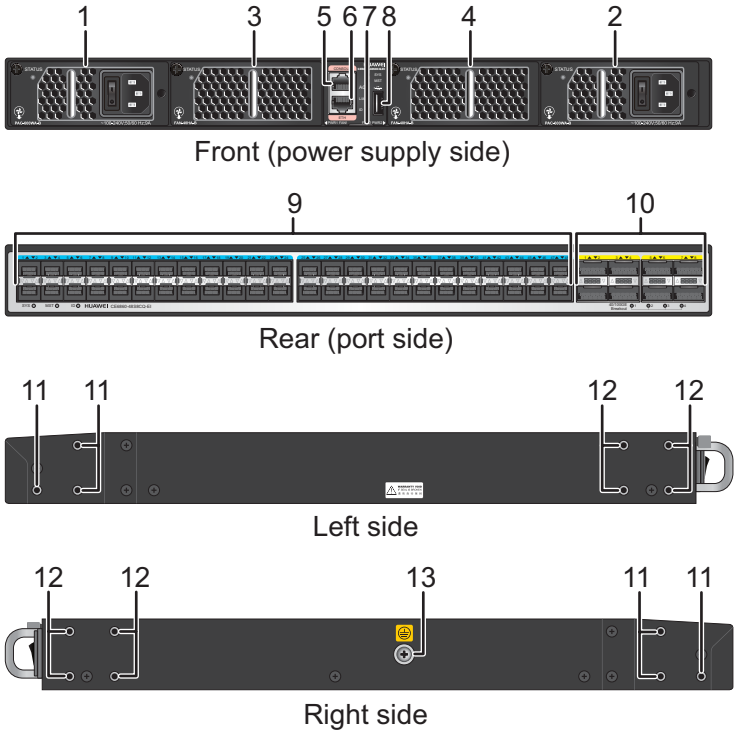
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6860	CE6860-48S8CQ-EI	CE6860EI	V200R002C50 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-93 CE6860-48S8CQ-EI



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1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module** **NOTE** 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.	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **600 W AC power module** **NOTE** 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.
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.	8	USB port

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9	Forty-eight 10GE/25GE SFP28 Ethernet optical ports Applicable modules and cables: • **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) **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: • **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)
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.

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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.

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Figure 2-94 Front-to-back airflow (air flows out from the port side)

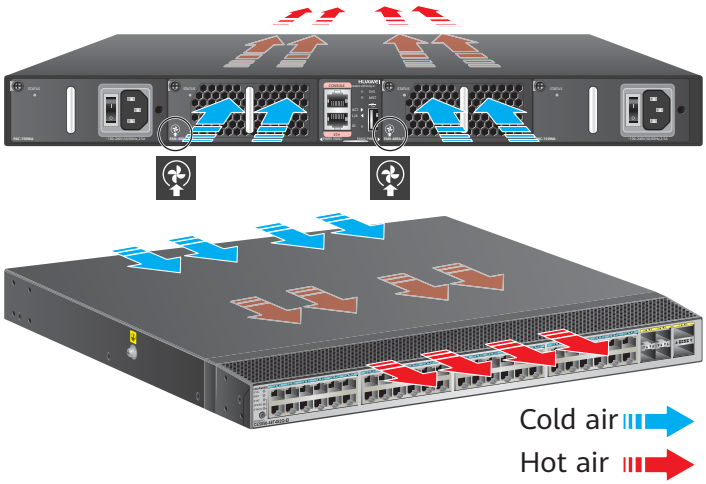
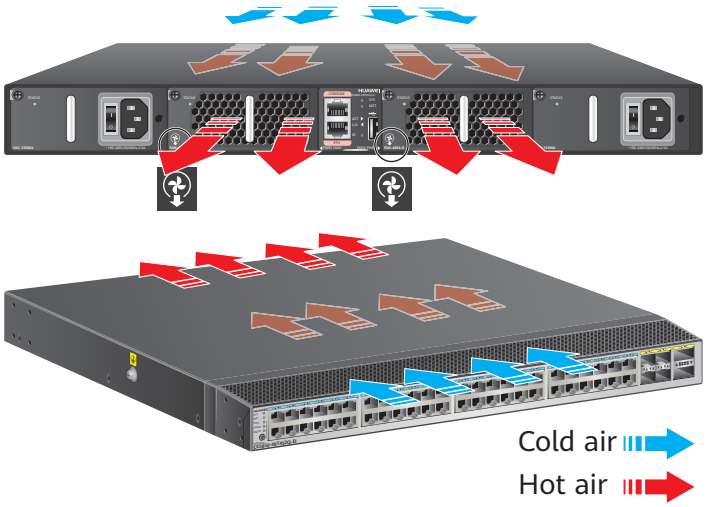


Figure 2-95 Back-to-front airflow (air flows in from the port side)



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Indicators

Figure 2-96 Indicators on the CE6860-48S8CQ-EI rear panel

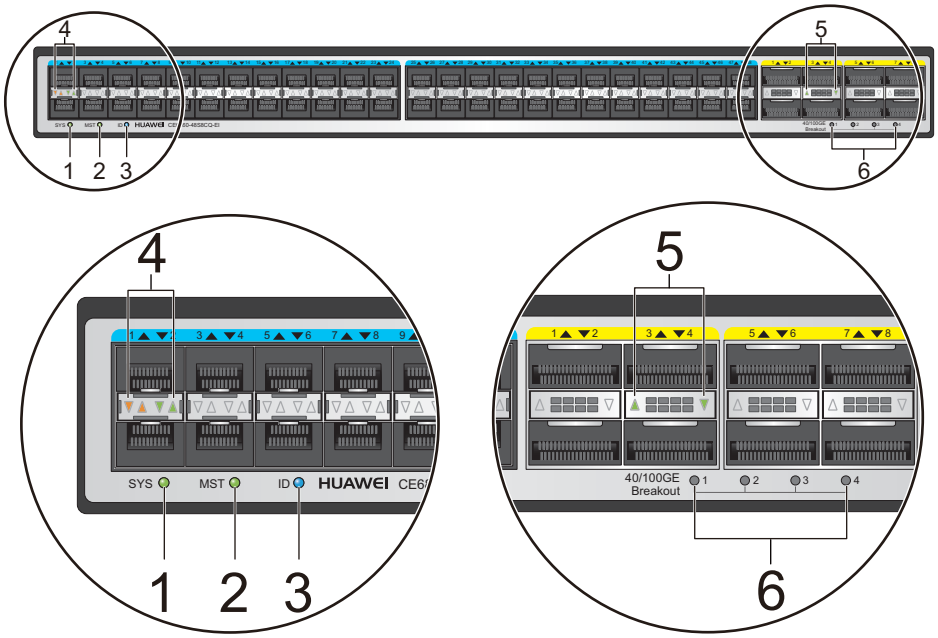

Figure 2-97 Indicators on the CE6860-48S8CQ-EI front panel

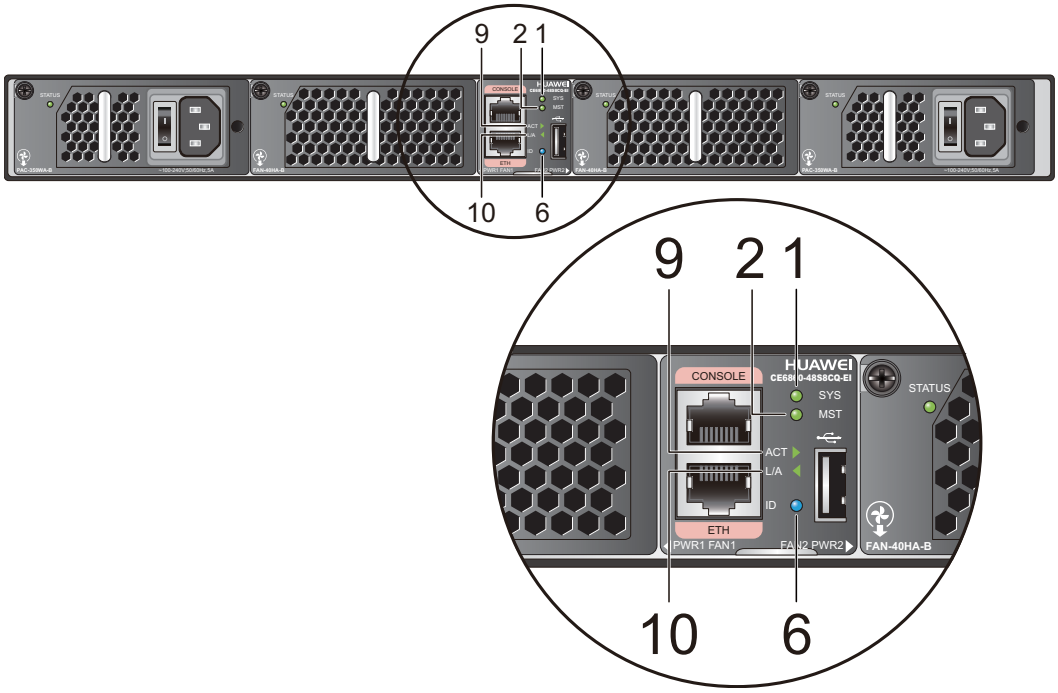

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Table 2-209 Indicator description

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	• 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 **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).

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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.		

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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: • 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.

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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

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Attribute	Description
Port use constraints	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. 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). ● 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

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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

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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		• 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	• 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)	• Back-to-front airflow: < 51 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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

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Item		Description
	DC power input	• 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	• 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: • 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.

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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		• 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	CE6860-48S8CQ-EI	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, Without Fan and Power Module)

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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.

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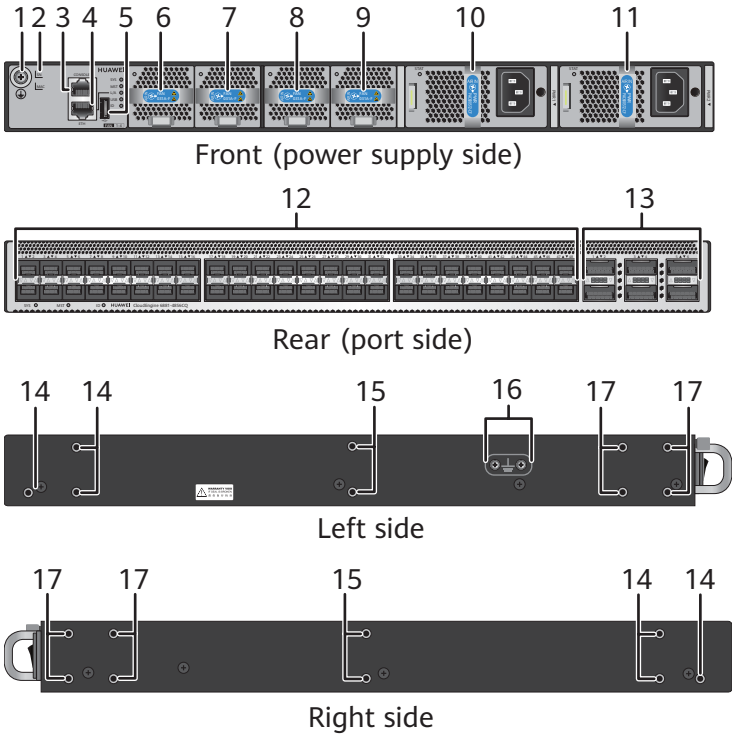
Figure 2-98 CE6863-48S6CQ



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)**

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1 1	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)**	1 2	Forty-eight 10GE/25GE SFP28 Ethernet optical ports Applicable modules and cables: • 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 **NOTE** 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. 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.

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13	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • 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.) **NOTE** 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. 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.	14	Three port-side mounting holes for mounting brackets
15	Two middle mounting holes for mounting brackets	16	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
17	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.

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- 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).

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Figure 2-99 Front-to-back airflow for port-side exhaust

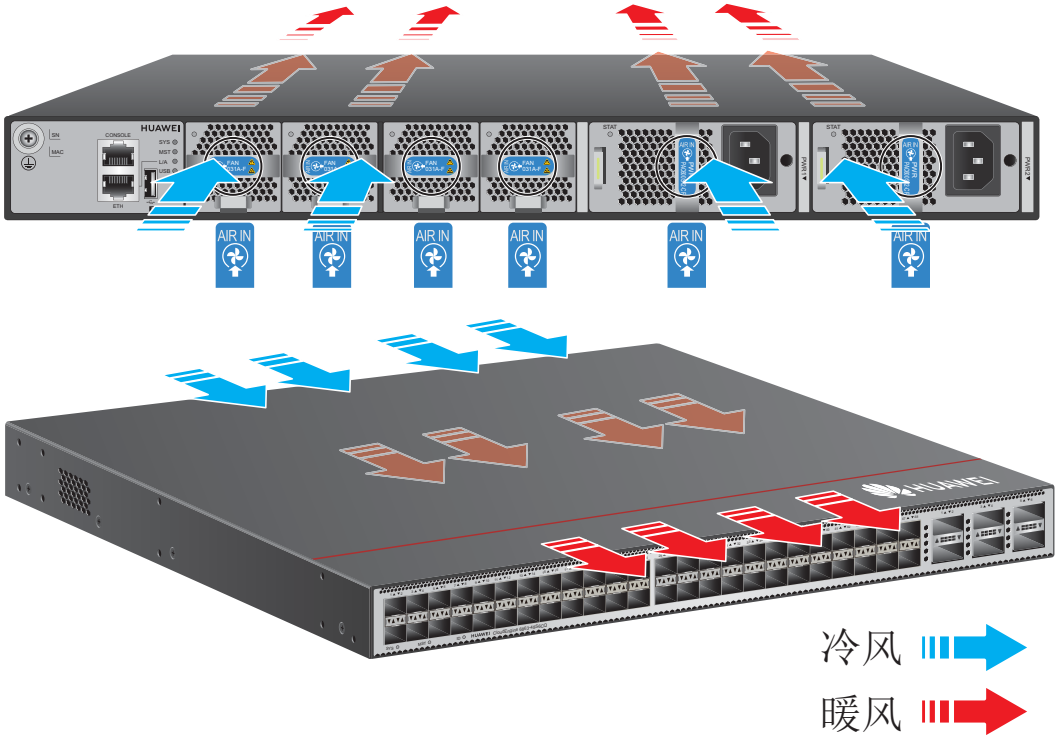
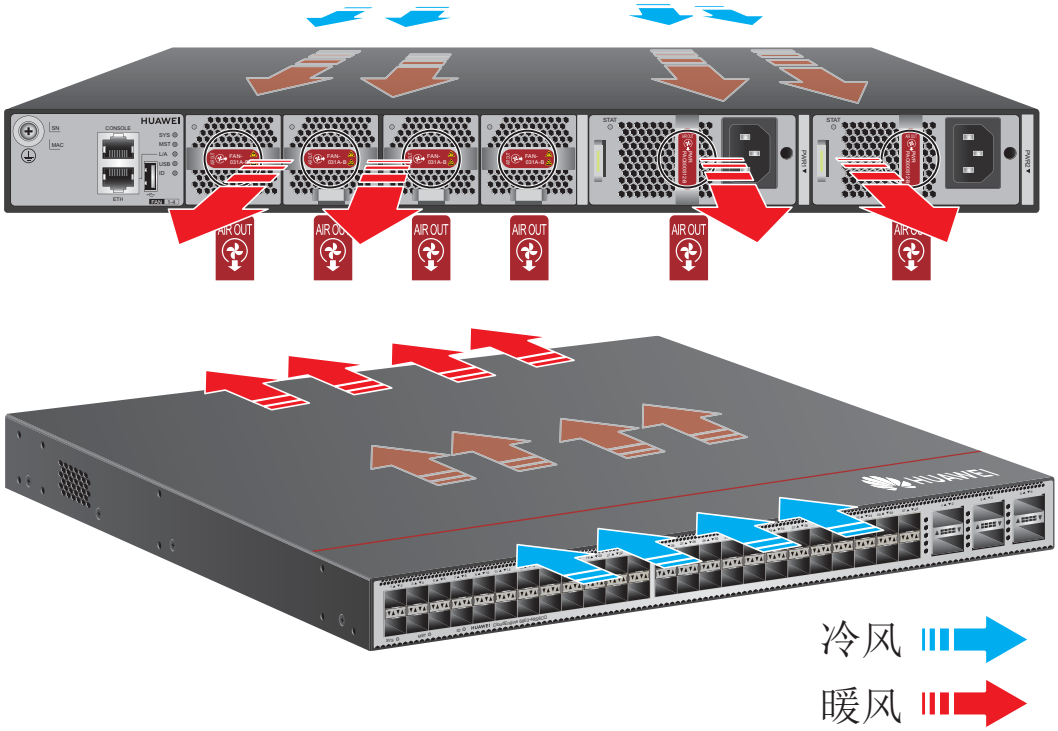


Figure 2-100 Back-to-front airflow for port-side intake



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

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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

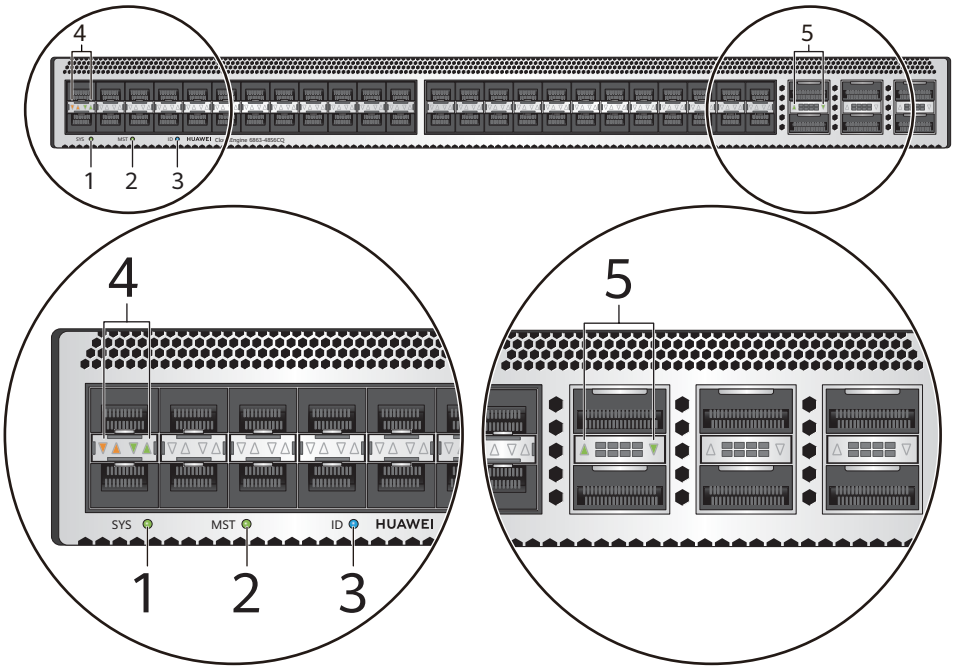

Figure 2-102 Indicators on the CE6863-48S6CQ front panel

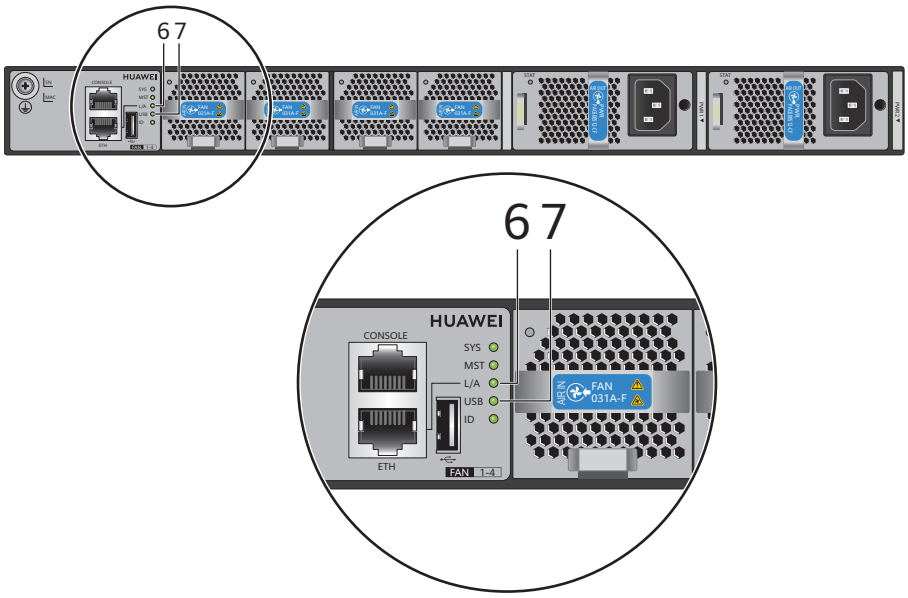

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Table 2-217 Indicator description

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	• 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 **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.

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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.

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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

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Attribute	Description
Port use constraints	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. 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). • 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

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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.

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Table 2-222 Technical specifications

Item		Description
Physical specifications		• Dimensions (H x W x D) – Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 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	• 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)	• Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	• 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	• Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC

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Item		Description
	High-voltage DC power input	• 600 W AC&240 V DC power module (PAC600S12 series): – 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): – Rated voltage range: 240 V DC to 380V DC – Maximum voltage range: 190 V DC to 400 V DC
	Rated input current	• 600 W AC&240 V DC power module (PAC600S12 series): – 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	• 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	• 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)

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Item		Description
Surge protection		Power module: • 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

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Item	Description
Certification	• 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	CE6863-48S6CQ	CE6863-48S6CQ switch (48*25GE SFP28, 6*100GE QSFP28, without fan and power modules)
02352NUP	CE6863-48S6CQ-B	CE6863-48S6CQ switch (48*25GE SFP28, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)
02352NUQ	CE6863-48S6CQ-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	CE6863-48S6CQ-K	CE6863K	V200R019C10 and later

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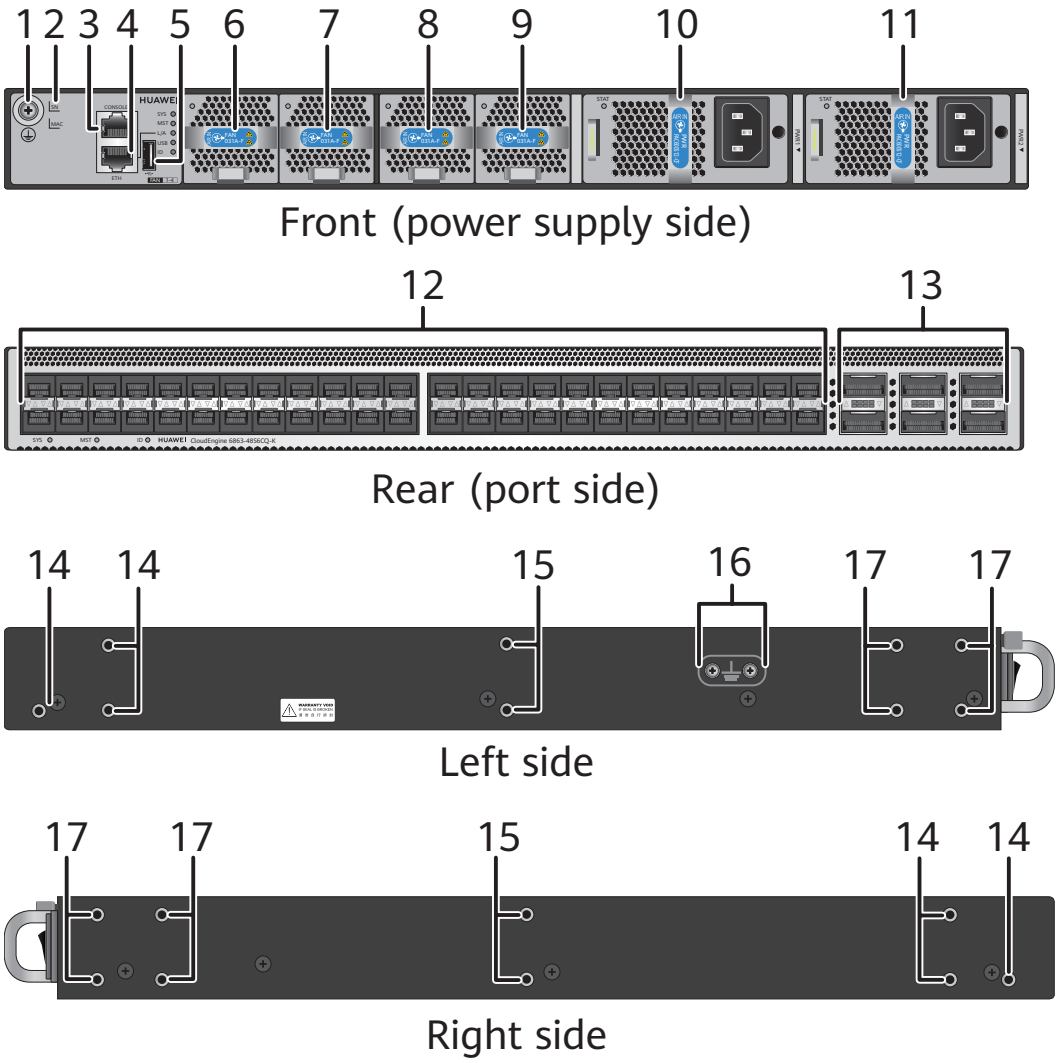
Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-103 CE6863-48S6CQ-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**

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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	Forty-eight 10GE/25GE SFP28 Ethernet optical ports Applicable modules and cables: • 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 **NOTE** 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. 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.

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13	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • 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.) **NOTE** 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. 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.	14	Three port-side mounting holes for mounting brackets
15	Two middle mounting holes for mounting brackets	16	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
17	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.

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- 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).

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Figure 2-104 Front-to-back airflow for port-side exhaust

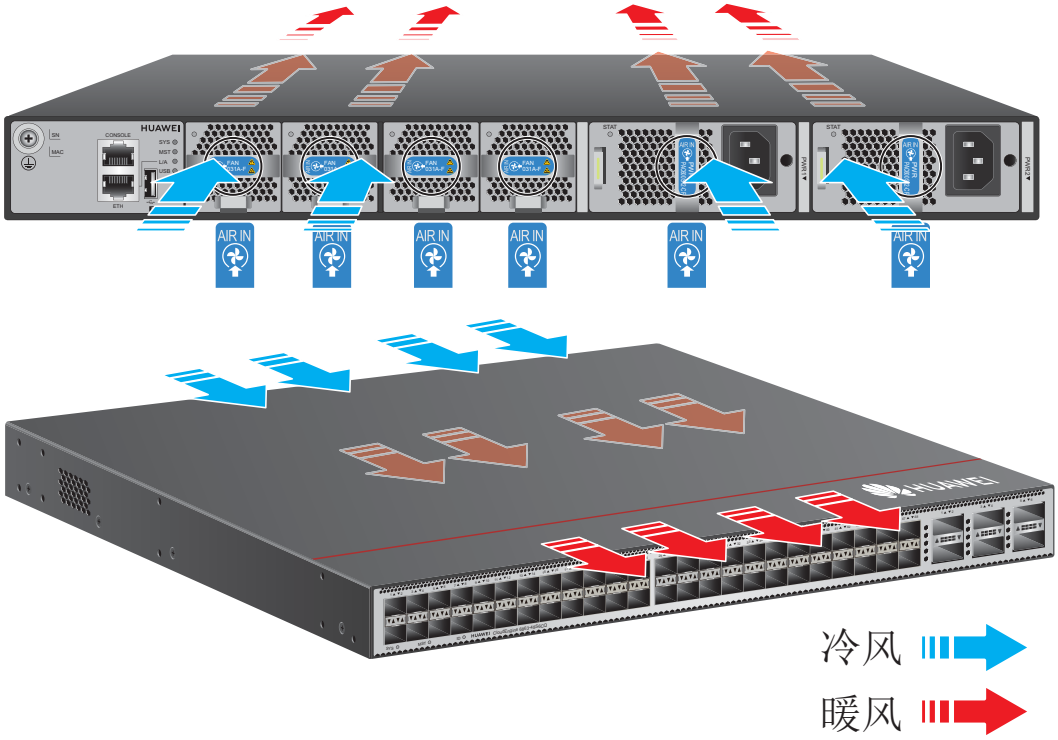
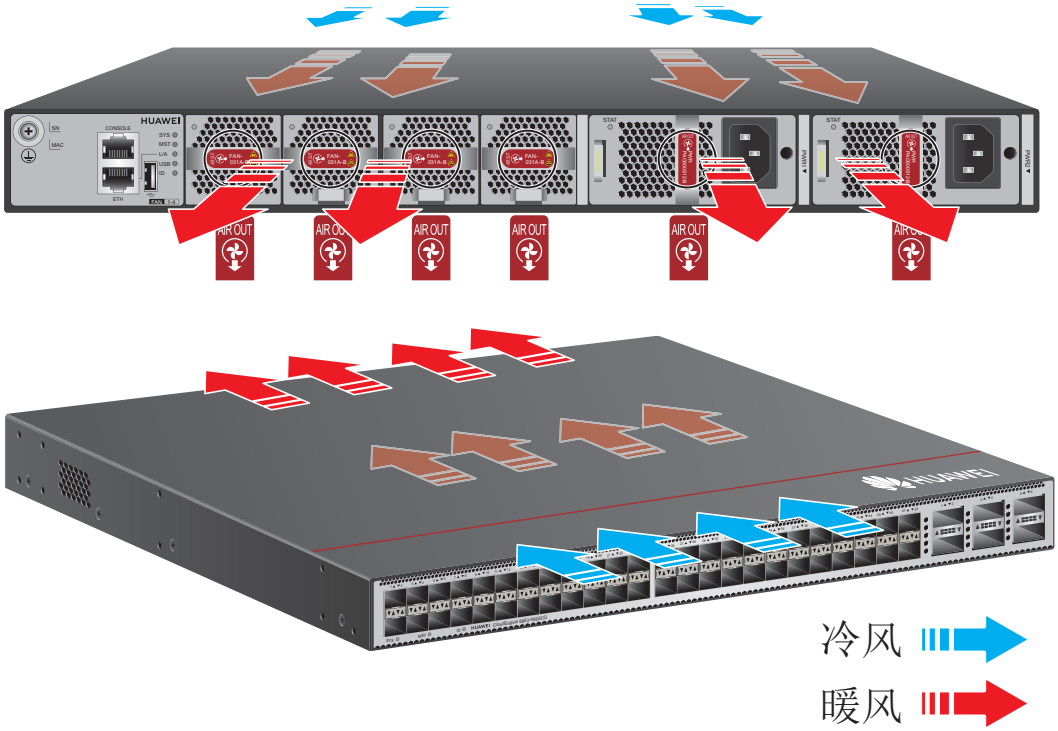


Figure 2-105 Back-to-front airflow for port-side intake



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

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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

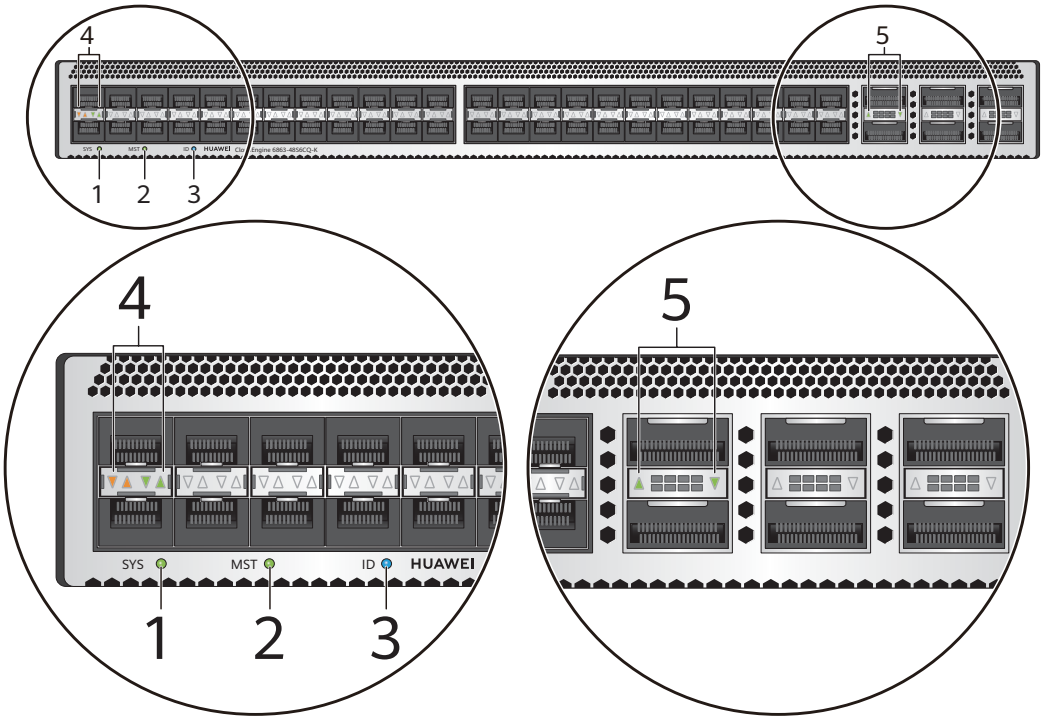

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Figure 2-107 Indicators on the CE6863-48S6CQ-K front panel

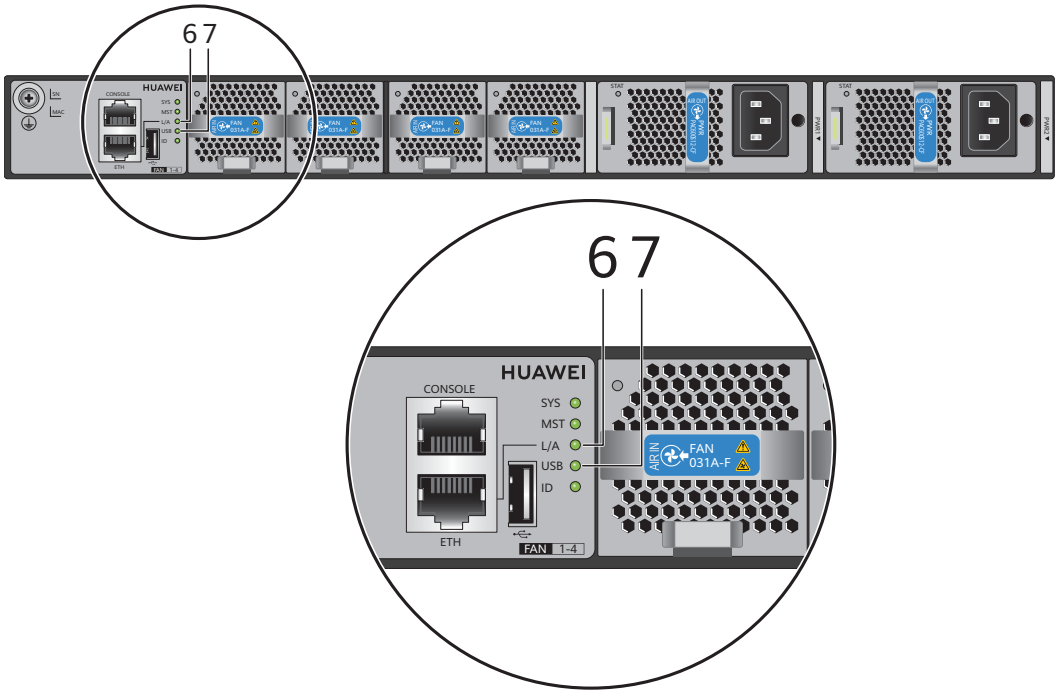

Table 2-225 Indicator description

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	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.
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.

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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

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Attribute	Description
Port use constraints	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. 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). • 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

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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.

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Table 2-230 Technical specifications

Item		Description
Physical specifications		• Dimensions (H x W x D) – Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 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	• 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)	• Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	• 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	• 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	• Rated voltage range: 240 V DC • Maximum voltage range: 190 V DC to -290 V DC

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Item		Description
	Rated input current	• 600 W AC&240 V DC power module (PAC600S12 series): – 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	• 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	• 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: • 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

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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		• 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.

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Table 2-231 Ordering information

Part Number	Part Model	Part Description
02353JAK	CE6863-48S6CQ-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

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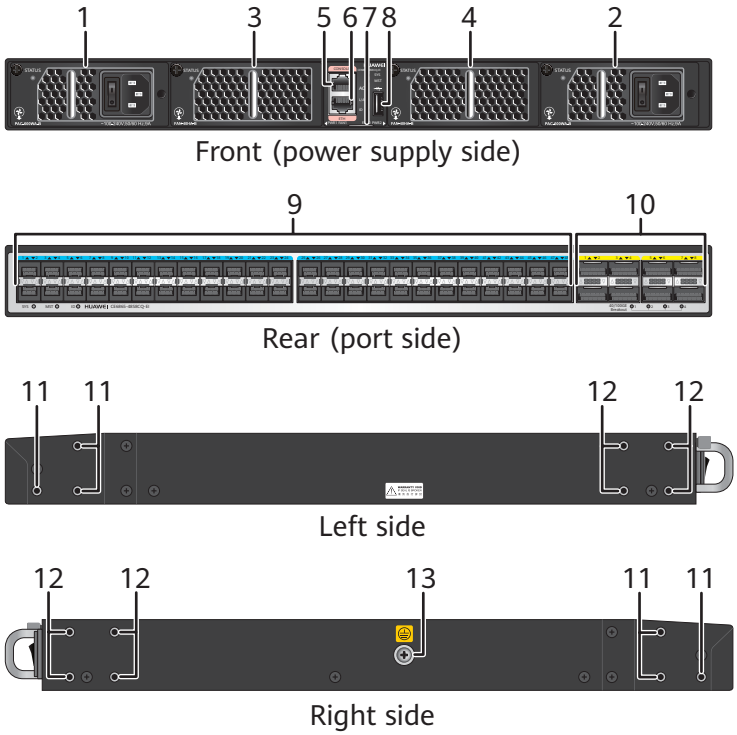
Figure 2-108 CE6865-48S8CQ-EI



1	Power supply slot 1 Applicable power modules: • 350 W DC Power Module (PDC-350WA) • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12) **NOTE** 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.	2	Power supply slot 2 Applicable power modules: • 350 W DC Power Module (PDC-350WA) • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12) **NOTE** 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.
3	Fan slot 1 Applicable fan modules: • FAN-40HA Series Fan Modules	4	Fan slot 2 Applicable fan modules: • FAN-40HA Series Fan Modules

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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: • 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: • 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

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- 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.

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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)

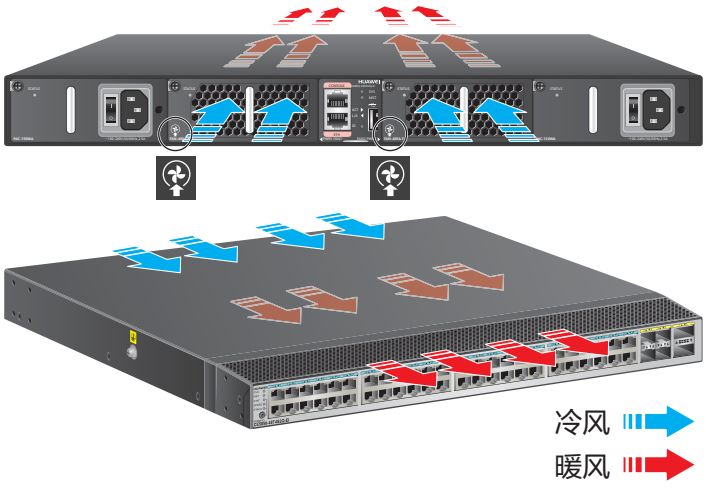

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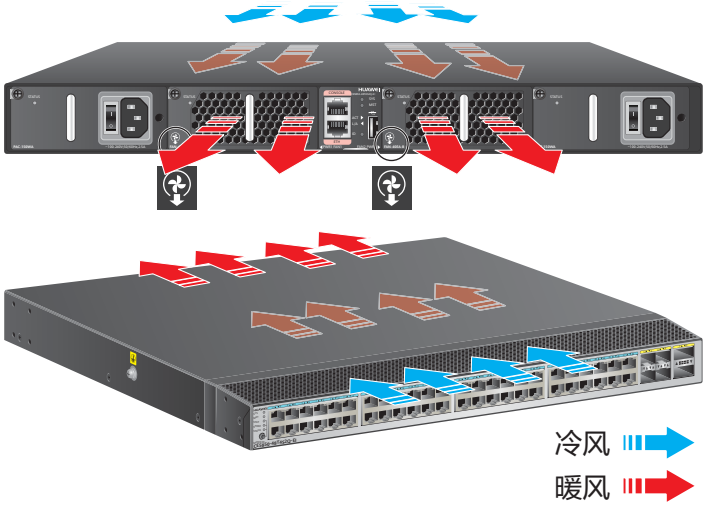
Figure 2-110 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-111 Indicators on the CE6865-48S8CQ-EI rear panel

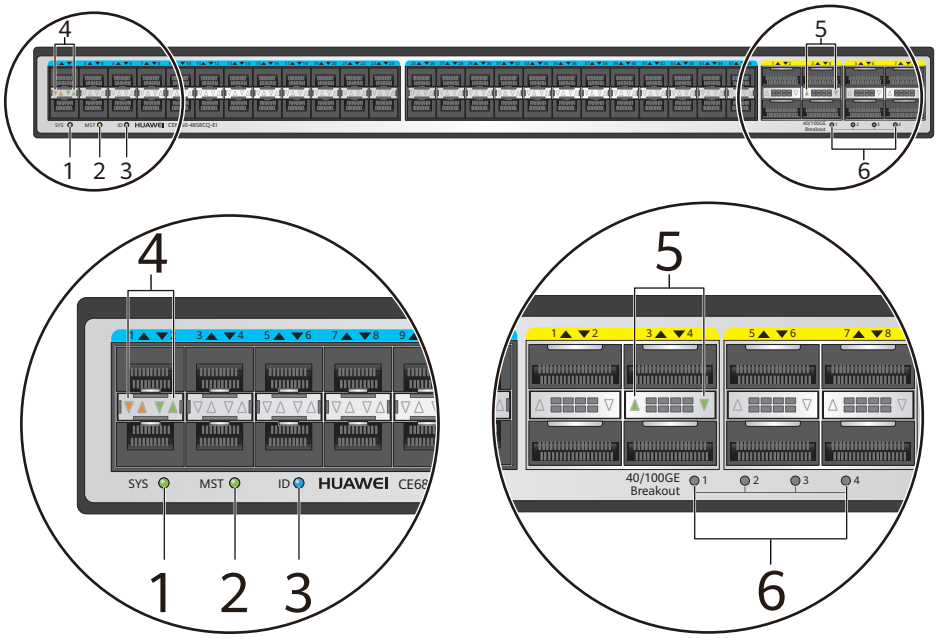


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Figure 2-112 Indicators on the CE6865-48S8CQ-EI front panel

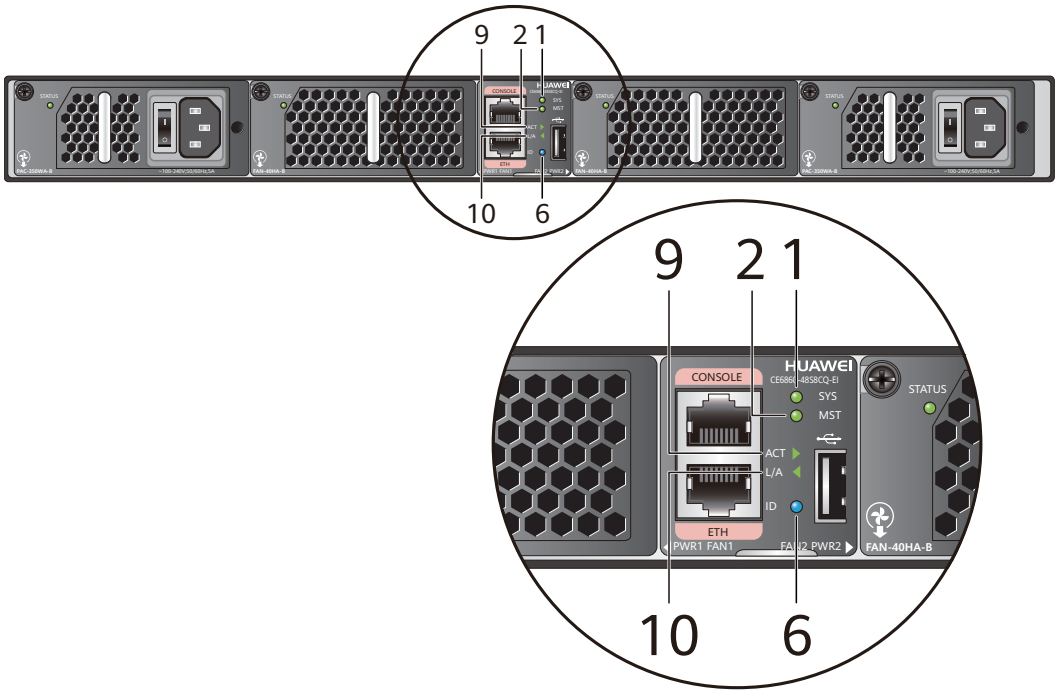

Table 2-233 Indicator description

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	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.		
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.

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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: • 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.

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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	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. 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). • 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

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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).

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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		• 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	• 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)	• Back-to-front airflow: < 65 dBA • Front-to-back airflow: < 65 dBA

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Item		Description
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • AC: 6 kV in common mode and 6 kV in differential mode • DC: 2 kV in common mode and 1 kV in differential mode

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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		• Safety standards compliance • EMC standards compliance • Environmental standards compliance

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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

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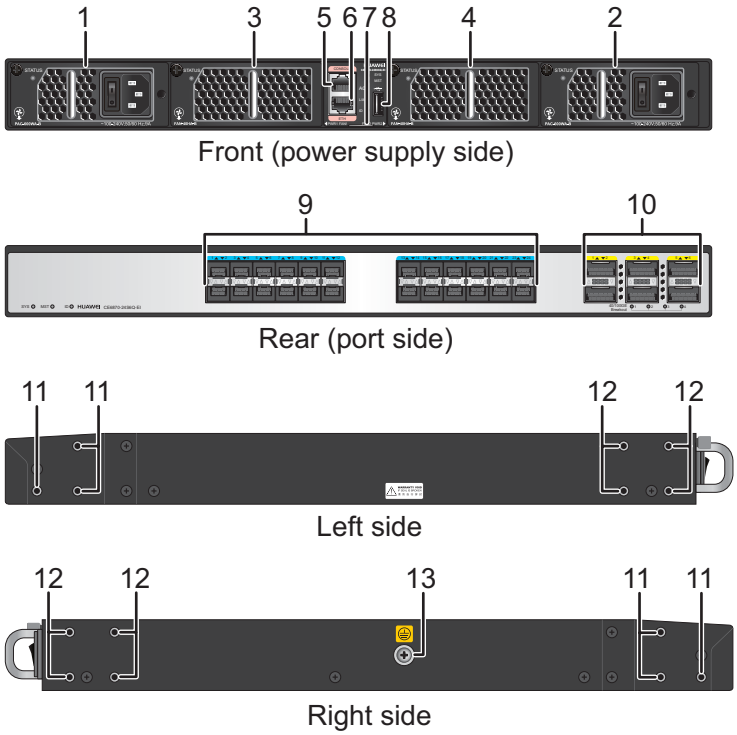
Figure 2-113 CE6870-24S6CQ-EI



1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **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.	8	USB port

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9	Twenty-four 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	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: • **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	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,

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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.

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Figure 2-114 Front-to-back airflow (air flows out from the port side)

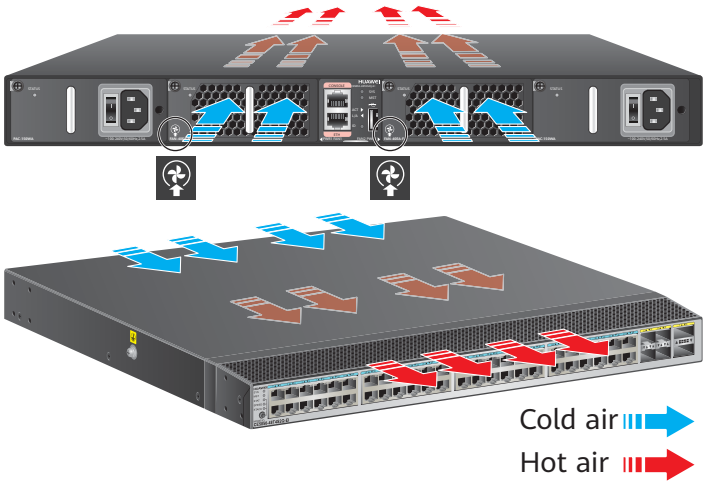
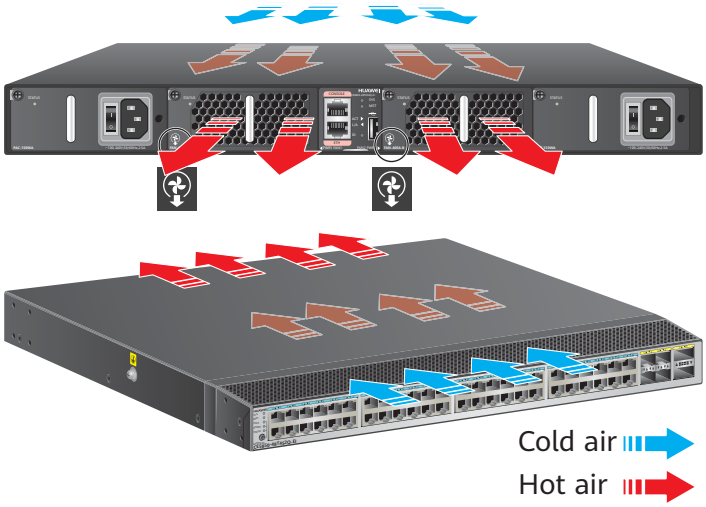


Figure 2-115 Back-to-front airflow (air flows in from the port side)



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.

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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)

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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		• 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	• 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)

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Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 55 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • AC: 6 kV in common mode and 6 kV in differential mode • DC: 4 kV in common mode and 2 kV in differential mode

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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		• 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

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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.

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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.

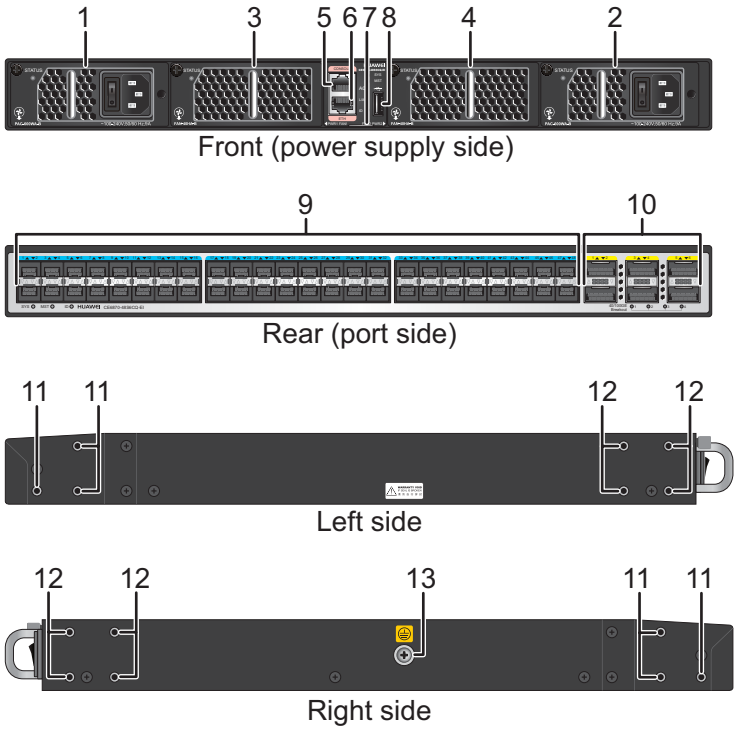
For example, if the SN of a switch is 2102XXXXXX10L3000XXX, the switch is manufactured in March 2020.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-116 CE6870-48S6CQ-EI



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1	Power supply slot 1 Applicable power modules: • 350 W DC Power Module (PDC-350WA) • 600 W AC Power Module (PAC-600WA)	2	Power supply slot 2 Applicable power modules: • 350 W DC Power Module (PDC-350WA) • 600 W AC Power Module (PAC-600WA)
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.	8	USB port
9	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • 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: • 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

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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.

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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)

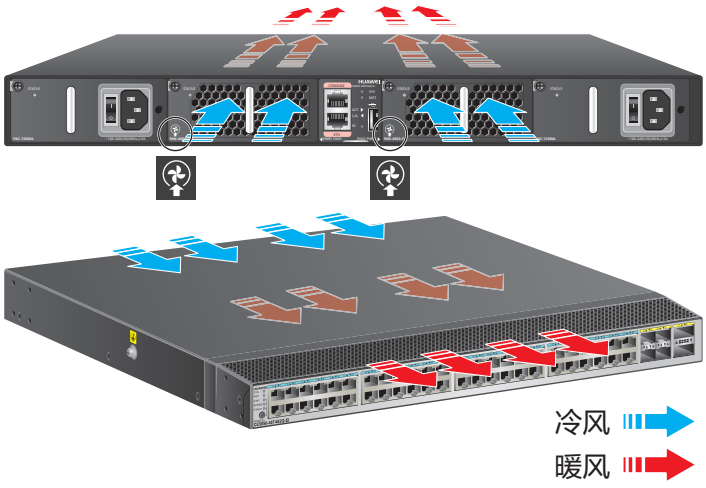

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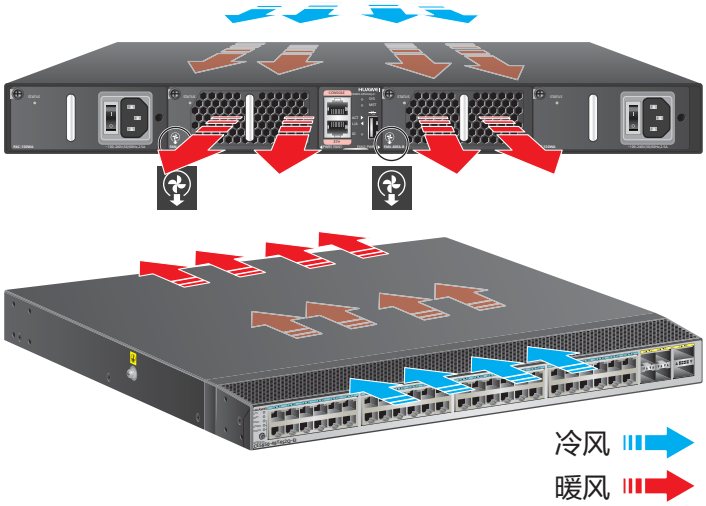
Figure 2-118 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-119 Indicators on the CE6870-48S6CQ-EI rear panel

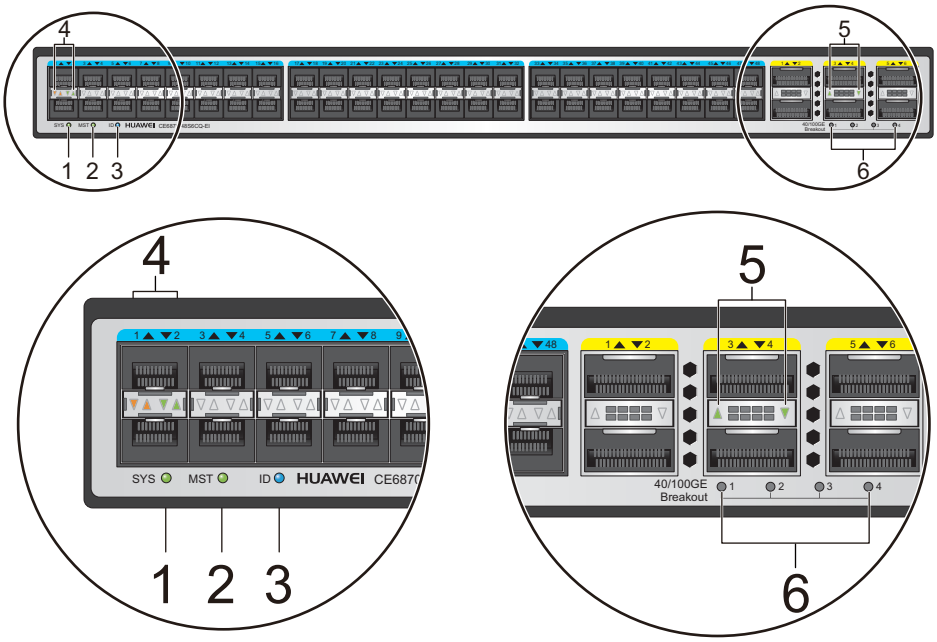


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Figure 2-120 Indicators on the CE6870-48S6CQ-EI front panel

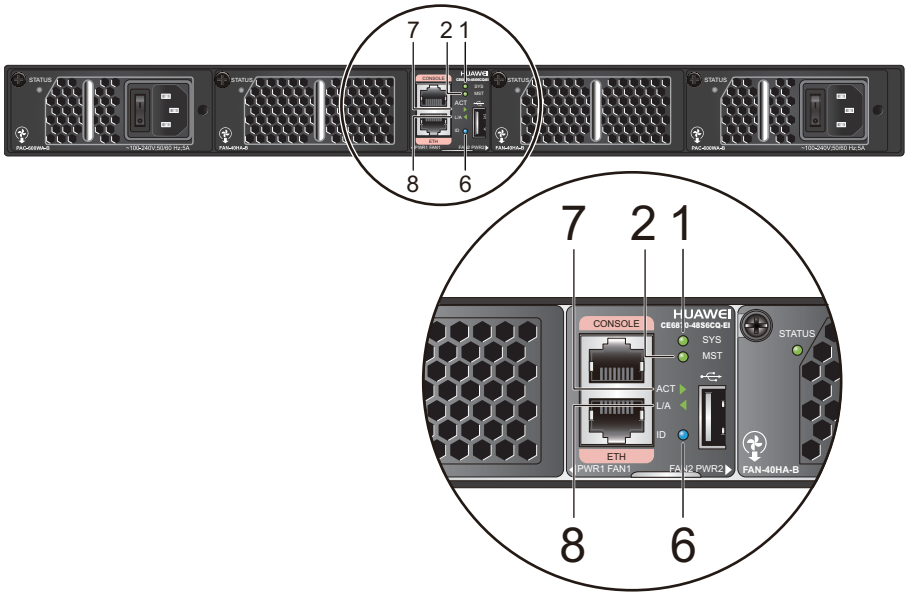

Table 2-248 Indicator description

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	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.		
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.

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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: • 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.

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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.

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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.

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Table 2-253 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• Back-to-front airflow: < 55 dBA • Front-to-back airflow: < 51 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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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		• 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.

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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.

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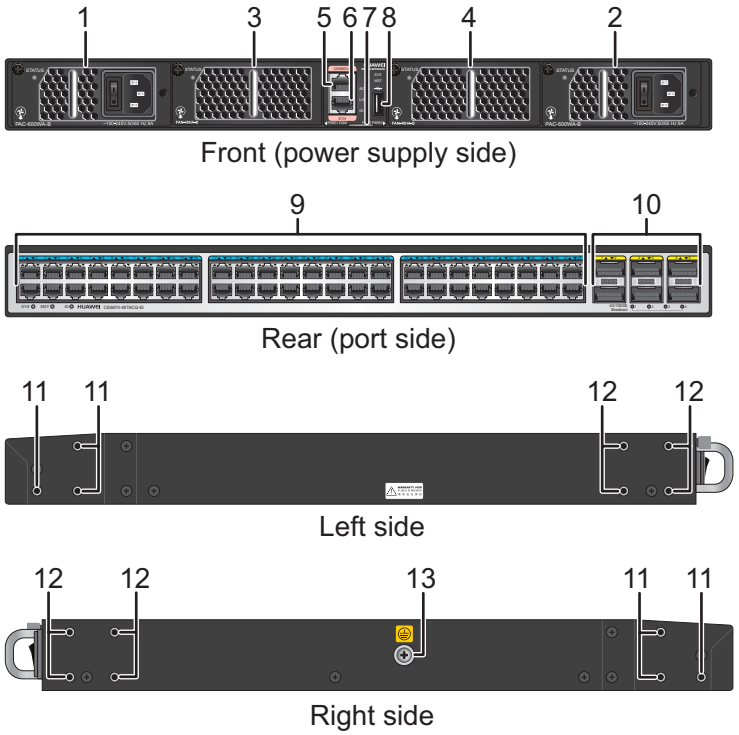
Figure 2-121 CE6870-48T6CQ-EI



1	Power supply slot 1 Applicable power modules: • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12)	2	Power supply slot 2 Applicable power modules: • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12)
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.	8	USB port

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9	Forty-eight 10GBASE-T Ethernet electrical ports	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: ● 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
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,

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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.

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Figure 2-122 Front-to-back airflow (air flows out from the port side)

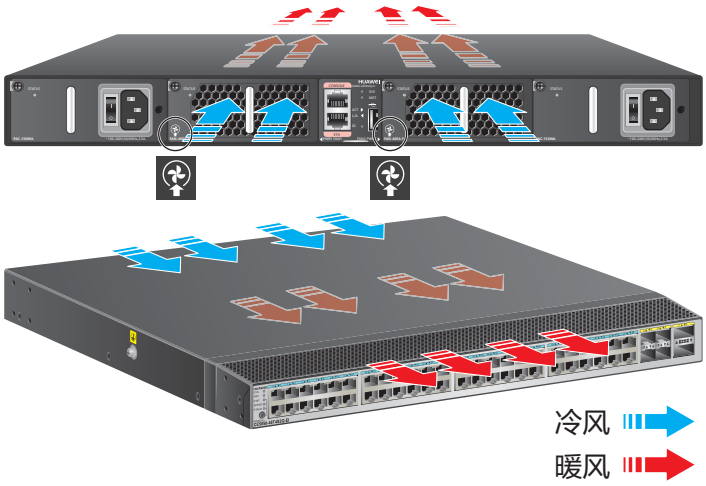
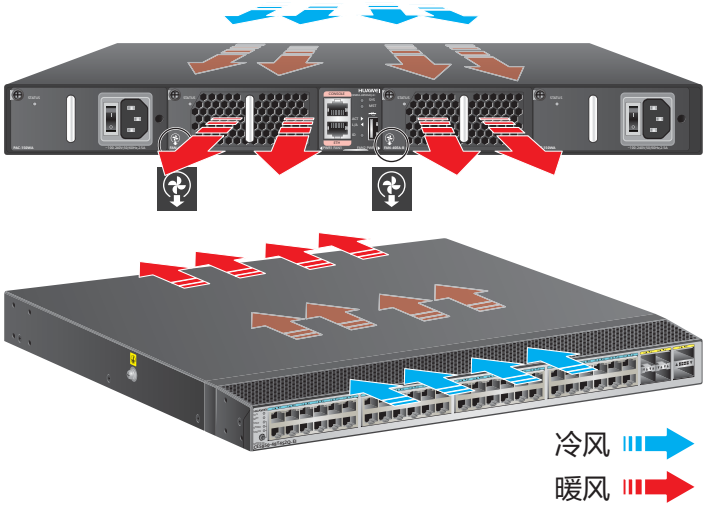


Figure 2-123 Back-to-front airflow (air flows in from the port side)



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.

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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

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 56 dBA • Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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.

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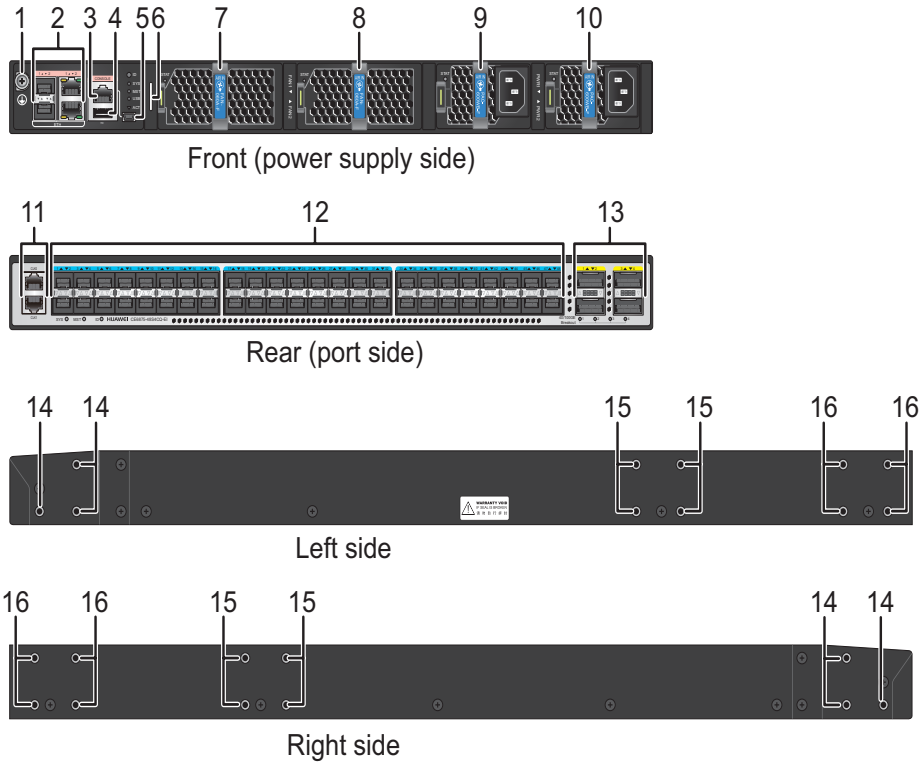
Appearance and Structure

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: • **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

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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	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: • 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: • **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**

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13	Four 40GE/100GE QSFP28 Ethernet optical ports **NOTE** A QSFP28 Ethernet optical port can be split into four 10GE or 25GE ports. QSFP28 optical ports support QSFP28 high-speed cables of 1 m. Applicable modules and cables: • **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.)	14	Three port-side mounting holes for mounting brackets
15	Four middle mounting holes for mounting brackets	16	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.

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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 2-125** (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 2-126** (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.

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Figure 2-125 Front-to-back airflow (air flows out from the port side)

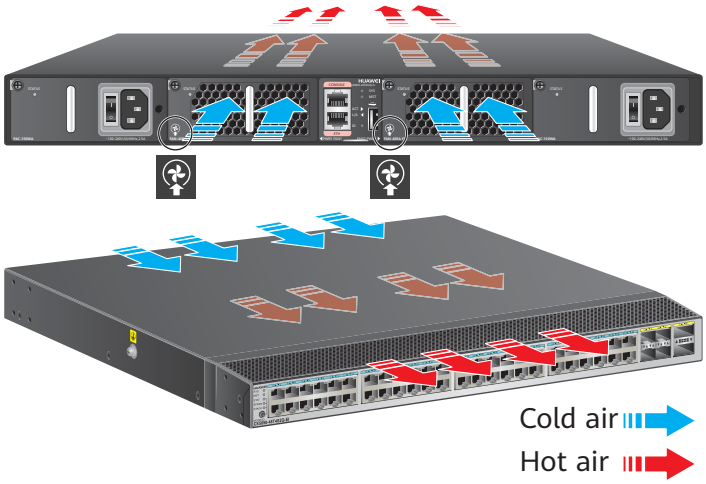
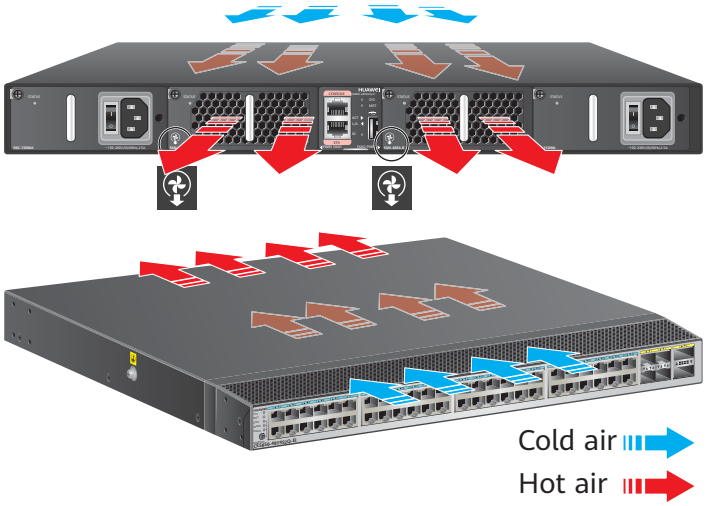


Figure 2-126 Back-to-front airflow (air flows in from the port side)



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

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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: • 1 pps + Time of Day (ToD) Clock synchronization: • 2 MHz • 2 Mbit/s: HDB3 code

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Attribute	Description
Standards compliance	Time synchronization: • 1 pps+ToD – NMEA-0183 – ToD standard of China Mobile Clock synchronization: • 2 MHz: G.703 standard • 2 Mbit/s: G.703 standard
Cables used	Time synchronization mode: time synchronization network cable, which is a straight through network cable with the RS422 interface level Clock synchronization mode: E1/T1 cable, which is a 120-ohm balanced cable For details about cable parameters, see **Clock Cable**.

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.

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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

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• 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	• 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	• 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	• 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	• 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 consu	Maximum power consumption	407 W

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Item		Description
mptio n	Typical power consump tion	273 W (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Chassi s heat dissipa tion	Maximu m heat dissipatio n	1389 BTU/hr
	Typical heat dissipatio n	932 BTU/hr (100% throughput, SFP+ cables on 48 ports and QSFP+ cables on 4 ports, double power modules)
Surge protection		Power module: • 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 dissipa tion	Heat dissipatio n mode	Air cooling
	Airflow	Front-to-back or back-to-front, depending on the fan modules and power modules
Reliabi lity and availa bility	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
	Availabili ty	0.99999339538

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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		• 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

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Version Mapping

Table 2-270 lists the mappings between the CE6880-24S4Q2CQ-EI and software versions.

Table 2-270 Version mapping

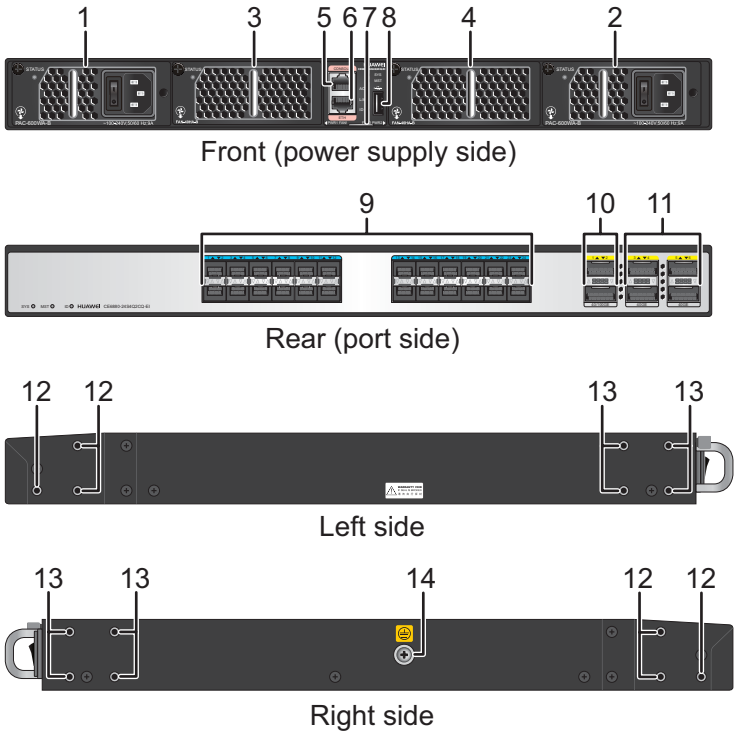
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6880	CE6880-24S4Q2CQ-EI	CE6880EI	V200R002C50 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-127 CE6880-24S4Q2CQ-EI



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1	Power supply slot 1 Applicable power modules: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **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.	8	USB port

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9	Twenty-four 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 100 Mbit/s or 1000 Mbit/s) • **SFP+ AOC cable** • **SFP+ high-speed cable**	10	Two 40GE/100GE QSFP28 Ethernet optical ports **NOTE** 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. Applicable modules and cables: • **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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11	Four 40GE QSFP+ Ethernet optical ports **NOTE** A 40GE QSFP+ port cannot be split into four 10GE ports. Applicable modules and cables: • **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)	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

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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 2-128** (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 2-129** (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 2-128 Front-to-back airflow (air flows out from the port side)

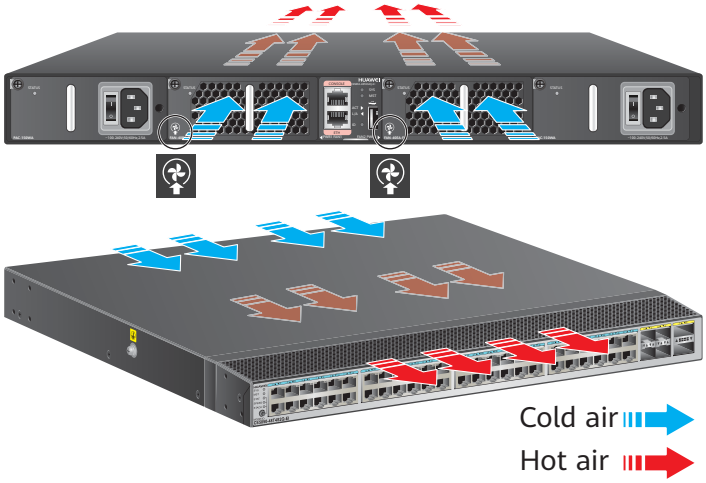

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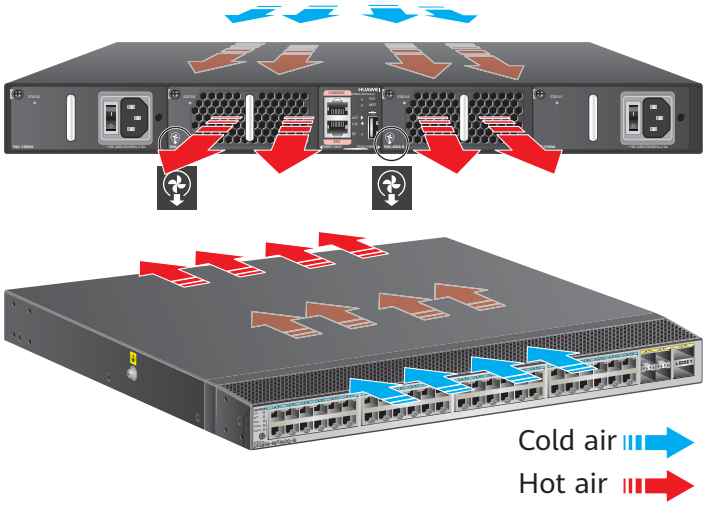
Figure 2-129 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-130 Indicators on the CE6880-24S4Q2CQ-EI rear panel

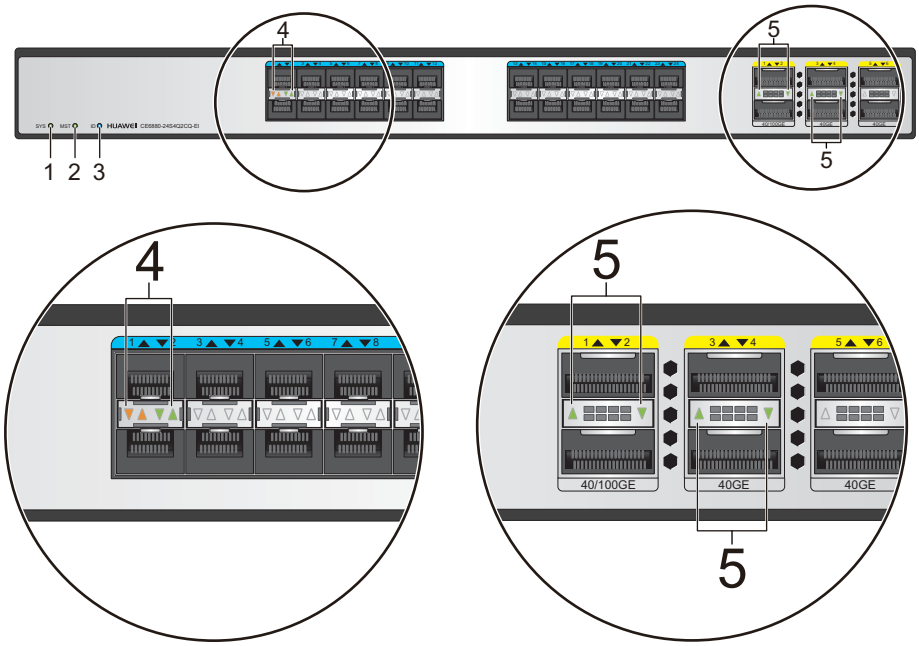


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Figure 2-131 Indicators on the CE6880-24S4Q2CQ-EI front panel

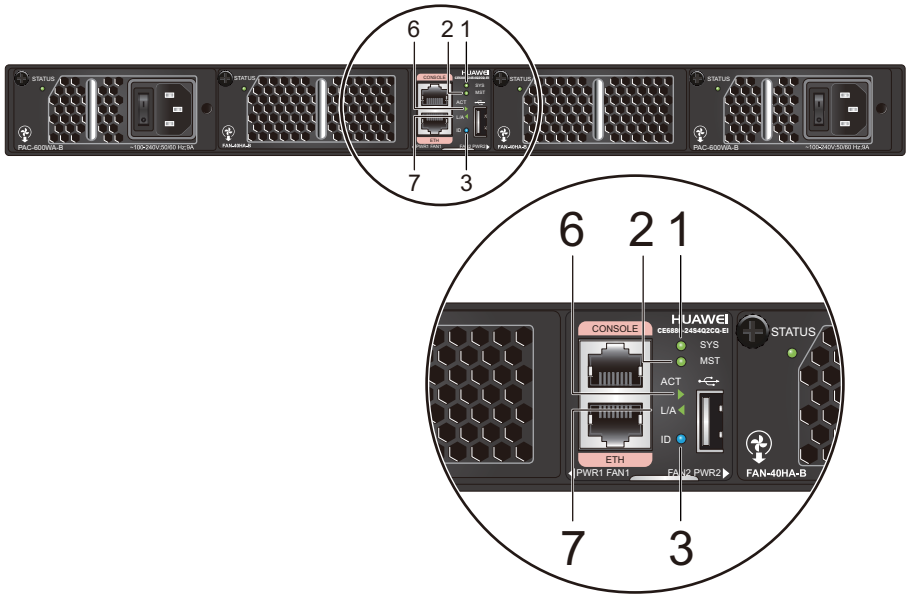

Table 2-271 Indicator description

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	• 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).

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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 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.

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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

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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.

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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.

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Table 2-277 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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

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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: • 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

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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		• 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.

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Table 2-279 Version mapping

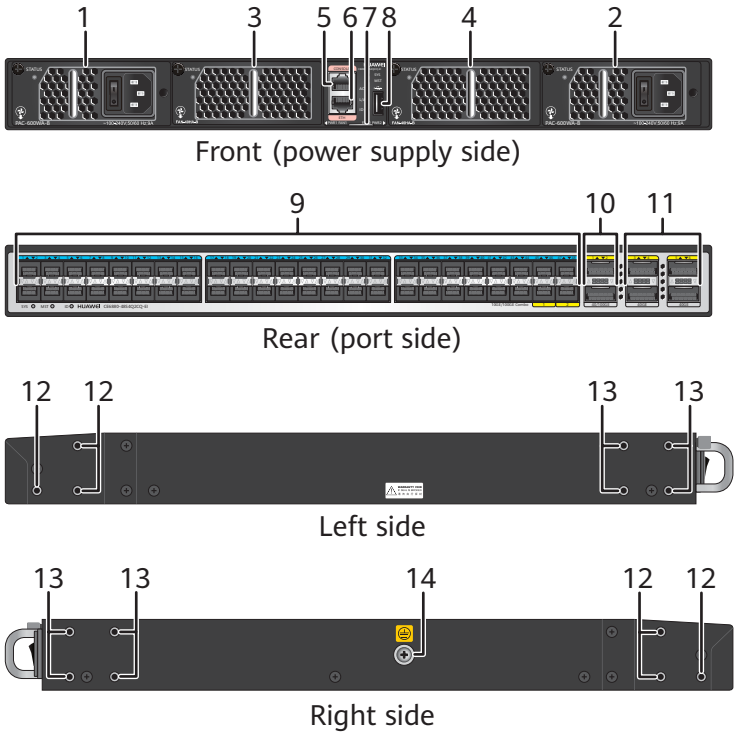
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6880	CE6880-48S4Q2CQ-EI	CE6880EI	V200R002C50 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

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: • **350 W DC power module** • **600 W AC power module**	2	Power supply slot 2 Applicable power modules: • **350 W DC power module** • **600 W AC power module**

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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.	8	USB port

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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** (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**	10	Two 40GE/100GE QSFP28 Ethernet optical ports **NOTE** • 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. Applicable modules and cables: • **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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11	Four 40GE QSFP+ Ethernet optical ports **NOTE** A 40GE QSFP+ port cannot be split into four 10GE ports. Applicable modules and cables: • **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)	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

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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 2-133** (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 2-134** (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 2-133 Front-to-back airflow (air flows out from the port side)

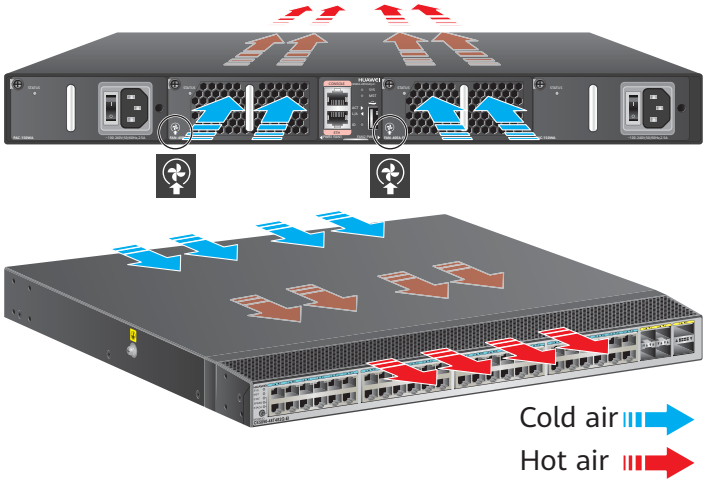

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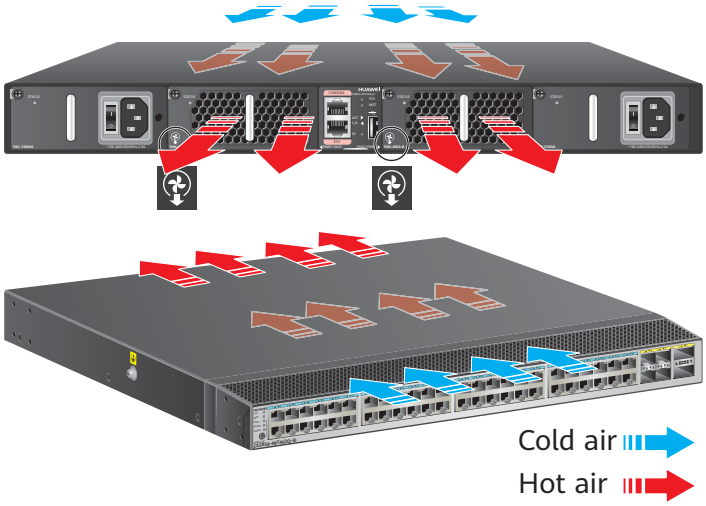
Figure 2-134 Back-to-front airflow (air flows in from the port side)



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.

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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

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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		• 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	• 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

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Item		Description
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC/DC
	AC power input	• 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	• 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	• 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: • 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

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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		• 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.

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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

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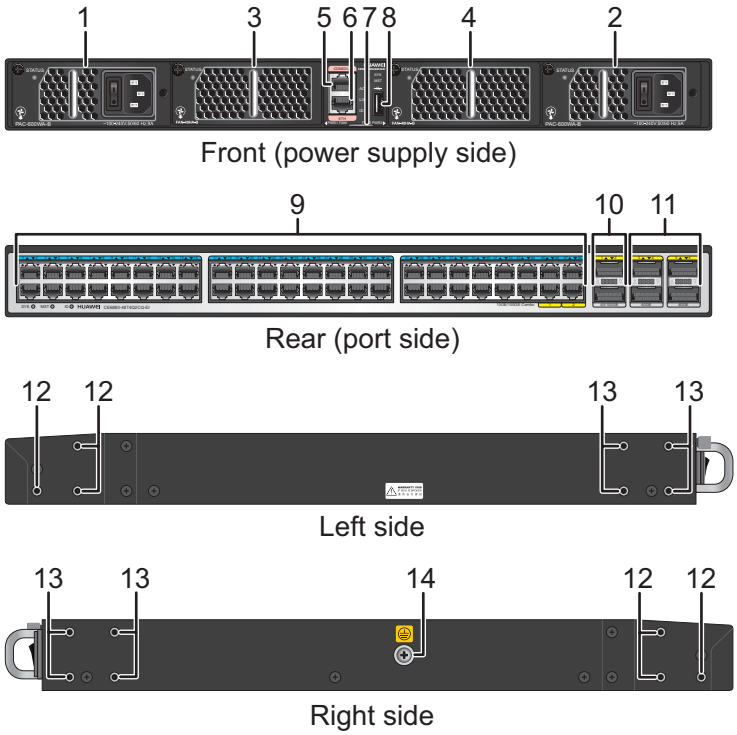
Figure 2-135 CE6880-48T4Q2CQ-EI



1	Power supply slot 1 Applicable power modules: • **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: • **3.6 600 W AC Power Module (PAC-600WA)** • **3.11 600 W DC Power Module (PDC600S12)**
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.	8	USB port

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9	Forty-eight 10GBASE-T Ethernet electrical ports	10	Two 40GE/100GE QSFP28 Ethernet optical ports **NOTE** • 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. Applicable modules and cables: • **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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11	Four 40GE QSFP+ Ethernet optical ports **NOTE** A 40GE QSFP+ port cannot be split into four 10GE ports. Applicable modules and cables: • **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)	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

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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 2-136** (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 2-137** (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 2-136 Front-to-back airflow (air flows out from the port side)

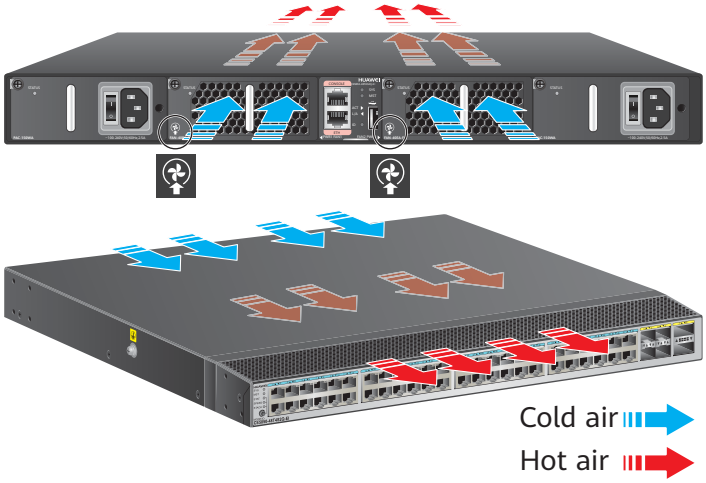

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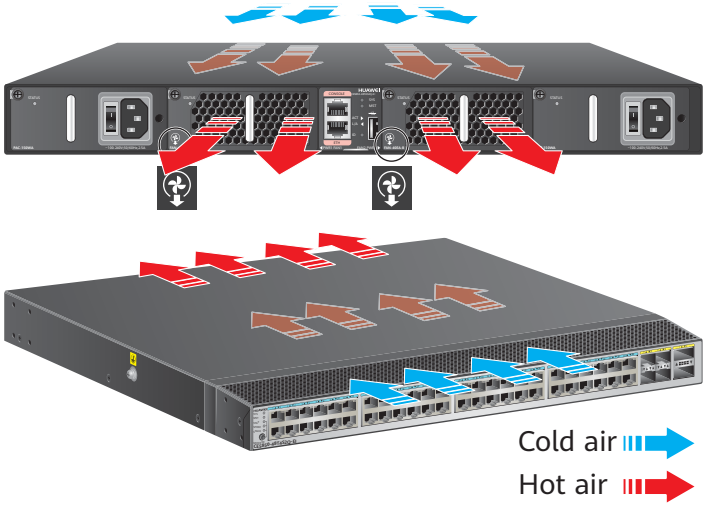
Figure 2-137 Back-to-front airflow (air flows in from the port side)



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

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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)

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 53 dBA • Front-to-back airflow: < 53 dBA
Power specifications	Power source type	AC
	AC power input	• 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	• 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	• 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

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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: • 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

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Item	Description
Certification	• 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	CE6880-48T4Q2CQ-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.

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Table 2-295 Version mapping

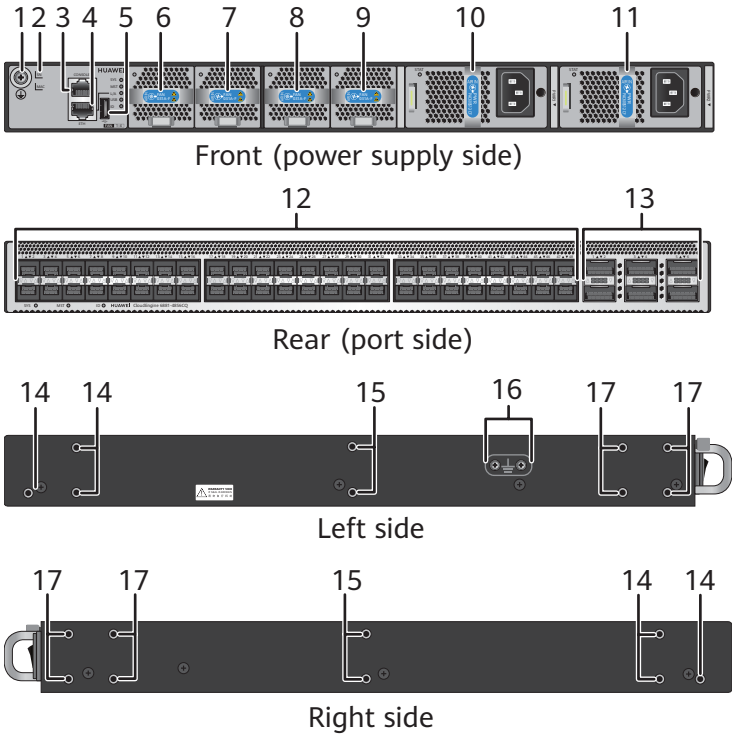
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6881	CE6881-48S6CQ	CE6881	V200R005C20 and later

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**

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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	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • **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** **NOTE** 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.

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13	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • **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.) **NOTE** 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. 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.	14	Three port-side mounting holes for mounting brackets
15	Two middle mounting holes for mounting brackets	16	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
17	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.

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- 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).

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Figure 2-139 Front-to-back airflow for port-side exhaust

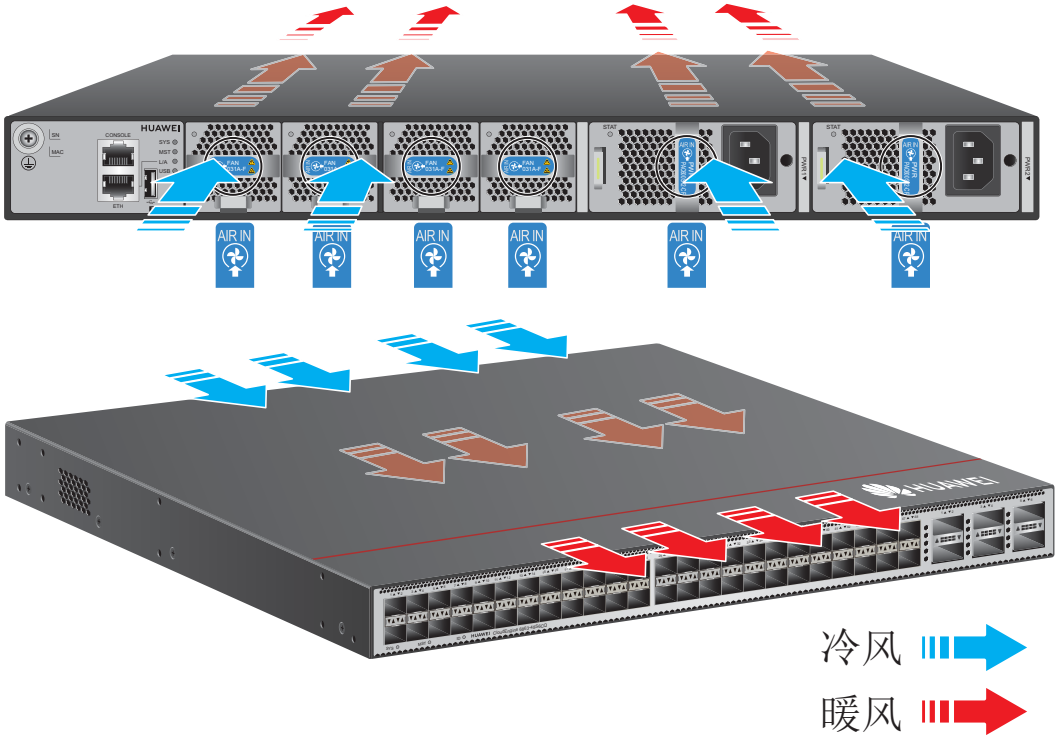
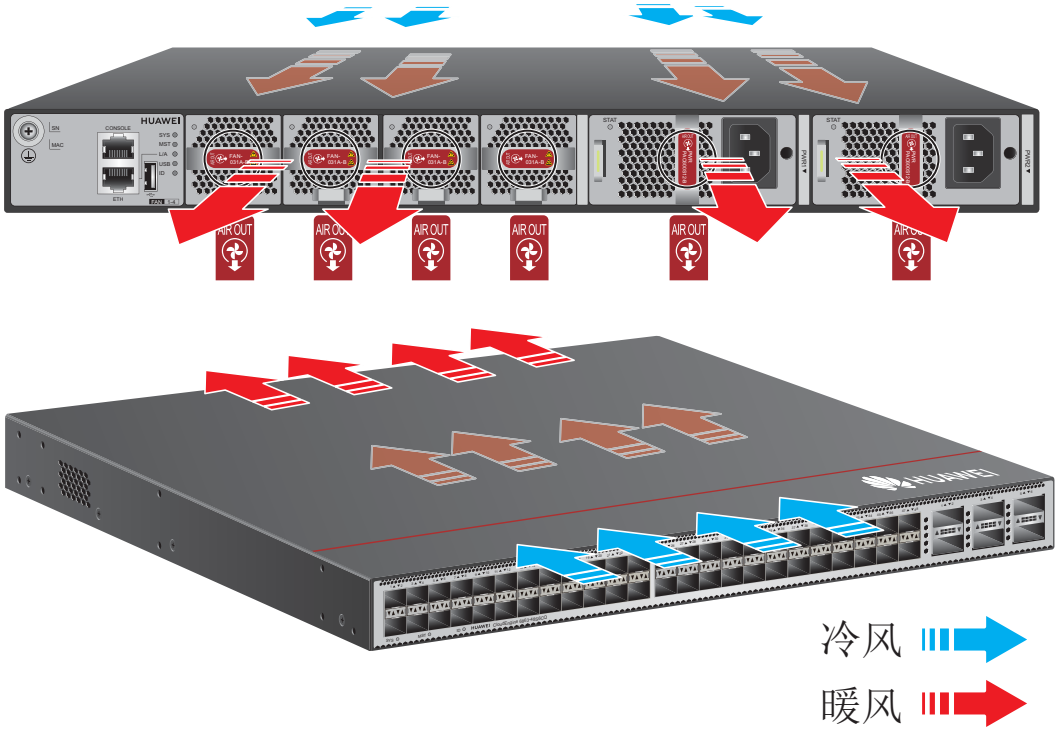


Figure 2-140 Back-to-front airflow for port-side intake



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

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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

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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.

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Table 2-300 Technical specifications

Item		Description
Physical specifications		• Dimensions (H x W x D) – Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 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	• 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)	• Back-to-front airflow: < 57 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	• 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	• Rated voltage range: -48 V DC to -60 V DC • Maximum voltage range: -38.4 V DC to -72 V DC

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Item		Description
	High-voltage DC power input	• 600 W AC&240 V DC power module (PAC600S12 series): – 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): – Rated voltage range: 240 V DC to 380V DC – Maximum voltage range: 190 V DC to 400 V DC
	Rated input current	• 600 W AC&240 V DC power module (PAC600S12 series): – 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	• 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	• 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)

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Item		Description
Surge protection		Power module: • 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

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Item	Description
Certification	• 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	CE6881-48S6CQ	CE6881-48S6CQ switch (48*10GE SFP+, 6*100GE QSFP28, without fan and power modules)
02352QGG	CE6881-48S6CQ-B	CE6881-48S6CQ switch (48*10GE SFP+, 6*100GE QSFP28, 2*AC power modules, 4*fan modules, port-side intake)
02352QGH	CE6881-48S6CQ-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	CE6881-48S6CQ-K	CE6881K	V200R019C10 and later

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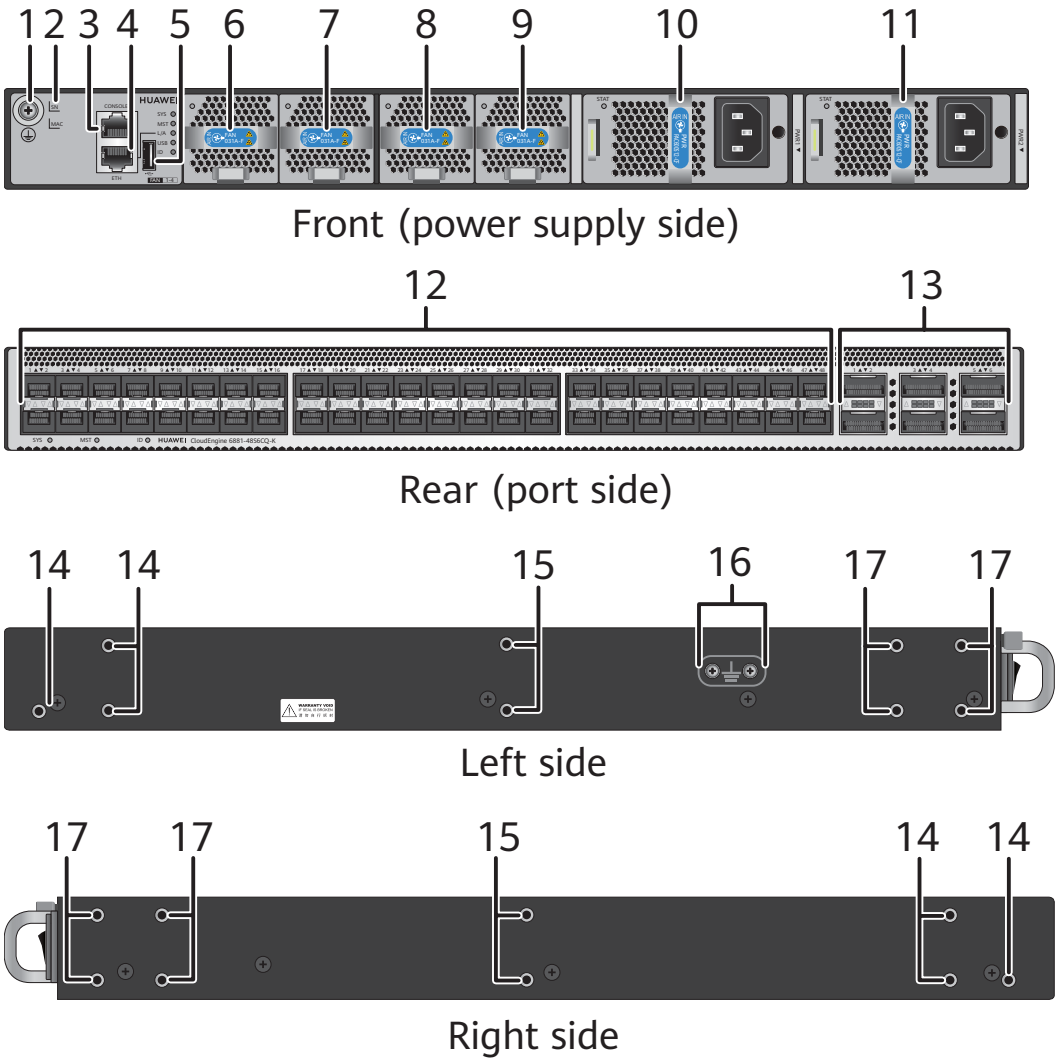
Appearance and Structure

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**

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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	Forty-eight 10GE SFP+ Ethernet optical ports Applicable modules and cables: • **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** **NOTE** 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.

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13	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • **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.) **NOTE** 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. 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.	14	Three port-side mounting holes for mounting brackets
15	Two middle mounting holes for mounting brackets	16	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal
17	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.

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- 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).

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Figure 2-142 Front-to-back airflow for port-side exhaust

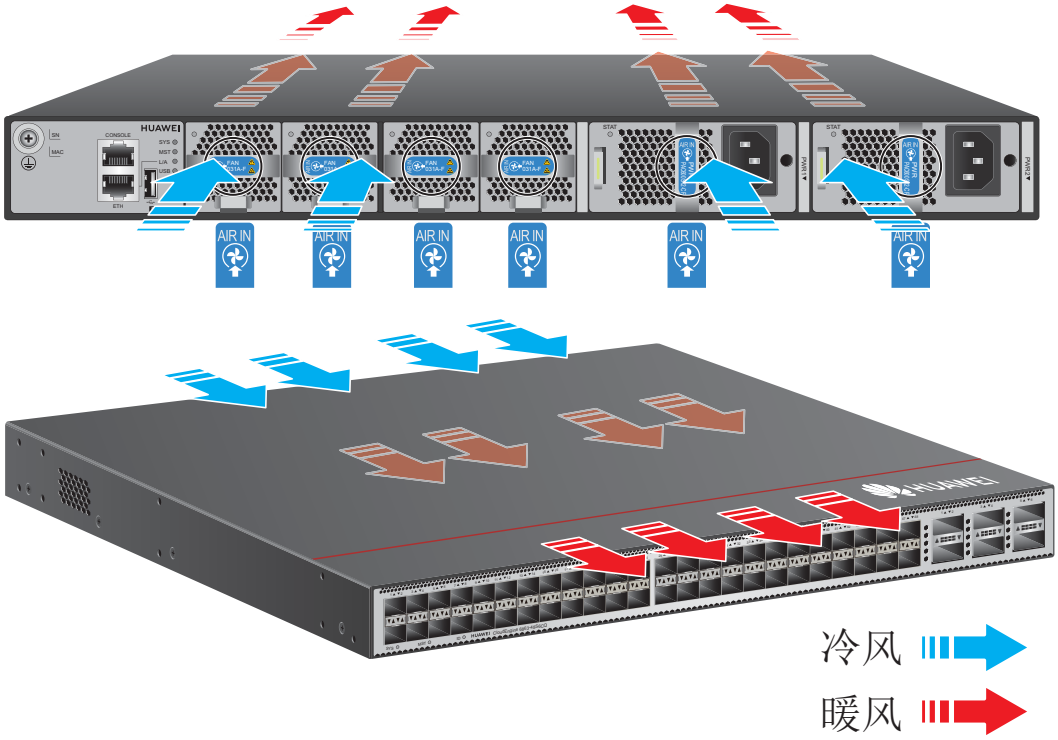
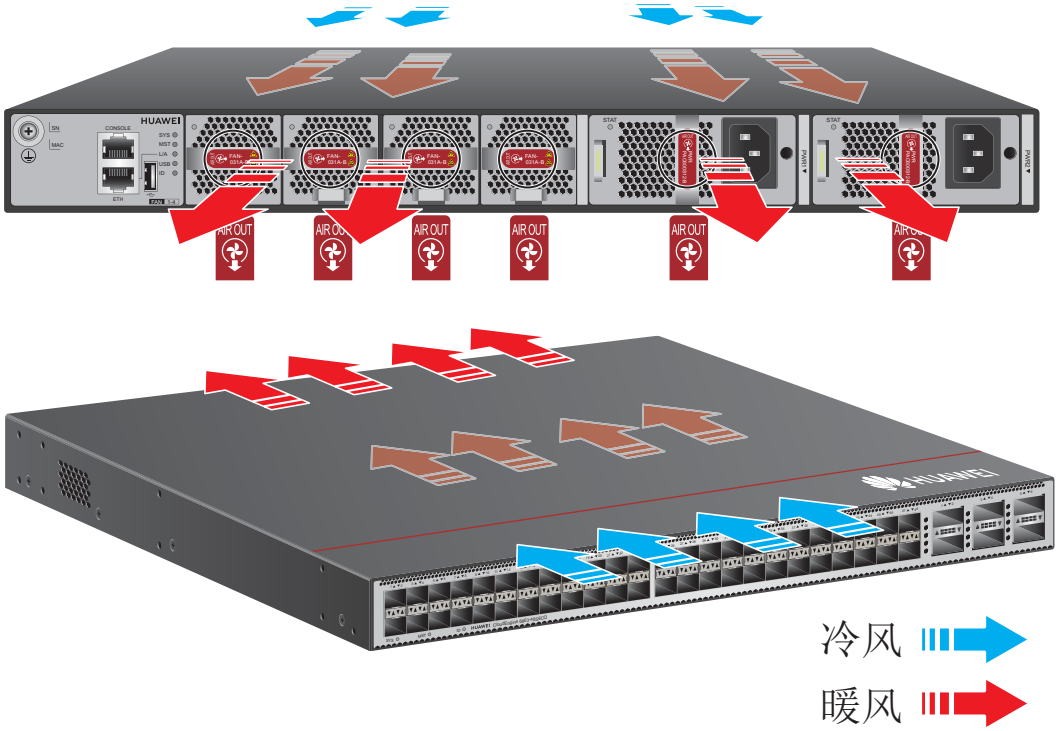


Figure 2-143 Back-to-front airflow for port-side intake



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

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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

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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.

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Table 2-307 Technical specifications

Item		Description
Physical specifications		• Dimensions (H x W x D) – Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 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	• 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)	• Back-to-front airflow: < 57 dBA • Front-to-back airflow: < 58 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	• 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	• 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	• Rated voltage range: 240 V DC • Maximum voltage range: 190 V DC to 290 V DC

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Item		Description
	Rated input current	• 600 W AC&240 V DC power module (PAC600S12 series): – 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	• 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	• 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: • 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

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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		• 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.

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Table 2-308 Ordering information

Part Number	Part Model	Part Description
02353JAQ	CE6881-48S6CQ-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

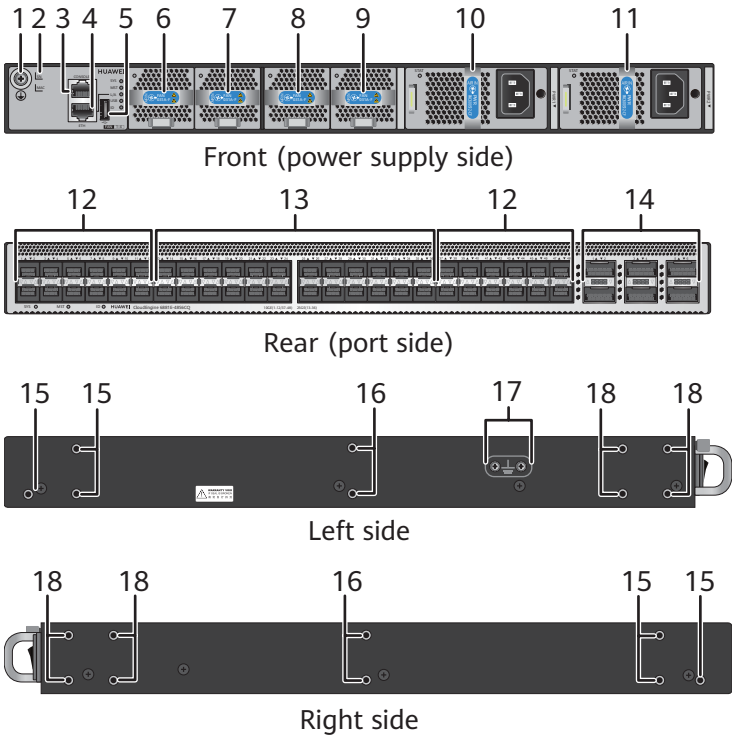
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE6800	CE6881E	CE6881E-48S6CQ	CE6881E	V200R019C10 and later

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-144 CE6881E-48S6CQ



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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

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13	Twenty-four 10GE/25GE SFP28 Ethernet optical ports Applicable modules and cables: • 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 **NOTE** 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. 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.	14	Six 40GE/100GE QSFP28 Ethernet optical ports Applicable modules and cables: • 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.) **NOTE** 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. 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.
15	Three port-side mounting holes for mounting brackets	16	Two middle mounting holes for mounting brackets
17	Equipotential bonding Ground screws for a ground cable with a two-hole OT terminal	18	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.

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- 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).

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Figure 2-145 Front-to-back airflow for port-side exhaust

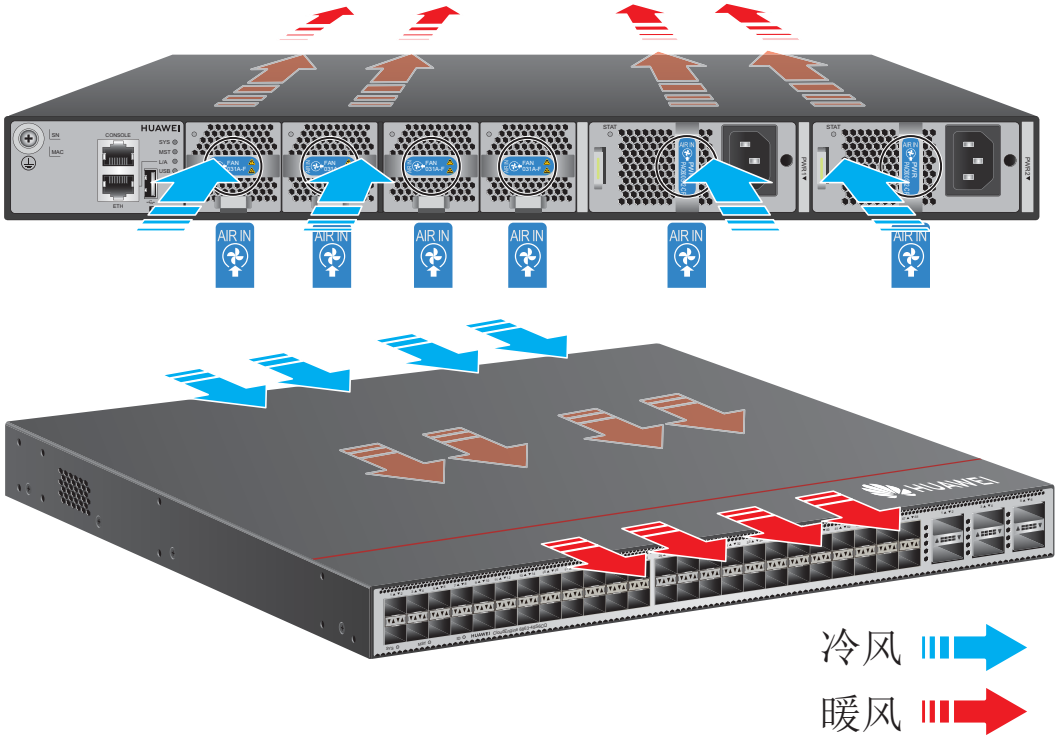
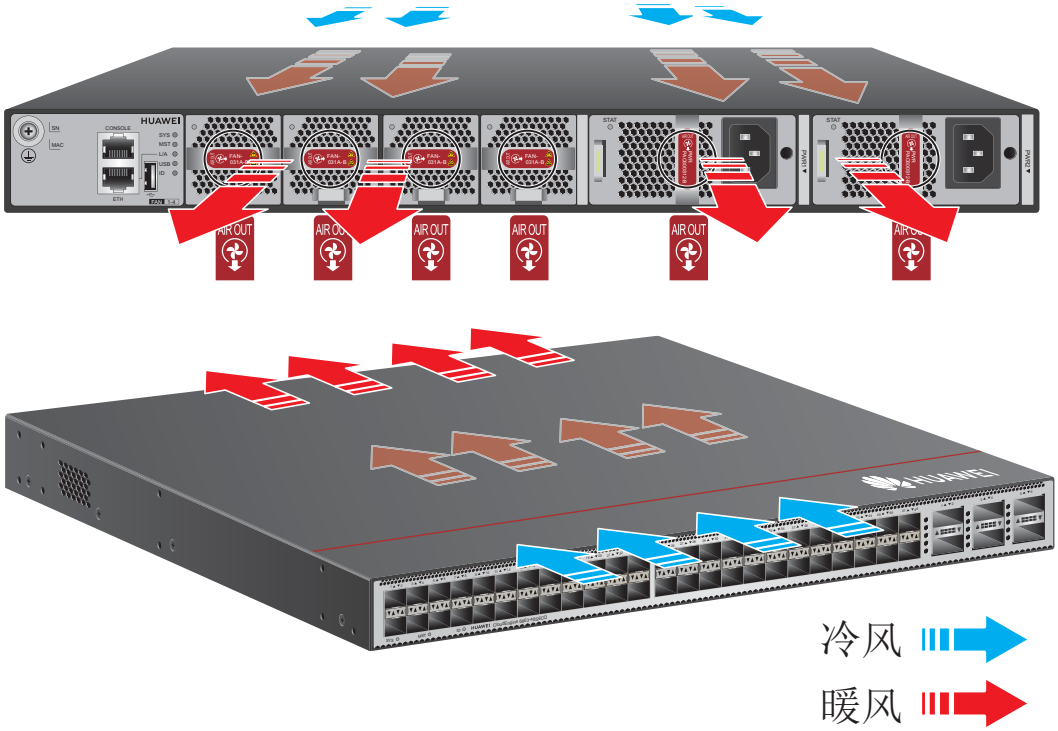


Figure 2-146 Back-to-front airflow for port-side intake



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

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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

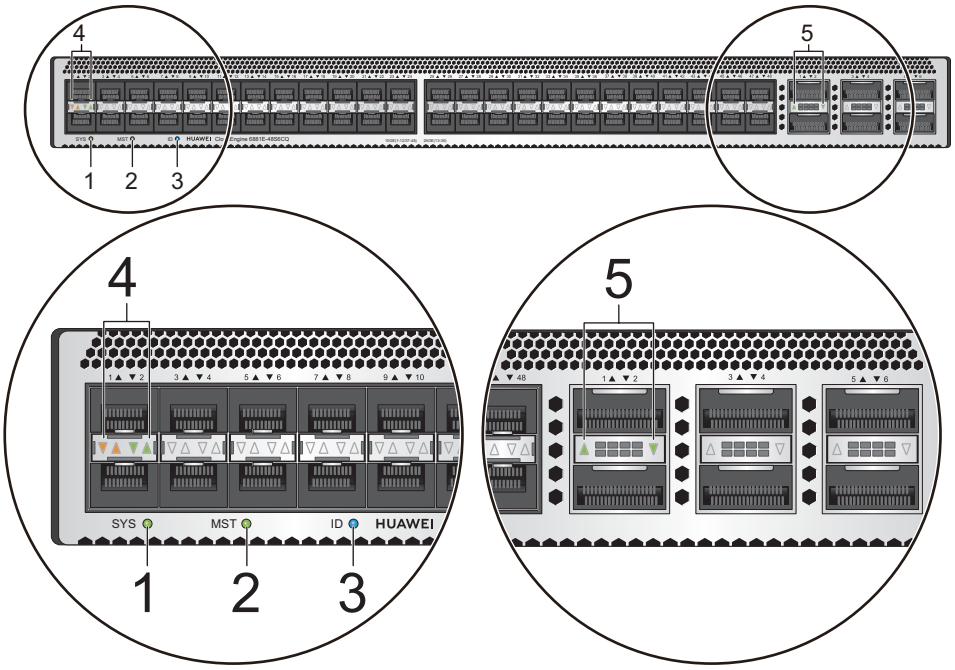

Figure 2-148 Indicators on the CE6881E-48S6CQ front panel

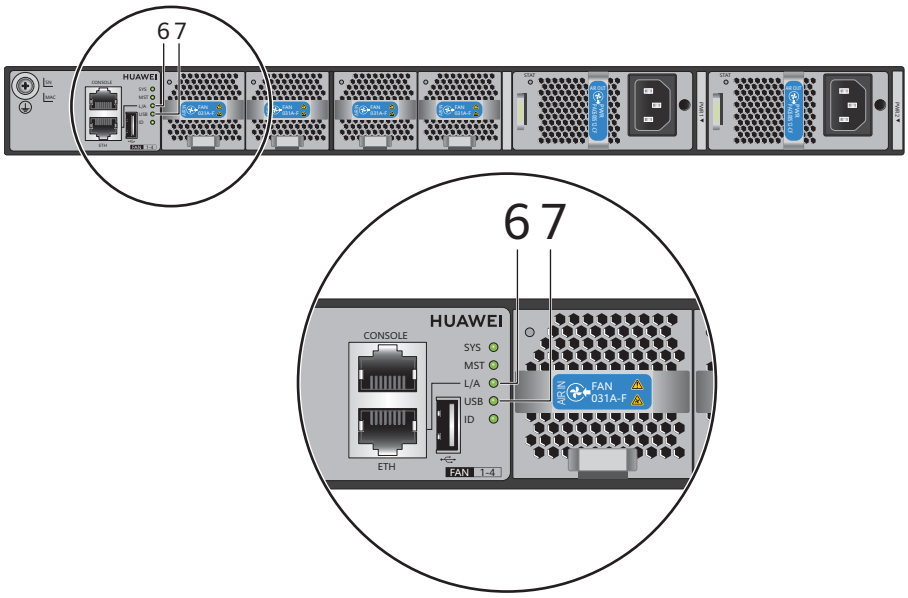

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Table 2-310 Indicator description

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	• 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 **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.

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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.

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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

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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	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. 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. • 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

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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).

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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	• Dimensions (H x W x D) – Basic dimensions (excluding the parts protruding from the body): 43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.4 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 58 dBA • Front-to-back airflow: < 57 dBA
Power specifications	Power source type	AC/DC/HVDC
	AC power input	• 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	• 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	• 600 W AC&240 V DC power module (PAC600S12 series): – 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): – Rated voltage range: 240 V DC to 380V DC – Maximum voltage range: 190 V DC to 400 V DC

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Item		Description
	Rated input current	• 600 W AC&240 V DC power module (PAC600S12 series): – 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	• 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	• 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: • 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

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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		• 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.

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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

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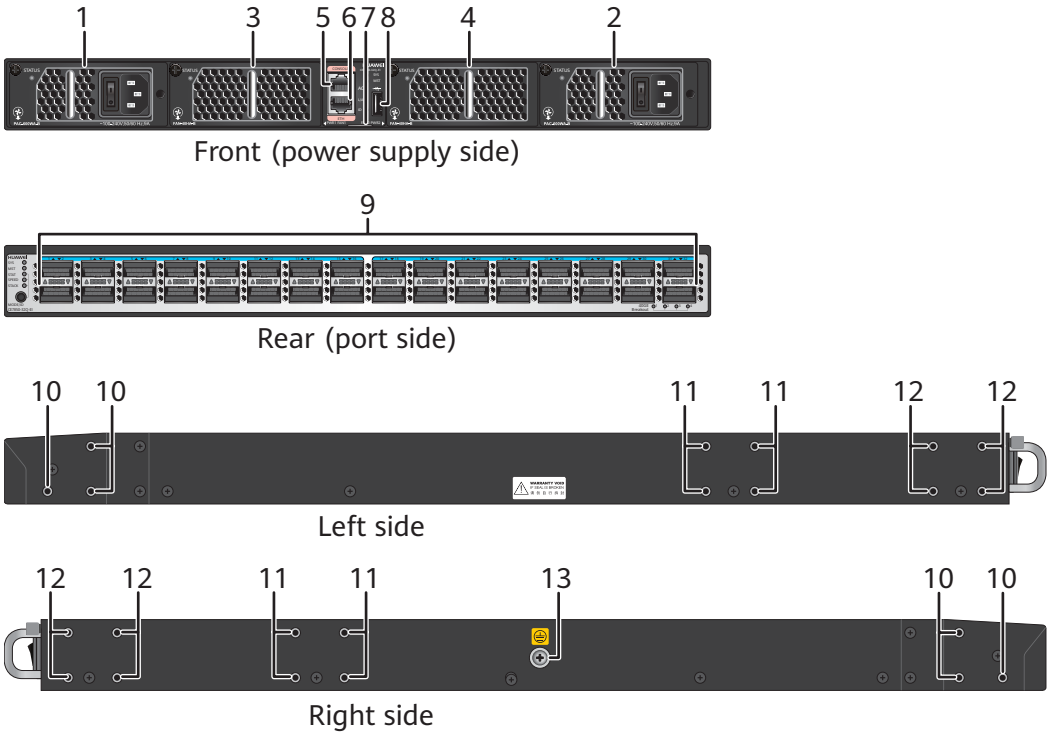
Figure 2-149 CE7850-32Q-EI



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

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9	Thirty-two 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+)**	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

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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 2-150** (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 2-151** (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 2-150 Front-to-back airflow (air flows out from the port side)

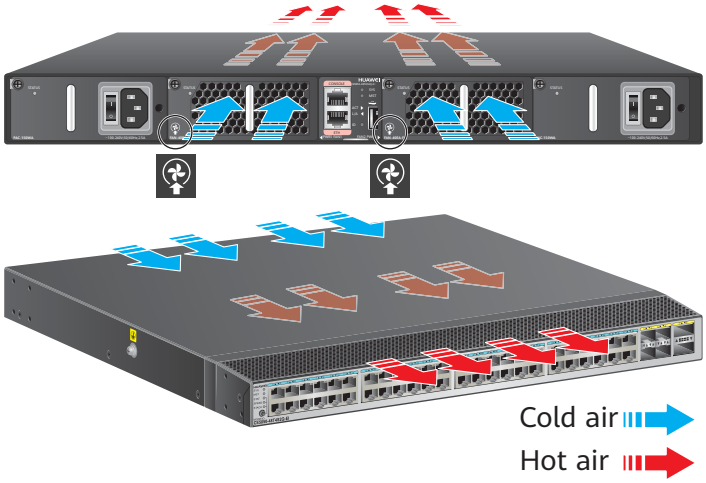

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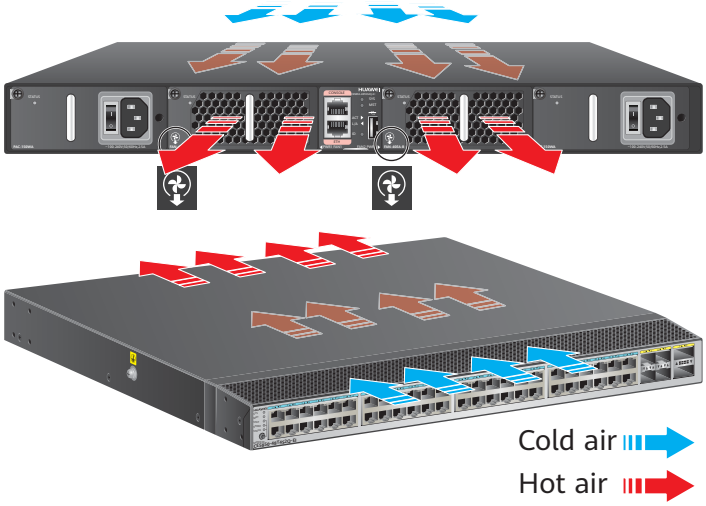
Figure 2-151 Back-to-front airflow (air flows in from the port side)



Indicators

Figure 2-152 Indicators on the CE7850-32Q-EI rear panel

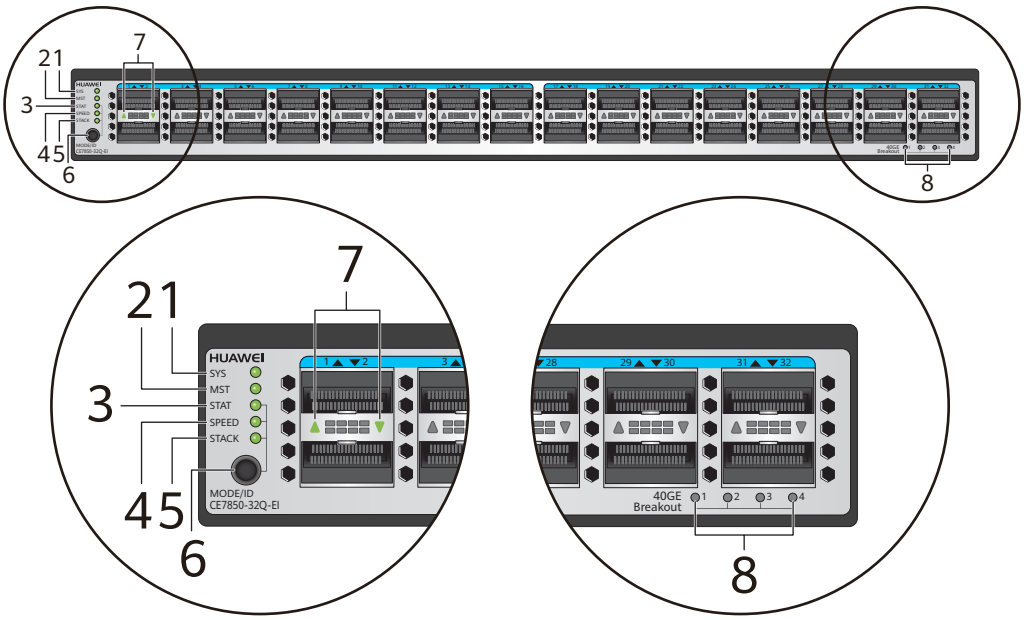


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Figure 2-153 Indicators on the CE7850-32Q-EI front panel

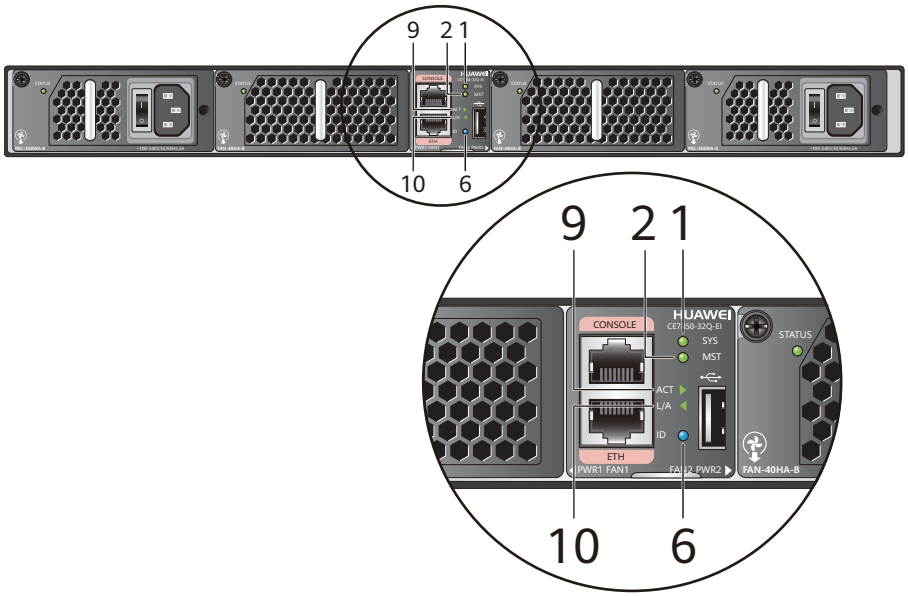

Table 2-319 Indicator description

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.
			Red	Steady on	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.	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.
				Steady on	The STACK mode is selected, and service port indicators show the stack member ID of the local switch.

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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	-	• 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	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.
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.		

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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.

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No.	Indicator	Name	Color	Status	Description
				Steady on	At least one 40GE port has been split into four 10GE ports. 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: • 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. 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. • 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

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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	• Steady on: A link is established on the port. • Blinking: The port is sending or receiving data.

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Display Mode	Port	Color	Description
SPEED	40GE optical port	-	Off: The port is not connected or has been shut down.
		Green	• Steady on: The 40GE port has been split into four 10GE ports. • Blinking: The port is working as a 40GE port.
STACK	Green **NOTE** This row describes the states and meanings of port indicators on a switch working in stack mode.		• 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).
	Green **NOTE** This row describes the states and meanings of port indicators on a switch working in super virtual fabric (SVF) mode.		• 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.

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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).

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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		• 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	• 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)	• Back-to-front airflow: < 55 dBA • Front-to-back airflow: < 54 dBA

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Item		Description
Power specifications	Power source type	AC
	AC power input	• 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

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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		• 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)

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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

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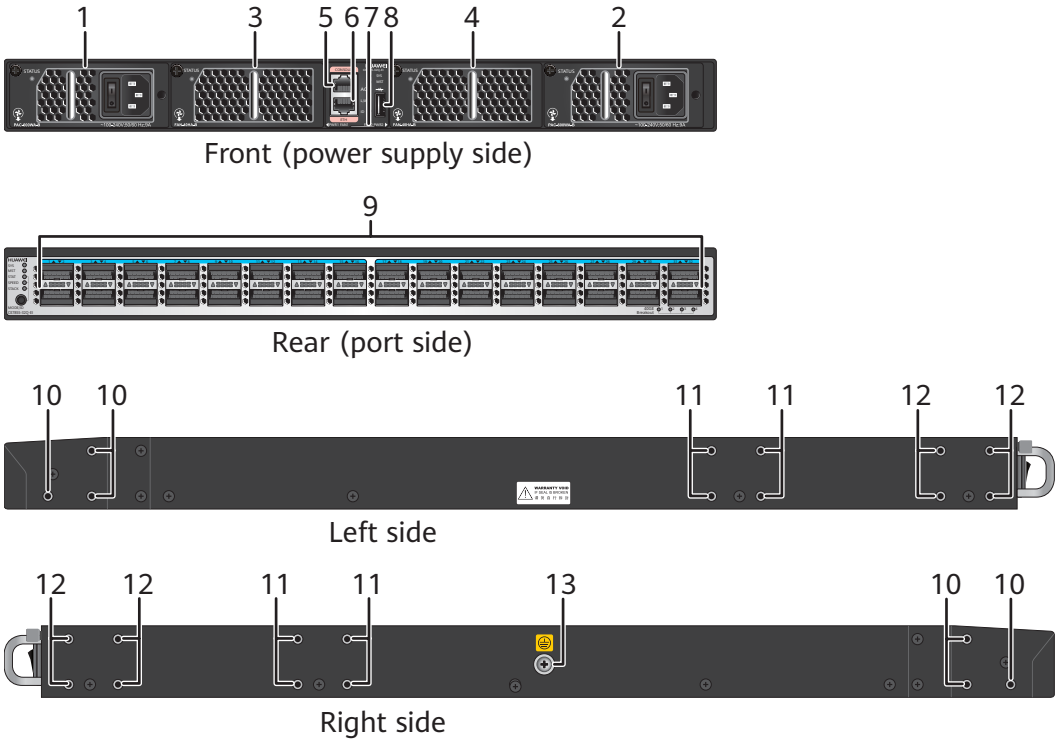
Figure 2-154 CE7855-32Q-EI



1	Power supply slot 1 Applicable power modules: • **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: • **3.6 600 W AC Power Module (PAC-600WA)** • **3.11 600 W DC Power Module (PDC600S12)**
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

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9	Thirty-two 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: • **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+)**	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.

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  - 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.

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Figure 2-155 Front-to-back airflow (air flows out from the port side)

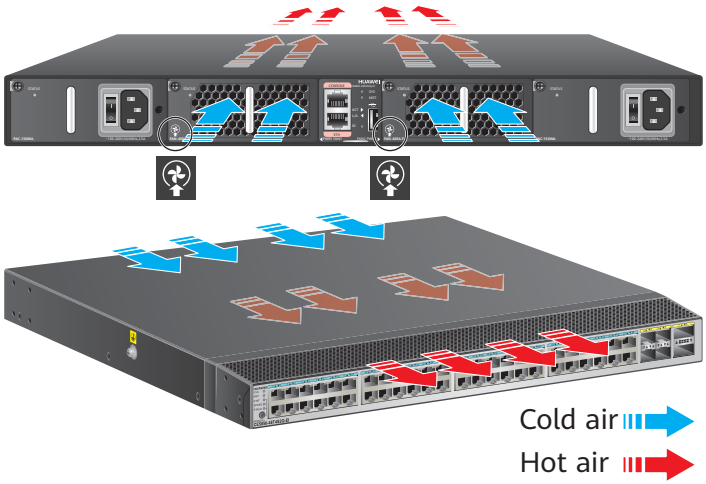
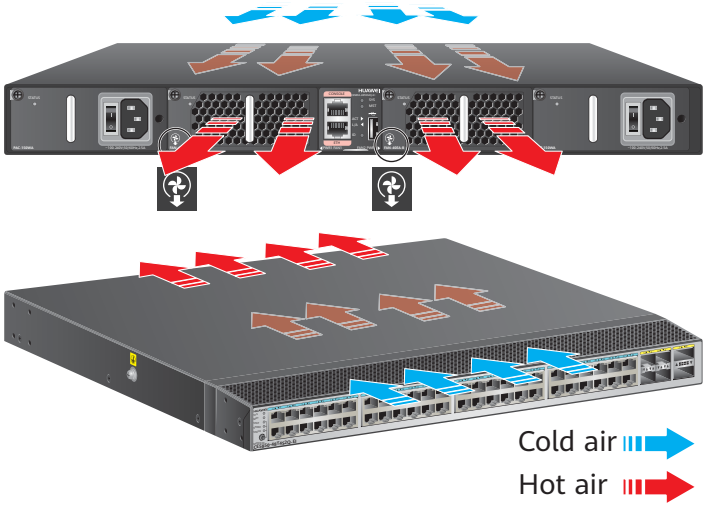


Figure 2-156 Back-to-front airflow (air flows in from the port side)



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.

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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

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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		• 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	• 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)	• Back-to-front airflow: < 55 dBA • Front-to-back airflow: < 54 dBA
Power specifications	Power source type	AC
	AC power input	• 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

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Item		Description
	DC power input	• 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	• 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

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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		• 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

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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

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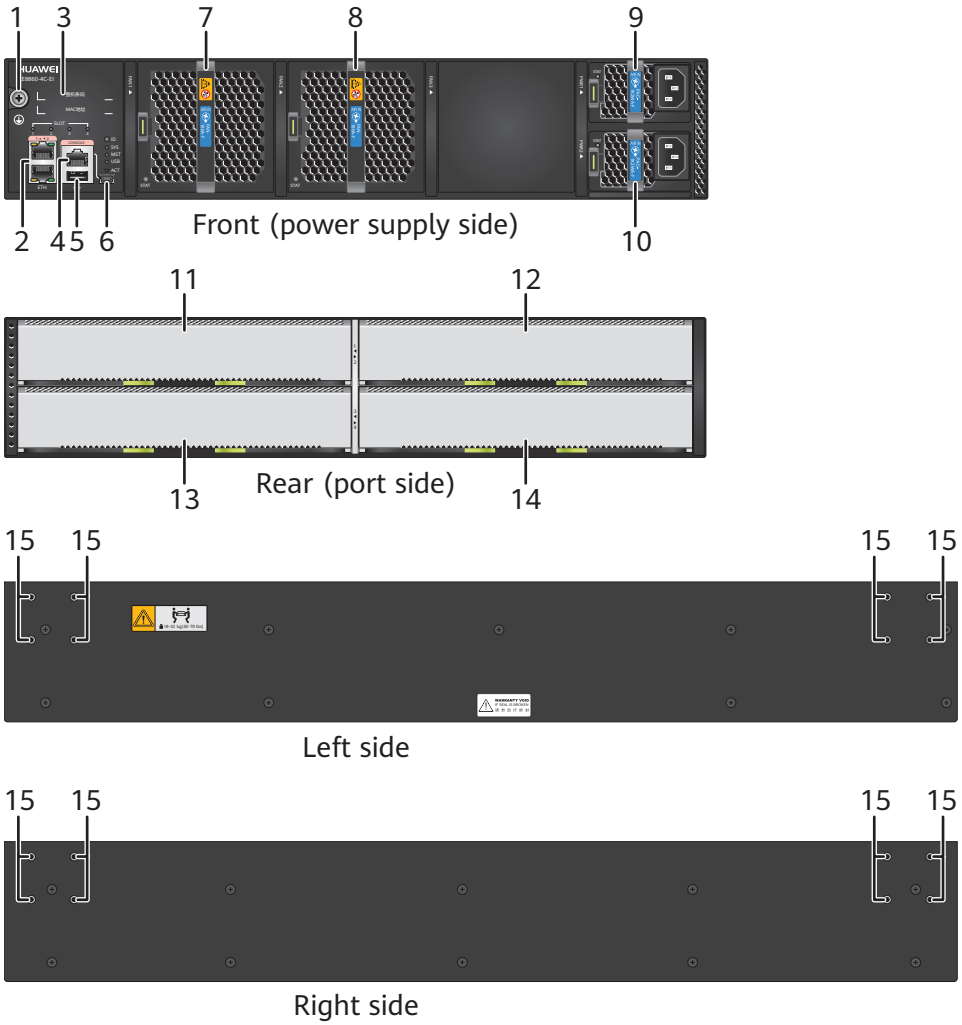
Figure 2-157 CE8860-4C-EI



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**

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9	Power supply slot 1 Applicable power modules: • **1200 W AC&240 V DC power module** • **1200 W high-voltage DC power module** • **1200 W DC power module**	10	Power supply slot 2 Applicable power modules: • **1200 W AC&240 V DC power module** • **1200 W high-voltage DC power module** • **1200 W DC power module**
11	Extended card slot 1 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**	12	Extended card slot 2 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**
13	Extended card slot 3 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**	14	Extended card slot 4 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**
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

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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.

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Figure 2-158 Front-to-back airflow (air flows out from the port side)

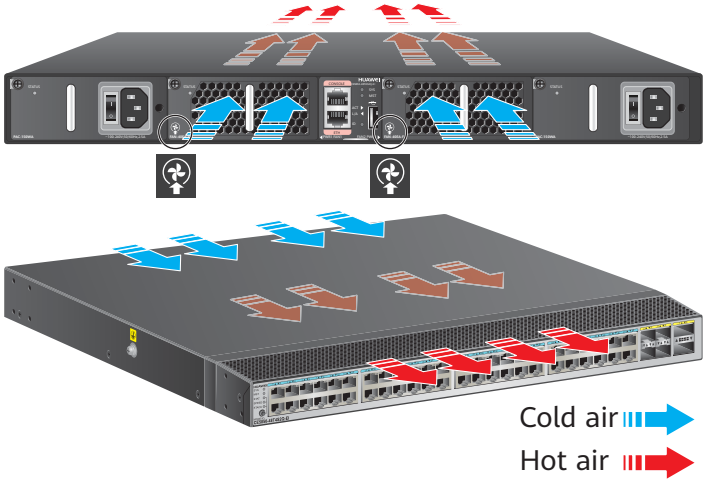
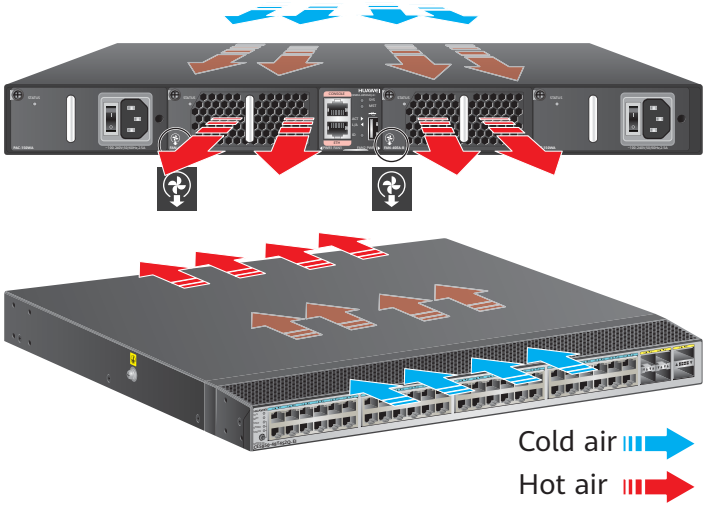


Figure 2-159 Back-to-front airflow (air flows in from the port side)



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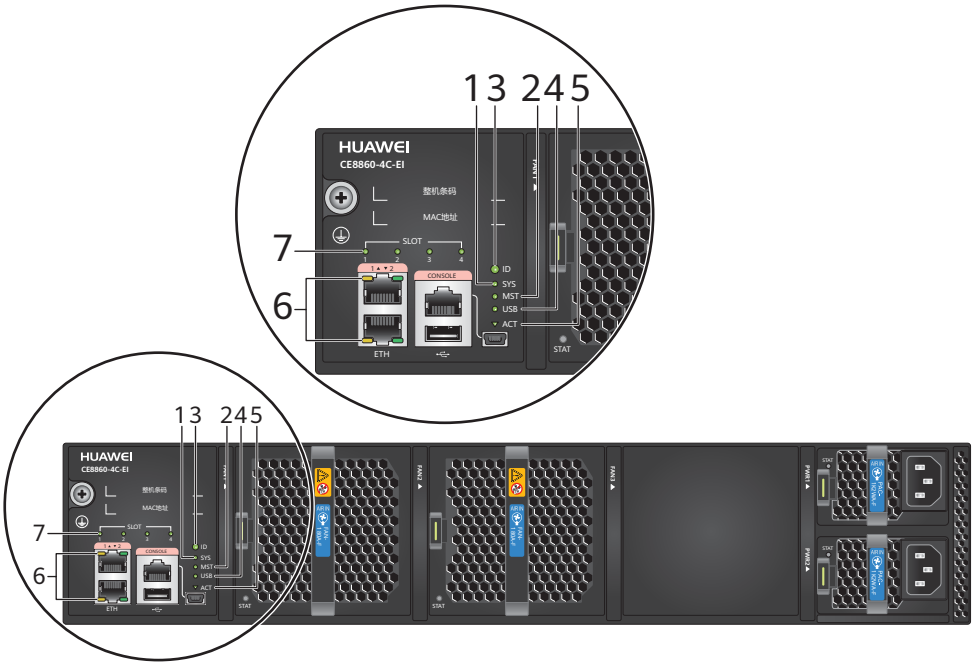
Indicators

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	• The system fails to start. • At least one power module does not work normally. • At least one fan module does not work normally.

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No.	Indicator	Name	Color	Status	Description
2	MST	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	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.

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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	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 2-334** describes the attributes of the console port.

Table 2-334 Attributes of the console port

Attribute	Description
Connector type	RJ45
Standards compliance	RS232

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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.

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- 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		• 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	• 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

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Item		Description
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• 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	• 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	• 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	• 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	• 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	• 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

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Item		Description
	Typical power consumption	• 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	• 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

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Item		Description
	Typical heat dissipation	• 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: • 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

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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		• 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)

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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.

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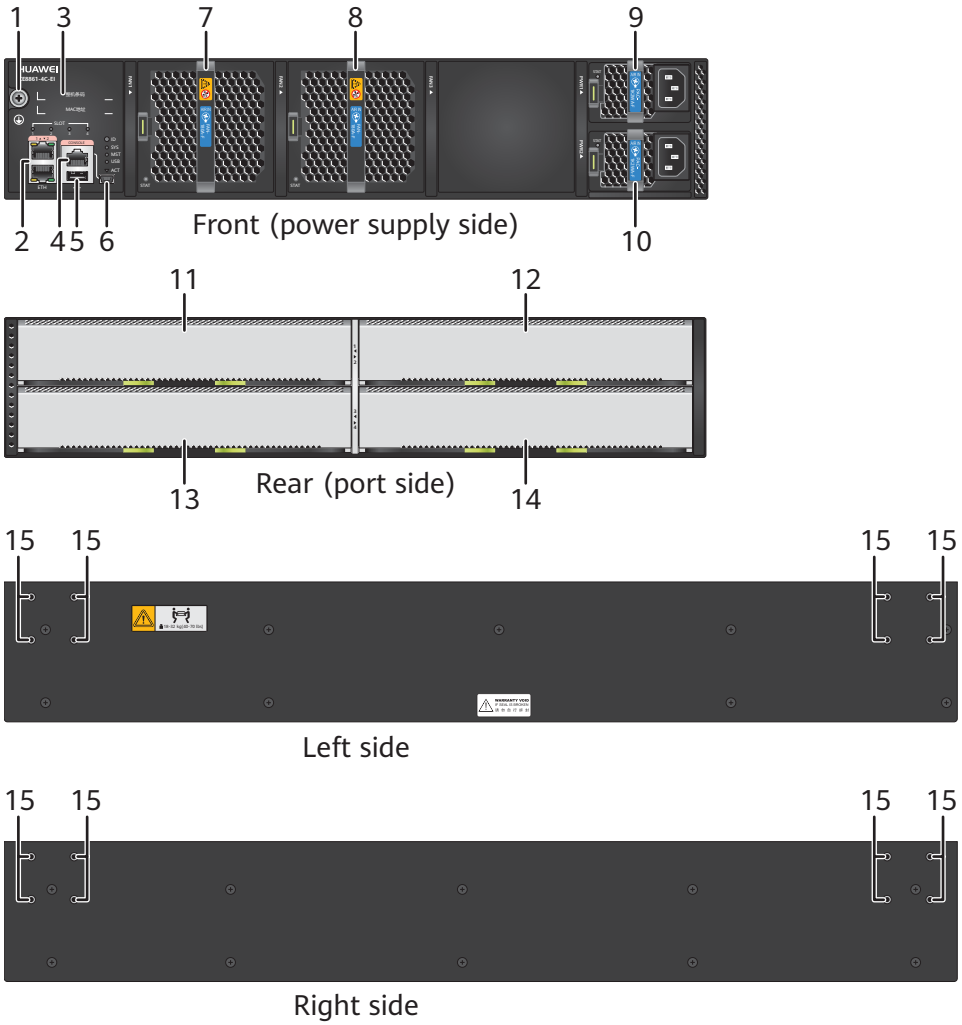
Figure 2-161 CE8861-4C-EI



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

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9	Power supply slot 1 Applicable power modules: • 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: • 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: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**	12	Extended card slot 2 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**
13	Extended card slot 3 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**	14	Extended card slot 4 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ** • **CE88-D24S2CQ-U**
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.

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- 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 2-162** (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.

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Figure 2-162 Front-to-back airflow (air flows out from the port side)

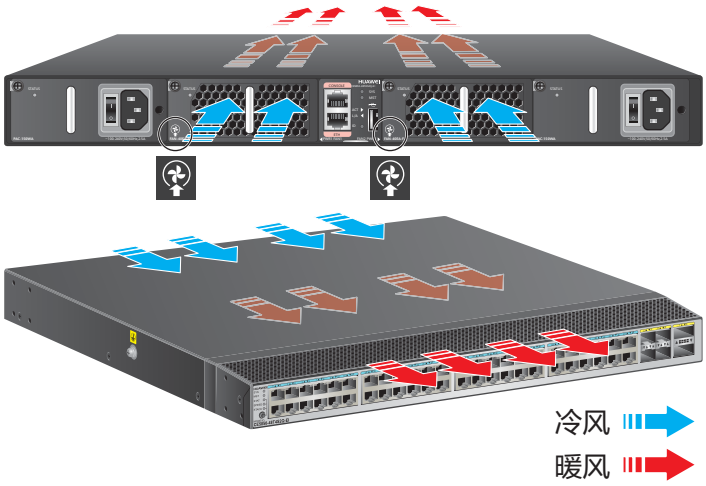
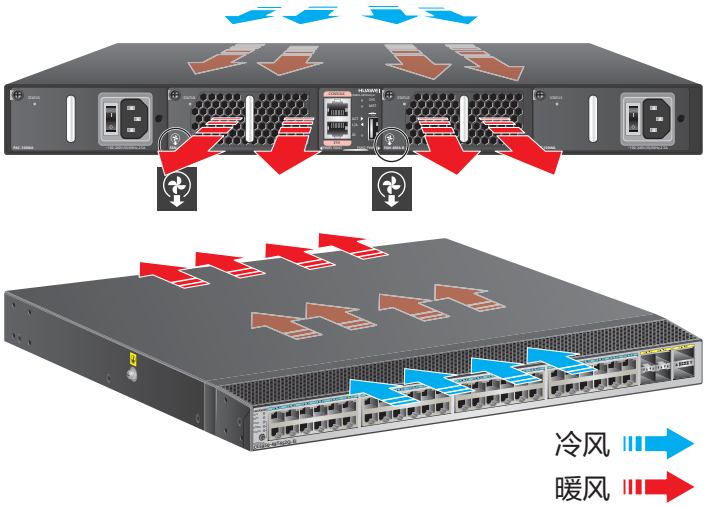


Figure 2-163 Back-to-front airflow (air flows in from the port side)



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.

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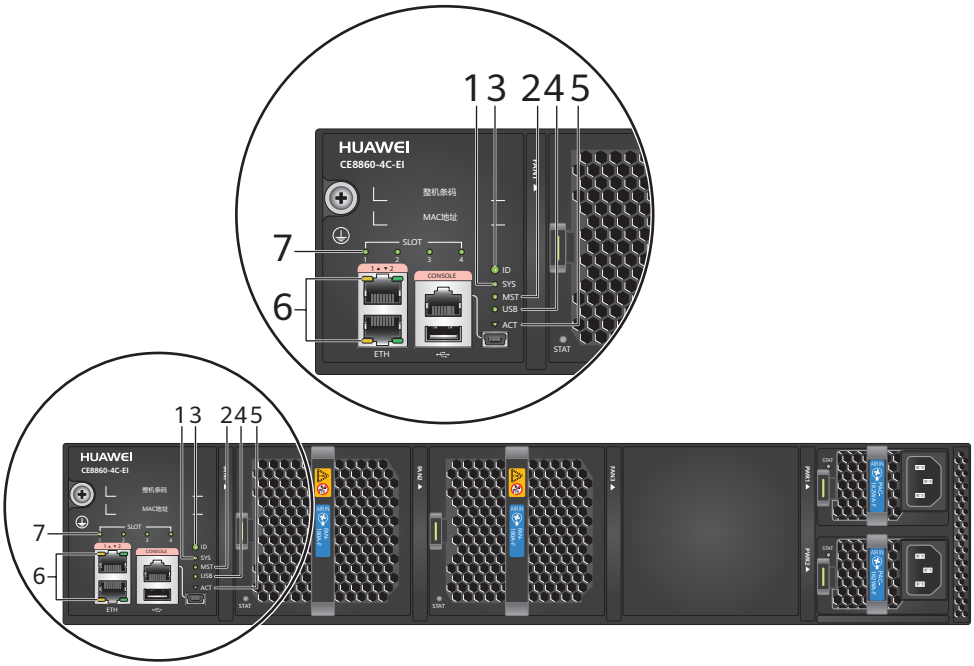
Figure 2-164 Indicators on the CE8861-4C-EI front panel



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	• 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.

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No.	Indicator	Name	Color	Status	Description
		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.		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.

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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)

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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*.

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- 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		• 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	• 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.)

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Item		Description
	Noise (sound pressure, 27°C)	• 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	• 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	• 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	• 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	• 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	• 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

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Item		Description
	Typical power consumption	• 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	• 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

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Item		Description
	Typical heat dissipation	• 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: • 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

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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		• 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.

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Table 2-344 Version mapping

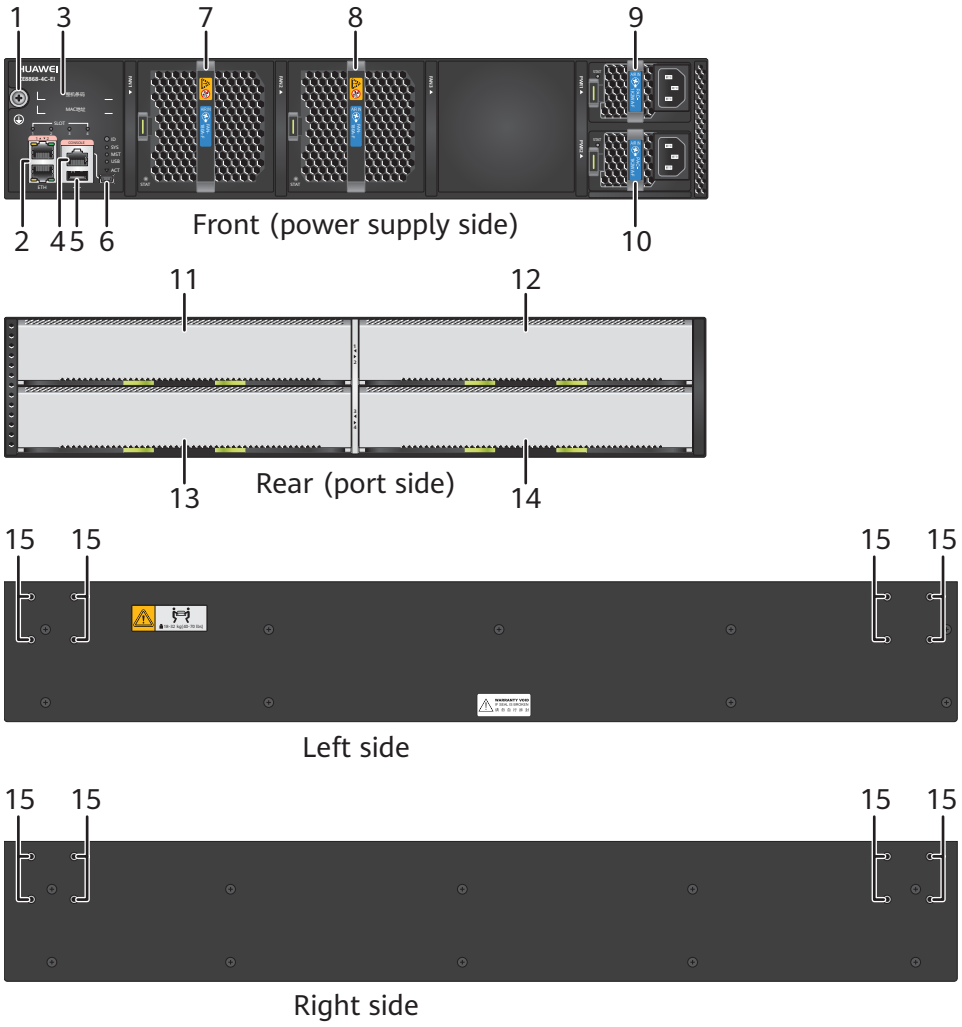
Device Series	Sub-series	Device Model	Short Name	Supported Version
CE8800	CE8868	CE8868-4C-EI	CE8868EI	V200R005C10 to V200R019C10 **NOTE** This model is not supported in V200R005C20.

Appearance and Structure

NOTE

The figures in this document are for reference only.

Figure 2-165 CE8868-4C-EI



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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: • 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: • 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: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ**	12	Extended card slot 2 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ**
13	Extended card slot 3 Applicable cards: • **CE88-D8CQ** • **CE88-D16Q** • **CE88-D24T2CQ** • **CE88-D24S2CQ**	14	Extended card slot 4 Applicable cards: • **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.

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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.

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Figure 2-166 Front-to-back airflow (air flows out from the port side)

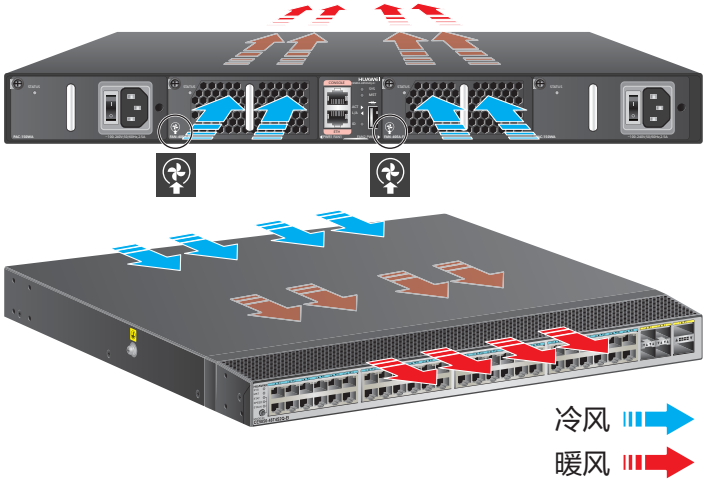
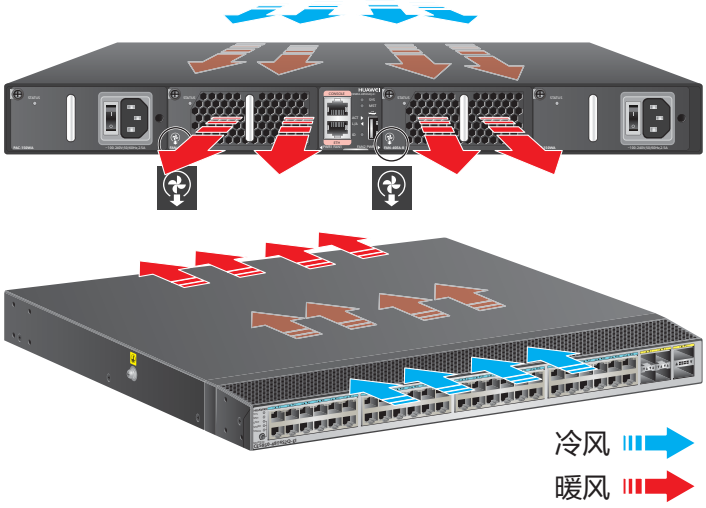


Figure 2-167 Back-to-front airflow (air flows in from the port side)



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

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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:

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- 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		• 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	• 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)

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Item		Description
	Relative humidity	5% RH to 95% RH, noncondensing
	Altitude	< 5000 m (16404 ft.)
	Noise (sound pressure, 27°C)	• 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	• 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	• 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	• 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	• 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	• 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

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Item		Description
	Typical power consumption	• 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	• 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	• 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: • 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

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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		• 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.

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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

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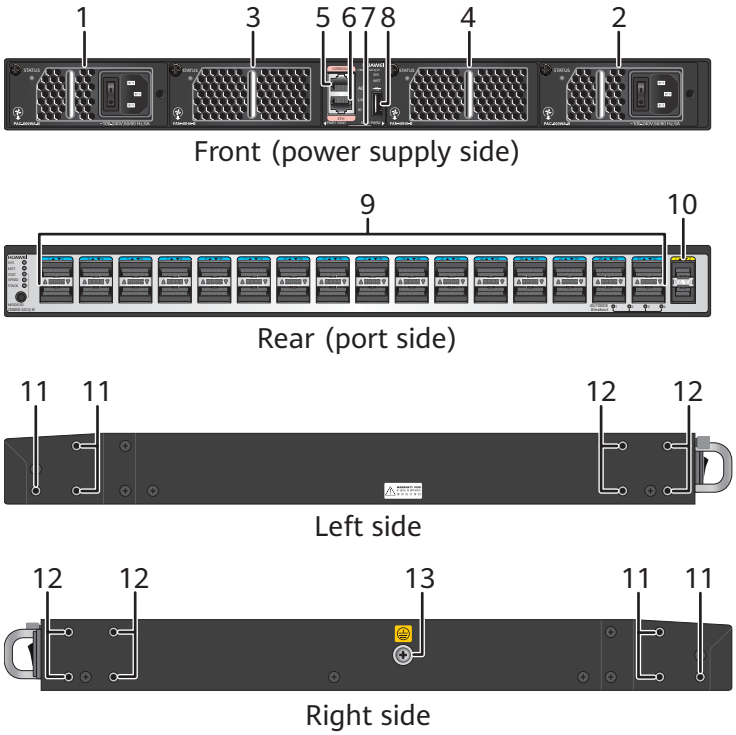
Figure 2-168 CE8850-32CQ-EI



1	Power supply slot 1 Applicable power modules: • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12)	2	Power supply slot 2 Applicable power modules: • 600 W AC Power Module (PAC-600WA) • 600 W DC Power Module (PDC600S12)
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.	8	USB port

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9	Thirty-two 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: ● 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	10	Two 10GE SFP+ Ethernet optical ports Applicable modules and cables: ● 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
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,

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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.

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Figure 2-169 Front-to-back airflow (air flows out from the port side)

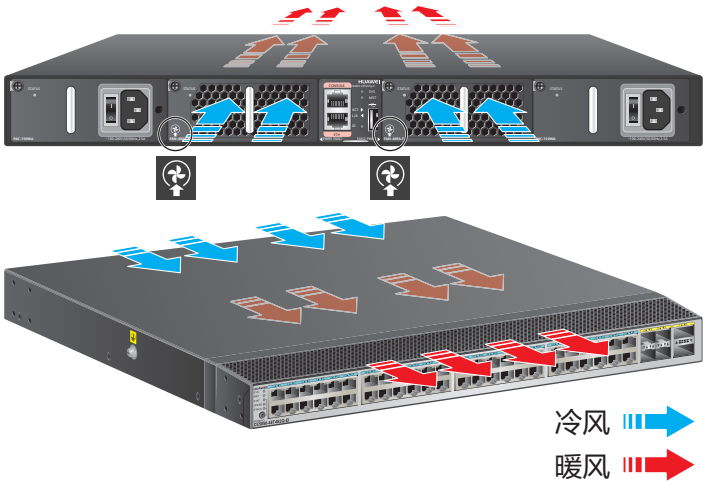
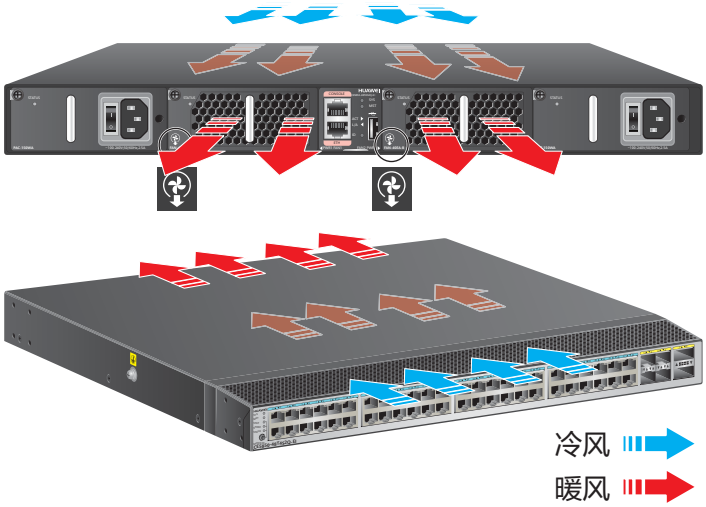


Figure 2-170 Back-to-front airflow (air flows in from the port side)



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.

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Figure 2-171 Indicators on the CE8850-32Q-EI rear panel

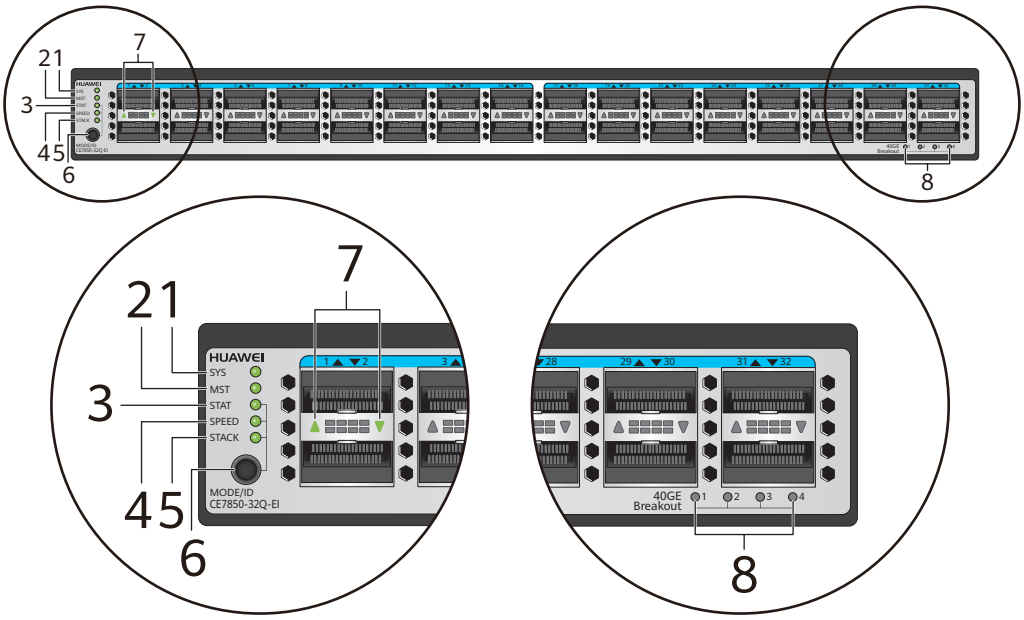

Figure 2-172 Indicators on the CE8850-32Q-EI front panel

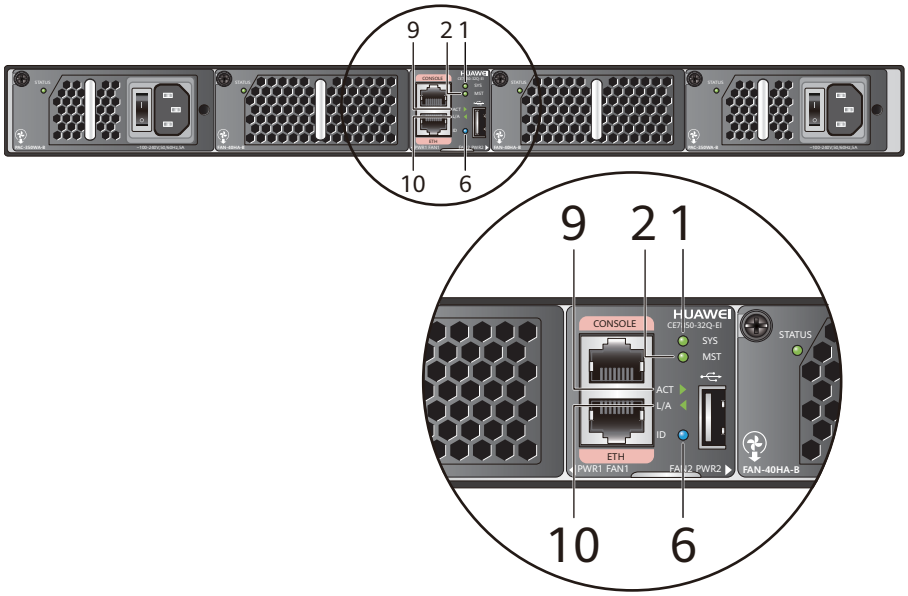

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Table 2-350 Indicator description

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	• 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 **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	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.

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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	-	• 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	The ID indicator is not used (default state).

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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.

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No.	Indicator	Name	Color	Status	Description
				Steady on	At least one 40GE port has been split into four 10GE ports. 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: • 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. 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. • 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

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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	• Steady on: A link is established on the port. • Blinking: The port is sending or receiving data.

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Display Mode	Port	Color	Description
SPEED	40GE optical port	-	Off: The port is not connected or has been shut down.
		Green	• Steady on: The 40GE port has been split into four 10GE ports. • Blinking: The port is working as a 40GE port.
STACK	Green **NOTE** This row describes the states and meanings of port indicators on a switch working in stack mode.		• 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).
	Green **NOTE** This row describes the states and meanings of port indicators on a switch working in super virtual fabric (SVF) mode.		• 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.

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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

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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	• 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)

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Item		Description
Environment parameters	Temperature	• 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)	• Back-to-front airflow: < 52 dBA • Front-to-back airflow: < 52 dBA
Power specifications	Power source type	AC
	AC power input	• 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	• 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	• 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

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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: • 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 CE8850EI 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

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Item	Description
Certification	• 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.

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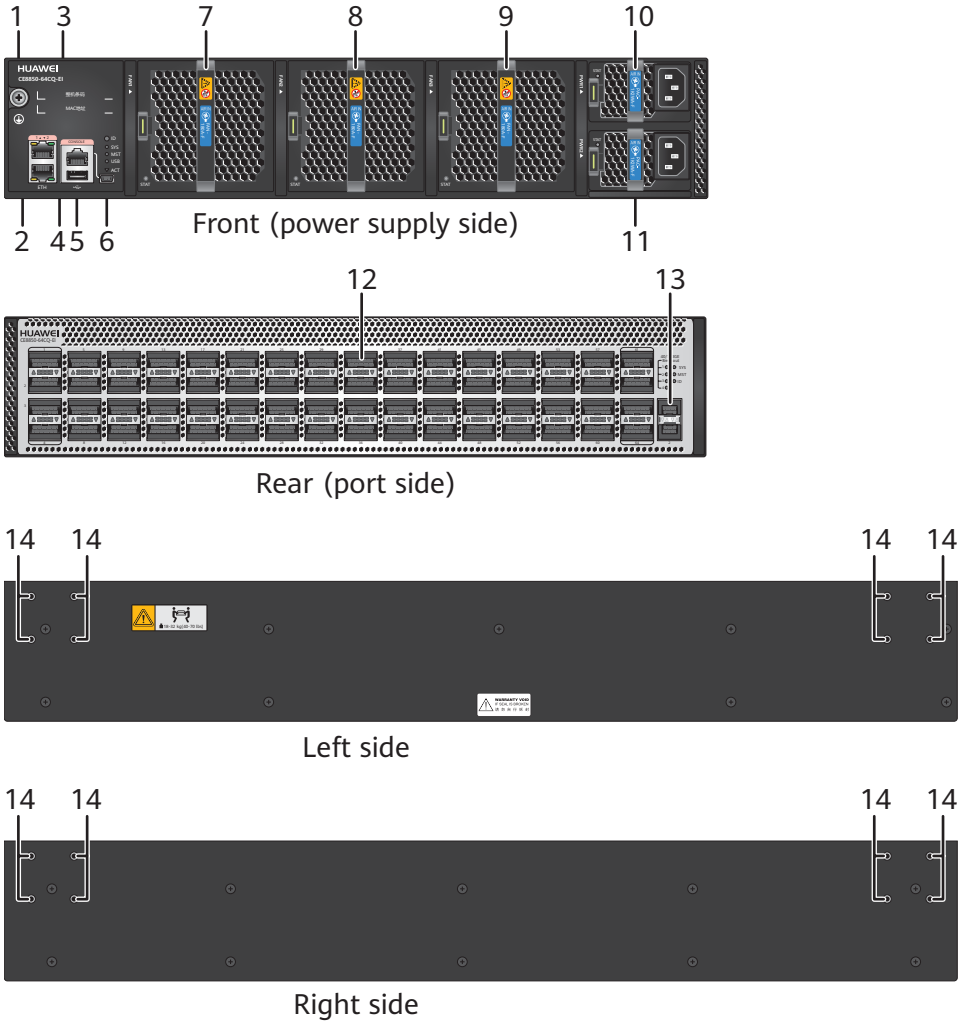
Appearance and Structure

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

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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	Fan slot 3 Applicable fan modules: ● FAN-180A Series Fan Modules	10	Power supply slot 1 Applicable power modules: ● 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) **NOTE** 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: 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.

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11	Power supply slot 2 Applicable power modules: • 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) **NOTE** 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: 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.	12	Sixty-four 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: • 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
13	Two 10GE SFP+ Ethernet optical ports These two ports are reserved for future function expansion and cannot be used currently.	14	Mounting holes for mounting brackets

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.

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- 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.

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Figure 2-174 Front-to-back airflow (air flows out from the port side)

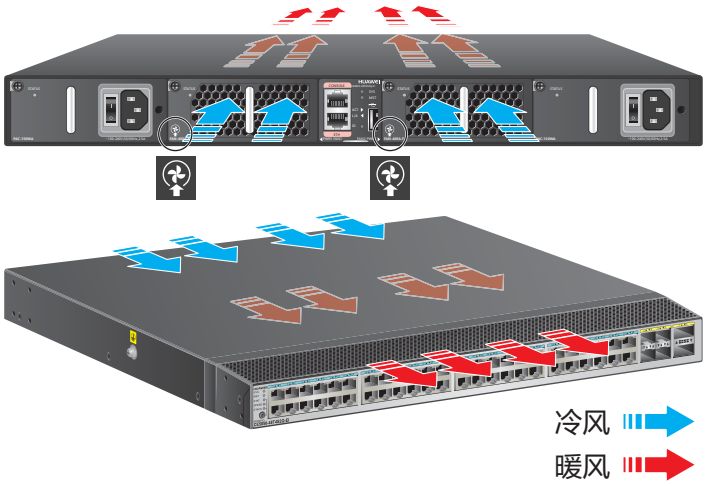
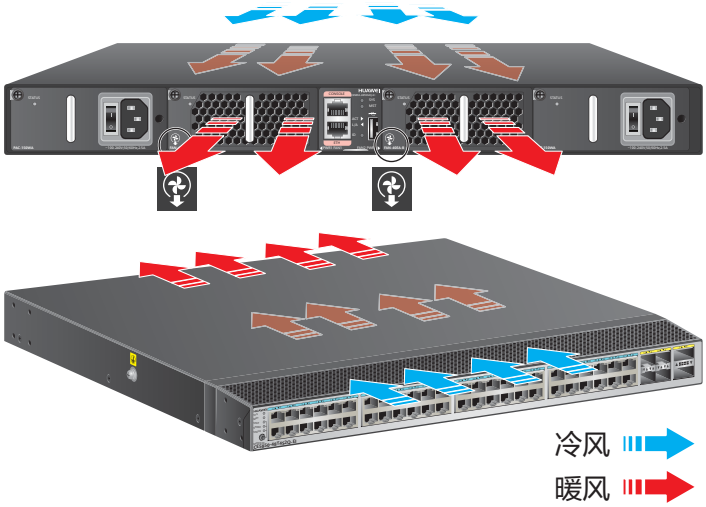


Figure 2-175 Back-to-front airflow (air flows in from the port side)



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Indicators

Figure 2-176 Indicators on the CE8850-64CQ-EI rear panel

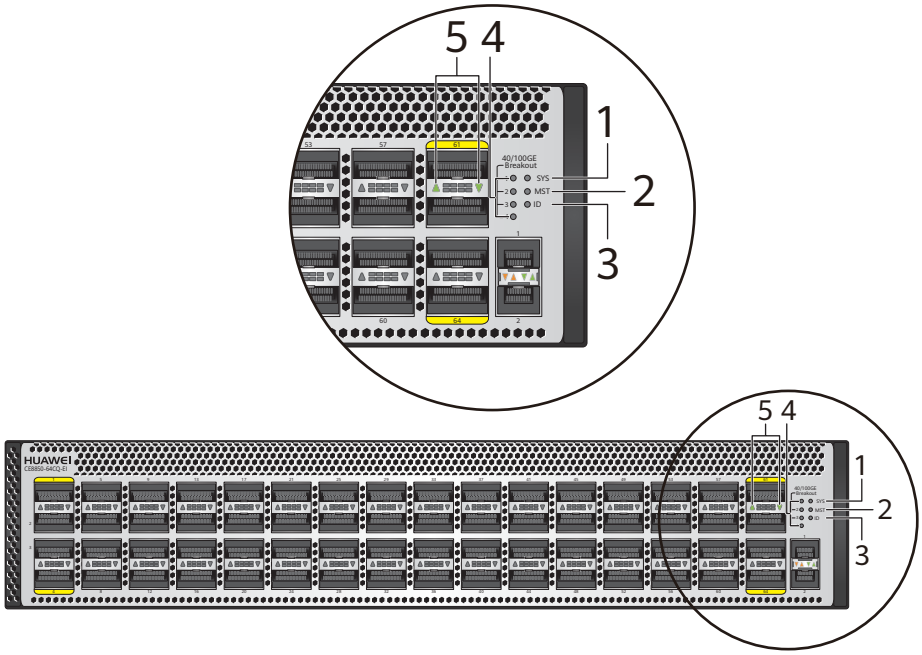

Figure 2-177 Indicators on the CE8850-64CQ-EI front panel

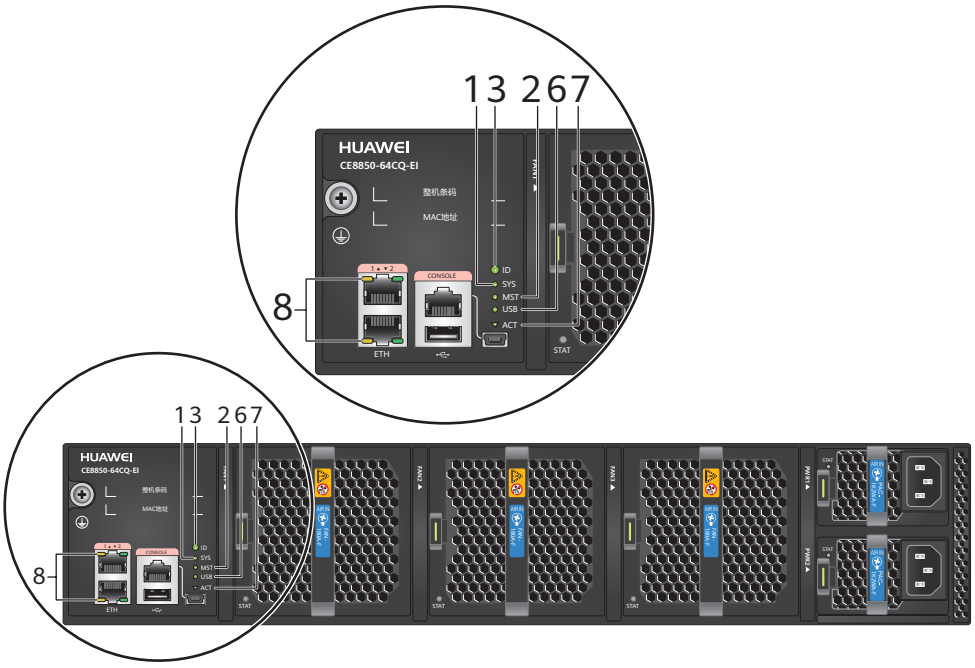

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Table 2-359 Indicator description

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	• 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 **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.

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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: • 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.

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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.

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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

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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.

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Table 2-363 Technical specifications

Item		Description
Physical specifications		• 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	• 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)	• 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	• 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	• 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	• 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

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Item		Description
	Rated input current	• 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: • 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

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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		• 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

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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)

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