7 Cables

7.1 AC Power Cable

Appearance and Structure

Figure 7-1 C13 straight female to PI straight male AC power cable (used in China)

Figure 7-2 C13 straight female to C14 straight male AC power cable (China)

Figure 7-3 Appearance of a power adapter

NOTE

The AC power cables used in different countries and regions have different connector types. **Figure 7-1** use Chinese AC power cables as examples. The power cable and plug delivered with the chassis can only be used on this chassis, and cannot be used on other devices.

Types of AC Power Cables

Select AC power cables based on the power supply system in your equipment room. Standard and country-specific AC power cables can be directly connected to power modules.

- Standard power cables: used to transmit power from a PDU. **Figure 7-4** shows the structure of a C14 straight male to C13 straight female AC power cable.
- Country-specific power cables: used to transmit power from a country-specific power strip. The cables are delivered in compliance with standards of the destination country or region. For example, PI straight male to C13 straight female AC power cable (**Figure 7-5**) is used in China.

- The AC power cables connected to a power distribution box must have cord end terminals. **Figure 7-6** shows the structure of a cord end to C13 straight female AC power cable.

Figure 7-4 Structure of a C14 straight male to C13 straight female AC power cable

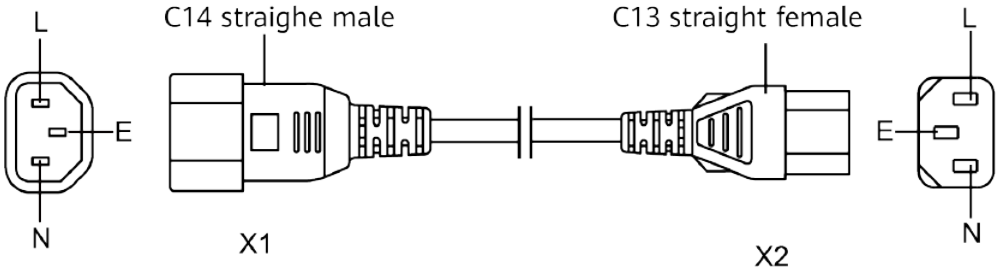


Figure 7-5 Structure of a PI straight male to C13 straight female AC power cable (used in China)

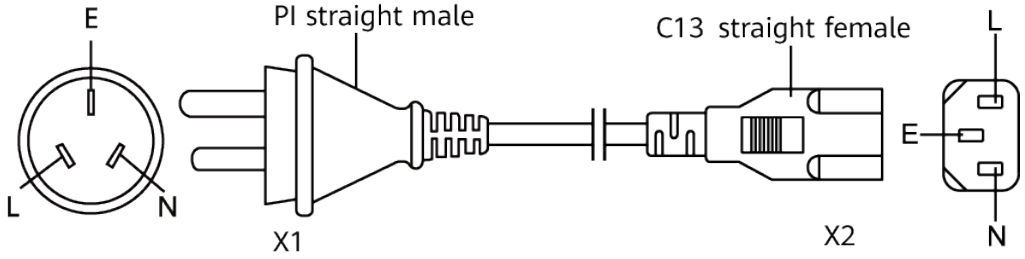
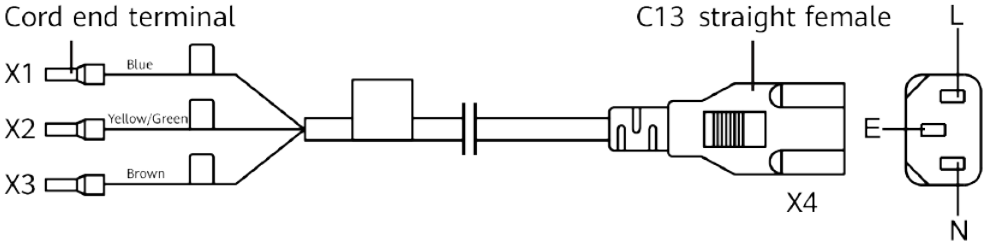


Figure 7-6 Structure of a Cord end to C13 straight female AC power cable (used in China)



Connection

Table 7-1 shows connections of various AC power cables.

Table 7-1 Connections of AC power cables

Power Cable Type	Connector Type and Connection	
C14 straight male to C13 straight female AC power cable	C14 straight male connector: connected to a PDU	C13 straight female connector: connected to the AC power socket on the switch. The current rating of the power cable is 10 A.
PI straight male to C13 straight female AC power cable (used in China)	PI straight male connector: connected to a country-specific power strip	
Cord end to C13 straight female AC power cable (used in China)	Cord end terminal: connected to a power distribution box or power distribution frame. Connect the brown wire to the L terminal, blue wire to the N terminal, and the yellow/green wire to the ground terminal. Different AC power cables may be delivered in compliance with local regulations or customer requirements.	

7.2 DC Power Cable (with Quick-Connect and Cord End Terminals)

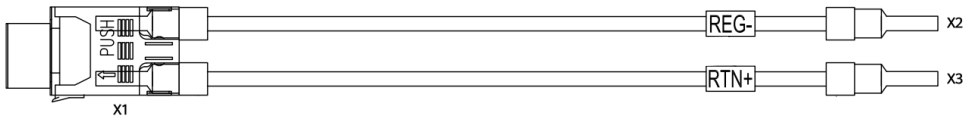
Appearance and Structure

Figure 7-7 shows the appearance of the power cable for a 1200 W DC power module.

Figure 7-7 Appearance of the power cable for a 1200 W DC power module (nylon insulation terminal)

Figure 7-8 shows the structure of the power cable for a 1200 W DC power module.

Figure 7-8 Structure of the power cable for a 1200 W DC power module (nylon insulation terminal)



Pin Assignments

Table 7-2 lists the pin assignments of the power cable for a 1200 W DC power module.

Table 7-2 Pin assignments of the power cable for a 1200 W DC power module (nylon insulation terminal)

X1	X2	X3	Length	Conductor Cross-Sectional Area
2 female	nylon insulation terminal	nylon insulation terminal	3 m	5.26 mm^2 (10AWG)

Connection

A DC power cable connects to the DC power module of the device:

- X1 connector connects to the input port on the DC power module.
- X2/X3 cord end terminal connects to an external power module.

7.3 Ground Cable

Appearance and Structure

Figure 7-9 shows the appearance of a typical ground cable.

NOTE

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

Figure 7-9 Appearance of a ground cable

Figure 7-10 shows the structure of a ground cable.

Figure 7-10 Structure of a ground cable

Pin Assignments

Table 7-3 lists the pin assignments of a ground cable.

Table 7-3 Pin assignments of a ground cable

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

Connection

A ground cable grounds a device to protect it from lightning and electromagnetic interference. A ground cable is connected to a chassis in the following way:

- The OT-4 naked crimping connector connects to the ground point on the chassis.
- The OT-6 naked crimping connector connects to the ground point on the cabinet.

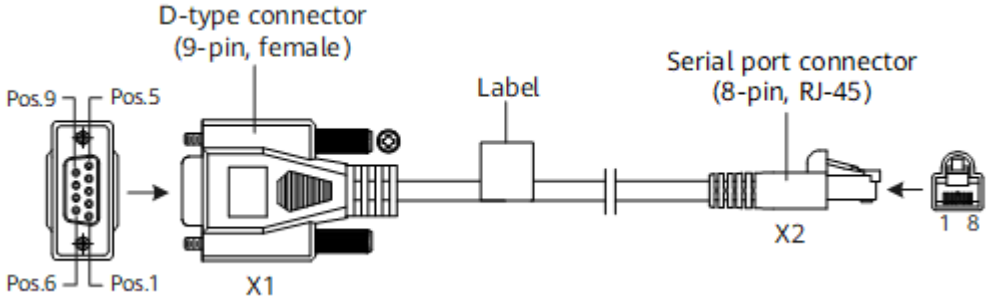
7.4 Console Cable

Appearance and Structure

Figure 7-11 and Figure 7-12 show the appearance and structure of a console cable.

Figure 7-11 Appearance of a console cable

Figure 7-12 Structure of a console cable



Pin Assignments

Table 7-4 lists the pin assignments of console cable connectors.

Table 7-4 Pin assignments of console cable connectors

Connector	X1 (DB9)	X2 (RJ45)
Pin assignment	2	3
	3	6
	5	5

Connection

A console cable connects the console port of the device to the serial port of an operation terminal to transmit configuration data. A shielded cable or an unshielded cable can be used according to the onsite situation.

A console cable connects the device and terminal as follows:

- The 8-pin RJ45 connector is inserted into the console port of the device.
- The DB9 connector is inserted into the terminal serial port.

7.5 Ethernet Cable

Types of Ethernet Cables

An Ethernet cable connects a maintenance terminal to the console port on the device for local or remote maintenance.

Ethernet cables are classified into straight-through cables and crossover cables.

- Straight-through cable: The twisted pairs in the RJ45 connectors at both ends are crimped in the same sequence. A straight-through cable connects two devices of different types, for example, a PC and a switch.
- Crossover cable: The twisted pairs in the RJ45 connectors at two ends are crimped in different sequences. A crossover cable connects two devices or interfaces of the same type, for example, two PCs.

Crossover and straight cables only differ in wire sequences, and function the same when transmitting data.

Huawei S series models support both straight-through and crossover cables and their ports are adaptive to the cable types.

Use shielded Ethernet cables when devices complying with EN 50121-4 are used in environments that meet EN 50121-4 requirements.

Appearance and Structure

NOTE

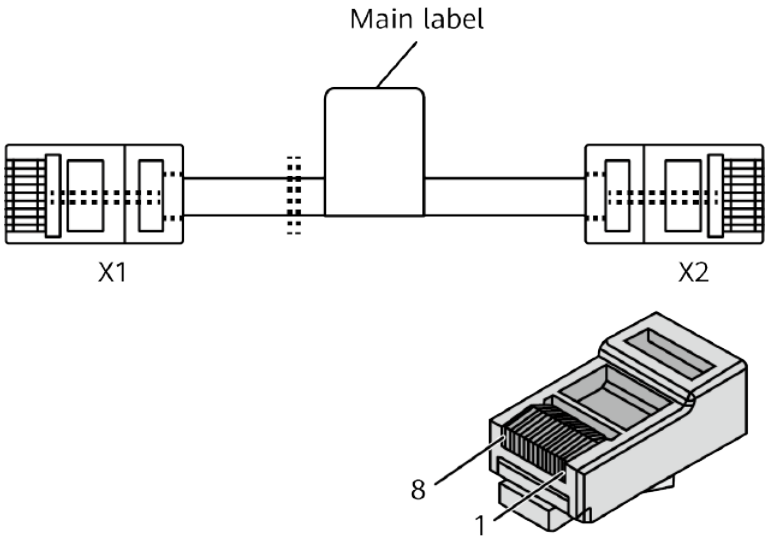
The straight-through cable and the crossover cable have the same appearance and use the RJ45 connector.

Figure 7-13 shows the appearance of an Ethernet cable.

Figure 7-13 Appearance of an Ethernet cable

Figure 7-14 shows the structure of an Ethernet cable.

Figure 7-14 Structure of an Ethernet cable



Pin Assignments

Table 7-5 lists pin assignments of a straight-through cable.

Table 7-5 Pin assignments of a straight-through cable

Connector X1	Connector X2	Color	Relationship
X1.2	X2.2	Orange	Twisted pair
X1.1	X2.1	White/Orange	
X1.6	X2.6	Green	Twisted pair
X1.3	X2.3	White/Green	
X1.4	X2.4	Blue	Twisted pair
X1.5	X2.5	White/Blue	
X1.8	X2.8	Brown	Twisted pair
X1.7	X2.7	White/Brown	

Table 7-6 lists pin assignments of a crossover cable.

Table 7-6 Pin assignments of a crossover cable

Connector X1	Connector X2	Color	Relationship
X1.6	X2.2	Orange	Twisted pair
X1.3	X2.1	White/Orange	
X1.2	X2.6	Green	Twisted pair
X1.1	X2.3	White/Green	
X1.4	X2.4	Blue	Twisted pair
X1.5	X2.5	White/Blue	
X1.8	X2.8	Brown	Twisted pair
X1.7	X2.7	White/Brown	

NOTE

To achieve the best electrical transmission performance, ensure that the wires connected to pins 1 and 2 and to pins 3 and 6 are twisted pairs.

7.6 AOC Cable

7.6.1 Understanding AOC Cables

Overview

An active optical cable (AOC) is an active optical fiber with optical modules at both ends, and therefore is easy to use.

Appearance and Structure

Figure 7-15 Appearance of an SFP+ to SFP+ AOC cable

Figure 7-16 Appearance of a QSFP+ to QSFP+ or QSFP28 to QSFP28 AOC cable

Figure 7-17 Appearance of a QSFP+ to 4*SFP+ AOC cable

7.6.2 SFP+ to SFP+ AOC Cable

7.6.2.1 SFP-10G-AOC10M

Technical Specifications

Table 7-7 Technical specifications of the SFP-10G-AOC10M

Item	Details
Part Number	02310QWH
Model	SFP-10G-AOC10M
Description	AOC Optical Transceiver,SFP +,850nm,1G~10G,10m
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	10 m (32.81 ft.)
Operating Wavelength [nm]	850 nm
Operating Temperature [°C (°F)]	0 °C to 70 °C (32 °F to 158 °F)

7.6.3 SFP28 to SFP28 AOC Cable

7.6.3.1 SFP-25G-AOC-5M-A

Technical Specifications

Table 7-8 Technical specifications of the SFP-25G-AOC-5M-A

Item	Details
Part Number	02311YJH
Model	SFP-25G-AOC-5M-A
Description	Active Optical Cable ,SFP28,25G, (850nm,5m,AOC,Aqua)
Connector X1	SFP28
Connector X2	SFP28

Item	Details
Cable length [m(ft.)]	5 m (16.40 ft.)
Operating Wavelength [nm]	850 nm
Operating Temperature [°C (°F)]	0 °C to 70 °C (32 °F to 158 °F)

7.6.3.2 SFP-25G-AOC-7M-A

Technical Specifications

Table 7-9 Technical specifications of the SFP-25G-AOC-7M-A

Item	Details
Part Number	02311YJK
Model	SFP-25G-AOC-7M-A
Description	Active Optical Cable ,SFP28,25G, (850nm,7m,AOC,Aqua)
Connector X1	SFP28
Connector X2	SFP28
Cable length [m(ft.)]	7 m (22.97 ft.)
Operating Wavelength [nm]	850 nm
Operating Temperature [°C (°F)]	0 °C to 70 °C (32 °F to 158 °F)

7.6.3.3 SFP-25G-AOC-10M-A

Technical Specifications

Table 7-10 Technical specifications of the SFP-25G-AOC-10M-A

Item	Details
Part Number	02311YJM
Model	SFP-25G-AOC-10M-A
Description	Active Optical Cable ,SFP28,25G, (850nm,10m,AOC,Aqua)
Connector X1	SFP28

Item	Details
Connector X2	SFP28
Cable length [m(ft.)]	10 m (32.81 ft.)
Operating Wavelength [nm]	850 nm
Operating Temperature [°C (°F)]	0 °C to 70 °C (32 °F to 158 °F)

7.7 High Speed Cable

7.7.1 Understanding High-Speed Cables

NOTE

You are advised to use high-speed cables that are certified for Huawei data center switches. This is because high-speed cables that are not certified for Huawei data center switches cannot ensure transmission reliability and may affect service stability. Huawei is not liable for any problems caused by high-speed cables that are not certified for Huawei data center switches and will not fix such problems.

Appearance and Structure

Figure 7-18 shows the appearance of an SFP+ to SFP+ high-speed cable.

Figure 7-18 Appearance of an SFP+ to SFP+ high-speed cable

Figure 7-19 shows the appearance of a QSFP+ to QSFP+ or QSFP28 to QSFP28 high-speed cable.

Figure 7-19 Appearance of a QSFP+ to QSFP+ or QSFP28 to QSFP28 high-speed cable

Figure 7-20 shows the appearance of a QSFP+ to 4*SFP+ or QSFP28 to 4*SFP28 high-speed cable.

Figure 7-20 Appearance of a QSFP+ to 4*SFP+ or QSFP28 to 4*SFP28 high-speed cable

Figure 7-21 shows the structure of an SFP+ to SFP+ high-speed cable.

Figure 7-21 Structure of an SFP+ to SFP+ high-speed cable

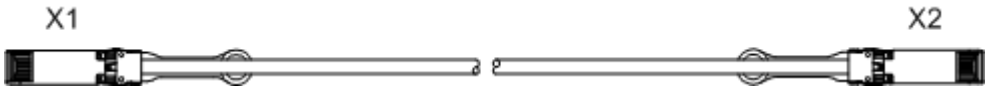


Figure 7-22 shows the structure of a QSFP+ to QSFP+ or QSFP28 to QSFP28 high-speed cable.

Figure 7-22 Structure of a QSFP+ to QSFP+ or QSFP28 to QSFP28 high-speed cable

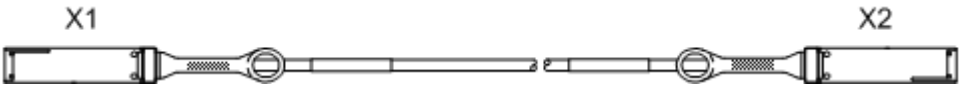
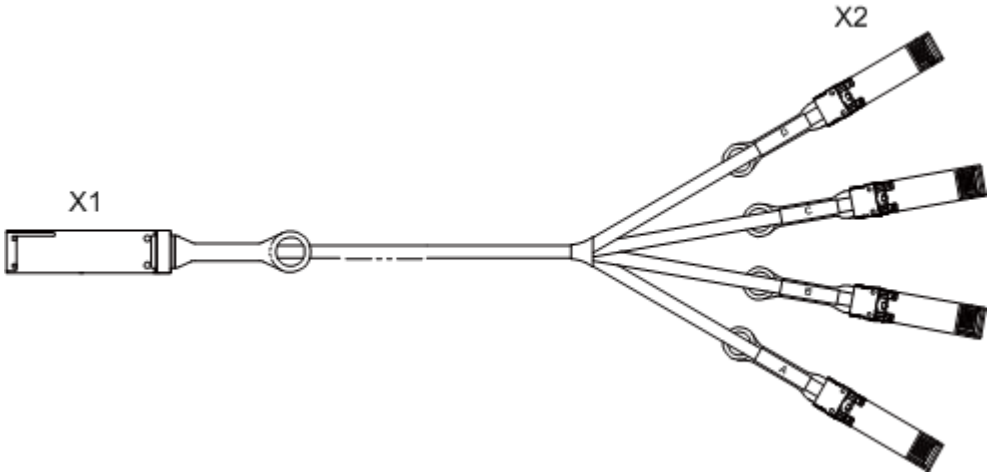


Figure 7-23 shows the structure of a QSFP+ to 4*SFP+ or QSFP28 to 4*SFP28 high-speed cable.

Figure 7-23 Structure of a QSFP+ to 4*SFP+ or QSFP28 to 4*SFP28 high-speed cable



7.7.2 SFP+ to SFP+ High-Speed Cable

7.7.2.1 SFP-10G-CU1M

Technical Specifications

Table 7-11 Technical specifications of the SFP-10G-CU1M

Item	Details
Part Number	02310MUN
Model	SFP-10G-CU1M
Description	SFP+,10G,High Speed Direct-attach Cables,1m,SFP +20M,CC2P0.254B(S),SFP+20M,Used indoor
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	1 m (3.28 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	25 mm (0.98 in.)
Minimum Clearance for Cable Routing [mm (in.)]	60 mm (2.36 in.)

7.7.2.2 SFP-10G-CU3M

Technical Specifications

Table 7-12 Technical specifications of the SFP-10G-CU3M

Item	Details
Part Number	02310MUP
Model	SFP-10G-CU3M
Description	SFP+,10G,High Speed Direct-attach Cables,3m,SFP +20M,CC2P0.254B(S),SFP+20M,Used indoor
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	3 m (9.84 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	25 mm (0.98 in.)
Minimum Clearance for Cable Routing [mm (in.)]	60 mm (2.36 in.)

7.7.2.3 SFP-10G-CU5M

Technical Specifications

Table 7-13 Technical specifications of the SFP-10G-CU5M

Item	Details
Part Number	02310QPR
Model	SFP-10G-CU5M
Description	SFP+,10G,High Speed Cable,5m,SFP +20M,CC2P0.254B(S),SFP +20M,LSFRZH For Indoor
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	5 m (16.40 ft.)
Electrical attribute	Passive

Item	Details
Bend radius [mm (in.)]	30 mm (1.18 in.)
Minimum Clearance for Cable Routing [mm (in.)]	60 mm (2.36 in.)

7.7.2.4 SFP-10G-AC10M

Technical Specifications

Table 7-14 Technical specifications of the SFP-10G-AC10M

Item	Details
Part Number	02310MUQ
Model	SFP-10G-AC10M
Description	SFP+,10G,Active High Speed Cables,10m,SFP +20M,CC2P0.32B(S),SFP+20M,Used indoor
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	10 m (32.81 ft.)
Electrical attribute	Active
Bend radius [mm (in.)]	25 mm (0.98 in.)
Minimum Clearance for Cable Routing [mm (in.)]	60 mm (2.36 in.)

7.7.3 SFP28 to SFP28 High-Speed Cable

7.7.3.1 SFP-25G-CU1M

Technical Specifications

Table 7-15 Technical specifications of the SFP-25G-CU1M

Item	Details
Part Number	02311NKS
Model	SFP-25G-CU1M
Description	SFP28,25G,High Speed Direct-attach Cables,1m, (SFP28),CC8P0.254B(S),SFP28
Connector X1	SFP28
Connector X2	SFP28
Cable length [m(ft.)]	1 m (3.28 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	25 mm (0.98 in.)
Minimum Clearance for Cable Routing [mm (in.)]	70 mm (2.76 in.)

7.7.3.2 SFP-25G-CU3M-N

Technical Specifications

Table 7-16 Technical specifications of the SFP-25G-CU3M-N

Item	Details
Part Number	02311MNV
Model	SFP-25G-CU3M-N
Description	SFP28,25G,High Speed Direct-attach Cables,3m,(SFP28),CC2P0.4B(S), (SFP28)
Connector X1	SFP28
Connector X2	SFP28
Cable length [m(ft.)]	3 m (9.84 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	30 mm (1.18 in.)

Item	Details
Minimum Clearance for Cable Routing [mm (in.)]	70 mm (2.76 in.)

7.8 Dedicated Stack Cable

7.8.1 Understanding dedicated stack cables Cables

Types of Dedicated Stack Cables

Dedicated stack cables are also copper cables, which are used for device stacking. Stacking using stack cables removes the need of configurations.

Table 7-17 lists the applicable dedicated stack cables.

Table 7-17 Dedicated stack cables

Model	Length	Electrical Attribute	Bend Radius	Connector Type	Part Number
SFP+STACK-CU0M5	0.5 m	Passive	25 mm	SFP+ to SFP+	02311VGK
SFP+STACK-CU1M5	1.5 m	Passive	25 mm	SFP+ to SFP+	02311VGN
SFP28-STACK-CU0M5	0.5 m	Passive	35 mm	SFP28 to SFP28	02315BQJ
SFP28-STACK-CU1M5	1.5 m	Passive	35 mm	SFP28 to SFP28	02315BQK

Appearance and Structure

Figure 7-24 Dedicated stack cable appearance

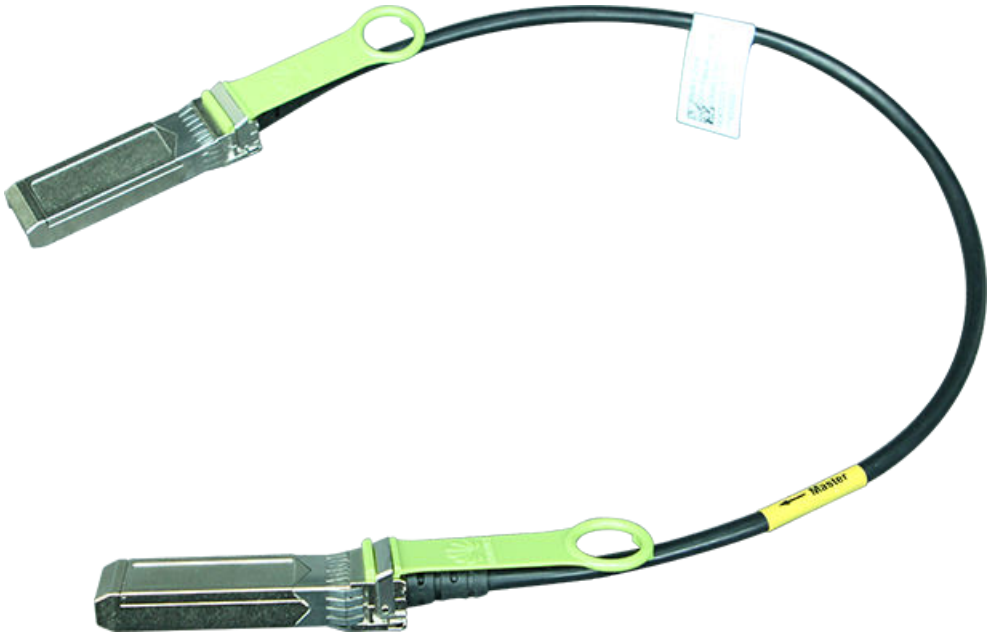


Figure 7-25 shows the structure of a dedicated stack cable.

Figure 7-25 Dedicated stack cable structure

7.8.2 SFP+ to SFP+ Stack Cable

7.8.2.1 SFP+STACK-CU0M5

Technical Specifications

Table 7-18 Technical specifications of the SFP+STACK-CU0M5

Item	Details
Part Number	02311VGK
Model	SFP+STACK-CU0M5
Description	SFP+ High speed dedicated stack cable-0.5m

Item	Details
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	0.5 m (1.64 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	25 mm (0.98 in.)

7.8.2.2 SFP+STACK-CU1M5

Technical Specifications

Table 7-19 Technical specifications of the SFP+STACK-CU1M5

Item	Details
Part Number	02311VGN
Model	SFP+STACK-CU1M5
Description	SFP+ High speed dedicated stack cable-1.5m
Connector X1	SFP+
Connector X2	SFP+
Cable length [m(ft.)]	1.5 m (4.92 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	25 mm (0.98 in.)

7.8.3 SFP28 to SFP28 Stack Cable

7.8.3.1 SFP28-STACK-CU0M5

Technical Specifications

Table 7-20 Technical specifications of the SFP28-STACK-CU0M5

Item	Details
Part Number	02315BQJ

Item	Details
Model	SFP28-STACK-CU0M5
Description	SFP28-STACK-CU0M5, SFP28 High speed dedicated stack cable-0.5m,Used indoor
Connector X1	SFP28
Connector X2	SFP28
Cable length [m(ft.)]	0.5 m (1.64 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	35 mm (1.38 in.)

7.8.3.2 SFP28-STACK-CU1M5

Technical Specifications

Table 7-21 Technical specifications of the SFP28-STACK-CU1M5

Item	Details
Part Number	02315BQK
Model	SFP28-STACK-CU1M5
Description	SFP28-STACK-CU1M5, SFP28 High speed dedicated stack cable-1.5m,Used indoor
Connector X1	SFP28
Connector X2	SFP28
Cable length [m(ft.)]	1.5 m (4.92 ft.)
Electrical attribute	Passive
Bend radius [mm (in.)]	35 mm (1.38 in.)

