HUAWEI eKit

F1001-AC

Quick Start

Issue 02

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HUAWEI TECHNOLOGIES CO., LTD.

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Contents

1 Device Appearance....1
2 Typical Application....3
3 Cable Connection....12
4 Indicator Description....14
5 Technical Specifications....15
6 FAQs....16

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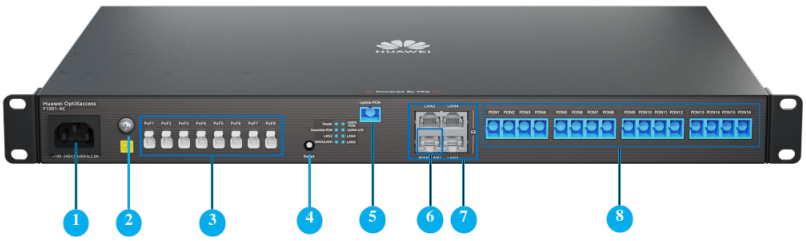
1 Device Appearance



NOTE

The schematic diagram in this document may differ from the actual product of the OptiXstar F1001-AC (F1001-AC or Optical Gateway for short).

Port/Button	Silkscreen	Description
AC power port	100–240V;50/60Hz;2.0A	Connects to the 100 V/240 V AC power supply.
Grounding point		Grounds the device.
Downstream optical port	PoF1 to PoF8	Provides eight XC/UPC ports. The built-in power adapter is connected to the power over fiber (PoF) cable to supply power to the downstream ONU and transmit optical signals. **NOTE** PoF refers to the PoF cable with an output voltage of 56 V. Take care.

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Port/Button	Silkscreen	Description
Reset button	Reset	• Restarts the system if you press and release the button. • Restores the device to its factory settings and restarts the device if you press and hold the button for more than 10 seconds and release it. **NOTE** • Restoring the factory settings will clear user configuration data. Exercise caution when performing this operation. • Exercise caution when pressing the reset button. After the device is restored to its factory settings, Internet access may be unavailable. If so, contact the service provider.
Upstream optical port	Uplink-PON	Supports XG-PON upstream transmission.
Upstream GE port	WAN/LAN1	Supports Ethernet GE upstream transmission.
Downstream GE port	WAN/LAN1 to LAN4	Supports an adaptive port rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. The WAN/LAN1 port can be used as a WAN port.
Downstream optical port	PON1 to PON16	Provides 16 SC/UPC ports to implement downstream access with ONUs.

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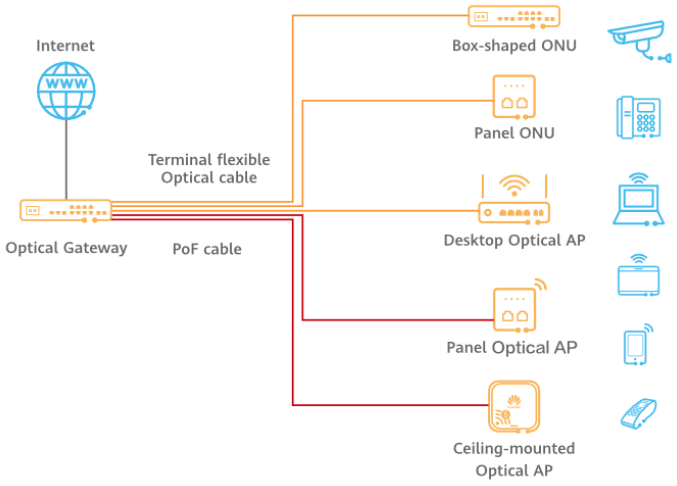
2 Typical Application

The following figure shows the networking of the Huawei MiniFTTO solution.

- The Optical Gateway F1001-AC connects to downstream optical APs and provides remote power supply through PoF cables. A maximum of eight optical APs can be connected.
- The Optical Gateway F1001-AC connects to downstream ONUs through terminal flexible optical cables. A maximum of 16 ONUs can be connected.

Figure 2-1 MiniFTTO networking scenario



Device Installation

The F1001-AC can be installed horizontally on an indoor desktop, in a 19-inch cabinet, or in a network box.

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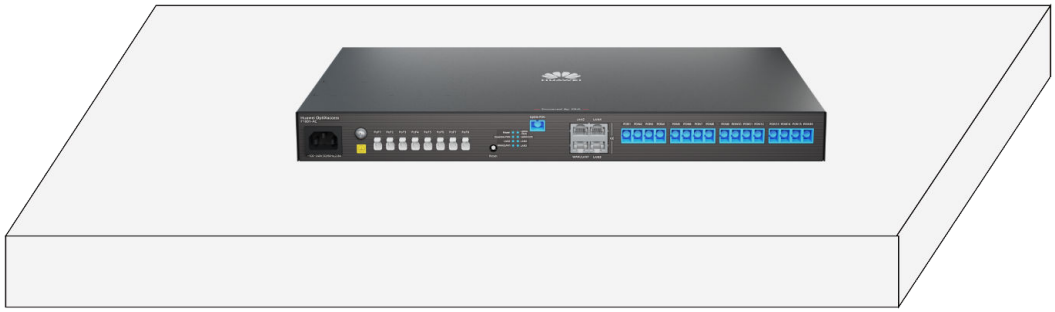
NOTICE

- All diagrams in this document may be different from the actual product. These differences do not affect the product functions.
- In the following, F1001-AC is referred to as a Optical Gateway.
- Do not stack Optical Gateways in horizontal deployment mode.
- To ensure proper grounding of devices, it is recommended that the ground cables be deployed by professionals.
- To avoid electromagnetic compatibility (EMC) risks, it is recommended that the Optical Gateway be used with shielded network cables.

Installation on the Desktop

NOTICE

Do not stack Optical Gateways on the desktop. Ensure that they are properly grounded before power-on.



Installation in a 19-inch Cabinet

Install mounting ears when deploying the Optical Gateway in a cabinet, as shown in the following figure.

NOTICE

- Do not stack Optical Gateways in a cabinet. Ensure that they are properly grounded before power-on.
- For better heat dissipation, it is recommended that at least 88.9 mm (2 U), 44.45 mm (1 U), and 70 mm space be reserved at the top, bottom, and front of a Optical Gateway, respectively.

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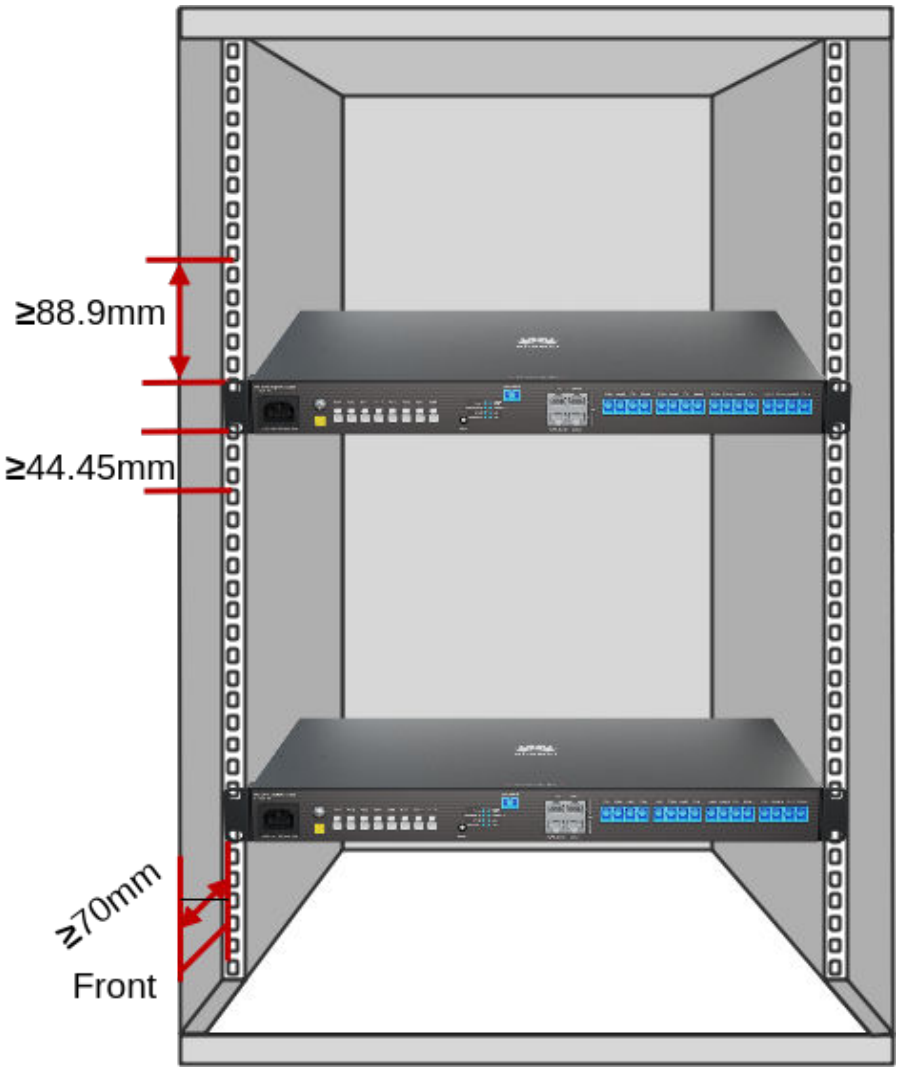

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Installation in a Network Box

NOTICE

- Do not install a Optical Gateway in an enclosed network box and verify that the air intake and exhaust vents are not blocked to ensure proper heat dissipation.
- IP*xx* indicates the international protection level. The first digit indicates the protection level against external solid particles, and the second digit indicates the protection level against water intrusion.
- A network box installed indoors or in a corridor free from rain must reach the IP31 protection level. Digit 3 means foreign matters with a diameter of 2.5 mm or larger cannot enter the box, and digit 1 means vertical water drops will not cause damages to the device.
- A network box installed outdoors or in a corridor exposed to rain must reach the IP55 protection level. The first digit 5 indicates that dust entering the box will not cause damages to devices inside. The second digit 5 indicates that water dropped from every direction onto the box will not cause damages to devices inside.
- The method for installing a Optical Gateway in a non-Huawei network box varies with the box specifications, but you need to meet the preceding space requirements for heat dissipation.

- **Guide for grounding the network box of the TN-S and TN-C-S power distribution systems**

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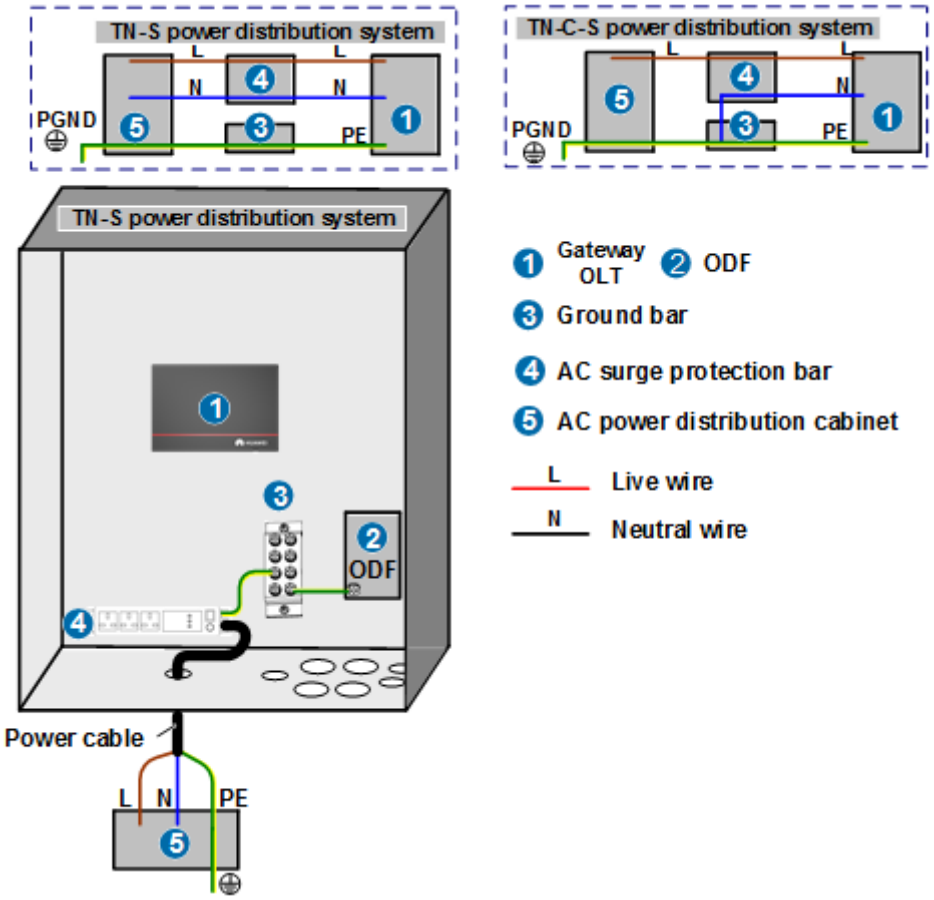

- For the TN-C-S and TN-S AC power distribution systems, it is recommended that the PE wire of the AC power cable be used to ground the Optical Gateway. Ensure that the PE wire of the AC power cable in the corridor is grounded properly.
- Verify that all devices in the network box are connected to the ground bar by ground cables (with a cross-sectional area of at least 6 mm^2), and that the ground bar is equipotentially connected to the network box by a metal structure.
- Connect the grounding point of the fiber strength members to the ground bar using a ground cable, or connect the grounding point to the network box in an equipotential manner using a metal structure.
- If the PE wire of the AC power cable of the corridor is not properly grounded, the network box must be grounded using an external ground cable (PGND cable). In addition, the fiber strength member must be disconnected from the device grounding system.
- Connect a surge protector and the power supply of a Optical Gateway using a power cable of 3–5 m for decoupling.

- **Guide for grounding the network box of the TT power distribution system**

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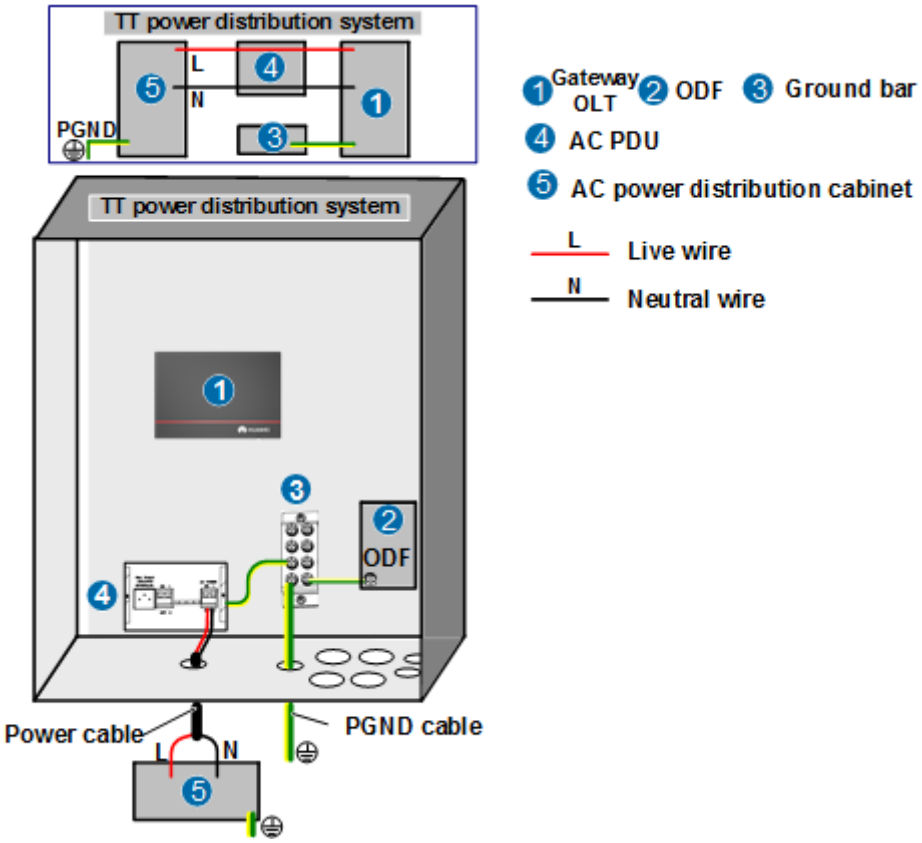

- For the TT power distribution system, it is recommended that an external grounding device be used. For example, use the dedicated grounding device of the building (ground flat steel, ground rod, or ground bar), use steel ribs in the concrete base, or deploy a new ground grid.
- Verify that all devices in the network box are connected to the ground bar by ground cables (with a cross-sectional area of at least 6 mm^2), and that the ground bar is equipotentially connected to the network box by a metal structure.
- Connect the external ground cable (PGND cable) of the network box to an external grounding device. The cross-sectional area of the external ground cable must be greater than or equal to 16 mm^2 (referring to the country-specific standards).

- **Guide for grounding the fiber strength member of the network box provided by the customer**

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Table 2-1 Construction responsibilities

Optical Cable Provider	Construction Owner	Recommended Method	Remarks
Huawei	Huawei	Method 1 is preferred. If method 1 cannot be implemented, communicate with the customer about construction risks and sign a memorandum with the customer before using method 2.	If method 1 is used, the construction quality must strictly comply with construction specifications. If method 2 is used, the network box must be securely grounded. In addition, a metal protective cover must be installed between the fiber strength member and network box fixing points to prevent fire from spreading if a fiber strength member makes contact with a high-voltage power line.
	Customer	Method 1	If the construction does not comply with method 1, the customer bears the responsibility for consequences.
Customer	Huawei	Requirements: During construction, do not route fiber strength members into the network box. Ground the fiber strength members and the network box separately. Install the network box and Optical Gateway according to the installation guide in this document.	The customer must ensure that the fiber strength members are not routed into the network box. Otherwise, the customer bears the responsibility for consequences.

a. **Grounding method 1: Fiber strength members are isolated from a network box and grounded outside the network box separately.**

   This method prevents a power surge from entering the network box, thereby protecting the device inside the network box. (A long-distance armored optical cable may direct a power surge into the network box if the outer insulation layer is broken and any metal part makes contact with a high-voltage power line.) Method 1 is implemented as follows:

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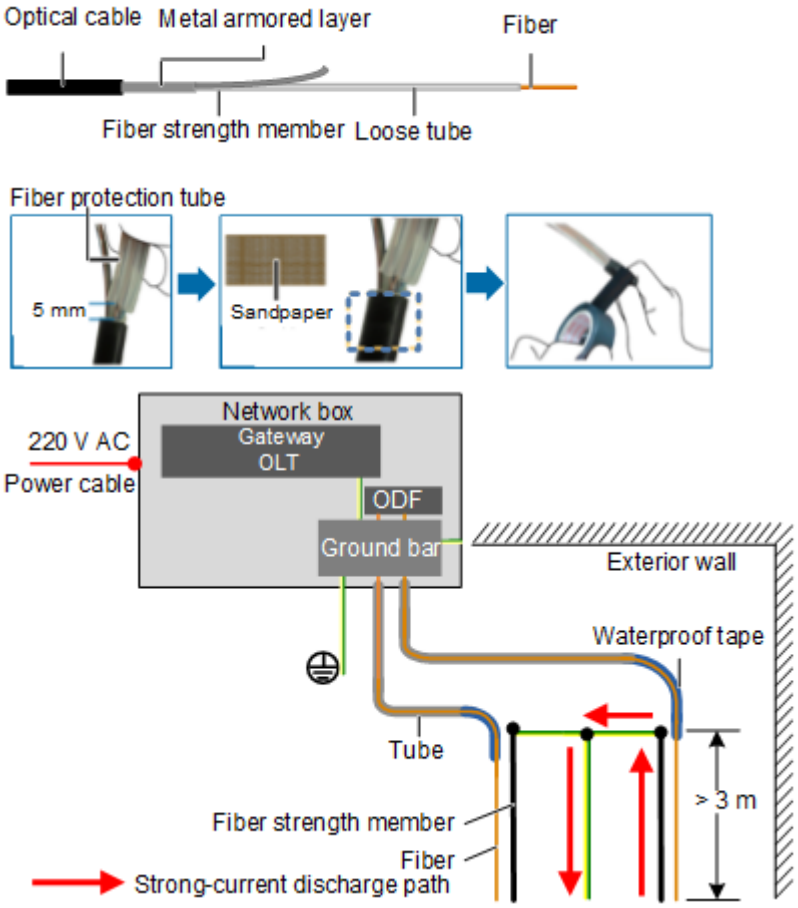
i. Strip the outer insulation layer and armored tube from the fiber strength members at the ground point. Then, clean bare fibers and use a bare fiber protection tube to protect them. (In outdoor scenarios, use an outdoor tube. In indoor or corridor scenarios, use a common tube. It is recommended that you use the 3M or COTRAN waterproof tape.)

ii. Use sandpaper to remove burrs at optical cable stripping points, and wrap the stripping points properly with waterproof tape. When wrapping waterproof tape, ensure that the fiber cores are not wrapped too tightly.

iii. Cut excess fiber strength members and reserve a proper length for grounding.



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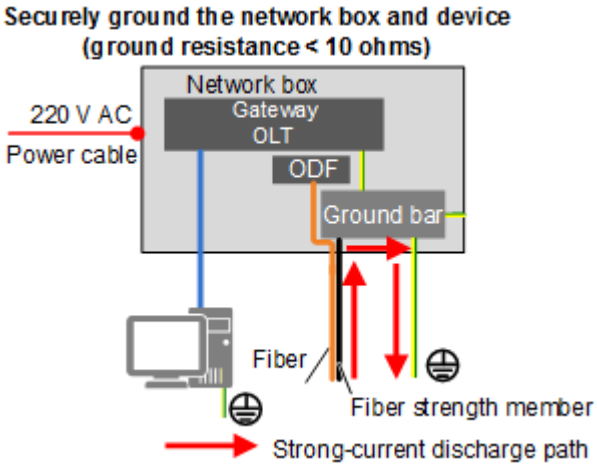
NOTICE

- Ensure that fibers are free from stress and the bending radius is greater than 40 mm. Otherwise, services may become abnormal or even fail due to degraded signal transmission.
- Fiber strength members must be securely grounded. A ground point must be at least 3 m above the ground to avoid accidental contact, and must not be within 0.3 m of combustible materials. If fiber strength members cannot be grounded, take proper insulation measures; otherwise, electric shocks may occur if the fiber strength members make contact with high-voltage power lines.

b. **Grounding method 2: Fiber strength members are grounded inside a network box.**

Connect the grounding point of the fiber strength members to the ground bar using a ground cable, or connect the grounding point to the network box in an equipotential manner using a metal structure. If a fiber strength member makes contact with a high-voltage power line, the current is discharged through the ground point in the network box. In this case, the contact point between the strength member and the ground bar may catch fire and damage devices inside the network box. Therefore, grounding method 1 is recommended.



NOTICE

If the ground bar of the network box cannot be securely grounded, ensure that the fiber strength members are disconnected from the ground bar and properly insulated. Otherwise, strong currents may be discharged through network ports on the local and peer devices, which may damage these network ports.

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3 Cable Connection

Figure 3-1 F1001-AC cable connection

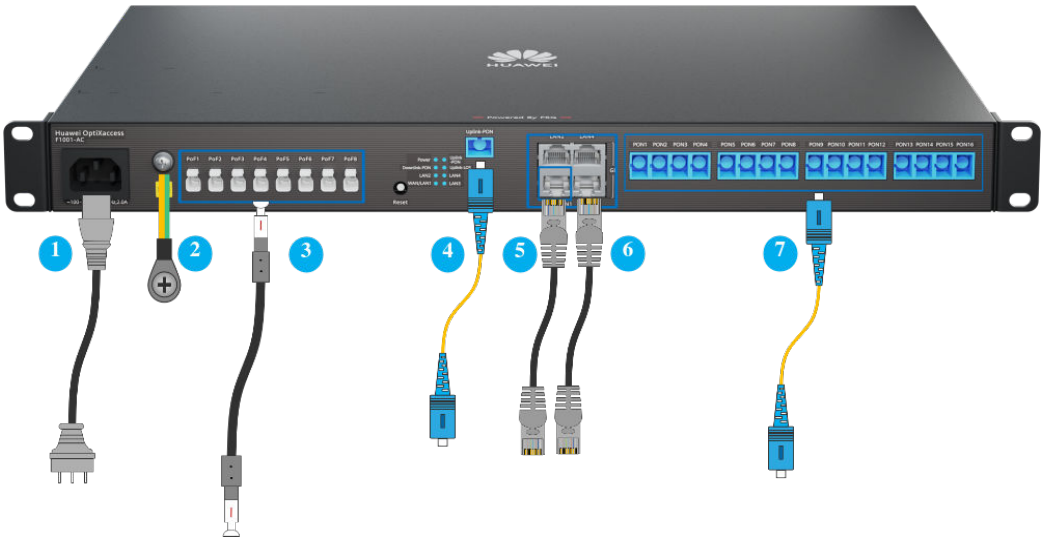

Table 3-1 Cable connection

No.	Port	Description
1	AC power port	Connects to the AC power cable.
2	Grounding point	Connects to the PGND cable. **CAUTION** Properly connecting the PGND cable ensures the lightning protection and interference protection of the chassis. Ensure that the device is securely grounded. Otherwise, device damage due to lightning strikes, service exceptions, and personal safety risks may occur.
3	Downstream optical port	Is an XC/UPC port connected to the downstream ONU through a PoF cable and cannot be connected to an optical splitter.

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No.	Port	Description
4	Upstream optical port	Is an SC/UPC port connected to the upstream optical fiber. **NOTE** Before connecting to the upstream optical fiber, check whether the optical power of the upstream optical fiber is within the range of –8 dBm to –28 dBm.
5	Upstream GE port	Connects to the upstream network cable.
6	Downstream GE port	Provides an adaptive Ethernet access rate of 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s. To connect to an external network, connect to the WAN/LAN1 port.
7	Downstream optical port	Is an SC/UPC port connected to the downstream ONU through an optical fiber and cannot be connected to an optical splitter.

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4 Indicator Description

Indicator	Status	Description
Power	Steady green	The power supply is working properly.
	Blinking green (1s on and 1s off)	The downstream PoF port has no power output.
	Off	The power supply is off or faulty.
Uplink-LOS	Blinking red	The receive optical power is lower than the optical receiver sensitivity.
	Off	The receive optical power is normal or the upstream optical port is not connected.
Uplink-PON	Steady green	The device has been activated.
	Blinking green	The device is being activated.
	Off	The device is not activated or the upstream optical port is not connected.
Downlink-PON	Steady green	There are online ONUs or running services on the corresponding PON port.
	Off	There is no online ONU on the corresponding PON port.
WAN/ LAN1 to LAN4	Steady green	The port is connected.
	Off	The port is not connected.

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5 Technical Specifications

Item	Specifications
Dimensions (W x D x H)	442 mm x 245 mm x 43.6 mm
Weight	3.0 kg
AC power supply	100–240 V AC, 50/60 Hz
Operating temperature	–10°C to +40°C
Operating humidity	5% RH to 95% RH, non-condensing

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6 FAQs

How Do I Log In to the WebUI of the Optical Gateway?

Step 1 Configure the PC with an IP address in the same network segment as the management IP address of the Optical Gateway.

NOTE

- For the default management IP address and subnet mask of the Optical Gateway, see the product nameplate.
- Check the bottom of the product for the nameplate.

Step 2 Enter the management IP address of the Optical Gateway in the address bar of the browser and press **Enter**. The login window is displayed.

Step 3 In the login window, enter the default user name and password (for details, see the product nameplate), and click **Login**. After the password is verified, you can access the WebUI.

- If you perform no operation for five minutes after logging in to the WebUI, the system automatically returns to the login window.
- If the user name and password are incorrectly entered three consecutive times, the system will be locked and then automatically unlocked one minute later.
- To ensure device security, change the login password immediately after logging in to the WebUI using the initial user name and password.

----End

How Do I Restart the Optical Gateway?

Press the reset button with a needle-like object to restart the device. For details about the position, see **Device Appearance**.

How Do I Restore the Factory Settings?

Press and hold the reset button for more than 10 seconds with a needle-like object to restore the factory settings and restart the device. For details about the position, see **Device Appearance**. If the indicator is off and then on, the device is restored to its factory settings.

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