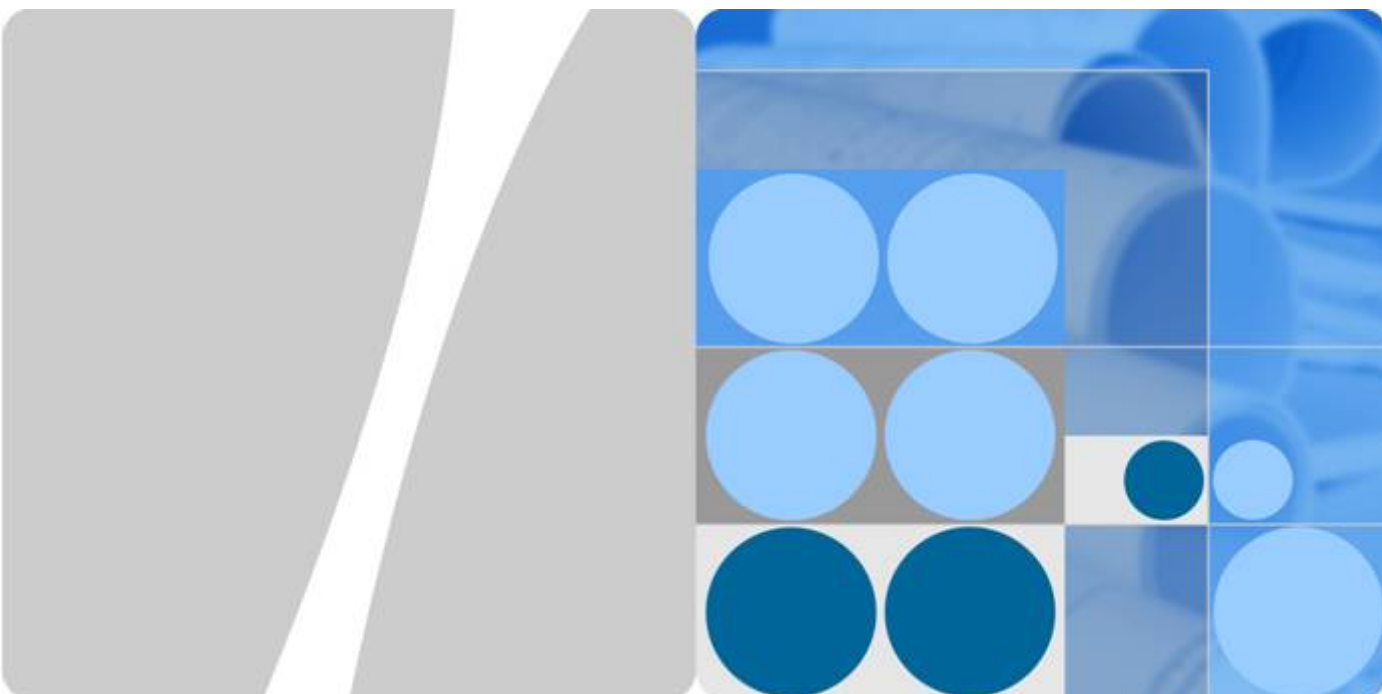




**eKitEngine AR180 and AR280**

**V600R025C00**

# **Hardware Description**

**Issue**      **01**

**Date**      **2025-09-30**

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## **Huawei Technologies Co., Ltd.**

Address: Huawei Industrial Base  
Bantian, Longgang  
Shenzhen 518129  
People's Republic of China

Website: <https://e.huawei.com>

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# 1 About This Document

## Intended Audience

This document describes the hardware features of eKitEngine AR routers, helping you learn more about the chassis, cables, and power supplies.

This document is intended for network engineers who are responsible for network design and deployment. The engineers should have a good understanding of your network, including the network topology and service requirements.

## Symbol Conventions

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

| Symbol                                                                              | Description                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.                                                                                                                                        |
|  | Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.                                                                                                                                     |
|  | Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.                                                                                                                                       |
|  | Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results.<br><b>NOTICE</b> is used to address practices not related to personal injury. |

| Symbol                                                                                        | Description                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>NOTE</b> | Supplements the important information in the main text.<br><br><b>NOTE</b> is used to address information not related to personal injury, equipment damage, and environment deterioration. |

## Notice

- The contents (including web pages, command formats, and command outputs) of this document are based on device information obtained under lab conditions. It provides instructions for common scenarios, but does not cover all use cases of all product models. The examples given may differ from your use case due to differences in software versions, models, and configuration files. When configuring your device, alter the configuration depending on your use case.
- The specifications provided in this document are tested in a lab environment (for example, cards of a certain type have been installed on the tested device or only one protocol is run on the device). Results may differ from the listed specifications when you attempt to obtain the maximum values due to factors such as differences in hardware configurations and carried services.
- In this document, public IP addresses may be used in feature introduction and configuration examples and are for reference only unless otherwise specified.

## Device Dimension Conventions

The dimensions described in this document are theoretically typical dimensions and do not include dimension tolerances.

# 2 Version Requirements for Components

---

This document describes only the AR device models and modules supported by a version. To obtain accurate ordering information, visit <https://ekit.huawei.com/> or contact Huawei local sales offices. You can also pay attention to the product change notices (PCNs) and lifecycle management bulletins launched at this website.

For details about the device models supported by a version, see "1.1 Product Version" in the release notes of the corresponding version.

The appearances of devices and modules may differ from the actual delivered products. All figures in this document are for illustration purposes only.

The actual available memory and storage resources (including the flash memory) of a device are less than the nominal values because the system software occupies some space.

# 3 Using the Info-Finder Tool

---

**Info-Finder** is a tool platform that allows you to search for key product information (such as software specifications, lifecycle, and hardware) by product series and model. It provides the following hardware-related tools:

- **Product Image Gallery:** provides product images based on product models. You can see the product appearance from multiple views and download and use the product gallery whenever needed, helping you create more professional design drawings and networking diagrams.
- **Hardware Configuration:** allows you to select components to automatically generate a hardware configuration diagram and calculate the weight, power consumption, and heat consumption of a device.
- **Hardware Center:** provides the technical specifications of an entire system and its components, as well as the mapping between the entire system, components, and versions, helping you quickly understand the whole picture of the product hardware.
- **3D Model:** provides product images, product overview, and component insertion/removal videos, as well as related component information, helping you quickly gain full product information in one-stop mode.

## NOTE

The heat dissipation value of a device can be converted from the power consumption value as follows:

$$\text{Heat dissipation (BTU/hr)} = \text{Power consumption (W)} \times 3.412$$

# 4 Chassis

[4.1 Naming Conventions](#)

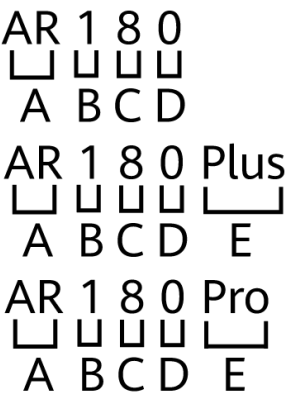
[4.2 AR180 Series](#)

[4.3 AR280 Series](#)

## 4.1 Naming Conventions

**Figure 4-1** shows naming conventions of AR180 series routers. **Table 4-1** describes the meaning of each letter and digit.

**Figure 4-1** Naming conventions of AR180 series routers



**Table 4-1** Naming conventions of AR180 series routers

| Identifi<br>er | Meaning            | Detailed Description                                                           |
|----------------|--------------------|--------------------------------------------------------------------------------|
| A              | Product name       | AR: enterprise router                                                          |
| B              | Product platform   | <ul style="list-style-type: none"><li>1: mini AR</li><li>2: small AR</li></ul> |
| C              | Market positioning | 8: SME network market                                                          |

| Identifier | Meaning            | Detailed Description                    |
|------------|--------------------|-----------------------------------------|
| D          | Product generation | The default value is 0.                 |
| E          | Capability flag    | Enhanced specifications and performance |

## 4.2 AR180 Series

### 4.2.1 AR180

#### Overview

Table 4-2 Basic information about the AR180

| Item                    | Details                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------|
| Description             | AR180 (1*2.5GE WAN, 4*GE LAN, 2+2 WiFi7, Venus White, with 1*AC power adapter, Fanless) |
| Part Number             | 50010839                                                                                |
| Model                   | AR180                                                                                   |
| First supported version | V600R025C00                                                                             |

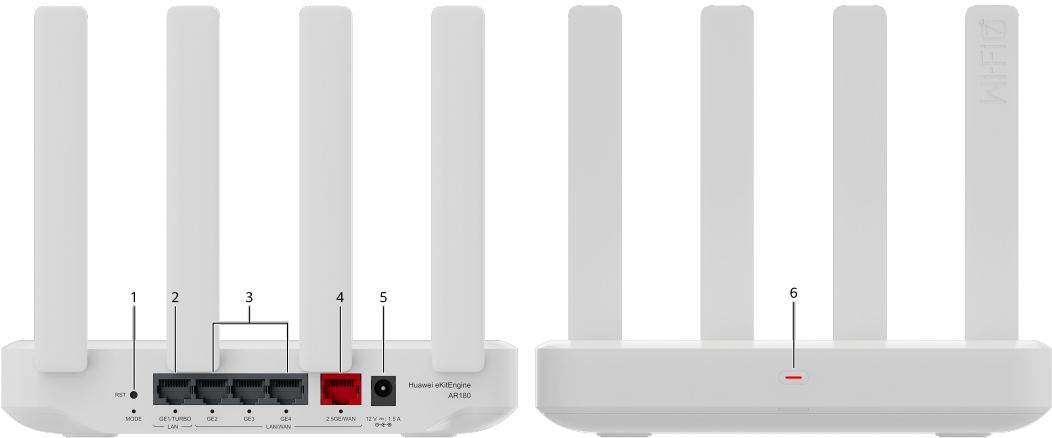
Appearance

Figure 4-2 Appearance of the AR180



Components

Figure 4-3 Components of the AR180



|                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>1. RST button</div> <div><b>NOTE</b><br/>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.<br/><br/>Pressing the button will reset the device.<br/><br/>Resetting the device will interrupt services. Exercise caution when you press the button.</div> | <div>2. LAN interface: one GE electrical interface (GE1/TURBO)</div> <div><b>NOTE</b><br/><br/>GE1 is a dedicated LAN interface.<br/><br/>GE1/TURBO is a prioritized forwarding interface. In case of upstream WAN interface congestion, traffic on the GE1/TURBO interface is preferentially forwarded.</div> | <div>3. LAN interfaces: three GE electrical interfaces (GE2 to GE4)</div> <div><b>NOTE</b><br/><br/>GE2, GE3, and GE4 work as LAN interfaces by default, and can be switched to WAN interfaces.</div>                                                                                                                                         |
| <div>4. WAN interface: one 2.5GE electrical interface</div> <div><b>NOTE</b><br/><br/>It works as a WAN interface by default and can be switched to a LAN interface.</div>                                                                                                                                        | <div>5. Power socket</div>                                                                                                                                                                                                                                                                                     | <div>6. Button to turn on/off indicators</div> <div><b>NOTE</b><br/><br/>This button is used to turn on or off device indicators. By default, all indicators are on.<ul style="list-style-type: none"><li>Press the button once: turns off all device indicators.</li><li>Press the button again: turns on device indicators.</li></ul></div> |

Ports

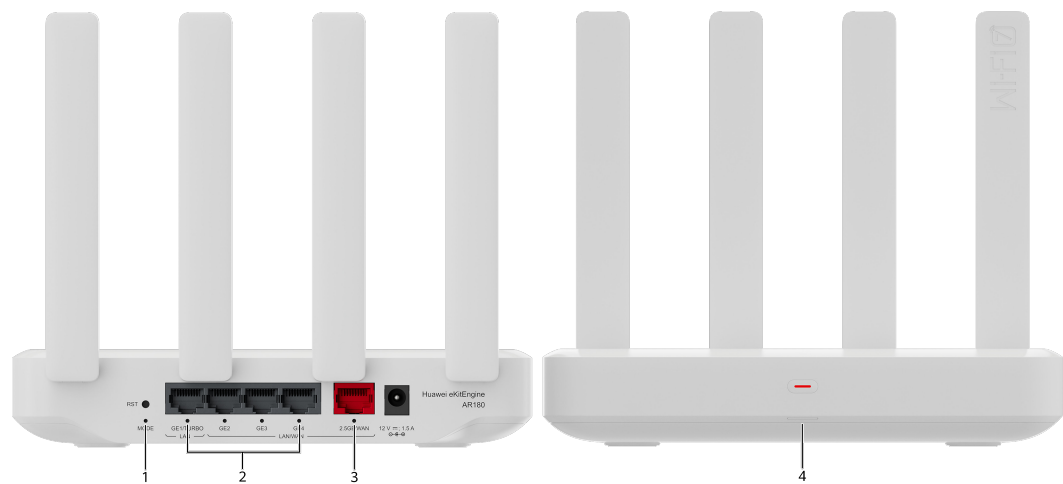
Table 4-3 Ports on the AR180

| Port               | Connector Type | Description                                                                                                                                                                                                                                                        | Available Components |
|--------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| GE electrical port | RJ45           | <div>A GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s.</div> <div><b>NOTE</b><br/>GE1 is a dedicated LAN interface. GE2, GE3, and GE4 are LAN interfaces by default and can be switched to WAN interfaces.</div> | Ethernet cable       |

| Port                    | Connector Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Available Components                                                                                             |
|-------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 2.5GE electrical port   | RJ45           | <p>A 2.5GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, or 2.5 Gbit/s.</p> <p><b>NOTE</b><br/>It works as a WAN interface by default and can be switched to a LAN interface.</p>                                                                                                                                                                                                                                                                                                                                | If the 2.5 Gbit/s speed is required, the electrical port must use an Ethernet cable of Cat5e or higher category. |
| Wi-Fi antenna interface | -              | <p>A Wi-Fi antenna interface connects to a Wi-Fi antenna to transmit and receive wireless data.</p> <ul style="list-style-type: none"> <li>Compliant standard: 2.4 GHz: 802.11b/g/n/ax/be; 5 GHz: 802.11a/n/ac/ax wave2/ax/be</li> <li>Frequency band: 2.4 GHz/5 GHz</li> <li>Antenna gain: 2.4 GHz: 3 dBi; 5 GHz: 4 dBi</li> <li>MIMO spatial streams: radio 0 (2.4 GHz): 2x2; radio 1 (5 GHz): 2x2</li> </ul> <p><b>NOTE</b><br/>Wi-Fi antennas have been installed on the Wi-Fi antenna interfaces of the device before delivery and cannot be removed.</p> | -                                                                                                                |

Indicators and Buttons

Figure 4-4 Indicators and buttons on the AR180



|                             |                                       |                                         |
|-----------------------------|---------------------------------------|-----------------------------------------|
| 1. Working mode indicator   | 2. GE electrical interface indicators | 3. 2.5GE electrical interface indicator |
| 4. System running indicator | -                                     | -                                       |

Table 4-4 Indicators on the AR180

| Silkscreen | Name                            | Color | Status        | Description                                                                                         |
|------------|---------------------------------|-------|---------------|-----------------------------------------------------------------------------------------------------|
| -          | System running status indicator | -     | Off           | The system is not running.                                                                          |
|            |                                 | Green | Fast blinking | The system is starting.                                                                             |
|            |                                 | Green | Steady on     | In the system startup preparation phase, the indicator is steady green for no more than 15 seconds. |
|            |                                 | Green | Slow blinking | The system is running properly.                                                                     |

| Silkscreen | Name                   | Color | Status        | Description                                                                                                 |
|------------|------------------------|-------|---------------|-------------------------------------------------------------------------------------------------------------|
|            |                        | Red   | Steady on     | The system does not work normally after registration, or a temperature alarm is generated.                  |
|            |                        | Blue  | Fast blinking | The device is connecting to the cloud.                                                                      |
|            |                        | Blue  | Slow blinking | The device is in the cloud-based management state. It has gone online successfully and is running properly. |
|            |                        | Red   | Fast blinking | You can press and hold down the RST button for more than 6s to restore the factory settings.                |
| MODE       | Working mode indicator | -     | Off           | The device works in routing mode.                                                                           |
|            |                        | Green | Steady on     | The device works in AP mode.                                                                                |
|            |                        | Green | Blinking      | The mode is being switched.                                                                                 |
| -          | Port indicator         | -     | Off           | The port is not connected or has been shut down.                                                            |
|            |                        | Green | Steady on     | The port is connected.                                                                                      |

| Silkscreen | Name | Color | Status   | Description                            |
|------------|------|-------|----------|----------------------------------------|
|            |      | Green | Blinking | The port is sending or receiving data. |

**Table 4-5** Buttons on the AR180

| Silkscreen | Name         | Description                                                                                                                                                                                                                                                             |
|------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RST        | RESET button | <p>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.</p> <p>Pressing the button will reset the device.</p> <p>Resetting the device will interrupt services.</p> <p>Exercise caution when you press the button.</p> |

## Technical Specifications

**Table 4-6** Technical specifications of the AR180

| Item                                               | Specification                                                                                                                                                                                                        |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation type                                  | <ul style="list-style-type: none"><li>• Work bench</li><li>• Against the wall</li></ul>                                                                                                                              |
| Chassis height [U]                                 | 0.8 U                                                                                                                                                                                                                |
| Dimensions without packaging (H x W x D) [mm(in.)] | <ul style="list-style-type: none"><li>• Basic dimensions: 35 mm x 195 mm x 130 mm (1.38 in. x 7.68 in. x 5.12 in.)</li><li>• Maximum dimensions: 163 mm x 195 mm x 150 mm (6.42 in. x 7.68 in. x 5.91 in.)</li></ul> |
| Dimensions with packaging (H x W x D) [mm(in.)]    | 90 mm x 230 mm x 185 mm (3.54 in. x 9.06 in. x 7.28 in.)                                                                                                                                                             |
| Weight with packaging [kg(lb)]                     | 0.99 kg (2.18 lb)                                                                                                                                                                                                    |
| Weight without packaging [kg(lb)]                  | 0.63 kg (1.39 lb)                                                                                                                                                                                                    |
| CPU                                                | 1.3 GHz, dual-core                                                                                                                                                                                                   |

| Item                          | Specification                 |
|-------------------------------|-------------------------------|
| Memory                        | 512 MB                        |
| NAND Flash                    | 256 MB                        |
| Console port                  | Not supported                 |
| RTC                           | Not supported                 |
| LAN ports                     | 4 x GE electrical interfaces  |
| WAN ports                     | 1 x 2.5GE electrical port     |
| Number of service board slots | 0                             |
| MIC slots (default/maximum)   | 0/0                           |
| SIC slots (default/maximum)   | 0/0                           |
| WSIC slots (default/maximum)  | 0/0                           |
| XSIC slots (default/maximum)  | 0/0                           |
| Redundant MPUs                | Not supported                 |
| RPS input                     | Not supported                 |
| PoE                           | Not supported                 |
| IP rating                     | IP20                          |
| MTBF [years]                  | 148.98 years                  |
| Availability                  | > 0.99999                     |
| Typical power consumption [W] | 7 W                           |
| Maximum power consumption [W] | 13 W                          |
| Power supply mode             | AC power adapter              |
| Number of power modules       | 1                             |
| Rated input voltage [V]       | 110 V AC–220 V AC; 50/60 Hz   |
| Input voltage range [V]       | 90 V AC–264 V AC; 45 Hz–65 Hz |
| Maximum input current [A]     | 2 A                           |
| Maximum output power [W]      | 24 W                          |
| Redundant power supply        | Not supported                 |
| Types of fans                 | None                          |
| Number of fan modules         | 0                             |
| Heat dissipation mode         | Natural heat dissipation      |
| Airflow                       | Natural heat dissipation      |

| Item                                                 | Specification                                                                                                                                                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noise at normal temperature (acoustic power) [dB(A)] | Fanless, silent                                                                                                                                                                                                         |
| Long-term operating temperature [°C(°F)]             | 0°C to 40°C (32°F to 104°F)<br><b>NOTE</b><br>When the altitude is 1800 m-5000 m (5906 ft.-16404.2 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). |
| Long-term operating relative humidity [RH]           | 5% RH to 95% RH, non-condensing                                                                                                                                                                                         |
| Long-term operating altitude [m(ft.)]                | < 5000 m (16404.2 ft.)                                                                                                                                                                                                  |
| Storage temperature [°C(°F)]                         | -40°C to +70°C (-40°F to +158°F)                                                                                                                                                                                        |
| Overtemperature alarm                                | Supported                                                                                                                                                                                                               |
| Certification                                        | EMC certification<br>Safety certification<br>Manufacturing certification                                                                                                                                                |

## 4.2.2 AR180Plus

### Overview

**Table 4-7** Basic information about the AR180Plus

| Item                    | Details                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------|
| Description             | AR180Plus (1*2.5GE WAN, 4*GE LAN, 2+2 WiFi7, Reynis Black, with 1*AC power adapter, Fanless) |
| Part Number             | 50010841                                                                                     |
| Model                   | AR180Plus                                                                                    |
| First supported version | V600R025C00                                                                                  |

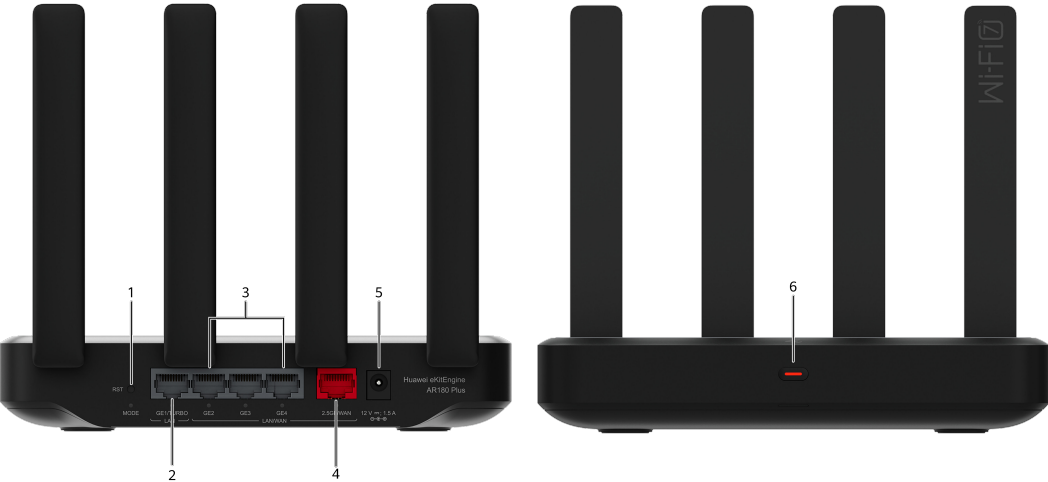
Appearance

Figure 4-5 Appearance of the AR180Plus



Components

Figure 4-6 Components of the AR180Plus



|                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>1. RST button</div> <div><b>NOTE</b><br/>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.<br/><br/>Pressing the button will reset the device.<br/><br/>Resetting the device will interrupt services. Exercise caution when you press the button.</div> | <div>2. LAN interface: one GE electrical interface (GE1/TURBO)</div> <div><b>NOTE</b><br/><br/>GE1 is a dedicated LAN interface.<br/><br/>GE1/TURBO is a prioritized forwarding interface. In case of upstream WAN interface congestion, traffic on the GE1/TURBO interface is preferentially forwarded.</div> | <div>3. LAN interfaces: three GE electrical interfaces (GE2 to GE4)</div> <div><b>NOTE</b><br/><br/>GE2, GE3, and GE4 work as LAN interfaces by default, and can be switched to WAN interfaces.</div>                                                                                                                                         |
| <div>4. WAN interface: one 2.5GE electrical interface</div> <div><b>NOTE</b><br/><br/>It works as a WAN interface by default and can be switched to a LAN interface.</div>                                                                                                                                        | <div>5. Power socket</div>                                                                                                                                                                                                                                                                                     | <div>6. Button to turn on/off indicators</div> <div><b>NOTE</b><br/><br/>This button is used to turn on or off device indicators. By default, all indicators are on.<ul style="list-style-type: none"><li>Press the button once: turns off all device indicators.</li><li>Press the button again: turns on device indicators.</li></ul></div> |

Ports

Table 4-8 Ports on the AR180Plus

| Port               | Connector Type | Description                                                                                                                                                                                                                                                        | Available Components |
|--------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| GE electrical port | RJ45           | <div>A GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s.</div> <div><b>NOTE</b><br/>GE1 is a dedicated LAN interface. GE2, GE3, and GE4 are LAN interfaces by default and can be switched to WAN interfaces.</div> | Ethernet cable       |

| Port                    | Connector Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Available Components                                                                                             |
|-------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 2.5GE electrical port   | RJ45           | <p>A 2.5GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, or 2.5 Gbit/s.</p> <p><b>NOTE</b><br/>It works as a WAN interface by default and can be switched to a LAN interface.</p>                                                                                                                                                                                                                                                                                                                                | If the 2.5 Gbit/s speed is required, the electrical port must use an Ethernet cable of Cat5e or higher category. |
| Wi-Fi antenna interface | -              | <p>A Wi-Fi antenna interface connects to a Wi-Fi antenna to transmit and receive wireless data.</p> <ul style="list-style-type: none"> <li>Compliant standard: 2.4 GHz: 802.11b/g/n/ax/be; 5 GHz: 802.11a/n/ac/ax wave2/ax/be</li> <li>Frequency band: 2.4 GHz/5 GHz</li> <li>Antenna gain: 2.4 GHz: 3 dBi; 5 GHz: 4 dBi</li> <li>MIMO spatial streams: radio 0 (2.4 GHz): 2x2; radio 1 (5 GHz): 2x2</li> </ul> <p><b>NOTE</b><br/>Wi-Fi antennas have been installed on the Wi-Fi antenna interfaces of the device before delivery and cannot be removed.</p> | -                                                                                                                |

Indicators and Buttons

Figure 4-7 Indicators and buttons on the AR180Plus



|                             |                                       |                                         |
|-----------------------------|---------------------------------------|-----------------------------------------|
| 1. Working mode indicator   | 2. GE electrical interface indicators | 3. 2.5GE electrical interface indicator |
| 4. System running indicator | -                                     | -                                       |

Table 4-9 Indicators on the AR180Plus

| Silkscreen | Name                            | Color | Status        | Description                                                                                             |
|------------|---------------------------------|-------|---------------|---------------------------------------------------------------------------------------------------------|
| -          | System running status indicator | -     | Off           | The system is not running.                                                                              |
|            |                                 | Green | Fast blinking | The system is starting.                                                                                 |
|            |                                 | Green | Steady on     | In the system startup preparation phase, the SYS indicator is steady green for no more than 15 seconds. |
|            |                                 | Green | Slow blinking | The system is running properly.                                                                         |

| Silkscreen | Name                   | Color | Status        | Description                                                                                                 |
|------------|------------------------|-------|---------------|-------------------------------------------------------------------------------------------------------------|
|            |                        | Red   | Steady on     | The system does not work normally after registration, or a temperature alarm is generated.                  |
|            |                        | Blue  | Fast blinking | The device is connecting to the cloud.                                                                      |
|            |                        | Blue  | Slow blinking | The device is in the cloud-based management state. It has gone online successfully and is running properly. |
|            |                        | Red   | Fast blinking | You can press and hold down the RST button for more than 6s to restore the factory settings.                |
| MODE       | Working mode indicator | -     | Off           | The device works in routing mode.                                                                           |
|            |                        | Green | Steady on     | The device works in AP mode.                                                                                |
|            |                        | Green | Blinking      | The mode is being switched.                                                                                 |
| -          | Port indicator         | -     | Off           | The port is not connected or has been shut down.                                                            |
|            |                        | Green | Steady on     | The port is connected.                                                                                      |

| Silkscreen | Name | Color | Status   | Description                            |
|------------|------|-------|----------|----------------------------------------|
|            |      | Green | Blinking | The port is sending or receiving data. |

**Table 4-10** Buttons on the AR180Plus

| Silkscreen | Name         | Description                                                                                                                                                                                                                                                             |
|------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RST        | Reset button | <p>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.</p> <p>Pressing the button will reset the device.</p> <p>Resetting the device will interrupt services.</p> <p>Exercise caution when you press the button.</p> |

## Technical Specifications

**Table 4-11** Technical specifications of the AR180Plus

| Item                                               | Specification                                                                                                                                                                                                        |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation type                                  | <ul style="list-style-type: none"><li>• Work bench</li><li>• Against the wall</li></ul>                                                                                                                              |
| Chassis height [U]                                 | 0.8 U                                                                                                                                                                                                                |
| Dimensions without packaging (H x W x D) [mm(in.)] | <ul style="list-style-type: none"><li>• Basic dimensions: 35 mm x 195 mm x 130 mm (1.38 in. x 7.68 in. x 5.12 in.)</li><li>• Maximum dimensions: 163 mm x 195 mm x 150 mm (6.42 in. x 7.68 in. x 5.91 in.)</li></ul> |
| Dimensions with packaging (H x W x D) [mm(in.)]    | 90 mm x 230 mm x 185 mm (3.54 in. x 9.06 in. x 7.28 in.)                                                                                                                                                             |
| Weight with packaging [kg(lb)]                     | 1.10 kg (2.43 lb)                                                                                                                                                                                                    |
| Weight without packaging [kg(lb)]                  | 0.75 kg (1.65 lb)                                                                                                                                                                                                    |
| CPU                                                | 1.3 GHz, dual-core                                                                                                                                                                                                   |

| Item                          | Specification                 |
|-------------------------------|-------------------------------|
| Memory                        | 512 MB                        |
| NAND Flash                    | 256 MB                        |
| Console port                  | Not supported                 |
| RTC                           | Not supported                 |
| LAN ports                     | 4 x GE electrical interfaces  |
| WAN ports                     | 1 x 2.5GE electrical port     |
| Number of service board slots | 0                             |
| MIC slots (default/maximum)   | 0/0                           |
| SIC slots (default/maximum)   | 0/0                           |
| WSIC slots (default/maximum)  | 0/0                           |
| XSIC slots (default/maximum)  | 0/0                           |
| Redundant MPUs                | Not supported                 |
| RPS input                     | Not supported                 |
| PoE                           | Not supported                 |
| IP rating                     | IP20                          |
| MTBF [years]                  | 148.98 years                  |
| Availability                  | > 0.99999                     |
| Typical power consumption [W] | 7 W                           |
| Maximum power consumption [W] | 13 W                          |
| Power supply mode             | AC power adapter              |
| Number of power modules       | 1                             |
| Rated input voltage [V]       | 110 V AC–220 V AC; 50/60 Hz   |
| Input voltage range [V]       | 90 V AC–264 V AC; 45 Hz–65 Hz |
| Maximum input current [A]     | 2 A                           |
| Maximum output power [W]      | 24 W                          |
| Redundant power supply        | Not supported                 |
| Types of fans                 | None                          |
| Number of fan modules         | 0                             |
| Heat dissipation mode         | Natural heat dissipation      |
| Airflow                       | Natural heat dissipation      |

| Item                                                 | Specification                                                                                                                                                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noise at normal temperature (acoustic power) [dB(A)] | Fanless, silent                                                                                                                                                                                                         |
| Long-term operating temperature [°C(°F)]             | 0°C to 40°C (32°F to 104°F)<br><b>NOTE</b><br>When the altitude is 1800 m-5000 m (5906 ft.-16404.2 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). |
| Long-term operating relative humidity [RH]           | 5% RH to 95% RH, non-condensing                                                                                                                                                                                         |
| Long-term operating altitude [m(ft.)]                | < 5000 m (16404.2 ft.)                                                                                                                                                                                                  |
| Storage temperature [°C(°F)]                         | -40°C to +70°C (-40°F to +158°F)                                                                                                                                                                                        |
| Overtemperature alarm                                | Supported                                                                                                                                                                                                               |
| Certification                                        | EMC certification<br>Safety certification<br>Manufacturing certification                                                                                                                                                |

### 4.2.3 AR180Pro

#### Overview

Table 4-12 Basic information about the AR180Pro

| Item                    | Details                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------|
| Description             | AR180Pro (1*2.5GE WAN, 1*2.5GE LAN, 4*GE LAN, 2+2 WiFi7, with 1*AC power adapter, Fanless) |
| Part Number             | 50010844                                                                                   |
| Model                   | AR180Pro                                                                                   |
| First supported version | V600R025C00                                                                                |

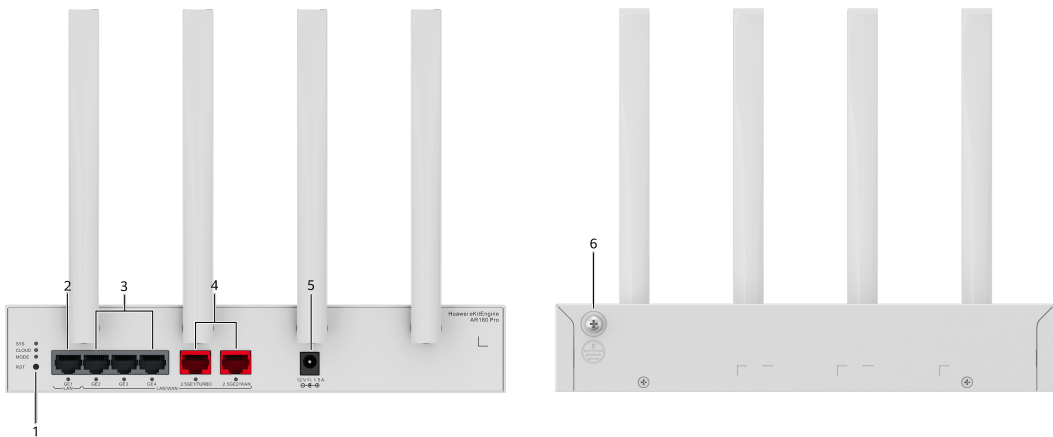
Appearance

Figure 4-8 Appearance of the AR180Pro



Components

Figure 4-9 Components of the AR180Pro



|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                        |                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. RST button</p> <p><b>NOTE</b></p> <p>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.</p> <p>Pressing the button will reset the device.</p> <p>Resetting the device will interrupt services. Exercise caution when you press the button.</p>                                                                                                                                       | <p>2. LAN interface: one GE electrical interface (GE1)</p> <p><b>NOTE</b></p> <p>GE1 is a dedicated LAN interface.</p> | <p>3. LAN interfaces: three GE electrical interfaces (GE2 to GE4)</p> <p><b>NOTE</b></p> <p>GE2, GE3, and GE4 work as LAN interfaces by default, and can be switched to WAN interfaces.</p> |
| <p>4. Two 2.5GE electrical interfaces (2.5GE1/TURBO and 2.5GE2/WAN)</p> <p><b>NOTE</b></p> <p>2.5GE1 works as a LAN interface by default and can be switched to a WAN interface.</p> <p>2.5GE2 works as a WAN interface by default and can be switched to a LAN interface.</p> <p>2.5GE1 is a prioritized forwarding interface. In case of upstream WAN interface congestion, traffic on the 2.5GE1 interface is preferentially forwarded.</p> | <p>5. Power socket</p>                                                                                                 | <p>6. Ground point</p>                                                                                                                                                                      |

## Ports

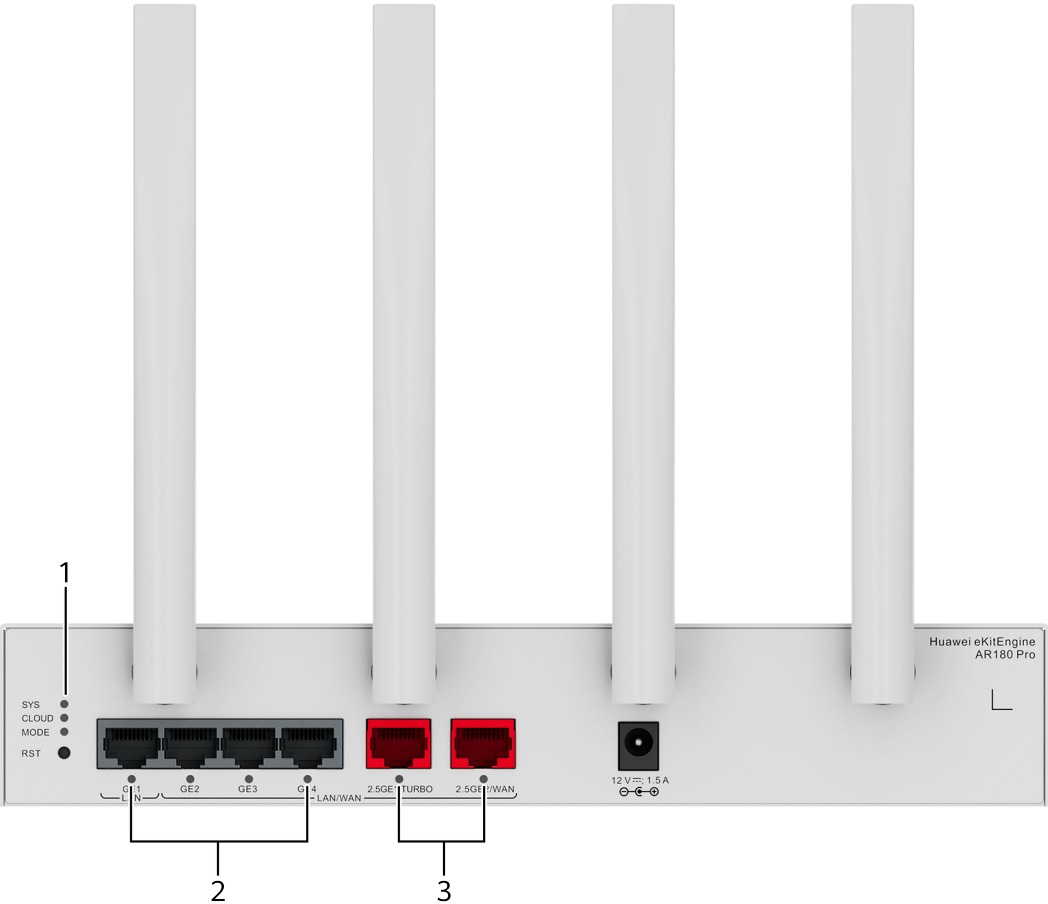
**Table 4-13** Ports on the AR180Pro

| Port                  | Connector Type | Description                                                                                                                                                                                                                                                                                                                                            | Available Components                                                                                             |
|-----------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| GE electrical port    | RJ45           | <p>A GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s.</p> <p><b>NOTE</b><br/>GE1 is a dedicated LAN interface. GE2, GE3, and GE4 are LAN interfaces by default and can be switched to WAN interfaces.</p>                                                                                             | <a href="#">Ethernet cable</a>                                                                                   |
| 2.5GE electrical port | RJ45           | <p>A 2.5GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, or 2.5 Gbit/s.</p> <p><b>NOTE</b><br/>The 2.5GE1 interface works as a LAN interface by default and can be switched to a WAN interface.<br/>The 2.5GE2 interface works as a WAN interface by default and can be switched to a LAN interface.</p> | If the 2.5 Gbit/s speed is required, the electrical port must use an Ethernet cable of Cat5e or higher category. |

| Port                    | Connector Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Available Components |
|-------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Wi-Fi antenna interface | -              | <p>A Wi-Fi antenna interface connects to a Wi-Fi antenna to transmit and receive wireless data.</p> <ul style="list-style-type: none"> <li>Compliant standard: 2.4 GHz: 802.11b/g/n/ax/be; 5 GHz: 802.11a/n/ac/awave2/ax/be</li> <li>Frequency band: 2.4 GHz/5 GHz</li> <li>Antenna gain: 2.4 GHz: 3 dBi; 5 GHz: 4 dBi</li> <li>MIMO spatial streams: radio 0 (2.4 GHz): 2x2; radio 1 (5 GHz): 2x2</li> </ul> <p><b>NOTE</b><br/>Wi-Fi antennas have been installed on the Wi-Fi antenna interfaces of the device before delivery and cannot be removed.</p> | -                    |

Indicators and Buttons

Figure 4-10 Indicators and buttons on the AR180Pro



|                                                                                                                                                                       |                                       |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|
| 1. From top to bottom: <ul style="list-style-type: none"><li>• System running indicator</li><li>• Network status indicator</li><li>• Working mode indicator</li></ul> | 2. GE electrical interface indicators | 3. 2.5GE electrical interface indicators |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|

Table 4-14 Indicators on the AR180Pro

| Silkscreen | Name                            | Color | Status        | Description                |
|------------|---------------------------------|-------|---------------|----------------------------|
| SYS        | System running status indicator | -     | Off           | The system is not running. |
|            |                                 | Green | Fast blinking | The system is starting.    |

| Silkscreen | Name                     | Color | Status        | Description                                                                                             |
|------------|--------------------------|-------|---------------|---------------------------------------------------------------------------------------------------------|
|            |                          | Green | Steady on     | In the system startup preparation phase, the SYS indicator is steady green for no more than 15 seconds. |
|            |                          | Green | Slow blinking | The system is running properly.                                                                         |
|            |                          | Red   | Steady on     | The system does not work normally after registration, or a temperature alarm is generated.              |
|            |                          | Red   | Fast blinking | You can press and hold down the RST button for more than 6s to restore the factory settings.            |
| CLOUD      | Network status indicator | -     | Off           | The device is not cloud-managed.                                                                        |
|            |                          | Blue  | Fast blinking | The device is connecting to the cloud.                                                                  |
|            |                          | Blue  | Slow blinking | The device is in the cloud-based management state and goes online successfully.                         |
| MODE       | Working mode indicator   | -     | Off           | The device works in routing mode.                                                                       |

| Silkscreen | Name           | Color | Status    | Description                                      |
|------------|----------------|-------|-----------|--------------------------------------------------|
|            |                | Green | Steady on | The device works in AP mode.                     |
|            |                | Green | Blinking  | The mode is being switched.                      |
| -          | Port indicator | -     | Off       | The port is not connected or has been shut down. |
|            |                | Green | Steady on | The port is connected.                           |
|            |                | Green | Blinking  | The port is sending or receiving data.           |

**Table 4-15** Buttons on the AR180Pro

| Silkscreen | Name         | Description                                                                                                                                                                                                                                                             |
|------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RST        | Reset button | <p>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.</p> <p>Pressing the button will reset the device.</p> <p>Resetting the device will interrupt services.</p> <p>Exercise caution when you press the button.</p> |

## Technical Specifications

**Table 4-16** Technical specifications of the AR180Pro

| Item               | Specification |
|--------------------|---------------|
| Installation type  | Work bench    |
| Chassis height [U] | 1 U           |

| Item                                               | Specification                                                                                                                                                                                                         |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions without packaging (H x W x D) [mm(in.)] | <ul style="list-style-type: none"> <li>Basic dimensions: 43.6 mm x 250 mm x 180 mm (1.72 in. x 9.84 in. x 7.09 in.)</li> <li>Maximum dimensions: 192 mm x 250 mm x 210 mm (7.56 in. x 9.84 in. x 8.27 in.)</li> </ul> |
| Dimensions with packaging (H x W x D) [mm(in.)]    | 90 mm x 465 mm x 350 mm (3.54 in. x 18.31 in. x 13.78 in.)                                                                                                                                                            |
| Weight with packaging [kg(lb)]                     | 2.16 kg (4.76 lb)                                                                                                                                                                                                     |
| Weight without packaging [kg(lb)]                  | 1.46 kg (3.22 lb)                                                                                                                                                                                                     |
| CPU                                                | 1.3 GHz, dual-core                                                                                                                                                                                                    |
| Memory                                             | 512 MB                                                                                                                                                                                                                |
| NAND Flash                                         | 256 MB                                                                                                                                                                                                                |
| Console port                                       | Not supported                                                                                                                                                                                                         |
| RTC                                                | Not supported                                                                                                                                                                                                         |
| LAN ports                                          | 4 x GE electrical ports, 1 x 2.5GE electrical port                                                                                                                                                                    |
| WAN ports                                          | 1 x 2.5GE electrical port                                                                                                                                                                                             |
| Number of service board slots                      | 0                                                                                                                                                                                                                     |
| MIC slots (default/maximum)                        | 0/0                                                                                                                                                                                                                   |
| SIC slots (default/maximum)                        | 0/0                                                                                                                                                                                                                   |
| WSIC slots (default/maximum)                       | 0/0                                                                                                                                                                                                                   |
| XSIC slots (default/maximum)                       | 0/0                                                                                                                                                                                                                   |
| Redundant MPUs                                     | Not supported                                                                                                                                                                                                         |
| RPS input                                          | Not supported                                                                                                                                                                                                         |
| PoE                                                | Not supported                                                                                                                                                                                                         |
| IP rating                                          | IP20                                                                                                                                                                                                                  |
| MTBF [years]                                       | 138.56 years                                                                                                                                                                                                          |
| Availability                                       | > 0.99999                                                                                                                                                                                                             |
| Typical power consumption [W]                      | 7.5 W                                                                                                                                                                                                                 |
| Maximum power consumption [W]                      | 13.5 W                                                                                                                                                                                                                |
| Power supply mode                                  | AC power adapter                                                                                                                                                                                                      |
| Number of power modules                            | 1                                                                                                                                                                                                                     |

| Item                                                 | Specification                                                                                                                                                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated input voltage [V]                              | 110 V AC–220 V AC; 50/60 Hz                                                                                                                                                                                             |
| Input voltage range [V]                              | 90 V AC–264 V AC; 45 Hz–65 Hz                                                                                                                                                                                           |
| Maximum input current [A]                            | 2 A                                                                                                                                                                                                                     |
| Maximum output power [W]                             | 24 W                                                                                                                                                                                                                    |
| Redundant power supply                               | Not supported                                                                                                                                                                                                           |
| Types of fans                                        | None                                                                                                                                                                                                                    |
| Number of fan modules                                | 0                                                                                                                                                                                                                       |
| Heat dissipation mode                                | Natural heat dissipation                                                                                                                                                                                                |
| Airflow                                              | Natural heat dissipation                                                                                                                                                                                                |
| Noise at normal temperature (acoustic power) [dB(A)] | Fanless, silent                                                                                                                                                                                                         |
| Long-term operating temperature [°C(°F)]             | 0°C to 40°C (32°F to 104°F)<br><b>NOTE</b><br>When the altitude is 1800 m-5000 m (5906 ft.-16404.2 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). |
| Long-term operating relative humidity [RH]           | 5% RH to 95% RH, non-condensing                                                                                                                                                                                         |
| Long-term operating altitude [m(ft.)]                | < 5000 m (16404.2 ft.)                                                                                                                                                                                                  |
| Storage temperature [°C(°F)]                         | -40°C to +70°C (-40°F to +158°F)                                                                                                                                                                                        |
| Overtemperature alarm                                | Supported                                                                                                                                                                                                               |
| Certification                                        | EMC certification<br>Safety certification<br>Manufacturing certification                                                                                                                                                |

## 4.3 AR280 Series

### 4.3.1 AR280

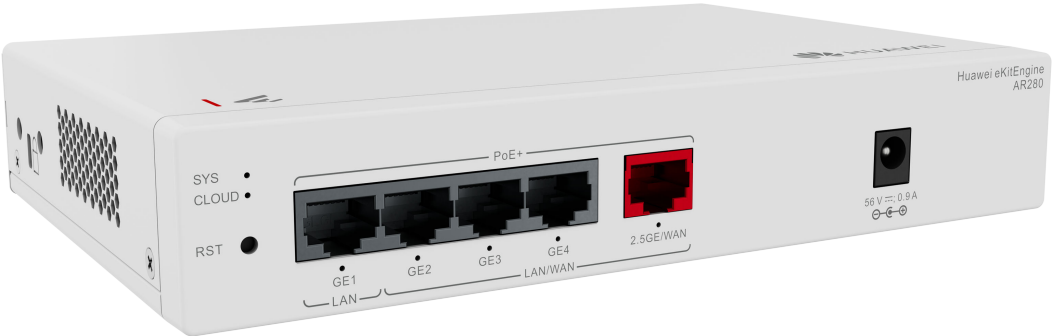
Overview

Table 4-17 Basic information about the AR280

| Item                    | Details                                                                   |
|-------------------------|---------------------------------------------------------------------------|
| Description             | AR280 (1*2.5GE WAN, 4*GE LAN, 41W PoE+, with 1*AC power adapter, Fanless) |
| Part Number             | 50010846                                                                  |
| Model                   | AR280                                                                     |
| First supported version | V600R025C00                                                               |

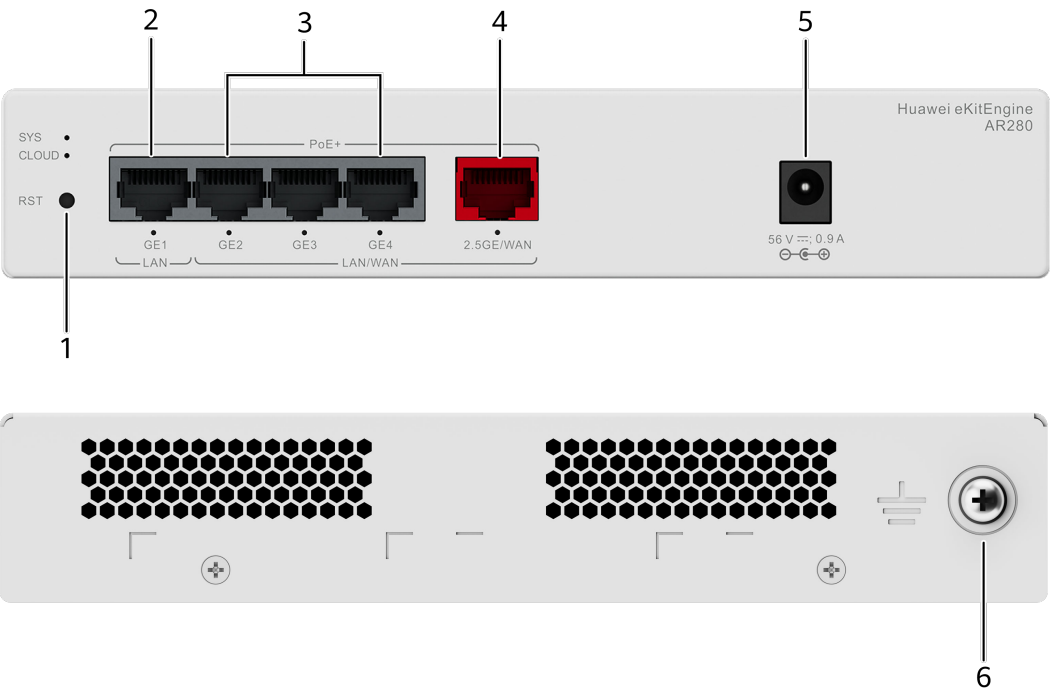
Appearance

Figure 4-11 Appearance of the AR280



Components

Figure 4-12 Components of the AR280



|                                                                                                                                                                                                                                                                                                          |                                                                                                                                                              |                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. RST button</p> <p><b>NOTE</b></p> <p>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.</p> <p>Pressing the button will reset the device.</p> <p>Resetting the device will interrupt services. Exercise caution when you press the button.</p> | <p>2. LAN interface: one GE electrical interface (PoE+) (GE1)</p> <p><b>NOTE</b></p> <p>GE1 is a dedicated LAN interface.</p> <p>GE1 is a PoE interface.</p> | <p>3. LAN interfaces: three GE electrical interfaces (PoE+) (GE2 to GE4)</p> <p><b>NOTE</b></p> <p>GE2, GE3, and GE4 work as LAN interfaces by default, and can be switched to WAN interfaces.</p> <p>GE2, GE3, and GE4 are PoE interfaces.</p> |
| <p>4. WAN interface: one 2.5GE electrical interface (PoE+) (2.5GE/WAN)</p> <p><b>NOTE</b></p> <p>It works as a WAN interface by default and can be switched to a LAN interface.</p> <p>The 2.5GE interface is a PoE interface.</p>                                                                       | <p>5. Power socket</p>                                                                                                                                       | <p>6. Ground point</p>                                                                                                                                                                                                                          |

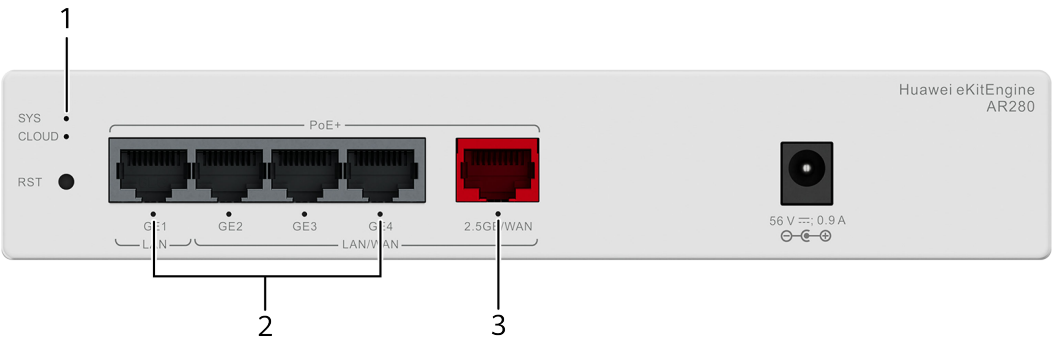
Ports

Table 4-18 Ports on the AR280

| Port                  | Connector Type | Description                                                                                                                                                                                                                                        | Available Components                                                                                             |
|-----------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| GE electrical port    | RJ45           | A GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, or 1000 Mbit/s.<br><br><b>NOTE</b><br>GE1 is a dedicated LAN interface. GE2, GE3, and GE4 are LAN interfaces by default and can be switched to WAN interfaces. | Ethernet cable                                                                                                   |
| 2.5GE electrical port | RJ45           | A 2.5GE electrical interface transmits and receives services at 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s, or 2.5 Gbit/s.<br><br><b>NOTE</b><br>It works as a WAN interface by default and can be switched to a LAN interface.                            | If the 2.5 Gbit/s speed is required, the electrical port must use an Ethernet cable of Cat5e or higher category. |

Indicators and Buttons

Figure 4-13 Indicators and buttons on the AR280



|                                                                                                                                      |                                       |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|
| 1. From top to bottom: <ul style="list-style-type: none"><li>• System running indicator</li><li>• Network status indicator</li></ul> | 2. GE electrical interface indicators | 3. 2.5GE electrical interface indicator |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|

Table 4-19 Indicators on the AR280

| Silkscreen | Name                            | Color | Status        | Description                                                                                             |
|------------|---------------------------------|-------|---------------|---------------------------------------------------------------------------------------------------------|
| SYS        | System running status indicator | -     | Off           | The system is not running.                                                                              |
|            |                                 | Green | Fast blinking | The system is starting.                                                                                 |
|            |                                 | Green | Steady on     | In the system startup preparation phase, the SYS indicator is steady green for no more than 15 seconds. |
|            |                                 | Green | Slow blinking | The system is running properly.                                                                         |
|            |                                 | Red   | Steady on     | The system does not work normally after registration, or a temperature alarm is generated.              |
|            |                                 | Red   | Fast blinking | You can press and hold down the RST button for more than 6s to restore the factory settings.            |
| CLOUD      | Network status indicator        | -     | Off           | The device is not cloud-managed.                                                                        |

| Silkscreen | Name           | Color | Status        | Description                                                                     |
|------------|----------------|-------|---------------|---------------------------------------------------------------------------------|
|            |                | Blue  | Fast blinking | The device is connecting to the cloud.                                          |
|            |                | Blue  | Slow blinking | The device is in the cloud-based management state and goes online successfully. |
| -          | Port indicator | -     | Off           | The port is not connected or has been shut down.                                |
|            |                | Green | Steady on     | The port is connected.                                                          |
|            |                | Green | Blinking      | The port is sending or receiving data.                                          |

Table 4-20 Buttons on the AR280

| Silkscreen | Name         | Description                                                                                                                                                                                                                                                             |
|------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RST        | Reset button | <p>Holding down the button for more than 6 seconds will resume the factory settings and reset the device.</p> <p>Pressing the button will reset the device.</p> <p>Resetting the device will interrupt services.</p> <p>Exercise caution when you press the button.</p> |

## Technical Specifications

**Table 4-21** Technical specifications of the AR280

| Item                                               | Specification                                                                                                                                                                                                       |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation type                                  | <ul style="list-style-type: none"><li>• Work bench</li><li>• Against the wall</li></ul>                                                                                                                             |
| Chassis height [U]                                 | 0.8 U                                                                                                                                                                                                               |
| Dimensions without packaging (H x W x D) [mm(in.)] | <ul style="list-style-type: none"><li>• Basic dimensions: 35 mm x 195 mm x 130 mm (1.38 in. x 7.68 in. x 5.12 in.)</li><li>• Maximum dimensions: 35 mm x 195 mm x 136 mm (1.38 in. x 7.68 in. x 5.35 in.)</li></ul> |
| Dimensions with packaging (H x W x D) [mm(in.)]    | 90 mm x 230 mm x 185 mm (3.54 in. x 9.06 in. x 7.28 in.)                                                                                                                                                            |
| Weight with packaging [kg(lb)]                     | 1.29 kg (2.84 lb)                                                                                                                                                                                                   |
| Weight without packaging [kg(lb)]                  | 0.93 kg (2.05 lb)                                                                                                                                                                                                   |
| CPU                                                | 1.3 GHz, dual-core                                                                                                                                                                                                  |
| Memory                                             | 512 MB                                                                                                                                                                                                              |
| NAND Flash                                         | 256 MB                                                                                                                                                                                                              |
| Console port                                       | Not supported                                                                                                                                                                                                       |
| RTC                                                | Not supported                                                                                                                                                                                                       |
| LAN ports                                          | 4 x GE electrical interfaces                                                                                                                                                                                        |
| WAN ports                                          | 1 x 2.5GE electrical port                                                                                                                                                                                           |
| Number of service board slots                      | 0                                                                                                                                                                                                                   |
| MIC slots (default/maximum)                        | 0/0                                                                                                                                                                                                                 |
| SIC slots (default/maximum)                        | 0/0                                                                                                                                                                                                                 |
| WSIC slots (default/maximum)                       | 0/0                                                                                                                                                                                                                 |
| XSIC slots (default/maximum)                       | 0/0                                                                                                                                                                                                                 |
| Redundant MPUs                                     | Not supported                                                                                                                                                                                                       |
| RPS input                                          | Not supported                                                                                                                                                                                                       |
| PoE                                                | Supported                                                                                                                                                                                                           |
| Maximum PoE output power [W]                       | 41 W                                                                                                                                                                                                                |
| PoE power ports                                    | 5                                                                                                                                                                                                                   |

| Item                                                 | Specification                                                                                                                                                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PoE+ power ports                                     | 5                                                                                                                                                                                                                       |
| IP rating                                            | IP20                                                                                                                                                                                                                    |
| MTBF [years]                                         | 156.18 years                                                                                                                                                                                                            |
| Availability                                         | > 0.99999                                                                                                                                                                                                               |
| Typical power consumption [W]                        | 5.8 W                                                                                                                                                                                                                   |
| Maximum power consumption [W]                        | 49 (PoE:41W)                                                                                                                                                                                                            |
| Power supply mode                                    | AC power adapter                                                                                                                                                                                                        |
| Number of power modules                              | 1                                                                                                                                                                                                                       |
| Rated input voltage [V]                              | 100 V AC–240 V AC; 50/60 Hz                                                                                                                                                                                             |
| Input voltage range [V]                              | 90 V AC–264 V AC; 45 Hz–65 Hz                                                                                                                                                                                           |
| Maximum input current [A]                            | 0.9 A                                                                                                                                                                                                                   |
| Maximum output power [W]                             | 50 W                                                                                                                                                                                                                    |
| Redundant power supply                               | Not supported                                                                                                                                                                                                           |
| Types of fans                                        | None                                                                                                                                                                                                                    |
| Number of fan modules                                | 0                                                                                                                                                                                                                       |
| Heat dissipation mode                                | Natural heat dissipation                                                                                                                                                                                                |
| Airflow                                              | Natural heat dissipation                                                                                                                                                                                                |
| Noise at normal temperature (acoustic power) [dB(A)] | Fanless, silent                                                                                                                                                                                                         |
| Long-term operating temperature [°C(°F)]             | 0°C to 40°C (32°F to 104°F)<br><b>NOTE</b><br>When the altitude is 1800 m-5000 m (5906 ft.-16404.2 ft.), the highest operating temperature reduces by 1°C (1.8°F) every time the altitude increases by 220 m (722 ft.). |
| Long-term operating relative humidity [RH]           | 5% RH to 95% RH, non-condensing                                                                                                                                                                                         |
| Long-term operating altitude [m(ft.)]                | < 5000 m (16404.2 ft.)                                                                                                                                                                                                  |
| Storage temperature [°C(°F)]                         | -40°C to +70°C (-40°F to +158°F)                                                                                                                                                                                        |
| Overtemperature alarm                                | Supported                                                                                                                                                                                                               |
| Certification                                        | EMC certification<br>Safety certification<br>Manufacturing certification                                                                                                                                                |

# 5 Power Supply

- 5.1 Types of Power Supplies
- 5.2 AD-560090D0D (Adapter Power-AD-560090D0D-Desktop-50.4W)
- 5.3 HW-24-12AC8D (Adapter,0degC,40degC,100V,240V,12V/2A,C8 /2.1\*5.5\*9.5 H DC PLUG("L"),SABS/SASO)

## 5.1 Types of Power Supplies

**Table 5-1** describes the types of supported power supplies. The actual power supplies applicable to a router vary depending on the device model.

**Table 5-1** Supported power supplies

| Power Supply Type | Description                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Power adapter     | An external unit that connects the device to an external power supply to supply power to the device.                                            |
| PoE adapter       | An external unit that connects the device to an external power supply and allows it to supply power to connected powered devices (PDs) via PoE. |

## 5.2 AD-560090D0D (Adapter Power-AD-560090D0D-Desktop-50.4W)

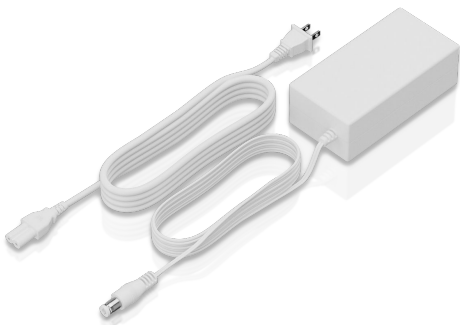
Overview

Table 5-2 Basic information about the AD-560090D0D

| Item        | Details                                  |
|-------------|------------------------------------------|
| Description | Adapter Power-AD-560090D0D-Desktop-50.4W |
| Part Number | 02221860                                 |
| Model       | AD-560090D0D                             |

Appearance

Figure 5-1 Appearance of the AD-560090D0D



Version Mapping

Table 5-3 Mappings between AD-560090D0D and product models

| Product | Product Model    | First Supported Version |
|---------|------------------|-------------------------|
| AR280   | AR280 (50010846) | V600R025C00             |

Technical Specifications

Table 5-4 Technical specifications of the AD-560090D0D

| Item                                               | Specification                                            |
|----------------------------------------------------|----------------------------------------------------------|
| Dimensions without packaging (H x W x D) [mm(in.)] | 30.5 mm x 55 mm x 100 mm (1.2 in. x 2.17 in. x 3.94 in.) |
| Weight without packaging [kg(lb)]                  | 0.2 kg (0.44 lb)                                         |
| Rated input voltage [V]                            | 100 V AC–240 V AC; 50/60 Hz                              |
| Input voltage range [V]                            | 90 V AC–264 V AC; 45 Hz–65 Hz                            |
| Maximum input current [A]                          | 1.5 A                                                    |
| Rated output voltage [V]                           | 56 V DC                                                  |
| Rated output power [W]                             | 50.4 W                                                   |
| Power dissipation Mode                             | Natural heat dissipation, fanless                        |

5.3 HW-24-12AC8D  
(Adapter,0degC,40degC,100V,240V,12V/2A,C8 /  
2.1\*5.5\*9.5 H DC PLUG("L"),SABS/SASO)

Overview

Table 5-5 Basic information about the HW-24-12AC8D

| Item        | Details                                                                               |
|-------------|---------------------------------------------------------------------------------------|
| Description | Adapter,0degC,40degC,100V,240V,12V/<br>2A,C8 /2.1*5.5*9.5 H DC<br>PLUG("L"),SABS/SASO |
| Part Number | 02220493                                                                              |
| Model       | HW-24-12AC8D                                                                          |

Appearance

Figure 5-2 Appearance of the HW-24-12AC8D



Version Mapping

Table 5-6 Mappings between HW-24-12AC8D and product models

| Product | Product Model        | First Supported Version |
|---------|----------------------|-------------------------|
| AR180   | AR180 (50010839)     | V600R025C00             |
| AR180   | AR180Plus (50010841) | V600R025C00             |
| AR180   | AR180Pro (50010844)  | V600R025C00             |

Functions and Features

Table 5-7 Functions and features of the HW-24-12AC8D

| Functions and Features             | Description                                                                                                                                                                                   |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input overcurrent protection       | In this protection state, the power adapter stops supplying power and cannot automatically resume power supply when the input current restores to the normal range.                           |
| Output current limiting protection | In this protection state, the power adapter supplies power intermittently. When the output current is limited within a range, the power adapter automatically resumes power supply.           |
| Output overvoltage protection      | In this protection state, the power adapter stops supplying power intermittently. When the output voltage restores to the normal range, the power adapter automatically resumes power supply. |

| Functions and Features          | Description                                                                                                                                                         |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output short-circuit protection | In this protection state, the power adapter supplies power intermittently. When the short circuit is removed, the power adapter automatically resumes power supply. |

## Technical Specifications

**Table 5-8** Technical specifications of the HW-24-12AC8D

| Item                                               | Specification                                          |
|----------------------------------------------------|--------------------------------------------------------|
| Dimensions without packaging (H x W x D) [mm(in.)] | 27 mm x 88 mm x 50 mm (1.06 in. x 3.46 in. x 1.97 in.) |
| Weight without packaging [kg(lb)]                  | 0.1 kg (0.22 lb)                                       |
| Rated input voltage [V]                            | 100 V AC to 240 V AC, 50 Hz/60 Hz                      |
| Input voltage range [V]                            | 90 V AC to 264 V AC, 47 Hz to 63 Hz                    |
| Maximum input current [A]                          | 0.8 A                                                  |
| Rated output voltage [V]                           | 12 V DC                                                |
| Rated output power [W]                             | 24 W                                                   |
| Power dissipation Mode                             | Natural heat dissipation                               |
| Hot swapping                                       | Not supported                                          |

# 6 Cable

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## 6.1 Ethernet Cable

## 6.2 Ground Cable

## 6.1 Ethernet Cable

### Connection

A straight-through cable can connect devices at different network layers in the following scenarios:

- Connect a switch or hub to a router.
- Connect a computer (server or workstation) to a switch or hub.
- Connect a switch to an upper-layer switch through an uplink interface.

A crossover cable can connect devices at the same network layer in the following scenarios:

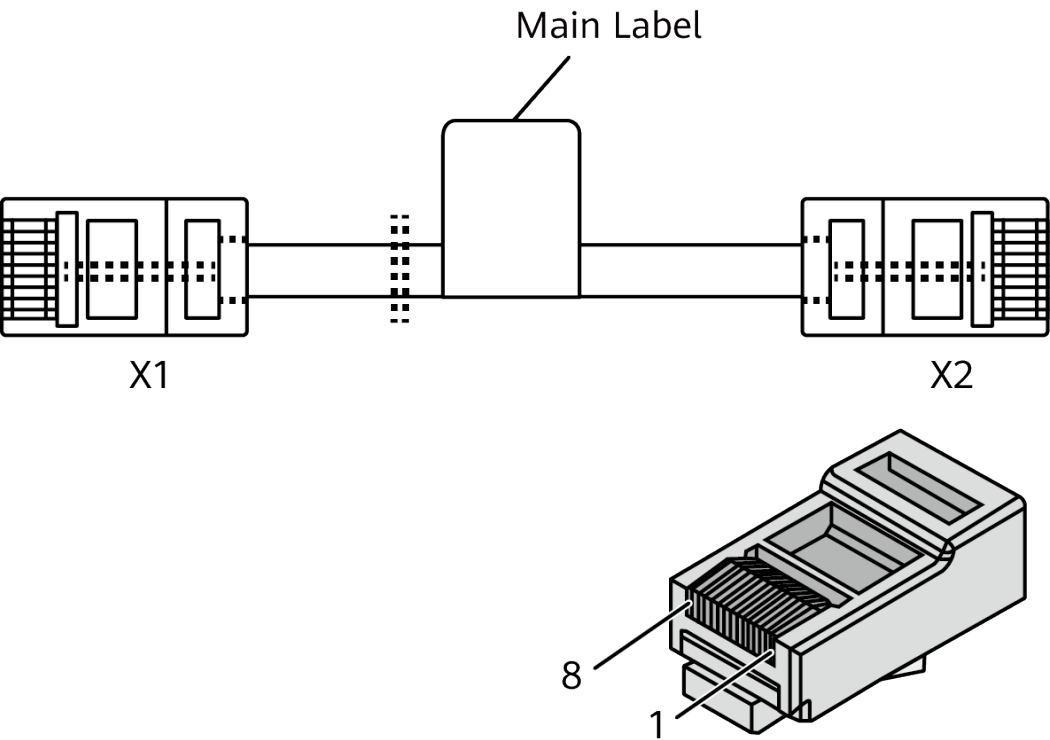
- Connect a computer to a router.
- Connect two switches at the same layer.
- Connect two hubs.
- Connect two computers.
- Connect two routers.
- Connect an Ethernet interface of an ADSL modem to the network interface of a computer.

#### NOTE

Most network devices support auto-negotiation on their interfaces. After auto-negotiation is enabled, the local and remote interfaces can automatically negotiate about communication parameters. In this case, the two interfaces can be connected by either a straight-through cable or a crossover cable.

Appearance and Structure

Figure 6-1 Structure of the Ethernet Cable



NOTE

An Ethernet cable consists of twisted pairs and RJ45 connectors at both ends. Pin assignments in the RJ45 connectors comply with the T568A or T568B standard. [Table 6-1](#) describes the two standards.

Table 6-1 T568A and T568B standards

| T568A |                  | T568B |                  |
|-------|------------------|-------|------------------|
| Pin   | Wire Color       | Pin   | Wire Color       |
| 1     | White and green  | 1     | White and orange |
| 2     | Green            | 2     | Orange           |
| 3     | White and orange | 3     | White and green  |
| 4     | Blue             | 4     | Blue             |
| 5     | White and blue   | 5     | White and blue   |
| 6     | Orange           | 6     | Green            |
| 7     | White and brown  | 7     | White and brown  |
| 8     | Brown            | 8     | Brown            |

## Pin Assignments

Depending on whether RJ45 connectors at both ends comply with the same standard, Ethernet cables are classified into two types:

- Straight-through cable: The RJ45 connectors at both ends comply with the T568B standard.

**Table 6-2** lists the pin assignments of a straight-through cable.

**Table 6-2** Pin assignments of a straight-through cable

| X1 (RJ45) | Wire Color       | X2 (RJ45) |
|-----------|------------------|-----------|
| 1         | White and orange | 1         |
| 2         | Orange           | 2         |
| 3         | White and green  | 3         |
| 4         | Blue             | 4         |
| 5         | White and blue   | 5         |
| 6         | Green            | 6         |
| 7         | White and brown  | 7         |
| 8         | Brown            | 8         |

- Crossover cable: One RJ45 connector complies with the T568A standard, and the other RJ45 connector complies with the T568B standard.

**Table 6-3** lists the pin assignments of a crossover cable.

**Table 6-3** Pin assignments of a crossover cable

| X1 (RJ45) | Wire Color       | X2 (RJ45) |
|-----------|------------------|-----------|
| 1         | White and orange | 3         |
| 2         | Orange           | 6         |
| 3         | White and green  | 1         |
| 4         | Blue             | 4         |
| 5         | White and blue   | 5         |
| 6         | Green            | 2         |
| 7         | White and brown  | 7         |
| 8         | Brown            | 8         |

Technical Specifications

Table 6-4 Technical specifications of the Ethernet Cable

| Description                                                                                | Part Number | Model          | Cable length | Connector type X1 | Connector type X2 |
|--------------------------------------------------------------------------------------------|-------------|----------------|--------------|-------------------|-------------------|
| Single Cable, Straight Through Cable, 2.00m, MP8-I, CC4P0.5GY, MP8-I, Unshielded , DL3470d | 04024336    | S-8-0.4-RJ45-5 | 2 m          | RJ45              | RJ45              |
| Signal Cable, Shielded Straight Through Cable, 3m, MP8-II, CC4P0.5G Y(S), MP8-II, FTP      | 04070006    | CSST00301      | 3 m          | RJ45              | RJ45              |
| Signal Cable, Shielded Crossover Network Cable, 3m, MP8-II,CC4P0.5G Y(S), MP8-II, FTP      | 04070007    | C00SCNC03      | 3 m          | RJ45              | RJ45              |
| Signal Cable, Shielded Straight Through Cable, 2.0m, MP8-II, CC4P0.5G Y(S), MP8-II, FTP    | 04070050    | S-8-0.4-RJ45-2 | 2 m          | RJ45              | RJ45              |

 NOTE

Select straight-through or crossover cables according to your network requirements. In an environment with severe electromagnetic interference, shielded Ethernet cables are recommended. If the cables need to be extended, configure one network interface connector (part number: 14080099) and one extension cable based on the number of the cables.

6.2 Ground Cable

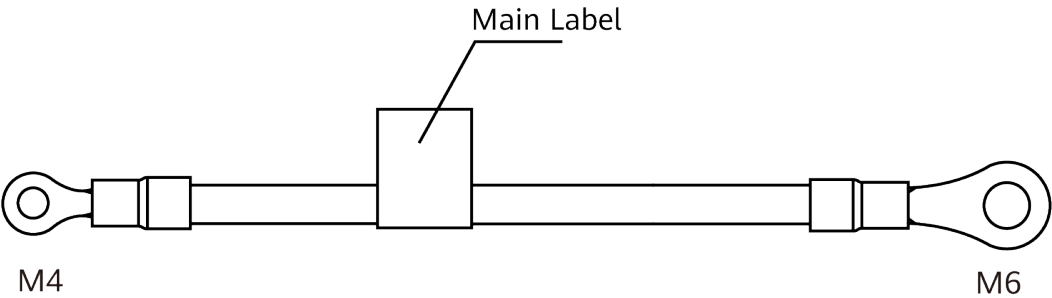
Connection

A ground cable is connected as follows:

- The M4 lug is connected to the ground point on a router.
- The M6 lug is connected to the ground point or equipotential terminal on a cabinet.

Appearance and Structure

Figure 6-2 Structure of the Ground Cable



 NOTE

A ground cable grounds a router to protect it from lightning and electromagnetic interference.

Technical Specifications

Table 6-5 Technical specifications of the Ground Cable

| Item        | Details                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------|
| Part Number | 04150052                                                                                          |
| Model       | CGND04600                                                                                         |
| Description | Power Cable, 0.4m, 6mm <sup>2</sup> , Yellow&Green, OT6-4, H07Z-K-6 <sup>2</sup> G&Y, OT6-6, LSZH |

| Item              | Details |
|-------------------|---------|
| Cable length [m]  | 0.4 m   |
| Connector type X1 | OT6-4   |
| Connector type X2 | OT6-6   |