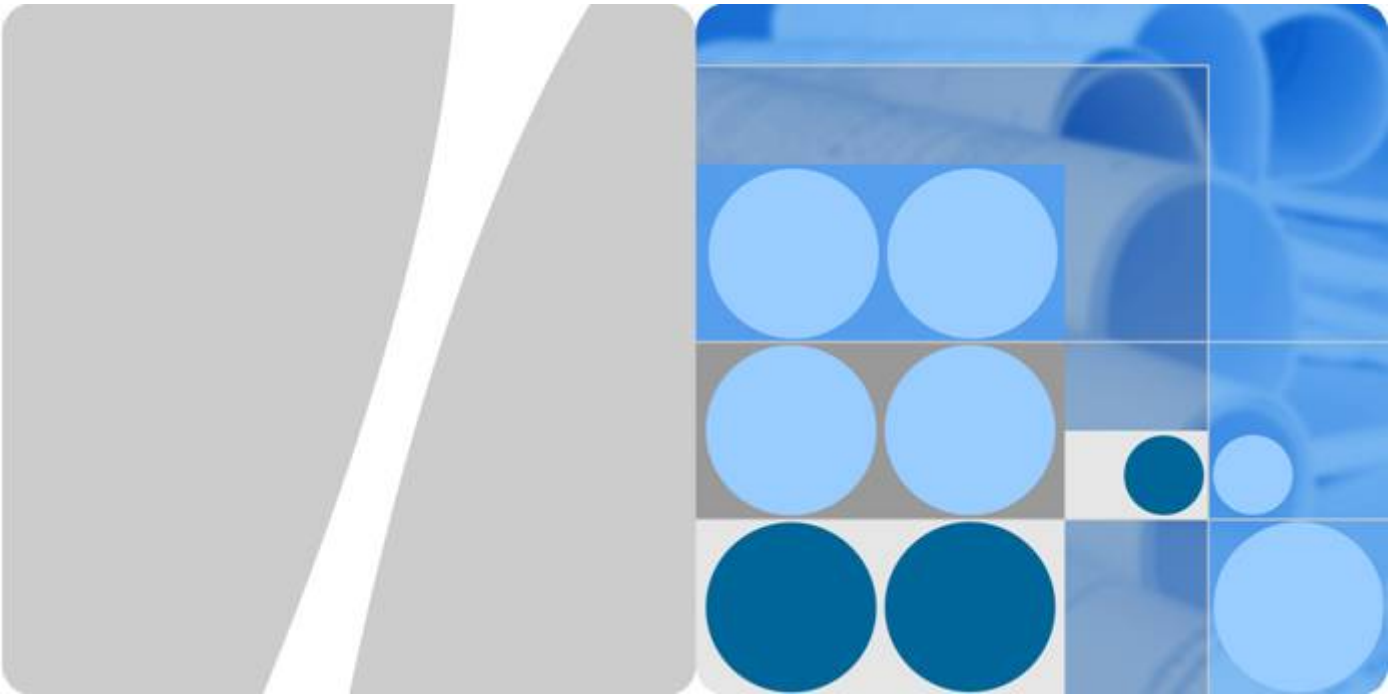

eKitEngine AR180 and AR280

V600R025C00

Hardware Description

Issue 01

Date 2025-09-30

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

Symbol	Description
NOTE	Supplements the important information in the main text. **NOTE** is used to address information not related to personal injury, equipment damage, and environment deterioration.

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:

  Heat dissipation (BTU/hr) = Power consumption (W) × 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

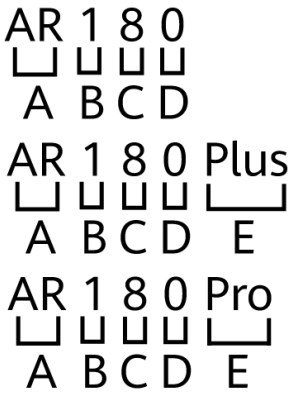


Table 4-1 Naming conventions of AR180 series routers

Identifier	Meaning	Detailed Description
A	Product name	AR: enterprise router
B	Product platform	• 1: mini AR • 2: small AR
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

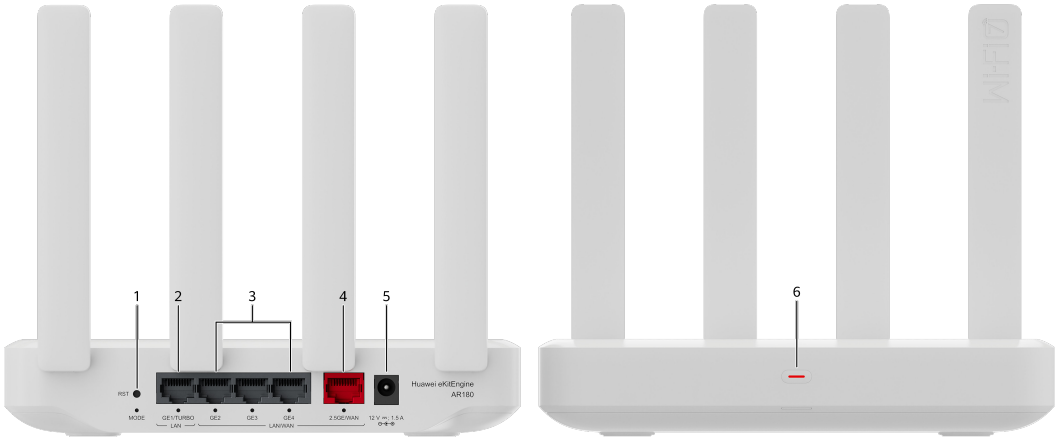
Item	Details
Description	AR180 (1*2.5GE WAN, 4*GE LAN, 2+2 WiFi7, Venus White, with 1*AC power adapter, Fanless)
Part Number	50010839
Model	AR180
First supported version	V600R025C00

Appearance

Figure 4-2 Appearance of the AR180

Components

Figure 4-3 Components of the AR180



1. RST button **NOTE** Holding down the button for more than 6 seconds will resume the factory settings and reset the device. Pressing the button will reset the device. Resetting the device will interrupt services. Exercise caution when you press the button.	2. LAN interface: one GE electrical interface (GE1/TURBO) **NOTE** GE1 is a dedicated LAN interface. GE1/TURBO is a prioritized forwarding interface. In case of upstream WAN interface congestion, traffic on the GE1/TURBO interface is preferentially forwarded.	3. LAN interfaces: three GE electrical interfaces (GE2 to GE4) **NOTE** GE2, GE3, and GE4 work as LAN interfaces by default, and can be switched to WAN interfaces.
4. WAN interface: one 2.5GE electrical interface **NOTE** It works as a WAN interface by default and can be switched to a LAN interface.	5. Power socket	6. Button to turn on/off indicators **NOTE** This button is used to turn on or off device indicators. By default, all indicators are on. • Press the button once: turns off all device indicators. • Press the button again: turns on device indicators.

Ports

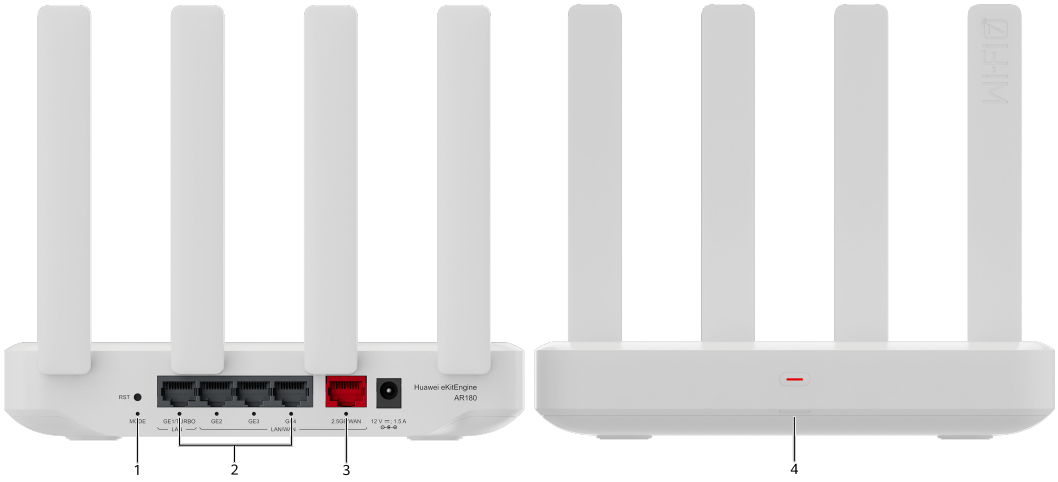
Table 4-3 Ports on the AR180

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. **NOTE** GE1 is a dedicated LAN interface. GE2, GE3, and GE4 are LAN interfaces by default and can be switched to WAN interfaces.	**Ethernet cable**

Port	Connector Type	Description	Available Components
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. **NOTE** 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.
Wi-Fi antenna interface	-	A Wi-Fi antenna interface connects to a Wi-Fi antenna to transmit and receive wireless data. ● Compliant standard: 2.4 GHz: 802.11b/g/n/ax/be; 5 GHz: 802.11a/n/ac/ac wave2/ax/be ● Frequency band: 2.4 GHz/5 GHz ● Antenna gain: 2.4 GHz: 3 dBi; 5 GHz: 4 dBi ● MIMO spatial streams: radio 0 (2.4 GHz): 2x2; radio 1 (5 GHz): 2x2 **NOTE** Wi-Fi antennas have been installed on the Wi-Fi antenna interfaces of the device before delivery and cannot be removed.	-

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	Holding down the button for more than 6 seconds will resume the factory settings and reset the device. Pressing the button will reset the device. Resetting the device will interrupt services. Exercise caution when you press the button.

Technical Specifications

Table 4-6 Technical specifications of the AR180

Item	Specification
Installation type	• Work bench • Against the wall
Chassis height [U]	0.8 U
Dimensions without packaging (H x W x D) [mm(in.)]	• Basic dimensions: 35 mm x 195 mm x 130 mm (1.38 in. x 7.68 in. x 5.12 in.) • Maximum dimensions: 163 mm x 195 mm x 150 mm (6.42 in. x 7.68 in. x 5.91 in.)
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) **NOTE** 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 Safety certification Manufacturing certification

4.2.2 AR180Plus

Overview

Table 4-7 Basic information about the AR180Plus

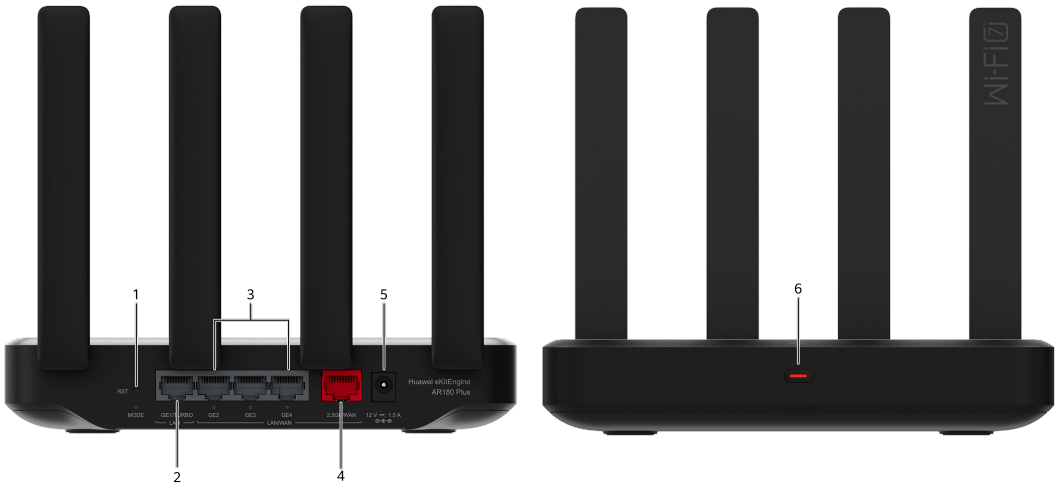
Item	Details
Description	AR180Plus (1*2.5GE WAN, 4*GE LAN, 2+2 WiFi7, Reynis Black, with 1*AC power adapter, Fanless)
Part Number	50010841
Model	AR180Plus
First supported version	V600R025C00

Appearance

Figure 4-5 Appearance of the AR180Plus

Components

Figure 4-6 Components of the AR180Plus



1. RST button **NOTE** Holding down the button for more than 6 seconds will resume the factory settings and reset the device. Pressing the button will reset the device. Resetting the device will interrupt services. Exercise caution when you press the button.	2. LAN interface: one GE electrical interface (GE1/TURBO) **NOTE** GE1 is a dedicated LAN interface. GE1/TURBO is a prioritized forwarding interface. In case of upstream WAN interface congestion, traffic on the GE1/TURBO interface is preferentially forwarded.	3. LAN interfaces: three GE electrical interfaces (GE2 to GE4) **NOTE** GE2, GE3, and GE4 work as LAN interfaces by default, and can be switched to WAN interfaces.
4. WAN interface: one 2.5GE electrical interface **NOTE** It works as a WAN interface by default and can be switched to a LAN interface.	5. Power socket	6. Button to turn on/off indicators **NOTE** This button is used to turn on or off device indicators. By default, all indicators are on. • Press the button once: turns off all device indicators. • Press the button again: turns on device indicators.

Ports

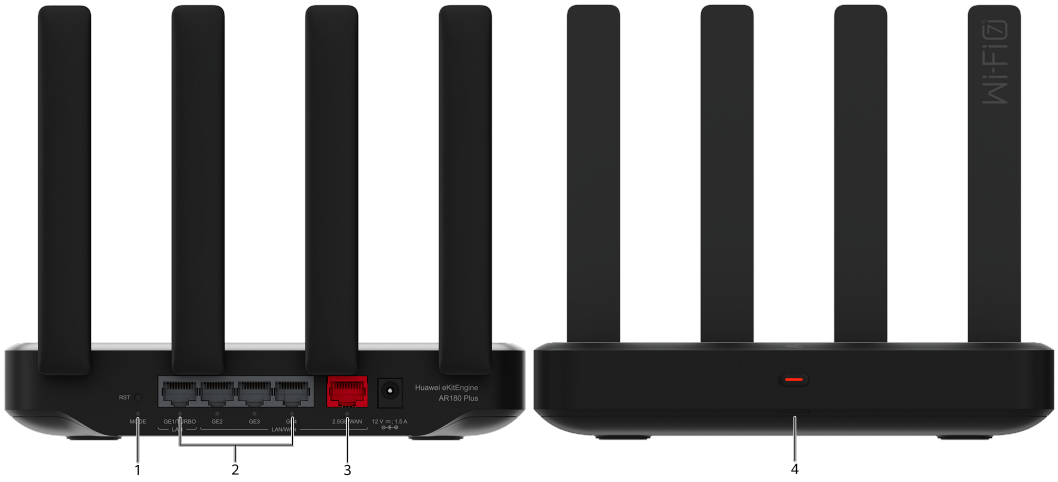
Table 4-8 Ports on the AR180Plus

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. **NOTE** GE1 is a dedicated LAN interface. GE2, GE3, and GE4 are LAN interfaces by default and can be switched to WAN interfaces.	**Ethernet cable**

Port	Connector Type	Description	Available Components
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. **NOTE** 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.
Wi-Fi antenna interface	-	A Wi-Fi antenna interface connects to a Wi-Fi antenna to transmit and receive wireless data. ● Compliant standard: 2.4 GHz: 802.11b/g/n/ax/be; 5 GHz: 802.11a/n/ac/ac wave2/ax/be ● Frequency band: 2.4 GHz/5 GHz ● Antenna gain: 2.4 GHz: 3 dBi; 5 GHz: 4 dBi ● MIMO spatial streams: radio 0 (2.4 GHz): 2x2; radio 1 (5 GHz): 2x2 **NOTE** Wi-Fi antennas have been installed on the Wi-Fi antenna interfaces of the device before delivery and cannot be removed.	-

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	Holding down the button for more than 6 seconds will resume the factory settings and reset the device. Pressing the button will reset the device. Resetting the device will interrupt services. Exercise caution when you press the button.

Technical Specifications

Table 4-11 Technical specifications of the AR180Plus

Item	Specification
Installation type	• Work bench • Against the wall
Chassis height [U]	0.8 U
Dimensions without packaging (H x W x D) [mm(in.)]	• Basic dimensions: 35 mm x 195 mm x 130 mm (1.38 in. x 7.68 in. x 5.12 in.) • Maximum dimensions: 163 mm x 195 mm x 150 mm (6.42 in. x 7.68 in. x 5.91 in.)
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) **NOTE** 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 Safety certification Manufacturing certification

4.2.3 AR180Pro

Overview

Table 4-12 Basic information about the AR180Pro

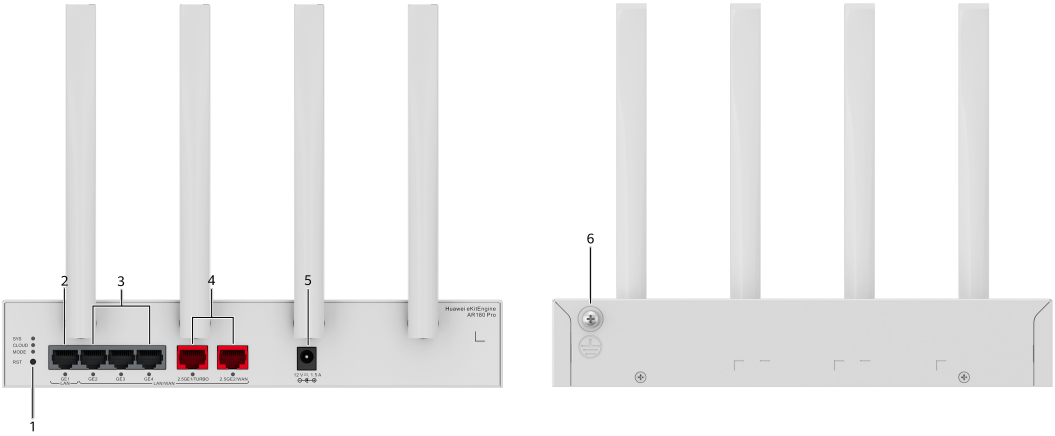
Item	Details
Description	AR180Pro (1*2.5GE WAN, 1*2.5GE LAN, 4*GE LAN, 2+2 WiFi7, with 1*AC power adapter, Fanless)
Part Number	50010844
Model	AR180Pro
First supported version	V600R025C00

Appearance

Figure 4-8 Appearance of the AR180Pro

Components

Figure 4-9 Components of the AR180Pro



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

Ports

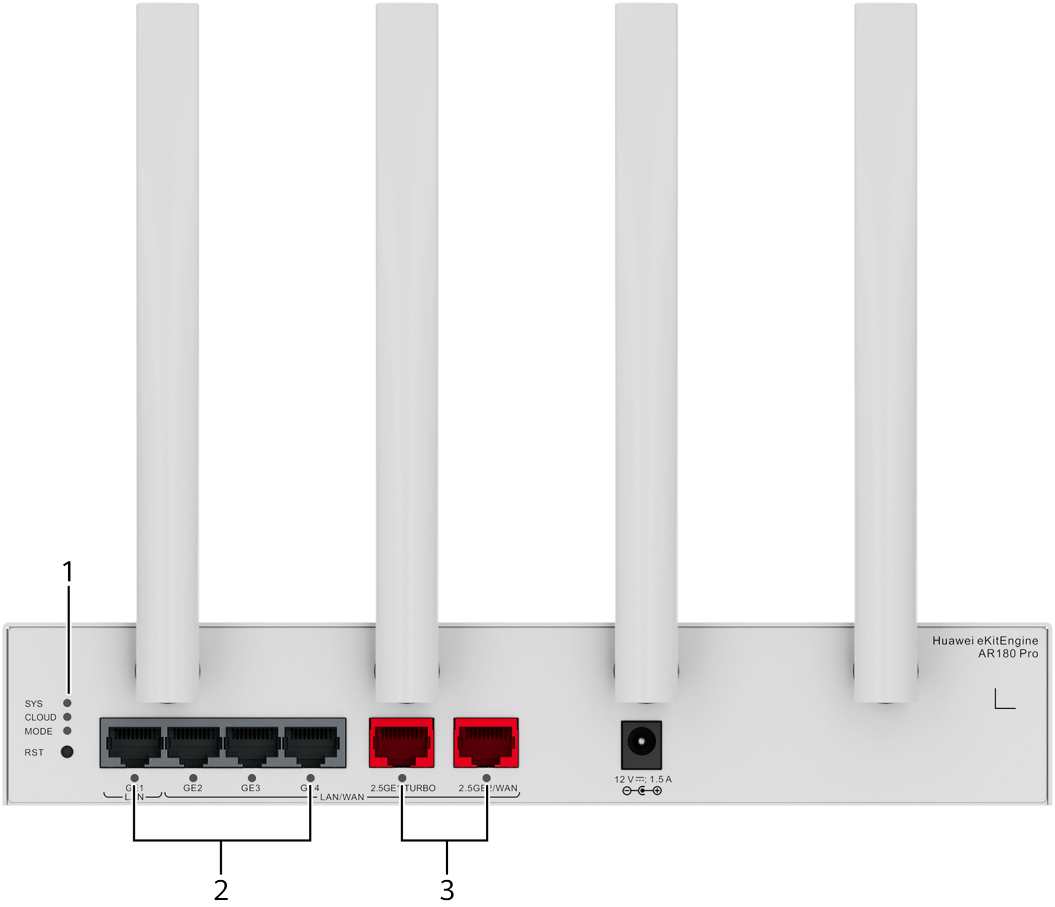
Table 4-13 Ports on the AR180Pro

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. **NOTE** 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. **NOTE** The 2.5GE1 interface works as a LAN interface by default and can be switched to a WAN interface. The 2.5GE2 interface 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.

Port	Connector Type	Description	Available Components
Wi-Fi antenna interface	-	A Wi-Fi antenna interface connects to a Wi-Fi antenna to transmit and receive wireless data. ● Compliant standard: 2.4 GHz: 802.11b/g/n/ax/be; 5 GHz: 802.11a/n/ac/ac wave2/ax/be ● Frequency band: 2.4 GHz/5 GHz ● Antenna gain: 2.4 GHz: 3 dBi; 5 GHz: 4 dBi ● MIMO spatial streams: radio 0 (2.4 GHz): 2x2; radio 1 (5 GHz): 2x2 **NOTE** Wi-Fi antennas have been installed on the Wi-Fi antenna interfaces of the device before delivery and cannot be removed.	-

Indicators and Buttons

Figure 4-10 Indicators and buttons on the AR180Pro



1. From top to bottom: • System running indicator • Network status indicator • Working mode indicator	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	Holding down the button for more than 6 seconds will resume the factory settings and reset the device. Pressing the button will reset the device. Resetting the device will interrupt services. Exercise caution when you press the button.

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.)]	• Basic dimensions: 43.6 mm x 250 mm x 180 mm (1.72 in. x 9.84 in. x 7.09 in.) • Maximum dimensions: 192 mm x 250 mm x 210 mm (7.56 in. x 9.84 in. x 8.27 in.)
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) **NOTE** 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 Safety certification Manufacturing certification

4.3 AR280 Series

4.3.1 AR280

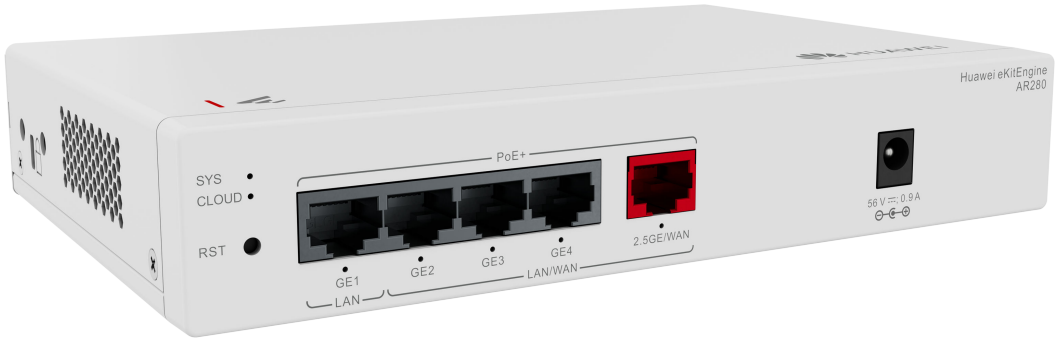
Overview

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

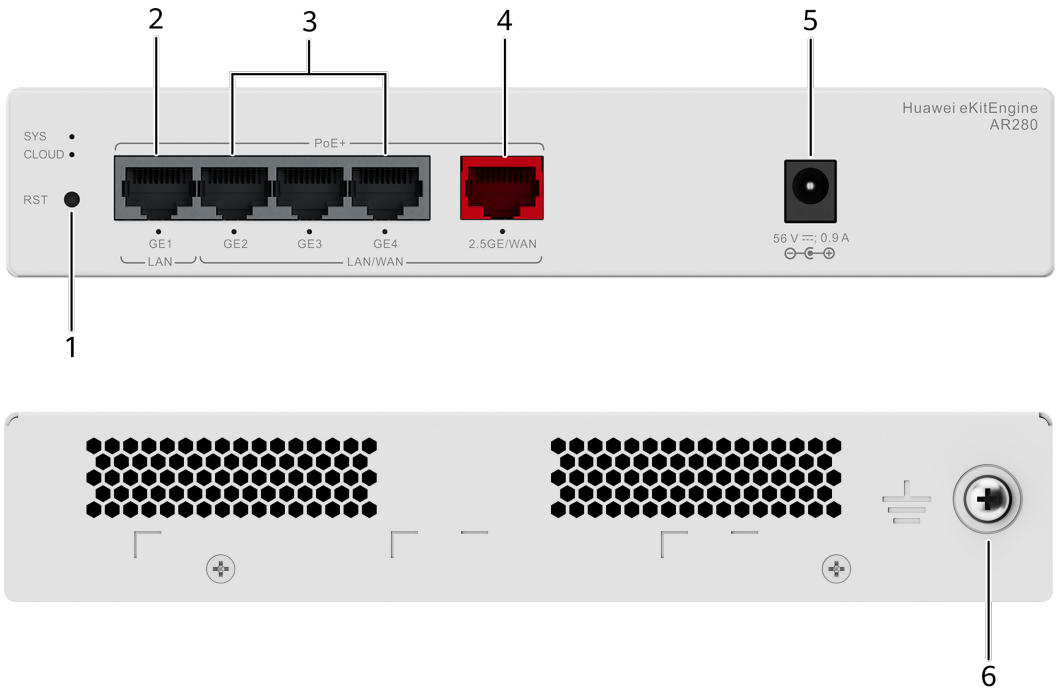
Appearance

Figure 4-11 Appearance of the AR280



Components

Figure 4-12 Components of the AR280



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

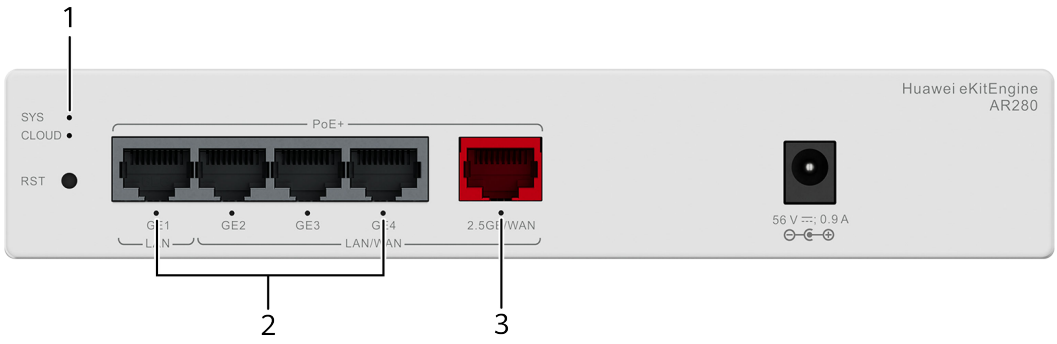
Ports

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. **NOTE** 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. **NOTE** 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: • System running indicator • Network status indicator	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	Holding down the button for more than 6 seconds will resume the factory settings and reset the device. Pressing the button will reset the device. Resetting the device will interrupt services. Exercise caution when you press the button.

Technical Specifications

Table 4-21 Technical specifications of the AR280

Item	Specification
Installation type	• Work bench • Against the wall
Chassis height [U]	0.8 U
Dimensions without packaging (H x W x D) [mm(in.)]	• Basic dimensions: 35 mm x 195 mm x 130 mm (1.38 in. x 7.68 in. x 5.12 in.) • Maximum dimensions: 35 mm x 195 mm x 136 mm (1.38 in. x 7.68 in. x 5.35 in.)
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) **NOTE** 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 Safety certification 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)

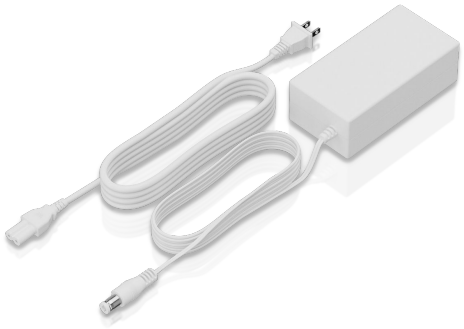
Overview

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/2A,C8 /2.1*5.5*9.5 H DC 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

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:

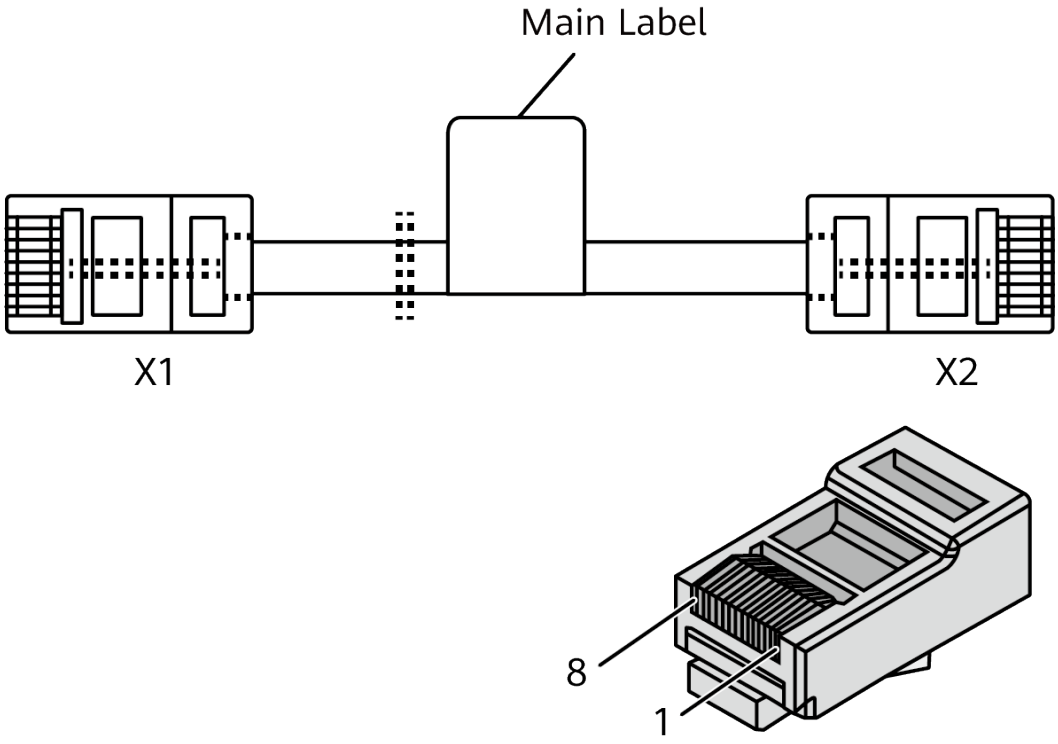
- Connect a computer to a router.
- Connect two switches at the same layer.
- Connect two hubs.
- Connect two computers.
- Connect two routers.
- Connect an Ethernet interface of an ADSL modem to the network interface of a computer.

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, CC4P0.5GY(S), MP8-II, FTP	04070006	CSST00301	3 m	RJ45	RJ45
Signal Cable, Shielded Crossover Network Cable, 3m, MP8-II,CC4P0.5GY(S), MP8-II, FTP	04070007	C00SCNC03	3 m	RJ45	RJ45
Signal Cable, Shielded Straight Through Cable, 2.0m, MP8-II, CC4P0.5GY(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

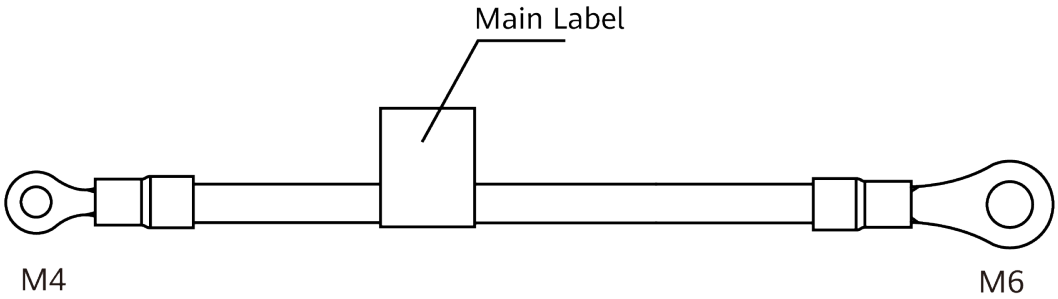
Connection

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^2, Yellow&Green, OT6-4, H07Z-K-6^2G&Y, OT6-6, LSZH

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

