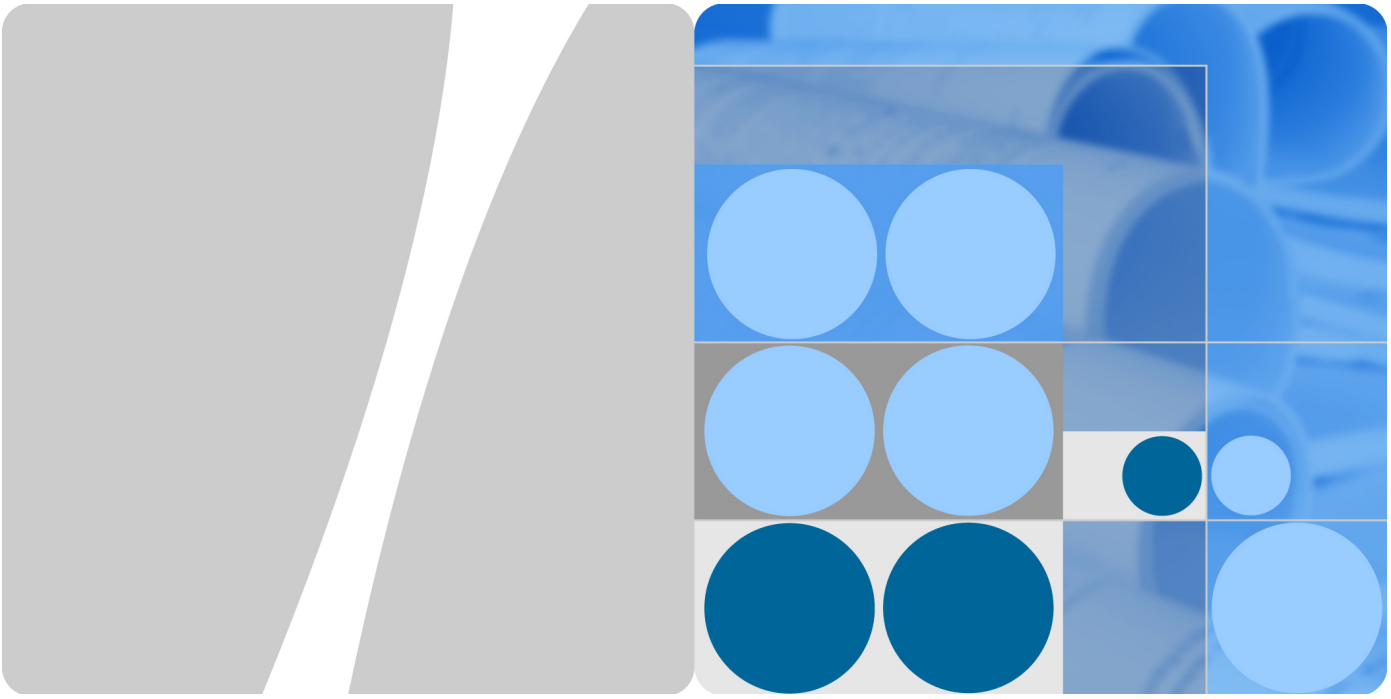

HUAWEI WS331c Range Extender Product Description

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Contents

1 Overview

1.1 Function Overview

HUAWEI WS331c 300Mbps WiFi Range Extender (hereinafter referred to as the WS331c) is a radio signal repeater that can work with wireless access points (APs) to extend the wireless network coverage.

Using the WS331c over a wireless network effectively helps solve radio signal issues, such as signal impairment and attenuation. The WS331c receives radio frequency signals (that is, 802.11 frames) from wireless devices, such as APs, clients, or other repeaters, and forwards the frames without changing the contents of the frames, thus extending the wireless network coverage. The wireless signals of the WS331c can cover some dead zones, such as the partition walls or partition floors of bedrooms, cellars, or yards, thus effectively extending the wireless signal coverage and easily implementing various wireless applications.

A wireless local area network (WLAN) with the WS331c supports the IEEE 802.11b, 802.11g, and 802.11n standards, providing you with high-rate wireless networking functions.

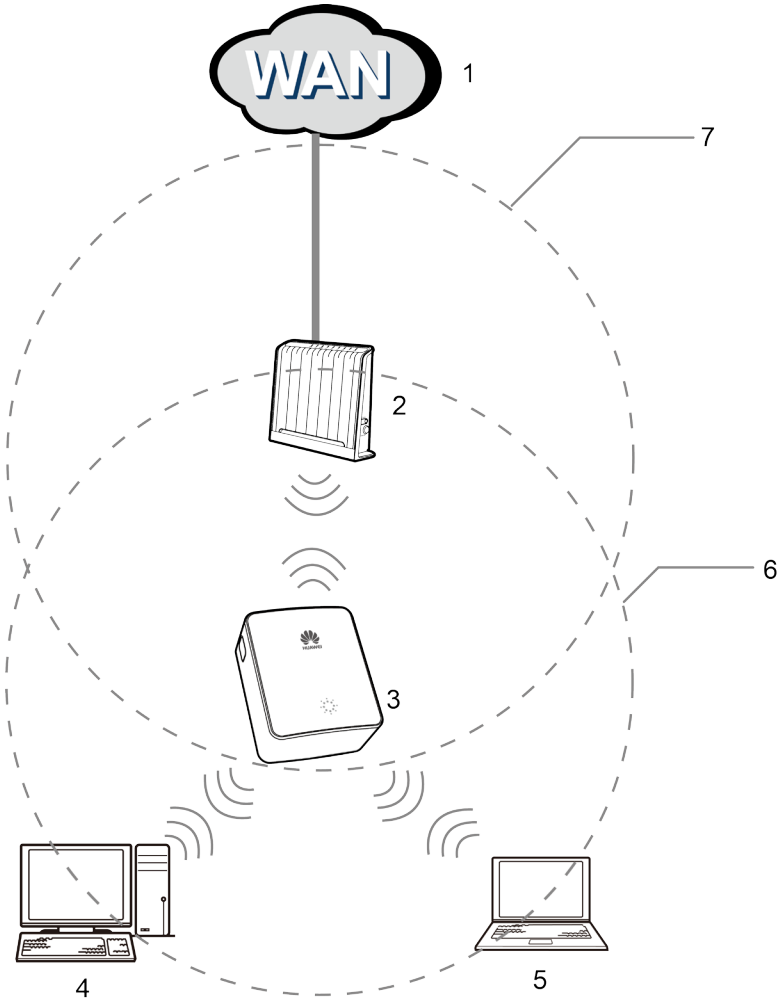
Figure 1-1 shows the appearance of the WS331c.

Figure 1-1 Appearance of the WS331c

1.2 Network Architecture

Figure 1-2 shows the networking diagram of the WS331c.

Figure 1-2 Networking diagram of the WS331c



1. Wide area network (WAN) 2.Wireless AP 3. WS331c
4. Desktop computer installed with a wireless adapter
5. Laptop installed with a wireless adapter
6. Coverage of the WLAN with the WS331c
7. Coverage of the WLAN with the AP

1.3 Hardware Features

1.3.1 Interfaces and Buttons

Figure 1-3 Interfaces and buttons on the WS331c

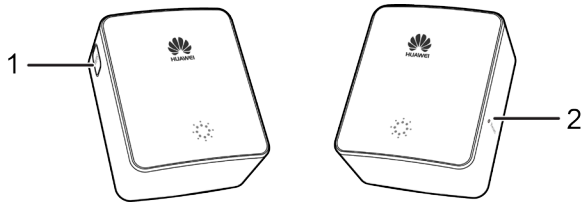


Table 1-1 Functions of the interfaces and buttons

No.	Description
1	WPS button: used to start the WPS negotiation of the WS331c.
2	Reset button: used to restore the default settings of the WS331c.
NOTE WPS = Wireless Fidelity Protected Setup	

1.3.2 Indicators

Figure 1-4 Indicator of the WS331c

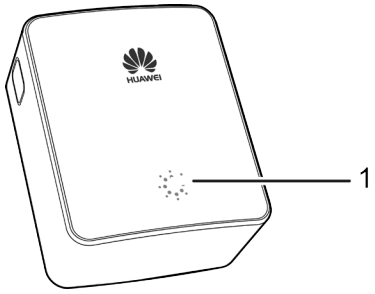


Table 1-2 Description of the indicator on the WS331c

No.	Description
1	Status indicator: used to indicate the working state of the WS331c.

2 Product Features

2.1 Built-In Antenna

With a built-in antenna, the WS331c features a compact, simple, and elegant appearance.

2.2 Multiple WLAN Protocols

The WS331c supports multiple WLAN protocols, including 802.11b, 802.11g, and 802.11n (2.4 GHz–2.4835 GHz, using a 2T × 2R antenna). It also supports different wireless encryption modes, providing a secure, reliable, and high-speed WLAN access for users.

2.3 802.11n

The WS331c supports 802.11n (using a 2T × 2R antenna). It can implement the network access at a high speed of 300 Mbit/s.

2.4 WPS

The WS331c provides a WPS button, which facilitates fast, convenient, and secure establishment of a wireless connection.

2.5 Convenient and Secure Management and Maintenance

The WS331c provides a Web-based configuration utility, and ensures secure use of this Web-based configuration utility through password verification.

3 Technical Specifications

3.1 WLAN Interface

WLAN Specifications

- Supports the following multiple WLAN protocols:
  - 802.11b
  - 802.11g
  - 802.11n (2.4 GHz–2.4835 GHz)
- Supports multiple modulation modes
- Supports simultaneous access of multiple wireless terminals

WLAN Rates

- 802.11b: 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, and 11 Mbit/s
- 802.11g: 6 Mbit/s, 9 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s, and 54 Mbit/s
- 802.11n (with 2T2R antenna used) : 7.2 Mbit/s, 14.4 Mbit/s, 15.0 Mbit/s, 21.7 Mbit/s, 28.9 Mbit/s, 30.0 M bit/s, 43.3 Mbit/s, 45.0 Mbit/s, 57.8 Mbit/s, 60.0 Mbit/s, 65.0Mbit/s, 72.2 Mbit/s, 86.7 Mbit/s, 90.0 Mbit/s, 115.6 Mbit/s, 120.0 Mbit/s, 130.0 Mbit/s, 135.0 Mbit/s, 144.4 Mbit/s, 150.0 Mbit/s, 180.0 Mbit/s, 240.0 Mbit/s, 270.0 Mbit/s, 300.0 Mbit/s

3.2 Security Features

- Supports the following multiple authentication modes on the WLAN interface
  - Open system
  - Wi-Fi Protected Access-pre-shared key (WPA-PSK)
  - WPA2-PSK
- Supports the following multiple encryption modes on the WLAN interface:
  - Wired Equivalent Privacy (WEP) encryption (64-bit and 128-bit)
  - Temporal Key Integrity Protocol (TKIP) encryption
  - Advanced Encryption Standard (AES) encryption
- Supports the following WPS modes:
  - Push Button Configuration (PBC) mode
  - Personal identification number (PIN) code mode
- Supports hiding of the service set identifier (SSID)

3.3 Maintenance and Management

- Local management through Web-based configuration utility
- Upgrading software through the Web management interface
- Software upgrade in multicast mode

3.4 Power Supply Specifications

- Supports power plugs with various specifications:
  - Chinese standard
  - American standard
  - British standard
  - European standard
- Power supply: 100 V AC–240 V AC
- Power consumption: < 5 W

3.5 Physical Specifications

Power Plug Specification	Dimensions (L × W × H)	Weight
China and America	76 mm × 42 mm × 59 mm	About 60 g
Britain	76 mm × 42 mm × 62mm	About 67g
Europe	76 mm × 42 mm × 69mm	About 67 g

3.6 Environmental Specifications

- Ambient temperature for operation: 0°C to 40°C (32°F to 104°F)
- Relative humidity for operation: 5% to 95% , non-condensing

4 Acronyms and abbreviations

Abbreviation	Full Form
AES	Advanced Encryption Standard
LAN	local area network
PBC	Push button configuration
PIN	personal identification number
PSK	Pre-shared Key
SSID	service set identifier
TKIP	Temporal Key Integrity Protocol
WAN	wide area network
WEP	Wired Equivalent Privacy
WLAN	wireless local area network
WPA	Wireless Fidelity Protected Access
WPS	Wireless Fidelity Protected Setup