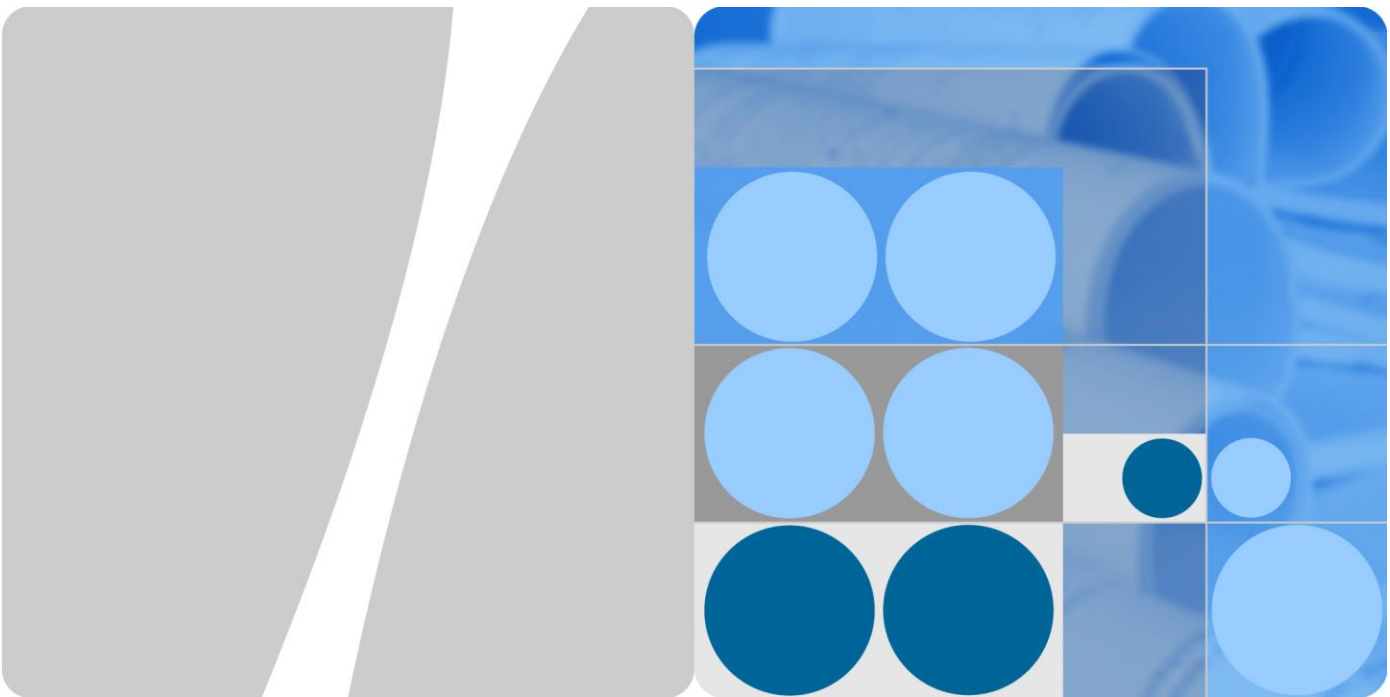


Part Number: 203179



# HUAWEI HG532e Home Gateway Product Description

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HUAWEI TECHNOLOGIES CO., LTD.





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# 1 Overview

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## 1.1 Introduction to the HG532e

**Figure 1-1** Appearance of the HG532e



HUAWEI HG532e Home Gateway (hereinafter referred to as the HG532e) is a type of Asymmetrical Digital Subscriber Line (ADSL) terminal. At the network side, it provides ADSL2+ for rapid Internet access and high-speed broadband access.

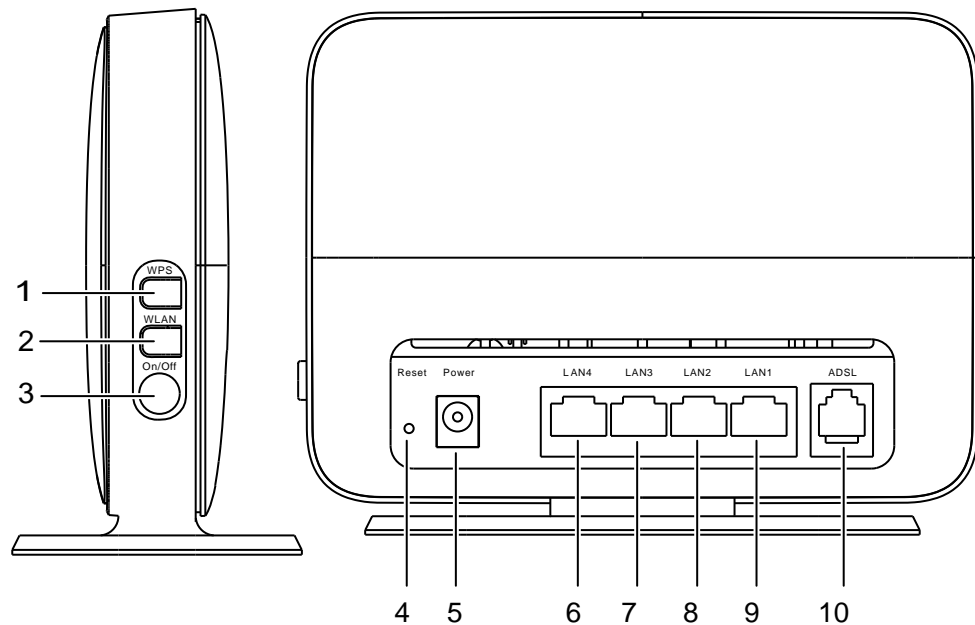
For users, it provides an 802.11b/g/n interface and four Ethernet interfaces. After connecting to a PC, STB, video phone, or another terminal, users can enjoy data, voice, and a range of other services.

The HG532e boasts powerful routing and bridging functions and supports NAT/firewall technology, with flexible network configuration and QoS policies. Moreover, the unit provides quality guarantees for latency-sensitive voice services and for video services susceptible to packet loss. Using the HG532e, users can enjoy high-speed and high-quality broadband services at home.

As a broadband network terminal, the HG532e is an extension of an operator's broadband network. HG532e provides powerful remote maintenance and administration functions. It supports the latest TR-069 terminal management standards and remote upgrades, thus facilitating large-scale deployment and maintenance.

## 1.1.2 Interfaces and Buttons

**Figure 1-2** Interfaces and buttons on the HG532e

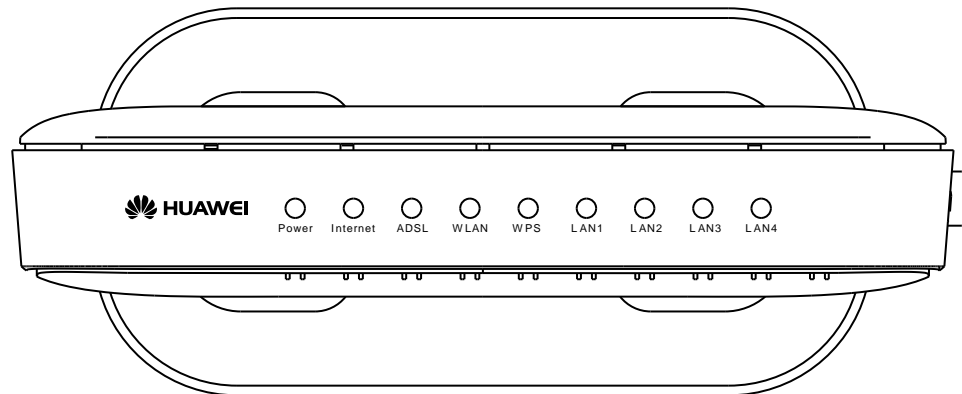


**Table 1-1** Interfaces and buttons on the HG532e

No.	Description
1	WPS button, which is used to start the WPS negotiation of the HG532e.
2	WLAN button, which is used to enable or disable wireless network function quickly.
3	Power button, which is used to power on or off the HG532e.
4	Reset button, which is used to restore the factory settings of the HG532e.
5	Power interface, which is used to connect the HG532e to the power adapter.
6-9	LAN interfaces, which are used to connect the HG532e to the Ethernet interface on the computer.
10	ADSL interface, which is used to connect HG532e to the MODEM interface on the splitter or to the telephone jack on the wall.

## 1.1.3 Indicators

**Figure 1-3** Indicators on the HG532e



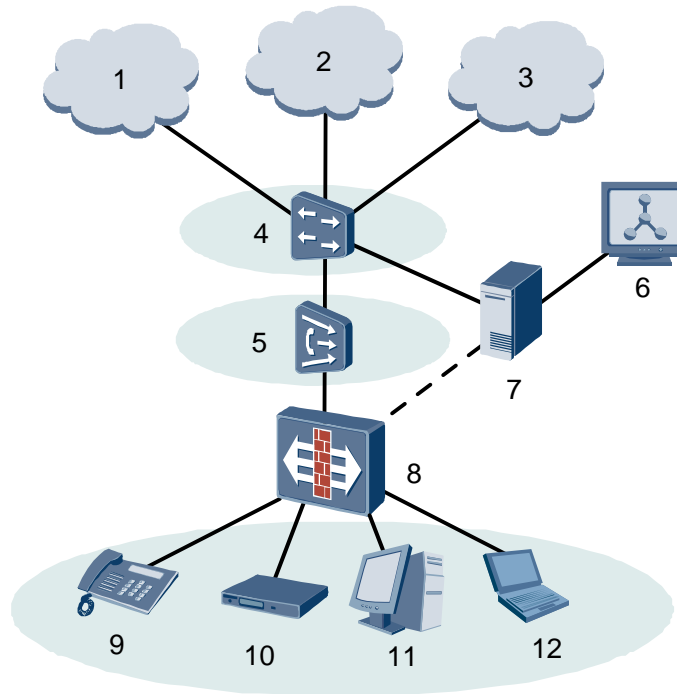
**Table 1-2** Indicators on the HG532e

Indicator	Used to...
Power	indicate the power condition of the HG532e.
Internet	indicate the status of the connection between the HG532e and the LAN in routing mode.
ADSL	indicate the status of the DSL line.
WLAN	indicate the status of the wireless network connection.
WPS	indicate the status of the wireless network connection through the WPS protocol.
LAN1 - LAN4	indicate the status of the Ethernet connection between the HG532e and the PC.

## 1.2 Network Architecture

Figure 1-4 shows the location of the HG532e in the network.

**Figure 1-4** Networking diagram of the HG532e



**NOTE**

- / indicates an actual network connection.
- - - - indicates a logical management channel.

Table 1-3 lists the network units in the networking diagram of the HG532e.

**Table 1-3** Network units in the networking diagram of the HG532e

No.	Item	Full Name
1	NGN	Next Generation Network
2	Internet	-
3	IPTV	Internet Protocol Television
4	BRAS	Broadband Remote Access Server
5	DSLAM	Digital Subscriber Line Access Multiplexer
6	OSS	Operations Support System
7	ACS	Auto-Configuration Server



No.	Item	Full Name
8	HG532e	-
9	Telephone	-
10	STB	set-top box
11	Desktop computer	-
12	Notebook computer	-



# 2 Functional Features

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## 2.1 High-bandwidth ADSL2+ and HSPA Upstream Link

With an embedded high-performance ADSL2+ network processor and High-Speed Packet Access (HSPA) uplink through Huawei HSPA modem, the HG532e can bring more abundant service experiences to users. It's also compatible with ADSL2 and ADSL.

## 2.2 WLAN Function

The HG532e provides high-speed, secure, and convenient wireless network access, and supports 802.11n, 802.11b, 802.11g, 802.11b/g and 802.11b/g/n. It can implement the network access at a high speed by using a powerful built-in antenna.

## 2.3 WPS Function

The HG532e provides the WPS function. A wireless connection can be set up between the computer and the HG532e conveniently and securely.

## 2.4 Routing Function

The HG532e has an embedded PPP dialer. It supports the functions of a Dynamic Host Configuration Protocol (DHCP) server and simultaneous access of multiple users and devices.

## 2.5 Flexible QoS Policies

The HG532e supports multiple methods of traffic classification, thus ensuring that user services at different levels of network applications are smoothly implemented and that end users can enjoy quality video and audio services.

## 2.6 Standardized TR-069 Management

The HG532e is completely compatible with the TR-069 standard defined by the Digital Subscriber Line (DSL) Forum. Providing complete remote management and diagnostic functions, it can implement the zero configuration solution. In addition, the HG532e can carry out customized service provisioning conveniently through automatic upgrade based on the service provisioning process. Hence operation and maintenance cost can be greatly reduced.

## 2.7 Convenient and Secure Management and Maintenance

The HG532e supports the TR-069 remote management, provides a Web-based configuration utility, and ensures secure use of the Web-based configuration utility through password verification.

# 3 Technical Specifications

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## 3.1 Interface Features

### 3.1.1 DSL Interface

#### Multiple DSL Standards

- ADSL2+
  - Supports G.992.5 (G.dmt.bitplus) Annex A
  - Supports G.992.5 (G.dmt.bitplus) Annex M
- ADSL2
  - Supports G.992.3 (G.dmt.bis) Annex A
  - Supports G.992.3 (G.dmt.bis) Annex L
  - Supports G.992.3 (G.dmt.bis) Annex M
- ADSL
  - Supports G.992.1 (G.dmt) Annex A
  - Supports G.994.1 (G.hs)
  - Supports ANSI T1.413 Issue 2

#### Other Features

- Supports multiple permanent virtual channels (8 PVCs)
- Supports manual configuration of PVC parameters

### 3.1.2 Ethernet Interface

- Provision of four 10/100 M adaptive Ethernet interfaces
- Supports IEEE 802.3 and IEEE 802.3u standard
- Supports line Auto MDI and MDIX Auto-sensing

### 3.1.3 WLAN Interface

- Supports 802.11n , 802.11b, 802.11g, 802.11b/g, 802.11b/g/n (2.4 GHz)
- Supports WPS

- Supports DQPSK, DBPSK, CCK, OFDM, BPSK, QPSK, 16-QAM and 64-QAM wireless modulation method
- Supports SSID hiding
- Supports multiple SSIDs
- Supports WPA-PSK and WPA2-PSK security
- Supports 64/128 digits WEP encryption
- Supports TKIP encryption
- WLAN Rates:
  - 802.11b: 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, 11 Mbit/s
  - 802.11g: 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, 6 Mbit/s, 9 Mbit/s, 11 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s, 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 powerful wireless network security
- Supports IP/MAC address filtering
- Supports port/URL filtering
- Supports ACL
- Supports DMZ
- Supports the PAP (RFC 1334) and CHAP (RFC 1994)
- Supports SPI (Stateful Packet Inspection)
- Prevents TCP/UDP port scanning
- Prevents DoS attacks such as the SYN flooding, port scanning, ICMP Redirection, ping of death, teardrop, and LAND

## 3.3 Routing & Bridged Features

- Supports NAT, NATP (RFC1631, RFC2663, RFC2766, RFC3022) and ALG expansion
- Supports DHCP server, DHCP client and DHCP relay
- Supports DNS client and DNS relay
- Supports IGMP proxy and IGMP snooping
- Supports port mapping
- Supports RIP v1 (RFC1058), RIP v2 (RFC1389, RFC1723,RFC2453)
- Supports the learning of up to 256 MAC addresses
- Supports UPnP

## 3.4 ATM Features

- Supports OAM F5 loop
- Supports LLC-SNAP and VC-MUX
- Supports ATM Forum UNI 3.0/3.1/4.0
- Supports ATM AAL5 able to provide different levels of QoS for each PVC
- Supports multiple ATM QoS service levels (CBR, UBR, rt-VBR and nrt-VBR)

## 3.5 QoS Features

- Supports IEEE 802.1p and DSCP remark
- Support for multiple methods of traffic classification based on:
  - LAN or WAN interface
  - IP address (source and destination address)
  - Ports (source ports and destination ports) at the fourth layer
  - Mac address (source address)
  - 802.1p
  - 802.1q
  - Differentiated Services Code Point (DSCP)
  - Protocol
- Support for queuing methods based on priorities (up to four queues):
  - Weighted Fair Queuing (WFQ)
  - Priority queuing (PQ)

## 3.6 Network Management

- Supports IPv6
- Supports TR-069
- Supports Sntp
- Prevents improper upgrades
- Supports the upgrade through TR-069
- Supports remote and local web configuration and management

## 3.7 Power Supply Specifications

- Entire-device power supply: 12 V DC, 0.5A
- Entire-device power consumption: < 12 W

## 3.8 Physical Specifications

- Dimensions (L × W × H): 145 mm % 105 mm % 28 mm
- Weight: about 360 g

## 3.9 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

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<b>ACS</b>	Auto-Configuration Server
<b>ADSL</b>	Asymmetrical Digital Subscriber Line
<b>ADSL2+</b>	Asymmetrical Digital Subscriber Line 2 plus
<b>AES</b>	Advanced Encryption Standard
<b>ATM</b>	Asynchronous Transfer Mode
<b>BRAS</b>	Broadband Remote Access Server
<b>CBR</b>	Constant Bit Rate
<b>DHCP</b>	Dynamic Host Configuration Protocol
<b>DNS</b>	Domain Name System
<b>DoS</b>	Denial of Service
<b>DSCP</b>	Differentiated Services Code Point
<b>DSL</b>	Digital Subscriber Line
<b>DSLAM</b>	Digital Subscriber Line Access Multiplexer
<b>HTTP</b>	Hyper Text Transport Protocol
<b>IP</b>	Internet Protocol
<b>IPTV</b>	Internet Protocol Television
<b>LAN</b>	Local Area Network
<b>MAC</b>	Media Access Control
<b>MER</b>	MAC Encapsulation Routing
<b>NAPT</b>	Network Address and Port Translation
<b>NAT</b>	Network Address Translation
<b>NGN</b>	Next Generation Network
<b>nrt-VBR</b>	non-real-time Variable Bit Rate

<b>OSS</b>	Operations Support System
<b>PC</b>	Personal Computer
<b>PPPoA</b>	Point-to-Point Protocol over ATM
<b>PPPoE</b>	Point-to-Point Protocol over Ethernet
<b>PQ</b>	Priority Queue
<b>PTM</b>	Packet Transfer Mode
<b>PVC</b>	Permanent Virtual Channel
<b>QoS</b>	Quality of Service
<b>RIP</b>	Routing Information Protocol
<b>rt-VBR</b>	real-time Variable Bit Rate
<b>SSID</b>	Service Set Identifier
<b>STB</b>	set-top box
<b>TKIP</b>	Temporal Key Integrity Protocol
<b>ToS</b>	Type of Service
<b>UBR</b>	Unspecified Bit Rate
<b>WAN</b>	Wide Area Network
<b>WEP</b>	Wired Equivalent Privacy
<b>WLAN</b>	Wireless Local Area Network
<b>WPA</b>	Wi-Fi Protected Access
<b>WPS</b>	Wi-Fi Protected Setup
<b>WRR</b>	Weighted Round Robin