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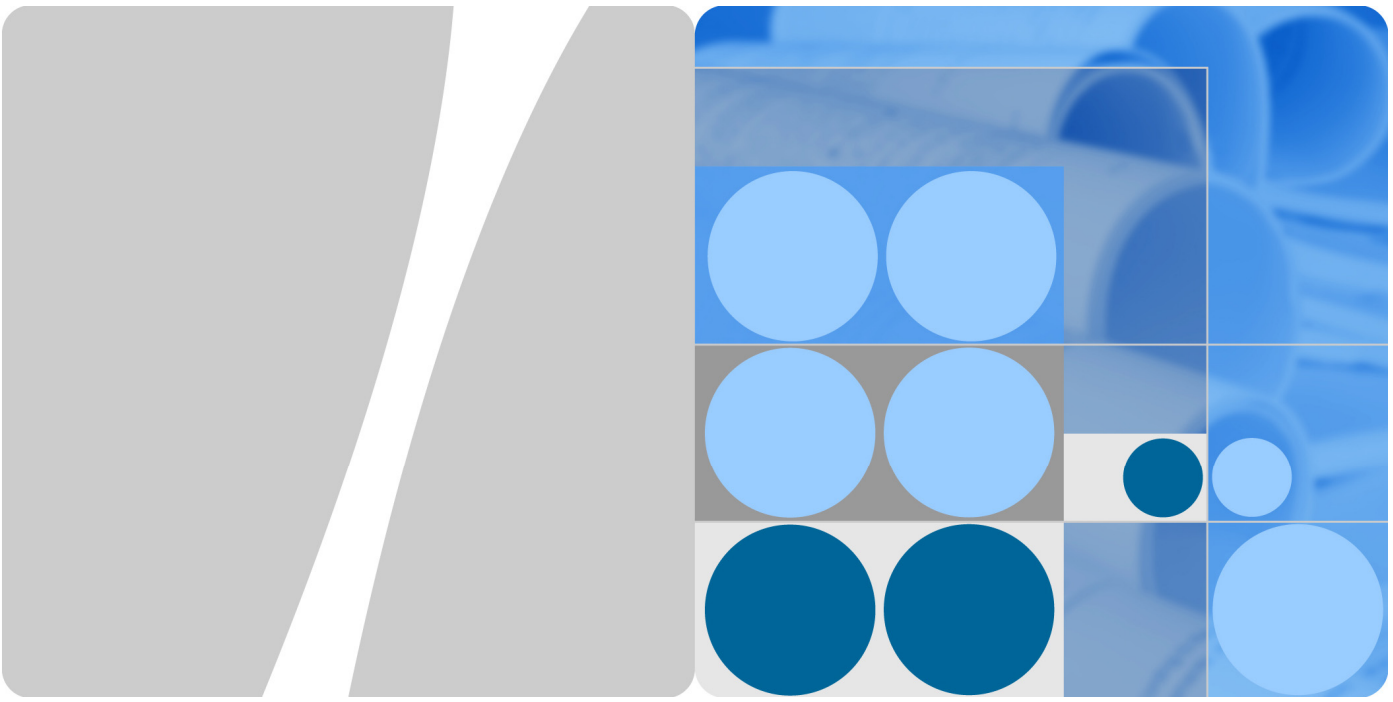

HUAWEI HG530 Home Gateway Product Description

Issue 01

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HUAWEI TECHNOLOGIES CO., LTD.

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1 Overview

1.1 Introduction to the HG530

Figure 1-1 Appearance of the HG530

HUAWEI HG530 Home Gateway (hereinafter referred to as the HG530) is a type of Asymmetrical Digital Subscriber Line (ADSL) terminal. You can put a photo into the front panel, which enhances its appeal and practicality.

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 HG530 supports the Triple play service completely and provides powerful routing and bridging functions. It supports ATM encapsulations, and various access modes such as PPPoE, IPoE and PPPoA. With flexible configuration and QoS strategy, the HG530 ensures the quality of audio service and video service that are respectively sensitive to time delay and packet loss. Using the HG530, users can enjoy high-speed and high-quality broadband services at home.

As a broadband network terminal, the HG530 is an extension of an operator's broadband network. HG530 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.

1.2 Hardware Features

1.2.1 Interfaces and Buttons

Figure 1-2 Interfaces and buttons on the HG530

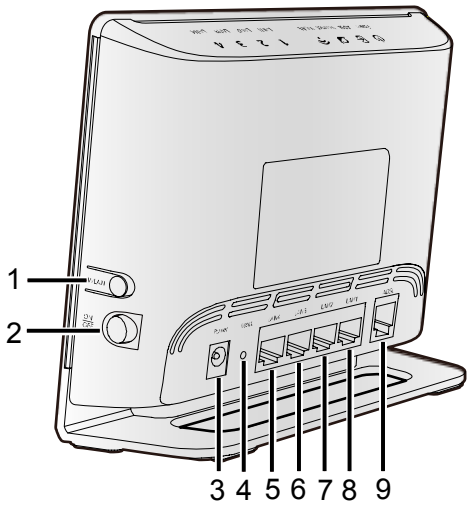


Table 1-1 Interfaces and buttons on the HG530

No.	Description
1	WLAN button, which is used to enable or disable wireless network function quickly.
2	Power button, which is used to power on or off the HG530.
3	Power interface, which is used to connect the HG530 to the power adapter.
4	Reset button, which is used to restore the factory settings of the HG530.
5 – 8	LAN interfaces, which are used to connect the HG530 to the Ethernet interface on the computer.
9	DSL interface, which is used to connect HG530 to the MODEM interface on the splitter or to the telephone jack on the wall.

1.2.2 Indicators

Figure 1-3 Indicators on the HG530

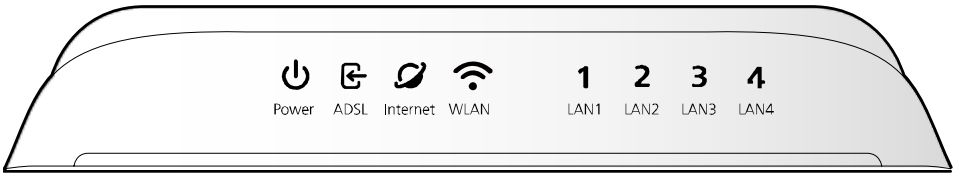


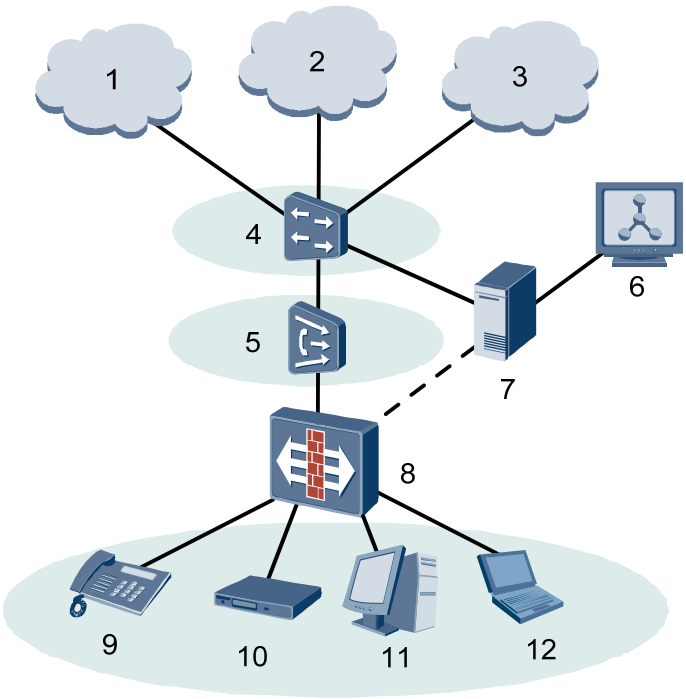
Table 1-2 Indicators on the HG530

Indicator	Used to…
Power	indicate the power condition of the HG530.
ADSL	indicate the status of the DSL line.
Internet	indicate the status of the connection between the HG530 and the LAN in routing mode.
WLAN	indicate the status of the wireless network connection.
LAN1 – LAN4	indicate the status of the Ethernet connection between the HG530 and the PC.

1.3 Network Architecture

Figure 1-4 shows the location of the HG530 in the network.

Figure 1-4 Networking diagram of the HG530



NOTE

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

Table 1-3 lists the network units in the networking diagram of the HG530.

Table 1-3 Network units in the networking diagram of the HG530

No.	Item	Full Name
1	NGN	Next Generation Network
2	Internet	-
3	IPTV Network	Internet Protocol Television Network
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	HG530	-
9	Telephone	-
10	STB	set-top box
11	Desktop computer	-
12	Notebook computer	-

2 Functional Features

2.1 High- bandwidth ADSL2+ Upstream Link

With an embedded high-performance ADSL2+ network processor, the HG530 can bring more abundant service experiences to users. It's also compatible with ADSL and ADSL2.

2.2 WLAN Function

The HG530 provides high-speed, secure, and convenient wireless network access, and supports 802.11n, 802.11g, and 802.11b. It can implement the network access at a high speed by using a powerful built-in antenna.

2.3 Routing Function

The HG530 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.

2.4 Flexible QoS Policies

The HG530 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.

2.5 Standardized TR-069 Management

The HG530 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 HG530 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.

2.6 Convenient and Secure Management and Maintenance

The HG530 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

3.1 Interface Features

3.1.1 DSL Interface

Multiple DSL Standards

- ADSL2+
  Supports G.992.5 (G.dmt.bitplus) Annex A
- ADSL2
  - Supports G.992.3 (G.dmt.bis) Annex A
  - Supports G.992.3 (G.dmt.bis) Annex L
- 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 (PVCs)
- Supports manual configuration of PVC parameters

3.1.2 Ethernet Interface

- Provision of four 10/100 M adaptive Ethernet interfaces
- Supports IEEE802.3 and IEEE802.3u standard
- Supports line Auto MDI and MDIX Auto-sensing

3.1.3 WLAN Interface

- Supports 802.11b, 802.11g, 802.11n (2.4 GHz)
- Supports 802.11n 1T1R antenna
- Supports OFDM and CCK wireless modulation method
- Supports SSID hiding

- Supports multiple SSID, up to four 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: 6 Mbit/s, 9 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s, 54 Mbit/s
  - 802.11n (with 1T1R antenna used): 6 Mbit/s, 6.5 Mbit/s, 13.0 Mbit/s, 13.5 Mbit/s, 19.5 Mbit/s, 26.0 Mbit/s, 27.0 Mbit/s, 39.0 Mbit/s, 40.5 Mbit/s, 52.0 Mbit/s, 54.0 Mbit/s, 58.5 Mbit/s, 65.0 Mbit/s, 81.0 Mbps, 108.0 Mbit/s, 117.0 Mbit/s, 121.5 Mbit/s, 135.0 Mbit/s

3.2 Security Features

- Supports powerful wireless network security
- Supports IP/MAC/URL filtering
- Supports port filtering
- Supports SPI (Stateful Packet Inspection)
- Prevents TCP/UDP port scanning
- Prevents DoS attacks such as the SYN flooding, ICMP Redirection, ping of death, teardrop, and LAND

3.3 Routing & Bridged Features

- Supports NAT and ALG expansion
- Supports DHCP server and DHCP client
- Supports DNS Relay
- Supports IGMP proxy and IGMP snooping
- Supports DMZ
- Supports UPnP
- Supports RIP V1&V2
- Bridging between the WAN port and the LAN port
- Bridging between a single PVC and the LAN interface or between multiple PVCs and the LAN interface

3.4 ATM Features

- Supports LLC-SNAP and VC-MUX
- Supports multiple ATM QoS service levels (CBR, UBR, rt-VBR and nrt-VBR)

3.5 QoS Features

- Supports 802.1p and 802.1q
- Support for various stream classification strategies l based on:
  - IP addresses
  - Port
  - DSCP
  - Tos/IP Precedence
- Support for the PQ queue modulation strategy

3.6 Network Management

- Supports TR-069
- Supports SNTP Views system logs
- Supports two levels of access control
- Prevents improper upgrades
- Supports the upgrade through TR-069
- Supports remote and local web configuration and management
- Backing up and restoring the configuration

3.7 Power Supply Specifications

- Entire-device power supply: 12 V DC, 0.5 A
- Entire-device power consumption: < 6 W

3.8 Physical Specifications

- Dimensions (L × W × H): 168 mm × 53 mm × 132 mm
- Weight: about 255 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

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

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