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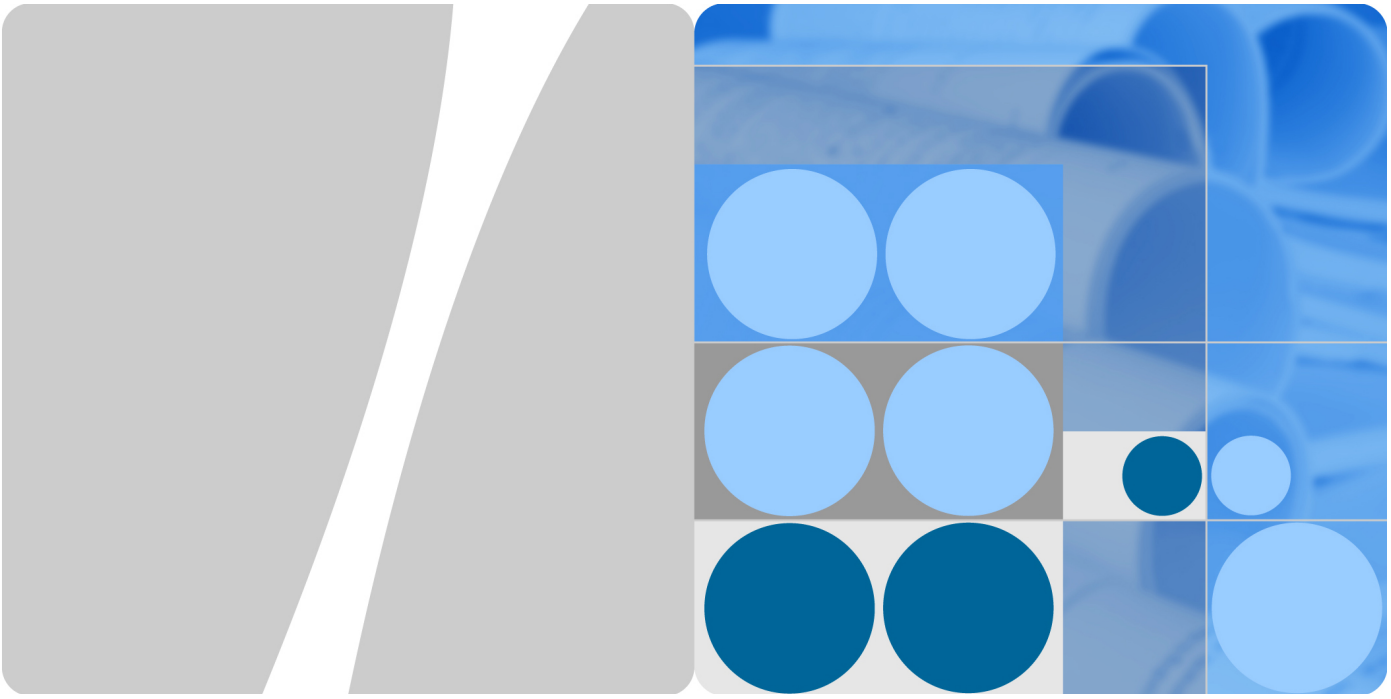

HG630 Home Gateway Product Description

Issue 01

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HUAWEI TECHNOLOGIES CO., LTD.

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1 Overview

1.1 Introduction to the HG630

Figure 1-1 Appearance of the HG630

HG630 Home Gateway (hereinafter referred to as the HG630) is a type of Very High Speed Digital Subscriber Line (VDSL) terminal. It's also compatible with Asymmetric Digital Subscriber Line (ADSL), ADSL2, ADSL2+. On the network side, the HG630 provides a DSL interface.

For users, it provides an 2×2 MIMO 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 HG630 supports the triple play service completely and provides powerful routing and bridging functions. It supports the IPv4 & IPv6 dual stack mode and the DS-Lite mode, and various access modes such as PPPoE, IPoA and IPoE. Besides, it supports DHCP, DNS, NAT, IGMP Proxy and Snooping, ACL, firewall, and ALG technologies. With flexible configuration and QoS strategy, the HG630 ensures the quality of audio service and video service that are respectively sensitive to time delay and packet loss. Using the HG630, users can enjoy high-speed and high-quality broadband services at home.

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As a broadband network terminal, the HG630 is an extension of an operator's broadband network. HG630 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 HG630

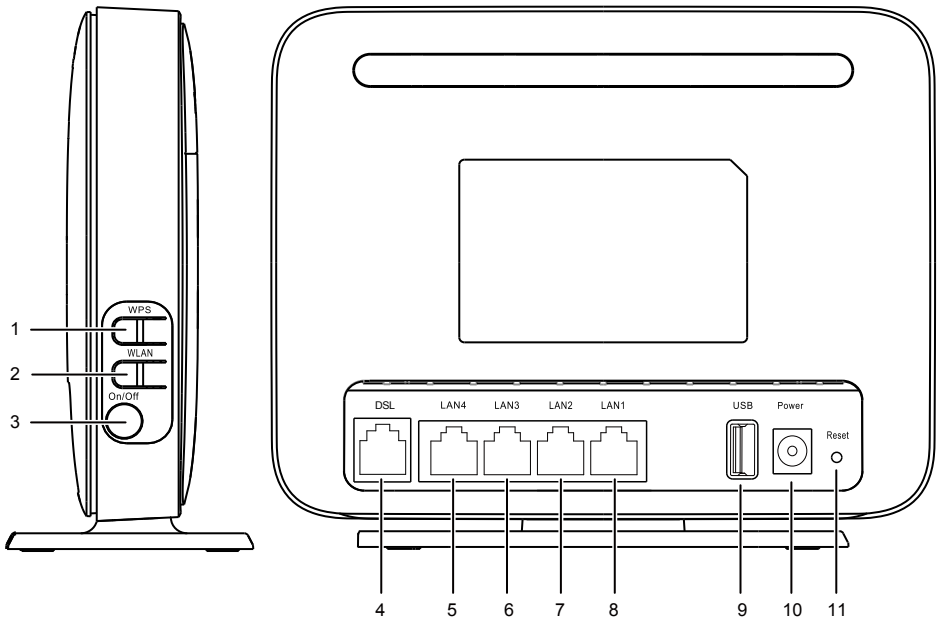

Table 1-1 Interfaces and buttons on the HG630

No.	Description
1	WPS button, which is used to enable the WPS negotiation function.
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 HG630.
4	DSL interface, which is used to connect HG630 to the MODEM interface on the splitter or to the telephone jack on the wall.
5-8	LAN interfaces, which are used to connect the HG630 to the Ethernet interface on the computer.

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No.	Description
9	USB interface, which is used to connect a USB device, such as a Huawei HSPA USB interface link device. **NOTE** The maximum voltage/current output from the USB port is 5 V/0.8 A. That is, the input voltage/current of the USB device connected to the USB port cannot exceed 5 V/0.8 A. Otherwise, the HG532s may not work correctly.
10	Power interface, which is used to connect the HG630 to the power adapter.
11	Reset button, which is used to restore the factory settings of the HG630.

1.2.2 Indicators

Figure 1-3 Indicators on the HG630

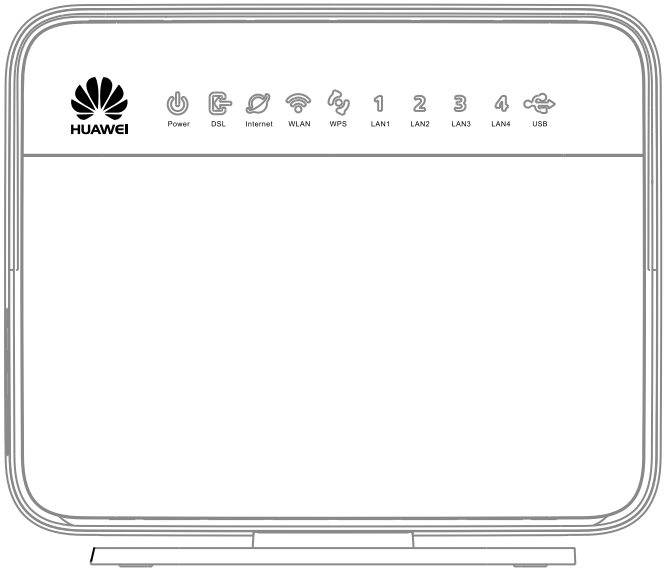

Table 1-2 Indicators on the HG630

Indicator	Description
Power	Indicates the power condition of the HG630.
DSL	Indicates the status of the DSL line.
Internet	Indicates whether the WAN uplink service is available in routing mode.
WLAN	Indicates the status of the wireless network connection.
WPS	Indicates the status of the wireless network connection through the WPS protocol.

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Indicator	Description
LAN1 ~ LAN4	Indicate the status of the Ethernet connection between the HG630 and the PC.
USB	Indicates the status of the USB connection between the HG630 and the USB device.

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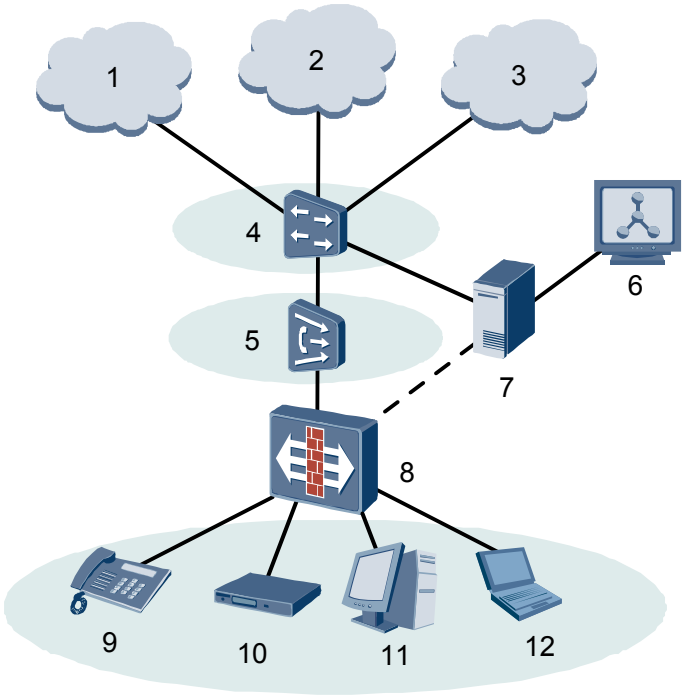
1.3 Network Architecture

Figure 1-4 shows the location of the HG630 in the network.

Figure 1-4 Networking diagram of the HG630



NOTE

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

Table 1-3 lists the network units in the networking diagram of the HG630.

Table 1-3 Network units in the networking diagram of the HG630

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

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No.	Item	Full Name
8	HG630	-
9	Telephone	-
10	STB	Set-Top Box
11	Desktop computer	-
12	Notebook computer	-

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2 Functional Features

2.1 High- bandwidth VDSL2 and HSPA Upstream Link

With an embedded high-performance VDSL2 network processor and High-Speed Packet Access (HSPA) uplink through HSPA modem, the HG630 can bring more abundant service experiences to users. It's also compatible with ADSL, ADSL2 and ADSL2+.

2.2 Support 802.11n

The HG630 provides high-speed, secure, and convenient wireless network access, and supports 802.11n (2.4 GHz ~ 2.4835 GHz), 802.11b, and 802.11g. It can implement the network access at a high speed by using a powerful built-in antenna. The IEEE 802.11n supports the MIMO 2×2 technology and the access rate can reach 300Mbit/s.

2.3 WPS Function

The HG630 provides the WPS 2.0 function. A wireless connection can be set up between the computer and the HG630 conveniently and securely.

2.4 Routing Function

The HG630 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 IPv6 Function

The HG630 provides the IPv6 function. It supports the IPv4 & IPv6 dual stack mode and the DS-Lite mode.

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2.6 Flexible QoS Policies

The HG630 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.

2.7 Standardized TR-069 Management

The HG630 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 HG630 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.

2.8 Convenient and Secure Management and Maintenance

The HG630 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.

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3 Technical Specifications

3.1 Interface Features

3.1.1 DSL Interface

Multiple DSL Standards

- VDSL2
  - Supports G.993.2 VDSL2
  - Supports VDSL2 Profiles for 8a, 8b, 8c, 8d, 12a, 17a
  - Supports VDSL Vectoring
- ADSL2+
  - Supports G.992.5 (G.dmt.bitplus)
- ADSL2
  - Supports G.992.3 (G.dmt.bis) Annex L
- ADSL
  - Supports G.992.1 (G.dmt)
  - Supports G.992.2 (G.lite)
  - 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 WLAN Interface

- Supports 802.11n 2×2 antenna
- Supports 802.11b, 802.11g, 802.11n (2.4 GHz ~ 2.4835GHz)
- Supports WPS 2.0 (PBC mode and PIN mode)
- Supports DQPSK, DBPSK, CCK, OFDM, BPSK, QPSK, 16-QAM and 64-QAM wireless modulation method

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- Supports SSID hiding
- Supports WPA1.0 and WPA2.0 security
- Supports 64/128 digits WEP encryption
- Supports TKIP and AES encryption
- Supports multiple SSIDs
- Supports WMM
- Supports enable or disable the WLAN function by press WLAN button or config the web-based utility
- WLAN Rates:
  - 802.11b: Up to 11 Mbit/s
  - 802.11g: Up to 54 Mbit/s
  - 802.11n(with a 2×2 antenna used):Up to 300.0 Mbit/s

3.1.3 USB Interface

- Functions as a USB Host 2.0 interface
- Supports mass storage device
- Supports accessing a portable storage device through FTP server
- Supports a printing function
- Supports USB modem
- Supports DLNA

3.2 Security Features

- Supports powerful wireless network security
- Supports IP/MAC filtering
- Supports URL filtering
- Supports ACL access control
- Prevents DoS attacks such as LAND, SYN flooding, ICMP Smurf, Ping of Death, Ping Sweep, Teardrop, Unreachable, TCP/UDP PortScan and ICMP Redirection.

3.3 Routing & Bridged Features

- Supports IPv6
  - Supports IPv4 and IPv6 dual-stack
  - Supports DS-Lite Tunnel
  - Supports SLAAC
- Supports NAT and ALG expansion
- Supports DHCP Server/Client
- Supports DNS Relay/Client
- Supports IGMP proxy and IGMP snooping
- Supports DMZ

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- Supports UpnP
- Supports SNTP
- Supports port mapping
- Supports RIP V1&V2
- Bridging between the WAN port and the LAN port

3.4 QoS Features

- Supports 802.1p and 802.1q
- Agile QoS Strategy
- Rich of stream classification strategy

3.5 Network Management

- Supports TR-069
- Supports Views system logs
- Supports two levels of web 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

3.6 Power Supply Specifications

- Entire-device power supply: 12 V DC, 2 A
- Entire-device power consumption: < 24 W

3.7 Physical Specifications

- Dimensions (L × W × H): about 162 mm × 137 mm × 32 mm (Including the base plate)
- Weight: about 266 g (Not including the power adapter)

3.8 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

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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
HSPA	High Speed Packet Access
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

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PPPoE	Point-to-Point Protocol over Ethernet
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
VDSL	Very High Speed Digital Subscriber Line
VDSL2	Very High Speed Digital Subscriber Line 2 plus
WEP	Wired Equivalent Privacy
WLAN	Wireless Local Area Network
WPA	Wi-Fi Protected Access
WPS	Wi-Fi Protected Setup

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