

HG630 Home Gateway Product Description

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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



The HG630 is a new generation wireless gateway that supports very-high-data-rate digital subscriber line 2 (VDSL2). The HG630 is designed for mid-range and high-end users using high bandwidth services, such as HD video.

The HG630 comes with Broadcom's latest chipset solution with the vectoring function that effectively solves the VDSL2 crosstalk issue. The vectoring function keeps the transmission rate at 100 Mbit/s when the user is within a range of 300 meters. Without vectoring, the transmission rate decreases to 70 Mbit/s when the user is 300 meters away. For HD video and high-speed Internet, the coverage range can be up to 800 meters (without vectoring: 500 meters). The HG630 effectively reduces the cost to carriers and guarantees high quality HD video services.

Using the 802.11n and 2 x 2 multiple-input and multiple-output (MIMO) technologies, the HG630 provides wireless transmission rates of up to 300 Mbit/s, making it an ideal choice for HD video streaming and online gaming.

With the DLNA function enabled on the HG630, you can built your own network access server (NAS) by connecting USB storage to the HG630's USB port.

1.2 Hardware Features

1.2.1 Indicators

Figure 1-2 Indicators on the HG630



Table 1-1 Indicators on the HG630

Indicator	Status	Description
Power	On	The HG630 is powered on.
	Off	The HG630 is powered off or faulty.
DSL	Blinking	The HG630 is being activated through DSL.
	Steady on	The HG630 is activated through DSL.
	Off	<ul style="list-style-type: none"> The HG630 is powered off. The DSL port is not connected.
Internet	On	<ul style="list-style-type: none"> The HG630 is working in routing mode. No data is being transmitted.
	Blinking	<ul style="list-style-type: none"> The HG630 is working in routing mode. Data is being transmitted.
	Off	<ul style="list-style-type: none"> The HG630 is working in bridge mode. The HG630 is powered off.
WLAN	On	The WLAN connection is set up, but no data is being transmitted.
	Blinking	The WLAN connection is set up, and data is being transmitted.
	Off	The WLAN function is disabled.

Indicator	Status	Description
WPS	Blinking	<ul style="list-style-type: none">• A wireless client, such as a computer installed with a wireless network adapter, is connecting to the HG630 using the WPS function.• This process lasts for no longer than 120 seconds.
	On	<ul style="list-style-type: none">• A wireless connection is set up between the HG630 and a wireless client using the WPS function.• The WPS indicator is on for about 300 seconds, and then turns off.
	Off	The WPS function is disabled or faulty.
LAN1 ~ LAN4	On	The HG630 is connected to a device properly.
	Blinking	Data is being transmitted between the HG630 and the device connected.
	Off	No connection is set up on the port.
USB	Blinking	A USB device is connected to the HG630 and data is being transmitted on the USB port.
	Steady on	<ul style="list-style-type: none">• A USB device is connected to the HG630• A portable storage device is connected to the USB port.
	Off	<ul style="list-style-type: none">• The USB port is not connected.• The HG630 is powered off.

1.2.2 Interfaces and Buttons

Figure 1-3 Interfaces and buttons on the HG630

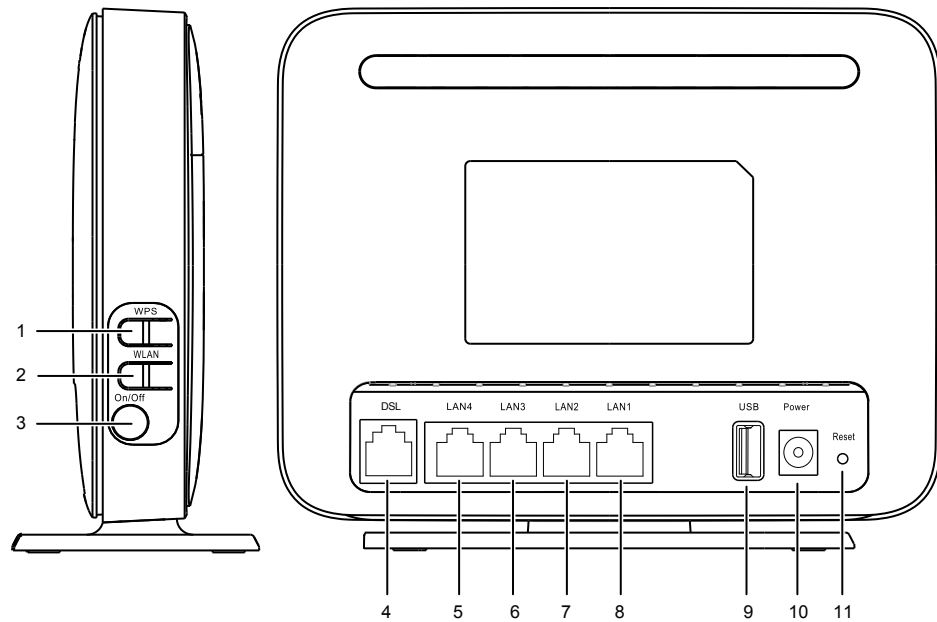
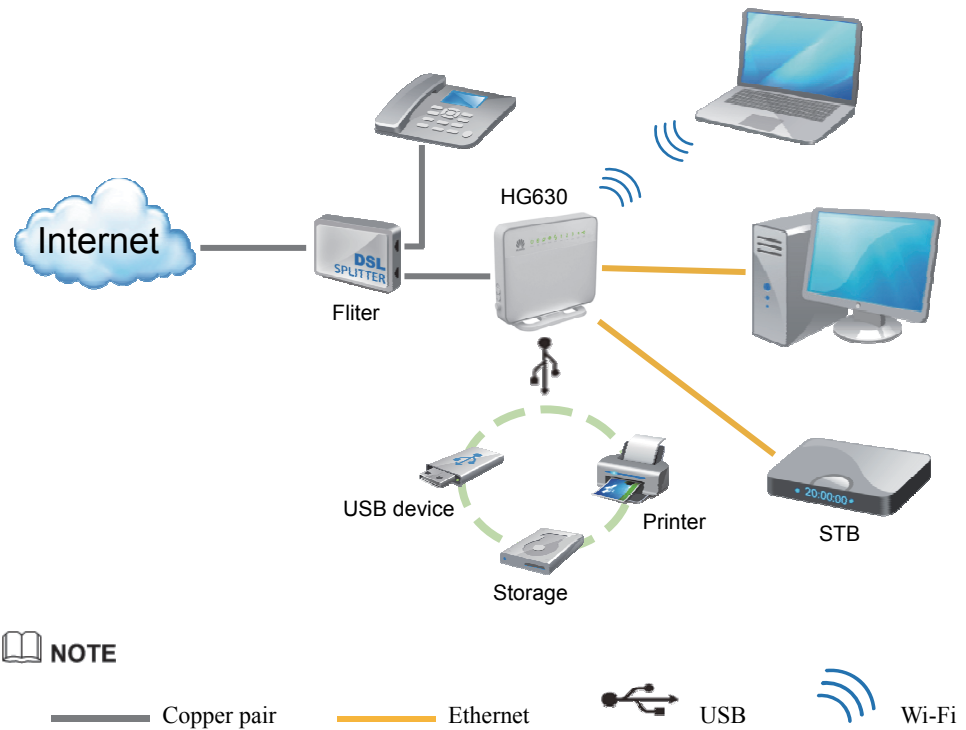


Table 1-2 Interfaces and buttons on the HG630

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.
9	USB interface, which is used to connect a USB device, such as a portable storage device, or a printer.
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.

1.3 Network Architecture

Figure 1-4 Networking diagram of the HG630



2 Functional Features

2.1 High-bandwidth VDSL2 Upstream Link

With an embedded high-performance VDSL2 network processor, the HG630 can bring more abundant service experiences to users. It's also compatible with ADSL, ADSL2 and ADSL2+.

2.2 WLAN Function

The HG630 provides high-speed, secure, and convenient wireless network access, and compliant with 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

A wireless connection can be set up between the computer and the HG630 conveniently and securely by pressing WPS button.

2.4 Routing Function

HG630 supports NAT/NAPT and RIP v1/v2, and complies with an embedded PPP dialer and a Dynamic Host Configuration Protocol (DHCP) server, which can access multiple users and devices simultaneously.

2.5 IPv6 Function

Supports the IPv4 & IPv6 dual stack mode and the DS-Lite mode.

2.6 Flexible QoS Policies

Multiple methods of traffic classification 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

Completely compatible with the TR-069 standard defined by the Digital Subscriber Line (DSL) Forum. The HG630 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.

3 Technical Specifications

3.1 Interface Features

3.1.1 DSL Interface

Multiple DSL Standards

- VDSL2
 - G.993.2 VDSL2
 - VDSL2 Profiles for 8a, 8b, 8c, 8d, 12a, 17a
 - VDSL Vectoring
- ADSL2+
 - G.992.5 (G.dmt.bitplus)
- ADSL2
 - G.992.3 (G.dmt.bis) Annex L
- ADSL
 - G.992.1 (G.dmt)
 - G.992.2 (G.lite)
 - G.994.1 (G.hs)
 - ANSI T1.413 Issue 2

Other Features

- Multiple permanent virtual channels (PVCs)
- Manual configuration of PVC parameters

3.1.2 WLAN Interface

- Compliant with 802.11b, 802.11g and 802.11n (2.4 GHz ~ 2.4835GHz)
- WPS 2.0 (PBC mode and PIN mode)
- Supports DQPSK, DBPSK, CCK, OFDM, BPSK, QPSK, 16-QAM and 64-QAM wireless modulation method
- Multiple SSIDs and SSID hiding

- WPA1.0 and WPA2.0 security
- 64/128 digits WEP encryption
- TKIP and AES encryption
- 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 for USB storage devices or printers.
- Accessing a portable storage device through FTP server
- Supports DLNA

3.2 Security Features

- Powerful wireless network security
- IP/MAC filtering
- URL filtering
- 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
 - IPv4 and IPv6 dual-stack
 - DS-Lite Tunnel
 - SLAAC
- NAT and ALG expansion
- DHCP Server/Client
- DNS Relay/Client
- IGMP proxy and IGMP snooping
- DMZ
- UpnP
- SNTP
- Port mapping
- 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
- Views system logs
- Two levels of web access control
- Prevents improper upgrades
- Upgrade through TR-069
- 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, 1 A
- Entire-device power consumption: < 12 W

3.7 Physical Specifications

- Dimensions (L × W × H): about 162 mm × 137 mm × 32 mm
(Including the base plate)
- Entire-device Weight: about 651 g (Including the box)

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

4 Acronyms and Abbreviations

ADSL	Asymmetrical Digital Subscriber Line
ADSL2+	Asymmetrical Digital Subscriber Line 2 plus
AES	Advanced Encryption Standard
ATM	Asynchronous Transfer Mode
CBR	Constant Bit Rate
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DoS	Denial of Service
DSL	Digital Subscriber Line
HTTP	Hyper Text Transport Protocol
IP	Internet Protocol
LAN	Local Area Network
MAC	Media Access Control
NAS	Network Access Server
NAT	Network Address Translation
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
PVC	Permanent Virtual Channel
QoS	Quality of Service
RIP	Routing Information Protocol
rt-VBR	Real-time Variable Bit Rate
SSID	Service Set Identifier
TKIP	Temporal Key Integrity Protocol
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