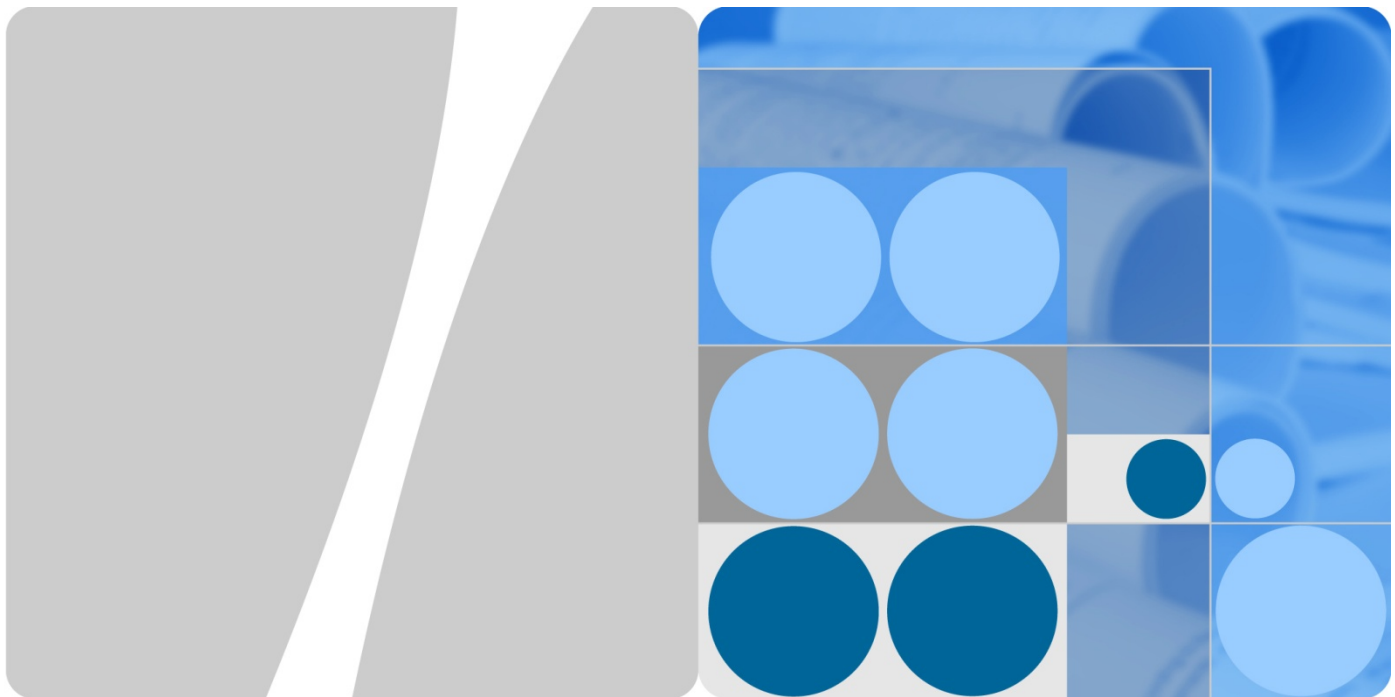


Part Number: 203277



HG635 Super Router Product Description

Issue V100R001_01

HUAWEI TECHNOLOGIES CO., LTD.



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1 Overview

1.1 Introduction to the HG635

Figure 1-1 Appearance of the HG635



HG635 Home Gateway (hereinafter referred to as the HG635) is a type of Very High Speed Digital Subscriber Line 2 (VDSL2) terminal. It's also compatible with ADSL, ADSL2, ADSL2+ and gigabit-speed Ethernet (GE). On the network side, the HG635 provides a DSL interface and a WAN interface for rapid Internet access.

Using the 802.11ac 3 x 3 and 802.11n 2 x 2 concurrent wireless technologies, the HG635 provides wireless transmission rates of up to 1.3 Gbit/s, making it an ideal choice for HD video streaming and online gaming.

The HG635 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 DLNA, DHCP, DNS, NAT, IGMP Proxy and Snooping, ACL, firewall, and ALG technologies. With flexible configuration and QoS strategy, the HG635 ensures the quality of audio service and video service that are respectively sensitive to time delay and packet loss. Using the HG635, users can enjoy high-speed and high-quality broadband services at home.

As a broadband network terminal, the HG635 is an extension of an operator's broadband network. HG635 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 HG635

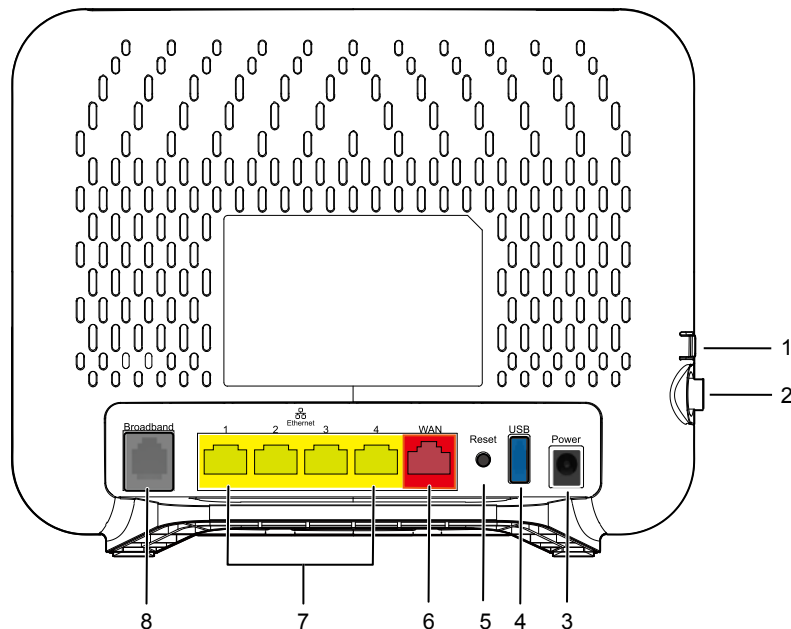


Table 1-1 Interfaces and buttons on the HG635

No.	Description
1	WPS button, which is used to enable the WPS negotiation function. <ul style="list-style-type: none"> Press and hold the WPS button for 3 seconds or more to enable the 5 G WPS function. Press and hold the WPS button within 3 seconds to enable the 2.4 G WPS function.
2	Power button, which is used to power on or off the HG635.
3	Power interface, which is used to connect the HG635 to the power adapter.
4	USB interface, which is used to connect a USB device, such as a USB storage device.
5	Reset button, which is used to restore the factory settings of the HG635.
6	WAN interface, which is used to connect the HG635 to the network.

No.	Description
7	LAN interfaces, which are used to connect the HG635 to the Ethernet interface on the computer.
8	Broadband interface, which is used to connect HG635 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 HG635

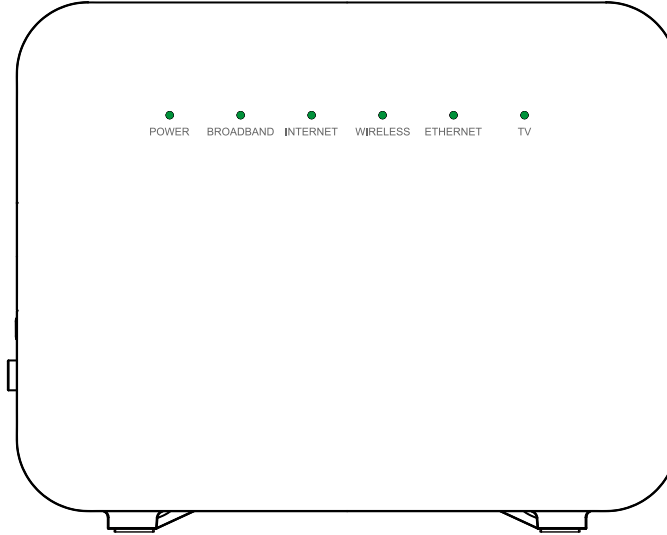


Table 1-2 Indicators on the HG635

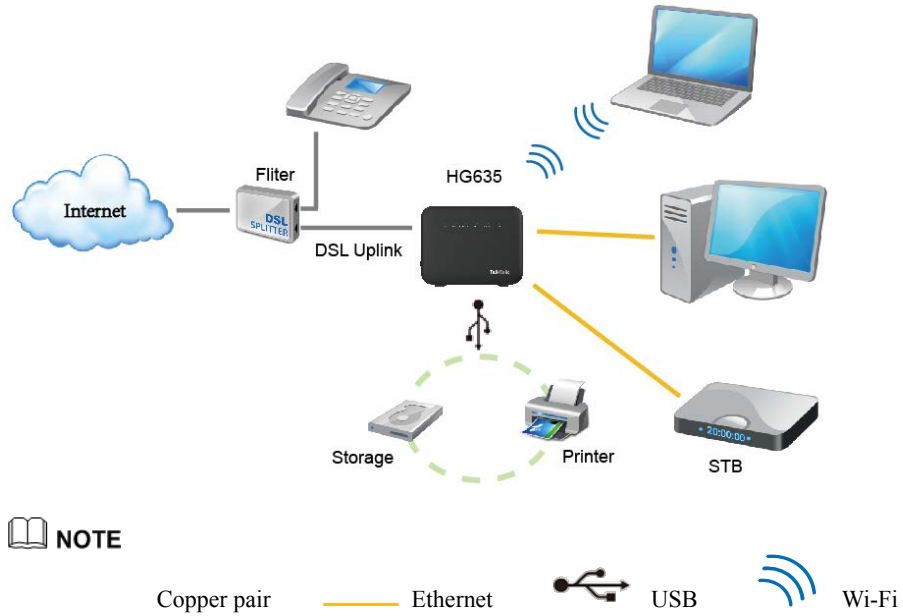
Indicator	Status	Description
Power	Green On	The HG635 is powered on and finished booting.
	Red On	The HG635 is powered on, but booting failed.
	Off	The HG635 is powered off or faulty.
BROADBAND	Green Blinking	The HG635 is being activated through Ethernet or DSL.
	Green On	The HG635 is activated through Ethernet or DSL.
	Off	<ul style="list-style-type: none"> The HG635 is powered off. The WAN or DSL port is not connected.
INTERNET	Green On	The Internet connection is successfully established but no data is being transmitted.
	Red On	<ul style="list-style-type: none"> The Internet connection is failed in PPP mode (The user name and password for Broadband dial-up is ineffective). The Internet connection is failed in DHCP mode.

Indicator	Status	Description
	Green Blinking	The Internet connection is successfully established and data is being transmitted.
	Red & Green Blinking	Firmware is upgrading.
	Off	<ul style="list-style-type: none"> • The HG635 is working in bridge mode. • No Ethernet or DSL connection is established. • The HG635 is powered off.
WIRELESS	Green On	<ul style="list-style-type: none"> • 2.4G Wi-Fi connection is set up. • 5G Wi-Fi connection is set up. • Both 2.4G &5G Wi-Fi are set up. • The HG635 is connected to a wireless client using the Wi-Fi Protected Setup (WPS) function.
	Green Blinking (1 Hz)	A wireless client, such as a computer installed with a wireless network adapter, is connecting to the HG635 using the WPS function. This process lasts for no longer than 120 seconds.
	Green Blinking (2 Hz)	The WLAN connection is set up, and data is being transmitted.
	Off	<ul style="list-style-type: none"> • Both 2.4G &5G Wi-Fi is disabled.
ETHERNET	Green On	At least one Ethernet port is connected to an Ethernet device (such as a computer) with a network cable, but no data is being transmitted.
	Green Blinking	At least one Ethernet port is connected to an Ethernet device with a network cable, and data is being transmitted.
	Off	<ul style="list-style-type: none"> • No Ethernet port connected to any Ethernet device. • The HG635 is powered off.
TV	Green On	The HG635 is connected to a YouView Box properly.
	Blinking	Data is being transmitted between the HG635 and the YouView Box connected.
	Off	<ul style="list-style-type: none"> • No Ethernet port connected to a YouView Box. • The HG635 is powered off.

1.3 Network Architecture

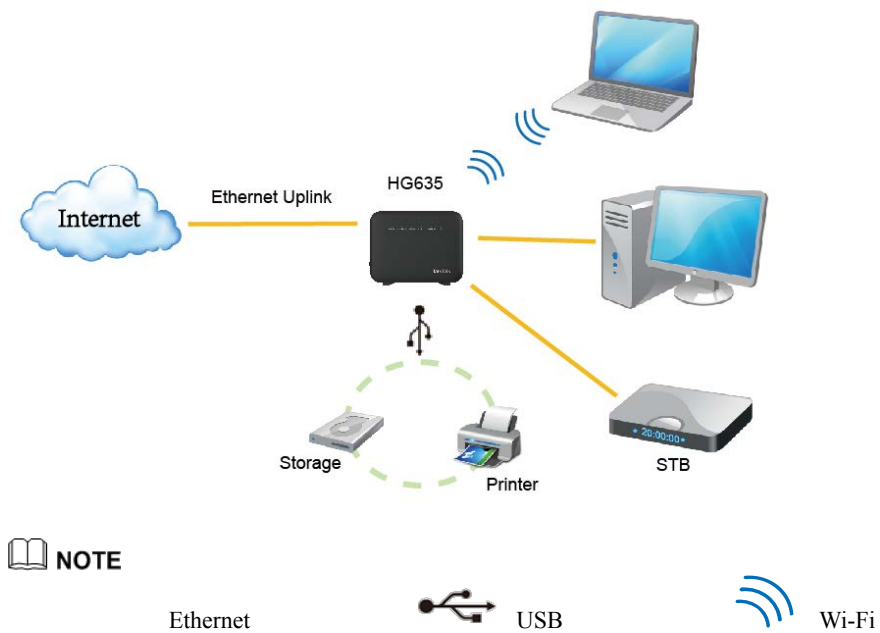
1.3.1 DSL Uplink

Figure 1-4 Networking diagram of the HG635



1.3.2 Ethernet Uplink

Figure 1-5 Networking diagram of the HG635



2 Functional Features

2.1 High-Speed Uplink Ethernet Access

The HG635 supports the uplink gigabit Ethernet access, which provides high-speed network services and abundant service experiences for users.

2.2 High- bandwidth DSL Upstream Link

With an embedded high-performance VDSL2 network processor, the HG635 can bring more abundant service experiences to users. It's also compatible with ADSL, ADSL2 and ADSL2+.

2.3 Support 802.11ac and 802.11n

The HG635 provides high-speed, secure, and convenient wireless network access, and compliant with 802.11b, 802.11g, 802.11n (2.4 GHz) and 802.11ac (5 GHz). It supports MIMO and 5G beamforming, and 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 with wireless data rates up to 300Mbit/s and the IEEE 802.11ac supports the MIMO 3×3 technology with wireless data rates up to 1.3Gbit/s.

2.4 WPS Function

The HG635 provides the WPS 2.0 function. A wireless connection can be set up between the computer and the HG635 conveniently and securely.

2.5 Routing Function

The HG635 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.

2.6 IPv6 Function

The HG635 provides the IPv6 function. It supports the IPv4 & IPv6 dual stack mode and the DS-Lite mode.

2.7 Flexible QoS Policies

The HG635 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.

2.8 Standardized TR-069 Management

The HG635 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 HG635 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.

2.9 Convenient and Secure Management and Maintenance

The HG635 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

- 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
- ADSL2
 - Supports G.992.3 (G.dmt.bis) Annex L
- ADSL2+
 - Supports G.992.5 (G.dmt.bitplus) Annex M
- VDSL2
 - Supports G.993.2 VDSL2 Annex B
 - Supports VDSL2 Profiles for 8a, 8b, 8c, 8d, 12a, 12b, 17a

Other Features

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

3.1.2 Ethernet Interface

- Provision of 10/100/1000 M adaptive Ethernet interfaces
- Supports IEEE802.3, IEEE802.3u and IEEE802.3az standard
- Supports MDI/MDIX auto-sensing
- Supports for half duplex or full duplex mode

3.1.3 WLAN Interface

- Supports 802.11n 2×2 and 802.11ac 3×3 antenna
- Supports 802.11b, 802.11g, 802.11n (2.4 GHz) and 802.11ac (5GHz) concurrent
- Supports WPS 2.0 (PBC mode and PIN mode)
- 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
 - 802.11ac(with a 3×3 antenna used): Up to 1.3 Gbit/s

3.1.4 USB Interface

- Functions as a USB Host 2.0 interface
- Supports mass storage device
- Supports a printing function
- Supports DLNA

3.2 Security Features

- Supports powerful wireless network security
- Supports IP/MAC filtering
- Supports URL filtering
- Supports ACL access control
- Supports parent control
- Prevents DoS attacks.

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
- Supports DNS Relay/Client
- Supports DDNS Client
- Supports DNS transmission
- Supports IGMP V2/V3proxy and IGMP snooping
- Supports DMZ
- Supports UpnP IGD
- Supports SNTP Client
- Supports RIP V1&V2

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 the upgrade through TR-069
- Supports 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): 186 mm × 148 mm × 35 mm (Including the base plate)
- Product Weight: about 350 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

4 Acronyms and Abbreviations

ADSL	Asymmetrical Digital Subscriber Line
ADSL2+	Asymmetrical Digital Subscriber Line 2 plus
AES	Advanced Encryption Standard
ATM	Asynchronous Transfer Mode
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DoS	Denial of Service
DSCP	Differentiated Services Code Point
DSL	Digital Subscriber Line
HTTP	Hyper Text Transport Protocol
IP	Internet Protocol
LAN	Local Area Network
MAC	Media Access Control
NAT	Network Address Translation
nrt-VBR	non-real-time Variable Bit Rate
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

STB	Set-Top Box
TKIP	Temporal Key Integrity Protocol
VDSL	Very High Speed Digital Subscriber Line
VDSL2	Very High Speed Digital Subscriber Line 2
WAN	Wide Area Network
WEP	Wired Equivalent Privacy
WLAN	Wireless Local Area Network
WPA	Wi-Fi Protected Access
WPS	Wi-Fi Protected Setup