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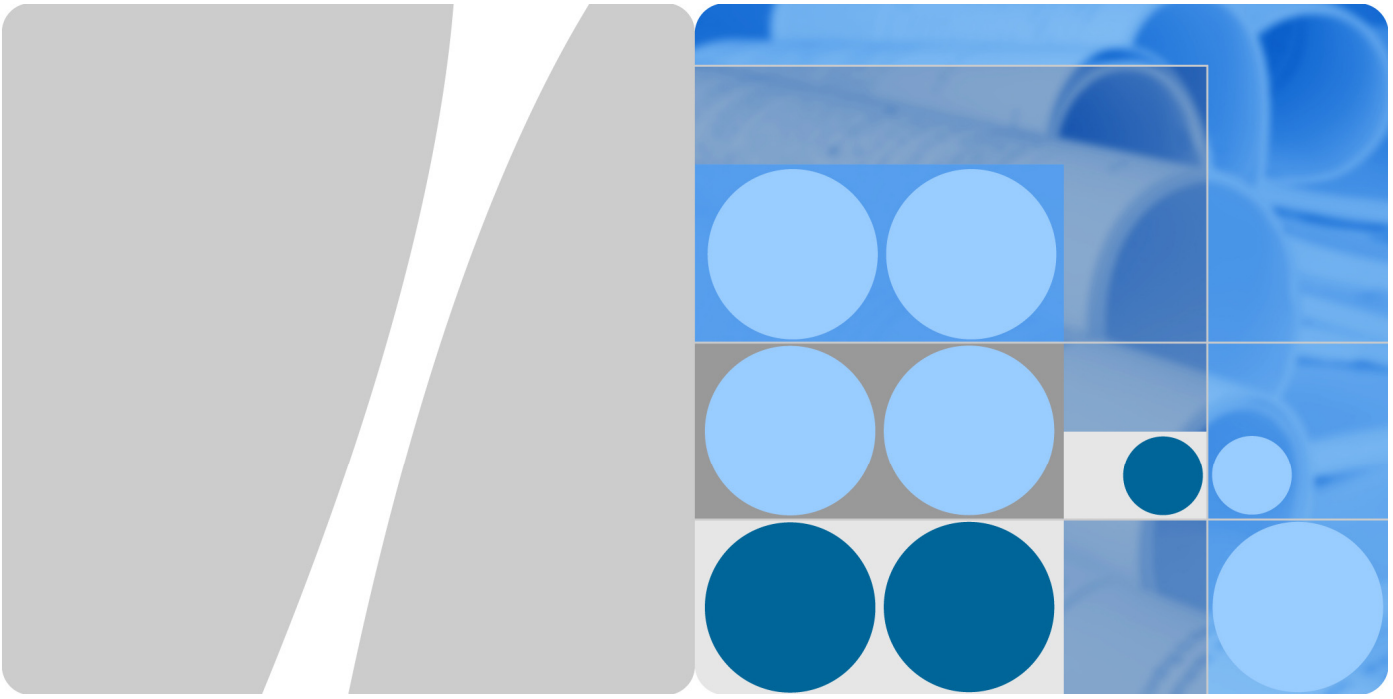

HUAWEI HG552d Home Gateway Product Description

Issue 01

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HUAWEI TECHNOLOGIES CO., LTD.

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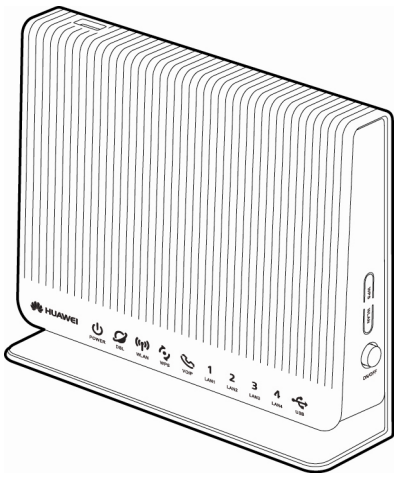
1 Overview

1.1 Introduction to the HG552d

Figure 1-1 Appearance of the HG552d



HUAWEI HG552d Home Gateway (hereinafter referred to as the HG552d) is a type of Asymmetric Digital Subscriber Line (ADSL) terminal. On the network side, it provides a high-speed ADSL2+ interface that supports the Annex A standard for wide area network (WAN) access. On the user side, it provides one USB host interface, four FE interfaces, two POTS interfaces. By integrating the Foreign Exchange Station (FXS) module, the HG552d can provide users with voice service over IP.

The HG552d provides a high-speed ADSL2+ (Annex A) interface to access the broadband WAN. For the LAN, it also provides abundant interfaces such as Ethernet, WiFi and USB interfaces to connect various household terminals, such as PC, STB, PHONE, and USB devices. By supporting 802.11b/g/n, the WLAN interface of the HG552d provides wireless networking and interworking function in the home.

The HG552d provides flexible network configuration and Quality of Service (QoS) policies to improve end-to-end quality assurance cooperating with network devices of the operators.

1.2 Hardware Features

1.2.1 Interfaces and Buttons

Figure 1-2 Interfaces and buttons on the HG552d

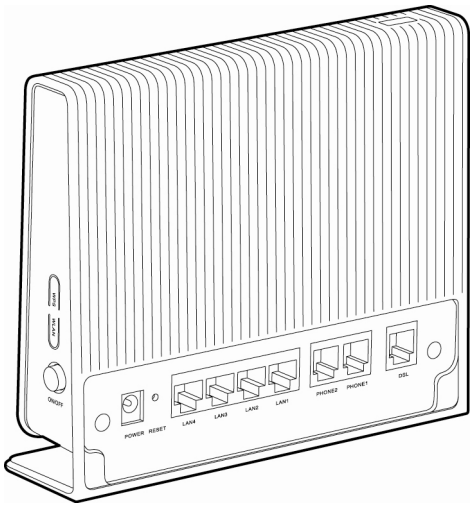


Table 1-1 Interfaces and buttons on the HG552d

Interface/Button	is used to…
DSL	connect the HG552d to the MODEM interface on the splitter.
PHONE1, PHONE2	connect the HG552d to the telephone.
LAN1, LAN2, LAN3, LAN4	connect the HG552d to the Ethernet interface on the computer or STB.
RESET	restore the factory settings of the HG552d.
POWER	connect the HG552d to the power adapter.
WLAN	enable or disable wireless network function quickly.
WPS	enable the WPS negotiation of the HG552d.
ON/OFF	power on or off the HG552d.
USB (on the top of the HG552d)	connect the USB device.

1.2.2 Indicators

Figure 1-3 Indicators on the HG552d

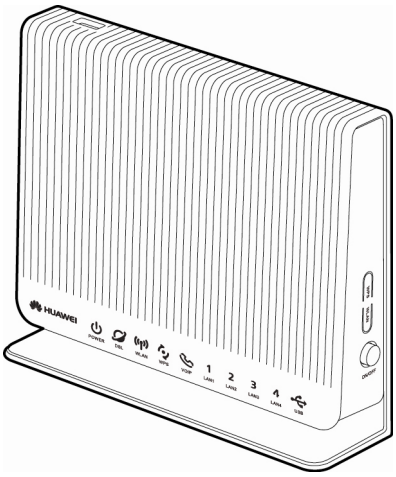


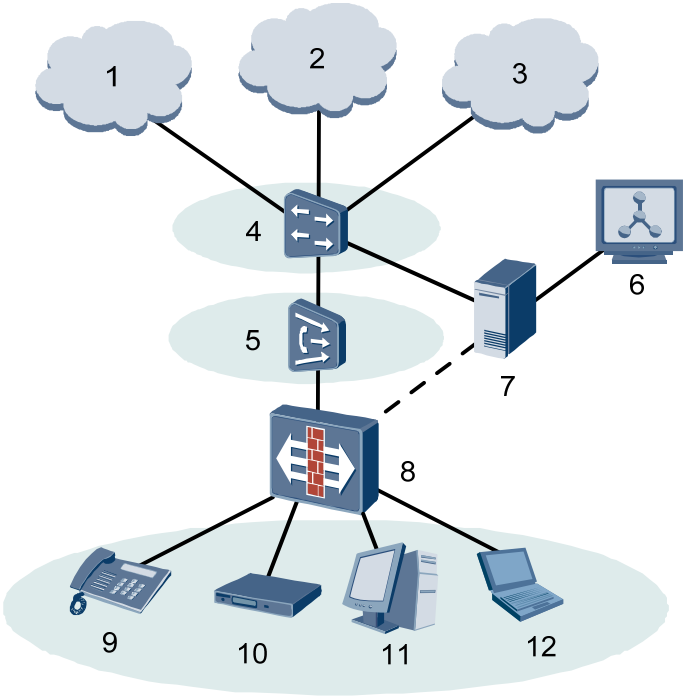
Table 1-2 Indicators on the HG552d

Indicator…	indicates…
POWER	the power condition of the HG552d.
DSL	the status of the ADSL line.
WLAN	the status of the wireless network connection.
WPS	the status of the wireless network connection through the WPS protocol.
VOIP	the status of the connection between the HG552d and the telephone.
LAN1, LAN2, LAN3, LAN4	the status of the Ethernet connection between the HG552d and the PC.
USB	the status of the connection between the HG552d and the USB device.

1.3 Network Architecture

Figure 1-4 shows the location of the HG552d in the network.

Figure 1-4 Networking diagram of the HG552d



NOTE

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

Table 1-3 lists the network units in the networking diagram of the HG552d.

Table 1-3 Network units in the networking diagram of the HG552d

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

No.	Item	Full Name
7	ACS	Auto-Configuration Server
8	HG552d	-
9	Telephone	-
10	STB	set-top box
11	Desktop computer	-
12	Notebook computer	-

2 Functional Features

2.1 Routing Function

The HG552d 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.

2.2 LAN Function

The HG552d 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 WPS Function

The HG552d provides the WPS function. A wireless connection can be set up between the computer and the HG552d conveniently and securely.

2.4 VoIP Function

Provides the Voice over IP (VoIP) and Fax (T.38) services and supports value-added services.

2.5 Flexible QoS Policies

The HG552d 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 HG552d 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 HG552d 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 HG552d 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

Support for Multiple DSL Standards

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

G.992.5 (G.dmt.bitplus) Annex A

Other Features

- Support for multiple permanent virtual channels (PVCs)
- Support for manual configuration of PVC parameters

3.1.2 Ethernet Interface

- Provision of four Ethernet interfaces
- Support for the IEEE 802.3u standard
- Support for the 10/100 Mbit/s adaptation
- Support for the MDI/MDIX auto-sensing

3.1.3 FXS Interface

Support two POTS telephones and line emergency function

3.1.4 USB Interface

- Supports USB 2.0 host Interface
- Supports USB mass storage device

3.2 Security Features

- Support for the firewall:
  - Blacklist function
  - Protection against denial of service (DoS) attacks
- Support for MAC address filtering
- Support for secure use of the Web-based configuration utility through password verification

3.3 Routing Features

- Support for multiple working modes on each PVC

  You can set the working mode of a PVC to one of the following modes:
  - Pure bridging mode (RFC2684 bridged)
  - MAC Encapsulated Routing (MER) (RFC2684 bridged static IP and RFC2684 bridged DHCP client)
  - Point-to-Point Protocol over Ethernet (PPPoE) (RFC1661 and RFC2516)
  - Point-to-Point Protocol over ATM (PPPoA) (RFC1661 and RFC2364)
- Support for Routing Information Protocol (RIP) v1 and RIP v2
- Support for the Network Address and Port Translation (NAPT)
- Support for a DHCP server
- Support for a DHCP client
- Support for a Domain Name System (DNS) client
- Support for a DNS relay

3.4 WLAN features

- Support for a built-in 802.11n 2T × 2R antenna
- Support for 802.11b, 802.11g, and 802.11n (2.4G)
- Support for WPS and Wi-Fi Multimedia (WMM)
- Support for security authentications of WPA1.0 and WPA2.0
- Support for the Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP), and 64-bit or 128-bit Wired Equivalent Privacy (WEP)

3.5 QoS Features

- Support for multiple methods of traffic classification based on:
  - LAN interface
  - Differentiated Services Code Point (DSCP)
  - Ports (source ports and destination ports) at the fourth layer
  - IP addresses (source IP addresses and destination IP addresses)
- Support for queuing methods based on priorities:
  - First In, First Out (FIFO) queuing: supporting one queue
  - Priority queuing: supporting four queues

3.6 ATM Features

- Support for Asynchronous Transfer Mode (ATM) Forum UNI 3.0/3.1/4.0
- Support for the QoS of the Asynchronous Transfer Mode (ATM)
- Support for multiple service types:
  - Unspecified bit rate (UBR)
  - Constance bit rate (CBR)
  - Real-time variable bit rate (rt-VBR)
  - Non-real-time variable bit rate (nrt-VBR)

3.7 VoIP Features

- Support SIP (RFC 3261)
- Support SDP (RFC 2327)
- Support the value-added services, such as call transfer, call waiting, call hold, and three-way calling
- Support echo cancellation, silence suppression, and comfort noise generation

3.8 Supports jitter buffer Maintenance and Management

- Support for TR-069
- Support for the remote and local management through the Web-based configuration utility
- Support for the software upgrade in Hyper Text Transport Protocol (HTTP) mode

3.9 Power Supply Specifications

- Entire-device power supply: 12 V DC, 1.5 A
- Entire-device power consumption: < 18 W

3.10 Physical Specifications

- Dimensions (L × W × H): 173 mm × 48 mm × 146.5 mm
- Weight: < 0.5 kg

3.11 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
FIFO	First In, First Out
FXS	Foreign Exchange Station
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
PPPoE	Point-to-Point Protocol over Ethernet
PPPoA	Point-to-Point Protocol over ATM
PSK	pre-shared key
PVC	permanent virtual channel
QoS	quality of service
RIP	Routing Information Protocol
RT-VBR	real-time variable bit rate
STB	set-top box
TKIP	Temporal Key Integrity Protocol
ToS	Type of Service
UBR	unspecified bit rate
VoIP	Voice over IP
WAN	wide area network
WLAN	Wireless Local Area Network
WPS	WiFi Protected Setup