



HG658 Home Gateway

User Guide



HG658 Home Gateway
V100R001

User Guide

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Huawei Technologies Co., Ltd. provides customers with comprehensive technical support and service. Please feel free to contact our local office or company headquarters.

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The power consumption of product in networked standby if all wired network ports are connected and all wireless network ports are activated is 8.6 W.

For the product information displayed on the manufacturers' freely accessible websites required by (EU) No 801/2013, please visit <http://consumer.huawei.com/certification>.

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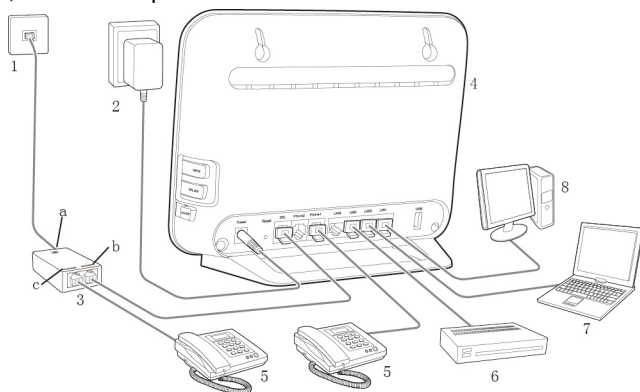
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1 Connecting Cables and Getting Started

Thank you for purchasing the HG658 Home Gateway (HG658 for short).

1.1 Connecting Cables

The following figure shows an example of how to connect the cables. In this example, the HG658 is connected to a set-top box, desktop computer, laptop computer, and two telephones.



- | | | |
|-----------------------|--------------------|---------------|
| 1 Telephone wall jack | 2 Power adapter | 3 Splitter |
| 4 HG658 | 5 Telephone | 6 Set-top box |
| 7 Laptop computer | 8 Desktop computer | a LINE port |
| b MODEM port | c PHONE port | |

1.2 Powering On the HG658

After connecting the cables, press the **On/Off** button on the side panel to power on the HG658.

After you power on the HG658, the **WAN** indicator light blinks (for less than three minutes), indicating that the HG658 is being activated. Once activated, the **WAN** indicator light remains steady on. The **Power** indicator also remains steady on, indicating that the HG658 is working properly.



To power off the HG658, press the **On/Off** button again, and then unplug the power adapter.

2 Setting Network Access Parameters

2.1 Logging in to the Web-based Configuration Utility

Most parameters of the HG658 are pre-set before delivery to meet common home application scenarios. To check the HG658's working status or configure certain advanced network functions, use the web-based configuration utility.

To log in to the web-based configuration utility:

- Step 1** Open a browser on your computer. Enter **http://192.168.1.1** in the address box, and then press **Enter**.
- Step 2** On the login page, enter your user name (**user** by default) and password (**HuaweiUser** by default).



For safety or convenience reasons, you can change the user name and password for the web-based configuration utility. For details, see section 5.1 "Changing the User Name and Password for the Web-based Configuration Utility".

If the user name and password are changed, you must use the new user name and password to log in.

- Step 3** Click **Login**.

After the system verifies your account information, the web-based configuration utility is displayed.



The first time you log in to the web-based configuration utility, a setup wizard is displayed. To skip the wizard and go immediately to the HG658 configuration page, click **Advance**.

2.2 Using the Setup Wizard

After logging in to the web-based configuration utility, you can use the setup wizard to quickly configure the HG658.

When you configure the HG658 for the first time, the setup wizard page is displayed automatically after logging in to the utility.



If you have configured the HG658 before and you log in to the web-based configuration utility, the setup wizard page will not be displayed. However, you can still click **Setup Wizard** in the upper right corner to display the setup wizard page.

To configure the HG658 through the setup wizard:

Step 1 Log in to the web-based configuration utility. When the **Wizard** page is displayed, click **Next**.

Step 2 Set **WAN device** based on your network type, enter the user name and password that are provided by your Internet Service Provider (ISP) in the **User name** and **Password** text boxes, and then click **Next**.



If you can access the Internet without the PPPoE dial-up operation, skip Step 2 and configure the WLAN parameters directly.

Step 3 Set WLAN parameters, and then click **Next**.



Check the label on the HG658's rear panel for the **SSID** and **WPA pre-shared key**. You can configure the **SSID** and **WPA pre-shared key** by choosing **Basic > WLAN**. For details, see section 5.4 "Changing the Wireless Network Name and Password".

Step 4 Click **Submit**.

3 Setting Up a Wireless Connection

If a wireless network adapter is installed on your computer, you can connect your computer to the HG658 over a wireless connection.



The method for installing the wireless adapter and its driver varies by vendor. For details, see the installation guide provided by the vendor of your wireless adapter.

The wireless network function is enabled on the HG658 before delivery. To check the function status, see section 5.3 "Enabling or Disabling the Wireless Network Function".

There are two methods for setting up a wireless connection between the HG658 and your computer.

3.1 Setting up a Wireless Connection Using the WPS Button

The HG658 supports the Wi-Fi Protected Setup (WPS) function in Push Button Configuration (PBC) mode. If your wireless network adapter also supports the WPS function, do the following to connect your computer to the HG658 over a wireless connection:

Step 1 Press and hold the **WPS** button (on the HG658 side panel) for 1 or more seconds.

The **WLAN** indicator light on the HG658 starts blinking, indicating that the HG658 is in the WPS negotiation state.

Step 2 Enable the WPS negotiation function on the computer within 2 minutes of the previous step.

Wait until the HG658 **WLAN** indicator light stops blinking and remains steady on. This indicates that a wireless connection is set up between the HG658 and the computer.



The WPS function can be used only when the security mode of the WLAN is set to WPA2-PSK or WPA-PSK/WPA2-PSK.

3.2 Setting up a Wireless Connection Manually

Besides using the WPS button, you can also set up a wireless connection manually.

The following example uses a computer running the Windows XP operating system to describe how to set up a wireless connection using the default wireless network name and password:

Step 1 Start the wireless configuration service of the Windows XP operating system as follows:

1. Right-click **My Computer** to display a short-cut menu, and then choose **Manage**.
2. In the **Computer Management** window, choose **Computer Management (Local) > Services and Applications > Services**.
3. Right-click **Wireless Zero Configuration** to display a shortcut menu, and then choose **Properties**.
4. Check that **Service status** is **Started**. If **Service status** is not **Started**, click **Start**.
5. Click **OK** to close the dialog box, and then close the **Computer Management** window.

Step 2 Find the wireless network name (**WLAN Name**) and its password (**WLAN Key**) printed on the label of the HG658's rear panel.

Step 3 Configure the wireless network connection on the computer as follows:

1. Choose **Start > All Programs > Accessories > Communications > Network Connections**.
2. In the **Network Connections** window, right-click **Wireless Network Connection** to display a shortcut menu, and choose **Properties**.

3. In the **Wireless Network Connection Properties** dialog box, click the **Wireless Networks** tab.
4. Select **Use Windows to configure my wireless network settings**.
5. Click **View Wireless Networks**.
6. In the **Wireless Network Connection** dialog box, select the wireless network whose name is the same as the one you recorded in Step 2, and click **Connect**.
7. In the dialog box, enter the password you recorded in Step 2, and then click **Connect**.

After the system verifies the password, **Connected** appears on the wireless network icon in the wireless network list, indicating that your computer has established a wireless connection to the HG658.

8. Close the **Wireless Network Connection** dialog box.



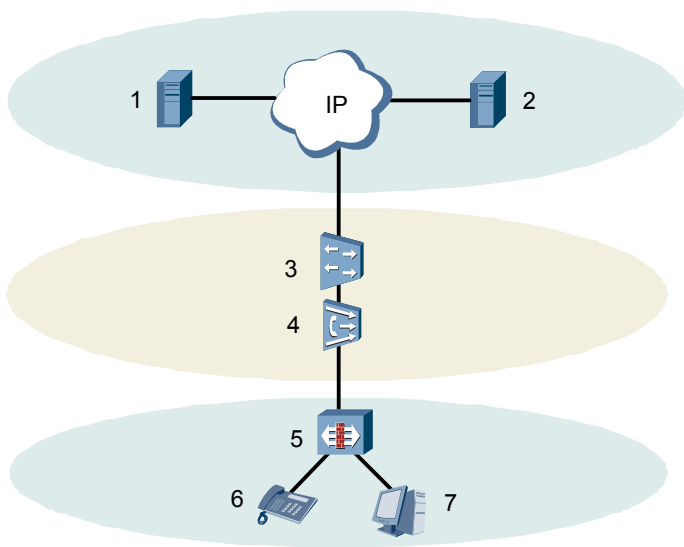
You need to set up a wireless connection only once. You can access the wireless network anytime you want as long as the wireless network name and password are not changed. When the HG658 is working properly, your computer connects to the HG658 automatically after its wireless function is enabled.

4 Voice Services

4.1 Introduction

The HG658 supports voice services based on the Session Initiation Protocol (SIP). SIP is an application layer protocol used to create, modify, or end multimedia sessions.

4.2 Networking



No.	Item	Description
1	Proxy server	Server that forwards requests or responses in place of the client

No.	Item	Description
2	Registrar server	Server that receives registration requests
3	BRAS	Broadband remote access server
4	DSLAM	Digital subscriber line access multiplexer
5	HG658	-
6	Telephone	-
7	Computer	-

4.3 Configuration Procedure

The HG658's Voice over Internet Protocol (VoIP) parameters are set before delivery. Generally, these parameters do not need to be modified.

5 Configuring the HG658

5.1 Changing the User Name and Password for the Web-based Configuration Utility

For safety or convenience reasons, you can change the user name and password for the web-based configuration utility.

To change the login user name and password:

- Step 1** Log in to the web-based configuration utility.
- Step 2** Choose **Maintenance > Account** to display the user information management page.
- Step 3** Enter a new user name, your current password, and new password in the corresponding text boxes. Re-enter the new password to confirm it.
- Step 4** Click **Submit**.

After the user name and password are changed, the login page is displayed again. Enter your new user name and password to log in.



If you cannot remember the user name and password that you have set, you can restore them to their default settings by pressing and holding the **Reset** button for 6 or more seconds. Once complete, the login information of the web-based configuration utility is restored to default settings. When the default settings are restored, your custom data is lost. Therefore, exercise caution when using the **Reset** button.

5.2 Changing the Login IP Address

You can change the login IP address of the web-based configuration utility according to your individual requirements.

To change the login IP address:

- Step 1** Log in to the web-based configuration utility.
- Step 2** Choose **Basic > LAN**.

Step 3 Enter a new IP address in the **IP address** text box, and then enter a subnet mask in **Subnet mask** text box.

Step 4 Click **Submit** to save the settings.



To log in to the web-based configuration utility after you change the login IP address, enter the new IP address into the web browser's address box. Ensure that the IP address of the computer is in the same network segment as that of the HG658 to enable the computer to access the web-based configuration utility.

5.3 Enabling or Disabling the Wireless Network Function

There are two methods for enabling or disabling the wireless network function.

Using the WLAN Button

To enable or disable the wireless network function, press the **WLAN** button for 1 or more seconds. The **WLAN** indicator light indicates the status of the wireless network function.

Using the Web-based Configuration Utility

To enable or disable the wireless network function from the web-based configuration utility:

Step 1 Log in to the web-based configuration utility.

Step 2 Choose **Basic > WLAN**.

Step 3 Select **Enable WLAN**.

- Select **Enable WLAN** to enable the wireless network function.
- Clear **Enable WLAN** to disable the wireless network function.

5.4 Changing the Wireless Network Name and Password

The default wireless network encryption mode is **WPA-PSK/WPA2-PSK**. You can find the default wireless network name (**WLAN Name**) and password (**WLAN Key**) printed on the label of the HG658's rear panel.

To change the wireless network name and password:

(This example uses **WPA-PSK/WPA2-PSK** encryption mode.)

Step 1 Log in to the web-based configuration utility.

Step 2 Choose **Basic > WLAN**.

Step 3 Select **Enable WLAN**.

Step 4 Enter a wireless network name in **SSID** text box.

Step 5 For **Security Mode**, select **WPA-PSK/WPA2-PSK**. Enter a password in **WPA Pre-Shared Key** text box. Use default settings for other parameters.

Step 6 Click **Submit**.

You will be prompted to enter this password when connecting wireless devices, such as a computer, to the HG658's wireless network. You cannot connect to the HG658's wireless network if you enter an incorrect password.



If you cannot remember the wireless network name and password, log in to the web-based configuration utility to set a new name and password. Alternatively, you can restore the HG658 to its default settings. The name and password are then restored to the values printed on the label of the HG658's rear panel.

5.5 Accessing Mobile Storage Devices Using the FTP Client

The HG658 supports a home storage function. Mobile storage devices, such as a USB flash drive, can be connected to the USB port on the HG658. You can then access the mobile storage devices from the Local Area Network (LAN) or Internet.

To access a mobile storage device:

- Step 1** Connect the mobile storage device to the HG658's USB port.
- Step 2** Enable the FTP server, and then configure the FTP server settings.
1. Log in to the HG658's web-based configuration utility.
 2. Choose **Advanced > USB Port**.
 3. Select **Enable FTP Server**.
 4. In **User name** and **Password**, enter the user name and password of the FTP server (both default values are **ftp**). Keep the default settings of other parameters.
 5. Click **Submit** to save the settings.
- Step 3** Start the FTP client, and access the HG658's LAN IP address through the FTP server.
1. On your computer, open a web browser.
 2. Enter **FTP://192.168.1.1** in the address box, and then press **Enter**.
 3. In the **Login** dialog box, enter the user name and password for the FTP server (values that you set in Step 2), and then click **Login**.

After the system verifies the user name and password, you can read data from or write data to the mobile storage device connected to the HG658.

5.6 Restoring Default Settings



If you restore the HG658 to default settings, all customized user data will be lost. Therefore, exercise caution when using this function.

To restore the HG658 to default settings, power on the HG658, press and hold the **Reset** button for 6 or more seconds, and then release.

You can also restore the HG658 to default settings from the web-based configuration utility:

Step 1 Log in to the web-based configuration utility.

Step 2 Choose **Maintenance > Device**.

Step 3 Click **Restore Default Settings**.

Step 4 In the displayed dialog box, click **OK**.

After the preceding steps are complete, the login page is displayed. You can then enter the default user name (**user**) and password (**HuaweiUser**) to log in.

5.7 Restarting the HG658

To restart the HG658:

Step 1 Log in to the web-based configuration utility.

Step 2 Choose **Maintenance > Device**.

Step 3 Click **Reboot**.

6 FAQs

How can I quickly enable or disable the wireless network function?

Press and hold the **WLAN** button for 1 or more seconds, and then release. The **WLAN** indicator light indicates the status of the wireless network function.

How can I quickly restore the HG658 to its default settings?

To restore the HG658 to default settings, press and hold the **Reset** button for over 6 or more seconds when the HG658 is powered on, and then release.

What can I do if I cannot access the Internet?

Step 1 Check that the **Power** indicator on the HG658 is steady on.

If the **Power** indicator is off, perform further checks as follows:

1. Check that the HG658 is turned on.
2. Check that electricity comes from the socket and that the power input from the socket meets the requirements described on the label of the HG658's power adapter. If the voltage is unstable, for example, if the voltage is too high or too low, do not use the HG658. Wait until the voltage recovers, and then use the HG658.
3. Check that the HG658 is securely connected to the socket using its power adapter.

If the **Power** indicator is still off, contact an authorized maintenance center.

Step 2 After powering on the HG658, wait for about 3 minutes. Then check whether the **WAN** indicator turns steady on.

If the **WAN** indicator is off, perform further checks as follows:

1. Check that the telephone line is correctly and securely connected, especially the connection between the telephone line and the splitter.
2. Check that the HG658 and telephone line are located far from any electric appliances that generate strong magnetic or electric fields. Replace the telephone line when necessary.

If the **WAN** indicator is still off, contact your network service

provider.

Step 3 Check that you have entered the correct user name and password. The user name and password are provided by your network service provider. To check the user name and password, see section 3.2 “Using the Setup Wizard”.

Step 4 Check whether the **LAN** indicator is on.

If the **LAN** indicator is off, perform further checks as follows:

1. Check that the network adapter on your computer is enabled.
2. Check that the network cable between the HG658 and the computer is securely connected. Remove and then insert the network cable or replace the network cable when necessary.

If the **LAN** indicator is still off, contact an authorized maintenance center.

Step 5 Check that the driver for the network adapter is correctly installed. The following example uses a computer running the Windows XP operating system to check whether the driver for the network adapter is installed:

1. Right-click **My Computer**, and choose **Manage** from the displayed shortcut menu.
2. In the **Computer Management** window, click **Device Manager**.
3. In the right pane of the **Computer Management** window, click **Network adapters**.

If no network adapter is found or if a question mark (?) or an exclamation mark (!) is displayed next to the network adapter icon, the driver for the network adapter is not correctly installed.

Re-install the driver.

Step 6 Check that the proxy server of the browser is correctly configured. The following example uses Internet Explorer on the Windows XP operating system to check whether the proxy server of the browser is correctly configured:

1. Launch Internet Explorer.
2. Choose **Tools > Internet Options**.
3. In the **Internet Options** dialog box, click the **Connections** tab.
4. In the **Local Area Network (LAN) settings** area, click **LAN**

Settings.

5. In the **Proxy server** area of the **Local Area Network (LAN) Settings** dialog box, check that the **Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections.)** check box is cleared.

Step 7 Try to access more websites to check whether the HG658 can access these websites.

If the problem persists, contact your network service provider.

What can I do if I cannot access the Web-based configuration utility?

Step 1 Refer to "What can I do if I cannot access the Internet?" to check that the power supply, telephone line, and network line are working properly.

Step 2 Check that the computer's IP address and the HG658's LAN IP address are in the same network segment, and that the browser is not using a proxy server.



To ensure that the computer's IP address and the HG658's LAN IP address are in the same network segment, you can set the computer to obtain an IP address automatically.

Step 3 Check that the correct user name and password are used to log in to the Web-based configuration utility.

If the problem persists, restore the HG658 to its default settings. For details, see "How can I quickly restore the HG658 to its default settings?"

What can I do if I cannot access the Internet over a wireless connection?

Step 1 Check that all cables are securely connected, such as the power adapter cable and the telephone line.

Step 2 Check whether the **WLAN** indicator is on.

If the **WLAN** indicator is off, the wireless network function is disabled, and you need to turn on the wireless network function.

Step 3 Read the user guide of the wireless network adapter, and check whether the wireless network adapter supports the 802.11b, 802.11g, or 802.11n protocol.

If the wireless network adapter does not support any of the

preceding protocol, replace it.

Step 4 Check whether the driver for the wireless network adapter is correctly installed.

If the driver is not correctly installed, re-install it using the driver program provided with the wireless network adapter.

Step 5 Check whether the computer receives wireless signals properly. The following example uses the computer running the Window XP operating system to check wireless signal reception:

1. Choose **Start > Control Panel**. Double-click **Network Connections**.
2. In the **Network Connections** window, right-click **Wireless Network Connection**, and choose **View Available Wireless Networks**.

If the computer cannot find the wireless network, move the computer closer to the HG658. Check that there are no obstacles, such as walls, between the computer and the HG658.

Step 6 Check whether the computer is connected to the HG658's wireless network. On the wireless network list, check whether the HG658's wireless network is displayed as **Connected**.

Step 7 Try to access more websites to check whether the HG658 can access these websites.

If you still cannot access the websites, restore the HG658 to its default settings. If the problem persists, contact your network service provider.

What can I do if sometimes the terminal cannot access the Internet over a wireless connection or if the wireless connection is unstable?

Step 1 Check the positions of the HG658 and the computer. Ensure that they are located far from the electric appliances such as microwave ovens, refrigerators, or cordless telephones that generate strong magnetic or electric fields.

Step 2 Place the HG658 in an open area.

Although radio signals can pass through obstacles, their transmission is affected if they pass through too many obstacles such as walls.

Step 3 Move the computer closer to the HG658.

Step 4 Place the HG658 and the computer in another direction.

Step 5 Try to avoid using wireless network connection during thunderstorms.

What can I do if the wireless network is not encrypted but the computer cannot connect to the wireless network?

Step 1 Delete wireless network configuration from the computer.

The following example uses a computer running the Windows XP operating system:

1. Choose **Start > Control Panel**. Double-click **Network Connections**.
2. In the **Network Connections** window, right-click **Wireless Network Connection**, and choose **Properties**.
3. In the **Wireless Network Connection Properties dialog box**, click the **Wireless Networks** tab.
4. In the **Preferred Networks** area, select a wireless network, and click **Remove**.
5. Delete all the other wireless network connections from the **Preferred Networks** area.
6. Click **OK**.

Step 2 Set up an unencrypted wireless network connection.

Does the WPS function have any special requirements on the wireless encryption settings of the HG658?

The WPS function can be used only when the security mode of the wireless network is set to **WPA2-PSK**, or **WPA-PSK/WPA2-PSK**, and the SSID is set to **SSID1**. It is recommended that you set the security mode to **WPA-PSK/WPA2-PSK**.

What can I do if I cannot set up a wireless connection between the HG658 and the computer by pressing the **WPS** button?

Step 1 Check that only one computer tries to connect to the HG658 using the WPS function at a time.

Step 2 Check that the wireless network function and the WPS function in PBC mode are enabled on the HG658.

Step 3 Check that the security mode of the wireless network is set to

WPA2-PSK, or **WPA-PSK/WPA2-PSK**, and **SSID** is set to **SSID1**.

Note that the WPS function is forcibly disabled if the wireless network uses the Wired Equivalent Privacy (WEP) encryption.

Step 4 Check the positions of the HG658 and the computer. Ensure that they are far from the electric appliances such as microwave ovens, refrigerators, or cordless telephones that generate strong magnetic or electric fields.

Step 5 Place the HG658 in an open area.

Although radio signals can pass through obstacles, their transmission is affected if they pass through too many obstacles such as walls.

What can I do if noises exist during telephone calls?

Step 1 Check that a splitter is installed.

A splitter helps to protect the ADSL call quality from being affected due to the interference of other signals.

Step 2 Check that telephone lines are securely connected. In particular, ensure that the telephone line connecting to the splitter is securely connected.

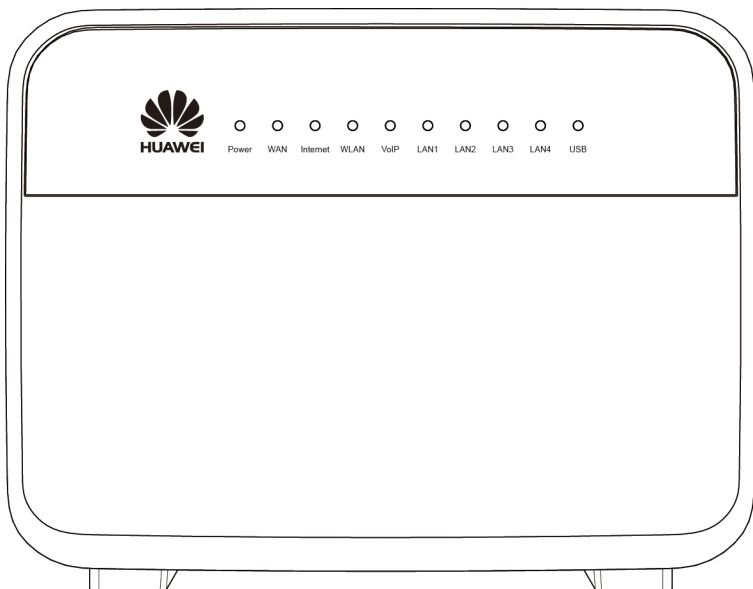
Step 3 Replace telephone lines and ensure that the telephone lines are not faulty.

After a broadband device is installed, does Internet access degrade call quality or do telephone calls lower the Internet access rate?

No. The HG658 uses the frequency division multiplexing (FDM) and splitter technologies to separate voice signals from data signals. Although these two types of signals are transmitted through one telephone line, they are carried by different frequency bands. Therefore, they do not interfere with each other. In this case, you can make telephone calls and access the Internet at the same time, without degrading call quality or lowering the Internet access rate.

7 Technical Specifications

7.1 Indicators

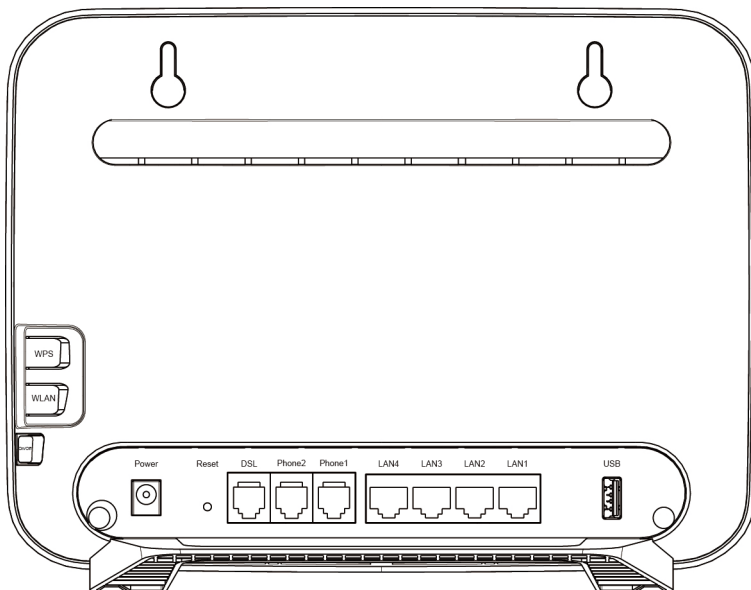


Indicator	Color	Status	Description
Power	Green	On	The HG658 is powered on.
	Red	On	There are errors in the booting process.
	-	Off	The HG658 is powered off.
WAN	Green	On	The DSL connection is established and activated.
	Green	Blinking	The DSL connection is being activated.
	-	Off	The HG658 is powered off or no DSL connection is established.

Indicator	Color	Status	Description
Internet	Green	On	The Internet connection is successfully established but no data is being transmitted.
	Green	Blinking	The Internet connection is successfully established and data is being transmitted.
	Red	On	A physical connection is established, but the HG658 is not connected to the Internet.
	-	Off	<ul style="list-style-type: none"> • The HG658 is powered off. • The HG658 is working in bridge mode. • No ADSL connection is established.
WLAN	Green	On	The WLAN function is enabled, but no data is being transmitted on the WLAN.
	Green	Blinking	<ul style="list-style-type: none"> • The WLAN function is enabled and data is being transmitted on the WLAN. • A wireless connection is set up between the HG658 and a wireless client using the WPS function.
	-	Off	The WLAN function is disabled.
VoIP	Green	On	The HG658 is registered with the SIP (Session Initiation Protocol) server.
	Green	Blinking	The phone is in the off-hook state.
	Red	On	The softswitch is not registered.
	-	Off	The HG658 is powered off.
LAN1, LAN2, LAN3, LAN4	Green	On	The LAN connection is successfully established but no data is being transmitted.
	Green	Blinking	The LAN connection is successfully established and data is being transmitted.
	-	Off	<ul style="list-style-type: none"> • The HG658 is powered off. • No LAN connection is established.

Indicator	Color	Status	Description
USB	Green	On	The USB connection is successfully established in USB host mode but no data is being transmitted.
	Green	Blinking	The USB connection is successfully established in USB host mode and data is being transmitted.
		Off	<ul style="list-style-type: none"> The HG658 is powered off. No USB connection is established.

7.2 Ports and Buttons



Port or Button	Function
WPS	Used to enable the WPS function.

Port or Button	Function
WLAN	Used to enable or disable the WLAN function.
On/Off	Used to power on or off the HG658.
Power	Connects a power adapter.
Reset	Restores the HG658 to default settings if you press and hold for 6 or more seconds. NOTE After you restore the HG658 to default settings, your customized data will be lost. Therefore, exercise caution when using the Reset button.
DSL	Connects to a splitter or telephone wall jack.
Phone1, Phone2	Connects to a telephone.
LAN1–LAN4	Connect to computers, switches, or other Ethernet devices.
USB	Connects to a USB device.

7.3 Default Settings

Parameter	Default Settings
LAN IP address	192.168.1.1
LAN subnet mask	255.255.255.0
User name for web-based configuration utility login	user
Password for web-based configuration utility login	HuaweiUser
Wireless network name (WLAN Name) for wireless connection	See the label printed on the HG658's rear panel.
Password (WLAN Key) for wireless connection	See the label printed on the HG658's rear panel.
DHCP server	Enabled
Wireless network	Enabled
Firewall function	Enabled

7.4 Product Specifications

Item	Specifications
Operating temperature	0°C to 40°C (32°F to 104°F)
Operating humidity	5% to 95%, non-condensing
Dimensions (H × W × D)	About 185 mm × 240 mm × 85 mm
Weight	About 600g

Item	Specifications	
Standards	ADSL standards	<ul style="list-style-type: none"> ● G.992.1 (G.dmt) ● G.992.2 (G.dmt) ● G.994.1 (G.hs) ● ANSI T1.413 Issue 2
	ADSL2 standard	● G.992.3 (G.dmt.bis) Annex L
	ADSL2+ standard	● G.992.5 (G.dmt.bitplus)
	VDSL standard	● G.993.2
	WLAN standards	802.11b, 802.11g, 802.11n (2.4 GHz)
Wireless transmission rates	802.11b mode	Up to 11 Mbit/s
	802.11g mode	Up to 54 Mbit/s
	802.11n mode (2 x 2 antenna used)	Up to 300 Mbit/s

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