



HG658c Home Gateway

## **User Guide**



HG658c Home Gateway  
V100R001

## User Guide

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# Contents

<b>Contents</b> .....	<b>i</b>
<b>1 Connecting Cables and Getting Started</b> .....	<b>1</b>
1.1 Connecting Cables Using the WAN Port .....	1
1.2 Connecting Cables Using the USB Port .....	2
1.3 Connecting Cables Using the DSL Port.....	3
<b>2 Setting Network Access Parameters</b> .....	<b>4</b>
2.1 Logging in to the Web-based Configuration Utility.....	4
2.2 Configuring Internet Access Parameters .....	4
<b>3 Setting Up a Wireless Connection</b> .....	<b>5</b>
3.1 Setting up a Wireless Connection Using the WPS Button.....	5
3.2 Setting up a Wireless Connection Manually .....	6
<b>4 Voice Services</b> .....	<b>7</b>
<b>5 Configuring the HG658c</b> .....	<b>7</b>
5.1 Accessing Mobile Storage Devices Using the FTP Client.....	7
5.2 Changing the User Name and Password for the Web-based Configuration Utility .....	8
5.3 Changing the Login IP Address .....	9
5.4 Enabling or Disabling the Wireless Network Function .....	10
5.5 Changing the Wireless Network Name and Password .....	10
5.6 Configuring the Firewall .....	11
5.7 Restoring Default Settings .....	12
5.8 Restarting the HG658c.....	12
<b>6 FAQs</b> .....	<b>13</b>
<b>7 Technical Specifications</b> .....	<b>19</b>
7.1 Indicators.....	19

7.2 Ports and Buttons.....	22
7.3 Default Settings.....	24
7.4 Product Specifications.....	24

# 1 Connecting Cables and Getting Started

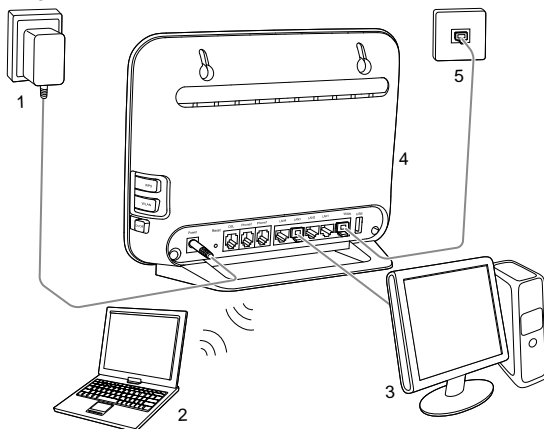
Thank you for purchasing the HG658c (HG658c for short).

You can go online using the Ethernet, USB and DSL modem services. However, you can only use one type of service at one time.

## 1.1 Connecting Cables Using the WAN Port

### Connecting Cables

If there is at least one Ethernet wall jack available in your home, you can access the Internet using the Ethernet.



- |   |               |   |                    |   |                  |
|---|---------------|---|--------------------|---|------------------|
| 1 | Power adapter | 2 | Laptop computer    | 3 | Desktop computer |
| 4 | HG658c        | 5 | Ethernet wall jack |   |                  |

### Getting Started

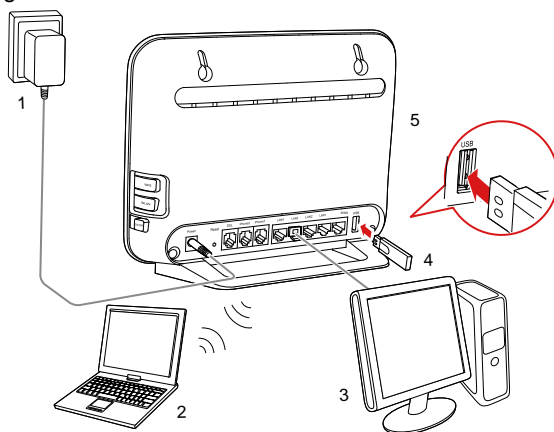
After connecting the cables, press the **On/Off** button on the side panel to power on the HG658c.

After you power on the HG658c, the **Power** indicator turns on, the **INTERNET** indicator turns on. This indicates that the HG658c is working properly. When the **INTERNET** indicator starts blinking, data is being transmitted between the HG658c and the connected device.

## 1.2 Connecting Cables Using the USB Port

### Connecting Cables

You can go online using the USB modem service when you cannot access the network using the DSL or Ethernet services.



1. Power adapter
2. Laptop computer
3. Desktop computer
4. USB modem
5. HG658c

### Getting Started

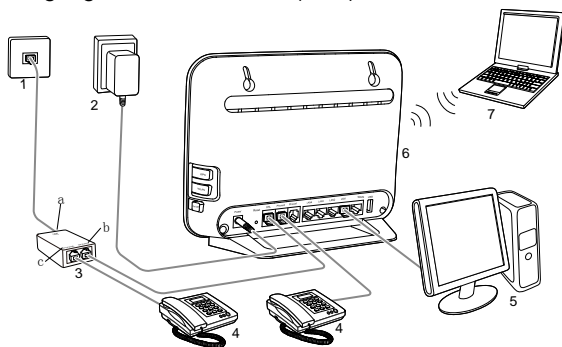
After connecting the cables, press the **On/Off** button on the side of the HG658c to power on the HG658c.

After you power on the HG658c, the **Power** indicator turns on, the **USB** indicator turns on. This indicates that the HG658c is working properly. When the **USB** indicator starts blinking, data is being transmitted between the HG658c and the connected device.

## 1.3 Connecting Cables Using the DSL Port

### Connecting Cables

If there is at least one telephone jack available in your home, you can access the Internet using digital subscriber line (DSL) services.



- |   |                     |   |                  |   |            |
|---|---------------------|---|------------------|---|------------|
| 1 | Telephone wall jack | 2 | Power adapter    | 3 | Splitter   |
| 4 | Telephone           | 5 | Desktop computer | 6 | HG658c     |
| 7 | Laptop computer     |   |                  |   |            |
| a | LINE port           | b | MODEM port       | c | PHONE port |

### Getting Started

After connecting the cables, press the **On/Off** button on the side panel to power on the HG658c.

After you power on the HG658c, the **Power** indicator turns on. The **WAN** indicator lights up and starts blinking. This indicates that the **DSL** port activation is in progress. The blinking may last less than 3 minutes. When the **WAN** indicator stops blinking and remains on, the HG658c is working properly.



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To power off the HG658c, press the **On/Off** button on the side panel, and then unplug the power adapter.

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## 2 Setting Network Access Parameters

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### 2.1 Logging in to the Web-based Configuration Utility

Most parameters of the HG658c are pre-set before delivery to meet common home application scenarios. To check the HG658c's working status or configure certain advanced network functions, use the web-based configuration utility.

To log in to the web-based configuration utility:

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

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

### 2.2 Configuring Internet Access Parameters

After logging in to the web-based configuration utility, you can use the setup wizard to quickly configure the HG658c.

1. Log in to the web-based configuration utility.
2. Click **Setup Wizard**.
3. Click **Next**.
4. In **User name** and **Password**, enter the user name and password that are provided by your service provider, and then click **Next**.
5. Set WLAN parameters by choosing **Basic > WLAN**. You can configure the **SSID** and **WPA pre-shared key**. The default wireless network name (**SSID**) are printed on the label of the HG658c's rear panel are preset before delivery. And then click **Next**.
6. Check that the wireless name you set is correct, and then click **Submit**.

# 3 Setting Up a Wireless Connection

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If a wireless network adapter is installed on your computer, you can connect your computer to the HG658c over a wireless connection.



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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.

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There are two methods for setting up a wireless connection between the HG658c and your computer.

## 3.1 Setting up a Wireless Connection Using the WPS Button

The HG658c 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 HG658c over a wireless connection:

1. Press and hold the **WPS** button (on the HG658c side panel) more than 1 second.
2. The **WLAN** indicator light on the HG658c starts blinking, indicating that the HG658c is in the WPS negotiation state.
3. Enable the WPS negotiation function on the computer within 2 minutes of the previous step.
4. Wait until the HG658c **WLAN** indicator light stops blinking and remains steady on. This indicates that a wireless connection is set up between the HG658c and the computer.



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

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## 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:

1. Find the wireless network name (**SSID**) and its password (**WLAN Key**) printed on the label of the HG658c's rear panel.
2. 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.
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 1, and click **Connect**.
- 7) In the dialog box, enter the password you recorded in 1, 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 HG658c.

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



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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 HG658c is working properly, your computer connects to the HG658c automatically after its wireless function is enabled.

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## 4 Voice Services

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The HG656c supports voice over IP (VoIP) services based on Session Initiation Protocol (SIP). SIP is an application layer protocol used to create, modify, and end multimedia sessions.

The HG658c's Voice over Internet Protocol (VoIP) parameters are set before delivery. Generally, these parameters do not need to be modified. You can use the VoIP services directly.

## 5 Configuring the HG658c

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### 5.1 Accessing Mobile Storage Devices Using the FTP Client

The HG658c supports a home storage function. Mobile storage devices, such as a USB flash drive, can be connected to the USB port on the HG658c. You

can then access the mobile storage devices from the Local Area Network (LAN) or Internet.

To access a mobile storage device:

1. Connect the mobile storage device to the HG658c's USB port.
2. Enable the FTP server, and then configure the FTP server settings.
  - 1) Log in to the 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) Enter a server port number (default is **21**) in the **Port** text box.
  - 6) Click **Submit** to save the settings.
3. Start the FTP client, and access the HG658c'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 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 HG658c.

## 5.2 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:

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

2. Choose **Maintenance** > **Account** to display the user information management page.
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.
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.



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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 over 6 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.

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## 5.3 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:

1. Log in to the web-based configuration utility.
2. Choose **Basic** > **LAN**.
3. Enter a new IP address in the **IP address** text box, and then enter a subnet mask in **Subnet mask** text box.
4. Click **Submit** to save the settings.



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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 HG658c to enable the computer to access the web-based configuration utility.

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## 5.4 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 more than 1 second. 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:

1. Log in to the web-based configuration utility.
2. Choose **Basic > WLAN**.
3. Select **Enable WLAN**.
  - Select **Enable WLAN** to enable the wireless network function.
  - Clear **Enable WLAN** to disable the wireless network function.

## 5.5 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 (**SSID**) and password (**WLAN Key**) printed on the label of the HG658c's rear panel.

To change the wireless network name and password:

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

1. Log in to the web-based configuration utility.
2. Choose **Basic > WLAN**.
3. Select **Enable WLAN**.
4. Enter a wireless network name in **SSID** text box.

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.
6. Click **Submit**.

You will be prompted to enter this password when connecting wireless devices, such as a computer, to the HG658c's wireless network. You cannot connect to the HG658c's wireless network if you enter an incorrect password.



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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 HG658c to its default settings. The name and password are then restored to the values printed on the label of the HG658c's rear panel.

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## 5.6 Configuring the Firewall

The firewall can protect the terminal against malicious access on the WAN port and is used when the HG658c works in routing mode. To configure the firewall, do as follows:

1. Log in to the HG658c's web-based configuration utility.
2. Choose **Advanced > Firewall** to display the firewall page.
3. Select a firewall level for **Firewall level**.
4. Click **Submit**.



## 5.7 Restoring Default Settings



If you restore the HG658c to default settings, all customized user data will be lost. Therefore, exercise caution when using this function.

To restore the HG658c to default settings, power on the HG658c, press and hold the **Reset** button more than 6 seconds, and then release.

You can also restore the HG658c to default settings from the web-based configuration utility:

1. Log in to the web-based configuration utility.
2. Choose **Maintenance > Device**.
3. Click **Restore Default Settings**.
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.

## 5.8 Restarting the HG658c

1. Log in to the web-based configuration utility.
2. Choose **Maintenance > Device**.
3. Click **Reboot**.

## 6 FAQs

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

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

How can I quickly restore the HG658c to its default settings?

To restore the HG658c to default settings, press and hold the **Reset** button for over 6 or more seconds when the HG658c is powered on, and then release.

What can I do if I cannot access the Internet?

1. Check that the **Power** indicator on the HG658c is steady on.

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

- 1) Check that the HG658c 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 HG658c's power adapter. If the voltage is unstable, for example, if the voltage is too high or too low, do not use the HG658c. Wait until the voltage recovers, and then use the HG658c.
- 3) Check that the HG658c is securely connected to the socket using its power adapter.

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

2. After powering on the HG658c, 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 HG658c 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.

3. Check that you have entered the correct user name and password.
4. The user name and password are provided by your network service provider. To check the user name and password, see section 0“Configuring Internet Access Parameters”.
5. 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 HG658c 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.

6. 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.

7. 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.
8. Try to access more websites to check whether the HG658c 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?

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.
2. Check that the computer's IP address and the HG658c's LAN IP address are in the same network segment, and that the browser is not using a proxy server.



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To ensure that the computer's IP address and the HG658c's LAN IP address are in the same network segment, you can set the computer to obtain an IP address automatically.

---

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 HG658c to its default settings. For details, see "How can I quickly restore the HG658c to its default settings?"

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

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

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.

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.

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 HG658c. Check that there are no obstacles, such as walls, between the computer and the HG658c.

6. Check whether the computer is connected to the HG658c's wireless network. On the wireless network list, check whether the HG658c's wireless network is displayed as Connected.
7. Try to access more websites to check whether the HG658c can access these websites.

If you still cannot access the websites, restore the HG658c 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?

1. Check the positions of the HG658c 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.
2. Place the HG658c 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.

3. Move the computer closer to the HG658c.
4. Place the HG658c and the computer in another direction.
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?

1. Delete wireless network configuration from the computer.

The following example uses a computer running the Window 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**.

2. Set up an unencrypted wireless network connection.

Does the WPS function have any special requirements on the wireless encryption settings of the HG658c?

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 HG658c and the computer by pressing the **WPS** button?

1. Check that only one computer tries to connect to the HG658c using the WPS function at a time.
2. Check that the wireless network function and the WPS function in PBC mode are enabled on the HG658c.

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.

4. Check the positions of the HG658c 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.
5. Place the HG658c 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?

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.

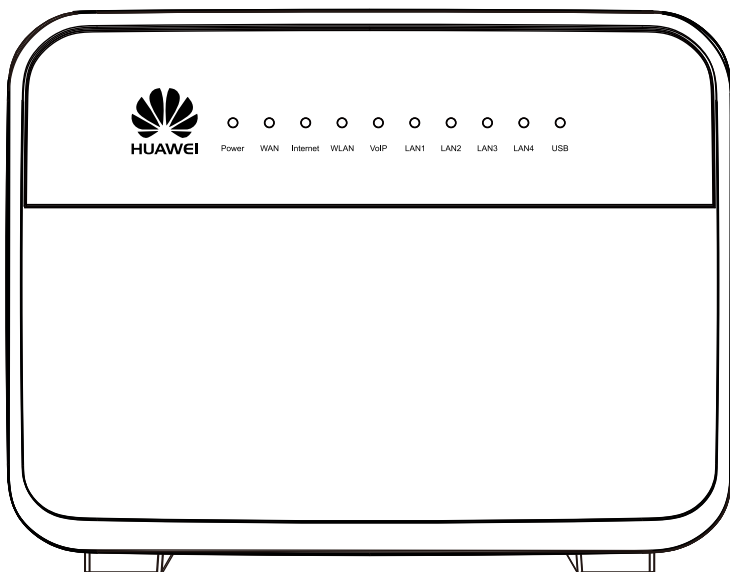
2. Check that telephone lines are securely connected. In particular, ensure that the telephone line connecting to the splitter is securely connected.
3. Replace telephone lines and ensure that the telephone lines are not faulty.

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

No. The HG658c 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



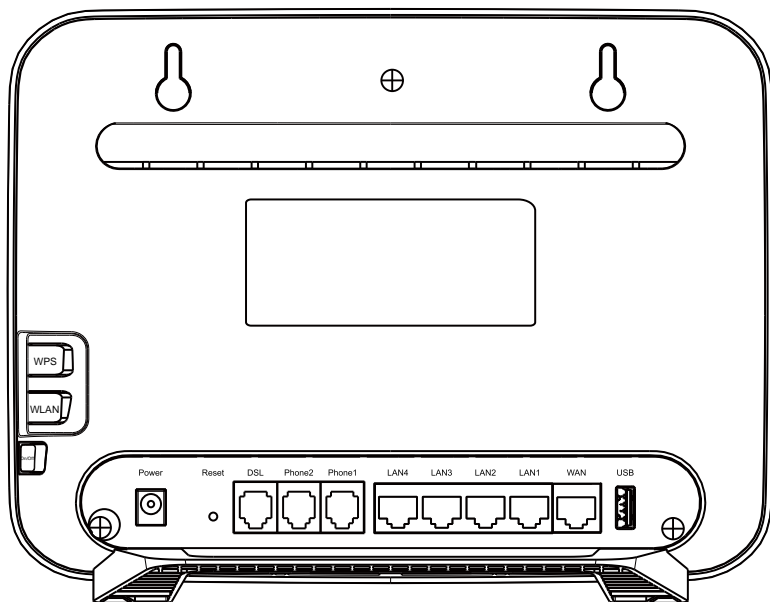
Indicator	Color	Status	Description
Power	Green	On	The HG658c is powered on.
	Red	On	There are errors in the booting process.
	-	Off	The HG658c is powered off.
WAN	Green	On	The DSL connection is established and activated. Or the GE connection is successfully established but no data is being transmitted.
	Green	Blinking	The DSL connection is being activated.
	-	Off	The HG658c is powered off or no DSL or no GE 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 HG658c is not connected to the Internet.
	-	Off	<ul style="list-style-type: none"> <li>● The HG658c is powered off.</li> <li>● The HG658c is working in bridge mode.</li> <li>● No ADSL connection is established.</li> </ul>
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"> <li>● The WLAN function is enabled and data is being transmitted on the WLAN.</li> <li>● A wireless connection is set up between the HG658c and a wireless client using the WPS function.</li> </ul>
	-	Off	The WLAN function is disabled.
VoIP	Green	On	The HG658c 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 HG658c is powered off.

<b>Indicator</b>	<b>Color</b>	<b>Status</b>	<b>Description</b>
LAN1- 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"> <li>● The HG658c is powered off.</li> <li>● No LAN connection is established.</li> </ul>
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"> <li>● The HG658c is powered off.</li> <li>● No USB connection is established.</li> </ul>

## 7.2 Ports and Buttons



Port or Button	Function
WPS	Used to enable the WPS function.
WLAN	Used to enable or disable the WLAN function.
On/Off	Used to power on or off the HG658c.
Power	Connects a power adapter.
Reset	Restores the HG658c to default settings if you press and hold for 6 or more seconds. <b>NOTE</b> After you restore the HG658c to default settings, your customized data will be lost. Therefore, exercise caution when using the <b>Reset</b> button.
DSL	Connects to a splitter or telephone wall jack.

<b>Port or Button</b>	<b>Function</b>
Phone1, Phone2	Connects to a telephone.
LAN1–LAN4	Connect to computers, switches, or other Ethernet devices.
WAN	Used to connect the HG658c to the network.
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 ( <b>WLAN Name</b> ) for wireless connection	See the label printed on the HG658c's rear panel.
Password ( <b>WLAN Key</b> ) for wireless connection	See the label printed on the HG658c's rear panel.
DHCP server	Enable
Wireless network	Enable

## 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 x W x D)	About 185 mm x 240 mm x 85 mm
Weight	About 600g (only the HG658c) About 980g (all included)

Item	Specifications	
Standards	ADSL standards	<ul style="list-style-type: none"> <li>● G.993.1</li> <li>● G.993.2</li> <li>● G.992.1</li> <li>● G.992.3</li> <li>● G.992.5</li> <li>● T1.413</li> </ul>
	ADSL2 standard	G.992.3 (G.dmt.bis) Annex L
	ADSL2+ standard	G.992.5 (G.dmt.bitplus)
	VDSL standard	G.993.2
	LAN standards	802.3、 802.3u
	WAN standards	802.3、 802.3u
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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