



EchoLife HG521 Home Gateway

User Guide



EchoLife HG521 Home Gateway
V100R001

User Guide

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1 Safety Precautions

Thank you for purchasing the EchoLife HG521 Home Gateway (hereinafter referred to as the HG521).

For safety purposes, carefully read through these safety precautions and observe them during operation.

Basic Requirements

- Keep the device dry during storage, transportation, and operation of the device.
- Prevent collision of the device with other objects during storage, transportation, and operation of the device.
- Do not attempt to dismantle the device. In case of any fault, contact the authorized maintenance center for assistance or repair.
- Without prior written consent, no organization or individual is permitted to make any change to the structure, safety, and performance design of the device.
- While using the device, observe all applicable laws, directives and regulations, and respect the legal rights of other people.

Environmental Requirements

- Place the device in a well-ventilated place. Do not expose the device to direct sunlight.
- Keep the device clean, free of dust and stain.
- Do not place the device near a water source or in a damp area.
- Place the device on a stable surface.
- Do not place any object on the top of the device. Reserve a minimum space of 10 cm at the four sides and on the top of the device for heat dissipation.
- Do not place the device on or near inflammable materials such as foam.
- Keep the device away from heat source or fire, such as a radiator or a candle.
- Keep the device away from any household appliances with strong magnetic field or electric field, such as microwave oven, refrigerator, or mobile phone.

Operation Requirements

- Do not allow children to play with the device or accessories. Swallowing the accessories may be fatal.

- Use the accessories such as the power adaptor provided or authorized only by the manufacturer.
- Make sure that the device does not get wet. If water gets into the device, disconnect the power supply immediately and unplug all the cables connected to the device.
- The power supply of the device must meet the requirements of the input voltage of the device.
- Before plugging or unplugging any cable, shut down the device and disconnect the power supply.
- While plugging or unplugging any cable, make sure that your hands are dry.
- Do not step on, pull, or stretch any cable. Otherwise, the cable may get damaged, leading to malfunction of the device.
- Do not use old or damaged cables.
- Keep the power plug clean and dry, to prevent electric shock or other dangers.
- During lightning, disconnect the device from the power supply and unplug all the cables connected to the device, such as the power cable, telephone cable, and RF cable, to prevent lightning strike.
- If the device is not used for a long time, disconnect the power supply and unplug the all the cables connected to the device.
- If smoke, sound, or smell is emitted from the device, stop using the device immediately, disconnect the power supply, unplug the power supply and other cables, and remove the batteries. Contact the authorized maintenance center for repair.
- Make sure that no object (such as metal shavings) enters the device through the heat dissipation vent.
- Do not scratch or abrade the shell of the device. The shed painting may lead to skin allergy or malfunctions of the device. If the shed painting material drops into the host, a short circuit may occur.

Cleaning Requirements

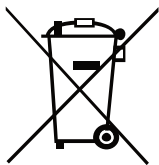
- Before cleaning the device, stop using it, disconnect the power supply, and unplug all the cables connected to the device.
- Do not clean the device cover with any cleaning solution or cleanser spray. Use a piece of soft cloth to clean the device cover.

Wireless Product Usage Requirements

- Keep the device away from magnetic storage devices (e.g., a magnetic card or a floppy disk), to prevent loss of the stored information.

- Stop using the device or disconnect the power supply in situations where wireless device is prohibited or using of a wireless device leads to interference or danger.
- The user who uses an electronic assistant medical-treatment device needs to confirm with the service center regarding the effects of the radio wave on this device.
- Do not take the device to the operation theater, Intensive Care Unit (ICU) or the Coronary Care Unit (CCU).
- When using the device maintain distance of 3 cm between your body and the antenna of the device.
- In the area with inflammable or explosive materials, turn off your wireless device, and follow the relevant instructions given in the label, to prevent explosion or fire.
- Protect the wireless device and its accessories, and use it in a clean and dust-free environment. Make sure that the wireless device does not come in contact with flame or a cigarette that is lit.
- Make sure that the wireless device and its accessories are dry.
- Do not drop, throw or try to bend your wireless device.
- Do not place the wireless device and its accessories in high temperature areas.

Environmental Protection



This marking on the device (and any included batteries) indicates that they should not be disposed of as normal household garbage. Do not dispose of this device or batteries as unsorted municipal waste. The device (and any batteries) should be handed over to a certified collection point for recycling or proper disposal at the end of their life.

For more detailed information about the recycling of the device or batteries, please contact your local city office, the household waste disposal service or the retail store where you purchased this device.

The disposal of this device is subject to the Waste from Electrical and Electronic Equipment (WEEE) directive of the European Union. The reason for separating WEEE and batteries from other waste is to minimize the potential environmental impacts and effects on human health of any hazardous substances that may be present.

REACH Declaration

This device is in compliant with the REACH regulation(Regulation 1907/2006/EC). For more information about the device's REACH compliance, please visit

www.huaweidevice.com/certification. You are recommended to visit the Web site regularly for up-to-date information.

EU Regulatory Conformance

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.

France: Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz

Italy: For private use, a general authorisation is required if WAS/RLAN's are used outside own premises. For public use, a general authorisation is required

Luxembourg: General authorisation required for network and service supply

Norway: This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund

Hereby, Huawei Technologies Co., Ltd., declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The declaration of conformity may be consulted at www.huaweidevice.com/certification.

CE0678 

Federal Communications Commission (FCC)

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital Device, pursuant to Part 15 of the FCC rules.

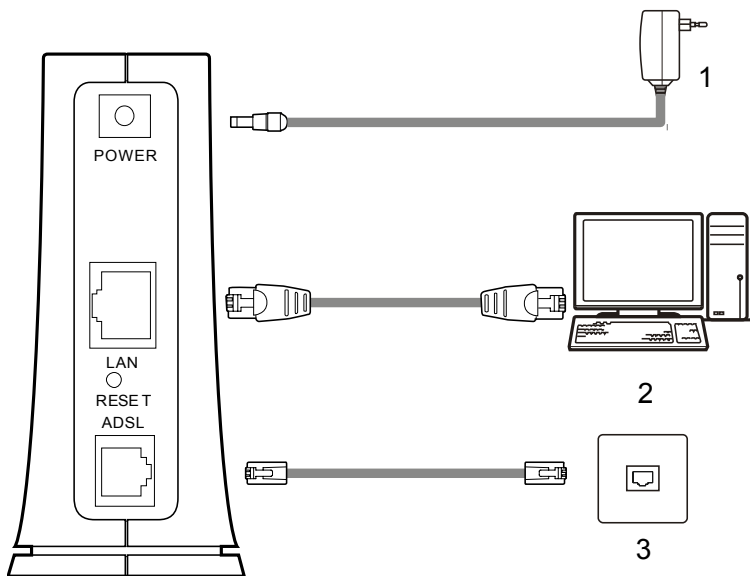
Changes or modifications made to this equipment not expressly approved by Huawei Technologies Co., Ltd., may void the FCC authorization to operate this equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

2 Connecting the Cables and Getting Started

2.1 Simple Connection

If your telephone line is used for the broadband network access only and if you do not need to use a telephone, take the following figure as a reference for connecting the cables.



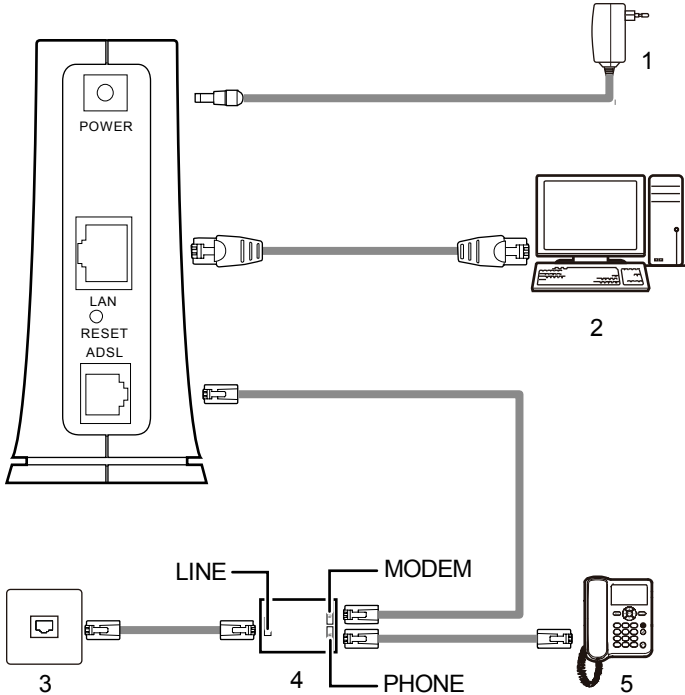
1. Power adapter 2. Computer 3. Telephone jack on the wall



If the wireless network function is used on the HG521 for the network access, you do not need to connect the cables.

2.2 Connecting One Telephone

If your telephone line is used for both the broadband network access and a telephone connection, take the following figure as a reference for connecting the cables.



1. Power adapter

2. Computer

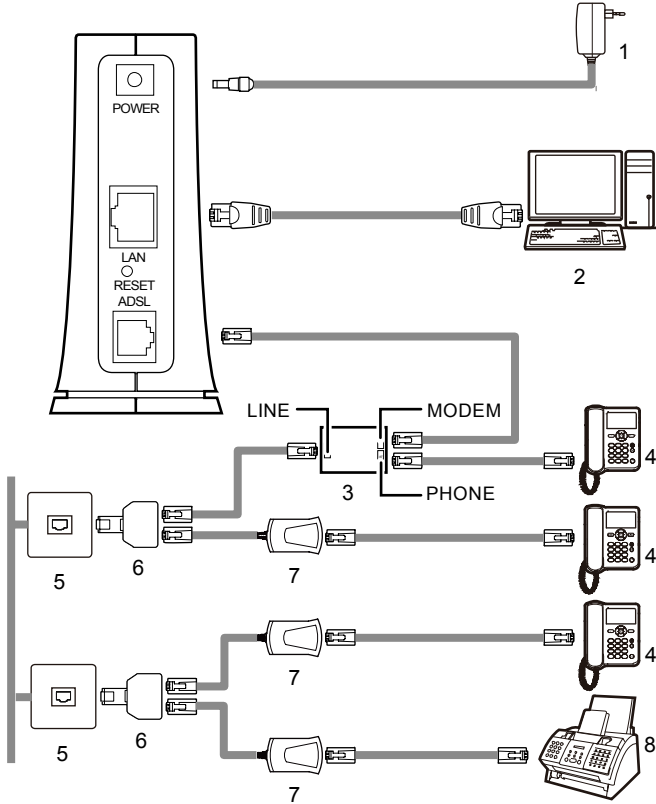
3. Telephone jack on the wall

4. Splitter

5. Telephone

2.3 Connecting Multiple Telephones

If your telephone line is used for the broadband network access, telephone connections, and fax connections, take the following figure as a reference for connecting the cables.



- | | | | |
|-------------------------------|----------------|----------------|----------------|
| 1. Power adapter | 2. Computer | 3. Splitter | 4. Telephone |
| 5. Telephone jack on the wall | 6. T connector | 7. Microfilter | 8. Fax machine |

2.4 Getting Started

To power on the HG521, press the power button on the top of the HG521.

After you power on the HG521, the ADSL indicator blinks (for less than three minutes), which indicates that the HG521 is being activated. Later, the ADSL indicator turns solid on. The POWER indicator is also solid on, which indicates that the HG520a is working properly.

3 Setting the Network-Access Parameters

By configuring the HG521 and your computer, you can choose any of the following methods to surf the Internet:

- Accessing the Network Through the Embedded PPP Dial-Up Software on the HG521
- Accessing the Network Through the PPP Dial-Up Software on Your Computer

3.1 Accessing the Network Through the Embedded PPP Dial-Up Software on the HG521

If you select this method for accessing the network, the HG521 starts to set up a dial-up connection automatically after the startup. You can access the network after you power on your computer. You do not need to install any special dial-up software on your computer or perform dial-up operations on your computer. To configure the HG521 and your computer for the network access, do as follows:

Step 1 Log in to the Web-based configuration utility of the HG521.

1. Launch the Internet Explorer on your computer. Enter **http://192.168.1.1** in the address bar, and then press **Enter**.
2. In the displayed dialog box, enter the user name and the password, and then click **OK**.

By default, both the user name and the password are **admin**. After the user name and the password are verified, you can access the Web-based configuration utility.

Step 2 Enable the embedded dial-up function.

1. In the navigation tree on the left of the Web-based configuration utility, choose **Basic > WAN**.
2. Click **New**.
3. Select **Enable** check box for **WAN connection**.
4. Enter the VPI and VCI that are provided by the network operator in the **VPI/VCI** text boxes.
5. Select **INTERNET** from the **Service list** drop-down combo box.
6. Select **Route** from the **Connection mode** drop-down combo box.
7. Select **PPPoE** option button for **Connection type**.

8. Select **Enable** check box for **NAT**.
9. Enter the user name and password that are provided by the network operator in the **User name** and **Password** text boxes, and keep the default settings of other parameters.
10. Click **Submit** to save the settings.

After you complete the preceding settings, you can surf the Internet.

You need to perform the preceding operations on a computer once only. The next time when you power on your computer, you can surf the Internet without any configuration.

3.2 Accessing the Network Through the PPP Dial-Up Software on Your Computer

If you select this method for accessing the network, you need to install and configure the dial-up software on your computer. In addition, you need to perform dial-up operations on your computer upon each startup. To configure the HG521 and your computer for the network access, do as follows:

Step 1 Set the working mode of the HG521 to **Bridge**.

For details, refer to the procedure for enabling the embedded dial-up function described in Step 2 in section 3.1 "Accessing the Network Through the Embedded PPP Dial-Up Software on the HG521." Note that **Bridge** is selected from the **Mode** drop-down combo box.

Step 2 Install and configure the PPP dial-up software on your computer.

The PPP dial-up software is pre-installed on certain computer operating systems. To create a dial-up connection, do as follows (taking the Windows XP operating system as an example):

1. Choose **Start > All Programs > Accessories > Communications > Network Connections**.
2. Click **Create a new connection** in **Network Tasks** to display the **New Connection Wizard** window, and then click **Next**.
3. Select **Connect to the Internet**, and then click **Next**.
4. Select **Set up my connection manually**, and then click **Next**.
5. Select **Connect using a broadband connection that requires a user name and password**, and then click **Next**.
6. Enter the name (as desired) of the dial-up connection in **ISP Name**, and then click **Next**.
7. Select **Anyone's use** or **My use only**, and then click **Next**.
8. Enter the user name and password provided by the network operator and used for the dial-up connection, and then click **Next**.
9. Select **Add a shortcut to this connection to my desktop**, and then click **Finish**.

An icon for the dial-up connection is displayed on the desktop of your computer. You need to perform the preceding operations only once for creating a network connection. After the network connection is created, to access the network, double-click the icon for the dial-up connection, and then click **Connect** in the displayed dialog box.

4 Configuring the Wireless Network Connection

If a wireless network adapter is installed on your computer, you can connect your computer to the HG521 through a wireless connection.



The hardware installation methods and driver installation methods of wireless network adapters provided by different companies vary from each other. For details, see the installation guide provided by the wireless network adapter provider.

After the installation of a wireless network adapter, you need to configure the wireless network connection on your computer. You can configure the wireless network connection through the software provided with the wireless network adapter. If the Windows XP operating system is used, you can also configure the wireless network connection through the wireless configuration software provided by Windows XP.

To configure the wireless network connection, do as follows (taking the Windows XP operating system as an example):

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

1. Launch the Internet Explorer on your computer. Enter **http://192.168.1.1** in the address bar, and then press **Enter**.
2. In the displayed dialog box, enter the user name and the password, and then click **OK**.

By default, both the user name and the password are **admin**.

Step 2 Set the wireless network name and access password of the HG521.

To set the wireless network name and the access password, do as follows (taking the authentication type WPA-PSK as an example):

1. In the navigation tree on the left of the Web-based configuration utility, choose **Basic > LAN > WLAN**.
2. Select the **Enable WLAN** check box.
3. Select the **SSID1** from the **SSID index** drop-down combo box.
4. Enter a wireless network name in the **SSID** text box.
5. Select the **Enable** option box of **SSID**.
6. Select **WPA-PSK** from the **Security** drop-down combo box.

7. Enter an access password in the **WPA pre-shared key** text box.
8. Select **TKIP** from the **WPA encryption** drop-down combo box.
9. Click **Submit** to save the settings.

Step 3 Enable the wireless configuration service provided by Windows XP.

1. Right-click **My Computer**, and then choose **Manage** from the shortcut menu.
2. In the **Computer Management** window, choose **Computer Management (Local) > Services and Applications > Services**.
3. From the services listed in the right pane of the **Computer Management** window, right-click **Wireless Zero Configuration**, and then choose **Properties** from the shortcut menu.
4. In the **Wireless Zero Configuration Properties (Local Computer)** dialog box, check whether **Service status** is **Started**. If not, click the **Start** button.
5. Click **OK** to close the dialog box. Then, close the **Computer Management** window.

Step 4 Configure the wireless network connection on your computer.

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 then choose **Properties** from the shortcut menu.
3. In the **Wireless Network Connection Properties** dialog box, select **Wireless Networks**.
4. Select **Use Windows to configure my wireless network settings**.
5. Click **View Wireless Networks**.
6. Select the wireless network that is configured in Step 2, and then click **Connect** in the lower right corner of the window.
7. In the displayed dialog box, enter the access password that is preset in Step 2, and then click **Connect**.

After the password is verified, **Connected** appears on the icon of the wireless network in the wireless network list, which indicates that the computer is connected to the HG521 through a wireless connection.

8. Close the **Wireless Network Connection** dialog box.
9. In the **Wireless Network Connection Properties** dialog box, click **OK**.

5 Configuring the HG521

5.1 Changing the Administrator Password Used for Logging In to the Web-Based Configuration Utility

For safety reasons or to make the password easy to remember, you can change the administrator password for login after logging in to the Web-based configuration utility.

To change the password, do as follows:

- Step 1** Log in to the Web-based configuration utility.
- Step 2** Choose **Maintenance** > **Account** in the navigation tree to display the system management page.
- Step 3** Select the **admin** from the **User name** drop-down combo box.
- Step 4** Enter the Current password in the **Current Password** text box. Enter the new password in the **New Password** text box. Then enter the new password again in the **Confirm password** text box for confirmation.
- Step 5** Click **Submit** to save the settings.

After you change the password successfully, the current page jumps to the page for logging in to the Web-based configuration utility. To log in to the Web-based configuration utility, enter the new password, and then click **OK**.



If you forget the user name or password that has been changed, you can restore the default settings of the HG521 by pressing and holding the RESET button for over six seconds. Then, the user name and password that are used for logging in to the Web-based configuration utility are restored to default values. After you restore the default settings, however, your customized data is lost. Therefore, use this function with caution.

5.2 Enabling or Disabling the Wireless Network Function

The WLAN indicator shows whether the wireless network function is enabled. you can enable or disable the wireless network function through the Web-based configuration utility, do as follows:

- Step 1** Log in to the Web-based configuration utility.

- Step 2** In the navigation tree on the left, choose **Basic > LAN > WLAN**.
- Step 3** Select the **Enable WLAN** combo box or not.
- Step 4** Click **Submit** to save the settings.

5.3 Changing the Wireless Network Name and the Access Password

To change the name and access password for the wireless network, do as follows (taking the authentication type WPA-PSK as an example):

- Step 1** Log in to the Web-based configuration utility.
- Step 2** In the navigation tree on the left, choose **Basic > LAN > WLAN**.
- Step 3** Enter a wireless network name in the **SSID** text box.
- Step 4** Select **WPA-PSK** from the **Security** drop-down combo box.
- Step 5** Enter an access password in the **WPA Pre-Shared Key** text box.
- Step 6** Select **TKIP** from the **WPA encryption** drop-down combo box.
- Step 7** Click **Submit** to save the settings.

5.4 Changing the IP Address Used for Logging In to the Web-Based Configuration Utility

To make the login IP address easy to remember, you can change the IP address after logging in to the Web-based configuration utility.

To change the IP address, do as follows:

- Step 1** Choose **Basic > LAN > DHCP** in the navigation tree to display the LAN settings page.
- Step 2** Enter a new IP address as desired in the **IP Address** text box. Then, enter a subnet mask in **Subnet Mask**.
- Step 3** Click **Submit** to save the settings.



To log in to the Web-based configuration utility after you change the IP address successfully, you need to launch the Internet Explorer, and then enter the new IP address in the address bar. Ensure that the IP address of the computer is in the same network segment as that of the HG521 so that the computer can access the Web-based configuration utility.

5.5 Restoring Default Settings

You can quickly restore the default settings of the HG521 by pressing the RESET button on the rear panel. To restore the default settings, press and hold the RESET button for over six seconds after the HG521 is powered on, and then release the button. In addition, you can restore the default settings of the HG521 through the Web-based configuration utility. To restore the default settings through the Web-based configuration utility, do as follows:

Step 1 Log in to the Web-based configuration utility, and then choose **Maintenance** > **Device** in the navigation tree to display the reboot page.

Step 2 Select **Reset**.

Step 3 Click **Restore Default Settings**.

After the preceding operations, the page jumps to the login page. You can log in to the Web-based configuration utility by entering the default user name and password that are **admin**.

6 FAQs

How can I quickly restore the default settings of the terminal?

To restore the default settings, press and hold the RESET button on the rear panel for over six seconds after the HG521 is powered on, and then release the button.

What can I do if I cannot access the Internet through the terminal?

Step 1 Check whether the POWER indicator on the terminal is solid on.

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

1. Ensure that the terminal is turned on.
2. Ensure that electricity comes from the socket and that the power input from the socket meets the requirements described on the label of the terminal power adapter. If the voltage is unsteady, for example, if the voltage is too high or too low, do not use the terminal. Wait until the voltage restores to its normal level, and then use the terminal.
3. Ensure that the terminal is properly connected to the socket through

the power adapter.

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

Step 2 After powering on the terminal, wait for about three minutes. Then, check whether the ADSL indicator on the terminal is solid on.

If the ADSL indicator blinks for a long time, perform further checks as follows:

1. Ensure that telephone lines are properly connected. Pay special attention to the connections between the telephone lines and the splitter.
2. Ensure that the terminal or telephone lines are far from the electric appliances that generate strong magnetic or electric fields. Replace telephone lines when necessary.

If the ADSL indicator still blinks and does not turn solid on, contact your network operator.

Step 3 Check whether the LAN indicator of the terminal is on.

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

1. Ensure that the network adapter of the computer is enabled.
2. Ensure that the network cable between the terminal and the computer is properly 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 4 Check whether the driver for the network adapter is properly installed. Take a computer that runs Windows XP as an example. To check whether the driver for the network adapter is installed, do as follows:

1. On the desktop, right-click **My Computer**, and then choose **Manage**.
2. In the navigation tree of the **Computer Management** window, choose **Device Manager**.
3. In the right pane of the **Computer Management** window, click **Network adapters** to view the information about the network adapter of the computer.

If no network adapter is found or if a question mark (?) or an exclamation mark (!) is displayed next to the icon of the network adapter, you can infer that the driver for the network adapter is not properly installed. In this case, re-install the driver for the network adapter of the computer.

Step 5 Ensure that you have entered the correct user name and user password that are required by the PPP dial-up software.

The user name and the user password are provided by your network operator.

Step 6 Check whether you can use the PPP dial-up software to dial successfully.

If you cannot use the PPP dial-up software to dial successfully, perform further checks as follows:

1. Stop the PPP dial-up software and then power off the terminal. After five minutes, power on the terminal, and then use the PPP dial-up software to dial again.
2. Restore the default settings of the terminal.

If the problem persists, contact your network operator.

Step 7 Check whether the proxy server of the Web browser is correctly configured. Take the Internet Explorer installed on a computer that runs Windows XP as an example. To check whether the proxy server of the Web browser is correctly configured, do as follows:

1. Launch the 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** group box, click **LAN Settings**.
5. In the **Proxy server** group box of the **Local Area Network (LAN) Settings** dialog box, ensure 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 8 Try to access multiple Web sites to check whether the terminal can access these Web sites.

If the terminal still cannot access Web sites, contact your network service provider.

What can I do if Web pages often cannot be displayed during Web page browsing and can be displayed after the terminal is restarted?

Step 1 Ensure that the terminal and other devices, such as telephones or fax machines, are connected to telephone lines through a splitter.

For details about how to install a splitter, see the related description in the manual.

Step 2 Ensure that telephone lines are properly connected.

If the telephone lines are improperly connected, the stability of the network connection is affected.

Step 3 Check the positions of your terminal and your computer. Ensure that they are far from electric appliances, such as microwave ovens, refrigerators, or cordless telephones, that generate strong magnetic or electric fields.

If the problem persists, contact your service provider.

What can I do if sometimes the terminal cannot access the Internet through a WLAN connection or if the WLAN connection is unsteady?

Step 1 Check the positions of your terminal and your 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 2 Place your terminal in an open area.

Although radio signals can pass through obstacles, the transmission effects of WLAN radio signals are affected if radio signals pass through too many obstacles, such as cement or wooden walls.

Step 3 Place your computer close to your terminal.

If your computer is far from your terminal, the effects of the WLAN are affected.

Step 4 Place your terminal and computer in another direction.

Step 5 Do not use your terminal to access the WLAN during thunderstorms.

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


No. The terminal uses the frequency division multiplexing (FDM) and splitter technologies to separate voice signals from data signals. Although the 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 a telephone call and access the Internet simultaneously, without degrading call quality or lowering the Internet access rate.

7 Appendix

7.1 Indicators

Indicator	Status	Description
POWER	Solid on	The HG521 is powered on.
	Off	The HG521 is powered off.
ADSL	Blinking	The HG521 is being activated.
	Solid on	The HG521 is activated.
	Off	The HG521 is powered off.
INTERNET	Blinking	<ul style="list-style-type: none">• The HG521 works in routing mode.• The WAN connection is set up.• Data is being transmitted.
	Solid on	<ul style="list-style-type: none">• The HG521 works in routing mode.• The WAN connection is set up.• No data is being transmitted.
	Off	<ul style="list-style-type: none">• The HG521 works in bridge mode or in routing mode.• No WAN connection is set up.
LAN	Blinking	Data is being transmitted through the Ethernet interface.
	Solid on	The Ethernet connection is set up.
	Off	The Ethernet connection is not set up.
WLAN	Blinking	<ul style="list-style-type: none">• The wireless network function is enabled.• Data is being transmitted through the WLAN.
	Solid on	<ul style="list-style-type: none">• The wireless network function is enabled.• No data is being transmitted through the WLAN.
	Off	The wireless network function is disabled.

7.2 Interfaces and Buttons

Interface or Button	Description
POWER	It is used to connect the power adapter.
LAN	It is used to connect to the Ethernet interface on the computer.
RESET	You can press and hold the RESET button for over six seconds to restore the default settings of the HG521. Note: After you restore the default settings, your customized data is lost. Therefore, use this function with caution.
ADSL	It is used to connect to the MODEM interface on the splitter.
	It is the power switch and is used to power on or power off the HG521.

7.3 Default Settings

Parameter	Setting
IP address of the LAN interface	192.168.1.1
Subnet mask of the LAN interface	255.255.255.0
User name used for logging in to the Web-based configuration utility	admin
Password used for logging in to the Web-based configuration utility	admin
DHCP server function	Enable
Wireless network function	Enable

7.4 Technical Specifications

Item	Specification
Power supply for the HG521	5 V DC, 1 A
Power consumption	< 5 W
Ambient temperature for operation	0°C to 40°C (32°F to 104°F)

Item		Specification
Relative humidity for operation		5% to 95% (non-condensing)
Dimensions (L × W × H)		118.4mm×40.4mm ×90.3mm
Weight		About 115 g
Standards	ADSL standards	<ul style="list-style-type: none"> • ITU G.992.1 (G.dmt) Annex A • ITU G.994.1 (G.hs) • ANSI T1.413 Issue 2
	ADSL2 standard	ITU G.992.3 (G.dmt.bis) Annex A
	ADSL2+ standard	ITU G.992.5 Annex A
	WLAN standard	802.11b , 802.11g and 802.11n (2.4GHz)
DSL transmission rates	G.dmt T1.413	<ul style="list-style-type: none"> • Maximum downlink rate: 8 Mbit/s • Maximum uplink rate: 896 kbit/s
	G.992.5 (ADSL2+)	<ul style="list-style-type: none"> • Maximum downlink rate: 24 Mbit/s • Maximum uplink rate: 1024 kbit/s
Wireless transmission rates	802.11b	1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, and 11 Mbit/s
	802.11g	6 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s, and 54 Mbit/s
	802.11n	<ul style="list-style-type: none"> • Transmission rate: 6 Mbit/s, 6.5 Mbit/s, 13 Mbit/s, 13.5 Mbit/s, 19.5 Mbit/s, 26 Mbit/s, 27 Mbit/s, 39 Mbit/s, 40.5 Mbit/s, 52 Mbit/s, 54 Mbit/s, 58.5 Mbit/s, 65 Mbit/s, 81 Mbit/s, 108 Mbit/s, 121.5 Mbit/s and 135 Mbit/s • Reception rate: 6 Mbit/s, 6.5 Mbit/s, 13 Mbit/s, 13.5 Mbit/s, 19.5 Mbit/s, 26 Mbit/s, 27 Mbit/s, 39 Mbit/s, 40.5 Mbit/s, 52 Mbit/s, 54 Mbit/s, 58.5 Mbit/s, 65 Mbit/s, 78 Mbit/s, 81 Mbit/s, 104 Mbit/s, 108 Mbit/s, 117 Mbit/s, 121.5 Mbit/s, 130 Mbit/s, 135 Mbit/s, 162 Mbit/s, 216 Mbit/s, 243 Mbit/s, 270 Mbit/s and 300 Mbit/s

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