

Wonderful Communication, Mobile Life.

Welcome to HUAWEI B970b Wireless Gateway

HUAWEI B970b Wireless Gateway
User Guide

Notice

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Customers shall comply with all applicable export or import laws and regulations and will obtain all necessary governmental permits and licenses in order to export, re-export or import the product mentioned in this manual including the software and technical data therein.

Safety Precautions

Read the safety precautions carefully to ensure the correct and safe use of your wireless device.



Do not switch on your device when the device use is prohibited or when the device use may cause interference or danger.



Do not use your device while driving.



Follow the rules or regulations in hospitals and health care facilities. Switch off your device near medical apparatus.



Switch off your device in an aircraft. The device may cause interference to control signals of the aircraft.



Switch off your device near high-precision electronic devices. The device may affect the performance of these devices.



Do not attempt to disassemble your device or its accessories. Only qualified personnel are allowed to service or repair the device.



Do not place your device or its accessories in containers with strong electromagnetic field.



Do not place magnetic storage media near your device. Radiation from the device may erase the information stored on them.



Do not put your device in a high-temperature place or use it in a place with flammable gas such as a gas station.



Keep your device and its accessories away from children. Do not allow children to use your device without guidance.



Use approved accessories only to avoid explosion.



Observe the laws or regulations on device use. Respect others' privacy and legal rights when using your device.

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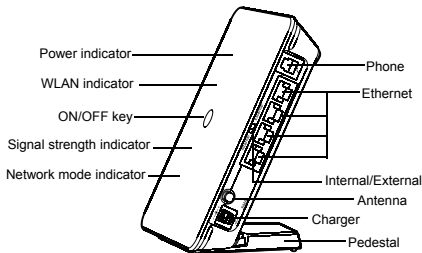
Abbreviations 28

1 Quick Start

Note

The supported functions and actual appearance are subject to your product purchased. The following pictures are displayed for illustration purpose only. For details of your product selection, consult your service provider.

Appearance



Indicator	Status
Power	<ul style="list-style-type: none">Steady on and in yellow: The device is switched on successfully

Indicator	Status
WLAN	<ul style="list-style-type: none">Steady on and in yellow: The WLAN is enabledBlinking: Data is being transmitted
Signal	<ul style="list-style-type: none">Steady on and in green: Signal strength is strongSteady on and in yellow: Signal strength is mediumSteady on and in red: Signal strength is weakFast blinking in red: The SIM card does not exist or the PIN code is not verified
Mode	<ul style="list-style-type: none">Double blinking in green: Searching for the networkBlinking in green: Registering with the 2G networkSteady on and in green: 2G data service connectedBlinking in blue: Registering with the 3G networkSteady on and in blue: WCDMA data service connectedSteady on and in cyan: HSPA data service connected

PC Configuration Requirements

PC Configuration Requirements

The recommended PC configurations for using the device are as follows:

- CPU: Pentium 500 MHz or above
- Memory: 128 MB RAM or above
- Hard disk: 100 MB or above available space
- Operating System: Windows 2000, Windows XP, or Windows Vista
- LCD resolution: 800*600 pixel or above, recommended 1024*768 pixel
- Interface: standard USB interface
- Internet Browser: Internet Explorer 6.0 or Internet Explorer 7.0, Firefox 1.5 or Firefox 2.0, Safari 3.0

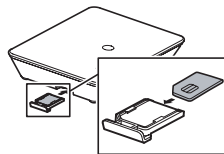
Installation

◆ Step 1: Insert the SIM card



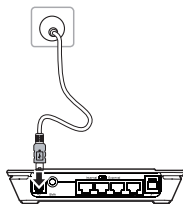
Before inserting or removing the SIM card, you must disconnect the device from the power adapter.

Remove the card slot out of the device. Slide the SIM card into the card slot with the golden contact facing upward. Insert the card slot into the device.



◆ Step 2: Connect to the power adapter

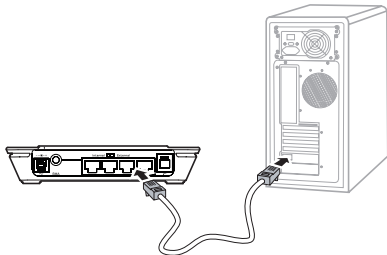
Use a power adapter that is compatible with the device; otherwise, the device may be damaged.



◆ Step 3: Connect to a PC

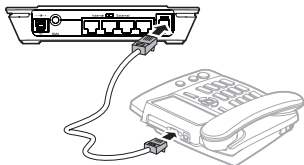
If the indicator of the Ethernet interface connecting with a network cable is on, the connection is successful. The Ethernet cable cannot be longer than

100 meters (328 feet). To achieve better effect, use the shielded cable.



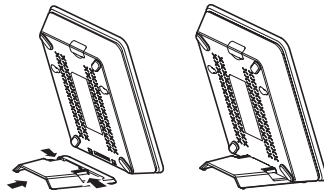
◆ Step 4: Connect to a telephone set

The communication quality of the telephone set can be interfered by the wireless signal. Place the telephone set one meter away from the device.



◆ Step 5: Place the device

The device can be placed horizontally on a table, hanging against the wall, or leaning against the pedestal. Place the device on a higher place or near the window, so it can receive stronger signals. Press the bayonet of the pedestal, and place the device into the pedestal as shown in the figure. Thus, the device can lean against the pedestal.



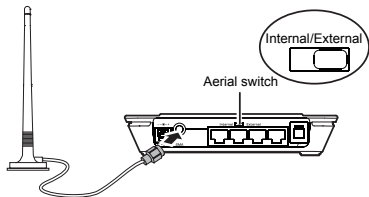
Warning

To avoid electrical devices from interfering by the wireless signal, place electrical devices one meter away from the device.

◆ Step 6: Connect the external antenna (optional)

Connect the external antenna cable with the antenna jack on the main unit. Screw the cable to make sure that the antenna is tightly connected with the antenna jack.

Making a Call



Note You can choose whether to use the external antenna. In the area covered with strong signal, you can switch to the antenna internal and uninstall the external antenna. In the area covered with weak signal, you can install the external antenna and switch to the antenna external. For details of antenna selection, consult your local dealer.

◆ Step 7: Power On/Off

Press and hold the **On/ Off** button to power on or off the device.

Making a Call

When you hear the dial tone after picking up the handset, you can make a call.

Dial-up Access

By default, the device dials up to access the Internet as required. You can directly use the network services such as web browsing, and receiving or sending emails.

Logging In to the Management Page

- 1 Start the Internet browser and enter the address **http://192.168.1.1** in the address bar.
- 2 Select a user type, enter the password, and then click **Login**.
 - **Admin:** This user type is authorized to view and change configurations. The default password is **admin**.
 - **User:** This user type is authorized to view only the basic status information. The default password is **user**.

Note To avoid the configuration conflict, only one user is allowed to log in to the management page at a time.

Accessing the Internet

- 1 Click **Connection**.

Note

- If you are required to enter the PIN code, enter the correct one. If you fail to enter the correct PIN or PUK code, the network-related functions are unavailable.
- The SIM card is supplied by the service provider. For details, contact your service provider.
- When the **Save PIN Code** check box is selected, the **Auto validation** is enabled.
- If **Auto validation** is enabled, the PIN code is recorded and automatically validated after each restart.

- 2 If **PPP Connection** is **Manual**, click **Connect / Disconnect** to connect to or disconnect from the network.

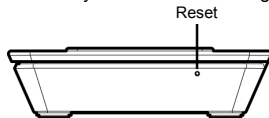
Note

If **PPP Connection** is **Auto** or **On Demand**, refresh the page to view the current network connection status.

- 3 Wait for several minutes. If you are notified that the connection is successful, you can start the browser and enter the website address to access the Internet.

Restoring the Factory Defaults

If you need to reconstruct the network or you forget the changes of some parameters, you can choose to restore factory defaults and reconfigure the device.



Reset: Press and hold it to restore the factory defaults.

Note

After this operation, all configurations are restored to the defaults.

2 Using the Management Page

Management Page Overview


Operation Functions

The following table shows the main operations in the management page.

Item	Description
Basic Status	Displays the parameter configuration status of the device.
Quick Setup	Quickly configures the device.
Connection	Displays the network connection status and connects to the network.
Advanced Settings	Configures the advanced settings.
Security	Configures the security settings.
Logout	Log out of the management page.

Device Status

The following table shows the status information of the device.

Item	Green icon	Red icon
SIM	The card is valid.	The card is not inserted or is invalid.
WAN	The PPP dial-up connection is established.	The PPP dial-up connection is not established.
WCDMA	The WCDMA network is available.	The WCDMA network is unavailable.
	Note	If the device is registered with other network modes, the corresponding network connection status is displayed.
SIG	The signal strength from weak to strong is shown as follows: 	

Viewing Configuration Info

On the configuration page, you can view the current parameter configuration information and the network connection status.

- 1 Click **Basic Status**.
- 2 Click **Advanced** on the right part of the page to view the advanced status.
- 3 Click **Refresh** to view the current status on the advanced status page.

Quick Setup

You can use the quick setup wizard to configure and maintain the basic parameters of the device. Click **Quick Setup** to access the welcome page. Click **Next** to configure the PPP profile settings.

Configuring PPP Profile Settings

- **Profile Name:** Enter a profile name when the text box is empty.
- **Dial-up Number/PPP User Name/PPP Password:** Enter these three parameters provided by the internet service provider (ISP). The dial-up number is used to initiate the network call; the PPP user name and PPP password is used to obtain the service authorization provided by the ISP.
- **APN/IP Address:** Select the mode for obtaining the access point name (APN) and IP address. If the service

provider provides the relevant parameters, select **Static** and enter their values. Otherwise, select **Dynamic** and the device automatically obtains them.

Configuring PPP Dial-up Settings

PPP Connection: Select the dial-up access mode.

- **Auto:** The device automatically connects to the Internet and does not disconnect when no data is transmitted.
- **On Demand:** The device automatically connects to the Internet when data transmission exists. When the duration of no data transmission exceeds the maximum idle time, the device disconnects the Internet connection.
- **Manual:** The device connects to the Internet after you click **Connect** on the connection page. For details, see "Accessing the Internet".

PPP Authentication: This service is provided by your ISP. For details, consult your ISP.

Configuring WLAN Settings

(Name) SSID: Enter a name for your wireless local area network (WLAN).

- The service set identifier (SSID) is used to identify a WLAN. A PC and the wireless device can perform normal data communication only when they have the same SSIDs. To ensure the WLAN security, do not use the default SSID. You can enter a character string as the SSID, such as **MyHome**.

■ Quick Setup

SSID Broadcast: Enable or disable the SSID broadcast.

- **Enabled:** The device broadcasts the SSID of the WLAN and users can easily access the WLAN. In this case, unauthorized users can also access the WLAN because the SSID is broadcasted.
- **Disabled:** The device does not broadcast the SSID of the WLAN. Before accessing the WLAN, a user must obtain the SSID of the WLAN. In this case, the WLAN security is improved.

Note

For the convenience of users accessing the WLAN, you can select **Enabled** for SSID Broadcast when you configure the WLAN setting. After the setting, you can select **Disabled** to improve the WLAN security.

Configuring WLAN Encryption

To access the WLAN, you must set the wireless security key on your PC to be the same as that of the wireless device.

No Encryption

- For the convenience of users accessing the WLAN, you can select **NO ENCRYPTION** for the **Encryption Mode** when you set up a WLAN. It is not recommended to select this option in daily use.

WPA-PSK/WPA2-PSK

- **WPA-PSK:** It is a 256-bit data encryption method that can automatically change the key.
- **WPA2-PSK:** It is a more secure version of WPA-PSK and it supports the IEEE 802.11i standard.
- **WPA Encryption Algorithm: TKIP, AES, TKIP+AES.**
- **WPA Pre-Shared Key:** You can enter a 64-character hexadecimal value or 8-63-character ASCII value as the key. The ASCII value contains all characters that can be entered through the PC keyboard, and the hexadecimal value contains numbers of 0-9 and characters of A-F. For example, you can enter the ASCII value of 1234abcde as the key.
- **Network Key Rotation Interval:** It is used to set how long a network key is dynamically changed. By default, it is 0. To disable this function, you can set the value to 0 or null.

WEP

- **Wireless Equivalent Privacy (WEP)** is a 64-bit or 128-bit data encryption method. The 128-bit WEP encryption provides higher security level.
- **Network Key 1:** You can enter 5 ASCII characters or 10-character hexadecimal numeral to form a 64-bit key. You can also enter 13 ASCII characters or 26-character hexadecimal numeral to form a 128-bit key.

Validating Quick Setup

The last page of the wizard displays all the settings you have configured.

- To accept the settings, click **Finish**.
- To change the settings, click **Back**.
- To quit the settings, click **Cancel**.

3 Configuring Your Computer

This takes the Windows XP operating system (OS) as an example to describe how to configure your computer. For other OSs, the configurations may be different and you need to configure them as required.

Wireless Configuration

The wireless configuration allows your PC to connect to the device through the wireless network. If you need only the Ethernet to connect your PC, you can skip this part.

Configuration Requirements

- To set up wireless network connection, your PC must be configured with the WLAN adapter that supports the IEEE 802.11 b/g protocol.
- If the encryption function is enabled, you need to ensure that all PCs connecting to the device use the same key as that of the device.
- For the use of WLAN adapter, refer to the WLAN adapter user guide provided by the manufacturer.
- For the encryption configurations, see "Configuring WLAN Encryption".
- For SSID parameters configuration, see "Configuring WLAN Settings".

Configuring the Wireless Network

- 1 Choose **Start > Control Panel > Network Connections > Wireless Network Connection**.
- 2 Click **Show Wireless Networks** to display the wireless network connection list.
- 3 Select the network connection that the SSID is the same as that of the device, and then click **Connect**.
- 4 If the encryption parameter is set for the device, the **Wireless Network Connection** dialog box is displayed and requires the network key and confirmation. The value you entered must be the same as the **WPA Pre-Shared Key** or **Network Key** of the device.
- 5 Wait for a while after you enter the correct network key. The wireless connection icon displays in the status area in the lower right corner of the screen. Then, your PC can automatically connect to the device.

Configuring the PC Network

The recommended configurations of the PC are as follows:

- Obtain an IP address automatically.
- Deselect Use a proxy server for your LAN.

Configuring the Network Connection

- 1** Choose **My Network Places > Properties > Local Area Connection**.
- 2** Right-click the **Local Area Connection** icon and select **Properties**.
- 3** In the **Local Area Connection Properties** dialog box, select **Internet Protocol (TCP/IP)** in the **This connection uses the following items** list box, and then click **Properties**.
- 4** In the **Internet Protocol (TCP/IP) Properties** dialog box, select **Obtain an IP address automatically** and **Obtain DNS server address automatically**, and then click **OK**.

Disabling Proxy Settings







- 1** Start the Internet browser, and then choose **Tools > Internet Options**.
- 2** Select the **Connections** tab, and then click **LAN Settings**.
- 3** In the **LAN Settings** dialog box, deselect **Use a proxy server for your LAN**.

4 Advanced Settings


Overview

Click **Advanced Settings**, you can configure both the basic attributes and advanced parameters of the device, and also perform routine maintenance and management to the device.


The following table shows the functions of the shortcut icons.

Icon	Description
	Click to access the System page.
	Click to access the SIM Settings page.
	Click to access the Mobile Network Settings page.
	Click to access the Dial-up Settings page.
	Click to access the DHCP Settings page.
	Click to access the Clip Settings page.

Icon	Description
------	-------------


	Click to access the WLAN Settings page.
---	--

System Management

Click  to access the **System** page.

Changing the Password

You can change the login password to prevent unauthorized users from logging in to the management page.

- 1 Click .
- 2 Enter the current password, and then enter the new password and confirm it.
- 3 Click **Modify**.

Upgrading the device

- 1 Click .

2 Enter the path or click **Browse** to select the software image file to be updated.

3 Click **Upgrade**.




Warning

- After the system is upgraded, the system automatically restarts.
- The software programs for upgrading must come from the official website of Huawei or the official website of the service provider.
- Upgrading the software does not change the configuration of the client.

Restoring the Factory Defaults

If you need to reconstruct the network or you forget the changes of some parameters, you can choose to restore factory defaults and reconfigure the device.




Click  to access the **Restore Defaults** page, and then click **Restore**.

Note


After this operation, all configurations are restored to the defaults.

Restarting the Device


1 Click  to access the **Reboot** page.

2 Click **Reboot**.

Viewing the Version Information

Click  to access the **Version** page.

SIM Settings

Click  to access the **SIM Settings** page.

Enabling or Disabling the PIN Code

1 Click  .

2 Select **Enable/Disable** in the **PIN Code Operation** list box.


3 Enter the correct PIN code.

Mobile Network Settings

- 4 Click **Apply**.

Changing the PIN Code

When the PIN code protection is enabled, you can reset the PIN code.

- 1 Click  .
- 2 Select **Modify** in the **PIN Code Operation** list box.
- 3 Enter the current PIN code.
- 4 Enter the new PIN code and confirm it.
- 5 Click **Apply**.

Auto Validating PIN Code

You can enable or disable the auto validate PIN code function.

- 1 Click  .

- 2 Select **Enable/Disable** in the **Auto Validate** option button.


- 3 Enter the current PIN code.

- 4 Click **Apply**.

Mobile Network Settings

Click  to access the **Mobile Network Settings** page.

Setting the Preferred Mode and Band

- 1 Click  .
- 2 Select the preference of connection mode in the **Preferred Mode** list box.

Note

- If the service provider provides only the 2G service and the preferred mode is configured as 3G only, you cannot access the Internet.

- If the service provider provides only the 3G service and the preferred mode is configured as 2G only, you cannot access the Internet.
- If the service provider provides neither the 3G nor 2G service, you cannot access the Internet regardless of the preferred mode.

3 Select the band to search the network in the **Band** list box.

4 Click **Apply**.

Configuring the Mode for Searching Network

1 Click  .

2 Select the mode for searching the network.

- **Auto:** The device automatically searches the network and registers with it.
- **Manual:** You need to manually search the network and register with it.


3 Click **Apply**.

4 In **Manual** mode, select the searched network and click **Log on**.

Dial-up Settings

Click  to access the **Dial-up Settings** page.

Configuring the PPP Settings

1 Click  to access the **PPP Settings** page.

2 Enter the correct parameters.

- **Profile List:** Select a profile from the established dial-up connection list. If the drop-down list is empty, you need to create a profile list.
- **PPP Connection:** Select the dial-up connection mode.
- **PPP Authentication:** The service is provided by your ISP. For details, consult your ISP.
- **PPP Max Idle Time:** The duration of the PPP connection is in idle. In **On Demand** mode, if no data is transmitted in this duration, the PPP connection automatically disconnects.

■ DHCP Settings

- **PPP MTU:** It is the maximum transmission unit (MTU) of the PPP connection. It is used to set the maximum number of bytes encapsulated in a single data frame.
- **PPP Max Dial Time:** Set the maximum waiting time when connecting to the Internet.

Managing the Profile List

Click  to access the **Profile Settings** page.

◆ Creating a Profile

1 Enter the profile information in the text box according to the prompts.

2 Click **Save**.

◆ Changing a Profile

1 Select a profile to be changed in the **Profile List** drop-down list. Relevant information is displayed in the corresponding text box.

2 Enter the profile information.


3 Click **Save**.

◆ Deleting a Profile

1 Select a profile to be deleted in the **Profile List** drop-down list.

2 Click **Delete**.

DHCP Settings

Click  to access the **DHCP Settings** page, you can set the mode for assigning IP addresses in a LAN. DHCP automatically assigns IP addresses to the network devices. If you are using the DHCP server, you need to do the configurations on the PC connecting with the device. For details, see "Configuring the Network Connection".


- **IP Address:** The default IP address of the device is 192.168.1.1.
- **Subnet Mask:** The combination of the subnet mask and IP address enables the flexible sub netting. By default, the subnet mask is 255.255.255.0.

- **DHCP Server:** It is used to assign IP addresses dynamically. If the DHCP server is **Enabled**, it can automatically assign IP addresses for PCs. It is recommended to select **Enabled** for the DHCP server.
- **Start IP Address/End IP Address:** It is used to define the IP address range that the host can use during the IP address assignment. For example, in the network segment 192.168.1.0/24, the default IP address of the device is 192.168.1.1. The host IP address can range from 192.168.1.2 to 192.168.1.254. The minimum range is a single IP address.
- **DHCP Lease Time:** The DHCP server automatically assigns an IP address to each device connected to the network. When the leased time expires, the DHCP server checks whether the device is connected to the network. If the device is disconnected from the network, the server assigns the IP address to another device. Thus, the IP address is not wasted.


Note

- The **Start IP Address** must be smaller than or equal to the **End IP Address**.
- If the **DHCP Server** is **Enabled**, the configurations of **Start IP Address**, **End IP address**, and **DHCP Lease Time** are valid; otherwise, you cannot configure them.


Clip Settings

- 1 Click  to access the **Clip Settings** page.
- 2 Select **Clip Mode**.
- 3 Click **Apply**.

WLAN Settings


Click  to access the **WLAN Settings** page.

Enabling or Disabling the WLAN

- 1 Click  to access the **WLAN Enable** page.
- 2 Select **Enabled/Disabled** to enable or disable the WLAN.
- 3 Click **Apply**.

WLAN Settings

WLAN Basic Settings

Click  to access the **WLAN Basic Settings** page.

◆ Wireless Interface

- It refers to the SSID and MAC address, and is used to identify the wireless device.

◆ SSID

- Entering a name (SSID) for your WLAN.
- Enabling or Disabling the **SSID Broadcast**.

◆ Enabling or Disabling the AP Isolation

- **On:** The terminals (PCs) connecting to the device through the WLAN cannot communicate with each other.
- **Off:** The terminals (PCs) connecting to the device through the WLAN can communicate with each other.

◆ Selecting a Country

- **Country:** It is used to identify the country. Different countries have different standards on channel usage.

◆ Selecting a WLAN Channel

- **Channel:** It refers to the channel that the device works with. If you do not know which channel to select, select

Auto and the device can automatically search for the channel.

◆ Configuring the 802.11 Mode

Mode	Description
54g Auto	The WLAN has the best compatibility in this mode.
54g Performance	The WLAN has the best performance in this mode.
54g LRS	If the device has difficulties in communicating with devices conforming to the IEEE 802.11b standards, select this mode.
54g Only	The device can only work in the low performance 802.11g standard network mode.
802.11b Only	The device can only work in the low performance 802.11b standard network mode.


◆ Configuring the Transmission Rate

- 1 Select **Auto**, the device automatically searches the transmission rate.

- 2 Click **Apply** to submit the setting.

WLAN Advance Settings



Click  to access the **WLAN Advance Settings** page.

A security key can protect your WLAN from illegal data attacking. The security key of your wireless device must be consistent with that of the PC.

◆ Configuring the 802.11 Authentication


- **Open:** Open system authentication. A user accessing the WLAN can choose **WEP**, **WPA-PSK**, **WPA2-PSK** or **WPA-PSK|WPA2-PSK** key to pass the authentication or choose **No ENCRYPTION** to skip the authentication.
- **Shared:** Shared key authentication. It can use only **WEP**. The user accessing the WLAN must use the **WEP** to authenticate.

◆ Configuring the Encryption Mode

- Encryption modes: **No ENCRYPTION**, **WPA-PSK**, **WPA2-PSK**, **WPA-PSK|WPA2-PSK** and **WEP**.
- For details, refer to "Configuring WLAN Encryption".

Configuring the MAC Filter



Click  to access the **WLAN MAC Filter** page. You can control and manage the clients accessing the WLAN, and improve the WLAN security performance.

◆ MAC Restrict Mode

The following table shows the MAC address filter modes:


Parameter	Description
Disabled	The MAC address filter function is disabled.
Allow	The clients with addresses in the MAC Addresses list are allowed to connect with the device through the WLAN.
Deny	The clients with addresses in the MAC Addresses list are not allowed to connect with the device through the WLAN.

■ WLAN Settings

◆ MAC Addresses

- Enter MAC addresses in the list. The device can perform the access control over the clients whose MAC addresses are in the list.

WLAN Bridge

Click  to access the **WLAN Bridge** page.

- **Preamble Type:** It has two options: **Long** and **Short**. In the case that the client (PC) supports the **Short** type, the WLAN can have a better performance if it is **Short**.
- **MAX Associations Limit:** It refers to the maximum number of connections. It is used to set the maximum number of concurrent WLAN users on the device.
- **Mode:** It refers to the WLAN accessing mode. The device can work in two modes, as shown in the following table. The default value is **Access Point**.

Mode	Description
Wireless Bridge	It is used to connect two or more access points.
Access Point	The access points meeting the IEEE 802.11b/g standard or the wireless terminals can connect the wireless device.


- **Bridge Restriction:** It refers to the limitation to the peer MAC addresses. When it is **Disabled**, the device can access all the remote bridges; when it is **Enabled**, the device can only access the remote bridges that the addresses are in the address list.
- **Bridges:** It refers to the physical address of the remote peer bridge. The device supports the point-to-multipoint (PTM) bridge mode.
- **Peer MAC Address:** It refers to the physical address list of the remote peer bridges.
- **Link Status:** **Up** shows the successful connection and **Down** shows the failed connection.

5 Security Settings

Click **Security**. You can configure the advanced security settings.

Firewall Switch

Your device has a true firewall that controls the incoming and outgoing data flow and protects your computer from illegal intrusion.

- 1 Click  .
- 2 Select the **Enable the firewall (main switch of the firewall)** check box to enable the firewall.

Note

- Only when the **Enable the firewall** check box is selected, the other functions such as the IP address filter function, the MAC address filter function, and the WAN port ping function are available.
- When the **Enable LAN MAC address filter** check box is selected, the default filter rules are available.

- 3 Select other options as required, and then click **Apply**.


LAN MAC Filter

Your device supports MAC filtering based on a list of either denied or allowed computers. A common method to restrict network access is to specify the Media Access Control (MAC) address.

To locate the MAC address in the Windows OS, choose **Start > Run**, and then enter **cmd**.

The command window is displayed, enter **ipconfig/all**, and then press **Enter**.

The MAC address is displayed as the **Physical Address**.




- 1 Click  .
- 2 Select **LAN MAC Filter Mode**.
- 3 Enter the MAC addresses of the clients and click **Apply**.

LAN IP Filter

You can configure the device to block specific IP addresses so that they cannot be accessed from

Virtual Server

computers in the local network.

- 1 Click  .
- 2 Select **Protocol** and **Status**.
- 3 Enter the IP addresses and corresponding ports to be blocked from accessing the LAN.
- 4 Click **Ok**.
 - **Validate:** Click **Apply**.
 - **Edit:** Click  in the **Modification** column.
 - **Delete:** Click  in the **Modification** column.

Virtual Server

Your device supports the virtual server to enable external computers to access WWW, FTP, or other services provided by the LAN.



- 1 Click  .
- 2 Select **Protocol** and **Status**.

- 3 Enter values in the following text boxes:

- **Name:** Enter a name to the service provided by the LAN.
- **WAN Port:** Enter the WAN port of the LAN in which the computer provides services.
- **IP Address:** Specify a computer in the LAN to provide services.
- **LAN Port:** Enter the LAN port of the computer that provides services.

Note


You can also add a virtual server in the following way: select a port from the **Common Port** list. The Protocol, Status, Name, WAN Port, and LAN Port will be set as the default values. If required, you can change them.

- 4 Click **Ok**.
 - **Validate:** Click **Apply**.
 - **Edit:** Click  in the **Modification** column.
 - **Delete:** Click  in the **Modification** column.

DMZ Settings

If your PC cannot run network applications through the device, you can set the computer to access the Internet unlimitedly by configuring the IP address of the computer in the demilitarized zone (DMZ).


However, the DMZ computer is not protected by the firewall. It is vulnerable to attack and may also put other computers in the home network at risk.

- 1 Click  .
- 2 Select **Enabled/Disabled** for **DMZ Status** to enable or disable the DMZ service.
- 3 Enter the local IP address of the computer that is specified as a DMZ host.
- 4 Click **Apply**.

Note Only one computer can be specified as a DMZ host at a time.

UPnP Settings

The Universal Plug and Play (UPnP) service allows other network users to control your device's network features to realize the intelligent interconnection.

- 1 Click  .
- 2 Select **Enabled/Disabled** for **UPnP Status** to enable or disable the UPnP service
- 3 Click **Apply**.

Remote Management

The remote web management allows the access and control of the device either from the home network or from the Internet.

When you are on a trip, you can maintain your device through the remote web management service. It also allows your ISP to help you solve the device problems from a remote location.

- 1 Click  .

■ Remote Management

- 2 Select **Enabled/Disabled** for **Remote Status** to enable or disable the service.
- 3 Enter the IP address that can access and control your device.
- 4 Click **Apply**.

6 Troubleshooting

What to do if a PC in the LAN cannot access the Internet?

- 1 If the power indicator is off, you need to check whether the power adapter is normally connected.
- 2 If the signal strength indicator is off, you need to check whether the area is covered by the network.
- 3 If the area is covered by the network, you need to check whether the network mode is correct. For information about network mode, see "Mobile Network Settings".
- 4 If the indicator of the Ethernet interfaces blinks, the corresponding Ethernet interface is normally connected. If the indicator is off, you need to check and ensure that the related Ethernet connection is normal.
- 5 You must configure the correct PPP user name and PPP password when you access the Internet through the device. Check whether they

are correct, and see "Configuring PPP Profile Settings" for details.

- 6 If the DHCP service is disabled and the PC obtains the IP address dynamically, the PC also cannot access the Internet. You can change the mode to manually assign an IP address. See "Configuring the Network Connection".
- 7 Check whether the driver of the network adapter is correctly installed.
- 8 If the preceding methods cannot solve the problem, please consult your service provider.

What to do if a PC in the WLAN cannot access the WLAN?

- 1 If interferences or shields near the device exist, you can adjust the position of the device. When the signal strength is strong, you can move to the next step.



- 2 Check and record the following data on the network adapter of your PC: SSID, WEP type, and key.
- 3 Check and record the following data on the device: SSID, WEP type, and key.
- 4 Compare the recorded data, the SSID on the network adapter should be ANY or be the same as that on the device. The WEP type and key on the network adapter and device should be the same. Otherwise, you need to change the data on the network adapter.

What to do if I forgot the IP address of the LAN interface?

If you forgot the IP address of the LAN interface, you can enter `http://e.home` and log in to the management page when the PC obtains the IP address automatically.

What to do if bridging between two devices is unsuccessful?

- 1 Make sure that the two devices work on the same channel. For details, see "Selecting a WLAN Channel".
- 2 Make sure that the MAC address of one device is in the peer MAC address list of the other device. For details, see "WLAN Bridge".

When the signal strength is normal, what to do if the downloading rate is low?

In this case, you need to set the value in the registry as follows:

- 1 Choose **Start > Run**.
- 2 Enter **regedit** in the **Open** text box and then click **OK**.
- 3 Select parameters in the following directory:
`\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip`.



- 4 Choose **Edit > New > DWORD Value**.
- 5 Rename **New Value #1** to **TcpWindowSize**.
- 6 Right-click **TcpWindowSize** and then select **Modify**.
- 7 Select **Decimal** and enter **65535** in the **Value data** text box, and then click **OK**.
- 8 For the **DWORD Value** of **DefaultRcvWindow**, do the same operations as that of **TcpWindowSize**.

7

Safety Information

This section contains important information pertaining to the operating instructions of your device. It also contains information about how to use the device safely. Read this information carefully before using your device.

Electronic Device

Do not use your device if using your device is prohibited. Do not use the device when using your device causes danger or interference with electronic devices.

Medical Device

- Follow rules and regulations set forth by hospitals and health care facilities. Do not use your device when using the device is prohibited.
- Some wireless devices may affect the performance of hearing aids or pacemakers. For any such problems, consult your service provider.
- If you are using an electronic medical device, consult the doctor or the device manufacturer to confirm whether radio waves affect the operation of this device.

Potentially Explosive Atmosphere

Do not use your device in any area with a potentially

explosive atmosphere, and comply with all signs and instructions. Areas that may have potentially explosive atmospheres include the areas where you would normally be advised to turn off your vehicle engine. Triggering of sparks in such areas could cause an explosion or a fire, resulting in bodily injuries or even deaths. Do not use your device at refueling points such as service stations. Comply with restrictions on the use of radio equipment in fuel depots, storage, and distribution areas, and chemical plants. In addition, adhere to restrictions in areas where blasting operations are in progress. Before using the device, watch out for areas that have potentially explosive atmospheres that are often, but not always, clearly marked. Such locations include areas below the deck on boats, chemical transfer or storage facilities, and areas where the air contains chemicals or particles such as grain, dust, or metal powders. Ask the manufacturers of vehicles using liquefied petroleum gas (such as propane or butane) whether this device can be safely used in their vicinity.

Traffic Security

- Observe local laws and regulations while using the device. To prevent accidents, do not use your wireless device while driving.
- RF signals may affect electronic systems of motor vehicles. For more information, consult the vehicle

manufacturer.

- In a motor vehicle, do not place the device over the air bag or in the air bag deployment area. Otherwise, the device may hurt you owing to the strong force when the air bag inflates.
- Do not use your device while flying in an aircraft and before boarding an aircraft. Using wireless devices in an aircraft may cause danger to the operation of the aircraft and disrupt the wireless telephone network. It may also be considered illegal.

Operating Environment

- Do not use or charge the device in dusty, damp, and dirty places or places with magnetic fields. Otherwise, it may result in a malfunction of the circuit.
- While using the device, observe the local laws and regulations, and respect others' privacy and legal rights.
- Place the device or accessories in well-ventilated, cool, and out-of-direct-sunlight place. Avoid enveloping the device, or covering towels and placing articles on the device. Place the device out of a box or case to avoid poor heat dissipation that results in the damage to the device.
- On a stormy day with thunder, do not use your device, to prevent any danger caused by lightning.
- Keep the ambient temperature between -10°C to

$+45^{\circ}\text{C}$ for using the device.

- This device should be installed and operated with a minimum distance of 20 cm between the antenna and all persons.

Safety of Children

Comply with all precautions with regard to children's safety. Letting the child play with your device or its accessories, which may include parts that can be detached from the device, may be dangerous, as it may present a choking hazard. Ensure that small children are kept away from the device and accessories.

Accessories

Use the accessories delivered only by the manufacturer. Using accessories of other manufacturers or vendors with this device model may invalidate any approval or warranty applicable to the device, result in the non-operation of the device, and cause danger.

Charger

- Use the AC power supply defined in the specifications of the charger. An improper power voltage may cause a fire or a malfunction of the charger.
- If the power cable is damaged (for example, the cord is exposed or broken), or the plug loosens, stop using the cable at once. Otherwise, it may lead to an electric shock, a short circuit of the charger, or a fire.

Cleaning and Maintenance

It is normal that your wireless device gets hot when you use or charge it. Before you clean or maintain the wireless device, stop all applications and disconnect the wireless device from your PC.

- Use your wireless device and accessories with care and in a clean environment. Keep the wireless device away from a fire or a lit cigarette.
- Protect your wireless device and accessories from water and vapor, and keep them dry.
- Do not drop, throw, or bend your wireless device.
- Do not use any chemical detergent, powder, or other chemical agents (such as alcohol and benzene) to clean the device and the charger. Otherwise, parts of the device may be damaged or a fire can be caused. You can clean the device and the charger with a piece of damp and soft antistatic cloth.
- Do not dismantle the device or accessories. Otherwise, the warranty on the device and accessories is invalid and the manufacturer is not liable to pay for the damage.

FCC Statement

15.19

NOTICE:

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.

15.21

NOTICE:

Changes or modifications made to this device not expressly approved by Huawei Technologies Co., Ltd. may void the FCC authorization to operate this device. 15.105

NOTE: 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. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by connecting or disconnecting the equipment to a PC, the user is encouraged to try to correct the interference by adopting one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.

- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Disposal and Recycling Information



This symbol on the device (and any included batteries) indicates that they should not be disposed of as normal household garbage. Do not dispose of your 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, 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 on human health of any hazardous substances that may be present.

Reduction of Hazardous Substances

This device is compliant with the EU Registration, Evaluation, Authorisation and Restriction of Chemicals

(REACH) Regulation (Regulation No 1907/2006/EC of the European Parliament and of the Council) and the EU Restriction of Hazardous Substances (RoHS) Directive (Directive 2002/95/EC of the European Parliament and of the Council). For more information about the REACH compliance of the device, visit the Web site www.huaweidevice.com/certification. You are recommended to visit the Web site regularly for up-to-date information.

EU regulatory conformance

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Malti: Hawnhekk, Huawei Technologies Co., Ltd. tiddikjara li dan it-tagħmir hu konformi mal-ħtiġijiet essenzjali u provvedimenti rilevanti oħrajn ta' Direttiva 1999/5/KE.

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1999/5/CE.

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For the declaration of conformity, visit the Web site www.huaweidevice.com/certification.

CE 0682 

Notice: Observe the national local regulations in the location where the device is to be used. This device may be restricted for use in some or all member states of the European Union (EU).

Notice: This device may be operated in all member states of the EU.

France: L'utilisation à l'extérieur est limitée à 10 mW de puissance isotrope rayonnée équivalente dans la plage 2454-2483,5 MHz

Italia: per l'uso privato è necessaria un'autorizzazione generica se vengono utilizzati i sistemi wireless di accesso alla rete locale (WAS/RLAN)

Lëtzebuerg: Eng generell Autorisatioun ass néideg fir Netz- oder Déngschtleeschungsgebrauch

Luxembourg: Allgemeine Zulassung für Netzwerk- und Dienstleistungen erforderlich

Luxembourg: Autorisation globale nécessaire pour le réseau et la fourniture de services

Norge: Dette underavsnittet gjelder ikke for det geografiske området innen en radius på 20 km fra Ny-Ålesund

8 Abbreviations

3G	The Third Generation
AP	Access Point
APN	Access Point Name
CDMA	Code Division Multiple Access
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
EDGE	Enhanced Data rates for GSM Evolution
GSM	Global System for Mobile communications
GPRS	General Packet Radio Service
HSPA	High Speed Packet Access
HSDPA	High Speed Downlink Packet Access
HSUPA	High Speed Uplink Packet Access
IP	Internet Protocol
LAN	Local Area Network
LED	Light Emitting Diode
NAT	Network Address Translation
POTS	Plain Old Telephone Service
UMTS	Universal Mobile Telecommunications System
WAN	Wide Area Network

WLAN	Wireless Local Area Network
WCDMA	Wideband CDMA
WI-FI	Wireless Fidelity