

HG658 V2 Home Gateway

User Guide



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1 Product Overview

Supported Features

The HG658 V2 Home Gateway (HG658 V2 for short) is a high-speed wireless router designed for home and small office use. This chapter describes the features supported by the HG658 V2.

- Digital subscriber line (DSL) provides rugged stability, and with the WPS button, zero configuration is required for connections to multiple devices.
- Network range allows any device in a home to be connected with a transmission rate of up to 300Mbps.
- A powerful firewall is provided with a flexible network configuration and quality of service (QoS) strategy, enabling different home devices to enjoy high-speed and high-quality broadband services.

High-Bandwidth DSL Connectivity

The HG658 V2 incorporates a high-performance ADSL2+/VDSL processor and provides high-speed Internet access and abundant services to be delivered through the digital subscriber line (DSL).

Routing

The HG658 V2 supports routing. It can obtain an IP address through PPP dial-up or Dynamic Host Configuration Protocol (DHCP), which provides simultaneous access for multiple devices.

WLAN

The HG658 V2 supports multiple WLAN protocols, including 802.11b/g/n (2.4 GHz). Adopting 802.11n multiple-input multiple-output antennas (MIMO) technology, the HG658 V2 delivers a wireless transmission rate of up to 300Mbps with its dual antennas. In addition, the HG658 V2 supports multiple wireless encryption modes to provide a secure, reliable, and high-speed WLAN.

Bandwidth Control

The HG658 V2 supports bandwidth control and allocates bandwidth to different computers within your home based on Internet access requirements. Your family can then access the Internet, play online games, and watch videos without interfering with each other.

Wi-Fi Protected Setup

You can set up wireless connections between the HG658 V2 and Wi-Fi enabled devices by pressing the Wi-Fi Protected Setup (WPS) button.

Firewall

The powerful built-in firewall effectively protects against viruses and malicious attacks.

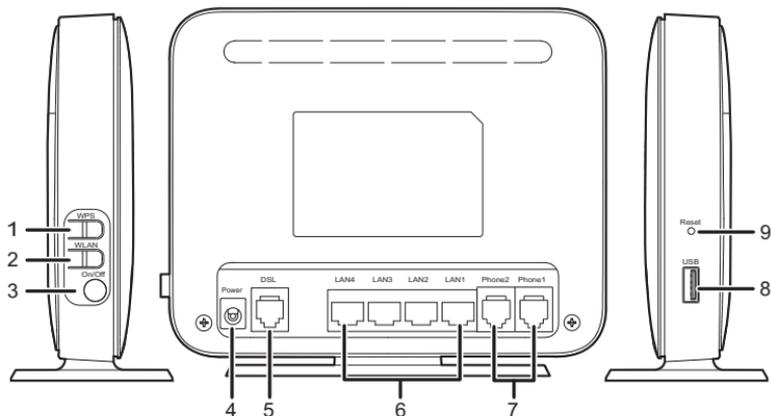
Parental Controls

Parents can control their children's computer usage by placing time limits on usage duration or forbidding access to certain websites.

Easy Configuration and Management

The HG658 V2 provides password-protected web-based management pages to protect your personal data.

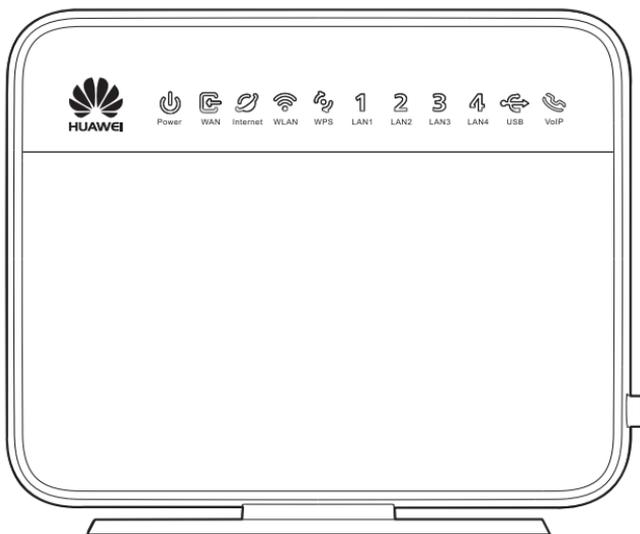
Ports and Buttons



No.	Item	Description
1	WPS	Starts Wi-Fi protected setup (WPS) negotiation.
2	WLAN	Enables or disables the WLAN function.
3	On/Off	Powers the HG658 V2 on or off.
4	Power	Connects to a power adapter.
5	DSL	Connects to a DSL filter or phone socket.
6	LAN1 ~ LAN4	Connects to Ethernet devices, such as computers, set-top boxes (STBs), and switches.
7	Phone1 ~ Phone2	Connects to a telephone.

No.	Item	Description
8	USB	<p>Connects to a USB device, such as a USB storage device or a USB printer.</p> <p>⚠ If you connect a USB device to the HG658 V2, verify that the input voltage and current of the USB device do not exceed 5 V/0.5 A. Otherwise, the HG658 V2 may malfunction.</p>
9	Reset	<p>Restores the HG658 V2 to its default settings after you press and hold this button for 6 seconds or more while the HG658 V2 is powered on.</p> <p>⚠ A reset will result in all custom data and settings being lost. Use with caution.</p>

Indicators



Indicator	Status	Description
Power	Steady green	The HG658 V2 is powered on.
	Off	The HG658 V2 is powered off.

Indicator	Status	Description
WAN	Steady green	A digital subscriber line (DSL) connection has been set up and activated.
	Blinking green	A DSL connection is being activated.
	Off	No DSL connection has been set up, or the DSL connection is faulty.
Internet	Steady green	The HG658 V2 is connected to the Internet in router mode, but no data is being transmitted.
	Blinking green	The HG658 V2 is connected to the Internet in router mode, and data is being transmitted.
	Off	<ul style="list-style-type: none"> •The HG658 V2 is in router mode, but not connected to the Internet. •The HG658 V2 is in bridge mode.
WLAN	Steady green	The HG658 V2 has WLAN enabled, but is not transmitting data.
	Blinking green	The HG658 V2 has WLAN enabled, and data is being transmitted.
	Off	WLAN is disabled.
WPS	Steady green	The HG658 V2 is connected to a wireless client, such as a computer with a wireless network adapter, over the WLAN using the Wi-Fi Protected Setup (WPS) function.
	Blinking green	The HG658 V2 is attempting to connect to a wireless client over the WLAN using the WPS function.
	Off	WPS is disabled.
LAN1 ~ LAN4	Steady green	The LAN port is connected to an Ethernet device (such as a computer) with a network cable, but no data is being transmitted.
	Blinking green	The LAN port is connected to an Ethernet device with a network cable, and data is being transmitted.
	Off	The LAN port is not connected to any Ethernet device.

Indicator	Status	Description
USB	Steady green	The HG658 V2 is connected to a USB device, but no data is being transmitted.
	Blinking green	The HG658 V2 is connected to a USB device, and data is being transmitted.
	Off	The HG658 V2 is not connected to any USB device.
VoIP	Steady green	The HG658 V2 is registered with a SIP server, but no data is being transmitted.
	Blinking green	The HG658 V2 is registered with a SIP server, and data is being transmitted.
	Off	The HG658 V2 is not registered with a SIP server.

2 Hardware Installation

Selecting an Installation Location

Place the HG658 V2 on a well-ventilated even surface without exposure to direct sunlight. For the best possible performance, take note of the following:

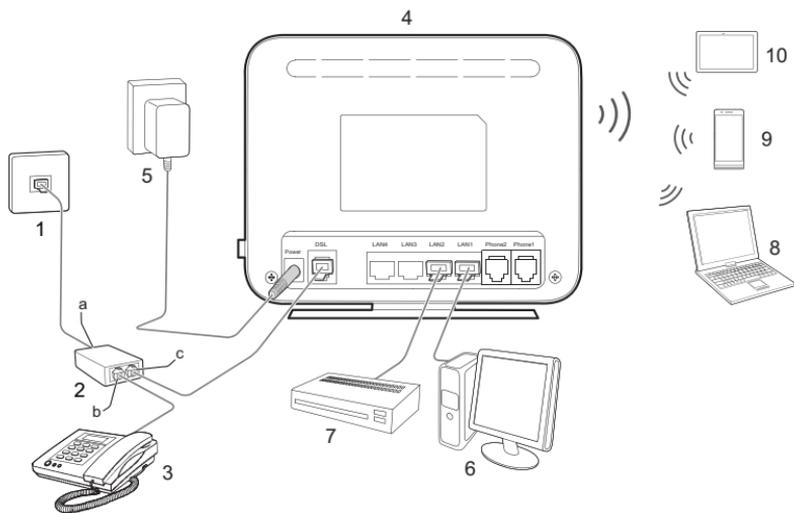
- Make sure there are no obstacles, such as concrete or wooden walls, between the computer and HG658 V2.
- Ensure that the computer and HG658 V2 are far from electric appliances that generate strong magnetic or electric fields, such as microwave ovens.

Installing the HG658 V2 on a DSL Broadband Network

In some communities, Internet service providers use telephone lines to provide broadband access services.

If you have subscribed to digital subscriber line (DSL) broadband, you can connect the HG658 V2 to a telephone port for Internet access.

Connect your devices in the sequence indicated in the following figure.



1 Telephone wall jack

2 Splitter

3 Telephone

4	HG658 V2	5	Power adapter	6	Desktop computer
7	Set-top Box	8	Laptop computer	9	Smart Phone
10	Pad				
a	LINE port	b	PHONE port	c	MODEM port

-  When configuring the HG658 V2 for the first time, use an Ethernet cable to connect the HG658 V2 to a computer.

Powering On

To power on the HG658 V2, press its power button.

After the HG658 V2 is powered on, the HG658 V2 indicator turns on. The following table lists how the indicators behave when the HG658 V2 is operating correctly. If the indicators do not behave as expected, ensure that everything is plugged in correctly.

Indicator	Expected State
Power	Steady on
WAN	Steady on
WLAN	Steady on
LAN	Steady on or blinking (indicator of the connected LAN port)
Internet	Steady on or blinking

3 Setting Network Parameters

Setting the Computer IP Address

Before logging in to the HG658 V2 web management page, set the IP address of the computer that will be used for the login.

On Windows 7

1. Click  in the lower right corner of your desktop. Choose **Open Network and Sharing Center**.
2. Choose **Change adapter settings**. Right-click **Local Area Connection** and choose **Properties**.
3. Double-click **Internet Protocol Version 4 (TCP/IPv4)**.
4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**. Click **OK**.

Logging In to the Web Management Page

The HG658 V2 provides an intuitive web management page where you can view or set the HG658 V2 parameters.

-  Before you log in to the HG658 V2 web management page, ensure that the computer used for the login is connected to the HG658 V2 and has been configured to automatically obtain an IP address or assigned with a static IP address.
1. Open a browser. In the address box, enter **192.168.1.1**. Press **Enter**.
 2. Enter the login user name (**user** by default) and password (**HuaweiUser** by default). Click **Login**.
-  To protect against unauthorized access, change the user name and password after the first login.

Setting Network Access Parameters

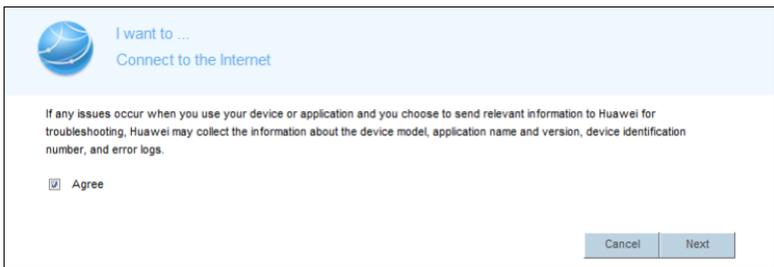
Configuring an Automatical Connection to Access the Internet

The HG658 V2 supports you to choose the proper connection mode automatically to access the Internet, meaning you do not need to install dial-up software or perform dial-up operations on your computer and just following the wizard page.

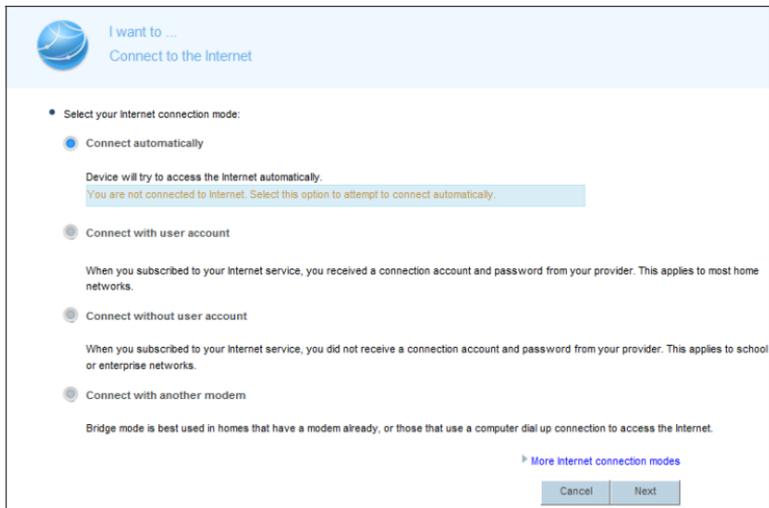
To set up an automatical connection to access the Internet:

1. Log in to the web management page.
2. Choose **Home** tab, click **Start Wizard**.

3. On the **I want to... Connect to the Internet** page, select **Agree**, and click **Next**.



4. Select your Internet connection mode.



Refer to the following table to configure the network connection.

Scenario Connection	Type
When you are unsure of the network connection you subscribed to, you can select this mode that the device will detect the network connection automatically.	Connect automatically
The account name and password are provided by your Internet Service Provider (ISP).	Connect with user account
No parameter is provided by your ISP. The IP address is automatically assigned by the ISP.	Connect without user account

Scenario Connection	Type
The user name and password are provided by ISP. Set up a dial-up connection on one computer only.	Connect with another modem

5. Set WLAN parameters.

- If you selected **Connect with user account** , enter the parameters provided by your ISP and click **Next**.
- If you selected **Connect without user account** or **Connect with another modem**, click **Next**.

i If you selected **Connect with user account** or **Connect without user account**, the computer automatically connects to the Internet as long as the router is working properly.

6. Choose **Home** tab, click **Set Up WLAN**, set WLAN parameters, and click **Save**.

I want to
Set Up WLAN

• 2.4 GHz

SSID:

Encryption Settings:

Password:

Save

i To obtain the default SSID and key, check the label on the rear panel. To better secure your WLAN, promptly change the SSID and key.

4 Wireless Connection Setup

Setting Up a Wireless Connection Using the WPS Button

Push the WPS button once to quickly set up a wireless connection between the HG658 V2 and any WPS-capable device.

Before you set up a wireless connection using the WPS button, verify the following:

- The wireless network security mode of the HG658 V2 is WPA2-PSK or WPA-PSK/WPA2-PSK.
 - The wireless device (laptop, tablet, or mobile phone) to connect to the HG658 V2 is WPS-capable.
1. Press the WPS button on the wireless device to start WPS negotiation. For details, see the user guide for the wireless device.
 2. Within 2 minutes, press and hold the WPS button on the HG658 V2 for 1 second or more. The WPS indicator blinks.

When the WPS indicator of the HG658 V2 is on and then turn off, a connection between the HG658 V2 and wireless device has been set up.

Manually Setting Up a Wireless Connection

The wireless configuration software provided by Windows is used as an example to describe how to set up a wireless connection.

You can also use the tool built into the network adapter to set up a wireless connection. For details, see the network adapter's user guide.

Before setting up a wireless connection, record the WLAN name and password of the HG658 V2. The default WLAN name and password are printed on the HG658 V2 cover label.

On Windows 7

1. Click  in the lower right corner of your desktop.
2. From the wireless network list, select the WLAN provided by the HG658 V2. Click **Connect**.
3. In the displayed dialog box, enter the WLAN password and click **OK**.
4. In the wireless network list, check the WLAN connection status. If the status is **Connected**, the computer is wirelessly connected to the HG658 V2.

5 WLAN Configuration

Enabling and Disabling the WLAN on the HG658 V2

The following two methods are available to enable and disable the WLAN on the HG658 V2.

Using the WLAN Button

Press the WLAN button in the HG658 V2 to enable or disable the WLAN. To ascertain whether the WLAN is enabled, view the WLAN indicator.

Using the Web Management Page

1. Log in to the web management page.
2. Choose **Home Network** tab.
3. In the navigation tree, choose **WLAN Settings**.
4. Select **Basic Settings** configuration page.
5. Set **Enable WLAN 2.4 GHz** to enable.
6. Click **Save**.



Changing Your WLAN Name and Password

WLAN access requires the WLAN name and password. To improve your WLAN security, regularly change your WLAN name and password.

1. Log in to the web management page.
2. Choose **Home Network** tab.
3. In the navigation tree, choose **WLAN Settings**.
4. Select **WLAN Encryption** configuration page.
5. In **SSID**, enter a new WLAN name.
6. In **WPA pre-shared key**, enter a new WLAN password.
7. Click **Save**.

WLAN Encryption [What's this?](#)

2.4 GHz Frequency Band

SSID:

Enable SSID:

Encryption Settings

Security mode:

WPA encryption mode:

WPA pre-shared key:

Enable AP isolation:

Hide broadcast:

-  After the SSID and key had been changed, your computer should use the new ones to establish a wireless connection to the HG658 V2.

6 Network Security

Improving WLAN Security

Hiding the WLAN Name

After you hide the WLAN name, anyone who wishes to connect to the WLAN must enter the correct WLAN name. This measure helps improve WLAN security.

1. Log in to the web management page.
2. Choose **Home Network** tab.
3. In the navigation tree, choose **WLAN Settings**.
4. Select **WLAN Encryption** configuration page.
5. Set **Hide broadcast** to enable.
6. Click **Save**.

WLAN Encryption [What's this?](#)

2.4 GHz Frequency Band

SSID:

Enable SSID:

Encryption Settings

Security mode:

WPA encryption mode:

WPA pre-shared key:

Enable AP isolation:

Hide broadcast:

! This will disable WPS.

Using High Security Encryption Modes

Adopting high security encryption modes protects against unauthorized access as well as data interception on networks.

To improve WLAN security without sacrificing working efficiency, use **WPA-PSK/WPA2-PSK** and **TKIP+AES**. This step also prevents WLAN unavailability caused by network adapters' incompatibility with the selected security mode.

1. Log in to the web management page.

2. Choose **Home Network** tab.
3. In the navigation tree, choose **WLAN Settings**.
4. Select **WLAN Encryption** configuration page.
5. Select **Security mode** for you wanted.
6. Select **WPA encryption mode** for you wanted.
7. In **WPA pre-shared key**, enter the WLAN password you specified.
8. Click **Save**.

WLAN Encryption [What's this?](#)

2.4 GHz Frequency Band

SSID:

Enable SSID:

Encryption Settings

Security mode:

WPA encryption mode:

WPA pre-shared key:

Enable AP isolation:

Hide broadcast:

- i** After the password used for accessing a WLAN is changed, you need to enter the new password when connecting a PC to the WLAN.

Allowing Only Specified Computers to Access Your WLAN

To prevent unauthorized access to your WLAN, you can specify which devices are allowed to access your WLAN.

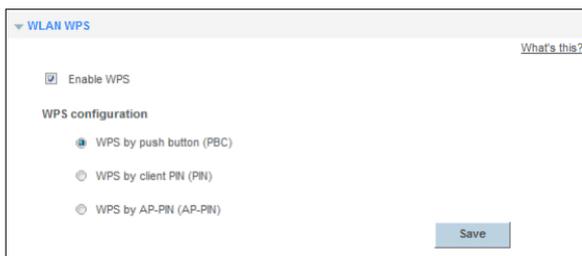
1. Connect a computer and the HG658 V2 via wireless.
2. Log in to the web management page.
3. Choose **Home Network** tab.
4. In the navigation tree, choose **WLAN Access**.
5. Select **WLAN Access Rules** configuration page.
6. Set **Only allow specific computers in the WLAN** to enable.
7. In **Managed LAN devices**, select the computer name for you wanted.
8. Click **Save**.



Enable WPS Function

After the WPS function is turned on, you can safely access the wireless network without enter a wireless network name and password.

1. Log in to the web management page.
2. Choose **Home Network** tab.
3. In the navigation tree, choose **WLAN Access**.
4. Select **WLAN WPS** configuration page.
5. Set **Enable WPS** to enable.
6. Under the expanded **WPS configuration** menu, select the WPS mode you want to use.



- **WPS by push button (PBC)** : Enable the WPS function by press the **WPS** button on theHG658 V2.
 - **WPS by client PIN (PIN)** : Get the pin code from a pin client and then enter the pin code in **PIN code** text box. Click **Connect**.
 - **WPS by AP-PIN (AP-PIN)**: Click **PIN** to get the pin code and then enter the pin code into the text box on the pin client.
7. Click **Save**.

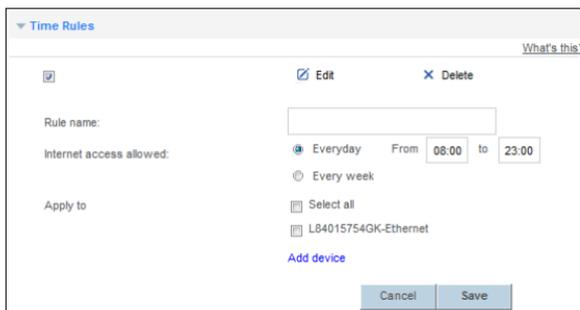
Controlling Computer Internet Access

You can prohibit certain PCs from accessing the Internet or allow only certain PCs to access the Internet. In addition, you can set the period during which the PCs are not allowed to access the Internet.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Parental Control**.
4. Select **Time Rules** configuration page.
5. Click **New time rule**.



6. In **Rule name**, enter a filtering rule name you specified.
7. In **Internet access allowed**, enter a time zone you specified.
8. In **Apply to**, select the computer name for you wanted.
9. Click **Save**.



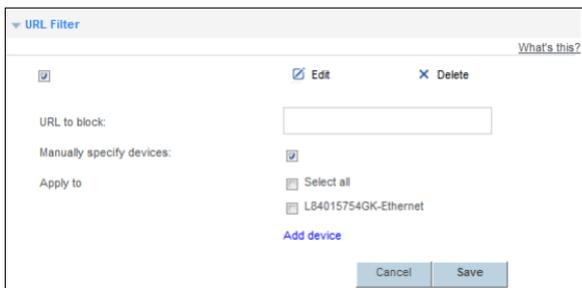
Filtering Out Inappropriate Websites

Use URL filtering to prevent certain websites from being accessed.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Parental Control**.
4. Select **URL Filter** configuration page.
5. Click **New URL filter**.



6. In **URL to block**, enter the Web site address you specify.
7. Set **Manually specify devices** to enable.
8. In **Apply to**, select the computer name for you wanted.
9. Click **Save**.



Controlling Computer Bandwidth

By configuring bandwidth control policies, you can control the bandwidth of computers connected to the HG658 V2 in the following ways:

- Determine the minimum bandwidth allocated to specific computers to help ensure the Internet access speed for those computers.
 - Determine the maximum bandwidth certain computers can occupy so that bandwidth remains available to other computers.
1. Log in to the web management page.
 2. Choose **Internet** tab.
 3. In the navigation tree, choose **Bandwidth Control**.
 4. Select **Bandwidth Control** configuration page.
 5. Set **Enable bandwidth control** to enable.
 6. In **Ingress bandwidth**, enter the rate value you specified.

7. Click **Save**.

Bandwidth Control [What's this?](#)

Enable bandwidth control:

Ingress bandwidth: kbit/s

Save

[What's this?](#)

[+ New](#)

You can configure different bandwidth control policies for different computers.

The configuration procedure is as follows:

1. Click **New**.
2. In **Traffic classifier name**, enter a bandwidth control name you specified.
3. In **Schedule priority**, select the schedule priority you specified.
4. In **Upload min** and **Upload max**, enter the rate value you specified.
5. In **Traffic management type**, select the traffic management type you specified.
 - When the Traffic Management Type is **IP QoS classification**, enter the IP address of the computers you want to control in **IP address**.
 - When the Traffic Management Type is **MAC QoS classification**, select the MAC address of the computer you want to control in **MAC address**.
 - When the Traffic Management Type is **LAN QoS classification**, select the interface of the computer you want to control in **LAN interface**.
 - When the Traffic Management Type is **Application QoS classification**, enter the Application name you specified in **Application**.

6. Click Save.

The screenshot shows a configuration window with a title bar containing a checkmark icon, 'Edit', and 'Delete'. The form includes the following fields:

- Traffic classifier name: [Empty text box]
- Schedule priority: [Default] (dropdown menu)
- Upload min: [0] kbit/s
- Upload max: [0] kbit/s
- DSCP mark: [-1] [-1 - 63]
- Traffic management type: [IP QoS classification] (dropdown menu)
- IP protocol version: [IPv4] (dropdown menu)
- IP address: [Four empty boxes for IP address]

At the bottom right, there are 'Cancel' and 'Save' buttons.

Configure the Firewall to Prevent Attacks on the Internet

The Description of Firewall Level

The preset protective levels of the firewall are as follows:

Level	Description
High	When you set the firewall level of the router to High , only the FTP / DNS / HTTP packet is allowed to pass through.
Low	When you set the firewall level of the router to Low , the packets from the LAN to the WAN are allowed to pass through.
Disabled	When you set the firewall level of the router to Disabled , all data packets are allowed to pass through.

Recommended Firewall Level

To better protect your privacy and prevent the HG658 V2 from malicious network attacks, recommended setting the firewall level to **High**, so the LAN computers can only browse the web and download files using FTP server, while prohibiting Internet users access to HG658 V2.

Configuring the Firewall

The HG658 V2 provides a firewall to help secure its WLAN and any devices connected to it. Set the firewall level based on site requirements to quickly configure the firewall.

1. Log in to the web management page.

2. Choose **Internet** tab.
3. In the navigation tree, choose **Network Security**.
4. Select **Firewall** configuration page.
5. In **Firewall level**, select the firewall level you specified.
6. Click **Save**.

Firewall

What's this?

Firewall level: Low

! When the level is Low, all active packets from the LAN to WAN are allowed.

Attack protecting

Enable ICMP flood protecting:

Enable SYN flood protecting:

Enable ARP attack protecting:

Save

Configure DMZ

After DMZ is enabled, the computer that is configured as a DMZ host is exposed to the Internet. For example, when building a server, you can configure the computer providing external services as a DMZ host, which helps protect other computers on the home network.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Network Security**.
4. Select **DMZ** configuration page.
5. In **Host address**, select the device you want to specified, or click **Add device** to add a new device for DMZ host.
6. Set **Enable DMZ** to enable.
7. Click **Save**.

DMZ

What's this?

Host address:

Add device

Enable DMZ:

Save

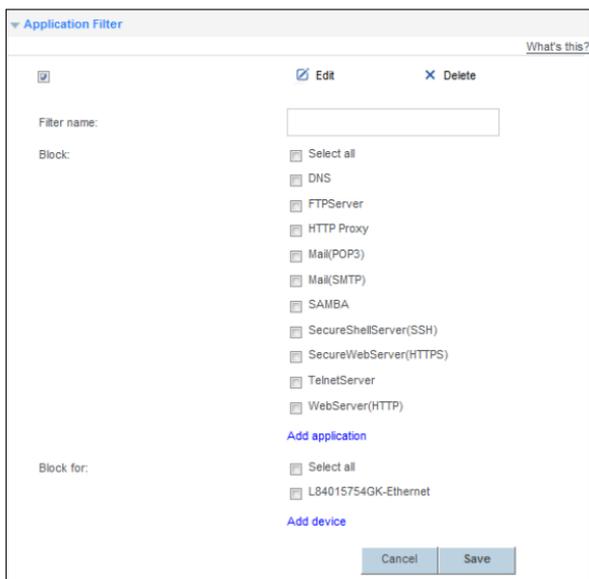
Configure Application Filter

To enable application filter function on specified computer, you can block network attacks from applications to the specified computer.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Network Security**.
4. Select **Application Filter** configuration page.
5. Click **New application filter**.



6. In **Filter name**, enter a rule name you specified.
7. In **Block**, select the application you want to set, or click **Add application** to add a new port application.
8. In **Block for**, select the computer name you want specified.
9. Click **Save**.



Configure Port Forwarding

You can set forwarding rules on the HG658 V2 so that users can easily access server resources provided by your computer (such as personal websites and FTP servers) from the Internet.

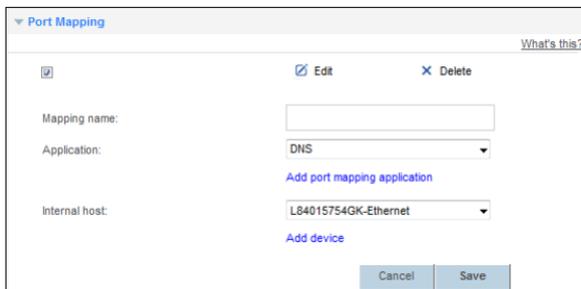
Configure Port Mapping

By setting a port forwarding rule, you can let a internet user to access a local computer.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Forwarding**.
4. Select **Port Mapping** configuration page.
5. Click **New port mapping**.



6. In **Mapping name**, enter a rule name you specified.
7. In **Application**, select the application type you want to set, or click **Add port mapping application** to add a new application type.
8. In **Internal host**, select a local computer you want to set, or click **Add device** to add a new local computer.
9. Click **Save**.



Configure Port Trigger

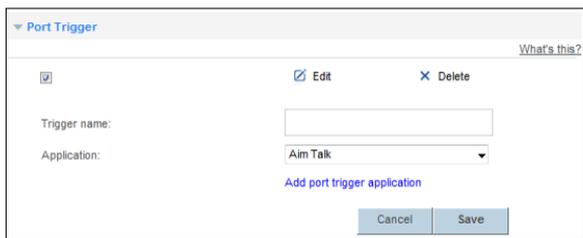
By setting port triggering, LAN has a client-initiated requests to an Internet server, the application will trigger port to initiate a connection, thereby triggering HG658 V2 open the appropriate ports to ensure the normal use of the application.

1. Log in to the web management page.

2. Choose **Internet** tab.
3. In the navigation tree, choose **Forwarding**.
4. Select **Port Trigger** configuration page.
5. Click **New port trigger**.



6. In **Trigger name**, enter a rule name you specified.
7. In **Application**, select the application type you want to set, or click **Add port trigger application** to add a new application type.
8. Click **Save**.



Configure ALG

By opening the application layer gateway-related functions, the application layer can be resolved to ensure the correctness of the application layer communication.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Forwarding**.
4. Select **ALG** configuration page.
5. Set **Enable** beside the application that you want specified.
6. Click **Save**.



Configure Routing

By routing function, a computer network can be achieved between different subnets for data forwarding, so not in the same subnet as the computer can communicate.

Configure Static Routing

By setting a static route, you can send the information from source IP address to the destination IP address through a specified path.

1. Log in to the web management page.
2. Choose **Internet** tab.
3. In the navigation tree, choose **Routing Rules**.
4. Select **Static Routing** configuration page.
5. Click **New static route**.



6. In **Destination network address**, enter the IP address of the destination computer that you want to send information.
7. In **Destination subnet mask**, enter the subnet mask of the destination computer that you want to send information.
8. In **Default gateway**, enter the IP address of the destination computer which will be received the packet.
9. In **Source IP address**, enter the subnet mask of the source computer that you want to send information.
10. In **Source subnet mask**, enter the subnet mask of the source computer that you want to send information.
11. In **Interface**, select a LAN interface that receives packets.
12. Click **Save**.

Static Routing What's this?

[Edit](#) [Delete](#)

Destination network address:

Destination subnet mask:

Default gateway:

Source IP address:

Source subnet mask:

Interface:

Configure UPnP

After UPnP is enabled, the device that supports UPnP function can be identified and added to the network automatically.

1. Log in to the web management page.
2. Choose **Home Network** tab.
3. In the navigation tree, choose **LAN Interface**.
4. Select **UPnP** configuration page.
5. Set **Enable UPnP** to enable.
6. Click **Save**.

UPnP What's this?

Enable UPnP:

7 IP Telephony

Introduction to IP Telephony

IP telephony, namely voice over Internet Protocol (VoIP), is also called broadband telephony or Internet telephony. It utilizes Internet Protocol (IP) network technologies to implement voice communication. During a VoIP call, voice signals are digitized, encoded, packetized, and transmitted as packets over a network. On the receiving side, the packets are then decoded, and digital signals are converted to reproduce the original voice streams, which can be heard by the called party. Different from traditional PSTN calls, VoIP calls are transported over IP networks, meaning voice streams are transmitted over users' existing broadband Internet. This makes full use of broadband resources.

Configuring VoIP

The HG658 V2 supports VoIP. You can place VoIP calls after your phone is connected to the **Phone** port on the HG658 V2.

To use the HG658 V2 to place VoIP calls, ask your network service provider to activate VoIP services for you. By default, your network service provider will have all related parameters, such as the VoIP account and address, set for you. You will not need to configure any settings to place VoIP calls.

To configure voice services, do as follows:

1. Configure a VoIP provider.

a. Choose **Telephony > VoIP** to display the VoIP provider page.

b. Click **New VoIP provider**.



c. Enter the VoIP provider name provided by the service provider.

d. Enter the IP address or name of the SIP registrar server provided by the service provider in the **Primary Registrar** text box.

e. Enter the port number of the SIP registrar server provided by the service provider in the primary registrar **Port** text box. If the service provider does not provide the port number, the default value should be used.

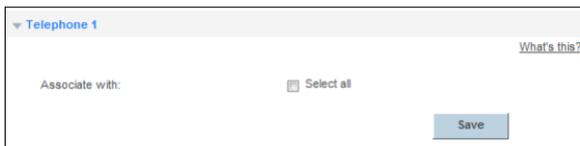
f. Enter the IP address or name of the SIP proxy server provided by the service provider in the **Primary proxy server** text box.

- g. Enter the port number of the SIP proxy server provided by the service provider in the primary proxy **Port** text box.
- h. Enter the home domain name of the SIP user in the **SIP domain** box.
- i. Click **Save** to save the settings.

2. Configure a VoIP number.

- a. Choose **Telephony > VoIP > VoIP Accounts** to display the VoIP configuration page.
- b. Select the VoIP provider name from the drop-down list box.
- c. Enter the SIP phone number.
- d. Enter the SIP user name and password.
- e. Click **Enable** to enable the VoIP account.
- f. Click **Save** to save the settings.

3. Associate your telephone to the VoIP number.
 - a. Choose **Telephony > Telephone** to display the telephony page.
 - b. Associate your telephone to the VoIP number.



The screenshot shows a web interface for configuring a telephone. At the top left, there is a breadcrumb trail: "Telephone 1". At the top right, there is a link labeled "What's this?". Below the breadcrumb, the text "Associate with:" is followed by a "Select all" button. At the bottom right of the form area, there is a "Save" button.

Placing a VoIP Call

Once your network service provider has activated VoIP services for you, you will be assigned a VoIP account, which is also your VoIP call number.

Before placing a VoIP call, ensure that the HG658 V2 has connected to the network. When the call is established, your VoIP call number is displayed on the called party's phone.

For VoIP call tariffs, contact your network service provider.

8 USB Device

USB Storage Device

USB storage devices use their USB ports to exchange data with other devices.

You can connect a USB storage device to your HG658 V2 and access the USB device from your computer.

Both the USB drive and removable hard disk can connect to your HG658 V2.

Your HG658 V2 supports the following file systems for reading and writing.

- FAT32/FAT
- NTFS
- Ext2/3
- HFS+

Connecting a USB Device

After you connect a USB device to your HG658 V2, computers or other devices connected to the HG658 V2 network can access and share the data in or applications provided by the USB device.

 If you connect a USB device to the HG658 V2, verify that the input voltage and current of the USB device do not exceed 5 V/0.5 A. Otherwise, the HG658 V2 may malfunction.

You can connect the following USB devices to your HG658 V2:

- USB storage device
- USB printer

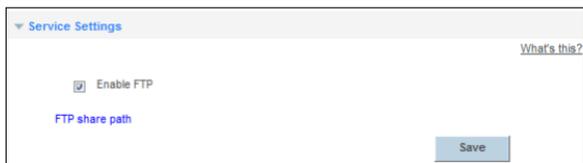
Setting the FTP Access Permission

To avoid unauthorized access to the USB storage device, you can set the FTP access permission on your HG658 V2. This allows only authorized users to access the USB storage device.

Accessing to FTP Server Through the User Name and Password

1. Connect the portable storage device to the HG658 V2's USB port.
2. Enable the FTP server.
 - a. Log in to the web management page.
 - b. Choose **Share > Storage Share**.
 - c. In **Service Settings**, select **Enable FTP** for FTP server.

d. Click **Save** to save the settings.



The screenshot shows the 'Service Settings' configuration page. At the top left, there is a dropdown arrow and the text 'Service Settings'. At the top right, there is a link 'What's this?'. Below the header, there is a checkbox labeled 'Enable FTP' which is checked. Underneath it is the text 'FTP share path'. At the bottom right, there is a blue 'Save' button.

3. Set the user name and password of the portable storage device.

a. Select **User Settings** configuration page.

b. Click **New USB user**.



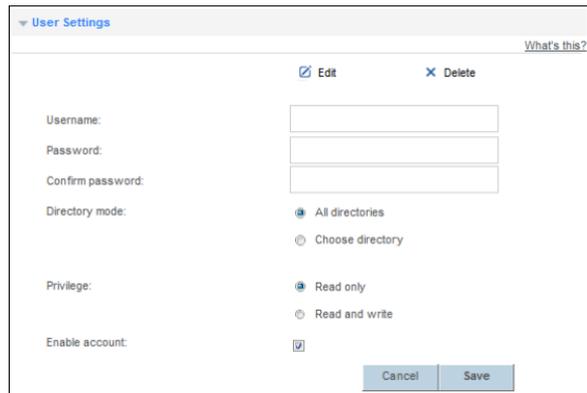
The screenshot shows the 'User Settings' configuration page. At the top left, there is a dropdown arrow and the text 'User Settings'. At the top right, there is a link 'What's this?'. Below the header, there is a blue '+ New USB user' button.

c. In **Username** and **Password**, enter a user name and password for the FTP server, and re-enter the password to confirm it.

d. In **Directory mode**, choose a file sharing path.

e. In **Privilege**, select the desired right.

f. Click **Save** to save the settings.



The screenshot shows the 'New USB user' configuration page. At the top left, there is a dropdown arrow and the text 'User Settings'. At the top right, there is a link 'What's this?'. Below the header, there are two buttons: 'Edit' (checked) and 'Delete'. The form contains the following fields and options:

- Username: [Text input field]
- Password: [Text input field]
- Confirm password: [Text input field]
- Directory mode:
 - All directories
 - Choose directory
- Privilege:
 - Read only
 - Read and write
- Enable account:

At the bottom right, there are two buttons: 'Cancel' and 'Save'.

Accessing to FTP server Anonymously

1. Connect the portable storage device to the HG658 V2's USB port.

2. Enable the FTP server.

a. Log in to the web management page.

b. Choose **Share > Storage Share**.

c. In **Service Settings**, select **Enable FTP** for FTP server.

- d. Click **Save** to save the settings.
3. Enable anonymous users.
 - a. In **FTP Anonymous Users**, select **Enable anonymous users**.
 - b. In **Directory mode**, choose a file sharing path.
 - c. In **Privilege**, select the desired right.
 - d. Click **Save** to save the settings.

▼ FTP Anonymous Users What's this?

Enable anonymous users:

Directory mode: All directories
 Choose directory

Privilege: Read only
 Read and write

Save

Accessing a USB Storage Device Using FTP

You can access a USB storage device through the FTP server.

To access a USB storage device using FTP, connect the USB storage device to your HG658 V2 and set the FTP login parameters.

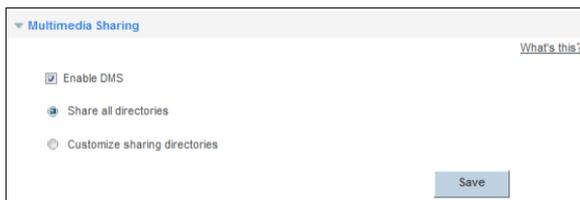
1. Open a browser on your computer.
2. In the address box, enter ftp://192.168.1.1. Press **Enter**.
3. In the **Login** dialog box, enter the login user name and password you set in the HG658 V2's **Storage Share** page (Anonymous users select the anonymous directly). Click **Login**.

Once you pass the authentication, the directory of and files in the USB storage device will be displayed.

Configure DLNA

You can play media files on a portable storage device using the DLNA function of the HG658 V2.

1. Log in to the web management page.
2. Choose **Share** tab.
3. In the navigation tree, choose **Multimedia Share**.
4. Select **Multimedia Share** configuration page.
5. Set **Enable DMS** to enable, then choose the application that you want specified.
6. Click **Save**.



Sharing a USB Printer

HG658 V2 supports USB printers. After you connect a USB printer to your HG658 V2 through the USB port, you can access the printer from the Internet or internal network.

1. Connect the USB cable of the printer to the USB port on the HG658 V2.
2. Add a Network Printer.

On Windows 7

1. Choose **Start > Devices and Printers**.
2. Choose **Add a printer**.
3. Choose **Add a network, wireless or Bluetooth printer**.
4. Click **The printer that I want isn't listed**.
5. Choose **Select a shared printer by name** and enter the printer address in the text box. **myprinter** is the customized name of the printer to add. Click **Next**.
6. Select the model of the printer you want or click **Have Disk** to manually install the printer drive.
7. Click **OK**.

After you complete the preceding settings, open the files you want to print on your computer. Then you can choose the printer just installed to print your files.

9 Maintenance Guide

Changing the IP Address Used to Log In to the Web Management Page

The IP address used to log in to the HG658 V2 web management page is the HG658 V2 IP address. For security or other purposes (for instance, if the default HG658 V2 IP address conflicts with that of another device on the same network), you can change the HG658 V2 IP address.

1. Log in to the web management page.
2. Choose **Home Network** tab.
3. In the navigation tree, choose **LAN Interface**.
4. Select **LAN Interface Settings** configuration page.
5. In **IP address**, enter a new IP address (Such as: 192.168.6.1).
6. Click **Save**.

The screenshot shows the 'LAN Interface Settings' configuration page. It includes the following fields and values:

- IP address:** 192 . 168 . 6 . 1
- Server subnet mask:** 255 . 255 . 255 . 0
- Device name:** mediarouter

Below the fields, there is a note: "You can access the HG658 V2 from http://mediarouter.home." and a "Save" button.

Use the new IP address to log in to the web management page.

Changing the Web Management Page User Name and Password

The correct user name and password are required to log in to the web management page. Regular changes to the web management page user name and password can effectively prevent unauthorized users from logging in and modifying important parameters.

1. Log in to the web management page.
2. Choose **Maintain** tab.
3. In the navigation tree, choose **Account Management**.
4. Select **Modify Login Password** configuration page.
5. Click **Edit** beside the user account you want to modify.
6. In **Current password**, enter the currently used password.

- In **New password**, enter a new password, in **Confirm password**, enter the new password again.
- Click **Save**.

▼ Modify Login Password

user User Edit

New username: user

Current password:

New password:

Confirm password:

Cancel Save

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

- i** If you forget the password, you can restore the default settings by pressing and holding the **Reset** button on the rear panel of the HG658 V2 for over 6 seconds. The user name and password used for logging in to the web management page are then restored to their default values. After the HG658 V2 is restored to its default settings, all user customized data will be lost. Perform this operation with caution.

Restoring Default Settings

Using the Reset Button

If you forget the login password to the web management page or could not access the web management page, use the reset button on the HG658 V2 rear panel to restore the HG658 V2 to its default settings. Perform this operation with caution. After the HG658 V2 is restored to its default settings, all custom data and settings will be lost, and the password will be restored to **HuaweiUser**.

- Press the HG658 V2 power button to power the HG658 V2 on.
- Press and hold the reset button for 6seconds or more.

The HG658 V2 will restart, which will cause temporary network interruptions.

After the HG658 V2 is restored to its default settings, change the computer IP address so that it is in the same network segment as the 192.168.1.1 default IP address.

Using the Configuration Tool

If the HG658 V2 parameter settings were configured incorrectly, log in to the web management page to restore the HG658 V2 to its default settings. Perform this operation with caution. After the HG658 V2 is restored to its default settings, all custom data and settings will be lost, and the password will be restored to **HuaweiUser**.

1. Log in to the web management page.
2. Choose **Maintain** tab.
3. In the navigation tree, choose **Device Management**.
4. Select **Factory Restore** configuration page.
5. Click **Restore**.
6. In the displayed dialog box, click **OK**.



Upgrading Firmware

The HG658 V2 supports upgrade firmware through the web management page. Before upgrading the firmware, please download the latest firmware of the HG658 V2 at the Huawei's official website.

! To avoid any damage to the HG658 V2, do not power off the HG658 V2 when it is being upgraded.

1. Log in to the web management page.
2. Choose **Maintain** tab.
3. In the navigation tree, choose **Device Management**.
4. Select **Firmware Upgrade** configuration page.
5. Click **Browse...**, and select the latest firmware you download at the Huawei's official website.
6. Click **Upgrade**.



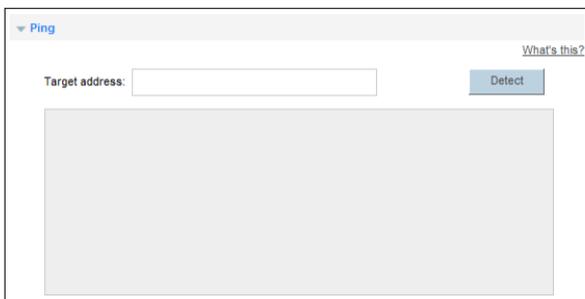
After the firmware is upgraded, the login page is displayed. Reenter to log in.

Using Ping Tool Diagnose Network

HG658 V2 supports the Ping function. You can check the connection between the HG658 V2 and other hosts (including network equipment) connection, such as the connectivity or delay and etc between the HG658 V2 and other hosts.

1. Log in to the web management page.
2. Choose **Maintain** tab.

3. In the navigation tree, choose **Tools**.
4. Select **Ping** configuration page.
5. In **Target address**, enter the IP address or domain name you want to test.
6. Click **Detect**.



Using Tracert Tool Diagnose Network

Tracert function is used to detect the number of other routers that passed when the HG658 V2 is connected to the test host.

1. Log in to the web management page.
2. Choose **Maintain** tab.
3. In the navigation tree, choose **Tools**.
4. Select **Traceroute** configuration page.
5. In **Target address**, enter the IP address or domain name you want to test.
6. Click **Detect**.



10 Reference Operations

Setting Dial-Up Connection Parameters

When the HG658 V2 works in Bridge mode you need to perform this operation. Otherwise you do not need to perform this operation.

Before setting dial-up connection parameters, verify that the HG658 V2 is correctly connected to your computer and you have the dial-up connection account name and password provided by your Internet service provider (ISP). This section demonstrates how to set up a Point-to-Point Protocol over Ethernet (PPPoE) connection on Windows.

On Windows 7

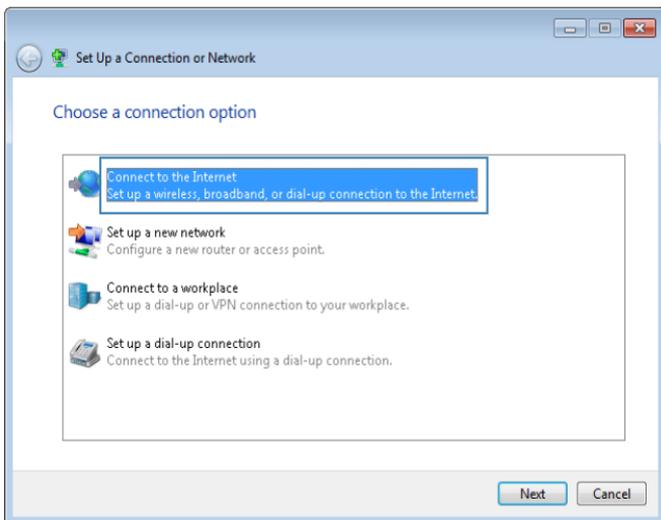
1. Choose **Start > Control Panel > Network and Internet > Network and Sharing Center**.



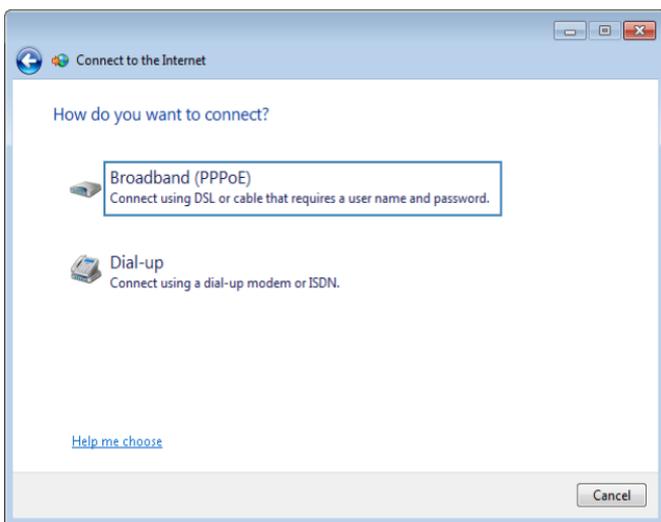
2. Under **Change your networking settings**, click **Set up a new connection or network**.



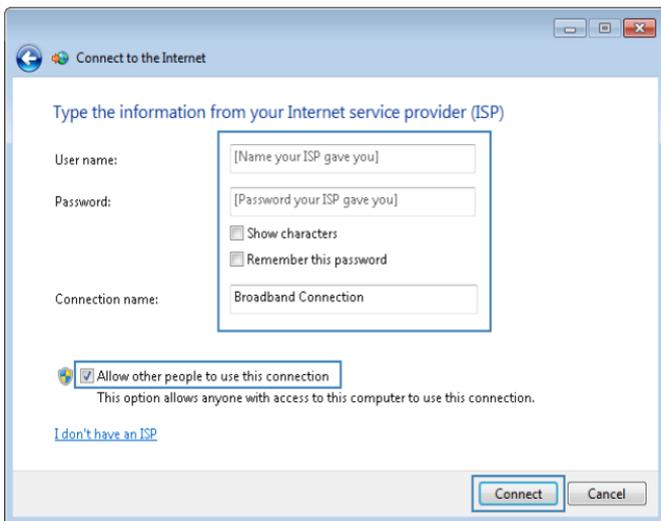
3. In the **Set Up a Connection or Network** window, select **Connect to the Internet** and click **Next**.



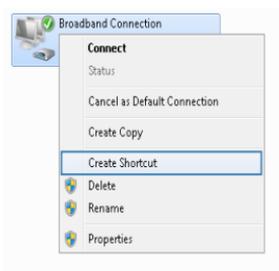
4. Click **Broadband (PPPoE)**.



5. In **User name** and **Password**, enter the dial-up connection account name and password provided by your ISP. In **Connection name**, name the dial-up connection. Select or deselect **Allow other people to use this connection**. Then click **Connect**.



6. Return to the **Network and Sharing Center** page. Click **Change adapter settings**. Right-click the icon for the dial-up connection you just set up and choose **Create Shortcut** from the shortcut menu. In the displayed dialog box, click **Yes**.



After you successfully set up a PPPoE connection, a dial-up connection icon is displayed on your computer desktop.

To connect to the Internet, double-click the dial-up connection icon. In the displayed dialog box, click **Connect**.

Enabling Wireless Configuration on Windows

If the setup of the wireless connection between your computer and the HG658 V2 failed, verify that wireless configuration is enabled on Windows.

On Windows 7 or Windows Vista

1. Right-click **Computer** and choose **Manage** from the shortcut menu.

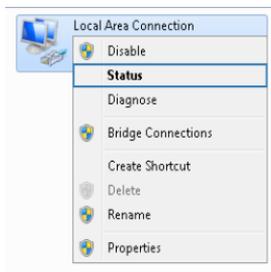
2. In the left pane of the **Computer Management** window, choose **Computer Management (Local) > Services and Applications > Services**.
3. In the right pane of the **Computer Management** window, right-click **WLAN AutoConfig** and choose **Properties** from the shortcut menu.
4. In the displayed dialog box, check that **Service status** is **Started**.
5. Click **OK** to close the dialog box. Then close the **Computer Management** window.

Checking the Computer MAC Address

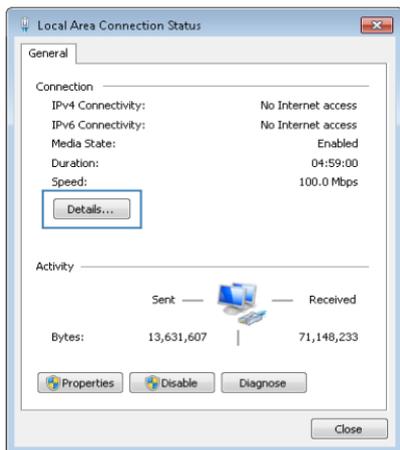
The MAC address, also known as the physical address, is a unique identifier assigned to a network adapter. A MAC address contains six groups of two hexadecimal digits, such as **2C-41-38-8D-75-8D**. This section demonstrates how to check your computer's MAC address.

On Windows 7

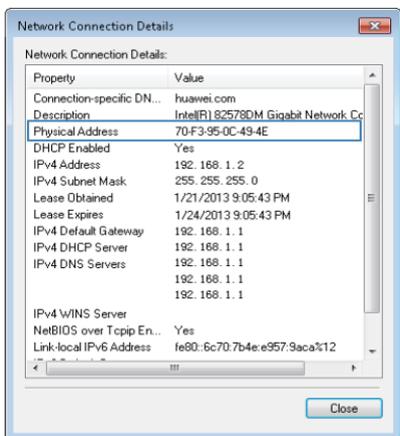
1. Choose **Start > Control Panel > Network and Internet > Network and Sharing Center > Change adapter settings**. Right-click **Local Area Connection** and choose **Status** from the shortcut menu.



2. Click **Details**.



3. In **Network Connection Details**, find the line similar to **Physical Address 70-F3-95-0C-49-4E**. The **70-F3-95-0C-49-4E** string is your computer's MAC address.



11 FAQs

What Can I Do If I Cannot Open the Web Management Page?

1. Open Internet Explorer. Choose **Tools > Internet Options > Connections > LAN settings**, and ensure that all check boxes are deselected.
 2. Check that the computer IP address is 192.168.1.*. (* is any integer from 2 to 254.)
 3. Check that the cables are securely connected to the HG658 V2.
- If the problem persists, restore the HG658 V2 to its default settings.

What Can I Do If the HG658 V2 Cannot Access the Internet through a Wireless Network Adapter Sometimes or If the WLAN Connection Is Unsteady?

This is probably because the HG658 V2 has its cables connected loosely, is placed too close to electronic appliances with intensive interference, or is too far from the computer. Verify that:

1. The power and telephone cables are correctly connected to the HG658 V2.
2. Your computer and the HG658 V2 are far from electric appliances that generate strong magnetic or electric fields, such as microwave ovens, refrigerators, and cordless telephones.
3. The HG658 V2 is in an open area, and there are no obstacles, such as concrete or wooden walls, between the HG658 V2 and computer.
4. The HG658 V2 is close to the computer.
5. The angle between the HG658 V2 and computer is appropriate.

-  Do not use the HG658 V2 during thunderstorms, as the signal strength may be unsteady and the HG658 V2 itself may be damaged due to lightning strikes.

What Can I Do If I Cannot Access the Internet?

1. Check that the **Power** indicator on the HG658 V2 is steady on. If the **Power** indicator is off, perform further checks as follows:
 - a. Check that the HG658 V2 is turned on.
 - b. Check that electricity comes from the socket and that the power input from the socket meets the requirements described on the label of the HG658 V2's power adapter. If the voltage is unstable,

for example, if the voltage is too high or too low, do not use the HG658 V2. Wait until the voltage recovers, and then use the HG658 V2.

c. Check that the HG658 V2 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 HG658 V2, wait for about 3 minutes. Then check whether the **WAN** indicator turns steady on.

a. Check that the telephone line is correctly and securely connected, especially the connection between the telephone line and the splitter.

b. Check that the HG658 V2 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 whether the **LAN** indicator is on. If the **LAN** indicator is off, perform further checks as follows:

a. Check that the network adapter on your computer is enabled.

b. Check that the network cable between the HG658 V2 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.

4. Check that the driver for the network adapter is correctly installed. The following example uses a computer running the Windows 7 operating system to check whether the driver for the network adapter is installed:

a. Right-click **My Computer**, and choose **Manage** from the displayed shortcut menu.

b. In the **Computer Management** window, click **Device Manager**.

c. 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.

5. Check that PPP dial-up software is installed and parameters are set correctly. For details about parameter settings, see the user guide for the PPP dial-up software.

6. Check that you have entered the correct user name and password required by the PPP dial-up software. The user name and password are provided by your network service provider.

7. Check that you can use the PPP dial-up software to set up dial-up connection. If the dial-up connection fails, perform further checks as follows:

a. Close the PPP dial-up software, and power off the HG658 V2. After 5 minutes, power on the HG658 V2, and use the PPP dial-up software to dial again.

b. Restore the HG658 V2 to its default settings.

If the problem persists, contact your network service provider.

8. Check that the proxy server of the browser is correctly configured. The following example uses Internet Explorer on the Windows 7 operating system to check whether the proxy server of the browser is correctly configured:
 - a. Launch Internet Explorer.
 - b. Choose **Tools > Internet Options**.
 - c. In the **Internet Options** dialog box, click the **Connections** tab.
 - d. In the **Local Area Network (LAN) settings** area, click **LAN Settings**.
 - e. 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.
9. Try to access more websites to check whether the HG658 V2 can access these websites. If the problem persists, contact your network service provider.

I Often Need to Restart the HG658 V2 to Display Web Pages.

What Can I Do?

Verify the following:

1. Cables are securely connected to HG658 V2 ports. Otherwise, network stability may suffer.
2. Your computer and the HG658 V2 are far from electric appliances that generate strong magnetic or electric fields, such as microwave ovens, refrigerators, and cordless telephones.

If the problem persists, contact your Internet Service Provider.

What Is the Difference Between Wireless MAC Address Filtering and MAC Address Filtering?

- Wireless MAC address filtering: controls whether a computer can connect to the HG658 V2 over the WLAN.
- MAC address filtering: controls whether a computer connected to the HG658 V2 can access the Internet.

Can I Change the WLAN Password?

Yes. To improve your WLAN security, regularly change your WLAN password.

12 Appendix

Technical Specifications

Item	Specifications	
Power supply	12 V DC, 1 A	
Power consumption	< 12 W	
Ambient operating temperature	0°C to 40°C	
Ambient humidity	5% to 95% RH (non-condensing)	
Dimensions (H x W x D)	5.12 mm x 32 mm x 162 mm (4.65 in. x 1.26 in. x 6.38 in.) antenna excluded	
Weight	About 360 g	
DSL standard	ADSL standard	ITU G.992.1 (G.dmt) ITU G.992.2 (G.lite) ITU G.994.1 (G.hs) ANSI T1.413 Issue 2
	ADSL2 standard	ITU G.992.3 (G.dmt.bis) Annex L
	ADSL2+ standard	ITU G.992.5 (G.dmt.bitplus)
	VDSL2	ITU G.993.2 VDSL2 VDSL2 Profiles for 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a VDSL Vectoring
DSL transmission rate	G.dmt T1.413	Downlink: 8 Mbit/s Uplink: 896 kbit/s
	ADSL	Downlink: 12 Mbit/s Uplink: 1024 kbit/s
	ADSL2+	Downlink: 24 Mbit/s Uplink: 1024 kbit/s

Item	Specifications	
Wireless transmission rate	802.11b	Up to 11 Mbit/s
	802.11g	Up to 54 Mbit/s
	802.11n (2T2R antenna technology)	Up to 300 Mbit/s

Default Settings

Parameter	Default Value
LAN port IP address	192.168.1.1
LAN port subnet mask	255.255.255.0
User name to log in to the web configuration page	user
Password to log in to the web configuration page	HuaweiUser
WLAN name	Labeled on the product cover
WLAN password	Labeled on the product cover
DHCP	Enable
WLAN	Enable

13 For More Help

Please visit <http://consumer.huawei.com/en/support/hotline> for recently updated hotline and email address in your country or region.

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