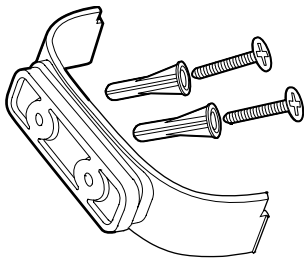
HG556a
INSTALLATION GUIDE
AND
USER MANUAL

Contents

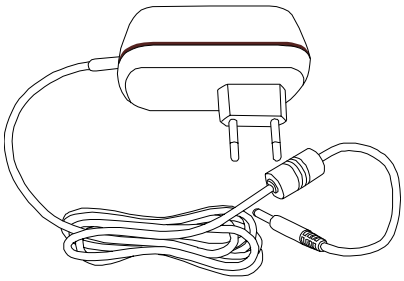
1 INTRODUCTION

1.1 Contents in the Package

Vodafone Station

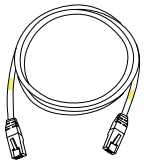


Bracket and Screws

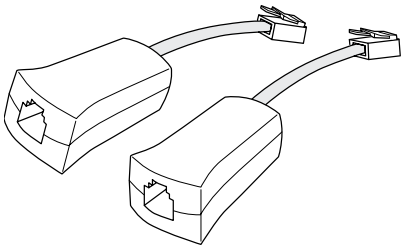


Power adapter

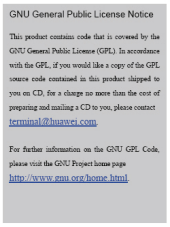
DSL cable



Ethernet cable

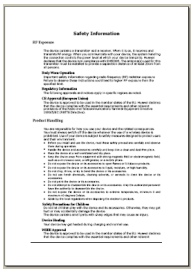


Micro-filters

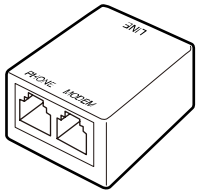


GPL

Warranty Card



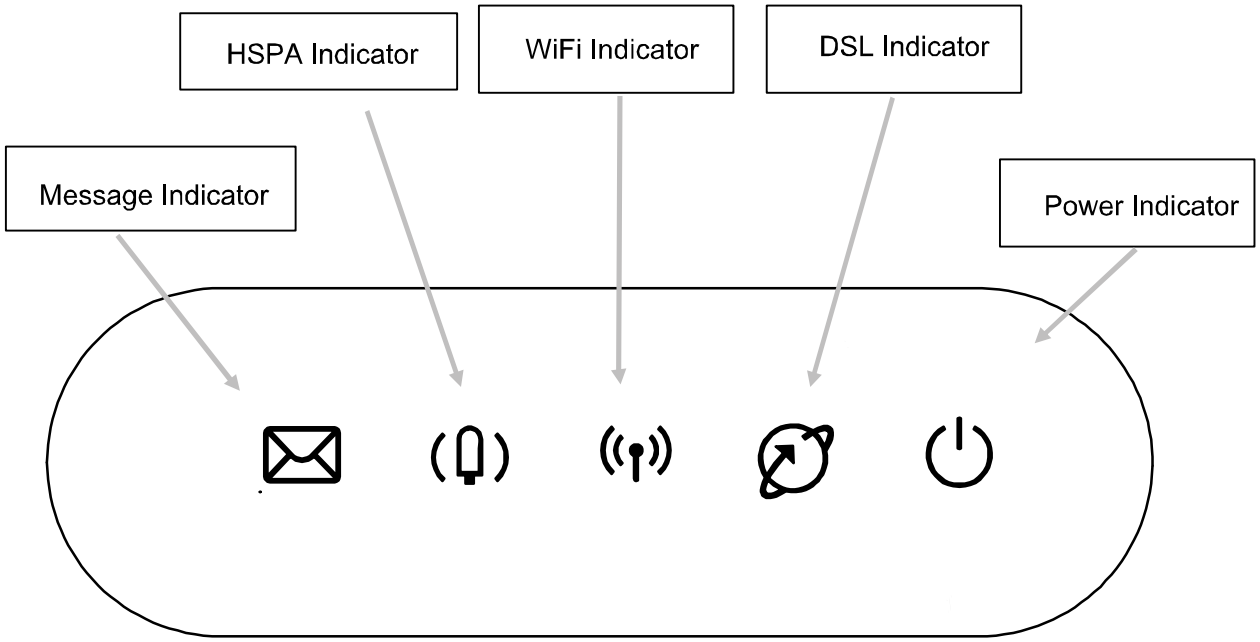
Safety Information



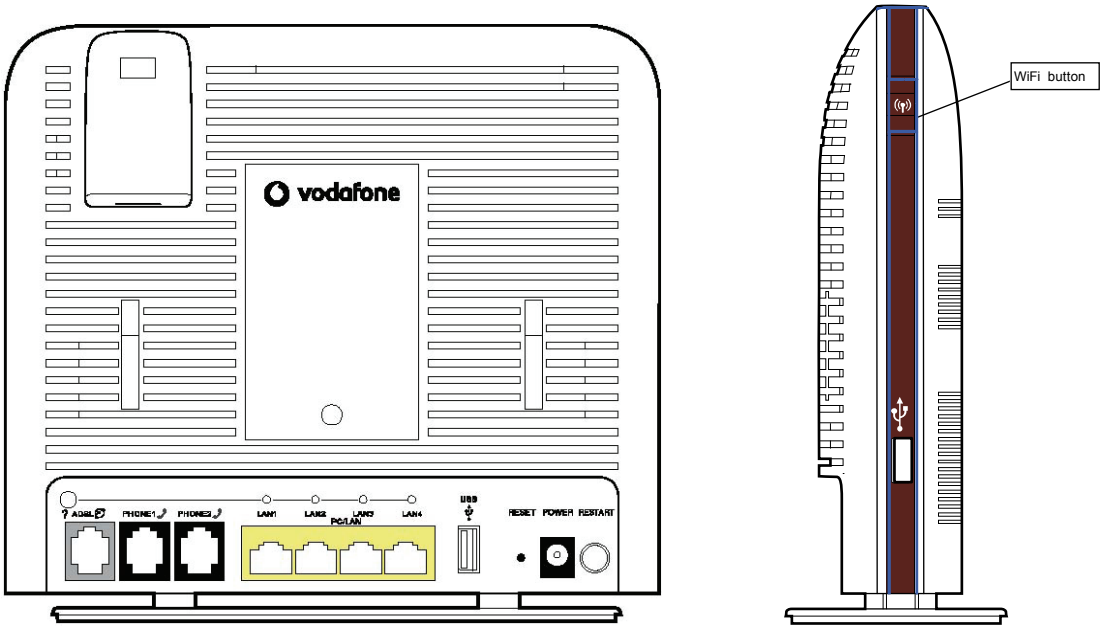
Splitter

1.2 The Front Panel of the HG556a

Figure 1-1 Indicators on the front panel of the HG556a



1.3 The Rear and Side Panels of the HG556a



1. **The rear panel of the HG556a provides the following interfaces and buttons**:

Interface or Button	Meaning
?	Diagnostic button, press this button to check the status of the four LAN indicators.
ADSL	Connects the telephone jack on the wall.
PHONE1, PHONE2	Connects a phone.
LAN1–LAN4	Connects PCs, switches, or other equipment.
USB	Connects a USB storage device, such as a USB disk, a printer etc.
RESET	Restores the factory settings if this button is pressed and hold more than 5 seconds. **NOTE** After you restore the factory settings, the customized data will be lost. Therefore, press the **RESET** button with caution.
POWER	Connects a power adapter.
RESTART	Restarts the HG556a if this button is pressed and hold more than 0.5 seconds.

Note for the four LAN indicators:

The four LAN indicators are normally off.

When the diagnostic button is pressed, the four LAN indicators turn red or green, see 1.4 Description of the Indicators on the Front and Rear Panels.

2. **The side panel of the HG556a provides the following interface and button:**

- One Wi-Fi button:

Note for the Wi-Fi button:

The initial configuration for the Wi-Fi function of the HG556a is **Enabled**. Press and hold the WiFi button for less than four seconds to disable the WiFi function.

Press and hold the Wi-Fi button for more than four seconds to enable the WPS function.

More details about the Wi-Fi button, see 2.4 Connecting the PC to the HG556a Through Wi-Fi.

- One USB interface: connects a USB storage device, such as a USB disk, a printer etc.

1.4 Description of the Indicators on the Front and Rear Panels

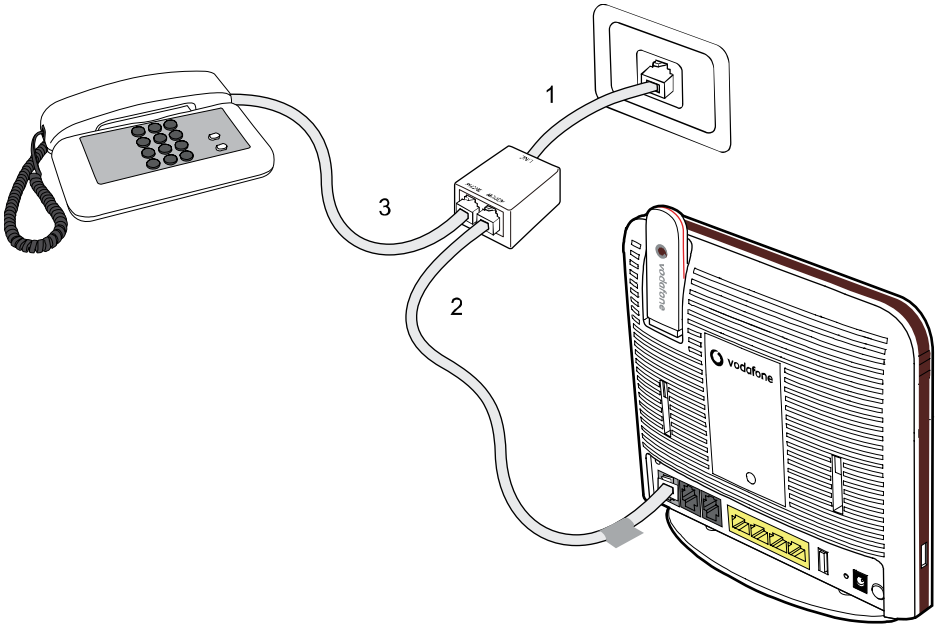
Indicator	Color	Status	Meaning
Message 	-	Off	There is no message.
	Red	On	There is an incoming message.
HSPA 	-	Off	The HSPA module is not connected or used.
	Red	Blinking slowly	The HSPA connection is normal and data connection is being established.
	Red	Blinking quickly	The HSPA connection is normal and voice connection is being established.
	Red	On	The connected HSPA module works normally.
Wi-Fi 	-	Off	The Wi-Fi network is not activated.
	Red	Blinking slowly	The Wi-Fi Protected Setup (WPS) process is in progress.
	Red	On	The Wi-Fi connection is in good condition.
	Red	Blinking quickly	The Wi-Fi connection is normal and data is being transmitted on the link.
DSL 	-	Off	The ADSL connection is not activated.
	Red	Blinking slowly	The ADSL connection is in process.
	Red	On	The ADSL connection is in good condition.
	Red	Blinking quickly	DSL synchronization is in progress.
POWER 	-	Off	The HG556a is powered off.
	Red	On	The HG556a is powered on.
LAN  LAN	-	Off	There is no Ethernet connection.
	Green	On	The Ethernet connection is in good condition.
	Red	On	The LAN connection is not connected.

2 *Installation Guide*

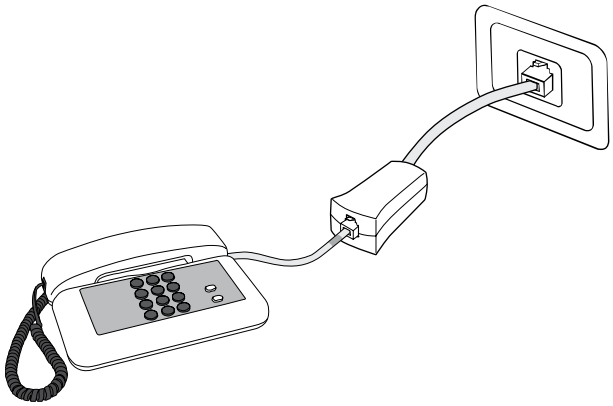
This chapter describes the procedure for installing the HG556a.

2.1 Connecting the Telephone

1. Connect the telephone jack on the wall to the LINE interface on the splitter.
2. Connect the ADSL interface on the HG556a to the MODEM interface on the splitter with a DSL cable.
3. Connect the telephone to the PHONE interface on the splitter with a DSL cable.

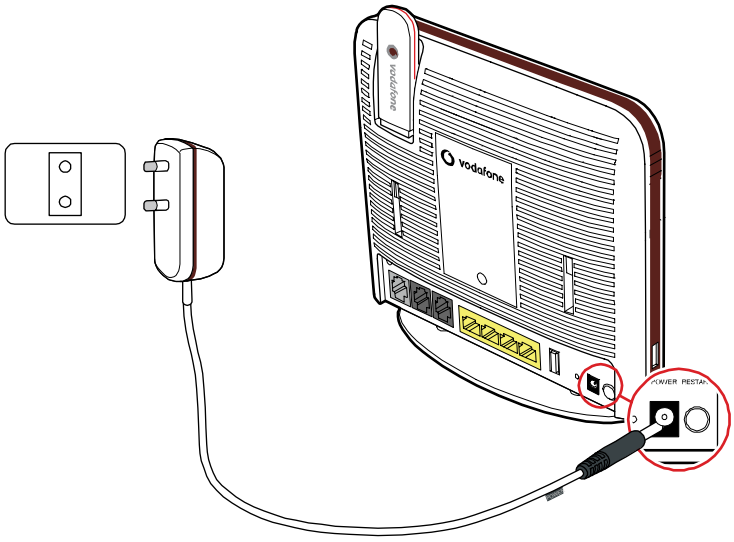


If you have another telephone, you can use the microfilter to connect the telephone.



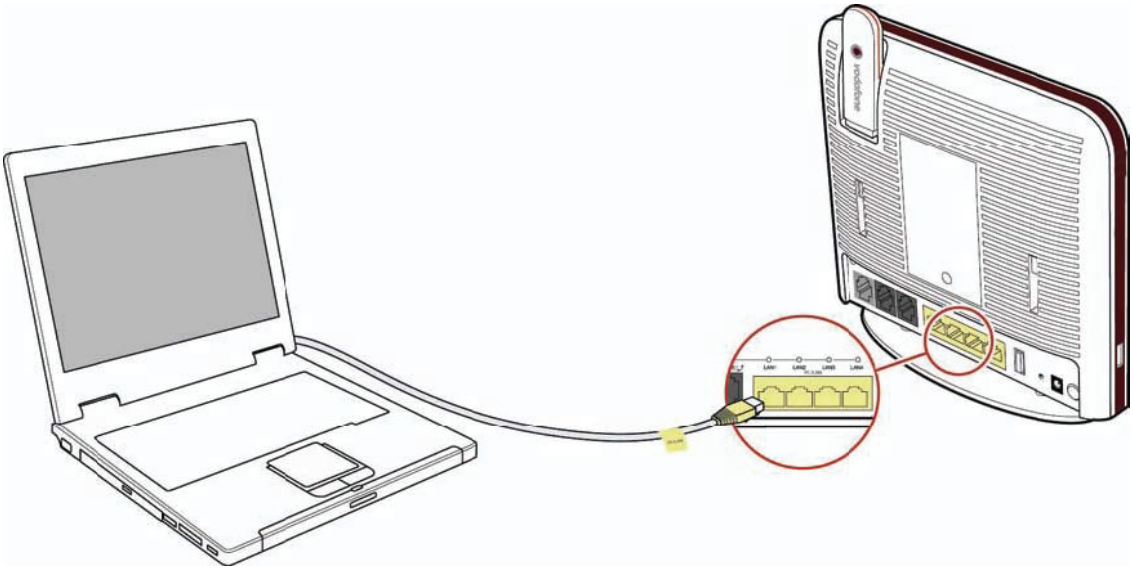
2.2 Supplying Power to the HG556a

1. Connect the power adapter to the power interface on the back of the device and plug the power adapter into a wall outlet or a power strip.



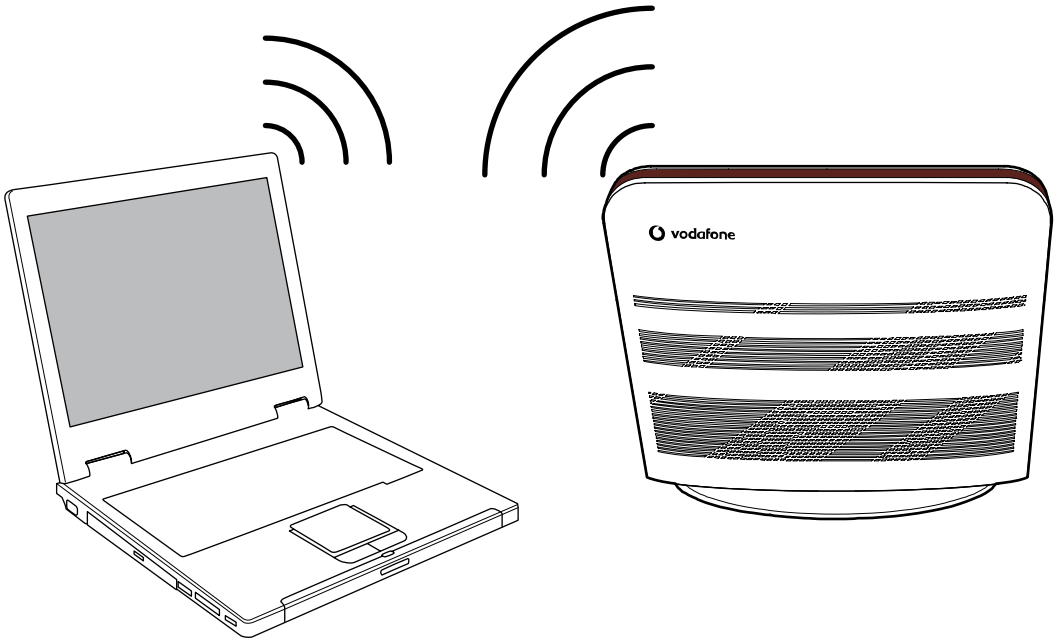
2. After you finish the connection, the power indicator turns on, indicating that the HG556a is being activated and working normally.

2.3 Connecting the PC to the HG556a



Use the provided Ethernet cable to connect the PC to any of the four LAN interfaces on the rear panel of HG556a.

2.4 Connecting the PC to the HG556a Through Wi-Fi



To configure the PC to the HG556a wirelessly, do as follows:

1. Enable the WPS function.

Press the Wi-Fi button on the side panel of the HG556a and hold it for more than four seconds. The WPS function is then enabled.

Note for pressing the Wi-Fi button:

- Press and hold the Wi-Fi button for more than four seconds to enable the WPS function.
- Once the button is pressed and held for more than four seconds, the Wi-Fi indicator start to blink slowly in a few seconds.

2. Access the WLAN through the wireless network adapter on your PC.

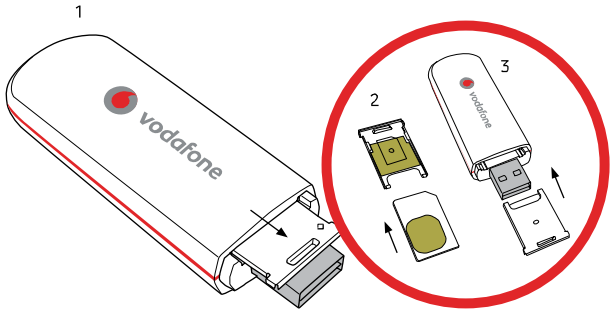
After you install a wireless network adapter on your PC and enable the WPS negotiation function, the wireless network adapter automatically searches for an available wireless network.

3. Wait for a few seconds, and then you can see the wireless icon on the corner to the right of the task bar of the PC.

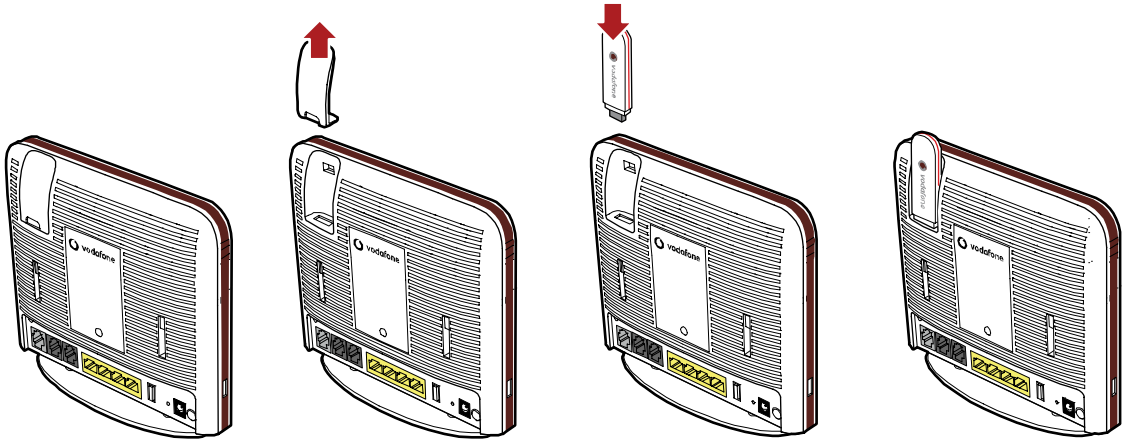
Access the Internet through WLAN, you do not need to connect any Ethernet cable.

2.5 Inserting the Vodafone Internet Key

1. Remove the SIM card holder from the Vodafone Internet Key.
2. Insert the SIM card into the card holder.
3. Reinsert the SIM card holder into the Vodafone Internet Key.



4. Remove the lid on the back of the Vodafone Station and insert the Vodafone Internet Key into the slot.



The previous Vodafone Internet Key is just the sample for reference, you can choose other kind of Internet Key and use the same way to install.

3 User Manual

3.1 Introduction

This manual provides instructions on how to use the product properly. It also provides instructions that must be followed to protect the HG556a and the safety of the operator.

3.2 Features of the HG556a

The main features of the HG556a are as follows:

1. **ADSL2+ interface**

- Supports ITU G.992.1 (G.dmt), G.992.3 ADSL2 (G.dmt.bis), and G.992.5 ADSL2+ Annex A (G.dmt.bitplus)
- Supports ANSI T1.413 Issue 2
- Supports Annex L (RE ADSL)
- Supports the configuration of eight VPI/VCIs
- Supports manual configuration of VPI/VCI parameters

2. **USB port**

- Supports USB 2.0 host port
- Supports Huawei HSPA USB interface link driver
- Supports mutual data backup of ADSL2+ uplink and USB port uplink
- Supports USB mass storage device
- Supports USB printer

3. **Ethernet interface**

- Provides four 10/100 M auto-sensing Ethernet interfaces
- Supports Ethernet switch function
- Supports 802.3u
- Supports test of the Ethernet with the diagnostic button

4. **Wi-Fi interface**

- Supports 802.11b, 802.11g, and 802.11n
- Supports 32 connections
- Supports SSID hiding
- Supports channel selection
- Supports Open System/Shared Key authorization
- Supports WPS

- Supports WEP/TKIP/AES
- Supports WPA-PSK/WPA2-PSK
- Supports WMM

3.3 Requirements of PC Configuration

The requirements of PC configuration for displaying the management Web pages of the HG556a are:

	Microsoft® Windows		Apple® Mac
Operating system	Windows® 98SE/ME	Windows® 2000/XP/Vista	Mac OS® 10.1
RAM	32 MB	64 MB	128 MB
Free disk space	40 MB		10 MB
CD-driver/DVD-driver	Provided		
Display	800 x 600 pixel, 256 color		
Ethernet 10/100Base-T	Required for Ethernet connection		
Wi-Fi 802.11b/g	Required for Wi-Fi connection		
Browser	Internet Explorer® 5.0, 6.0, 7.0 Mozilla© Firefox 1.0		Internet Explorer® 5.0, 6.0, 7.0 Apple Safari® 1.0

3.4 Management of the HG556a

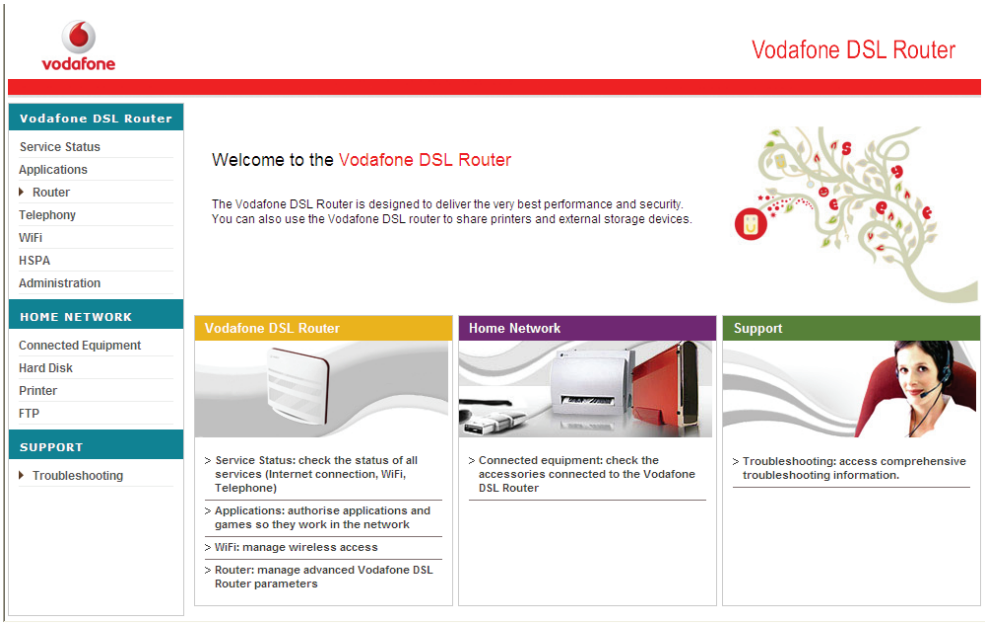
3.4.1 Home Page

To log in to the configuration page, do as follows:

1. Launch the Internet Explorer and enter **http://192.168.1.1** (the default LAN IP address of the HG556a) in the address bar. Then press **Enter** to display the login window.
2. Enter the user name (vodafone by default) and password (vodafone by default). Then you can see the home page of the HG556a.

Figure 3-1 shows the **Welcome to the Vodafone DSL Router** page.

Figure 3-1 **Welcome to the Vodafone DSL Router** page

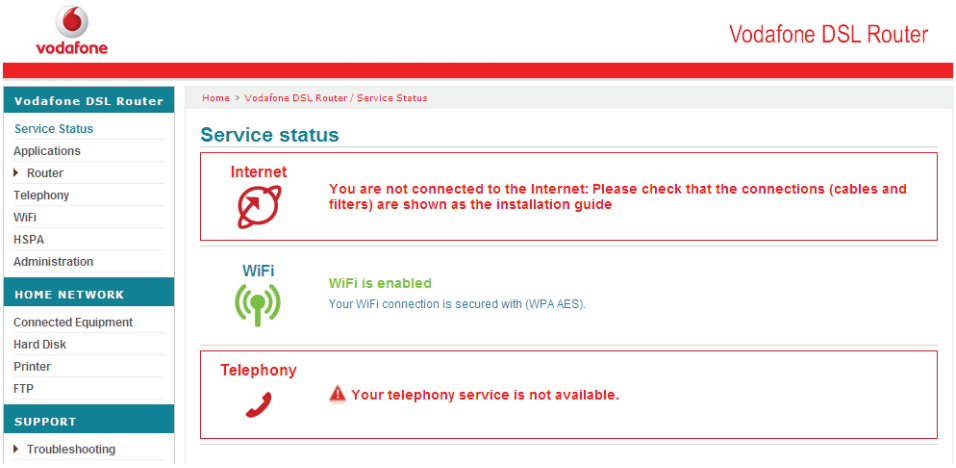


Choose **Vodafone DSL Router** > **Service Status** in the navigation tree to display the status of the HG556a, including:

- **Internet**: the main information about the connections of the HG556a
- **WiFi**: the information and status of the Wi-Fi interface
- **Telephony**: the information about the telephony service

Figure 3-2 shows the **Service status** page.

Figure 3-2 **Service status** page

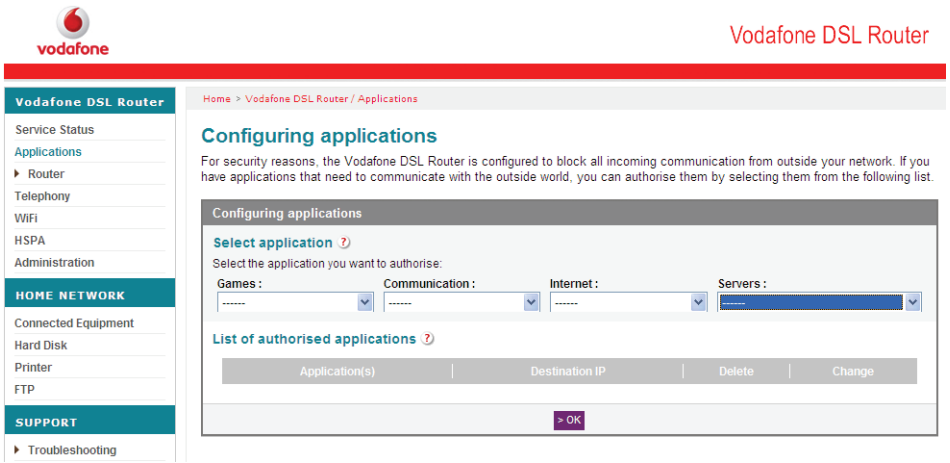


3.4.2 Applications

Choose **Vodafone DSL Router** >**Applications** in the navigation tree to display the **Configuring applications** page.

Figure 3-3 shows the **Configuring applications** page

Figure 3-3 **Configuring applications** page



When you select an option from the **Games**, **Communications**, **Internet** or **Services** drop-down list box, the authorized IP address is displayed in the **Destination IP** column in the **List of authorised applications** area.

If you want to delete the authorized application, click the **Delete** icon in the **List of authorised applications** area and then click the **OK** button. If you want to change the destination IP address, just click the **Change** icon and then enter the new address in the **Destination IP** box, and then click the **OK** button to save the change.

Table 3-1 lists the parameters for the Configuring applications.

Table 3-1 Parameters for the Configuring applications

Item	Description
Games	The name of game.
Communication	List all types of communications.
Internet	The type of Internet application.
Services	List all types of services.
Destination IP	The destination IP address of the server that the user defined.

3.4.3 Router

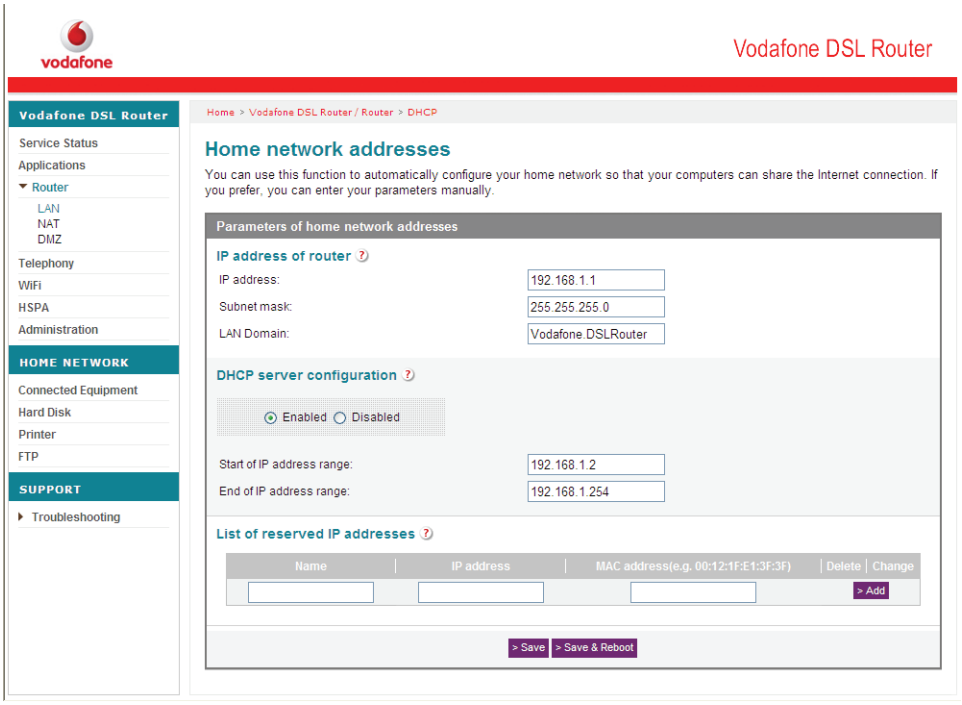
LAN

Choose **Vodafone DSL Router** > **Router** > **LAN** in the navigation tree to display the **Home network addresses** page.

The HG556a provides a default LAN IP address. You can change the LAN IP address and subnet mask, and choose whether to activate the DHCP service.

Figure 3-4 shows the **Home network addresses** page.

Figure 3-4 **Home network addresses** page



NAT

Choose **Vodafone DSL Router** >**Router** > **NAT** in the navigation tree to display the **NAT management and port redirection** page.

Figure 3-5 shows the **NAT management and port redirection** page.

Figure 3-5 **NAT management and port redirection** page

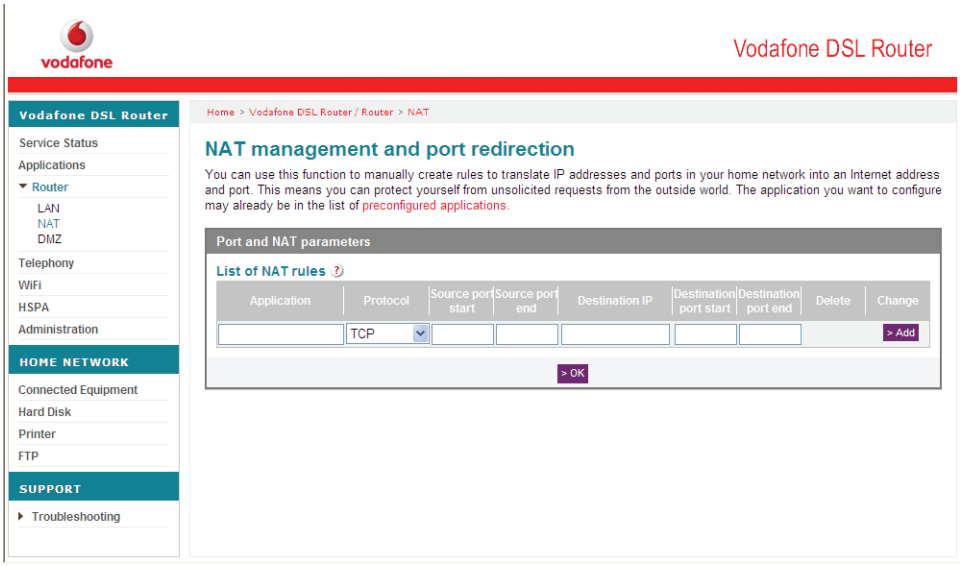


Table 3-2 lists the parameters for NAT.

Table 3-2 Parameters for NAT

Item	Description
Add	Create the new NAT rules that you specify.
OK	Make the configuration take effect.

DMZ

Choose **Vodafone DSL Router** >**Router** > **DMZ** in the navigation tree to display the **DMZ configuration** page.

Figure 3-6 shows the **DMZ configuration** page.

Figure 3-6 **DMZ configuration** page

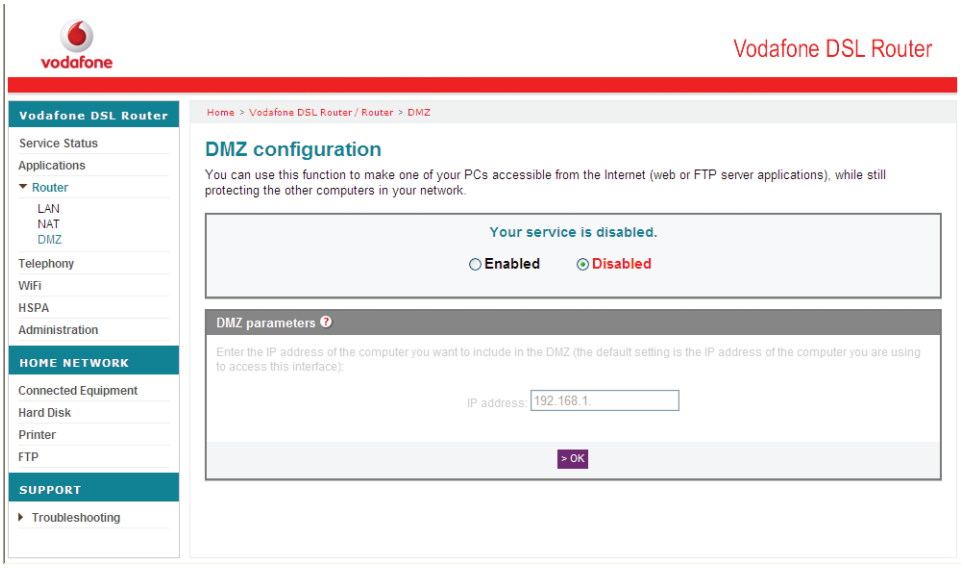


Table 3-3 lists the parameters for the DMZ configuration.

Table 3-3 Parameters for the DMZ configuration

Item	Description
Enabled	Enable the function to make your PC accessible from the Internet.
Disabled	Disable the function to make your PC accessible from the Internet.
IP address	The IP address of the DMZ host computer.
NOTE DMZ = Demilitarized Zone	

3.4.4 WiFi

This page allows you to enable or disable Wi-Fi on the Vodafone Station and to hide or show the wireless network. Choose **Vodafone DSL Router** > **WiFi** in the navigation tree to display the **WiFi parameters** page.

Figure 3-7 shows the **WiFi parameters** page.

Figure 3-7 **WiFi parameters** page

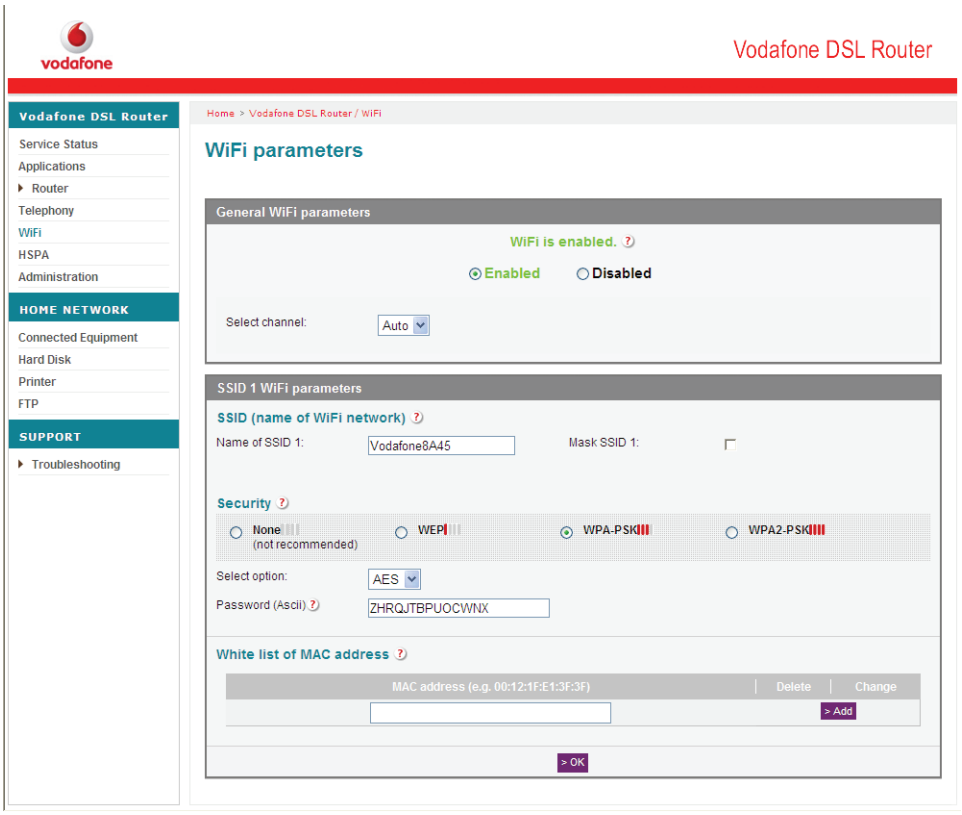


Table 3-4 lists the parameters for WiFi parameters.

Table 3-4 Parameters for WiFi parameters

Item	Description
Enabled/Disabled	To enable or disable the Wi-Fi function.
Select channel	Select a proper channel from the list that conforms to the network settings.
Name of SSID1	The name of the WLAN. It identifies the different networks. Wireless clients must have the same SSID as that of the AP to communicate with each other.
Mask SSID1	It is used to hide or display the AP. If the AP is hidden, the HG556a does not carry the SSID information when broadcasting beacon packets. When the wireless client connects to the HG556a, the SSID needs to be entered manually.
Security	It is used to enable or disable the network authentication function. • **None**: Any wireless device can access the WLAN. • **WEP**: The simplified Shared authentication mode. The HG556a encrypts all the communications by using the WEP key. • **WPA-PSK**: The simplified WPA authentication mode. The HG556a encrypts all the communications by using the WPA pre-shared key. • **WPA2-PSK**: The simplified WPA2 authentication mode. The HG556a encrypts all the communications by using the WPA2 pre-shared key.
NOTE WLAN = Wireless Local Area Network SSID = Service Set Identifier AP = Access Point	

3.4.5 HSPA

Choose **Vodafone DSL Router** > **HSPA** in the navigation tree to display the **HSPA** page. Figure 3-8 shows the **HSPA** page.

Figure 3-8 **HSPA** page

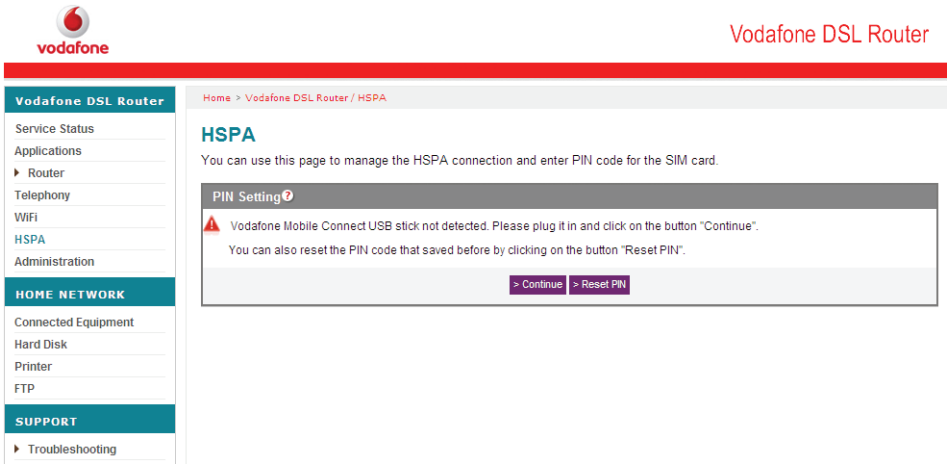


Table 3-5 lists the parameters for the HSPA.

Table 3-5 Parameters for the HSPA

Item	Description
PIN Code	The PIN of your SIM card.
Save PIN	Save the PIN code of your SIM card.
NOTE PIN = Personal Identification Number SIM = Subscriber Identity Module	

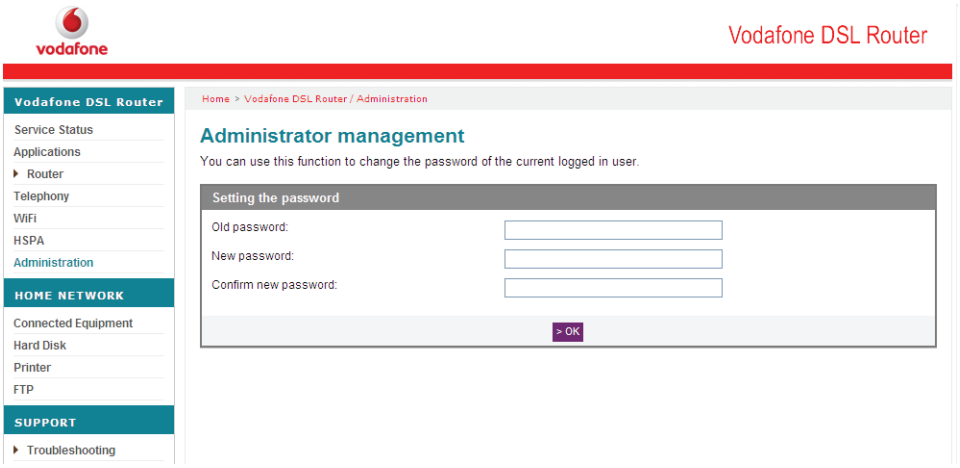
3.4.6 Administration

This page allows you to change the password of the user.

Choose **Vodafone DSL Router** > **Administration** in the navigation tree to display the **Administrator management** page.

Figure 3-9 shows the **Administrator management** page.

Figure 3-9 **Administrator management** page



3.4.7 Printer

Choose **Vodafone DSL Router** > **HOME NETWORK** > **Printer** in the navigation tree to display the **Managing your shared printer** page.

Figure 3-10 shows the **Managing your shared printer** page.

Figure 3-10 **Managing your shared printer** page

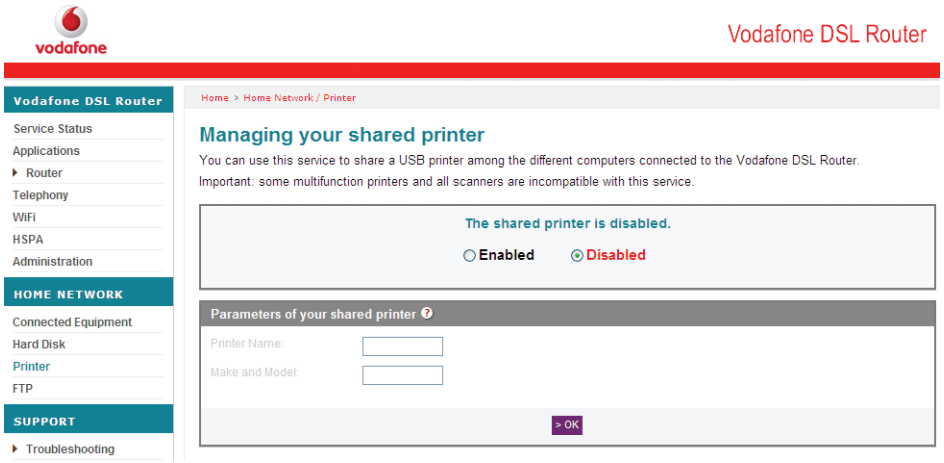


Table 3-6 lists the parameters for the printer.

Table 3-6 Parameters for the printer

Item	Description
Enabled	It is used to enable the print server.
Disabled	It is used to disable the print server.
Printer Name	The name of the printer.
Mark and Model	The model of the printer.

Click **OK** to save the settings.

3.4.8 FTP

Choose **Vodafone DSL Router** > **FTP** in the navigation tree to display the **Ftp Server parameters** page.

Figure 3-11 shows the **Ftp Server parameters** page.

Figure 3-11 **Ftp Server parameters** page

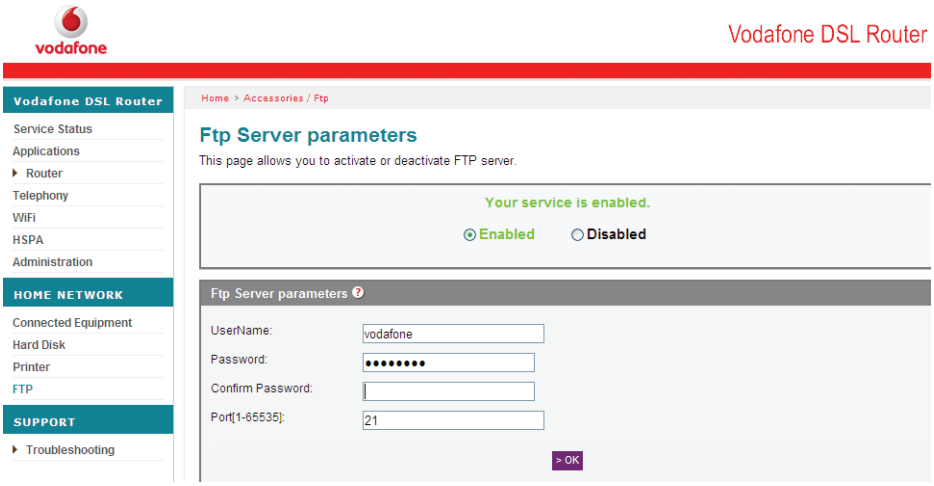


Table 3-7 lists the parameters for the FTP.

Table 3-7 Parameters for the FTP

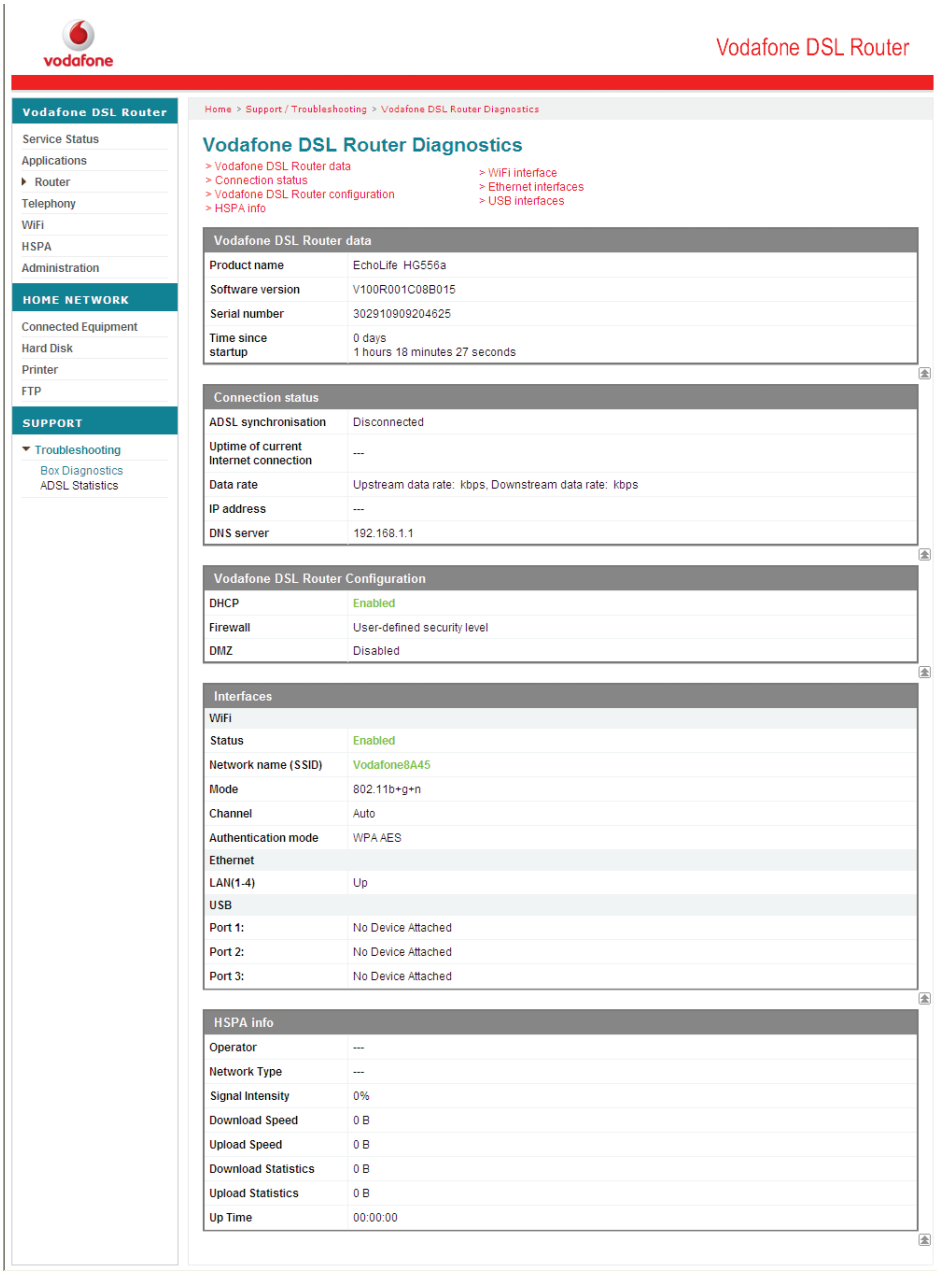
Item	Description
Enabled	It is used to enable the FTP server.
Disabled	It is used to disable the FTP server.
UserName	The name of the FTP, the default setting is vodafone.
Password	The password of the FTP, the default setting is vodafone.
Confirm Password	Double confirm the password of the FTP.
Port[1-65535]	The port number of the FTP server, the default setting is 21.

3.4.9 Box Diagnostics

Choose **SUPPORT > Troubleshooting > Box Diagnostics** in the navigation tree to display the **Vodafone DSL Router Diagnostics** page.

Figure 3-12 shows the **Vodafone DSL Router Diagnostics** page.

Figure 3-12 **Vodafone DSL Router Diagnostics** page



On the **Vodafone DSL Router Diagnostics** page, you can review the basic device information about HG556a and the status of interfaces.

The basic device information of the HG556a, including:

- **Vodafone DSL Router Data**: the information about the home gateway versions (software and hardware)
- **Connection status**: the information about the current connection status
- **Vodafone DSL Router configuration**: the current connection status about DHCP, Firewall and DMZ
- **WiFi interface**: the information and status of the Wi-Fi interface and the security configuration parameters
- **Ethernet interfaces**: the information and status of each LAN interface
- **USB interfaces**: the information and status of each USB port

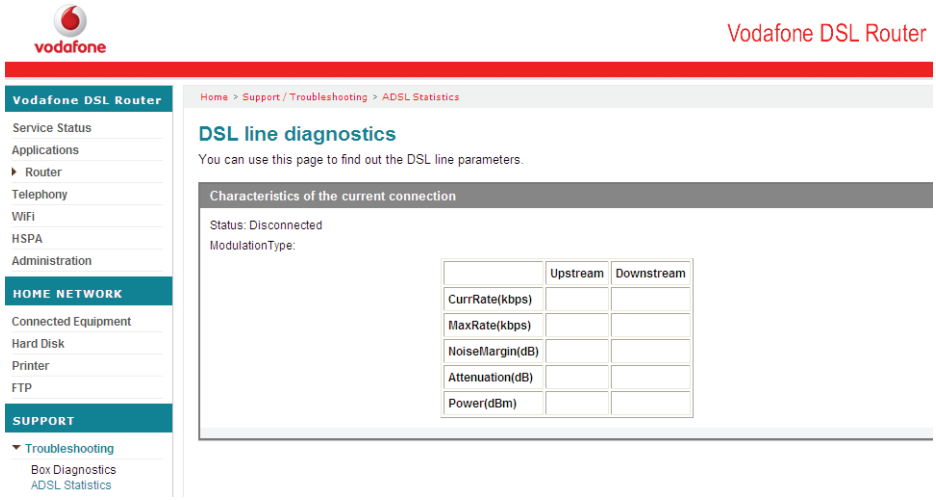
- **HSPA info**: the information and status of HSPA configuration

3.4.10 ADSL Statistics

Choose **SUPPORT** > **Troubleshooting** > **ADSL Statistics** in the navigation tree to display the **DSL line diagnostics** page.

Figure 3-13 shows the **DSL line diagnostics** page.

Figure 3-13 **DSL line diagnostics** page



On the **DSL line diagnostics** page, you can review the DSL line parameters and the status of the current connection.

3.5 Functions

3.5.1 Home Storage Function

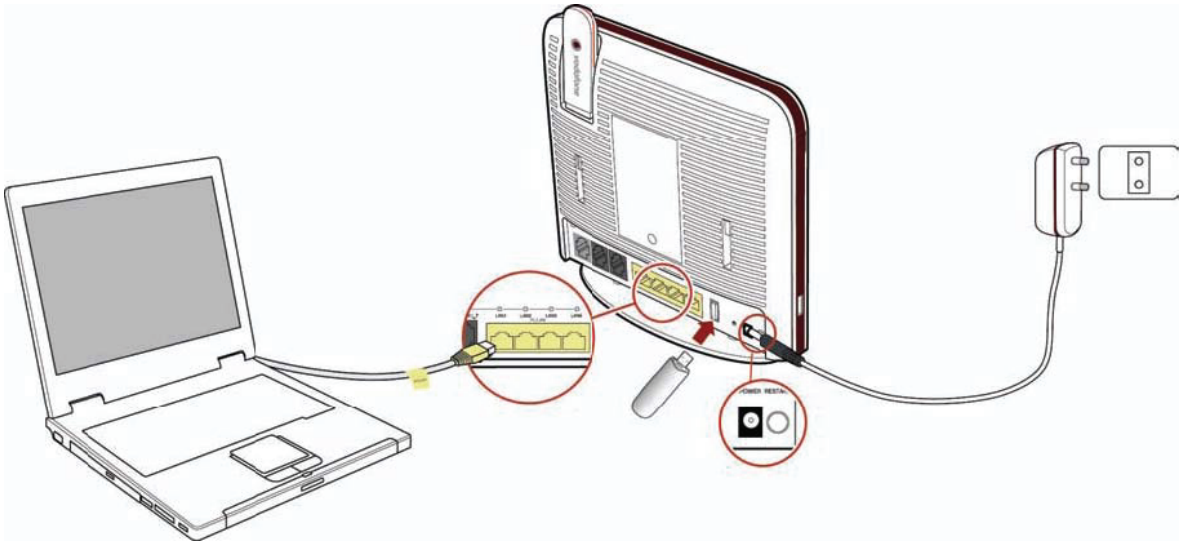
The HG556a supports the home storage function. Portable storage devices, such as USB flash drives and portable hard disks, can be connected to the USB port on the HG556a. You can access a portable storage device through the HG556a.

If your portable storage device is a card reader, insert the storage card（for example CF, SD, MMC card）in the card reader, and then connect the card reader to the USB interface of the HG556a.

To access a portable storage device, do as follows:

1. Enable the FTP server. Then see 3.4.8 FTP to configure parameters of the FTP server.
2. Connect a portable storage device to the USB port on the HG556a. For the connection method, see the following figure.

Figure 3-14 **Home storage connection**



After connecting the cables, you can access the portable storage device through the three methords as follows.

Accessing the Portable Storage Device Through the FTP Client

1. Start the FTP client and access the LAN IP address of the HG556a through the FTP.

   The LAN IP address of the HG556a is **192.168.1.1**. To access the LAN IP address of the HG556a, launch the Internet Explorer and enter **FTP://192.168.1.1**.

2. In the **Login** dialog box, enter the user name and the password for logging in to the FTP server (the default user name and password are **vodafone**) and then click **Login**.
3. After the password is verified, you can read and write the contents on the portable storage device connected to the HG556a.

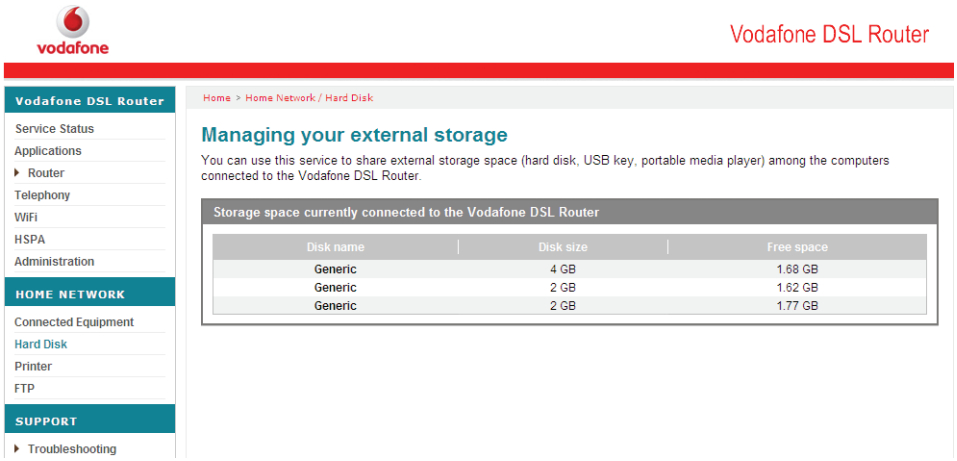
Accessing the Portable Storage Device Through the Samba Function

Check the following two Web pages after you finish the cable connection as previously described.

If you can see the Disk name on **Managing your external storage** page and the USB disk is connected on the **Connected equipment** page as below, which indicates that you can access the USB disk successfully.

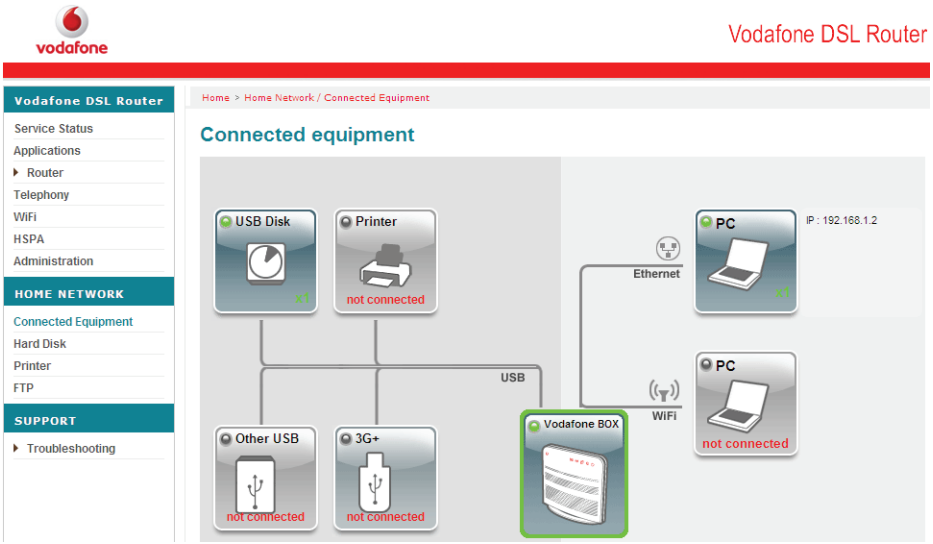
Choose **HOME NETWORK** > **Hard Disk** in the navigation tree to display the **Managing your external storage** page. When insert the hard disk on the HG556a, you can see the information of disk name, disk size and free size on the **Managing your external storage** page.

Figure 3-15 **Managing your external storage** page



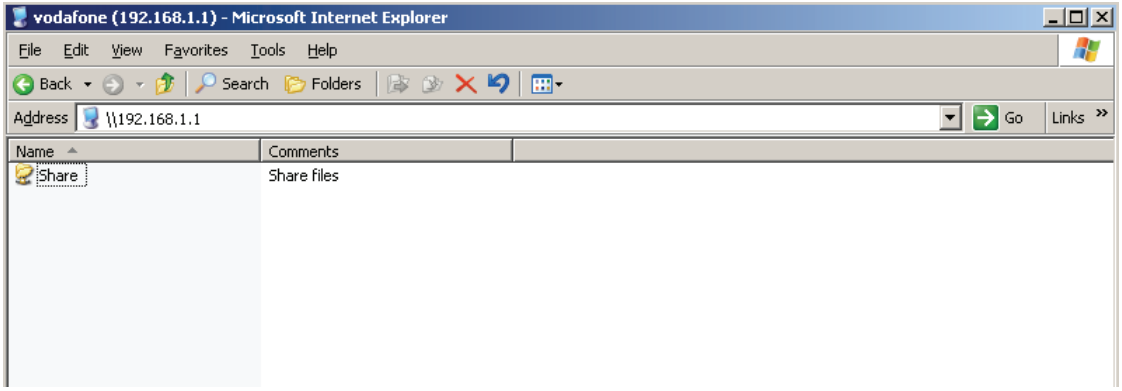
Choose **HOME NETWORK** > **Connected equipment** in the navigation tree to display the **Connected equipment** page.

Figure 3-16 **Connected equipment** page



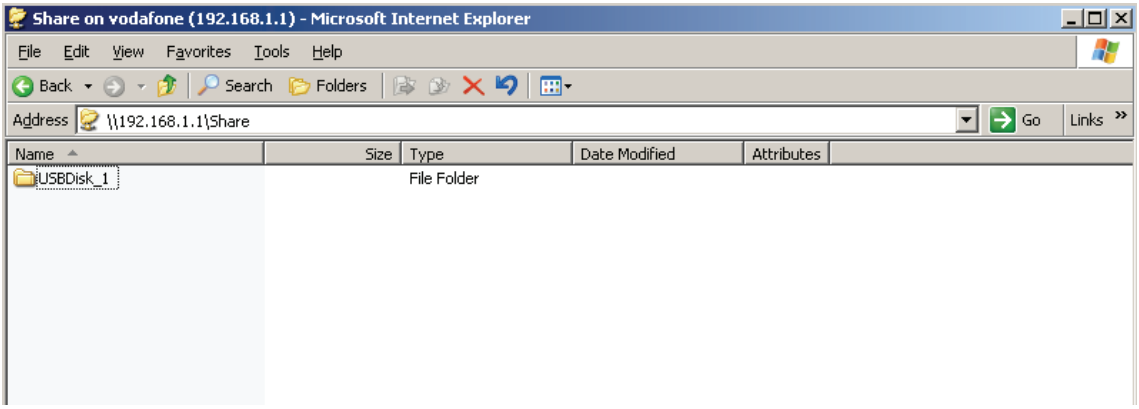
2. Launch the Internet Explorer and enter **\\192.168.1.1** in the address bar, then press **Enter** to display the **Share** folder.

Figure 3-17 **Share** folder



3. Double-click the **Share** folder. Then you can share the contents on the portable storage device.

Figure 3-18 **USBDisk_1** folder



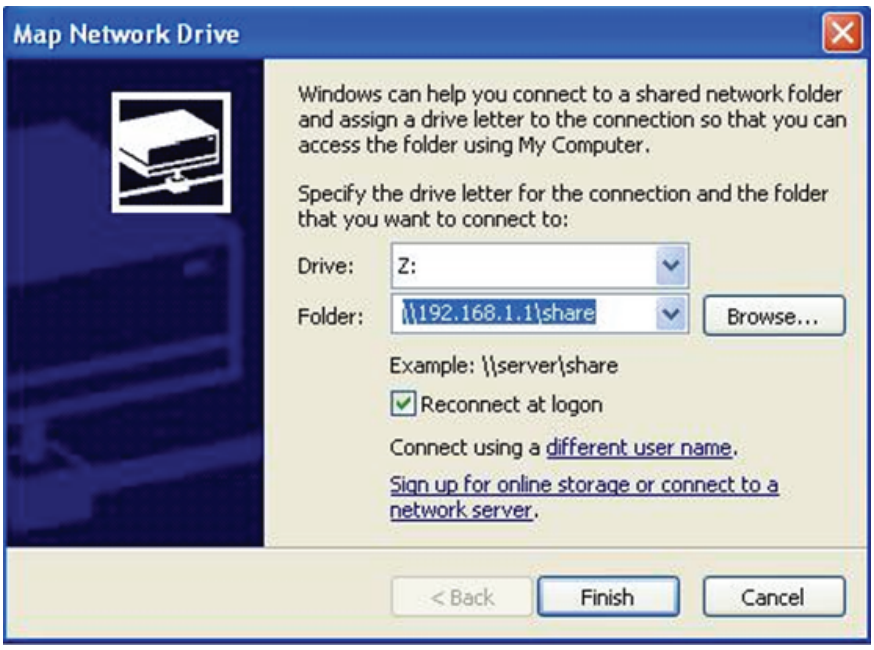
Double click the **USBDisk_1** folder, and then you can see the folder structure of your portable storage device.

Accessing the Portable Storage Device by Mapping Network Drive

The HG556a allows you to accessing the portable storage device by mapping as a network drive, do as follows:

1. Right click the **My Computer** icon on the desktop of your PC.
2. Choose **Map Network Drive** to display the **Map Network Drive** page, see Figure 3-19.
3. Specify the drive name (take **Z** as an example) in the **Drive** drop-list box.
4. Enter the path of the shared folder: **\\192.168.1.1\share**.
5. Click **finish** button.
6. Double click the **My Computer** icon, then you can see a mapped network drive named **Z**.
7. Double click the **Z** disk, then you can see the content in your portable storage device.

Figure 3-19 **Map Network Drive** page



3.5.2 USB Printer Function

To enable the USB printer function, do as follows:

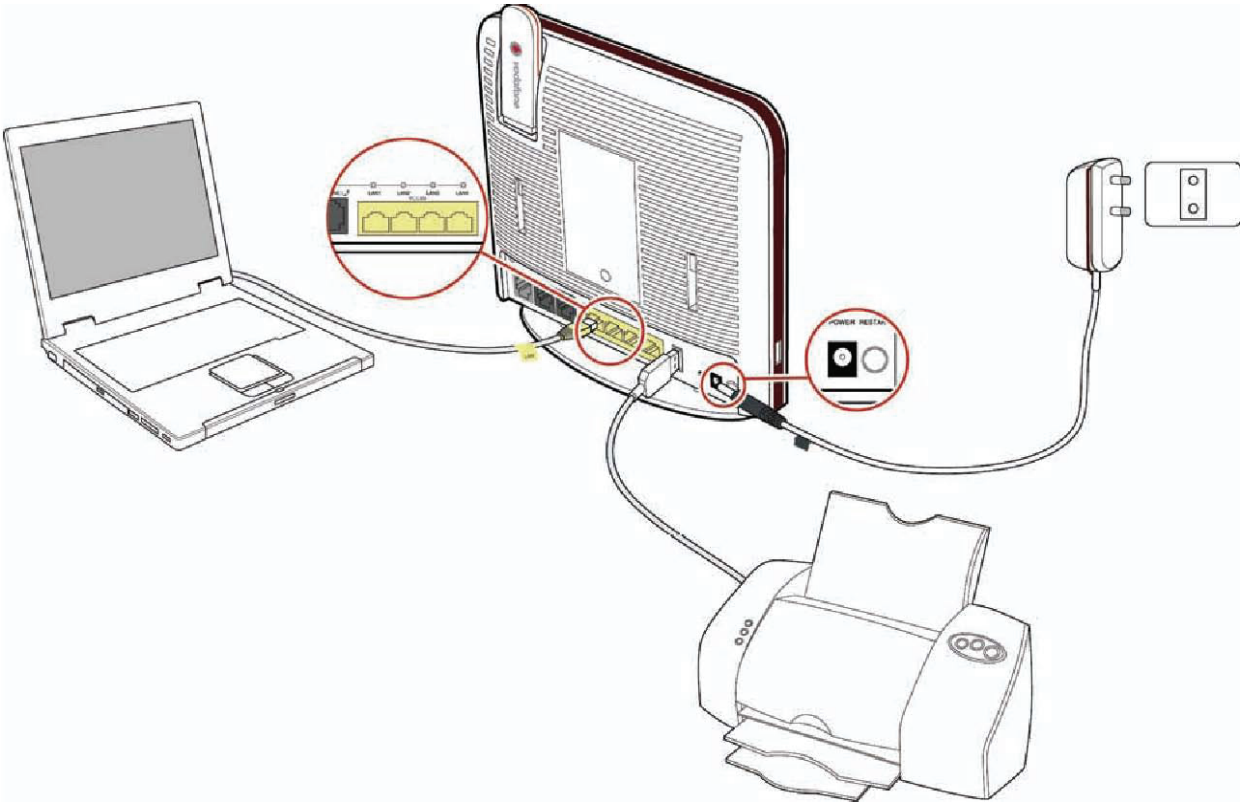
1. Connect the cables as follows:

Step1 Connect the power adapter to the power interface on the rear panel of the HG556a and plug the power adapter into a wall outlet or a power strip.

Step2 Connect the PC to any of the four LAN interfaces on the rear panel of the HG556a by using the provided Ethernet cable. For details, see section 2.2 "Supplying Power to the HG556a" and section 2.3 "Connecting the PC to the HG556a".

Step3 Connect the USB cable of the printer to the USB port on the HG556a.

Figure 3-20 **USB printer connection**



2. Configure the web page as follows:

Step1 Launch the Internet Explorer on your computer and enter **http://192.168.1.1** in the address bar.

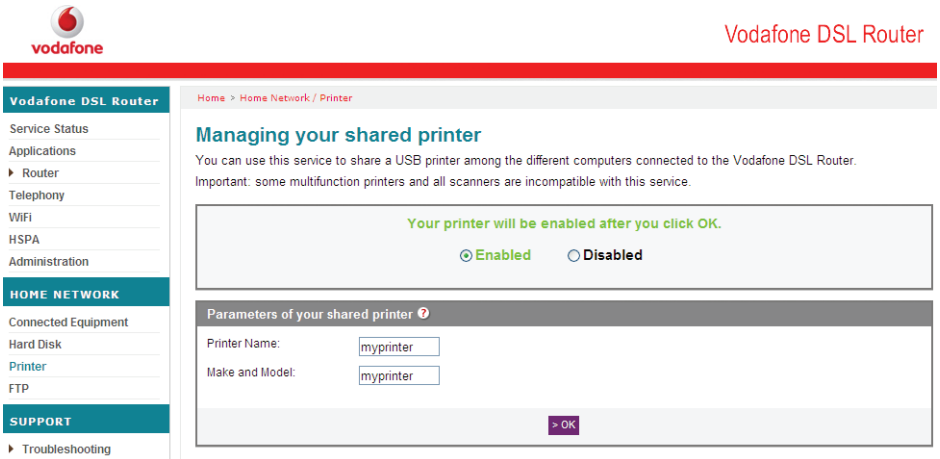
Step2 Enter the user name and the password in the displayed window, and then click **OK**.
Step3 Choose **HOME NETWORK** > **Printer** in the navigation tree to display the **Managing your shared printer** page.

Step4 Select **Enabled** to enable the printer function. Enter the printer name and the printer model in the **Printer Name** and **Make and Model** text boxes respectively.

For details, see Figure 3-21.

Step5 Click **OK** to save the settings.

Figure 3-21 **Managing your shared printer** page

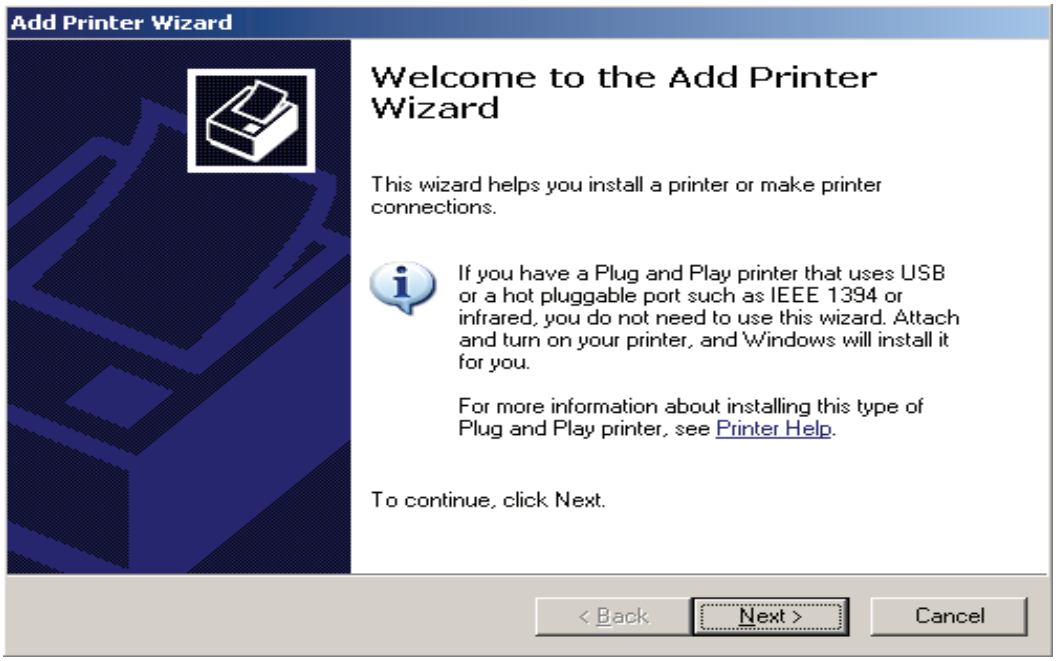


3. Set the printer parameters on the PC.

Step1 Choose **Start** > **Printers and Faxes**. Then click the **Add Printer** icon on the left side of the displayed page.

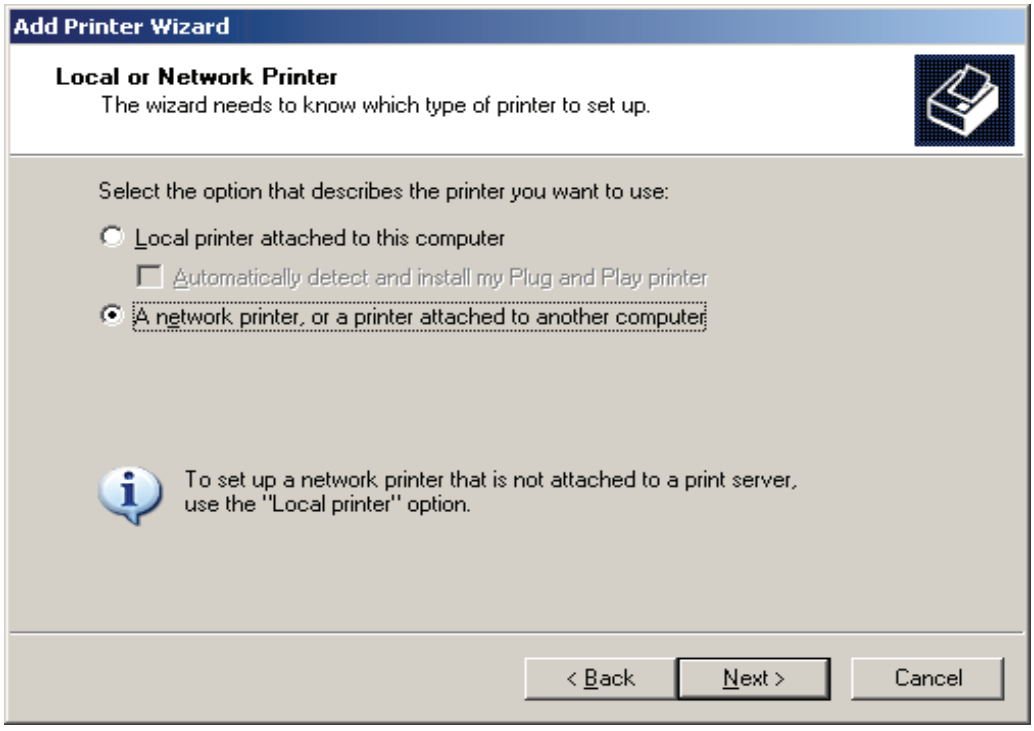
Step2 Click **Next** in the **Welcome to the Add Printer Wizard** page.

Figure 3-22 **Welcome to the Add Printer Wizard** page



Step3 Select **A network printer, or a printer attached to another computer** and then click **Next**.

Figure 3-23 **Add Printer Wizard** page



Step4 Select **Connect to a printer on the Internet or on a home or office network**.
Step5 Enter http://192.168.1.1:631/printers/myprinter in the **URL** text box. Then click **Next**.

The address **192.168.1.1:631** is preset and cannot be changed, **myprinter** is the printer name that is specified on the **Managing your shared printer** page.

Step6 Choose the printer model that you want.

If there is no printer model for you to choose, please install the printer driver on your PC first.

Step7 Click **OK** to set the current printer as the default printer.
Step8 Click **Finish** to complete the settings.

4. Open the files you want to print on your PC. Then you can choose the printer just installed to print your files.

3.5.3 Wireless Function

Introduction

By using 802.11b/g/n, the HG556a supports wireless networking and interconnection at home. After enabling the wireless network function, you can access a WLAN through the HSPA data card on the HG556a. Therefore, you do not need to connect any Ethernet cable for accessing the Internet.

Configuration Steps

1. Configure the SSIDs of the HG556a. For details, see 3.4.4 WiFi.
2. Enable the WiFi function. For details, see 2.4 Connecting the PC to the HG556a Through Wi-Fi.

3.6 Troubleshooting

The following table describes solutions to the common problems.

You can also use the auto installation CD-ROM to solve certain connection problems.

If the solutions provided in this document cannot solve the problems you meet, contact the customer service center of Vodafone.

Phenomenon	Possible Cause	Solution
The power indicator is off.	The HG556a is not connected to the power supply.	Connect the HG556a to the power supply.
The LAN indicator is off.	The Ethernet cable is not connected to the Ethernet interface on the HG556a.	Connect the Ethernet cable to the Ethernet interface on the HG556a.
	The Ethernet cable is not connected to the PC.	Connect the Ethernet cable to the PC.
The Wi-Fi indicator is off.	The Wi-Fi radio channel of the HG556a is off.	Check whether the Wi-Fi button on the side panel of the HG556a is pressed.
Unable to access the Internet.	The TCP/IP protocol of the network connection is not installed.	Install the Ethernet cable or USB data card.
	The browser has set up a proxy server.	Access the option of the Internet Explorer and disable the proxy server.
	The SSID or encryption mode (WPA/WEP/non-encryption) of the HG556a is modified or the configuration of the Wi-Fi device is incorrect.	Check whether the SSID or encryption mode of the HG556a is correct.
	The Wi-Fi device is out of the radio coverage of the HG556a.	Put the Wi-Fi device within the radio coverage of the HG556a.
	The Wi-Fi device is not authorized.	Use the 802.11b or 802.11g authorized device and check whether the installation and configuration are correct.
The HSPA indicator is off.	The HSPA module is not correctly connected.	Reconnect the HSPA module.

3.7 Glossary

ADSL

Asymmetric Digital Subscriber Line

ADSL is a technology for transmitting digital information at a high bandwidth on existing phone lines to homes and businesses. Unlike regular dial-up phone service, ADSL provides continuously-available, "always on" connection. ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part to receive information from the user. ADSL simultaneously accommodates analog (voice) information on the same line. ADSL is generally offered at downstream data rates from 512 kbit/s to about 6 Mbit/s.

ADSL2+

Asymmetric Digital Subscriber Line 2+

ADSL2plus doubles the bandwidth used for downstream data transmission, effectively doubling the maximum downstream data rates, and achieving rates of 20 Mbit/s on phone lines as long at 5,000 feet. ADSL2plus solutions will most commonly be multimode, interoperating with ADSL and ADSL2, as well as with ADSL2plus chipsets.

Browser

A computer program that allows users to view information from the Internet. To use a browser, you type in the URL of a website, and the browser then connects your computer to the website, and shows the information there on your screen.

Client

On a local area network or the Internet, a computer that accesses shared network resources provided by another computer (called a server).

DHCP

Dynamic Host Configuration Protocol

DHCP is a client-server networking protocol. Most organizations use DHCP. A DHCP server provides configuration parameters specific to the DHCP client host requesting, generally, information required by the host to participate on the Internet network. DHCP also provides a mechanism for allocation of IP addresses to hosts.

DNS

Domain Name System

A hierarchical way of tracking domain names and their addresses, devised in the mid-1980s. The DNS database does not rely on one file or even one server, but rather is distributed over several key computers across the Internet to prevent catastrophic failure if one or a few computers go down. DNS is a TCP/IP service that belongs to the Application layer of the OSI model.

Ethernet

A local area network (LAN) architecture developed by Xerox Corporation in cooperation with DEC and Intel in 1976. Ethernet uses a bus or star topology and supports data

transfer rates of 10 Mbit/s. The Ethernet specification served as the basis for the IEEE 802.3 standard, which specifies the physical and lower software layers. Ethernet uses the CSMA/CD access method to handle simultaneous demands. It is one of the most widely implemented LAN standards.

IEEE

Institute of Electrical and Electronics Engineers (IEEE) is a standards organization for computer and electronic devices. Its senior members are IEEE fellows.

Internet

Largest global internet work, connecting tens of thousands of networks worldwide and having a "culture" that focuses on research and standardization based on real-life use. Many leading-edge network technologies come from the Internet community.

The most important using for Internet is:

- The email
- The World Wide Web (WWW)
- The transfer of data
- The forum of discussion
- To transfer data of peer-to-peer
- Chat
- The content of audio/video streaming

IP

Internet Protocol

The set of standards responsible for ensuring that data packets transmitted over the Internet are routed to their intended destinations.

IP address

An IP address is the logical address of a network adapter. The IP address uniquely identifies computers on a network. An IP address can be private, for use on a LAN, or public, for use on the Internet or other WAN.

kbit/s

Kilobit per second

A unit used to express the speed of a network.

LAN

Local Area Network

A computer network covering a small local area, like a home, office, or small group of buildings such as a home, office, or college. Current LANs are most likely to be based on switched Ethernet or Wi-Fi technology running at 10, 100 or 1,000 Mbit/s (1,000 Mbit/s is also known as 1 Gbit/s).

MAC address

It is a hardware address that uniquely identifies each node of a network.

Mbit/s

Megabit per second

A unit used to express the speed of a network.

NAPT

Network Address Port Translation

NAPT enables a local area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic.

PPPoE

Point-to-Point Protocol over Ethernet

PPPoE is a network protocol for encapsulating PPP frames in Ethernet frames. It is used mainly with DSL services. It offers standard PPP features such as authentication, encryption, and compression.

Protocol

On the Internet, "protocol" usually refers to a set of rules that define an exact format for communication between systems.

Server

A computer or program that responds to commands from a client. For example, a file server may contain an archive of data or program files. When a client submits a request for a file, the server transfers a copy of the file to the client.

Subnet mask

The technique used by the IP protocol to determine which network segment packets are destined for. The subnet mask is a binary pattern that is stored in the client machine, server or router, and is matched with the IP address.

TCP

Transmission Control Protocol

The reliable transport protocol within the TCP/IP protocol suite. TCP ensures that all data arrive accurately and 100% intact at the other end. TCP's unreliable counterpart is UDP, which is used for streaming media, VoIP and videoconferencing.

TCP/IP

A suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP.

UDP

User Datagram Protocol

One of the TCP/IP suite of protocols for data transfer, which allows an application program on one machine to send a datagram to an application program on another machine.

URL

Universal Resource Locator

The global address of documents and other resources on the World Wide Web.

USB

Universal Serial Bus

USB is a serial protocol and physical link, which transmits all data differentially on a single pair of wires. Another pair provides power to downstream peripherals.

Virtual server

A virtual server allows you to direct incoming traffic from the Internet (identified by protocol and external port) to an internal server with a private IP address on the LAN.

WAN

Wide Area Network

WAN usually refers to a network which covers a large geographical area, and uses communications circuits to connect the intermediate nodes. A major factor impacting WAN design and performance is a requirement that they lease communications circuits from telephone companies or other communications carriers.

Wi-Fi

Wireless Fidelity

A wireless data networking protocol generally used to connect PCs to a network. Also known as 802.11b and WLAN (Wireless LAN), it is the most common means of wireless networking and operates at 2.4 GHz.

WPA-PSK

Wi-Fi Protected Access-Pre Shared Key

WPA is an industry standard based on a subset of an early draft of 802.11i. WPA replaces WEP's keying mechanism with a more robust system, called Temporal Key Integrity Protocol (although TKIP is still based on RC4 encryption). (See full description of TKIP). WPA adds a strong message integrity check and allows for authentication using 802.1X.

WEP

Wired Equivalent Privacy

Part of the IEEE 802.11 standard (ratified in September 1999), and is a scheme used to secure wireless networks (Wi-Fi). Because a wireless network broadcasts messages using radio, it is particularly susceptible to eavesdropping; WEP was designed to provide comparable confidentiality to a traditional wired network, hence the name.

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