D-Link DSL-524B

ADSL2/2+ 4-port Ethernet Router

User Manual

D-Link®

Building Networks for People

RECYCLABLE

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1.OVERVIEW

1.1 ABOUT ADSL

An ADSL MODEM is a broadband Internet access device, which utilizes the high frequency segment of the phone line to transmit high-speed data without affecting the voice transmission. The frequency of the ADSL signal is higher than that of voice, so voice and ADSL signal can coexist in one line by using a splitter to insulate each from the other. ADSL data transfer adapts the asymmetry model. It supports upload transmission speed up to 1Mbps and download speed up to 8 Mbps (24Mbps for ADSL2+). ADSL is an ideal device for broadband access.

1.2 ABOUT ADSL2/2+

Transmission performance of ADSL2 is improved comparing with the first generation of ADSL. These improvements are mainly concerned with long distance, anti-line-loss, anti-noise, etc. By doubling the transmission bandwidth, ADSL2+ has implemented a downlink rate as high as 24 Mbps. Therefore, Internet applications such as synchronous transmission of multi video stream, online games and huge capacity of downloading files are made possible.

1.3 FEATURES

1、 Support ANSI T1.413 ISSUE 2、 ITU G.992.1 (G.DMT)、ITU G.992.2 (G.LITE)、ITU G992.3、 ITU G992.5
2、 Web-based configuration and monitoring.
3、 Support multiple PVCs.
4、 Routing function.
5、 NAPT、DHCP function.

2 SPECIFICATION

2.1 FRONT PANEL VIEW

Table 2.1

	Name	Condition	Color	Timing
Indicator	①Power	Power ON	Green	Solid
		Power OFF	Dark	
	②ADSL Link/Act	Link	Green	Solid
		Active	Green	Blinking
	③LAN Status	System Normal Operating	Green	Blinking
		System Fail	Green or Dark	Solid
	④Internet Link/Act	Link	Green	Solid
		Active	Green	Blinking

2.2 BACK PANEL VIEW

ADSL Port	RJ-11 telephone port connects telephone cable to DSL line.
LAN 1-4 Ports	RJ-45 connects the unit to Ethernet devices such as a PC or a switch.
Power Input	Connects to the power adapter.
Power ON / OFF Switch	Press to turn the router on and off.

3. CONFIGURATION

3.1 DEFAULT CONFIGURATION

ADSL MODEM has pre-configured with the VCI/VPI which is in common use. The default dial-up mode is bridge encapsulation. For bridge mode, no need to configure any more parameter. However, the third party dial-up software is needed for connection with the Internet.

3.2 COMPUTER CONFIGURATION

The default IP address for ADSL MODEM is: **10.1.1.1**; The Subnet Mask is：**255.0.0.0**. Users can configure ADSL MODEM through an Internet browser. ADSL Modem can be used as gateway and DNS server; users need to set the computer's TCP/IP protocol as follow:

1、 Set the computer IP address at same segment of ADSL Modem, such as set the IP address of the network card to one of the "10.1.1.2"～ "10.1.1.254".
2、 Set the computer's gateway the same IP address as the ADSL Modem's.
3、 Set computer's DNS server the same as ADSL Modem's IP address or that of an effective DNS server.

3.3 ADSL MODEM CONFIGURATION

3.3.1 LOG IN

Open the browser; input **http://10.1.1.1** at the address column. Press "Enter" key then the entry dialog box will show up as Figure 3.1. Input Username: **admin** , Password: **admin** (capital sensitive), then press Enter.
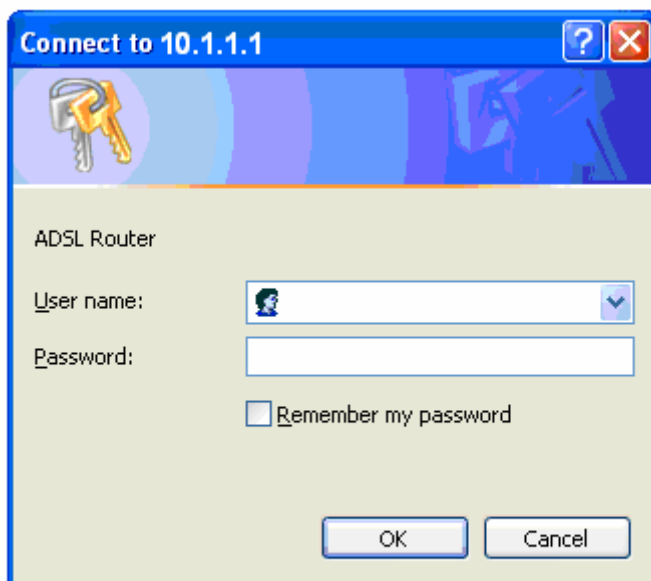

Figure 3.1

3.3.2 SAVE SETTING

After getting through each page for parameters setting, click "Save" or "Save apply" to store the value in ADSL Modem. Briefly, we named "Save".

Note：

When you save the settings, the web page will be refreshed slowly, please wait it finished.
After you save the settings, it will take effect until next reboot.
Some settings only take effect after rebooting the router.

3.4 WAN CONFIGURATION

If the configuration is bridge encapsulation, there is no need to configure any more parameters. Only need to use the third party dial-up software to connect the Internet.

Totally, this router supports：PPPoA、PPPoE、MER、IPoA、Bridging. For detail configuration information, please check the following configuration guide.

3.4.1 CONFIGURATION GUIDE

Click "WAN" on the left page, enter into "WAN" configuration page.
Note: At most we can have eight connections. If you need to add a new connection, please delete or modify an existing connection.

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Device Info	**Wide Area Network (WAN) Setup**
Advanced Setup	Choose Add, Edit, or Remove to configure WAN interfaces.
WAN	Choose Save/Reboot to apply the changes and reboot the system.
LAN	
NAT	
Quality of Service	
Routing	
DNS	
DSL	
Interface Group	
Diagnostics	
Management	

Port/Vpi/Vci	VLAN Mux	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	State	Remove	Edit
0/0/35	Off	1	UBR	pppoe_0_0_35_1	ppp_0_0_35_1	PPPoE	Disabled	Disabled	Enabled	☐	Edit

[Add] [Remove] [Save/Reboot]

Recommend: 800x600 pixels, High Color(16 Bits)

Figure 3.2

Click on the next connection which you want modify. Press "Edit" button, enter the configure guide, as Figure 3.3

Figure 3.3

- The value for VPI/VCI is assigned by your ISP.   After inputting the PVC value, press "Next" into "connection type".   As Figure 3.4.

Figure 3.4

The Modem supports five ADSL protocol modes. Choose the protocol which is appointed by ISP and PVC encapsulation, click "Next" enter to the protocol configure. Below, we introduce the configurations of the five protocol modes.

• PPP over ATM (PPPoA)   • PPP over Ethernet (PPPoE)
• MAC Encapsulated Routing (MER)   • IP over ATM (IPoA)
• Bridging

● Some connection lines need to confirm the LLC or VC, if you can't confirm, please don't modify the default value or ask your ISP.

3.4.2 RFC1483 BRIDGE CONFIGURATION

Select the Bridging mode. Then press "Next" to specify the Service Name, and select the "Enable Service" as Figure 3.5.

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Device Info
Advanced Setup
   WAN
   LAN
   NAT
   Quality of Service
   Routing
   DNS
   DSL
   Interface Group
Diagnostics
Management

Unselect the check box below to disable this WAN service

Enable Bridge Service: ☑

Service Name: br_0_0_35

Back Next

Recommend: 800x600 pixels, High Color(16 Bits)

Figure 3.5

Press "Next" to enter into "WAN configuration", click "save" to save configuration, if you need to modify the parameter, click "back" as Figure 3.6.

Figure 3.6

Note：When you use bridge mode, please close "DHCP SERVER", the result as Figure 3.7

Figure 3.7

3.4.3 PPPOE CONFIGURATION

PPPoE is also known as RFC 2516. It is a method of encapsulating PPP packets over Ethernet.

PPPoA is also known as RFC2364 and named as Peer to Peer Protocol over ATM. As PPPoE, it also has all the features of PPP. Although it's based on ATM protocol, the setting of all the other parameters is similar with PPPoE. So we only introduce PPPoE in detail here.

In Figure 3.4, select PPP over Ethernet (PPPoE), press "Next step" entering the configuring interface, as Figure 3.8.

Figure 3.8

- PPP Username: Your account from ISP to access Internet.
- PPP Password: Input the password assigned by your ISP.
- PPPoE service name: Server name of network ISP. No need to set.
- Authentication Method: Authentication mode of network ISP. Default is AUTO.
- Dial on demand: When this mode is selected, the connection that has no traffic within assigned disconnect timeout (e.g. 1 minute) will be automatically disconnected. The connection will be activated again when traffic arrives. This function is advantageous for users who are charged with online time. It should be noticed that some programs automatically link to Internet. Computer will send data to network when infected by virus. Connection will not be disconnected under these data streams.
- Inactivity Timeout (minutes) [1-4320]: When "Connection on demand" is selected, this input box indicates that after how
- long the connection will be disconnected in the absence of traffic. If the value is 0, connection will not be disconnected.

- PPP IP Extension: The PPP IP Extension is a special feature deployed by some service providers. Unless your service provider specifically requires this setup, do not select it.

● Use Static IP Address: Default gateway can be gotten automatically from your ISP or set as static IP address or selected from the Use WAN Interface drop-down list.

Press "Next step" when configuration is finished. The following operation is same with Figure 3.5. Notice that PPPoE mode does not work until the modem is reset.

3.4.4 STATIC ADDRESS

In Figure3.4, select MAC Encapsulation Routing (MER), press "Next", and the configuration can be queried from your ISP, the result as Figure3.9.

Figure 3.9

4 OTHER CONFIGURATION

4.1 LAN CONFIGURATION

Configuration of Modem's IP address and password

4.1.1 CONFIGURATION OF MODEM'S IP ADDRESS

As a network device, ADSL Modem has its own IP address and MAC address. The factory sets the MODEM, at a default IP address of 10.1.1.1 and subnet mask of 255.0.0.0. The user can configure these addresses through the "LAN" on "Configuration" like this:

For example, change IP address to "10.1.1.1". Click "LAN", input "IP address": 10.1.1.1, then "subnet mask": 255.0.0.0, the result is as Figure4.1, press "save".
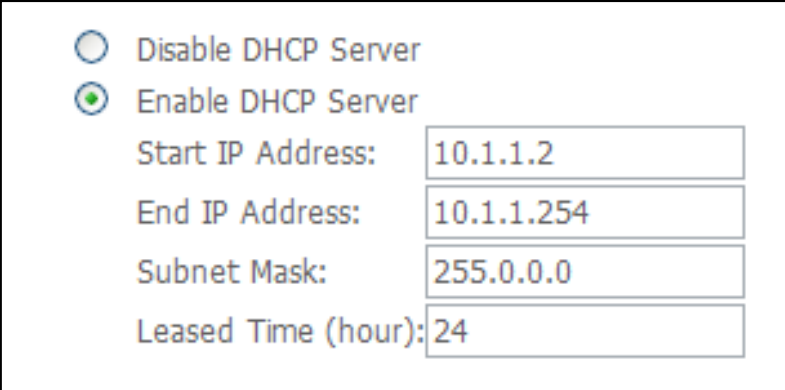

Figure 4.1

Note：If you change IP address, it will take effect after you reboot the modem. You must use the new IP address to login.

4.1.2 DHCP CONFIGURATION

• Click **"LAN "**
• Click "**DHCP server"**；

• Define the "Start IP address" and the "End IP address" of DHCP server (for example, from 10.1.1.2 to 10.1.1.254).

• Input the value of lease (Measured by the second, 0 indicates permanently valid).

As Figure 4.2, open DHCP server, computer will set the IP Address of network card with one of the address   10.1.1.2 ～ 10.1.1.254.

Figure 4.2

Note：When you use the DHCP Server, please pay attention to having multi-DHCP Server in one LAN.

4.2 PASSWORD CONFIGURATION

When you configure ADSL MODEM through an Internet browser, the system requires user name and password to validate access permission. The factory sets the modem at a default username of "**admin**" and the password of "**admin**". The username is unchanged. You can enter the "password configuration" on Configuration column to change the password.

Attention: please remember the password after change, otherwise you will not be able to change configuration after saving setting

5. TROUBLESHOOTING

5.1 UNABLE TO ACCESS INTERNET

5.1.1 CHECK THE LINE AND THE DEVICE

1、 Check the indicator of power supply is on, if not, Make sure the connection of power supply is correct; Make sure the output of power supply is correct; Make sure the switch of power supply is turned on；

2、 Check the indicator of PC is on, if not, Make sure the connection of cable and network adapter; Make sure that the correct cable is used;

3、 Check the LINK LED to see if it is twinkling. If no fast twinkling is observed within 3 minutes, please check whether phone line has been correctly placed; whether ADSL separator is correctly used. If multiple extensions have been installed, make sure that the separator is installed prior to the junction box of phone line. If the above items are confirmed and still no fast twinkling of WAN LED is observed, call the ISP to query whether ADSL service has been provided on your line;

4、 Check the LINK LED to see whether it is unable to change status from fast twinkling to always light, or whether it changes status to fast twinkling after sometime of always light. If these phenomena occur constantly, please contact your ISP with a demand to check lines and signal quality;

If there is no problem in the above items, the line and the device shall be working. Problems may come from your computer configuration or device configuration.

5.1.2 CHECK YOUR CONFIGURATION

We explain here the configuration of PPPOE using Windows 2000 operation system as an example. For other operation systems the process is similar.
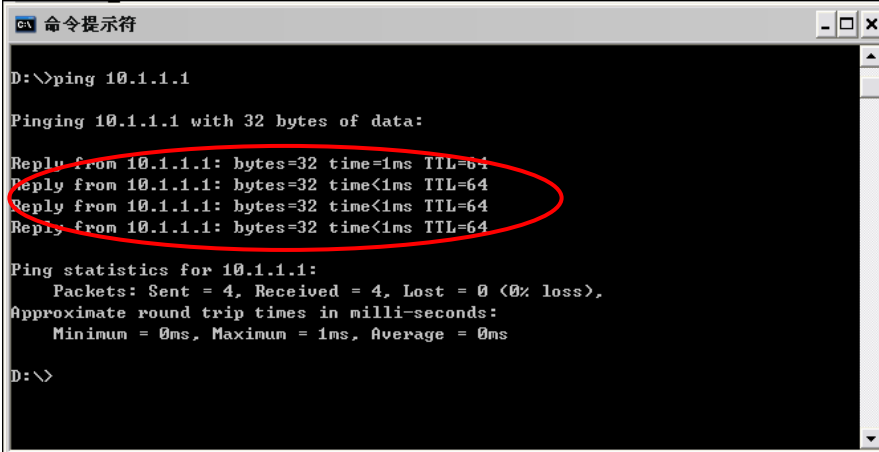
1、 Enter the device manager to check if Ethernet adapter is correctly installed. If any problem exists, please re-installed it;

2、 Check the configuration of Ethernet adapter in PC. Try to manually set IP address that is in band 10.1.1.x without conflict. See 3.2;

3、 Try to run command "ping 10.1.1.1" on command line mode. If the response returns "time out", please check Ethernet connection and IP settings;

4、 If this modem is reachable, try to run ping with a known outer IP,
   - If ping is reachable, there shall be no problems in the modem. Please see step 5;
   - If ping is not reachable, see step 6 and check if the configuration is correct.

5、 Please try to ping a certain outer URL, e.g. "ping www.google.com".
   - If ping is reachable, there shall be no problems in the network settings. Please check the settings of the PC terminal, e.g. whether the security level is too high, or whether anti-virus firewall is installed;
   - If ping is not reachable, check the DNS setting of Ethernet adapter. See 3.2.

Note 1：The precondition is that LAN settings in the modem has not been modified.
Note 2：We usually start command line mode in Windows 2000 as follows: click on the "RUN" item of Windows Start Menu, input characters "cmd" in the input box popped up with an "Enter". The

window subsequently popped up is the command line window.

Note 3：The returned values of ping command in the following format show the standard of "reachable"

Figure 5.1

6、If ping of the modem is reachable but ping of the outer fixed IP is unreachable, attention should be concentrated upon device settings. Please enter the configuring interface following the instructions in this manual.

（1） Check first the number of connections. If more than one connection exists, for troubleshooting , delete unused connections and remain the one connection you are using.

（2） Check the connection to see whether correct "type" is selected. It's normal to choose login type of PPPoE. When you use PPPoE to login, the following information should be provided: VPI and VCI, which can be queried from your ISP, user name and password.

（3） Then make sure that "using NAT" and "default gateway" have been selected with a tick. Check whether "connect on demand" has been selected with a tick. If it is selected, the connection is activated only when traffic to outer networks arrives. If not selected, check "keep connection", which should be set to 0 if you demand to keep connection

Make sure that the above parameters are saved after configuration. Internet is now available since the configuration is properly done.

ANNEX：SHIPPING LIST

ADSL MODEM   ×1
Quick Installation Guide   ×1
Power Supply   ×1
Cable Cat5 RJ45   ×1
Telephone Line   ×1
User CD   ×1