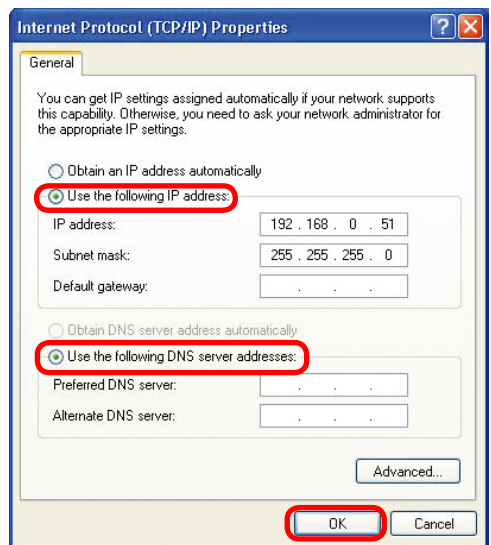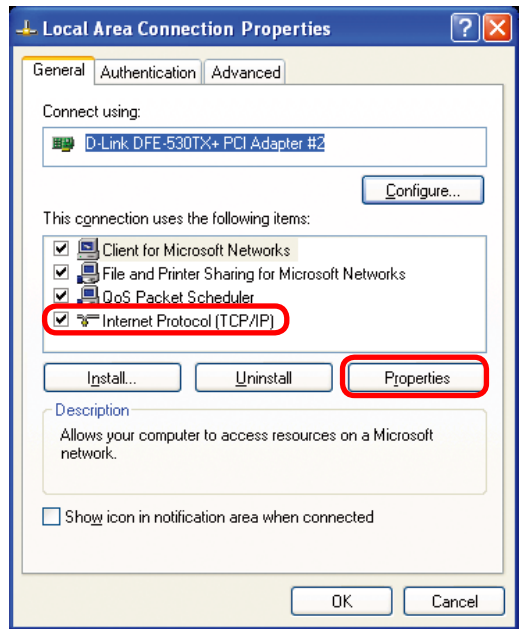## Networking Basics
Assigning a Static IP Address
in <u>Windows XP/2000</u>

■ Click on **Internet Protocol (TCP/IP)**

■ Click **Properties**

■ Input your **IP address and subnet mask.** (The IP Addresses on your network must be within the same range. For example, if one computer has an IP Address of 192.168.0.2, the other computers should have IP Addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)

■ Input your **DNS server addresses. (Note: If you are entering a DNS server, you must enter the IP Address of the Default Gateway.)**
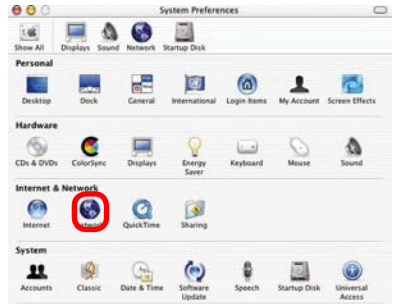
The DNS server information will be supplied by your ISP (Internet Service Provider.)
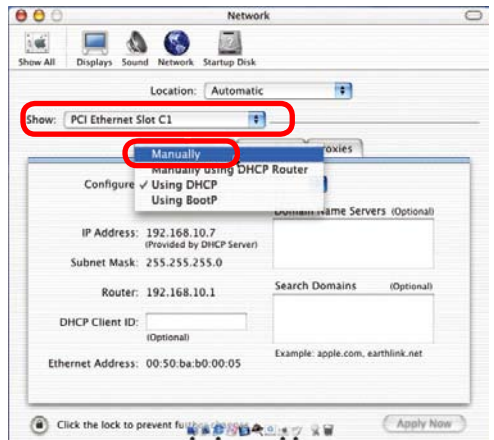
■ Click **OK**

Networking Basics
Assigning a Static IP Address with <u>Macintosh OSX</u>

■ Go to the **Apple Menu** and select **System Preferences**

■ Click on **Network**

■ Select **Built-in Ethernet** in the **Show** pull-down menu

■ Select **Manually** in the **Configure** pull-down menu

■ Input the **Static IP Address**, the **Subnet Mask** and the **Router IP Address** in the appropriate fields

■ Click **Apply Now**

Networking Basics
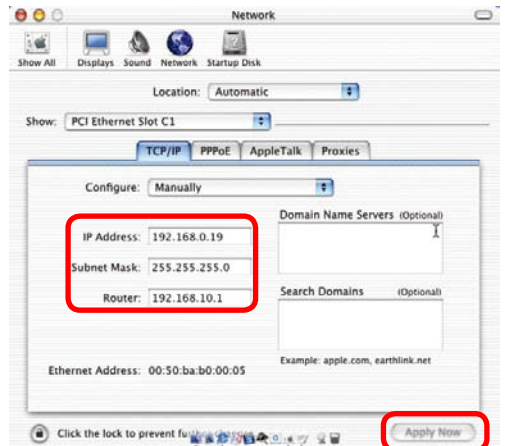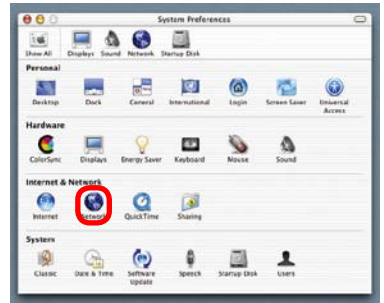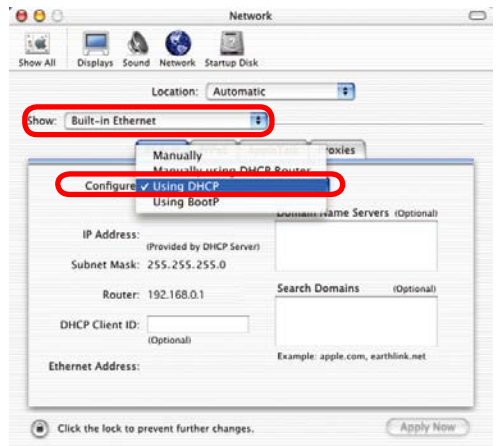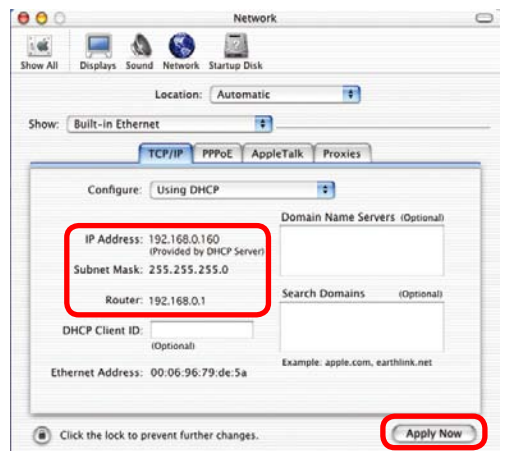### *Selecting a Dynamic IP Address with <u>Macintosh OSX</u>*

- Go to the **Apple Menu** and select **System Preferences**

- Click on **Network**

- Select **Built-in Ethernet** in the **Show** pull-down menu

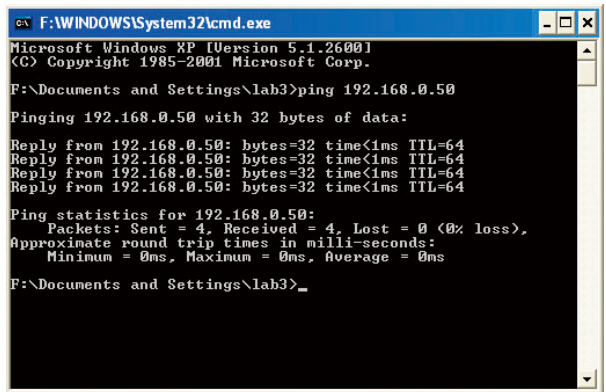- Select **Using DHCP** in the **Configure** pull-down menu

- Click **Apply Now**

- The **IP Address, Subnet mask**, and the **Router's IP Address** will appear in a few seconds

Networking Basics
Checking the Wireless Connection by <u>Pinging in Windows XP and 2000</u>

■ Go to **Start** > **Run** > type **cmd**. A window similar to this one will appear. Type **ping xxx.xxx.xxx.xxx**, where **xxx** is the **IP Address** of the Wireless Router or Access Point. A good wireless connection will show four replies from the Wireless Router or Acess Point, as shown.

```
F:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab3>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

F:\Documents and Settings\lab3>_
```
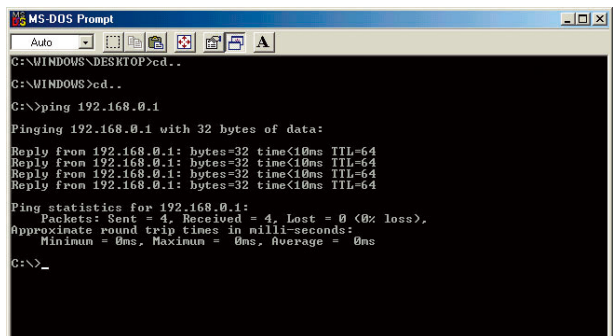
Checking the Wireless Connection by <u>Pinging in Windows Me and 98</u>

■ Go to **Start** > **Run** > type **command**. A window similar to this will appear. Type **ping xxx.xxx.xxx.xxx** where **xxx** is the **IP Address** of the Wireless Router or Access Point. A good wireless connection will show four replies from the wireless router or access point, as shown.

```
MS-DOS Prompt
Auto
C:\WINDOWS\DESKTOP>cd..

C:\WINDOWS>cd..

C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>_
```

Troubleshooting

This Chapter provides solutions to problems that can occur during the installation and operation of the DI-524 Wireless Broadband Router. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.
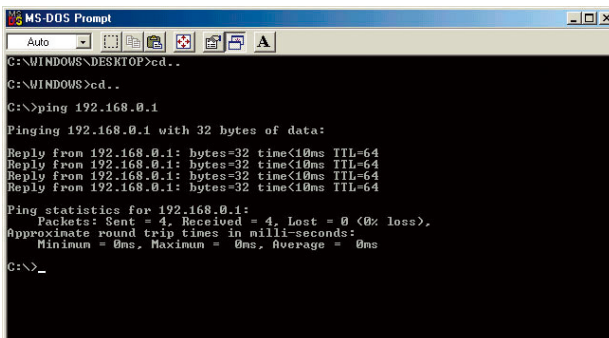
> *Note: It is recommended that you use an Ethernet connection to configure the DI-524 Wireless Broadband Router.*

1.The computer used to configure the DI-524 cannot access the Configuration menu.

- ■ Check that the **Ethernet LED** on the DI-524 is **ON**. If the **LED** is not **ON**, check that the cable for the Ethernet connection is securely inserted.

- ■ Check that the Ethernet Adapter is working properly. Please see item 3 (***Check that the drivers for the network adapters are installed properly***) in this **Troubleshooting** section to check that the drivers are loaded properly.

- ■ Check that the **IP Address** is in the same range and subnet as the DI-524. Please see ***Checking the IP Address in Windows XP*** in the **Networking Basics** section of this manual.

Note: The IP Address of the DI-524 is 192.168.0.1. All the computers on the network must have a unique IP Address in the same range, e.g., 192.168.0.x. Any computers that have identical IP Addresses will not be visible on the network. They must all have the same subnet mask, e.g., 255.255.255.0

- ■ Do a **Ping test** to make sure that the DI-524 is responding. Go to **Start**>**Run**>Type **Command**>Type **ping 192.168.0.1.** A successful ping will show four replies.


Note: If you have changed the default IP Address, make sure to ping the correct IP Address assigned to the DI-524.

Troubleshooting

2. The wireless client cannot access the Internet in the

Infrastructure mode.

Make sure the wireless client is associated and joined with the correct Access Point. To check this connection: **Right-click** on the **Local Area Connection icon** in the taskbar> select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.
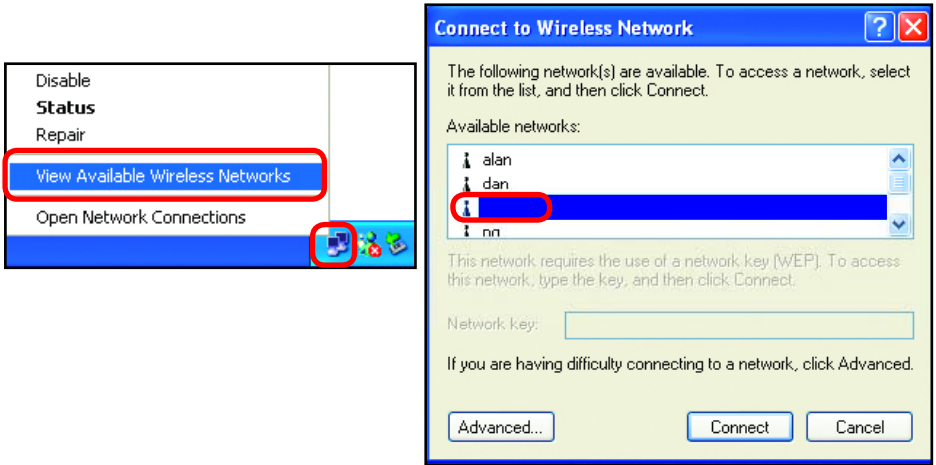

- Check that the **IP Address** assigned to the wireless adapter is within the same **IP Address range** as the access point and gateway. *(Since the DI-524 has an IP Address of 192.168.0.1, wireless adapters must have an IP Address in the same range, e.g., 192.168.0.x. Each device must have a unique IP Address; no two devices may have the same IP Address. The subnet mask must be the same for all the computers on the network.)* To check the **IP Address** assigned to the wireless adapter, **double-click** on the **Local Area Connection icon** in the taskbar > select the **Support tab** and the **IP Address** will be displayed. *(Please refer to Checking the IP Address in the Networking Basics section of this manual.)*

- If it is necessary to assign a **Static IP Address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**. If you are entering a **DNS Server address** you must also enter the **Default Gateway Address.** *(Remember that if you have a DHCP-capable router, you will not need to assign a Static IP Address. See Networking Basics: Assigning a Static IP Address.)*
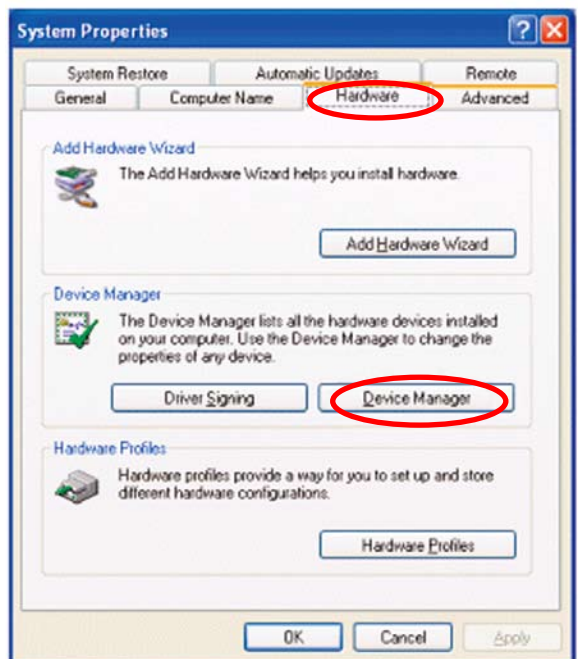
Troubleshooting

3. Check that the drivers for the network adapters are installed properly.

You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

■ Go to **Start > My Computer > Properties**
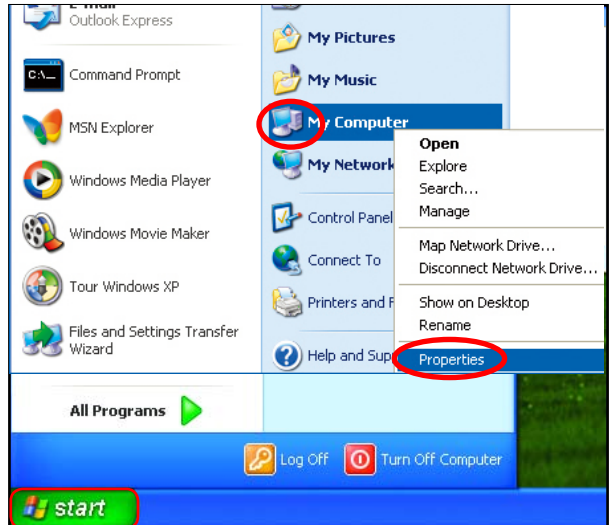
■ **Select** the **Hardware Tab**

■ Click **Device Manager**

Troubleshooting

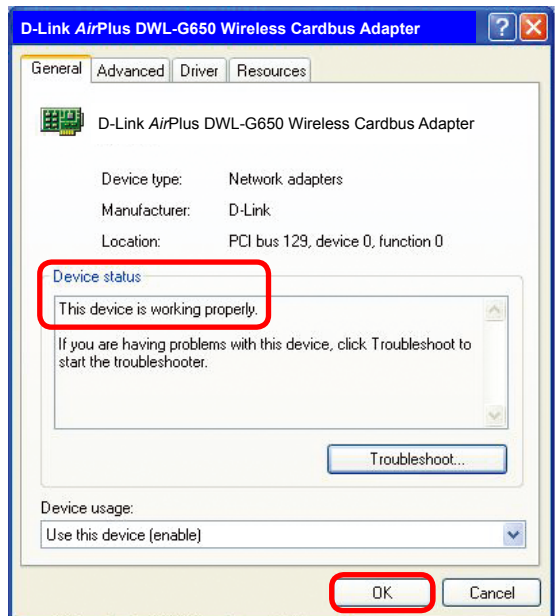- Double-click on **Network Adapters**

- Right-click on **D-Link *Air*Plus DWL-G650 Wireless Cardbus Adapter** (In this example we use the DWL-G650; you may be using other network adapters, but the procedure will remain the same.)
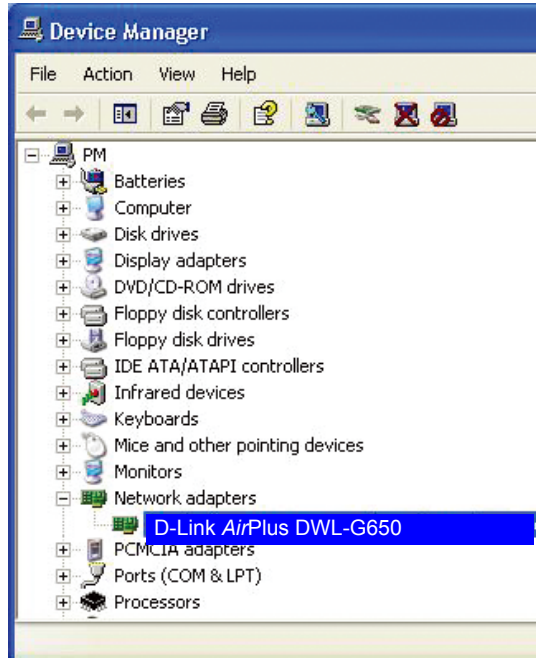
- Select **Properties** to check that the drivers are installed properly

- Look under **Device Status** to check that the device is working properly

- Click **OK**

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Troubleshooting

4. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

5. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the DI-524. Try to keep the antenna at least 6 inches away from the wall or other objects.

- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the Channel on your Router, Access Point and Wireless adapter to a different Channel to avoid interference.

- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

6. Why can't I get a wireless connection?

If you have enabled Encryption on the DI-524, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- For 802.11b, the Encryption settings are: 64, 128, or 256 bit. Make sure that the encryption bit level is the same on the Router and the Wireless Client.

- Make sure that the SSID on the Router and the Wireless Client are exactly the same. If they are not, wireless connection will not be established.

- Move the DI-524 and the wireless client into the same room and then test the wireless connection.

- Disable all security settings. (WEP, MAC Address Control)

Troubleshooting

6. Why can't I get a wireless connection? (continued)

■ Turn off your DI-524 and the client. Turn the DI-524 back on again, and then turn on the client.

■ Make sure that all devices are set to **Infrastructure** mode.

■ Check that the LED indicators are indicating normal activity. If not, check that the AC power and Ethernet cables are firmly connected.

■ Check that the IP Address, subnet mask, gateway and DNS settings are correctly entered for the network.

■ If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the Channel on your DI-524, and on all the devices in your network to avoid interference.

■ Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

7. I forgot my encryption key.

■ Reset the DI-524 to its factory default settings and restore the other devices on your network to their default settings. You may do this by pressing the Reset button on the back of the unit. You will lose the current configuration settings.