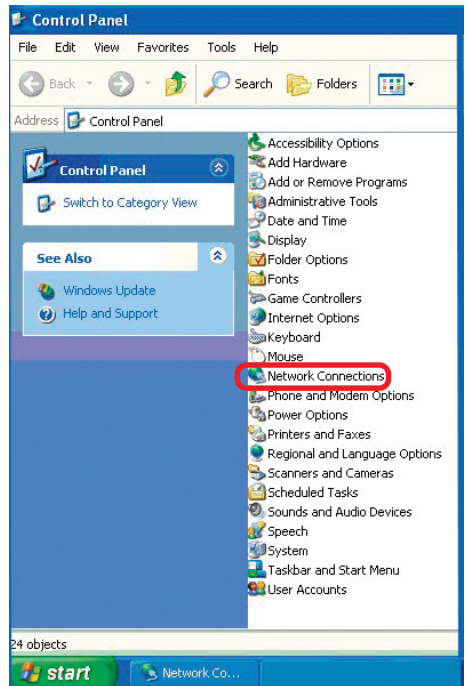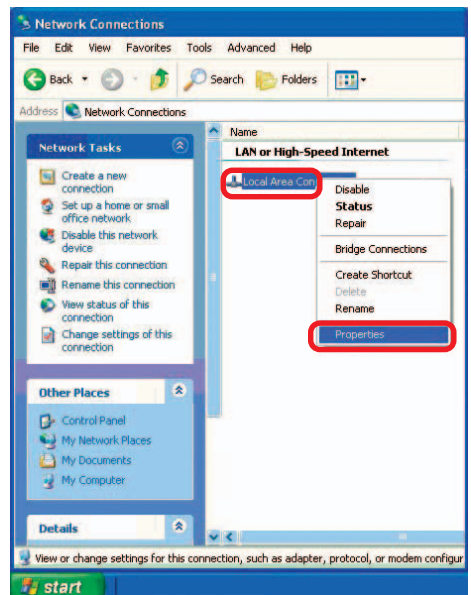# Networking Basics (continued)

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

- Double-click on **Network Connections**.

- Right-click on **Local Area Connections**.

- Double-click on **Properties**.

Networking Basics (continued)

Assigning a Static IP Address in Windows XP/2000

- ■ 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.)
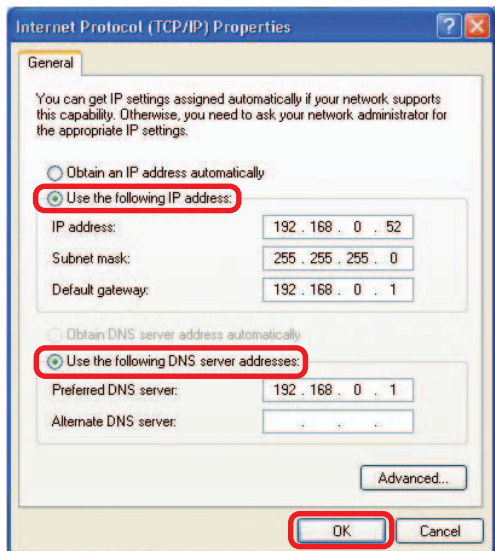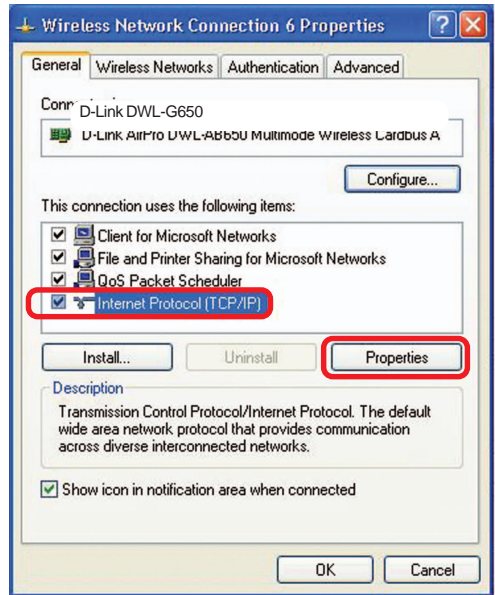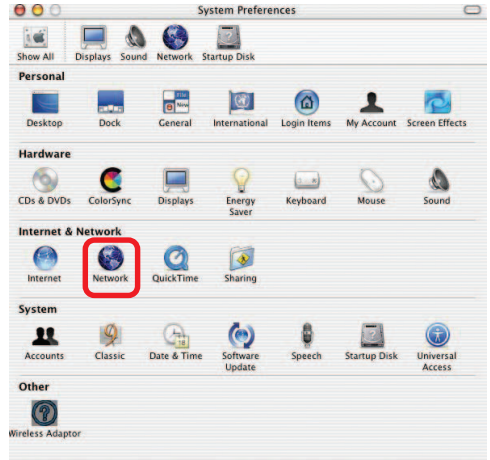
The DNS server information will be supplied by your ISP (Internet Service Provider.)

- ■ Click **OK**.

Networking Basics (continued)

Assigning a Static IP Address with Macintosh OSX

■ 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.
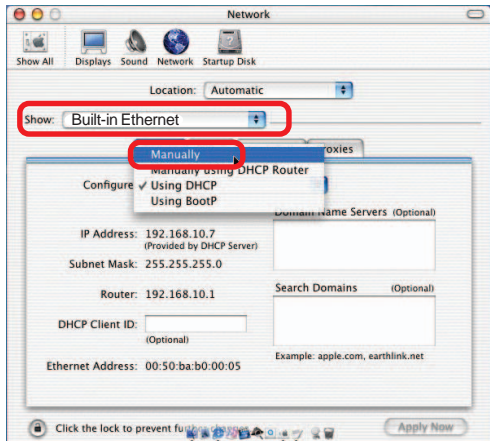
■ Click **Apply Now**.

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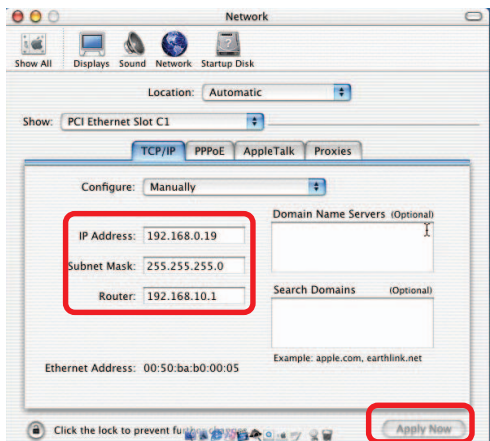## *Selecting a Dynamic IP Address with <u>Macintosh OSX</u>*

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

- ■ Click on **Network**.
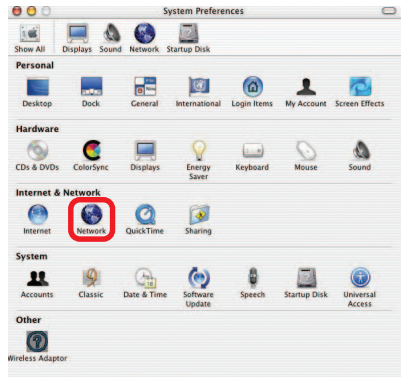
- ■ Select **Built-in Ethernet** in the **Show** pull-down menu.

- ■ Select **Using DHCP** in the **Configure** pull-down menu.
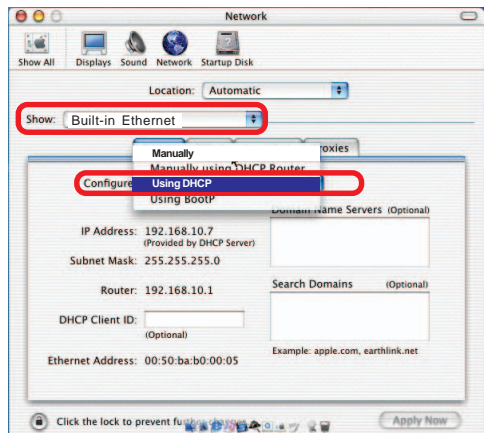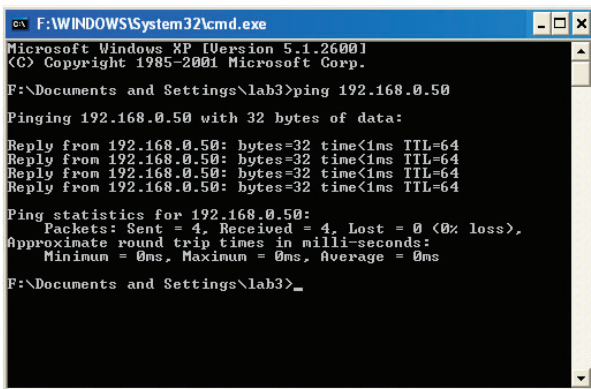
- ■ Click **Apply Now**.

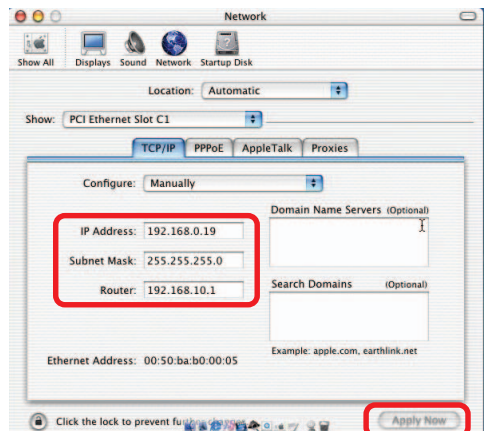- ■ The **IP Address, Subnet mask**, and the **Router's IP Address** will appear in a few seconds.

Networking Basics (continued)

Checking the Wireless Connection by Pinging in Windows XP/ 2000

■ 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 access point, as shown.

Checking the Wireless Connection by Pinging in Windows Me/98

■ 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.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-G710 Wireless Range Extender. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.
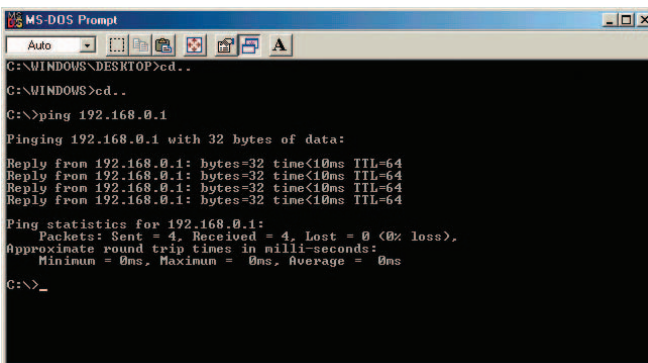
> **Note: It is recommended that you use an Ethernet connection to configure the DWL-G710 Wireless Range Extender.**

1.The computer used to configure the DWL-G710 cannot access the configuration menu.

- Check that the **Ethernet LED** on the DWL-G710 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 DWL-G710. Please see *Checking the IP Address in Windows XP* in the **Networking Basics** section of this manual.

Note: The IP address of the DWL-G710 is 192.168.0.30. 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 DWL-G710 is responding. Go to **Start**>**Run**>Type **Command**>Type **ping 192.168.0.30.** 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 DWL-G710.

Troubleshooting (continued)

2. The wireless client cannot access the Internet in Infrastructure mode.

Make sure the wireless client is associated and joined with the correct device. 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 illustration below.
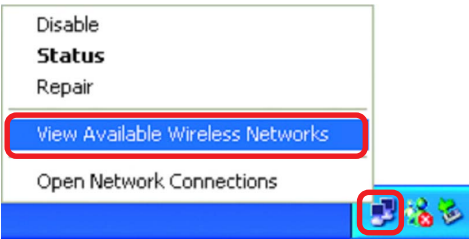
- Check that the **IP address** assigned to the wireless adapter is within the same **IP address range** as the existing network. *(Since the DWL-G710 has an IP address of 192.168.0.30, wireless adapters must have an IP address in the same range, e.g., 192.168.0.x. Each device must have a unique IP address; 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 (continued)

2. The wireless client cannot access the Internet in the Infrastructure mode *(continued).*

- ■ Please note that the DWL-G710 is compatible with the following D-Link devices:

  1 D-Link *Air*Plus™ G DI-524 Wireless Router

  2 D-Link *Air*Plus™ G DWL-G700AP Wireless Access Point

  3 D-Link *Air*Plus™ G DWL-G710 Wireless Range Extender

- ■ If you wish to repeat a device that is not a D-Link product, please check the FAQs for supported products on the D-Link support website (http://support.dlink.com) to make certain that the device can be repeated by the DWL-G710.

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**.
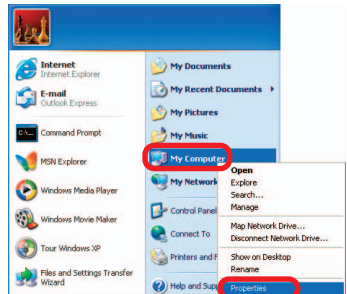
- ■ Select the **Hardware** tab.
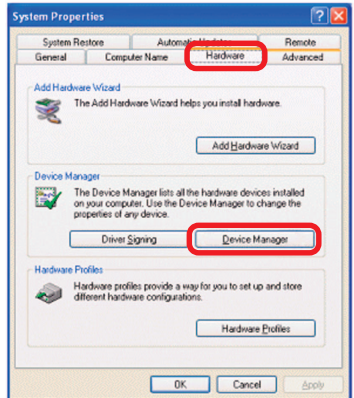
- ■ Click **Device Manager**.

Troubleshooting (continued)

■ Double-click on **Network Adapters**.

■ Right-click on **D-Link *Air*Plus™ G DWL-G630 Wireless Cardbus Adapter** (In this example we use the DWL-G630; you may be using other network adapters, but the procedure will remain the same.)
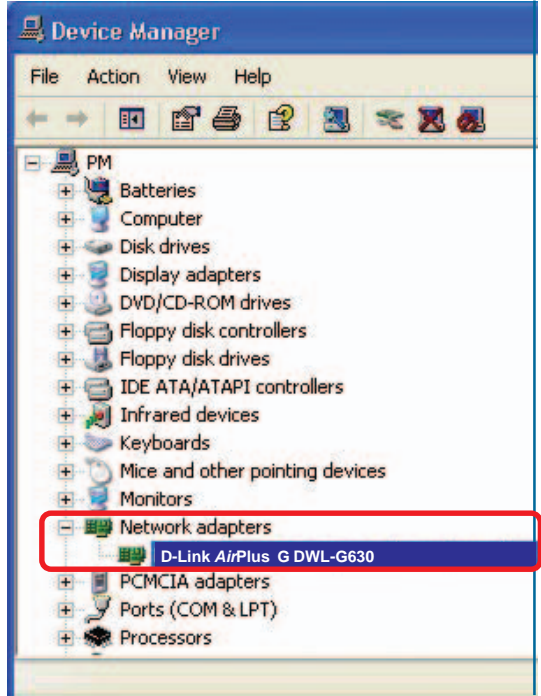
■ Select **Properties** to check that the drivers are installed properly.

■ Look under **Device Status** to check that the device is working properly.
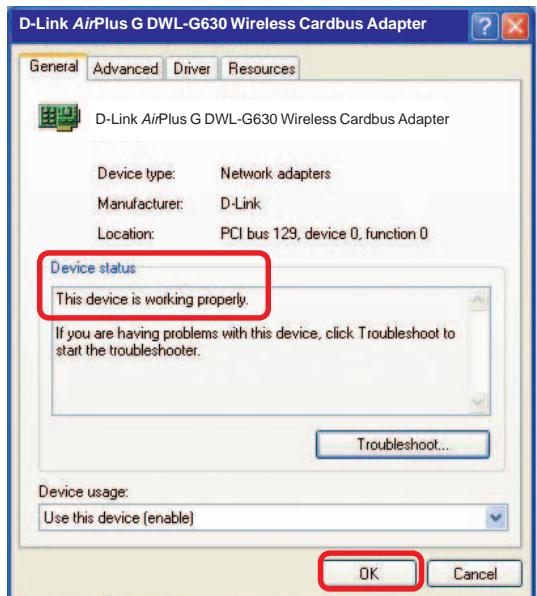
■ Click **OK**.

Troubleshooting (continued)

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 DWL-G710. 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 DWL-G710, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- Make sure that the encryption bit level is the same on the DWL-G710 and the wireless client.

- Make sure that the SSID on the DWL-G710 and the wireless client are exactly the same. If they are not, wireless connection will not be established.

- Check that the DWL-G710 is configured properly.

- Check that the wireless clients are working properly.

Troubleshooting (continued)

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

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

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

■ Check that the IP address, subnet mask, and gateway 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 DWL-G710, 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 DWL-G710 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.

Troubleshooting (continued)

8. Resetting the DWL-G710 to factory default settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DWL-G710 to the factory default settings.
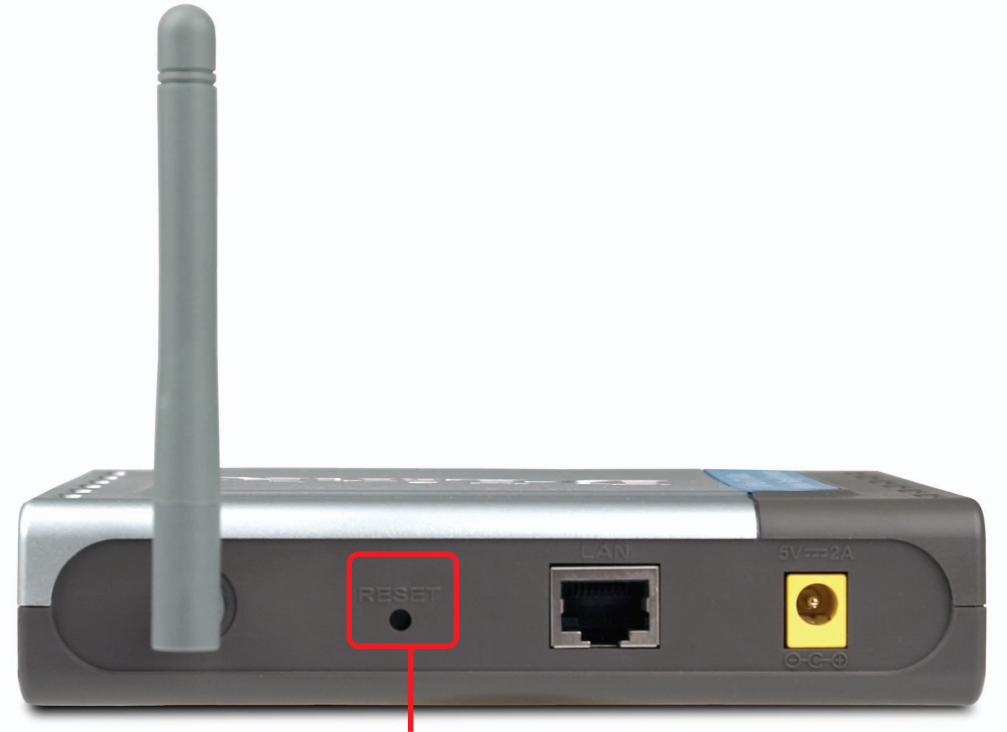
Reset button

To hard-reset the D-Link DWL-G710 to the factory default settings, please do the following:

- ■ Locate the **Reset** button on the back of the DWL-G710.

- ■ Use a paper clip to press the **Reset** button.

- ■ Hold for about 5 seconds and then release.

- ■ After the DWL-G710 reboots (this may take a few minutes) it will be reset to the factory **Default** settings.

Technical Specifications

Standards
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3u

Device Management
- Web-Based – Internet Explorer v6 or later; Netscape Navigator v7 or later

Data Rate
For 802.11g:
- 54, 48, 36, 24, 18, 12, 9 and 6Mbps
For 802.11b:
- 11, 5.5, 2, and1Mbps

Security
- 64-, 128-bit WEP

Wireless Frequency Range
- 2.412GHz to 2.462GHz
- Channels 1-11 utilize the 2.4GHz band

Wireless Operating Range*
802.11g (Full Power with 2dBi gain diversity dipole antenna)
Outdoors:
- 164ft (50m) @ 54Mbps
- 492ft (150m) @ 36Mbps
- 656ft (200m) @ 11Mbps

Power
- External Power Supply: DC 5V/2A

* Environmental Factors may Adversely Affect Wireless Range

Technical Specifications (continued)

Radio and Modulation Type
For 802.11g:
OFDM:
- BPSK @ 6 and 9Mbps
- QPSK @ 12 and 18Mbps
- 16QAM @ 24 and 36Mbps
- 64QAM @ 48 and 54Mbps
DSSS:
- DBPSK @ 1Mbps
- DQPSK @ 2Mbps
- CCK @ 5.5 and 11Mbps
For 802.11b:
DSSS:
- DBPSK @ 1Mbps
- DQPSK @ 2Mbps
- CCK @ 5.5 and 11Mbps

Wireless Transmit Power
Typical RF Output Power at each Data Rate
For 802.11g:
- 31mW (15dBm) @ 54Mbps
- 40mW (16dBm) @ 48Mbps
- 40mW (16dBm) @ 36, 24, 18, 12, 9, and 6Mbps
For 802.11b:
- 50mW (17dBm) @ 11, 5.5, 2, and 1Mbps

Receiver Sensitivity
For 802.11g:
- 6Mbps: -82dBm
- 9Mbps: -81dBm
- 12Mbps: -79dBm
- 18Mbps: -77dBm
- 24Mbps: -74dBm
- 36Mbps: -70dBm
- 48Mbps: -66dBm
- 54Mbps: -65dBm
For 802.11b:
- 1Mbps: -87dBm
- 2Mbps: -87dBm
- 5.5Mbps: -85dBm
- 11Mbps: -82dBm

Technical Specifications (continued)

LEDs
• Power
• LAN
• WLAN

Temperature
• Operating: 32ºF to 131ºF (0ºC to 55ºC)
• Storing: -4ºF to 149ºF (-20ºC to 65ºC)

Humidity
• 5%~95% (non-condensing)

Certifications
• FCC
• UL

Dimensions
• L = 5.59 inches (142mm)
• W = 4.29 inches (109mm)
• H = 1.22 inches (31mm)

Weight
• 0.44lbs (200g)

Warranty
• 1 Year

Technical Support

You can find software updates and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact D-Link technical support through our web site, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:
(877) 453-5465
24 hours a day, seven days a week.

D-Link Technical Support over the Internet:
http://support.dlink.com
email:support@dlink.com

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:
(800) 361-5265
Monday to Friday 7:30am to 9:00pm EST

D-Link Technical Support over the Internet:
http://support.dlink.ca
email:support@dlink.ca

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

- D-Link or its authorized reseller or distributor and
- Products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link products described below will be free from material defects in workmanship and materials from the date of original retail purchase of the product, for the period set forth below applicable to the product type ("Warranty Period"), except as otherwise stated herein.

1-Year Limited Warranty for the Product(s) is defined as follows:

- Hardware (excluding power supplies and fans) One (1) Year
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link's sole discretion. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or have an identical make, model or part. D-Link may in its sole discretion replace the defective Hardware (or any part thereof) with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement Hardware will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund at D-Link's sole discretion. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Software will be warranted for the remainder of the original Warranty Period from the date or original retail purchase. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for hardware and software of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.

- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.

- Return Merchandise Ship-To Address
  USA: 17595 Mt. Herrmann, Fountain Valley, CA 92708
  Canada: 2180 Winston Park Drive, Oakville, ON, L6H 5W1 (Visit http://www.dlink.ca for detailed warranty information within Canada)

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: This limited warranty provided by D-Link does not cover: Products, if in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. Repair by anyone other than D-Link or an Authorized D-Link Service Office will void this Warranty.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO NINETY (90) DAYS. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability: TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures**:**

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
D-Link declares that the DWL-G710 (FCC ID: KA2DWLG710A1) is limited in CH1~CH11 by specified firmware controlled in the USA.

Registration

Register your product online at:
http://support.dlink.com/register

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

(12/15/04)