

D-Link *AirPremier*TM **DWL-2700AP** Outdoor 802.11g Wireless Access Point

Manual



This product should be installed **ONLY** by experienced, professional installers who are familiar with local building and safety codes, and wherever applicable, are licensed by the appropriate authorities. Failure to do so may void the warranty and may expose the user or the service provider to legal and financial liabilities.

D-Link[®]

Building Networks for People

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Package Contents



- 1** D-Link AirPremier™ DWL-2700AP
Outdoor 802.11g Wireless Access Point
- 2** Two rubber dipole antennas
- 3** Manual on CD
- 4** QIG
- 5** Mounting Kit
- 6** PoE base unit
- 7** Power adapter
- 8** Power cord
- 9** RF jumper cable
- 10** Grounding wire
- 11** Surge arrester
- 12** 30m Ethernet cable

If any of the above items are missing, please contact your reseller.

Introduction

The DWL-2700AP covers a large operating distance, providing an 802.11g outdoor WLAN which enables users to access the Internet or an organization's network.

At up to fifteen times the speed of previous wireless devices (up to 108Mbps in Super G mode), you can work faster and more efficiently, increasing productivity. With the DWL-2700AP, bandwidth-intensive applications like graphics or multimedia will benefit significantly because large files are able to move across the network quickly.

The D-Link AirPremier™ DWL-2700AP features a die-cast watertight housing and a built-in lightning protector to protect the access point from harsh environmental conditions, including extreme variance in temperature. It also includes *Power over Ethernet* (POE) and a unique outdoor remote-mounted design for easy installation.

The DWL-2700AP is suitable for manufacturing plants, industrial sites, military bases, universities, hotels, airports and golf courses.

Configurable in five different modes (access point; bridge; multi-point bridge; wireless client and repeater), the DWL-2700AP offers 128-bit encryption; WPA and 802.1X authentication when used with a RADIUS server; MAC address access control; and additional security features.

With a built-in firewall, the DWL-2700AP can operate as a NAT inbound virtual server and provides IP based access control. Denial of Service (DoS) protection is also included with the DWL-2700AP to prevent the wireless network from being hacked. The DWL-2700AP is easily managed via a web-based user interface, Telnet, or RS-232 console configuration. The DWL-2700AP can also be managed remotely through SNMP (MIB I & MIB II) support.

System Requirements for Configuration:

- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0 or Netscape Navigator Version 6.0 and Above

Features

- **Ideal for Internet Hotspots-** Provides outdoor users with wireless Internet access.
- **Robust Outdoor Housing** - Designed for harsh outdoor environments, with die-cast, watertight housing, built-in heater and temperature sensor.
- **5 Different Operation modes with WDS (Wireless Distribution System)** - Capable of operating in one of five different operation modes to meet your wireless networking requirements: access point (AP); Point-to-Point (PtP) bridge ; Point-to-multipoint (PtMP) bridge; wireless client; or repeater.
- **Embedded DHCP Server** automatically assigns IP addresses to wireless clients.
- **Connect networks in different buildings** when used in conjunction with D-Link's high-gain outdoor antennas.
- **Easy Installation with 802.3af PoE.**
- **Faster wireless networking** with the 802.11g standard to provide a wireless data rate of up to 108Mbps.
- **Compatible with the 802.11b standard** to provide a wireless data rate of up to 11Mbps with 802.11b devices - that means you can migrate your system to the 802.11g standard on your own schedule without sacrificing connectivity.
- **Better security with ACL,WPA, AES and 802.1X-** The DWL-2700AP can securely connect to wireless clients on the network using WPA (Wi-Fi Protected Access) providing a much higher level of security for your data and communications than has previously been available. In conjunction with a RADIUS server, 802.1X authentication verifies the identity of would be clients.
- **Supports up to 152-bit WEP encryption and AES (Advanced Encryption Standard).**
- **Multiple Management options** - Great for enterprise wireless network management
 - **Web-based configuration**
 - **Telnet**
 - **RS-232 Console configuration**
 - **SNMP v.3**
 - **D-Link's D-View Network Management software**

Five Operational Modes

Operation Mode

(Only supports 1 mode at a time)

Function

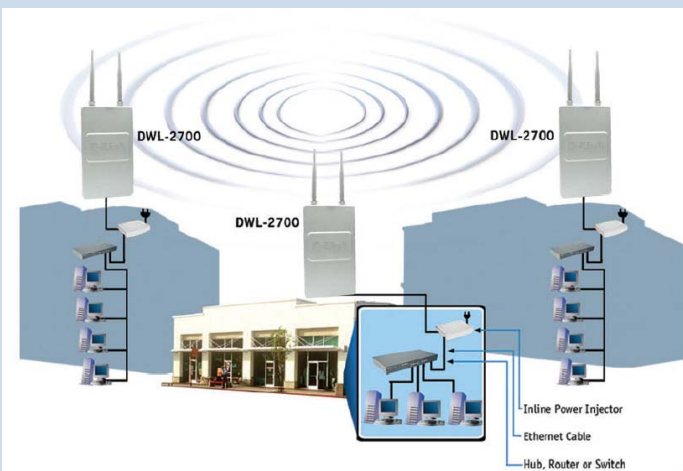
Access Point (AP)	Create a Wireless LAN
AP - to - AP Bridging	Wirelessly Connect 2 Networks
Point - to - Multipoint Bridging	Wirelessly Connect Multi Networks
Wireless Client	Wirelessly Connect Ethernet Devices
Wireless Repeater (WDS)*	Wireless Repeats 11g AP Gateways (Atheros Based)

*WDS Includes Bridge Repeating

AP Mode



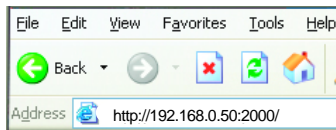
Bridge Mode



Using the Configuration Utility

To configure the DWL-2700AP, use a computer which is connected to the DWL-2700AP with an Ethernet cable (see the *Network Layout* diagram).

- First, disable the **Access the Internet using a proxy server** function. To disable this function, go to **Control Panel > Internet Options > Connections > LAN Settings** and uncheck the enable box.
- Start your web browser program (Internet Explorer, Netscape Navigator) .
- Type the IP address and http port of the DWL-2700AP (the default port is 2000; the IP is 192.168.0.50) in the address field (<http://192.168.0.50:2000/>) and press **Enter**. Make sure that the IP addresses of the DWL-2700AP and your computer are in the same subnet.

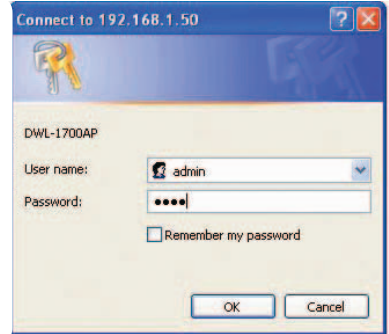


Using the Configuration Utility (continued)

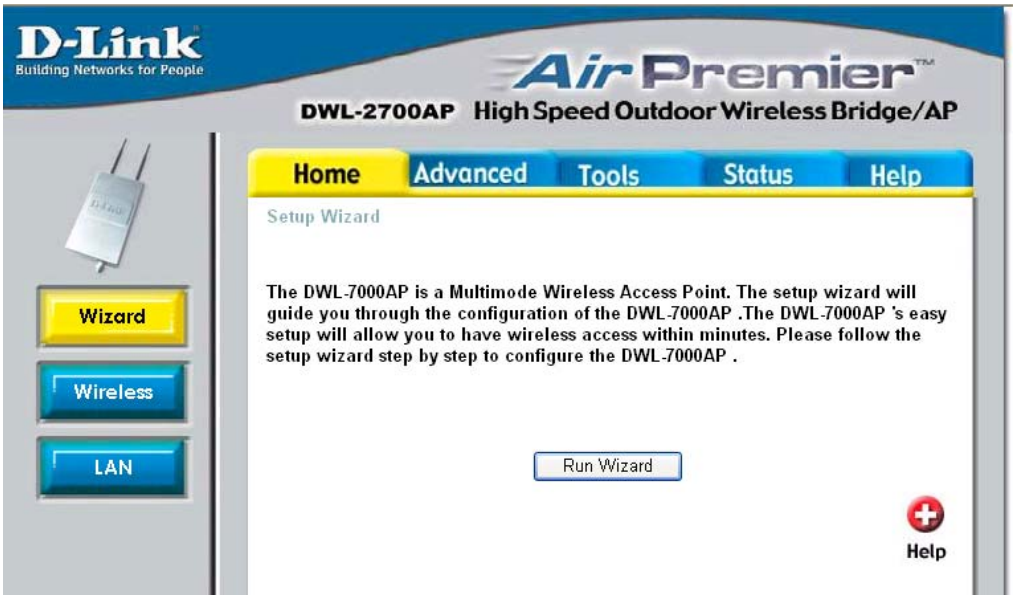
After the connection is established, you will see the user identification window as shown.

Note: If you have changed the default IP address assigned to the DWL-2700AP, make sure to enter the correct IP address.

- Type **admin** in the **User Name** field
- The default password is **root**.
(However, if you have changed the password, please enter the correct password.)
- Click **OK**



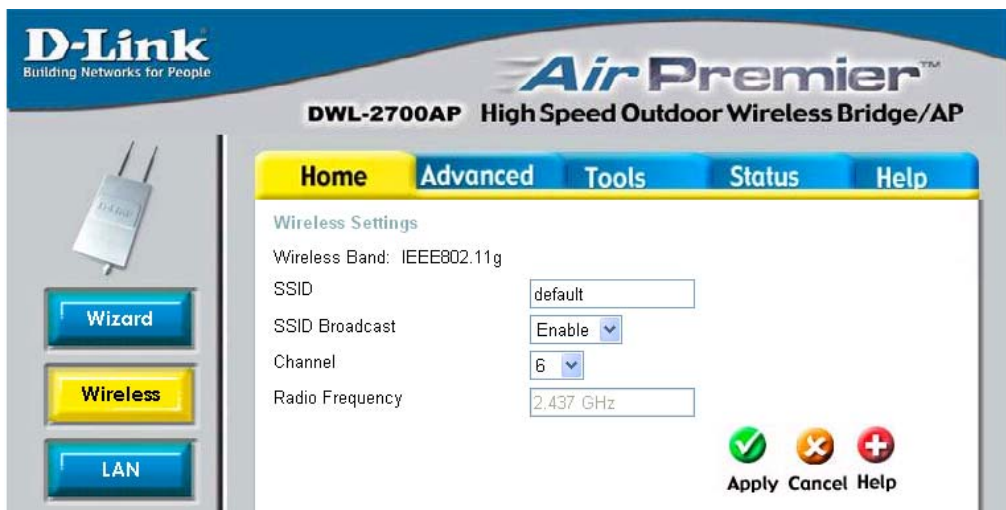
Home > Wizard



The **Home>Wizard** screen will appear. Please refer to the *Quick Installation Guide* for more information regarding the *Setup Wizard*.

Using the Configuration Utility (continued)

Home > Wireless



Wireless

Band-

802.11g

SSID-

Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **default**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

SSID

Broadcast-

Enable or Disable SSID Broadcast. Enabling this feature broadcasts the SSID across the network.

Channel-

6 is the default channel. All devices on the network must share the same channel.

Radio

Frequency-

The radio frequency will remain at 2.437 GHz .

Apply-

Click **Apply** to save the changes.

Using the Configuration Utility (continued)

Home > LAN

The screenshot shows the configuration utility for a D-Link Air Premier DWL-2700AP. The interface has a blue header with the D-Link logo and the product name. Below the header, there are navigation tabs: Home (selected), Advanced, Tools, Status, and Help. On the left side, there are three buttons: Wizard, Wireless, and LAN (selected). The main content area is titled 'LAN Settings' and contains the following fields:

Get IP From	Static (Manual) ▼
IP Address	192.168.0.50
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0

At the bottom right of the form, there are three buttons: Apply (with a green checkmark icon), Cancel (with a yellow 'X' icon), and Help (with a red plus icon).

LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DWL-2700AP. These settings may be referred to as private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

Get IP From-

Select **Static (Manual)** or **Dynamic (DHCP)** as the method you will use to assign an IP address to the DWL-2700AP.

IP Address-

The IP address of the LAN interface. The default IP address is: **192.168.0.50**

Subnet Mask-

The subnet mask of the LAN interface.
The default subnet mask is **255.255.255.0**

Default Gateway-

This field is optional. Enter in the IP address of the router on your network.

Apply-

Click **Apply** to save the changes.

Using the Configuration Utility (continued)

Advanced > Mode

The DWL-2700AP can be configured to perform in any of five modes: wireless access point; wireless client; wireless bridge; multi-point bridge; repeater.

Access Point is the default setting. This mode is used to create a wireless LAN.

PtP Bridge will allow you to connect two LANs together. The wireless bridge mode will work only with another DWL-2700AP. Click to enable and enter the MAC address of the remote bridge.

PtMP Bridge will allow you to connect multiple wireless LANs together. Other wireless LANs must be using DWL-2700APs. Click to enable and enter up to 8 remote AP MAC addresses.

AP Repeater will allow you to repeat the wireless signal of the root AP. Click to enable and enter the MAC address of the root AP.

AP Client will transform any IEEE 802.3 Ethernet device (e.g., a computer, printer, etc.) into an 802.11b wireless client when it communicates with another DWL-2700AP that is acting as an AP. Click to enable and enter the MAC address of the root AP.

Apply - Click **Apply** if you have made any changes.

Find the **MAC address** of the DWL-2700AP that is acting as a **Remote Access Point** or a **Remote Bridge**, by going to **Status > Device Info** in the configuration utility of the remote DWL-2700AP. There you will find the MAC address.

MAC Address - (Media Access Control Address) is a unique hardware address that identifies a device on a network. It is assigned at the factory and cannot be changed. Usually you will find this address on a sticker on the device or on the packaging.

The screenshot shows the configuration utility for the D-Link Air Premier DWL-2700AP. The page title is "Advanced > Mode". The navigation bar includes "Home", "Advanced", "Tools", "Status", and "Help". The "Advanced" tab is selected. The main content area is titled "AP Mode Settings" and contains the following options:

- Wireless Band : IEEE802.11g
- Access Point
- PtP Bridge
 - Remote AP MAC Address: [text input]
- PtMP Bridge
 - Remote AP MAC Address:
 - 1. [text input] 2. [text input]
 - 3. [text input] 4. [text input]
 - 5. [text input] 6. [text input]
 - 7. [text input] 8. [text input]
 - 9. [text input] 10. [text input]
 - 11. [text input] 12. [text input]
 - 13. [text input] 14. [text input]
 - 15. [text input] 16. [text input]
- AP Repeater
 - Static Key
 - Dynamic Key
 - Root AP MAC Address: [text input]
- AP Client
 - Root AP MAC Address: [text input]

At the bottom right, there are three buttons: "Apply" (with a green checkmark icon), "Cancel" (with a red X icon), and "Help" (with a red plus icon).

Using the Configuration Utility (continued)

Wireless Band- 802.11g

Turbo Setting-

Enabling Turbo mode increases the throughput to a maximum of 108Mbps. All devices on the network must share the same Turbo setting in order to communicate. Select **Disabled** on all network devices to share the standard 802.11g throughput of up to 108Mbps.

Frequency-

The frequency remains at **2.437 GHz**.

Channel-

Select from channels **1-11**.

Data Rate-

The **Data Rates** are Auto, 1Mbps, 2Mbps, 5.5Mbps, 6Mbps, 9Mbps, 11Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps, 108Mbps.

Beacon Interval-

Beacons are packets sent by an access point to synchronize a network. Specify a beacon interval value. The default (100) is recommended.

DTIM-

(Delivery Traffic Indication Message)- **3** is the default setting. DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

Fragment Length-

The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting

RTS Length-

This value should remain at its default setting of 2,346. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2,346 are recommended

Transmit Power-

Choose full, half (-3dB), quarter (-6dB), eighth (-9dB), minimum power.

Advanced > Performance

The screenshot shows the configuration utility for a D-Link Air Premier DWL-2700AP. The interface is titled "D-Link Building Networks for People" and "Air Premier High Speed Outdoor Wireless Bridge/AP". The "Advanced" tab is selected, and the "Performance" sub-tab is active. On the left, there is a navigation menu with buttons for "Mode", "Performance", "Filters", "Encryption", "Grouping", and "DHCP Server". The main area displays "Advance Wireless Settings" with the following fields:

- Wireless Band: IEEE802.11g
- Turbo Setting: Disabled (dropdown)
- Frequency: 2.437 GHz (text input)
- Channel: 6 (dropdown)
- Data Rate: Auto (dropdown)
- Beacon Interval (20 - 1000): 100 (text input)
- DTIM (1 - 255): 1 (text input)
- Fragment Length (256 - 2346): 2346 (text input)
- RTS Length (256 - 2346): 2346 (text input)
- Transmit Power: full (dropdown)

At the bottom right, there are three buttons: "Apply" (with a green checkmark), "Cancel" (with a red X), and "Help" (with a red plus sign).

Using the Configuration Utility (continued)

Advanced > Filters

The screenshot shows the configuration utility for a D-Link Air Premier DWL-2700AP. The interface includes a navigation menu with tabs for Home, Advanced (selected), Tools, Status, and Help. The main content area is titled 'Wireless Access Settings / WLAN Partition' and displays the following settings:

- Wireless Band: IEEE802.11g
- Access Control: Disabled (selected in a dropdown menu)

Below these settings is an 'Access Control List' table with 12 rows, each with a 'Mac Address' column and an empty input field for the address.

	Mac Address
1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>
6	<input type="text"/>
7	<input type="text"/>
8	<input type="text"/>
9	<input type="text"/>
10	<input type="text"/>
11	<input type="text"/>
12	<input type="text"/>

On the left side of the utility, there is a vertical menu with buttons for Mode, Performance, Filters (highlighted in yellow), Encryption, Grouping, and DHCP Server. An image of the DWL-2700AP device is also visible in the top left corner.

Wireless Band- 802.11g

Access Control- Select **Disabled** to disable the filters function.
Select **Accept** to accept only those devices with MAC addresses in the Access Control List.
Select **Reject** to reject the devices with MAC addresses in the Access Control List.

Access Control List- The MAC addresses in this list can be accepted or rejected for inclusion in the network, depending upon the Access Control selection.

Apply- Click **Apply** to save the changes

Using the Configuration Utility (continued)

Advanced > Encryption

WPA & 802.1x - represent the first line of defense against network intrusion. In the authentication process the RADIUS server verifies the identity of the client attempting to connect to the network. Unfamiliar clients will be denied access. **EAP**(Extensible Authentication Protocol) is available through the Windows XP Operating System. You will need to use the same type of EAP protocol on all the devices in your network when using the 802.1x feature.

The screenshot shows the configuration utility for a D-Link Air Premier DWL-2700AP. The interface has a blue header with the D-Link logo and 'Air Premier' branding. Below the header, there are navigation tabs: Home, Advanced (selected), Tools, Status, and Help. The main content area is titled 'Security Settings' and includes the following fields:

- Wireless Band: IEEE802.11g
- Authentication: Open System, Shared Key, Open System / Shared key, 802.1x, WPA, WPA-PSK
- PassPhrase: You are using PSK
- Cipher: WEP
- Encryption: Disabled, Enabled
- Key Type: HEX
- Key Size: 64 Bits
- Valid Key: First
- Key Table: First Key, Second Key, Third Key (each with a password field)

On the left side of the utility, there is a vertical menu with buttons for Mode, Performance, Filters, Encryption (highlighted in yellow), Grouping, and DHCP Server.

Wireless Band- 802.11g
Authentication-

- Select **Open System** to communicate the key across the network.
- Select **Shared Key** to limit communication to only those devices that share the same WEP settings.
- Select **Open System/Shared Key** to communicate the key and require identical WEP settings to communicate.
- Select **802.1X** for increased security features with a RADIUS server.
- Select **WPA** to utilize the increased security with a RADIUS server.

PassPhrase- When you select **WPA-PSK** you will enter a **Passphrase**.

Cipher- When you select WPA or 802.1X you will select an EAP type here

Encryption- Select **Enabled** to use **WEP Encryption** security.

Key Type- Select **HEX** or **ASCII**.

Key Size- Select **64-, 128-, 152-**bits.

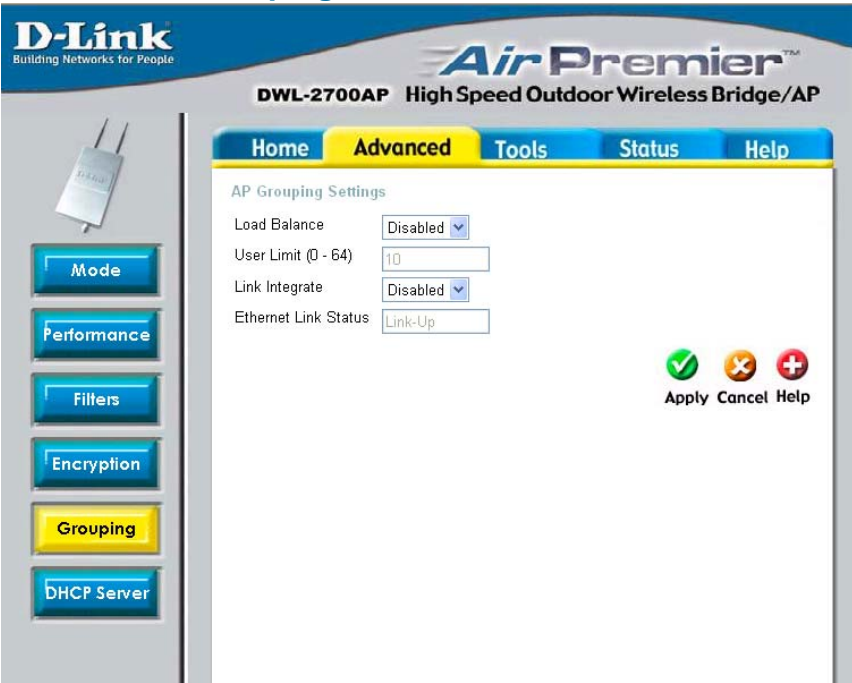
Valid Key- Select the **1st** through the **4th** key to be the active key.

Key Table- Input up to **four keys** for encryption. You will select one of these keys in the valid key field.

Apply- Click **Apply** to save changes.

Using the Configuration Utility (continued)

Advanced > Grouping



Load Balance- Select **Enabled** or **Disabled**.

When you **Enable Load Balance** you allow several DWL-2700APs to balance wireless network traffic and wireless clients among the DWL-2700APs in the network. Assign each access point a different **non-overlapping channel** (e.g., 1, 6, 11).

User Limit (0-64)- Set the User Limit in this field (0-64).

Link Integrate- Select **Enabled** or **Disabled**.

When **Link Integrate** is **Enabled**, whenever the Ethernet connection between the LAN and the AP is disconnected - then the wireless segment associated with the AP will also be disconnected from the AP.

Ethernet Link Status- This field displays the Ethernet Link Status. **Link Up** indicates that there is an Ethernet LAN connection to the AP.

Click Apply- Click **Apply** to save the changes.

Using the Configuration Utility (continued)

Advanced > DHCP Server > Static Pool Settings

DHCP Server Control-

Enable or Disable the DHCP function here.

Static Pool Settings-

Assigned IP-

Enter the static IP address of the device here.

Assigned MAC Address-

Enter the MAC address of the device here.

D-Link
Building Networks for People

Air Premier™
DWL-2700AP High Speed Outdoor Wireless Bridge/AP

Home Advanced Tools Status Help

Static Pool Settings / Current IP Mapping List / Dynamic Pool Settings

DHCP Server Control
Function Enable/Disable: Disabled

Static Pool Settings

Assigned IP: 0.0.0.0
Assigned MAC Address:
SubMask: 0.0.0.0
Gateway: 0.0.0.0
Wins: 0.0.0.0
DNS: 0.0.0.0
Domain Name:
Status: OFF

Apply Cancel Help

Assigned Static Pool

MAC Address	IP address	State	Edit	Delete
-------------	------------	-------	------	--------

SubMask-

Enter the subnet mask here.

Gateway-

Enter the IP address of the router on the network.

Wins-

Windows Internet Naming Service is a system that determines the IP address of a network computer that has a dynamically assigned IP address.

DNS-

Enter the IP address of the DNS server. The DNS server translates domain names such as www.dlink.com into IP addresses.

Domain Name-

Enter the Domain Name of the DWL-2700AP.

Status-

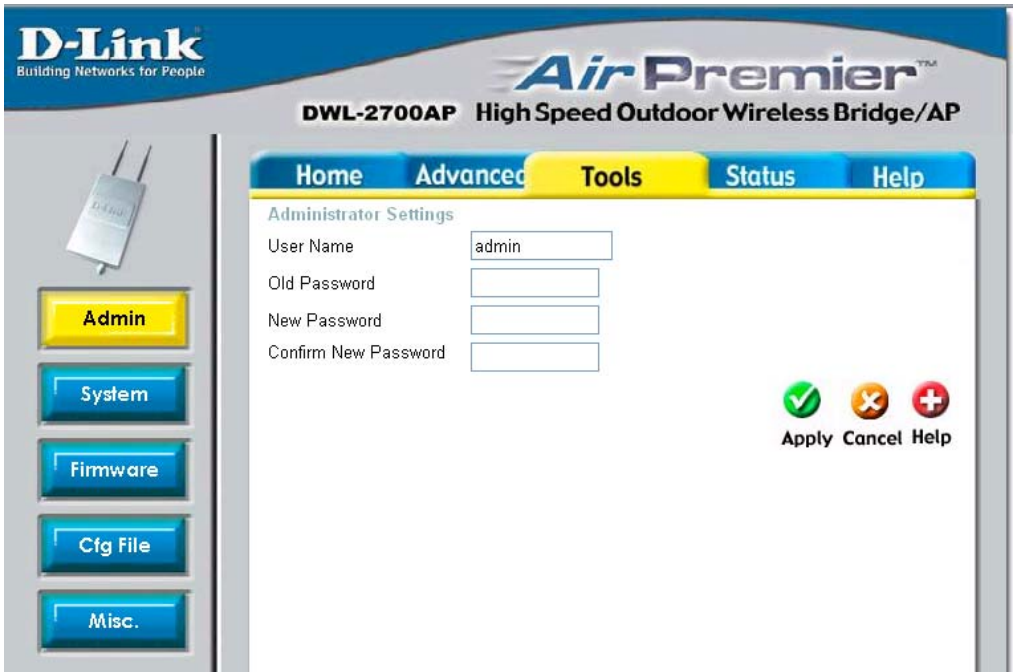
Turn the **Static Pool Settings** ON or OFF here.

Assigned Static Pool-

After you have input the **Static Pool Settings** for each device, click **Apply** and the profile will appear in this list at the bottom of the window.

Using the Configuration Utility (continued)

Tools > Admin



User Name-

Enter a user name; **admin** is the default setting.

Old Password-

To change your password, enter your old password here

New Password-

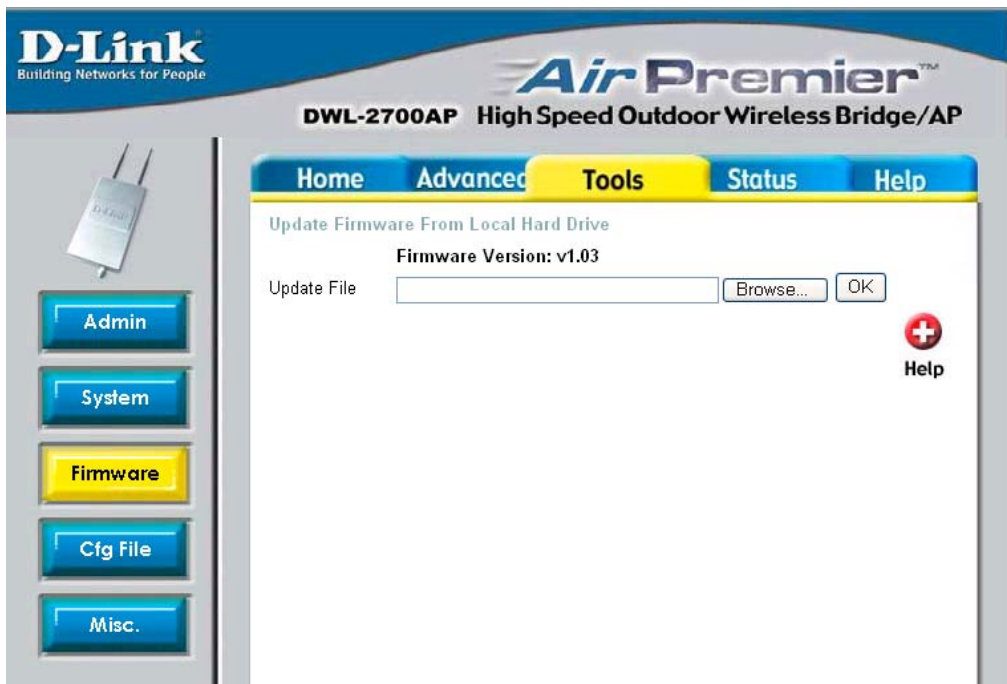
Enter your new password here.

Confirm New Password-

Enter your new password again.

Using the Configuration Utility (continued)

Tools > Firmware



The screenshot shows the D-Link configuration utility interface for the Air Premier DWL-2700AP. The top navigation bar includes 'Home', 'Advanced', 'Tools' (highlighted in yellow), 'Status', and 'Help'. The main content area is titled 'Update Firmware From Local Hard Drive' and displays 'Firmware Version: v1.03'. Below this, there is a text input field labeled 'Update File', a 'Browse...' button, and an 'OK' button. A 'Help' icon (a red circle with a white plus sign) is located on the right side of the page. On the left sidebar, there are five menu buttons: 'Admin', 'System', 'Firmware' (highlighted in yellow), 'Cfg File', and 'Misc.'. An image of the DWL-2700AP device is shown in the top left corner of the utility interface.

Update File-

After you have downloaded the most recent version of the firmware from www.support.dlink.com you can **browse** your hard drive to locate the downloaded file. Click **OK** to update the firmware.

Using the Configuration Utility (continued)

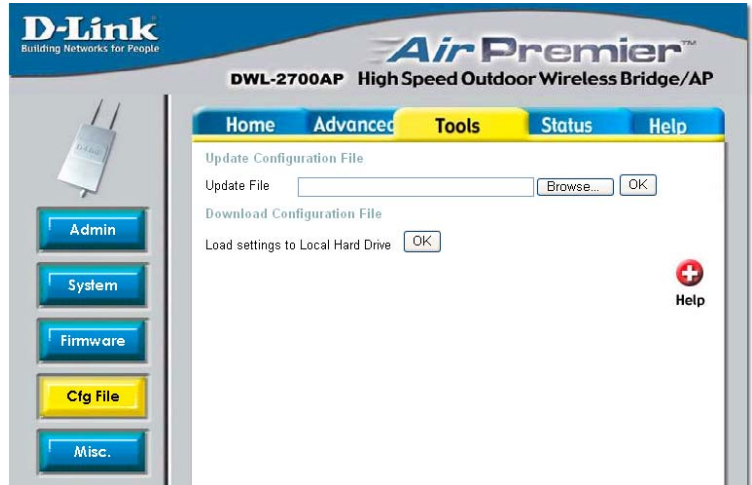
Tools > Cfg File

Update File-

Browse for the configuration settings that you have saved to your hard drive. Click **OK** when you made your selection.

Load Settings to the Local Hard Drive-

Click **OK** to load the selected settings.



Tools > Misc.

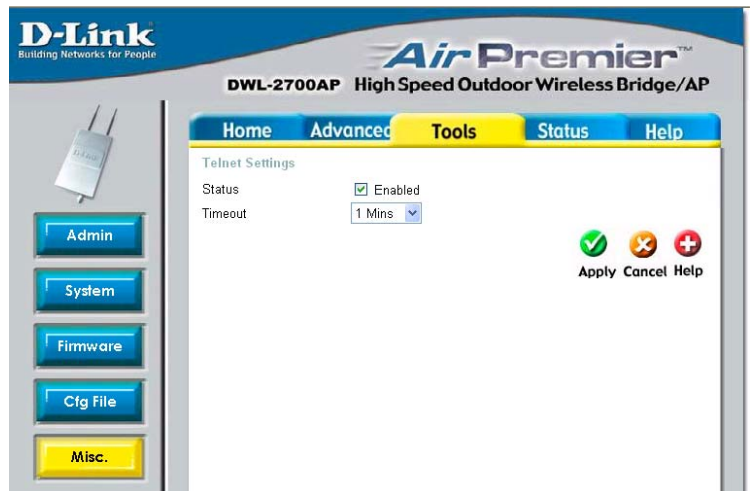
Telnet Settings

Status-

Click to Enable a Telnet session.

Timeout-

Select a time period after which a session timeout will occur.



Using the Configuration Utility (continued)

Status > Device Info

This window displays the settings of the DWL-2700AP, as well as the Firmware version and the MAC address.

The screenshot shows the configuration utility interface for the DWL-2700AP. The left sidebar contains a device image and three buttons: "Device Info" (highlighted in yellow), "Stats", and "Indication". The main content area has a navigation bar with "Home", "Advanced", "Tools", "Status" (highlighted in yellow), and "Help". Below the navigation bar, the "Device Information" section displays the following data:

Device Information	
Firmware Version: v1.03	
MAC Address: 00:05:5d:9a:0d:3a	
Ethernet	
Get IP From:	Manual
IP address:	192.168.0.50
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0
Wireless (802.11g)	
SSID:	default
Channel:	6
Turbo Mode:	N/A
Rate:	Auto
Security Level:	Open System / WEP Disabled

A red plus icon labeled "Help" is located in the bottom right corner of the main content area.

Status > Stats

This window displays the statistics of the wireless local area network.

The screenshot shows the configuration utility interface for the DWL-2700AP. The left sidebar contains a device image and three buttons: "Device Info", "Stats" (highlighted in yellow), and "Indication". The main content area has a navigation bar with "Home", "Advanced", "Tools", "Status" (highlighted in yellow), and "Help". Below the navigation bar, the "WLAN 802.11G Traffic Statistics" section displays the following data:

ThroughPut	
Transmit Success Rate	100 %
Transmit Retry Rate:	0 %
Receive Success Rate:	100 %
Receive Duplicate Rate:	0 %
RTS Success Count:	0
RTS Failure Count:	0
Transmitted Frame Count	
Transmitted Frame Count	107
Multicast Transmitted Frame Count	75
Transmitted Error Count:	0
Transmitted Total Retry Count:	0
Transmitted Multiple Retry Count:	0
Received Frame Count	
Received Frame Count	46268
Multicast Received Frame Count	18
Received Frame FCS Error Count:	0
Received Frame Duplicate Count:	0
Ack Rcv failure Count:	0
Wep Frame Error Count	
WEP Excluded Frame Count	0
WEP ICV Error Count	0

Refresh and Help icons are located in the bottom right corner of the main content area.

Using the Configuration Utility (continued)

Status > Indication

Temperature Indication-

Indicates the current temperature.

RSSI Indication-

Indicates the RSSI voltage.

The screenshot shows the configuration utility interface for the DWL-2700AP. The top navigation bar includes Home, Advanced, Tools, Status (selected), and Help. The main content area is titled 'Indication' and contains two sections: 'Temperature indication' with a progress bar and a value of 38 °C (100 °F), and 'RSSI indication' with a progress bar and a value of 0 dB. On the left side, there is a sidebar with a device image and three buttons: 'Device Info', 'Stats', and 'Indication' (highlighted).

Help

At this window you can access the help screens for the topics listed.

The screenshot shows the configuration utility interface for the DWL-2700AP. The top navigation bar includes Home, Advanced, Tools, Status, and Help (selected). The main content area is titled 'Help' and lists various help topics categorized under Home, Advanced, Tools, Status, and FAQs. On the left side, there is a sidebar with a device image.

- Home**
 - [Setup Wizard](#)
 - [Wireless](#)
 - [LAN Settings](#)
- Advanced**
 - [Mode](#)
 - [Performance](#)
 - [Filters](#)
 - [Encryption](#)
 - [Grouping](#)
 - [DHCP Server](#)
- Tools**
 - [Administrator Settings](#)
 - [System Settings](#)
 - [Firmware Upgrade](#)
 - [Configuration File Upgrade](#)
 - [Miscellaneous Upgrade](#)
- Status**
 - [Device Information](#)
 - [Statistics](#)
- FAQs**

Technical Specifications

Standards

- IEEE 802.11b
- IEEE 802.11g

Device Management

- Web-based manager
- Telnet
- SNMP v.3

Regulation Certifications

- FCC Part15
- ETSI 300/328

Temperature

- Operating: -40°F to 140°F (-40°C to 60°C)
- Storing: -40°F to 149°F (-40°C to 65°C)

Humidity:

- 5% to 95% typical
- All-weather enclosure

Regulation Certifications:

- FCC Part15
- ETSI 300/328

Frequency Range:

- 2.4GHz to 2.497MHz ISM band

Data Rates:

- 108, 54, 48, 36, 24, 18, 12, 9 and 6Mbps
- 11, 5.5, 2 and 1Mbps

Transmit Power:

- 23dBm (200mW)

Technical Specifications (continued)

Receiver Sensitivity:

Typical sensitivity at which frame (1000-byte PDUs) error rate = 10%

- <-89dBm @2Mbps
- <-87dBm @6Mbps
- <-86dBm @9Mbps
- <-85dBm @12Mbps
- <-83dBm @18Mbps
- <-83dBm @11Mbps
- <-80dBm @24Mbps
- <-76dBm @36Mbps
- <-71dBm @48Mbps
- <-66dBm @54Mbps

Current Consumption:

- Max. 7W without POE (without heater)
- Max. 8.5W with POE (without heater)
- Max. 27W without POE (with heater)
- Max. 28.5W with POE (with heater)

Physical Dimensions:

- L = 10.93 inches (277.7mm)
- W = 6.10 inches (155mm)
- H = 1.77 inches (45mm)

Media Access Protocol:

- CSMA/CA with ACK

Antenna Type:

- Monopole antenna with 5dBi gain

Interface:

- Power Jack
- Factory Reset Button
- 10/100M Base-T (UTP)
- Wireless Antenna

LEDs:

- Power LED
- 10/100M LED
- RSSI level LED
- 802.11b/g LED

Technical Specifications (continued)

Transmitter Output Power:

Typical RF Output Power at each data rate

- +18dBm at 54Mbps
- +20dBm at 48Mbps
- +20dBm at 36Mbps
- +23dBm at 24, 18, 12, 9 and 6Mbps
- +23dBm at 11, 5.5, 2 and 1Mbps

Security:

- 64/128152-bit WEP (RC4)
- IEEE 802.1X port-based authentication
- MAC address based access control
- 802.11b SSID hidden
- WPA (Wi-Fi Protected Access)
- AES (Advanced Encryption Standard)

Ethernet Standards:

- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x

Radio and Modulation Type:

- BPSK, QPSK, 16QAM, 64QAM, OFDM
- DQPSK, DBPSK, and CCK

Operating Frequency:

- 2400 ~ 2483.5MHz ISM band
- Channel Numbers
- 11 Channels for the United States
- 13 Channels for Europe
- 13 Channels for Japan

Humidity (non-condensing):

- 5% to 95% typical
- All-weather enclosure

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 8:30am to 9:00pm EST

D-Link Technical Support over the Internet:

<http://support.dlink.ca>

email:support@dlink.ca

Warranty and Registration

(USA only)

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 of 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 and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. 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.

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

Governing Law: This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This limited warranty provides specific legal rights and the product owner may also have other rights which vary from state to state.

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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.

Federal Communications Commission (FCC) Requirements, Part 15

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.

Regulatory information / Disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment and its antenna must be installed on a permanent outdoor structure and provides with minimum distance 1.5 meter between the radiator and your body. For detailed warranty outside the United States, please contact corresponding local D-Link office.

Register your D-Link product online at <http://support.dlink.com/register/>

01/30/04