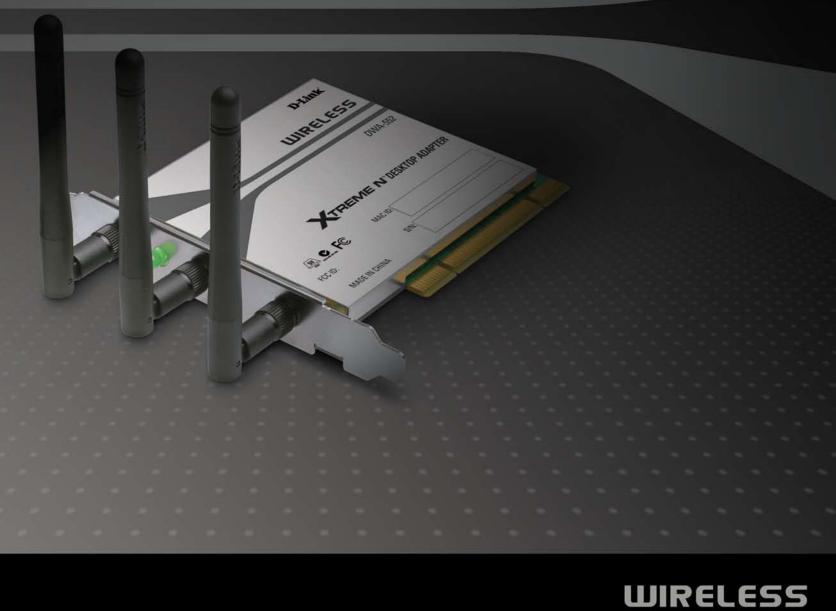
### USER MANUAL DWA-552

VERSION 1.0





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### **Package Contents**

- D-Link DWA-552 Xtreme N<sup>™</sup> Desktop Adapter
- Manual and Warranty on CD
- D-Link Wireless Connection Manager on CD



### **System Requirements**

- A desktop computer with an available PCI slot
- Windows® 2000 (Service Pack 4) or XP (Service Pack 2)
- 300MHz processor and at least 64MB of RAM
- A draft 802.11n or 802.11g access point (for Infrastructure mode), or another draft 802.11n or 802.11g wireless adapter (for Ad-Hoc networking mode).

### Introduction

The D-Link Xtreme N<sup>™</sup> Desktop Adapter (DWA-552) is a Draft 802.11n client device that delivers unrivaled wireless performance for your desktop computer. With the DWA-552, you can add or upgrade your Desktop PC's wireless connectivity without having to purchase a new computer. Once connected, access your network's high-speed Internet connection while sharing photos, files, music, video, printers, and storage. Get a better Internet experience with a faster wireless connection so you can enjoy digital phone calls, gaming, downloading, and video streaming.

Powered by Xtreme N<sup>™</sup> technology, the DWA-552 provides a faster wireless connection and superior reception than 802.11g<sup>\*</sup>. The DWA-552 is designed for use in bigger homes and for those that demand higher networking. Maximize wireless performance by connecting this desktop adapter to a Xtreme N<sup>™</sup> Router and stay connected from virtually anywhere in the home. This adapter supports WEP, WPA, and WPA2 encryption to prevent outside intrusion and protect your personal information from being exposed.

The D-Link Xtreme N<sup>™</sup> DWA-552 is a powerful 32-bit desktop adapter that installs quickly and easily into desktop computers. Like all D-Link wireless adapters, the DWA-552 can be used in ad-hoc mode to connect directly with other cards for peer-to-peer file sharing or in infrastructure mode to connect with a wireless access point or router for access to the Internet in your office or home network.

The DWA-552 features robust security to help protect the wireless network from intruders, complying with the latest wireless networking security protocols, including WEP encryption and Wi-Fi Protected Access (WPA) support for WPA2-PSK. The DWA-552 also includes a configuration utility to discover available wireless networks and create and save detailed connectivity profiles for those networks most often accessed.

\*Maximum wireless signal rate derived from IEEE Standard 802.11g and draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

### **Features**

- Faster Wireless Networking\* Enable wireless connectivity on your Desktop PC computer with the DWA-552. With the performance of D-Link's Xtreme N<sup>™</sup> line of wireless products, the DWA-552 delivers an unsurpassed wireless experience. Perform multiple network tasks at once with the speed provided by this Wireless Adapter.
- **Compatible with 802.11b and 802.11g Devices** Fully compatible with the IEEE 802.11b and 802.11g standards, the DWA-552 can connect with existing 802.11b or 802.11g compliant routers, access points and cards. That means you can still communicate with colleagues and friends while you have the ability to link to even more wireless networks.
- Better Security with 802.1x\*\* and WPA With the DWA-552 in your Desktop PC you can securely connect to a wireless network using 802.1x for wireless authentication, as well as WPA (Wi-Fi Protected Access) providing you a much higher level of security for your data and communication than has previously been available.
- Total Performance Upgrade your computer with the latest draft 802.11n technology.
- Total Wireless Protection Connect to secure wireless networks using WEP and WPA.
- Total Connectionn Get reception throughout your home by connecting to a Xtreme N<sup>™</sup> Router.

\*\* Available as a driver upgrade in the near future from support.dlink.com.

<sup>\*</sup>Maximum wireless signal rate derived from IEEE Standard 802.11g and draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

# Hardware Overview LEDs



## Installation

This section will walk you through the installation process. If you have a built-in wireless adapter, please disable it in device manager before installing your D-Link adapter. Also, if you have previously installed another wireless adapter, please make sure any software is uninstalled.

### **Getting Started**

Before installing your new D-Link wireless adapter, please verify the following:

- Remove any previous installations of wireless adapters
- Disable any built-in wireless adapters
- Verify the settings such as the SSID and security settings of the network(s) you want to connect to

### **Remove Existing Installations**

If you've installed a different manufacture's adapter or a different model D-Link adapter, make sure the software is uninstalled before installing the new software. Some utilities may cause a conflict with the new software. If you plan to use multiple adapters at different times, make sure the utilities are not set to load when your computer boots up. Windows<sup>®</sup> XP users may use the built-in wireless utility for all adapters.

To remove any old software:

Windows<sup>®</sup> XP users: Click Start > Control Panel > Add or Remove Programs. Windows<sup>®</sup> 2000 users: Click Start > Settings > Control Panel > Add or Remove Programs.

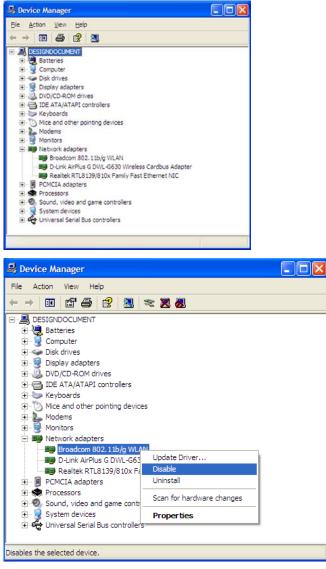
#### **Disable Other Wireless Adapters**

To prevent any conflicts with the D-Link wireless adapter, it is recommended to disable any wireless adapter (as well as any unused Ethernet adapters).

From the desktop, right-click on the **My Computer** icon and select **Properties**.

Click the **Hardware** tab and then click **Device Manager**. Scroll down the list and click the **+** sign to the left of **Network Adapters**.

Right-click the adapter you would like to disable and select **Disable**.

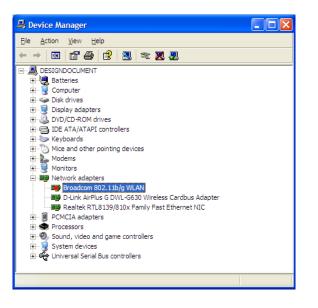


Click **Yes** to disable the adapter.

The adapter is now disabled. When disabled, a red X will be displayed.

Disabling the adapter will not remove the drivers. If you would like to use the adapter, simply right-click it and select **Enable**.

Broadc	om 802.11b/g WLAN
⚠	Disabling this device will cause it to stop functioning. Do you really want to disable it?
	<u>No</u>



### **Wireless Installation Considerations**

The D-Link wireless adapter lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- Keep the number of walls and ceilings between the D-Link adapter and other network devices to a minimum each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- 2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- **3**. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
- 4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
- **5**. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

### **Adapter Installation**

**Note:** Please install the DWA-552 Desktop Adapter into your computer before installing the driver software from the D-Link CD. When the "Add New Hardware" wizard appears, click **Cancel**.

Turn on the computer and Insert the D-Link DWA-552 Driver CD in the CD-ROM drive. The step-by-step instructions that follow are shown in Windows<sup>®</sup> XP. The steps and screens are similar for the other Windows operating systems.

If the CD Autorun function does not automatically start on your computer, go to **Start** > **Run**. In the run box type "**D:\DWA552**. **exe**" (where **D**: represents the drive letter of your CD-ROM drive).



The *InstallShield Wizard* window will appear. Click **Next** to continue.



Setup will install D-Link Xireme N Desktop Adapter

Destination Folder C.N., ND-Link/IDWA-552

install to this folder, click Next. To install to a diffe

Bjowse...

(Back Next) Cancel

D-Link

#### Click Next

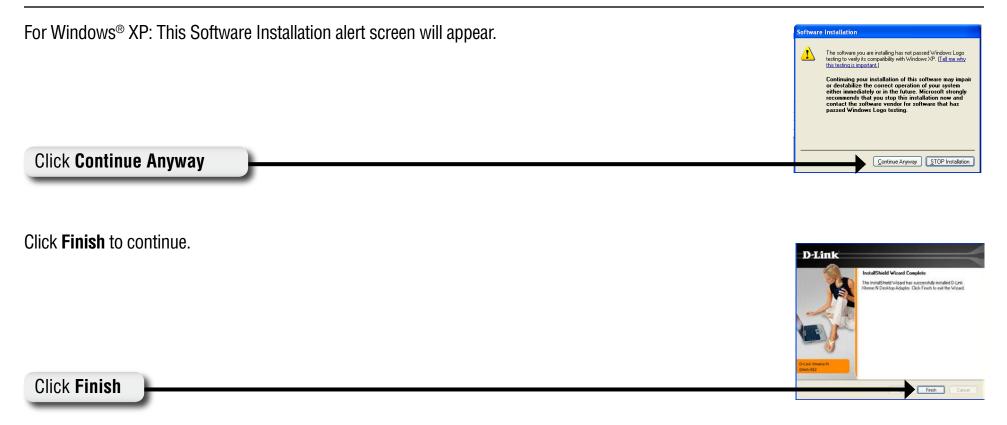
By default setup will install to the default location: *C:\Program Files\D-Link\DWA-552*, where C: represents the drive letter of your hard drive. To install to a different location click **Browse** and specify the location. Click **Next**.

#### Click Next

Select the Program Files folder location.

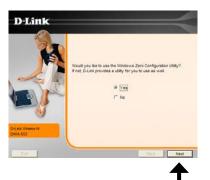


#### Click Next



The D-Link Configuration Wizard will now appear.

If you are using Windows<sup>®</sup> XP (SP2), you will have the option to use either the D-Link utility or the built-in Windows<sup>®</sup> Wireless utility.



#### Click Next

Section 2 - Installation

Enter the network name (SSID) manually. If you enter the SSID incorrectly, you will automatically be brought to the site survey page. Click **Scan** to display the site survey page.

Click on the network name (SSID) and click Next.

#### Click Next

Click Next

If you are prompted to reboot your computer, select **Yes**, **I** want to restart my computer now.

Click Finish







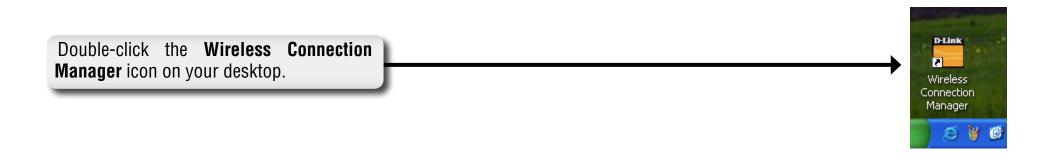
## Configuration

This section will show you how to configure your new D-Link wireless adapter using the D-Link Utility as well as the Windows<sup>®</sup> XP Zero Configuration Utility.

### **D-Link Wireless Connection Manager**

The D-Link DWA-552 uses the Wireless Connection Manager as the management software. The manager provides the user an easy interface to change any settings related to the wireless adapter. Double-clicking on the Wireless Connection Manager icon on your desktop will start the Configuration.

If you are using Windows<sup>®</sup> XP, please skip to page 22.



### **Wireless Networks**

The Wireless Networks (Site Survey) page will display all wireless networks that are available in your area. To connect to a network, simply highlight the wireless network (SSID) and click **Connect**.

- **SSID:** The SSID (Service Set Identifier) is the name of the wireless network.
- **MAC:** Displays the MAC address of the wireless device.
- Signal: Displays the Link Quality of the wireless connection.
- Security: If there is a "lock" icon, this means the wireless network is secure. You must know the encryption key/security settings to connect.
- Channel: Displays the channel of the wireless network.
- **Refresh Button:** Rescans for available wireless networks in your area.
- **Connect Button:** Highlight a wireless network and click the **Connect** button. If the network is secure, a pop-up window will appear. Enter the security information to connect (refer to the *Wireless Security* section for more information).
- Activate Button: Select a wireless network profile from the drop-down menu and click Activate to connect. Allow up to 30 seconds to connect.

default	192.168	.15.24 Cł	H6 11Mbps	Connected	ii
D-Link					<
DWA-552	WIRELESS NETWORK	S MY WREL	ESS NETWORK	ks su	PPORT >>
SSID 🛆	MAC(BSSID)	Signal	Security	Channel	
💡 default	00:11:95:DF:86:82	26%		6	
i default3	00:0D:88:EB:BD:C8	62%	£	11	_
My Wireless Netw	orks —		_	Refresh	Connect

### **My Wireless Networks**

The My Wireless Networks page will allow you to create, edit, and delete wireless network profiles. Every time you connect to a network using the *Wireless Networks* page, a profile will automatically be created.

- New Button: Click New to create a new wireless network profile (refer to page 18).
  - **Modify:** Click **Modify** to edit a current profile (refer to page 19).
  - **Delete:** Click **Delete** to remove a profile.
  - Activate: Click Activate to use a profile. Allow up to 30 seconds to connect to the wireless network.
- Profile Details: The Profile Details section will display information about the wireless network such as the network name (SSID), network type (Infrastructure or Ad-Hoc), and if the network is secured.

	0.0.0.0	CH11	1Mbps	Connected	.1
D-Link					
DWA-552	WIRELESS NETWORKS	MY WIRELESS N	NETWORKS	SUPPOR	<b>⊺</b> >>
- My Wireless Net	work			New	. 1
-				- New	<u> </u>
				Modi	fy
				Dele	te
				Activa	te
Profile Details					
Network					
Network Type	c .				
Security:					
<u></u>					

#### Add Profile

You may add a new network by clicking the **New** button from the *My Wireless Networks* page.

- **Profile Name:** Enter a name for your profile (e.g. Home, Office, Coffee Shop).
  - **SSID:** Enter the SSID of the wireless network.
- Network Type: Select the network type. If you are connecting to a wireless router or access point, select Infrastructure. If you are connecting to another wireless client such as an adapter, select Ad-Hoc.
- **Set Security:** Select the type of security used. Please refer to the **Wireless Security** section for more information.

**OK Button:** Click **OK** to save your settings.

Profile Setting	X
-Basic Settings—	
Profile Name:	New Profile
SSID:	mySSID
Network Type:	Infrastructure      Adhoc
Set Security Option	None Security
C WPA-PSK	
O WPA2-PSK	
O WPA	
O WPA2	
O None     O	
	OK Cancel

#### **Modify Profile**

You may edit an existing profile by clicking the **Modify** button from the *My Wireless Networks* page.

- **Profile Name:** Enter a name for your profile (e.g. Home, Office, Coffee Shop).
  - **SSID:** Displays the SSID of the network.
- **Network Type:** Displays the network type.
- **Set Security:** Select the type of security used. Please refer to the **Wireless Security** section for more information.
  - **OK Button:** Click **OK** to save your settings.

Profile Setting	X
Basic Settings—	
Profile Name:	New Profile
SSID:	mySSID
Network Type:	Infrastructure      Adhoc
Set Security Option	n None Security
O WPA-PSK	
C WPA2-PSK	
C WPA	
O WPA2	
• None	
	OK Cancel

#### Support

If you need help, click the Support button. A panel will appear to the right of the utility which will display information about the utility.

0.0.0.0	CH11	1Mbps	Connected			
D-Link					Support	
DWA-552 // WIRELESS NETWORKS	MY WIRELESS	NETWORKS	SUPPOR	T>>	About	
My Wireless Network			- Nev Modi	_	My Wireless Networks	
			Dele Activa	_	What is a My Wireless Network profile? My Wireless Networks profiles are settings that allow mobile users to	
Profile Details Network Network Type: Security:					move from one location to another while easily connecting to the network at that specific location. These profiles are automatically created for you when you first join the network. You can have a	

#### About

The About screen gives you information about the Firmware and Utility Versions of the DWA-552.

About			×
<b>D</b> -Link			
Driver Version:	1.5.200.27		
Utility Version:	1.00		
MAC Address:	00:0F:3D:85:9E:0E		
		ок	

### Windows<sup>®</sup> XP Configuration Utility

Windows<sup>®</sup> XP users may use the built-in wireless utility. The following instructions are for Service Pack 2 users. If you are using Windows<sup>®</sup> 2000, you must use the D-Link Wireless Connection Manager. Please refer to page 15.

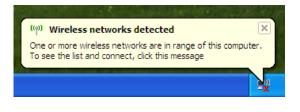
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.

The utility will display any available wireless networks in your area. Click on a network and click the **Connect** button.

Refer to the **Wireless Security** section for information on connecting to a secure network.

If you want to use the D-Link manager instead of the Windows<sup>®</sup> XP wireless utility, refer to the next page.





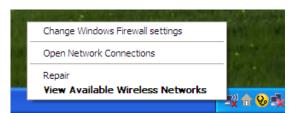


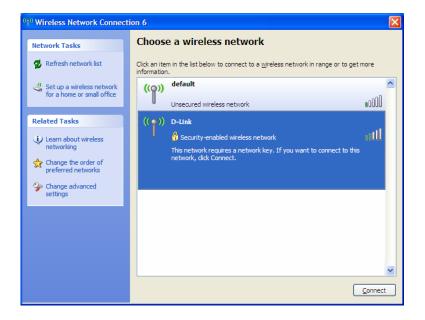
### Disabling The Windows® XP Utility

If you want to use the D-Link Wireless Connection Manager you must disable the Windows® XP wireless utility.

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.

In the **Choose a Wireless Network** window click **Change Advanced Settings** on the left side below *Related Tasks*.





In the *Wireless Network Connection Properties* window, uncheck **Use Windows® to configure my wireless network settings** and then click **OK**.

🕹 Wireless Network Connection 6 Properties 🛛 🕐 🔀
General Wireless Networks Advanced
Use Windows to configure my wireless network settings
Available networks:
To connect to, disconnect from, or find out more information about wireless networks in range, click the button below.
View Wireless Networks
Preferred networks: Automatically connect to available networks in the order listed
below:
Move up
Move <u>d</u> own
Add <u>R</u> emove <u>Properties</u>
Learn about <u>setting up wireless network</u> Advanced
OK Cancel

Refer to page 15, on instructions for launching the D-Link Wireless Connection Manager.

## **Wireless Security**

This section will show you the different levels of security you can use to protect your data from intruders. The DWA-552 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)

- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

### What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

### What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

### **Configure WEP**

### **Using the D-Link Wireless Connection Manager**

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

- Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop. From the list of available wireless networks, select the network you want to connect to and click **Connect**. If the network is using WEP, the screen (as shown to the right) will appear.
- **2.** Enter the WEP key exactly as it is on your wireless router or access point.
- **3.** Click the **Show text in the password field** box to see the WEP key. Unchecking it will hide the key.
- 4. Click **OK** to connect to the network. Allow up to 30 seconds to connect.

If you would like to create a new network and enter the WEP settings, refer to the next page.

Connection	د	ĸ
This network gamdal requires a network key (WE	Р Кеу)	
Key: Attack Key: Show text in the password field		]
	OK Cancel	J

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. make sure you enter the WEP key exactly the same on all wireless devices. It is strongly recommended to set the authentication to **Shared Key**.

- 1. Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop. Click on **New** to create a new profile or highlight an existing profile and click **Modify**.
- 2. Select WEP under Set Security Option.
- **3.** Select **Shared** and then select the *Key Length* from the drop-down menu.
- **4.** Enter the WEP key exactly as it is on your wireless router or access point.
- **5.** Click **OK** to connect to the network. Allow up to 30 seconds to connect.

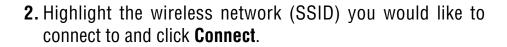
Profile Setting	🔀
Basic Settings Profile Name: SSID:	default default
Network Type:	Infrastructure O Adhoc
Set Security Option WEP WPA-PSK WPA2-PSK WPA WPA2	WEP Security Open  Shared O Auto Key: I  Key Length: 64 bits (40+24) - 10 Hexadecimal
( <u>O None</u>	Show Text in the password field OK Cancel

### **Configure WEP**

### Using the Windows® XP Utility

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows<sup>®</sup> XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select View Available Wireless Networks.







Section 4 - Wireless Security

**3.** The **Wireless Network Connection** box will appear. Enter the WEP key and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless router or access point.

Wireless Network Connection		
The network 'test1' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network.		
Type the key, and then click Connect.		
Network <u>k</u> ey:		
Confirm network key:		
	<u>Connect</u> Cancel	

### **Configure WPA/WPA2 Passphrase**

#### **Using the D-Link Wireless Connection Manager**

It is recommended to enable WPA-PSK on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WPA-PSK passphrase being used.

- 1. Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop.
- **2.** Highlight the wireless network (SSID) you would like to connect to and click **Connect**. If the network is using WPA-PSK, the screen (as shown to the right) will appear.
- **3.** Enter the WPA-PSK passphrase exactly as it is on your wireless router or access point. Click the **Show text in the password field** box to see the passphrase. Unchecking it will hide it.
- 4. Click **OK** to connect to the network. Allow up to 30 seconds to connect.

If you would like to create a new network and enter the WEP settings, refer to the next page.

Connection	×
This network avalon requires a network key (Pa	ssphrase)
Key: ************************************	
	OK Cancel

It is recommended to enable WPA-PSK on your wireless router or access point before configuring your wireless adapter. Make sure you enter the passphrase exactly the same on all wireless devices.

- 1. Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop. Click on **New** to create a new profile or highlight an existing profile and click **Modify**.
- 2. Select WPA/WPA2 Passphrase under Set Security Option.
- 3. Select TKIP or AES.
- **4.** Enter the passphrase exactly as it is on your wireless router or access point.
- 5. Click **OK** to connect to the network. Allow up to 30 seconds to connect.

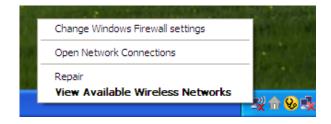
Profile Setting	
Basic Settings Profile Name: SSID: Network Type:	default default ⊙ Infrastructure ○ Adhoc
Set Security Option OWEP WPA-PSK OWPA2-PSK OWPA OWPA2 OWPA2	)

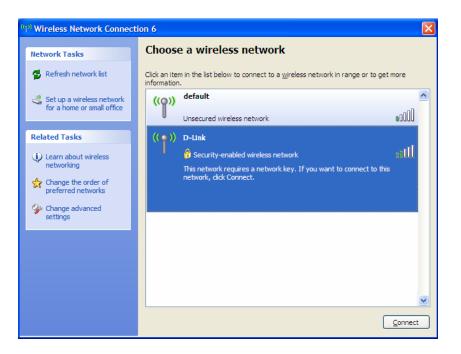
## **Configure WPA/WPA2 Passphrase**

### Using the Windows® XP Utility

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows<sup>®</sup> XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select View Available Wireless Networks.





2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.

Section 4 - Wireless Security

**3.** The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The WPA-PSK passphrase must be exactly the same as on the wireless router or access point.

Wireless Network Conne	ection 🔀			
The network 'test1' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network.				
Type the key, and then click Connect.				
Network <u>k</u> ey:				
Confirm network key:				
	<u>Connect</u> Cancel			

### **Configure WPA/WPA2**

#### **Using the D-Link Wireless Connection Manager**

WPA and WPA2 are for advanced users who are familiar with using a RADIUS server and setting up certificates.

- **1.** Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop. Click on **New** to create a new profile or highlight an existing profile and click **Modify**.
- 2. Select WPA/WPA2 under Set Security Option and then select TKIP or AES.
- 3. Click on Advanced Config to continue.
- A. Next to EAP Type, select EAP-TLS, EAP-TTLS, or PEAP. Extensible Authentication Protocols allow devices on the network to request authentication from the RADIUS server in the network. All the devices on the network must use the same EAP type when using a RADIUS server for authentication. Some RADIUS servers require that the Validate Server field be selected. Check this field if your RADIUS server requires validation.
- 5. Select an User Certificate from the drop-down menu.
- 6. Enter the login information required to authenticate.
- 7. Click Add to enter the IP address(es) of your RADIUS servers.
- 8. Click OK to save your settings.

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default	
default	
⊙ Infrastructure C Adhoc	
WPA © TKIP O AES Advance Config	
	default       Infrastructure     C Adhoc       WPA     C [TKIP]       C [TKIP]     C AES

Advanced Security S	ettings X
EAP Type:	EAP-TLS
User Certificate	Certificate
User Name	Domain Name
Password	
Confirm Password	
TTLS Identity	
	Add
	Keniove
	OK

## Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWA-552. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows<sup>®</sup> XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

#### 1. How do I know if my adapter is installed properly?

Go to Start > My Computer > Properties.

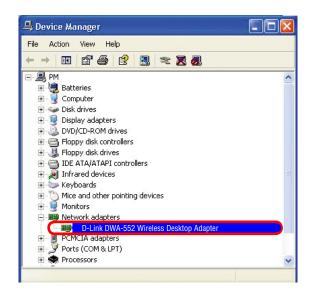
Select the Hardware Tab.



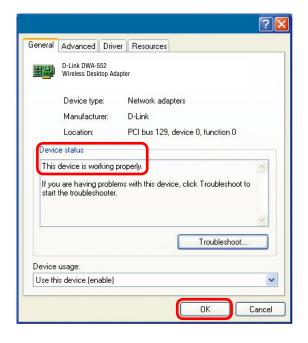
Click the + sign next to Network Adapters.

Right-click on **D-Link DWA-552 Wireless Desktop** Adapter.

Select **Properties** to check that the drivers are installed properly.



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



- 2. I cannot connect to the access point or the wireless router.
  - Make sure that the SSID on the DWA-552 desktop adapter is exactly the same as the SSID on the Access Point or wireless router.
  - Move the DWA-552 and Access Point or Wireless router into the same room and then test the wireless connection.
  - Disable all security settings. (WEP, MAC Address Control, AES)
  - Make sure that the Radio is not locked down to a different frequency
  - Turn off your Access Point and the computer with the DWA-552. Turn on the Access Point, and then turn on the computer with the DWA-552.
  - Refresh the DWA-552 Utility

# 3. The DWA-552 Power and Link lights are not on.

• Check to see if the DWA-552 desktop adapter is firmly inserted into the PCI slot of your laptop computer.

# 4. I forgot my encryption key.

• Reset the Access Point to its factory default settings and restore the DWA-552 Wireless Desktop Adapter to the factory default settings. The default settings are listed in the Configuration section in this manual.

#### 5. The computer does not recognize the DWA-552 Wireless Adapter.

- Make sure that the DWA-552 Wireless Adapter is properly seated in the computer's PCI slot.
- If Windows does not detect the hardware upon insertion of the adapter, make sure to completely remove drivers that were previously loaded. To remove the drivers, do the following:
  - A. Under **Tools** > select **Folder Options...** > select **View** > under Hidden files and folders > select Show hidden files and folders.
  - B. Uncheck Hide extension for known file types > click on Apply
  - C. Search for previously loaded driver files. Remove these files from the INF and SYSTEM (DRIVERS) folders in the Windows directory. **Note:** Windows<sup>®</sup> XP and 2000 will rename .inf files that have not received WHQL certification into oem.inf files (e.g., oem1.inf).

# 6. The computer with the DWA-552 installed is unable to connect to the wireless network and/or the Internet.

- Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection.
- Check that the LED indicators on the wireless router are functioning properly. 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.

- In Infrastructure mode, make sure the same Service Set Identifier (SSID) is specified on the settings for the wireless clients and access points. The SSID factory default setting for D-Link products is default.
- In **Ad-Hoc** mode, both wireless clients will need to have the same **SSID**. Please note that it might be necessary to set up one client to establish a **BSS (Basic Service Set)** and wait briefly before setting up other clients. This prevents several clients from trying to establish a **BSS** at the same time, which can result in multiple singular **BSSs** being established, rather than a single **BSS** with multiple clients associated to it.
- Check that the Network Connection for the wireless client is configured properly. Select AP (Infrastructure) when connecting to an access point and select Ad-Hoc mode when connecting without an access point. Double-click on the WLAN icon in the taskbar > click on Configuration to change the settings for the wireless adapter.
- If Security is enabled, make sure that the correct encryption keys are entered on both the DWA-552 and the access point. Double-click on the WLAN icon in the taskbar > click Encryption. Check to see that the key selected is set to the same key as other devices on the network.

# 7. How can I troubleshoot distance issues using the DWA-552?

- Move the DWA-552 and Access Point or Wireless router into the same room and then test the wireless connection.
- Change the channel of the Access Point.
- Move devices within the line of sight.

# Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

# What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

# Why D-Link Wireless?

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

# How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

# Wireless Local Area Network (WLAN)

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

# Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

# Who uses wireless?

Wireless technology as become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

### Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

# **Small Office and Home Office**

- •Stay on top of everything at home as you would at office
- · Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

# Where is wireless used?

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link wireless desktop adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

# Tips

Here are a few things to keep in mind, when you install a wireless network.

#### **Centralize your router or Access Point**

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

#### **Eliminate Interference**

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

# Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

# Wireless Modes

There are basically two modes of networking:

- Infrastructure All wireless clients will connect to an access point or wireless router.
- Ad-Hoc Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DWA-552 wireless network wireless desktop adapters.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless desktop adapters. All the adapters must be in Ad-Hoc mode to communicate.

# **Networking Basics**

# **Check your IP address**

After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type *cmd* and click **OK**.

At the prompt, type *ipconfig* and press Enter.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.

🛛 C:\WINDOWS\system32\cmd.exe	- 🗆 ×
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	
C:\Documents and Settings>ipconfig	
Windows IP Configuration	
Ethernet adapter Local Area Connection: Connection-specific DNS Suffix .: dlink IP Address	
C:\Documents and Settings>_	
	-

# Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

# Step 1

Windows<sup>®</sup> XP - Click on Start > Control Panel > Network Connections. Windows<sup>®</sup> 2000 - From the desktop, right-click My Network Places > Properties.

### Step 2

Right-click on the Local Area Connection which represents your D-Link network adapter and select Properties.

#### Step 3

Highlight Internet Protocol (TCP/IP) and click Properties.

#### Step 4

Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

#### **Step 5** Click OK twice to save your settings.

	l automatically if your network supports ed to ask your network administrator fi		
Obtain an IP address autor	natically		
Use the following IP addres	s:		
IP address: Subnet mask: Default gateway:	192.168.0.52         255.255.255.0         192.168.0.1		
		Obtain DNS server address	automatically
		💿 Use the following DNS serv	rer addresses:
Preferred DNS server:	192.168.0.1		
Alternate DNS server:			
	Advanced		

# **Technical Specifications**

#### Standards\*

- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n (draft)

#### Security

- WPA Wi-Fi Protected Access
- 64/128-bit WEP

#### **Frequency Range**

• 2.4GHz to 2.462GHz

#### **External Antenna Type**

• Dipole with detachable reverse SMA connector

#### **Operating Temperature**

• 32°F to 131°F ( 0°C to 55°C)

#### Humidity

• 95% maximum (non-condensing)

#### Dimensions

• L = 4.64 (114.3mm)

- W = 2.13 (54mm)
- H = 0.34 inches (8.7mm)

\*Maximum wireless signal rate derived from IEEE Standard 802.11g and draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

#### Weight

• 0.12 lb (55g)

#### Warranty

• 1 Year

# **Contacting Technical Support**

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

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. DWA-552)
- Hardware Revision (located on the label on the adapter (e.g. rev A1))
- Serial Number (s/n number located on the label on the adapter).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

#### For customers within the United States:

Phone Support: (877) 453-5465 24 hours a day, seven days a week.

> Internet Support: http://support.dlink.com

### For customers within Canada:

Phone Support: (800) 361-5265 Monday to Friday 7:30am to 9:00pm EST

> Internet Support: http://support.dlink.ca

# Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

• Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and

• Only for 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, or addresses with an APO or FPO.

#### **Limited Warranty:**

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

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any 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, at its option, 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 or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual 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 ("Software 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 Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, 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 the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by DLink in writing, the replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. 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 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 portions 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 DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

- 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. DLink 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. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. 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:

The Limited Warranty provided herein by D-Link does not cover:

Products that, 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; and 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.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited 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 NONINFRINGEMENT.

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 THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. 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 NONCONFORMING 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 you may also have other rights which vary from state to state.

# Trademarks:

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# **Copyright Statement:**

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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.

#### **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.

#### IMPORTANT NOTICE: 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.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

#### Industry Canada Notice:

This device complies with RSS-210 of the Industry Canada 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.

#### IMPORTANT NOTICE: Radiation Exposure Statement:

This equipment complies with IC 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 device has been designed to operate with an antenna having a maximum gain of 2 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

#### "This Class B digital apparatus complies with Canadian ICES-003"

#### Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada

#### Avis de Conformité à la Réglementation d'Industrie Canada:

Pour empêcher toute interférence aux services faisant l'objet d'une licence, cet appareil doit être utilisé à l'intérieur seulement et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. L'installateur du présent matériel radio doit s'assurer que l'antenne est située ou pointée de manière à ce que cette dernière n'émette pas de champs radioélectriques supérieurs aux limites specifées par Santé Canada pour le grand public; consulter le Code de sécurité 6, disponible sur le site Web de Santé Canada, à l'adresse suivante: www.hc-sc.gc.ca/rpb.

# Registration



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

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