

# USER MANUAL

DAP-1160

VERSION 1.0



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# Package Contents

- D-Link DAP-1160 Wireless G Access Point
- Power Supply
- Manual on CD
- Quick Installation Guide
- Ethernet Cable

**Note:** Using a power supply with a different voltage rating than the one included with the DAP-1160 will cause damage and void the warranty for this product.



# System Requirements

- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet Adapter
- Internet Explorer or Netscape Navigator version 6.0 or above, with JavaScript enabled

# Introduction

D-Link, an industry leader in networking, introduces the new D-Link Wireless G Access Point(DAP-1160). With the ability to transfer files with a maximum wireless signal rate of up to 54Mbps<sup>1</sup>, the DAP-1160 gives you high-speed wireless network access for your home or office.

The DAP-1160 is Wi-Fi IEEE 802.11g compliant, meaning that it can connect and interoperate with other 802.11g compatible wireless client devices. The 1160 is also backwards compatible to 802.11b.

The DAP-1160 can be flexibly configured to operate as an Access Point, AP Client, Bridge, Bridge with AP, Wireless Repeater, WISP Client Router<sup>2</sup> or WISP Repeater<sup>2</sup>

With its D-Link's Click 'n Connect Wizard, the DAP-1160 Access Point ensures that you will be up and running on a wireless network in just a matter of minutes. The DAP-1160 also includes an embedded DHCP server that can automatically assign IP addresses to wireless network clients.

The DAP-1160 Access Point features Wi-Fi Protected Access (WPA-PSK/WPA2-PSK) and 64/128-bit WEP Encryption to provide an enhanced level of security for wireless data communications. The DAP-1160 also includes additional security features to keep your wireless connection safe from unauthorized access.

With easy-to-use Web-based management, the DAP-1160 Access Point is the right choice for setting up your first wireless network or extending the range of an existing wireless network.

<sup>1</sup> Maximum wireless signal rate based on IEEE Standard 802.11g 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.

<sup>2</sup> Function available in future firmware upgrade.

# Features

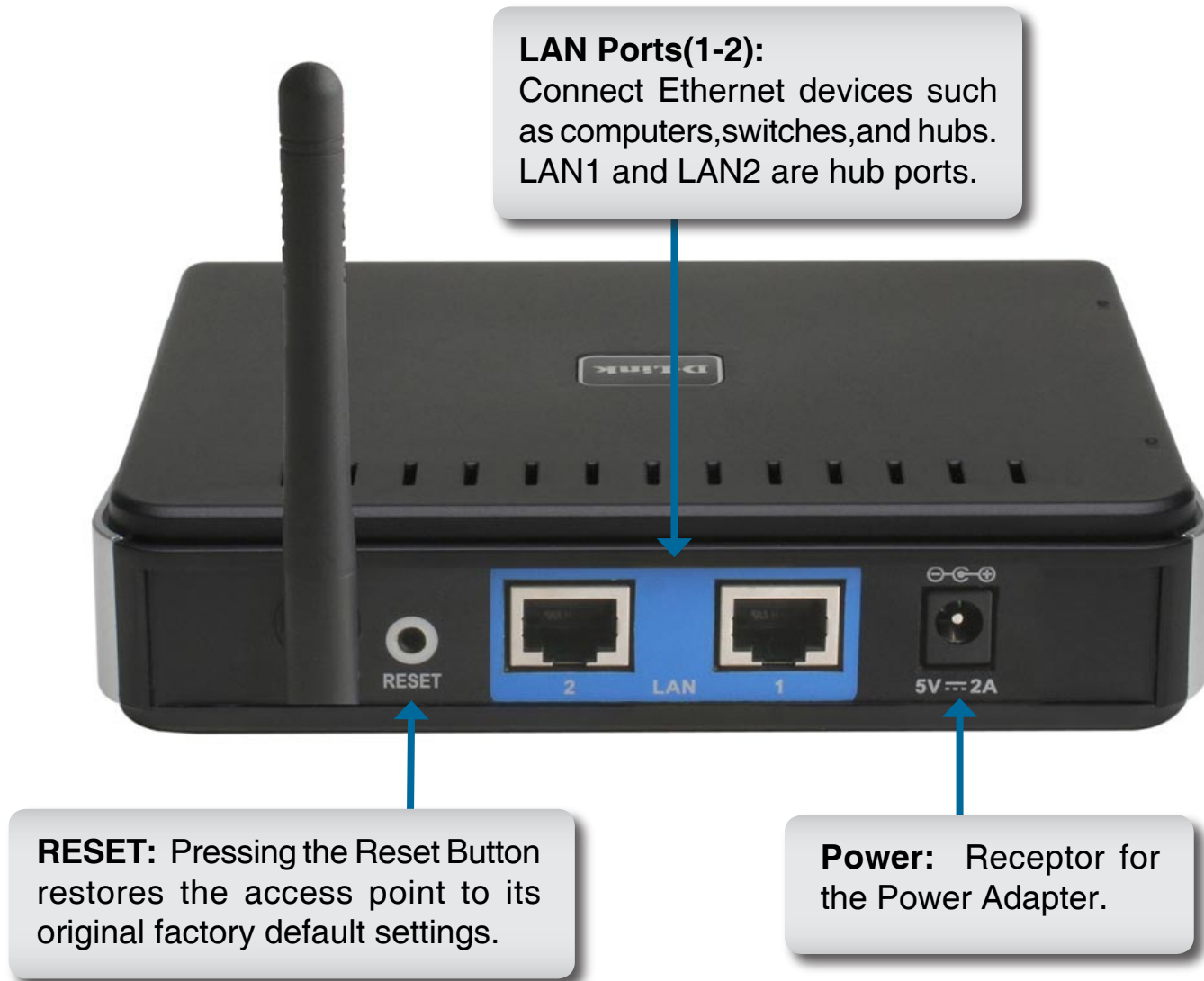
- **Seven operation modes** – Can be flexibly configured to operate as an Access Point, AP Client, Bridge, Bridge with AP, Wireless Repeater, WISP Client Router<sup>1</sup> or WISP Repeater<sup>2</sup>
- **Total security** – Complete set of security features including WEP encryption and WPA/WPA2 to protect network against outside intruders.
- **Two integrated ethernet ports** – Two Ethernet ports for ready connection to two computers, or to an Ethernet-enabled device (e.g. a broadband router) and a PC.
- **Connect home and soho to a wireless network** – Create a wireless network for your home and office using the D-Link DAP-1160 is an 802.11g standard Wireless Access Point. Connect this Access Point to a broadband modem and wirelessly share your Internet connection. Enjoy surfing the web, checking e-mail, and chatting with family and friends online.
- **Protect wireless network and data** – The DAP-1160 provides 64/128-bit WEP encryption and WPA/WPA2 security to protect your network and wireless data. In addition, it also provides MAC address filtering and the Disable SSID Broadcast function to limit outsiders' access to your home and office network.
- **Flexibly configure your AP for different applications** – The DAP-1160 can be configured to operate as (1) an Access Point to act as a central hub for wireless users, (2) an AP Client to connect to another Access Point, (3) a Bridge to joint two wireless workgroups together, (4) a Bridge with AP to act as wireless hub and a bridge at the same time, (5) a Repeater to extend the wireless coverage to cover all "dead" spots", (6) a WISP Client Router<sup>1</sup> to let wireless Internet service subscribers share Internet connection with home/office Ethernet-enabled computers without the need for an extra router, or (7) a WISP Repeater<sup>2</sup> to let WISP subscribers share Internet connection with wireless computers without any extra router.
- **Easy to install and use** – With D-Link's Click 'n Connect Wizard, you can set up your wireless network in minutes. It configures your DAP-1160's operation mode, makes it easy to add new wireless devices onto the network, and helps you create a simple wireless network for your home and office.

<sup>1</sup> Maximum wireless signal rate based on IEEE Standard 802.11g 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.

<sup>2</sup> Function available in future firmware upgrade.

# Hardware Overview

## Connections

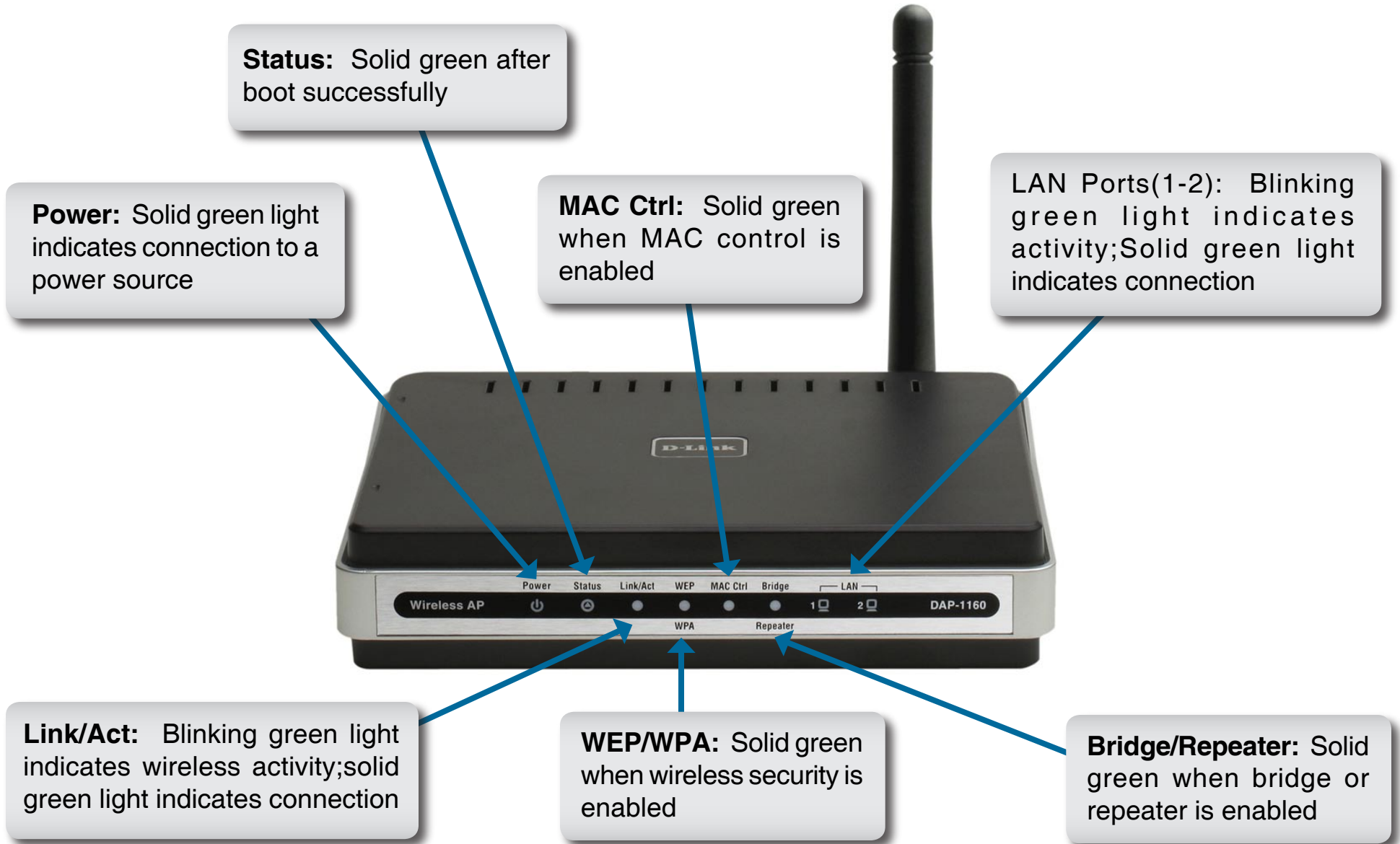


**RESET:** Pressing the Reset Button restores the access point to its original factory default settings.

**Power:** Receptor for the Power Adapter.

# Hardware Overview

## LEDs





# Configuration

This section will show you how to configure your new D-Link wireless access point using the web-based configuration utility.

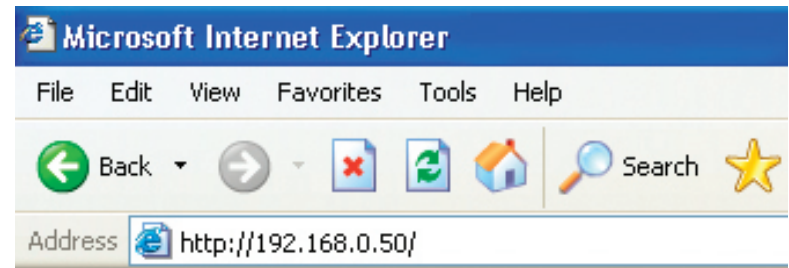
## Web-based Configuration Utility

If you wish to change the default settings or optimize the performance of the DAP-1160 , D-Link has included a configuration utility for this purpose.

After you have completed the initial installation, you can access the configuration menu, at any time, by opening the web-browser and typing in the IP address of the DAP-1160. The DAP-1160's default IP address is shown below:

Open the web browser

Type in the **IP address** of the DAP-1160.(192.168.0.50).

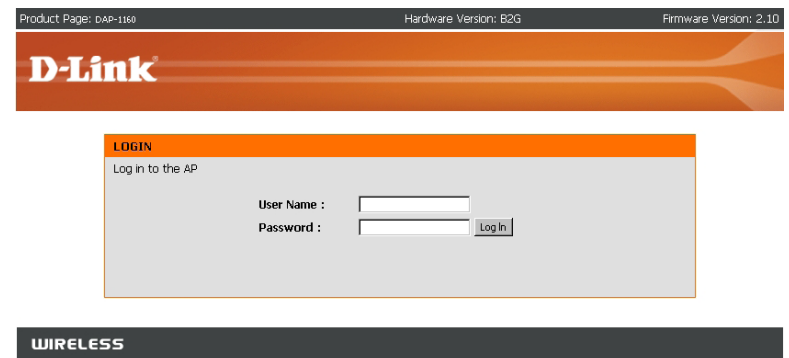


*Note: If you have changed the default IP address assigned to the DAP-1160, make sure to enter the correct IP address.*

Type **admin** in the **User Name** field

Leave the **Password** blank

Click **OK**



After logging in the **Setup > Wizard** page will be displayed:

The screenshot displays the D-Link DAP-1160 web interface. At the top, it shows 'Product Page: DAP-1160', 'Hardware Version: A1', and 'Firmware Version: v1.00'. Below this is the D-Link logo. A navigation bar contains 'DAP-1160 //', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' section is active, showing a sidebar with 'WIZARD', 'WIRELESS', and 'LAN'. The main content area is titled 'WIZARD' and contains the following text: 'The following Web-based Setup Wizard is designed to assist you in your wireless network setup. This Setup Wizard will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.' Below this text is a 'Launch Setup Wizard' button. A red note states: 'Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Access Point.' On the right side, under 'Helpful Hints..', it says: 'If you are new to networking and have never configured an access point before, click on Launch Setup Wizard and the access point will guide you through a few simple steps to get your network up and running.'

## Setup Wizard

A Setup Wizard is available to quickly and easily configure access point wireless security settings.

Click **Launch Setup Wizard**.

### WIZARD

The following Web-based Setup Wizard is designed to assist you in your wireless network setup. This Setup Wizard will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.

Launch Setup Wizard

**Note:** Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Access Point.

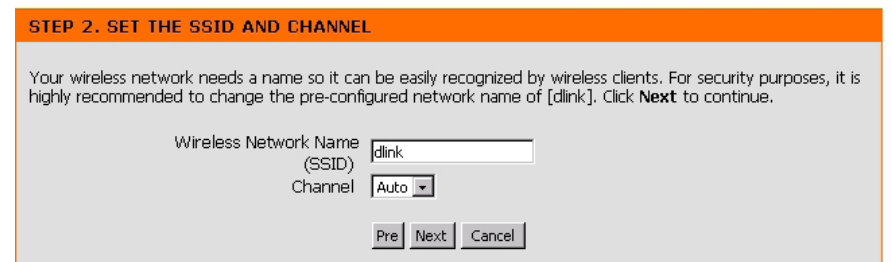
The wizard welcome screen will appear. Click **Next** to continue.



Create a new password and then click **Next** to continue.



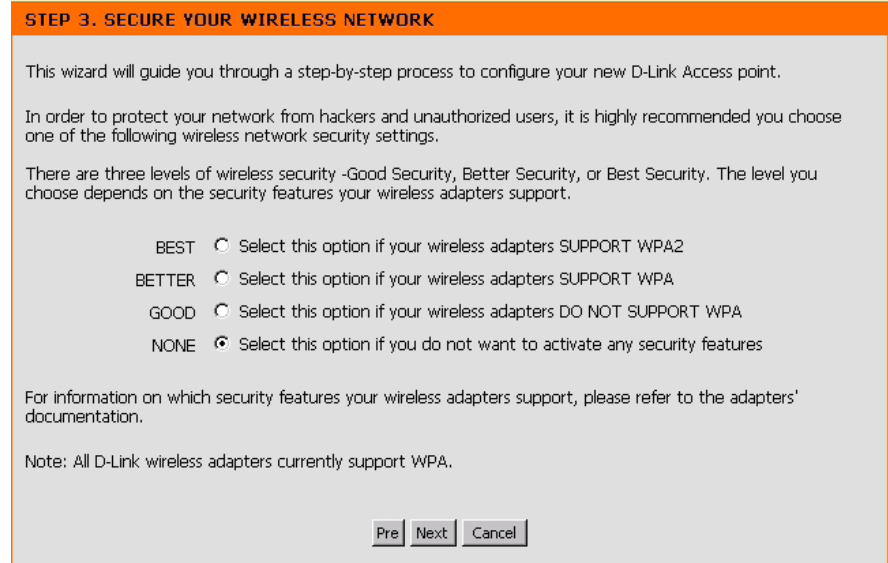
Enter your wireless network name (SSID). Auto Channel Scan is enabled by default. Uncheck the option to select a channel. Click **Next** to continue.



Select the type of wireless security you want to use:

- Best - WPA2 Authentication
- Better - WPA Authentication
- Good - WEP Encryption
- None - No Security

Click **Next** to continue.



If you selected Good (WEP) security, select a **Key Type**, **Key Size**, and enter a **Wireless Security Password**:

Click **Next** to continue.



If you selected Better/Best security, enter a **Wireless Security Password** between 8-63 characters:

Click **Next** to continue.

At the **Setup Complete** screen, if you selected Good security, the following screen will show your WEP key. This key should be used by wireless clients connecting to the wireless network:

Click **Save**.

**STEP 3. SET YOUR WPA PERSONAL PASSPHRASE**

Once you have selected your security level - you will need to set a WPA Personal Passphrase.

WPA Personal Passphrase:   
(8 to 63 characters)

Note: You will need to enter your WPA Personal Passphrase into your wireless client to establish proper wireless communication.

**STEP 4. SAVE AND RESTART**

Below is a detailed summary of your wireless security settings. Please print this page out, or write the information on a piece of paper, so you can configure the correct settings on your wireless client adapters.

**Wireless Network Name (SSID) :** dlink  
**Channel :** 1  
**Wep Key Length :** 64-Bit  
**Wep Key Type :** ASCII  
**Default WEP Key to Use :** 1  
**Authentication :** Open  
**Wep Key :** \*\*\*\*\*

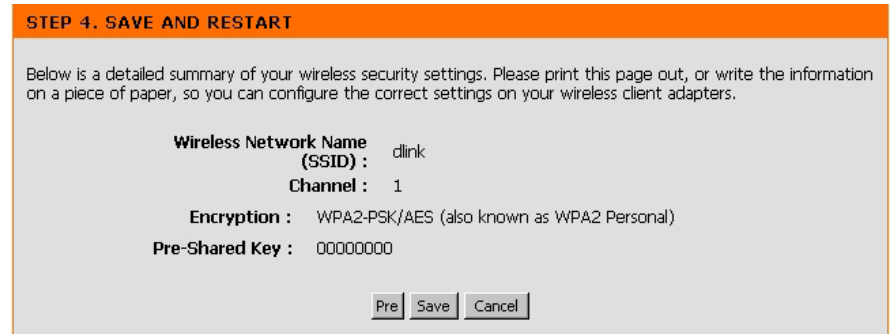
If you selected Better security, the following screen will show your Pre-Shared Key. This key should be used by wireless clients connecting to the wireless network.

Click **Save**.



If you selected Best security, the following screen will show your Pre-Shared Key. This key should be used by wireless clients connecting to the wireless network:

Click **Save**.



# Wireless

The Wireless page is used to configure the wireless settings for the access point. Wireless security settings are also configured on this page.

Product Page: DAP-1160
Hardware Version: A1
Firmware Version: v1.00

D-Link

DAP-1160 //	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT															
WIZARD <b style="background-color: #f4a460; color: white; padding: 2px;">WIRELESS</b> LAN	<div style="background-color: #f4a460; padding: 5px; font-weight: bold;">WIRELESS NETWORK</div> <p>Use this section to configure the wireless settings for your D-Link Access Point. Please note that changes made on this section may also need to be duplicated on your wireless client.</p> <p>To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP or WPA.</p> <div style="display: flex; justify-content: center; gap: 10px;"> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </div>				<b>Helpful Hints..</b>  <b>Wireless Mode:</b> Select a function mode to configure your wireless network. Function wireless modes include Access Point, AP Client, WDS, AP+WDS and Repeater. Function wireless modes are designed to support various wireless network topologies and applications.															
<div style="background-color: #333; color: white; padding: 5px; font-weight: bold;">WIRELESS NETWORK SETTINGS :</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Wireless Mode :</td> <td style="width: 40%;"> <input type="text" value="Access Point"/> <input type="button" value="Site Survey"/> </td> <td style="width: 30%;"></td> </tr> <tr> <td>Wireless Network Name :</td> <td> <input type="text" value="dlink"/>           (Also called the SSID)         </td> <td></td> </tr> <tr> <td>Wireless Channel :</td> <td> <input type="text" value="1"/>           (Domain:FCC)         </td> <td></td> </tr> <tr> <td>Enable Auto Channel Scan :</td> <td colspan="2"> <input checked="" type="checkbox"/> </td> </tr> <tr> <td>Enable Hidden Wireless :</td> <td colspan="2"> <input type="checkbox"/>           (Also called Disable SSID Broadcast)         </td> </tr> </table>						Wireless Mode :	<input type="text" value="Access Point"/> <input type="button" value="Site Survey"/>		Wireless Network Name :	<input type="text" value="dlink"/> (Also called the SSID)		Wireless Channel :	<input type="text" value="1"/> (Domain:FCC)		Enable Auto Channel Scan :	<input checked="" type="checkbox"/>		Enable Hidden Wireless :	<input type="checkbox"/> (Also called Disable SSID Broadcast)	
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<div style="background-color: #333; color: white; padding: 5px; font-weight: bold;">WIRELESS SECURITY MODE :</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Security Mode :</td> <td style="width: 70%;"> <input type="text" value="Disable Wireless Security (not recommended)"/> </td> </tr> </table>						Security Mode :	<input type="text" value="Disable Wireless Security (not recommended)"/>													
Security Mode :	<input type="text" value="Disable Wireless Security (not recommended)"/>																			
<b>Hidden Wireless:</b> Enabling Hidden Mode is another way to secure your network. With this																				



## Wireless Settings

**Mode:** Select Access Point mode, AP Client mode, Bridge mode, Bridge with AP mode or Repeater mode.

**Wireless Network Name(Also called the SSID):** dlink is the default setting. The SSID is a unique name that identifies a network. All devices on a network must share the same SSID name in order to communicate on the network. If you choose to change the SSID from the default setting, input your new SSID name in this field.

**Site Survey:** Click this button to choose the root AP from an available connection list. This button is available in AP client and Repeater mode.

**Wireless Channel:** Auto channel selection is the select by default. Input a new number if you want to change the default setting. All devices on the network must be set to the same channel to communicate on the network.

**Enable Auto Channel Scan:** Select Enable or Disable. Enable this feature to auto-select the channel for best wireless performance.

**Enable Hidden Wireless:** Select Enable if you do not want the SSID to be broadcast by the DAP-1160. This prevents the SSID from being seen by Site Survey utilities, so any wireless clients will have to be pre-configured with the SSID of the DAP-1160 in order to connect to it.

**Wireless Security Mode:** Select a wireless security setting. Options are None, WEP, WPA, WPA2 or WPA2-Auto. See p.34 for a detailed explanation of the wireless security options.

# Access Point

Product Page: DAP-1160		Hardware Version: A1		Firmware Version: v1.00		
<b>D-Link</b>						
<b>DAP-1160</b> //		<b>SETUP</b>	<b>ADVANCED</b>	<b>TOOLS</b>	<b>STATUS</b>	<b>SUPPORT</b>
WIZARD WIRELESS LAN		<b>WIRELESS NETWORK</b> Use this section to configure the wireless settings for your D-Link Access Point. Please note that changes made on this section may also need to be duplicated on your wireless client.  To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP or WPA.  <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>			<b>Helpful Hints..</b>  <b>Wireless Mode:</b> Select a function mode to configure your wireless network. Function wireless modes include Access Point, AP Client, WDS, AP+WDS and Repeater. Function wireless modes are designed to support various wireless network topologies and applications.	
		<b>WIRELESS NETWORK SETTINGS :</b>  Wireless Mode : <input type="text" value="Access Point"/> <input type="button" value="Site Survey"/> Wireless Network Name : <input type="text" value="dlink"/> (Also called the SSID) Wireless Channel : <input type="text" value="1"/> (Domain:FCC) Enable Auto Channel Scan : <input checked="" type="checkbox"/> Enable Hidden Wireless : <input type="checkbox"/> (Also called Disable SSID Broadcast)			<b>Wireless Network Name:</b> Changing your Wireless Network Name is the first step in securing your wireless network. We recommend that you change it to a familiar name that does not contain any personal information.	
		<b>WIRELESS SECURITY MODE :</b>  Security Mode : <input type="text" value="Disable Wireless Security (not recommended)"/>			<b>Hidden Wireless:</b> Enabling Hidden Mode is another way to secure your network. With this	

## Access Point Settings

**Wireless Network Name (also called the SSID):** The Wireless Network Name is a unique name that identifies a network. All devices on a network must share the same wireless network name in order to communicate on the network. If you choose to change the wireless network name from the default setting, input your new wireless network name in this field.

**Site Survey:** This option is unavailable in Access Point mode.

**Wireless Channel:** Auto channel selection is default setting. Input a new number if you want to change.

**Enable Auto Channel scan:** Select Enable or Disable. Enable this feature to auto-select the channel for best wireless performance.

**Enable Hidden Wireless:** Select Enable if you do not want the SSID to be broadcast by the DAP-1160. This prevents the SSID from being seen by Site Survey utilities, so any wireless clients will have to be pre-configured with the SSID of the DAP-1160 in order to connect to it.

## AP Client Settings

- Wireless Network Name (also called the SSID):** You can input the wireless network name of root AP or use site survey function to find the root AP.
- Site Survey:** Click this button to choose the root AP from an available connection list.
- Wireless Channel:** The channel used will be displayed. The channel will follow the root AP.
- Enable Auto Channel scan:** This option is unavailable in AP Client mode.
- Enable Hidden Wireless:** This option is unavailable in AP client mode.

**WIRELESS NETWORK SETTINGS :**

Wireless Mode :

Wireless Network Name :  (Also called the SSID)

Wireless Channel :  (Domain:FCC)

Enable Auto Channel Scan :

Enable Hidden Wireless :  (Also called Disable SSID Broadcast)

## Bridge Settings

In Bridge mode, The DAP-1160 wirelessly connects multiple networks, without functioning as a wireless AP.

**Wireless Network Name (also called the SSID):** The Wireless Network Name is a unique name that identifies a network. All devices on a network must share the same wireless network name in order to communicate on the network. If you choose to change the wireless network name from the default setting, input your new wireless network name in this field.

**Site Survey:** This option is unavailable in Bridge mode.

**Wireless Channel:** All devices on the network must share the same channel.

**Enable Auto Channel scan:** This option is unavailable in Bridge mode.

**Enable Hidden Wireless:** This option is unavailable in Bridge mode.

**Remote AP MAC:** Enter the MAC addresses of the APs in your network that will serve as bridges to wirelessly connect multiple networks.

### WDS Security:

**None:** Select None Encryption to across the network.

**WEP64/128:** Select WEP 64bits/128bits to limit communication to only those devices that share the same WEP settings.

**WPA-PSK/WPA2-PSK:** Select WPA-PSK, WPA2-PSK to secure your network using a password and dynamic key changes (No RADIUS server required).

**WIRELESS NETWORK SETTINGS :**

Wireless Mode : Bridge Site Survey

Wireless Network Name :  (Also called the SSID)

Wireless Channel : 1 (Domain:FCC)

Enable Auto Channel Scan :

Enable Hidden Wireless :  (Also called Disable SSID Broadcast)

---

**WDS SETTING :**

Remote AP Mac: 1.  2.

3.  4.

5.  6.

7.  8.

WDS Security: none

WEP Key: Hex

Passphrase:  (8~63 char.)

**Note:** Bridge Mode is not completely specified in WiFi or IEEE standards. It can works with other DAP-1160..Communication with other access points is not guaranteed.

## Bridge with AP Mode Settings

In Bridge with AP mode, the DAP1160 wirelessly connects multiple networks, while still functioning as a wireless AP. Bridge allows access points to communicate with one another wirelessly in a standardized way. It can also simplify the network infrastructure by reducing the amount of cabling required. Basically the access points will act as a client and an access point at the same time.

**Wireless Network Name (also called the SSID):** The Wireless Network Name is a unique name that identifies a network. All devices on a network must share the same wireless network name in order to communicate on the network. If you choose to change the wireless network name from the default setting, input your new wireless network name in this field.

**Site Survey:** This option is unavailable in Bridge with AP mode.

**Wireless Channel:** Input a new number if you want to change the default setting. All devices on the network must be set to the same channel to communicate on the network.

**Enable Hidden Wireless:** Select Enable if you do not want the SSID to be broadcast by the DAP-1160. This prevents the SSID from being seen by Site Survey utilities, so any wireless clients will have to be pre-configured with the SSID of the DAP-1160 in order to connect to it.

**Enable Auto Channel scan:** This option is unavailable in Bridge mode.

**Wireless Security Mode:** Select a wireless security setting. Options are None, WEP, WPA, WPA2 or WPA2-Auto. See p.34 for a detailed explanation of the wireless security options.

**WDS Security:**

**Remote AP Mac :** Enter the MAC addresses of the APs in your network that will serve as bridges to wirelessly connect multiple networks.

**None:** Select None Encryption to across the network.

**WIRELESS NETWORK SETTINGS :**

Wireless Mode : Bridge with AP Site Survey

Wireless Network Name :  (Also called the SSID)

Wireless Channel : 1 (Domain:FCC)

Enable Auto Channel Scan :

Enable Hidden Wireless :  (Also called Disable SSID Broadcast)

---

**WIRELESS SECURITY MODE :**

Security Mode : Disable Wireless Security (not recommended)

---

**WDS SETTING :**

Remote AP Mac: 1.  2.   
 3.  4.   
 5.  6.   
 7.  8.

WDS Security: none

WEP Key:  Hex

Passphrase:  (8~63 char.)

**WEP64/128:** Select WEP 64bits/128bits to limit communication to only those devices that share the same WEP settings.

**WPA-PSK/WPA2-PSK:** Select WPA-PSK, WPA2-PSK to secure your network using a password and dynamic key changes (No RADIUS server required).

**Note:** Bridge mode is not completely specified in WiFi or IEEE standards. It can work with other DAP-1160. Communication with other access points is not guaranteed.

**Wireless Network Name (Repeater Mode Settings):** The Wireless Network Name is a unique name that identifies a network. All devices on a network must share the same wireless network name in order to communicate on the network. If you choose to change the wireless network name from the default setting, input your new wireless network name in this field.

**WIRELESS NETWORK SETTINGS :**

Wireless Mode : Repeater

Wireless Network Name : dlink (Also called the SSID)

Wireless Channel : 1 (Domain:FCC)

Enable Auto Channel Scan :

Enable Hidden Wireless :  (Also called Disable SSID Broadcast)

**Site Survey:** Click this button to choose the root AP from an available connection list.

**Wireless Channel:** Auto channel selection is default setting. Input a new number if you want to change.

**Enable Auto Channel scan:** The channel used will be displayed.

The channel will follow the root AP.

**Enable Hidden Wireless:** This option is unavailable in Repeater mode.

# LAN

The LAN, or Local Area Network, is your private, internal network. This page allows you to configure the IP settings of the LAN interface for the DAP-1160. The IP address can be changed to your current network IP range. This IP address cannot be seen from the Internet.

WIZARD	<b>NETWORK SETTINGS :</b>	<p>Use this section to configure the internal network settings of your AP and also to configure the built-in DHCP Server to assign IP addresses to the computers on your network. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.</p> <p style="text-align: center;"> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </p>	<b>Helpful Hints..</b>	
WIRELESS				<b>LAN Settings:</b>
LAN				<p>Also referred as private settings. LAN settings allow you to configure LAN interface of DAP-1160. LAN IP address is private to your internal network and is not visible to Internet. The default IP address 192.168.0.50 with subnet mask as 255.255.255.0.</p>
				<b>LAN Connection type:</b>
<b>LAN CONNECTION TYPE :</b>		<p>Choose the mode to be used by the Access Point.</p> <p style="text-align: center;">My LAN Connection is : <input type="text" value="Static IP"/></p>	<p>The factory default setting is "Static IP" which allows the IP address of the DAP-1160 to be manually configured in accordance to the applied local area network. Enable Dynamic (DHCP) to allow the DHCP host to automatically assign the Access Point an IP address that conforms to the applied local area network.</p>	
<b>STATIC IP ADDRESS LAN CONNECTION TYPE :</b>		<p>Enter the static address information.</p> <p style="text-align: center;">           IP Address : <input type="text" value="192.168.0.50"/>            Subnet Mask : <input type="text" value="255.255.255.0"/>            Gateway Address : <input type="text" value="0.0.0.0"/> </p>	<b>IP Address:</b>	
<b>DHCP SERVER SETTINGS :</b>		<p>Use this section to configure the built-in DHCP Server to assign IP addresses to the computers on your network.</p> <p style="text-align: center;">           Enable DHCP Server : <input type="checkbox"/>            DHCP IP Address Range : <input type="text" value="192.168.0.100"/> to <input type="text" value="192.168.0.200"/> (addresses within the LAN subnet)            DHCP Lease Time : <input type="text" value="1 Week"/> </p>	<p>The default IP address is 192.168.0.50. It can be modified to conform to an existing local area network. Please note that the IP address of each device in the wireless local area network must be within the same IP address range and subnet mask. Take default DAP-1160 IP address as an example, each station associated to the AP must</p>	



## LAN Settings

- LAN Connection Type:** The DAP-1160 is set to Static by default. Select this option if you do not have a DHCP server on your network, or if you wish to assign a static IP address to the DAP-1160.
- Static IP:** Select this option if you are manually assigning an IP Address.
- Dynamic IP:** Select this option if you would like to have an IP Address automatically assigned to the DAP-1160 by a DHCP server in your network.
- IP Address:** 192.168.0.50 is the default IP Address of the Access Point.
- Subnet Mask:** 255.255.255.0 is the default Subnet Mask. All devices on the network must have the same subnet mask to communicate on the network.
- Gateway address:** Enter the IP Address of the router in your network.

LAN CONNECTION TYPE :			
Choose the mode to be used by the Access Point.			
My LAN Connection is : <input type="text" value="Static IP"/>			
STATIC IP ADDRESS LAN CONNECTION TYPE :			
Enter the static address information.			
IP Address :	<input type="text" value="192.168.0.50"/>		
Subnet Mask :	<input type="text" value="255.255.255.0"/>		
Gateway address :	<input type="text" value="0.0.0.0"/>		
DHCP SERVER SETTINGS :			
Use this section to configure the built-in DHCP Server to assign IP addresses to the computers on your network.			
Enable DHCP Server :	<input checked="" type="checkbox"/>		
DHCP IP Address Range :	<input type="text" value="192.168.0.100"/>	to	<input type="text" value="192.168.0.200"/> (addresses within the LAN subnet)
DHCP Lease Time :	<input type="text" value="1 Week"/>		
DYNAMIC DHCP CLIENT LIST :			
Host Name	IP Address	MAC Address	Expired Time
none	----	----	----

**Enable DHCP** Disabled is the default setting.

**Server:** If you want to use the DAP-1160 as a DHCP server, to automatically assign dynamic IP addresses on the network, you will select Enabled.

**DHCP IP Address Range:** If you have enabled the DHCP server function, enter the starting and Ending point of the IP address range for your network.

**DHCP Lease Time:** Choose the length of time during which the DHCP function of the DAP-1160 automatically regenerates the IP addresses to the devices in your network.

**Dynamic DHCP Client List:** Lists the devices on your network that are receiving dynamic IP addresses from the DAP-1160.

# Advanced Performance

**TX Rates:** Select the transmission rate for the network.

**Transmit Power:** Choose 100%, 50%(-3dB), 25% (-6dB), 12.5% (-9dB), minimum power.

**Beacon Interval:** Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. Default (100) is recommended.

**RTS Threshold:** This value should remain at its default setting of 2,432. If you encounter inconsistent data flow, only minor modifications to the value range between 256 and 2,432 are recommended.

**Fragmentation:** This value should remain at its default setting of 2,346. If you experience a high packet error rate, you may slightly increase your fragmentation threshold within the value range of 256 to 2,346. Setting the fragmentation threshold too low may result in poor performance.

**DTIM Interval (Beacon Rate):** (Delivery Traffic Indication Message) Enter a value between 1 and 255 (default is 3) for the Delivery Traffic Indication Message (DTIM.) A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

**Mode Setting:** For utmost speed, select G Mode to include only 802.11g devices in your network. Select Mix Mode to include 802.11g and 802.11b devices in your network.

**Preamble:** Long Preamble is the default setting. (High traffic networks should use the shorter preamble type.) The preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) used in communication between the access point and the wireless network adapters.

**ADVANCED WIRELESS SETTINGS :**

TX Rates :  (Mbps)

Transmit Power:

Beacon interval :  (msec, range:1~1000, default:100)

RTS Threshold :  (range: 256~2432, default:2432)

Fragmentation :  (range: 256~2346, default:2346, even number only)

DTIM interval :  (range: 1~255, default:3)

Mode setting :  G Mode  Mixed Mode

Preamble Type :  Short Preamble  Long Preamble

## Filters

Use MAC Filters to allow or deny wireless clients, by their MAC addresses, from accessing the DAP-1160. You can manually add a MAC address or select the MAC address from the list of clients that are currently connected to the AP (Connected PCs). The default setting is Disabled MAC Filters.

**MAC Filter List:** This list will display the MAC addresses that are in the selected filter.

WIRELESS ACCESS SETTINGS		
Use the client's <b>MAC Address</b> to authorize network access through the Access Point.		
Access Control :	<input type="text" value="Disable"/>	
MAC Address :	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> <input type="button" value="Clear"/>	
Connected PCs :	<input type="text" value="00-0e-35-76-43-cb"/> <input type="button" value="Clone"/>	
MAC ADDRESS LIST		
MAC Address	Edit	Del

# Tools Admin

**New Password:** Enter the new password.

**Confirm Password:** Re-enter the password to confirm it.

**PASSWORD :**

New Password :

Confirm Password :

# System

**Save Settings:** The current system settings can be saved as a file onto the local hard drive.

**Load Settings:** The saved file or any other saved setting file can be loaded back on the access point. To reload a system settings file, click on Browse to browse the local hard drive and locate the system file to be used. Click Load when you have selected the file to be loaded back onto the access point.

**Restore:** You may also reset the DAP-1160 back to factory settings by clicking on Restore. Make sure to save the unit's settings before clicking on Restore. You will lose your current settings when you click Restore.

**SYSTEM SETTINGS :**

Save Settings To Local Hard Drive :

Load Settings From Local Hard Drive :

Upload Settings :

Restore To Factory Default Settings :

# Firmware

**FIRMWARE UPGRADE :**

There may be new firmware for your DAP-1160 to improve functionality and performance. [Click here to check for an upgrade on our support site.](#)

To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Save Settings button below to start the firmware upgrade.

**CURRENT FIRMWARE INFO :**

**Current Firmware Version** v1.00  
**Firmware Date** Fri, 22 Dec 2006

You can upgrade the firmware of the DAP-1160 at this page. When you click [Click here to check...](#) in this window you will be connected to D-Link's website, where you can download the latest firmware update. After you have completed the firmware download to your hard drive, click Browse to browse your local hard drive and locate the firmware to be used for the update. Click Apply.

# Status Device Info

## DEVICE INFORMATION :

All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.

**Firmware Version: v1.00 , Tue, 23 Jan 2007**

## LAN

MAC Address : 00:40:f4:ff:e7:f6  
Connection : Static IP  
IP Address : 192.168.0.50  
Subnet Mask : 255.255.255.0  
Default Gateway : 0.0.0.0

## WIRELESS LAN

MAC Address : 00:40:f4:ff:e7:f6  
Network Name(SSID) : dlink  
Channel : 1  
Security Type : Open / Disabled

This screen displays the current firmware version, and the current wireless and Ethernet settings of the DAP-1160.

# Log

## View Log

The DAP-1160 keeps a running log of events and activities occurring on the AP. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Setting.

First Page - The first page of the log.

Last Page - The last page of the log.

Previous - Moves back one log page.

Next - Moves forward one log page.

Clear - Clears the logs completely.

Log Settings - Brings up the page to configure the logs.

## Log Settings

Not only does the DAP-1160 display the logs of activities and events, it can be setup to send these logs to another location. The logs can be sent via email to an email account.

**VIEW LOG :**

View Log displays the activities occurring on the DAP-1160.

**LOG FILES :**

page 1 of 3

Time	Message
------	---------



## Stats

### Traffic Statistics

The DAP-1160 keeps statistics of traffic that passes through it. You are able to view the amount of packets that pass through the Ethernet and wireless portions of the network. The traffic counter will reset if the device is rebooted.

	Receive	Transmit
LAN	0 Packets	69 Packets
WIRELESS	2289 Packets	458 Packets

Refresh

## Wireless

### Connected Wireless PCs List

This list displays the MAC Addresses of connected PCs and the length of time that they have been connected.

CONNECTED WIRELESS CLIENT LIST :	
The Wireless Client table below displays Wireless clients Connected to the AP (Access Point).	
Connected Time	MAC Address
19 sec	00:0e:35:76:43:cb

# Support

The Support page contains an index of links to help topics for each function of the DAP-1160.

Product Page: DAP-1160 Hardware Version: B2G Firmware Version: v1.00

**D-Link**

DAP-1160 // SETUP ADVANCED TOOLS STATUS SUPPORT

MENU

**SUPPORT MENU**

**Setup**

- [Wizard](#)
- [Wireless Setting](#)
- [LAN](#)

**Advanced**

- [Performance](#)
- [Filter](#)

**Tools**

- [Admin](#)
- [System](#)
- [Firmware Upgrade](#)
- [Log Setting](#)

**Status**

- [Device Info](#)
- [Stats](#)
- [Client Info](#)
- [Log](#)

**Helpful Hints..**

Click on the links for more informations of each section in the GUI.

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DAP-1160 offers the following types of security:

- WPA-Personal (Pre-Shared Key)
- WPA2-Personal (Pre-Shared Key 2)
- WPA2-Auto-Personal
- WEP (Wired Equivalent Privacy)
- WPA-Enterprise (Extensible Authentication Protocol)
- WPA2-Enterprise (Extensible Authentication Protocol 2)
- WPA2-Auto-Enterprise (Extensible Authentication Protocol 2 Auto)

## 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.

# Configure WEP

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WEP Security**.
3. Next to *Authentication*, select **Shared Key** or **Open**.
4. Select either **64-bit** or **128-bit** encryption from the drop-down menu next to *WEP Encryption*.
5. Next to *Key Type*, select either **Hex** or **ASCII**.
  - Hex (recommended) - Letters A-F and numbers 0-9 are valid.
  - ASCII - All numbers and letters are valid.

**WIRELESS SECURITY MODE :**

Security Mode :

**WEP :**

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the AP and the wireless stations. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP set the authentication type to "Shared Key" when WEP is enabled.

You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. A maximum of 5 text characters can be entered for 64 bit keys, and a maximum of 13 characters for 128 bit keys.

Authentication :

WEP Encryption :

Key Type :

Default WEP Key :

WEP Key 1 :

WEP Key 2 :

WEP Key 3 :

WEP Key 4 :

6. Next to *Key 1*, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.
7. Click **Save Settings** to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the access point.

# 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 (AES) 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 WPA-Personal

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WPA Wireless Security, Enable WPA2 Wireless Security, or Enable WPA2-Auto Wireless Security**.
3. Next to *Cipher Mode*, select **TKIP, AES, or Auto**.
4. Next to *Personal / Enterprise*, select **Personal**.
5. Next to *Passphrase*, enter a key (passphrase). The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?\*&\_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.
6. Enter the passphrase again next to *Confirmed Passphrase*.
7. Click **Save Settings** to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WPA-Personal, WPA2-Personal, or WPA2-Auto-Personal on your adapter and enter the same passphrase as you did on the access point.

The screenshot displays the 'WIRELESS SECURITY MODE' configuration page. At the top, the title 'WIRELESS SECURITY MODE' is shown in a dark header. Below it, the 'Security Mode' is set to 'Enable WPA Wireless Security (enhanced)' via a dropdown menu. A second dark header is labeled 'WPA'. Underneath, a note states: 'WPA requires stations to use high grade encryption and authentication.' The configuration options include: 'Cipher Type' set to 'Auto', 'Personal / Enterprise' set to 'Personal', and two empty text input fields for 'Passphrase' and 'Confirmed Passphrase'.

# Configure WPA (Enterprise)

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Wireless Settings** on the left side.
2. Next to *Security Mode*, select **Enable WPA Wireless Security**, **Enable WPA2 Wireless Security**, or **Enable WPA2-Auto Wireless Security**.
3. Next to *Cipher Mode*, select **TKIP**, **AES**, or **Auto**.
4. Next to *Personal / Enterprise*, select **Enterprise**.
5. Next to *RADIUS Server* enter the IP Address of your RADIUS server.
6. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
7. Next to *Shared Secret*, enter the security key.
8. Click **Apply Settings** to save your settings.

**WIRELESS SECURITY MODE :**

Security Mode :

---

**WPA-PERSONAL :**

WPA-Personal requires stations to use high grade encryption and authentication.

Cipher Type :

PSK / EAP :

802.1X

RADIUS Server 1 : IP

Port

Shared Secret

RADIUS Server 2 : IP

Port

Shared Secret



# Connect to a Wireless Network Using Windows® XP

Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

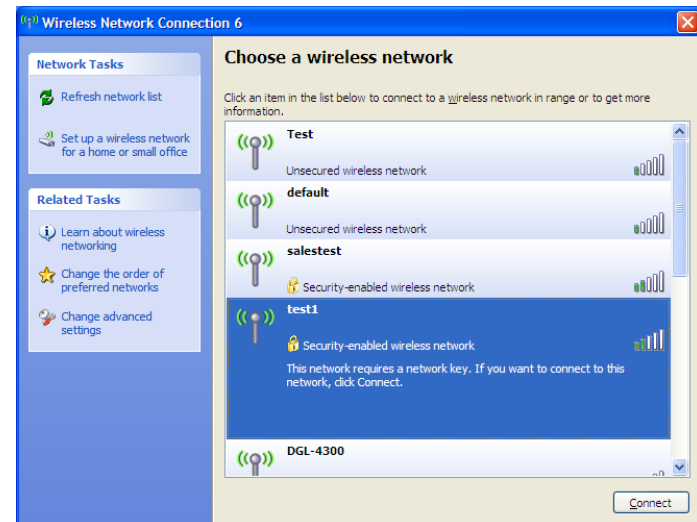
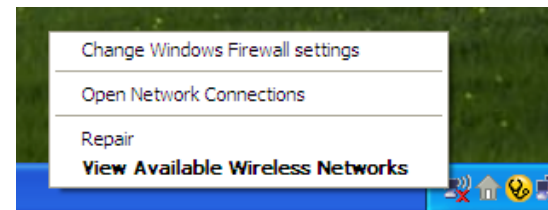
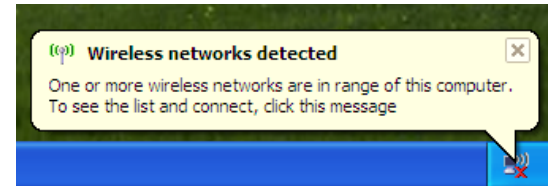
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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 (displayed using the SSID) and click the **Connect** button.

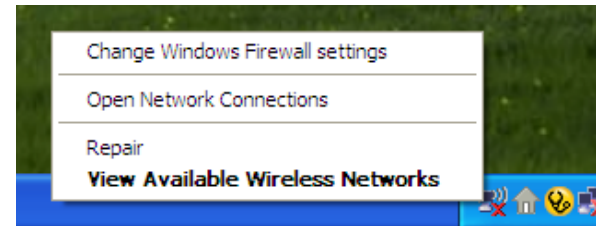
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



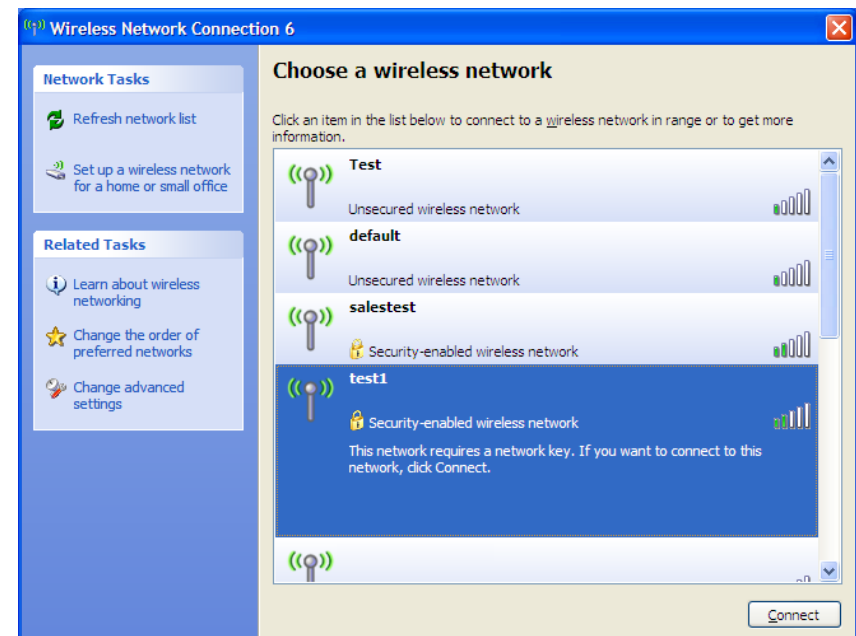
# Configure WEP

It is recommended to enable WEP on your wireless 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® 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**.

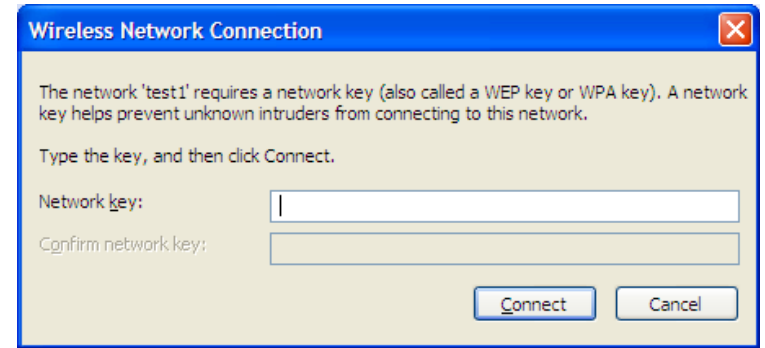


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the same WEP key that is on your access point and click **Connect**.

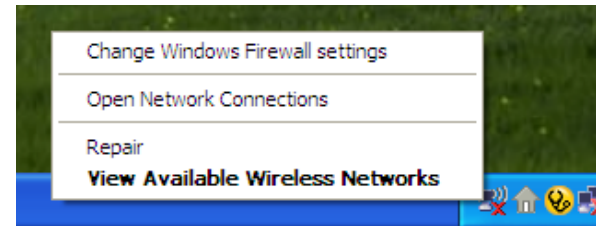
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless access point.



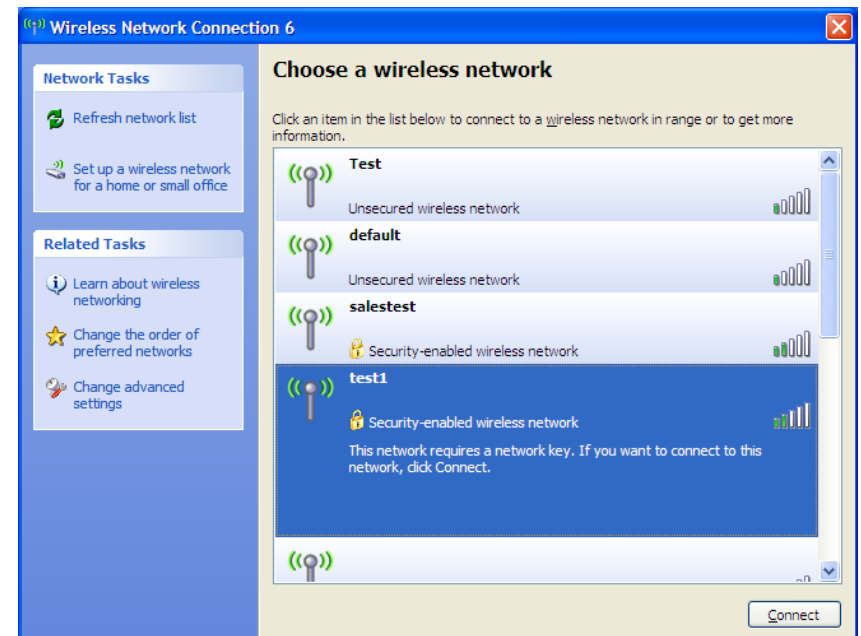
# Configure WPA-Personal

It is recommended to enable WEP on your wireless 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® 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**.

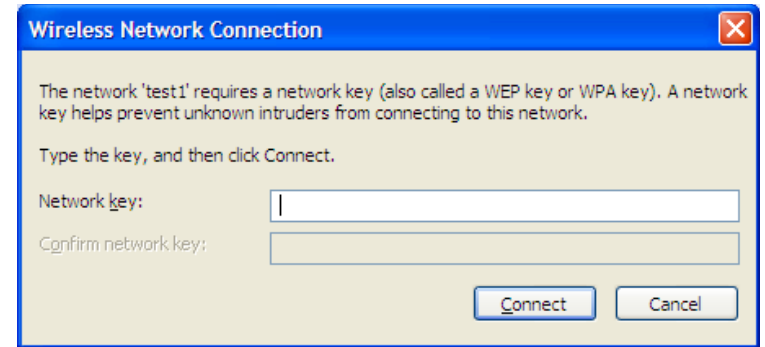


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the WPA-Personal 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-Personal settings are correct. The WPA-Personal passphrase must be exactly the same as on the wireless access point.



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DAP-1160. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

## 1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link access point (192.168.0.50 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 6.0 or higher
  - Firefox 1.5 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:

- Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** icon. From the **Security** tab, click the button to restore the settings to their defaults.
  - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.
  - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.
  - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link access point in the address bar. This should open the login page for your the web management.
  - If you still cannot access the configuration, unplug the power to the access point for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

## 2. What can I do if I forgot my password?

If you forgot your password, you must reset your access point. Unfortunately this process will change all your settings back to the factory defaults.

To reset the access point, locate the reset button (hole) on the rear panel of the unit. With the access point powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the access point will go through its reboot process. Wait about 30 seconds to access the access point. The default IP address is 192.168.0.50. When logging in, the username is **admin** and leave the password box empty.

# 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, 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 has become so popular in recent years that almost everyone is using it, at home and in the office.

### **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 Cardbus 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 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 will significantly reduce any interference that the appliances might cause if operating on same frequency.

## Security

Don't let you 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 access point. 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.

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 cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

# Networking Basics

## Check your IP address

After you install your network 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.

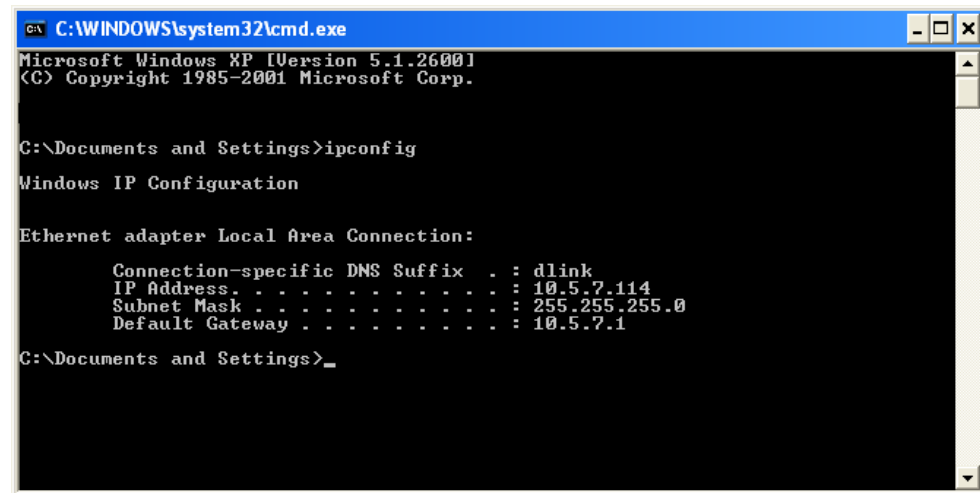
Click on **Start > Run**. In the run box type **cmd** and click **OK**.

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 . . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

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® XP - Click on **Start > Control Panel > Network Connections**.

Windows® 2000 - From the desktop, right-click **My Network Places > Properties**.

### Step 2

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

### Step 3

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

### Step 4

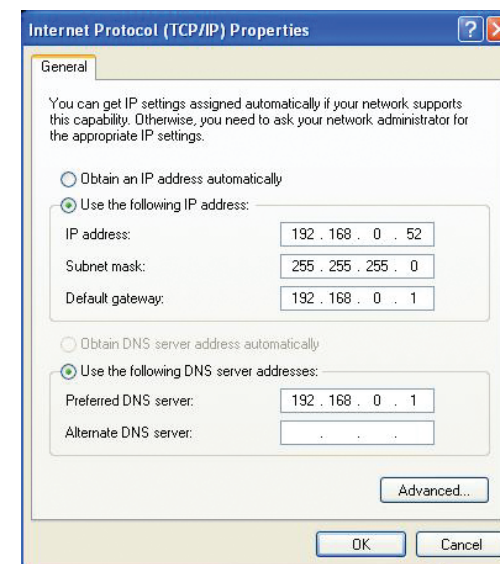
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

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.



# Technical Specifications

## NETWORK STANDARDS

- 802.11g wireless LAN
- 802.11b wireless LAN
- 802.3/802.3u 10BASE-T/100BASE-TX Ethernet
- ANSI/IEEE 802.3 NWay auto-negotiation

## DEVICE INTERFACES

- 802.11g wireless LAN
- 2 10/100BASE-TX Ethernet LAN ports

## OPERATING FREQUENCY

2.4 to 2.4835 GHz

## OPERATING CHANNELS

- FCC: 11
- ETSI: 13

## RADIO & MODULATION SCHEMES

DQPSK, DBPSK, CCK, OFDM

## OPERATION MODES

- Access Point
- AP Client
- Bridge
- Bridge with AP
- Repeater
- WISP Client Router
- WISP Repeater

## ANTENNA

2dBi Gain detachable omni-directional antenna with RP-SMA connector

## RECEIVE SENSITIVITY

+For 802.11b, at 8% PER:

- 11Mbps: -80dBm
- 5.5Mbps: -84dBm
- 2Mbps: -87dBm
- 1Mbps: -88dBm

+ For 802.11g, at 10% PER:

- 54Mbps: -65dBm
- 48Mbps: -66dBm
- 36Mbps: -70dBm
- 24Mbps: -74dBm
- 18Mbps: -77dBm
- 12Mbps: -79dBm
- 9Mbps: -81dBm
- 6Mbps: -82dBm

## Transmit Output Power

- + For 802.11b:  
16dBm (typical)
- + For 802.11g:  
14dBm (typical)

### **SECURITY**

- 64/128-bit WEP data encryption
- WPA-PSK, WPA2-PSK
- WPA-EAP, WPA2-EAP
- TKIP, AES
- MAC address filtering
- SSID broadcast disable function

### **QUALITY OF SERVICE (QoS)**

Wi-Fi Multimedia (WMM) \*

### **DEVICE MANAGEMENT**

- Web-based management through Internet Explorer v.6 or later, Netscape Navigator v.6 or later or other Java-enabled browser

### **Diagnostic LED**

- Power
- Status
- Link/Act
- WEP/WPA
- MAC Ctrl
- BRIDGE / REPEATER
- LAN1
- LAN2

### **POWER INPUT**

5VDC 2A

External power adapter

### **DIMENSIONS**

\* Function available in future firmware upgrade.

54Mbps maximum wireless signal rate derived from IEEE standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, may lower actual throughput rate. Environmental factors will adversely affect wireless signal range, maximum throughput based on 802.11g devices.

144 (W) x 109 (D) x 30 (H) mm (5.67 x 4.29 x 1.18 inches)

### **WEIGHT**

229grams (0.5lb)

### **OPERATING TEMPERATURE**

0 to 55 C (32 to 131 F)

### **STORAGE TEMPERATURE**

-10 to 70 C (14 to 158 F)

### **OPERATING HUMIDITY**

10% to 90% non-condensing

### **STORAGE HUMIDITY**

5% to 95% non-condensing

### **CERTIFICATION**

- FCC Class B
- CE
- C-Tick
- Wi-Fi



### **Federal Communication Commission Interference 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 communications. 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 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.

### **FCC Caution:**

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

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 NOTE:**

#### **FCC Radiation Exposure Statement:**

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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 statement:**

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 NOTE:**

**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.

The Class [B] digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

Cet appareil numérique de la class [B] respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.



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