# USER MANUAL DIR-600

**VERSION 5.00** 



WIRELESS N 150 HOME ROUTER 無線寬頻路由器



WIRELESS

## **Preface**

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

#### **Manual Revisions**

Revision	Date	Description
1.0	December 10, 2010	DIR-600 Revision B5

#### **Trademarks**

D-Link and the D-Link logo are trademarks or registered trademarks of D-Link Corporation or its subsidiaries in the United States or other countries. All other company or product names mentioned herein are trademarks or registered trademarks of their respective companies.

Copyright © 2010 by D-Link Systems, Inc.

All rights reserved. This publication may not be reproduced, in whole or in part, without prior expressed written permission from D-Link Systems, Inc.

# **Table of Contents**

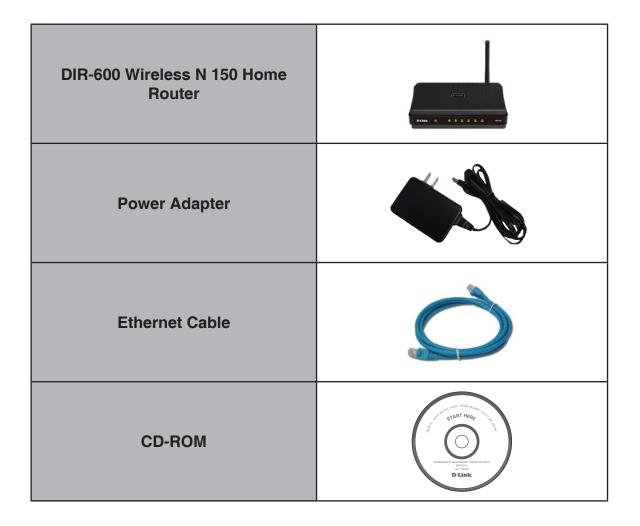
Pretace	I
Manual Revisions	i
Trademarks	i
	_
Product Overview	1
Package Contents	1
System Requirements	2
Features	3
Hardware Overview	4
Connections	4
LEDs	5
	_
Installation	
Before you Begin	6
Wireless Installation Considerations	7
Wall Mounting Your Device	8
Connect to Cable/DSL/Satellite Modem	9
Connect to Another Router	10
Getting Started	12
Configuration	13
Web-based Configuration Utility	
Setup	
Internet	
Internet Connection Setup Wizard	
Manual Internet Connection Setup	
Static IP	
Static ir	23

Dynamic IP (DHCP)	24
PPPoE (Username/Password)	25
PPTP	27
L2TP	29
Russia PPTP (Dual Access)	31
Russia PPPoE (Dual Access)	33
Wireless Settings	35
Manual Wireless Settings	
802.11n/b/g (2.4GHz)	36
Network Settings	
Router Settings	38
DHCP Server Settings	39
DHCP Reservation	
Advanced	41
Virtual Server	41
Port Forwarding	43
Application Rules	44
QoS Engine	45
Network Filter	46
Website Filter	47
Firewall Settings	48
Firewall Rules	49
Routing	51
Advanced Wireless Settings	52
802.11n/b/g (2.4GHz)	52
Wi-Fi Protected Setup (WPS)	53

Advanced Network	.55	Firmware	7
UPnP	.55	Dynamic DNS	7
Internet Ping Block	.55	System Check	79
Internet Port Speed	.55	Schedules	8
Multicast Streams	.55	Status	8
IPv6	.56	Device Info	8
Static IPv6	.57	Logs	8
Link-local Only	.58	Statistics	8
Static IPv6 (Stateless)	.59	Internet Sessions	84
Static IPv6 (Stateful)	.60	Wireless	8
Autoconfiguration(Stateless/DHCPv6)	.61	IPv6	8
Autoconfiguration(Stateless/DHCPv6)-		Support	8
(Stateless)	.63 .64 .65 .66 .67	Wireless Security What is WPA? Wireless Connection Setup Wizard Wireless Security Setup Wizard Add Wireless Device with WPS Wizard Configure WEP Configure WPA/WPA2-Personal (PSK) Configure WPA/WPA2-Enterprise (RADIUS)	
6to4(Stateless) Autoconfiguration6to4(Stateful) (DHCPv6) Autoconfiguration			
6rd		Connect to a Wireless Network  Using Windows® 7	
IPv6 Routing	.72	Configure WPS	
Tools	.73	Using Windows Vista®	
Admin	.73	Configure Wireless Security	10
Time	.74	Using Windows® XP	10
Email Settings	.75		
System	.76		

Configure WPA-PSK	107
Troubleshooting	109
Wireless Basics	113
What is Wireless?	114
Tips	116
Wireless Modes	
Networking Basics	118
Check your IP address	118
Statically Assign an IP address	119
Technical Specifications	120

# **Package Contents**



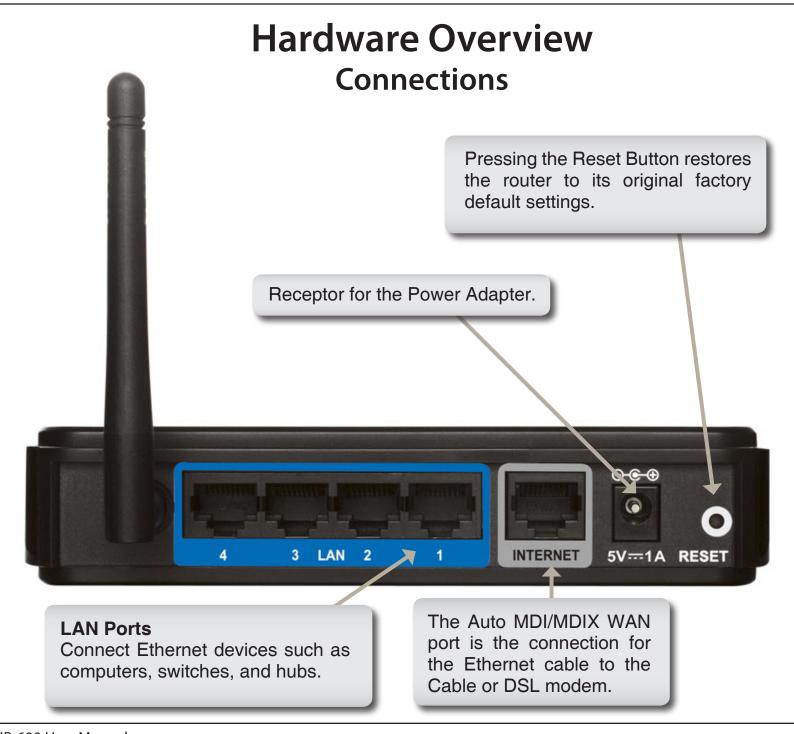
**Note:** Using a power supply with a different voltage rating than the one included with the DIR-600 will cause damage and void the warranty for this product.

# **System Requirements**

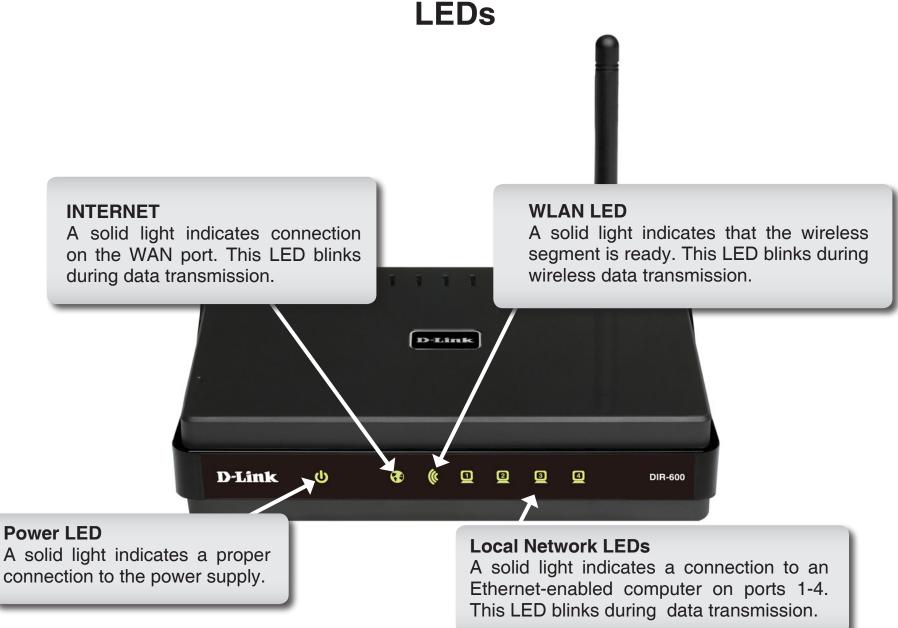
Network Requirements	An Ethernet-based Cable or DSL modem     IEEE 802.11n or 802.11g wireless clients     10/100 Ethernet
Web-based Configuration Utility Requirements	Computer with the following:  • Windows®, Macintosh, or Linux-based operating system  • An installed Ethernet adapter  Browser Requirements:  • Internet Explorer 6 or higher  • Firefox 3.0 or higher  • Safari 3.0 or higher  • Chrome 2.0 or higher  Windows® Users: Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.
CD Installation Wizard Requirements	Computer with the following:  • Windows® 7/ Vista® / XP with Service Pack 3  • An installed Ethernet adapter  • CD-ROM drive

#### **Features**

- Faster Wireless Networking The DIR-600 provides up to 150Mbps\* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio.
- Compatible with 802.11b and 802.11g Devices The DIR-600 is still fully compatible with the IEEE 802.11b and IEEE 802.11g standard, so it can connect with existing 802.11b and IEEE 802.11g PCI, USB and Cardbus adapters.
- Advanced Firewall Features The Web-based user interface displays a number of advanced network management features including:
  - Content Filtering Easily applied content filtering based on MAC Address, URL, and/or Domain Name.
  - Filter Scheduling These filters can be scheduled to be active on certain days or for a duration of hours or minutes.
  - Secure Multiple/Concurrent Sessions The DIR-600 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-600 can securely access corporate networks.
- **User-friendly Setup Wizard** Through its easy-to-use Web-based user interface, the DIR-600 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.



# Hardware Overview LEDs



### Installation

This section will walk you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in the attic or garage.

## Before you Begin

- Please configure the router with the computer that was last connected directly to your modem.
- You can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the Internet port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).
- If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.
- When running the Setup Wizard from the D-Link CD, make sure the computer you are running the CD from is connected to the Internet and online or the wizard will not work. If you have disconnected any hardware, reconnect your computer back to the modem and make sure you are online.

### **Wireless Installation Considerations**

The D-Link wireless router 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:

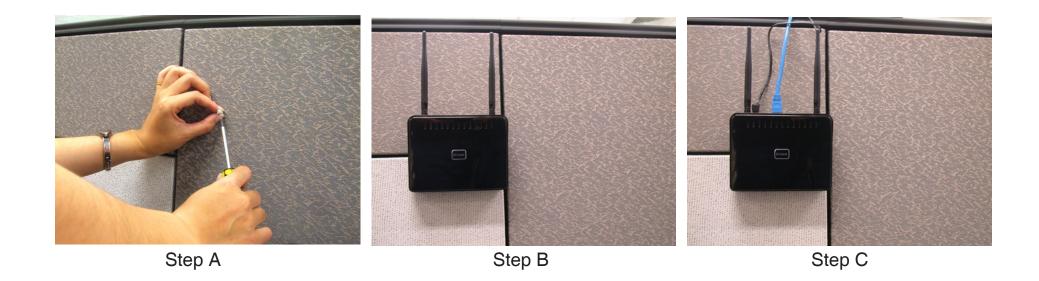
- 1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- **2**. Be aware of the direct line 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.

## **Wall Mounting Your Device**

You can mount the DIR-600 to a wall or a partition for easy and convenient placement of your device.

To wall mount your device,

- A. Screw the provided screws with the equipment to the wall or partition where the device to be placed.
- B. Place the mounting holes on the bottom of the device over the screws to mount it to the wall or partition.
- C. Connect your cables to the device.



### Connect to Cable/DSL/Satellite Modem

If you are connecting the router to a cable/DSL/satellite modem, please follow the steps below:

- 1. Place the router in an open and central location. Do not plug the power adapter into the router.
- 2. Unplug the modem's power adapter. Shut down your computer.
- 3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the Internet port on the router.
- 4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.
- 5. Plug in your modem. Wait for the modem to boot (about 30 seconds).
- 6. Plug the power adapter to the router and connect to an outlet or power strip.
- 7. Use the power switch to power on the router. Wait about 30 seconds for the router to boot.
- 8. Turn on your computer.
- 9. Refer to "Getting Started" on page 12 to configure your router.

### **Connect to Another Router**

If you are connecting the D-Link router to another router to use as a wireless access point and/or switch, you will have to do the following before connecting the router to your network:

- Disable UPnP<sup>™</sup>
- Disable DHCP
- Change the LAN IP address to an available address on your network. The LAN ports on the router cannot accept a DHCP address from your other router.

To connect to another router, please follow the steps below:

- 1. Plug the power into the router and use the power switch to power up the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). Please see the **Networking Basics** section for more information. If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.
- 2. Open a web browser and enter http://192.168.0.1 and press Enter. When the login window appears, set the user name to Admin and leave the password box empty. Click Log In to continue.
- 3. Click on **Advanced** and then click **Advanced Network**. Uncheck the **Enable UPnP** checkbox. Click **Save Settings** to continue.
- 4. Click **Setup** and then click **Network Settings**. Uncheck the **Enable DHCP Server** checkbox. Click **Save Settings** to continue.
- 5. Under Router Settings, enter an available IP address and the subnet mask of your network. Click **Save Settings** to save your settings. Use this new IP address to access the configuration utility of the router in the future. Close the browser and change your computer's IP settings back to the original values as in Step 1.

- 6. Disconnect the Ethernet cable from the router and reconnect your computer to your network.
- 7. Connect an Ethernet cable in one of the **LAN** ports of the router and connect it to your other router. Do not plug anything into the Internet (WAN) port of the D-Link router.
- 8. You may now use the other 3 LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up your wireless network.

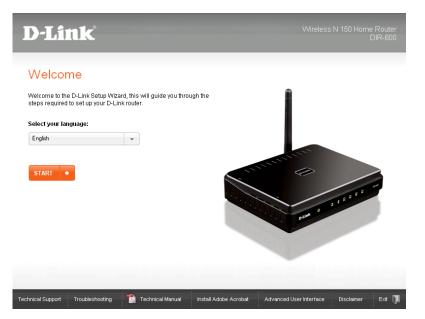
## **Getting Started**

The DIR-600 includes a Setup Wizard CD. Follow the simple steps below to run the Setup Wizard to guide you quickly through the installation process.

Insert the **Setup Wizard CD** in the CD-ROM drive. The step-by-step instructions that follow are shown in Windows® 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:\autorun.exe" (where **D**: represents the drive letter of your CD-ROM drive).

When the autorun screen appears, click Install.



**Note:** It is recommended to write down the SSID and Security Key, followed by the login password.

# Configuration

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

## **Web-based Configuration Utility**

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (192.168.0.1).



Enter **Admin** in the User Name field. Leave the password blank by default.

If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.

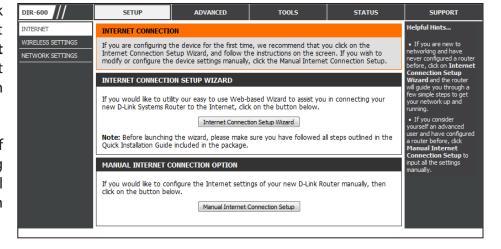


## Setup Internet

This section allows you to configure your Router's Internet settings.

Internet The Internet Connection Setup Wizard provides a quick Connection method for configuring your Internet settings. To start Setup Wizard: the Internet Connection Setup Wizard, click the Internet Connection Setup Wizard button. Refer to "Internet Connection Setup Wizard" on page 15 for more information on how to use the Internet Connection Setup Wizard.

Manual Internet Click the Manual Internet Connection Setup button if Connection you want to enter your Internet settings without running Option: the Internet Connection Setup Wizard. Refer to "Manual Internet Connection Setup" on page 22 for more information on how to configure your Internet settings manually.



#### **Internet Connection Setup Wizard**

Click the **Internet Connection Setup Wizard** button to start the Internet Connection Setup Wizard.

#### INTERNET CONNECTION

If you are configuring the device for the first time, we recommend that you click on the Internet Connection Setup Wizard, and follow the instructions on the screen. If you wish to modify or configure the device settings manually, click the Manual Internet Connection Setup.

#### INTERNET CONNECTION SETUP WIZARD

If you would like to utility our easy to use Web-based Wizard to assist you in connecting your new D-Link Systems Router to the Internet, click on the button below.

Internet Connection Setup Wizard

**Note:** Before launching the wizard, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.

#### MANUAL INTERNET CONNECTION OPTION

If you would like to configure the Internet settings of your new D-Link Router manually, then click on the button below.

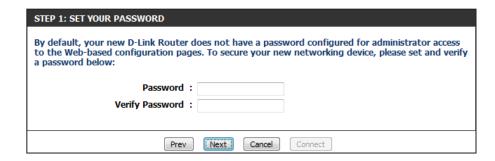
Manual Internet Connection Setup

The following window appears, summarizing the steps required to complete the Internet Connection Setup Wizard:

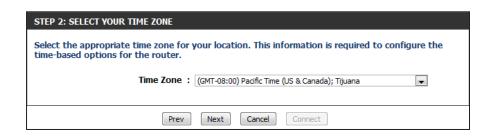
Click **Next** to continue.



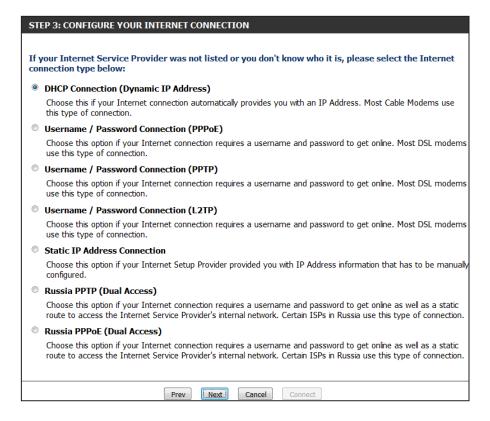
Create a new password and then click Next to continue.



Select your time zone from the drop-down menu and then click **Next** to continue.

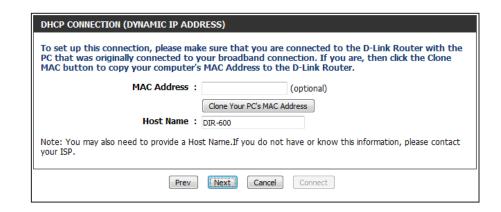


Select the type of Internet connection you use and then click **Next** to continue.



If you selected **DHCP Connection (Dynamic IP Address)**, you may need to enter the MAC address of the computer that was last connected directly to your modem. If you are currently using that computer, click **Clone Your PC's MAC Address** and then click **Next** to continue.

The Host Name is optional but may be required by some ISPs. The default host name is the device name of the router and may be changed.



If you selected **PPPoE**, enter your PPPoE username and password.

If your ISP requires you to enter a PPPoE service name, enter the service name in the **Service Name** field.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

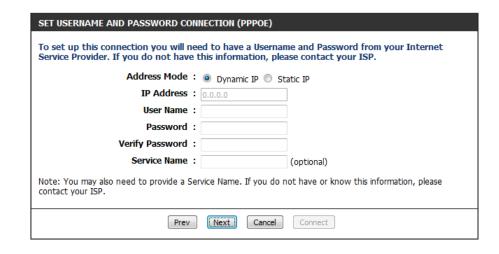
Click **Next** to continue.

**Note:** Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

If you selected PPTP, enter your PPTP username and password.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and PPTP server addresses.

Click **Next** to continue.



To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need PPTP IP address. If you do not have this information, please contact your ISP.

Address Mode : Dynamic IP Static IP

PPTP IP Address : 0.0.0.0

PPTP Subnet Mask : 0.0.0.0

PPTP Gateway IP Address : 0.0.0.0

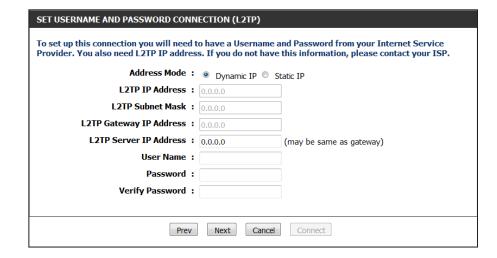
PPTP Server IP Address : 0.0.0.0

User Name : Password : Verify Password : Cancel Connect

If you selected L2TP, enter your L2TP username and password.

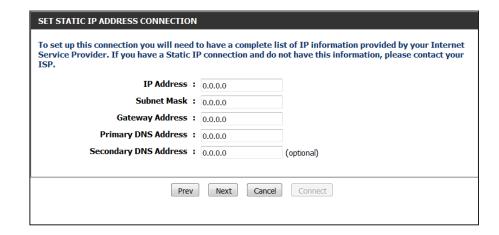
Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and L2TP server addresses.

Click **Next** to continue.



If you selected **Static**, enter your network settings supplied by your Internet provider.

Click **Next** to continue.



If you selected **Russia PPTP** (**Dual Access**), enter your PPTP username and password.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

Click **Next** to continue.

SET USERNAME AND PASSWORD CONNECTION (PPTP)			
			ne and Password from your Internet o not have this information, please contact
Address Mode	:   Dynan	nic IP 🔘 Sta	atic IP
PPTP IP Address	0.0.0.0		
PPTP Subnet Mask	0.0.0.0		
PPTP Gateway IP Address	0.0.0.0		
PPTP Server IP Address	0.0.0.0		(may be same as gateway)
User Name	:		
Password	:		
Verify Password	:		
Prev	Next	Cancel	Connect

If you selected **Russia PPPoE** (**Dual Access**), enter your PPPoE username and password.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

If your ISP requires you to manually specify the WAN Physical IP settings, click the **Static IP** radio button and enter the required *IP Address, Subnet Mask, Gateway,* and *DNS Server Addresses* in their respective fields.

Click **Next** to continue.

**Note:** Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

	NECTION (PPPOE)	
To set up this connection you will ne Service Provider. If you do not have		ame and Password from your Internet lease contact your ISP.
Address Mode:	Dynamic IP	Static IP
IP Address:	0.0.0.0	
User Name :		
Password :		
Verify Password:		
Service Name :		(optional)
WAN PHYSICAL SETTINGS	Dynamic IP	Static IP
WAN PHYSICAL SETTINGS  IP Address:	Dynamic IP	Static IP
	Dynamic IP	Static IP
IP Address:	Dynamic IP	Static IP
IP Address : Subnet Mask :		Static IP
IP Address : Subnet Mask : Gateway :		Static IP  (optional)
IP Address : Subnet Mask : Gateway : Primary DNS Address :		

Click **Connect** to save your settings.



The following window appears to indicate that the settings are being saved. When the Router has finished saving all the changes, the **Setup> Internet** window will open.

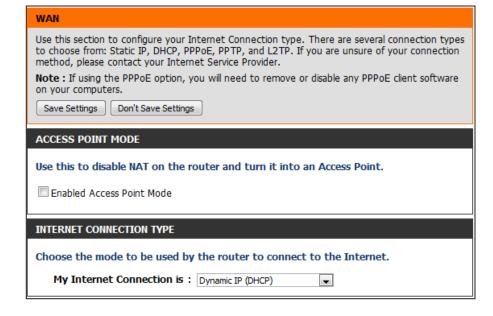
Close your browser window and reopen it to test your Internet connection. It may take a few tries to initially connect to the Internet.



#### **Manual Internet Connection Setup**

Access Point Check the Enabled Access Point Mode box if you want to Mode: disable NAT on the router and turn it into an Access Point.

Internet Use the My Internet Connection is drop-down menu to Connection select the mode that the router should use to connect to Type: the Internet.



# Manual Internet Connection Setup Static IP

Select **Static IP** from the drop-down menu if all the Internet port's IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x.x). The Router will not accept the IP address if it is not in this format.

**IP Address:** Enter the IP address assigned by your ISP.

**Subnet Mask:** Enter the Subnet Mask assigned by your ISP.

**Default Gateway:** Enter the Gateway assigned by your ISP.

**DNS Servers:** The DNS server information will be supplied by your ISP (Internet Service Provider).

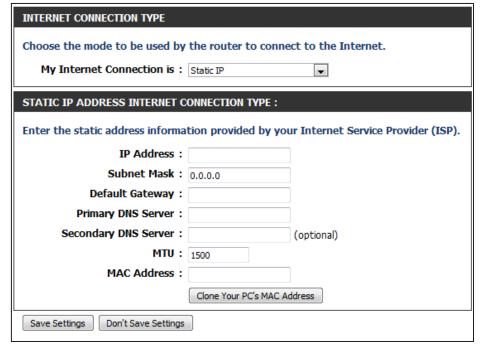
MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500

is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical

interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the **Clone Your PC's MAC Address** button to replace the Internet port's

MAC address with the MAC address of your Ethernet card.



Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup Dynamic IP (DHCP)

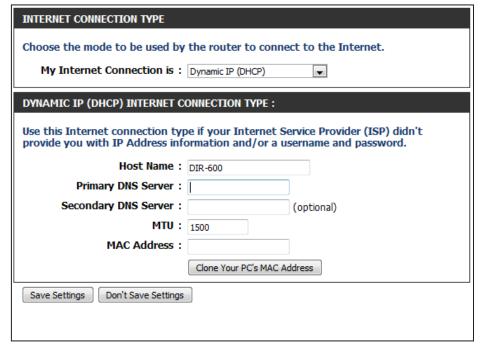
Select **Dynamic IP (DHCP)** from the drop-down menu to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for cable modem services such as Comcast and Cox.

**Host Name:** The Host Name is optional but may be required by some ISPs. Leave blank if you are not sure.

**Primary**/ Enter the Primary and Secondary DNS server IP addresses **Secondary DNS** assigned by your ISP. These addresses are usually obtained **Server:** automatically from your ISP. Enter the value 0.0.0.0 if you did not specifically receive these from your ISP.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.



Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup PPPoE (Username/Password)

Select **PPPoE** (**Username/Password**) from the drop-down menu if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

Address Mode: Select Static IP if your ISP assigned you the IP address,

subnet mask, gateway, and DNS server addresses. In most

cases, select Dynamic.

**IP Address:** Enter the IP address (Static PPPoE only).

**User Name:** Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password

in the next box.

Service Name: Enter the ISP Service Name (optional).

**Reconnect** Use the radio buttons to specify the reconnect mode.

Mode: The user can specify a custom schedule or specify the On

Demand, or Manual option.

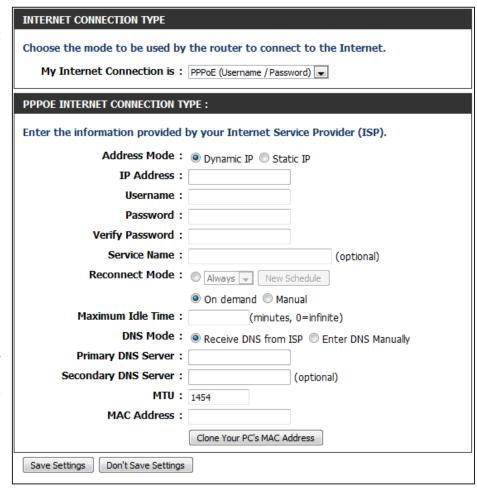
To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Referto "Schedules" on page 80 for more information.

Maximum Idle Enter a maximum idle time during which the Internet

**Time:** connection is maintained during inactivity. To disable this

feature, enable Auto-reconnect.

**DNS Servers:** Enter the Primary and Secondary DNS Server Addresses (Static PPPoE only).



MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup PPTP

Select **PPTP** (**Point-to-Point Tunneling Protocol**) from the drop-down menu if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

Address Mode: Select Static IP if your ISP assigned you the IP address,

subnet mask, gateway, and DNS server addresses. In most

cases, select Dynamic IP.

**PPTP IP Address:** Enter the IP address (Static PPTP only).

PPTP Subnet Enter the Primary and Secondary DNS Server Addresses

Mask: (Static PPTP only).

**PPTP Gateway IP** Enter the Gateway IP Address provided by your ISP.

Address:

**PPTP Server IP** Enter the Server IP provided by your ISP (optional).

Address:

**Username:** Enter your PPTP username.

Password: Enter your PPTP password and then retype the password

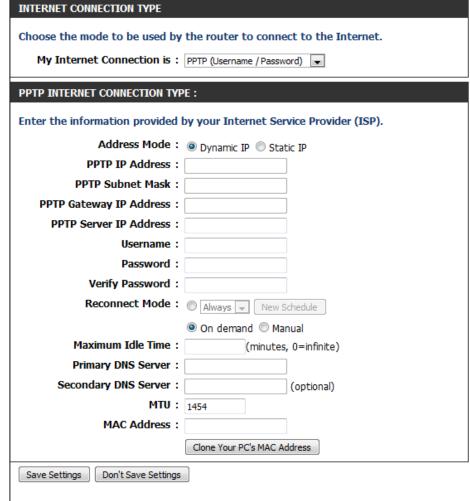
in the next box.

**Reconnect** Use the radio buttons to specify the reconnect mode.

**Mode:** The user can specify a custom schedule or specify the **On** 

Demand, or Manual option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools> Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools> Schedules** window. Refer to "Schedules" on page 82 for more information.



**Maximum Idle** Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable **Time:** Auto-reconnect.

**DNS Servers:** The DNS server information will be supplied by your ISP (Internet Service Provider).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

Click the **Save Settings** button to save any changes made.

# Manual Internet Connection Setup

Choose **L2TP** (Layer 2 Tunneling Protocol) if your ISP uses a L2TP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

**Address Mode:** Select Static if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select Dynamic.

**L2TP IP Address:** Enter the L2TP IP address supplied by your ISP (Static only).

**L2TP Subnet** Enter the Subnet Mask supplied by your ISP (Static only). **Mask:** 

**L2TP Gateway IP** Enter the Gateway IP Address provided by your ISP. Address:

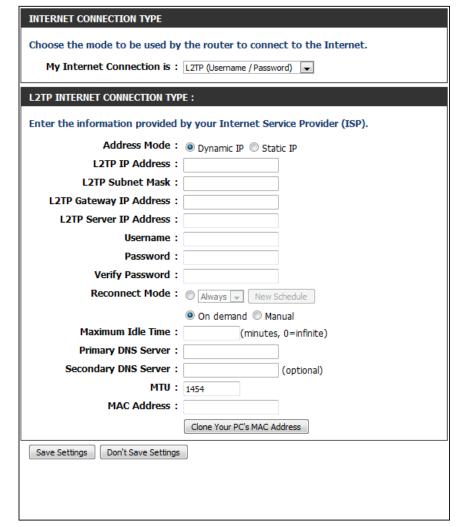
**L2TP Server IP** Enter the Server IP provided by your ISP (optional). **Address:** 

**Username:** Enter your L2TP username.

**Password:** Enter your L2TP password and then retype the password in the next box.

**Reconnect** Use the radio buttons to specify the reconnect mode. The user **Mode:** can specify a custom schedule or specify the **On Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools**> **Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools**> **Schedules** window. Refer to "Schedules" on page 80 for more information.



**Maximum Idle** Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable **Time:** Auto-reconnect.

**DNS Servers:** Enter the Primary and Secondary DNS Server Addresses (Static L2TP only).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

Click the **Save Settings** button to save any changes made.

#### Manual Internet Connection Setup Russia PPTP (Dual Access)

Select **PPTP** (**Point-to-Point Tunneling Protocol**) from the drop-down menu if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

Address Mode: Select Static if your ISP assigned you the IP address, subnet

mask, gateway, and DNS server addresses. In most cases,

select Dynamic.

**PPTP IP Address:** Enter the IP address (Static PPTP only).

PPTP Subnet Enter the Primary and Secondary DNS Server Addresses

Mask: (Static PPTP only).

PPTP Gateway: Enter the Gateway IP Address provided by your ISP.

**PPTP Server IP:** Enter the Server IP provided by your ISP (optional).

Username: Enter your PPTP username.

Password: Enter your PPTP password and then retype the password

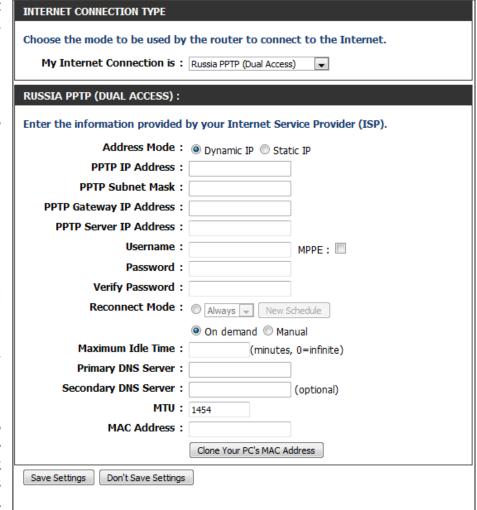
in the next box.

**Reconnect** Use the radio buttons to specify the reconnect mode.

**Mode:** The user can specify a custom schedule or specify the **On** 

**Demand**, or **Manual** option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools**> **Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools**> **Schedules** window. Referto "Schedules" on page 80 for more information.



**Maximum Idle** Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable **Time:** Auto-reconnect.

**DNS Servers:** The DNS server information will be supplied by your ISP (Internet Service Provider).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

Click the **Save Settings** button to save any changes made.

#### Manual Internet Connection Setup Russia PPPoE (Dual Access)

Select **PPPoE** (**Username/Password**) from the drop-down menu if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

**Address Mode:** Select Static IP if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select Dynamic IP.

IP Address: Enter the IP address (Static PPPoE only).

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the

next box.

**Service Name:** Enter the ISP Service Name (optional).

**Reconnect** Use the radio buttons to specify the reconnect mode. The user can

Mode: specify a custom schedule or specify the On Demand, or Manual

option.

To specify a custom schedule, use the drop-down menu to select one of the schedules that has been defined in the **Tools**> **Schedules** window. To create a new schedule, click the **New Schedule** button to open the **Tools**> **Schedules** window. Refer to "Schedules" on page 80 for more information.

Maximum Idle Enter a maximum idle time during which the Internet connection

**Time:** is maintained during inactivity. To disable this feature, enable Auto-

reconnect.

DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static

PPPoE only).

Choose the mode to be used by the router to connect to the Internet.  My Internet Connection is: Russia PPPOE (Dual Access)  PPPOE INTERNET CONNECTION TYPE:  Enter the information provided by your Internet Service Provider (ISP).  Address Mode:	INTERNET CONNECTION TYPE		
PPPOE INTERNET CONNECTION TYPE:  Enter the information provided by your Internet Service Provider (ISP).  Address Mode:	Choose the mode to be used by the router to connect to the Internet.		
PPPOE INTERNET CONNECTION TYPE:  Enter the information provided by your Internet Service Provider (ISP).  Address Mode:	My Internet Connection is :	Russia PPPoF (Dual Access)	
Enter the information provided by your Internet Service Provider (ISP).  Address Mode:	<u>,                                      </u>		
Address Mode:	PPPOE INTERNET CONNECTION T	YPE:	
IP Address:  Username:  Password:  Verify Password:  Service Name:  On demand Manual  Maximum Idle Time:  (minutes, 0=infinite)  DNS Mode:  Recondary DNS Server:  Secondary DNS Server:  (optional)  MTU: 1454  MAC Address:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS   Opynamic IP Static IP  IP Address:  Subnet Mask:  Opynamic IP Static IP  IP Address:  Subnet Mask:  Opynamic IP Static IP  IP Address:  Subnet Mask:  Opynamic IP Static IP	Enter the information provided	by your Internet Service Provider (ISP).	
Username: MPPE: Password:  Verify Password: (optional)  Reconnect Mode: Always New Schedule  On demand Manual  Maximum Idle Time: (minutes, 0=infinite)  DNS Mode: Receive DNS from ISP Enter DNS Manually  Primary DNS Server: (optional)  MTU: 1454  MAC Address: (Clone Your PC's MAC Address)  WAN PHYSICAL SETTINGS  Opynamic IP Static IP  IP Address: Subnet Mask: 0.0.0.0.0  Gateway: Primary DNS Address:	Address Mode:	Dynamic IP      Static IP	
Password:  Verify Password:  Service Name:  On demand Manual  Maximum Idle Time: (minutes, 0=infinite)  DNS Mode: Receive DNS from ISP Enter DNS Manually  Primary DNS Server:  Secondary DNS Server:  Secondary DNS Server:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS   Dynamic IP Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:	IP Address:		
Verify Password :  Service Name :  Qualways New Schedule  On demand Manual  Maximum Idle Time :  (minutes, 0=infinite)  DNS Mode :  Receive DNS from ISP Enter DNS Manually  Primary DNS Server :  Secondary DNS Server :  (optional)  MTU : 1454  MAC Address :  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS   Dynamic IP Static IP  IP Address :  Subnet Mask :  O.0.0.0  Gateway :  Primary DNS Address :	Username :	MPPE:	
Service Name:  Reconnect Mode:  On demand Manual  Maximum Idle Time:  (minutes, 0=infinite)  DNS Mode:  Receive DNS from ISP Enter DNS Manually  Primary DNS Server:  Secondary DNS Server:  (optional)  MTU:  1454  MAC Address:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS   O Dynamic IP Static IP  IP Address:  Subnet Mask:  O,0,0,0  Gateway:  Primary DNS Address:	Password :		
Reconnect Mode:   Always New Schedule  On demand Manual  Maximum Idle Time: (minutes, 0=infinite)  DNS Mode: Receive DNS from ISP Enter DNS Manually  Primary DNS Server: (optional)  MTU: 1454  MAC Address: Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS  Opposite To No Manually  Primary DNS Address:	Verify Password:		
● On demand ● Manual  Maximum Idle Time:	Service Name:	(optional)	
Maximum Idle Time: (minutes, 0=infinite)  DNS Mode: Receive DNS from ISP Enter DNS Manually  Primary DNS Server: (optional)  MTU: 1454  MAC Address: Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS  Dynamic IP Static IP  IP Address: Subnet Mask: 0.0.0.0  Gateway: Primary DNS Address:	Reconnect Mode :	○ Always → New Schedule	
DNS Mode:  Receive DNS from ISP Enter DNS Manually Primary DNS Server:  Secondary DNS Server:   MTU: 1454  MAC Address:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS  Dynamic IP Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:		On demand	
Primary DNS Server:  Secondary DNS Server:  MTU: 1454  MAC Address:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS    Dynamic IP Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:			
Secondary DNS Server: (optional)  MTU: 1454  MAC Address: Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS		Receive DNS from ISP	
MTU: 1454  MAC Address:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS   Dynamic IP Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:	•		
MAC Address:  Clone Your PC's MAC Address  WAN PHYSICAL SETTINGS   Dynamic IP Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:	•		
Clone Your PC's MAC Address		1454	
WAN PHYSICAL SETTINGS   © Dynamic IP © Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:	MAC Address :		
© Dynamic IP © Static IP  IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:		Clone Your PC's MAC Address	
IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:	WAN PHYSICAL SETTINGS		
IP Address:  Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:			
Subnet Mask: 0.0.0.0  Gateway:  Primary DNS Address:	IP Address :	Static IP Static IP	
Gateway : Primary DNS Address :			
Primary DNS Address :		0.0.0.0	
	•		
	•		
, cr		CPECINI	
Save Settings Don't Save Settings	Save Settings Don't Save Settings		

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1454 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the Clone Your PC's MAC Address button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

**WAN Physical** If your ISP requires you to manually specify the WAN Physical IP settings, click the **Static IP** radio button and enter the required *IP* **Settings:** *Address, Subnet Mask, Gateway,* and *DNS Server Addresses* in their respective fields.

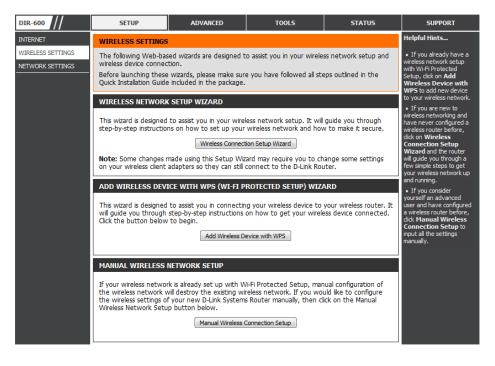
Click the **Save Settings** button to save any changes made.

#### **Wireless Settings**

If you want to configure the wireless settings on your router using the wizard, click **Wireless Connection Setup Wizard** and refer to ""Wireless Connection Setup Wizard" on page 89.

Click **Add Wireless Device with WPS** if you want to add a wireless device using Wi-Fi Protected Setup (WPS) and refer to "Add Wireless Device with WPS Wizard" on page 92.

If you want to manually configure the wireless settings on your router click **Manual Wireless Connection Setup** and refer to the next page.



#### Manual Wireless Settings 802.11n/b/g (2.4GHz)

WIRELESS NETWORK SETTINGS

Enable Auto Channel Selection:

WIRELESS SECURITY MODE

Save Settings

Wireless Network Name: dlink

Wireless Channel: 6

Don't Save Settings

Enable Wireless: V Always V

Enable Hidden Wireless: (Also called the SSID Broadcast)

Security Mode: Disable Wireless Security (not recommended)

WMM Enable: <a> (Wireless QoS)</a>

New Schedule

(Also called the SSID)

**Enable Wireless:** Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all

the wireless functions.

**Schedule:** Select the time frame that you would like your wireless

network enabled. The schedule may be set to Always. Any schedule you create will be available in the drop-down

menu. Click **New Schedule** to create a new schedule.

Wireless Network The Service Set Identifier (SSID) is the name of your wireless

Name: network. Create a name using up to 32 characters. The

SSID is case-sensitive.

Enable Auto The Auto Channel Selection setting can be selected to

**Channel Selection:** allow the DIR-600 to choose the channel with the least

amount of interference.

**Wireless Channel:** Indicates the channel setting for the DIR-600. By default the channel is set to 1. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you enable **Auto Channel Selection**, this option

will be greyed out.

Transmission Rate: Select the transmit rate. It is strongly suggested to select Best (Automatic) for best performance.

WMM Enable: WMM (Wi-Fi Multimedia) is QoS for your wireless network. Check this box to improve the quality of video and voice applications for

your wireless clients. This feature is not available in 802.11n configurations.

Enable Hidden Check this box if you do not want the SSID of your wireless network to be broadcast by the DIR-600. If the SSID is hidden, the SSID

Wireless of the DIR-600 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-600 in order

to connect to it.

Wireless Security Refer to "Wireless Security" on page 88 for more information regarding wireless security.

Mode:

Click the **Save Settings** button to save any changes made.

#### **Network Settings**

This section will allow you to change the local network settings of the router and to configure the DHCP settings.

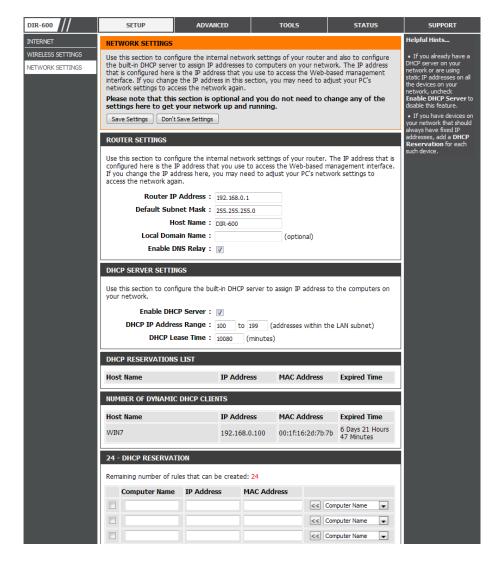
**Router** Use this section to configure the Router's local network **Settings:** settings.

**DHCP Server** Use this section to configure the DIR-600's built-in DHCP **Settings:** server settings.

**DHCP** Displays information about the devices that have a DHCP **Reservations** reservation from the DIR-600. The information includes the **List:** Host Name, IP Address, MAC Address, and Expiration Time.

Number of Displays information about the devices that have a **Dynamic** dynamic DHCP lease from the DIR-600. The information **DHCP Clients:** includes the *Host Name, IP Address, MAC Address,* and *Lease Expiration Time*.

**DHCP** Use this section to create a new DHCP reservation or **Reservation:** manage existing DHCP reservations.



#### Network Settings Router Settings

**Router IP Address:** Enter the IP address of the router. The default IP address is 192.168.0.1.

If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

**Default Subnet** Enter the Subnet Mask. The default subnet mask is

**Mask:** 255.255.255.0.

**Host Name:** Enter a Host Name to identify the DIR-600.

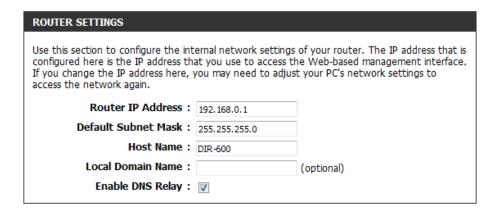
**Local Domain:** Enter the Domain name (Optional).

Enable DNS Relay: Uncheck the box to transfer the DNS server information

from your ISP to your computers. If checked, your

computers will use the router for a DNS server.

Click the **Save Settings** button to save any changes made.



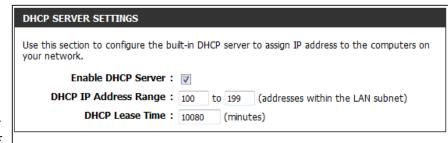
#### Network Settings DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-600 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DIR-600. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

**Enable DHCP** Check this box to enable the DHCP server on your router. **Server:** Uncheck to disable this function.

**DHCP IP Address** Enter the starting and ending IP addresses for the DHCP server's **Range:** IP assignment.

**Note:** If you statically (manually) assign IP addresses to your computers or devices, make sure the IP addresses are outside of this range or you may have an IP conflict.



**DHCP Lease Time:** The length of time for the IP address lease. Enter the Lease time in minutes.

When you have finished configuring the new DHCP Server Settings, click the **Save Settings** button at the top or bottom of the window.

### Network Settings DHCP Reservation

If you want a computer or device to always have the same IP address assigned, you can create a DHCP reservation. The router will assign the IP address only to that computer or device.

**Note:** This IP address must be within the DHCP IP Address Range.

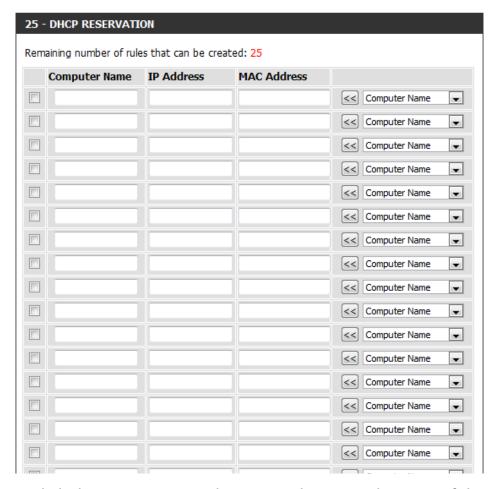
**Checkbox:** Check this box to enable the reservation.

**Computer** Enter the computer name. Alternatively, select a **Name:** computer that currently has a DHCP lease from the drop down menu and click << to automatically populate the **Computer Name**, **IP Address**, and **MAC** 

**Address** fields.

**IP Address:** Enter the IP address you want to assign to the computer or device. This IP Address must be within the DHCP IP Address Range.

**MAC Address:** Enter the MAC address of the computer or device.



When you have finished configuring the new DHCP Reservation, click the **Save Settings** button at the top or bottom of the window to activate your reservations.

# Advanced Virtual Server

The DIR-600 can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The DIR-600 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DIR-600 are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling Virtual Server. Depending on the requested service, the DIR-600 redirects the external service request to the appropriate server within the LAN network.

The DIR-600 is also capable of port-redirection, meaning that incoming traffic to a particular port may be redirected to a different port on the server computer.

For a list of ports for common applications, please visit <a href="http://support.dlink.com/faq/view.asp?prod\_id=1191">http://support.dlink.com/faq/view.asp?prod\_id=1191</a>.

The Virtual Server window allows you to open a single port. If you would like to open a range of ports, refer to the next page.

**Enable** Check the box on the left side to enable the Virtual **Checkbox:** Server rule.

Name: Enter a name for the rule or select an application from the drop-down menu. Select an application and click << to populate the fields.

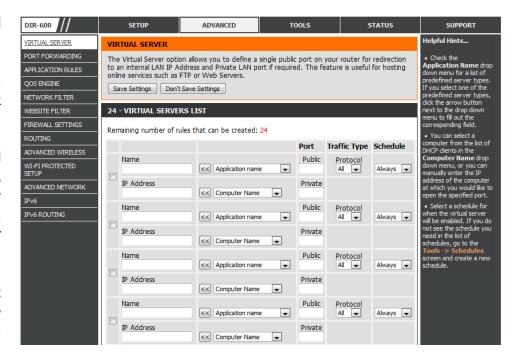
IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), you computer will be listed in the Computer Name drop-down menu. Select your computer and click <<.

Public Port/ Enter the port that you want to open next to Public Private Port: Port and Private Port. The public and private ports are usually the same. The public port is the port seen from the Internet side, and the private port is the port being used by the application on the computer within your local network.

**Traffic Type:** Select **TCP**, **UDP**, or **All** from the **Protocol** drop-down menu.

Schedule Use the drop-down menu to schedule the time that the Drop-Down Virtual Server Rule will be enabled. The schedule may be Menu: set to Always, which will allow the particular service to always be enabled. You can create your own times in the Tools > Schedules section.

Click the **Save Settings** button to save any changes made.



#### **Port Forwarding**

This will allow you to open a single port or a range of ports.

**Enable Checkbox:** Tick the checkbox on the left side to enable the Port Forwarding rule.

**Name:** Enter a name for the rule or select an application from the drop-down menu. Select an application and click << to populate the fields.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), you computer will be listed in the Computer Name drop-down menu. Select your computer and click <<.

Public Port/ Enter the port that you want to open next to Public Private Port: Port and Private Port. The public and private ports are usually the same. The public port is the port seen from the Internet side, and the private port is the port being used by the application on the computer within your local network.

**Traffic Type:** Select **TCP**, **UDP**, or **All** from the drop-down menu.

Schedule: Use the drop-down menu to schedule the time that the Port Forwarding rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the Tools > Schedules section.

ADVANCED PORT FORWARDING PORT FORWARDING This option is used to open multiple ports or a range of ports in your router and redirect data through those ports to a single PC on your network. This feature allows you to enter ports in APPLICATION RULES the format, Port Ranges (100-150). This option is only applicable to the INTERNET session. 24 -- PORT FORWARDING RULES Remaining number of rules that can be created: 24 ADVANCED WIRELESS Traffic Type WI-FI PROTECTED < | Application Name IP Address Private Port Schedule < | Computer Name Always 🔻 Traffic Type IPv6 ROUTING << Application Name All 💌 IP Address Schedule < | Computer Name Always 💌 Traffic Type < | Application Name IP Address Private Port Schedule Always 🔻 Public Port Name Traffic Type All 🔻 IP Address Private Port Schedule < | Computer Name Always 🔻

Click the **Save Settings** button to save any changes made.

#### **Application Rules**

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-600. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the firewall (public) ports associated with the trigger port to open them for inbound traffic.

**Enable Checkbox:** Check the box on the left side to enable the Application Rule.

**Name:** Enter a name for the rule. You may select a pre-defined application from the **Application** drop-down menu and click <<.

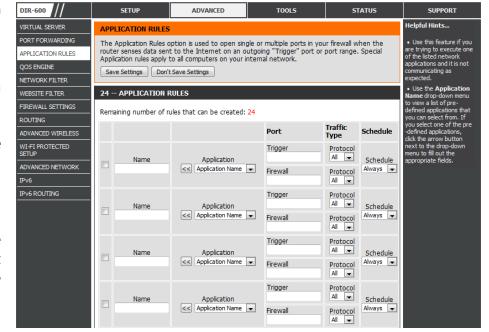
**Trigger:** This is the port used to trigger the application. It can be either a single port or a range of ports.

**Traffic Type:** Select the protocol of the trigger port (TCP, UDP, or All).

**Firewall:** This is the port number on the Internet side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges.

**Traffic Type:** Select the protocol of the firewall port (TCP, UDP, or All).

**Schedule:** The schedule of time when the Application Rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Tools** > **Schedules** section.



Click the **Save Settings** button to save any changes made.

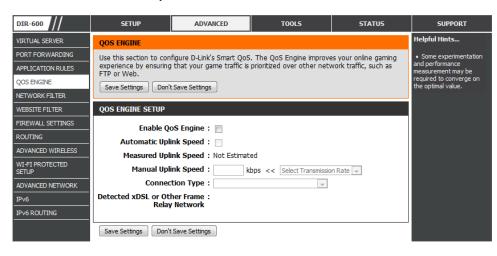
#### **QoS Engine**

The QoS Engine option helps improve your network gaming performance by prioritizing applications. By default the QoS Engine settings are disabled and application priority is not classified automatically.

**Enable QoS** This option is disabled by default. Enable this option for **Engine:** better performance and experience with online games and other interactive applications, such as VoIP.

**Automatic Uplink** This option is enabled by default when the QoS Engine **Speed:** option is enabled. This option will allow your router to automatically determine the uplink speed of your Internet connection.

**Measured Uplink** This displays the detected uplink speed. Speed:



Manual Uplink The speed at which data can be transferred from the

**Speed:** router to your ISP. This is determined by your ISP. ISP's often define speed as a download/upload pair. For example, 1.5Mbits/284Kbits. Using this example, you would enter 284. Alternatively you can test your uplink speed with a service such as www.dslreports.com.

Connection Type: By default, the router automatically determines whether the underlying connection is an xDSL/Frame-relay network or some other connection type (such as cable modem or Ethernet), and it displays the result as Detected xDSL or Frame Relay Network. If you have an unusual network connection in which you are actually connected via xDSL but for which you configure either "Static" or "DHCP" in the Internet settings, setting this option to xDSL or Other Frame Relay Network ensures that the router will recognize that it needs to shape traffic slightly differently in order to give the best performance. Choosing xDSL or Other Frame Relay Network causes the measured uplink speed to be reported slightly lower than before on such connections, but gives much better results.

**Detected xDSL or** When **Connection Type** is set to auto-detect, the automatically detected connection type is displayed here. **Other Frame Relay Network:** 

Click the **Save Settings** button to save any changes made.

#### **Network Filter**

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.

Configure MAC Select Turn MAC Filtering OFF, Turn MAC Filtering ON Filtering: and ALLOW computers listed to access the network, or Turn MAC Filtering ON and DENY computers listed to access the network from the drop-down menu.

**Enable Checkbox:** Check the box on the left side to enable the Network

Filter.

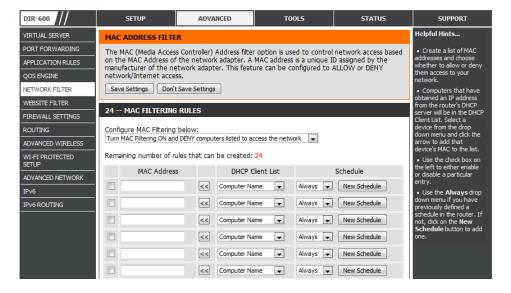
MAC Address: Enter the MAC address you would like to filter.

To find the MAC address on a computer, please refer to the *Networking Basics* section in this manual.

**DHCP Client List:** Select a DHCP client from the **Computer Name** drop down menu and click << to copy that MAC Address.

Schedule: The schedule of time when the Network Filter will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. Click the New Schedule button to create your own times in the Tools > Schedules section.

Click the **Save Settings** button to save any changes made.



#### **Website Filter**

Website Filters are used to allow you to set up a list of Web sites that can be viewed by multiple users through the network. To use this feature select the appropriate Web Filtering option, enter the domain or website, and click **Save Settings**.

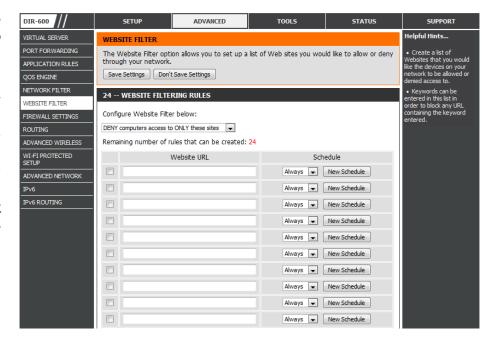
Configure Web Select Turn OFF WEBSITE FILTERING, ALLOW computers Filtering: access to ONLY these sites, or DENY computers access to ONLY these sites from the drop-down menu.

**Enable Checkbox:** Check the box on the left side to enable the Website Filter.

Website URL: Enter the keywords or URLs that you want to allow or block.

Schedule: The schedule of time when the Website Filter will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. Click the New Schedule button to create your own times in the Tools > Schedules section.

Click the **Save Settings** button to save any changes made.



#### **Firewall Settings**

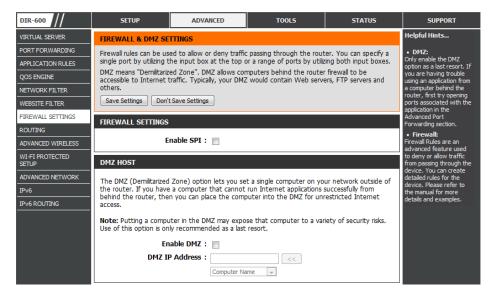
A firewall protects your network from the outside world. The DIR-600 offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

Firewall Settings: Check the Enable SPI box to enable the SPI (Stateful Packet Inspection, also known as dynamic packet filtering) feature. Enabling SPI helps to prevent cyber attacks by tracking more state per session. It validates that the traffic passing through the session conforms to the protocol.

**DMZ Host:** If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer.

Carry out the following to create a DMZ host:

- 1. Check the **Enable DMZ** box.
- 2. Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication in the DMZ IP address field. To specify an existing DHCP client, use the Computer Name drop-down to select the computer that you want to make a DMZ host. If selecting a computer that is a DHCP client, be sure to make a static reservation in the Setup > Network Settings page so that the IP address of the DMZ machine does not change.
- 3. Click the **Save Settings** button to add the new DMZ host.



**Note:** Placing a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

### Firewall Settings Firewall Rules

Use the Firewall Rules section to create/modify firewall rules.

**Enable Checkbox:** Check the box on the left side to enable the firewall rule.

Name: Enter a name to identify the firewall rule.

**Action:** Use the drop-down menu to *Allow* or *Deny* transport of the data packets according to the criteria defined in the firewall rule.

**Source:** Use the **Source** drop-down menu to specify the interface that connects to the source IP addresses of the firewall rule.

Enter the first source IP address in the range in the adjacent top IP Address field.

Enter the last source IP address in the range in the IP Address field below.

**Dest:** Use the **Dest** drop-down menu to specify the interface that connects to the destination IP addresses of the firewall rule.

Enter the first destination IP address in the range in the adjacent top IP Address field.

Enter the last destination IP address in the range in the IP Address field below.



**Protocol:** Select the protocol of the firewall port (All, TCP, UDP, or ICMP).

**Port Range:** Enter the first port of the range that will be used for the firewall rule in the top port range field and enter the last port in the field underneath.

**Select Schedule:** Use the drop-down menu to schedule the time that the Firewall rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. Click the **New Schedule** button to create your own times in the **Tools** > **Schedules** section.

When you have finished configuring the firewall rules, click the **Save Settings** button at the top or bottom of the window to save any changes made.

#### Routing

The Routing option is an advanced method of customizing specific routes of data through your network.

**Enable:** To enable a route, check the box that is on the left side of

the route.

Interface: Use the drop-down menu to specify if the IP packet must

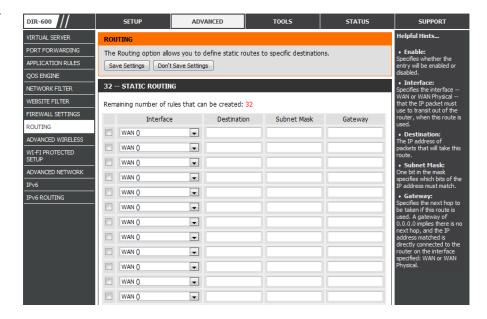
use the WAN or LAN interface to transit out of the Router.

**Destination:** Enter the IP address of the packets that will take this route.

Subnet Mask: Enter the subnet mask to specify the subnet of the IP

packets that will take this route.

**Gateway:** Enter the next hop that will be taken if this route is used.



Click the **Save Settings** button to save any changes made.

#### Advanced Wireless Settings 802.11n/b/g (2.4GHz)

**Transmit Power:** Set the transmit power of the antennas.

**Beacon Period:** Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a value. 100 is

the default setting and is recommended.

RTS Threshold: This value should remain at its default setting of 2346.

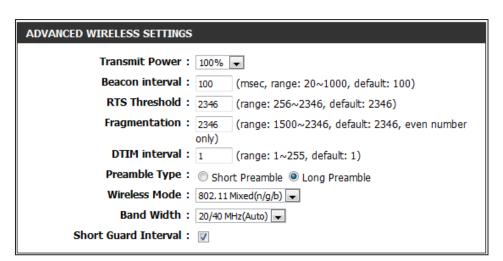
If inconsistent data flow is a problem, only a minor

modification should be made.

Fragmentation: The fragmentation threshold, which is specified in bytes,

determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented

before transmission. 2346 is the default setting.



**DTIM Interval:** (Delivery Traffic Indication Message) 1 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

**Preamble Type:** Use the radio buttons to specify whether the Router should use the **Short Preamble** or **Long Preamble** type. The preamble type defines the length of the CRC (Cyclic Redundancy Check) block for communication between the Router and roaming wireless adapters.

**Wireless Mode:** Use the drop-down menu to specify the wireless mode that will be used by the 2.4GHz band. The available options are 802.11 n only, 802.11 Mixed (g/b), and 802.11 Mixed (n/g/b).

**Band** Use the drop-down menu to select the channel bandwidth. If you selected the 802.11 Mixed (g/b) or 802.11 Mixed (n/g/b) wireless **Width:** mode, the available options are 20 MHz and 20/40MHz. If selecting the 802.11n only wireless mode, 20MHz is the only available option.

**Short** Check this box to reduce the guard interval time therefore increasing the data capacity. However, it's less reliable and may create **Guard Interval:** higher data loss.

Click the **Save Settings** button to save any changes made.

#### Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS) System is a simplified method for securing your wireless network during the "Initial setup" as well as the "Add New Device" processes. The Wi-Fi Alliance (WFA) has certified it across different products as well as manufactures. The process is just as easy, as depressing a button for the Push-Button Method or correctly entering the 8-digit code for the Pin-Code Method. The time reduction in setup and ease of use are quite beneficial, while the highest wireless Security setting of WPA2 is automatically used.

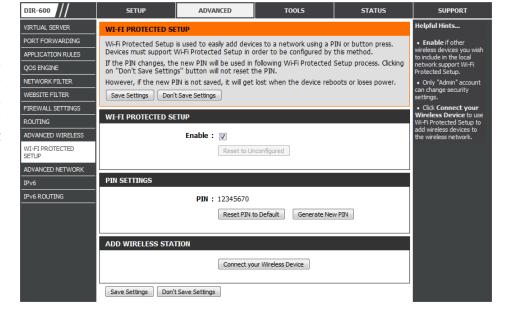
**Enable:** Enable the Wi-Fi Protected Setup feature.

PIN Settings: A PIN is a unique number that can be used to add the router to an existing network or to create a new network. The default PIN may be printed on the bottom of the router. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator ("admin" account) can change or reset the PIN.

PIN: Shows the current value of the router's PIN.

**Reset PIN to** Click this button to restore the default PIN of the router. **Default:** 

**Generate New** Click this button to create a random number that is a **PIN:** valid PIN. This becomes the router's PIN. You can then copy this PIN to the user interface of the registrar.



**Add Wireless** Click the **Connect your Wireless Device** button to start Wireless Connection Setup Wizard. This wizard helps you add wireless **Station:** devices to the wireless network.

The wizard will either display the wireless network settings to guide you through manual configuration, prompt you to enter the PIN for the device, or ask you to press the configuration button on the device. If the device supports Wi-Fi Protected Setup and has a configuration button, you can add it to the network by pressing the configuration button on the device and then the on the router within 60 seconds. The status LED on the router will flash three times if the device has been successfully added to the network.

There are several ways to add a wireless device to your network. A "registrar" controls access to the wireless network. A registrar only allows devices onto the wireless network if you have entered the PIN, or pressed a special Wi-Fi Protected Setup button on the device. The router acts as a registrar for the network, although other devices may act as a registrar as well.

Click the **Save Settings** button to save any changes made.

#### **Advanced Network**

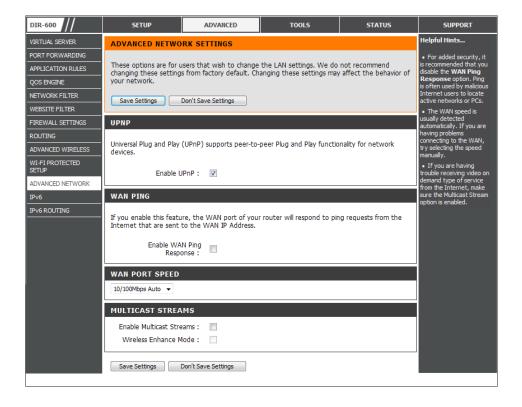
**Enable UPnP:** To use the Universal Plug and Play (UPnP<sup>™</sup>) feature click on **Enabled**. UPNP provides compatibility with networking equipment, software and peripherals.

**Enable WAN Ping** Unchecking the box will not allow the DIR-600 to **Response:** respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the Internet port to be "pinged".

WAN Port Speed: You may set the port speed of the Internet port to 10Mbps, 100Mbps, or auto. Some older cable or DSL modems may require you to set the port speed to 10Mbps.

**Enable Multicast** Check the **Enable Multicast Streams** box to allow **Streams:** multicast traffic to pass through the router from the Internet.

Wireless Enhance Check the Wireless Enhance Mode box to enable Mode: the router to forward all multicast streams from the Internet to the wireless station using a unicast stream. This feature helps improve the quality of multimedia applications for wireless users.



Click the **Save Settings** button to save any changes made.

#### IPv6

Use the IPv6 window to configure the mode that the Router will use to access an IPv6 Internet connection.

**My Internet** Use the drop-down menu to select the IPv6 **Connection is:** Internet Connection mode.



### IPv6 Static IPv6

Select Static IPv6 from the My IPv6 Connection is drop-down menu if your Router will use a static IPv6 address to connect

to the Internet.

**WAN IPv6 Address** Enter the address settings supplied by your Internet **Settings:** provider (ISP).

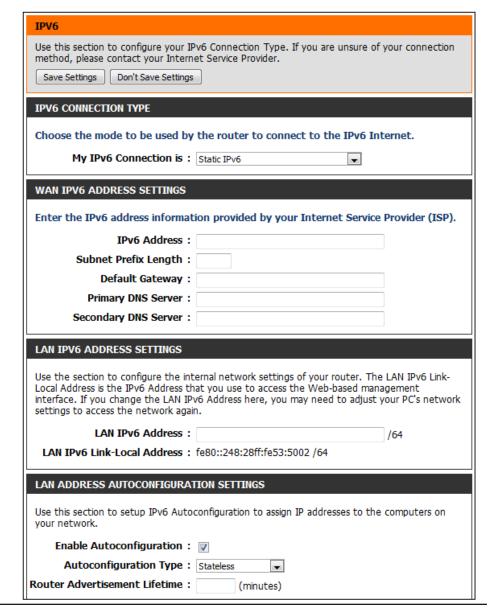
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

**LAN IPv6** Displays the Router's LAN Link-Local Address.

**Link-Local Address:** 

**LAN Address** Use this section to configure the IPv6 autoconfiguration Autoconfiguration Settings.

**Settings:** 



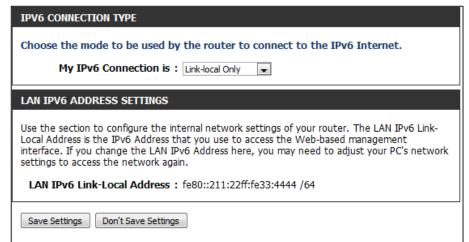
Click the **Save Settings** button to save any changes made.

# IPv6 Link-local Only

Select Link-local Only from the **My IPv6 Connection is** drop-down menu if your Router will use the IPv6 link local method to connect to the Internet.

**LAN IPv6 Address** Displays the LAN IPv6 Link-Local address of the router. **Settings:** 

Click the **Save Settings** button to save any changes made.



# IPv6 Static IPv6 (Stateless)

To configure the Router to use a Static IPv6 Stateless connection, configure the parameters in the LAN Address Autoconfiguration Settings section as described below:

**Enable** Check to enable the Autoconfiguration feature. **Autoconfiguration:** 

**Autoconfiguration** Select the *Stateless* option from the drop-down menu. **Type:** 

Router Enter the Router Advertisement Lifetime (in minutes).

Advertisement

Lifetime:

Use this section to setup IPv6 Autoconfiguration to assign IP addresses to the computers on your network.

Enable Autoconfiguration:

Autoconfiguration Type: Stateless

Router Advertisement Lifetime: (minutes)

Click the **Save Settings** button to save any changes made.

### IPv6 Static IPv6 (Stateful)

To configure the Router to use a Static IPv6 Stateful connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

**Enable** Check to enable the Autoconfiguration feature. **Autoconfiguration:** 

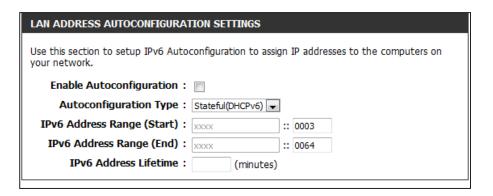
**Autoconfiguration** Select the *Stateful(DHCPv6)* option from the drop-down **Type:** menu.

**IPv6 Address Range** Enter the start IPv6 Address for the DHCPv6 range for your **Start:** local computers.

**IPv6 Address Range** Enter the end IPv6 Address for the DHCPv6 range for your **End:** local computers.

**IPv6 Address** Enter the IPv6 Address Lifetime (in minutes). **Lifetime:** 

Click the **Save Settings** button to save any changes made.



# IPv6 Autoconfiguration(Stateless/DHCPv6)

Select Autoconfiguration(Stateless/DHCPv6) from the My IPv6 Connection is drop-down menu if your Router will use the IPv6 Autoconfiguration(Stateless/DHCPv6) method to connect to the Internet.

IPv6 DNS Settings: Select either Obtain DNS server address automatically

or Use thefollowing DNS Address.

**Enable DHCP-PD:** Select DHCP-PD to acquire the IPv6 prefix for the Router.

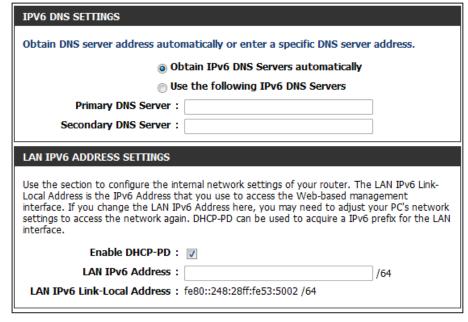
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Displays the Router's LAN Link-Local Address.

**Link-Local Address:** 

**LAN Address** Use this section to configure the IPv6 autoconfiguration **Autoconfiguration** settings.

**Settings:** 



#### IPv6

#### **Autoconfiguration(Stateless/DHCPv6)- (Stateless)**

To configure the Router to use a 6rd Stateless connection, configure the parameters in the LAN Address Autoconfiguration Settings section as described below:

**Enable** Check to enable the Autoconfiguration feature. **Autoconfiguration:** 

**Autoconfiguration** Select the *Stateless* option from the drop-down menu. **Type:** 

Router Enter the Router Advertisement Lifetime (in minutes).

Advertisement

Lifetime:

Click the **Save Settings** button to save any changes made.

IPV6 DNS SETTINGS		
Obtain DNS server address automatically or enter a specific DNS server address.		
Obta	in IPv6 DNS Servers automatically	
⊚ Use t	the following IPv6 DNS Servers	
Primary DNS Server :		
Secondary DNS Server :		
LAN IPV6 ADDRESS SETTINGS		
Use the section to configure the internal network settings of your router. The LAN IPv6 Link-Local Address is the IPv6 Address that you use to access the Web-based management interface. If you change the LAN IPv6 Address here, you may need to adjust your PC's network settings to access the network again. DHCP-PD can be used to acquire a IPv6 prefix for the LAN interface.		
Enable DHCP-PD:		
LAN IPv6 Address :	/64	
LAN IPv6 Link-Local Address: fe80::248:28ff:fe53:5002 /64		

#### IPv6

#### Autoconfiguration(Stateless/DHCPv6)- (Stateful)

To configure the Router to use a 6rd Stateful connection, configure the parameters in the LAN Address Autoconfiguration Settings section as described below:

**Enable** Check to enable the Autoconfiguration feature. **Autoconfiguration:** 

**Autoconfiguration** Select **Stateful**. Refer to the previous page for Stateful. **Type:** 

**IPv6 Address Range** Enter the start IPv6 Address for the DHCPv6 range for your **(Start):** local computers.

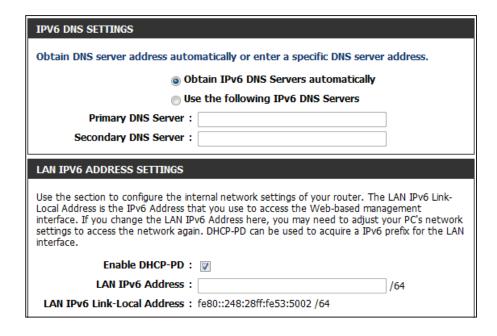
**IPv6 Address Range** Enter the end IPv6 Address for the DHCPv6 range for your **(End):** local computers.

Router Enter the Router Advertisement Lifetime (in minutes).

Advertisement

Lifetime:

Click the Save Settings button to save any changes made.



#### IPv6 PPPoE

Select PPPoE from the My IPv6 Connection is drop-down menu if your Router will use the PPPoE method to connect to the Internet.

**PPPoE:** Enter the settings supplied by your Internet provider (ISP).

IPv6 DNS Settings: Select either Obtain DNS server address automatically or

Use thefollowing DNS Address.

**Enable DHCP-PD:** Select DHCP-PD to acquire the IPv6 prefix for the Router.

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

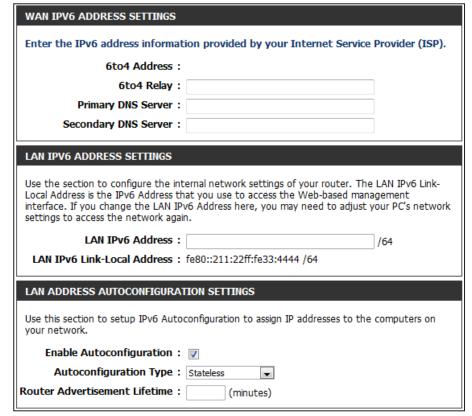
LAN IPv6 Link-Local Displays the Router's LAN Link-Local Address.

Address:

LAN Address Use this section to configure the IPv6 autoconfiguration

**Autoconfiguration** settings.

Settings:



### IPv6 IPv6 in IPv4 Tunnel

Select 6rd from the My IPv6 Connection is drop-down menu if your Router will use the IPv6 6rd method to connect to the Internet.

IPv6 in IPv4 Tunnel	Enter the settings supplied by your Internet provider (ISP).
Settings:	

IPv6 DNS Settings: Select either Obtain DNS server address automatically or

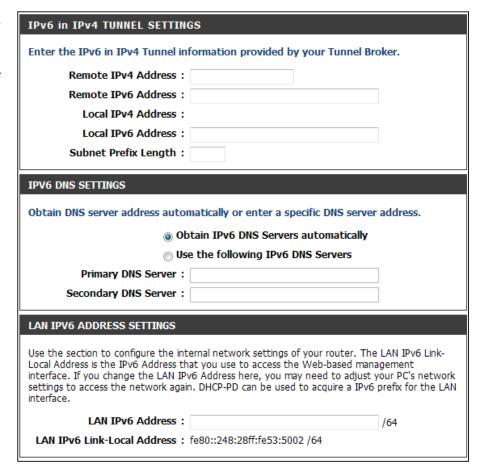
Use thefollowing DNS Address.

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

**LAN IPv6 Link-Local** Displays the Router's LAN Link-Local Address. **Address:** 

LAN Address Use this section to configure the IPv6 autoconfiguration Autoconfiguration settings.

Settings:



# IPv6 IPv6 in IPv4 Tunnel(Stateless)

To configure the Router to use a 6rd Stateless connection, configure the parameters in the LAN Address Autoconfiguration Settings section as described below:

Autoconfiguration:

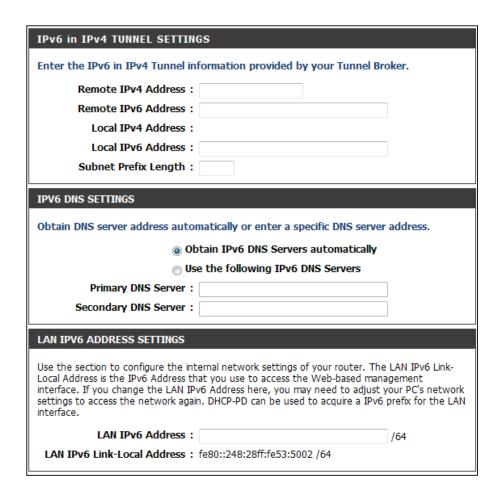
Autoconfiguration Select the Stateless option from the drop-down menu.

Type:

Router Enter the Router Advertisement Lifetime (in minutes).

Advertisement Lifetime:

**Enable** Check to enable the Autoconfiguration feature.



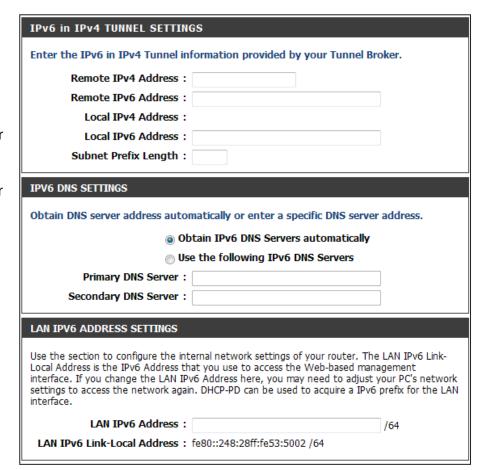
Click the **Save Settings** button to save any changes made.

# IPv6 IPv6 in IPv4 Tunnel (Stateful)

To configure the Router to use a 6rd Stateful connection, configure the parameters in the LAN Address Autoconfiguration Settings section as described below:

Autoconfiguration:	
Autoconfiguration Type:	Select Stateful. Refer to the previous page for Stateful.
_	Enter the start IPv6 Address for the DHCPv6 range for you local computers.
•	Enter the end IPv6 Address for the DHCPv6 range for your local computers.
Router Advertisement Lifetime:	Enter the Router Advertisement Lifetime (in minutes).

**Enable** Check to enable the Autoconfiguration feature.



Click the **Save Settings** button to save any changes made.

#### IPv6 6to4

Select **6to4** from the **My IPv6 Connection is** drop-down menu if your Router will use an IPv6 to IPv4 tunnel to connect to the Internet.

**WAN IPv6 Address** Enter the address settings supplied by your Internet **Settings:** provider (ISP).

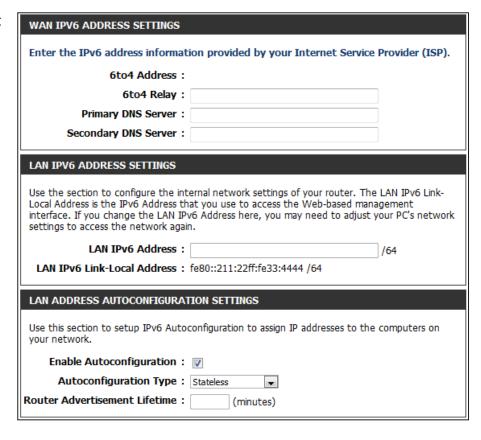
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link- Displays the Router's LAN Link-Local Address.

**Local Address:** 

**LAN Address** Use this section to congure the IPv6 autoconguration Autoconfiguration settings.

**Settings:** 



#### IPv6 6to4(Stateless) Autoconfiguration

To configure the Router to use an IPv6 to IPv4 tunnel stateless autoconfiguration connection, configure the parameters in the **LAN Address Autoconfiguration Settings** section as described below:

**Enable** Check to enable the Autoconfiguration feature. **Autoconfiguration:** 

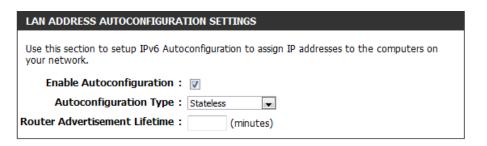
**Autoconfiguration** Select the *Stateless* option from the drop-down menu. **Type:** 

Router Enter the Router Advertisement Lifetime (in minutes).

Advertisement

Lifetime:

Click the **Save Settings** button to save any changes made.



## IPv6 6to4(Stateful) (DHCPv6) Autoconfiguration

To configure the Router to use an IPv6 to IPv4 tunnel stateful autoconfiguration connection, configure the parameters in the LAN Address Autoconfiguration Settings section as described below:

**Enable** Check to enable the Autoconfiguration feature. **Autoconfiguration:** 

**Autoconfiguration** Select the *Stateful(DHCPv6)* option from the drop-down **Type:** menu.

IPv6 Address Range Enter the start IPv6 Address for the DHCPv6 range for your

**Start:** local computers.

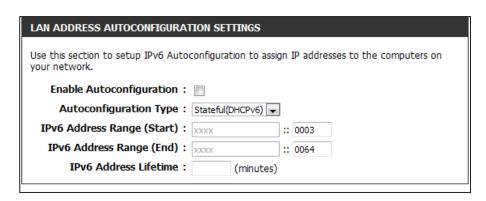
IPv6 Address Range Enter the end IPv6 Address for the DHCPv6 range for your

End: local computers.

IPv6 Address Enter the IPv6 Address Lifetime (in minutes).

Lifetime:

Click the **Save Settings** button to save any changes made.



#### IPv6 6rd

Select 6rd from the My IPv6 Connection is drop-down menu if your Router will use the IPv6 6rd method to connect to the Internet.

**Settings:** provider (ISP).

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Displays the Router's LAN Link-Local Address.

**Address:** 

LAN Address Use this section to configure the IPv6 autoconfiguration

**Autoconfiguration** settings.

Settings:



#### **IPv6 Routing**

The Routing option is an advanced method of customizing specific routes of data through your network.

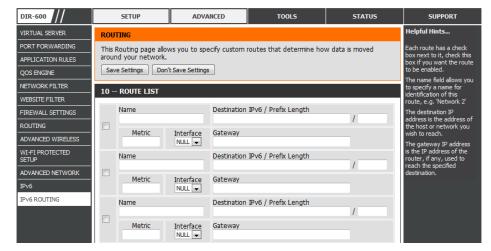
**Enable:** To enable a route, check the box that is on the left side of the route.

**Metric:** Use the drop-down menu to specify if the IP packet must use the WAN or LAN interface to transit out of the Router.

**Interface:** Use the drop-down menu to specify if the IP packet must use the WAN or LAN interface to transit out of the Router.

**Destination IPv6** Enter the LAN (local) IPv6 address for the router and Prefix / **Prefix Length**: Length.

**Gateway:** Enter the next hop that will be taken if this route is used.



# **Tools**

#### **Admin**

This page will allow you to change the Administrator password and configure the authentication settings. This window also allows you to enable Remote Management, via the Internet.

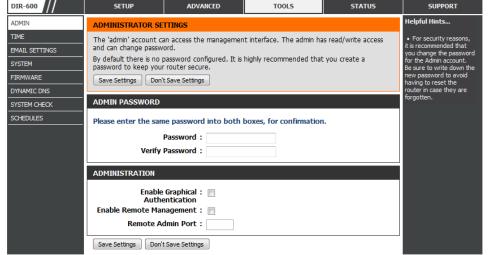
**Admin** Enter a new password for the Administrator Login Name. **Password:** The administrator can make changes to the settings.

**Enable** Enables a challenge-response test to require users to type **Graphical** letters or numbers from a distorted image displayed on Authentication: the screen to prevent online hackers and unauthorized users from gaining access to your router's network settings.

**Enable Remote** Remote management allows the DIR-600 to be configured Management: from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.

**Remote** Enter the port number that will be used to access the DIR-815. **Admin Port:** 

Click the **Save Settings** button to save any changes made.



#### **Time**

The Time window allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the Time Server. Daylight Saving can also be configured to automatically adjust the time when needed.

**Time Zone:** Select the Time Zone from the drop-down menu.

**Enable Daylight** Check this box if the country your are located in uses **Saving:** Daylight Saving time. Enter a start date and an end date for daylight saving time.

Sync. Your Click this button to synchronize the DIR-600's system clock Computer's Time to your computer's time settings.

Settings:

Automatic NTP is short for Network Time Protocol. NTP synchronizes Time and Date computer clock times in a network of computers. To enable Configuration: NTP carry out the following:

- 1. Check the **Automatically synchronize with D-Link's Internet Time Server** box.
- Choose the D-Link NTP server that you would like to synchronize with from the NTP Server Used drop-down menu.
- 3. Click the **Update Now** button to update the time on the Router clock so that it is synchronized with the D-Link Internet Time Server.

**Set the Time and** Use this section to configure the time manually. To **Date Manually:** configure the time manually, use the drop-down menus to select the appropriate Year, Month, Day, Hour, Minute, and Second.

Click the **Save Settings** button to save any changes made.



#### **Email Settings**

The Email feature can be used to send the system log files and router alert messages to your email address.

**From Email** This email address will appear as the sender when you **Address:** receive a log file or firmware upgrade notification via email.

To Email Address: Enter the email address where you want the email sent.

**Email Subject:** Enter the text that you want to appear in the subject line of the e-mail that is sent.

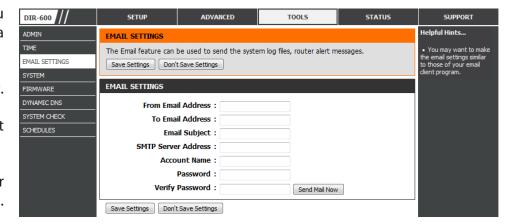
**SMTP Server** Enter the SMTP server address for sending email. If your **Address:** SMTP server requires authentication, select this option.

Account Name: Enter your account for sending email.

**Password:** Enter the password associated with the account. Re-type the password associated with the account.

**Send Mail Now:** Click this button to send a test email from the Router to verify that the email settings have been configured correctly.

Click the **Save Settings** button to save any changes made.



#### **System**

This section allows you to manage the router's configuration settings, reboot the router, and restore the router to the factory default settings. Restoring the unit to the factory default settings will erase all settings, including any rules that you've created.

Save Settings to Use this option to save the current router configuration Local Hard Drive: settings to a file on the hard disk of the computer you are using. First, click the Save button. A file dialog will appear, allowing you to select a location and file name for the settings.

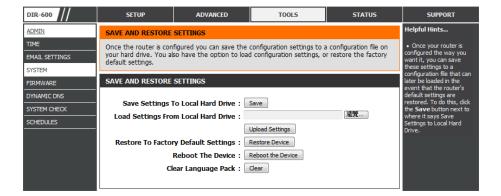
**Load Settings from** Use this option to load previously saved router configuration **Local Hard Drive:** settings. First, use the **Browse** option to find a previously saved file of configuration settings. Then, click the Upload Settings button below to transfer those settings to the router.

**Restore to Factory** This option will restore all configuration settings back **Default Settings:** to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current router configuration settings, use the Save button above.

**Reboot Device:** Click to reboot the router.

Clear Language If you previously installed a language pack and want to Pack: revert all the menus on the Router interface back to the

default language settings, click the **Clear** button.



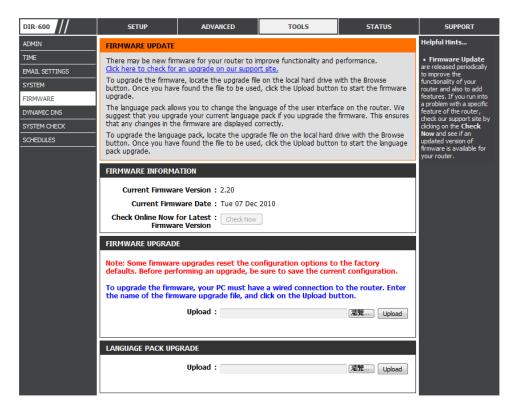
#### **Firmware**

Use the Firmware window to upgrade the firmware of the Router and install language packs. If you plan to install new firmware, make sure the firmware you want to use is on the local hard drive of the computer. If you want to install a new language pack, make sure that you have the language pack available. Please check the D-Link support site for firmware updates at http://support.dlink.com. You can download firmware upgrades to your hard drive from the D-Link support site.

**Firmware** This section displays information about the firmware **Information:** that is loaded on the Router. Click the **Check Now** button to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

**Firmware** After you have downloaded the new firmware, click **Upgrade: Browse** to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

Language Pack If you want to change the Router's language pack, click Upgrade: Browse to locate the language pack. Click Upload to complete the load the new language pack.



#### **Dynamic DNS**

The DDNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter in your domain name to connect to your server no matter what your IP address is.

**Enable DDNS:** Dynamic Domain Name System is a method of

keeping a domain name linked to a changing IP Address. Check the box to enable DDNS.

**Server Address:** Choose your DDNS provider from the drop down

menu.

Host Name: Enter the Host Name that you registered with

your DDNS service provider.

**User Account:** Enter the Username for your DDNS account.

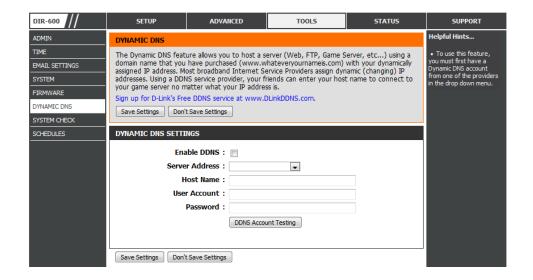
**Password:** Enter the Password for your DDNS account.

**DDNS Account** Click this button to verify that the DDNS account

Testing: user name and password have been entered

correctly.

Click the **Save Settings** button to save any changes made.



#### **System Check**

**Ping Test:** The Ping Test is used to send Ping packets to test if a computer is on the Internet. Enter the IP Address that you wish to Ping, and click **Ping**. Click **Stop** to stop sending Ping packets

**IPv6 Ping** The IPv6 Ping Test is used to send IPv6 Ping packets to test **Test:** if a computer is on the Internet. Enter the IPv6 Address that you wish to Ping, and click **Ping**. Click **Stop** to stop sending IPv6 Ping packets

**Ping Results:** The results of your Ping/IPv6 Ping attempts will be displayed here.



#### **Schedules**

Schedules can be created for use with enforcing rules. For example, if you want to restrict web access to Mon-Fri from 3pm to 8pm, you could create a schedule selecting Mon, Tue, Wed, Thu, and Fri and enter a Start Time of 3pm and End Time of 8pm.

Name: Enter a name for your new schedule.

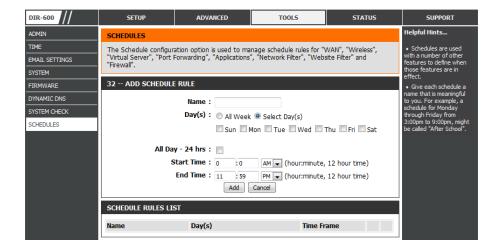
**Days:** Select a day, a range of days, or All Week to include every day.

**Time:** Check **All Day - 24hrs** or enter a *Start Time* and *End Time* for your schedule.

**Add:** Click **Add** to save your schedule. You must click the **Add** button for your schedules to go into effect.

Schedule Rules The list of schedules will be listed here. Click the Edit icon

**List:** to make changes or click the **Delete** icon to remove the schedule.



## **Status**

#### **Device Info**

This page displays the current information for the DIR-600. It will display the LAN, WAN (Internet), and Wireless information. If your Internet connection is set up for a Dynamic IP address then a **Release** button and a **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

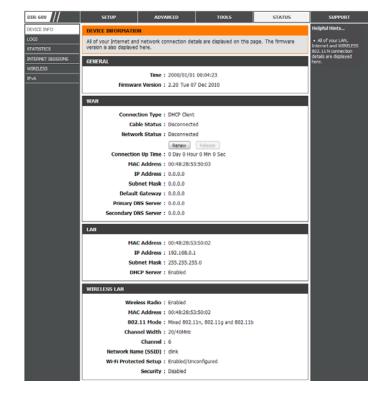
If your Internet connection is set up for PPPoE, a **Connect** button and a **Disconnect** button will be displayed. Use **Disconnect** to drop the PPPoE connection and use **Connect** to establish the PPPoE connection.

**General:** Displays the router's time and firmware version.

**WAN:** Displays the MAC address and the public IP settings for the router.

**LAN:** Displays the MAC address and the private (local) IP settings for the router.

**Wireless LAN:** Displays the wireless MAC address and your wireless settings such as SSID and Channel.



#### Logs

The router automatically logs (records) events of possible interest in it's internal memory. If there isn't enough internal memory for all events, logs of older events are deleted but logs of the latest events are retained. The Logs option allows you to view the router logs. You can define what types of events you want to view and the level of the events to view. This router also has external Syslog Server support so you can send the log files to a computer on your network that is running a Syslog utility.

**Save Log File:** Click the **Save** button save the Router's log entries to a log file on your computer.

**Log Type:** Use the radio buttons to select the types of messages that you want to display from the log. **System, Firewall & Security**, and **Router Status** messages can be selected.

**Log Level:** There are three levels of message importance: **Critical**, **Warning**, and **Information**. Select the levels that you want displayed in the log.

**Log Files:** Use this section to view and manage the Router's log entries.

**First Page:** Click this button to view the first page of the Router logs.

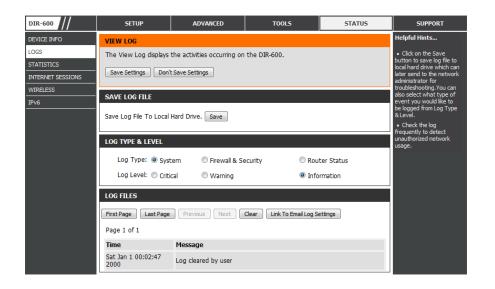
Last Page: Click this button to view the last page of the Router logs.

**Previous:** Click this button to view the previous page of the Router logs.

**Next:** Click this button to view the next page of the Router logs.

Clear: Clears all of the log contents.

**Link to Log** Click this button to open the **Tools** > **Email Settings Settings:** screen so that you can change the Email configuration for sending logs.

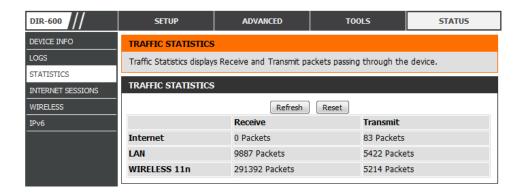


#### **Statistics**

The screen below displays the **Traffic Statistics**. Here you can view the amount of packets that pass through the DIR-600 on both the WAN, LAN ports and the 802.11n/g (2.4GHz) wireless bands. The traffic counter will reset if the device is rebooted.

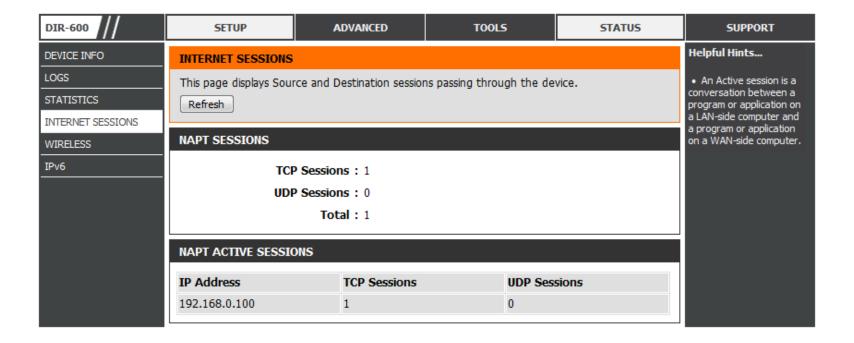
**Refresh:** Click the **Refresh** button to refresh the Router's traffic statistics.

**Reset:** Click the **Reset** button to reset the Router's traffic statistics.



#### **Internet Sessions**

The Internet Sessions page displays full details of active Internet sessions through your router. An Internet session is a conversation between a program or application on a LAN-side computer and a program or application on a WAN-side computer.



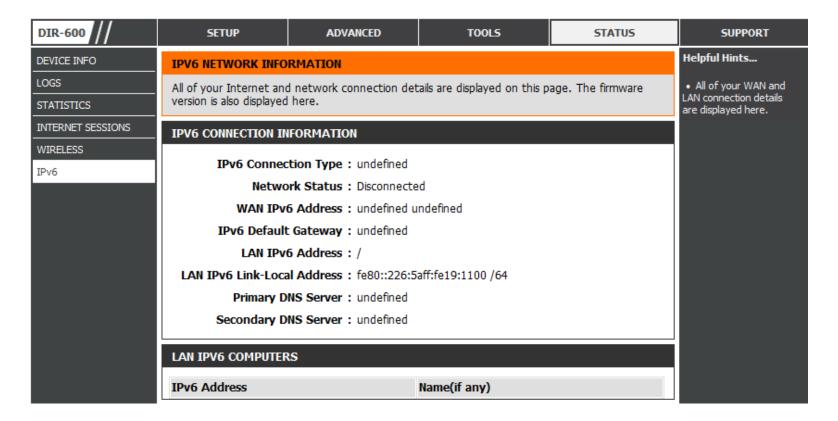
#### Wireless

The wireless client table displays a list of current connected wireless clients. This table also displays the connection time and MAC address of the connected wireless clients.

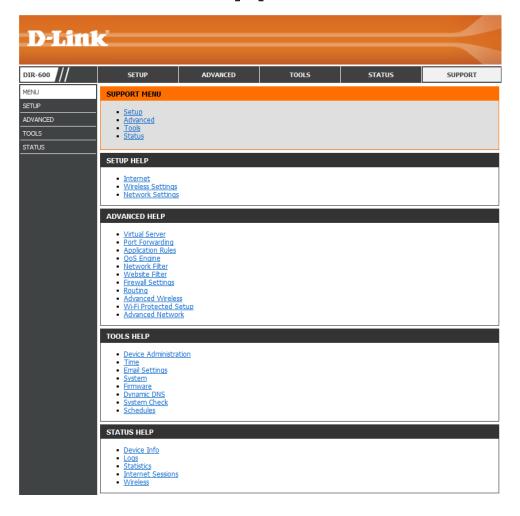


#### IPv6

The IPv6 page displays a summary of the Router's IPv6 settings and lists the IPv6 address and host name of any IPv6 clients.



# Support



# **Wireless Security**

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-600 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA2-PSK (Pre-Shared Key)

• WPA (Wi-Fi Protected Access)

• WPA-PSK (Pre-Shared Key)

#### What is WPA?

WPA (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.

## **Wireless Connection Setup Wizard**

To run the Wireless Connection Setup Wizard, click the **Wireless Connection Setup Wizard** button in the **Setup>Wireless Settings** window.

#### WIRELESS SETTINGS

The following Web-based wizards are designed to assist you in your wireless network setup and wireless device connection.

Before launching these wizards, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.

#### WIRELESS NETWORK SETUP WIZARD

This wizard is designed to assist you in your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.

Wireless Connection 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 Router.

#### ADD WIRELESS DEVICE WITH WPS (WI-FI PROTECTED SETUP) WIZARD

This wizard is designed to assist you in connecting your wireless device to your wireless router. It will guide you through step-by-step instructions on how to get your wireless device connected. Click the button below to begin.

Add Wireless Device with WPS

#### MANUAL WIRELESS NETWORK SETUP

If your wireless network is already set up with Wi-Fi Protected Setup, manual configuration of the wireless network will destroy the existing wireless network. If you would like to configure the wireless settings of your new D-Link Systems Router manually, then click on the Manual Wireless Network Setup button below.

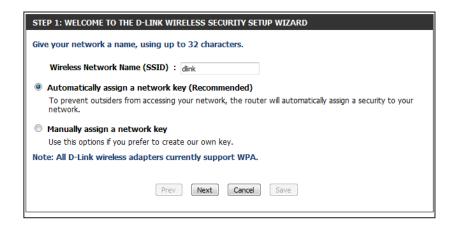
Manual Wireless Connection Setup

## Wireless Security Setup Wizard

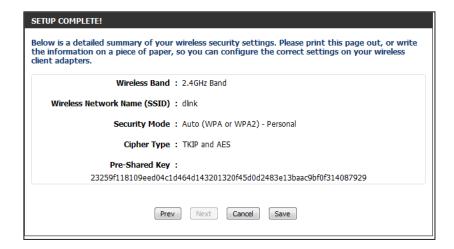
Type your desired wireless network name (SSID).

**Automatically:** Select this option to automatically generate the router's network key and click **Next**.

**Manually:** Select this option to manually enter your network key and click **Next**.



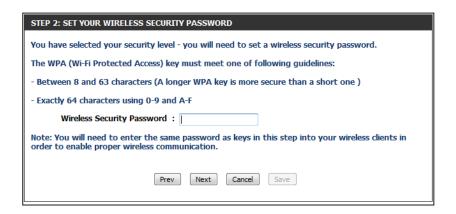
If you selected **Automatically**, the summary window will display your settings. Write down the security key and enter this on your wireless clients. Click **Save** to save your settings.

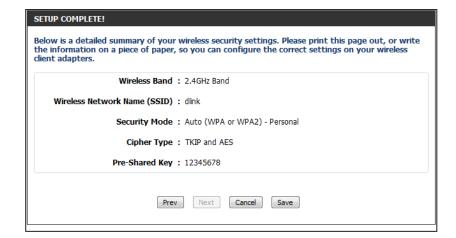


If you selected Manually, the following screen will appear.

Enter the *Wireless Security Password* you would like to use for your wireless network and click **Next** to proceed to the next window.

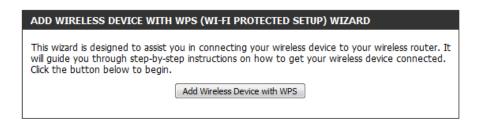
The summary window will display your settings. Write down the security key and enter this on your wireless clients. Click **Save** to save your settings.





#### Add Wireless Device with WPS Wizard

From the **Setup** > **Wireless Settings** screen, click **Add Wireless Device with WPS**.



Select **Auto** to add a wireless client using WPS (Wi-Fi Protected Setup). Once you select **Auto** and click **Connect**, you will have a 120 second time limit to apply the settings to your wireless client(s) and successfully establish a connection.

If you select **Manual**, a settings summary screen will appear. Write down the security key and enter this on your wireless clients.



**PIN:** Select this option to use PIN method. In order to use this method you must know the wireless client's 8 digit PIN and click **Connect**.

**PBC:** Select this option to use PBC (Push Button) method to add a wireless client. Click **Connect**.

There are two ways to add wireless device to your wireless network:

-PIN (Personal Identification Number)

-PBC (Push Button Configuration)

PIN:

please enter the PIN from your wireless device and click the below "Connect" Button within 120 seconds

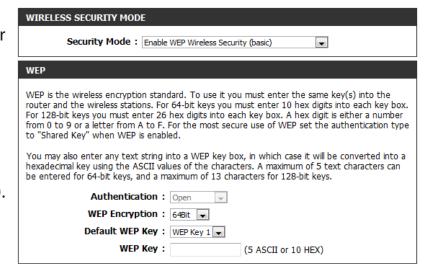
PBC

please press the push button on your wireless device and click the below "Connect" Button within 120 seconds

# **Configure WEP**

It is recommended to enable encryption on your wireless router 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.

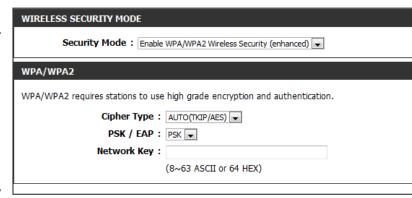
- 1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1).
- 2. Click on **Setup** and then click **Wireless Settings** on the left side.
- 3. Click the Manual Wireless Connection Setup button.
- 4. Next to Security Mode, select Enable WEP Wireless Security (basic).
- 5. Next to WEP Encryption, select 64bit or 128bit.
- 6. Next to *Default WEP Key*, select the WEP key you would like to use as the default WEP key. The available options are **WEP Key 1**, **WEP Key 2**, **WEP Key 3**, or **WEP Key 4**.
- 7. Enter the WEP key you would like to use in the WEP Key field.
- 8. Click **Save Settings** to save your settings. If you are configuring the router 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 router.



## Configure WPA/WPA2-Personal (PSK)

It is recommended to enable encryption on your wireless router 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.

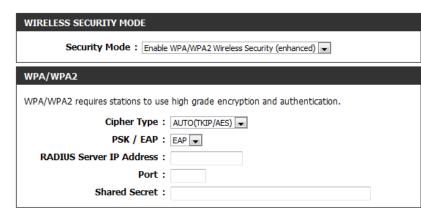
- 1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1).
- 2. Click on **Setup** and then click **Wireless Settings** on the left side.
- 3. Click the Manual Wireless Connection Setup button.
- 4. Next to *Security Mode*, select **Enable WPA/WPA2 Wireless Security** (enhanced).
- 5. Next to Cipher Type, select Auto (TKIP/AES), TKIP, or AES.
- 6. Next to *PSK/EAP*, select **PSK**.
- 7. Enter the **WPA network key** you would like to use in the *Network Key* field.
- 8. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the router.



# **Configure WPA/WPA2-Enterprise (RADIUS)**

It is recommended to enable encryption on your wireless router 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 router (192.168.0.1).
- 2. Click on **Setup** and then click **Wireless Settings** on the left side.
- 3. Click the Manual Wireless Connection Setup button.
- 4. Next to *Security Mode*, select **Enable WPA/WPA2 Wireless Security** (enhanced).
- 5. Next to Cipher Type, select Auto (TKIP/AES), TKIP, or AES.
- 6. Next to *PSK/EAP*, select **EAP**.
- 7. Next to RADIUS Server IP Address enter the IP Address of your RADIUS server.
- 8. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
- 9. Next to *Shared Secret*, enter the security key.
- 10. Click **Save Settings** to save your settings.



# Connect to a Wireless Network Using Windows® 7

It is recommended to enable wireless security (WPA/WPA2) 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 security key or passphrase being used.

1. Click on the wireless icon in your system tray (lower-right corner).



2. The utility will display any available wireless networks in your area.

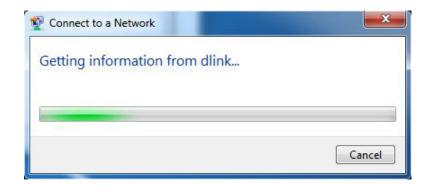


3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

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



4. The following window appears while your computer tries to connect to the router.



5. Enter the same security key or passphrase that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

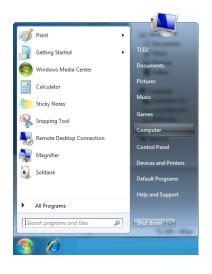
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.



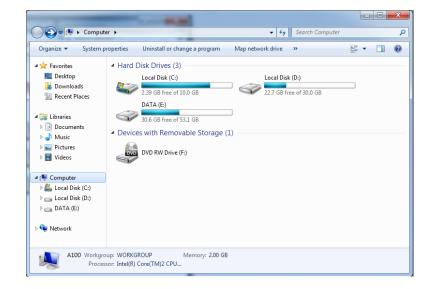
#### **Configure WPS**

The WPS feature of the router can be configured using Windows 7. Carry out the following steps to use Windows 7 to configure the WPS feature of the router:

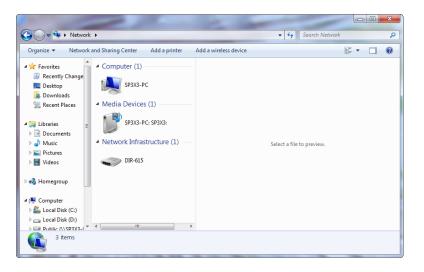
1. Click the **Start** button and select **Computer** from the Start menu.



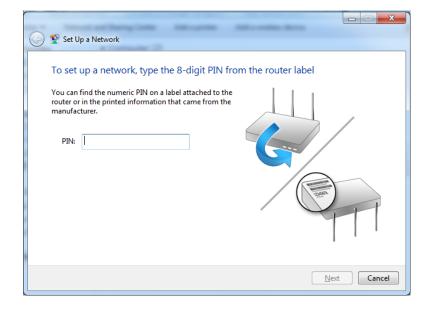
2. Click the **Network** option.



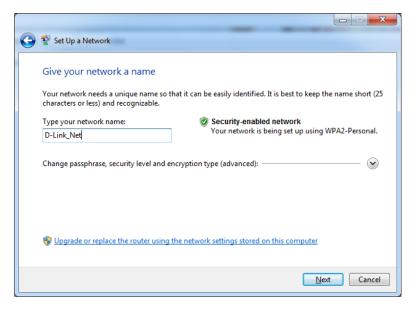
3. Double-click the DIR-600.



4. Input the WPS PIN number (displayed in the WPS window on the Router's LCD screen or in the **Setup** > **Wireless Setup** menu in the Router's Web UI) and click **Next**.

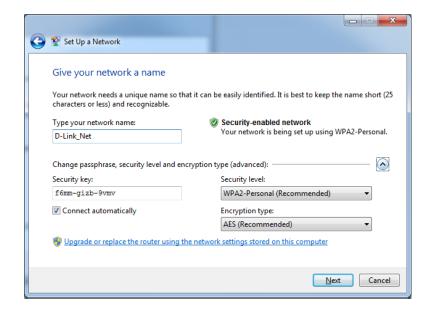


5. Type a name to identify the network.



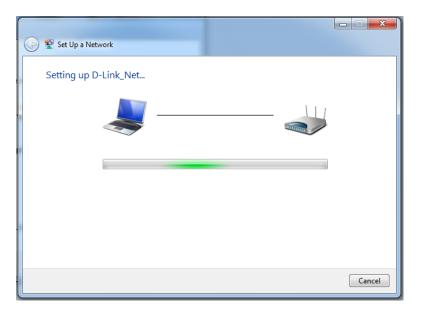
6. To configure advanced settings, click the vicon.

Click **Next** to continue.



7. The following window appears while the Router is being configured.

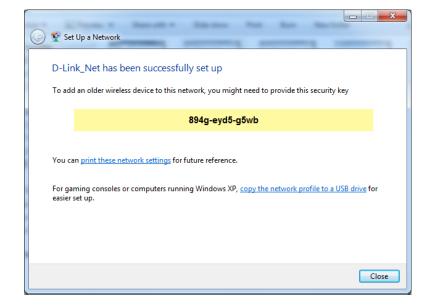
Wait for the configuration to complete.



8. The following window informs you that WPS on the DIR-600 has been setup successfully.

Make a note of the security key as you may need to provide this security key if adding an older wireless device to the network in the future.

9. Click **Close** to complete WPS setup.



# **Using Windows Vista**®

Windows Vista® users may use the built-in wireless utility. 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 Vista® utility as seen below.

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

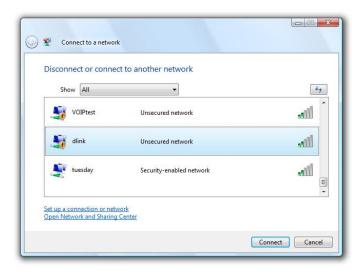
or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **Connect to a network**.

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 Wireless Security**

It is recommended to enable wireless security (WPA/WPA2) 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 security key or passphrase being used.

1. Open the Windows Vista® Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower right corner of screen). Select **Connect to a network**.

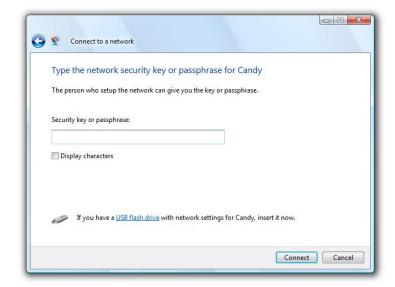


**2.** Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



**3.** Enter the same security key or passphrase that is on your router and click **Connect**.

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



# **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.

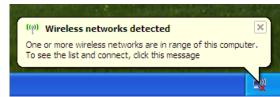
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

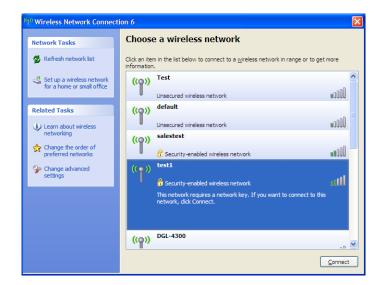
Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.

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.



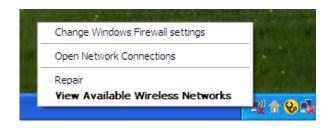




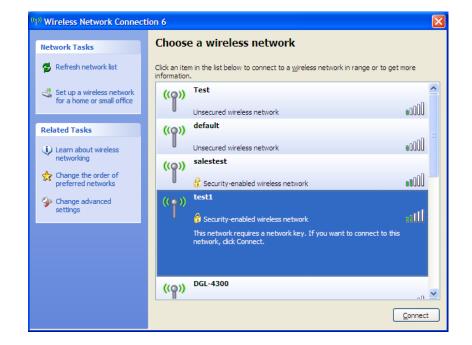
## **Configure WPA-PSK**

It is recommended to enable WPA 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 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.

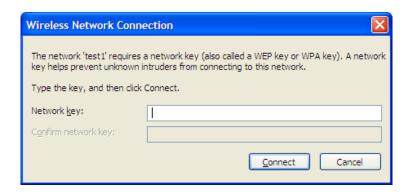


**2.** Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



**3.** The **Wireless Network Connection** box will appear. Enter the WPA-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.



# **Troubleshooting**

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-600. 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 router (192.168.0.1 for example), you are not connecting to a website nor do you 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:
  - Microsoft Internet Explorer 6.0 and higher
  - Mozilla Firefox 3.0 and higher
  - Google<sup>™</sup> Chrome 2.0 and higher
  - Apple Safari 3.0 and 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 router in the address bar. This should open the login page for your web management.
- If you still cannot access the configuration, unplug the power to the router 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 router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is 192.168.0.1. When logging in, the username is **admin** and leave the password box empty.

#### 3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

#### Note: AOL DSL+ users must use MTU of 1400.

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on Start and then click Run.
- Windows 95, 98, and Me users type in **command** (Windows NT, 2000, and XP users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

ping [url] [-f] [-l] [MTU value]

Example: ping yahoo.com -f -l 1472

```
C:\>ping yahoo.com -f -1 1482

Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:

Packet needs to be fragmented but DF set.

Ping statistics for 66.94.234.13:

Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping yahoo.com -f -1 1472

Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:

Reply from 66.94.234.13: bytes=1472 time=93ms ITL=52

Reply from 66.94.234.13: bytes=1472 time=109ms ITL=52

Reply from 66.94.234.13: bytes=1472 time=125ms ITL=52

Reply from 66.94.234.13: bytes=1472 time=203ms ITL=52

Ping statistics for 66.94.234.13:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 93ms, Maximum = 203ms, Average = 132ms

C:\>
```

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, lets say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Manual Configure**.
- To change the MTU enter the number in the MTU field and click Save Settings to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

## **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, 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 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 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 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 DIR-600 wireless network Cardbus 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 cardbus 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**. (Windows® 7/Vista® users type **cmd** in the **Start Search** box.)

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.

### **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** 7 - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Change Adapter Setting.** 

Windows Vista® - Click on Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections.

**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

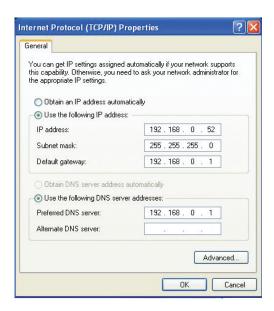
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

**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.



#### **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.

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

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

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

#### **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.

Note to US model owner: To comply with US FCC regulation, the country selection function has been completely removed from all US models. The above function is for non-US models only.

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 interference and

2) this device must accept any interference, including interference that may cause undesired

operation of the device

This device has been designed to operate with an antenna having a maximum gain of 2dBi.

Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The

required antenna

impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be

so chosen that the EIRP is not more than required for successful communication.

IMPORTANT NOTE:

IC 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils

radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le

dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout

brouillage reçu, y compris un brouillage susceptible de provoguer un fonctionnement

indésirable.

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de dB [2].

Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada.

L'impédance d'antenne requise est de 50 ohms.

NOTE IMPORTANTE: (Pour l'utilisation de dispositifs mobiles)

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un

environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de

20 cm de distance entre la source de rayonnement et votre corps.

#### 以下警語適用台灣地區

經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用, 並改善至無干擾時方得繼續使用。前項合法通信,指依電信法規定作業之無線電通信。低功率射 頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。