WUS-B12 2.4 GHz Wireless USB Adapter

Manual

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D-Link Building Networks for People

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Package Contents



Contents of Package:

- WUS-B12 2.4 GHz Wireless USB Adapter
- Manual, Quick Installation Guide, and Drivers on CD

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

System Requirements:

- A laptop computer with an available USB port
- Windows XP, Windows 2000, Windows ME, or Windows 98 SE
- At least 32 MB of memory and a 300 MHz processor or higher
- An 802.11b Access Point (e.g., WAP-B11 for Infrastructure Mode) or another 802.11b wireless adapter (e.g., WCB-B13 for Ad-Hoc mode.)

Introduction

The WUS-B12 Wireless USB Adapter is an advanced IEEE 802.11b compatible, high performance, wireless adapter that supports data transfer speeds of up to 11 Mbps.

It is an ideal way to connect your laptop computer to a Wireless Local Area Network (WLAN.) After completing the steps outlined in the Quick Installation Guide you will have the ability to share information and resources, such as files and printers, and take full advantage of a "connected" environment for work or play! Please look at our **Getting Started** section in this manual. You will see several options for setting up a network using the WUS-B12.

The WUS-B12 comes with software drivers for the most popular Microsoft Windows operating systems and can be integrated into a larger network running Windows XP, Windows 2000, Windows ME, and Windows 98SE, in either Ad Hoc mode (without an Access Point) or Infrastructure mode (with an Access Point.)

This manual provides a quick introduction to wireless technology and its application as it relates to networking. Take a moment to read through this manual and get acquainted with wireless technology.

Product Features

- Compatible with IEEE 802.11b high rate standard to provide wireless Ethernet speeds of 11Mbps data rate
- Dynamic data rate scaling at 11, 5.5, 2 and 1Mbps
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports wireless data encryption with 64 and 128-bit WEP standard for security
- Printed PCB antenna
- Drivers support Windows 98, 2000 and Millennium
- Simple user setup & diagnostics utilities
- Compliant with FCC Part 15.247 for US, EN 300 328 for Europe, and RCR STD-33A and ARIB STD-T66 for Japan

LEDS

LED stands for Light-Emitting Diode. The WUS-B12 Wireless USB Adapter has two LEDs: Link and Activity.



Wireless Basics

Wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home or business. Strictly adhering to IEEE 802.11b, our wireless family of products will allow you to access the data you want, when and where you want it. No longer will you be limited to one location or forced to run new wiring through your home or office. 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. 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 has proven to be beneficial for many users.

Wireless users can use the same network applications they use on an Ethernet LAN. Wireless adapter cards used on laptop and desktop systems, support the same protocols as Ethernet adapter cards. For most users, there is no noticeable functional difference between a wired Ethernet desktop computer and a wireless computer equipped with a wireless adapter other than the added benefit of the ability to roam within the wireless-cell. 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 Access Point (AP) is a device used to provide this link.

People use wireless LAN technology for many different purposes.

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Ad-hoc management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs - WLANs are easy to set up, manage, change and relocate. Networks that frequently change, both physically and logically, can benefit from WLANs' ease of implementation. WLANs can operate in locations where installation of wiring may be impractical. Furthermore, IEEE standardization mandates interoperability of all WLAN devices that conform to the 802.11b set of standards.

Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

Wireless Basics (continued)

Installation Flexibility - Wireless technology allows the network to go where wires cannot go.

Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

Scalability - Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users that allow roaming over a broad area.

Standards-based Technology

Based on the IEEE 802.11b standard, the WUS-B12 is also interoperable with existing compatible 2.4 GHz wireless technologies, with data transfer speeds of up to 11 Mbps.

Installation Considerations

The WUS-B12 lets you access your network with your laptop computer from virtually anywhere you want. Keep in mind, however, that the number and thickness of walls, ceilings or other objects that the wireless signals must pass thru may limit range. Typical ranges vary depending on the types of materials and background RF noise in your home or business. The key to maximizing range is to follow these basic principles:

Wireless Basics (continued)

- Keep the number of walls and ceilings between the Access Point and your receiving device to a minimum each wall or ceiling can reduce your wireless product's range from 3-90 feet (1-30 meters.) For some businesses or for a large residential home deployment, it may be beneficial to have more than one access point with overlapping coverage.
- 2. Be aware of the direct line between Access Points and computers with wireless adapters 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! Try to make sure that the Access Points and Adapters are positioned so that the signal will travel straight through a wall or ceiling 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, and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4. Make sure that the antenna is positioned for best reception by using the software signal strength tools included with your product.
- 5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

For the average residence, range should not be a problem. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the computers with wireless adapters that will be connected. Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strongly as desired.

Using radio frequency (RF) technology, WLANs (Wireless Local Area Networks) transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

Getting Started

To begin, select the type of wireless network you will be building. We will discuss the following types of networks in this section:

- 1. A Home Internet Network with A Residential Gateway/Router
- 2. A Home Internet Network with Multiple IP Addresses
- 3. An Ad Hoc Network
- 4. An Ad Hoc Network with Internet Sharing

Please select, from the four types of networks described above, the type of network that is appropriate for your needs. Please follow the instructions in the corresponding section that follows.

1. A Home Internet Network with A Residential Gateway/Router

(Network administrators with Dynamic IPs can also follow these instructions.)

If you have two or more computers (laptops or desktops) and want to share files, printers, and Internet access using a DHCP-capable Residential Gateway/Router – or - if you want to connect to an Ethernet network that uses Dynamic (DHCP) IP addresses, then follow the instructions on the next page. When it is complete, your network may look similar to this:



1. A Home Internet Network with A Residential Gateway/Router (continued)

(Requirements: A Residential Gateway/Router connected with an Ethernet (CAT5) cable to an 802.11b Access Point such as the WAP-B11

000AP.

This type of installation requires that you provide a dynamic IP address for each computer on your network. You will need a DHCP-capable Residential Gateway/Router for your network.

To complete the installation, please follow these steps:

- 1. Connect the **Router/Gateway** to a Broadband connection, (e.g., a **Cable** modem or a **DSL** modem.)
- 2. Connect the 802.11b Access Point (WAP-B11) to the router.
- 3. Install the **WUS-B12 Wireless USB Adapter** into a laptop computer on your wireless network.
- Check the Device Manager to confirm that the wireless adapter is installed correctly. Please refer to the Networking Basics section in this manual entitled: Checking the Installation of the Drivers for the Wireless Adapter.
- 5. By default, the wireless adapter is set to obtain a Dynamic IP Address. If you are having difficulty connecting, check to make sure that the IP Address of the wireless adapter is within the IP address range of your network. Please refer to the Networking Basics section in this manual entitled: Checking The IP Address.
- 6. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

2. A Home Internet Network with Multiple IP Addresses

(Network administrators with Static IPs can also follow these instructions.)

If you have two or more computers (laptops or desktops) and want to share files, printers, and Internet access using multiple IP addresses that you have purchased from your Internet Service Provider -or- you want to connect to an Ethernet network that uses Static IP Addresses, then follow the instructions on the next page. When you have completed your network, it should look similar to this:

2. A Home Internet Network with Multiple IP Addresses (continued)



Please note that this type of installation requires that your ISP (Internet Service Provider) provides you a static IP address for each computer and the Access Point on your network. Please refer to the manual that came with your Access Point to determine its configuration.

Please follow these steps to complete the installation:

- 1. Connect the **Wireless Access Point** to a Broadband connection (i.e., a **Cable** modem.)
- 2. Install the **WUS-B12 Wireless USB Adapter** into the laptop computer(s) on your wireless network.
- Check the Device Manager to confirm that the wireless adapter is installed correctly. Please refer to the Networking Basics section in this manual entitled: Checking the Installation of the Drivers for the Wireless Adapter.

2. A Home Internet Network with Multiple IP Addresses (continued)

4. Set the **Static IP Address** of the **wireless adapters**. Please refer to the **Networking Basics** section in this manual entitled: **Assigning an IP Address**.

Note: The IP Address for all computers must be in the same IP Address range, and the Subnet Mask must be the same for all the computers on the network. For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

If you are using a **PPPoE client** (**Point to Point Protocol over Ethernet**) please contact your **ISP** (**Internet Service Provider**) for further instructions regarding connecting to the Internet.

5. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

3. An Ad Hoc Network

If you have two or more computers (desktops or laptops) and want to share files and printers, but no Internet connection, please complete the following instructions. When your Ad Hoc network is complete it may look similar to this:



3. An Ad Hoc Network (continued)

To complete this installation, please follow these steps:

- 1. Install the WUS-B12 Wireless USB Adapter into your desktop computers.
- 2. Set the **Static IP Address** of the **wireless adapters**. Please refer to the **Networking Basics** section in this manual entitled: **Assigning an IP Address**.

Note: The IP Address for all computers must be in the same IP Address range, and the Subnet Mask must be the same for all computers on your network. For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

- Check the Device Manager to confirm that the wireless adapter is installed correctly. Please refer to the Networking Basics section in this manual entitled: Checking the Installation of the Drivers for the Wireless Adapter.
- 4. Check the **Wireless Configuration** for each **wireless adapter**. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Wireless Configuration**.
- 5. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

4. An Ad Hoc Network with Internet Sharing

If you have two or more computers (desktops or laptops) and want to share files, printers, and Internet access using one computer or laptop as an Internet Server, then follow the instructions below. When you have completed your network, it should look similar to this:

4. An Ad Hoc Network with Internet Sharing (continued)



To share an Internet connection with Internet Sharing software you will need to purchase Internet Sharing software or use the Internet Connection Sharing (ICS) utility provided with Windows XP, Windows 2000, Windows ME or Windows 98SE.

Please follow your software documentation to properly configure the Internet sharing software after you install your wireless networking adapters. To install your wireless network adapter follow the instructions on the next page.

If the Internet Sharing Software will be installed on the same computer into which you are installing this wireless network adapter, then follow these steps:

- 1. Install the WUS-B12 Wireless USB Adapter (please refer to the Quick Install Guide.)
- 2. Check the **Device Manager** to confirm that your adapter is installed correctly. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Installation of the Drivers for the Wireless Adapter**.
- 3. Install your Internet Sharing Software
- 4. If required by the ICS software, set the static IP Address for the **wireless adapter**. Please refer to the **Networking Basics** section in this manual entitled: **Assigning an IP Address**.

Note: The IP Address for all the computers on the network must be in the same IP Address range, and the Subnet Mask must be the same for all the computers on the network. For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

5. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers**.

If the **Internet Sharing Software** will be installed on a computer other than the one in which you are installing the **WUS-B12 Wireless USB Adapter**, then follow these steps:

1. Install the WUS-B12 Wireless USB Adapter into the computer (please refer to the Quick Install Guide.)

2. Check the **IP Address** for the **wireless adapter**. Please make certain that all the computers on your network are in the same IP Address range. Please refer to the **Networking Basics** section in this manual entitled: **Checking your IP Address**.

Note: By default, the wireless adapter is set to obtain a Dynamic IP Address, automatically.

3. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

Installation

This section shows you how to install the Utility if you are using Windows 2000, 98, ME, or NT operating systems. Follow the instructions given below on how to install the hardware (WUS-B12 USB Adapter) and then the software (driver and utility). For those using Windows XP, the installation procedure will be the same until the utility installation. Windows XP has a built in utility for wireless devices. The configuration utility does not need to be installed for users using the XP operating system.

System Requirements:

- A laptop computer with an available USB port
- At least a 300 MHz processor and 32 MB of memory
- USB Controller properly installed and working
- An 802.11b Access Point (for Infrastructure Mode) or another 802.11b wireless adapter (for Ad-Hoc mode.)

1. Installing the WUS-B12

- Turn on the computer
- Insert the WUS-B12 Wireless USB Adapter



2. Installing the Driver

Installing the software involves two steps. The first is to install the Driver and the second is to install the Configuration Utility.

• When the WUS-B12 has been inserted into the USB port, the Found New Hardware Wizard screen appears.



• Continue with the installation and the screen below should appear. Click on *Next* to proceed with the installation.

	Found New Hardware Wizard Welcome to the Found New Hardware Wizard Interview of the state of the found New Hardware Wizard This wizard helps you install a device driver for a hardware device. To continue, click Next.
Click Next	<back next=""> Cancel</back>

• Insert the Driver CD into the CD-ROM drive. The Install Hardware Device Drivers window will appear. Click *Next*.

Fou	nd New Hardware Wizard
	Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.
	This wizard will complete the installation for this device:
	A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click. Next.
	What do you want the wizard to do?
	Search for a suitable driver for my device (recommended)
	C <u>D</u> isplay a list of the known drivers for this device so that I can choose a specific driver
t	< <u>B</u> ack <u>N</u> ext> Cancel

• The installation will continue with the following screen. Click Next.

Four	nd New Hardware Wizard
L	.ocate Driver Files Where do you want Windows to search for driver files?
	Search for driver files for the following hardware device:
	The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify. To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
	Optional search locations: Floppy disk drives CD-ROM drives Specify a location Merce & Model and Medical
Click Next	<u>Microsoft Windows Update</u> <u> <u> </u></u>

• The following screen will appear.



• The installation will continue with the following screen. Click Next.



• The installation will continue with the following screen. Click Yes.



• The installation will finish with the following screen. Click *Finish*.



3. Installing the Configuration Utility

Look for the file named "Setup.exe" on the installation CD-Rom. Double-click on it to start the installation for the configuration utility.



• When this screen appears click Next.



• To install to the folder C:\Program Files\NonBrand click **Next**. Otherwise click on **Browse** to choose an alternate location.



• Click *Next* to proceed with the utility installation.

	InstallShield Wizard
	Select Program Folder Please select a program folder.
	Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
	Program Folders:
	WLAN Monitor
	E <u>x</u> isting Folders:
	Startup
Click	InstallShield < Back Next > Cancel

• The Setup Status screen will appear like the one below:

InstallShield Wizard	×
Setup Status	
WLAN Monitor Setup is performing the requested operations.	
Registering product	
100%	
InstallShield	Cancel

• After the Utility has been successfully installed, InstallShield Wizard will prompt you to restart your computer. Select "Yes, I want to restart my computer now," and click on *Finish*. This completes the Utility installation.



3. Uninstalling the Configuration Utility

To uninstall the configuration utility simply click Uninstall under Programs->WLAN Monitor->Uninstall.

Inte Exp	ernet lorer						
		New Office Document					
	Ĩ	Open Office Document					
	*	Windows Update					
la I	***	Programs	•		Accessories	Ľ	
ois,	<u> </u>	Documents	Þ	(internet) (internet)	Startup	•	
ofes	5	Settings	Þ	<i>(</i>)	Internet Explorer Microsoft Word		
<u>P</u>		Search	•	4	Outlook Express		
S 20	2	Help			WLAN Monitor		Uninstall WLANmon
ğ	2	Run				_	
ş	1	Shut Down					

• To uninstall the driver, right-click on My Computer.

) ments	
Ca	Explore
	Search
4	Manage
-	Map Network Drive
Pla -	Disconnect Network Drive
e -	Create Shortcut
	Rename
всу	Properties
6	
0	
Interr Explo	rer

• Left-click on **Properties** to bring up the **System Properties** screen.



• Click on the Hardware tab.



• Click on Device Manager.



• Click on Network adapters.



• Right-click on the "Wireless LAN Card (RTL8180)" icon.

📙 Device Ma	nager	>
<u>Action Vie</u>	₩ ← → 🛍 🖬 😭 😫 🕺 😹 🗙	
🖃 🖳 WIN200	0	
🗄 🥷 Batt	reies	
🔅 🚊 Com	nputer	
😟 💷 Disk	drives	
📄 🖳 🛄 Disp	lay adapters	
📄 🗄 🔬 DVD	/CD-ROM drives	
🗄 🚭 Flop	ipy disk controllers	
🗄 🚭 IDE	ATA/ATAPI controllers	
🗄 🧖 Infr	ared devices	
🗄 🥰 Key	boards	
🗄 🖳 🖸 Mice	and other pointing devices	
🗄 🖳 Mor	itors	
E-By Net	work adapters	
	D-Link DFE-650TX/TXD Fast Ethernet PC Card	
····· B	Wireless LAN Card(R Disable	
± _y Port	S (COM & LPT)	
	top devices	
	versal Serial Pus contra Properties	
⊡~~~~~~~ Onit		

• Click on **Uninstall**. You will then receive a **Confirm Device Removal** screen. Click **OK** to complete the uninstallation.



Using the Configuration Utility for Windows 2000, 98, or ME

If you are using Windows 2000, 98, ME, or NT, the Configuration Utility program for the WUS-B12 is called **WLAN Monitor**. Once you have installed **WLAN Monitor** (the configuration utility), you can read this section of the manual to find out how to monitor and configure your WUS-B12 adapter using **WLAN Monitor**. Screenshots for this section have been taken in Windows 2000. There are four tabs in the **WLAN Monitor** Configuration Utility program. In this section we will describe the uses for each tab in the Configuration Utility window.

To access **WLAN Monitor** once it has been installed, just right-click on the **WLAN Monitor** icon in the taskbar, and then click on **Wireless Network**.



Under the **Configuration Tab** you will find a list of access points to which you may add or change connections.

Configuration Tab

Available <u>W</u> LANs: o connect to available WLAN, click Add o setup.	Preterred WLANs: Automatically connect to available WLAN per below order:
Multicast	P-Link Move up Move down
Refresh Add	New <u>Remove</u> Properties

Using the Configuration Utility for Windows 2000, 98, or ME (continued)

On the left side of the screen are *Available WLANs* which you may connect to by first selecting the WLAN (it will appear highlighted) and then clicking on *Add*. When you do so a screen like the one below will pop up:

Wireless Network Pr	operties 🔀					
Wireless network <u>n</u> arr	ne D-Link					
Wireless network ke	ey (WEP)					
This network require	es a key for the following:					
Network Auth	entication (Shared mode)					
Data encryptio	n (WEP enabled)					
Key length:	40 bits (10 Hexadecimal digits) 💌					
Use QuickKey						
C I want to specify the key by myself						
Key <u>1</u> :						
Key <u>2</u> :						
Key <u>3</u> :						
Key <u>4</u> :						
Default key: Key	1					
This is a <u>c</u> omputer access points are	r to computer (ad hoc) network; no used.					
IP Config	OK Cancel					

In the **Wireless Network Properties** screen you may change the name of the WLAN. You may also enter wireless network encryption keys by checking **Network Authentication (Shared mode)** or **Data encryption**. You may enter up to four keys of length 10 or 25 hexadecimal digits. You may also set one of the four keys as a default key.

Click on **IP Config** to set the IP address, Subnet mask, and Default gateway manually instead of obtaining the IP address automatically through the Dynamic Configuration Host Protocol (DCHP) server. You may also set the DNS server address settings and WINS address settings.

If the network you are using is a computer-to-computer network or ad hoc network, no access points are used. You may check the box "This is a computer to computer (ad hoc) network; no access points are used" to enable this option.

Using the Configuration Utility for Windows 2000, 98, or ME (continued)

On the **Configuration Tab** click on **Refresh** to call up all the available WLANs. On the right side of the screen is a list of *Preferred WLANs*. These are WLANs that have already been added to the wireless network. Click **New** to rename the WLAN and reset its properties. You will see the **Wireless Network Properties** screen as displayed previously when you click **New**. This is also the same screen that will appear when you click **Properties** on the right side of the **Configuration Tab** screen. Click **Remove** to remove the connection.

On the right side of the screen you may click **Move Up** to move the selected WLAN up in the order it is displayed on the *Preferred WLANs* screen. You

may click *Move Down* to move the selected WLAN down in the order in which it is displayed.

The *Advance* button allows the user to set the WLAN type to connect: infrastructure and ad hoc network, infrastructure network only, or ad hoc network only. You may also automatically connect to non-preferred networks by checking the option.

When you are done entering the settings and options for the wireless network click on *OK*, *Cancel*, or *Apply*. *Ok* places the settings into effect and closes the graphical user interface (GUI). *Cancel* makes all settings entered invalid. *Apply* places the settings entered into effect but does not close the GUI.

Using the Configuration Utility for Windows 2000, 98, or ME (continued)

Under the **Status Tab** you will find information on the connection state, hardware information, and advanced state.

Status Tab

Connection State	Hardware Information	Hardware Information	
Connection Status :	Connected MAC Address : 00:05:5	D:76:73:	
SSID:	D-Link Regulatory Domain :	F	
Network Type :	Infracstructure		
Wep Status :	Disable Advance State		
Speed:	5.5 Mbps Radio Status:	C	
Signal Strength :	Turbo Mode:	i	

Information given under **Connected State** are the **Connection status** (connected or disconnected), **SSID**, **Network type** (infrastructure or adhoc), **Wep Status** (enabled or disabled), **Speed** (of the wireless connection), and **Signal Strength** (a colored bar shows the intensity of the radio signals in the network).

Under **Hardware Information** the **Media Access Control (MAC) address** of the hardware (WLAN USB adapter) is given. The MAC address is a factory given address that cannot be changed. A **Regulatory Domain** displays the code of the country in which this software is being used.

Advanced State shows the Radio Status (ON or OFF) and there is no Turbo Mode.

Click **OK** to accept the connection status and exit the GUI. Click **Cancel** to not accept the status settings and exit the GUI.

Using the Configuration Utility for Windows 2000, 98, or ME (continued)

Under the **Options Tab** general settings and advanced settings are shown.

Options Tab

Wireless LAN Card(RTL8180)		×
Configuration Status Option About		
☑ Auto launch when Windows start up	🗖 Disable Radio	
Remember mini status position	Current Channel:	
T Auto hide mini status	Power Save Mode:	Disable 💌
📕 Set mini status always on top	Fragmentation Threshold :	2432
Enable IP Setting in Profile	RTS Threshold :	2432
	OK Can	cel Apply

Check "Auto launch when Windows starts up" so that WLAN Monitor automatically launches when Windows starts up. Part of the GUI for WLAN Monitor is a mini status dialog box that appears when you left-click on the WLAN Monitor icon in the taskbar. "Remember mini status position" keeps track of the last position of the mini status dialog box. "Auto hide mini status" pulls the dialog box to the right and drags it off the screen. "Set mini status always on top" places the mini status dialog box on top of all other dialog boxes. Check "Enable IP Setting in Profile" to enable the IP settings made under IP Config in the Wireless Network Properties screen. If checked current IP settings will be saved. If unchecked (and previously checked) previous IP settings will be

restored. Check "Disable Radio" to disconnect the network connection without removing the WLAN USB adapter. You may select the **Current Chanel** (1, 2, or 3) and **Power Save Mode** (Disable, Max Save, Fast Save). You may enter the **Fragmentation Threshold** and **RTS Threshold**.

Using the Configuration Utility for Windows 2000, 98, or ME (continued)

The **About Tab** gives the utility version of WLAN Monitor.

About Tab

Wireless LAN Card(RTL8180)			×
Configuration Status Option	About		
Сор	vright 2002, D-Link. All Right	s Reserved.	
About	Utility Version	3, 0, 13, 21218	
		OK Car	ncel <u>A</u> pply

Using the Configuration Utility for Windows XP

The WLAN Monitor Configuration Utility supports Windows XP; however, Windows XP has its own utility for wireless devices. In order to use the WLAN Monitor Configuration Utility as described in the last section you must disable the utility built into Windows XP by unchecking the box below.

4 Wireless Network Connection 3 Properties 👘 💽 🔀		
General Wireless Networks Advanced		
Use Windows to configure my wireless network settings		
Available networks:		
To connect to an available network, click Configure.		
Link Configure		
BFMD Befresh		
Preferred networks:		
Automatically connect to available networks in the order listed below:		
Link Move up		
Move down		
Add Remove Properties		
Learn about <u>setting up wireless network</u> <u>configuration.</u> Advanced		
OK Cancel		

Using the Configuration Utility for Windows XP (continued)

If you leave the "Use Windows to configure my wireless network settings" box checked you will use the Windows XP utility for wireless devices.

The following demonstrates how to manage wireless network connections with the Windows XP built-in utility.

Creating a connection

• Right-click on "My Network Places" to obtain a drop-down menu with Properties listed.



• Left-click on Properties to obtain the Network Connections screen.



• Right-click on the "Wireless Network Connection" icon to produce another drop-down menu with item **Properties**.



Using the Configuration Utility for Windows XP (continued)

• Left-click on **Properties** to bring up the screen below.

🕹 Wireless Network Connection 3 Properties 👘 🕐 🔀		
General Authentication Advanced		
Connect using:		
Wireless LAN Card(RTL8180)		
Configure		
Image: Client for Microsoft Networks Image: Client for Microsoft		
OK Cancel		

• Click on the Wireless Networks tab.

🗕 Wireless Network Connection 3 Properties 👘 💽 🔀			
General Wireless Networks Authentication Advanced			
✓ Use <u>W</u> indows to configure my wireless network settings			
Available networks:			
To connect to an available network, click Configure.			
👗 ikeda 🛛 🔼 🔼 🔼 🔼			
l lecom_bb			
P-Link			
Preferred networks: Automatically connect to available networks in the order listed below:			
Movedown			
Add Remove Properties			
Learn about <u>setting up wireless network</u> <u>configuration.</u> Ad <u>v</u> anced			
OK Cancel			

• Click on the Access Point under **Available Networks** with which you wish to establish a connection.

	🕂 Wireless Network Connection 3 Properties 👘 🕐 🔀			
	General Wireless Networks Authentication Advanced			
	✓ Use <u>W</u> indows to configure my wireless network settings			
	Available <u>networks</u> :			
	ikeda Configure			
2	P D-Link Refresh			
	Preferred networks: Automatically connect to available networks in the order listed			
	below:			
	Move <u>d</u> own			
	Add <u>R</u> emove Properties			
	Learn about <u>setting up wireless network</u> <u>configuration</u> . Ad <u>v</u> anced			
	OK Cancel			

• Click on **Configure** to establish a connection with the chosen access point "D-Link." A screen such as the following called **Wireless Network Properties** will then appear.

Using the Configuration Utility for Windows XP (continued)

• Enter the appropriate settings and click **OK**.

Wireless Network Properties 🔹 🛛 🔀			
Network name (SSID):	D-Link		
- Wireless network key (WE	P)		
This network requires a ke	This network requires a key for the following:		
Data encryption (WE	P enabled)		
Network Authentication (Shared mode)			
Network key:			
Key format:	ASCII characters		
Key length:	104 bits (13 characters) 💽		
Key index (advanced):	0		
The key is provided for me automatically			
This is a computer-to-computer (ad hoc) network; wireless access points are not used			

• The access point "D-Link" has been added to the network under **Preferred networks**.

🕹 Wireless Network Connection 3 Properties 💦 🛛 🥐
General Wireless Networks Authentication Advanced
 ✓ Use Windows to configure my wireless network settings Available networks: To connect to an available network, click Configure. ikeda elecom_bb D-Link Preferred networks: Automatically connect to available networks in the order listed below:
Add Remove Properties Learn about setting up wireless network configuration. Advanced
OK Cancel

Using the Configuration Utility for Windows XP (continued)

• The Network Connections window now shows the wireless network connection as "Enabled".



Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using Microsoft Windows XP.

Note: Please refer to websites such as <u>http://www.homenethelp.com</u>

and <u>http://www.microsoft.com/windows2000</u> for information about networking computers using Windows 2000, *ME*, or 98.

Go to START>CONTROL PANEL>NETWORK CONNECTIONS Select Set up a home or small office network.

Network Setup Wizard		
	Welcome to the Network Setup Wizard	
	This wizard will help you set up this computer to run on your network. With a network you can:	
世众	 Share an Internet connection Set up Internet Connection Firewall Share files and folders Share a printer 	
	To continue, click Next.	
	< Back Next > Cancel	

• When this screen appears, **Click Next**.

Networking Basics

Please follow all the instructions in this window:

Network Setup Wizard
Before you continue
Before you continue, review the <u>checklist for creating a network</u> . Then, complete the following steps: • Install the network cards, modems, and cables. • Turn on all computers, printers, and external modems. • Connect to the Internet. When you click Next, the wizard will search for a shared Internet connection on your network.
< <u>B</u> ack <u>N</u> ext > Cancel

- Click Next.
- In the following window, select the best description of your computer. If your computer connects to the Internet through a gateway/router, select the second option as shown and **Click Next**.

Network Setup Wizard		
Select a connection method.		
Select the statement that best describes this computer:		
O This computer connects directly to the Internet. The other computers on my network connect to the Internet through this computer. <u>View an example</u> .		
 This computer connects to the Internet through another computer on my network or through a residential gateway. <u>View an example</u>. 		
O ⊡ther		
Learn more about home or small office network configurations.		
< <u>B</u> ack <u>N</u> ext > Cancel		

• Enter a Computer description and a Computer name (optional) and Click Next.

Network Setup Wizard	
Give this computer a description and name.	
<u>C</u> omputer description:	Mary's Computer Examples: Family Room Computer or Monica's Computer
C <u>o</u> mputer name:	Office Examples: FAMILY or MONICA
The current computer na	ter names and descriptions.
	< Back Next > Cancel

• Enter a **Workgroup** name and **Click Next**. All computers on your network should have the same **Workgroup** name.

Network Setup Wizard			
Name your net w ork.			
Name your network by spea should have the same work	cifying a workgroup name below. All computers on your network .group name.		
Workgroup name:	Accounting		
Examples: HOME or OFFICE			
	< <u>B</u> ack <u>N</u> ext> Cancel		

• Please wait while the wizard applies the changes. When the changes are complete, **Click Next**.

Network Setup Wizard		
Ready to apply network settings		
The wizard will apply the following settings. This process may take a few minutes to complete and cannot be interrupted. Settings:		
Network settings:		
Computer description: Mary's Computer Computer name: Office Workgroup name: Accounting		
The Shared Documents folder and any printers connected to this computer have been shared.		
To apply these settings, click Next.		
< <u>Back</u> <u>N</u> ext > Cancel		

• Please wait while the wizard configures the computer. This may take a few minutes.

Network Setup Wizard	
Please wait	
Please wait while the wizard configures this process may take a few minutes.	computer for home or small office networking. This
3	
	< <u>B</u> ack <u>N</u> ext > Cancel

Networking Basics

• In the window below, select the best option. In this example, "Create a Network Setup Disk" has been selected. You will run this disk on each of the computers on your network. Click Next.



• Insert a disk into the Floppy Disk Drive, in this case drive "A:" Format the disk if you wish, and Click Next.

Network Setup Wizard
Insert the disk you want to use.
Insert a disk the into the following disk drive, and then click Next. 31⁄2 Floppy (A:) If you want to format the disk, click Format Disk. <u>Format Disk</u>
< <u>Back</u> Cancel

Networking Basics

• Please wait while the wizard copies the files.

Copying	
Please wait while the wizard copies files	
	Cancel

 Please read the information under Here's how in the screen below. After you complete the Network Setup Wizard you will use the Network Setup Disk to run the Network Setup Wizard once on each of the computers on your network. To continue Click Next.

Network Setup Wizard		
To run the wizard with the Network Setup Disk		
Complete the wizard and restart this computer. Then, use the Network Setup Disk to run the Network Setup Wizard once on each of the other computers on your network.		
Here's how:		
 Dpen My Computer and then open the Network Setup Disk. Double-click "netsetup." 		
Cancel		

• Please read the information on this screen, then **Click Finish** to complete the **Network Setup Wizard**.

Network Setup Wizard		
	Completing the Network Setup Wizard	
	You have successfully set up this computer for home or small office networking.	
印办	For help with home or small office networking, see the following topics in Help and Support Center:	
Lising the Shared Documents folder Sharing files and folders		
	To see other computers on your network, click Start, and then click My Network Places.	
	To close this wizard, click Finish.	
Reack Finish Cancel		

• The new settings will take effect when you restart the computer. **Click Yes** to restart the computer.

System Settings Change		
?	You must restart your computer before the new settings will take effect. Do you want to restart your computer now? Yes <u>No</u>	

You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

Networking Basics

Naming your Computer

To name your computer, please follow these directions:

In Windows XP:

- Click START (in the lower left corner of the screen)
- Right-click on My
 Computer
- Select Properties
 and Click



•	Select the		
	Computer Name		
	Tab in the System		
	Properties window.		

You may enter a **Computer description** if you wish, this field is optional.

To rename the computer and join a domain,

Click Change

System Properties 🔹 🕐 🔀				
System Re	store	Automat	ic Updates	Remote
General	Compu	iter Name	Hardware	Advanced
Windows uses the following information to identify your computer on the network.				
Computer <u>d</u> esc	ription:			
For example: "Kitchen Computer" or "Mary's Computer".				
Full computer name: Office				
Workgroup: Accounting				
To use the Network Identification Wizard to join a domain and create a local user account, click Network ID ID.				
To rename this computer or join a domain, click Change.				

? 🗙

Networking Basics Naming your Computer (continued)

- In this window, enter the Computer name.
- Select Workgroup and enter the name of the Workgroup.
- All computers on your network must have the same Workgroup name.
- Click OK

	You can change the name and the membership of this computer. Changes may affect access to network resources.
	Computer name:
	Office
	Full computer name: Office
	More
	Member of
×	⊙ <u>W</u> orkgroup:
	Accounting
×	OK Cancel

Computer Name Changes

Checking the Installation of the Drivers for the Wireless Adapter

- Go to Start
- Right-click on
 My Computer
- Click Properties



Networking Basics

Checking the Installation of the Drivers for the Wireless Adapter

- Select the Hardware Tab
- Click Device Manager



Netwoclick on Network Checkin Adapters stallation of the Driv Right-Click on Wireless Adapter Wireless LAN Card

 Select Properties to check that the drivers are installed properly



 Look under Device Status to check that the 	D:Link AirPro DWL-A650 Wireless Cardbus Adapter P ? General Advanced Settings Driver Resources Wireless Lan Card(RTL6180)
device is working properly.	Device type: Network adapters Manufacturer: D-Link Location: PCI bus 5, device 0, function 0
Click OK	This device is working properly. If you are having moblems with this device, click Troubleshoot to start the troubleshooter. Iroubleshoot
	Device usage:
	Use tris device (enable)

Checking the Wireless Configuration

• Double-click on the Networking Icon in the taskbar.

In this window you will see the **Signal Strength** and the **Status** of the WUS-B12. In this case the Status and the Signal Strength are fine.



🕆 Wireless Network Connection 7 Status 🛛 🕐 🗙				
General Support				
Connection				
Status:	Connected			
Duration:	00:03:00			
Speed:	72.0 Mbps			
Signal Strength:	? !!			
Activity Sent —	Received			
Packets: 270	0			
<u>Properties</u> Disable				
	<u>C</u> lose			



For more information:

Click Properties

Networking Basics Checking the Wireless Configuration

• Click Configure to access more information.

/	Wireless Networks	Authentication	Advanced
Connec	t using:		
	Wireless Lan Card(RT I	L8180)	
			<u>C</u> onfigure
his co	nnection uses the fol	lowing items:	
	Client for Microsoft	Networks	
	File and Printer Sha	ring for Microsoft	Networks
	QoS Packet Sched	luler	
V 35	Internet Protocol (T	CP/IP)	
121 9	internet research		
C V		,	162
e ,	nstall	<u>U</u> ninstall	Properties
L U	nstall	<u>U</u> ninstall	Properties
L V Desci Allow	nstall	Uninstall	Properties
L Desci Allow netw	nstall niption vs your computer to a ork.	Uninstall ccess resources	Properties on a Microsoft
Desci Allow netw	nstall iiption is your computer to a ork.	Uninstall	Properties on a Microsoft
I. Descr Allow netw	nstall iption is your computer to a ork. w icon in polification	Uninstall ccess resources	Properties on a Microsoft
L v Descr Allow netw	nstall iiption is your computer to a ork. w icon in notification	Uninstall ccess resources area when conne	Properties on a Microsoft



• Select Settings

This screen shows the wireless configuration.

Click Modify to check on the configuration.

D-Link AirPro DWL-A650 Wireless Cardbus Ac	lapter P	?×
General Advanced Settings Driver Resources		
Selected Configuration: Uperault		
Configuration List		
Default	<u>N</u> ew	
	<u>M</u> odify	
	<u>D</u> elete	
Selected Configuration Details		
Network Name (SSID): <empty> Network Connection: AP (Infrastructure)</empty>		
Turbo Mode : Disabled Power Saving: Normal		
Locally Admin. Address: Not Used Data Security: Disabled		
ОК	Ca	ncel
ОК		ncel

Networking Basics Checking the Wireless Configuration

- The Network Name (SSID) should be set to Default.
- The Network Connection should be set to the correct mode (Infrastructure or Ad Hoc.)
- The **Turbo Mode** setting (**Disabled** in the example here) must be the same on all the stations in your network.
- Click on the Security Tab
- If Enable Security is selected on one station on your network, it must be selected on all stations. Likewise, if Enable Security is deselected on one station, it must be deselected on all stations.

Network Configuration Settings		?
General Security		
Configuration Name:	Default	
Network Name (SSID):	Default	
Network Connection:	AP (Infrastructure)	
Power Saving:	AP (Infrastructure) Normal	
Turbo Mode:	Disable 💌	
Locally Administered Address: (Hex 0-9 A-F)		
	ОК	Cancel

Network Configuration Settings	? 2
General Security	
Enable Security Default Encryption Key: Encryption Keys (Hex 0-9 A-F)	Unique 👤
	Key Length (bits): 152 (128+24) 32 hex digits 💌
Shared Keys:	
First:	64 (40+24) 10 hex digits 💌
Second:	64 (40+24) 10 hex digits
Fourth:	64 (40+24) 10 hex digits
	OK Cancel

• Check to see that your IP Address and your Subnet Mask are in the correct range. See the Networking Basics sections: Checking the IP Address and Assigning a Static IP Address.