



USER GUIDE

INDUSTRIAL DATA COMMUNICATIONS



FLC800C

PCMCIA Card



It is essential that all instructions contained in the User Guide are followed precisely to ensure proper operation of equipment.

FCC Notification

This equipment has been tested and found to comply with the limits for a Class B digital devices pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication.

Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at this own expense.

The user should not modify or change this equipment without written approval from company name. Modification could void authority to use this equipment.

For the safety reason, people should not work in a situation which RF Exposure limits be exceeded. To prevent the situation happening, people who work with the antenna should be aware of the following rules:

1. Install the antenna in a location where a distance of 20 cm from the antenna may be maintained.
2. While installing the antenna in the location, please do not turn on the power of wireless card.
3. While the device is working, please do not contact the antenna.

Table of Contents

	Page
Introduction	
Features & Benefits	3
FastLinc™ FLC800C Installation	4
Product Kit	4
Before Installation	4
Installation	5
LED Indicators	5
Installing Drivers for Windows	
Set Up for Windows XP	6
Set Up for Windows 2000	8
Set Up for Windows NT	13
Set Up for Windows 98/ME	17
Configuration	
Automatic Wireless Network Configuration	21
Installing the WLAN Utility	22
Using the WLAN Utility	24
Technical Support	30
Return Material Authorization	30
Contact Information	30

Introduction

The FastLinc™ IEEE 802.11b Wireless LAN PC Card (FLC800C) is a standard PCMCIA adapter that fits into any standard PCMCIA Type II slot in a notebook computer. Its 11Mbps over the air data rate gives equivalent Ethernet speed to access any 802.11b network. In addition, the detachable antenna is specifically designed for system integrator application. When installed, the FLC800C wireless LAN PC card is able to communicate with any 802.11 and 802.11b compliant products.

Features and Benefits

- Fully IEEE 802.11b compatible.
- Direct Sequence Spread Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection.
- Supports 1, 2, 5.5 and 11 Mbps data rate.
- Working range up to 800 ft. in an open environment (with supplied antenna).
- Seamless connectivity to wired Ethernet and PC network LANs augmenting existing networks quickly and easily.
- Wireless connection without the cost of cabling.
- Easy to install and user friendly, just Plug and Play.
- Low power consumption.
- Supports a variety of operating systems (WinXP/2000/NT/98/ME).
- 64-bit and 128-bit WEP encryption capable.
- Provides Window-based Diagnostic Tools, most notably Site Survey, Link Quality Test and Access Point Browser.

FastLinc™ FLC800C Installation

This chapter describes the instructions that guide you through the proper installation of the FLC800C wireless LAN PC card for the Windows XP/2000/NT/98/ME operating systems.

The complete installation of the FLC800C consists of the following steps:

1. Insert your FLC800C into your notebook.
2. Install the corresponding driver and utility.
3. Set basic settings.
4. Finish Installation.

I. Product Kit

The FLC800C comes with the following items. Please go through each item below. If any of listed items appears to be damaged or missing, please contact Data-Linc Group.

- (1) FLC800C Wireless LAN PC Card
- (1) FLC800C PC Card Software CD
- (1) FLC800C Wireless LAN PC Card User Guide
- (1) Blade Antenna

If any of the above items are not included or damaged, please contact Data-Linc Group for support.

II. Before Installation

In addition to the items shipped with FLC800C, you will also need the following in order to install the adapter:

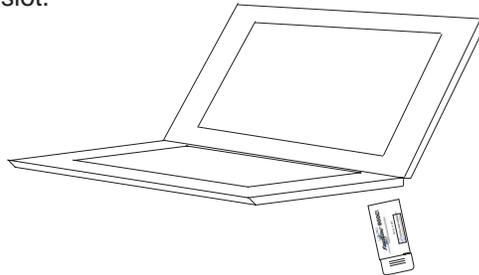
1. A computer equipped with a Type II or Type III PCMCIA slot, and a PCMCIA card and socket services compliant with revision 2.10 of the PCMCIA specification (or higher).
2. Windows XP/2000/NT/98/ME (with a Windows installation CD-ROM/diskettes for use during installation)
3. Minimum 500 Kbytes free disk space for installing driver and utility program.

Note: If you are not familiar with the hardware installation process for a Windows based computer, please consult with your computer technology specialist before proceeding. Failure to properly install this or any other hardware on your computer can cause serious problems with the computer.

III. Installation

To install the FLC800C, please do the following:

1. Find an available Type II or Type III PCMCIA slot on your computer.
2. With the FLC800C's 68-pin connector facing the PCMCIA slot and its label facing up, slide the PCMCIA adapter completely into the PCMCIA slot.



Insert the FLC800C PC Card into the notebook.

Note: Do not force the client adapter into the slot. Forcing it will damage both the client adapter and the slot. If the client adapter does not go in easily, remove the card and reinsert it.

IV. LED Indicators

The FLC800C has two LED indicators.

The behavior of the indicators are described as below:

Link LED

Solid Green – Associated with the Access Point or AdHoc wireless workstation.

Flashing Green – Not connecting to the Access Point or AdHoc wireless workstation.

Power LED

OFF – No light

ON – Solid Yellow



Installing Drivers for Windows

This section describes the installation of the FLC800C driver for Windows XP/2000/NT/98/ME operating systems.

Note: Before you start the installation, you are advised to keep the Windows CD-ROM in case you might need certain system files.

I. Set Up for Windows XP

1. After inserting the FLC800C into the PCMCIA slot on your notebook, Windows XP will auto-detect the FLC800C and a *Found New Hardware Wizard* window will pop up on the task bar.



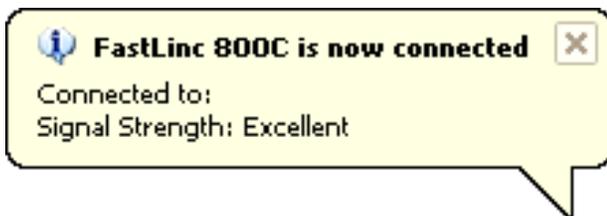
2. Windows XP will use embedded drives to install and set up the FLC800C.



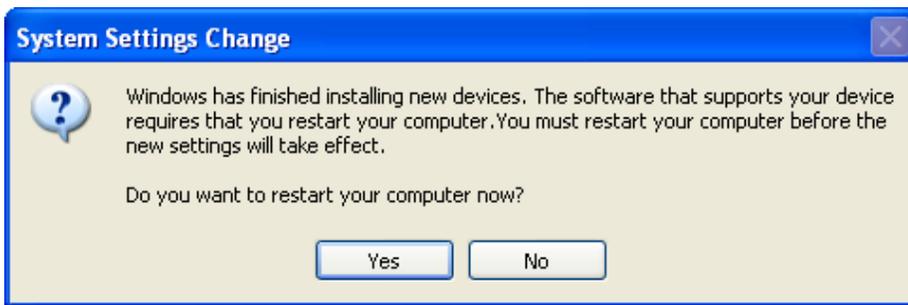
3. If an embedded driver is not pre-installed or found, Windows XP will ask for the driver disk. Continue to follow the instructions on the screen.



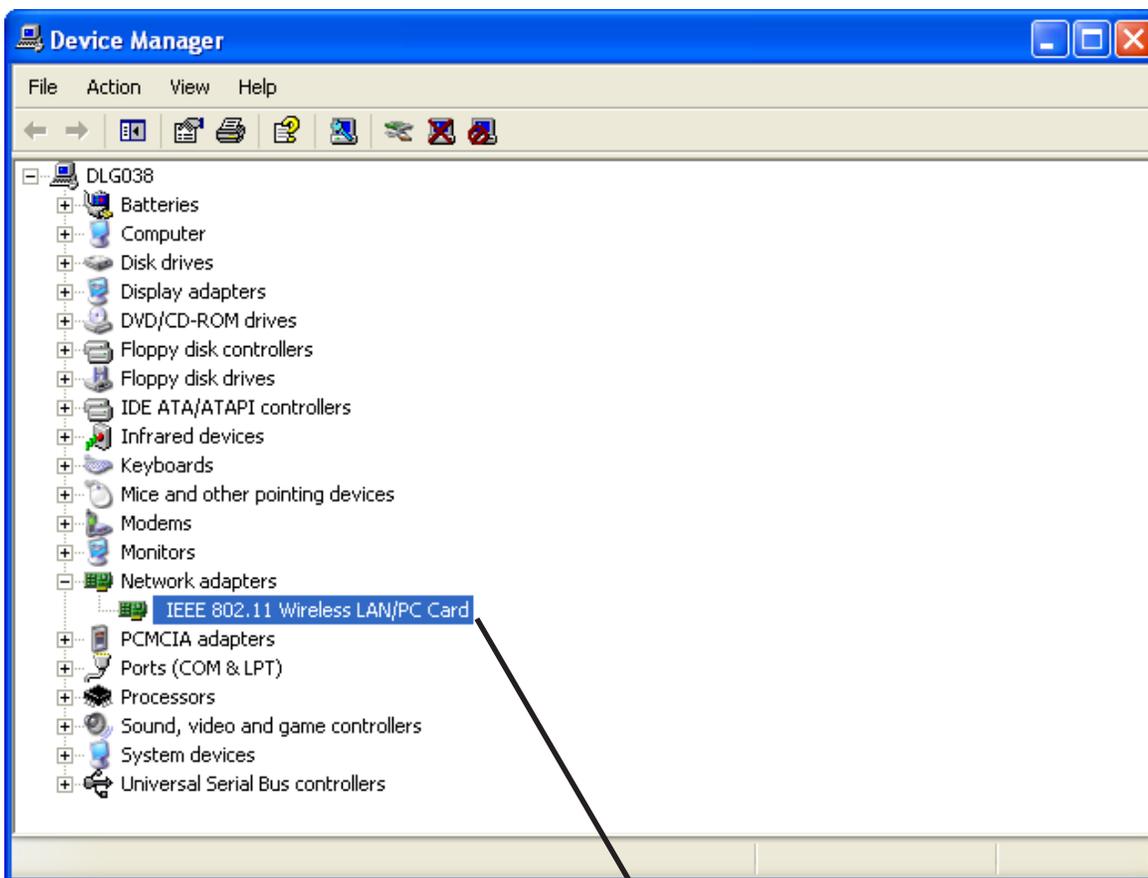
4. Click *Finish* to complete the installation. If the access point and card are setup, Windows XP will acknowledge a connection.



5. Restart the computer.



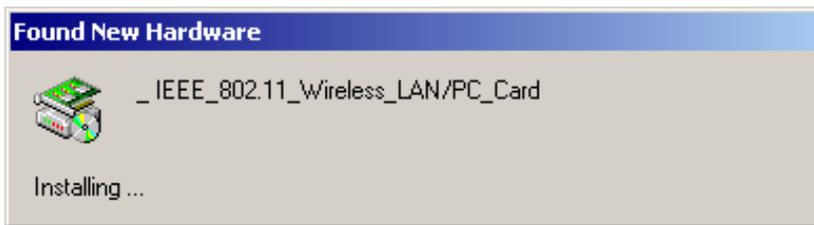
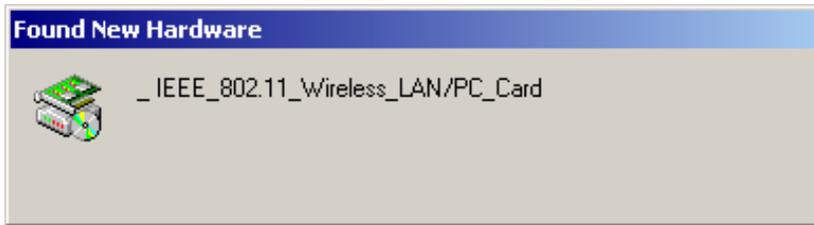
6. Right click *My Computer* from *Start*, select *Properties*, go to the *Hardware* tab and click the *Device Manager* button to see if any error icon appears next to the Network Adapter/IEEE 802.11 Wireless LAN/PC Card. If no error, your FastLinc FLC800C is working.



Check if there is any error icon next to the IEEE 802.11 Wireless LAN PC Card

II. Set Up for Windows 2000

1. After inserting the FLC800C into the PCMCIA slot on your notebook, Windows will auto-detect the card.



2. A *Found New Hardware Wizard* window shows up. Click *Next* to proceed.



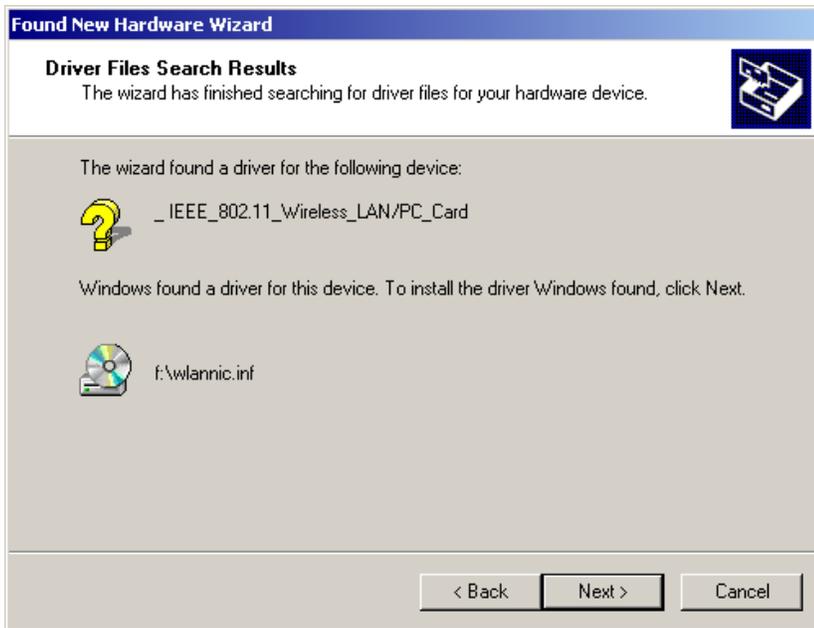
3. Select *Search for a suitable driver for my device (recommended)*.



4. Insert the **FastLinc Drivers & Utilities** CD-ROM into the appropriate drive. Select *Specify a location* and when prompted, type: "X:" as the location of the driver file (where "X" is the CD Rom drive that the disk is located in). Click on *Next* to install the driver.



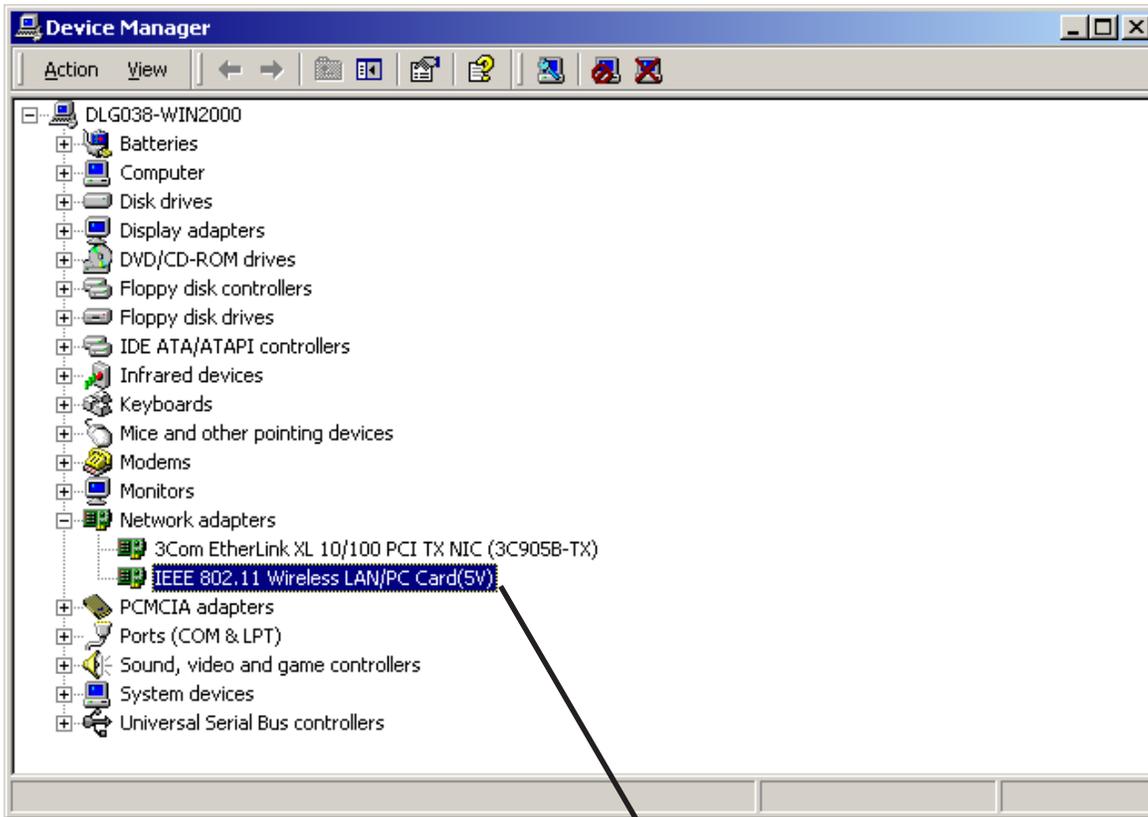
5. Windows will find *IEEE 802.11 Wireless LAN/PC Card (5V)*. Click on *Next* to continue.



6. Click *Finish* to complete the installation.



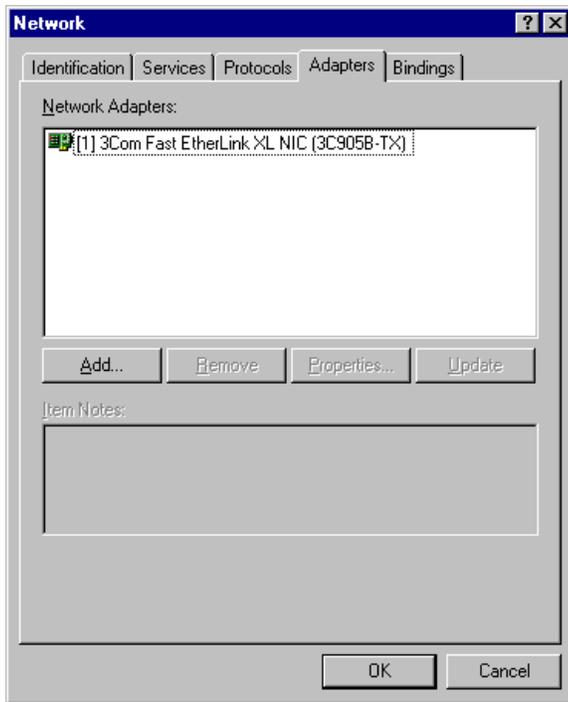
7. Open *Control Panel/System/Device Manager*, and check *Network Adapters* to see if any error icon appears. If no, your FastLinc Wireless LAN PC Card is working well.



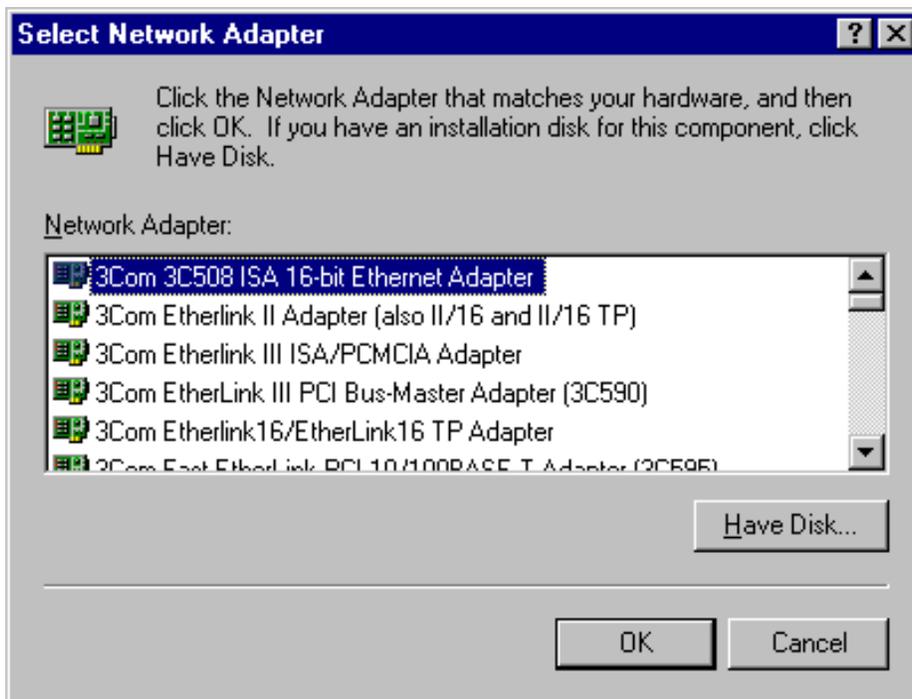
Check if there is an error icon next to the IEEE 802.11 Wireless LAN PC Card

III. Set Up for Windows NT

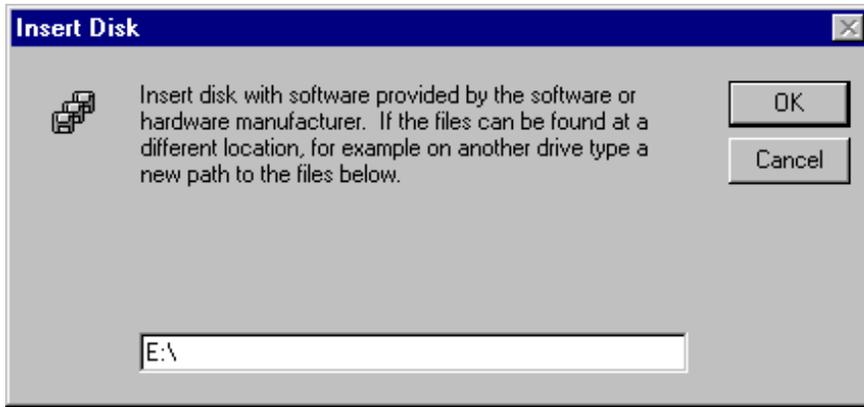
1. From the desktop, select *Control Panel*, double-click *Network*, go to the *Adapters* tab, and then click the *Add* button.



2. Windows NT will present a list of all its supported adapters. Click *Have Disk* to continue.



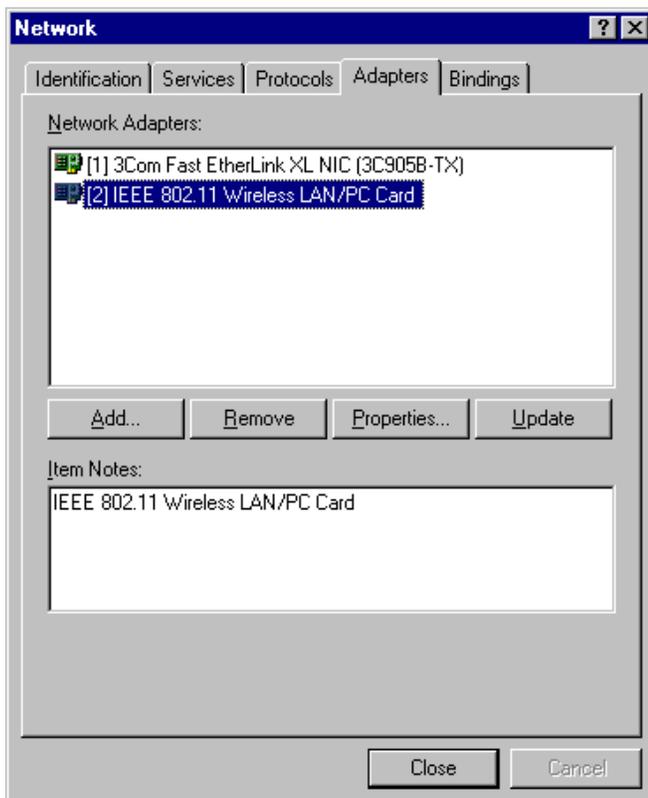
3. Windows NT will ask for the path containing the FLC800C driver for Windows NT. Insert the **FastLinc Drivers & Utilities** CD-ROM into the corresponding drive, and then choose the location where the driver is placed (see below). Click *OK* to continue.



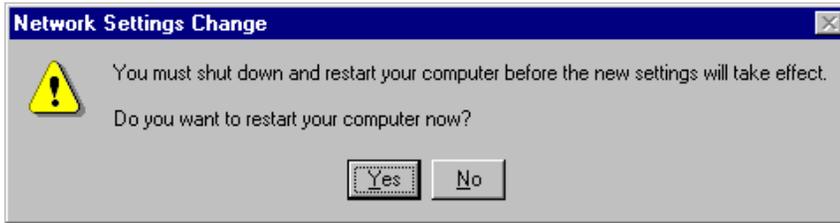
4. The Windows will find "IEEE 802.11 Wireless LAN PC Card". Click *OK* and Windows will then copy the necessary files into the system.



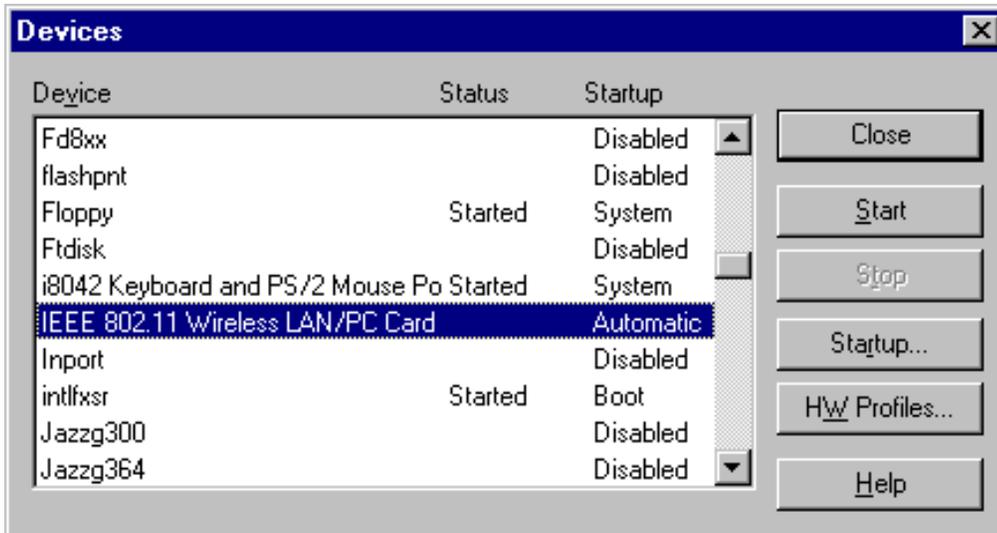
5. When the installation is complete the PC card will have been added to the adapter list.



6. Click **Yes** to finish the installation. Restart Windows.



7. To ensure whether the FLC800C is working, go to *Control Panel*, double-click *Devices*, then verify whether the FastLinc PC Card driver has started.



IV. Set Up for Windows 98/ME

1. After inserting the FLC800C into the PCMCIA slot on your notebook, Windows will auto-detect new hardware and will display an *Add New Hardware Wizard* window. Click *Next* to continue.

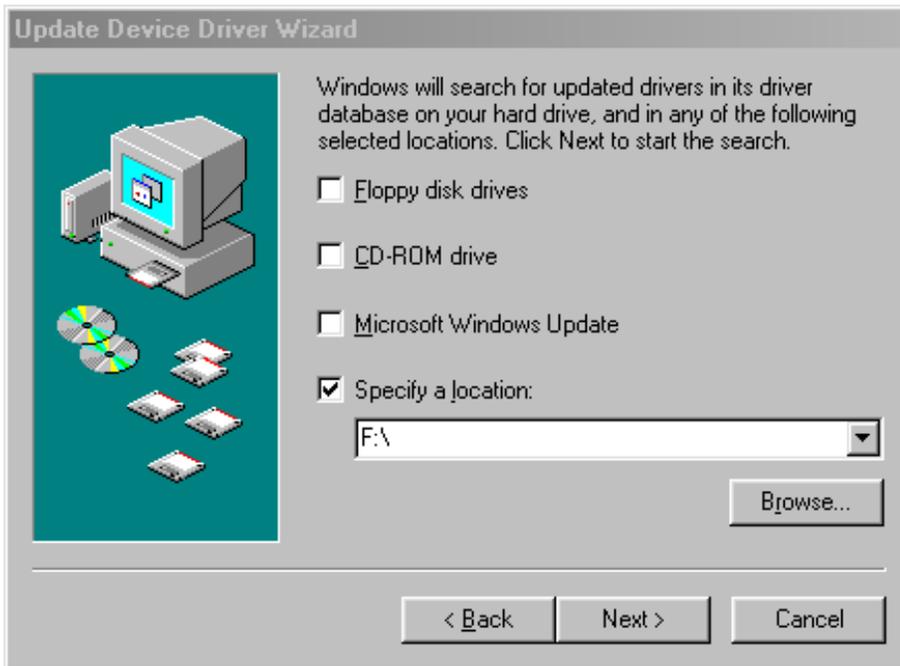


2. Select *Search for the best driver for your device (Recommended)* and click *Next*.

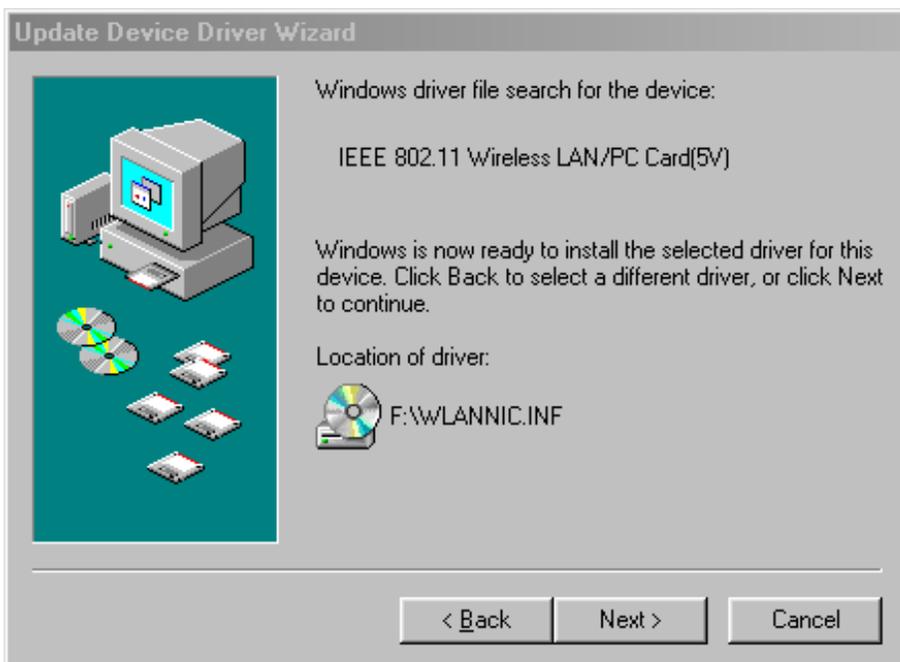


3. Insert the **FastLinc Drivers & Utilities** CD-ROM into the appropriate drive. Select *Specify a location* and type "X:" in the appropriate space (where "X" is the CD Rom drive).

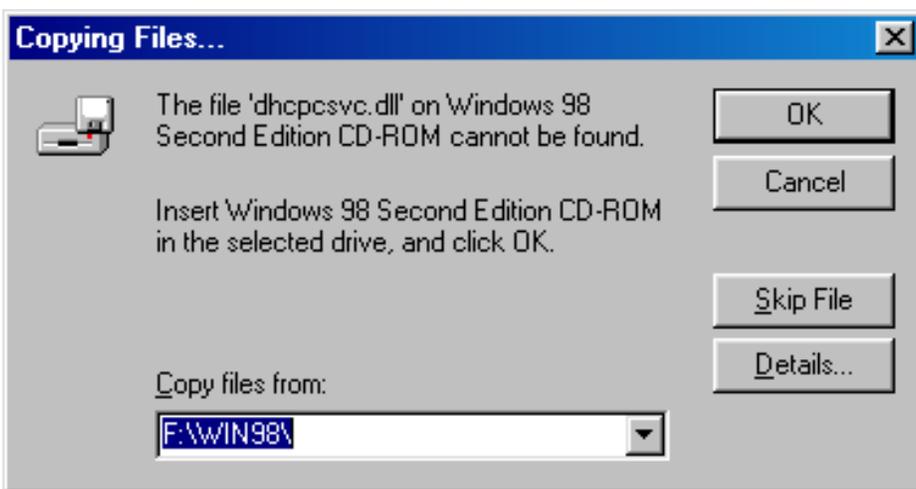
Click on *Next* to install the driver.



4. The Windows will find "IEEE 802.11 Wireless LAN/PC Card". Click *Next* to continue.



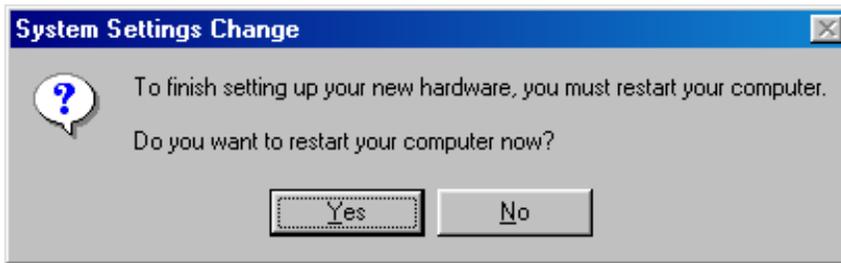
5. Once the “Please insert the disk labeled ‘Windows 98 Second Edition CD-ROM/ME CD-ROM”, and then click *OK*” window appears, insert the Windows CD-ROM and enter the path corresponding to the appropriate drives and click *OK*.



6. Windows may need help locating the correct files. If this occurs, try adding the *WIN98* path in the Copy files from box.

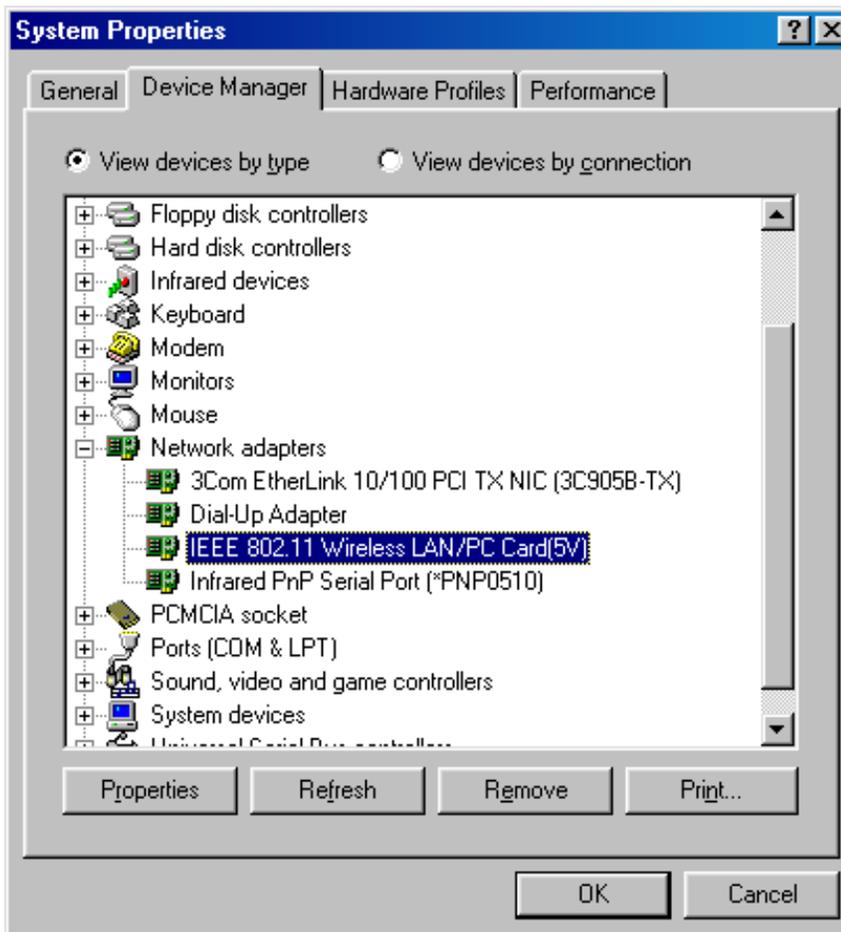


7. Click *Finish* to complete the software installation.



8. Restart the computer.

9. Open *Control Panel/System/Device Manager*, and check *Network Adapters* to see if any error icon appears next to the IEEE 802.11 Wireless LAN PC Card. If not, the FastLinc FLC800C is working well.



Configuration

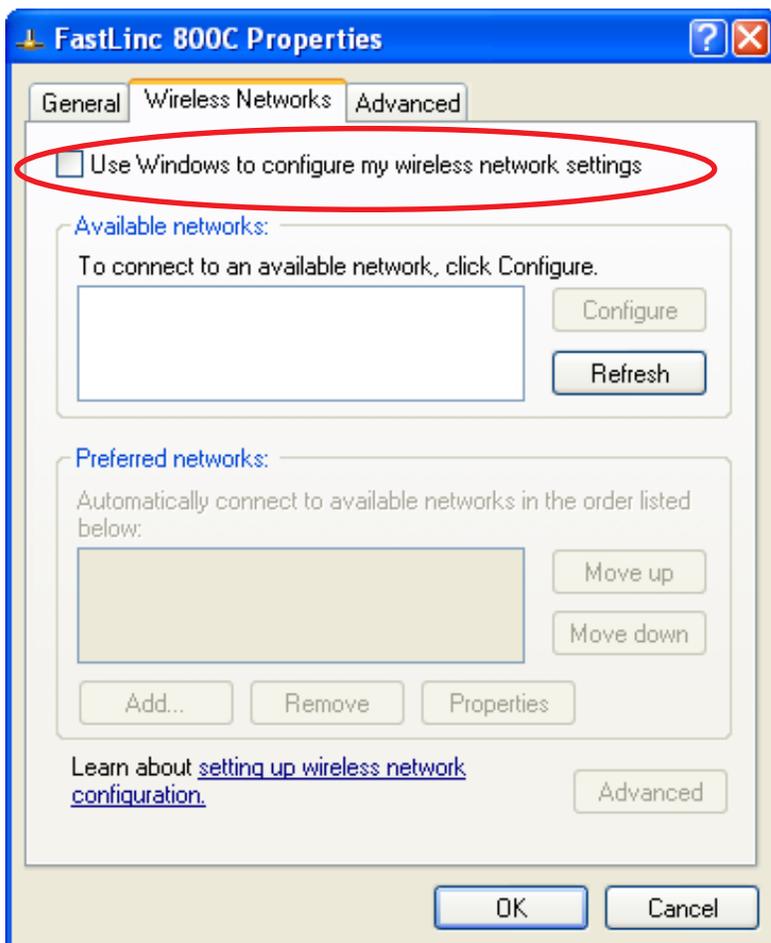
This chapter gives you assistance with detailed configuration for the FastLinc FLC800C under Windows XP/2000/NT/98/ME.

I. Automatic Wireless Network Configuration

Windows XP/2000/NT/98/ME provides Automatic Wireless Network Configuration for the wireless network clients to establish a wireless connection. After installing the FLC800C, the Windows wireless network configuration will then appear automatically for users to set the basic parameters for the FLC800C. For more information on using the automatic wireless network configuration please refer to the Windows OS Help file.

Alternatively, you may use the WLAN Utility that comes with the FLC800C to create the configuration and monitor the wireless connection. For more information on installing and using the WLAN utility please continue reading.

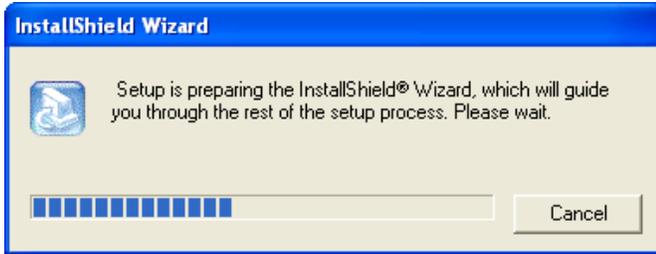
Note: To use the WLAN utility under Windows XP, you need to disable the Automatic Wireless Network Configuration first by clearing the “Use Windows to configure my wireless network settings” check box at Network Connections/Properties of Wireless Connection.



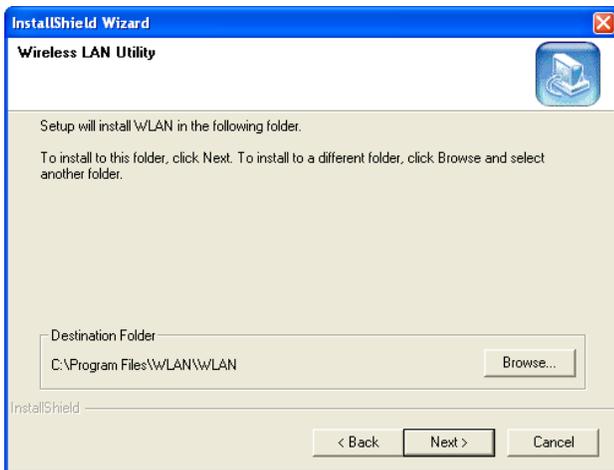
II. Installing the WLAN Utility

To install the WLAN Utility, follow these steps:

1. Insert the **FastLinc Drivers & Utilities** CD-ROM.
2. Go to the utility folder and run setup.exe.
3. The InstallShield Wizard will show up and guide you through the rest of the setup process



4. Confirm *Destination Folder* path or *Browse* to choose another location. Click *Next* to continue.



5. Select a program folder and click *Next*.



You may add a shortcut in the startup folder as desired.



7. Upon completion, go to *Program Files* and run the WLAN Utility and its icon will appear in the *System Tray* in the bottom right corner of your task bar. Clicking on the icon will open the configuration window. When you minimize the window, the system tray icon will be loaded in the *System Tray* again.



The color behind the system tray icon indicates the link status.



Blue indicates a good or excellent link.



Yellow indicates a usable but weak link.



Red indicates no or very poor link quality.

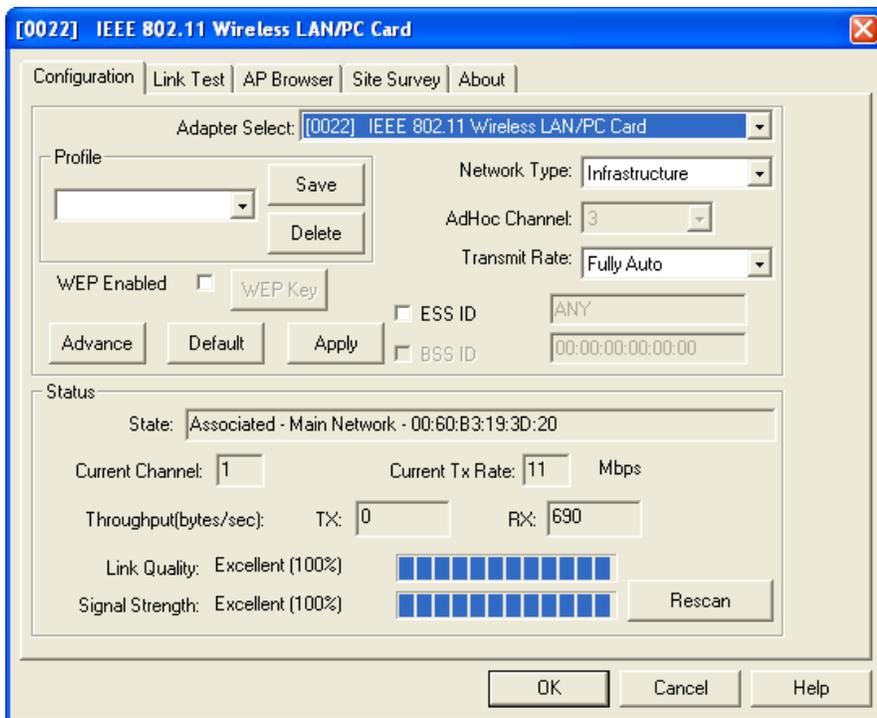
II. Using the WLAN Utility

The WLAN Utility enables you to make configuration changes and perform user-level diagnostics on the FLC800C in Windows XP/2000/NT/98/ME. The WLAN Utility consists of a window with 5 item tabs for you to monitor and configure the FLC800C- Configuration, Loop Back, AP Browser, Site Survey and About.

Configuration Tab

The Configuration item allows you to modify the configuration parameters for the FLC800C such as Profile, Network Type, AdHoc Channel, Transmit Rate, ESSID, WEP, RTS/CTS, Fragment Threshold, and Power Save mode. Furthermore, you may monitor the current status of the FLC800C such as State, Current Channel, Current Tx Rate, Throughput, Link Quality and Signal Strength.

1.) Profile:

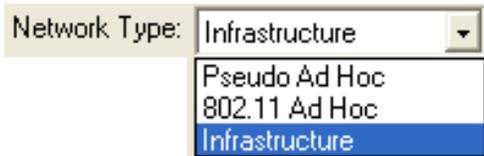


The Profile field allows you to set values for all parameters by selecting a previously defined profile. Click the down arrow at the right of the *Profile* field to display the available profiles for the FLC800C. You will always have at least one profile, named *Default*. You can modify this profile at any time. Or, you can also create multiple profiles by typing a name in the *Profile* field. If one of the profiles is no longer used, you may remove it by clicking the *Delete* button. After changing parameters, click the *Save* button and *Apply* button to take effect.



2.) Network Type:

There are 3 network types for the FLC800C to operate. If you need to access your company network or the Internet via Access Point, select *Infrastructure*. To set up a group of wireless stations for file and printer sharing, select *AdHoc* or *802.11 AdHoc* (without Access Point). If *AdHoc* (without access point) is selected, you need to set wireless stations with the same channel. For *802.11 AdHoc*, the same channel and ESSID are required to the wireless stations.



3.) ESSID:

The ESSID is the unique ID used by Access Points and stations to identify a wireless LAN. Wireless clients associating to any Access Point must have the same ESSID. The default setting is *ANY*, which allows the FLC800C to automatically associate to any Access Point (Infrastructure mode) in the vicinity of your wireless adapter. Alternatively, you may check the ESSID check box to specify the ESSID. It will then attempt to associate with Access Points or stations with the same ESSID. The ESSID can be set up to 32 characters and is case sensitive.

Check here before entering the ESSID



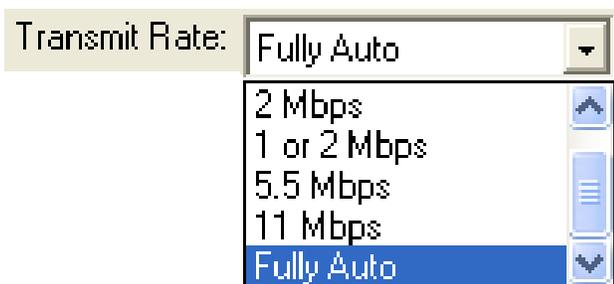
If there two Access Points with the same ESSID, you may check the BSSID check box and enter the MAC address of the Access Point you desire to connect to.

Check here before entering the BSSID



4.) Transmit Rate:

The FLC800C provides various data rate options for you to select. Data rates options include *Fully Automatic*, *2 Mb*, *Auto 1* or *2 Mb*, *5.5 Mb*, and *11 Mb*. In most networking scenarios, you will see that the factory-set default *Fully Automatic* will prove the most efficient. This setting will allow the FLC800C to operate at the maximum data rate. When the communication quality drops below a certain level, the FLC800C will automatically switch to a lower data rate. Transmission at lower data speeds are usually more reliable. However, when the communications quality improves again, the FLC800C will gradually increase the data rate again, until it has reached the highest available transmit rate.



5.) WEP:

To prevent unauthorized wireless stations from accessing data transmitted over the network, the WLAN Utility offers highly secure data encryption, known as WEP, making your data transmission over air more secure. To activate the WEP Encryption, check the *WEP Enabled* check box. An Encryption window will then appear. The instructions are as follows:

- Pull down the Encryption (WEP) menu and select either 64bit or 128bit encryption method.
- Specify the encryption keys. There are two methods to set the WEP keys, as described below:

1.) Create Encryption Keys by Using a Passphrase

To create encryption keys by using a passphrase, click the *Create Key with Passphrase* check box and type a character string in the Passphrase field. As you type, the utility uses an algorithm to generate 4 keys automatically.



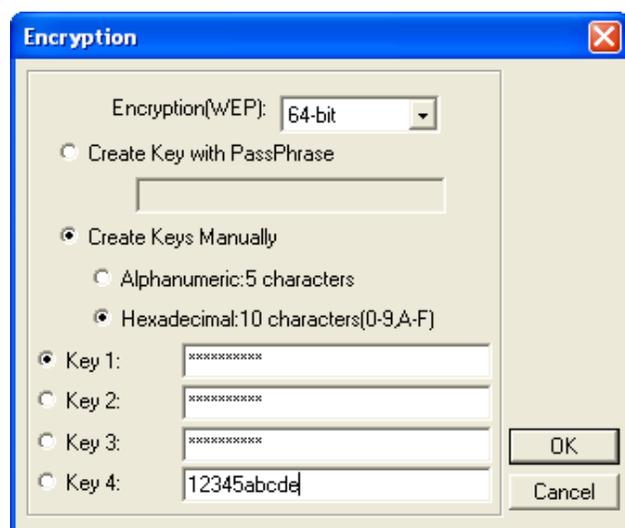
Create Encryption Keys Using a Passphrase (128bit)

2.) Create Encryption Keys Manually

WEP encryption is either 40 bits or 128 bits. When menus or manuals reference 64 bits it is actually 40 bits.

The number of characters to enter for 40 bit encryption is five (5) ASCII characters long. However, if the string is preceded by the characters '0x', the characters can be typed as ten (10) hexadecimal characters. Hexadecimal characters must be 0 to 9 or A to F.

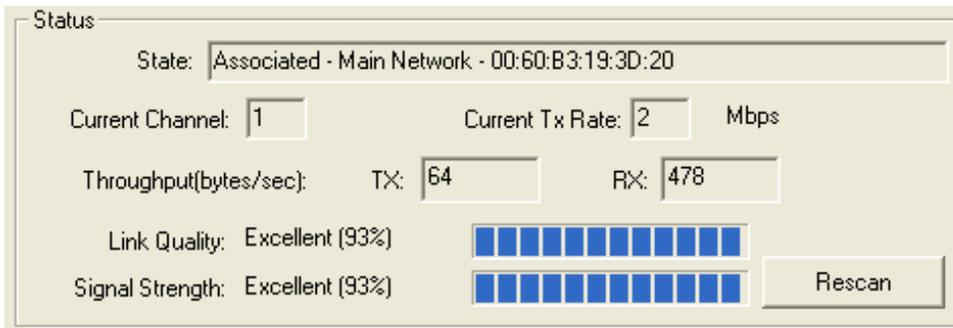
After entering one or more keys, select one of them by clicking to the left of a Key # item. Then click OK.



Create Encryption keys Manually (64bit)

6.) Status:

The Status field on the Configuration menu provides the following information.



State

When operating in Infrastructure mode, this field shows the MAC address of the Access Point with which the FLC800C is communicating. When operating in AdHoc mode, it shows the virtual MAC address used by computers participating in the AdHoc network.

Current Channel

Shows the channel on which the connection is made.

Current Tx Rate

Shows the highest transmit rate of the current association.

Throughput

Shows the short term transmit and receive throughput in bytes/second, and is continuously updated.

Link Quality

Based on the quality of the received signal of the Access Point beacon. There are 5 states of link quality:

- 100%~80%: Excellent link.
- 80%~60%: Good link quality.
- 60%~40%: Fair link quality.
- Under 40%: Poor or no connection.

Signal Strength

Based on the received signal strength measurement of the baseband processor of the Beacon signal. Same as link quality, there are 5 states of signal strength:

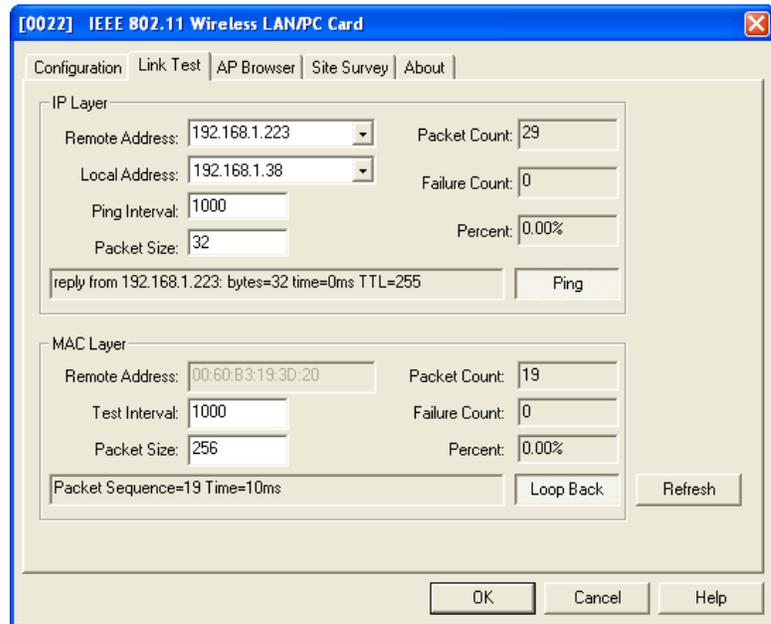
- 100%~80%: Excellent signal strength.
- 80%~60%: Good signal strength.
- 60%~40%: Fair signal strength.
- Under 40%: Poor or no signal strength.

Rescan

You can click the Rescan button to force the radio to rescan all available channels. If the link quality or signal strength is poor, rescanning can be used to push the radio off a weak Access Point and search for a better link with another Access Point.

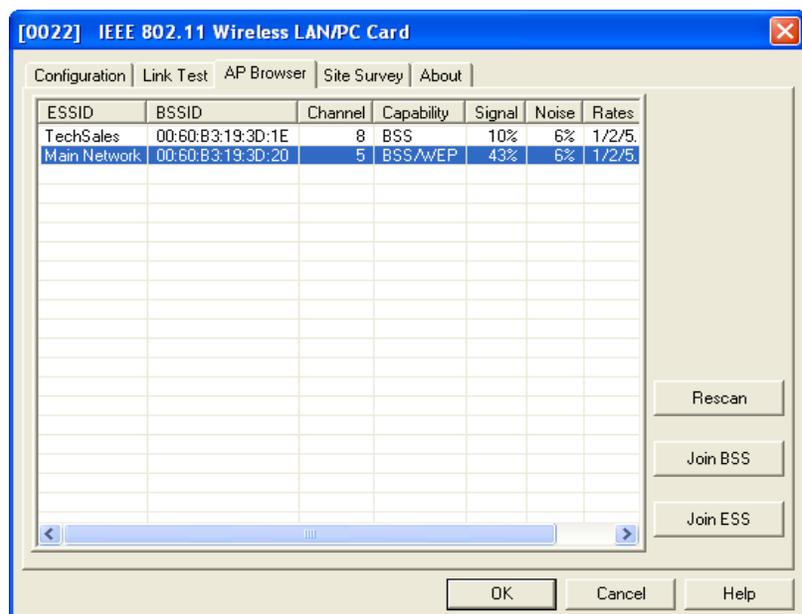
Link Test Tab

The Link Test tool helps you examine point-to-point data transmission quality between the FLC800C and any workstation on the network. By entering the IP address of the remote station, set ping interval and packet size, you may know whether communication has been made successfully or not. Additionally, if you use the infrastructure wireless LAN configuration, you may run the Link Test by clicking the Link Test button to verify the communication quality between your wireless station and Access Point.



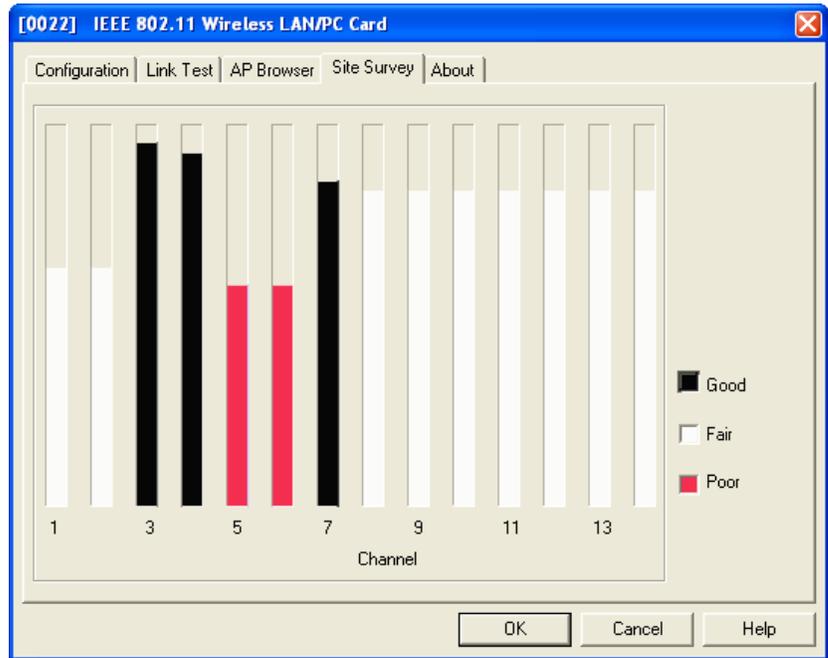
AP Browser Tab

By clicking the "Rescan" button, the AP Browser can display all the Access Point around the working environment. Besides showing the ESSID of each Access Point, it also displays BSSID, Channel, Signal, Quality and Supported Rates. To join any of the displayed Access Points, highlight the Access Point you desire to connect with and then click the *Join BSS* or *Join ESS* button to join the group.



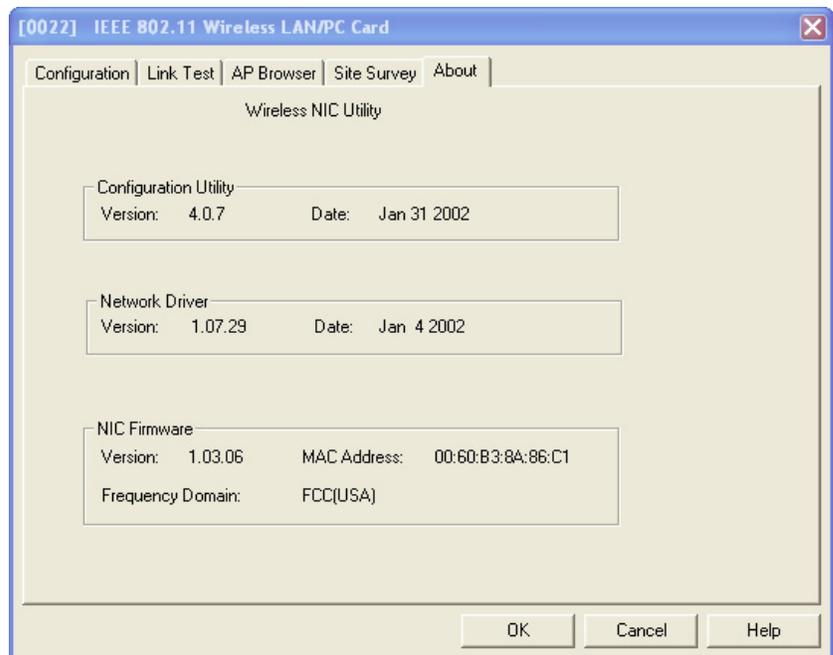
Site Survey Tab

When the Site Survey screen is displayed, the channel quality of all 14 radio channels will be displayed. These channel quality measurements are shown on each gauge for the 14 radio channels. The blue bar indicated the channel quality is clear and good. The higher the blue bar is, the better quality you have (i.e., less interference). The yellow bar indicates the channel quality is fair and the red bar indicates the channel is busy or having severe interference.



About Tab

The About tab shows the versions of the Wireless LAN Utility, driver, the firmware of the FastLinc FLC800C. Also, the MAC address and frequency domain are displayed.



Technical Support

Data-Linc Group maintains a fully trained staff of service personnel who are capable of providing complete product assistance. They can provide you with technical, application and troubleshooting, spare parts and warranty assistance. Our technical staff is based in Bellevue, Washington USA and may be reached at (425) 882-2206 or e-mail support@data-linc.com

Product Warranty

Data-Linc Group warrants equipment of its own manufacture to be free from defects in material and workmanship for one year from date of shipment to original user. Data-Linc Group will replace or repair, at our option, any part found to be defective. Buyer must return any part claimed defective to Data-Linc Group, transportation prepaid.

Return Material Authorization

If a part needs to be sent to the factory for repair, contact Data-Linc Group's corporate office and request a Return Material Authorization (RMA) number. The RMA number identifies the part and the owner and must be included with the part when shipped to the factory.

Contact Information

Corporate Office

Data-Linc Group

3535 Factoria Blvd. SE
Suite 100
Bellevue, Washington 98006 USA

Telephone: (425) 882-2206
Fax: (425) 867-0865
E-mail: info@data-linc.com
Web site: www.data-linc.com