You can change the order of the preferred networks by selecting the Wireless LAN Network that you want to reposition on the list, and then clicking Move up or Move down. You can change the Wireless LAN Network connection settings of a preferred network by selecting the Wireless LAN Network, clicking Properties, and then changing the settings as needed. To remove a Wireless LAN Network from the list of preferred networks, select the Wireless LAN Network that you want to remove, and then click Remove.

🕹 Local Area Connection 5 Properties 🛛 🔹 🔀
General Wireless Networks Authentication Advanced
✓ Use Windows to configure my wireless network settings
Available <u>petworks</u> :
To connect to an available network, click Configure.
👔 DemoAP_4 🛛 🔼 Configure
🔰 👔 testbed-a
Ad Hoc Network 🛛 Refresh
Automatically connect to available networks in the order listed below:
DemoAP 4
X Test_Network
Ad Hoc Network Move down
Add <u>R</u> emove <u>Properties</u>
Learn about <u>setting up wireless network</u> <u>configuration.</u> Advanced
OK Cancel

If a network is not defined in the preferred networks list, but you know it is available and you want to automatically connect to it, then click Advanced in the Wireless LAN Networks tab, and select the "Automatically connect to non-preferred networks" check box.

Advanced 🔹 🔀
Networks to access
• Any available network (access point preferred)
O Access point (infrastructure) networks only
◯ Computer-to-computer (ad hoc) networks only
Automatically connect to non-preferred networks Close

### 6. Windows NT 4.0

#### 6.1 Driver installation and TCP/IP Setup

Windows NT 4.0 does not support Plug-and-plug. Therefore, the 802.11a NDIS driver installation uses an approach that is different from the installation used in other Operating Systems. In order to install 802.11a Wireless LAN Network Adapter in Windows NT 4.0, a PC Card utility called CardWizard is used. If your computer system does not have CardWizard utility pre-loaded then you can purchase it from SystemSoft Corporation (www.svstemsoft.com) or you can download a 14-day evaluation copy from <u>ftp://www.systemsoft.com/pub/Wn51tren.exe.</u> Note that CardWizard requires Windows NT 4.0 Build 1381 (Service Pack 6) installed in order to function correctly. Please install Service Pack 6 if your Windows NT 4.0 is not updated

After CardWizard utility is loaded, insert the 802.11a Wireless LAN Network Adapter into a 32-bit CardBus slot, and follow these steps to install the NDIS driver: 1.

1. CardWizard will detect the insertion of the 802.11a CardBus card and show the following screen. Click Correct to Continue.

Wizard Information	Correct
twoik PC Card Device	-
e inserted card has not yet been configured. This may an that the driver has not been installed or configured. ect CORRECT in order to fix this problem.	Test
When you press the CORRECT button, you may be prompted to supply the system drivers needed. Please have he Windows NT setup disk and/or the card manufacturer's nstall disk ready in this case.	Нер
	Exit

2. Click OK to continue.



3. Windows NT 4.0 Network Properties windows displays. Click Add to continue.

<u>∆</u> dd	Benove	Properties	Update
tem Notes:		)	

#### 4. Click Have Disk.

Select No	etwork Adapter 🔹 🕄 🗙
<b></b>	Click the Network Adapter that matches your hardware, and then click OK. If you have an installation disk for this component, click Have Disk.
<u>N</u> etwark	Adapter:
<b>3)</b> 30a <b>3)</b> 30a <b>3)</b> 30a <b>3)</b> 30a <b>3)</b> 30a	Im 30508 ISA 16-bit Ethernet Adapter Im Etherlink II Adapter (also II/16 and II/16 TP) Im Etherlink III ISA/PDMCIA Adapter Im Etherlink III PCI Bus-Master Adapter (30590) Im Etherlink16/EtherLink16 TP Adapter Im Etherlink16/EtherLink16 TP Adapter (20595)
	<u>H</u> ave Disk
	OK Cancel

5. Manually enter the location of where the 802.11a NDIS 4.0 driver is located. For example, D:\NDIS\BIN\NDIS4. Click OK to continue.

Insert Dis		X
đ	Insert disk with software provided by the software or hardware manufacturer. If the files can be lound at a different location, for example on another drive type a new path to the files below.	OK Cancel
	D:\NDIS\BIN\NDIS4	

6. Make sure 802.11a Wireless LAN Network Adapter is selected. Click OK to continue.

				nardotaroro	diore.
02.11a Wirel	ess LAN Ne	twork Adapt	er		

7. Set Map Registers value to 256 (default value) and click Continue.

Wireless Network A	Adapter Setup V1.01	X
Map Registers:	256	
	Conlinue	

8. Windows NT 4.0 binds TCP/IP protocol to 802.11a Wireless LAN Network Adapters and TCP/IP properties have to be entered. Depending on the type of network the station connects to, Gateway and DNS Configuration information may also be required. IP configuration information (DHCP or assigned IP address, Gateway and DNS server IP addresses) is usually obtained from the corporate IT staff. For a simple demonstration, the station is assigned a static 1P address. Choose "Specify an IP address" and enter an IP address and subnet mask. Assigning an IP address and subnet mask allows the station to interact with the AP or other stations in the same IP subnet. Click OK to complete the TCP/IP configuration.

Microsoft TCP/IP Properties ?	X
IP Address DNS WINS Address Routing	- 28
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.	
Adapte:	
[1] 802.11a Wireless LAN Network Adpater	8
<ul> <li><u>O</u>btain an IP address from a DHCP server</li> <li><u>Specify an IP address</u></li> </ul>	8
<u>IP Address</u> 192 . 168 . 1 . 93	
Subnet Mask: 255 . 255 . 0	
Default <u>G</u> oteway:	
A <u>d</u> vanced	
OK Cancel Apply	

9. Restart the system for the changes to take effect.



#### 6.2 Device Configuration

Configuration of the 802.11a Wireless LAN Network Adapter can be done through the 802.11a NIC Configuration Control Panel applet . Similar to Windows 2000, the device can be set to work in one of two modes, either infrastructure mode or ad hoc mode. See Section 2.4 for more details on these network connection types.

Start 802.11a NIC Configuration utility form the Control Panel.



Select one of the configuration(s) under the configuration list and click Modify or click New and follow the Section 6.2.1 and Section 6.2.2 to set up the station to work in infrastructure mode and ad hoc mode.

#### 6.2.1 Infrastructure Mode

This section defines the process of configuring an 802.11a Wireless LAN Network Adapter in infrastructure mode. Refer to Section 2.4 for detailed descriptions of each option in the Network Configuration Settings.

- 1. Under the "General" tab, make sure the "Locally Administered Address" checkbox is unchecked. Use the following information as a guideline to choose the values of each field in the configuration window:
  - Configuration Name: This field identifies the configuration. This name must be unique. Configuration names are case insensitive. For example, "AP".
  - Network Name (SSID): This is the name of the IEEE 802.1 la Wireless LAN Network. For example, "802.11apP". This field has a maximum limit of 32 characters. If

this field is left blank, the STA will connect to the AP with the best signal strength.

- •
- Network Connection: AP (Infrastructure) Power Saving: This field allows the configuration of power management options. The options are Off, Normal and Maximum. Turbo Mode: This field enables or disables 802.11a Turbo mode. •

Network Configuration Settings		? ×
General Security		
Configuration Name:	ΔP	
Network Name (SSID):	∫ 802.11a_A₽	
Network Connection:	AP (Infrastructure)	
Power Saving:	Normal	
Turbo Mode:	Disable	
Localy Administered Address: (Hex D-9 A-F)		
	OK	Cancel

2. Usually, infrastructure mode is used in an enterprise environment where APs are installed and maintained by corporate IT staff. Much of the data in the enterprise network is confidential. It is important to configure security to make sure only stations with appropriate keys can receive sensitive data. The 802.11a Wireless LAN Network Adapter and NDIS driver support key lengths of 40-bits, 104-bits and 128-bits. Typically, the appropriate encryption and decryption keys will be supplied by the corporate IT staff.

etwork Configuration Sett General Security	ings	?
Enable Security	Default Encryption	n Køy: Unique 💌
- Encryption Keys (Hex 0-9 A	F)	Key Length (bits):
Unique Key: Transmission	NOTE BOOKE BOOKE BOOKE BOOK	152 (128+24) 32 hex digits 💌
Shared Keys:		
First:		152 (128+24) 32 hex digits 💌
Second:		64 (40+24) 10 hex digits 💌
Third:		64 (40+24) 10 hex digits 💌
Fourth:		64 (40+24) 10 hex digits 💌
		OK. Cancel

#### 6.2.2 Ad Hoc Mode

This section defines the process of configuring an 802.11a Wireless LAN Network Adapter in ad hoc or IBSS mode. Refer to Section 2.4.2 for detail descriptions of ad hoc operation.

- Similar to the set up of AP Infrastructure mode described in the previous section, ad hoc mode is also configured by changing the options in "Network Configuration Settings" window. Use the following information as a guideline to choose the values of each field in the configuration window:
  - Configuration Name: This field identifies the configuration. This name must be unique. Configuration names are case insensitive. For example, "Ad Hoc".
  - Network Name (SSID): A Network Name is mandatory for ad hoc mode. The SSID for all stations in a single ad hoc network must be the same.
  - Network Connection: Ad Hoc.
  - Power Saving: Power saving mode is not currently supported in an ad hoc network.
  - Turbo Mode: All stations participating in the ad hoc network must have the same rate setting.
  - Locally Administered Address: This field defines the locally administered MAC address (LAA). To enter a value in the address field, the check box needs to be selected.

Network Configuration Settings	?	X
General Security		_
Configuration Name: Ad Hoc		
Network Name (SSID): Adhoc		
Network Connection: Ad Hoc		
Power Saving: 0 ff	<u>v</u>	
Turbo Mode: Disable	•	
Locally Administered Address: (Hex 0-9 A-F)		
	OK Cancel	

2. You may optionally set up security features but it is not typically a requirement since the duration of the ad hoc network tends to be limited. Currently, only shared key security is supported in ad hoc mode. Future 802.11a software implementations will provide unique key support.

Network Configuration Setting	9\$	? ×
General Security		
Enable Security	Default Encryption Key:	First
- Encryption Keys (Hex 0-9 A-F)		Keel and (12)
Uning Kau		Key Length (birs):
Unique Key.		152 (128+24) 32 hex digits
Shared Keys:		
First:		152 (128+24) 32 hex digits 💌
Second:		64 (40+24) 10 hex digits 💌
Third:		64 (40+24) 10 hex digits 💌
Fourth:		64 (40+24) 10 hex digits 💌
		OK Cancel

3. In ad hoc mode, a station will scan the air for an existing Basic Service Set (BSS). If no BSS is found, the station will establish a BSS for other stations to join. When other stations scan the air and find an established BSS in place, they join that BSS to form an ad hoc network. If a specific set of stations requires ad hoc network connectivity, it is recommended to have one station establish a BSS first before configuring the remaining stations. This will prevent the scenario of several stations trying to form a BSS at the same time, which may result in multiple singular BSSs being established rather than a single BSS with multiple stations.

#### 6.2.3 Verify Connection

You may use LinkMon utility to monitor the operating status of 802.11a Wireless LAN Network Adapter once the STA is connected. Please refer to Chapter 7 for descriptions of LinkMon utility. If the STA is configured properly then you will be able to perform ping test as well as other network applications that a wired Ethernet device can perform.

1. Click Start, Programs, Accessories, and Command Prompt to open the Command prompt window. Type "ipconfig" to determine if the TCP/IP configuration has taken effect. To test IP connectivity in ad hoc or infrastructure mode, use the "ping <ipaddress>" command.



2. To map the drive on another machine to your computer, right-click "My Computer" and click "Map Network Drive...."



3. Specify the path of a network-shared folder.

X
▼ OK
▼ Cancel
<u>H</u> elp
🔽 Expand by Default

4. After mapping the drive, you can perform file transfers, video streaming, and all other network data transfers that are normally performed with wired 10/100 Ethernet connections.

#### 6.2 driver Un-installation

This section provides uninstallation procedures for removing the 802.11a NDIS driver from the system.

1. To remove the NDIS driver from the system, go to Control Panel and open Network properties.



2. Under the Adapters tab, choose 802.11a Wireless LAN Network Adapter and click Remove.

Network	x
Identification Services Protocols Adapters Bindings	
Network Adapters:	
802.11a Network Adapter	
Add <u>R</u> emove <u>P</u> roperties <u>U</u> pdate Item Notes:	
802.11a Network Adapter	
OK Cancel	

3. Click OK to confirm the removal of the 802.11a Wireless LAN Network Adapter.

Warning	×
	This action will permanently remove the component from the system. If you wish to reinstall it, you will have to restart the system before doing so.
	Do you still wish to continue?
	<u>Y</u> es <u>N</u> o

4. 802.11a Wireless LAN Network Adapter is no longer listed under the Adapters tab. Click Close to continue.

twork dentification   Ser	vices   Protocols	: Adapters Bin	dings )
Network Adapter:	s.		1
<u>A</u> dd	<u>R</u> emove	Properties	Update
Item Notes:			
			_
			and the second se

5. Restart the system to complete the un-installation of 802.11a NDIS 4.0 driver.



## 7. LinMon

#### 7.1 Installation

LinkMon is a Graphical User Interface (GUI) program that provides detailed operational status and statistics for the 802.11a Wireless LAN Network Adapter. The LinkMon executable file, linkmon.exe, is included on the 802.11a Release Version 1.2 CD, and is in the folder: \ndis\bin\production\. Copy this file from the CD to a local driver for execution.

Since Windows 98 SE does not have native support for WMI, which is required to make LinkMon work correctly, an upgrade from Microsoft is needed. Use the procedures described in the following section to acquire and install the necessary WMI module from Microsoft. This is only required for Windows 98 SE installations.

- 1. Download WMI installer from Microsoft (wmi9x.exe) and save it to your hard disk.
- 2. Execute WMI installer by double-clicking wmi9x.exe.

😂 C:///HLiestalLlar//is58		
j Ele Edit View Eo Favorites H	alp.	1949
Back Foxyed Up	La Copy Parts Und	Defete Properties Views -
Address C/WMI install for Win98		
Nan	e Size Tree	Modilied
999	MIBCEXE 3.02948 Applo	sion 7/11/01 8:08 AM
WMI install		
for Win98		
Select an item to view ite		
description.		
	lo orun	IR H.C.
1	15/26948	A My Computer

#### 3. Click Next to continue.



4. Click "I accept this agreement" and then click Next to continue.



#### 5. Click Next to continue.



6. The installer now installs files to the SYSTEM directory.



7. The system must be rebooted for the WMI installation files to become effective. When the system completes the rebooting process, launch LinkMon.

#### 7.2 Features

There are five tabs in LinkMon used to display STA information:

- General Tab
- Frame Statistics Tab
- Transmit Retries Tab
- Station Tab
- Driver Tab

Under the General tab of the LinkMon program property sheet is general information about the program and its operations.

A LinkMon				_ 🗆 🗙		
Action Options Help						
802.11a Wireles	s LAN Network Adp	ater	•			
General Frame Statistics	Transmit Retries	Station Driver				
<ul> <li>Network Interface Card Card Name: 80 Mac Address: 00 Device Name: \0 Device ID: 00 Class Subkey: 00 Driver: C: Driver Version: 1.3 Driver Date: 28</li> </ul>	1 12.11a Wireless LAN 1-03-7F-00-14-08 1EVICE\(07128112-6 107 105 105 1WINNT\System32\ 2.0.2 1 Sep 2001 13:23:50	Network Adpater A93-4EBC-8D86-58BAD DRIVERS\ar5210b.sys	9E CA7E 0}			
Connection Information	1					
Turbo Mode:	DH	Channel / Fre	quency: 60 / 5.30	0 GHz		
Network Type:	Infrastructure	Lini	Status: Connect	ed		
WEP: 1	WEP: Disabled Transmit Rate: 54 Mbps					
Power Save State:	Awake	Recei	ve Rate: 12 Mbps			
Ready		CONNECTED	Tx 54 Mbps	Rx 12 Mbps		

Under the Frame Statistics tab is statistical information showing the number of frames being sent and received, retry count on frames sent, frame checksum error counts for received frames, and receive signal strength indicator (RSSI) information. These fields are described in the Station Programmer's Guide under Appendix A as OIDs. LinkMon supports most of the OIDs listed in that section.

802.11a Wireless LAN Network A	dpater 🗾
ieneral Frame Statistics Transmit Retries	Station Driver
Transmit Statistics	Receive Statistics
Frames Sent: 88	Frames Received: 1225
Outo Datum 2	Duplicate Frames: 0
Une Hetty: 3	Multiple Duplicates: 0
Excessive Retries: 0	Multicast Frames: 0
FIFO Underruns: 0	FIFO Overruns: 0
Huma Count 1	HW Reported FCS Errors: 67
Hung Count.	SW Reported FCS Errors: 7
ACK Receive Errors: 67	WEP Decryption Errors: 0
Last ACK RSSI: 23	Last Frames RSSI: 29

Under the Transmit Retries tab is detailed transmit retry statistical information for transmitted frames.

\Lambda LinkMon		
Action Options Help		
802.11a Wireless LAN Networ	rk Adpater	<b>T</b>
General       Frame Statistics       Transmit Retr         Transmit Retries:           Retry       Court         1       2         3       4         5       6         7       8         9       10	ies       Station       Driver         nt	88 0 0 1 67 23
Ready	CONNECTED Tx 36 M	bps Rx 12 Mbps

Under the Station tab is detailed BSS information including SSID, BSSID, association status, operating channel frequency, and information about scanned APs.

LinkMon					
ction Option	is Help				
802	.11a Wireles	ss LAN Network Adpate	r	-	
General   Fra	me Statistic:	s Transmit Retries	tabon Driver		
Network Nar	ne (SSID):	MichaelAP		Station Status:	Associated
-	necip). I	00 00 75 40 00 07		Channel/Frequency:	36 / 5.18 GHz
AP Address (	1855IUJ:	00-03-71-A0-00-07		Regulatory Domain:	0x10 FCC (US)
Scan List:	DCCI	DECID	Mahuari Mar	(DEID)	
36 52 56	24 16 11	00-03-7F-A0-00-07 00-03-7F-A0-00-38 00-03-7F-A0-00-17	MichaelAP SPE_ALPHA SPE_ALPHA		
ady			CONNECTED	Tx 36 Mbps	Rx 12 Mbps

Under the Driver tab is statistical data pertaining to NDIS driver operation.

A LinkMon			_ 🗆 X
Action Options Help			
802.11a Wireless LAN Network Adpate	er -	•	
General   Frame Statistics   Transmit Retries   S	tation Driver		
NDIS Statistics			
NDIS Resets: 0			
Self Induced Resets: 0			
NDIS Send Requests: 39			
NDIS Send Request Denied: 0			
Driver Information			
Ndis Version: 5.0 Driver: C:\WINNT\System32\D Driver Version: 1.2.0.2 Driver Date: 28 Sep 2001 13:23:50 INI File: <a href="https://www.sed.org">kite:</a>	)RIVERS\ai5210b.sy	45 	
Ready	CONNECTED	Tx 54 Mbps	Rx 12 Mbps

The Action menu enables a NDIS driver unloading and reloading, and network interface card (NIC) reset. Note that driver unload option is not available in Windows Me, Windows 98SE, and Windows NT 4.0. NIC reset is also not available in Windows NT 4.0.

A LinkMon				
Action Options H	elp			
Stop	Wireless LAN N	Network Adapter	<u>·</u>	
Unload Driver NIC Reset	stistics   Transm	it Retries Station Driver		
Exit	NDIS Resets:	0		
Self In	duced Resets:	0		
NDIS 5	end Requests:	39		
NDIS Send Re	equest Denied:	0		
Driver Information	on			
Ndis Version: Driver: Driver Version: Driver Date: INI File:	5.0 C:W/INNT 1.2.0.2 28 Sep 200 cnot used>	\System32\DRIVERS\ar5210t I1 13:23:50	2.5µs	
Load/Unload Driver		CONNECTED	Tx 48 Mbps	Rx 12 Mbps

On the Options menu, click Settings....

🔨 LinkMon			>
Action Options Help			
Settings Wireless LAN Networe	k Adapter	•	
General Frame Statistics Transmit Retries S	itation Driver		
NDIS Statistics			
NDIS Resets: 0			
Self Induced Resets: 0			
NDIS Send Requests: 51			
NDIS Send Request Denied: 0			
Driver Information			
Ndis Version:     5.0       Driver:     C:\W/INNT\System32\0       Driver Version:     1.2.0.2       Driver Date:     28 Sep 2001 13:23:50       INI File:     Knot used>	DRIVERS\ar5210b.ଶ	18	
Channe user settings		Ty 48 Mbrs	Ry 12 Mbrs

Under the Display tab, you can select the data display modes of "Cumulative" or "Relative." "Cumulative" mode displays statistical LinkMon data collected from the beginning of driver load. "Relative" mode, displays differences in the statistical data since the last update.

Settings	×
Display Log File	
Data Display: <mark>Cumulati</mark> Refresh Interval (ms): 3000	/e
	OK Cancel

Under the Log File tab, the logging function can be enabled to log to a file the statistical information collected by the LinkMon utility, for later reference or post processing by an application such as Microsoft Excel.

Settings			×
Display Log File			
Enable Log	ging		
Log File Path:	c:\test\log.txt		Browse
		ОК.	Cancel

## 8 Country Code Selector

Starting from Release 1.1, the 802.11a Wireless LAN Network Adapter has EEPROM locations allocated to store country code information. Currently, there are three countries available to select from -- United States, Canada, and Japan. These countries represent two regulatory domains, namely the FCC (USA and Canada) and TELEC (Japan). When the country code is changed, the NDIS driver scans only the legal frequency channels allowed in those countries.

The country code selection utility is provided as part of the NDIS driver package in Release 1.2 to allow users to switch to different countries. This utility is located under \NDIS\BIN\ARCCSEL in the CD. Start Country Code Selector by running ARCCSEL.EXE and follow the steps below to change countries.

1. Make sure the 802.11a Wireless Netwok Adapter is listed under Network Card field. From the Country pull-down menu, choose the country that you want to switch to.

🔮 Country Code Selector - 👘	Wirele	ss Network Cards	×
Network Card:	802.11a Wire	eless LAN Network Adpater	<u> </u>
Country:	CANADA		•
	CANADA		
	UNITED STA	TES	
	OK	Cancel	

2. Click Yes to continue.

Contract of the local division of the local	×
The following network cards will be reconfigure 802.11a Wireless LAN Network Adpater	ed as follows:
Old Country: UNITED STATES	New Country: JAPAN
Do you wish to continue?	
<u>Y</u> es <u>N</u> o	1
	The following network cards will be reconfigure 802.11a Wireless LAN Network Adpater Old Country: UNITED STATES Do you wish to continue?

3. The country selection takes effect immediately. You can use LinkMon to verify the country that you selected by looking at the Regulatory Domain field in the Station tab.

LinkMon					
ction Option	ns <u>H</u> elp				
802	2.11a Wireles	ss LAN Network A	dpater	-	
General Fra	ame Statistics	Transmit Retrie	s Station Driver		
Network Nar	me (SSID):			Station Status:	Not Joined
AP Address	BSSIDE [			Channel/Frequency:	387519GHz
Scan List:	(), ]			Regulatory Domain:	0x40 MKK (Japan)
Channel	RSSI	BSSID	Network Nar	ne (SSID)	
eady			DISCONNECTED	Tx 24 Mbps	Rx 6 Mbps

## 9 Troubleshooting

This chapter provides solutions to common problems that usually occur during the installation and operation of the 802.11a Wireless LAN Network Adapter. Read the following descriptions below if you are having problems. If you cannot find an answer here, please contact an field application engineer for assistance.

#### 1. My computer does not recognize the 802.11a CardBus reference card.

Make sure the CardBus card is properly inserted into a 32-bit CardBus slot. If Windows does not detect the hardware upon insertion of the card, the system could have a previous 802.11a NDIS driver installed. Remove the old driver and try again.

# 2. The 802.11a Wireless LAN Network Adapter does not work properly after the driver is installed.

Re-insert the CardBus card into the slot. A beep should be heard if the adapter is properly inserted. Go to Device Manager and make sure the 802.11a Wireless LAN Network Adapter exists under the network adapters device node. If you see the yellow exclamation mark then there are conflicting resources. In this case, make sure the computer system has a free IRQ and make sure you have installed the proper driver. Uninstall the driver, restart the system, and repeat the driver installation steps if necessary.

#### 3. Stations cannot associate in ad hoc mode.

Make sure the Same Service set identifier is specified for all stations that need to join the same ad hoc network. Set up one station to establish a BSS and wait briefly before setting up other stations. This prevents several stations from trying to establish a BSS at the same time, which can result in multiple singular BSSs being established, rather than a single BSS with multiple stations associated to it.

4. The station cannot access the Internet in the infrastructure configuration. Make sure the station is associated and joined with the AP. If Wired Equivalent Privacy (WEP) security is enabled on the AP, the station must have the proper WEP keys specified. Also make sure TCP/IP properties are correctly configured.

# 5. ARCCSEL Country Code Selector shows the following error message: No configurable 802.11a network cards were found in this system.

Make sure the 802.11a Wireless LAN Network Adapter has Release 1.1 EEPROM contents programmed. 802.11a CardBus Reference Design boards that were released prior to Release 1.1 do not contain the regulatory domain information in the EEPROM. Therefore, the country code selection utility will not recognize the card.

### Appendix A – Channel and Data Rate Selection

This section provides basic information for selecting fixed data rate and channel frequency in the NDIS driver. This becomes necessary if you want to test the 802.11a Wireless LAN Network Adapter at a specific channel with the rate adaptation controls turned off.

To select channel frequency and data rate in the Windows environment with NDIS driver installed: 1. Click Start, Run, and type "regedit" to open Registry Editor

2. For Windows 2000 and Windows XP, locate the following registry key, and select Find from the Edit menu:

HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\

For Windows 98SE and Windows Me, locate the following registry key, and select Find from the Edit menu:

HKEY\_LOCAL\_MACHINE\System\CurrnetControlSet\

- 3. Type "clist" and click Find Next to find the registry key. Note that if you have multiple instances of the 802.11a Wireless LAN Network Adapter installed, for example, the NDIS driver is installed more than once, then you will need to click Find Next to locate the current instance of the device that is in use.
- 4. Double-click on clist and enter the channel number in the "Value Data" field. Enter the IEEE channel number from the following table. For example, enter 40 to select channel frequency of 5.20 GHz. The channel numbers follow the IEEE format where:

Channel Number	Channel Frequency	Regulator Domain
26	5.13 GHz	N/A (not calibrated)
28	5.14 GHz	N/A (not calibrated)
30	5.15 GHz	N/A (not calibrated)
32	5.16 GHz	N/A (not calibrated
34	5.17 GHz	TELEC
36	5.18 GHz	FCC
38	5.19 GHz	TELEC
40	5.20 GHz	FCC
42	5.21 GHz	TELEC
44	5.22 GHz	FCC
46	5.23 GHz	TELEC
48	5.24 GHz	FCC

Channel Frequency (in GHz)= 5 + 0.005 \*(Channel Number).

Channel Number	Channel Frequency	Regulator Domain
50	5.25 GHz	N/A (not calibrated)
52	5.26 GHz	FCC
54	5.27 GHz	N/A (not calibrated)
56	5.28 GHz	FCC
58	5.29 GHz	N/A (not calibrated)
60	5.30 GHz	FCC
62	5.31 GHz	N/A (not calibrated)
64	5.32 GHz	FCC
66	5.33 GHz	N/A (not calibrated)
68	5.34 GHz	N/A (not calibrated)
70	5.35 GHz	N/A (not calibrated)
72	5.36 GHz	N/A (not calibrated)
74	5.37 GHz	N/A (not calibrated)
76	5.38 GHz	N/A (not calibrated)
78	5.39 GHz	N/A (not calibrated)
80	5.40 GHz	N/A (not calibrated)
82	5.41 GHz	N/A (not calibrated)
84	5.42 GHZ	N/A (not calibrated)
86	5.43 GHZ	N/A (not calibrated)

5. To select the fixed data rate at which you want the station to transmit, double-click on rateCtrlEnable from the same registry key location where clist resides, and enter 0 to disable rate adaptation. Double-click on TransmitRate and enter the value specified in the following table to select the actual data rate. For example, enter 3 for 18 Mbps.

Rate Number	Data Rate
0	6 Mbps
1	9 Mbps
2	12 Mbps
3	18 Mbps
4	24 Mbps
5	36 Mbps
6	48 Mbps
7	54 Mbps

- 6. For the changes to take effect:
  - If you are running Windows 98SE or Windows Me, close Register Editor and restart the systems.
  - If you are running Windows 2000 or Windows XP, unload and load the driver from LinkMon.
- 7. To undo these changes and go back to normal operation where the channel and data rate are dynamically set, change rateCtrlEnable to 1 and clear the clist value.

# **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

# **IMPORTANT NOTE:**

# FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 2.5cm between the radiator & your body.

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