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4655 Great America Parkway
Santa Clara, CA 95054

Installing and Using the Nortel Networks Wireless LAN Mobile Adapter 2201

NORTEL NETWORKS™

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Compliances

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 instructions, may cause harmful interference to radio communications. However, there is no guarantee that the 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 or more of the following measures:

- Reorient 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 a minimum distance of 2.5cm between the radiator and your body.

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

Caution: This device includes a module which can emit RF energy. For compliance with FCC exposure rule, the user has to keep at least 2.5cm separation distance between the radiator and the body of the user.

Exposure to Radio Frequency Radiation

The radiated output power of the Nortel Networks Wireless LAN Mobile Adapter 2201 radio is far below the FCC radio frequency exposure limits. Nevertheless, the wireless radio shall be used in such a manner that the potential for human contact during normal operation is minimized.

The Nortel Networks Wireless LAN Mobile Adapter 2201 radio operates within guidelines found in radio frequency safety standards and recommendations, which reflect the consensus of the scientific community. Nortel Networks therefore believes the internal wireless radio is safe for use by consumers. The level of energy emitted is far less than the

electromagnetic energy emitted by wireless devices such as mobile phones. However, the use of wireless radios may be restricted in some situations or environments, such as aboard airplanes. If you are unsure of restrictions, you are encouraged to ask for authorization before turning on the wireless radio.

European Community Notice

Marking by the symbol CE0560(!) indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

EN 301 893, EN 301 489-17, EN 60950, ETS 300 328-2

This device should not be operated in 802.11a mode in the following European Community countries: Greece and Spain. The radio spectrum authorities in these countries do not currently allow operation of this radio device in the 5GHz bands.

This device is restricted **to indoor use** when operated in the European Community using channels in the 5150-5350 MHz band to reduce the potential for harmful interference to other users of the band.

To remain in conformance with European National spectrum usage laws, the following channel limitations apply per the table below. **The user should use the utility provided with the product software to check the current channel of operation**. If operation is occurring outside of the allowable frequencies as listed in the table, the user should cease operating the product and consult with the local technical support staff responsible for the wireless network.

This device is restricted from operating in **ad-hoc mode using channels in the 5GHz bands in the European Community**. Ad-hoc mode is direct communication between two client devices without an Access Point.

Allowable Frequencies of Operation	Countries
5150-5250 MHz (Channels 36, 40, 44, 48)	Austria, Germany, Liechtenstein, Switzerland
5150-5350 MHz (Channels 36, 40, 44, 48, 52, 56, 60, 64)	Belgium, France, Ireland, U.K.
5150-5350 & 5470-5725 MHz (Channels 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140)	Denmark, Finland, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Sweden
2446.5Mhz - 2483.5Mhz (Channels 10,11,12,13)	France

European Community Declaration of Conformity:

English Hereby, Nortel Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Finnish *Valmistaja* Nortel Networks vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Dutch Hierbij verklaart Nortel Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG

Bij deze verklaart Nortel Networks dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.

French	Par la présente Nortel Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE Par la présente, Nortel Networks déclare que ce Radio LAN device est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables
Swedish	Härmed intygar Nortel Networks att denna Radio LAN device står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede Nortel Networks erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF
German	Hiermit erklärt Nortel Networks, dass sich *dieser/diese/dieses* Radio LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi) Hiermit erklärt Nortel Networks die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Nortel Networks ΔΗΛΩΝΕΙ ΟΤΙ Radio LAN device ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ
Italian	Con la presente Nortel Networks dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente Nortel Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	Nortel Networks declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

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Preface

Introduction

Thank you for purchasing the Nortel Network Wireless LAN Mobile Adapter 2201 (Mobile Adapter 2201) that provides the easiest way to wireless networking. This User Manual contains detailed instructions in the operation of this product. Please keep this manual for future reference.

Package Checklist

The Mobile Adapter 2201 package includes:

- 1 Nortel Network Wireless LAN Mobile Adapter 2201
- 1 Installation Software CD
- 1 Documentation CD

System Requirements

Before you install the Mobile Adapter 2201, check your system for the following:

- A laptop PC contains:
  - — 32-bit Cardbus slot
  - — 64 MB memory or greater
  - — 300 MHz processor or higher
- Microsoft Windows 98 Second Edition/Me/2000/XP (Prepare the Windows installation CD-ROM for use during installation; some versions of Windows require you to have administrator privileges)

Status LEDs

There are two Status LEDs on the Mobile Adapter 2201. You can check your network connectivity status by looking at the LEDs.

Table 1 Status LEDs

Status	Description
Off	Power is off.
Slow Blink	A connection is made. There is no activity yet.
Fast Blink	There are activities in a connected network.
Alternate Blink between LEDs	Look for a network association.
One LED Blink	Power Saving Mode is on.
One LED Steady Light	Awake from Power Saving Mode.

Chapter 1
Driver/Utility Installation

Warning: The Installation Section in this User Manual describes the first-time installation for Windows. To re-install the driver, please first uninstall the previously installed driver. See "Uninstallation" on page 22.

Warning: Do Not insert the Mobile Adapter 2201 into the Cardbus slot before installing the driver.

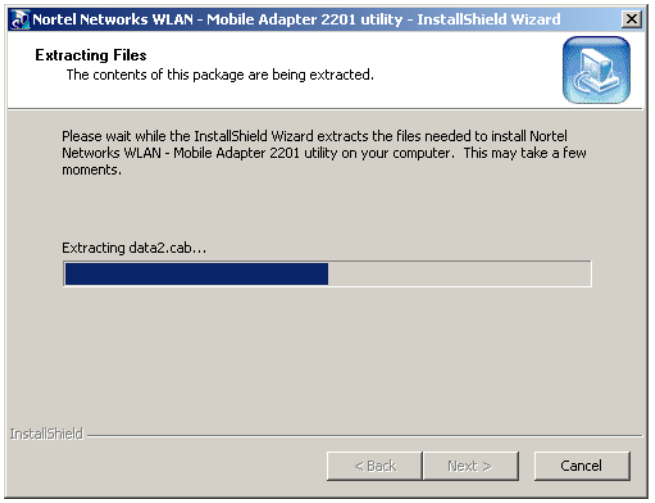
To protect your computer's configuration, you **must** follow the specific installation instructions for the specific Windows installation you are running.

Basic Setup

Follow the steps below to complete the driver/utility installation:

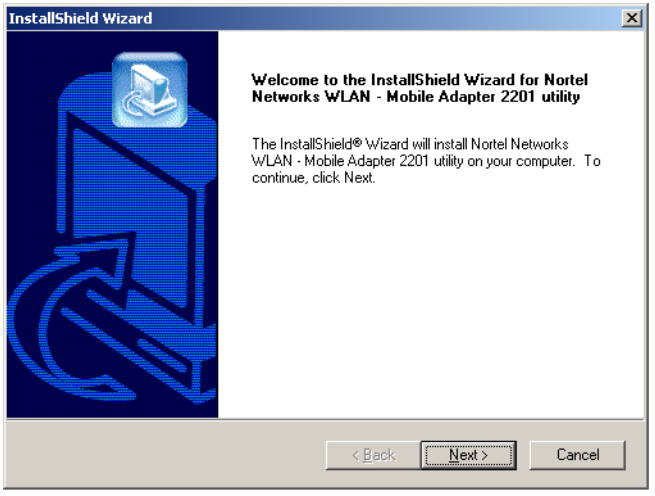
1 Insert the Installation Software CD into the CD-ROM Drive. Click "setup.exe" to launch the InstallShield Wizard (Figure 1).

Figure 1 InstallShield Wizard



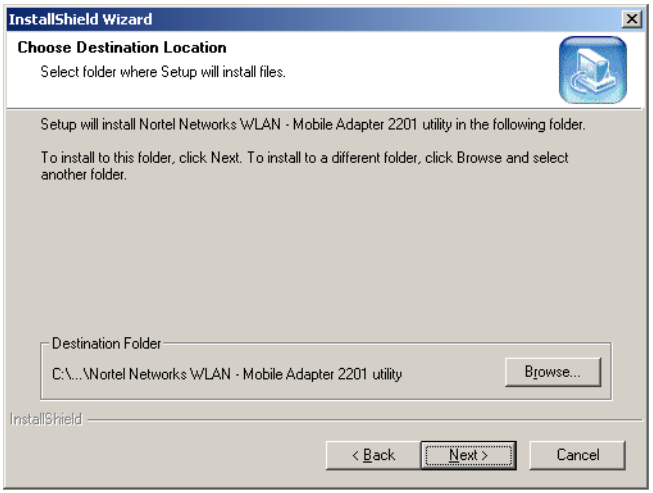
2 The InstallShield Wizard dialog box appears (Figure 2). Click “Next.”

Figure 2 InstallShield Wizard setup dialog box



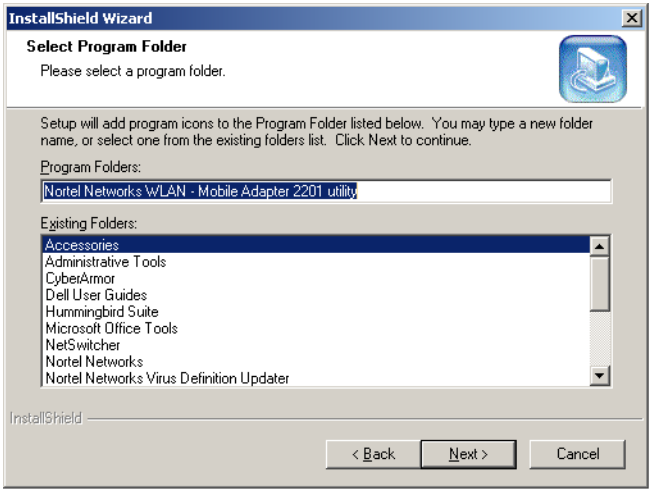
3 The Choose Destination Location dialog box appears (Figure 3). Click “Next” to continue using the default destination folder or click “Browse” to choose a different destination folder.

Figure 3 Choose Destination Location dialog box



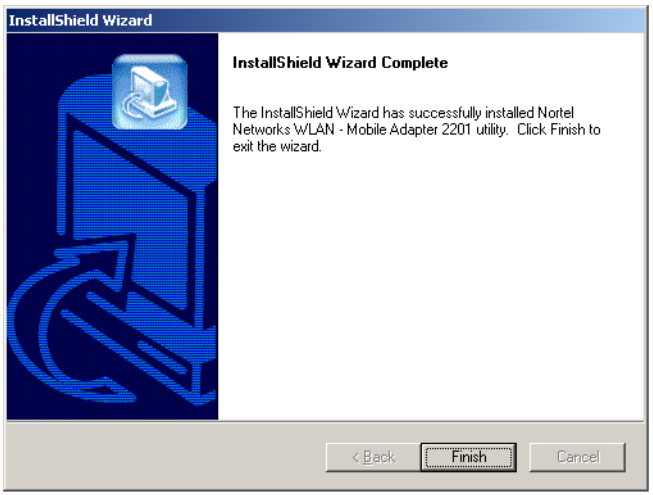
4 The Select Program Folder dialog box appears (Figure 4). Click "Next" to accept the default program folder name, or enter a custom name in the Program Folders text box and then click "Next" to continue.

Figure 4 Select Program Folder dialog box



5 The InstallShield Wizard Complete dialog box appears (Figure 5). Click "Finish."

Figure 5 InstallShield Wizard Complete dialog box



The Mobile Adapter 2201 software is now installed.

Note: For Windows 98SE or Windows Me, restart your computer before inserting the Adapter.

6 Insert the Mobile Adapter 2201 into the Cardbus slot (Figure 6), and the Windows Operating System will find the new hardware (Figure 7) and launch the Found New Hardware wizard.

Figure 6 Inserting the adapter

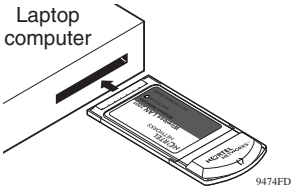


Figure 7 Found New Hardware dialog box



7 Click “Next” to install the driver (Figure 8).

Figure 8 Found New Hardware Wizard dialog box



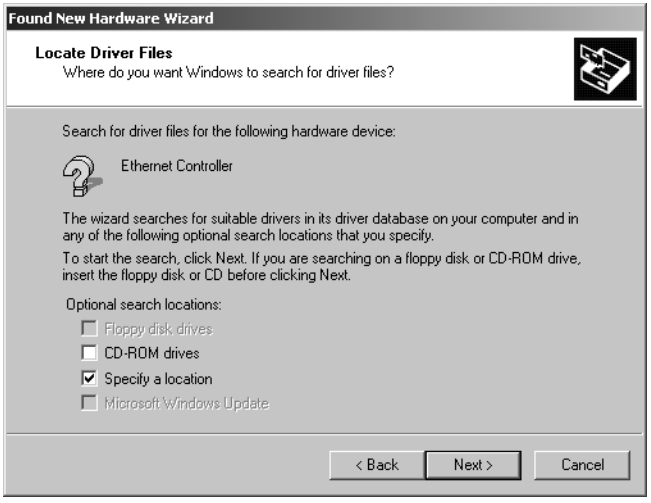
8 The Install Hardware Device Drivers dialog box appears (Figure 9). Select the option to search for a suitable driver and click “Next.”

Figure 9 Install Hardware Device Drivers dialog box



9 The Locate Driver Files dialog box appears (Figure 10). Check the option to Specify a location and click “Next.”

Figure 10 Locate Driver Files dialog box



10 Browse to the appropriate location on the CD where the drivers for your particular operating system are located (Figure 11) and click “OK.”

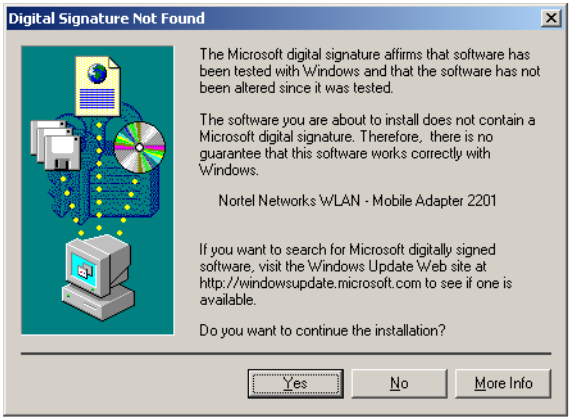
Figure 11 Driver location



Note: The path may vary on your computer.

Note: On some operating systems, the Digital Signature Not Found dialog box (Figure 12) or the Windows XP compatibility testing dialog box may appear during driver installation. Click "Yes" (Windows 2000) or "Continue Anyway" (Windows XP) to continue the installation.

Figure 12 Digital Signature Not Found dialog box



The driver files are copied to your system. The installation completes (Figure 13). Click “Finish to close the Found New Hardware Wizard. The drivers are now installed.

Figure 13 Completing the Found New Hardware Wizard dialog box



Additional Setup

During software installation procedure, each operating system may prompt different specific options:

- **Windows 98SE**: The system will request the original Windows CD during the installation process. When the installation is finished, you will have to restart your computer.
- **Windows Me**: Please restart your computer when the installation is finished.
- **Windows 2000/XP**: Select “Install the software automatically” if the window with this option appears, and then click “Next” to continue installation.

Note: Refer to “Advanced settings for Windows XP” on page 31 for information on disabling the Windows XP Zero Configuration tool.

Verifying the Driver

Windows 98SE/Me

1. Right-click “My Computer” icon on the desktop and choose “Properties.”
2. Select “Device Manager” tab and open “Network adapters.” You should see your Mobile Adapter 2201 in the list. Highlight it and click “Properties.”
3. From the “Device status”, you should see the line “This device is working properly.” If, instead, you see error messages displayed, please remove this Mobile Adapter 2201 (highlight this Mobile Adapter 2201 and click “Remove”). Restart your PC and go through the installation process again.

Windows 2000

1. Right-click “My Computer” icon on the desktop and choose “Properties.”
2. Select “Hardware” tab and click “Device Manager.” Open “Network adapters.” You should see your Mobile Adapter 2201 in the list. Right-click this Mobile Adapter 2201 and choose “Properties.”
3. From the “Device status”, you should see the line “This device is working properly.” If, instead, you see error messages displayed, please remove this Mobile Adapter 2201 (right-click this Mobile Adapter 2201 from the “Network adapters” list and choose “Uninstall”). Restart your PC and go through the installation process again.

Windows XP

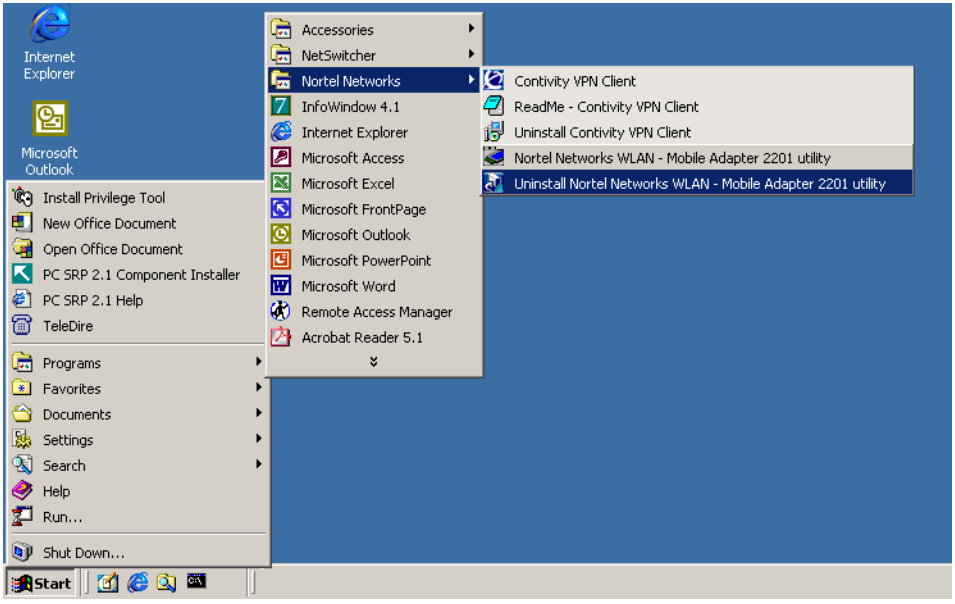
1. Click Start>Control Panel> System.
2. Select “Hardware” tab and click “Device Manager.” Open “Network adapters.” You should see your Mobile Adapter 2201 in the list. Right-click this Adapter and choose “Properties.”
3. From the “Device status”, you should see the line “This device is working properly.” If, instead, you see error messages displayed, please remove this Mobile Adapter 2201 (right-click this Mobile Adapter 2201 from the “Network adapters” list and choose “Uninstall”). Restart your PC and go through the installation process again.

Uninstallation

Note: Before uninstallation, please close all running programs and make sure that the Mobile Adapter 2201 is inserted in the Cardbus slot.

1 Click Start>Nortel Networks>Uninstall Mobile Adapter 2201 (Figure 14).

Figure 14 Uninstall Mobile Adapter 2201



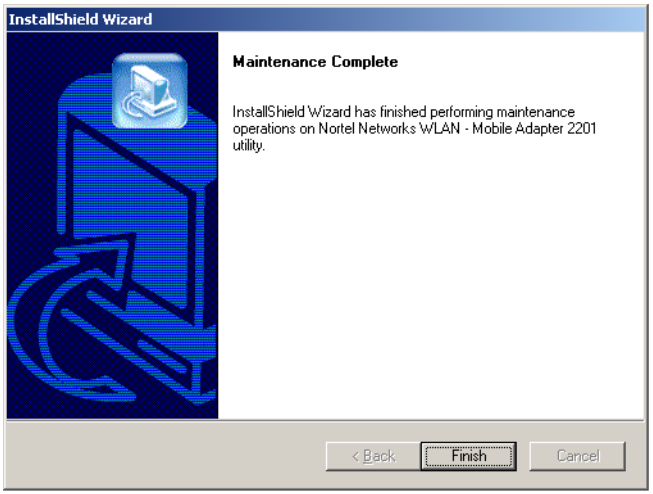
2 The Confirm File Deletion dialog box appears (Figure 15). Click “OK” to start Uninstall.

Figure 15 Confirm File Deletion dialog box



3 The Maintenance Complete dialog box appears (Figure 16). Click "Finish." Uninstall is now complete.

Figure 16 Maintenance Complete dialog box



Chapter 2
Utility Configuration

Connecting to an Existing Network

1 Click Start>Programs>Nortel Networks>Nortel Networks WLAN - Mobile Adapter 2201 utility (Figure 17), and the Mobile Adapter 2201 Client Manager window will appear (Figure 18).

Figure 17 Launch Mobile Adapter 2201

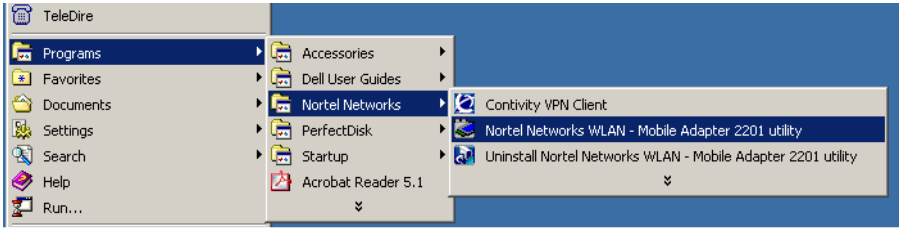
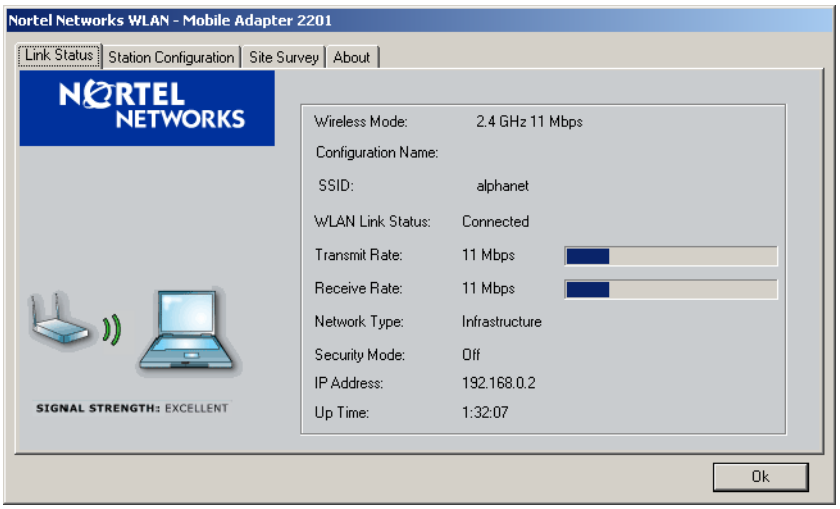


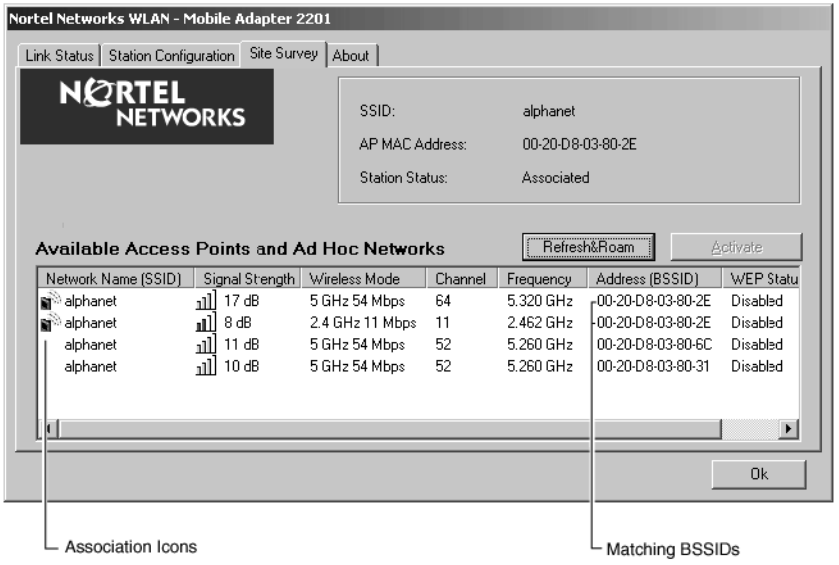
Figure 18 Mobile Adapter 2201 Client Manager



2 Click the Site Survey tab to bring up a list of the available access points and ad hoc networks (Figure 19). An icon next to the Network Name indicates that the Mobile Adapter 2201 is associated with an access point.

Note: If your Mobile Adapter 2201 associates with a Nortel Networks access point that has both 802.11a and 802.11b enabled, there will be two association icons in the Site Survey tab. When you refer to the MAC Address (BSSID) column, you will see that both associations are with the same device (Figure 19).
Check the Wireless Mode and the Transmit Rate in the Link Status tab (Figure 18), and you will know if you are using 802.11a or 802.11b.

Figure 19 Mobile Adapter 2201 Client Manager - Site Survey tab

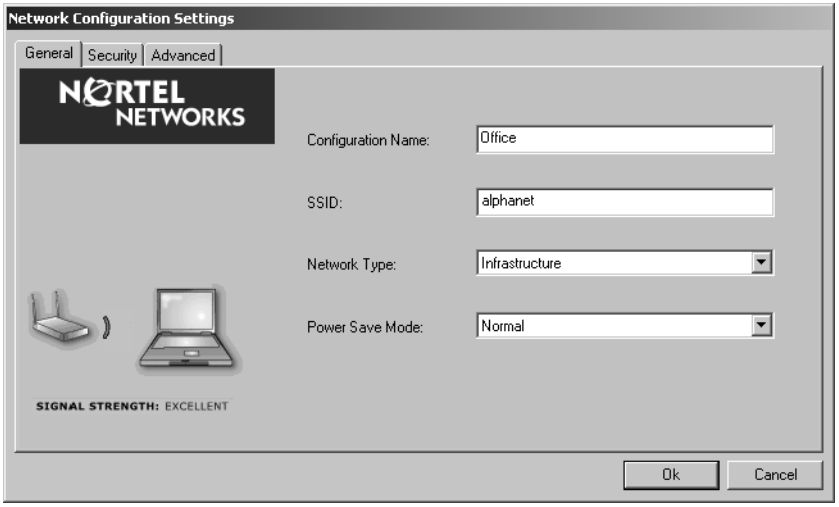


3 To connect to a different access point, select the Network Name (SSID) for that access point and click on “Activate.” (For more information on this material, refer to Chapter 3.)

4 If you do not already have a configuration profile created for this association, you will be prompted to create one. The Network Configuration Settings dialog box will launch (Figure 20).

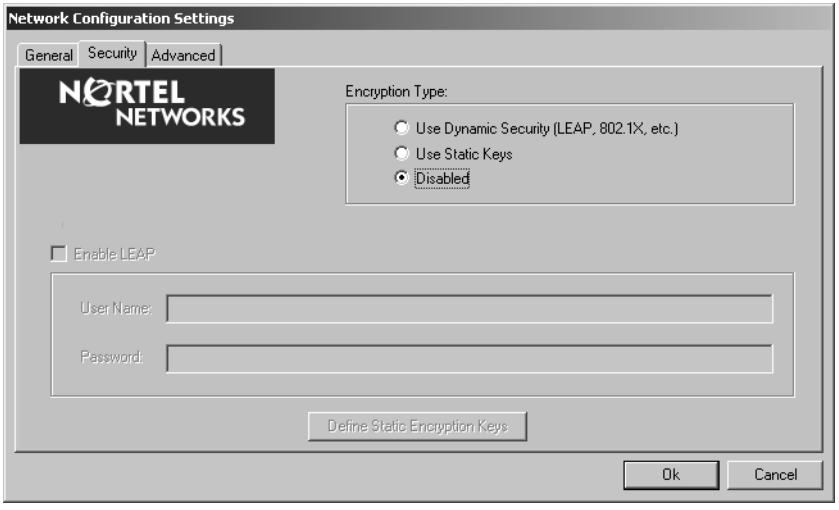
Enter the correct SSID and Network Type (refer to Chapter 3) for the network that you are going to join.

Figure 20 Network Configuration Settings dialog box - General Tab



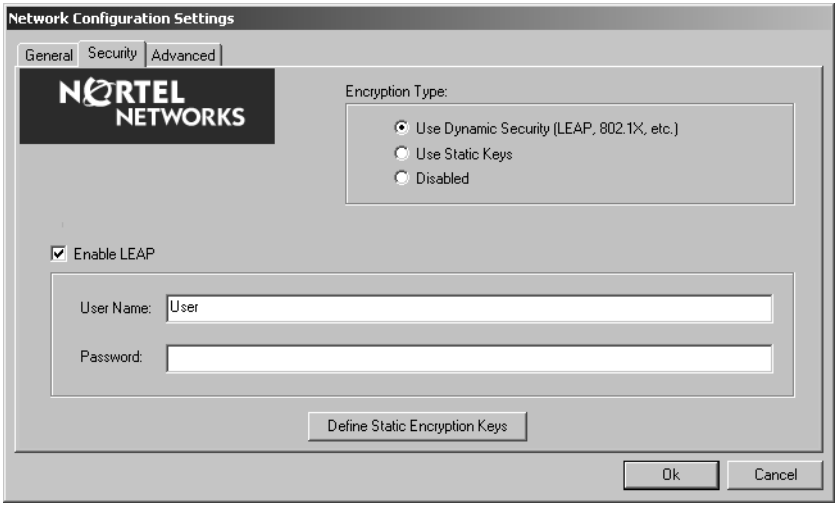
5 Click on the Security tab (Figure 21). The Security dialog box appears. Enter the appropriate settings for your network.

Figure 21 Network Configuration Settings - Security Tab



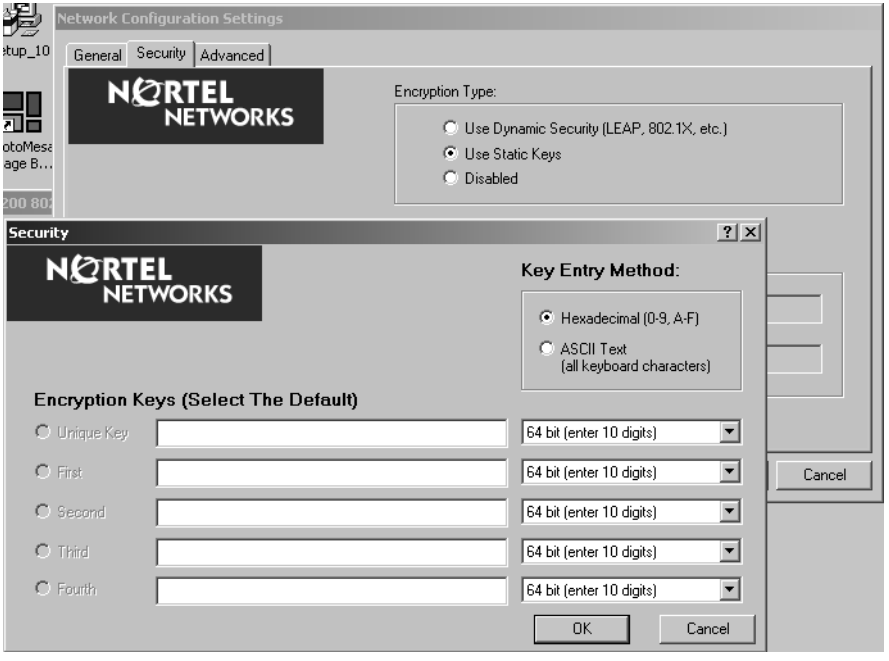
6 If you select Use Dynamic Security and check the box to Enable LEAP, you will be prompted to enter a user name and password (Figure 22).

Figure 22 Network Configuration Settings - Security Tab, LEAP Enabled



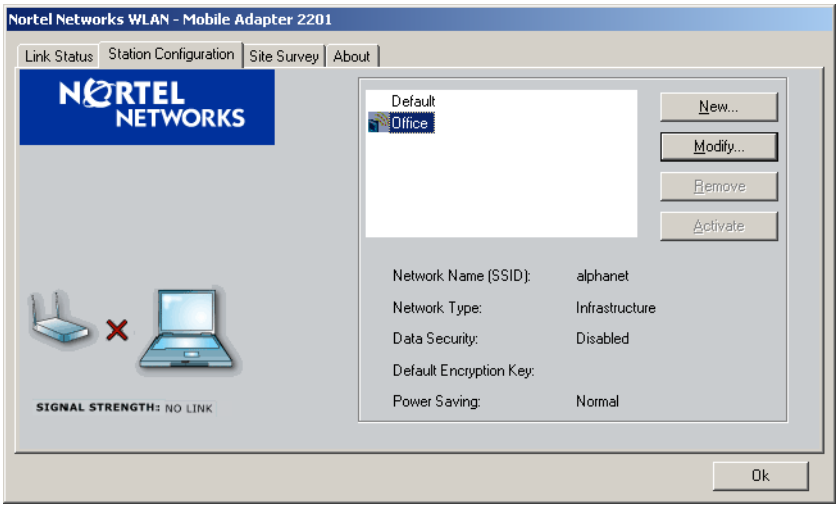
If you select Define Static Encryption Keys, you will be prompted to enter the encryption key(s) (Figure 23).

Figure 23 Encryption Key dialog box.



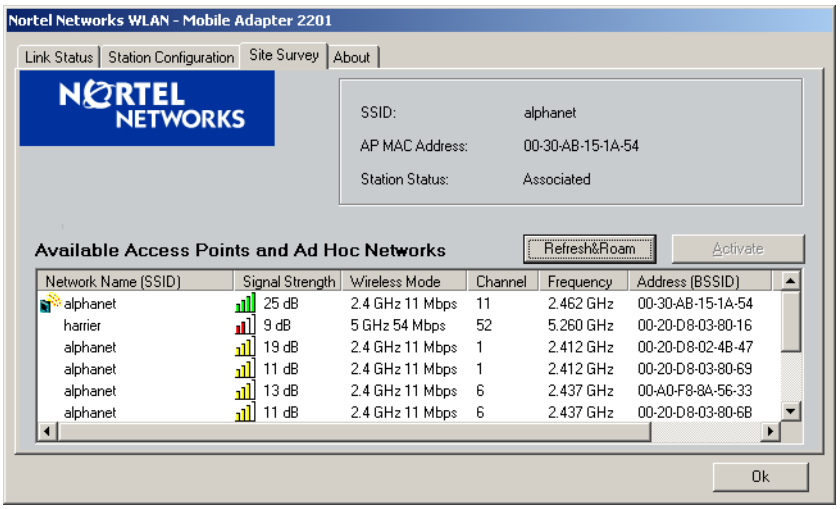
7 Once all of the profile settings have been entered, click OK. The newly created profile will be displayed in the Station Configuration tab (Figure 24).

Figure 24 Mobile Adapter 2201 Client Manager - Station Configuration tab



8 Once you have created the proper profile for the network that you are trying to join, your Mobile Adapter 2201 will associate with the proper access point. When you click on the Site Survey tab, the association icon will appear before the Network Name (SSID) that you selected (Figure 25).

Figure 25 Mobile Adapter 2201 Client Manager - Site Survey tab



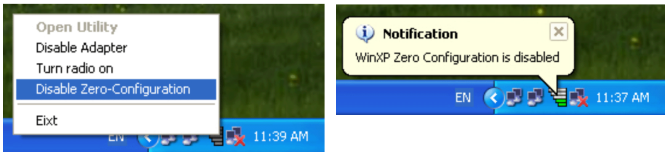
Advanced settings for Windows XP

In Windows XP, it is recommended that you use the Mobile Adapter 2201 Client Manager rather than the Windows XP Zero Configuration tool. Before using the Mobile Adapter 2201 Client Manager, please follow the steps below to disable the Windows XP Zero Configuration.

1 Click Start>Programs> Nortel Networks>Mobile Adapter 2201 to open the Utility.

2 From the Windows System Tray, you should see the signal icon. Right-click it and select “Disable Zero-Configuration” (Figure 26).

Figure 26 Windows system tray signal icon

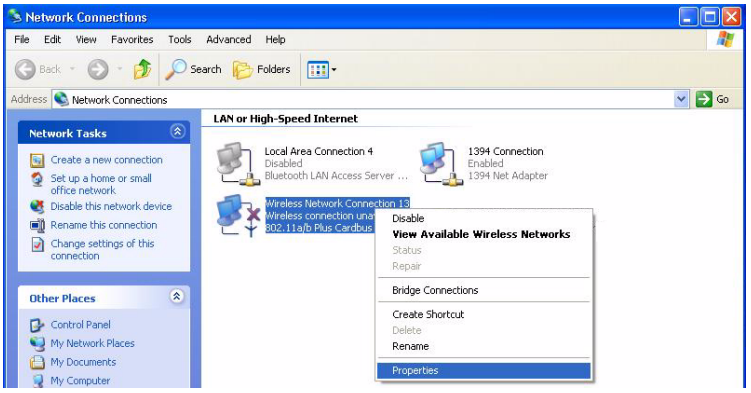


Or

1 Go to “Control Panel” and double click “Network Connections.”

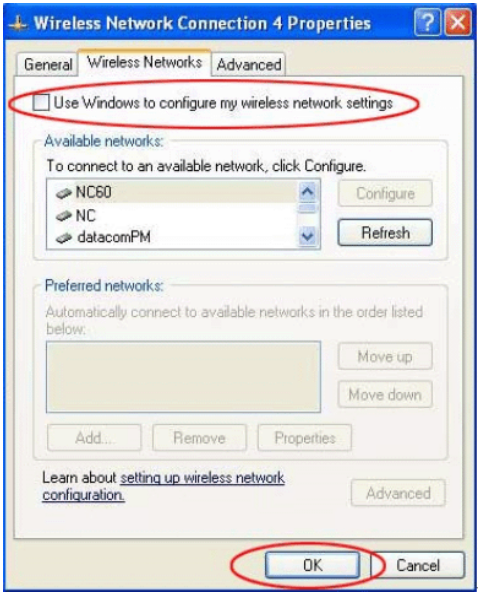
2 Right-click “Wireless Network Connection” of “Mobile Adapter 2201,” and select “Properties” (Figure 27).

Figure 27 Cardbus context menu



3 Select “Wireless Networks” tab, and uncheck the check box “Use Windows to configure my wireless network settings,” and then click “OK” (Figure 28).

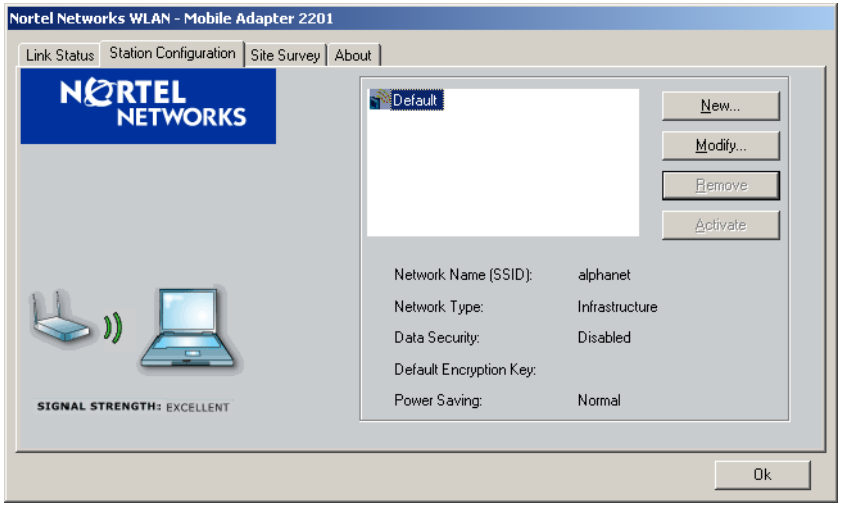
Figure 28 Wireless networks tab



Create a New Network Profile

1 To create a new Network Configuration profile, click the Station Configuration tab (Figure 29).

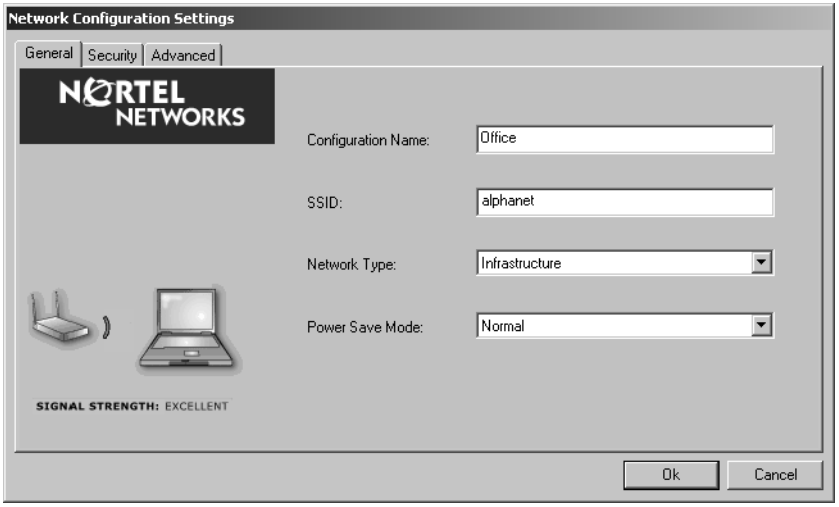
Figure 29 Mobile Adapter 2201 Client Manager - Station Configuration tab



2 Click New. The Network Configuration Settings dialog box will launch (Figure 30).

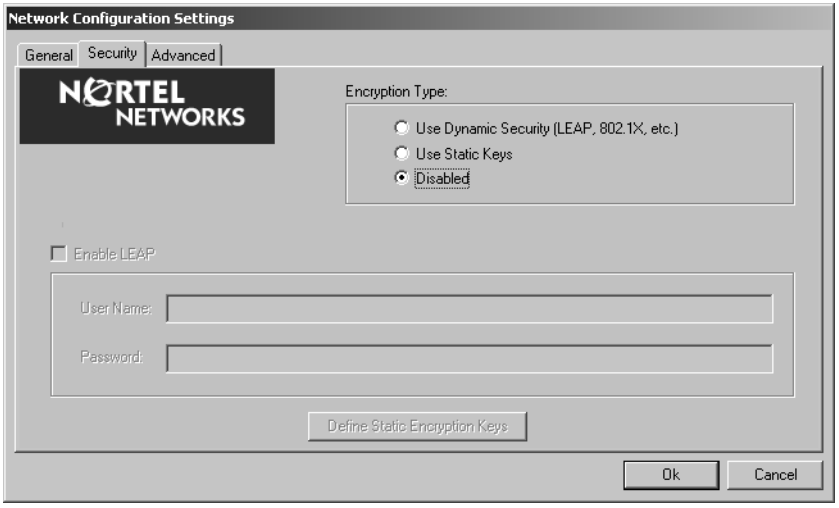
Enter the correct SSID and Network Type for the network that you are going to join.

Figure 30 Network Configuration Settings dialog box - General Tab



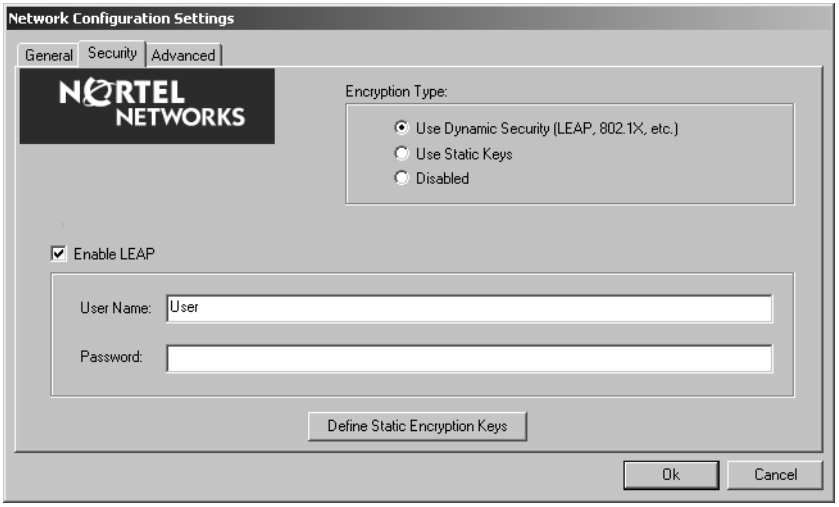
3 Click on the Security tab (Figure 31). The Security dialog box appears. Enter the appropriate settings for your network.

Figure 31 Network Configuration Settings - Security Tab



4 If you select Use Dynamic Security and check the box to Enable LEAP, you will be prompted to enter a user name and password (Figure 32).

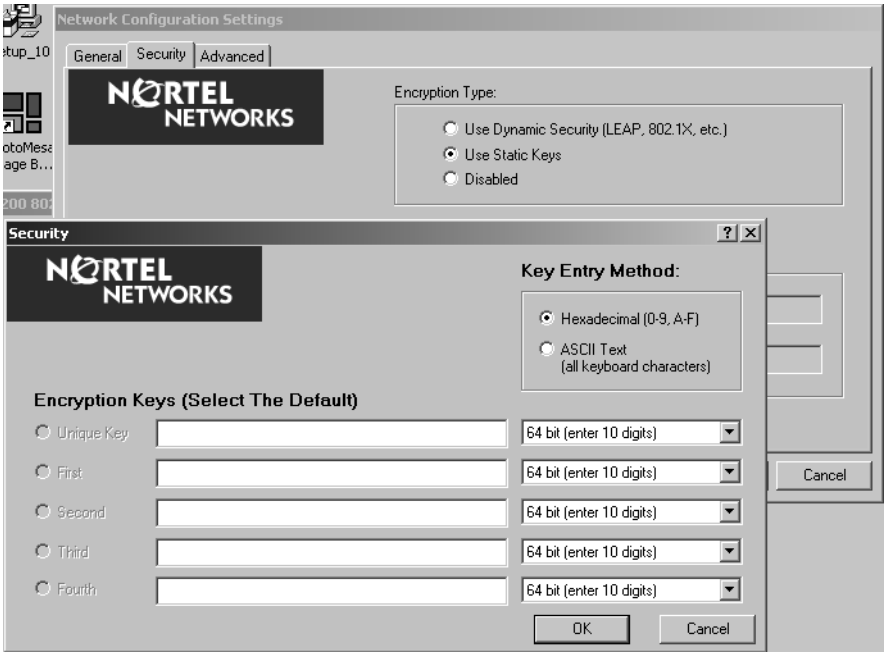
Figure 32 Network Configuration Settings - Security Tab, LEAP Enabled



If you select Define Static Encryption Keys, you will be prompted to enter the encryption key(s) (Figure 33).

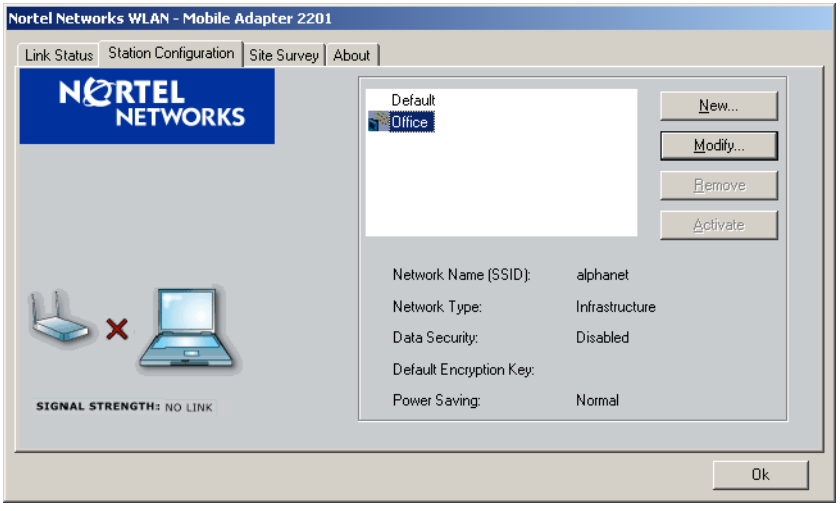
Note: Only three static encryption keys are available when associating with the Nortel Networks Wireless LAN Access Point 2220.

Figure 33 Encryption Key dialog box.



5 Once all of the profile settings have been entered, click OK. The newly created profile will be displayed in the Station Configuration tab (Figure 34).

Figure 34 Mobile Adapter 2201 Client Manager - Station Configuration tab



Chapter 3
Network Configuration

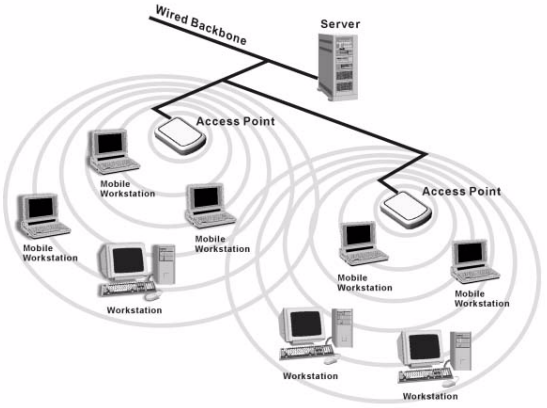
Device Configuration

You can set the Wireless Network Adapter to work in either “infrastructure” mode or “ad hoc” mode.

Infrastructure Mode

In infrastructure mode, devices communicate with each other by first going through an Access Point (AP). Wireless devices can communicate with each other or can communicate with a wired network (Figure 35). When one AP is connected to a wired network and a set of wireless stations, it is referred to as a BSS (Basic Service Set).

Figure 35 Infrastructure mode

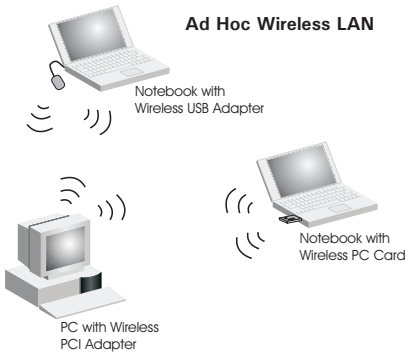


Ad Hoc Mode

Ad-hoc mode is also called “peer-to-peer mode” or “Independent Basic Service Set (IBSS).” In ad hoc mode (Figure 36), devices communicate directly with each other without using an Access Point (AP).

An ad hoc wireless LAN consists of a group of computers, each equipped with a wireless adapter, connected via radio signals as an independent wireless LAN. Computers in a specific ad hoc wireless LAN must therefore be configured to the same radio channel. An ad hoc wireless LAN can be used for a branch office operation.

Figure 36 Ad hoc mode



Non-Default Settings Configuration

1 To create a configuration profile with non-default settings, Click Start>Programs>Nortel Networks>Mobile Adapter 2201 (Figure 37), and the Mobile Adapter 2201 Client Manager window will appear (Figure 38).

Figure 37 Launch Mobile Adapter 2201

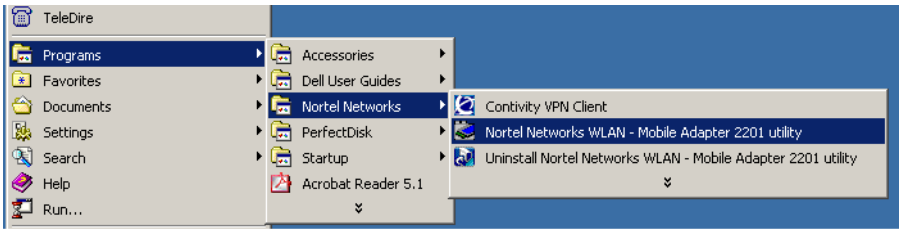
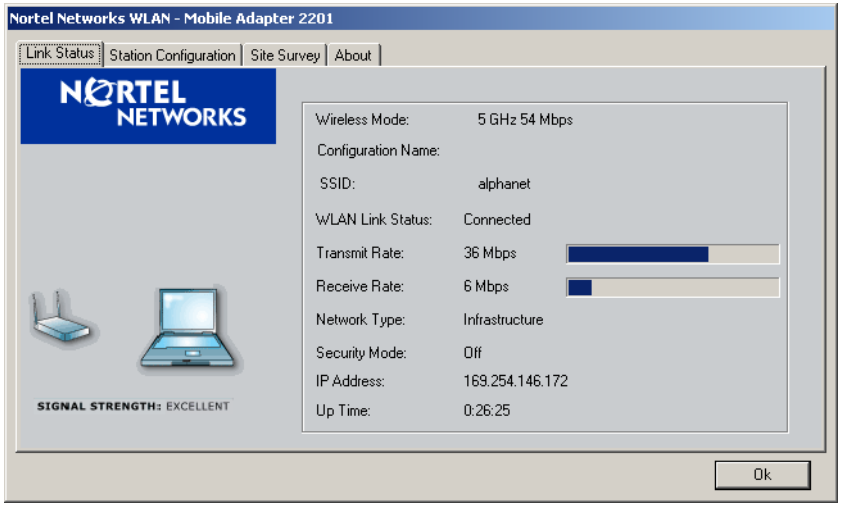
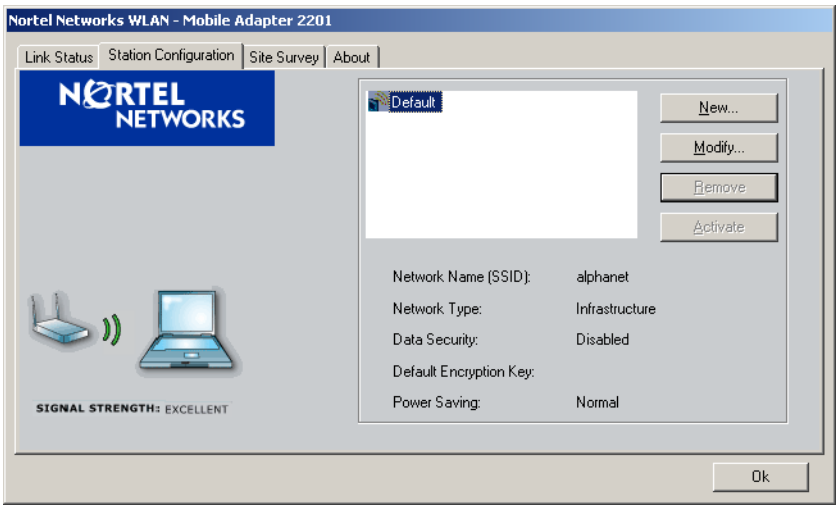


Figure 38 Mobile Adapter 2201 Client Manager



1 Click the Station Configuration tab (Figure 39).

Figure 39 Mobile Adapter 2201 Client Manager - Station Configuration tab



2 Click New. The Network Configuration Settings dialog box will launch (Figure 40).

Enter the correct SSID and Network Type for the network profile that you are creating. Table 2 shows the items on the Network Configuration Settings - General tab.

Figure 40 Network Configuration Settings dialog box - General Tab

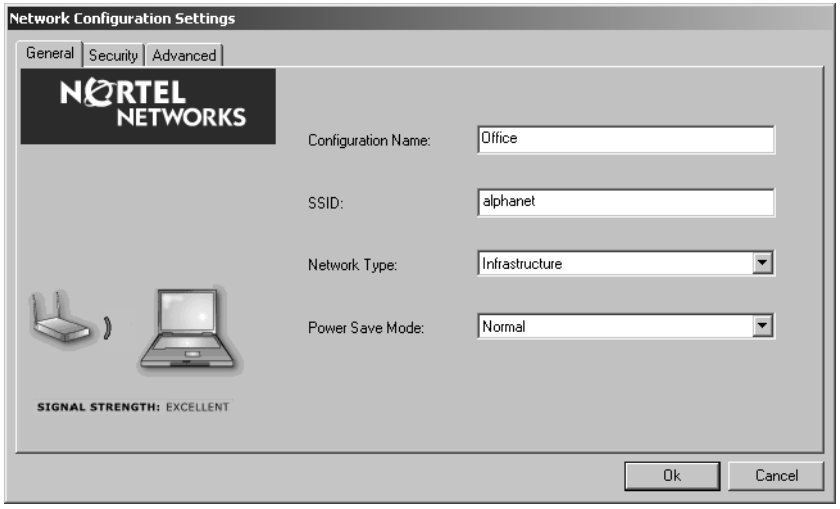
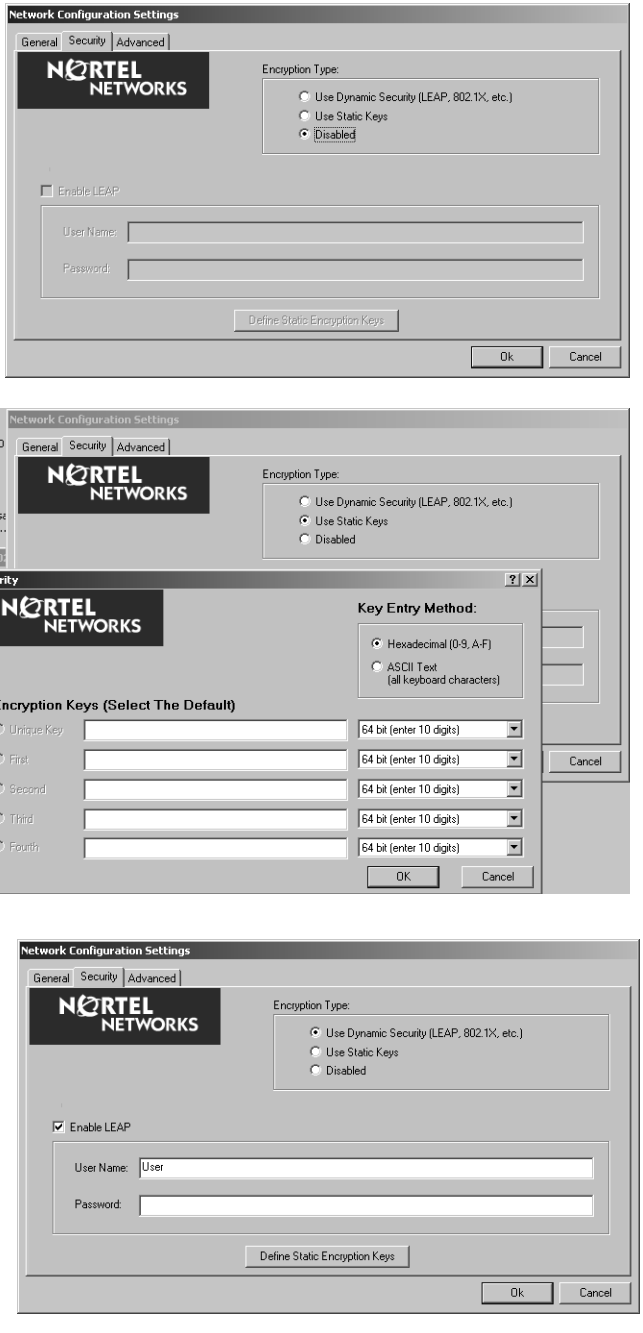


Table 2 Network Configuration Settings - General tab

Item	Description
Configuration Name	This name identifies the configuration. This name should be unique.
SSID	The name of the wireless network. This name cannot be longer than 32 characters. If the field is set to be “ANY” or is left blank, your computer will connect to an AP with the best signal strength.
Network Type	Specifies the mode of the network. Two options are “Infrastructure” and “Ad Hoc.”
Power Save Mode	Three power management options are “Off,” “Normal” and ”Maximum.” In Ad Hoc mode, Power Savings function cannot be enabled.

3 Click on the Security tab. Depending on the Encryption Type selected, you will be presented with different security settings to enter (Figure 41). Enter the appropriate settings for your network. Table 3 shows the items on the Network Configuration Settings - Security tab.

Figure 41 Network Configuration Settings - Security tab



Note: Only three static encryption keys are available when associating with the Nortel Networks Wireless LAN Access Point 2220.

Table 3 Network Configuration Settings - Security tab

Item	Description
Encryption Type	Three options are “Use Dynamic Security (LEAP, 802.1X, etc.”, “Use Static Keys” and “Disabled.”
Enable LEAP	If ‘Use Dynamic Security” is selected and this box is checked, you may enter the User Name and Password information used for Lightweight Extensible Authentication Protocol (LEAP) authentication.
Key Entry Method	If ‘Use Static Keys” is selected, you may specify Hexadecimal or ASCII Text as the method of key entry.
Encryption Keys	Enter the encryption keys using the key entry method specified (Hexadecimal or ASCII). **Note:** Only three static encryption keys are available when associating with the Nortel Networks Wireless LAN Access Point 2220. **Unique Key:** Defines the unique encryption key for security for the current network configuration. Not used in Ad-Hoc mode. To use Unique Key for security, this field should be populated. **First, Second, Third, Fourth:** Defines four shared encryption keys. To use Shared Keys for security, at least one Shared Key should be populated. **Key Length:** Defines the length of each encryption key. When the length is changed to be a smaller number after a key is entered, the key is automatically truncated to fit. If the length is increased again, the key will not be automatically updated to the previous value.

4 Click on the Advanced tab to set advanced security settings (Figure 42). Table 4 shows the items on the Network Configuration Settings - Advanced tab.

Figure 42 Network Configuration Settings - Advanced tab

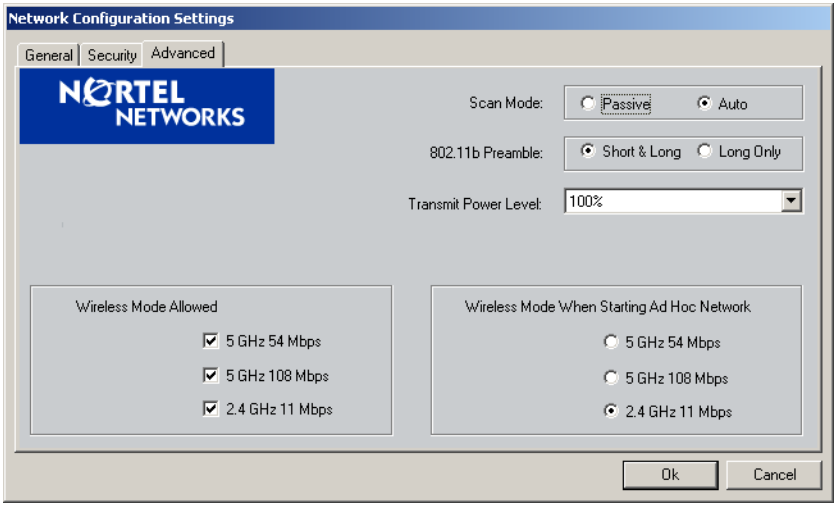
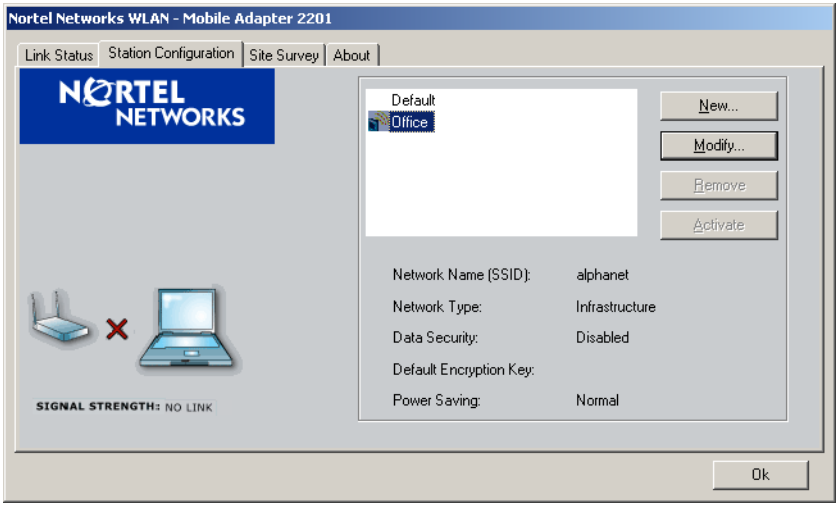


Table 4 Network Configuration Settings - Advanced tab

Item	Description
Scan Mode	Two options are “Auto” and “Passive.”
802.11b Preamble	Two options are “Short & Long” and “Long Only.”
Transmit Power Level	Options are “100%,” “50%,” “25%,” “12.5%” and “Lowest.”
Wireless Mode Allowed	Three options are “5 GHz 54 Mbps,” “5 GHz 108 Mbps” and “2.4 GHz 11 Mbps.”
Wireless Mode When Starting Ad Hoc Network	Three options are “5 GHz 54 Mbps,” “5 GHz 108 Mbps” and “2.4 GHz 11 Mbps.”

5 Once all of the profile settings have been entered, click OK. The newly created profile will be displayed in the Station Configuration tab (Figure 43).

Figure 43 Mobile Adapter 2201 Client Manager - Station Configuration tab



Chapter 4
Troubleshooting

Check the following troubleshooting items before contacting Technical Support.

Table 5 Troubleshooting

Problems	Possible Solutions
My computer cannot find the Adapter	• Make sure the Adapter has no physical damage. • Make sure the Adapter is properly inserted in the Cardbus slot. • Try the Adapter in other Cardbus slots. • Try another Adapter in that particular Cardbus slot. • Check whether there are conflicts caused by other network cards in the computer. Remove all other cards then try this Adapter separately.
I cannot access any network resources from the computer.	• Make sure the correct software is installed. • Uninstall and reinstall the driver/utility (see Chapter 2 for the procedures). • Make sure all network devices are receiving power and working well. • Check whether the SSID is set properly. • Check with the network administrator to see whether the Access Point is configured properly to accept your signal. • If you have trouble accessing the Internet, make sure to check with the network administrator for further instructions.

Appendix A
Specifications

This appendix provides technical specifications for the Nortel Network Wireless LAN Mobile Adapter 2201.

Frequency Range

US/Canada: 2.412 - 2.484 GHz, 5.15 - 5.35 GHz, 5.725 - 5.825 GHz

Major European countries: 2.412 - 2.484 GHz, 5.15 - 5.35 GHz, 5.47 - 5.725 GHz

Japan: 2.412 - 2.497 GHz, 5.15 - 5.25 GHz

Frequency selection will vary according to current local regulations.

Modulation Technique

Direct Sequence Spread Spectrum (DSSS) (with CCK, BPSK, QPSK modulation) for 2.4 GHz

Orthogonal Frequency Division Multiplexing (OFDM) subcarrier (with BPSK, QPSK, 16-QAM, 64-QAM modulation) for 5 GHz

Host Interface

Card Bus interface and form factor

Channels Supported

2.4 GHz (802.11b)	US/Canada: 11 (1 - 11 with 3 non-overlapping channels)
	Major European countries: 13 (1 - 13 with 3 non-overlapping)
	Japan: 14 (1 - 14)

5 GHz (802.11a)	US/Canada: 12 non-overlapping channels
	5.15 - 5.35 GHz, 5.725 - 5.825 GHz
	Major European countries: 19 non-overlapping channel
	5.15 - 5.35 GHz, 5.47 - 5.725 GHz
	Japan: 4 non-overlapping channels
	5.15 - 5.25 GHz

Channel selection will vary according to current local regulations.

Operation Voltage

3.3V +/- 5%

Power Consumption

Transmission mode	1155 mW (estimated)
Receive mode	1221 mW (estimated)
Standby mode	297 mW (estimated)
Power saving mode	39.6 mW (estimated)

Output Power

Worldwide	2.4 GHz: 18 dBm (~65 mW) peak power
US	5 GHz
	a. 5.150 - 5.250: peak power to 50mW (17dBm) per FCC 15.407 specification (UNII band operation)
	b. 5.250 - 5.350:peak power to 250mW (24 dBm) per FCC 15.407 specification (UNII band operation)
	c. 5.470 - 5.725:not allowed
	d. 5.725 - 5.825:peak power to 1W (30 dBm) per FCC 15.407 specification (UNII band operation)
Europe	5 GHz
	a. 5.150 - 5.250 and 5.250-5.350: European regulations limit power; this limitation varies by current local regulations
	b. 5.470 -5.725: European regulations limit power; this limitation varies by current local regulations

Japan	5 GHz
	a. 5.150 ~ 5.250: Output power varies according to current local regulations
	b. 5.250 ~ 5.350: not allowed
	c. 5.470 ~ 5.725: not allowed
	d. 5.725 ~ 5.825: not allowed

Maximum power setting will vary according to current local regulations.

Operating System Support

Windows 98SE, Me, 2000, XP

Dimension

23mm (L) x 54mm (W) x 10.4mm (H)

Security

64-bit WEP, 128-bit WEP, 152-bit WEP Encryption

802.1x Authentication

Operation Mode

Infrastructure & Ad-hoc mode

Transfer Data Rate

2.4 GHz	11, 5.5, 2, 1 Mbps, auto-fallback
5 GHz	54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback
	108, 96, 72, 48, 36, 24, 18, 12 Mbps by using turbo mode

Operating Temperature

0 - 55°C

Storage Temperature

-20 - 80 °C

Compliance Standards

Safety:

UL 60950

CAN/CSA-22.2 No. 60950

IEC 60950/EN60950, CB certificate and report with all national deviations

Radio Approvals:

FCC Part 15.247 (2.4 GHz)

FCC Part 15.401-15.407 (5 GHz)

RSS-139-1, RSS-210 (Canada)

EN 300.329 (Europe, 2.4 GHz)

EN 301.893 (Europe, 5 GHz)

EMI and Susceptibility (Class B):

FCC Part 15.107 and 15.109

ICES-003 (Canada)

EN 301.489-1 and -17 (Europe)

Other:

IEEE 802.11a and 802.11b

FCC Bulletin OET-65C (Human exposure to RF Fields)

RSS-102 (Canada)

Media Access Protocol

Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) with positive ACK architecture