PHILIPS

DRAFT

Quick Installer Guide for 802.11a/b/g miniPCI Card

PH11107-X   PH12127-X
(where "X" could be either B or E)
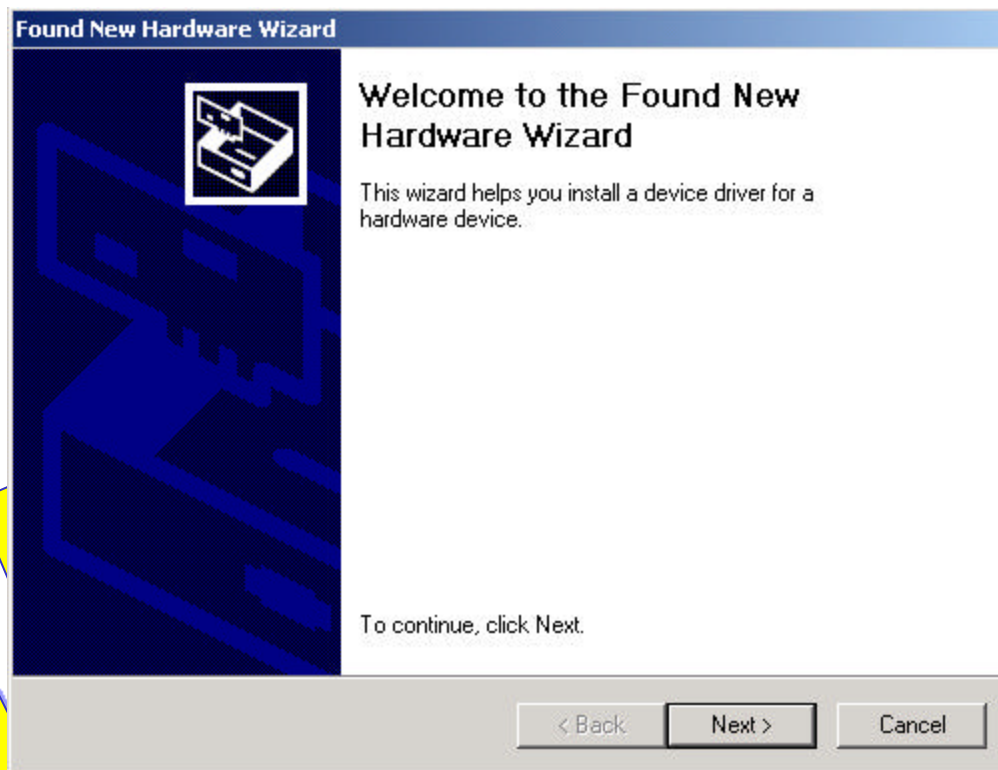
July 2, 2003
Version: 0.1

DRAFT

Quick Installer Guide for Philips miniPCI 802.11a/b/g card
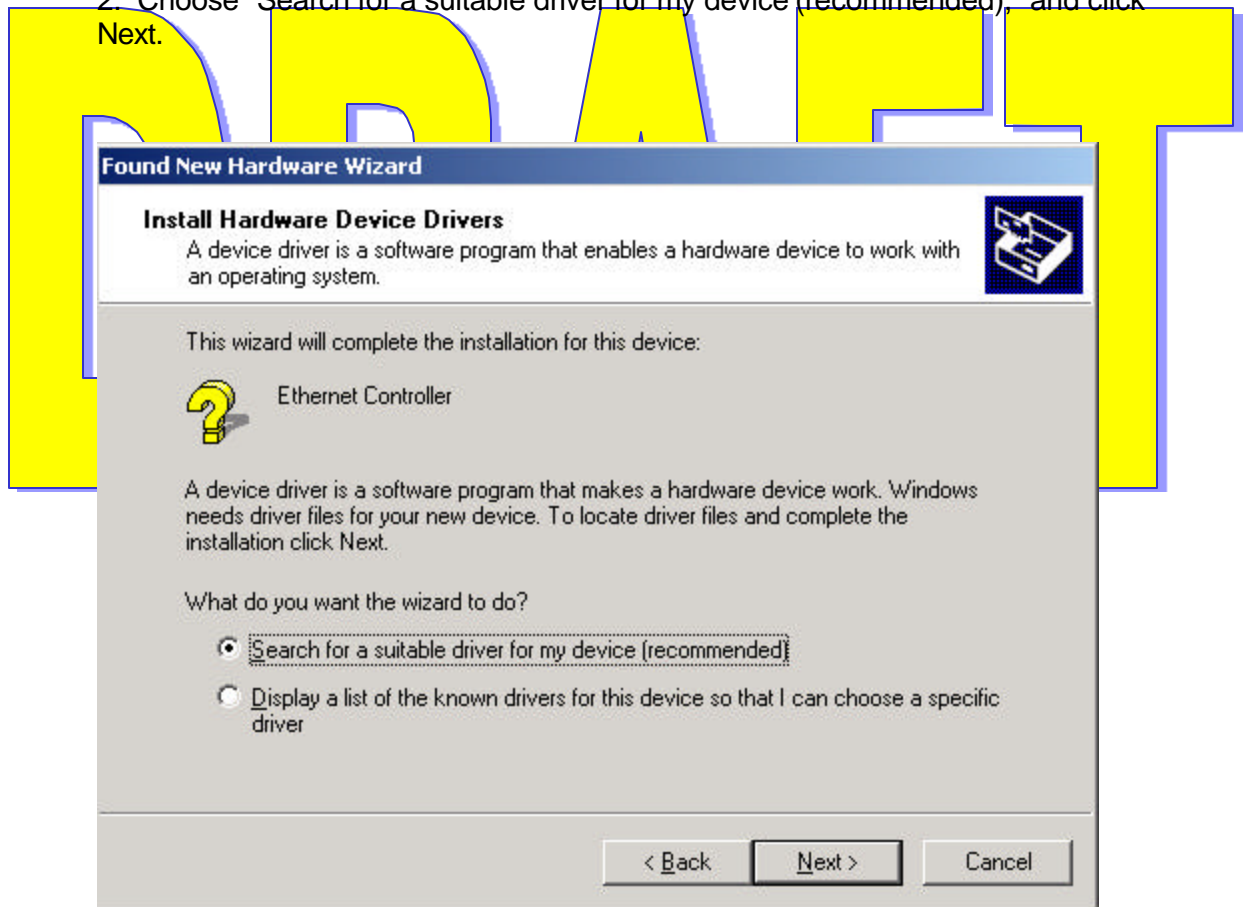
1.   Driver Installation

Install Philips miniPCI 802.11a/b/g card. Laptop is turn off during installation. Once the card is installed, turn on the laptop.
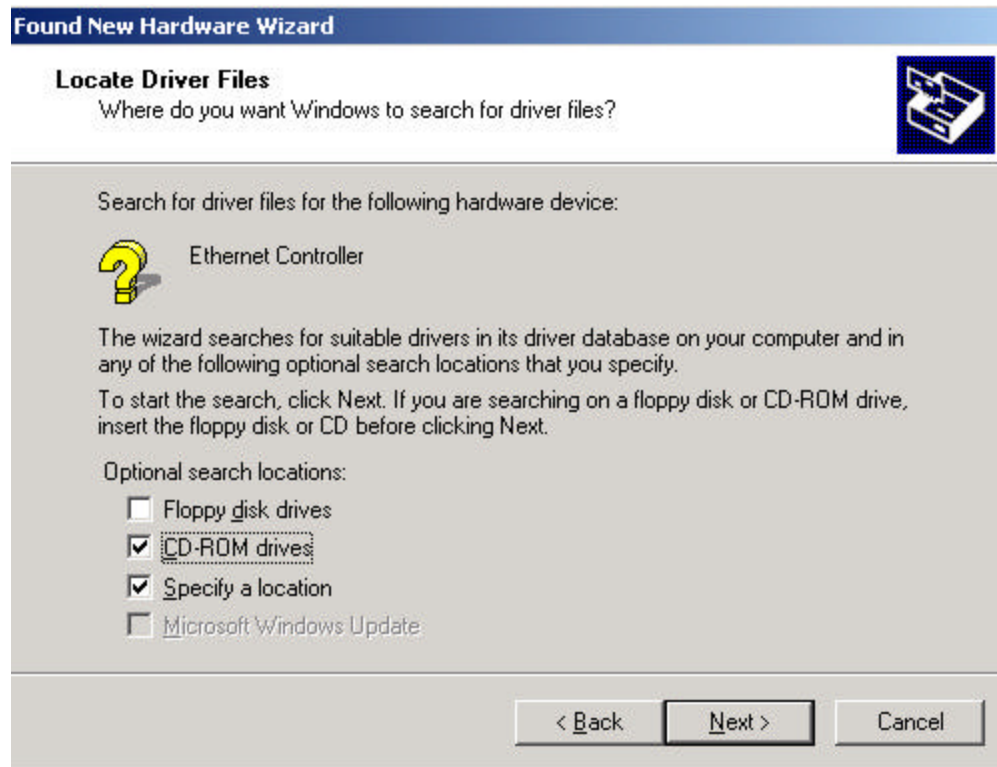
1. Wait for the following dialog box to display, and click Next to continue.

2. Choose "Search for a suitable driver for my device (recommended)," and click Next.
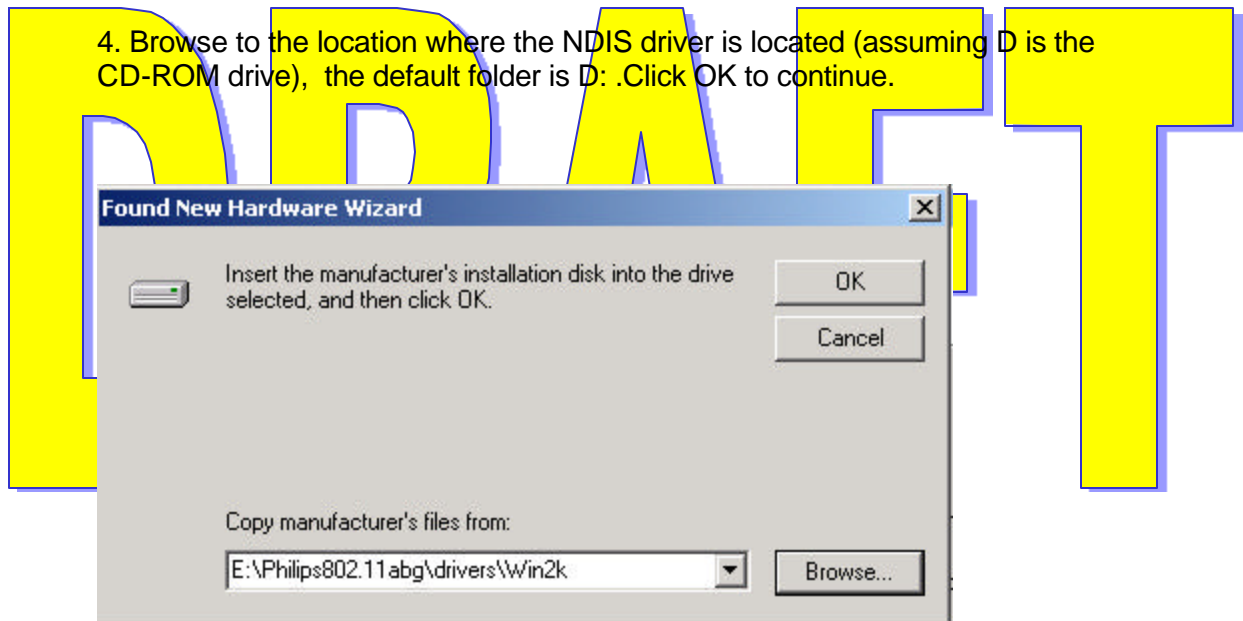
Found New Hardware Wizard

Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.

This wizard will complete the installation for this device:

Ethernet Controller

A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.

What do you want the wizard to do?

⦿ Search for a suitable driver for my device (recommended)

◯ Display a list of the known drivers for this device so that I can choose a specific driver

[< Back] [Next >] [Cancel]

3. Insert the CD in your CD-ROM drive. Choose "Specify a location" under "Optional search locations," and click Next to continue.

Found New Hardware Wizard

Locate Driver Files
Where do you want Windows to search for driver files?

Search for driver files for the following hardware device:

Ethernet Controller

The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.

To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.

Optional search locations:
☐ Floppy disk drives
☑ CD-ROM drives
☑ Specify a location
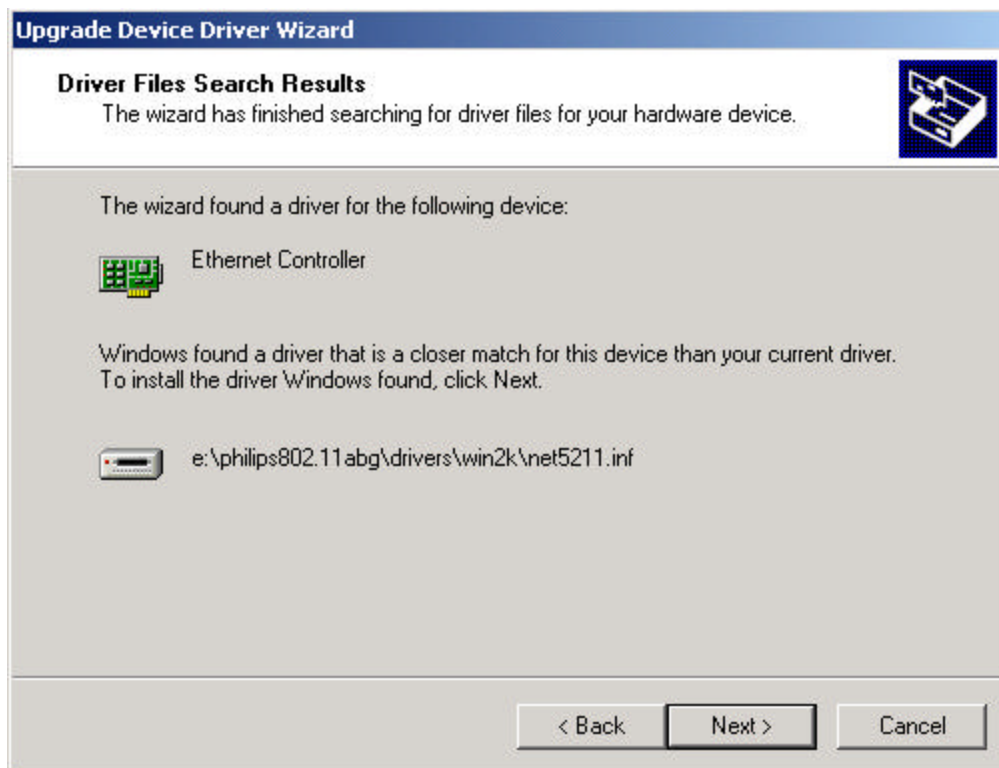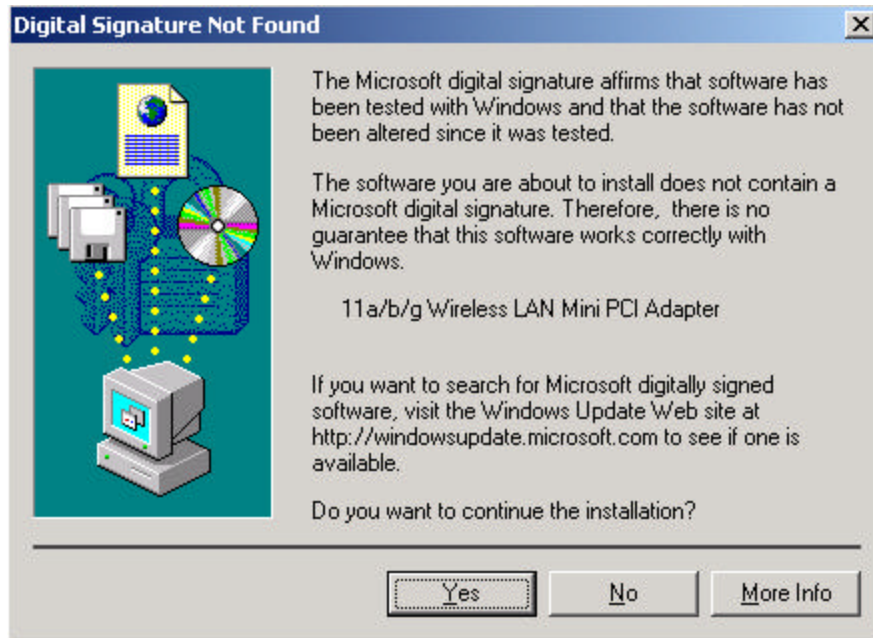☐ Microsoft Windows Update

< Back   Next >   Cancel

4. Browse to the location where the NDIS driver is located (assuming D is the CD-ROM drive), the default folder is D: .Click OK to continue.

Found New Hardware Wizard

Insert the manufacturer's installation disk into the drive selected, and then click OK.

OK

Cancel

Copy manufacturer's files from:

E:\Philips802.11abg\drivers\Win2k

Browse...

5. When you find the driver installation file (net5211.inf), click Next to continue.

Upgrade Device Driver Wizard

Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.

The wizard found a driver for the following device:

Ethernet Controller

Windows found a driver that is a closer match for this device than your current driver.
To install the driver Windows found, click Next.

e:\philips802.11abg\drivers\win2k\net5211.inf

< Back   Next >   Cancel

6. The evaluation driver currently does not have a digital signature from Microsoft. There, Windows shows a warning message. Click Yes to proceed with the driver installation.

Digital Signature Not Found

The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.

The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.

   11a/b/g Wireless LAN Mini PCI Adapter

If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.

Do you want to continue the installation?

[Yes]   [No]   [More Info]

7. Click Finish to complete the driver installation. See Section 2.0 for the device configuration.

2.   Device Configuration

Configuration of the Philips miniPCI Wireless Network Adapter can be done through the Network Control Panel (NCP) in adapter properties. You can set the Wireless Network Adapter to work in one of two modes, either infrastructure mode (which leverages an AP) or ad hoc mode (which consists of a group of stations participating in the WLAN).

In infrastructure mode, the Wireless Network Adapter participates in a basic service set (BSS) as a station, and communicates with the other stations through an AP, as illustrated below.

B. SYSTEM TRAY APPLICATION

1. Screen Layout
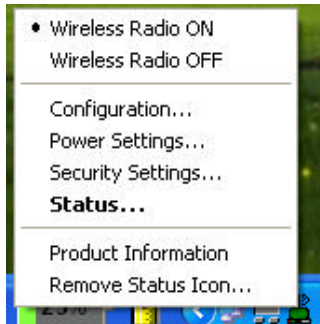
(1) Figure 1: System Tray Icon and Menu

The system tray application provides status information to users via an icon displayed in the Windows system tray.

The system tray app provides visual indication of the radio state and signal strength. It indicates if the signal strength is weak (< 20%), fair (< 40%) or strong (> 40%) by displaying a different icon for each state. Also, the system tray app displays a distinct icon to indicate that the radio is currently turned off.

The system tray icon has an associated context menu, which allows users to turn the radio on and off, and to launch directly into various screens in our Control Panel application. The menu items are described below:

2. System Tray Menu Items

- *Wireless Radio On:* Turns the radio on. If the radio is already on, an adjacent dot indicator is displayed.

- *Wireless Radio Off* Turns the radio off. If the radio is already off, an adjacent dot indicator is displayed

- *Configuration*: Launches our Control Panel Application with the "Configuration" screen displayed.

- *Power Settings:* Launches our Control Panel Application with the "Power" screen displayed.

- *Security Settings*:   Launches our Control Panel Application with the "Security" screen displayed.

- *Status*:   Launches our Control Panel Application with the "Status" screen displayed.

- *Product Information*:   Launches our Control Panel Application to the "About" screen, displaying copyright and version information for our product.

- *Remove Status Icon*:   Removes our icon from the Windows system tray, and also closes our system tray application. To restart our system tray app, the user must double-click the "Wireless Configuration" program icon on the Windows "Start" Menu (or in the File Manager).

C. STATUS SCREEN

1. Screen Layout
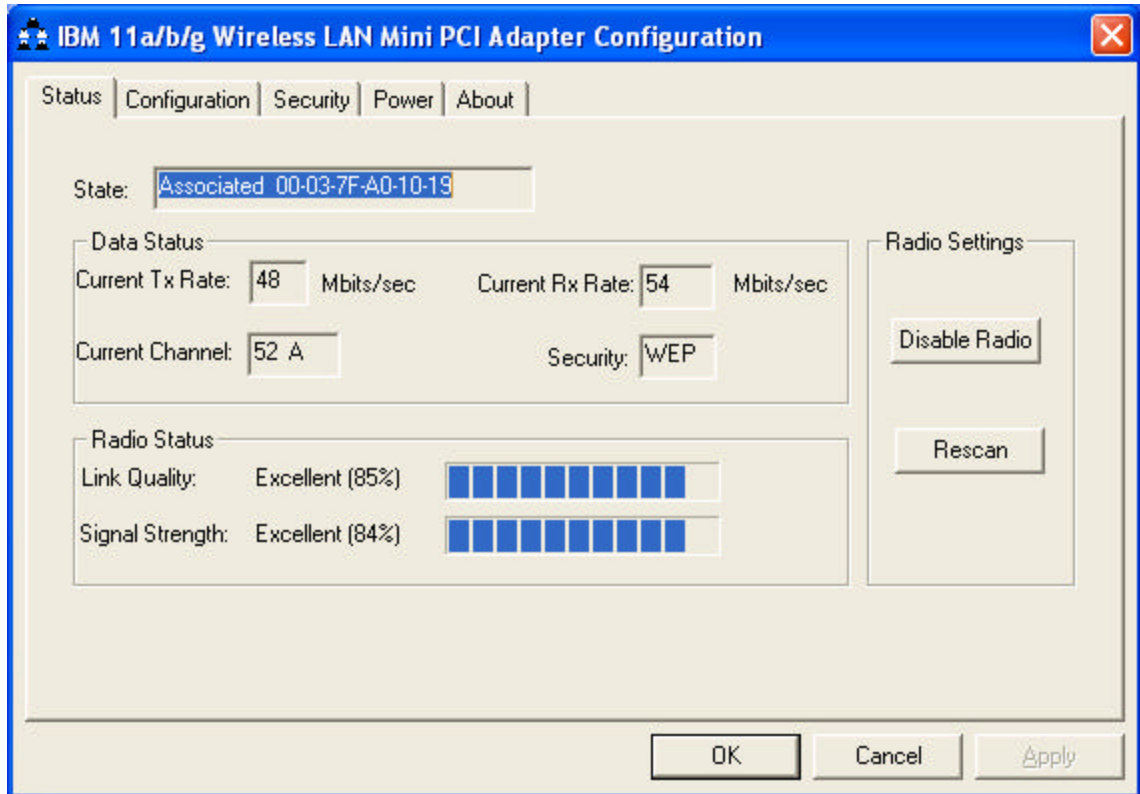
Figure 2 (Status Screen)

The Status Screen is the first tab in our Control Panel application. It displays status information about the 802.11a/b/g card, including the connection state, the associated server MAC address (if any), transmit and receive rates, Current Channel, Security Mode, link quality and signal strength. The information is automatically updated on a regular basis. The user can also turn the radio on or off from this screen. A Rescan button is also provided to refresh the values.

2. Controls on the Status Screen

Field	Description
State	**Displays link status, along with associated MAC address (if any).**
Current Tx Rate	Displays the current transmit rate, depending on link quality and configuration parameters
Current Rx Rate	Displays the current receive rate
Current Channel	Displays the current channel on which the radio is operating
Security	Displays the current Security Mode
Link Quality	Displays the current perceived link quality
Signal Strength	Displays the signal strength based on specific radio parameters
Disable Radio	Allows users to turn the radio on or off. The button is labeled "Disable Radio" or "Enable Radio", depending on the current radio state.
Rescan	The Rescan button allows the user to update the screen contents immediately.

3. Interaction of Status Screen Controls

1) Other than the two push buttons, all controls on this screen are display-only. Display-only values are updated at regular intervals (currently every 3 seconds).

2) By pressing the Rescan button, the user can force a refresh of the display-only information.

3) The "Disable/Enable Radio" button will turn the radio on or off, depending upon its current state. (NOTE: The functionality is provided by our system tray application.)

4) The "Rescan" button will update the screen controls immediately.

D. CONFIGURATION SCREEN

1. Screen Layout
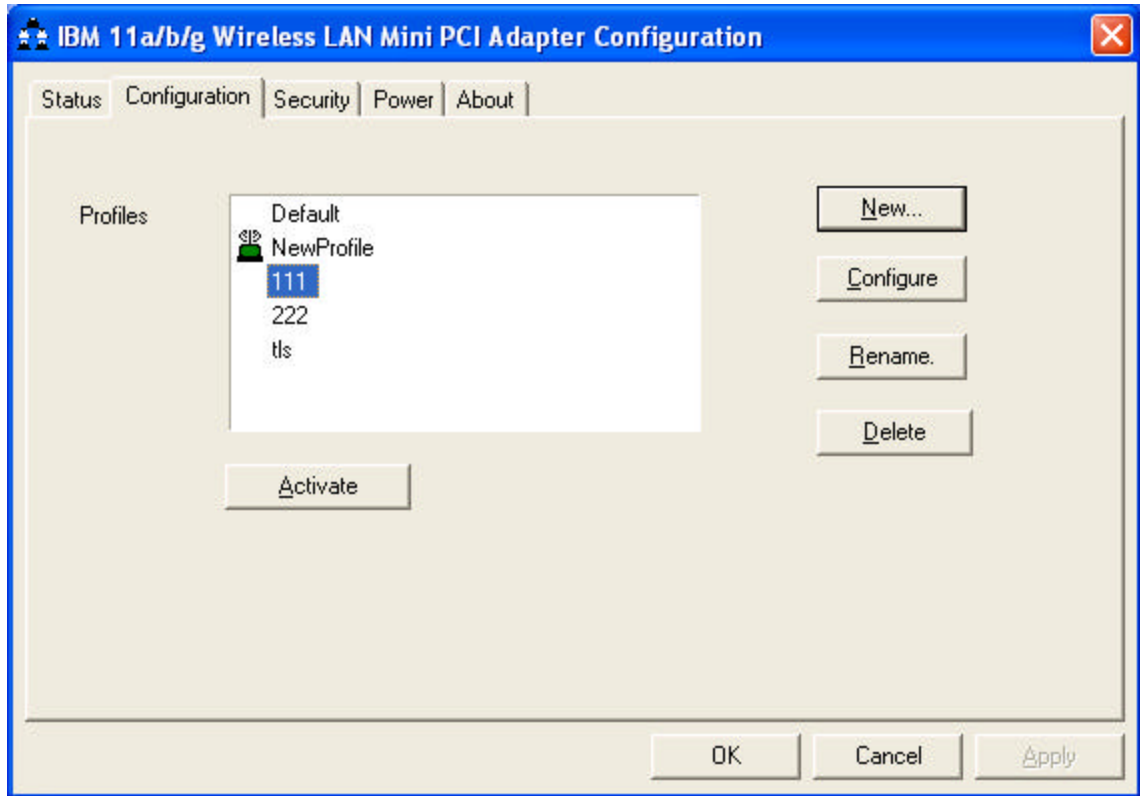
Figure 3 (Main Configuration Screen)

The Configuration screen is the second tab in our Control Panel application. It displays a list of existing configuration profiles, which can be modified, renamed or deleted by the user. The user can also create new profiles on this screen. Initially, there is only one profile shipped with the product, with a name of "Default".

Configuration settings for the selected profile are displayed (and modifiable) on the Configuration, Security and Power screens. Therefore, selecting a profile from the "Profile Name" list will determine the contents of the Configuration screen as well as those other three screens.

When the user presses the "OK" button or the "Apply" button (from any screen in the control panel application), all changes the user has made are saved. If changes were made to the active profile (or if a different profile was selected as the active profile), the driver is unloaded and reloaded. Upon driver reload, the settings of the selected profile will be in effect.

2. Controls on the Configuration Screen

Figure 4 (Configuration Screen For Each Profile)

Field	Description
Profile Name	List of available profiles. User may select from list to activate or modify a profile.
New/Rename/Delete Buttons	For creating, renaming and deleting profiles from the list above.
Network Type	Allows selection of either "Peer-to-Peer" (Ad-Hoc) or "Access Point "(Infrastructure).
Network Name1	Lets the user specify an SSID1 for the selected profile.
Network Name2	Lets the user to specify SSID2, in case SSID1 is an invalid one.
Network Name3	Lets the user to specify SSID3
Wireless Mode	Shows a list of Wireless Modes such as "Auto" (Meaning auto detection of Network Type), "802.11a" and "802.11b". If the 80211abg card is plugged in "802.11g" will be shown on the list. User can select from one of these four modes.
Peer-to-Peer Net Start	The configurable peer-to-peer channel for the selected profile. The default value is "802.11a".
Transmit Rate	Displays the Transmit Rate. The default value is "Auto".
OK Button	From any screen in control panel app, submits changes made during session and exits the Application.
Cancel Button	From any screen in control panel app, cancels all changes made during session.
Apply Button	From any screen in control panel app, submits changes made during session.

3. Interaction of Configuration Screen Controls

(1) Selecting a different profile in the "Profile Name" list causes different settings values to be displayed in the controls on the Configuration screen, as well as the Security and Power screens.

(2) When the control panel application is launched, the active profile (whose settings are currently in use by the device driver) will be shown as the selected profile in the "Profile Name" list.

(3) Clicking the "Rename" or "Delete" button while the selected profile is "Default" will result in an error message indicating that the default profile cannot be renamed or deleted.

(4) Clicking the "Rename" or "New" button will display a dialog (titled "New Profile" or "Rename Profile", respectively) that prompts the user to enter a profile name.

(5) The "Peer-to-Peer Channel Net Start" is enabled only if the Network Type is "Ad-Hoc".

(6) The user can select between different available Transmit rates only if the "Wireless Mode" is not in "Auto". If the wireless mode is "Auto", this edit box is disabled.

(7) The OK button causes all changes (on all the tabs) to be saved. Configuration changes for all profiles (not just the selected one) will be saved. If any changes have been made to the active profile, or if a new active profile is selected, then the 802.11a/b/g driver will be unloaded and reloaded. Upon reload, the new settings will take effect. This button is active from any screen in the control panel application.

(8) The Cancel button will back out any and all changes made during this invocation of the control panel application. This includes any change made to any profile on any screen. This button is active from any screen in the control panel application.

4. Configuration Screen Input Validation

An error message is displayed, and the user is prevented from leaving the Configuration screen (except via Cancel button) under the following conditions:

(1) The Network Type is "Adhoc" and the Network Name1 field is blank.

E. NEW PROFILE AND RENAME PROFILE DIALOGS

1. Screen Layout

IBM 11a/b/g Wireless LAN Mini PCI Adapter Configuration ✕

Please enter a name for the new profile and press OK.

Profile Name: NewProfile

[OK]   [Cancel]

IBM 11a/b/g Wireless LAN Mini PCI Adapter Configuration ✕

Please enter a new name for the profile and press OK.

Profile Name: 111

[OK]   [Cancel]

(i)   Figure 4: New/Rename Profile Dialogs

The New Profile and Rename Profile dialogs are actually the same dialog. Only the instructional texts differ depending upon whether the user is creating a new profile or renaming an existing one.

This dialog is displayed in response to the "New" button and the "Rename" button on the Configuration screen.

2.   Controls on the New/Rename Profile Dialogs

Field	Description
Profile Name	Edit field used to specify the new name for the profile.
OK button	Submits the profile name for validation and, if valid, completes the new/modify profile operation.
Cancel button	Cancels the "New" or "Rename" operation.

3.   New/Rename Profile Input Validation

An error message is displayed, and the user is prevented from leaving the New/Rename Profile dialog (except via Cancel button) under the following conditions:

(1) A profile already exists with the name specified.

(2) No profile name is specified

F. SECURITY SCREEN

1.   Screen Layout
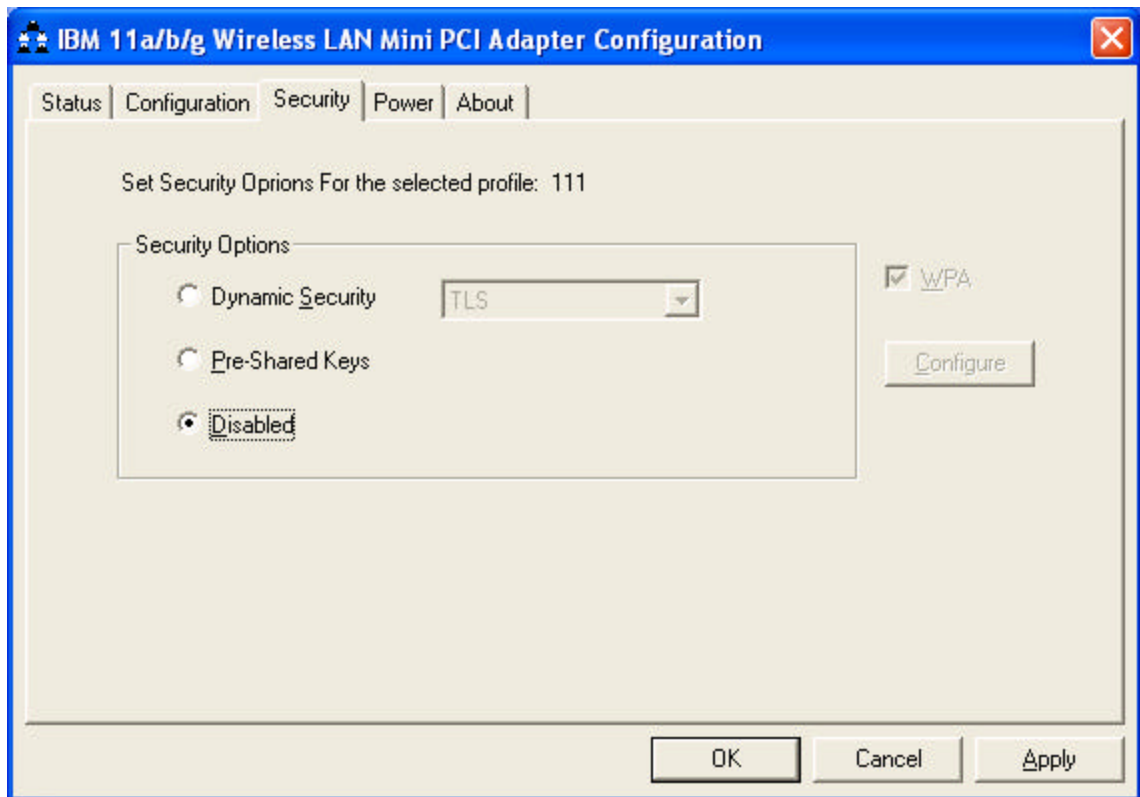
Figure 5 (Security Screen – Main Screen)
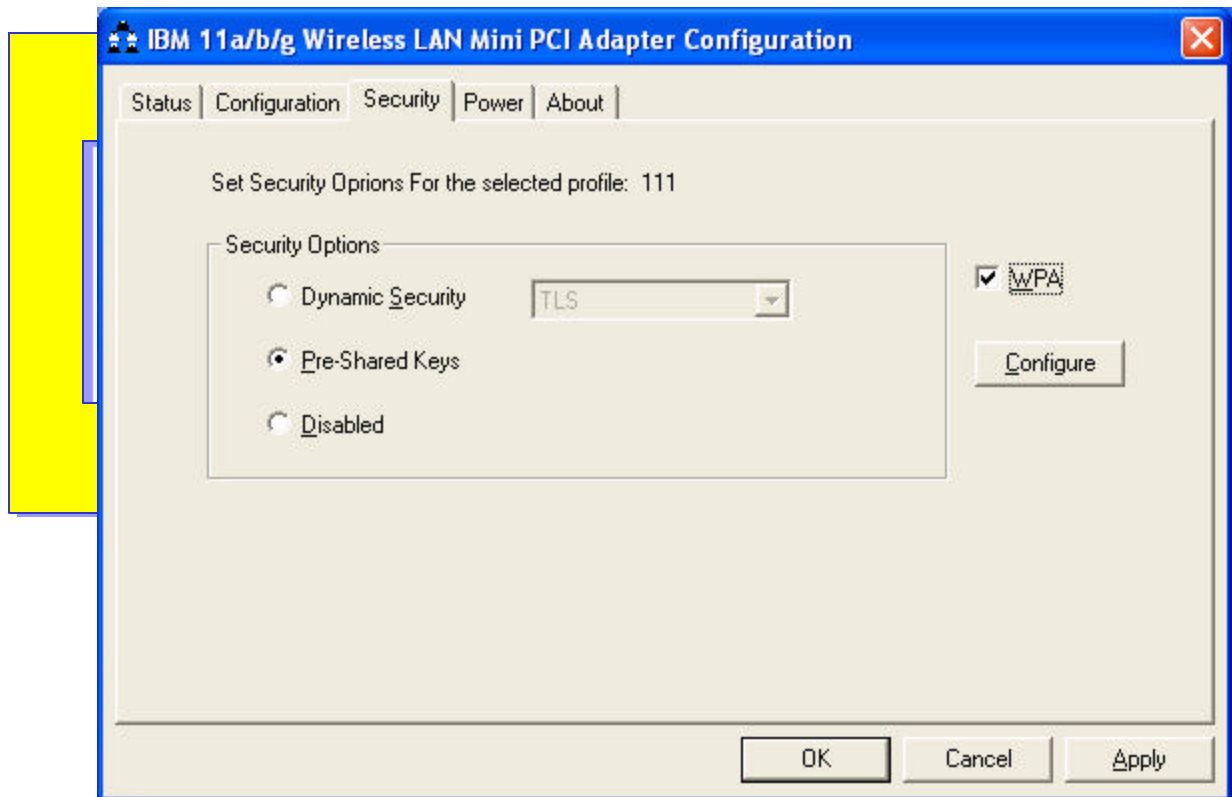
Figure 6 (Security Screen – Pre-Shared Key Option)

The Security screen is the third tab in our Control Panel application. It allows the user to view and modify security settings for the selected profile. Up to four encryption keys may be specified. Two types of Key Entries are possible, hexadecimal and alphanumeric. The available maximum Key lengths for Hexadecimal keys are 10,26 and 32 while the available maximum Key lengths are 5, 13 and 16 for alphanumeric keys. In addition user can disable the security, or can select 802.1x or leap security.
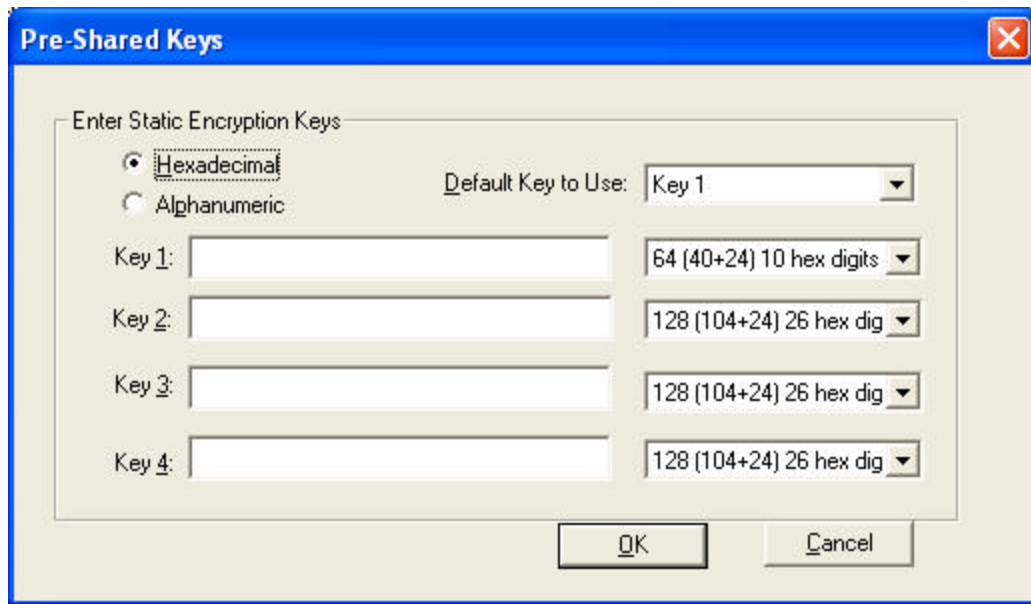
Figure 6 (Security Screen – Hexadecimal Keys)
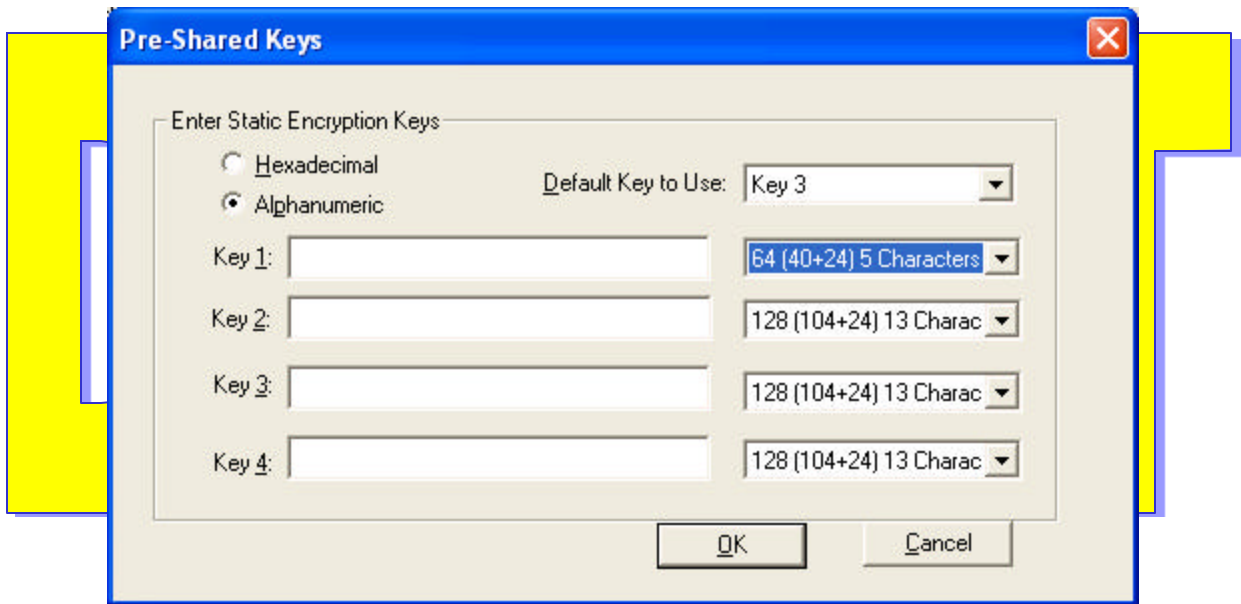
Figure 6 (Security Screen – Alphanumeric Keys)
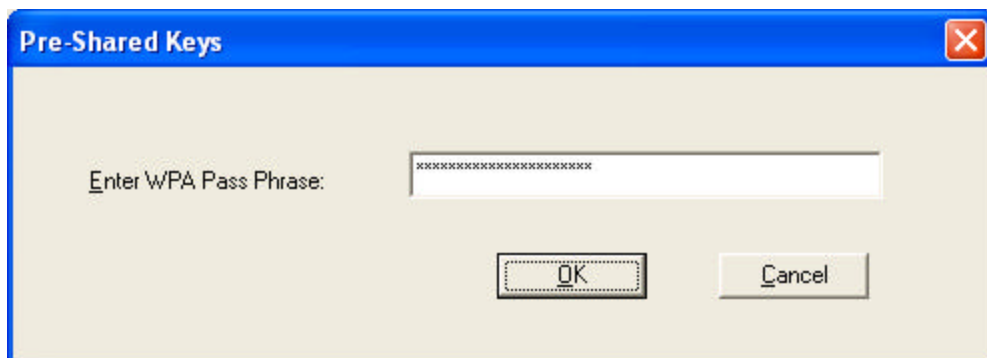
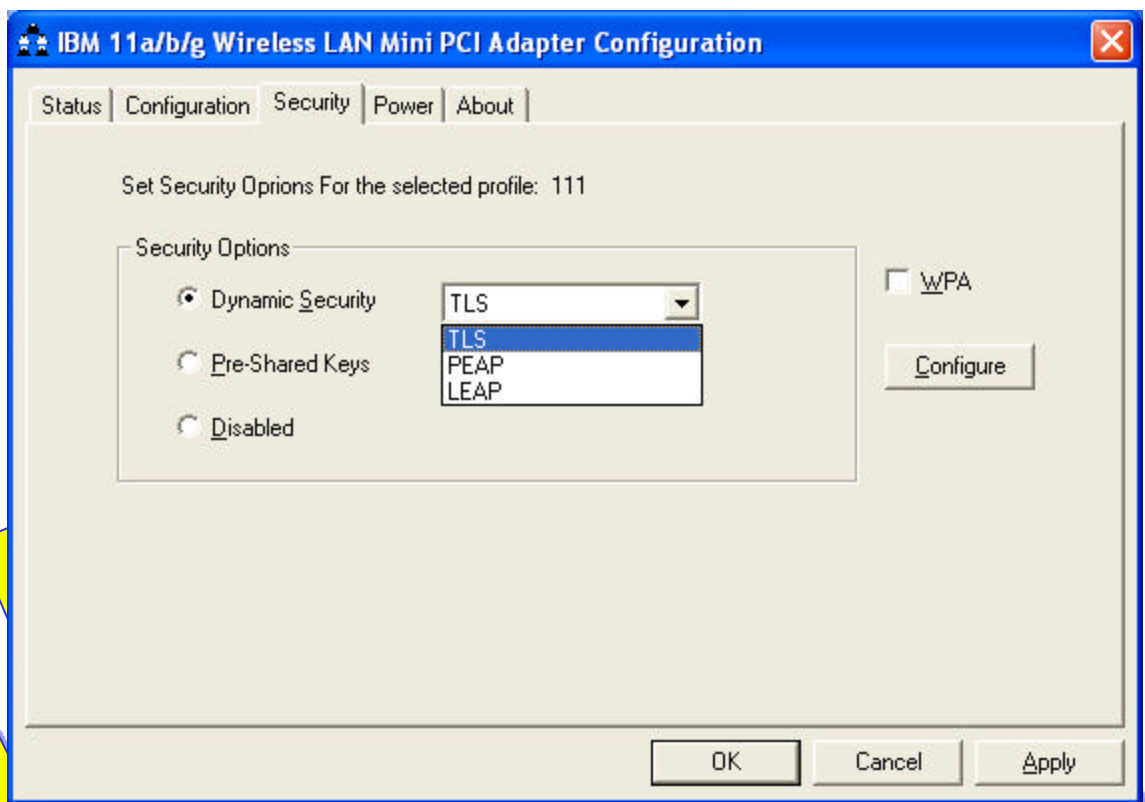**Figure 6 (WPA Passphrase Entry Screen)**
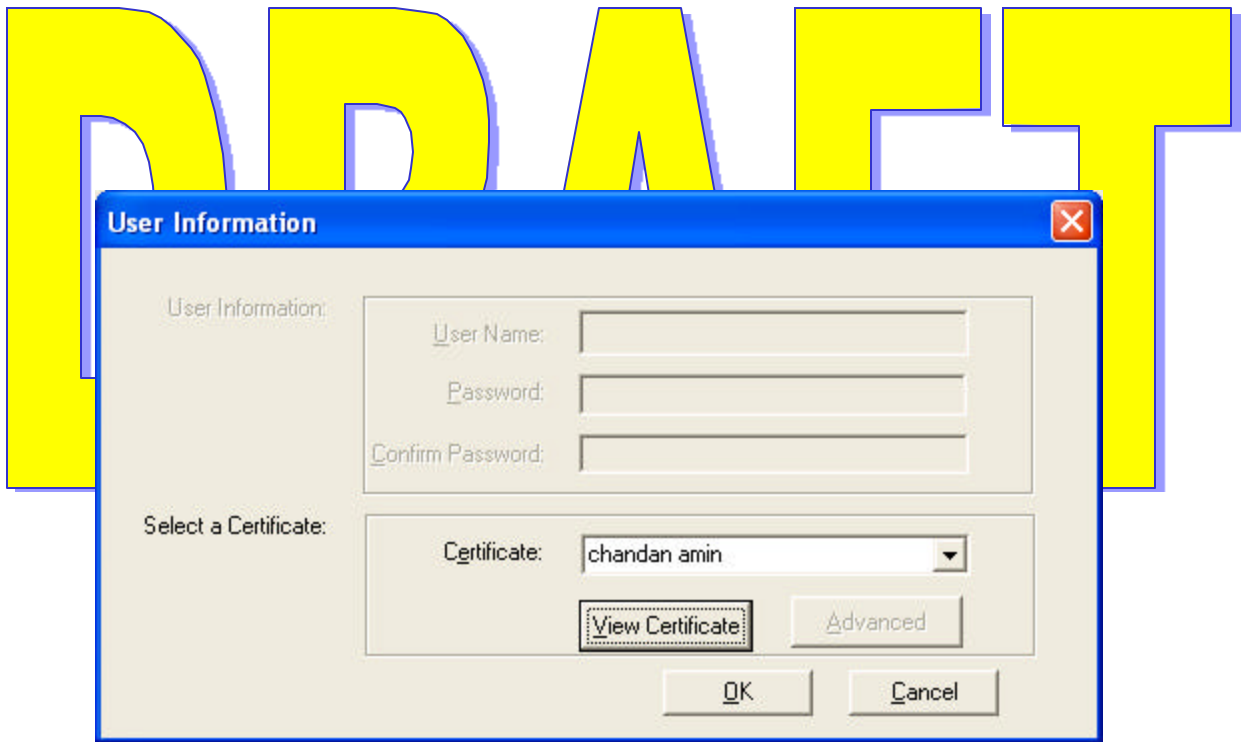
Figure 6 (Security Screen – Dynamic Security Options)

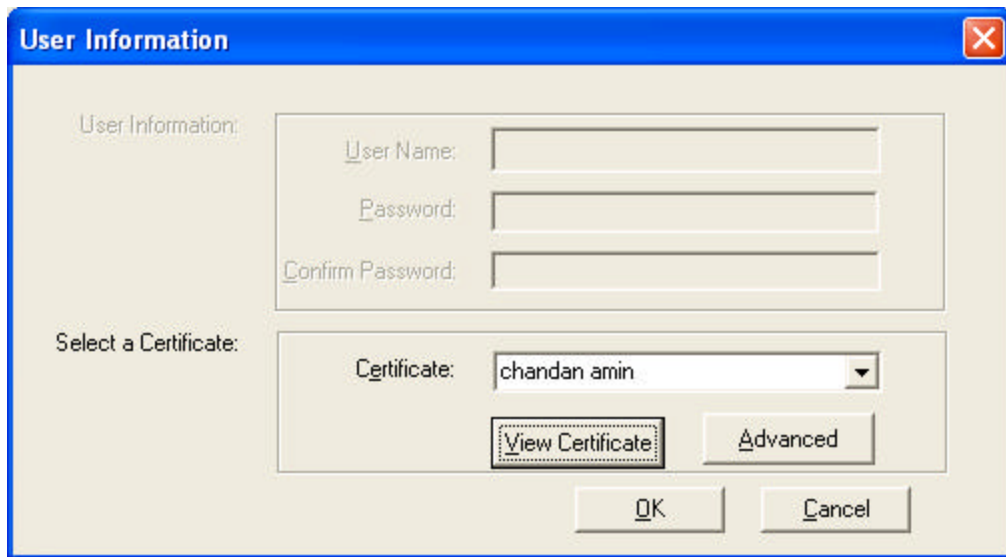**Figure 7 (User Information – TLS)**
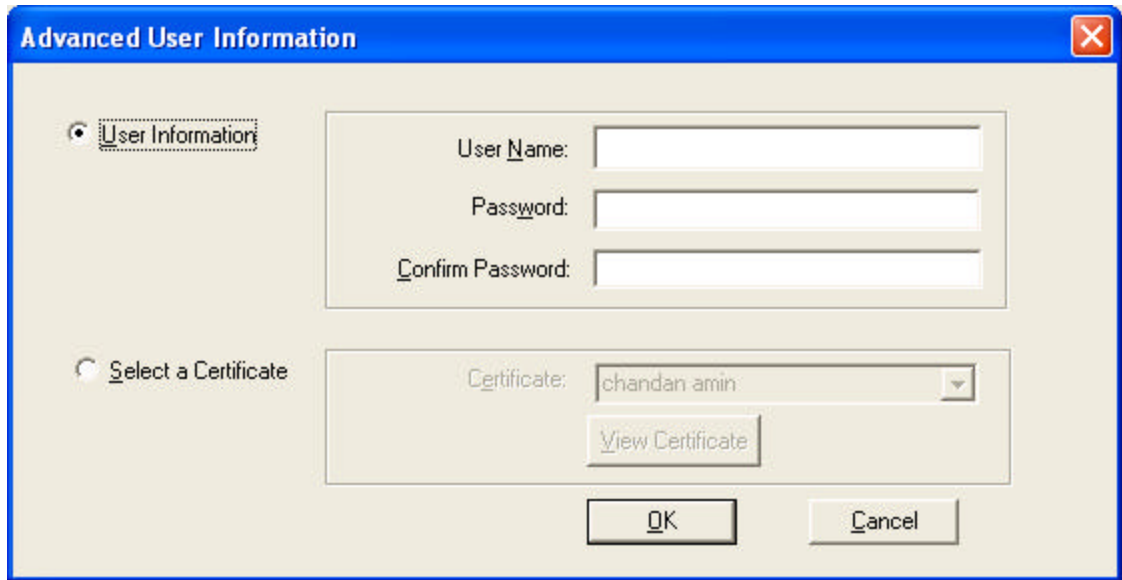

Figure 7 (User Information – PEAP)

Figure 7 (Advanced User Information – PEAP)
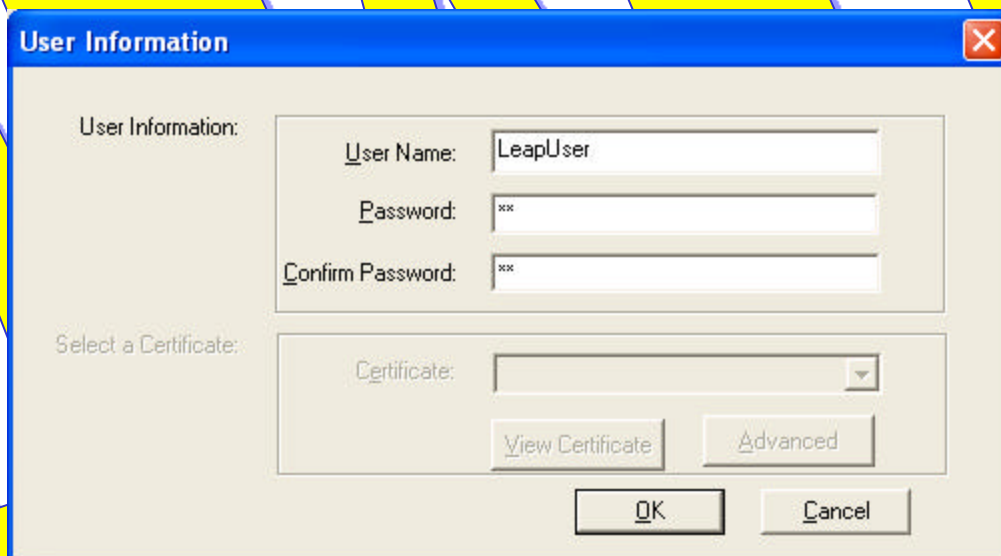
Figure 8 (User Information – LEAP)

2. Controls on the Security Screen

Field	Description
Disable Radio button	Disables the encryption
Leap radio button	Enables Leap security
User Name	Enter the leap user name
Password	Enter leap password
Confirm Password	Confirm the password for leap
Domain Name	Enter the leap domain
802.1x radio button	Enables 802.1x security
Pre-Shared Keys	Enables static security
Default Key to Use	Used to identify which encryption key (Key1-Key4) is to be used by default.
Alphanumeric or Hexadecimal Key selection Radio Buttons	Allows user to select either of the two WEP Key character Entry modes.
Key 1-4 edit controls	Used to enter up to four encryption keys for the selected profile. Keys must contain only hex digits. Each key's length is specified in the drop-list to its right.
Key 1-4 length drop-lists	Used to select the length of the corresponding key field. There are three choices: 10, 26, or 32 hex digits.

3. Interaction of Security Screen Controls

(1) Checking of 'Disable' radio button causes Security to be disabled and causes all other screen controls to become disabled.

(2) Selecting 'Leap' radio button will enable controls related to Leap

(3) Selecting '802.1x' radio button causes 802.1x to be enabled and all other screen controls to become disabled.

(4) Selecting 'Pre-Shared Keys' causes the section under static keys to be enabled and all other controls disabled.

(5) Upon initial display of the Security screen(for Pre-Shared Keys), previously entered key values will not be displayed. Each hex digit in these keys will be displayed as an asterisk (*) character.

(6) Any modification to a key that is displayed as asterisk characters will cause the key value to be erased. The new key must be entered in its entirety.

(7) Keys are restricted to contain only hex digits (0-9,A-F). The edit control for each key will ignore entry of any non-hex digits. Digits may be upper or lower case.

(8) Each key value is restricted to the length specified by the list control to its right.

(9) If a key has been entered (or partially entered), and the user changes its length selection, the key will be truncated if necessary. For example, if the user has entered 18 hex digits for Key 1, and then the user selects "10 Hex Digits" in its corresponding length drop-list, then the last 8 digits of the key will be erased.

(10)   If the user changes the key length selection for a key that is displayed as asterisks, then the key value will be cleared, as described in (3) above.

(11)   If the user changes the Key type between "Hexadecimal" and "Alphanumeric", the Key values entered will be cleared.

(12)   By default, the Hexadecimal Key Entry will be selected in Pre-Shared Keys

(13)   Upon selection of 'Leap ' radio button, the user name and password files have to be entered. And also the Confirm password field also to be entered.

(14)   Upon selection of the 802.1x, the user doesn't have to enter anything in any fileds. The operation will be handled internally.

4. Security Screen Input Validation

An error message is displayed, and the user is prevented from leaving the Security screen (except via Cancel button), under the following conditions:

(1) Pre-Shared Keys is enabled and no encryption key has been specified.

(2) The "Default Key to Use" selection is a key that has not been entered.

(3) The length of one of the non-blank encryption keys does not match the corresponding key length specified.

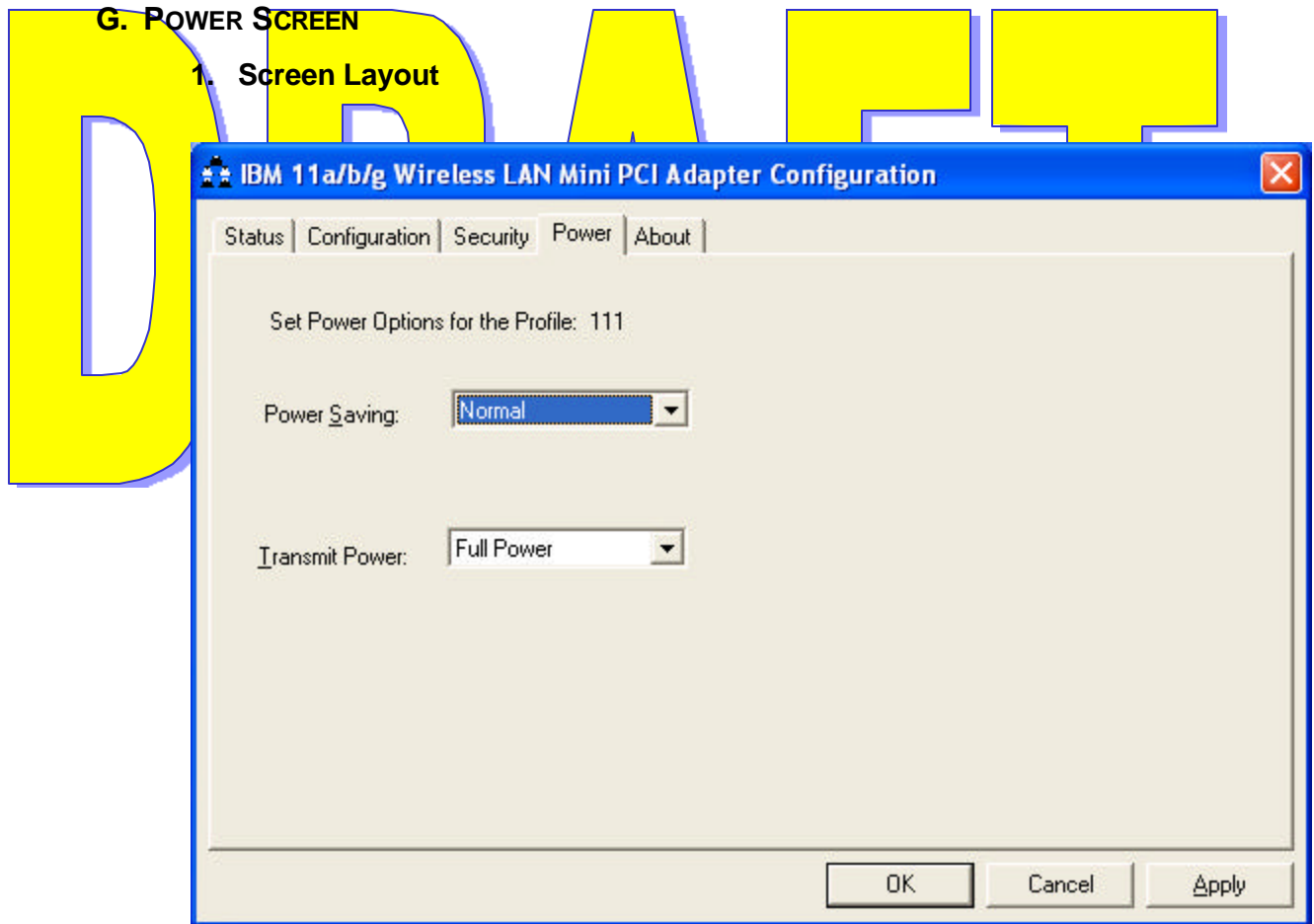(4) Leap is enabled and no user name or password(confirm password also) is entered.

G. POWER SCREEN

1. Screen Layout

Figure 9 (Power Screen)

The Power screen is the fourth tab in our Control Panel application. It allows the user to view and modify power settings for the selected profile. Currently the only available settings are the Power Saving mode and Transmit Power level.

2. Controls on the Power Screen

Field	Description
Power Saving	Used to specify the Power Saving Mode for the selected profile. Offers three choices: Off, Normal, or Maximum.
Transmit Power	Used to specify the Transmit Power level for the selected profile. Offers five choices: Full Power, 50% Power, 25% Power, 12% Power and Lowest Power.

3. Interaction of Power Screen Controls

Currently, there is no special interaction between controls on the Power screen.

H. ABOUT SCREEN
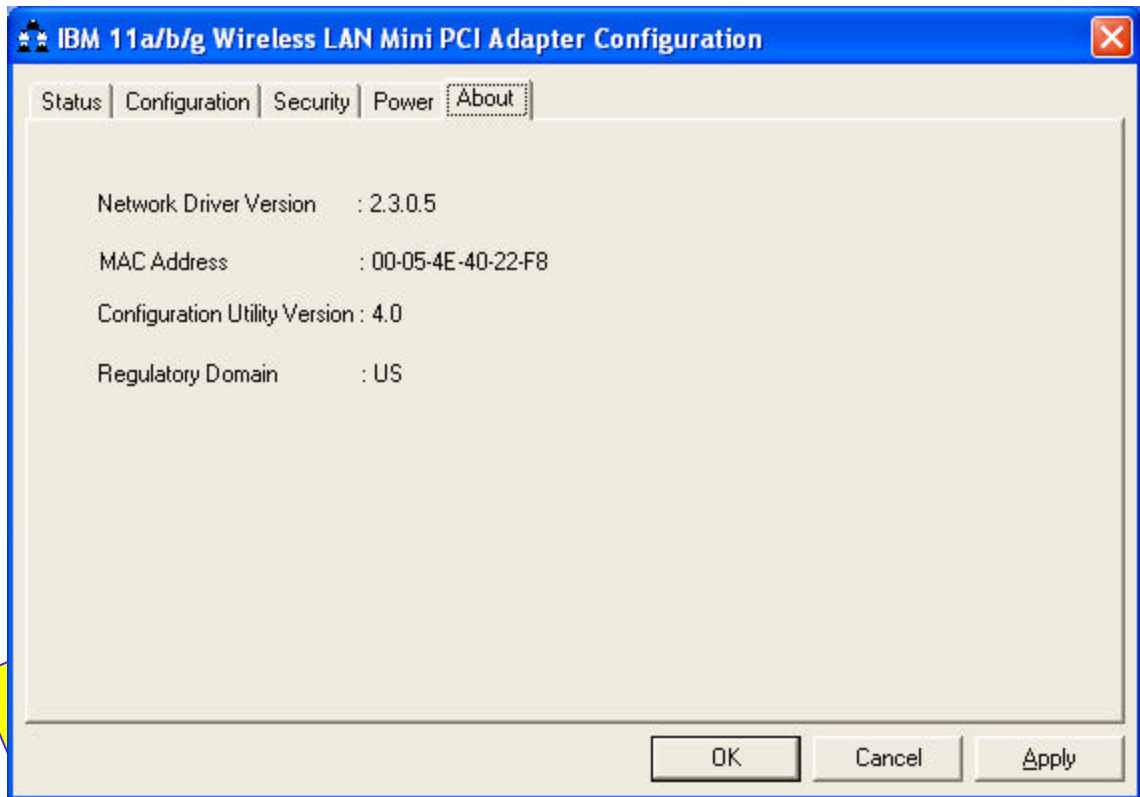
1. Screen Layout

Figure 10 (About Screen)

The About Screen is the last tab of the Control Panel Application. This screen shows the Network Driver version, the MAC Address of the machine, the version of the Configuration utility Application, and the Current Regulatory Domain details.

2. Controls on the About Screen

Not Applicable.

3. Interaction of Power Screen Controls

Not Applicable.

II. Regulatory Information

- To identify this product refer to the part or model number on the product label

A. FEDERAL COMMUNICATIONS COMMISSION (FCC)

FCC Modular Labeling Requirements:

The modular transmitter must be labeled with its own FCC ID PUBWCM1008, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: PUBWCM1008" or "Contains FCC ID: PUBWCM1008."

FCC Notice:

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.

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 or more 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 RF Exposure Warning:

The antenna(s) used for this transmitter must be installed to provide a seperation distance of atleast 20cm from the from the person and must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC RF interference requirements:

This device is restricted to indoor use due to its operations in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoor for the frequency range 5.15-5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite Systems.

Modifications:

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Philips Components may void the user's authority to operate the equipment.

B. INDUSTRY CANADA (IC):

"Operation is subject to the following two conditions: (1) this device may not cause interference,
and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

"To prevent radio interference to the licensed service, this device must be operated indoors only and should be kept away from windows to provide maximum shielding.

C. EUROPEAN COMMUNITY NOTICE:

Marking by the symbol **CE 0984 ①** 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

5GHz operation of this device is not allowed in the following European Community countries: Germany, Greece and Spain. The radio spectrum authorities in these countries do not currently allow operation of this radio device in the 5GHz bands.

Operation of this device in the U.K. currently requires the end user or installer to contact the U.K. Radiocommunications Agency (phone: 0207 211 0181) to request a **Temporary Use License for 5GHz operation**. The Temporary Use License requirement will be removed once pending U.K. license exemption legislation is finalized.

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.

- **European Community Declaration of Conformity:**

	English	Hereby, *Philips Components*, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
	Finnish	*Valmistaja Philips Components* 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 *Philips Components* 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 *Philips Components* 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 *Philips Components* 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, *Philips Components* 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 *Philips Components* 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 *Philips Components* erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF
	German	Hiermit erklärt *Philips Components*, 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 *Philips Components* die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)

Greek	*ÌÅ ÔÇÍ ÐÁÑÏÕÓÁ* *Philips Components* *ÄÇËÙÍÅÉ ÏÔÉ* Radio LAN device *ÓÕÌÌÏÑÖÙÍÅÔÁÉ ÐÑÏÓ ÔÉÓ ÏÕÓÉÙÄÅÉÓ ÁÐÁÉÔÇÓÅÉÓ ÊÁÉ ÔÉÓ ËÏÉÐÅÓ Ó×ÅÔÉÊÅÓ ÄÉÁÔÁÎÅÉÓ ÔÇÓ ÏÄÇÃÉÁÓ 1999/5/ÅÊ*
Italian	Con la presente *Philips Components* 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 *Philips Components* 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	*Philips Components* declara que este Radio LAN device está conforme c requisitos essenciais e outras disposições da Directiva 1999/5/CE.