NOTICE TO THE USER:

***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.

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTICE TO OEM INTEGRATORS:

***When this unit is placed inside of your host device, you must attach a label stating the following: "This device contains FCC ID: R5Y-EZWFM06ER" to the outside of the final product.**

FCC RF EXPOSURE INFORMATION

WARNING! Read this information before using the device

In August 1996 the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters. Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of this device complies with the FCC guidelines and these international standards.

Operating Requirements

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antennas or transmitters. Please maintain 20 cm separation distance from the antenna to meet FCC RF exposure compliance requirements.

Specifically:

In order to comply with FCC RF exposure requirements, OEM integrators must install this mini PCI card in notebook PCs with the antenna mounted inside or on the LCD display 20 cm from the end user.

In addition, OEM integrators must inform end users of the following: "In order too comply with FCC RF exposure requirements, this device must be operated in such a way that a minimum 20cm separation distance is maintained between the antenna, and all persons, during normal operation."

FCC Radio Frequency Interference Requirements

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

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/ or damage this product.

Introduction

The EAZIX EZWFM06ER is a cost effective wireless module with MiniPCI interface, which enables embedded solutions. It incorporates the IEEE.802.11a/b/g WLAN. It provides OFDM data rates of 54, 48, 36, 24, 18, 12, 9 and 6Mbps in both the 2.4 and 5GHz bands, as well as CCK data rates for backward-compatibility with any installed 802.11b WLAN base. OFDM also provides the speed required up to 54Mbps for today's high-bandwidth applications. The EZWFM06ER Mini-PCI module is based on the Conexant PRISM WorldRadio chipset.

Features:

- IEEE 802.11a/b/g/h/j compliant
- 64-, 128 bit WEP
- WiFi Protected Access
- Frequency Range: 2.412 to 2.484 GHz and 4.9GHz to 5.9GHz
- Data Rates for 2.4GHz: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps
- Data Rates for 5GHz: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- Modulation Techniques: OFDM with BPSK, QPSK, 16QAM, 64QAM; DBPSK, DQPSK, CCK
- Outdoors range of up to 300 feet
- Operating Temperature Range of -20° C to 70°C
- Mini-PCI host interface with Type 3B form factor
- Driver Support for Microsoft Windows 98SE/ME/NT/2000/XP

1 Installation Procedure

1.1 Installing the card into the host computer

1.1.1 Turn the host computer off; insert the WLAN card into the mini PCI slot, shown in **Figure 1.1**.

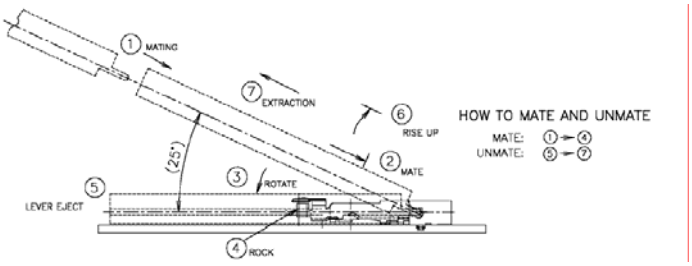

Figure 1.1: Insertion and Removal of the Mini-PCI Board

The highlighted antenna port, shown in **Figure 1.2**, is the proper antenna port used for antenna connection during testing.

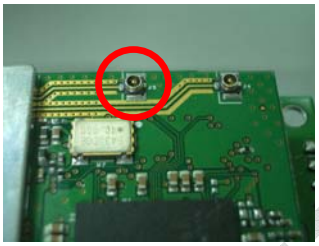

Figure 1.2: Antenna port

1.2 Installing the software drivers

1.2.1 Boot PC with the mini-PCI unit. Log in to PC; assure that user has *Administrator Level* for a successful installation. Refer to related Windows OS document on how to set the User Level.

1.2.2 Windows will recognize the new device and will launch the *New Hardware Found Wizard.* Select *Install from a list or specific location.* Select *Search for best drivers in this location.* Specify the location of the Driver Package where *Globespan Virata (GSV) driver SingleSource_Windows_Driver_Package_2.1.15.0)* is located.

1.2.3 A message will appear specifying that the driver is not signed. Select *Continue Installation* and then *Finish Installation* when done.

1.2.4 To check if the device is successfully installed open the device manager and check under Network Adapters for the WLAN device as shown in **Figure 2.1**

2 Windows settings

2.1 The device should appear in the Device Manager list when the card is inserted, shown in **Figure 2.1**.

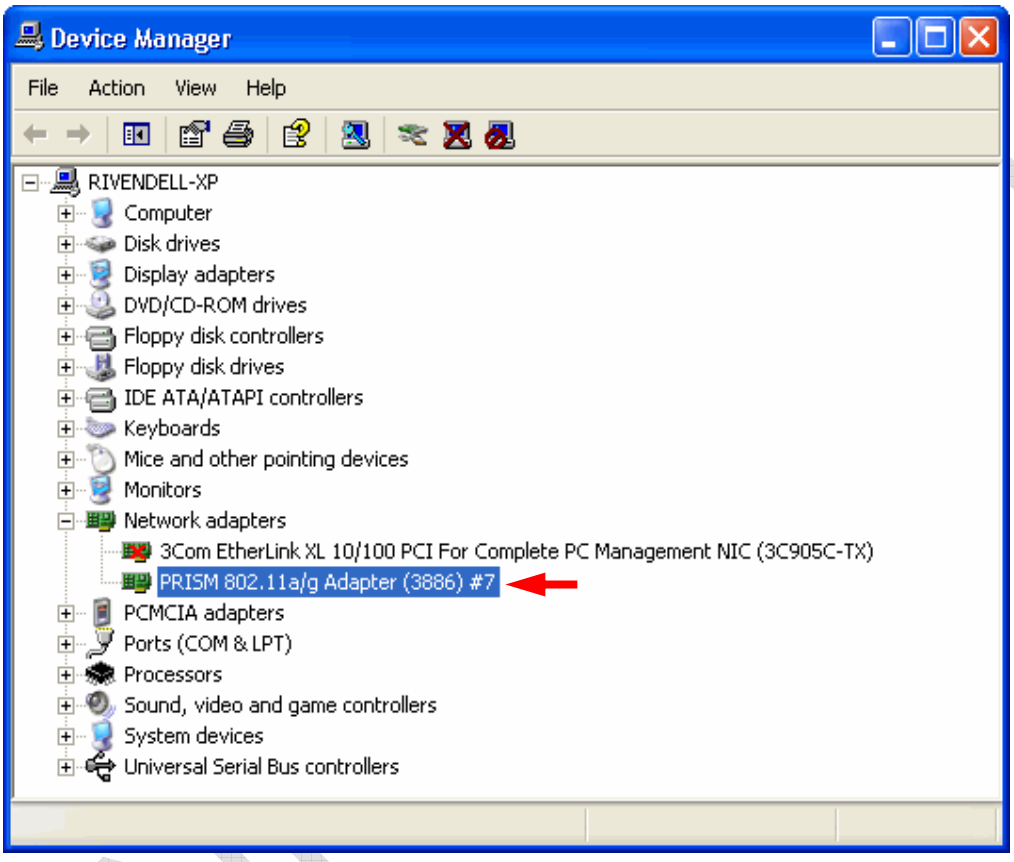

Figure 2.1: Device Manager

2.2 The GSV WLAN icon will appear in the system tray at the bottom right of the screen **Figure 2.2**

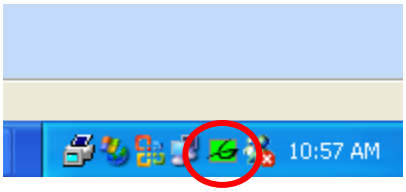

Figure 2.2 Globespan Virata (GSV) Icon

Note:
The device name in the Device Manager list may not exactly appear as in **Figure 2.1**. The number after PRISM 802.11a/g Adapter (3886) # depends on the association of the driver with the device. The Globespan Virata Icon (GSV) may not immediately appear as in **Figure 2.2**. It may show up as colored red or with a red "X" over it, if the device and software are not yet properly configured.

Reminders:

The Network Connection icon will appear in the system tray at the bottom right of the screen if the "Show icon in notification area when connected" option is checked in the General tab of the Wireless Network Connection Properties window, shown in **Figure 2.3.**

Method on Windows:
[Start -> Control Panel -> Network Connections -> Wireless Network Connection -> Properties -> General Tab]

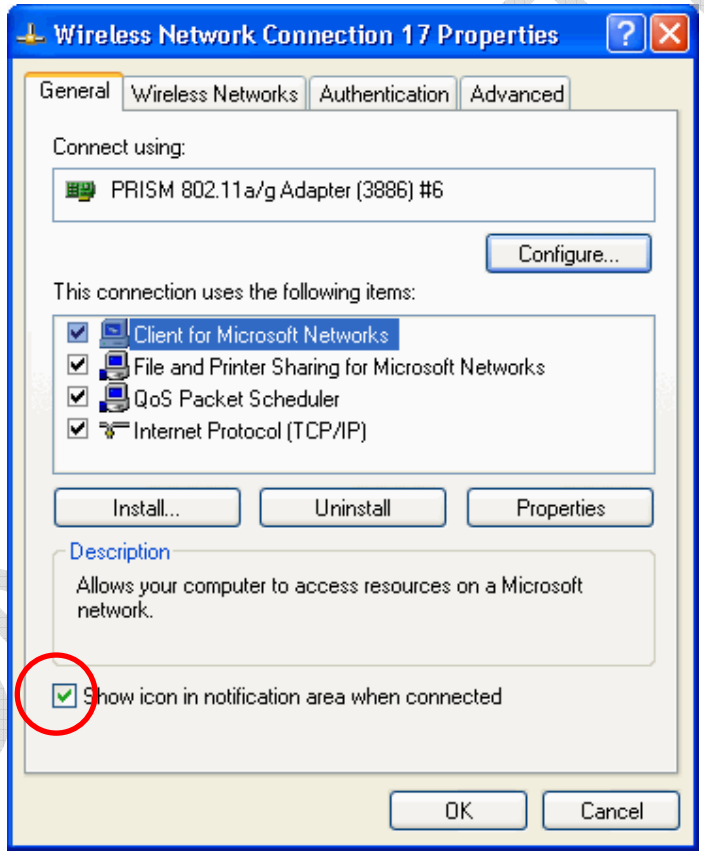

Figure 2.3 General Tab

Figure 2.4 Connection Icon

On the Wireless Networks Tab, check “Use Windows to configure my wireless network settings” to configure the wireless networks through Windows.

Method on Windows:
[Start->Control Panel->Network Connections->Wireless Network Connection->Properties->Wireless Network Tab]

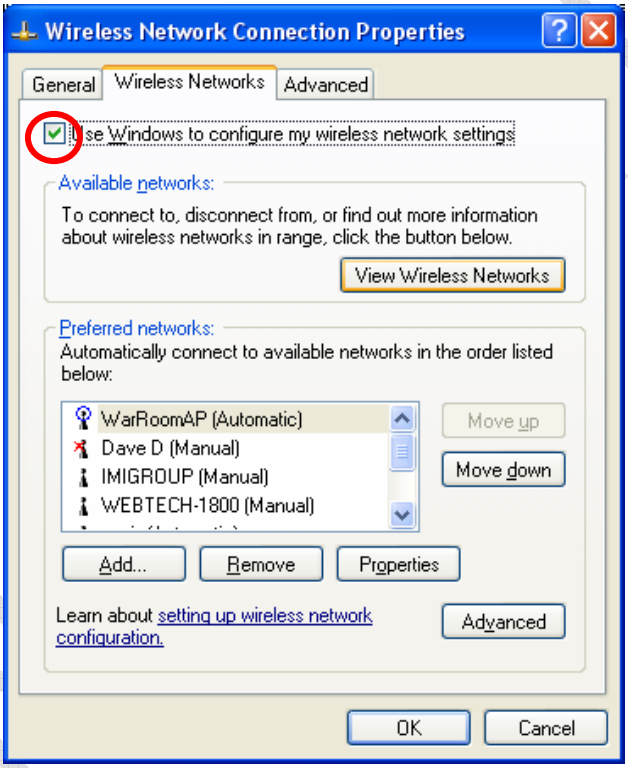

Figure 2.5 Wireless Tab

3 WLAN Configuration

3.1 The user can monitor the link quality and signal strength of the connection through the status tab of the WLAN Settings Window as shown in **Figure 3.1.**

Method on Windows:
[Double Click GSV Icon->Status Tab]

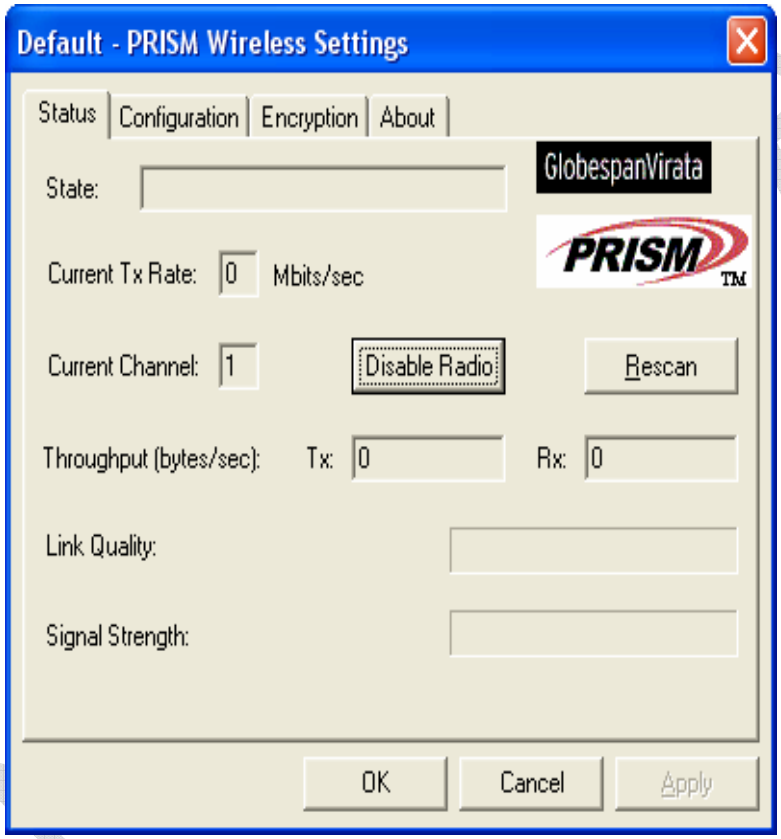

Figure 3.1 WLAN Settings window

3.2 The user can change the network type from peer-to-peer to access point connection through the Network Type option shown in **Figure 3.2**. It is recommended that the transmit rate be set to "*Fully Automatic*" on the Transmit Rate option, but the user could vary the transmit rate on different speeds: 1 or 2, 5.5 or 11 Mbps, as shown in **Figure 3.3.**

Method on Windows:
[Click on the GSV Icon->Configuration Tab-> Access point]

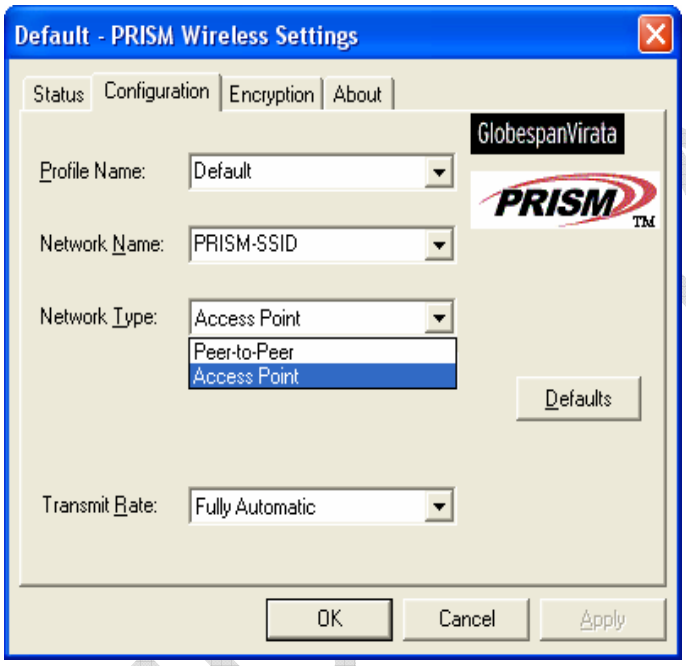

Figure 3.2 Network Type on Configuration Tab

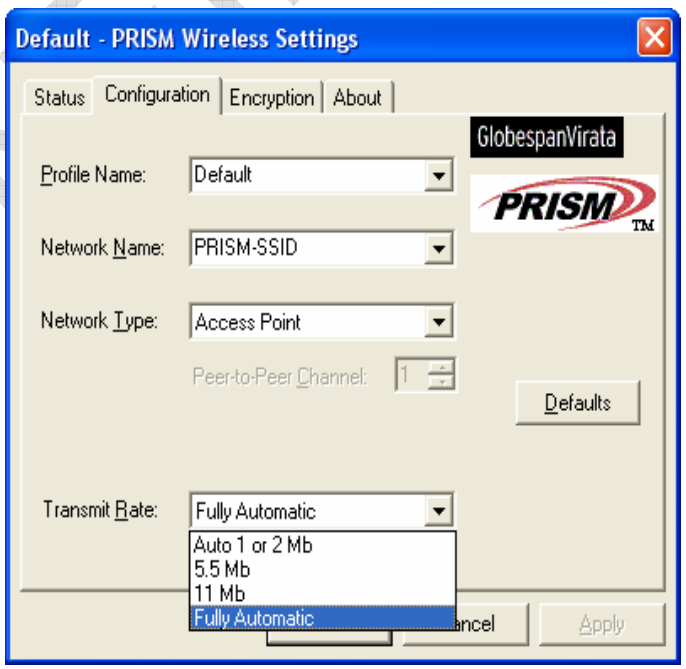

Figure 3.3 Transmit Rate on Configuration Tab

3.3 The Encryption tab enables the user to automatically log the WEP-Keys needed by the Access Point. The user could also disable this feature through the same tab. The user can log four (4) different WEP Keys on 64 bits, **shown in Figure 3.4** or 128 bits, **shown in Figure 3.5**. The number of bits needed for WEP-keys are dictated by the Access point. The user can select which WEP key to use by choosing among the WEP keys in the 'Use WEP Key" drop down box.

Method on Windows:
[Click on the GSV Icon->Encryption Tab]

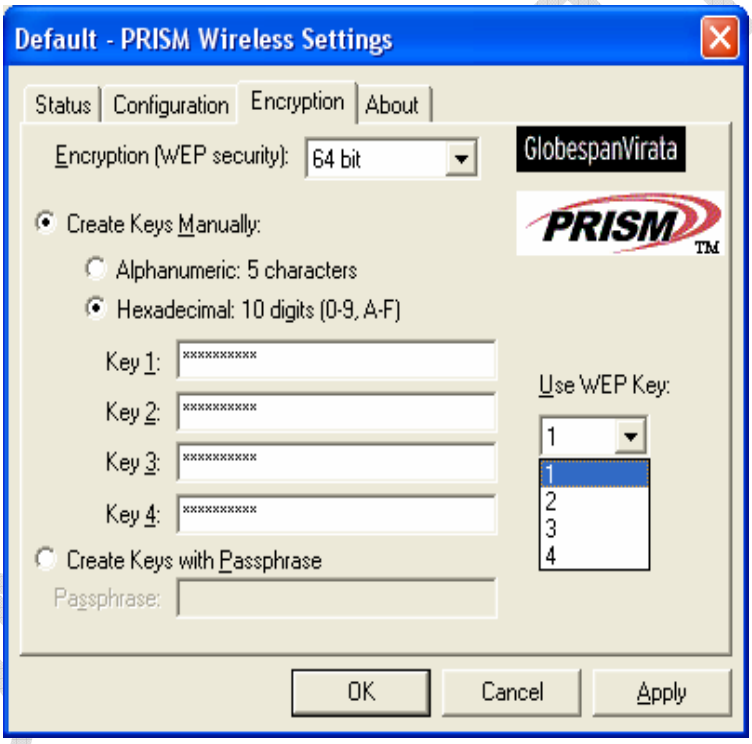

Figure 3.4 WEP Key on 64 bit

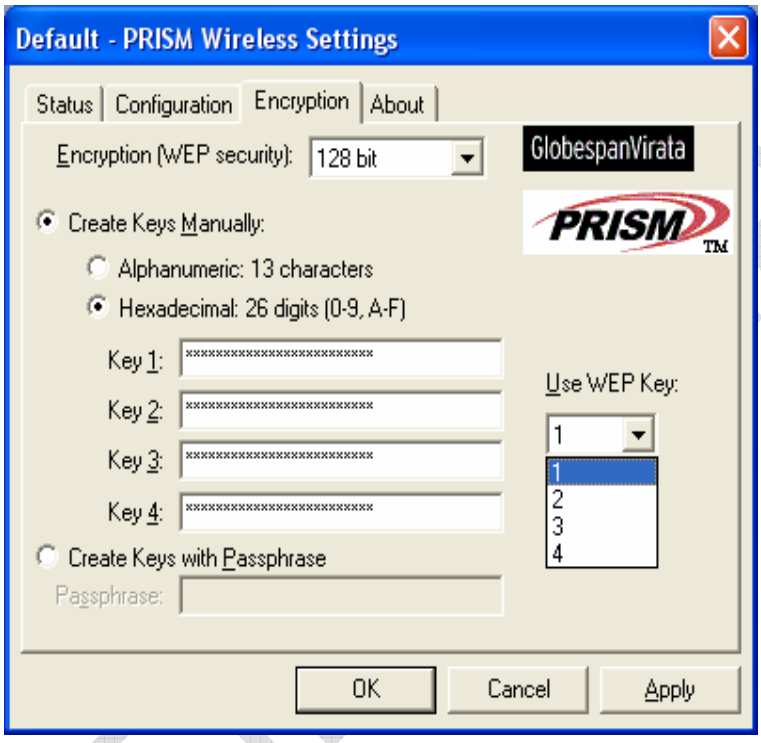

Figure 3.5 WEP Key on 128 bit

3.4 The About tab enables the user to view information regarding the module such as the current network driver, configuration utility and NIC Firmware used. **(Figure 3.6)**

Method on Windows:
[Click on the GSV Icon->About Tab]

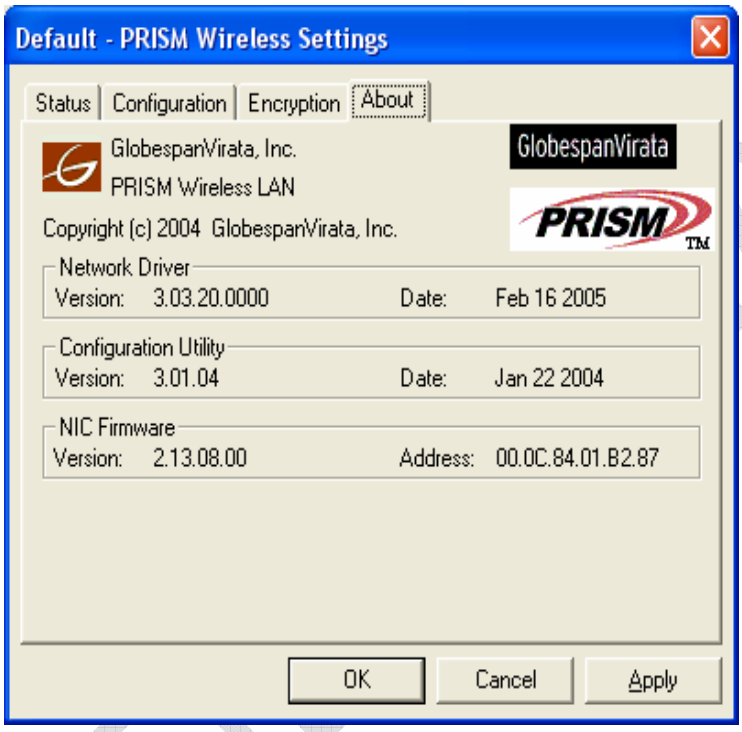

Figure 3.6 About Tab

4 Establishing WLAN Connection

4.1 View Wireless Network window enables the user to connect/disconnect to the access point. The user must provide the WEP Key for the particular access point to be used to enable connection. This is shown in **Figure 4.1.**

Method on Windows:
[Double Click Connection Icon-> Select Access Point-> Enter Network Key (WEP Key)]

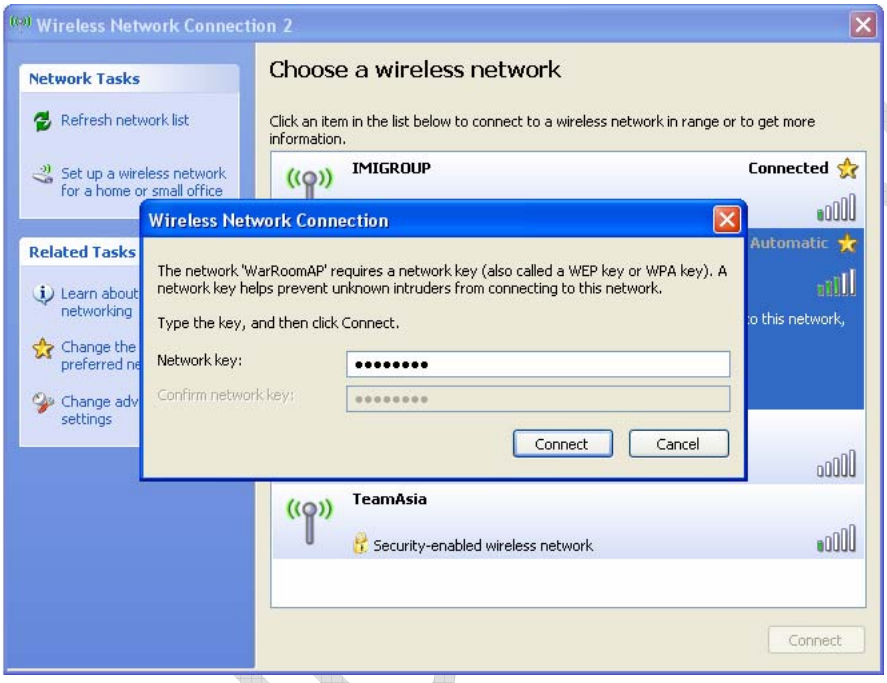

Figure 4.1 Network Key (WEP Key)

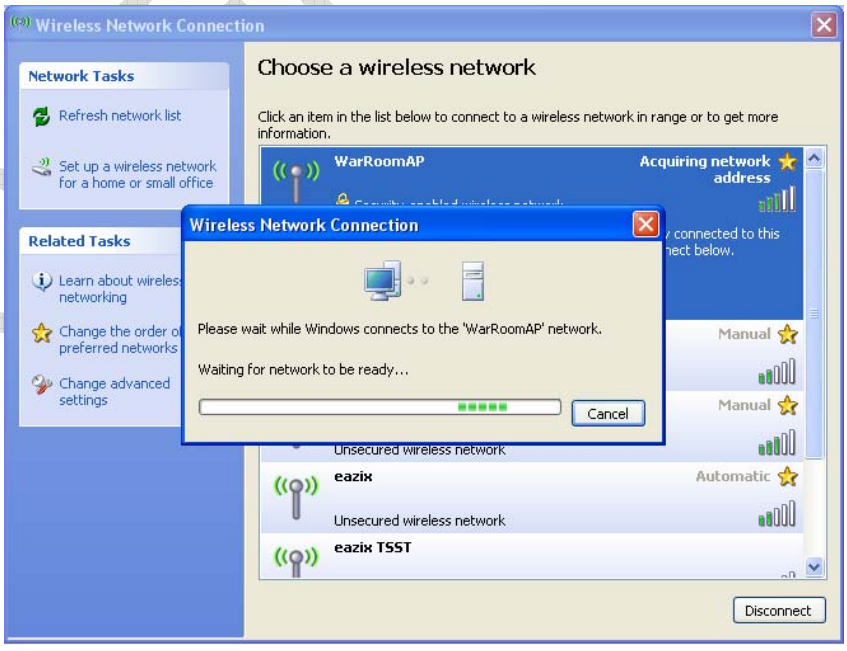

Figure 4.2 Connecting to Wireless Networks

4.2 If the client is obtaining an IP address from the Access Point, the connection icon would be shown as in **Figure 4.3.**

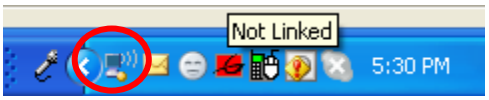

Figure 4.3 Obtaining an IP Address

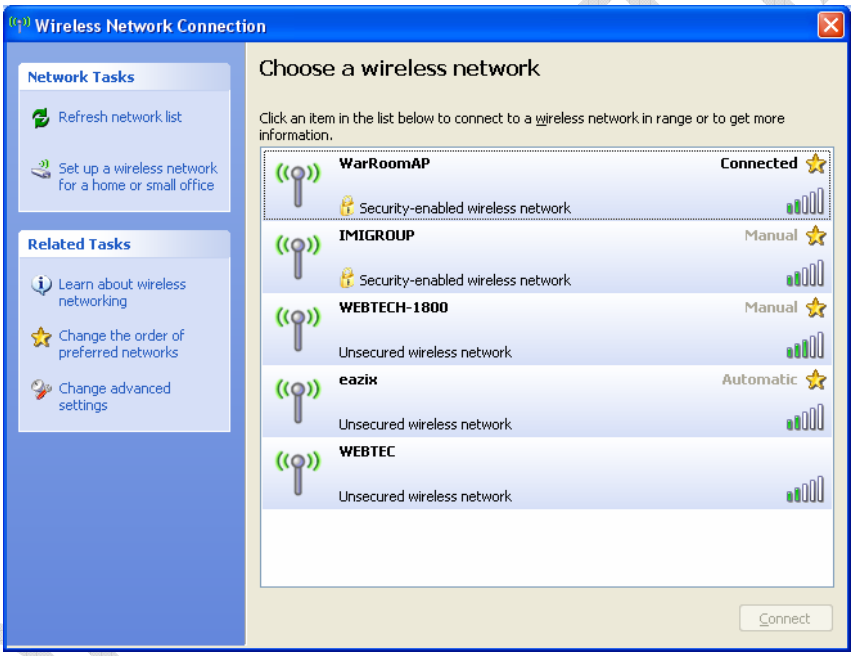

Figure 4.4 Connected

4.3 If the client is connected, information about the connection would be displayed when the cursor is pointed over the Connection Icon as shown in **Figure 4.5**.

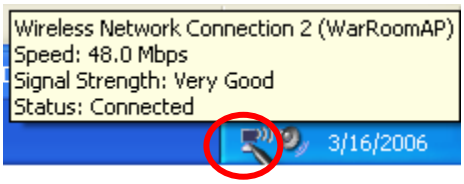

Figure 4.5 Connection Icon when Connected

4.4 If the client is disconnected from the Access Point, the GSV Icon would appear as in **Figure 4.6.**

Figure 4.6 Not Linked/Disconnected

4.5 If the GSV icon is colored green with a red X over it **(Figure 4.7)**, then a connection exists but there is a problem in authentication (wrong WEP key, if it is required).

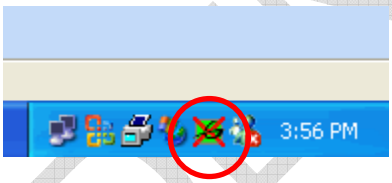

Figure 4.7 Wrong WEP Key

4.6 The connection status (speed, signal strength and network used) could be verified through the Wireless Network Connection Status General tab window as shown in **Figure 4.8.**

Method on Windows:
[Click on the Connection Icon->General Tab]

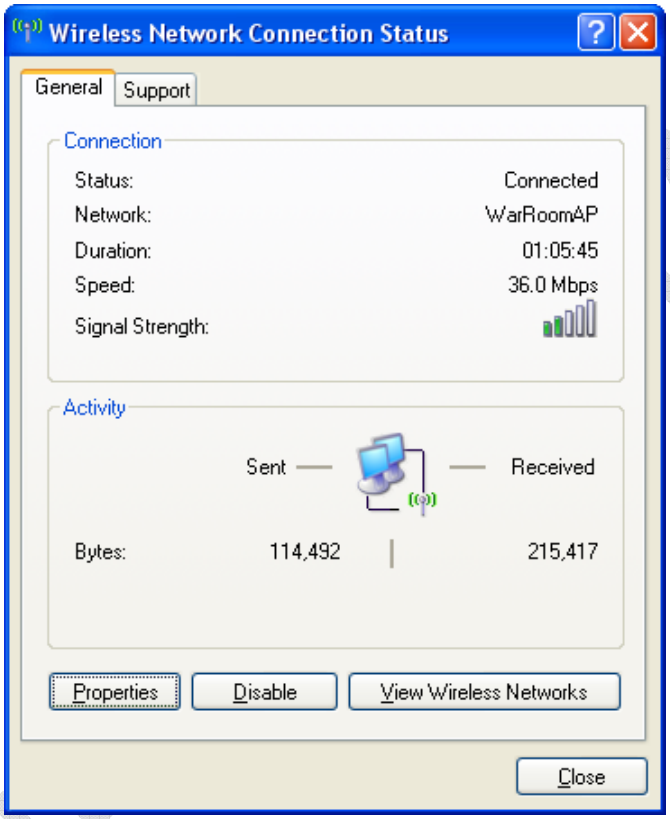

Figure 4.8 Status of the Connection

4.6 The Wireless Network Connection Status Support tab contains the IP address, subnet mask, default gateway and address type (dynamic/static) used **(Figure 4.9)**.

Method on Windows:
[Click on the Connection Icon->Support Tab]

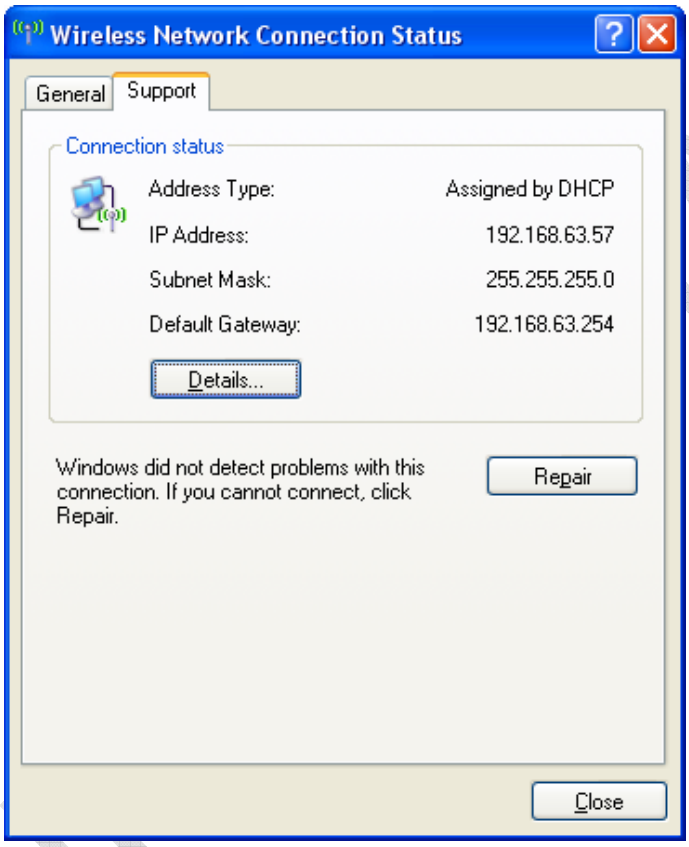

Figure 4.9 IP Address in Support tab

5 Windows Utility

5.1 The user can choose one of three different types of connections in the Wireless Network Tab Advanced window as shown in **Figure 5.1**:

- ✓ Access Point or computer (any available networks)
- ✓ Access point only (infrastructure)
- ✓ Computer-to-computer only (ad-hoc mode)

Method on Windows:

[Start->Control Panel->Network Connections->Wireless Network Connection->Properties->Wireless Network Tab->Advanced]

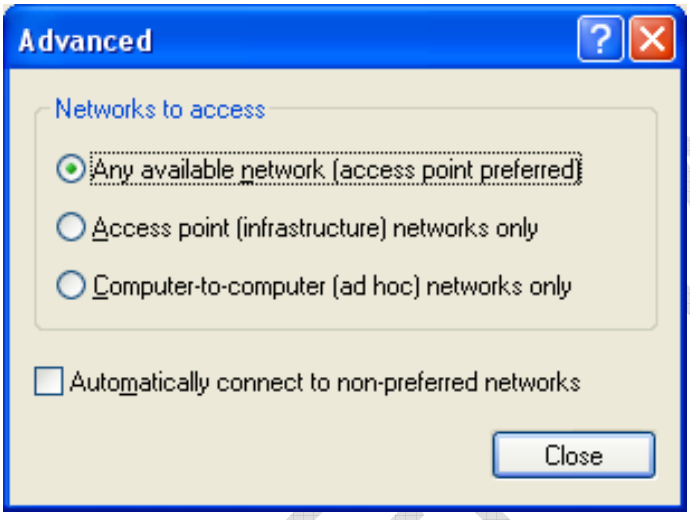

Figure 5.1 Type of connection

5.2 The General tab of the 'PRISM Adapter Properties' window allows the user to view information regarding the device type, manufacturer and location (slot) of the module. This tab also confirms that the device is working properly with respect to the installed driver **(Figure 5.2)**.

Method on Windows:

[Right Click My Computer->Manager-> Device Manager-> Network Adapters->Right Click PRISM 802.11a/g (3886) #-> Properties]

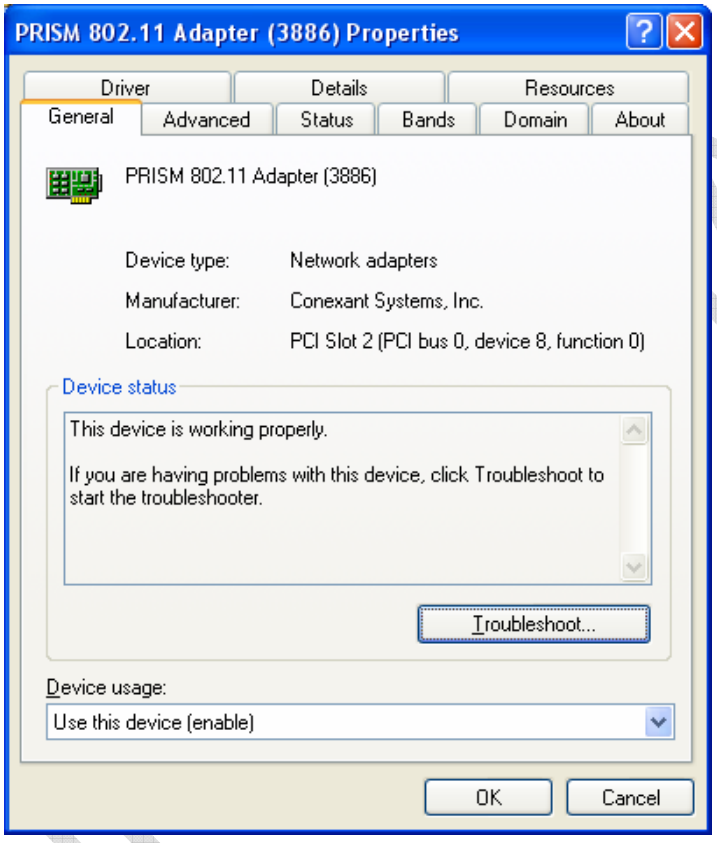

Figure 5.2 PRISM Adapter Properties

5.3 The Band tab of the PRISM Adapter Properties window enables the user to select different bands of operation as shown in **Figure 5.3** (Auto 802.11 a/b/g 2.4 or 5 GHz), **Figure 5.4** (802.11 b/g – 2.4 GHz only) and **Figure 5.5** (802.11a - 5GHz only).

Method on Windows:

[Right Click My Computer->Manager-> Device Manager-> Network Adapters->Right Click PRISM 802.11a/g (3886) #-> Properties->Band]

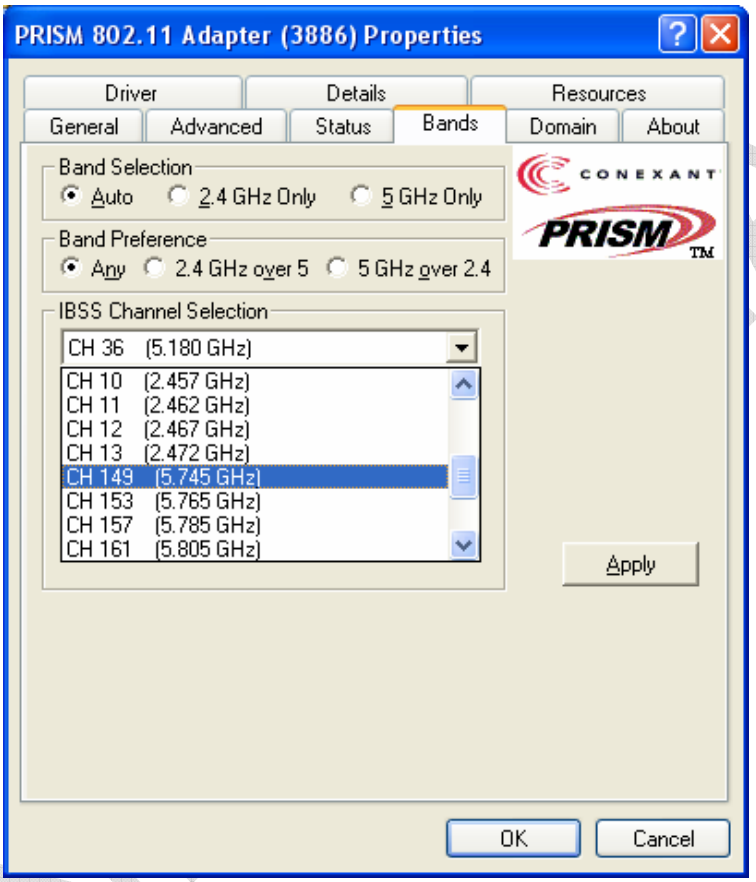

Figure 5.3 Band Tab for Auto selection (2.4 or 5Ghz)

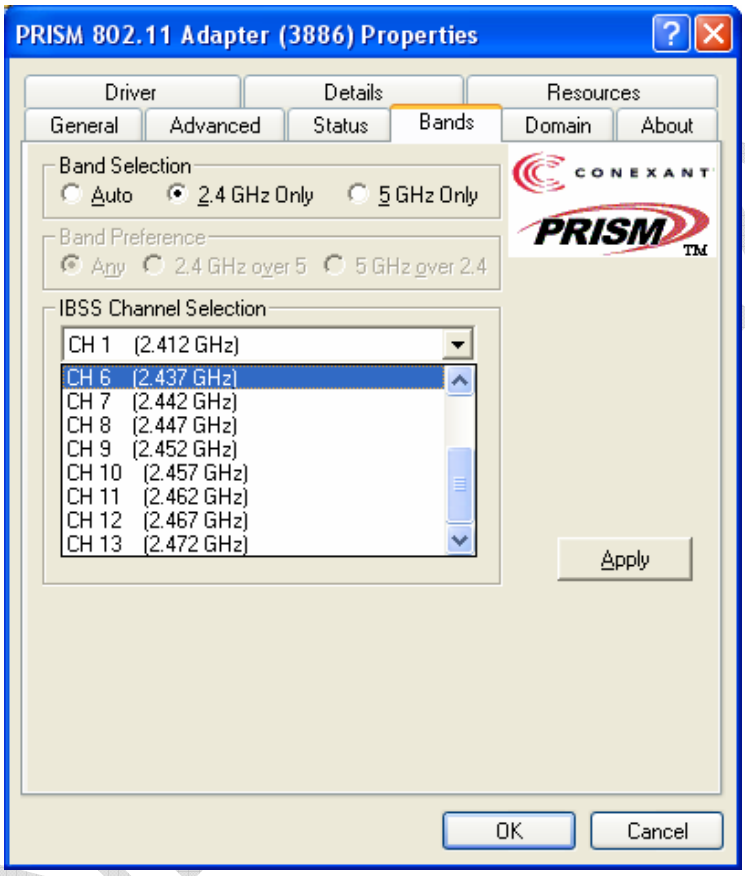

Figure 5.4 Band Tab for 2.4 GHz only

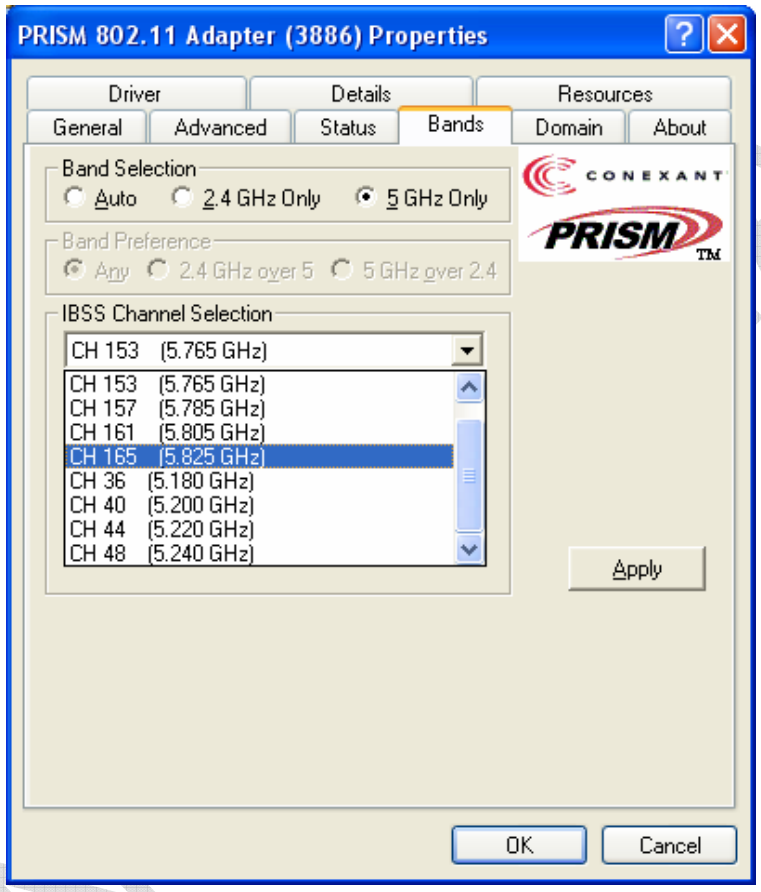

Figure 5.5 Band Tab for 5 GHz only

5.4 The Domain tab of the PRISM Adapter Properties window enables the user to select different domains/countries in which the device should operate. This is shown in **Figure 5.6**

Method on Windows:
[Right Click My Computer->Manager-> Device Manager-> Network Adapters->Right Click PRISM 802.11a/g (3886) #-> Properties->Domain]

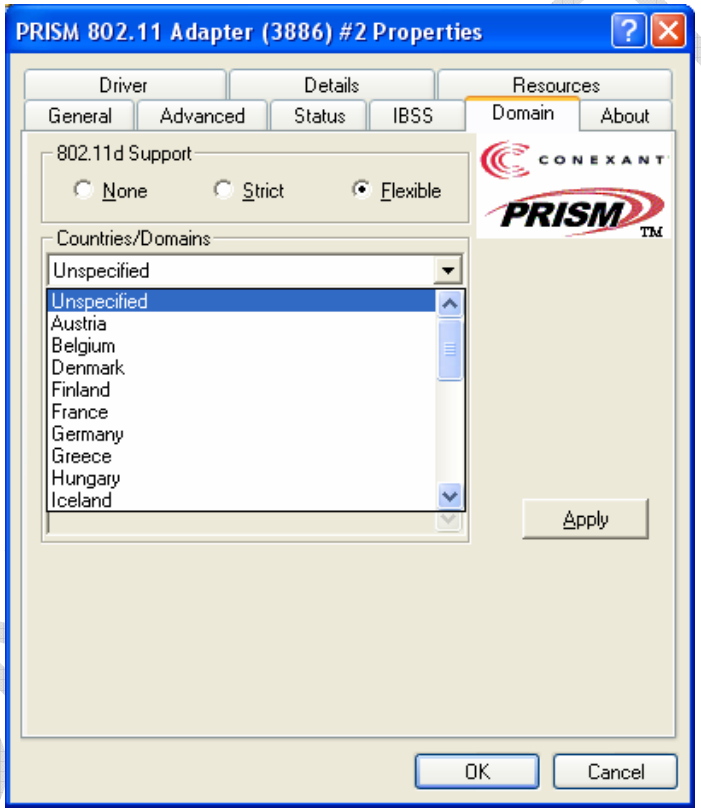

Figure 5.6 Domain Tab

6 Technical Specifications

Radio Technology	IEEE 802.11 a\b\g Turbo (DSSS and OFDM)
Operating Frequency	2412-2484 MHz and 4900-5900 MHz
Modulation Schemes	OFDM with BPSK, QPSK, 16QAM, 64QAM DSSS: DBPSK, DQPSK, CCK
RF Channel Availability	United States: 11 channels (2412 to 2462 MHz) Europe: 13 channels (2412 to 2472 MHz) Japan:13 channels (2412 to 2472 MHz); channel 14 (2484 MHz) United States: 12 channels (5180 to 5805 MHz) Europe: 12 channels (5180 to 5805 MHz) Japan:11 channels (4920 to 5230 MHz)
Data Rate	OFDM: 54,36,24,18,12,9 and 6 Mbps CCK: 11 and 5.5 Mbps QPSK: 2 Mbps BPSK: 1 Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter RF Output Power	<20 dBm EIRP (typical) including antenna gain
Operating Voltage	3.3 Vdc (mini PCI slot of host computer)
Interface	PC Card mini PCI
Device Driver Support	Microsoft Windows 98SE/ME/NT/2000/XP