Introduction: Askey WLL6190
802.11g / 802.11n WLAN PCI-E Mini Card User's Guide

Before you begin

Obtain the following information from your network administrator (if you are a home user, obtain this information from the person that installed your wireless access point):

- Network names (SSID) of the specific wireless networks that you want to connect to.
- WEP (Wired Equivalent Privacy) key information (if any) for the networks you want to connect to.
- For Microsoft® Windows® networking, your customer name and workgroup name.
- For your network account, your user name and password.
- Your IP address (if not using a DHCP server)

Things you should know

When you start your computer, your Askey WLL6190 802.11g / 802.11n WLAN PCI-E Mini Card detects certain wireless networks that are within range. Before you can connect to these and other wireless networks, you must configure a profile for each network using the information you obtained from your network administrator.

WEP is a security protocol for wireless local area networks (defined in the IEEE 802.11g standard) that encrypts data sent over radio waves. The use of the WEP key is optional and can be enabled or disabled. If the network you are connecting to has enabled WEP, you must also enable WEP in the network profile and set the WEP key to match the WEP key used by the network. Otherwise, you cannot connect to the network.

Askey WLL6190 network

Askey 802.11g / 802.11n WLAN PCI-E Mini Card (Model name : WLL6190) using Broadcom Wireless Utility to connect network.

 The Askey WLL6190 solution allows you to make a wireless connection to a network, as illustrated below.
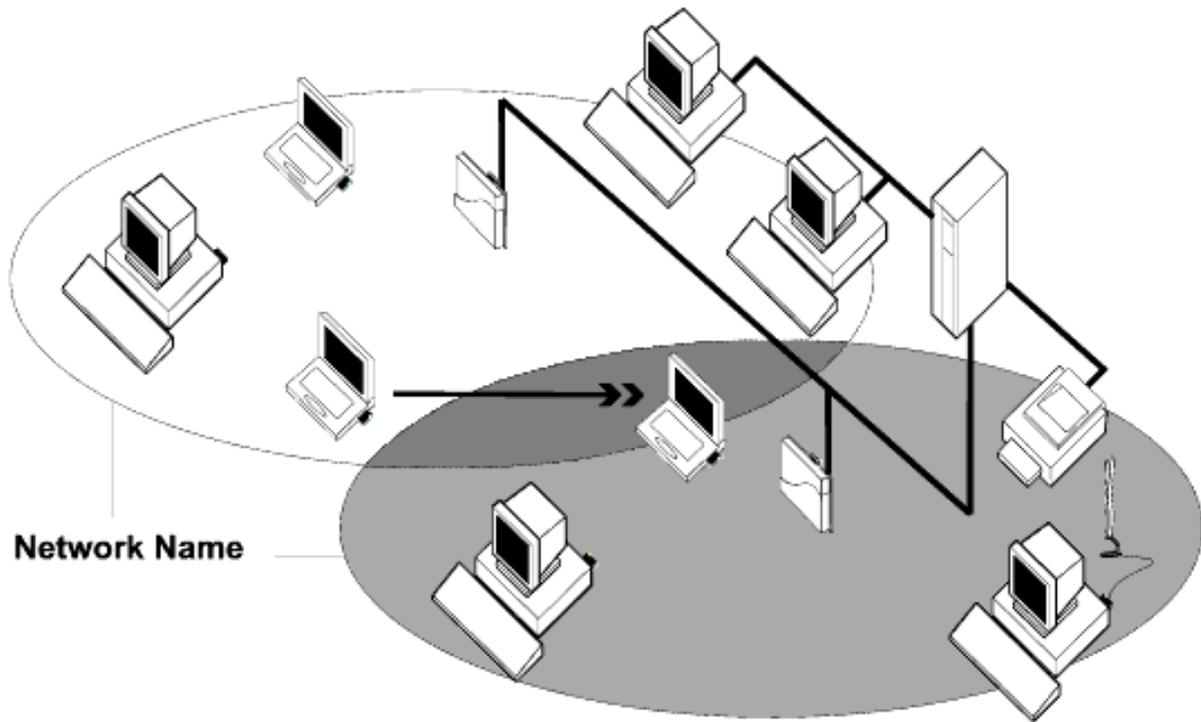
Network Name

Using the Broadcom Wireless Utility: Broadcom AirForce™ 54g™ and Intensi-fi™ Wireless Network Adapter User Guide

- Overview
- Utility Components

Overview

The Broadcom Wireless Utility enables you to do the following network tasks:

- Manage your wireless networks and create network connection profiles (Wireless Networks tab)
- Connect to available networks (utility icon in notification area)
- Get information about the network status and signal and noise of your network connection (Link Status tab)
- View current and accumulated statistics (Statistics tab)
- Find out which broadcasting networks are in range and search for nonbroadcasting networks (Site Monitor tab)
- Run tests on the wireless network adapter (Diagnostics tab)
- Get date and version information about the utility, and software, hardware, and location details about your wireless network adapter (Information tab)
- Manually add or delete trusted servers and enable the manual acceptance or rejection of auto-provisioning and A-ID group changes (Wireless Networks tab)
- Manually import EAP-FAST PACs (Wireless Networks tab)

In the utility, you can open Wireless Network Wizard to connect to a basic network or create an ad hoc network, or you can open the Wireless Network Connection Settings tool to connect to an advanced network. To do any of the other tasks, click the tab that is associated with the described task.

To start using the utility, right-click the utility icon 🖧 in the notification area, and then click **Open Utility**. If the icon is not available, open **Broadcom Wireless Utility** in Control Panel.

> **NOTE:** The utility icon may not appear exactly as shown here. See "Table 1. Signal Strength Indicated by the Broadcom Wireless Utility Icon."

Utility Components

Utility components include the utility icon in the notification area, the six utility tabs, and Wireless Network Connection Settings.

Utility Icon

To do any of the following tasks or operations, right-click the utility icon, and then click the appropriate item.

- Open the on-line Broadcom AirForce™ 54g™ and Intensi-fi™ Wireless Network Adapter User Guide (Help Files)
- Open About WLAN Card Utility to view links to Broadcom and Broadcom Customer Support websites and to view the version and date of the utility (About)
- Hide the utility icon (Hide Tray Icon)
- Disable or enable the radio (Disable/Enable Radio)
- Connect to any of the networks for which you have created a connection profile and are within range (Connect To)
- Open the utility to the Wireless Networks tab (Open Utility)
- Open the utility to the Link Status tab to view information about the connection (Status)
- Display a log of your wireless network events (Display Log)

Wireless Networks Tab

The **Wireless Networks** tab has tools that enable you to do the following:

- Use the utility to manage your wireless networks
- Add a network connection profile
- Edit or remove a network connection profile
- Change the order in which profiles are listed under **Preferred network connections**
- Connect to any listed network without changing its order in the list
- Disable or enable the radio (Disable/Enable Radio)
- Show or hide the utility icon in the notification area
- Choose which type of network to access
- Lock or unlock a preferred network connection profile
- Save your wireless network connection profiles as a WPN file
- Import a WPN file
- Manually add or delete trusted servers and enable the manual acceptance or rejection of auto-provisioning and A-ID group changes
- Manually import EAP-FAST PACS

On the **Add** menu, you can use either the wireless network wizard that is available from Broadcom Wireless Utility (see Connecting to a Basic Network or Creating an Ad Hoc Network Using the Wireless Network Wizard") or the utility (see "Connecting to an Advanced Network Using the Broadcom Wireless Utility") to add a network connection profile.

To use the utility to manage your wireless networks, select the **Let this tool manage your wireless networks** check box.

To add a network connection profile, click the **Add** arrow, and then click either **Use Wizard (basic network)** or **Use Utility (advanced network)**.

To edit or remove a network connection profile, right-click the network name, and then click either **Edit** or **Remove**.

To change the order in which profiles are listed under **Preferred network connections**, click the network name, and then click either the up arrow or down arrow.

To connect to any listed network without changing its order in the list, right-click the network name, and then click **Connect**.

To disable the radio, clear the **Enable radio** check box. To enable the radio, select the **Enable radio** check box.

To hide the utility icon , clear the **Show utility icon** check box. To show the icon, select the **Show utility icon** check box.

To choose the type of network to access, click the **Options** arrow, and then click **Advanced**.

To lock or unlock a preferred network connection profile, right-click anywhere in the row that lists the network name, and then click **Lock** or **Unlock**, as appropriate.

> **NOTE:** You must have system or administrator rights to be able to lock or unlock a profile.

To save your wireless network connection profiles to a WPN file, click the **Options** arrow, and then click **Export** (see "Saving Preferred Network Connection Settings to a File" in "Connecting to an Advanced Network Using the Broadcom Wireless Utility."

To import a WPN file, click the **Options** arrow, and then click **Import** (see "Importing a Preferred Network Connection Profiles File" in "Connecting to an Advanced Network Using the Broadcom Wireless Utility."

Click **Apply** or **OK** after you change any of the settings for the change to take effect.
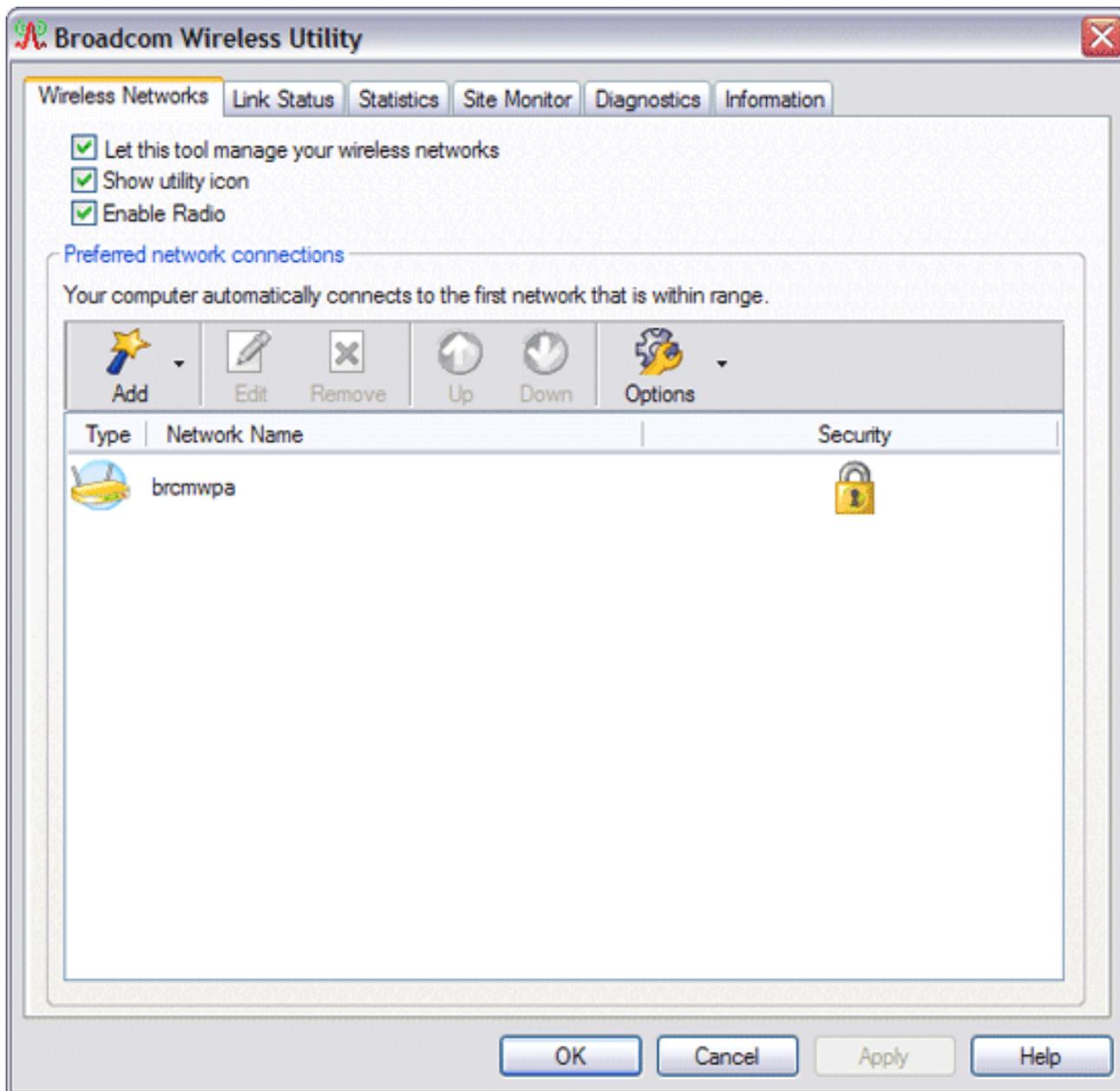
For networks that use the EAP-FAST authentication method, the Wireless WLAN Card Utility automatically adds trusted servers to the trust list and accepts auto-provisioning and AID (A-ID) group changes by default. The utility also enables you to import a Protected Access Credential (PAC). From the utility, you can also manually add or delete trusted servers, enable the manual acceptance or rejection of auto-provisioning and A-ID group changes, or import or delete PACS, as described in the following instructions. In general, you should use the default settings. Therefore, check with the network administrator before you make any changes.

To manually add a trusted server to the trust list

1. Open Broadcom Wireless Utility.
2. From the **Wireless Networks** tab, click **Options**, point to **Cisco Compatible Extensions**, and then click **Administrator Settings**.
3. Click **Add**.
4. Type *the A-ID friendly name of the trusted server* in the space provided, and then click **OK**.

To delete a trusted server from the trust list

1. Open Broadcom Wireless Utility.
2. From the **Wireless Networks** tab, click **Options**, point to **Cisco Compatible Extensions**, and then click **Administrator Settings**.
3. In the **Trust list (A-ID)**, click the name of the trusted server you want to delete, and then click **Delete**.

To change the default settings for administering Cisco Compatible Extensions

1. Open Broadcom Wireless Utility.
2. From the **Wireless Networks** tab, click **Options**, point to **Cisco Compatible Extensions**, and then click **Administrator Settings**.
3. Clear the **Disable auto-provision prompt** check box to enable manual acceptance or rejection.
4. Clear the **Disable A-ID group change prompt** check box to enable manual acceptance or rejection.
5. Select the **Auto-provision PAC only once** check box to auto-provision a Protected Access Credential (PAC) only once.

To import or remove an EAP-FAST PAC

1. Open Broadcom Wireless Utility.
2. From the **Wireless Networks** tab, click **Options**, point to **Cisco Compatible Extensions**, and then click **Manage PACs**.
3. To import a PAC: in Protected Access Credentials, click **Add**, and then follow the on-screen instructions.

NOTE: The PAC is password protected, so you must know the password to be able to import the PAC.

-or-

To remove a PAC: click anywhere in the row that lists the PAC, and then click **Remove**.

Link Status

Network status and signal and noise information about your network connection is displayed on the Link Status tab.

NOTES:

- For IEEE 802.11n connections, speed is indicated by an MCS value.
- Radio Stream information is provided only for IEEE 802.11n connections.
- Click anywhere in the **Signal & noise history** box to change the type of history being displayed. Successive clicks change the type from both signal and noise, to noise only, to signal only, and back to both signal and noise.
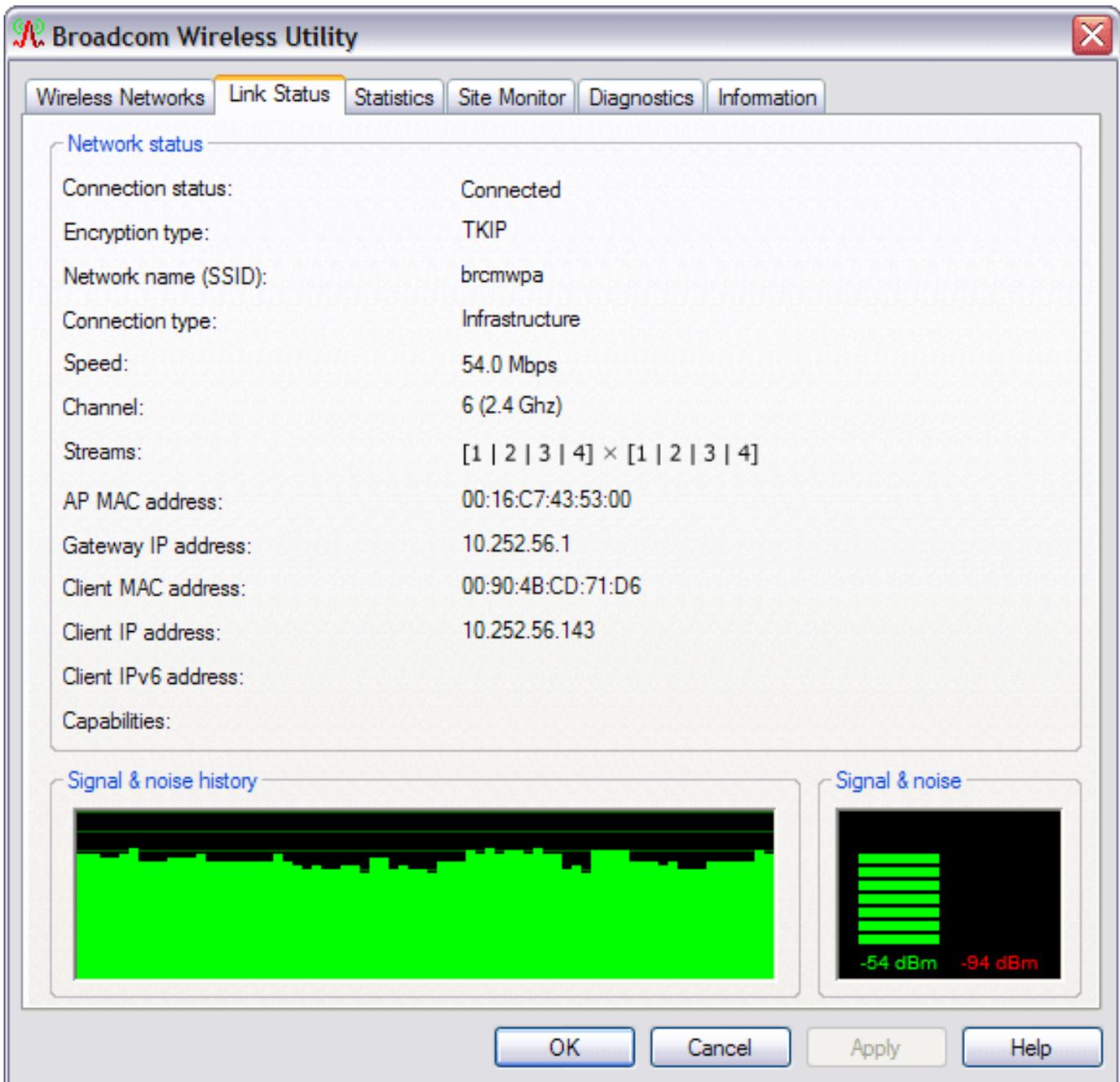
The status of your network connection is also indicated by the appearance of the utility icon . The number and color of the radio waves indicates the strength or weakness of the signal (see Table 1. Signal Strength Indicated by the Broadcom Wireless Utility Icon for details).

To view the network name (SSID), speed, signal strength rating, connection status, and the client IP address of the network connection, move your mouse pointer over the utility icon.

NOTE: On computers running Windows XP, you also can view the SSID, speed, signal strength rating, and connection status by moving your mouse pointer over the Windows **Wireless Network Connection** icon in the notification area.

Table 1. Signal Strength Indicated by the Broadcom Wireless Utility Icon

| Icon Appearance	Indicated Received Signal Strength
	The signal strength is **very good** or **excellent**.
	The signal strength is **weak**. See Troubleshooting for suggested action.
	No signal is being received. See Troubleshooting for probable causes and suggested action.
	The radio is disabled or switched off. See Troubleshooting for suggested action.

Statistics

On the Statistics tab under Current, the following current statistics are shown:

- Network name (SSID)
- Connection time
- Packets sent
- Packets received
- Sent packets lost
- Received packets lost
- Total packets lost (%)

Under Accumulated, the following accumulated statistics are shown:

- Packets sent
- Packets received
- Sent packets lost
- Received packets lost
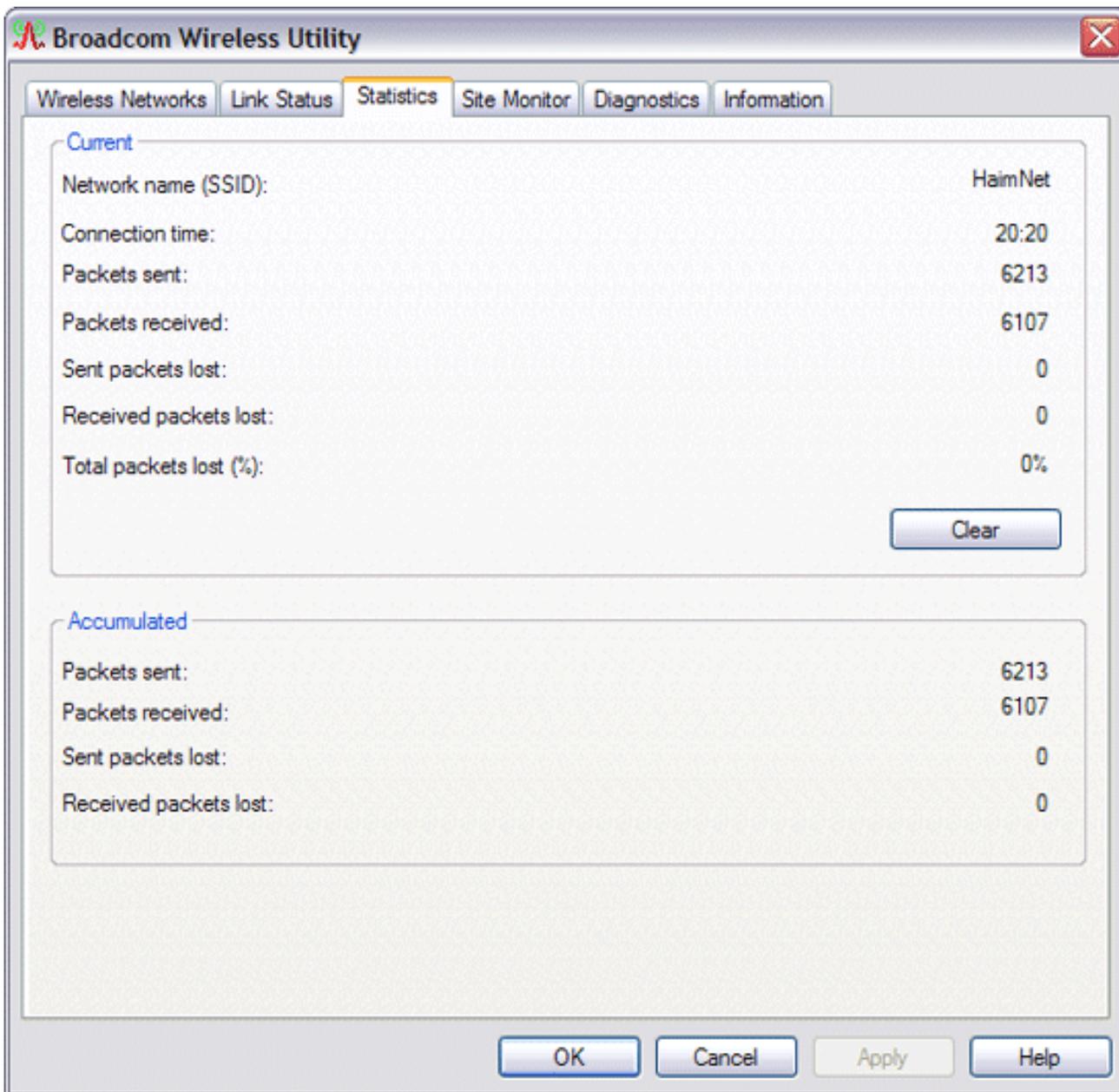
Site Monitor

Basic Site Monitor

On the Site Monitor tab, the basic Site Monitor displays information about wireless routers/APs and ad hoc networks that are within range. To sort the list, click the column heading that shows the characteristic you want to sort by. For example, to sort by signal strength, click **Signal** .

To view information about a particular wireless router/AP or ad hoc network, click anywhere in the row that lists the wireless router/AP or ad hoc network. The network information is shown under Selected Network. To view or change the network connection settings for a particular wireless router/AP or ad hoc network, right-click anywhere in the row that lists the wireless router/AP or ad hoc network, and then click **Edit**—if you have not yet created a network connection profile for that particular wireless router/AP or ad hoc network and want to do so, click **Add** .

To see the information elements for a listed AP or ad hoc network, right-click anywhere in the row that lists the AP or ad hoc network, and then click **Show Information Elements**.

📝 **NOTES:**

- Nonbroadcasting networks are labeled (nonbroadcasting) under Network Name.
- The network performance may be degraded while Site Monitor is displaying nonbroadcasting APs to which you are not currently connected.
- The symbols under AP Band indicate IEEE 802.11b, IEEE 802.11g, or IEEE 802.11n operation.

To see more detailed information about a particular wireless router/AP or ad hoc network, click anywhere in the row that lists the wireless router/AP or ad hoc network, and then click **Advanced**.


Advanced Site Monitor

To save the activity log to a file, click the **Options** arrow, and then click **Start Log**.

You can adjust the time interval between scans by clicking the **Options** arrow, and then clicking either one of the preset values or clicking **Customize** to specify a different time interval.

> 🖉 **NOTE:** The network performance may be degraded while Site Monitor is displaying nonbroadcasting networks to which you are not currently connected.

To view detailed network information for a single nonbroadcasting network, type *the network name* in the **Look for** box, and then click **Find**.

To reset the site monitor to the broadcasting networks, click **Clear**.
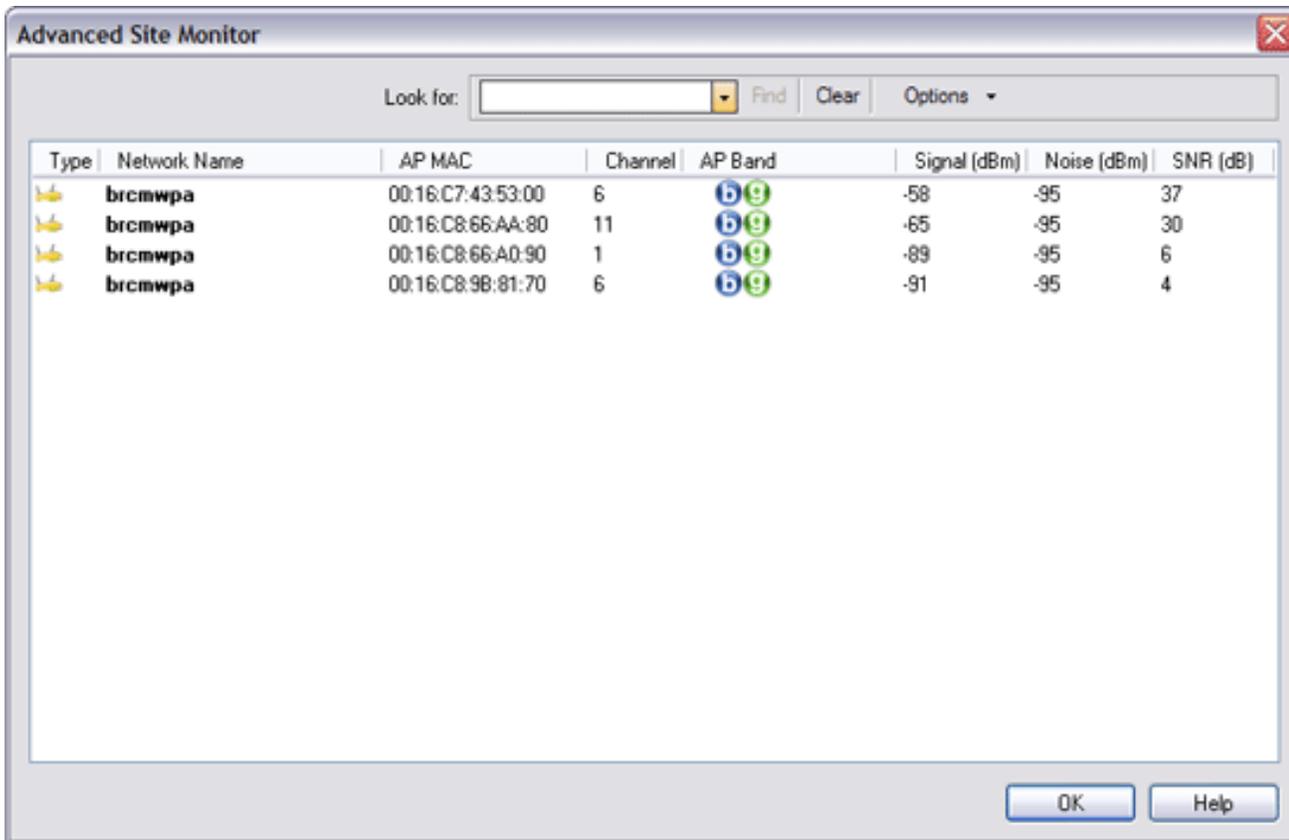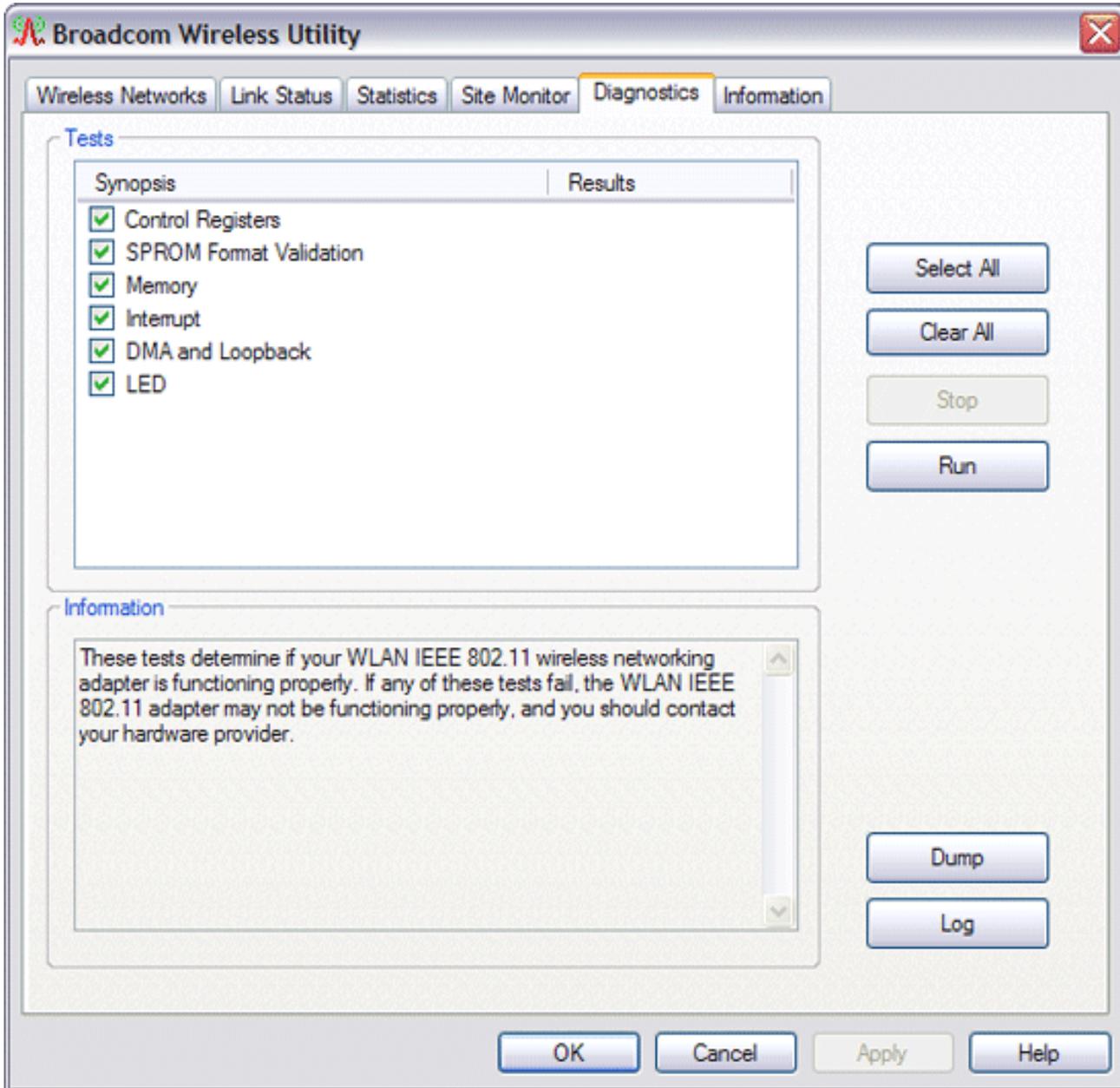

Diagnostics

On the **Diagnostics** tab, you can run a number of tests to determine if your wireless network adapter is functioning properly. Select the tests you want to run, and then click **Run**. For information about an individual test, look under **Information** before you click **Run**. To see the test results, look under **Information** after you click **Run**.

> 🖉 **NOTE:** The network connection is lost when you run the tests. When the test run is over, your network connection is automatically reestablished.

Also, you can view a log of your wireless network events. To do so, click **Log**.

Examples of wireless network events that are logged include:

- Initiation of user session
- Connecting to a network
- Disconnecting from current network
- Authentication mode being used
- Driver status
- Supplicant status
- New wireless device available
- Initializing wireless state machine
- Wireless utility is managing this adapter
- Wireless utility is not managing this adapter

If your Broadcom 802.11 Network Adapter fails any of the diagnostics tests, go to http://www.broadcom.com/ for technical support.

Information

The following information is displayed on the **Information** tab:

- Software details
- Hardware details
- Location details (shows the country for which the driver is installed and the channels supported for that location)
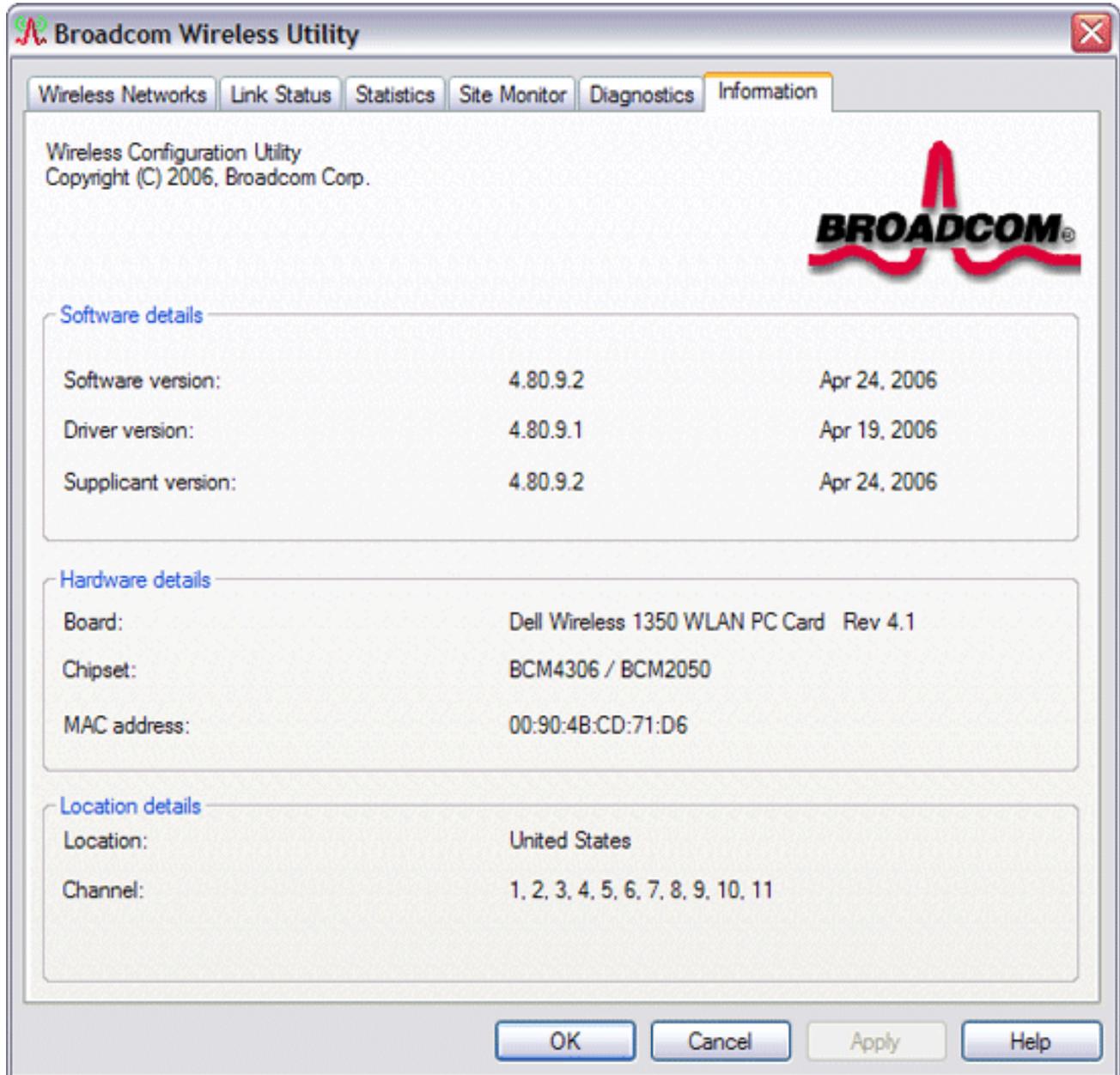
Wireless Network Connection Settings

The Wireless Network Connection Settings component is intended for use by advanced users or network administrators. You can use Wireless Network Connection Settings to create a connection profile for an advanced infrastructure network, a basic infrastructure network, or an ad hoc network (see " Connecting to an Advanced Network Using the Broadcom Wireless Utility").

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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 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 Caution: 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/Industry Canada licence-exempt RSS standard(s). 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 device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC/IC Radiation Exposure Statement:

This equipment complies with FCC/ IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This radio transmitter has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna Type	Connector	Gain (dBi)	Remark
PIFA Antenna	U.FL	4.72	TX / RX

IC End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: Contains transmitter module IC: 1353A-WLL6190

FCC End Product Labeling

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: H8N-WLL6190 ".

If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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 Class [B] digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.