Intel(R) PROSet/Wireless WiMAX Connection Utility User Guide

Introduction

This user guide describes how to use the Intel(R) PROSet/Wireless WiMAX Connection Utility and the following Intel(R) WiMAX adapters:

- Intel® WiMAX/WiFi Link 5150
- Intel® WiMAX/WiFi Link 5350

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CONTENT IN DEVELOPMENT Intel wireless WiMAX adapters are engineered, manufactured, tested, and quality checked to ensure that they meet all necessary local and governmental regulatory agency requirements for the regions that they are designated and/or marked to ship into. Because wireless WiMAX adapters are generally unlicensed devices that share spectrum with radars, satellites, and other licensed and unlicensed devices, it is sometimes necessary to dynamically detect, avoid, and limit usage to avoid interference with these devices. In many instances Intel is required to provide test data to prove regional and local compliance to regional and governmental regulations before certification or approval to use the product is granted. Intel's wireless WiMAX EEPROM, firmware, and software driver are designed to carefully control parameters that affect radio operation and to ensure electromagnetic compliance (EMC). These parameters include, without limitation, RF power, spectrum usage, channel scanning, and human exposure.

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March 2008

WiMAX Overview

WiMAX is a next generation wireless network communications technology. WiMAX is similar to Wi-Fi, except that WiMAX provides high-speed, broadband access over a much larger area. For fixed WiMAX stations, the range of coverage encompasses several square miles. WiMAX networks also enjoy less interference than Wi-Fi. Notebook computers and Mobile Internet Devices enabled for WiMAX service can access the Internet nearly everywhere within the large coverage area, and in places where WiFi hotspots are not available. WiMAX enables mobile internet access. For example, you could be in a bus traveling across the city, and remain continuously connected to the internet. WiMAX will deliver Internet access speeds similar to DSL and cable connections, directly to your WiMAX enabled notebook computer or mobile Internet device.

WiMAX Benefits

WiMAX provides access to the Internet in far more places than current WiFi hotspots. WiMAX serves mobile users with a broader range of wireless coverage. High-speed connections provide access to richer content, more complex media and gaming experiences. WiMAX transmits broadband Internet connectivity into more of the places where you live, work, and play. Imagine broadband on the go, enabled by WiMAX:

- Video conferencing from the park.
- Looking up the nearest local bookstore or getting directions to a restaurant while on the move.
- Downloading movies while at the soccer field.
- Streaming radio and television broadcasts off the Internet.
- Staying productive on the road without searching for hotspots.
- Engaging in a multi-player, three dimensional video battle, while on a train.

Is WiMAX Available in your Area?

WiMAX is coming to cities and localities across the United States. To see if WiMAX is

available near you, visit this site:

www.intel.com/go/getWiMAX

View a Demo about WiMAX

Click here to learn more about WiMAX.

[WiMAX Demo](#)

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What is the Intel(R) PROSet/Wireless WiMAX Connection Utility?

The Intel(R) PROSet/Wireless WiMAX Connection Utility (or just the WiMAX connection utility) lets you easily manage your laptop connections to WiMAX networks. Connecting to WiMAX is simple. And the utility keeps track of available networks and can connect to them automatically. The utility is completely configurable. The WiMAX adapter and connection can be easily turned off whenever necessary.

Start the Intel(R) PROSet/Wireless WiMAX Connection Utility

Because your laptop computer has a WiMAX adapter, a software program is always managing the adapter. If a program other than the WiMAX connection utility is managing your WiMAX adapter, you first need to close/stop that program. You can then start the WiMAX connection utility.

To start the Intel(R) PROSet/Wireless WiMAX Connection Utility, use one of the following methods:

- Click **Start > All Programs > Intel(R) PROSet/Wireless > WiMAX Connection Utility**.
- Right-click the [System Tray icon](#) located in the lower right corner of your Windows Desktop. Click **Configure WiMAX…**.
- Double-click the [System Tray icon](#).

Intel® PROSet/Wireless
WiMAX Connection Utility

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If there are any issues encountered when starting the application, a window is displayed showing the possible reasons. See Reasons why WiMAX is not Ready for more information.

Main Window

The Intel(R) PROSet/Wireless WiMAX Connection Utility main window lets you:

- Connect to a network
- Activate a new network for connection
- View current connection status information
- Search for available networks. These are both activated networks (called *home networks*) and un-activated networks.
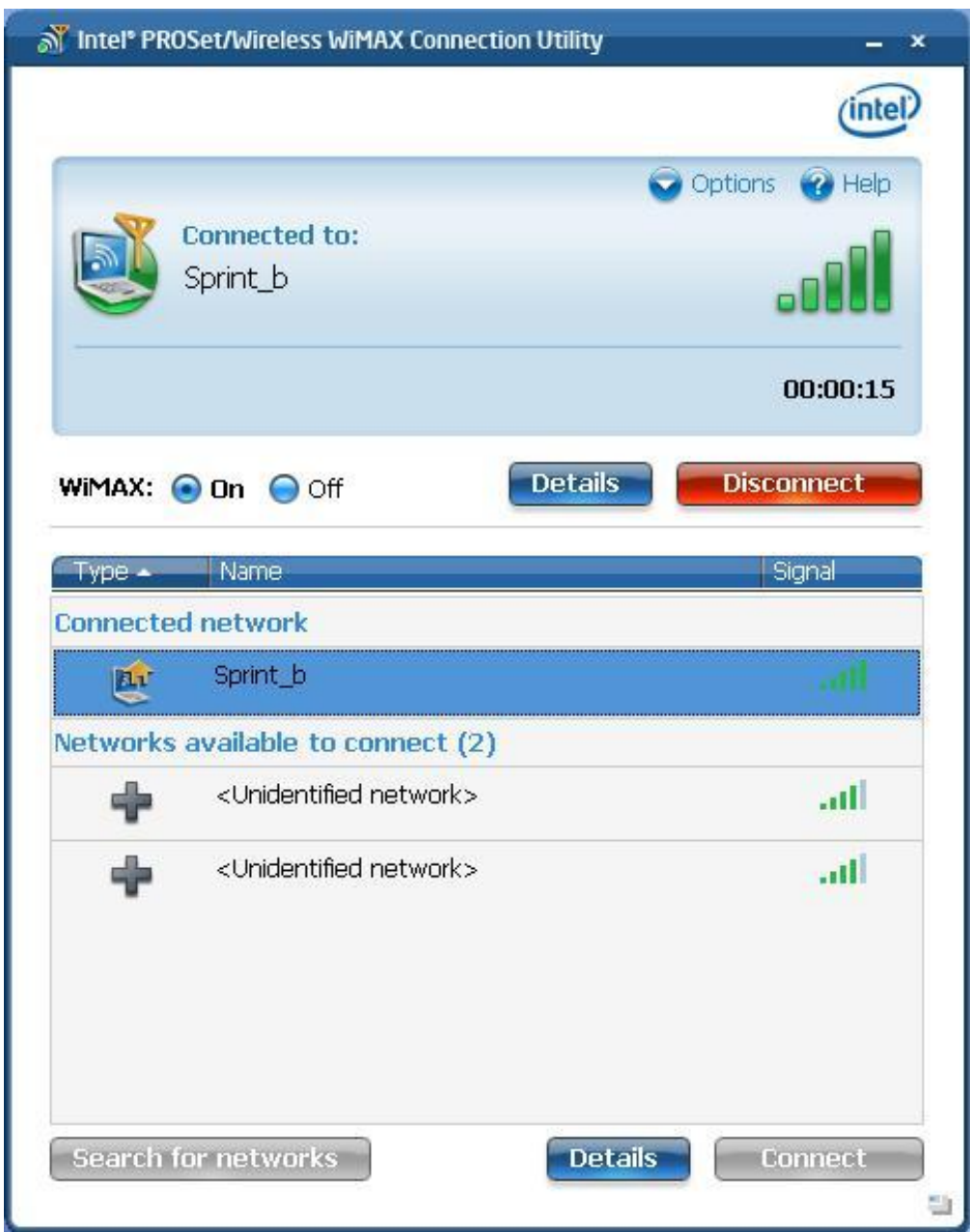
Connection Status Area

This area tells you about the current connection status. For example, if you are currently connected to a network, this area shows you current network name, signal quality, and connection duration. This area will also show messages about the availability of networks, the operation currently in progress, and the status of the WiMAX adapter.

Information

	Connected to: Indicates the WiMAX network you are currently connected to. There are several other icons and status messages displayed in this area. See Connection Status Messages.
	Indicates signal quality. The *number* of green bars may range from one to five, with more green bars indicating a better quality signal. A better quality signal enables a more rapid connection. A poor quality signal may result in dropped connections, or keep you from being able to connect to that network.
Time	Indicates the time duration for this connection, from the moment at which the current connection was made.

Buttons

Details	Provides details of the currently connected network.
Disconnect	Click **Disconnect** to disconnect from the currently connected network. The network will then be listed in the Available Networks list. This button is not present if your are not connected to a network.
WiMAX On/Off	Turns the WiMAX adapter on or off. If you are connected to a network and you turn the adapter off, you will be disconnected. If the utility is searching for networks and you turn the adapter off, the search will be stopped.
Options	Clicking **Options** presents these choices: • **Preferences...** • **Detailed information...** • **Advanced...** • **About**: Provides version and contact information about the WiMAX connection utility.
Help	help in using the Intel(R) PROSet/Wireless WiMAX Connection Utility.

Available WiMAX Networks

This area lists the detected, available WiMAX networks. This area can be hidden or shown, by clicking on this icon in the lower-right corner of the window:

Available networks are shown in the following order:

- **Connected network**. This is the WiMAX network you are currently connected to. It is also shown in the Connection Status area above.
- **Networks available to connect**: This list includes activated **home** networks and **un-activated** networks.
  - A **home** network is indicated by the icon. Double-click on any home network, you will then be connected to that network. You can also right-click on the network to select either **Connect** or **Show details**.
  - A **un-activated** network is indicated by the icon. An un-activated network is one that you have *not* activated for service. Double-click on an un-activated network and you will then begin the activation process. You can also right-click on the network to select either **Connect** to begin the activation process, or **Show details**. Un-activated networks are only shown in this list after you have clicked **Search for networks**.

The **Networks** area displays the following information for each network:

Type	Indicated by the icon, this tells you if the network is a home network or is un-activated . A network that is un-activated is not yet available for you to explore the internet. You first need to connect to this network and activate service. To activate a un-activated network, select it and click Connect.
Name	Name of the listed network
	Indicates signal quality. The *number* of green bars may range from one to five, with more green bars indicating a better quality stronger signal. A better quality signal enables a more rapid connection. A poor quality signal may result in dropped connections, or keep you from being able to connect to that network.

Buttons

The Networks area has the following buttons:

Search for Networks	The WiMAX connection utility periodically searches for *home* networks automatically, keeping the network list current with home networks. Clicking **Search for Networks** causes the adapter to search for *all* networks. This includes home networks and un-activated networks. Home networks are listed first, then un-activated networks. Once you begin a network search, there is no way to stop the search other than clicking **WiMAX Off**, which will turn off the WiMAX adapter and halt the search. You should only need to click **Search for Networks** if you have not yet activated a WiMAX network for your laptop, or if you are in a different city or area where you have not activated service and a home network network has not been detected. In this case, see First Time Connection to a WiMAX Network **NOTE**: Searching for new networks is a battery-intensive operation that will take several minutes to complete.
Details	Provides details of the current network selected from the networks list.
Connect	When the selected network in the list is an activated (for example, a home network), then clicking **Connect** opens a connection with that network. Information about the connection is provided in the Network Connection Status window. If the selected network is not yet activated, then clicking **Connect** will start the activation process. You can also connect to an available network by double-clicking on it. This button is grayed out if no networks are available.

Icons

The following icons are used in the main window to provide information. Additionally, icons used in the taskbar keep you informed about WiMAX networks and your WiMAX adapter.

Icon	Meaning
	Used in the Connection Status area, this indicates that you are connected to a WiMAX network. There are several other status messages and icons displayed in this area. See Connection Status Messages.
	Indicates signal strength. The *number* of green bars may range from one to five, with more green bars indicating a stronger signal. Stronger signals enable more rapid connections. Weaker signals may result in slower or dropped connections.
	Indicates that this is a home network. You have already activated service with this network and it is available for connection.
	Indicates that you have not activated this network. To make the network available, you need to first Activate service.

Close Intel(R) PROSet/Wireless WiMAX Connection Utility Window

To close the utility main window, click **X** on the main window, upper-right corner. Closing the utility does *not* close a connection. The utility and the adapter continue to operate. To close a connection, click **Disconnect** on the main window, or click **WiMAX: Off**.
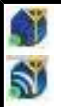
Taskbar

- Taskbar Icons
- Taskbar Menu Commands
- Tool Tips
- Desktop Alerts
- Start the Intel(R) PROSet/Wireless WiMAX Connection Utility from the Taskbar

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Taskbar Icons

The Taskbar icons provide visual indication of the current state of WiMAX. The taskbar status icon is located on the lower right corner of your Windows desktop.

	Available networks: WiMAX networks are available for connection. This icon is only displayed if you are not connected to a WiMAX network and networks are available. Double click the icon to open the WiMAX connection utility.
	Connecting: When the adapter is connecting to a network, this icon changes (animates) to show a varying number of white arcs.
	Searching. When the adapter is searching, the round magnifying glass moves around the icon. Click on the icon to learn more information.
	Signal Quality . Shows the signal quality for the current WiMAX connection.
	WiMAX radio is turned off. You are not connected. The utility also cannot search for available networks. Click on the icon to learn more information.
	No WiMAX networks are available. A search has been performed and no networks are available in the area. This includes both activated and un-activated networks. Click on the icon to learn more information.
	Problem: A problem exists. WiMAX cannot be used until the problem has been corrected. Click on the icon to learn more information.

Taskbar Menu Commands

Right-click on the Intel(R) PROSet/Wireless WiMAX Connection Utility icon to access the taskbar commands. The icon is visible on the Taskbar, located in the lower right corner of your Windows desktop.

NOTE: The displayed icon changes, based on the status of the utility See Taskbar Icons to learn about the icons.

If the Intel(R) PROSet/Wireless WiFi Connection Utility is present on your laptop, then many commands for that utility will be accessible at the taskbar icon and grouped with WiMAX commands. WiFi commands are not discussed in this section. To learn about WiFi commands, please see the Help and User Guide that supports the Intel(R) PROSet/Wireless WiFi Connection Utility.

Command	Description
Configure WiMAX	Click to open the Intel(R) PROSet/Wireless WiMAX Configuration Utility.
WiMAX on / WiMAX off	If the WiFi Connection Utility is installed, this command will appear under **Turn wireless on/off**. This command turns WiMAX on or off.

Show Status	This command is present only if the adapter supports both WiFi and WiMAX connections. The command lets you select to show the following:
	
	● **WiFi status only**: Only the WiFi status icons and tool tips are displayed.
	● **WiMAX status only**: Only the WiMAX status icons and tool tips are displayed.
	● **Automatic**: Displays WiMAX or WiFi icons and tool tips, providing the following information:
	   ❍ Currently connected
	   ❍ Last connected
	   ❍ Available networks
	   ❍ Radio on.

Connect	If the WiFi Connection Utility is installed, this command is **Connect WiMAX**. Connects to the available WiMAX home network. If the WiFi Connection Utility is installed, this command will appear as **Connect WiMAX**. Possible sub-commands or information: ● **Auto connect mode is enabled**. If a home network was available, the you would already be connected to it. See Connection Preferences. ● **<Network name>** Lets you select the network to connect to. May show more than one available network, including both home networks and networks not activated. Click to determine whether this is a home network or not. ● **Searching for networks**… The utility is searching for networks and this item will be updated with the results when the search completes. Home networks and un-activated networks will be shown. ● **No networks available**. Search has revealed that no networks are available (home or un-activated). This command is grayed out if the WiMAX On/Off button is Off,

	or the hardware WiMAX radio switch if off (if present).
Disconnect	If the WiFi Connection Utility is installed, this command is **Disconnect WiMAX**. Disconnects from currently connected WiMAX network. However the connection continues if the adapter is operating in Auto Connect mode. In this case, a message appears indicating so and suggests that you turn the WiMAX radio off or change the Connection Settings.

Mouse-Over Tool Tips

Tool tips provide information about the adapter, connection and availability of networks. Tool tips display when you pass the mouse pointer over the taskbar icon. Following are the all of the possible tool tips.

Tip	Explanation
<ABC WiMAX Network> is available to connect.	One WiMAX network (in this example ABC WiMAX Network) is available for you to connect. This may be an activated or un-activated network. This message only displays if you are not currently connected.
N networks available to connect.	Two or more WiMAX networks are available to connect. They may be activated or un-activated networks. This message only displays if you are not currently connected.
Searching for networks…	The adapter is currently searching for available WiMAX networks.
Connecting to <Network name >	The adapter is currently connecting to the named network.
Connected to <Network name > Signal: <Excellent> IP address: <XXX.XXX.XXX.XXX>	The adapter is connected to the named network. This signal strength is shown. It may range from Poor to Excellent. The internet protocol address is listed for this adapter/connection.
WiMAX is off.	The WiMAX radio is off. Turn it on using the **WiMAX On / Off** button (shown on the utility main window). If the button is gray, check the WiMAX radio hardware switch, if present.
The hardware WiMAX switch is off.	Some laptops have a physical switch that you can use to turn on or off WiMAX. The message indicates that the switch is off. To connect you need to turn it on.
No networks available to connect.	Indicates that no WiMAX networks, including activated and un-activated, are available to connect to.
An incompatible version of the WiMAX software was detected.	There is a problem with the WiMAX software. You need to contact your WiMAX service provider.
Another application is currently managing WiMAX connections.	This message indicates that another WiMAX connection manager is managing WiMAX connections on your laptop. To let Intel(R) PROSet/Wireless WiMAX Connection Utility manage your WiMAX connections, you need to remove the other connection manager software from your laptop.

The WiMAX adapter is disabled or missing.	This may be caused by one of the following reasons: • The WiMAX adapter may be disabled via Windows XP* or Vista*. Enable using the Device Manager. • The WiMAX adapter is missing. • The WiMAX driver and/or software are working correctly. You may need to reboot the computer.

Alerts

When user action is required, a desktop alert displays. If you click the alert, then an appropriate action is taken.

Tip	Explanation
Auto connect mode is enabled. To disconnect from the network either a) turn WiMAX off, or b) switch to manual connect mode and then click 'Disconnect'.	This message is shown if the user attempts to disconnect a network and the connection mode is Auto Connect.
WiMAX updates are available. These updates are critical for the proper operation of WiMAX. Download the updates now?	This message is shown for the CHECKDAN…APDO FUMO process (download and install as separate operations).
The WiMAX updates have been downloaded. These updates are critical for the proper operation of WiMAX. Install the updates now?	Shown for the APDO FUMO process (download and install as separate operations).
WiMAX updates are available. These updates are critical for the proper operation of WiMAX. Download the updates now?	Shown for APDO FUMO process (download and install as single operation).
The network is attempting to update the WiMAX connection settings. These settings are critical for the proper operation of WiMAX. Update the WiMAX connection settings now?	Shown for APDO Initial Provisioning and Ongoing Provisioning.

Notifications

Notifications are displayed when the state of a connection has changed (connected or disconnected), or WiMAX networks have become available to connect. Action on your part is not required.

Tip	Explanation

Connected to <Network name > Signal: <Excellent> IP address: <XXX.XXX.XXX.XXX>	Displays when the adapter connects to the named network. This signal strength is shown. It may range from Poor to Excellent. The internet protocol address is listed for this adapter/connection.
Disconnected from: <Network name>	Shown anytime a network is disconnected. This includes if the network was disconnected as a result of the radio being turned off.
<Network name> is available. Click here to connect.	Shown if *one* network is available. The same notification should not be shown over and over. Instead, this notification should be shown once, and then not shown again until there is a change in either the number of networks available or the name of the network that is available.
# WiMAX networks are available. Click here to connect.	Shown if *two or more* networks are available. The same notification should not be shown over and over. Instead, this notification should be shown once, and then not shown again until there is a change in either the number of networks available or the name of the network that is available.

Open Intel(R) PROSet/Wireless WiMAX Connection Utility from the Taskbar

To open Intel(R) PROSet/Wireless WiMAX Connection Utility:

- Double-click the Taskbar icon located in the lower right corner of your Windows desktop, or
- Right-click the Taskbar icon, and select **Configure WiMAX**.

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Connect to a WiMAX Network

Connect to an Activated WiMAX Network

An activated WiMAX network is a *home* network: a network with which you have already established service. A home network is identified by this icon: . To connect to a home network, simply double click on the network in the **Networks available to connect** list. Or select it and click **Connect**.

In the following image, Sprint_b is a home network (this is an example only).

Automatic and Manual Connection

The Intel(R) PROSet/Wireless WiMAX Connection Utility is set by default for *manual*

connection. This means that to connect to a WiMAX home network, you must select it in the **Networks available to connect** list and click **Connect** (or double-click on the network). Otherwise, you will not be connected.

You can configure the utility to perform *automatic* connection to the first available home network. This means that whenever you turn on the laptop, the utility will connect to that network (unless you are of range). To turn on Auto Connect mode, see Connection Preferences.

> **NOTE**: You will never be automatically connected to an un-activated network, that is, a network that is not an activated home network. You can only be automatically connected to a home network.

Disconnect from a WiMAX Network

To disconnect from a WiMAX network, on the main window, click **Disconnect**.

Another way to disconnect from a network is to simply click WiMAX off (**WiMAX Off,** on the main window). If you attempt to disconnect from a network when Auto Connect mode is turned on, the following message is displayed: **Auto Connect mode is enabled. To disconnect from the network, either a) turn WiMAX off, or b) switch to manual connect mode and then click Disconnect**.

To turn on or off Auto Connect mode, see Connection Preferences

Connecting to a WiMAX Network in a New City

When you take your laptop if a new city or area, the first service provider with which you activated WiMAX may have a partner network, that will show up as a home network in your new area. You can connect to it as you would your home network in your previous area. If there are no partnered home networks listed in your new location, you will need to activate service with a new service provider in your new area, just as you did for the first WiMAX network service provider. To do this, see First Time Connection to a WiMAX Network.

> **NOTE**: Activating service with a new WiMAX network service provider does not cancel or change the agreement you have with your current service provider.

Un-subscribing from a WiMAX Network Service Provider

To unsubscribe from a WiMAX service provider, you need to contact the service provider. You cannot unsubscribe using the Intel(R) PROSet/Wireless WiMAX Connection Utility.

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First Time Connection - Activating Service with a WiMAX Network

Before you can enjoy the benefits of WiMAX, you need to *activate* a WiMAX network. Activating a WiMAX network means that you are registering your laptop computer with the WiMAX network service provider. During this process, you will be directed to a website for that provider, where you will open an account or update an existing account. Activation is quick and easy.

How to Activate a WiMAX Network

> **NOTE**: Turning WiMAX on will close any WiFI connections that are currently connected. As well, turning WiFi on, will close any WiMAX connections that are currently connected. WiFi and WiMAX connections cannot remain connected simultaneously.

1. Check that WiMAX is turned on. Right-click the WiMAX icon and be sure that **WiMAX on** is enabled, with the black dot before it. (Assuming that Intel(R) PROSet/Wireless WiFi Connection Utility is also installed, this command will be under **Turn wireless on/off**.)
2. Before activating a network, you need to find an available network. Depending on how your laptop is configured, Intel(R) PROSet/Wireless WiMAX Connection Utility (the utility) may have already searched for networks. Networks are listed on the utility main window, under under **Networks available to connect**. Available, un-activated networks have this icon: . If a network is available that you want to activate service with, go to step 5. If no networks are listed, click **Search for Networks**.
3. The following question is presented:

   > *Searching for networks is a battery intensive operation that could take several minutes. Start searching for networks now?*

4. Click **Yes**.
5. When the search completes, one or more available WiMAX networks should be displayed. If no networks are listed, it may be that none are available in your area. To check what networks are available, visit this website:

Assuming a network is available that you can activate service with, perform the next step.

6. Double click the network, or click once and then click **Connect**. A message is displayed in the Connection Status area:

> *To activate this network, you must subscribe for WiMAX service. Would you like to visit the network service provider's WiMAX subscription website now?*

7. Click **Yes**. The utility launches a web browser to the subscription website for the selected WiMAX network. At this website, you will be asked to enter subscription information.

> **NOTE**: Windows* Firewall may not allow you to complete the following steps. If you have trouble completing this process, you may want to turn off the Windows Firewall or other fire walls you may have running. To turn off Windows Firewall, click **Start** > **Control Panel**. Open the Firewall and click **Off**. Then click **OK**. When this process is complete, you can turn the firewall back on.

8. After you have entered the required information, you will see *one or more messages* asking permission to update your WiMAX connections settings and/or WiMAX software. Following are *examples* of these messages. The order presented may be different. Click **Yes** or **OK** to each of these requests. (If you click **Remind me later**, activation and access to this network will be postponed until you can complete this process.)
   a. *The network is attempting to update the WiMAX connection settings. These settings are critical for the normal operation of WiMAX. Unless these settings are updated, you may not be able to use WiMAX to connect to the internet. Download the updates now?* Click **Yes**.
   b. *WiMAX updates are available. These updates are critical for normal operation of WiMAX. Download the updates now?* Click **Yes**.
   c. *The WiMAX updates have been downloaded. These updates are critical for normal operation of WiMAX. Install the updates now?* Click **Yes**.
   d. *The WiMAX updates have been downloaded. Installation will now begin.* Click **OK**.
9. While these updates are being performed, progress messages will be shown in the Connection Status area. Following are *examples* of these messages. These are information messages only and no additional action is required.
   o *Network activation is in progress. The WiMAX connection settings are being updated...*
   o *Network activation is in progress. The WiMAX updates are being installed...*
10. When the activation is complete, the message *Network ABC has was successfully activated* will be displayed.
11. If you turned off Windows Firewall, turn it back on now. Click **Start** > **Control Panel**.

Open the Firewall and click **On**. Then click **OK**.

Your newly activated WiMAX network is now a *home* network, as indicated by the following icon: .

You should now be connected to this network and can use it to access the internet. To disconnect from this WiMAX network, click **Disconnect**.

If network activation fails, the following message is displayed:

The network activation has failed.

If you receive this message, contact your WiMAX network service provider.

You can connect to your new home network manually or automatically. See Connection Preferences.

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Receiving Updates from your WiMAX Service Provider

Periodically, your network service provider may need to update your WiMAX connection settings or your WiMAX software. The Intel(R) PROSet/Wireless WiMAX Utility will prompt with one of the following messages:

> *WiMAX updates are available. These updates are critical for normal operation of WiMAX. Download the updates now?*

or

> *The network is attempting to update the WiMAX connection settings. These settings are critical for the proper operation of WiMAX. Update WiMAX connection settings now?*

You should click **Yes** to both of these queries. If you click **Remind me later**, you may suffer a service degradation, and you will be prompted again.

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Advanced Window

The Advanced window presents the following three tabs:

- [Adapter](#)
- [Profiles](#)
- [Troubleshooting](#)

Adapter

This tab lets you reset the WiMAX adapter. You should only do this if the WiMAX adapter seems not to be working. All adapter activities will be stopped, your current WiMAX connection will be closed, and any search will be halted. Resetting takes from 5 to 10 seconds. This operation is similar to disabling and then enabling the adapter using the Device Manager in Windows Vista*. After resetting is complete, the WiMAX adapter should be ready to connect.

Resetting the Adapter

If you are connected to WiMAX and you click **Reset WiMAX adapter**, the following message is displayed:

Warning: You are currently connected to WiMAX. Resetting the WiMAX adapter will disconnect you from WiMAX. Do you want to continue?

Click **Yes** or **No**.
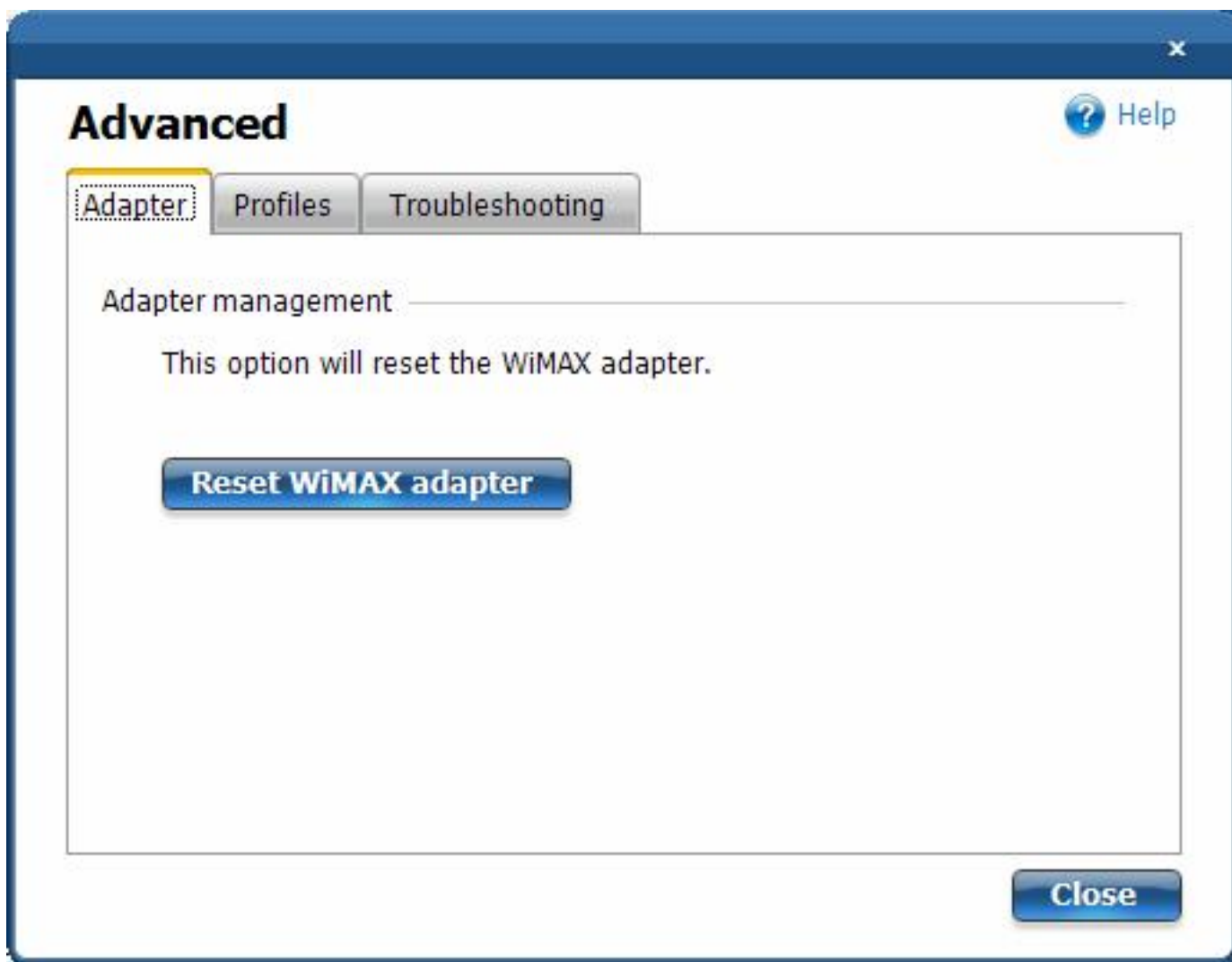
Profiles

Each activated network has a profile that lets the adapter connect with that network. The profile contains WiMAX connection settings that are maintained by the WiMAX network service provider. This tab lets you remove a profile.

Removing a Profile

NOTE: If you remove a profile, the network will no longer show as your home network and you will no longer be able to connect to that network without going through the activation process again.

NOTE: Removing a profile will not terminate your subscription agreement with that WiMAX network service provider. To change or cancel your subscription agreement, you need to contact that WiMAX network service provider.

To remove a profile, first disconnect from the named network. Then select it here and click **Remove profile**.
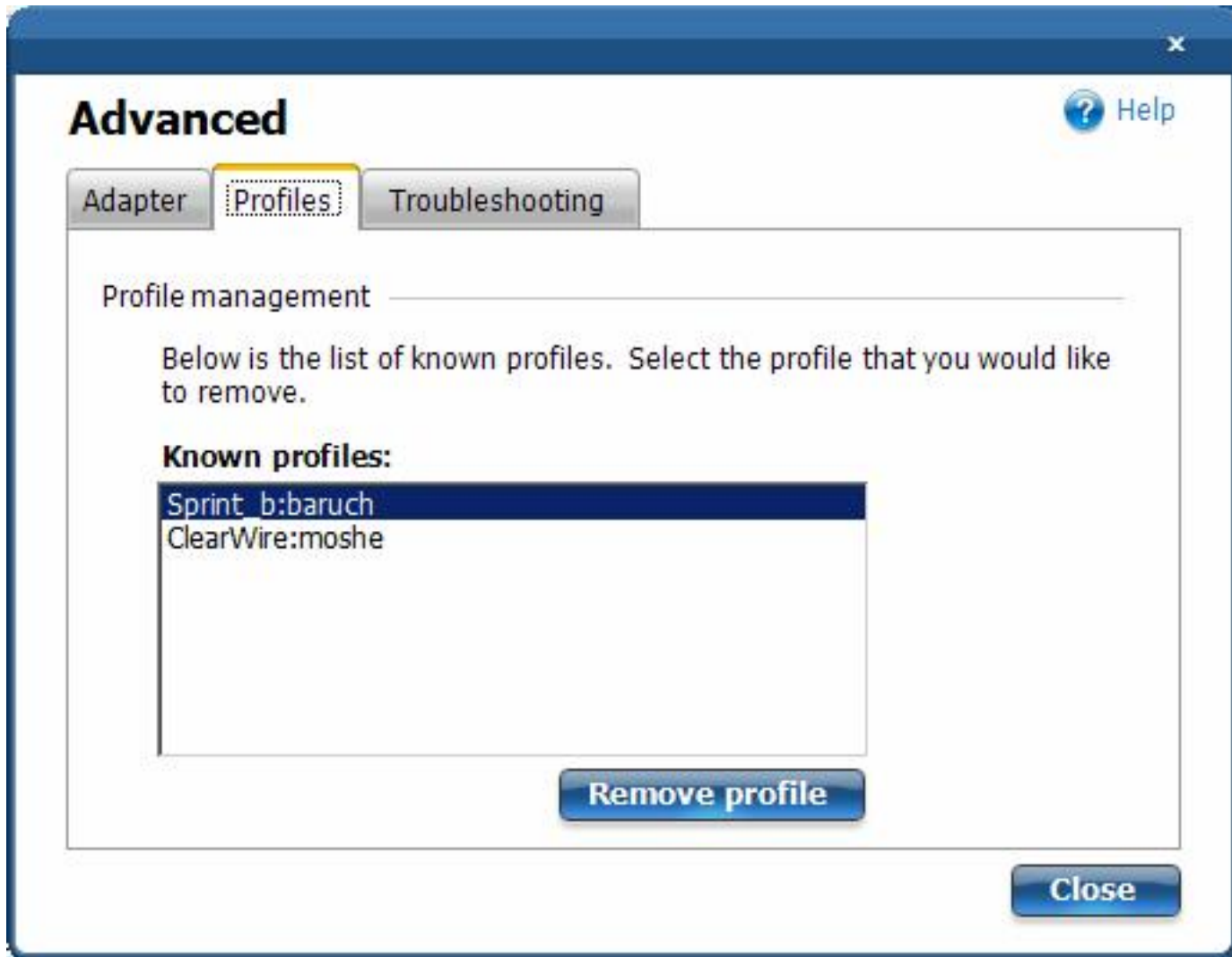
Troubleshooting

NOTE: The Troubleshooting tab should not be used unless you are directed to do so by your WiMAX network service provider. Changing your WiMAX connection settings may prevent you from being able to connect to WiMAX.

Restoring Settings

The WiMAX connection settings are periodically updated by your WiMAX network service provider. Three sets of WiMAX connection settings are maintained: current settings, previous settings, and factory default settings. This tab lets you:

- **Restore previous settings**: This is will cause the adapter to revert to the previous

set of connection settings.

- **Reset factory default settings**: This is will cause the adapter to revert to the factory default connection settings and may force you to reactive your home network.

Both of these actions invoke the following message:

Warning: This operation cannot be undone. This operation may cause you to loose your ability to connect to WiMAX. Do you want to continue?

Click **Yes** or **No**.

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Connection Status Messages

You will see different messages from time to time about your WiMAX connection, service, and the WiMAX adapter. These messages are listed next. Click on any message to learn more information.

- [Searching for networks…](#)
- [Not connected. *Network A* is available to connect.](#)
- [Connecting to *Network A*…](#)
- [Connecting to network…](#)
- [Connected to *Network A*…](#)
- [Not connected.](#)
- [Not connected. Unidentified network is available to connect](#)
- [The hardware radio switch is off. To connect, turn on the hardware radio switch.](#)
- [WiMAX is off.](#)
- [Another application is currently managing WiMAX connections.](#)
- [WiMAX is not ready.](#)
- [An unexpected version of one of the WiMAX software modules was detected.](#)

Searching for networks…
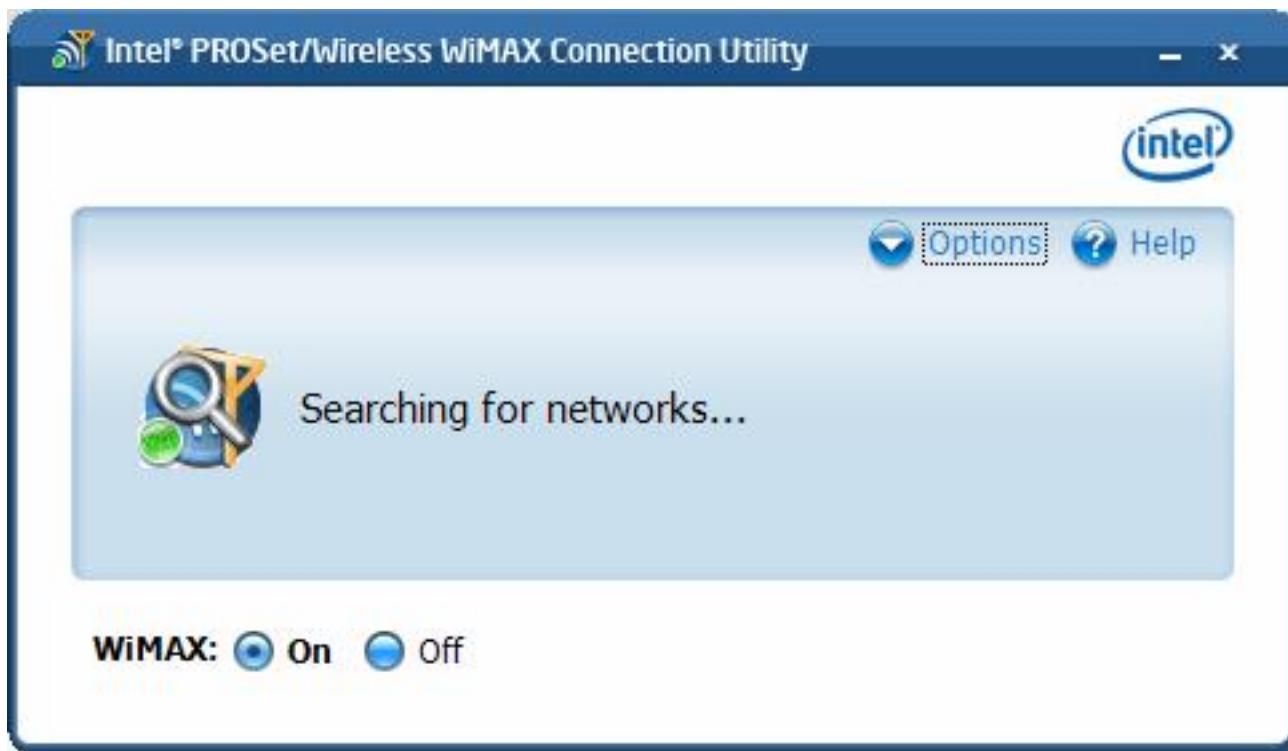
This message is displayed when the adapter is searching for WiMAX networks. This search will occur after you have click **Search for networks**, or if the WiMAX connection utility is operating on auto connect mode and is searching for a network to connect to. This search is for *all networks*; networks that you have connected to before, and networks that you have never connected with. The icon itself changes to show that the search is in progress and stops when the search has ended. The results of the search are shown in the **Networks available to connect** list.

Not connected. *Network A* is available to connect
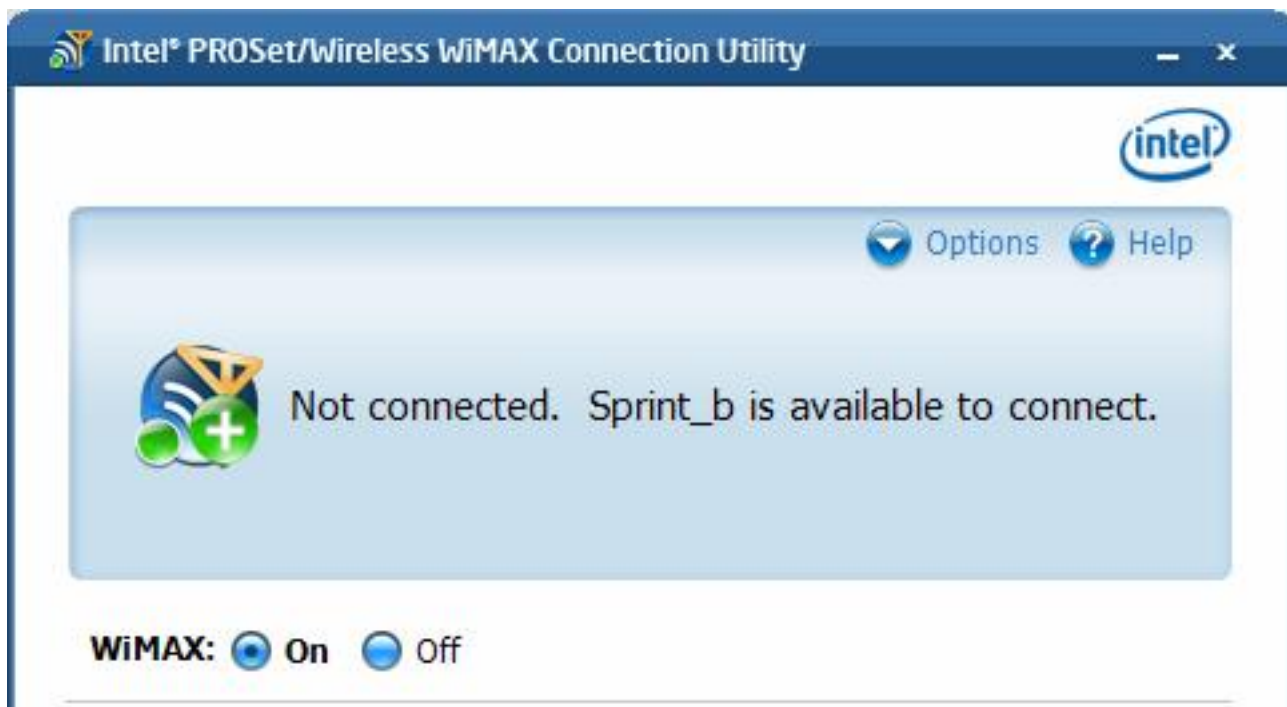
This message tells you that a network is available to connect. You can connect to it by double clicking on the network or clicking **Connect**.

Connecting to *Network A*...
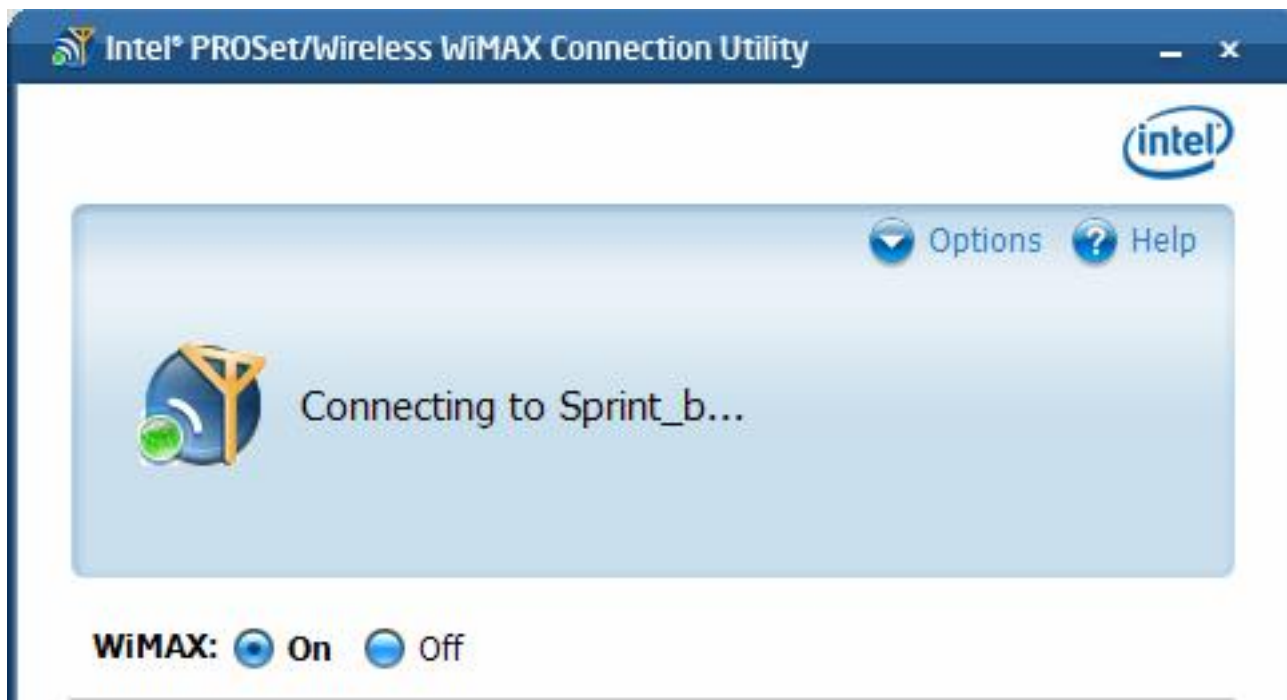
After clicking **Connect** or double clicking on a network in the **Networks available to connect** list, the WiMAX connection utility connects to the network. This is either a home network or an un-activated network, in which case you will begin the activation process for

this network.

Connecting to network ...
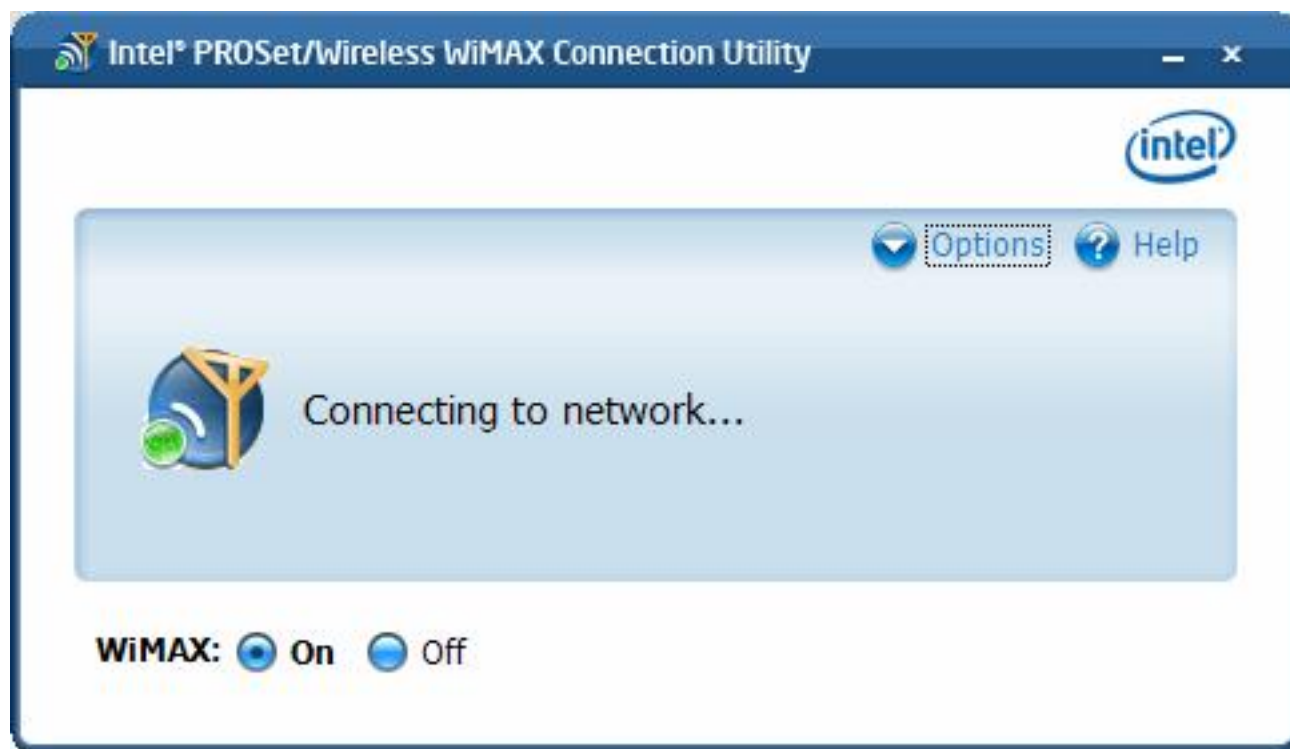
This message displays after you have turned on [Auto Connect]() mode and the WiMAX connection utility is initiating a connection to a home network. The icon changes (animates) during the connection process.

Connected to: *Network A*
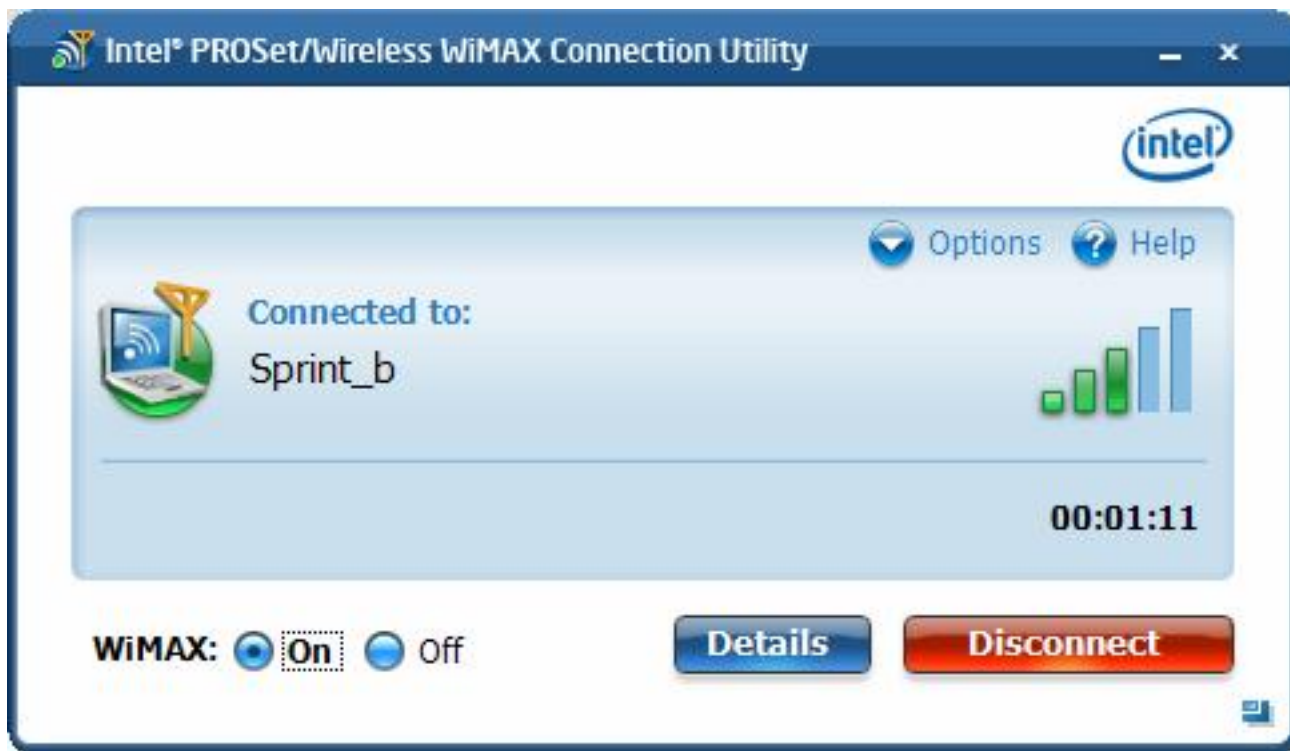
You are connected to a WiMAX network. For a complete description of features, controls, and indicators on this window, see Main Window.

Not connected
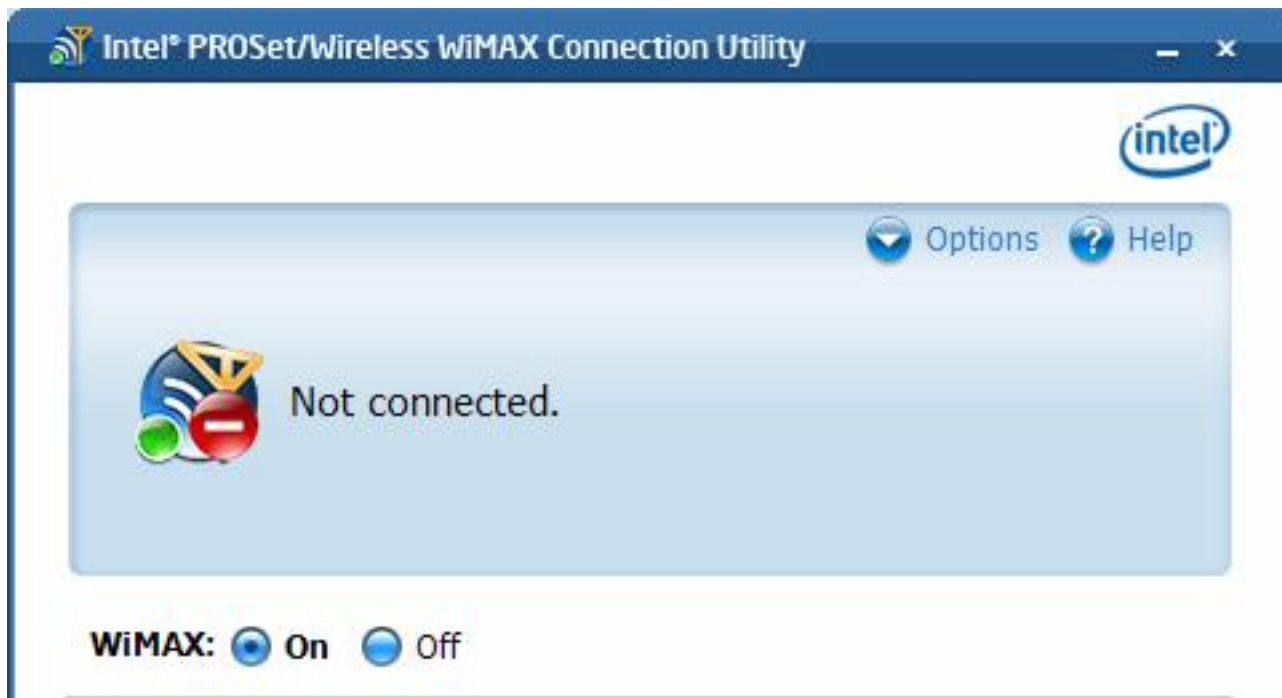
You are currently not connected to a WiMAX network. This message does not imply an error, but only that you are not connected and there are no home networks or un-activated

networks available to connect to. If a network was available to connect to, it would be displayed in this message.

Not connected <Unidentified network> is available to connect
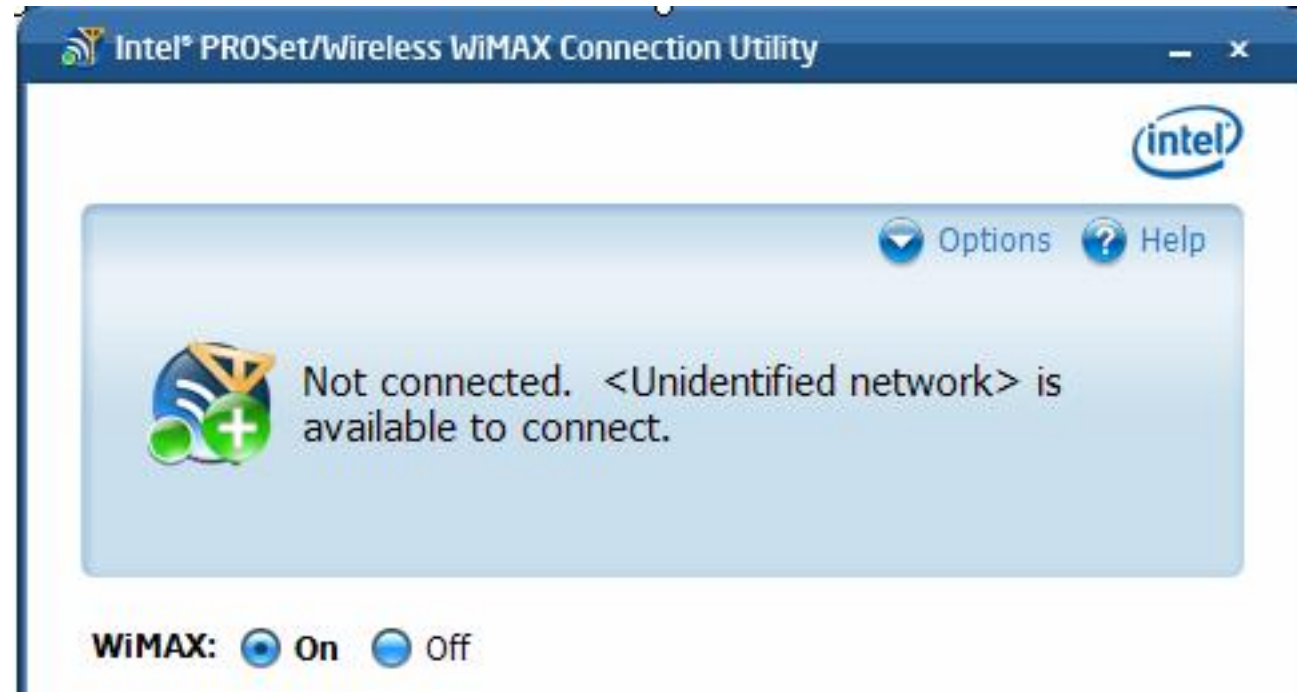
This message tells you that a network is available to connect. You can connect to it by double clicking on the network or clicking **Connect**, however this is not a home network and by connecting to it you will begin the activation process.

The hardware radio switch is off. To connect, turn on the hardware radio switch
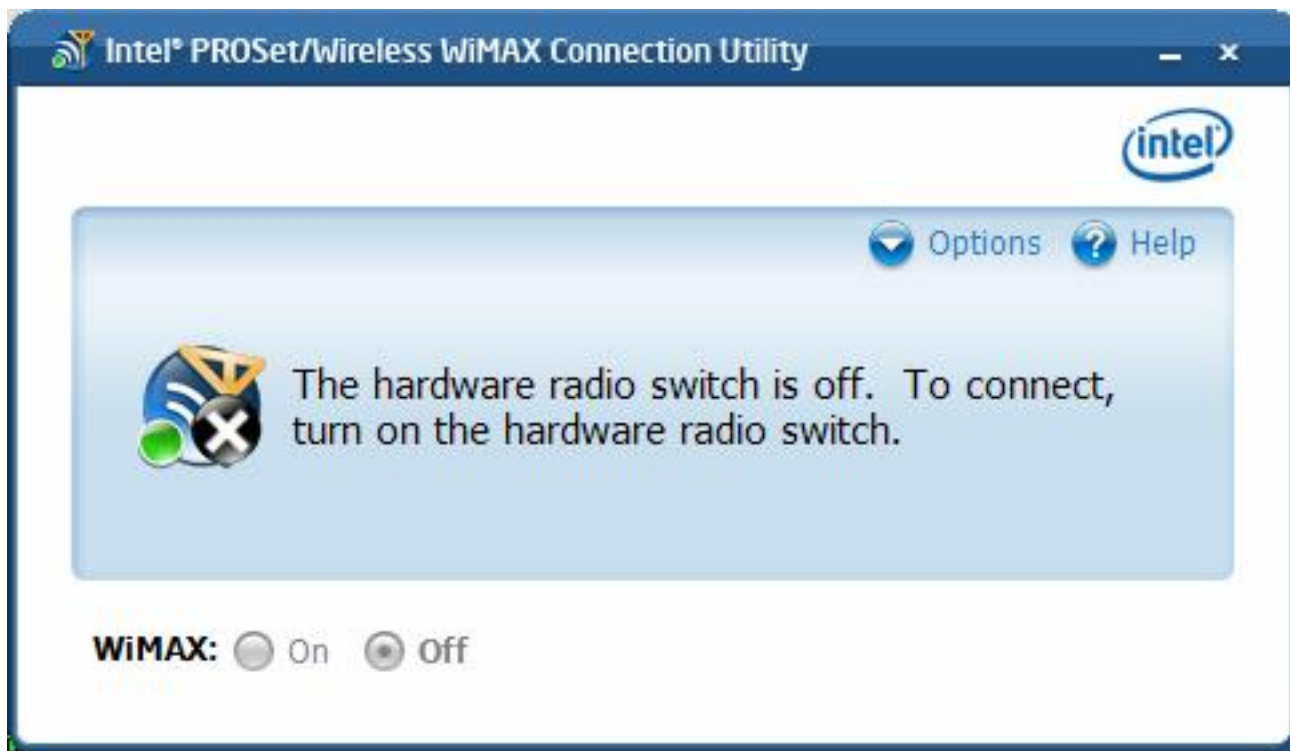
On some laptops, a WiMAX hardware radio switch lets you turn on or off WiMAX radio. If the hardware radio switch is off, then the **WiMAX On/Off** button on this window is gray and not available. First turn **On** the hardware radio switch. Then click **On** the Radio On/Off button.

WiMAX is off
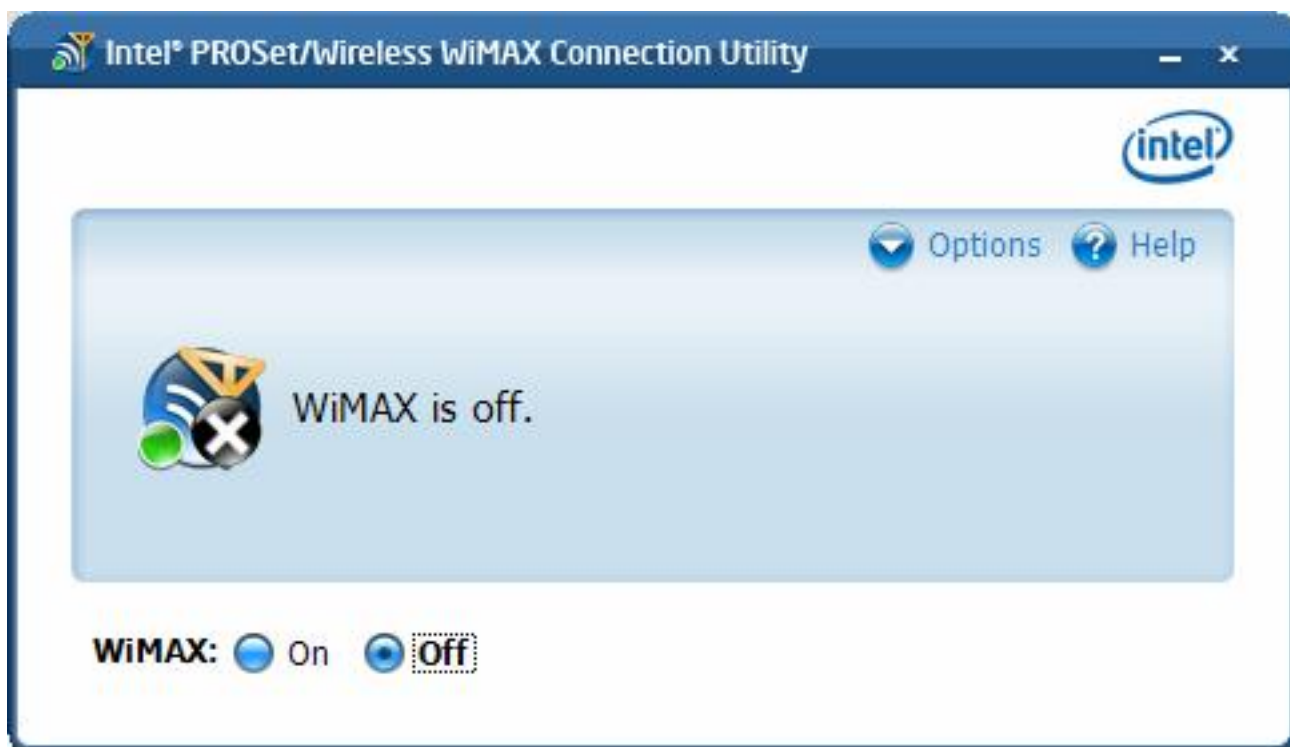
The software **WiMAX** button is set to **Off**. WiMAX connections and network searches are not possible when this switch is set to Off. On this window, click **On** to turn WiMAX on. (Also be sure that the hardware radio switch, if present, is set to On.) The WiMAX connection utility will then automatically perform a network search and list available networks in **Networks available to connect**. If Connection Mode is set to automatic, you will be connected to the first home network that is found. See Preferences.

Another application is currently managing WiMAX connections
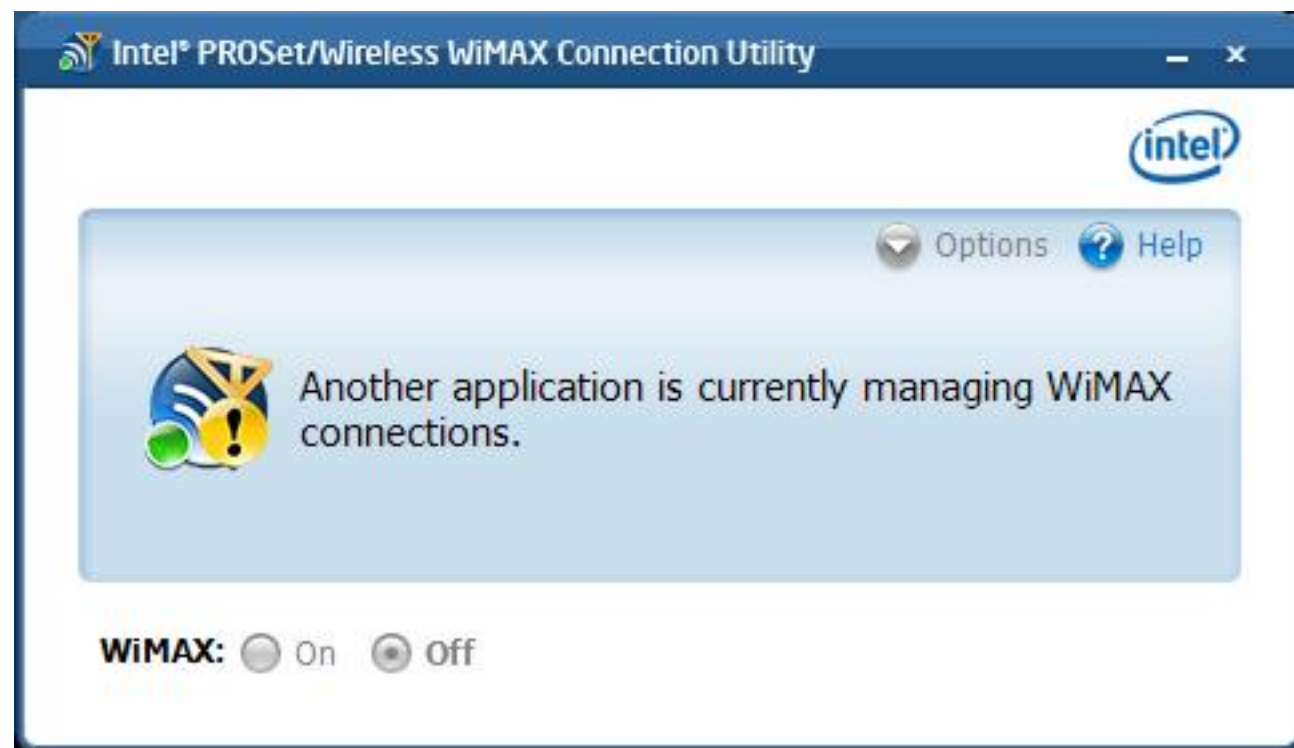
This message indicates that a WiMAX connection manager, other than Intel(R) PROSet/Wireless WiMAX Connection Utility, is managing WiMAX connections on your laptop. To let Intel(R) PROSet/Wireless WiMAX Connection Utility manage your WiMAX connections, you need to remove the other connection manager software from your laptop.

WiMAX is not ready...
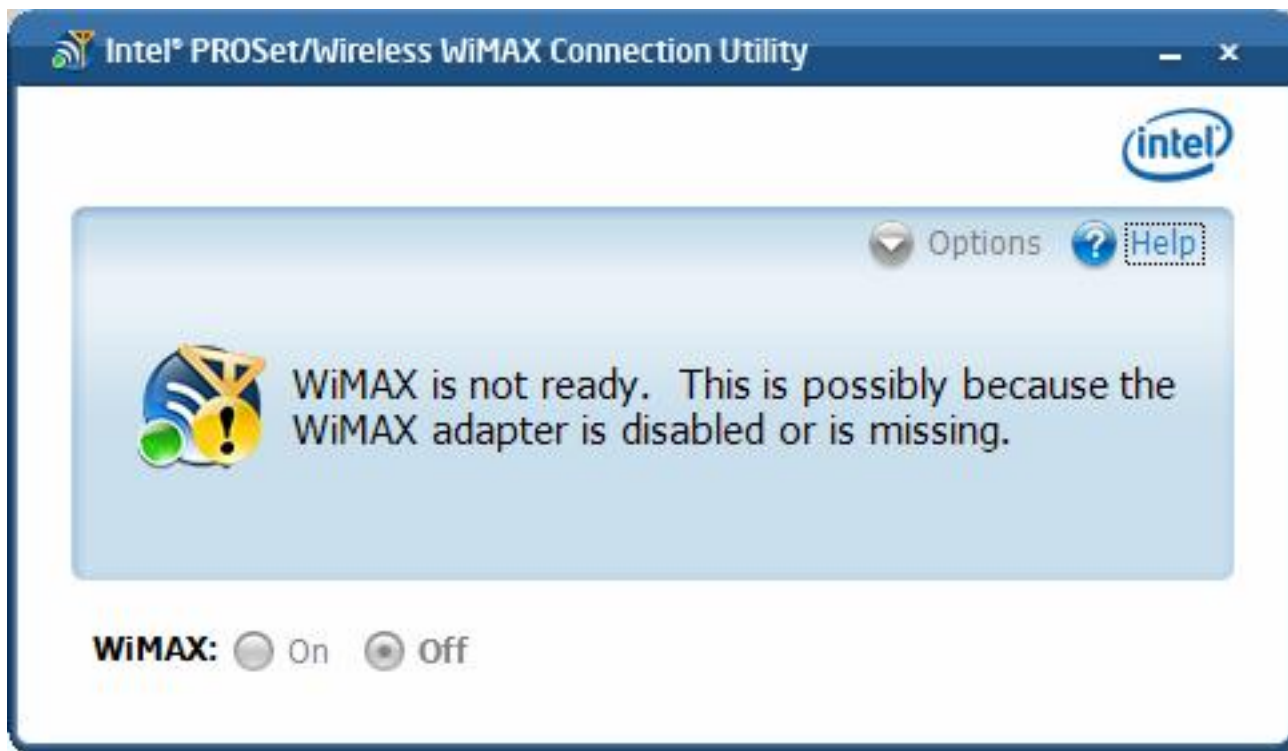
This message indicates that WiMAX on your laptop is not ready. Reasons may be:

- No WiMAX device was found. The required WiMAX adapter is not installed in the computer, or the adapter is not working correctly. Check that a proper working adapter is installed. (Turn off the computer before doing this.)
- The WiMAX adapter has been disabled. The adapter may be disabled via the Windows XP* or Windows Vista* operating system. Check the Device Manager to be sure that the adapter is enabled.
- The WiMAX driver and/or software are not working correctly. You may need to reboot the computer.

An incompatible version of the WiMAX software was detected
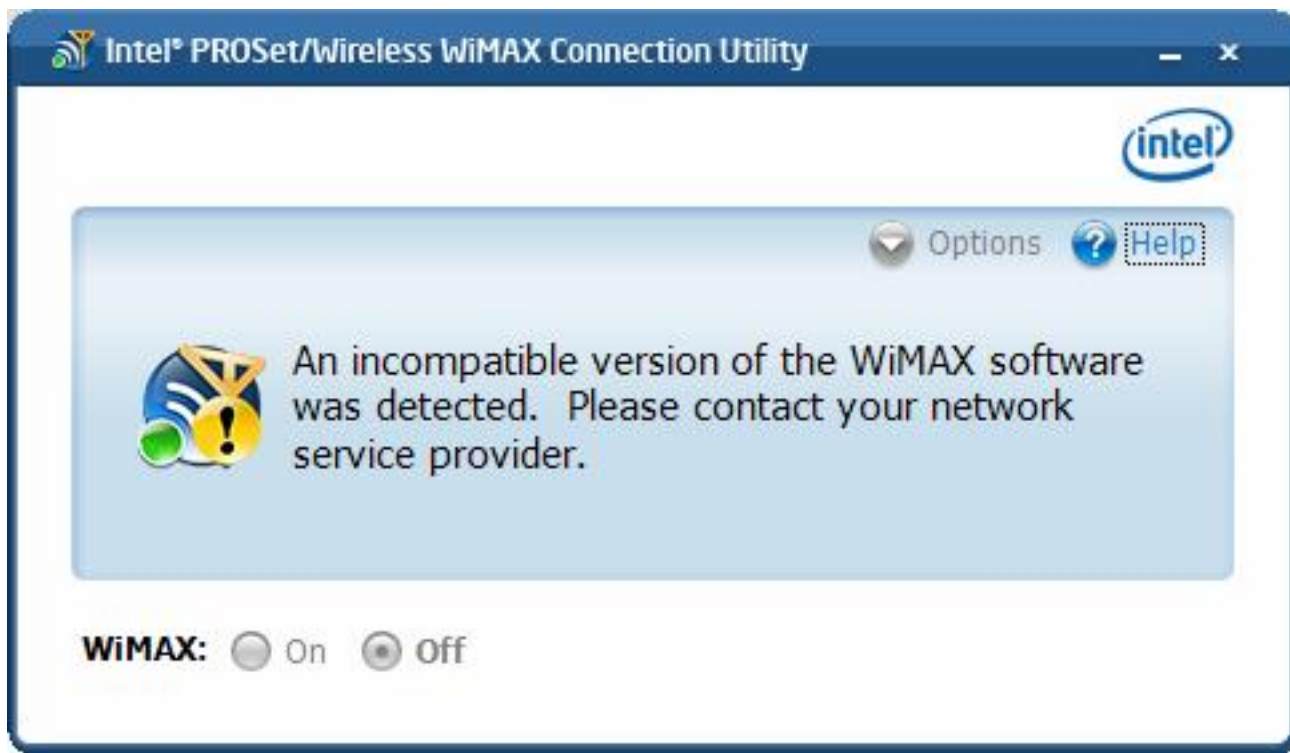
There is a problem with the WiMAX software. You need to contact your WiMAX service provider.

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Adapter Specifications

Intel(R) WiFi Link 5150 and Intel(R) WiFi Link 5350

WiFi / WiMAX		
Form Factor	PCI Express* Mini Card and Half-Mini Card	
SKUs	Intel® WiMAX/WiFi Link 5350 - 3x3 MC Intel® WiMAX/WiFi Link 5150 - 1X2 MC/HMC	
Dimensions	Mini Card: Width 20 in x Length 1.18 in x Height 0.18 in (50.80 mm x 30 mm x 4.5 mm) Half-Mini Card: Width 1.049 in x Length 1.18 in x Height 0.18 in (26.64 mm x 30 mm x 4.5 mm)	
Antenna Interface Connector	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066	
Antenna Diversity	On-board diversity	
Connector Interface	52-pin Mini Card edge connector	
Voltage	3.3 V	
Operating Temperature	0 to +80 degrees Celsius	
Humidity	50% to 90% non-condensing (at temperatures of 25 °C to 35 °C)	
WiFi		
Frequency Modulation	**5 GHz (802.11a/n)**	**2.4 GHz (802.11b/g/n)**
Frequency band	5.15 GHz - 5.85 GHz (dependent on country)	2.41-2.474 GHz (dependent on country)
Modulation	BPSK, QPSK, 16 QAM, 64 QAM	CCK, DQPSK, DBPSK
Wireless Medium	5 GHz UNII: Orthogonal Frequency Division Multiplexing (OFDM)	2.4 GHz ISM: Orthogonal Frequency Division Multiplexing (OFDM)

Channels	4 to 12 (dependent on country)	Channel 1-11 (US only) Channel 1-13 (Japan, Europe)
IEEE 802.11n Data Rates	**Intel(R) WiFi Link 5350** 450, 405, 360, 300, 270, 243, 240, 216.7, 195, 180, 173.3, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps	
	Intel(R) WiFi Link 5150 300, 270, 243, 240, 180, 150, 144, 135, 130, 120, 117, 115.5, 90, 86.667, 72.2, 65, 60, 57.8, 45, 43.3, 30, 28.9, 21.7, 15, 14.4, 7.2 Mbps	
IEEE 802.11a Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11g Data Rates	54, 48, 36, 24, 18, 12, 9, 6 Mbps	
IEEE 802.11b Data Rates	11, 5.5, 2, 1 Mbps	
WiFi General		
Operating Systems	Microsoft Windows XP* (32 and 64 bit) and Windows Vista* (32 and 64 bit)	
Wi-Fi Alliance* certification	Wi-Fi* certification for 802.11b, 802.11g, 802.11a, 802.11h, 802.11d, WPA-Personal, WPA-Enterprise, WPA2-Personal, WPA2-Enterprise, WMM, WMM Power Save, EAP-SIM, LEAP, PEAP, TKIP, EAP-FAST, EAP-TLS, EAP-TTLS	
Cisco Compatible Extensions certification	Cisco Compatible Extensions, v4.0	
WLAN Standard	IEEE 802.11g, 802.11b, 802.11a, 802.11n	
Architecture	Infrastructure or ad hoc (peer-to-peer) operating modes	
Security	WPA-Personal, WPA2-Personal, WPA-Enterprise, WPA2-Enterprise, 802.1X: EAP-SIM, LEAP, PEAP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-AKA	
Encryption	AES-CCMP 128-bit, WEP 128-bit and 64-bit, CKIP, TKIP	
Product Safety	UL, C-UL, CB (IEC 60590)	
WiMAX		
Frequency band	2.5-2.7 GHz (3A Profile)	
Modulation	UL - QPSK, 16 QAM DL - QPSK, 16 QAM, 64 QAM	

Wireless Medium	Duplex mode: TDD operations	Scalable OFDMA (SOFDMA): 512 and 1024 FFT
	sub-carrier permutation: PUSC	Channel bandwidths: 5 MHz and 10 MHz
WiMAX Network Release Feature set	SPWG/NWG Release 1.0 SPWG/NWG Release 1.5	
Rate Performance (OTA performance 10MHz channel)	10 Mbps DL and 4 Mbps UL @ peak rate	
RF Transmitter Output Power	Compliance with Power class 2	
WiMAX General		
Operating Systems	Microsoft Windows XP* ,Vista*	
Standard Compliance	802.16e-2005 Corrigenda 2 (D4)	
WiMAX System Profile Feature set	Mobile WiMAX release 1, Wave II Profile 3A	
Security	Key Management Protocol (PKMv2)	
Encryption	128bit CCMP (Counter-Mode/CBC-MAC) based on AES encryption	

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Regulatory Information

[Intel(R) WiFi Link 5150 and Intel(R) WiFi Link 5350 Adapters](#)

- [Information for the User](#)
- [Regulatory Information](#)

Intel(R) WiFi Link 5150 and Intel(R) WiFi Link 5350 Adapters

The information in this document applies to the following products:

Wireless WiMAX and Wireless LAN adapters (802.11a/802.11b/802.11g/802.11n draft 2.0/802.16e)

- Intel® WiMAX/WiFi Link 5150
- Intel® WiMAX/WiFi Link 5350

  NOTE: Hereafter, all references to "the adapter" refer equally to the Intel® WiMAX/WiFi Link 5150 and Intel® WiMAX/WiFi Link 5350 adapters.

  NOTE: Due to the evolving state of regulations and standards in the wireless LAN field (IEEE 802.11 and similar standards), the information provided herein is subject to change. Intel Corporation assumes no responsibility for errors or omissions in this document. Nor does Intel make any commitment to update the information contained herein.

Information for the user

Safety Notices

USA—FCC and FAA

The FCC with its action in ET Docket 96-8 has adopted a safety standard for human exposure to radio frequency (RF) electromagnetic energy emitted by FCC certified equipment. The adapter meets the Human Exposure limits found in OET Bulletin 65, supplement C, 2001, and ANSI/IEEE C95.1, 1992. Proper operation of this radio according to the instructions found in this manual will result in exposure substantially below the FCC's recommended limits.

The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; this behavior may cause damage to the radio.
- Use in specific environments:
  - The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
  - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
  - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

Antenna Use

- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from the body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Explosive Device Proximity Warning

Warning: Do not operate a portable transmitter (such as a wireless network adapter) near unshielded blasting caps or in an explosive environment unless the adapter has been modified to be qualified for such use.

Antenna Warnings

Warning: To comply with the FCC and ANSI C95.1 RF exposure limits, it is recommended that for the adapter installed in a desktop or portable computer, the antenna for this adapter to be installed so as to provide a separation distance of at least 20 cm (8 inches) from all persons. It is recommended that the user limit exposure time if the antenna

is positioned closer than 20 cm (8 inches).

⚠️ **Warning**: Intel(R) PRO/Wireless LAN products are not designed for use with high-gain directional antennas. Use of such antennas with these products in a manner other than as described in the previous section titled, "Antenna Use" is illegal.

Use On Aircraft Caution

⚠️ **Caution**: Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless adapters because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

Safety Notices for Other Devices in the Wireless Network: See the documentation supplied with wireless Ethernet adapters or other devices in the wireless network.

Local Restrictions on 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e Radio Usage

⚠️ **Caution**: Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. The device transmit power control (TPC) interface is part of the Intel(R) PROSet/ Wireless WiFi Connection Utility Software. Operational restrictions for Equivalent Isotropic Radiated Power (EIRP) are provided by the system manufacturer. Any deviation from the permissible power and frequency settings for the country of use is an infringement of national law and may be punished as such.

For country-specific information, see the additional compliance information supplied with the product.

Wireless interoperability

The adapter is designed to be interoperable with other wireless LAN products that are based on direct sequence spread spectrum (DSSS) radio technology and to comply with the following standards:

- IEEE Std. 802.11b compliant Standard on Wireless LAN
- IEEE Std. 802.11g compliant Standard on Wireless LAN
- IEEE Std. 802.11a compliant Standard on Wireless LAN

- IEEE Std. 802.11n draft 2.0 compliant on Wireless LAN
- IEEE 802.16e-2005 Wave 2 compliant
- Wireless Fidelity certification, as defined by the Wi-Fi Alliance
- WiMAX certification as defined by the WiMAX Forum

The Intel® WiMAX/WiFi Link 5150 or Intel® WiMAX/WiFi Link 5350 adapter, and your health

The adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by the adapter, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The adapter operates within the guidelines found in radio frequency safety standards and recommendations. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature. In some situations or environments, the use of the adapter may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations may include:

- Using the adapter equipment on board airplanes, or
- Using the adapter equipment in any other environment where the risk of interference with other devices or services is perceived or identified as being harmful.

If you are uncertain of the policy that applies to the use of wireless devices in a specific organization or environment (an airport, for example), you are encouraged to ask for authorization to use the adapter before you turn it on.

Regulatory information

Information for the OEMs and Integrators

The following statement must be included with all versions of this document supplied to an OEM or integrator, but should not be distributed to the end user.

- This device is intended for OEM integrators only.
- Please See the full Grant of Equipment document for other restrictions.
- This device must be operated and used with a locally approved access point.

Information To Be Supplied to the End User by the OEM or Integrator

The following regulatory and safety notices must be published in documentation supplied to the end user of the product or system incorporating an adapter in compliance with local regulations. Host system must be labeled with "Contains FCC ID: PD9533ANXM", FCC ID displayed on label.

The adapter must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. For country-specific approvals, see Radio approvals.

Local Restriction of 802.11a, 802.11b, 802.11g , 802.11n, and 802.16e Radio Usage

The following statement on local restrictions must be published as part of the compliance documentation for all 802.11a, 802.11b, 802.11g, 802.11n, and 802.11e products.

⚠ **Caution**: Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11g, 802.11n, and 802.16e products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use. Any deviation from permissible settings and restrictions in the country of use could be an infringement of national law and may be punished as such.

FCC Radio Frequency Interference Requirements

This device 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 device.

- This device is intended for OEM integrators only.
- This device cannot be co-located with any other transmitter unless approved by the FCC.

USA—Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation of the device is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesired operation.

   NOTE: The radiated output power of the adapter wireless network device is far below the FCC radio frequency exposure limits. Nevertheless, the adapter should be used in such a manner that the potential for human contact during normal operation is minimized. To avoid the possibility of exceeding the FCC

radio frequency exposure limits, you should keep a distance of at least 20 cm between you (or any other person in the vicinity) and the antenna that is built into the computer. Details of the authorized configurations can be found at http://www.fcc.gov/oet/ea/ by entering the FCC ID number on the device.

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. If the equipment is not installed and used in accordance with the instructions, the equipment may cause harmful interference to radio communications. There is no guarantee, however, that such 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 taking one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to 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.

    NOTE: The adapter wireless network device must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Any other installation or use will violate FCC Part 15 regulations.

Underwriters Laboratories Inc. (UL) Regulatory Warning

For use in (or with) UL Listed personal computers or compatible.

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Customer Support

Intel support is available online or by telephone. Available services include the most up-to-date product information, installation instructions about specific products, and troubleshooting tips.

Online Support

Technical Support: http://support.intel.com

Network Product Support: http://www.intel.com/network

Corporate Web Site: http://www.intel.com

Warranty

Product Warranty Information

One-Year Limited Hardware Warranty

Limited Warranty

Intel warrants to the purchaser of the Intel® WiMAX/WiFi Link 5150 adapter, or the Intel® WiMAX/WiFi Link 5350 adapter (the "Product"), that the Product, if properly used and installed, will be free from defects in material and workmanship and will substantially conform to Intel's publicly available specifications for the Product for a period of one (1) year beginning on the date the Product was purchased in its original sealed packaging.

SOFTWARE OF ANY KIND DELIVERED WITH OR AS PART OF THE PRODUCT IS EXPRESSLY PROVIDED "AS IS", SPECIFICALLY EXCLUDING ALL OTHER WARRANTIES, EXPRESS, IMPLIED (INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE), provided however, that Intel warrants that the media on which the software is furnished will be free from defects for a period of ninety (90) days from the date of delivery. If such a defect appears within the warranty period, you may return the defective media to Intel for replacement or alternative delivery of the software at Intel's discretion and without charge. Intel does not warrant or assume responsibility for the accuracy or completeness of any information, text, graphics, links or other items contained within the software.

If the Product which is the subject of this Limited Warranty fails during the warranty period for reasons covered by this Limited Warranty, Intel, at its option, will:

- **REPAIR** the Product by means of hardware and/or software; OR
- **REPLACE** the Product with another product, OR, if Intel is unable to repair or replace the Product,
- **REFUND** the then-current Intel price for the Product at the time a claim for warranty service is made to Intel under this Limited Warranty.

THIS LIMITED WARRANTY, AND ANY IMPLIED WARRANTIES THAT MAY EXIST UNDER APPLICABLE STATE, NATIONAL, PROVINCIAL OR LOCAL LAW, APPLY ONLY TO YOU AS THE ORIGINAL PURCHASER OF THE PRODUCT.

Extent of Limited Warranty

Intel does not warrant that the Product, whether purchased stand-alone or integrated with other products, including without limitation, semi-conductor components, will be free from design defects or errors known as "errata." Current characterized errata are available upon request. Further, this Limited Warranty does NOT cover: (i) any costs associated with the replacement or repair of the Product, including labor, installation or other costs incurred by you, and in particular, any costs relating to the removal or replacement of any Product soldered or otherwise permanently affixed to any printed circuit board or integrated with other products; (ii) damage to the Product due to external causes, including accident, problems with electrical power, abnormal, mechanical or environmental conditions, usage not in accordance with product instructions, misuse, neglect, accident, abuse, alteration, repair, improper or unauthorized installation or improper testing, or (iii) any Product which has been modified or operated outside of Intel's publicly available specifications or where the original product identification markings (trademark or serial number) have been removed, altered or obliterated from the Product; or (iv) issues resulting from modification (other than by Intel) of software products provided or included in the Product, (v) incorporation of software products, other than those software products provided or included in the Product by Intel, or (vi) failure to apply Intel-supplied modifications or corrections to any software provided with or included in the Product.

How to Obtain Warranty Service

To obtain warranty service for the Product, you may contact your original place of purchase in accordance with its instructions or you may contact Intel. To request warranty service from Intel, you must contact the Intel Customer Support ("ICS") center in your region (www.intel.com/support/) within the warranty period during normal business hours (local time), excluding holidays and return the Product to the designated ICS center. Please be prepared to provide: (1) your name, mailing address, email address, telephone numbers and, in the USA, valid credit card information; (2) proof of purchase; (3) model name and product identification number found on the Product; and (4) an explanation of the problem. The Customer Service Representative may need additional information from you depending on the nature of the problem. Upon ICS's verification that the Product is eligible for warranty service, you will be issued a Return Material Authorization ("RMA") number and provided with instructions for returning the Product to the designated ICS center. When you return the Product to the ICS center, you must include the RMA number on the outside of the package. Intel will not accept any returned Product without an RMA number, or that has an invalid RMA number, on the package. You must deliver the returned Product to the designated ICS center in the original or equivalent packaging, with shipping charges pre-paid (within the USA), and assume the risk of damage or loss during shipment. Intel may elect to repair or replace the Product with either a new or reconditioned Product or components, as Intel deems appropriate. The repaired or replaced product will be shipped to you at the expense of Intel within a reasonable period of time after receipt of the returned Product by ICS. The returned Product shall become Intel's property on receipt by ICS. The replacement product is warranted under this written warranty and is subject to the same limitations of liability and exclusions for ninety (90) days or the remainder of the original

warranty period, whichever is longer. If Intel replaces the Product, the Limited Warranty period for the replacement Product is not extended.

WARRANTY LIMITATIONS AND EXCLUSIONS

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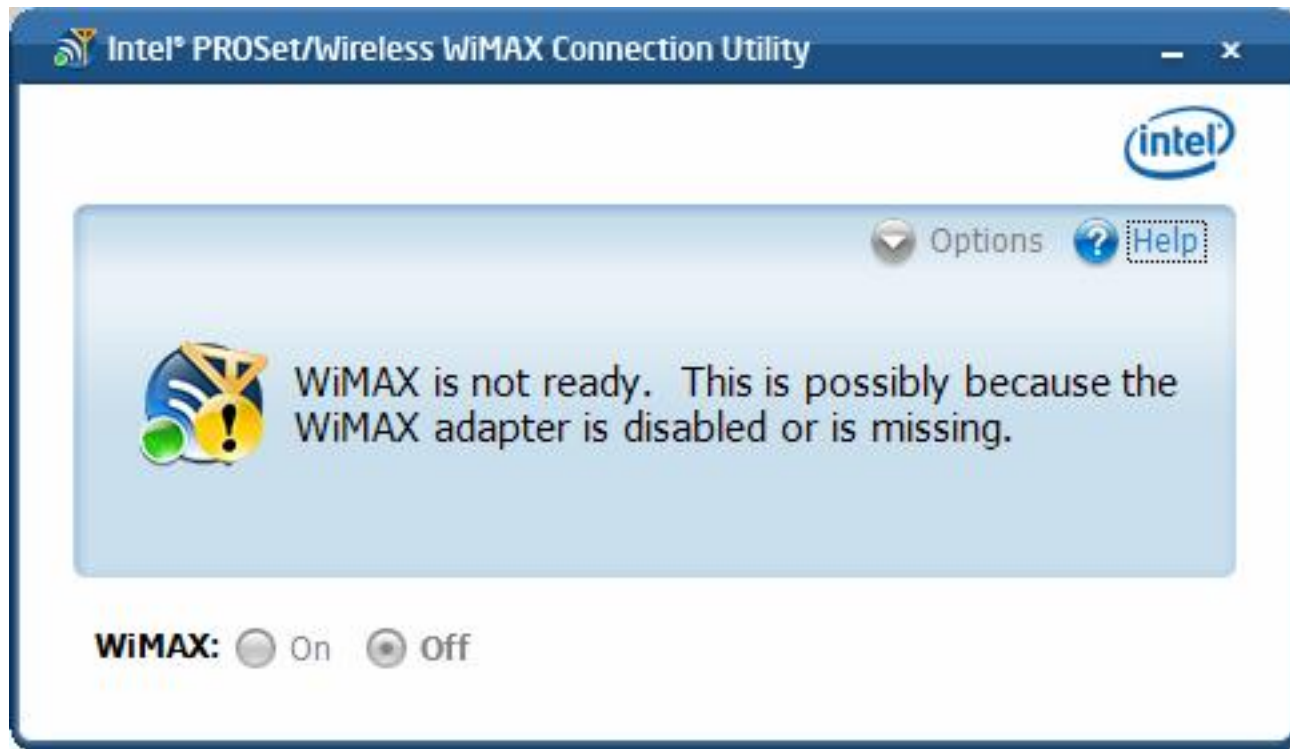
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WiMAX is not ready

This message indicates that WiMAX on your laptop is not ready. Reasons may be:

- No WiMAX device was found. The required WiMAX adapter is not installed in the computer, or the adapter is not working correctly. Check that a proper working adapter is installed. (Turn off the computer before doing this.)
- The WiMAX adapter has been disabled. The adapter may be disabled via the Windows XP* or Windows Vista* operating system. Check the Device Manager to be sure that the adapter is enabled.
- The WiMAX driver and/or software are not working correctly. You may need to reboot the computer.

Another Application is currently managing WiMAX connections

If you start the WiMAX connection utility and this message is displayed, it is because another application is controlling the WiMAX adapter and connections. To use the Intel(R) PROSet/Wireless WiMAX Connection Utility to activate networks and make connections, first close the other application so that it is no longer running. Then the start Intel(R) PROSet/Wireless WiMAX Connection Utility.

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Network Details

This window provides information about the selected network. The information varies, based on the network type and status:

- Network activated and connected.
- Network activated, not connected. This is a home network but you are not connected.
- Network not activated but connected. This occurs when you are in the process of activating a network.
- Network not activated, not connected.

Network Name	The name of the network, as defined by the network service provider.

| Network Type	Either **Home** or **Not activated**. A network that is not activated needs to be activated before you can access the internet over it. To activate a network, select the network and click **Connect**. This will start the activation process. Your home network is the WiMAX network you use to access the internet.
Network Status	**Connected** or **Not connected**. You can be connected to a home network, or a network that is not activated but is in the process of being activated.
Signal	This is the signal quality as received at the adapter. It can range from **Poor** to **Excellent**. Poor or Fair signal quality may affect the apparent speed of the connection, the connection may be dropped, or you may not be able to connect to this network.
Security	Always **Enabled** for WiMAX networks.
IP address	This Internet Protocol address (IPv4) for your WiMAX network adapter. This information is only present when the network is connected.

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Preferences

The Preferences window has settings that you can change. They are presented on two tabs:

- General Preferences
- Connection Preferences

General Preferences
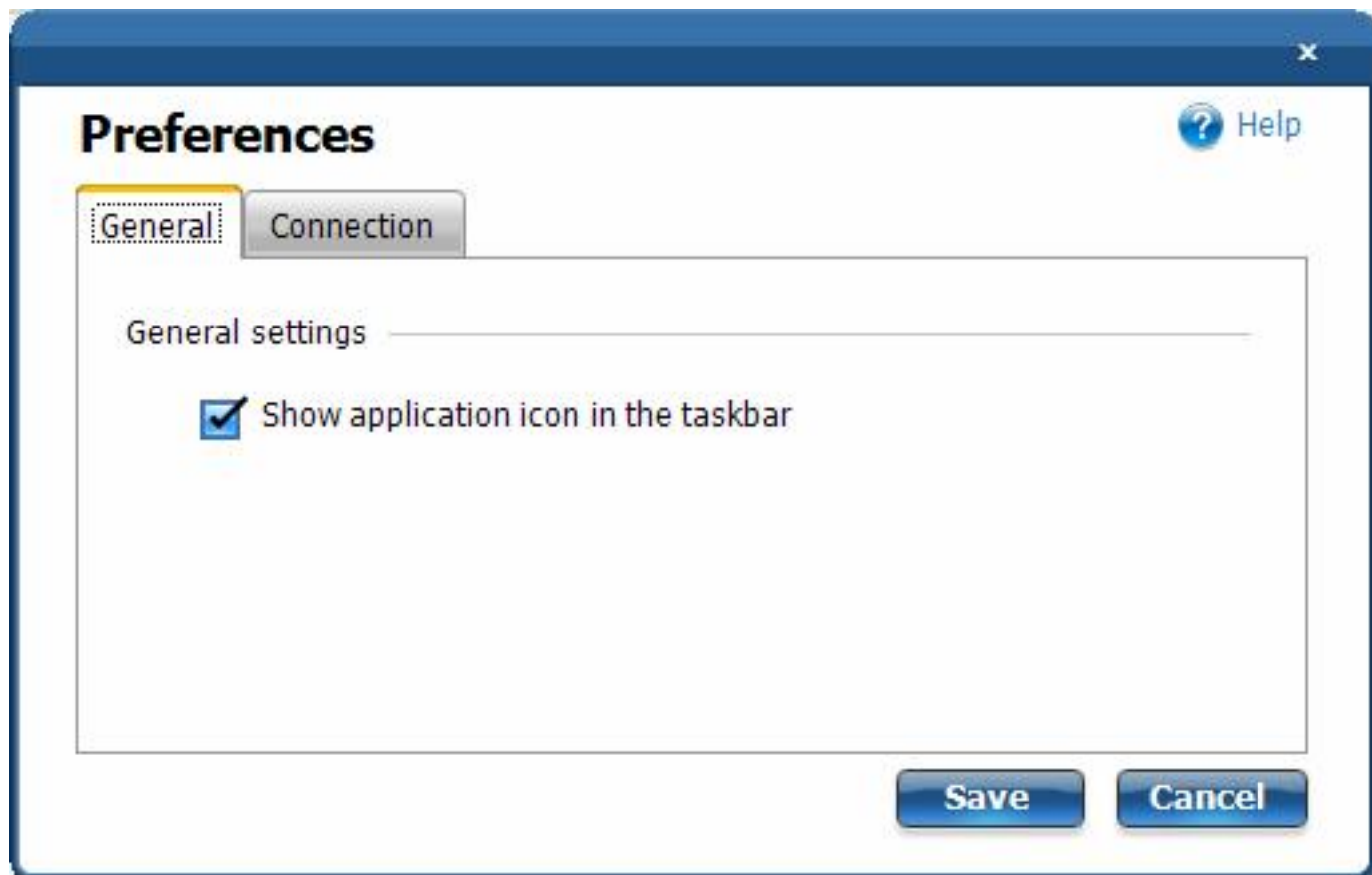
The General Preferences tab lets you select to **Show application icon in the taskbar**. See Taskbar Icons for information about the icons.

If you choose to uncheck this box, you will be cautioned with a message: **Unselecting this option will hide all Intel(R) PROSet/Wireless icons**. If you uncheck this box and turn

off the application icons, you will hide the icons for both Intel(R) PROSet/Wireless WiFi Connection Utility and Intel(R) PROSet/Wireless WiMAX Connection Utility. Click **Save** to make your selection.

Connection Preferences

The WiMAX connection utility is set by default for *manual* connection. This means that to connect to a WiMAX network, you must select the home network from the Networks available to connect list on the main window, and either click **Connect** or connect to the WiMAX network via the taskbar icon. Otherwise you will not be connected.

You can configure the utility to perform *automatic* connection. This means that whenever you turn WiMAX on, the WiMAX connection utility will search for available networks and *automatically* connect to the first network that it finds. To configure the utility connection preferences for automatic or manual connection, perform these steps:

1. On the WiMAX connection utility main window, click **Options**.
2. Click **Preferences**.
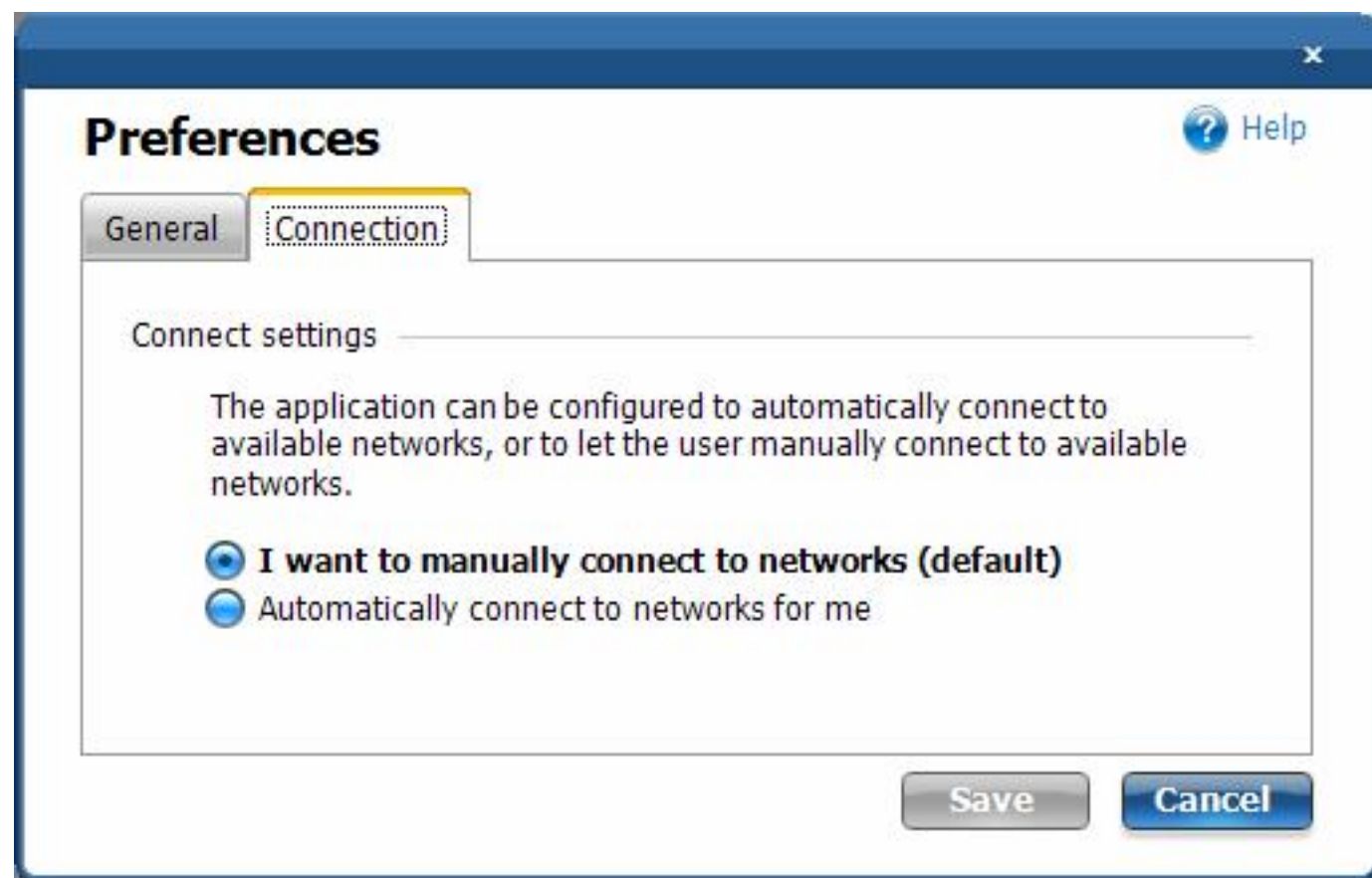
3. Click **Connection**. At the Connection tab, you can choose one of the following settings:

- ❍ **I want to manually connect to networks**. This is the default setting. The utility will not automatically connect to any WiMAX network, you must connect to the desired network.
- ❍ **Automatically connect to networks for me**. The utility will automatically connect to the first home network that it finds. The utility will *never* automatically connect to an un-activated network.

4. Click **Save**.

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Detailed Information

The Detailed Information window has the following information tabs:

- Adapter
- Current Connection

Adapter

This window provides information about the WiMAX adapter. This information includes:

- **Manufacturer**
- **Model**
- **Model version**
- **MAC address**

If the WiMAX adapter is not present in the laptop, all fields are filed with: **Information not available.**

Current Connection

This tab provides detailed information about the current connection. Information provided is refreshed periodically and will change based on your activity and location relative to WiMAX network tower. If you are not connected to a WiMAX network, then all fields are filled with **Not connected**.

Connected Network	
Name	The name of the WiMAX network you are currently connected to.
Total connection time	Indicates the time duration for this connection, from the moment at which the connection was made.
Network Statistics	

Channel Frequency	The channel frequency for this connection.
RSSI	
CINR	
Transmit power	
Data Transferred	
Total bytes sent	
Total bytes received	
Total packets sent	
Total packets received	

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