

Intel® PROSet/Wireless WiMAX Connection Utility

User Guide

Introduction

This user guide describes how to use the Intel® PROSet/Wireless WiMAX Connection Utility. This application runs on the following following Intel® adapters:

- Intel® WiMAX/WiFi Link 5150
 - Intel® WiMAX/WiFi Link 5350
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September 29, 2008

What is WiMAX?

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WiMAX Overview

WiMAX is a next generation wireless network communications technology. WiMAX is similar to WiFi, except that WiMAX provides high-speed, broadband access over a much larger area. For fixed WiMAX stations, the range of coverage may encompass several square miles. WiMAX networks also enjoy less interference than WiFi. 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 WiMAX Demo

You can view a demonstration of WiMAX technology. Click **Start > All Programs > Intel > WiMAX > WiMAX Demo**.

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Application Overview

The Intel® PROSet/Wireless 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. Intel® PROSet/Wireless WiMAX Software is completely configurable. The WiMAX adapter and connection can be easily turned off whenever necessary.

Start Intel® PROSet/Wireless WiMAX Connection Utility

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

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

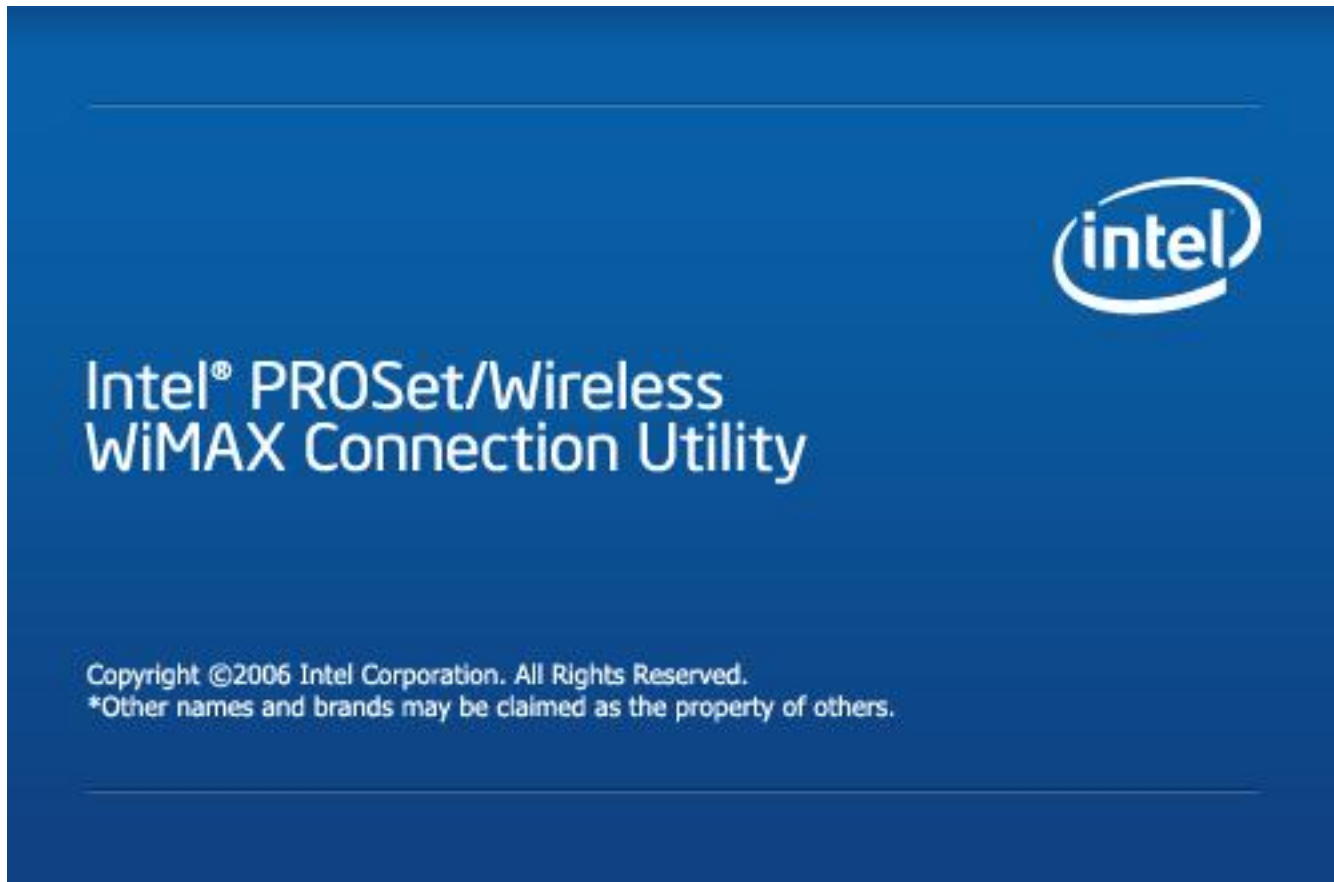
Because your laptop computer has a WiMAX adapter, a software program is always managing the adapter. If a program other than the Intel® PROSet/Wireless WiMAX Connection Utility is managing your WiMAX adapter, you may see the following message:

Another connection manager application is currently managing WiMAX

connections.

If the above message is displayed, close the other application so that it is no longer running. Then start Intel® PROSet/Wireless WiMAX Connection Utility. If this message displays again, you should remove the other application.

A blue launch window is displayed if you start Intel® PROSet/Wireless WiMAX Connection Utility from the Start menu.



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

Among other things, the Intel® PROSet/Wireless WiMAX Connection Utility main window lets you:

- [View the current status in the Status area](#)
- [View networks available to connect](#)
- [Make your first WiMAX connection](#)

- [Connect to a network](#)
- [Search for available networks](#)

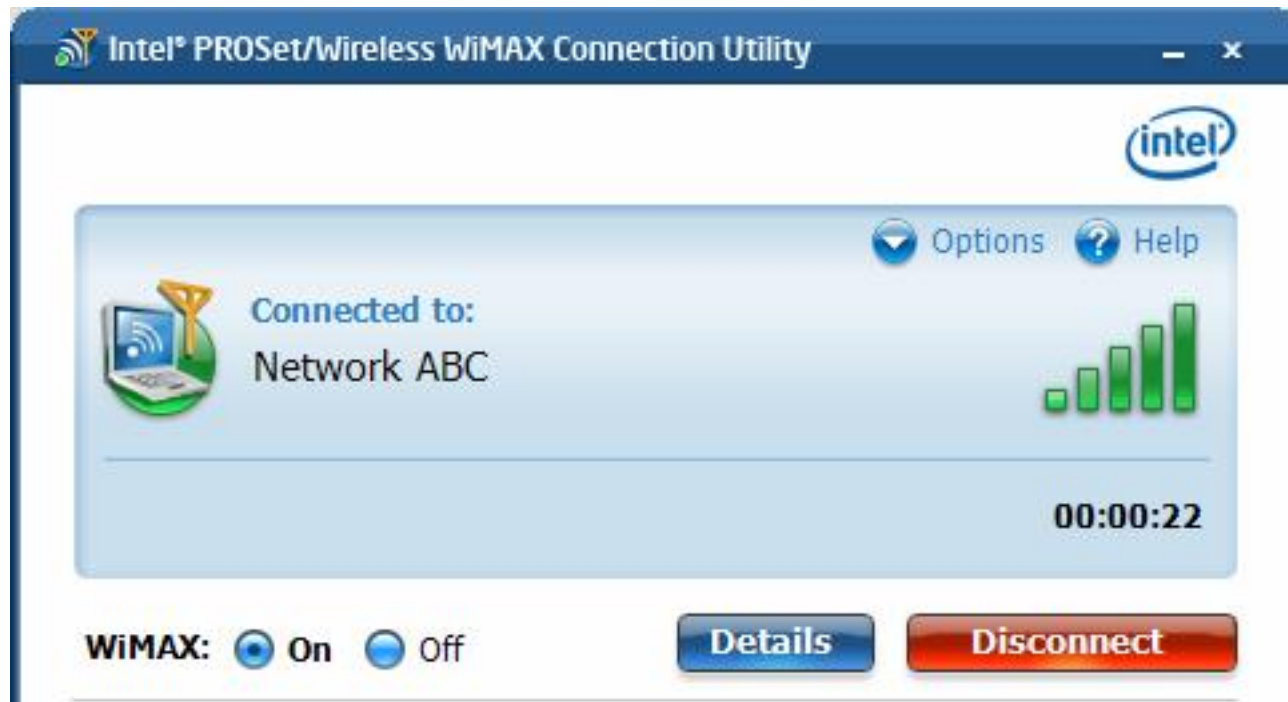
The screenshot shows the Intel PROSet/Wireless WiMAX Connection Utility window. The title bar reads "Intel® PROSet/Wireless WiMAX Connection Utility". The window features the Intel logo in the top right corner. Below the logo, there are "Options" and "Help" buttons. The main area displays "Connected to: Network ABC" with a signal strength indicator (four bars) and a timer showing "00:00:22". Below this, there is a "WiMAX" status section with "On" selected and "Off" as an alternative. There are "Details" and "Disconnect" buttons. A table lists the current network and two available networks. The table has columns for "Type", "Name", and "Signal".

Type	Name	Signal
Connected network		
	Network ABC	
Networks available to connect (2)		
	<Unidentified network>	
	<Unidentified network>	

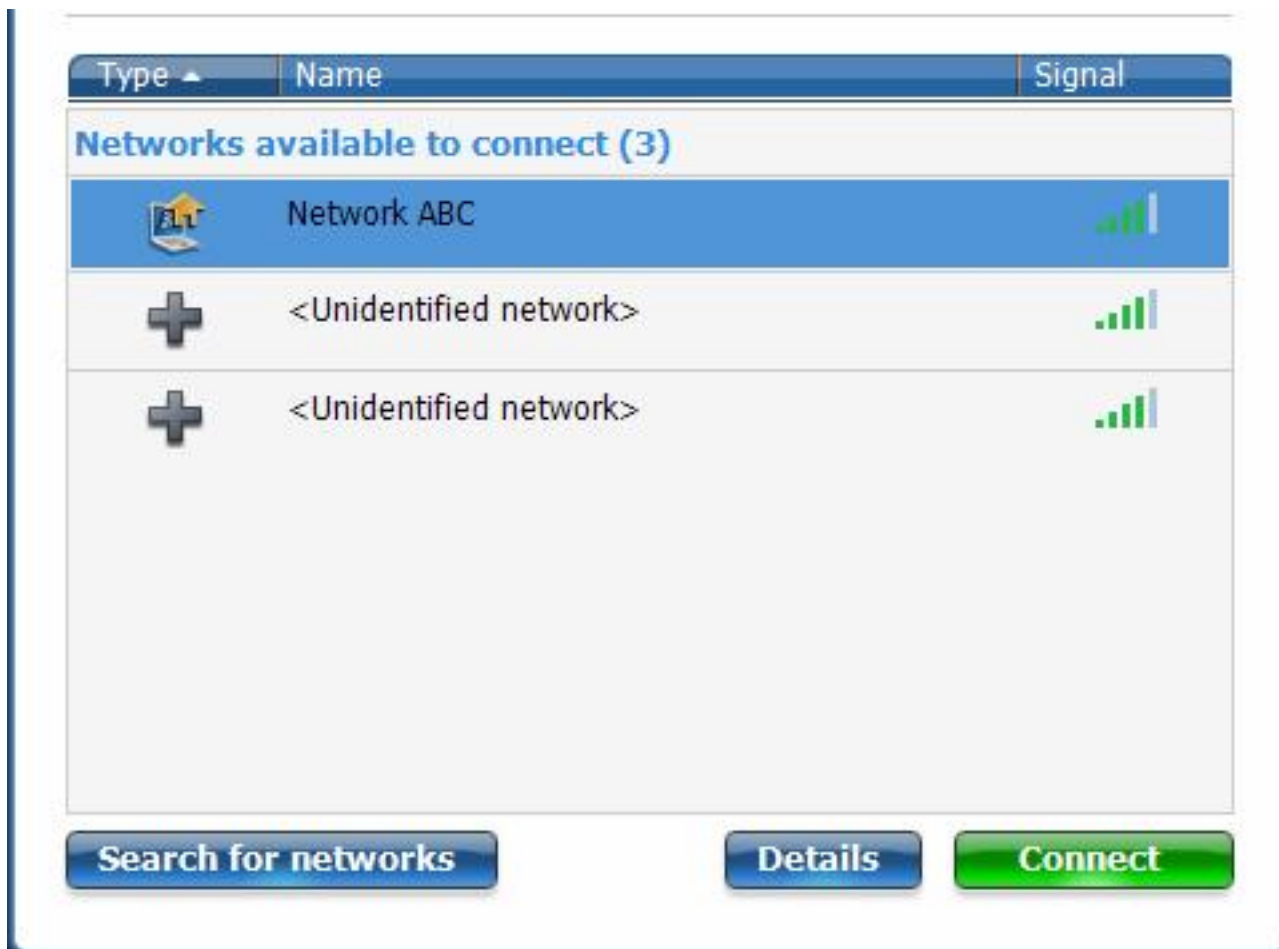
At the bottom of the window, there are "Search for networks", "Details", and "Connect" buttons.

Status Area

This area tells you about the status of the Intel® PROSet/Wireless WiMAX Connection Utility. 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. Click [Status](#) to see all possible status messages.



WiMAX Networks List



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





WiMAX 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 [Status](#) area above.
- *Networks available to connect*: This list includes activated *Home* networks and *unactivated 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](#).
 - An *unactivated network* is indicated by the icon. An unactivated network is one that you have *not* activated for service. Double-click on an unactivated 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](#). Unactivated networks are only shown in this list after you have performed an exhaustive search for networks [Searching for WiMAX networks](#).
 - An *unidentified network* is one that is not recognized by the Intel® PROSet/Wireless WiMAX Connection Utility. You can attempt to connect with the

network, by double-clicking on the network or by selecting it and clicking **Connect**. However, as an unidentified network, it may not function properly with the Intel® PROSet/Wireless WiMAX Connection Utility.

Icons

The following icons are presented in the main window. Additionally, icons used in the [taskbar](#) keep you informed about WiMAX networks and your WiMAX adapter.

	Connected to: Indicates the WiMAX network you are currently connected to. There are several other icons and status messages displayed in this area. See Status Messages .
	Indicates signal strength. The <i>number</i> 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 network is already activated and is available for connection. Your computer may have been configured during manufacture to have one or more home networks available. Or this may list as home network because you activated service with this WiMAX network service provider.
	Indicates that you have not activated this network. To make the network available, you need to first Activate service. For unknown networks, the activation process is guided by the WiMAX network service provider.
Time	Indicates the time duration for this connection, from the moment at which the current connection was made.

Buttons

The main window has the following buttons:

Details	In the status area, provides details of the currently connected network (if connected). In the WiMAX Networks List area, provides details of the current network selected from the list.
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<p>Connect / Disconnect</p>	<p>In the Status area, click Connect to connect to the selected network. 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 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.</p> <p>Click Disconnect to disconnect from the currently connected network. The network will then be listed in the Networks List.</p>
<p>WiMAX On/Off</p>	<p>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.</p>
<p>Options</p>	<p>Clicking Options displays these choices:</p> <ul style="list-style-type: none"> • Preferences... • Detailed information... • Advanced... • Search for networks (exhaustive) • About: Provides version and contact information about the Intel® PROSet/Wireless WiMAX Connection Utility.
<p>Help</p>	
<p>Search for Networks</p>	<p>The WiMAX connection utility periodically searches for <i>home</i> networks automatically, keeping the Networks List current with home networks. This is called a <i>fast</i> search. Clicking Search for Networks causes the adapter to search again for home networks. See Searching for WiMAX Networks.</p>

Close Intel® 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 function. To close a connection, click **Disconnect** on the main window, or click **WiMAX: Off**.

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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 Intel® PROSet/Wireless 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.
	Wireless 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. 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® 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. The available WiMAX taskbar command are listed next

NOTE: The taskbar icon changes, based on the status of the utility See [Taskbar Icons](#) to learn about the icons.

Command	Description
Configure WiMAX	Click to open the Intel® PROSet/Wireless WiMAX Configuration Utility.
WiMAX on / WiMAX off	This command turns WiMAX on or off.
Turn WiFi on/off	This command is only present when the computer is running Windows Vista*. Click Turn WiFi on/off to open the Windows Mobility Center. At the Windows Mobility Center, Wireless Network entry, click Turn wireless on or Turn wireless off , to control the WiFi radio. Note that WiMAX and WiFi cannot operate at the same time. If you turn WiMAX on, WiFi will turn off, and conversely, if you turn WiFi on, WiMAX will turn off.
Connect	<p>Connects to the available WiMAX home network.</p> <ul style="list-style-type: none"> • Auto connect mode is enabled. If a home network was available, then 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. • Searching for networks... The utility is searching for networks and this item will be updated with the results when the search completes. • No networks available. Search has revealed that no networks are available (home or unactivated). <p>This command is grayed out if the WiMAX On/Off button is Off, or the hardware radio switch if off (if present).</p>
Disconnect	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 wireless radio off or change the Connection Settings .

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

<p><ABC WiMAX Network> is available to connect.</p>	<p>One WiMAX network (in this example ABC WiMAX Network) is available for you to connect. This may be an activated or unactivated network. This message only displays if you are not currently connected, and only one network is available.</p>
<p>N WiMAX networks available to connect.</p>	<p>Two or more WiMAX networks are available to connect. They may be activated or unactivated networks. This message only displays if you are not currently connected.</p>
<p>Searching for WiMAX networks...</p>	<p>The adapter is currently searching for available WiMAX networks.</p>
<p>Connecting to <Network name></p>	<p>The adapter is currently connecting to the named network.</p>
<p>Connected to <Network name > Signal: <Excellent> IP address: <XXX.XXX.XXX.XXX></p>	<p>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.</p>
<p>WiMAX is off.</p>	<p>The wireless 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 hardware radio switch, if present.</p>
<p>The hardware radio switch is off.</p>	<p>Some laptops have a physical switch that you can use to turn on or off WiMAX and WiFi (the switch affects both). The message indicates that the switch is off. To connect you need to turn it on.</p>
<p>No WiMAX networks are available to connect.</p>	<p>Indicates that no WiMAX networks are available to connect to. You are in an area that does not have WiMAX coverage.</p>
<p>An incompatible version of the WiMAX software was detected.</p>	<p>There is a problem with the WiMAX software. You need to contact your WiMAX service provider.</p>
<p>Another connection manager application is currently managing WiMAX connections.</p>	<p>This message indicates that another application is controlling the WiMAX adapter and connections. To use the Intel® 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® PROSet/Wireless WiMAX Connection Utility. If this message displays again, you should remove the other application.</p>
<p>Not connected.</p>	<p>This message is shown if auto connect mode is turned on and the wireless radio is on, but there is no connected network.</p>

The WiMAX is not ready.	<p>This may be caused by one of the following reasons:</p> <ul style="list-style-type: none"> • 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 not working correctly. You may need to reboot the computer.
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Desktop 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 currently turned on. To disconnect from the network either: a) turn WiMAX off, or b) turn on manual connect mode and then click 'Disconnect'.	This message is shown if you attempt 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 when WiMAX software updates are available for download. If you choose Remind me later , proper WiMAX operation may not be possible. To ensure that WiMAX functions properly, you should click Yes .
The WiMAX updates are still being downloaded. Do you want to disconnect anyway?	Disconnecting WiMAX will stop the WiMAX download and installation will not be possible. You should click No to let the download complete.
The WiMAX updates are still being downloaded. Do you want to turn WiMAX off anyway?	Turning WiMAX off will stop the WiMAX download and installation will not be possible. You should click No to let the download complete.
The WiMAX updates have been downloaded. Installation will now begin.	Click OK to install the WiMAX updates.
You are attempting to connect to an unidentified WiMAX network. This network may not operate properly with the WiMAX installation on this computer. Connect anyway?	This message is shown if you attempt to connect to an unidentified WiMAX network. This network is not recognized by the Intel® PROSet/Wireless WiMAX Connection Utility. You can attempt to connect with the network, by double-clicking on the network or by selecting it and clicking Connect . However, as an unidentified network, it may not function properly with the Intel® PROSet/Wireless WiMAX Connection Utility.
WiFi and WiMAX cannot operate at the same time. If WiFi is connected, turning on WiMAX will disconnect WiFi. Do you want to turn on WiMAX?	This message is shown if you attempt to turn on WiMAX while WiFi is connected. If you click Yes , WiFi is disconnected and WiMAX is turned on. If you click No , WiFi remains on and WiMAX is left off.

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
This computer is enabled for WiMAX wireless broadband service.	This notification appears shortly after you start your computer, unless it has been turned off in the Preferences Window. See What is WiMAX? for more information.
One or more WiMAX networks are within range of this computer. To see the list and connect, click this message.	Clicking this message opens the Intel® PROSet/Wireless WiMAX Connection Utility main window and shows the available WiMAX network(s). From there you can open a WiMAX connection. See Connecting to a WiMAX Network for more information.
Connected to <Network name > Signal: <Excellent>	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.
You have disconnected from the network: <Network name>	<p>You have disconnected from the WiMAX network. This may be for any one of the following reasons:</p> <ul style="list-style-type: none"> • You intentionally disconnected from WiMAX. For example, you clicked off the WiMAX On/Off button on the main window, or clicked Disconnect. • You are in an area where WiMAX signal strength is poor. Check the signal strength indicator; the number of green bars increases with greater signal strength and decreases with less. To reconnect to WiMAX, move to an area of greater signal strength. For advanced users, see RSSI for more about signal strength. • You are in an area where WiMAX signal quality is poor. You may be too close to a wireless access point or microwave oven, both of which can interfere with your WiMAX connection. Make sure such devices are located at least 7ft (2 meters) from your WiMAX adapter. For advanced users, see CINR for more about signal quality. • You turned on WiFi. WiMAX and WiFi cannot operate at the same time. Turning on the WiFi radio will disconnect your WiMAX connection, and, turning on the wireless radio will disconnect your WiFi connection. See Turning WiMAX On and Off. • You turned off the wireless hardware radio switch. On some laptops, a wireless hardware radio switch lets you turn on or off wireless radio. If present, turn the wireless hardware radio switch back on. See Turning WiMAX On and Off • Service from your WiMAX network service provider has been interrupted. Contact your service provider for more information.

Open Intel® PROSet/Wireless WiMAX Connection Utility from the Taskbar

To open Intel® 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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Advanced Window

The Advanced window displays the following three tabs:

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

How to Access

On the main window, click **Options > Advanced**.

Adapter

This tab lets you reset the WiMAX adapter. You should only do this if the WiMAX adapter appears 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* or Windows XP*. After resetting is complete, the WiMAX adapter should be ready to connect.

How to Access

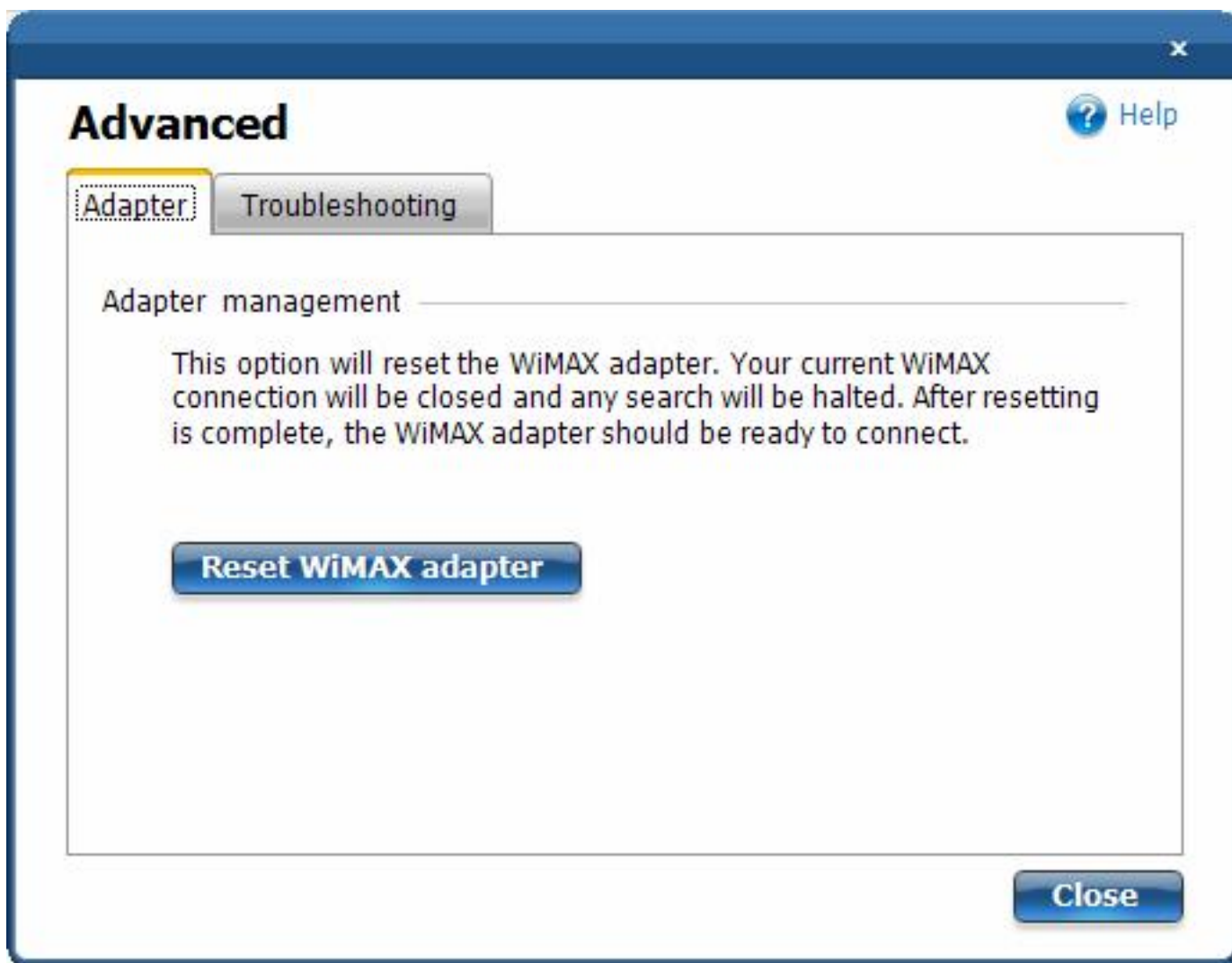
On the main window, click **Options > Advanced > Adapter**.

Resetting the Adapter

If you click **Reset WiMAX adapter**, and you are also connected to WiMAX, 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**.



Troubleshooting

WiMAX Connection Settings

CAUTION: 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 will force you to reconnect and update your connection settings with your service provider.

The WiMAX connection settings are periodically updated by your WiMAX network service provider. These updates keep your WiMAX connection operating optimally. However, in rare circumstances, it may be necessary to reset your WiMAX connection settings.

How to Access

On the main window, click **Options > Advanced > Troubleshooting**.

The Troubleshooting tab has the following button:

- **Restore factory default settings:** This action will restore the WiMAX connection settings to their factory default state. The connection settings that govern your connection to your current home network may be lost and you may be required to reconnect to the WiMAX network as though it is a new network, to receive updates to your connection settings.

If you click this button, the following message is displayed:

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

Click **Yes** or **No**. Clicking Yes will restore your connection settings to their factory default state.




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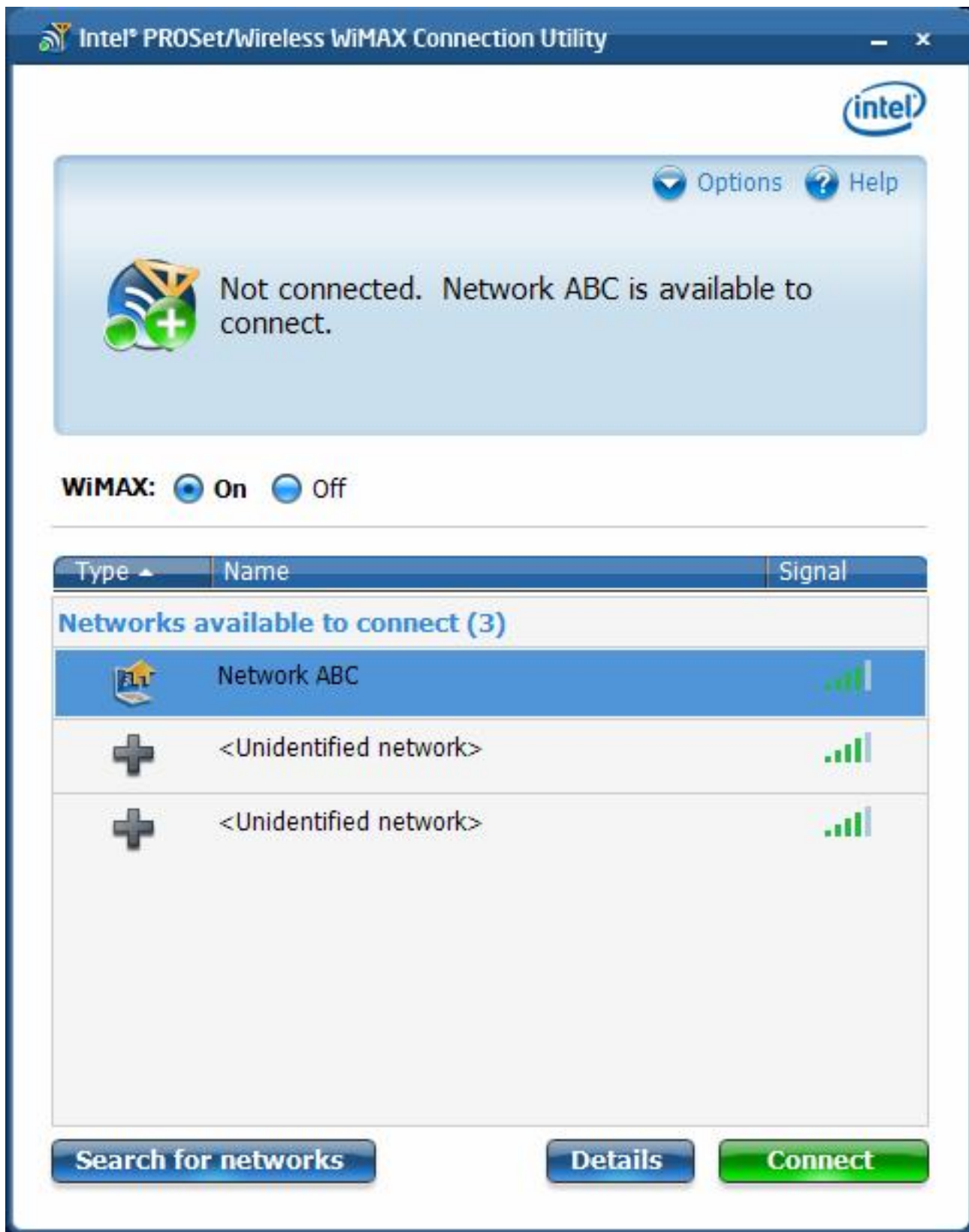
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Connecting to an Activated WiMAX Network

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, Network ABC is a home network (this is an example only).



Automatic and Manual Connection

The Intel® 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).

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 out of range). To turn on auto connect mode, see [Connection Preferences](#).

NOTE: You will never be automatically connected to an unactivated network, that is, a network that is not an activated home network. You can only automatically connect to a home network.

Disconnecting 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**. If you attempt to disconnect from a network when auto connect mode is turned on, the following message is displayed:

Auto connect mode is currently turned on. To disconnect from the network, either: (a) turn off WiMAX or (b) turn on 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 to a new city or area, the WiMAX service provider in your previous location (your home network) may also be listed in your new area. If your home network is not listed in your new location, you will need to activate service with a new service provider in the 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.

Unsubscribing 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® PROSet/Wireless WiMAX Connection Utility.

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Turning the Wireless Radio On and Off

When the Intel® PROSet/Wireless WiMAX Connection Utility is started, the wireless radio is on by default. This is indicated by the at the **WiMAX On/Off** button in the main window, and the **WiMAX On / WiMAX Off** button showing WiMAX On in the taskbar.

There are many ways to turn your wireless radio on or off:

- Main window **WiMAX On/Off** button: Simply click the button On or Off as necessary. Turning WiMAX off will disconnect you from the WiMAX network.
- Taskbar **WiMAX On / WiMAX Off** button: This button is available via the taskbar. It provides quick access to turn on or off WiMAX. Turning WiMAX off will disconnect you from the WiMAX network.
- WiFi exclusivity: If you turn WiFi on while WiMAX is connected, WiMAX will turn off and your WiMAX connection will be lost. The opposite is also true, if you turn WiMAX on while WiFi is connected, WiFi will turn off and your WiFi connection will be lost. WiFi and WiMAX cannot operate simultaneously.
- Hardware radio switch: Some computers have a hardware radio switch that lets you turn the wireless radio on and off. This switch operates independently from the **WiMAX On/Off** button (however, if the radio switch is off, this is reflected by the **WiMAX On/Off** button in the taskbar and main window). To turn WiMAX on, turn on the wireless radio hardware switch first. Then click WiMAX on at the taskbar or main window.
- Resetting the adapter: If the wireless radio is not working and you have checked the hardware radio switch, the adapter may need to be reset. Resetting the adapter also reloads the driver. To reset the adapter, at the main window, click **Options > Advanced > Adapter**. Then click **Reset WiMAX adapter**. This process takes from 5 to 10 seconds.

First Time Connection

During your first connection to a WiMAX network, you will open an account with the WiMAX network service provider. There are two kinds of WiMAX networks, known networks and unknown networks. A known network is a pre-activated network: one already recognized by your computer. A known network has a name (for example, ABC Network), and registration and subscription are easy.

However, before you can register and subscribe to any network, you may need need to configure your firewall. Activating WiMAX service with a service provider requires open, two-way communication between your laptop computer and the WiMAX service provider's network. Depending on your computer's firewall and security settings, you may need to change those settings to allow the required communications; otherwise activation may fail. See [Configuring your Firewall](#) for more information.

Making Your First Connection with a Known WiMAX Network

Perform these steps:

NOTE: WiFi and WiMAX cannot operate at the same time. If WiFi is connected, turning on WiMAX will disconnect WiFi. You should now close any WiFi connections.

1. If a program other than Intel® PROSet/Wireless WiMAX Connection Utility is managing your WiMAX adapter, you first need to close/stop that program.
2. If Intel® PROSet/Wireless WiMAX Connection Utility is not running, start it using one of the following methods:
 - Click **Start > All Programs > Intel® PROSet/Wireless > WiMAX Connection Utility**. Or...
 - Right-click the [Taskbar icon](#) located in the lower-right corner of your Windows* desktop. Click **Configure WiMAX....**
3. Check that WiMAX is turned on. At the main window, click **WiMAX: On**.
4. After a short interval, a known network (for example, ABC Network) should be listed under **Networks available to connect**. If a known network is not listed, click **Search for networks**. This will perform a fast search. In the event that a known network is not listed after the search completes, please check the following website to

determine if WiMAX is available in your area.

www.intel.com/go/getWiMAX

5. Choose a network and connect to it, either by double-clicking it, or by selecting it and then clicking **Connect**.
6. Open your internet browser, for example, Internet Explorer.

NOTE: During this process, your firewall application may ask your permission to allow communication between the WiMAX activation and provisioning site, and your computer. To complete the activation process, you will need to permit this communication.

7. Your laptop will connect to a internet portal managed by the network service provider, where you can subscribe for WiMAX service with the provider. The exact process for registering and subscribing may vary, based on the WiMAX network service provider. Once the subscription process is complete, you will have full access to the internet via WiMAX.

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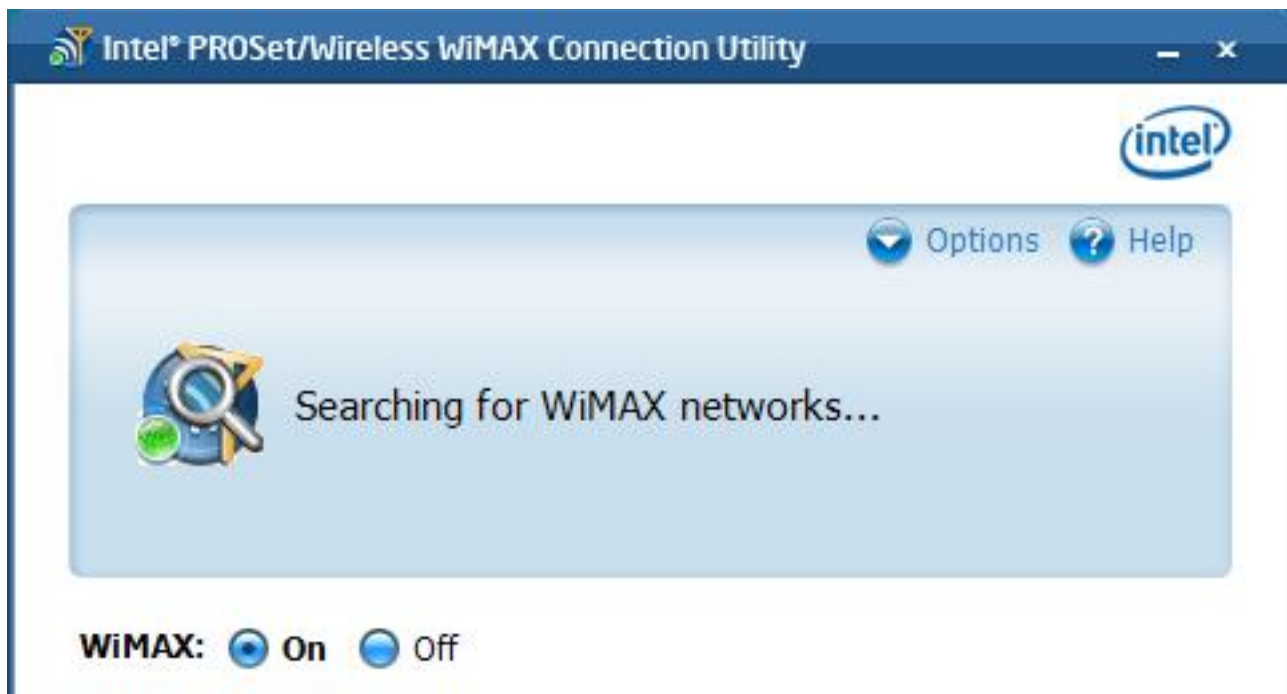
[Trademarks and Disclaimers](#)

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.

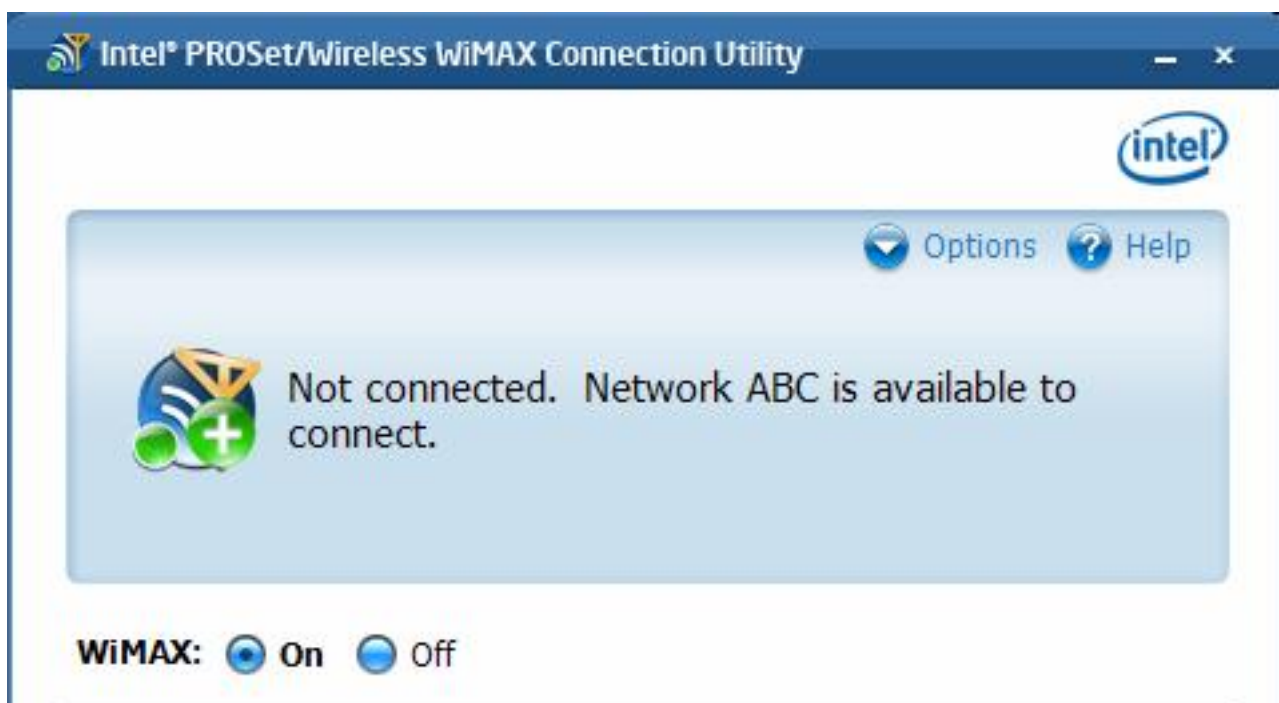
- [Searching for WiMAX networks](#)
 - [Not connected. *Network ABC* is available to connect](#)
 - [Connecting to *Network ABC*](#)
 - [Connecting to <Unidentified network>](#)
 - [Connected to: *Network ABC*](#)
 - [Not connected](#)
 - [Not Connected. Auto connect mode is enabled](#)
 - [Not connected. Unidentified network is available to connect](#)
 - [The hardware radio switch is off. To connect, turn on the hardware radio switch](#)
 - [WiMAX is off](#)
 - [Unable to connect to the network: <Network ABC>](#)
 - [Another connection manager application is currently managing WiMAX connections](#)
 - [WiMAX is not ready](#)
-

Searching for WiMAX networks...



This message is displayed when the adapter is searching for WiMAX networks. This search will occur after you have clicked **Search for networks**. 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.

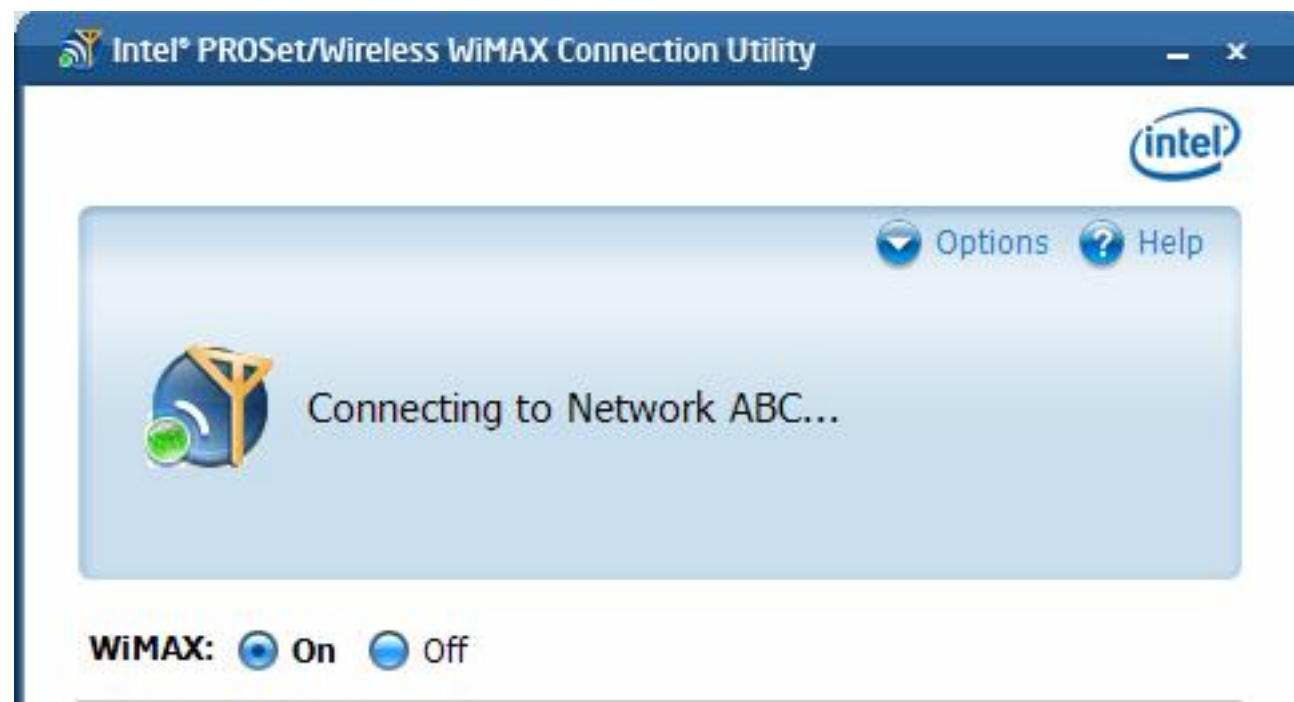
Not connected. *Network ABC* is available to connect



This message tells you that a network is available to connect. You can connect to it by

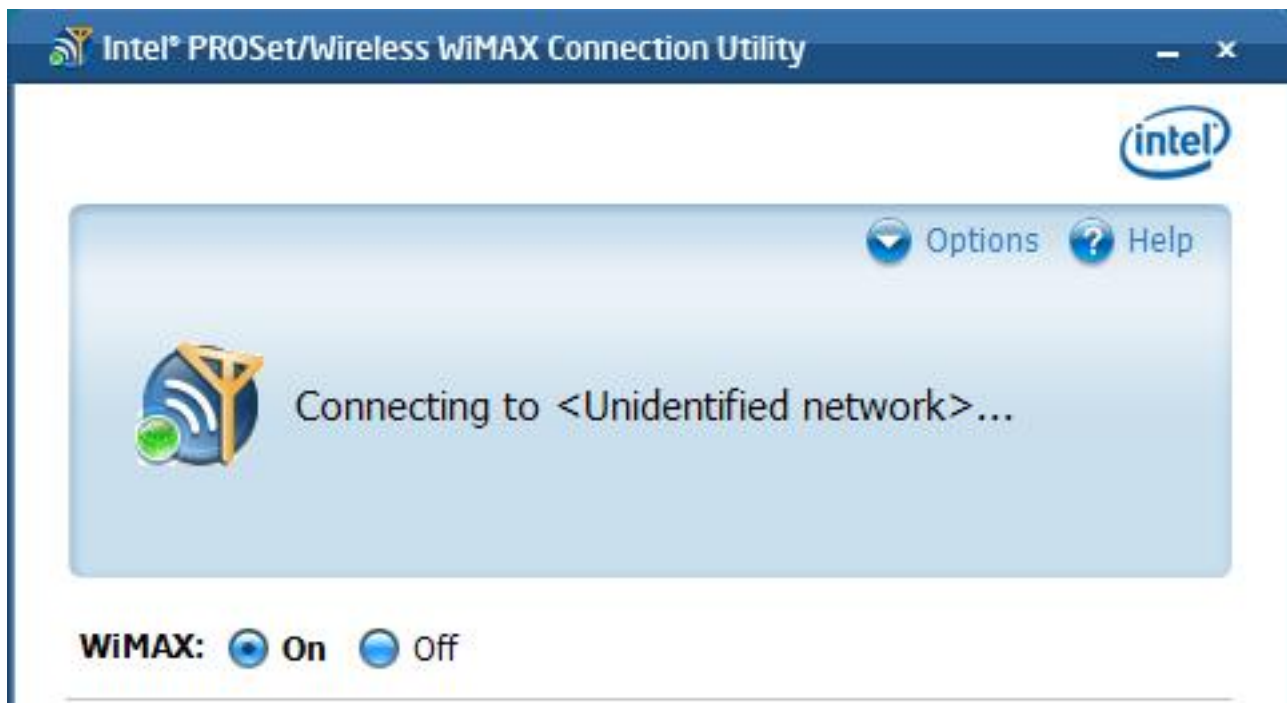
double-clicking on the network or clicking **Connect**.

Connecting to *Network ABC...*



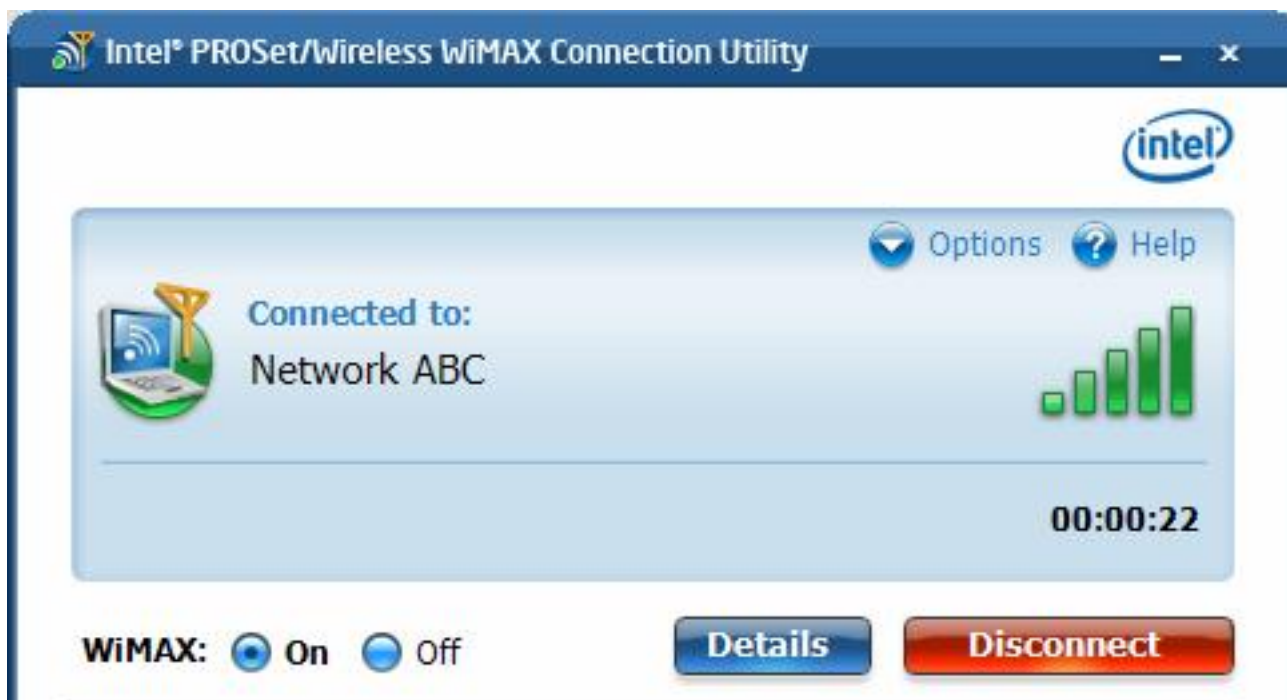
After clicking **Connect** or double-clicking on a network in the **Networks available to connect** list, the Intel® PROSet/Wireless WiMAX Connection Utility connects to the network. This is either a home network or an unactivated network, in which case you will begin the activation process for this network. The icon changes (animates) during the connection process.

Connecting to <Unidentified network> ...




This message displays when you are in the process of connecting to an unidentified network. An *unidentified network* is one that is not recognized by the Intel® PROSet/Wireless WiMAX Connection Utility. You can connect with the network, by double-clicking on it or by selecting it and clicking **Connect**. However, as an unidentified network, it *may not function properly* with the Intel® PROSet/Wireless WiMAX Connection Utility. The icon changes (animates) during the connection process.

Connected to: *Network ABC*



You are connected to a WiMAX network. For a complete description of features, controls, and indicators on this window, see [Main Window](#).

Not connected



The screenshot shows the Intel PROSet/Wireless WiMAX Connection Utility window. The title bar reads "Intel® PROSet/Wireless WiMAX Connection Utility". In the top right corner, there is an Intel logo and a "Help" button. Below the title bar, there is a "Options" button. The main area of the window displays a "Not connected." message next to a WiMAX icon. Below this, there are radio buttons for "WiMAX: On" (selected) and "Off". At the bottom, there is a table with columns "Type", "Name", and "Signal". The table is currently empty, and a message states: "No WiMAX networks have been found yet. To search for WiMAX networks, either click the 'Search for networks' button (recommended) to begin a fast network search or [click this link](#) to begin an exhaustive network search." At the bottom of the window, there are three buttons: "Search for networks", "Details", and "Connect".

Options Help

Not connected.

WiMAX: On Off

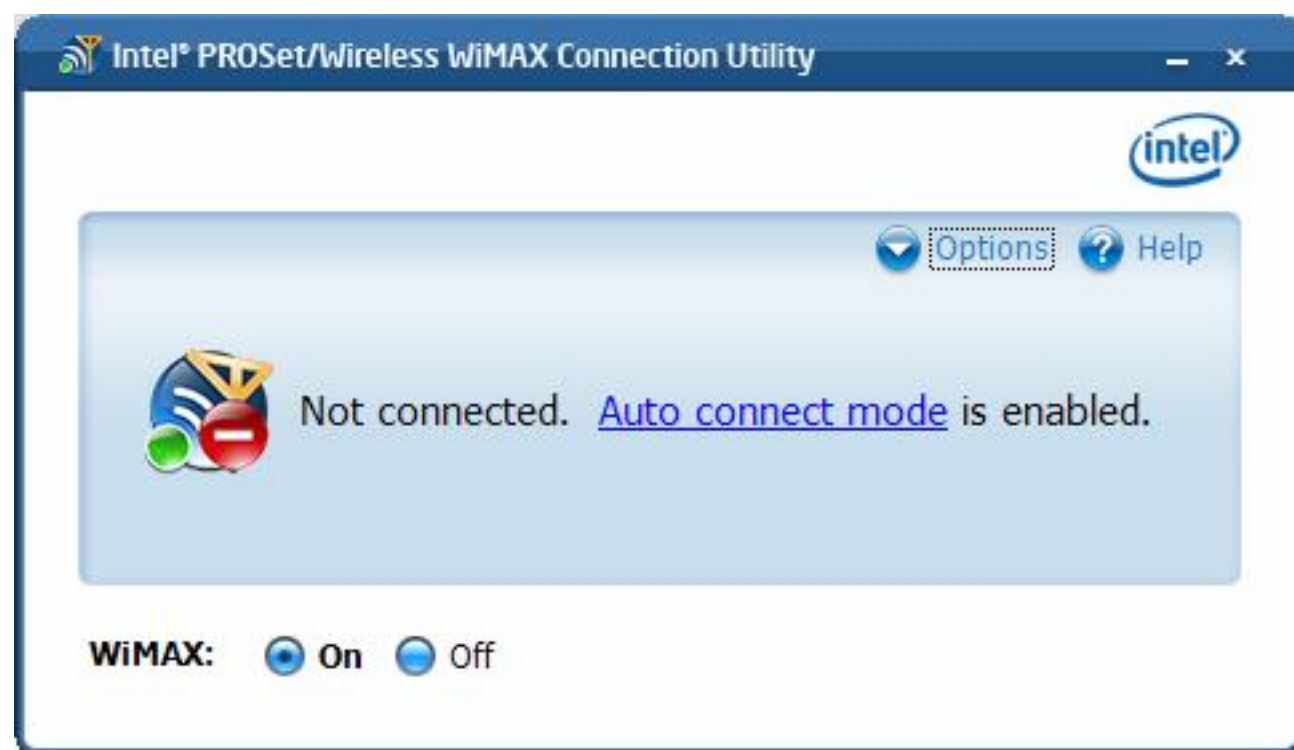
Type	Name	Signal
No WiMAX networks have been found yet.		
To search for WiMAX networks, either click the 'Search for networks' button (recommended) to begin a fast network search or click this link to begin an exhaustive network search.		

Search for networks Details Connect

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 available to connect to. You can perform a [fast](#) network search, which searches for previously connected networks, or an [exhaustive](#) network search, which searches for all WiMAX networks, including networks that you have not previously connected to.

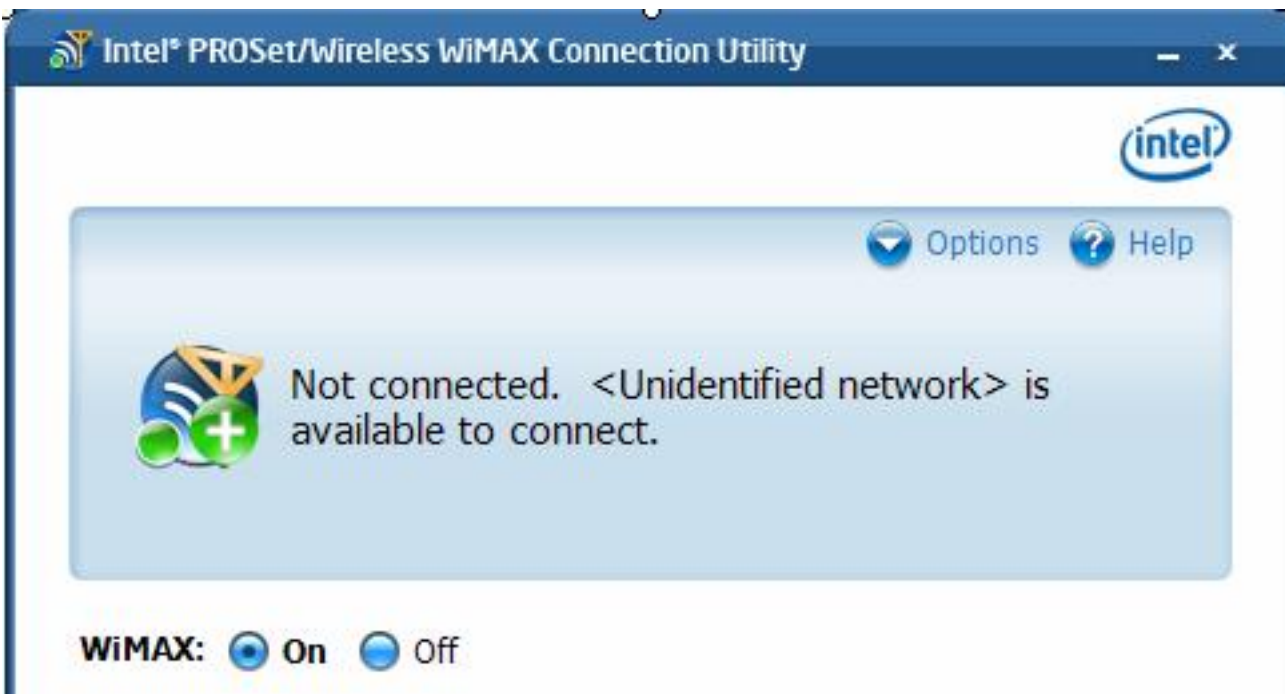
NOTE: An exhaustive network search may take several minutes and will consume more power than a fast search.

Not Connected. Auto connect mode is enabled



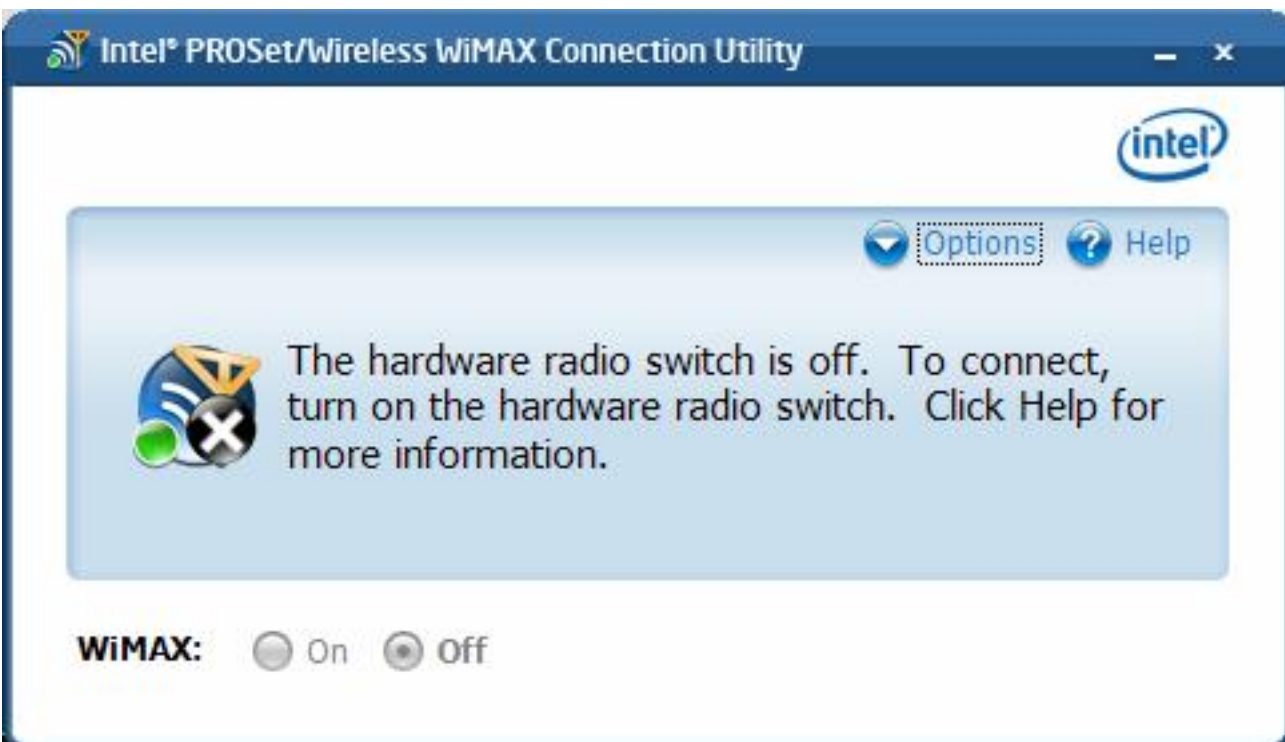
This message indicates that you are not connected, and that the application is in auto connect mode. In auto connect mode, if any WiMAX networks that you have previously connected to are available, the application will connect to them automatically. In this case, it is not necessary to perform a fast search to find a network. Also in this window, you can click auto connect mode and access the [Preferences](#) window to turn off auto connect mode (however that will not help you connect to a network).

Not connected. <Unidentified network> is available to connect



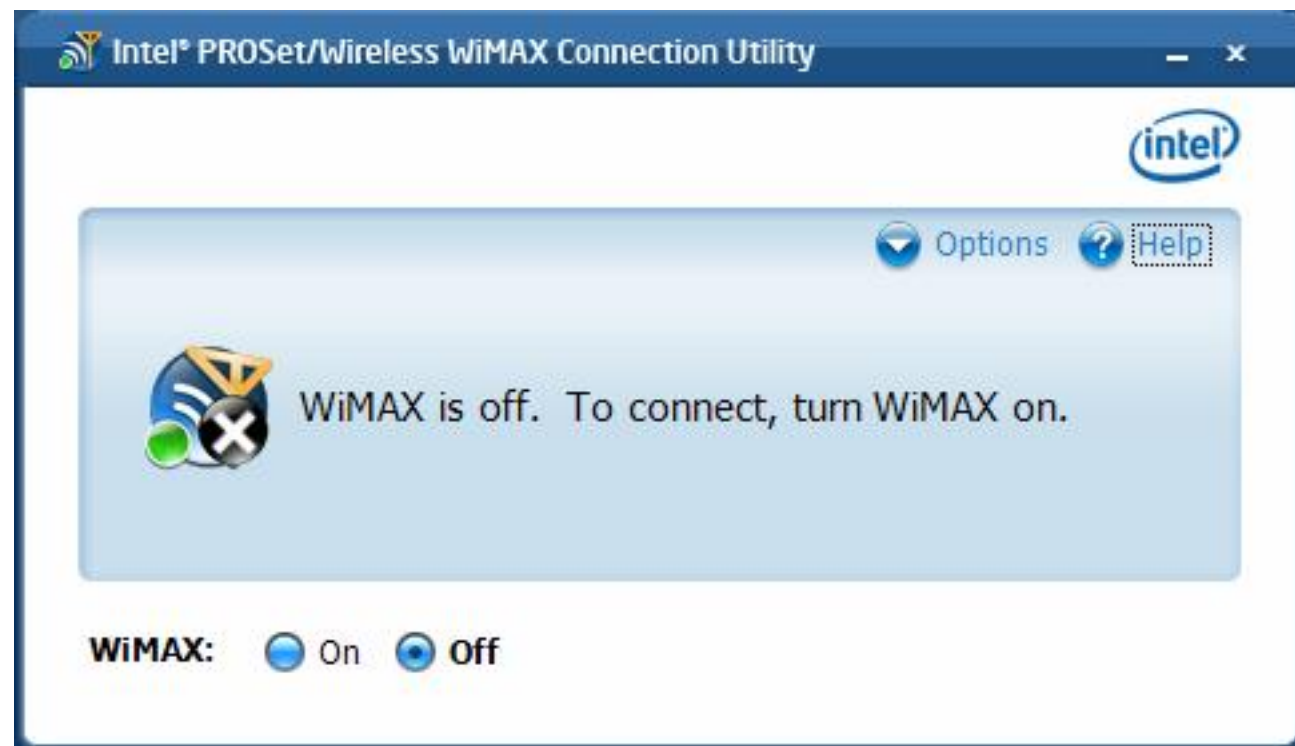
This message tells you that an unidentified network is available to connect. An *unidentified network* is a WiMAX network that is not recognized by the Intel® PROSet/Wireless WiMAX Connection Utility. You can attempt to connect with the network, by double-clicking on the network or by selecting it and clicking **Connect**. However, as an unidentified network, it may not function properly with the Intel® PROSet/Wireless WiMAX Connection Utility.

The hardware radio switch is off



On some laptops, a hardware radio switch lets you turn on or off the 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 WiMAX: On/Off button.

WiMAX is off



The software **WiMAX: On/Off** 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 Intel® PROSet/Wireless 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](#).

Unable to connect to the network: <Network ABC>

This may be for any one of the following reasons:

- You are in an area where WiMAX signal strength is poor. Check the [signal strength indicator](#); the number of green bars increases with greater signal strength and decreases with less. To reconnect to WiMAX, move to an area of greater signal strength. For advanced users, see [RSSI](#) for more about signal strength.

- You are in an area where WiMAX signal quality is poor. You may be too close to a wireless access point or microwave oven, both of which can interfere with your WiMAX connection. Make sure such devices are located at least 7ft (2 meters) from your WiMAX adapter. For advanced users, see [CINR](#) for more about signal quality.
 - You turned On the WiFi radio. WiMAX and WiFi cannot operate at the same time. Turning On the WiFi radio will disconnect your WiMAX connection, and, turning On the wireless radio will disconnect your WiFi connection. [See Turning WiMAX On and Off](#).
 - You turned Off the WiMAX hardware radio switch. On some laptops, a WiMAX hardware radio switch lets you turn On or Off WiMAX radio. If present, turn the WiMAX hardware radio switch back On. [See Turning WiMAX On and Off](#).
 - Service from your WiMAX network service provider has been interrupted. Contact your service provider for more information.
-

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Network Details

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

How to Access

On the main window, select the network and click **Details**. Or select the network, right-click, and click **Details**.



Network Name	The name of the network, as defined by the network service provider.
Network Type	Either Home or Not activated . Your home network is the WiMAX network you use to access the internet. 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.
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:

- [Connection Preferences](#)
- [Application Preferences](#)

How to Access

On the main window, click **Options** > **Preferences**.

Connection Preferences

The Intel® PROSet/Wireless WiMAX Connection Utility is normally set 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 Intel® PROSet/Wireless WiMAX Connection Utility will search for available networks and *automatically* connect to the first network that it finds.

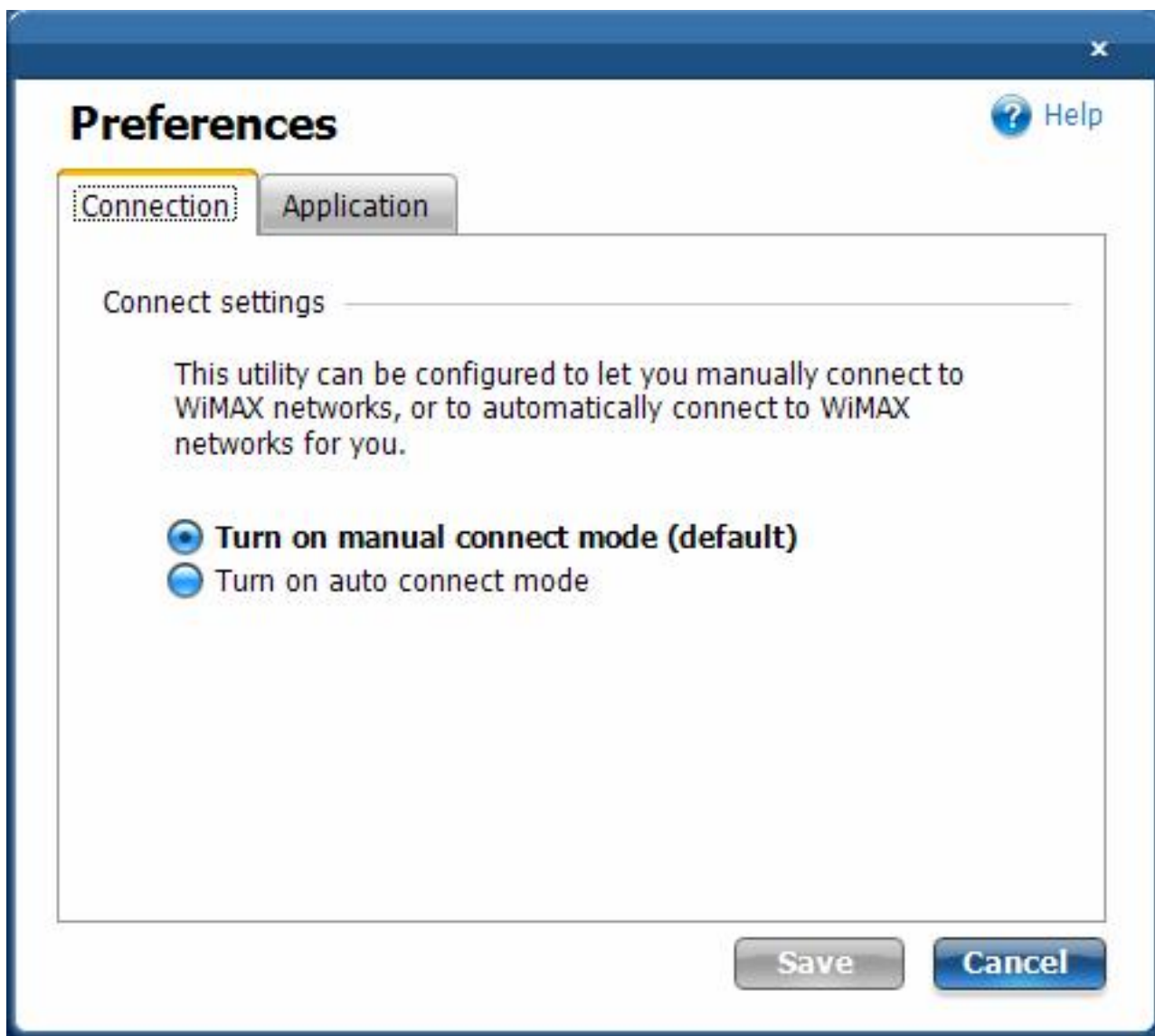
How to Access

On the main window, click **Options** > **Preferences** > **Connection**.

To configure the Connection Preferences for automatic or manual connection, perform these steps:

1. On the main window, click **Options**.
2. Click **Preferences**.
3. Click **Connection**. At the Connection tab, you can choose one of the following settings:
 - **Turn on manual connect mode (default)**. This is the default setting. The utility will not automatically connect to a WiMAX network, you must connect to the desired network.

- **Turn on auto connect mode.** The utility will automatically connect to the first home network that it finds. The utility will *never* automatically connect to an unactivated network. This means that you must first activate a network before you can turn on auto connect mode.
4. Click **Save**.



Application Preferences

The Application Preferences tab lets you set several application parameters, each is discussed next.

Show WiFi/WiMAX disconnect warnings	<p>Turned On (checked): This will display a warning that WiFi is about to disconnect because you are turning on WiMAX, or that WiMAX is about to disconnect because you are turning on WiMAX.</p> <p>Turned Off: No such warnings are displayed.</p>
Show firewall configuration warning	<p>Turned On (checked): When attempting to connect to certain sites, this will display a warning that your firewall might impede that connection. In this case, you may need to change the firewall configuration. (This warning is not aware of your firewall configuration. It only warns that connection to this site may be impeded by your firewall, if enabled).</p> <p>Turned Off: No such warning is displayed.</p>
Show disconnected notification	<p>Turned On (checked): this will display a warning when WiMAX becomes disconnected because another application has turned in WiFi.</p> <p>Turned Off: No such warning is displayed.</p>
Show when computer is enabled for WiMAX notification	<p>Turned On (checked): A message is displayed shortly after you turn on the computer telling you that your computer supports WiMAX network communications.</p> <p>Turned Off: No such message is displayed.</p>
Show application icon in the taskbar	<p>Turned On (checked): The Intel® PROSet/Wireless WiMAX Connection Utility icon is visible in the taskbar.</p> <p>Turned Off: The icon is removed from the taskbar. See Taskbar Icons for information about the icons.</p>

How to Access

On the main window, click **Options > Preferences**.

To change any parameter, check (click) or uncheck the parameter, and then click **Save**.

Preferences

 Help

Connection

Application

Warning and notification settings

- Show WiFi/WiMAX disconnect warnings
- Show firewall configuration warning
- Show disconnected notification
- Show computer is enabled for WiMAX notification

Taskbar settings

- Show application icon in the taskbar

This utility can always be opened from the Windows 'Start' menu (Start -> All Programs -> Intel® PROSet/Wireless -> WiMAX Connection Utility).

Save

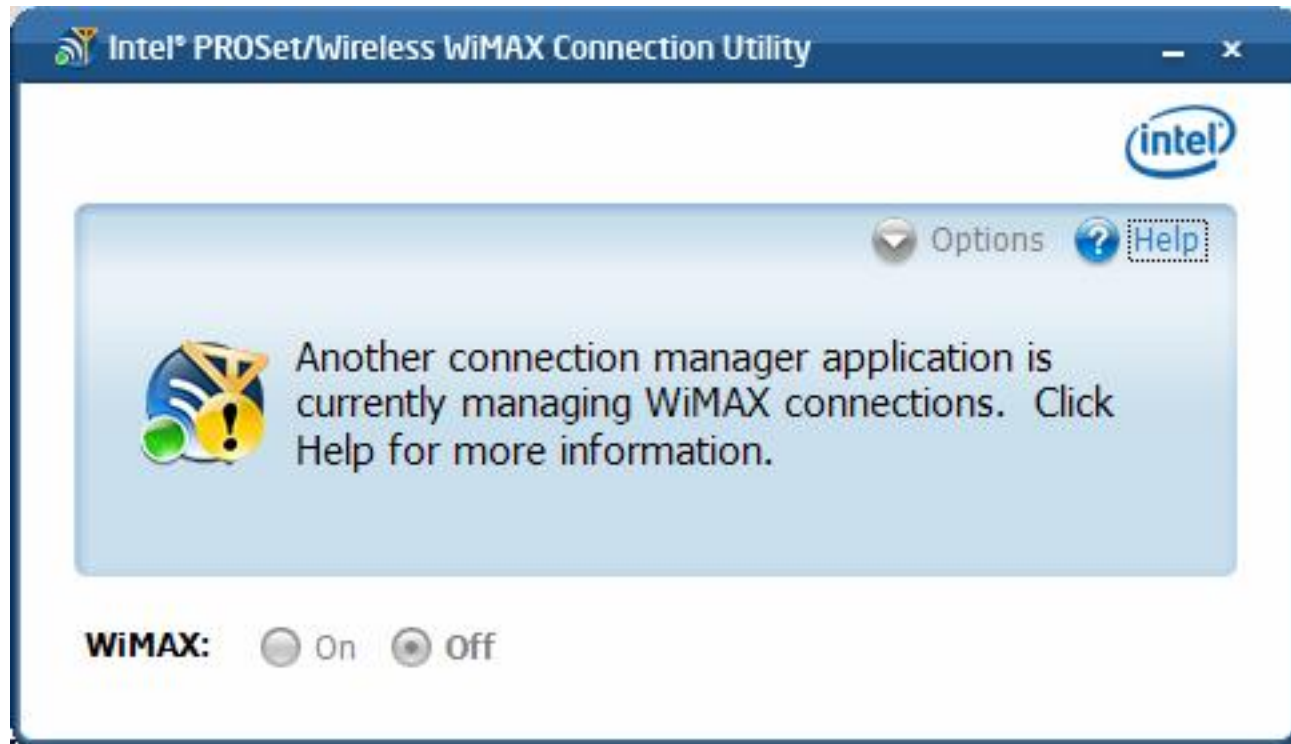
Cancel

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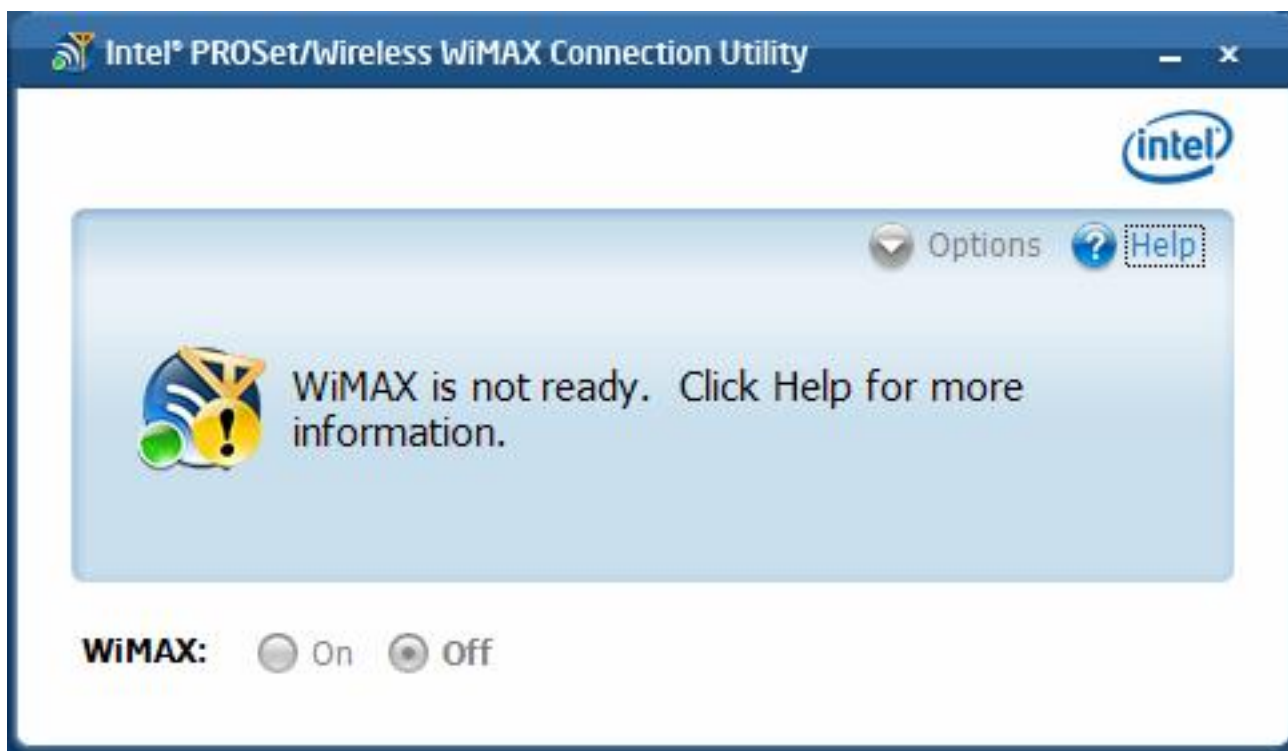
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Another connection manager application is currently managing WiMAX connections



If you start the Intel® PROSet/Wireless WiMAX Connection Utility and this message is displayed, it is because another application is controlling the WiMAX adapter and connections. To use the Intel® 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® PROSet/Wireless WiMAX Connection Utility. If this message displays again, you should remove the other application.

WiMAX is not ready



This message indicates that WiMAX on your computer 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.

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Detailed Information

The Detailed Information window has the following information tabs:

- [Adapter](#)
- [Current Connection](#)

How to Access

On the main window, click **Options > Detailed Information**.

Adapter

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

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

How to Access

On the main window, click **Options > Detailed Information > Adapter**.

If the WiMAX adapter is not present in the laptop, all fields are filled 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. Connection is required; if you are not connected to a WiMAX network, then

all fields are filled with **Not connected**.

How to Access

On the main window, click **Options > Detailed Information**.

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	Received Signal Strength Indication. This indicates the power of the received signal from the WiMAX service provider tower. A value of less than -87dBm indicates a very poor signal strength and network disconnections may occur.
CINR	Carrier to Interference-plus-Noise Ratio. Expressed in decibels (dB), CINR is a measurement of signal effectiveness. The carrier is the desired signal, and the interference can either be noise or co-channel interference, or both. A CINR value of less than 3dB indicates poor signal quality and network disconnections may occur.
Transmit power	The power level transmitted at the adapter.
Data Transferred	
Total bytes sent	The total number of bytes sent by the adapter.
Total bytes received	The total number of bytes received at the adapter.
Total packets sent	The total number of packets sent by the adapter.
Total packets received	The total number of packets received at the adapter.

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Configuring Your Firewall

Activating WiMAX service (also called *activation and provisioning*) requires open, two-way communication between your laptop computer and the WiMAX service provider's network. Depending on your computer's firewall and security settings, you may need to change your firewall's settings to allow the required communications. Following are instructions for several commonly-used firewalls. This information was current as of this writing. Consult the user's guide or online help for your firewall application to get the latest information.

- [Configure Windows XP Service Pack 2 Firewall](#)
 - [Configure McAfee Personal Firewall Plus](#)
 - [Configure BlackICE Defender Firewall](#)
 - [Configure Norton Internet Security Personal Firewall](#)
 - [Configure Sygate Personal Firewall Pro](#)
 - [Configure ZoneAlarm Professional](#)
-

Windows XP Service Pack 2 Firewall

To open UDP port 2948 in the Windows XP Service Pack 2 firewall, perform these steps:

1. Click **Start > Control Panel > Security Center > Firewall**.

NOTE: The above step applies if you are using Classic View. If you are using Category View rather than Classic View, then Security Center is not shown. Simply click **Start > Control Panel > Windows Firewall**.

2. Make sure the **On (recommended)** is checked. If this is not checked, then you may be using another firewall and these steps will not apply. Determine which firewall you are using. If you are not using another firewall, then click On (recommend).
3. Click the Exceptions tab. At this tab, click Add Port.
4. Enter the following information:
 - Enter a name for this port access rule. The precise name is not important; you might enter **WiMAX Firewall Rule** or whatever you prefer.
 - Enter this port number (this number is required): **2948**.
 - Check the option **UDP**.
5. Click **OK** and then click **OK** again to save these settings.

6. Click **OK** a third time to close Windows Firewall. You can now proceed with activation. Return to [Activating Service with a WiMAX Network](#).
-

McAfee Personal Firewall Plus

To open UDP port 2948 in the McAfee Personal Firewall Plus, perform these steps:

Click **Start** > **All Programs** > **McAfee** > **McAfee Personal Firewall Plus**.

1. Click **Utilities**.
 2. Click **System Services**.
 3. Click **Add**.
 4. In the Edit Port Configuration window, enter the following information:
 - o Program Name: Enter a name (purpose) for this program. The precise name is not important; you might enter **WiMAX Firewall Rule** or whatever you prefer.
 - o Incoming UDP ports: **2948** (this number is required).
 - o Description: Enter a name for this port access rule. As above, the precise name is not important; you might enter **WiMAX Firewall Rule** or whatever you prefer.
 5. Click **OK**. Then check the System Services list to see that your WiMAX Firewall Rule has been added and is checked.
 6. Click **OK** again to save your firewall settings.
 7. Click **OK** again to close the McAfee Personal Firewall Plus window. You can now proceed with activation. Return to [Making Your First Connection with a Known WiMAX Network](#).
-

BlackICE Defender Firewall

To open UDP port 2948 in the BlackICE Defender Firewall, perform these steps:

1. Click **Start** > **All Programs** > **Network ICE** > **BlackICE Utility**.
2. Click **Tools** > **Advanced Firewall Settings**.
3. Click **Add**.
4. Turn off **All Ports** (no checkmark), and then enter the following information.
 - o Name: **WiMAX Firewall Rule** (or whatever you prefer).
 - o Port: **2948** (this number is required).
 - o Type: **UDP**.
 - o Mode: Check (turn on) **Accept**.
 - o Duration of Rule: Check (turn on) **Forever**.
5. Click **Add**.
6. Click **OK** to save these firewall settings.

7. You can now proceed with activation. Return to [Making Your First Connection with a Known WiMAX Network](#).
-

Norton Internet Security Personal Firewall

To open UDP port 2948 in the Norton Internet Security Personal Firewall, perform these steps:

1. Click **Start > All Programs > Norton Internet Security > Norton Internet Security**. Or click the **Norton Protection Center** icon in the system tray and select **Norton Internet Security**.
 2. Under **Settings**, click **Personal Firewall**.
 3. Click **Configure**.
 4. Under **Firewall Protection**, make sure that **On (recommended)** is checked.
 5. Under **Personal Firewall**, click **Advanced Settings**.
 6. Click **Configure** and then click **Add**.
 7. Select **Allow** and then click **Next**.
 8. Select **Connections to and from other computers**. Then click **Next**.
 9. Select **Any computer**. Then click **Next**.
 10. Under **The protocol you want to allow**, select **UDP**. Then select **Only communications that match all types and ports listed below**.
 11. Click **Add**.
 12. In the **Specify Ports** window, select **Individually specified ports** and **Local**.
 13. Enter **2498** in the port number field. Then click **OK**.
 14. Enter a name for the rule. The precise name is not important; you might enter **WiMAX Firewall Rule** or whatever you prefer. Then click **Next**.
 15. Now click **Finish**. The new rule will appear in the General Rules list.
 16. Click **OK** to save these firewall settings. Then close the Norton Internet Security.
 17. You can now proceed with activation. Return to [Making Your First Connection with a Known WiMAX Network](#).
-

Sygate Personal Firewall Pro

To open UDP port 2948 in the Sygate Personal Firewall Pro firewall, perform these steps:

1. Click **Start > All Programs > Sygate Personal Firewall > Sygate Personal Firewall**.
2. Click **Tools > Advanced Rules**. (If necessary, click **OK** to dismiss the Advanced Rule Configuration warning.)
3. Click **Add**.
4. Under the General tab of the Advanced Rule Settings, enter the following information:

- Rule Description: This is the rule name. You might enter **WiMAX Firewall Rule** or whatever you prefer.
 - Action: Select **Allow this traffic**.
 - Advanced Settings: **Select All network interface cards**.
 - Apply this rule during Screensaver mode: Select **Both on and off**.
5. Select the Ports and Peripherals tab and enter the following information:
 - Protocol: Select **UDP**.
 - Local: Enter **2948**.
 - Traffic Direction: Select **Inbound**.
 6. Click **OK**.
 7. At the Advanced Rules window, confirm that your rule has been added. Click **OK** again to save your firewall settings.
 8. You can now proceed with activation. Return to [Making Your First Connection with a Known WiMAX Network](#).
-

ZoneAlarm Professional

To open UDP port 2948 in the ZoneAlarm Professional firewall, perform these steps:

1. Click **Start > All Programs > ZoneAlarm Pro > ZoneAlarm Pro**.
 2. Click **Firewall**.
 3. Click **Custom** on the Main tab.
 4. On the Internet Zone tab, select **Allow incoming UDP ports**.
 5. Enter **2498** in the Ports field. If values are already present in the Ports field, place a comma after the last value before entering the new port number.
 6. Click **Apply**.
 7. Click **OK** to save these firewall settings. Close ZoneAlarm Professional.
 8. You can now proceed with activation. Return to [Making Your First Connection with a Known WiMAX Network](#).
-

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Searching for WiMAX Networks

There are two kinds of network searches:

- [Fast search](#)
 - [Exhaustive search](#)
-

Fast Search

In a fast search, Intel® PROSet/Wireless WiMAX Connection Utility searches only for *home* networks, that is, networks that you have already activated or that may be pre-activated. A fast network search is performed automatically, periodically, and the list of home networks is displayed in the [WiMAX Networks List](#). If the utility is in auto connect mode, then it connects to the WiMAX home network after a fast search.

To perform a fast search, on the main window click **Search for networks**.

Exhaustive Search

In an exhaustive search, the utility searches for all networks and displays the list of found networks in the [WiMAX Networks List](#). This includes *home* networks and *unactivated* networks. You can then select from the list, which network to connect to or activate.

NOTE: An exhaustive search for all networks is battery-intensive and will take several minutes to complete.

To execute an exhaustive search, perform these steps:

1. On the main window, click **Options > Search for networks (exhaustive)**. The following message will be displayed.

This operation will take approximately one minute to complete. Begin an exhaustive network search now?

2. Click **Yes**.

If you select to perform an exhaustive search while auto connect mode is enabled, this message is displayed:

Auto connect mode is currently turned on. To start an exhaustive network search, you must first turn on manual connect mode.

You should only need to conduct an exhaustive search if you have not yet activated a WiMAX network for your computer, or if you are in a different city or area where you have not activated service and a home network has not been detected. In this case, see [First Time Connection to a WiMAX Network](#).

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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® PROSet/Wireless WiMAX Connection Utility will prompt with the following message:

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

Perform these steps to allow the updates.

1. You should click **Yes** to this query. If you click **Remind me later**, you may suffer a service degradation, and you will be prompted again. After clicking Yes, the WiMAX updates will be downloaded. You should not turn off WiMAX or disconnect from WiMAX while the updates are being downloaded, as the download will not complete. Once the download is completed, the following message will appear:

The WiMAX updates have been downloaded. Installation will now begin.

2. Click **OK** to allow the installation and complete the update.

Installing or Repairing Intel® PROSet/Wireless WiMAX Connection Utility

- [Downloading Intel® PROSet/Wireless WiMAX Connection Utility](#)
 - [Installing Intel® PROSet/Wireless WiMAX Connection Utility](#)
 - [Repairing Intel® PROSet/Wireless WiMAX Connection Utility](#)
 - [Removing Intel® PROSet/Wireless WiMAX Connection Utility](#)
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Downloading Intel® PROSet/Wireless WiMAX Connection Utility

You may want to download and install the latest available version of the Intel® PROSet/Wireless WiMAX Connection Utility. Perform these steps:

1. Gain access to an internet connection. You can use the WiFi or Ethernet port to do this.
2. Go to the following Intel website:

<http://downloadcenter.intel.com/>

3. At the Downloads site, find and select Wireless.
 4. Locate WiMAX products and locate the product for your adapter and your operating system.
 5. Download to a folder on your computer.
-

Installing Intel® PROSet/Wireless WiMAX Connection Utility

In the event that you need to reinstall the Intel(R) PROSet/Wireless WiMAX Connection Utility, perform these steps.

1. You may need to first download the latest version of the utility. See [Download Intel®](#)

[PROSet/Wireless WiMAX Connection Utility.](#)

2. Browse to the location where the download was placed on your computer.
 3. Locate and double-click on the file Autorun.exe. The installer begins and displays the message:
Welcome to the Intel(R) Wireless Installer Prerequisite Wizard.
 4. Click **Next**. The next message displays:
Welcome to the InstallShield Wizard to Intel(R) PROSet/Wireless WiMAX Software.
 5. Click **Next**.
 6. Read the license agreement. If you accept the agreement terms, click **I accept the terms in the license agreement**. You can click **Print** if you want a printed copy of the agreement.
 7. Click **Next**.
 8. Click **Next** to accept the default install destination folder. Otherwise, click **Change** to specify a different location. Then click **OK** and **Next**.
 9. The installation may take several minutes. When the installation completes, this message is displayed:
InstallShield Wizard Completed! displays. Click **Finish**.
 10. You may be asked to reboot the computer. If so, you should reboot your computer now. Click **Yes** to do so, or **No** to reboot later.
-

Repairing Intel® PROSet/Wireless WiMAX Connection Utility

In the rare event that your installation of Intel® PROSet/Wireless WiMAX Software becomes corrupted, perform these steps to repair it.

For XP Users:

1. Click **Start > Control Panel > Add or Remove Programs**.
2. Locate and click **Intel® PROSet/Wireless WiMAX Software**.
3. Click on **Click here for support information**.
4. At the Support Info window, click **Repair**. A minute or two may pass as information is gathered and the repair process executes. When it has completed, close the Support Info window.
5. The Intel® PROSet/Wireless WiMAX Software should be fully functional.

For Vista Users:

1. Click **Start > Control Panel > Programs and Features**.
2. Locate and click **Intel® PROSet/Wireless WiMAX Software**.
3. Above the list of applications, click **Repair**. A minute or two may pass as information is gathered and the repair process executes. When it has completed, close the

Support Info window.

4. The Intel® PROSet/Wireless WiMAX Software should be fully functional.
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Removing Intel® PROSet/Wireless WiMAX Connection Utility

Perform these steps to remove Intel® PROSet/Wireless WiMAX Connection Utility.

For XP Users

1. Click **Start** > **Control Panel** > **Add or Remove Programs**.
2. Click Intel® **PROSet/Wireless WiMAX Software**.
3. Click **Remove**.
4. Click **Next**.
5. The removal may take several minutes. After the software is removed, the message **InstallShield Wizard Completed!** displays. Click **Finish**.
6. A message may request that you restart your computer. If so, click **Yes** to restart the computer.

For Vista Users

1. Click **Start** > **Control Panel** > **Programs and Features**.
2. Locate and click **Intel® PROSet/Wireless WiMAX Software**.
3. Above the list of applications, click **Uninstall**. A minute or two may pass before the process completes.

Adapter Specifications

Intel® WiMAX/WiFi Link 5150 and Intel® WiMAX/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 2.0 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® WiMAX/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® WiMAX/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® WiMAX/WiFi Link 5150 and Intel® WiMAX/WiFi Link 5350 Adapters](#)

- [Information for the User](#)
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Intel® WiMAX/WiFi Link 5150 and Intel® WiMAX/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 (model numbers 512ANX_MMW, 512ANX_HMW)
- Intel® WiMAX/WiFi Link 5350 (model number 533ANX_MMW)

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® 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® 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.

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 802.16e 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>

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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

THIS WARRANTY REPLACES ALL OTHER WARRANTIES FOR THE PRODUCT AND INTEL DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, COURSE OF DEALING AND USAGE OF TRADE. **Some states (or jurisdictions) do not allow the exclusion of implied warranties so this limitation may not apply to you.** ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. .NO WARRANTIES APPLY AFTER THAT PERIOD. **Some states (or jurisdictions) do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.**

LIMITATIONS OF LIABILITY

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IMPORTANT! UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS SOLD HEREUNDER ARE NOT DESIGNED, OR INTENDED FOR USE IN ANY MEDICAL, LIFE SAVING OR LIFE SUSTAINING SYSTEMS, TRANSPORTATION SYSTEMS, NUCLEAR SYSTEMS, OR FOR ANY OTHER MISSION CRITICAL APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

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