

Dell™ TrueMobile™ 1300 Wireless USB2.0 Adapter User's Guide

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Getting Started with your Dell TrueMobile 1300 Wireless USB Adapter:

Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide



NOTE: If you did not purchase this device with a new Dell system, please start at step 1. If you purchased this device with a new Dell system, please skip to step 2.

To complete the setup of your TrueMobile 1300 Wireless USB Adapter, perform the following 3 steps:

- [1. Installing the software \(drivers and Dell Wireless Configuration Utility\)](#)
- [2. Connecting the device to the computer](#)
- [3. Connecting to your wireless network](#)

1. Installing the Software



NOTE: This installation is required before connecting the device to the system.

- a. Insert the **Dell TrueMobile 1300 Wireless USB 2.0 Adapter CD** into the CD or DVD drive of your computer. If the **Main Menu** screen does not appear automatically, select **Start-->Run** and then type **x:\setup.exe** (where x:\ is your CD-ROM drive letter) and click **OK**.
- b. Click on **Install Software**.
- c. The wizard will install the Dell Wireless Configuration Utility and the driver for your device.

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2. Connecting the Dell TrueMobile 1300 Wireless USB Adapter to Your Computer

- a. Connect the small connector of the USB cable to the connector in the **Dell TrueMobile 1300 Wireless USB Adapter** as shown in Figure 1.

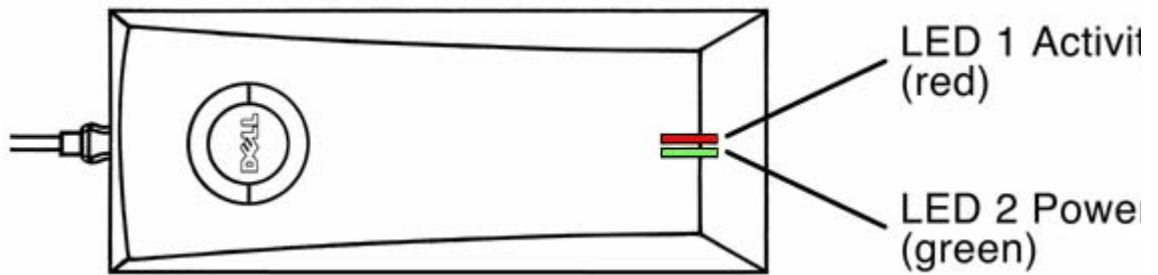


Figure 1

- b. Connect the other end of the USB cable to any USB connector on the back of your desktop computer as shown in Figure 2.

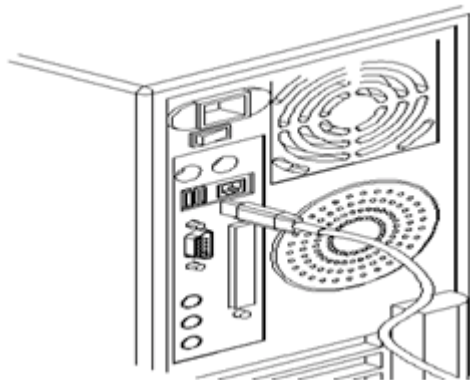


Figure 2

- c. The **Found New Hardware** screen will appear.
- d. The driver for your device will be automatically detected and installed.
- e. Check for the **Green Light** on the device to make sure the USB cable is connected between the device and the system correctly.
- f. The **New network device installed** screen will appear on the bottom right corner. Click **X** to close the message. **(XP only)**

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3. Connecting to Your Wireless Network

To connect to the wireless network, the wireless network name (SSID) of the **wireless USB adapter** must match the wireless network name specified by your Wireless Broadband Router*. To set the network name, follow the instructions below for Windows XP operating system. For Windows 2000, follow instructions under **section 3.2**.

3.1 Connecting using Windows® XP Operating System

- a. Click on the **Wireless Network Connection** pop up message on the bottom right corner.

- b. In the **Available networks** list, you should see the wireless network name that you specified in your wireless broadband router. Select that network name and click **Connect**. You may see the names of other wireless networks in this list. You only need to set the configuration for your wireless network.
- c. A pop up message on the bottom right corner will show that the device is **Connected to:** the network whose name was specified in step **b)** and also indicates the **Signal Strength**.
- d. Open the **Internet Explorer** and you should be able to browse the **Internet**.



NOTE: If you are unable to access the **Internet**, refer to the [Trouble Shooting](#) section of **guide**.


3.2 Using the Dell Wireless Configuration Utility for Windows 2000

The Dell Wireless Configuration Utility is a software utility that you can use to:

- Check the quality of your wireless connection.
- View/change the settings of your network connection.
- Monitor your network connection.

Use the following procedure to start the Dell Wireless Configuration Utility:

- a. Click **Start** → **Programs** → **Dell TrueMobile** → **TrueMobile 1300 USB2.0 WLAN Card Utility**.
- b. An icon like this will appear in the system tray (bottom right corner of your screen).

Double click the icon. 

- c. Click on the **Wireless Connections** tab.
- d. In the **Available networks** list, you should see the wireless network name that you specified in your wireless broadband router. Select that network name and click **Configure**. (You may see the names of other wireless networks in this list. You only need to set the configuration for your wireless network.)
- e. In the **Wireless Network Properties** box, click **OK** and the window will close. It may take up to one minute for the network connection to be made.
- f. The network name and icon should now appear at the top of the **Preferred networks** list when you next open the **Wireless Connections** tab in **Wireless Network Properties**. Your computer will be connected to the selected network when you see a blue bubble on top of the icon for that network.

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Securing your Network

Your network administrator may have implemented measures to help make your wireless network secure. If so, you must get the required settings from your administrator to establish a connection to the network. For detailed information on how to change these settings under any of the supported Windows operating systems, please consult the [Network Configuration](#) section of your Dell Truemobile 1300 Wireless USB Adapter User's Guide.

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Using your Dell Wireless Configuration Utility: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

The Dell Wireless Configuration Utility allows you to configure your TrueMobile 1300 Wireless USB adapter and your connection to the wireless network. The sections below provide complete information on the operation of the Configuration Utility.

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Operation of Your Dell Wireless Configuration Utility: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

This section discusses operation of the utility once it has been installed. It describes the [system tray icon](#), the [icon menu](#), and [starting](#) the utility.

System Tray Icon

After the installation of the Dell Wireless Configuration Utility, its icon appears in the System Tray in the bottom right corner of your desktop.



The color behind the logo indicates the link status, as follows:

	Weak
	Marginal
	Good
	Excellent
	Disconnected

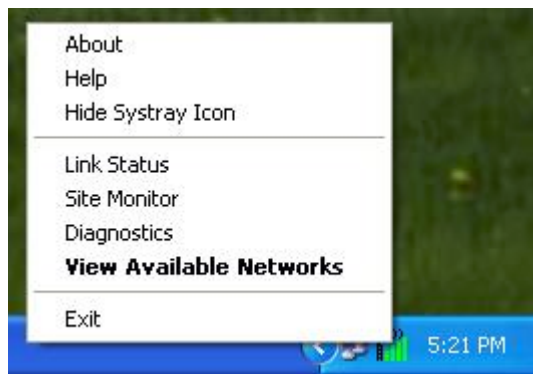
You can also view more complete information on the connection status of the link by placing the cursor over the Configuration Utility icon. When your computer has established a link, placing the cursor over the icon displays the network name, network type (infrastructure or ad-hoc) and connection speed. If your computer has not established a link, placing the cursor over the icon indicates the problem (no network adapter or no available network, for example).

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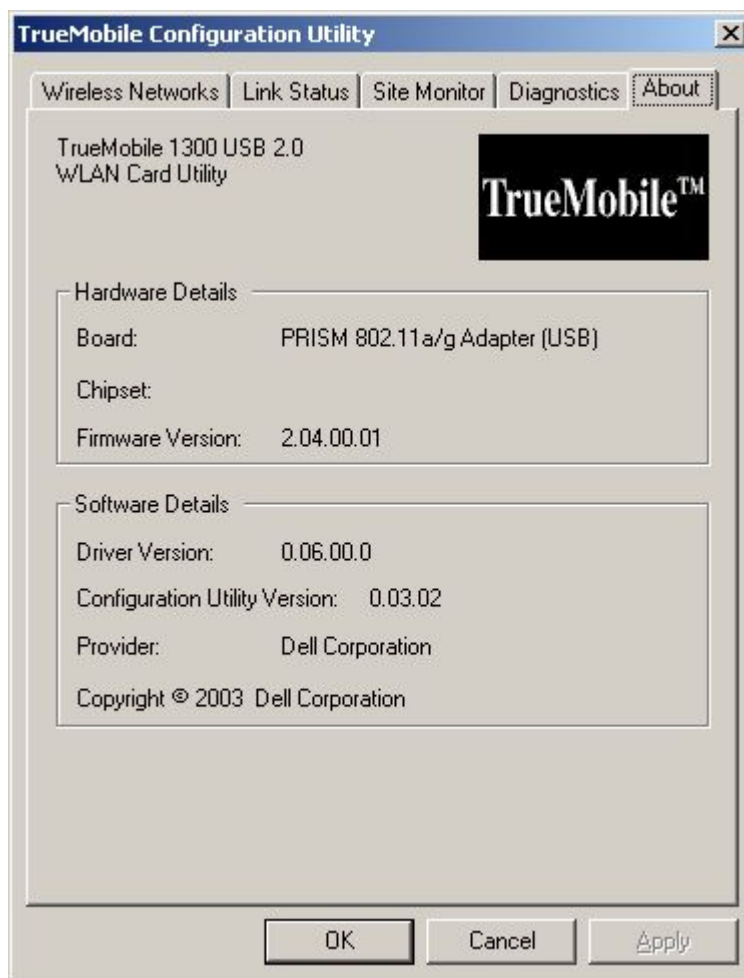
Icon Menu

Clicking the right mouse button on the System Tool Tray Icon displays a menu similar to the following illustration:



Clicking a command in the menu will cause the following action to occur:

About opens the Utility with the **About** tab selected, giving information on your TrueMobile Wireless adapter (its hardware and firmware components) and its associated software (driver and configuration utility).



Help opens the help file.

Hide Systray Icon removes the icon for the utility from the System Tray at the bottom of your screen. When you choose this command, the driver continues to operate the adapter in the last commanded configuration, but to restart the Configuration Utility you must select **Programs** → **Dell TrueMobile** → **TrueMobile 1300 USB2.0 WLAN Card Utility** from the **Start** menu.

Link Status opens the Utility with the **Link Status** tab selected. This tab provides information on the details and current quality of your connection to the wireless LAN. The section [Link Status](#) explains the information displayed by this tab.

Site Monitor opens the Utility with the **Site Monitor** tab selected. The section titled [Site Monitor](#) explains the operation of this tab.

Diagnostics opens the Utility with the **Diagnostics** tab selected. The section titled [Diagnostics](#) explains the operation of this tab.

View Available Networks: The window displayed by this command depends on whether your computer operates with the Wireless Zero Configuration service enabled under Windows XP:

- If you are already connected to a wireless network, choosing this command opens the **Wireless Network Connection** window if your computer operates with Wireless Zero Configuration enabled. Otherwise, choosing this command opens the Configuration Utility with the **Link Status** menu displayed.
- If you are not connected to a wireless network, choosing this command opens the **Connect to Wireless Network** window if your computer operates with Wireless Zero Configuration enabled. Otherwise, choosing this command opens the Configuration Utility with the **Wireless Networks** menu displayed.

Exit closes the Utility.

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Starting the Configuration Utility

You can launch the Configuration Utility in one of three ways:

- by simply clicking the left mouse button on the Configuration Utility icon.
- by clicking the right mouse button on the Configuration Utility icon and selecting one of the first five commands in the pop-up menu.
- If the Configuration Utility icon is not displayed in the System Tray, you can restart the Configuration Utility from the Start Menu by selecting **Programs** → **Dell TrueMobile** → **TrueMobile 1300 USB2.0 WLAN Card Utility**.



Note: The window displayed by the utility depends on whether your computer runs the Windows system with the Wireless Zero Configuration service enabled. With this service enabled, many of the configuration and security functions of your adapter are controlled by the operating system rather than the Configuration Utility.

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Connecting to the Wireless Network: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

With the Dell TrueMobile 1300 USB2.0 WLAN Card driver and Configuration Utility installed, your computer automatically scans for wireless networks. You can connect to any of the networks your card sees, and change the parameters of your communications with any of these networks, by starting the Configuration Utility. The facilities provided by the Configuration Utility to accomplish this differ slightly depending on whether or not your computer runs the Windows XP operating system with the Wireless Zero Configuration service enabled.

- [Windows XP With Wireless Zero Configuration Enabled](#)
- [Windows 2000 or Windows XP With Wireless Zero Configuration Disabled](#)

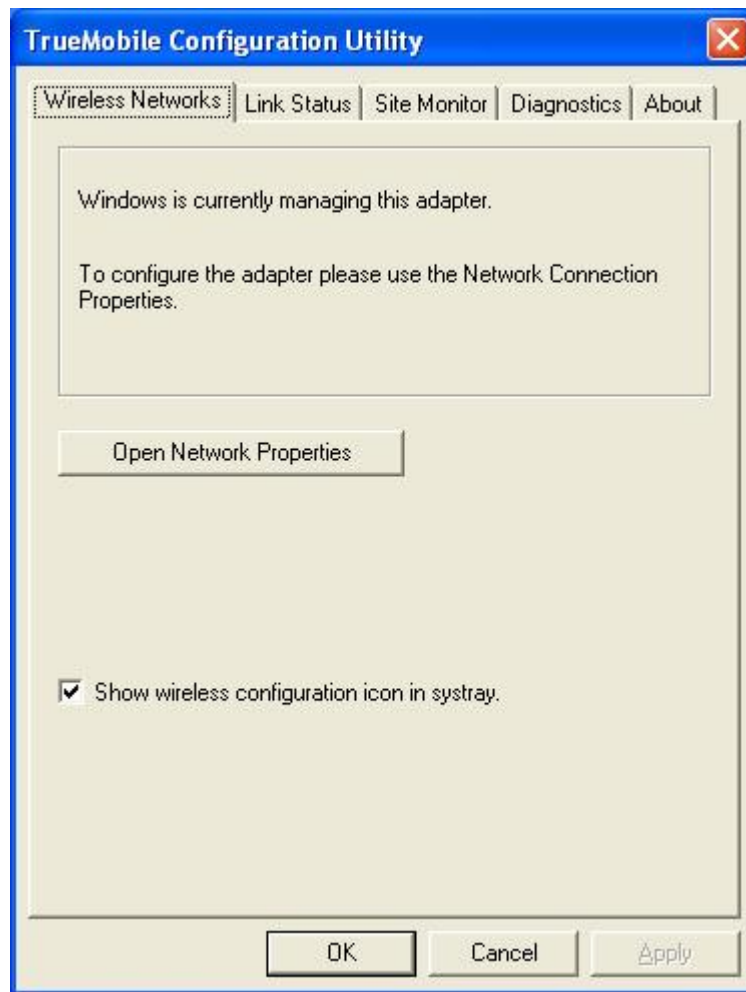
Windows XP With Wireless Zero Configuration Enabled

The Wireless Zero Configuration service allows the Windows XP operating system to handle the configuration of your connection to a wireless network. With this service enabled, if you are not connected to a wireless network when you start the Configuration utility, the following window appears on your desktop:



This window lists the networks to which you can connect. To connect to any of these networks, choose it from the list and click the **Connect** button. Once your connection is established, the **Wireless Network Connection** window (shown below) appears on your desktop.

With this service enabled, if you are already connected to a wireless network when you start the Configuration utility, the following window appears on your desktop:



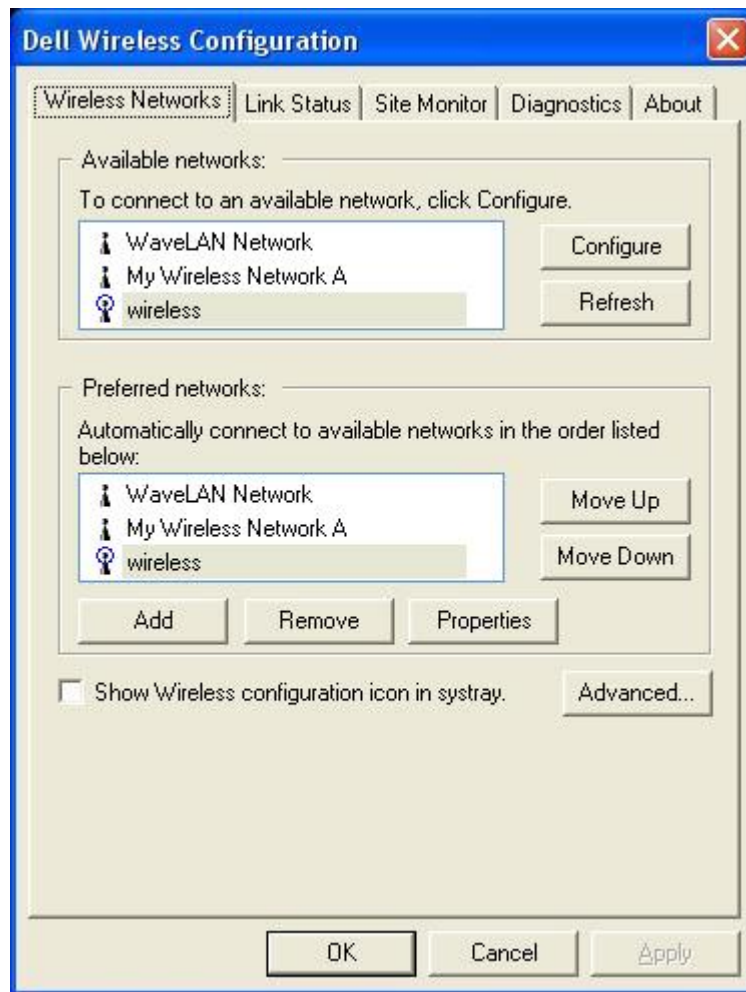
You can click the **Open Network Properties** button to access the tools provided by Windows XP to manage network connections. Consult your operating system documentation for information on using these tools.

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Windows 2000 or Windows XP With Wireless Zero Configuration Disabled

If your computer runs the Windows 2000 operating system or the Windows XP operating system with Wireless Zero Configuration disabled, all configuration of your connection to the wireless network is controlled by the Configuration Utility. Under these conditions, if you are not connected to a wireless network when you start the Configuration utility, the Wireless Networks window appears on your desktop:



The networks to which you can connect are listed in the window in the **Available networks** section. To connect to any of these networks, choose it from the list and click the **Configure** button to the right of the list. Configuration of a network is explained in the [Configuring a Wireless Network](#) section of this manual.

If you are already connected to a wireless network when you start the Configuration utility, the Link Status menu appears on your desktop. Refer to the [Link Status](#) section for a description of the information displayed by this menu. To connect to a different network, follow the instructions in the [Configuring a Wireless Network](#) section of this manual.

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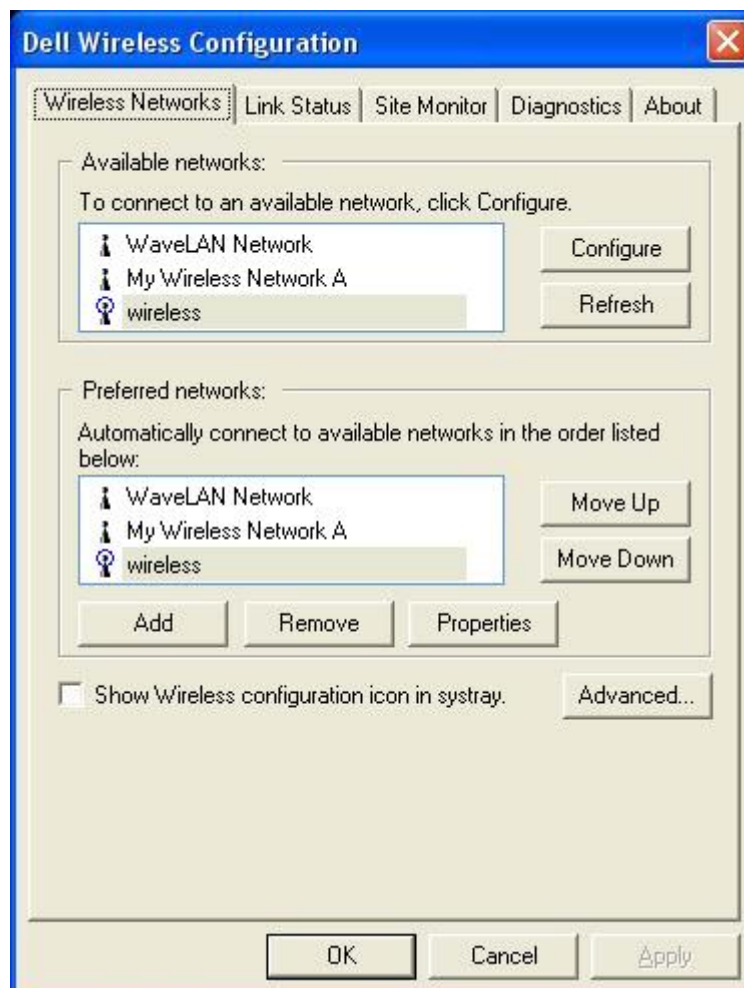
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Configuring a Wireless Network: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

The Dell WLAN Configuration Utility allows you to configure the parameters of your communications with the wireless network through the **Wireless Networks** menu. The following topics are covered in this section of the manual:

- [The Wireless Networks Menu](#)
- [Network Configuration](#)
- [The Association Tab](#)
- [The Authentication Tab](#)

The Wireless Networks Menu



 **Note:** If your computer runs the Windows XP operating system with the Wireless Zero Configuration service enabled, configuration of a wireless connection is controlled by that service. You must disable that service in order to use the Dell WLAN Configuration Utility to configure wireless communications.

Available Networks: The first section of this menu displays a list of the available wireless networks. If you are associated with a network, a blue bubble appears over the icon for the network in both this list and in the **Preferred networks** list.

The **Configure** button to the right of this list allows you to configure your connection to the highlighted network; refer to [Network Configuration](#) for an explanation of this process. The **Refresh** button forces the Configuration Utility to update the list by scanning for available networks.

Preferred Networks: The second section of this menu displays a list of preferred networks. This list shows the order, from top to bottom, of the networks to which your computer will attempt to connect. If your computer is connected to any of these networks, a blue bubble appears over the icon for that network. If your computer cannot find any of these networks when it performs a scan, a crossed-out red bubble appears over the icon for that network.

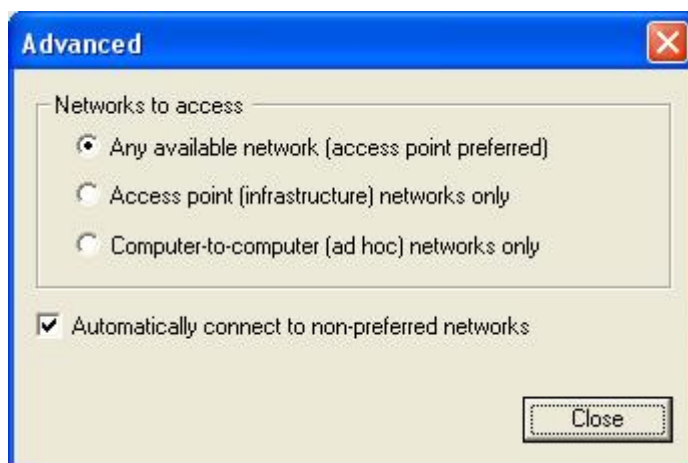
When your computer starts searching for a wireless network, it begins by attempting to connect to the first network in this list. If it cannot connect to this network, it then attempts to connect to the second network in the list. This process continues until the computer establishes a connection with one of these networks. After a connection is established, if a higher priority network become available, then the current connection is dropped and the computer connects with the higher priority network.

You can change the order of preferred networks by highlighting a network in this list and clicking the **Move Up** or **Move Down** buttons.

The **Add** button allows you to add a network to the list of preferred networks. The **Properties** button allows you to configure the selected network. Refer to [Network Configuration](#) for an explanation of the operation of these buttons. The **Remove** button removes the selected network from the list of preferred networks.

Two items appear beneath the **Preferred networks** section. The **Show wireless configuration icon in systray** field determines whether the icon for the Dell WLAN configuration utility appears in the system tray at the bottom right side of your desktop. If this field is not checked, you can start the Configuration Utility from the Start Menu by selecting **Programs** → **Dell TrueMobile** → **TrueMobile 1300 USB2.0 WLAN Card Utility**.

Clicking on the **Advanced...** button displays the following menu:



The first section of this menu allows you to specify the networks to access when your computer is searching for a wireless network connection. Clicking the check box next to the **Automatically connect to non-preferred networks** field allows your computer to connect to any available network if it cannot connect to a preferred network.

At the bottom of the **Wireless networks** menu are three buttons. Clicking the **OK** button applies any changes you made in this or any of the other menus of the Configuration Utility and closes

the utility. Clicking the **Cancel** button cancels any changes you made since you last clicked the **Apply** but does not close the utility. Clicking the **Apply** button saves any changes you made in this or any of the other menus of the utility and leaves the utility open.

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Network Configuration

There are three ways to configure a network through the Dell WLAN Configuration Utility:

- by choosing a network in the list of available networks and clicking the **Configure** button
- by choosing a network in the list of preferred networks and clicking the **Properties** button
- by clicking the **Add** button beneath the list of preferred networks

When you click any of these buttons a window similar to the following appears on your screen:



If you clicked the **Configure** or **Properties** button, the name of the network highlighted when you clicked the button appears in the **Network name (SSID)** field. If you clicked the **Add** button to display this menu, this field is blank. To add a network to the list of preferred networks, enter its name in this field.

Two buttons appear at the bottom of this menu. Clicking the **OK** button applies any changes you made in this or any of the other menus of the Configuration Utility. Clicking the **Cancel** button cancels any changes you made since you last clicked the **Apply** button. Clicking either of these buttons returns to the **Wireless networks** menu.

Network configuration consists of specifying values for association and [authentication](#), as explained in the following sections.

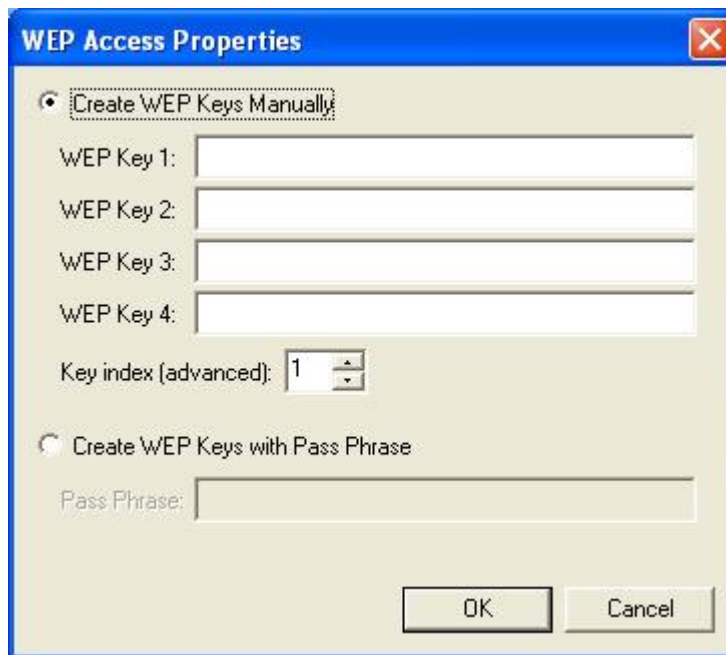
Association Tab

Association refers to the ability to join a network, either infrastructure or adhoc. The most basic requirement for associating with a network is specifying the correct name, or Service Set Identifier (SSID), for the network.

Networks may also require a key for association. If this is the case for the network you are configuring, you must enter the authentication and encryption types for your keys in the **Wireless Network Key** section of this menu. To choose a value for these fields, click the down arrow to the right of the appropriate file and highlight one of the values that appear in the drop-down list.

Open and **Shared** authentication require no further configuration. To use **WPA-PSK** authentication, you must click the **Properties** button next to this field and enter a shared secret key.

For key encryption, you can choose either **disabled** or **WEP**. To configure WEP encryption, click the **Properties** button next to this field. When you click this button, a menu similar to the following appears.



Creating Encryption Keys Manually

When you specify that WEP is enabled for the network, the Configuration Utility selects **Create WEP Keys Manually**, and allows you to enter keys as either alphanumeric or hexadecimal characters. To enter a key, click in the field for any of the four WEP keys and begin typing. For 64-bit encryption, you must type exactly 5 alphanumeric or 10 hexadecimal characters in each of the four key fields; for 128-bit encryption, you must type exactly 13 alphanumeric or 26 hexadecimal characters. You then click the **OK** button to create your encryption keys. After you click the **OK** button, the Configuration Utility uses asterisks to mask your keys.

The **Key index (advanced)** field lets you specify which of the four encryption keys you use to transmit data on your wireless LAN. You can change the default key by clicking on the up or down arrow at the right of this field until the number of the key you want to use appears. As long as the Access Point or computer with which you are communicating has the same key in the same position, you can use any of the keys as the default.

Creating Encryption Keys Using a Passphrase

To create encryption keys using a passphrase, click the radio button next to **Create WEP Keys with Pass Phrase** and type a character string in the **Pass Phrase** field. As with creating keys manually, you must type exactly 5 alphanumeric or 10 hexadecimal characters for 64-bit encryption, or exactly 13 alphanumeric or 26 hexadecimal characters for 128-bit encryption. After you click the **OK** button, the Configuration Utility generates 4 WEP keys and uses asterisks to mask your keys.

Two fields appear at the bottom of the **Association** menu. If you check the first field (by clicking in the box to the left of the field), your computer can associate with Access Points that do not support encryption, provided that the network name used by the AP matches the Network name specified in this menu.

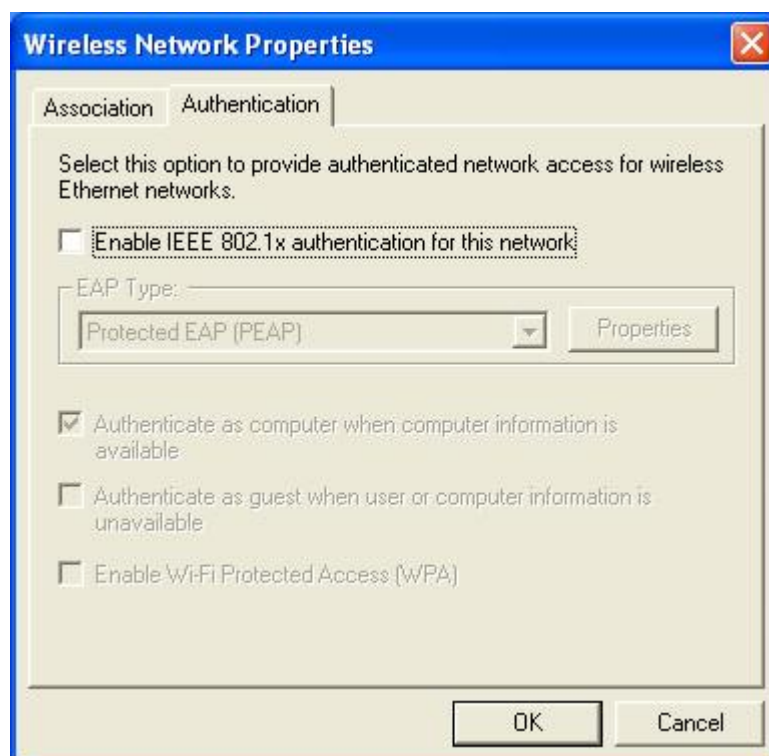
If the network that you are configuring is an ad-hoc network, the second field at the bottom of the **Association** menu is checked. If you are adding an adhoc network, click the check box next to this field. When this field is checked, you specify the channel used in the ad-hoc network by clicking the down arrow to the right of the **Ad-hoc Channel** field and highlighting the appropriate channel.

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Authentication Tab

If the network you are configuring requires authentication, select the **Authentication** tab to continue. Selecting this tab displays a menu similar to the following:



To enable authentication, click the check box next to the **Enable IEEE 802.1x authentication for this network** field. Checking this box activates the fields in the menu, allowing you to specify authentication parameters.

The first field in this menu lets you specify the type of Extensible Authentication Protocol (EAP) used by the network. To choose a type, click the down arrow to the right of this field and choose one of the types from the displayed list. Click the up and down arrows to the right of this list to display all the available types.


Beneath this field are three additional fields used to specify other authentication parameters. To enable any of these parameters, click the check box next to the appropriate field.

After you choose an EAP type, click the **Properties** button to specify the information required for authentication. The following sections describe configuration of each available EAP type.

- [PEAP authentication](#)
- [TLS/Smart Card authentication](#)
- [EAP – Cisco Wireless \(LEAP\) authentication](#)
- [MD5 Challenge authentication](#)
- [TTLS authentication](#)

PEAP Authentication

Clicking the **Properties** button for PEAP authentication displays the following menu:



PEAP requires a Username and a Server Name; enter this information in the appropriate fields on your screen. With PEAP, you can use a client certificate for authentication with the server by

clicking in the check box next to the **Use client certificate** field and then highlight a certificate from the list to select it.

Clicking next to the **Allow intermediate certificate authority** field lets you receive certification credentials from any authentication server authorized to provide authentication services by the server named in the **Server Name** field. Clicking next to the **Allow subdomains** field allows you to receive certification from an authorized server on any subdomain in your network.

Tunneled authentication requires a Username and Password (which you can enter in the appropriate fields in this menu), and an authentication method. To choose a method, click the down arrow next to the **Authentication** field, and then click on the method in the displayed list that you wish to use.

To save the information you entered in this menu, click the **OK** button. To discard any changes you made in this information, click the **Cancel** button. Clicking either of these buttons returns to the **Wireless network properties** menu.

With PEAP, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WiFi Protected Access (WPA)** in the **Wireless network properties** menu enables WPA with PEAP.

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TLS/Smart Card Authentication

Clicking the **Properties** button for TLS/Smart Card authentication displays the following menu:



The screenshot shows a dialog box titled "TLS/Smart Card Properties". It contains the following fields and options:

- Username:** A text input field.
- Use client certificate**: A checkbox with an empty list box below it.
- Server Name:** A text input field.
- Allow intermediate certificate authority**: A checkbox.
- Allow subdomains**: A checkbox.
- Tunneled Authentication**: A section containing:
 - Username:** A text input field.
 - Password:** A text input field.
 - Authentication:** A dropdown menu.
- OK** and **Cancel** buttons at the bottom.

TLS/Smart Card authentication requires a Username and a Server Name; enter this information in the appropriate fields on your screen. With TLS/Smart Card authentication, you can use a client certificate for authentication with the server by clicking in the check box next to the **Use client certificate** field and then highlight a certificate from the list to select it.

Clicking next to the **Allow intermediate certificate authority** field lets you receive certification credentials from any authentication server authorized to provide authentication services by the server named in the **Server Name** field. Clicking next to the **Allow subdomains** field allows you to receive certification from an authorized server on any subdomain in your network.

Tunneled authentication requires a Username and Password (which you can enter in the appropriate fields in this menu), and an authentication method. To choose a method, click the down arrow next to the **Authentication** field, and then click on the method in the displayed list that you wish to use.

To save the information you entered in this menu, click the **OK** button. To discard any changes you made in this information, click the **Cancel** button. Clicking either of these buttons returns to the **Wireless network properties** menu.

With TLS/Smart Card authentication, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WiFi Protected Access (WPA)** in the **Wireless network properties** menu enables WPA with TLS/Smart Card authentication.

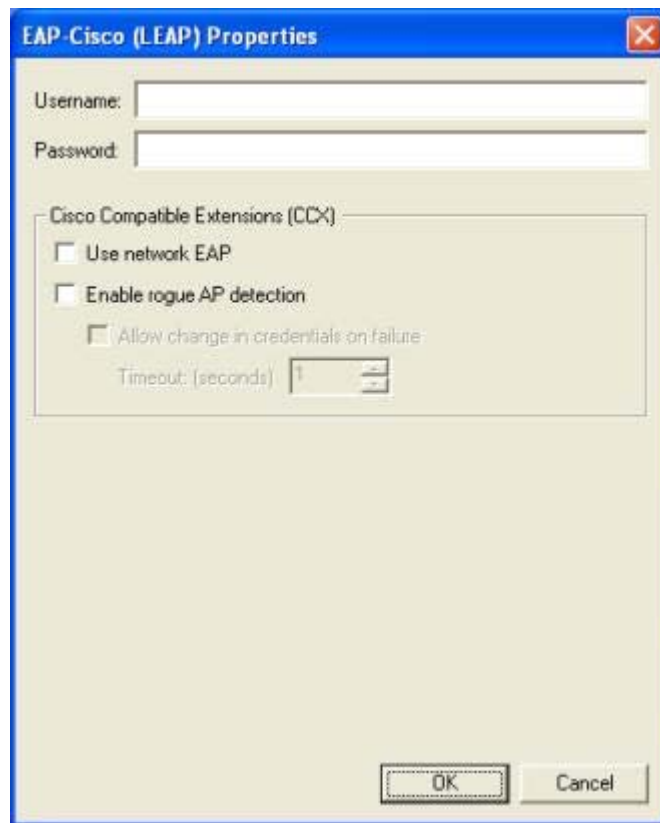
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EAP – Cisco Wireless (LEAP) Authentication

Clicking the **Properties** button for LEAP authentication displays the following menu:



LEAP security requires a Username and Password; enter this information in the appropriate fields on your screen.

You can also enable **CCX** (Cisco Compatible Extensions) with LEAP security. Network EAP utilizes an authentication server on the network. To use this facility, click the check box next to **Use network EAP**.

CCX also provides a means to avoid associating with unauthorized Access Points. To enable this facility, click the check box next to **Enable rogue AP detection**. With this facility enabled, you can also change authentication credentials if AP authentication fails by clicking the check box next to the **Allow Change in Credentials on Failure** field, and set a time out value for this authentication by clicking the up and down arrows to the right of the **Timeout** field.

With LEAP authentication, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WiFi Protected Access (WPA)** in the **Wireless network properties** menu enables WPA with LEAP authentication.

To save the information you entered in this menu, click the **OK** button. To discard any changes you made in this information, click the **Cancel** button. Clicking either of these buttons returns to the **Wireless network properties** menu.

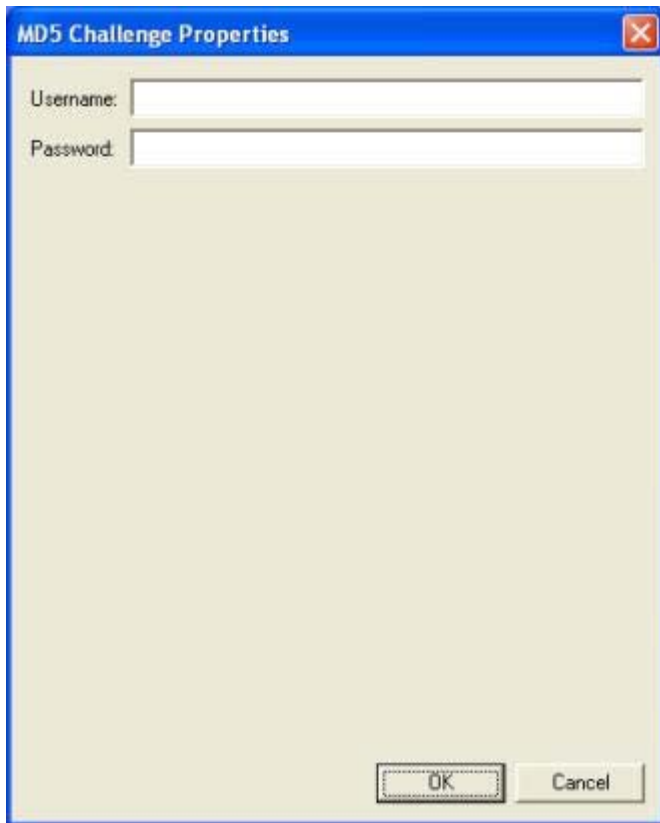
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MD5 Challenge Authentication

Clicking the **Properties** button for MD5 Challenge authentication displays the following menu:



The image shows a standard Windows-style dialog box titled "MD5 Challenge Properties". It features a blue title bar with a close button (X) in the top right corner. The main area is light beige and contains two text input fields. The first field is labeled "Username:" and the second is labeled "Password:". At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

MD5-Challenge authentication requires only a Username and Password; enter this information in the appropriate fields on your screen. To save the information you entered in this menu, click the **OK** button. To discard any changes you made in this information, click the **Cancel** button. Clicking either of these buttons returns to the **Wireless network properties** menu.

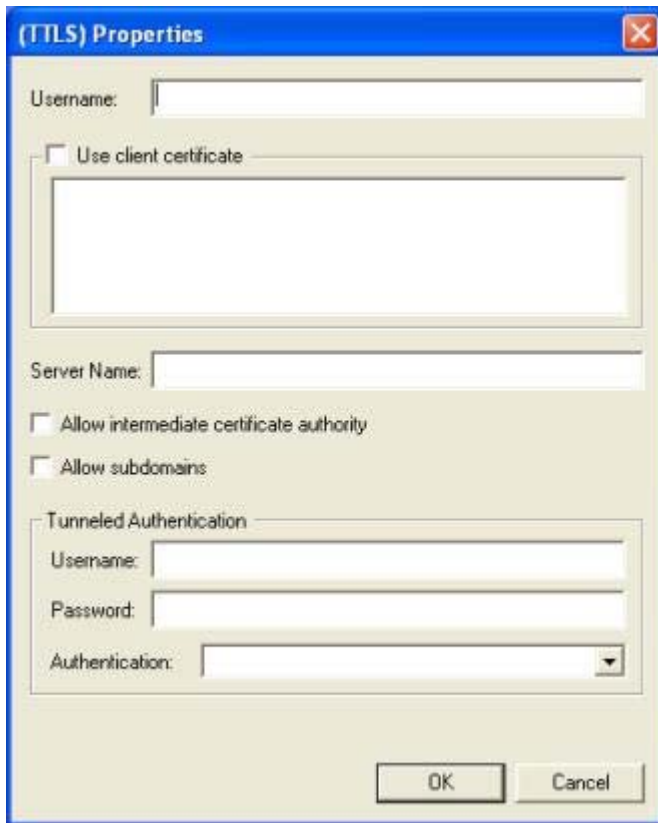
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TTLS Authentication

Clicking the **Properties** button for TTLS (Tunneled Transport Layered Security) authentication displays the following menu:



TTLS requires a Username and a Server Name; enter this information in the appropriate fields on your screen. With TTLS, you can use a client certificate for authentication with the server by clicking in the check box next to the **Use client certificate** field and then highlighting a certificate from the list to select it.

Clicking next to the **Allow intermediate certificate authority** field lets you receive certification credentials from any authentication server authorized to provide authentication services by the server named in the **Server Name** field. Clicking next to the **Allow subdomains** field allows you to receive certification from an authorized server on any subdomain in your network.

Tunneled authentication requires a Username and Password (which you can enter in the appropriate fields in this menu), and an authentication method. To choose a method, click the down arrow next to the **Authentication** field, and then click on the method in the displayed list that you wish to use.

To save the information you entered in this menu, click the **OK** button. To discard any changes you made in this information, click the **Cancel** button. Clicking either of these buttons returns to the **Wireless network properties** menu.

With TTLS, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WiFi Protected Access (WPA)** in the **Wireless network properties** menu enables WPA with TTLS.

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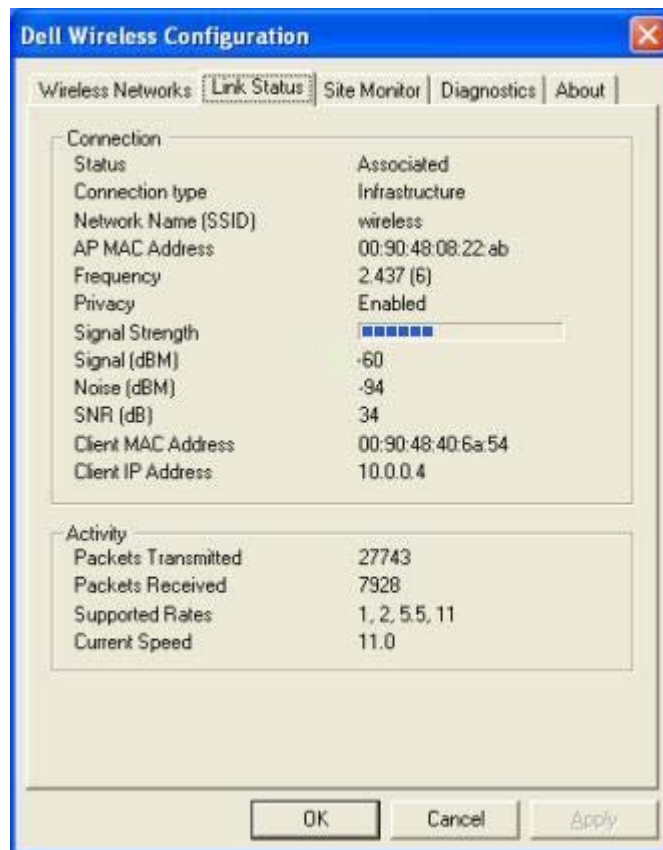
[Back to The Authentication Tab](#)

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Link Status: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

The Link Status tab, as the name suggests, displays information on the status and quality of your link to the wireless network. When you click on this tab, the following window appears:



The first section of this window provides the following information on your connection to the wireless network:

Status - The association state of your computer with the wireless LAN. Possible values for this field are:

- **Listening:** Indicates that the adapter is listening on all allowed channels, but has not yet found a network with which to associate.
- **Scanning:** The adapter is scanning for transmissions by other wireless adapters on all channels.
- **Associating:** The adapter is in the process of associating with a network
- **AdHoc:** The adapter is operating in a computer-to-computer network.
- **Associated:** The adapter is operating in Infrastructure mode.
- **Not Associated:** The adapter has not found any network with which to associate.

Connection Type - The type of wireless network with which you are associated; either

Infrastructure (communicating with an Access Point/Broadband Router) or AdHoc (communicating directly with one or more computers).

Network Name (SSID) - The name, or Service Set Identifier, of the network with which you are communicating. For an AdHoc network, this is the MAC address of the computer which established the network.

AP MAC Address - The MAC address of the Access Point in an Infrastructure network.

Frequency - The radio frequency (RF) used to communicate with the network.

Privacy - This indicates whether any security measures are enabled for this connection. You specify security measures when you configure your connection through the **Wireless Networks** tab.

Signal Strength - This sliding graph indicates the composite strength of the RF signal received from the network.

Signal (dBm) - The absolute strength (in decibels) of the RF signal received from the network.

Noise (dBm) - The absolute strength (in decibels) of the background noise received from the network.

SNR (db) - The signal-to-noise ratio (SNR), in decibels, of the signal received from the network.

Client MAC Address - The MAC address of your adapter.

Client IP Address - The Internet Protocol (IP) address of your adapter.

The second section of this window provides cumulative counters of the activity on your connection to the wireless network. The counts of packets transmitted and received, and the current speed of your connection, are continuously updated while this window is displayed.

At the bottom of the **Link Status** menu are three buttons. Clicking the **OK** button applies any changes you made in this or any of the other menus of the Configuration Utility and closes the utility. Clicking the **Cancel** button cancels any changes you made since you last clicked the **Apply** but does not close the utility. Clicking the **Apply** button saves any changes you made in this or any of the other menus of the utility and leaves the utility open.

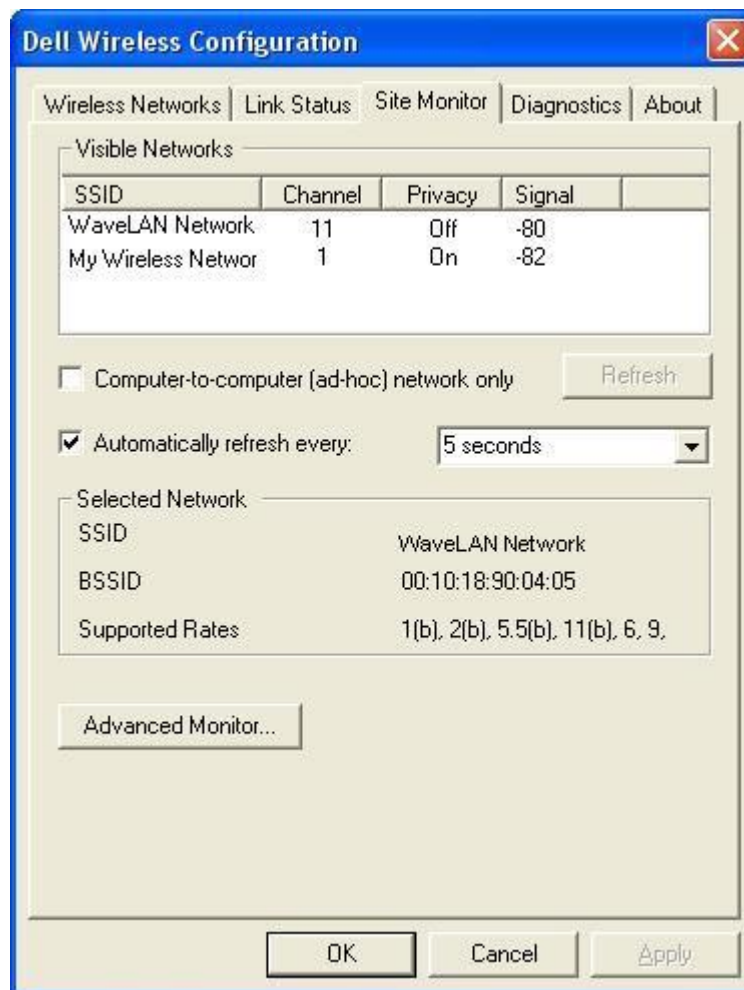
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The Site Monitor: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

The Site Monitor allows you to monitor available wireless networks, providing information on each network it sees and allowing you to update this information either manually or at regular intervals. When you click on the **Site Monitor** tab, the following window appears:

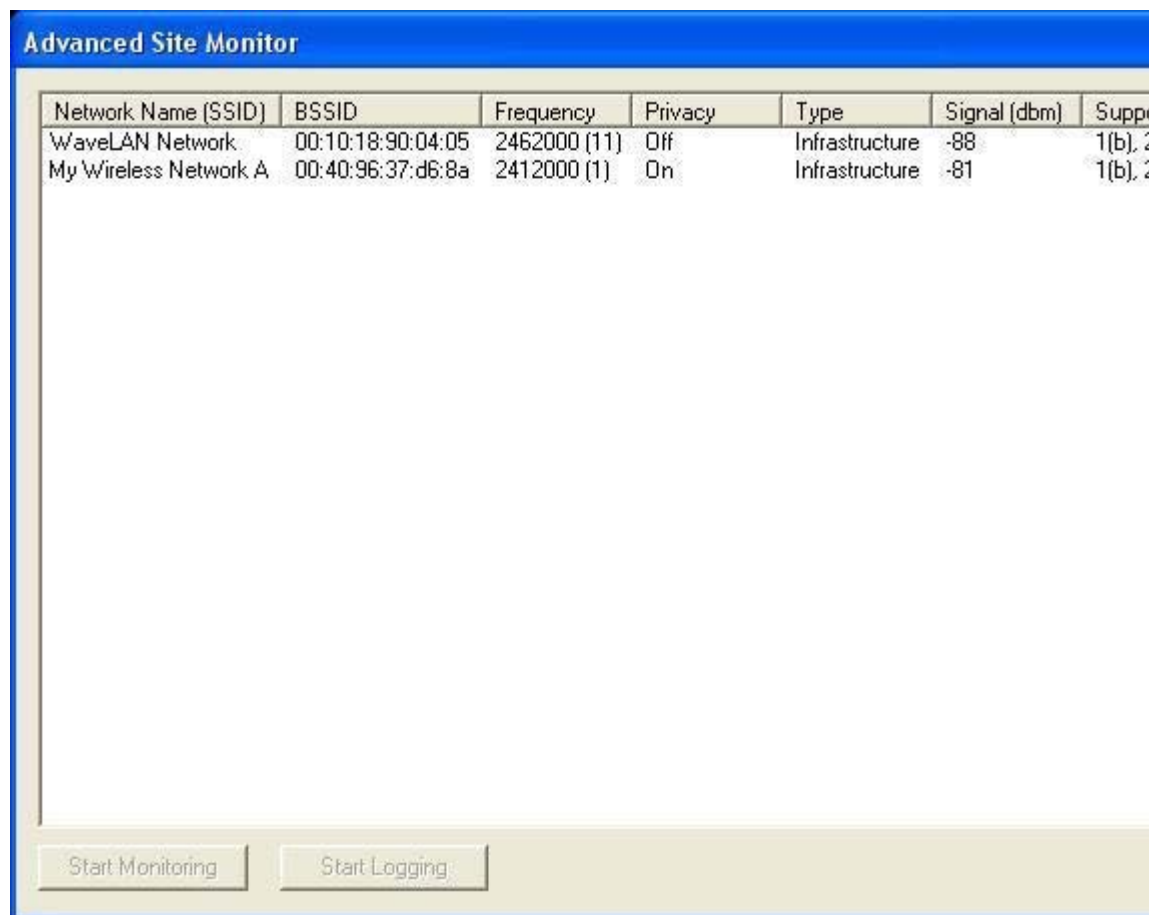


After the utility scans for wireless networks, it lists the networks it has found in the **Visible Networks** window. You can sort the list by any of the information it displays by clicking on the name of the appropriate column in the list.

When you first display the **Site Monitor** menu, the SSID, BSSID, and Supported Rate of the network to which you are connected appear in the **Selected Network** section of this menu. Selecting another network from the list of visible networks displayed its information in this section.

You can force the utility to perform a scan by clicking on the **Refresh** button. To cause the utility to scan at regular intervals, click the check box next to the **Auto Refresh every:** field and choose an interval for the scan from the list displayed by clicking the down arrow in the field to the right. You can also limit the scan to ad-hoc networks by clicking the check box next to the **Computer-to-computer (ad-hoc) network only** field.

You can obtain more information on the visible networks by clicking the **Advanced Monitor...** button, which displays the following window:



With this screen displayed, the utility continuously monitors the available networks and updates the list in this window if you clicked the **Auto Refresh** button in the **Site Monitor** menu. You can start or stop monitoring your site by clicking on the first button to the left at the bottom of this screen.

To capture this information in a file, click the **Start Logging** button, give a name for your log file in the **Save As** window displayed, and click the **Save** button. Click this button again to stop logging.

To close the Advanced Site Monitor (and the log file, if you started logging), click the **Close** button.

At the bottom of the **Site Monitor** menu are three buttons. Clicking the **OK** button applies any changes you made in this or any of the other menus of the Configuration Utility and closes the utility. Clicking the **Cancel** button cancels any changes you made since you last clicked the **Apply** but does not close the utility. Clicking the **Apply** button saves any changes you made in this or any of the other menus of the utility and leaves the utility open.

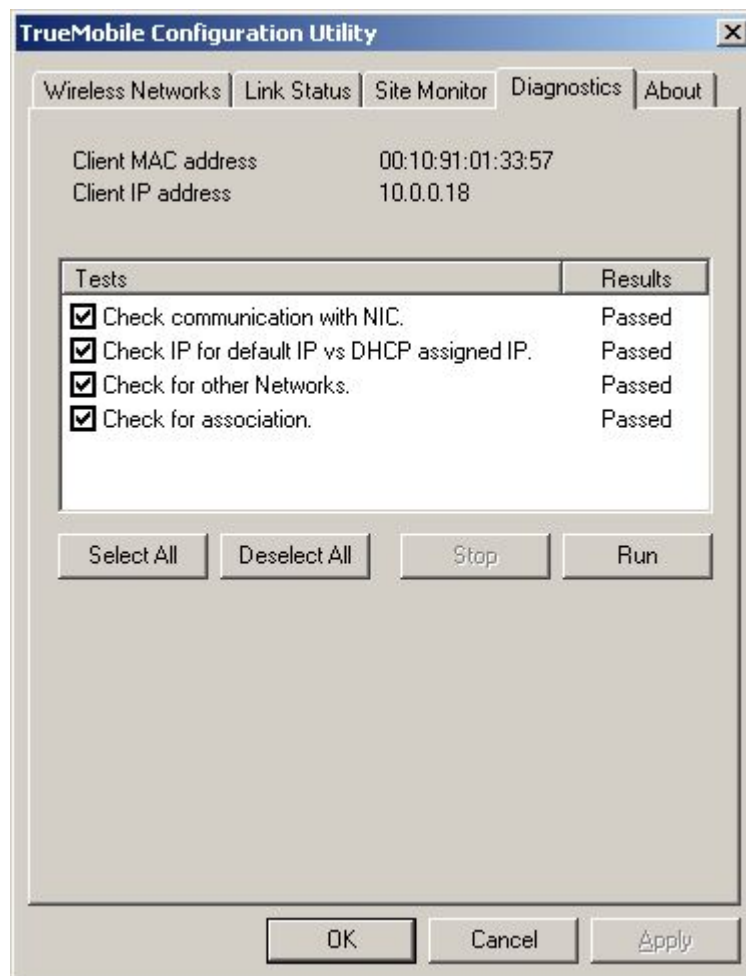
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Diagnostics: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

The Diagnostics menu provides a suite of tests which you can run to identify problems with your computer's connection to your adapter and to the wireless network. Clicking this tab displays the following window:



The MAC and IP addresses used by your adapter appear at the top of this window. The window below these addresses lists the tests you can perform. Choose the test or tests to perform by clicking the check box next to the desired test(s). You can select all tests by clicking the **Select All** button, or clear all check boxes by clicking the **Deselect All** button.

When the tests you wish to run are selected, click the **Run** button. The Configuration Utility then performs all the tests you have selected and displays the result of the test in the window. You can stop all tests in progress by clicking the **Stop** button.

At the bottom of the **Diagnostics** menu are three buttons. Clicking the **OK** button applies any changes you made in this or any of the other menus of the Configuration Utility and closes the utility. Clicking the **Cancel** button cancels any changes you made since you last clicked the **Apply** but does not close the utility. Clicking the **Apply** button saves any changes you made in this or any of the other menus of the utility and leaves the utility open.


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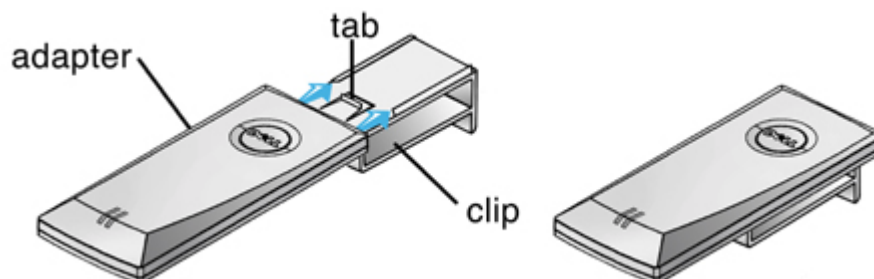
Mounting a Dell TrueMobile 1300 Wireless Adapter to Your Computer:

Dell™ TrueMobile™ 1300 Wireless USB2.0 Adapter User's Guide


 **NOTE:** Your computer must have wireless adapter mounting slots in order to mount the Dell TrueMobile 1300 wireless adapter on your computer.

Attaching the Clip to the Adapter

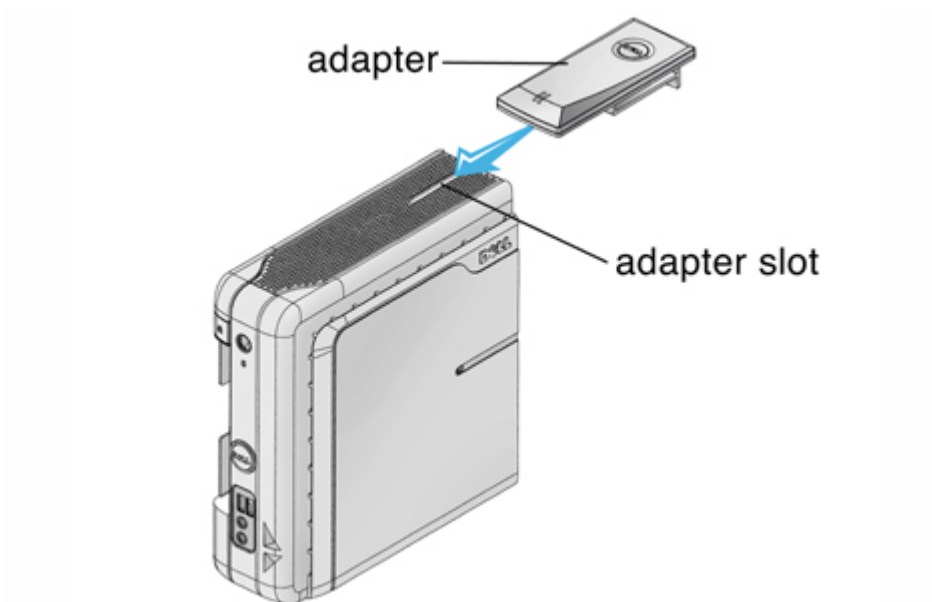
Align the grooves on the base of the adapter with the rails on the clip, and firmly slide the adapter forward until you hear a snap and the clip is fully connected to the adapter.




Mounting the Adapter on the Computer

 **NOTE:** Remove the cable cover on the back of your computer before mounting the adapter on the connector. For instructions on removing the cable cover, see the User's Guide that came with your computer.

Insert the clip, with the adapter attached, into the adapter slot on top of the computer, and slide it forward until the clip snaps into place.



 **NOTE:** When mounting the adapter on the computer, use the 1-foot cable to connect the adapter to the computer.

Removing the Adapter From the Computer

Slide the adapter back and out of the adapter slot.

Detaching the Adapter From the Clip

Turn the adapter over, slightly lift up the tab on the clip with a screwdriver, and then slide the adapter away from the clip.

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Technical Specifications and Regulatory Information: Dell™ TrueMobile™ 1300 Wireless USB2.0 Adapter User's Guide

● [Regulatory information](#)

● [Technical Specification](#)

Safety Instructions

The Dell™ TrueMobile™ 1300 Wireless USB Adapter, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Dell TrueMobile 1300 wireless device 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 Dell TrueMobile 1300 wireless devices may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations include the following:

- Using the Dell TrueMobile equipment on board airplanes,
- Using the Dell TrueMobile equipment in medical facilities, or
- Using the Dell TrueMobile 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 Dell TrueMobile 1300 wireless device before you turn it on.

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Regulatory information

The Dell™ TrueMobile™ 1300 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. For country-specific approvals, see Radio approvals. Dell Computer Corporation is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this Dell TrueMobile 1300 kit, or the substitution or attachment of connecting cables and equipment other than that specified by Dell Computer Corporation. The correction of interference caused by such unauthorized modification, substitution or attachment is the responsibility of the user. Dell Computer Corporation and its authorized resellers or distributors are not liable for any damage or violation of government regulations that

may arise from the user failing to comply with these guidelines.

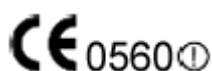
For the latest regulatory information, documentation, and other updates, please visit the Dell website at support.dell.com.

Canada—Industry Canada (IC)

This device complies with RSS210 of Industry Canada.

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Europe—EU Declaration of Conformity



This equipment complies with the essential requirements of the European Union directive 1999/5/EC.

Cet équipement est conforme aux principales caractéristiques définies dans la Directive européenne RTTE 1999/5/CE.

Die Geräte erfüllen die grundlegenden Anforderungen der RTTE-Richtlinie 1999/5/EG.

Questa apparecchiatura è conforme ai requisiti essenziali della Direttiva Europea R&TTE 1999/5/CE.

Este equipo cumple los requisitos principales de la Directiva 1999/5/CE de la UE, "Equipos de Terminales de Radio y Telecomunicaciones".

Este equipamento cumpre os requisitos essenciais da Directiva 1999/5/CE do Parlamento Europeu e do Conselho (Directiva RTT).

Deze apparatuur voldoet aan de noodzakelijke vereisten van EU-richtlijn betreffende radioapparatuur en telecommunicatie-eindapparatuur 1999/5/EG.

Dette udstyr opfylder de Væsentlige krav i EU's direktiv 1999/5/EC om Radio- og teleterminaludstyr.

Dette utstyret er i overensstemmelse med hovedkravene i R&TTE-direktivet (1999/5/EC) fra EU.

Utrustningen uppfyller kraven för EU-direktivet 1999/5/EC om ansluten teleutrustning och ömsesidigt erkännande av utrustningens överensstämmelse (R&TTE).

Tämä laite vastaa EU:n radio- ja telepäätelaitedirektiivin (EU R&TTE Directive 1999/5/EC) vaatimuksia.

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France

Some areas of France have a restricted frequency band. The worst-case maximum authorised power indoors is:

10 mW for the entire 2.4 GHz band (2400 MHz–2483.5 MHz)

100 mW for frequencies between 2446.5 MHz and 2483.5 MHz (NOTE—Channels 10 through 13 inclusive)

operate in the band 2446.6 MHz to 2483.5 MHz)

There are few possibilities for outdoor use: On private property or on the private property of public persons, use is subject to a preliminary authorisation procedure by the Ministry of Defence, with maximum authorised power of 100 mW in the 2446.5–2483.5 MHz band. Use outdoors on public property is not permitted.

In the departments listed below, for the entire 2.4 GHz band:

Maximum authorized power indoors is 100 mW

Maximum authorized power outdoors is 10 mW

Departements in which the use of the 2400–2483.5 MHz band is permitted with an EIRP of less than 100 mW indoors and less than 10 mW outdoors:

01 Ain Orientales	36 Indre	66 Pyrénées
02 Aisne	37 Indre et Loire	67 Bas Rhin
03 Allier	41 Loir et Cher	68 Haut Rhin
05 Hautes Alpes	42 Loire	70 Haute Saône
08 Ardennes	45 Loiret	71 Saône et Loire
09 Ariège	50 Manche	75 Paris
11 Aude	55 Meuse	82 Tarn et Garonne
12 Aveyron	58 Nièvre	84 Vaucluse
16 Charente	59 Nord	88 Vosges
24 Dordogne	60 Oise	89 Yonne
25 Doubs	61 Orne	90 Territoire de Belfort
26 Drôme	63 Puy du Dôme	94 Val de Marne
32 Gers	64 Pyrénées Atlantique	

This requirement is likely to change over time, allowing you to use your wireless LAN card in more areas within France. Please check with ART for the latest information (www.art-telecom.fr)



NOTE: Your Dell TrueMobile Wireless USB2.0 adapter transmits less than 100 mW, but more than 10 mW.

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Italia

A license is required for indoor use. Outdoor use is prohibited.
E' necessaria la concessione ministeriale anche per l'uso interno. Verificare con i rivenditori la procedura da seguire. L'uso per installazione in esterni non e' permessa.

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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.

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: This Dell TrueMobile 1300 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.

IMPORTANT NOTE

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radio approvals

To determine whether you are allowed to use your wireless network device in a specific country, please check to see if the radio type number that is printed on the identification label of your device is listed on the radio approval list posted on the general Dell support site at support.dell.com.

Warranty

One-Year Limited Warranty (United States Only)

Dell Computer Corporation ("Dell") manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices. Dell warrants that the hardware products it manufactures will be free from defects in materials and workmanship. The limited warranty term is one year beginning on the date of invoice, as further described in the following text.

Damage due to shipping the products to you is covered under this limited warranty. Otherwise, this limited

warranty does not cover damage due to external causes, including accident, abuse, misuse, problems with electrical power, servicing not authorized by Dell, usage not in accordance with product instructions, failure to perform required preventive maintenance, and problems caused by use of parts and components not supplied by Dell.

This limited warranty does not cover any items that are in one or more of the following categories: software; external devices (except as specifically noted); accessories or parts added to a Dell system after the system is shipped from Dell; accessories or parts added to a Dell system through Dell's system integration department; accessories or parts that are not installed in the Dell factory; or DellWare™ products. Monitors, keyboards, wireless access points and mice that are Dell branded or that are included on Dell's standard price list are covered under this limited warranty; all other monitors, keyboards, wireless access points and mice (including those sold through the DellWare program) are not covered.

During the one-year period beginning on the invoice date, Dell will repair or replace products returned to Dell's facility. To request limited warranty service, you must contact Dell's Customer Technical Support within the limited warranty period. Refer to your documentation to find the appropriate telephone number for obtaining customer assistance. If limited warranty service is required, Dell will issue a Return Material Authorization Number. You must ship the products back to Dell in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk of loss or damage during shipment. Dell will ship the repaired or replacement products to you freight prepaid if you use an address in the continental United States, where applicable. Shipments to other locations will be made freight collect.

NOTE: Before you ship the product(s) to Dell, back up the data on the hard-disk drive(s) and any other storage device(s) in the product(s). Remove any removable media, such as diskettes or CDs. Dell does not accept liability for lost data or software.

Dell owns all parts removed from repaired products. Dell uses new and reconditioned parts made by various manufacturers in performing limited warranty repairs and building replacement products. If Dell repairs or replaces a product, its limited warranty term is not extended.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). DELL'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS LIMITED WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD SET FORTH ABOVE AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER SUCH PERIOD. SOME STATES (OR JURISDICTIONS) DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

DELL DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY STATEMENT OR LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY LIABILITY FOR PRODUCTS NOT BEING AVAILABLE FOR USE OR FOR LOST DATA OR SOFTWARE. SOME STATES (OR JURISDICTIONS) DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

These provisions apply to Dell's one-year limited warranty only. For provisions of any on-site service contract covering your system, refer to the separate on-site service contract that you will receive.

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Technical Specification

Wireless interoperability

Dell™ TrueMobile™ 1300 products are designed to be interoperable with any wireless LAN product that is based on direct sequence spread spectrum (DSSS) radio technology and to comply with the following standards:

- IEEE Std. 802.11b-1999. Standard on Wireless LAN.
- IEEE Std. 802.11g-2003. Standard on Wireless LAN.
- Wireless Fidelity (WiFi) certification, as defined by the WECA (Wireless Ethernet Compatibility Alliance).

Driver support

- Microsoft Windows XP
- Microsoft Windows 2000

Standards supported

- IEEE 802.11b/g standard for Wireless LAN
- USB 2.0

Environment

- Max. Humidity: 95% Non-condensing

Power specification

- Nominal Temp Range: 17 dBm
- Extended Temp Range: 14 dBm min.
- Transmit Power, 2.7v to 3v: 14 dBm min.

Radio specification

Range:

- Per cell indoors approx. 35-100 meters or more
- Per cell outdoors up to 100-300 meters
- The range of your wireless devices can be affected when the antennas are placed near metal surfaces and solid high-density materials.
- Range is also impacted due to "obstacles" in the signal path of the radio that may either absorb or reflect the radio signal.
- In Open Office environments, antennas can "see" each other, i.e. there are no physical obstructions between them.
- In Semi-open Office environments, work space is divided by shoulder-height, hollow wall elements; antennas are at desktop level.
- In Closed Office environments, work space is separated by floor-to-ceiling brick walls.

Frequency range:

2.4-2.4835 GHz, direct sequence spread spectrum

Number of Channels:

- Europe: 13 (1-13)
- US: 11 (1-11)
- France: 2 (10-11)

- Japan: 14 (1-14)

Antenna system:

- Dual internal PIFA antenna supporting diversity.

Mobility:

- Seamless roaming across cell boundaries with handover

Specific features

Supported bit rates:

- 54 Mbps
- 48 Mbps
- 36 Mbps
- 24 Mbps
- 18 Mbps
- 12 Mbps
- 11 Mbps
- 9 Mbps
- 6 Mbps
- 5.5 Mbps
- 2 Mbps
- 1 Mbps

Data encryption:

- 64 /128 bit WEP Encryption

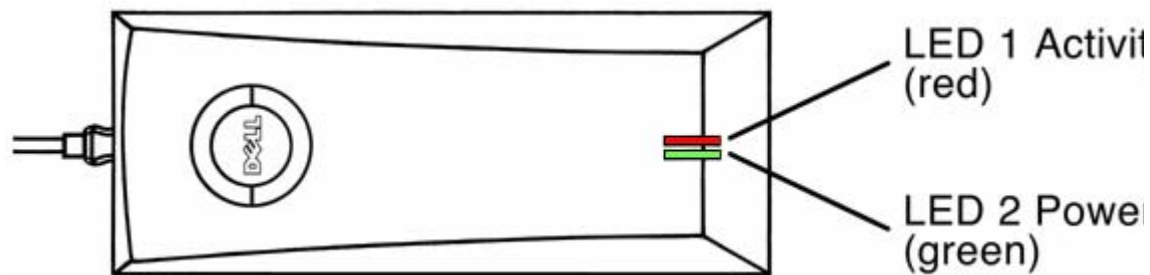
Security:

- Supports PEAP, TLS/Smartcard, WPA, WPA-PSK, EAP - Cisco Wireless (LEAP), MD5 Challenge and TTLS authentication

Utility Software:

- Management utility software

LED indicator:



LED 1	INDICATION
Off	Unit is off or disconnected
On	Radio is on and associated
Slow Flash	Radio is on and scanning for a wireless network
Fast Flash	Radio is on, associated, transmitting and receiving data
LED 2	INDICATION
Off	Power is off or unit is disconnected
On	Power is on and unit is connected

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Troubleshooting: Dell™ TrueMobile™ 1300 Wireless USB Adapter User's Guide

There is a red or yellow X in device manager over the Dell TrueMobile 1300 Wireless USB Adapter.

- 1) Right click on the yellow or red bang, select **properties**, select **driver**, select **update driver**, click **next**, then follow the instructions on the screen.
 - 2) If the above steps do not resolve the problem. Right click on the yellow or red bang again, select **properties**, select **driver**, select **update**, select **install from a list or specific location**, select **search removable media**, place the CD that came with your device in the CD-ROM drive, select next, and follow the instructions on the screen.
 - 3) If the above steps do not resolve the problem go to support.dell.com.
-

The Wireless Network Connection pop up message states that I am connected to my wireless router and the signal strength is good but I cannot use the network.

- Your wireless network may require security measures to be set. To check if the Router that you are connected to has security requirements, open the Dell Wireless Configuration Utility, click the Site Monitor Tab, and locate your network name in the list of Visible Networks. To specify security measures, refer to Network Configuration.
-

Windows does not detect or recognise my TrueMobile 1300 Wireless USB adaptor when I plug it in.

- This problem may occur with any USB device. To fix this problem simply un-plug and re-plug the device. If this does not work, plug the device into another free USB port.
-

The Icon in the systems tray has a red X over it.

- 1) Ensure that your Truemobile 1300 Wireless USB Adapter is connected both into a USB port on your system and into the adapter.
 - 2) If the above steps do not resolve the problem, perform the steps in the **Connecting to your Wireless network** section of this manual.
-

I cannot make a connection to the wireless broadband router.

- Using either the Microsoft Windows Zero Configuration utility or the Wireless configuration utility ensure

that the TrueMobile 1300 wireless USB adapter SSID matches that of the network you would like to connect to.

- The TrueMobile 1300 wireless USB adapter may not be in range of the wireless broadband router. Move either device closer to one another until they are in range of one another.
-

There is more than one available network listed.

- There are other available networks within your area. You should select and configure only the network you would like to access.
-

The network I want to connect to is available but I cannot connect to it using Microsoft Windows XP.

- In order to connect to (associate) to a network you must configure that connection via the zero configuration utility.
-

The wireless broadband router that you want to connect to does not show as an “available network.”

- Some wireless broadband routers do not “broadcast” that they are available. If you know that router’s SSID you can “Add” a network manually in the Microsoft Windows XP Zero Configuration utility or the Dell Wireless Configuration utility for other operating systems.
-

When I turn on security measures I lose connection to the wireless broadband router.

- The settings for both the wireless broadband router and the TrueMobile 1300 USB wireless adapters must match to make a connection.
-

May I connect to more than one wireless broadband router?

- You can only connect to one wireless broadband router at a time but may indicate a list of networks to connect to. The Microsoft Zero Configuration utility or the Dell Wireless Configuration utility will allow you to move the preferred networks “up” or “down” to prioritize the connections. In the event the first network is not available the system will try to connect to the next network in the preferred list.
-

How do I mount my TrueMobile 1300 Wireless USB adaptor for best operation?

- For best operation the wireless device should have a clear line of sight to the wireless broadband router. Operational speed and range may be reduced if there are walls or partitions between the wireless device and the wireless broadband router. The TrueMobile 1300 Wireless USB adaptor should be placed on a horizontal surface and the wireless broadband router antenna should be in a vertical position.
-

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Appendix: Dell™ TrueMobile™ 1300 Wireless USB2.0 Adapter User's Guide

Wireless Local Area Network (WLAN)

A Local Area Network (LAN) is a network in one location. Users at that location can share files, printers, and other services. In a LAN, a networked computer that requests services is called a client. A Wireless Local Area Network (WLAN) is a type of LAN that uses high frequency radio waves rather than wires to communicate and transmit data among the network clients and devices. It is a flexible data communication system implemented as an extension to, or as an alternative for, a wired LAN.

In a WLAN, wireless adapters are installed in clients, also called wireless clients. The adapter allows the wireless client to communicate with the WLAN without cables. Instead, wireless clients send and receive information through a path in the air called a channel.

The standards for a WLAN are based on the IEEE 802.11b/g standard. All Dell TrueMobile 802.11b/g-compliant devices interoperate with other 802.11b/g-compliant wireless devices from other vendors. The WiFi certification logo indicates that the wireless device has been tested by an independent organization and is 802.11b/g-compliant.

A wireless client operates in either infrastructure mode or peer-to-peer mode.

Infrastructure Mode: A WLAN with Wireless Broadband Routers

In infrastructure mode, wireless clients send and receive information through one or more Wireless Broadband Routers. Wireless Broadband Routers are strategically located within an area to provide optimal coverage for wireless clients. Wireless Broadband Routers and wireless clients constitute a WLAN.

Wireless Broadband Routers can be connected to a LAN of wired or wireless clients. The Wireless Broadband Routers send and receive information from the LAN through this connection.

An Extended Service Set Identifier (ESSID) is used to identify the wireless clients and Wireless Broadband Routers in a WLAN. All wireless clients and Wireless Broadband Routers in the WLAN must use the same ESSID. A Basic Service Set Identifier (BSSID) uniquely defines each wireless client and Wireless Broadband Router.

Peer-to-Peer Mode (Ad Hoc): A WLAN without Wireless Broadband Routers

In peer-to-peer mode, wireless clients directly send and receive information to other wireless clients without using a Wireless Broadband Router.

Identifying a WLAN

An ESSID and BSSID are both Service Set Identifiers (SSID) that identify and control the wireless client's access to a given WLAN. The SSID is sometimes referred to as the network name. The SSID indicates what WLAN you are referring to. In most cases, the user interface displays the SSID.

When installing a Wireless Broadband Router or wireless adapter in a wireless client, the installation program asks you to enter the SSID.

All wireless clients and Wireless Broadband Routers in a WLAN must use the same network name.

Encryption

In a WLAN, wireless clients and Wireless Broadband Routers send and receive information through the air. Without implementing security, it is possible for an unauthorized person to intercept the information.

A common way of implementing security and protecting information is encryption. Encryption applies a set of instructions, called an algorithm, to information. The instructions combine the plain or clear text of information with a sequence of hexadecimal numbers, called an encryption key.

Before transmitting information over the airwaves, the wireless client or Wireless Broadband Router encrypts or scrambles the information. The Wireless Broadband Router or wireless client receiving the information uses the same key to decrypt or unscramble the information. The information is only readable to WLAN devices that have the correct encryption key. The longer the key is, the stronger the encryption.

The form of data encryption used by the Wireless Broadband Router is called Wired Equivalent Privacy (WEP). When encryption is enabled, you must set the WEP key in the client to match the WEP key used by the Wireless Broadband Router because you will ONLY associate to Wireless Broadband Routers that have a matching WEP Key. For added security, change the encryption key often. WEP, or encryption, is an optional feature that can be enabled or disabled.

There are two WEP encryption methods: 40(64)-bit and 104(128)-bit. 40-bit and 64-bit encryption is identical similarly 104-bit and 128-bit encryption is identical. Some vendors use the term 40-bit; others use 64-bit. A wireless device that claims to have 40-bit encryption interoperates with a device that claims to have 64-bit encryption, and vice versa. A 40(64)-bit key consists of 10 hexadecimal numbers in five two-digit groups, arrayed as follows:

Example Key #1: 1A:2E:3F:11:18

A 128-bit hexadecimal key has several trillion times as many possible combinations than a 40(64)-bit key. It consists of 26 hexadecimal numbers arranged in thirteen two-digit groups, arrayed as follows:

Example Key #1: 1A:2D:3E:5F:4A:22:19:77:91:A1:B2:C3:D8

The examples above are for hexadecimal key format. Keys may also be in ASCII format. ASCII characters consist of any numbers or letters in upper or lower case. The key may be 40(64)-bit ASCII, which consists of five characters (for example: 12Abc). The key may also be 104(128)-bit ASCII, which consists of thirteen characters (for example: AbCdEf1234567). Note the case of the letters is important and "abcde" is not the same as "ABCDE".

All wireless clients and Wireless Broadband Routers in a WLAN must use the same encryption method and key. The following two examples stress how important this point is.

Example 1

The encryption method for a Wireless Broadband Router is 40(64)-bit. The method for a wireless client is 128-bit encryption. The client and Wireless Broadband Router cannot communicate with each other, even though the selected key is the same. To resolve this problem, set the Wireless Broadband Router to use 128-bit encryption.

Example 2

The encryption method is the same for the Wireless Broadband Router and wireless client. You select key 1 for the Wireless Broadband Router and key 2 for the wireless client. The wireless client cannot communicate with the WLAN. To resolve this problem, select key 1 for the wireless client.

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Glossary: Dell™ TrueMobile™ 1300 Wireless USB2.0 Adapter User's Guide

Access Point:

Sometimes referred to as a Wireless Broadband Router or Residential Gateway. An access point is a device on an 802.11b/g wireless network that receives and retransmits data. It allows computers with wireless network adapters to be connected, typically, to an Ethernet network.

Client:

A client is a computer on a network.

Domain Name System (or Service) (DNS):

DNS is an Internet service that translates domain names into IP addresses. A DNS server keeps a database of host computers, their respective domain names and IP addresses. When a domain name is requested, the DNS server uses this database to send the user to the correct IP address.

The DNS system is really its own network. If one DNS server doesn't know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned.

Dynamic Host Configuration Protocol (DHCP):

DHCP is the process of automatically configuring TCP/IP settings for every computer on a network.

Encryption:

Encryption is a common way of implementing security and protecting information. Encryption applies a set of instructions, called an algorithm, to information. The instructions combine the plain or clear text of information with a sequence of hexadecimal numbers, called an encryption key.

Before transmitting information over the airwaves, the wireless client or access point encrypts or scrambles the information. The access point or wireless client receiving the information uses the same key to decrypt or unscramble the information. The information is only readable to WLAN devices that have the correct encryption key. The longer the key is, the stronger the encryption.

802.11b-compliant wireless networks incorporate Wired Equivalent Privacy (WEP) technologies. There are two WEP encryption methods: 64(40)-bit and 128-bit. 40-bit and 64-bit identical. Some vendors use the term 40-bit; others use 64-bit. A wireless device that claims to have 40-bit encryption interoperates with a device that claims to have 64-bit encryption, and vice versa. A 64(40)-bit key consists of 10 hexadecimal numbers in five two-digit groups, arrayed as follows:

Key #1: 1A:2F:3A:44:23

Key #2: 23:44:56:65:78

Key #3: 01:23:3F:FF:DE

Key #4: 00:11:22:33:44

A 128-bit key has several trillion times as many possible combinations than a 64(40)-bit key. It consists of 26 hexadecimal numbers arranged in thirteen two-digit groups, arrayed as follows:

Key #1: 1A:2F:3A:44:23:22:22:34:44:55:1A:12:13
Key #2: 23:44:56:65:78:3A:44:23:22:22:34:44:55
Key #3: 01:23:3F:FF:DE:23:44:56:65:78:3A:44:11
Key #4: 00:11:22:33:44:AA23:3F:FF:DE:23:44:56

All wireless clients and access points in a WLAN must use the same encryption method and key.

Ethernet:

Ethernet is the most widely used local area networking technology. It is an industry-wide standard originally developed by Xerox and formalized in 1980 by DEC, Intel, and Xerox. Ethernet networks transmit data at 10/100 Mbps using a specified protocol.

Ethernet Address (MAC Address):

An Ethernet address is a unique, pre-programmed address, sometimes referred to as a media access control (MAC) address. Each computer on an Ethernet network has its own Ethernet address. This 12-digit hexadecimal address is encoded into the circuitry of the computer's network adapter when it is manufactured. Other devices on the network use this address to identify the computer. This address is not the same as the IP address that is assigned to computers on TCP/IP networks. On these networks, the IP address is associated with the MAC address to enable network communication.

Internet Protocol (IP):

IP is the protocol used to send data from one computer to another over the Internet. The IP protocol describes how Internet computers keep track of the IP address of each computer on the network and route packets of data from one IP address to another.

IP Address:

An IP address provides unique identification for each computer on the Internet or on a local network. IP addresses are usually expressed as a group of four numbers separated by periods, for example, 169.254.10.2. None of the numbers can be greater than 255. Each Ethernet interface has an IP address. For the Dell™ TrueMobile™ 1300 Wireless USB Adapter, there is a LAN Ethernet interface; hence, there is a LAN IP address.

Link Light:

A link light is a light on a network device that indicates a good network connection. Hubs typically have a link light for each port; although, they may not be labeled as such, and the lights may show other information. These lights often blink for network activity. Some hubs display different colored lights for 10 Mbps and 100 Mbps. For more information, see the documentation accompanying your product.

Local Area Network (LAN):

A LAN is a network in one location. The network lets users at that location share files, printers and other services.

Network Adapter:

A network adapter is a device expansion card that provides the physical connection between a computer and the network. There are many types of adapters. They include PC cards for laptops, a card that fits into a slot on your computer, just like you install a sound card or modem card, and embedded cards, embedded USB adapters, USB adapters, and USB desktop adapters. Some newer computers have a network adapter already built into the system. PC cards or cards that fit into a slot in the desktop are sometimes referred to as network interface cards, or NICs.

Network Name (SSID):

Access points are grouped together by an identifier called an ESSID. The ESSID is also referred to as a Net ID. This identifier is a combination of any letters or numbers that are appropriate for the network environment. ESSID is specifically for access points. When you talk about peer-to-peer networks, you cannot use the term ESSID.

Service Set Identifier (SSID) is more generic and is a 32-character name that uniquely identifies all the computers and equipments that make up a wireless network. A type of SSID is ESSID. Another type of SSID is Basic Service Set Identifier (BSSID). The BSSID is the MAC address of a wireless adapter or access point.

Port:

A port is a connector on a networking device, used to attach the network cable. Hubs and switches have numerous ports that connect to computers on the network.

Protocol:

Protocol refers to a set of rules for sending and receiving information on a network. The rules determine the format of the data that is transmitted and other aspects of networking, such as how errors are detected and corrected. The protocol driver in each computer is software that adheres to these rules when sending and receiving information. These drivers are also often called protocols.

Transmission Control Protocol/Internet Protocol (TCP/IP):

TCP/IP refers to the protocol that computers use to communicate over the Internet. TCP determines how a computer breaks up data into small units, called "packets," to be sent to another computer and how the receiving computer reassembles the packets into a single file. IP determines how the packets are routed across the Internet. See Internet Protocol.

Virtual Local Area Network (VLAN):

A VLAN is a network of computers that behave as if they are connected to the same wire, even though they may be physically located on different segments of a LAN. VLANs are configured through software rather than hardware, which makes them extremely flexible. When a computer on a VLAN is physically moved to another location, it can stay on the same VLAN without any hardware reconfigurations.

WEP (Wired Equivalent Privacy):

WEP data encryption is defined by the 802.11 standard to prevent (i) access to the network by "intruders" using similar wireless LAN equipment and (ii) capture of wireless LAN traffic through eavesdropping. WEP allows the administrator to define a set of respective "Keys" for each wireless network user based on a "Key String" passed through the WEP encryption algorithm. Access is denied by anyone who does not have an assigned key.

Wireless broadband router:

Also known as a "wireless residential gateway" or "SOHO router and access point," a wireless broadband router is a device which connects to multiple PCs to a single broadband (cable or DSL) modem, allowing the PCs to share internet access, exchange files between PCs, and share access to network devices such as printers.

Wireless Local Area Network (WLAN):

A WLAN is a type of Local Area Network (LAN) that uses high frequency radio waves rather than wires to communicate and transmit data among the network clients and devices. It is a flexible data communication system implemented as an extension to, or as an alternative for, a wired LAN. Just like a LAN, the network lets users at that location share files, printers and other services.

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