Dell™ Latitude™ XFR D630

Fully Rugged Notebook

User's Guide

Notes, Notices, and Cautions

NOTE: A **NOTE** indicates important information that helps you make better use of your computer.

NOTICE: A **NOTICE** indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

WARNING: A WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

1   Finding Information

NOTE: Some features or media may be optional and may not ship with your computer. Some features or media may not be available in certain countries.

NOTE: Additional information may ship with your computer.

⚠ **CAUTION: The *XFR D630 Fully Rugged Notebook User's Guide* provides important safety and regulatory information. See the <u>Safety Information</u> and <u>Regulatory Information</u> sections for further details.**

Documentation	Purpose	Document Location
'Open Me First' Envelope	Provides a single location where the documentation and CDs shipped with the XFR D630 can be located	• In the shipping container
XFR D630 Fully Rugged Notebook Quick Reference Guide	Guides you through your initial XFR D630 Notebook setup	• Available on the *Documentation and Driver CD*
XFR D630 Fully Rugged Notebook User's Guide	• How to configure your system settings • How to remove/replace parts • How to troubleshoot and solve problems • Specifications • Safety and regulatory information • Customer Care Program information	• Available in the 'Open Me First' envelope • Available on the *Documentation and Driver CD*
Documentation and Driver CD	The *Documentation and Driver CD* contains: • Product documentation • Supplemental Dell documentation	• Available in the 'Open Me First' envelope
Dell Drivers and Utilities CD (Optional)	**NOTE:** The *Drivers and Utilities CD* may be optional and may not ship with your computer. Documentation and drivers are already installed on your computer. You can use the media to reinstall drivers and to run Dell Diagnostics (see "<u>Dell Diagnostics</u>"). Readme files may be included on your media to provide last-minute updates about technical changes to your computer or advanced technical reference material for technicians or experienced users.	• Optionally available in the 'Open Me First' envelope
Operating System CD (Optional)	How to reinstall your operating system	**NOTE:** The *Operating System* CD is optional and may not ship with your computer. The operating system is already installed on your computer. To reinstall your operating system, use the *Operating System* CD. See "<u>Restoring Your Operating System</u>". After you reinstall your operating system, use the optional *Drivers and Utilities* CD to reinstall drivers for the devices that came with your computer. Your operating system product key label is located in the 'Open Me First' envelope.
Windows Help and Support Center	• How to use Windows operating system • How to work with programs and files • How to personalize your desktop	1. Click **Start** or 🪟 → **Help and Support** 2. Type a word or phrase that describes your problem and click the arrow icon 3. Click the topic that describes you problem 4. Follow the instructions on the screen
Service Tag	The Service Tag is located on the bottom of your computer. Use the Service Tag to identify your computer when you contact Customer Support.	This label is located on your computer.
Microsoft Windows License Label	This label provides your Microsoft Windows License information.	This label is located on your computer.
Dell Support Utility	Software upgrades and troubleshooting hints, frequently asked questions, hot topics, and general health of your computer	The Dell Support Utility automated upgrade and notification system installed on your computer. This support provides real-time health scans of your computing environment, software updates, and relevant self-support information. Access the Dell Support Utility from the 🖼 icon in the taskbar. For more

		information, see "<u>Dell Support Utility</u>".
Dell Quickset Help	Information on network activity, the Power Management Wizard, hotkeys, and other items controlled by Dell QuickSet	To view *Dell QuickSet* Help, right-click the QuickSet icon in the Microsoft Windows taskbar. For more information on Dell QuickSet, see "<u>Dell QuickSet</u>".

2   About Your Computer

2.1 Overview

The XFR D630 Fully Rugged Notebook provides Xtreme Terrain Grade^{TM} protection through rugged design expertise and independent MIL-STD testing and validation.

The Armored Protection System^{TM} (APS) is a proven ruggedization system that includes a dense magnesium exoskeleton, over-mold protection, and the patent-pending QuadCool^{TM} thermal management system.

The QuadCool thermal management system is a multi-faceted thermal management system that combines enhanced forced convection and conductive cooling focused on the internal core system components, primary memory, storage and smart battery elements.   QuadCool technology moves heat away from core system components and elements to the exterior of the system.

The XFR D630 provides the rugged industry's first 14.1″ wide-aspect LCD providing brighter, sharper and superior viewability. The DirectVue^{TM} Display technology offers optimal sunlight-readability because of its increased brightness, reduced reflectivity and a proprietary optical enhancement. Optionally available is the DirectVue^{TM} Touch Display.

With the XFR D630, you have the option to choose between two keyboards. The standard keyboard provides a sealed, full-sized keyboard while the optional backlit keyboard provides a sealed, full-sized, backlit, rubber keyboard.

Your XFR D630 Fully Rugged Notebook has a common IT platform and architecture with Dell^{TM}'s Latitude^{TM} D630 and ATG^{TM} D630 notebooks, thereby simplifying IT management and reducing support and administrative time and costs. This also means operating system images, drivers, firmware and other key IT architecture elements remain consistent across the Dell offerings; and therefore there is a family of supporting tools that are available to assist you with your notebook.

The result is a notebook that is not only rugged - it is Rugged Redefined™.

2.2 Front View

Figure 2 1 XFR D630 Front View
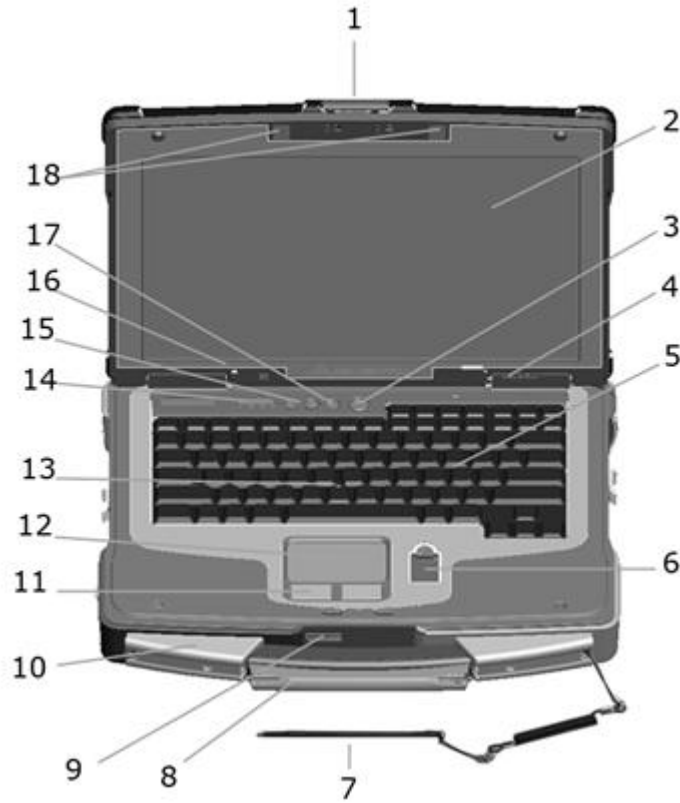
1	Display latch	2	DirectVue^{TM} Display or DirectVue^{TM} Touch Display	3	Power button
4	Device status lights	5	Standard keyboard or Backlit rubber keyboard	6	Biometric (fingerprint) reader - optional
7	Stylus and stylus tether (with Touch Display option)	8	Stylus housing (with Touch Display option)	9	Speaker
10	Handle	11	Touch pad/Track stick buttons	12	Touch pad
13	Track stick (standard keyboard only)	14	Keyboard status lights	15	Volume control buttons
16	Ambient light sensor (ALS)	17	Mute button	18	Keyboard illumination lights

⚠️ **CAUTION: The optional DirectVue^{TM} Touch Display has been designed to accept finger touch as well as passive stylus input directly onto the screen. With the optional DirectVue^{TM} Touch Display, a stylus is included with the XFR D630 for use in selecting items on the touch screen. Other pointing devices can be used with the touch screen such as any non-abrasive, smooth or blunt object that will not damage the touch screen display. The touch screen surface can be damaged by ink pens, marker pens or other pointed or abrasive objects. The use of non-approved input devices that cause damage to the digitizer or LCD may not be covered by the limited warranty.**

2.2.1 Device Status Lights

⏻	Turns on when you turn on the computer and blinks when the computer is in a power management mode.
🖴	Turns on when the computer reads or writes data. ⊘ **NOTICE:** To avoid loss of data, never turn off the computer while the 🖴 light is flashing.
🔋	Turns on steadily or blinks to indicate battery charge status.
📶	Turns on when wireless devices are enabled.
✳	Turns on when Bluetooth® wireless technology is enabled. To enable or disable Bluetooth wireless technology, move the wireless switch to the "on" position. See "wireless switch" on page 19 for more information. **NOTE:** Bluetooth wireless technology is an optional feature on your computer, so the ✳ icon turns on only if you ordered Bluetooth wireless technology with your computer. For more information, see the documentation that came with your Bluetooth wireless technology.

If the computer is connected to an electrical outlet, the 🔋 light operates as follows:
– Solid green: The battery is charging.
– Flashing green: The battery is almost fully charged.
– Off: The battery is adequately charged (or external power is not available to charge the battery).

If the computer is running on a battery, the 🔋 light operates as follows:
– Off: The battery is adequately charged (or the computer is turned off).
– Flashing orange: The battery charge is low.
– Solid orange: The battery charge is critically low.

2.2.2   Volume Control Buttons
Press these buttons to adjust the volume.

2.2.3   Mute Button
Press this button to turn off the volume.

2.2.4   Displays
For more information about the standard DirectVue^{TM} Display and the optional DirectVue Touch Display, see "<u>Using the DirectVue Displays</u>". The Display Latch keeps the display closed. The Display Latch Button is pressed to release the display latch and open the display.

2.2.5   Keyboard
You have the option of choosing the standard sealed, full-sized keyboard or the backlit, rubber, sealed full-sized keyboard. Both keyboards include a numeric keypad as well as the Microsoft® Windows® logo key. For information on supported keyboard shortcuts, see "<u>Using the Keyboard</u>".

2.2.6   Keyboard Status Lights

The green lights located above the keyboard indicate the following:

🔢   Turns on when the numeric keypad is enabled.

🅰   Turns on when the uppercase letter function is enabled.

🔒   Turns on when the scroll lock function is enabled.

2.2.7   Keyboard Illumination Lights

Press **<Fn>** and the right-arrow key to toggle on and off these lights for illumination of the keyboard in low-light environments.   These keyboard combinations are valid on both the standard and the rubber, backlit keyboard.

Keyboard Illumination
<Fn> and right-arrow key   Toggles the keyboard illumination lights on and off.

Display Functions

<Fn> and left-arrow key   Activates the ambient light sensor, which controls brightness of the
                                     display based on light level in the current environment.

<Fn> and up-arrow key   Increases brightness on the integrated display only (not on an external
                                     monitor).

<Fn> and down-arrow key   Decreases brightness on the integrated display only (not on an external monitor).

2.2.8   Touch Pad

Provides the functionality of a mouse (see "Touch Pad and Track Stick").

2.2.9   Track Stick

Provides the functionality of a mouse (see "Touch Pad and Track Stick").

NOTE: The track stick is only supported on the standard keyboard.

2.2.10   Touch Pad Buttons/Track Stick Buttons

Use these buttons much like the buttons on a mouse when you use the touch pad and track stick to move the cursor on the display (see "Touch Pad and Track Stick").

2.2.11   Power Button

Press the power button to turn on the computer or to enter or exit a power management mode.

NOTICE: To avoid losing data, shut down your computer instead of pressing the power button.

2.2.12 Biometric (Fingerprint) Reader (optional)

The optional biometric (fingerprint) reader helps to keep your Dell computer secure.

Figure 2 2 Biometric (Fingerprint) Reader

1	Biometric (Fingerprint) Reader

To access the biometric reader, you must first slide down the protective door that covers the reader. When you place your finger on the exposed reader, it uses your unique fingerprint to authenticate your user identity. For information on how to activate and use the security management software that controls the fingerprint reader, see "Security Management Software".

2.2.13 Speaker

To adjust the volume of the integrated speaker, press the volume control buttons, mute button, or volume-control keyboard shortcuts (see "Key Combinations").

2.2.14 Ambient Light Sensor

Detects available environmental light and automatically increases or decreases the display backlighting to compensate for low-light and high-light environments. Press the **<Fn>** and left-arrow keys to enable or disable the sensor ("Using the Ambient Light Sensor").

2.3 Left Side View

Figure 2 3 XFR D630 Left Side with Connectors/Devices Protected

The connectors and devices on the computer are protected from ingress by dense magnesium hinged and friction fit doors. This protection is a component of the Armored Protection System.

Figure 2 4 XFR D630 Left Side with Connectors/Devices Revealed
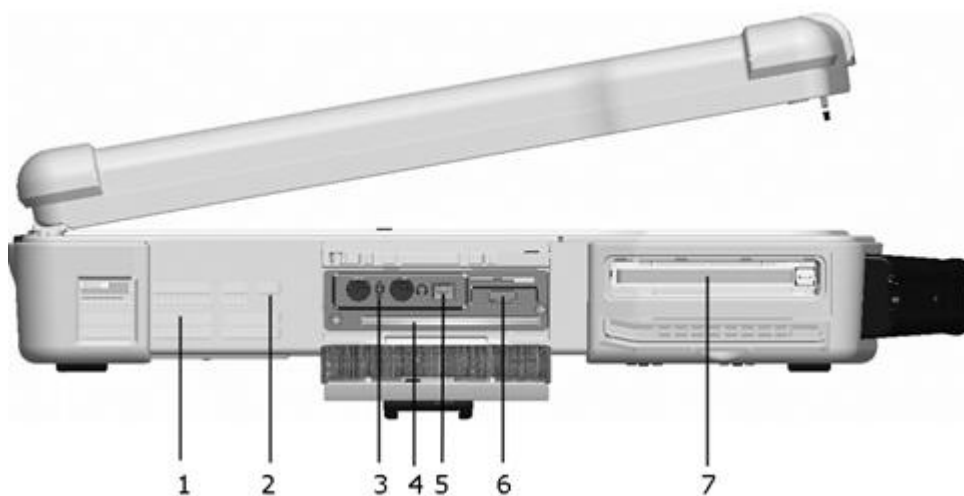
1	Air vents (protected from ingress)	2	Security cable slot	3	Audio connectors (2)
4	Smart card reader (standard or enclosed)	5	1394 connector	6	Wireless switch
7	PC card/ExpressCard slot				

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

2.3.1   Air Vents

The computer uses an internal fan to create airflow through the vents, which prevents the computer from overheating. The Air Vents are part of the QuadCool thermal management system. They provide external venting of internal heat via the enhanced convection cooling system.

⚠ **CAUTION: Do not block, push objects into, or allow dust to accumulate in the air vents. Do not store your computer in a low-airflow environment, such as a closed briefcase, while it is running. Restricting the airflow can damage the computer or cause a fire.**

✎ **NOTE:** This computer turns on the fan when the computer gets hot. Fan noise is normal and does not indicate a problem with the fan or the computer.

2.3.2   Security Cable Slot

Lets you attach a commercially available antitheft device to the computer (see "Security Cable Lock").

2.3.3   Audio Connectors

Attach headphones to the ⌒ connector.

Attach a microphone to the 🎤 connector.

2.3.4   IEEE 1394 Connector

Connects devices supporting IEEE 1394 high-speed transfer rates, such as some digital video cameras.

2.3.5   Smart Card Reader (with blank)

Supports one smart card. Smart cards provide a variety of functions, including security features and data storage. The blank prevents foreign matter from entering the interior of the computer when a smart card is not installed in the smart card slot. For more information and instructions on removing the blank, see "Smart Cards".

2.3.6   Wireless Switch

When enabled through Dell QuickSet, this switch can scan for a wireless LAN (WLAN) in your vicinity. You can also use it to rapidly turn off or on any wireless devices such as WLAN cards and internal cards with Bluetooth wireless technology (see "Dell Wi-Fi Catcher™ Network Locator").
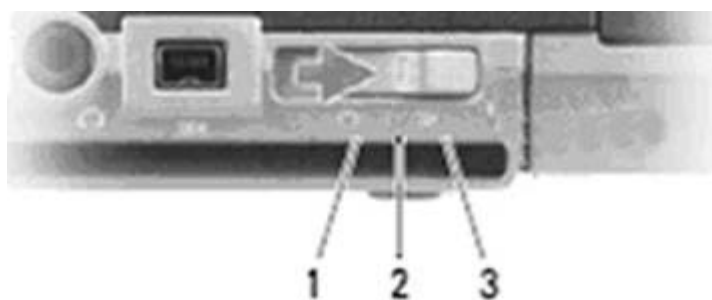
1	"off" position – disables wireless devices	2	"on" position – enables wireless devices	3	"momentary" position – Scans for WLAN networks (see "Dell Wi-Fi Catcher^{TM} Network Locator")

2.3.7   PC Card Slot

Supports one PC Card, such as a modem or network adapter. The computer ships with a blank installed in the slot to prevent foreign matter from entering the computer interior when a card is not installed (see "Card Types").

2.4 Right Side View

Figure 2 5 XFR D630 Right Side with Connectors/Devices Protected

The connectors and devices on the computer are protected from ingress by dense magnesium hinged and friction fit doors. This protection is a component of the Armored Protection System.

Figure 2 6 XFR D630 Right Side with Connectors/Devices Revealed

1	XBay expansion bay	2	XBay device latch release	3	USB connectors (2)

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠️ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

2.4.1   XBay

XBay expansion bay supports a floppy or an optical drive, second battery or second hard drive (see "<u>Using Multimedia</u>").

2.4.2   XBay Device Latch Release

Press the latch release to eject any device installed in the XBay.

2.4.3   USB Connectors

Connect USB devices such as a mouse, keyboard, or printer.

2.5 Back View

Figure 2 7 XFR D630 Back View with Connectors Protected

The connectors and devices on the computer are protected from ingress by dense magnesium hinged and friction fit doors. This protection is a component of the Armored Protection System.

Figure 2 8 XFR D630 Back View with Connectors Revealed

1	Network connector (RJ-45)	2	Modem connector (RJ-11)	3	USB connectors (2)
4	Serial connector	5	Video connector	6	AC adapter connector
7	Air vents (protected from ingress)				

⚠️ **CAUTION: Do not block, push objects into, or allow dust to accumulate in the air vents. Do not store your computer in a low-airflow environment, such as a closed briefcase, while it is running. Restricting the airflow can damage the computer or cause a fire.**

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠️ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

2.5.1   Network Connector (RJ-45)

➡ **NOTICE:** The network connector is slightly larger than the modem connector. To avoid damaging the computer, do not plug a telephone line into the network connector.
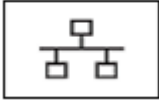
Connects the computer to a network. The two lights next to the connector indicate status and activity for wired network connections. For information on using the network adapter, see the device user's guide supplied with your computer.

2.5.2   Modem Connector (RJ-11)

Connect the telephone line to the modem connector. For information on using the modem, see the documentation supplied with your modem.

2.5.3   USB Connectors

Connects USB devices, such as a mouse, keyboard, or printer.

2.5.4   Serial Connector

Connects serial devices such as a mouse, keyboard, or printer.

2.5.5   Video Connector

Connects video devices, such as a monitor.

2.5.6   AC Adaper Connector

Connects an AC adapter to the computer.

Figure 2 9 Connecting the AC Adapter
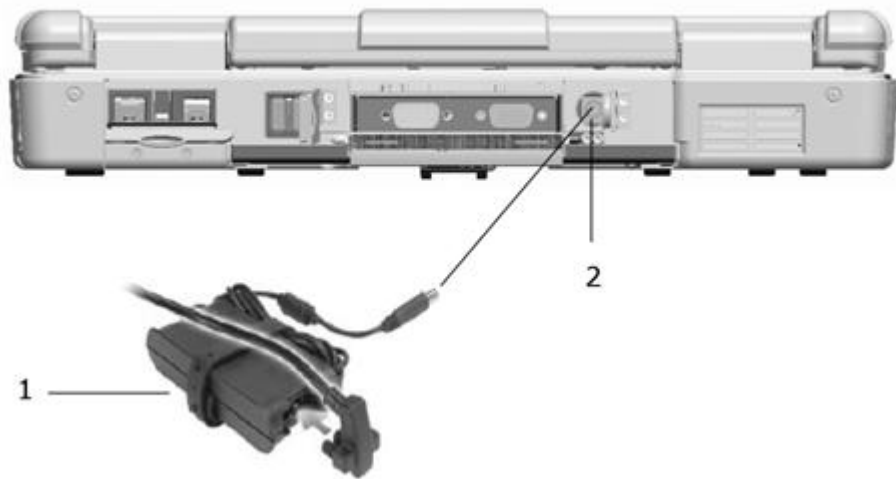
| 1 | AC adapter | 2 | AC adapter connector |

The AC adapter converts AC power to the DC power required by the computer. You can connect the AC adapter with your computer turned either on or off.

⚠ **CAUTION: The AC adapter works with electrical outlets worldwide. However, power connectors and power strips vary among countries. Using an incompatible cable or improperly connecting the cable to the power strip or electrical outlet may cause fire or equipment damage.**

🚫 **NOTICE:** When you disconnect the AC adapter cable from the computer, grasp the connector, not the cable itself, and pull firmly but gently to avoid damaging the cable. When you wrap the AC adapter cable, ensure that you follow the angle of the connector on the AC adapter to avoid damaging the cable.

2.5.7   Air Vents

The computer uses an internal fan to create airflow through the vents, which prevents the computer from overheating. The Air Vents are part of the QuadCool thermal management system. They provide external venting of internal heat via the enhanced convection cooling system.

⚠ **CAUTION: Do not block, push objects into, or allow dust to accumulate in the air vents. Do not store your computer in a low-airflow environment, such as a closed briefcase, while it is running. Restricting the airflow can damage the computer or cause a fire.**

2.6 Bottom View

Figure 2 10 XFR D630 Bottom View with Connectors/Devices Protected
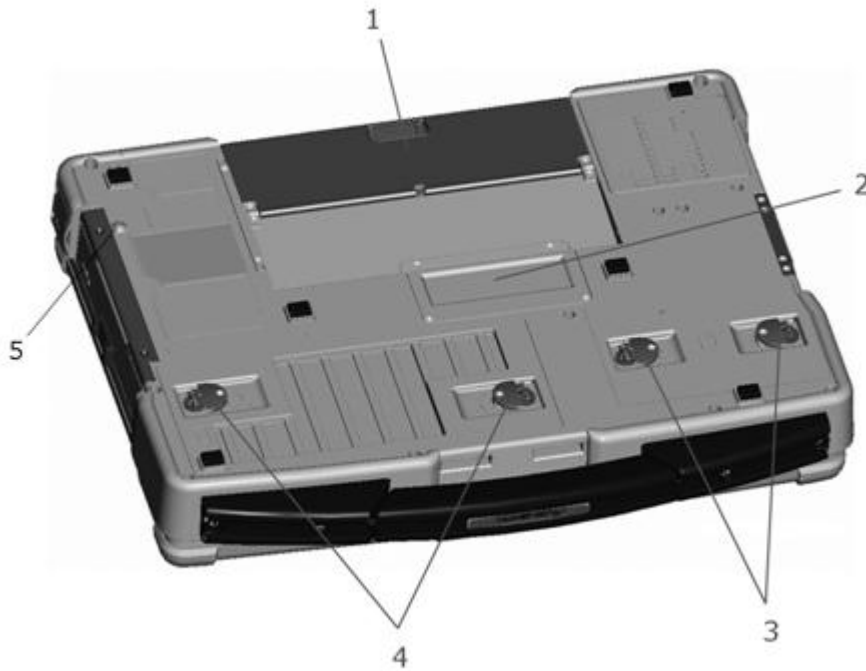
1	Docking device connector cover	2	Memory module cover	3	Hard disk drive compartment cover
4	Battery compartment cover	5	XBay device locking screw		

The compartments on the bottom of the computer are protected from ingress by dense magnesium compartment doors. This protection is a component of the Armored Protection System.

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

2.6.1   Docking-Device Connector

Lets you attach your computer to a docking device. See the documentation that came with your docking device for more information.

2.6.2   Memory Module Cover

The memory module cover provides a cover for the compartment that contains the second memory module connector (DIMM B) (see "Memory").

2.6.3   Hard Disk Drive Compartment Cover

The hard disk drive compartment covers the compartment that contains the hard disk drive. See "Hard Drive" for additional information.

2.6.4   Battery Compartment Cover

The battery compartment cover provides a cover for the compartment that contains the battery. For additional information regarding the use and access of the battery, see "Using a Battery".

2.6.5   XBay Device Locking Screw

Locks the device in the XBay in place such as an optical drive (see "XBay").

3 Transferring Information to Another Computer

You can use your operating system wizards to help you transfer files and other data from one computer to another. For instructions, see the following section that corresponds to the operating system that your computer is running.

NOTE: "Old computer" or "source computer" refers to the original computer *from* which the information is transferred; "new computer" or "destination computer" refers to the computer *to* which you transfer the information.

3.1 Microsoft® Windows® XP

The Microsoft Windows XP operating system provides the Files and Settings Transfer wizard to move data from a source computer to a new—destination—computer. You can transfer data such as:

- E-mail messages
- Toolbar settings
- Window sizes
- Internet bookmarks

You can transfer the data to the destination computer over a network, serial connection, or on removable media such as a writable CD.

NOTE: You can transfer information from the source computer to the destination computer by directly connecting a serial cable to the input/output (I/O) ports of the two computers. To transfer data over a serial connection, you must access the Network Connections utility from the Control Panel and perform additional configuration steps, such as setting up an advanced connection and designating the host computer and the guest computer.

For instructions on setting up a direct cable connection between two computers, see Microsoft Knowledge Base 87uArticle #305621, titled *How to Set Up a Direct Cable Connection Between Two Computers in Windows XP*. This information may not be available in some countries.

For transferring information to a new computer, you must run the Files and Settings Transfer Wizard.
You can use the optional *Operating System* media for this process or you can create a wizard disk with the Files and Settings Transfer Wizard.

3.1.1 Running the Files and Settings Transfer Wizard With the Operating System Media

NOTE: This procedure requires the *Operating System* media. This media is optional and may not be included with all computers.

To prepare the new computer for the file transfer:

1. Click **Start→ All Programs→ Accessories→ System Tools→ Files and Settings Transfer Wizard**.
2. When the **Files and Settings Transfer Wizard** welcome screen appears, click **Next**.
3. On the **Which computer is this?** screen, click **New Computer** and click **Next**.
4. On the **Do you have a Windows XP CD?** screen, click **I will use the wizard from the Windows XP CD** and click **Next**.
5. When the **Now go to your old computer screen** appears, go to your old or source computer. Do not click **Next** at this time.

To copy data from the source computer:

1. On the source computer, insert the Windows XP *Operating System* media.
2. On the **Welcome to Microsoft Windows XP** screen, click **Perform additional tasks**.
3. Under **What do you want to do?**, click T**ransfer files and settings**.
4. On the **Files and Settings Transfer Wizard** welcome screen, click **Next**.
5. On the **Which computer is this?** screen, click **Old Computer** and click **Next**.
6. On the **Select a transfer method** screen, click the transfer method you prefer.
7. On the **What do you want to transfer?** screen, select the items you want to transfer and click **Next**. After the information has been copied, the **Completing the Collection Phase** screen appears.
8. Click **Finish**.

To transfer data to the destination computer:
1. On the **Now go to your old computer** screen on the destination computer, click **Next**.
2. On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files and click **Next**. The wizard reads the collected files and settings and applies them to your destination

computer. When all of the settings and files have been applied, the **Finished** screen appears.
3. Click **Finished** and restart the destination computer.

3.1.2 Running the Files and Settings Transfer Wizard Without the Operating System Media

To run the Files and Settings Transfer Wizard without the *Operating System* media, you must create a wizard disk that will allow you to create a backup image file to removable media.

To create a wizard disk, use your destination computer with Windows XP and perform the following steps:

1. Click **Start→ All Programs→ Accessories→ System Tools→ Files and Settings Transfer Wizard**.
2. When the **Files and Settings Transfer Wizard** welcome screen appears, click **Next**.
3. On the **Which computer is this?** screen, click **New Computer→ Next**.
4. On the **Do you have a Windows XP CD?** screen, click **I want to create a Wizard Disk in the following drive→ Next**.
5. Insert the removable media, such as a writable CD, and click **OK**.
6. When the disk creation completes and the **Now go to your old computer** message appears, *do not* click **Next**.
7. Go to the source computer.

To copy data from the source computer:

1. On the source computer, insert the wizard disk.
2. Click **Start→ Run**.
3. In the **Open** field on the **Run** window, browse to the path for fastwiz (on the appropriate removable media) and click **OK**.
4. On the **Files and Settings Transfer Wizard** welcome screen, click **Next**.
5. On the **Which computer is this?** screen, click **Old Computer→ Next**.
6. On the **Select a transfer method** screen, click the transfer method you prefer.
7. On the **What do you want to transfer?** screen, select the items you want to transfer and click **Next**. After the information has been copied, the **Completing the Collection Phase** screen appears.
8. Click **Finish**.

To transfer data to the destination computer:

1. On the **Now go to your old computer** screen on the destination computer, click **Next**.
2. On the **Where are the files and settings?** screen, select the method you chose for transferring your settings and files and click **Next**. Follow the instructions on the screen. The wizard reads the collected files and settings and applies them to your destination computer. When all of the settings and files have been applied, the **Finished** screen appears.
3. Click **Finished** and restart the destination computer.

3.2 Microsoft Windows Vista^{TM}

1. Click the Windows Vista Start button, , and then click **Transfer files and settings→ Start Window Easy Transfer**.
2. In the **User Account Control** dialog box, click **Continue**.
3. Click **Start a new transfer** or **Continue a transfer in progress**.

Follow the instructions provided on the screen by the Windows Easy Transfer wizard.

3.2.1 Easy Transfer Cable for Windows Vista

NOTE: Dell does not provide the Easy Transfer Cable.

1. Insert the Easy Transfer Cable for Windows Vista Application Software media into the computer from which you are transferring data.
2. Follow the on-screen instructions until you are prompted to connect the Transfer Cable.
3. Connect the Easy Transfer Cable to the source computer.
   You are prompted to select a device option.
4. Continue until you are prompted to plug the other end of the Easy Transfer Cable into the destination computer.
   The screen indicates that a connection has been made.
5. At the computer from which you are transferring data, follow the on-screen instructions to select the settings and files you want to transfer.
6. You will come to a screen that indicates that you are ready to transfer files.
7. From the destination computer, view the transfer and wait for the indication that the transfer is complete.
8. Select **Close**.
   You are prompted to restart the computer.

9. Select **Yes**.
   The computer reboots and the transfer is complete.

4 Using a Battery

4.1 Battery Performance

NOTE: For information about the warranty for your computer, see the Limited Warranty document.

For optimal computer performance and to help preserve BIOS settings, operate your Dell portable computer with the main battery installed at all times. One battery is supplied as standard equipment in the battery compartment.

NOTE: Because the battery may not be fully charged, use the AC adapter to connect your new computer to an electrical outlet the first time you use the computer. For best results, operate the computer with the AC adapter until the battery is fully charged. To view the battery charge status, check the Power Meter in Power Options (see "Accessing Power Options Properties").

Battery operating time varies depending on operating conditions. You can install an optional second battery in the XBay to significantly increase operating time.

NOTE: Battery operating time (the time the battery can hold a charge) decreases over time. Depending on how often the battery is used and the conditions under which it is used, you may need to purchase a new battery during the life of your computer.

NOTE: It is recommended that you connect your computer to an electrical outlet when writing to a CD or DVD

Operating time is significantly reduced when you perform operations including, but not limited to, the following:

- Using optical drives

- Using wireless communications devices, PC Cards, media memory cards, or USB devices

- Using high-brightness display settings, 3D screen savers, or other power-intensive programs such as complex 3D graphics applications

- Running the computer in maximum performance mode. See "Configuring Power Management Settings" for information about accessing Windows Power Options Properties or Dell Quickset, which you can use to configure power management settings.

You can check the battery charge (see "Checking the Battery Charge") before you insert the battery into the computer. You can also set power management options to alert you when the battery charge is low.

⚠ **CAUTION: Using an incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell. The battery is designed to work with your computer. Do not use a battery from other computers with your computer.**

⚠ **CAUTION: Do not dispose of batteries with household waste. When your battery no longer holds a charge, call your local waste disposal or environmental agency for advice on disposing of a lithium-ion battery. See "Battery Disposal".**

⚠ **CAUTION: Misuse of the battery may increase the risk of fire or chemical burn. Do not puncture, incinerate, disassemble, or expose the battery to temperatures above 65^0C (149^0F). Keep the battery away from children. Handle damaged or leaking batteries with extreme care. Damaged batteries may leak and cause personal injury or equipment damage. Maximum system storage temperature is 71^0C (160^0F) without the battery installed.**

4.2 Checking the Battery Charge

The Dell QuickSet Battery Meter, the Microsoft Windows Power Meter window and ▪ icon, the battery charge gauge and health gauge, and the low-battery warning provide information on the battery charge.

4.2.1   Dell™ QuickSet Battery Meter

If Dell QuickSet is installed, press **<Fn><F3>** to display the QuickSet Battery Meter. The Battery Meter displays status, battery health, charge level, and charge completion time for the battery in your computer.
For more information about QuickSet, right-click the Quickset icon in the taskbar, and click **Help**.

4.2.2 Microsoft® Windows® Power Meter

The Windows Power Meter indicates the remaining battery charge. To check the Power Meter, double-click the ![icon] icon on the taskbar. If the computer is connected to an electrical outlet, a ![icon] icon appears.

4.2.3 Charge Gauge

To access the charge gauge you must first remove the battery compartment cover. See "Replacing the Battery" for instructions regarding removing the battery compartment cover.
By either pressing once or *pressing and holding* the status button on the charge gauge on the battery, you can check:

- Battery charge (check by *pressing and releasing* the status button)

- Battery health (check by *pressing and holding* the status button)
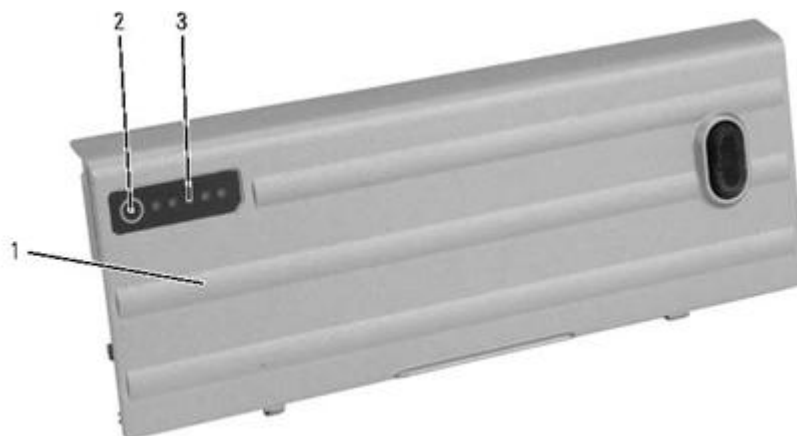
1	Battery	2	Status buttons	3	Charge gauge

The battery operating time is largely determined by the number of times it is charged. After hundreds of charge and discharge cycles, batteries lose some charge capacity — or battery health. That is, a battery can show a status of "charged" but maintain a reduced charge capacity (health).

4.2.3.1 Check the Battery Charge

To check the battery charge, *press and release* the status button on the battery charge gauge to illuminate the charge-level lights. Each light represents approximately 20 percent of the total battery charge. For example, if the battery has 80 percent of its charge remaining, four of the lights are on. If no lights appear, the battery has no charge.

4.2.3.2 Check the Battery Health

✐ **NOTE:** You can check battery health in one of two ways: by using the charge gauge on the battery as described below or by using the Battery Meter in Dell QuickSet. For information about QuickSet, right-click the icon in the taskbar, and click **Help**.

To check the battery health using the charge gauge, *press and hold* the status button on the battery charge gauge for at least 3 seconds. If no lights appear, the battery is in good condition, and more than 80 percent of its original charge capacity remains. Each light represents incremental degradation. If five lights appear, less than 60 percent of the charge capacity remains, and you should consider replacing the battery. See "Charge Gauge" for information about the battery operating time.

4.3 Low-Battery Warning

⊘ **NOTICE:** To avoid losing or corrupting data, save your work immediately after a low-battery warning. Then connect the computer to an electrical outlet, or install a second battery in the XBay. If the battery runs completely out of power, hibernate mode begins automatically.

A pop-up window warns you when the battery charge is approximately 90 percent depleted. If two batteries are installed,

the low-battery warning means that the combined charge of both batteries is approximately 90 percent depleted. The computer enters hibernate mode when the battery is at a critically low level.

You can change the settings for the battery alarms in QuickSet or the **Power Options Properties** window. See "Configuring Power Management Settings" for information about accessing QuickSet or the **Power Options Properties** window.

4.4 Conserving Battery Power

Perform the following actions to conserve battery power:

- Connect the computer to an electrical outlet when possible because battery life is largely determined by the number of times the battery is used and recharged.
- Place the computer in standby mode or hibernate mode when you leave the computer unattended for long periods of time. See "Power Management Modes".
- Use the Power Management Wizard or the **Power Options Properties** window to select options to optimize your computer's power usage. These options can also be set to change when you press the power button, close the display, or press **<Fn><Esc>**.

NOTE: See "Configuring Power Management Settings" for information on conserving battery power.

4.5 Power Management Modes

4.5.1   Standby and Sleep Mode

Standby mode (sleep mode in Microsoft Windows Vista™) conserves power by turning off the display and the hard drive after a predetermined period of inactivity (a time-out). When the computer exits standby or sleep mode, it returns to the same operating state it was in before entering standby or sleep mode.

NOTICE: If your computer loses AC and battery power while in standby or sleep mode, it may lose data.

To enter standby mode in Windows XP, click the **Start** button, click **Turn off computer**, and then click **Stand by**.

To enter sleep mode in Windows Vista, click the Windows Vista Start button, , and then click **Sleep**.

Depending on how you set the power management options in the **Power Options Properties** window or the QuickSet Power Management Wizard, you may also use one of the following methods:

- Press the power button.
- Close the display.
- Press **<Fn><Esc>**.

To exit standby or sleep mode, press the power button or open the display, depending on how you set the power management options. You cannot make the computer exit standby or sleep mode by pressing a key or touching the touch pad or track stick.

4.5.2   Hibernate Mode

Hibernate mode conserves power by copying system data to a reserved area on the hard drive and then completely turning off the computer. When the computer exits hibernate mode, it returns to the same operating state it was in before entering hibernate mode.

NOTICE: You cannot remove devices or undock your computer while your computer is in hibernate mode.

Your computer enters hibernate mode if the battery charge level becomes critically low.

To manually enter hibernate mode in Windows XP, click **Start→ Turn off computer**, press and hold **<Shift>**, and click **Hibernate**.

For information about the hibernate mode in Windows Vista, search for the keyword *hibernate* in Windows Help and Support (click **Start→ Help and Support**).

Depending on how you set the power management options in the **Power Options Properties** window or the QuickSet Power Management Wizard, you may also use one of the following methods to enter hibernate mode:

- Press the power button.
- Close the display.
- Press **<Fn><F1>**.

📝 **NOTE:** Some PC Cards may not operate correctly after the computer exits hibernate mode. Remove and reinsert the card (see "Removing a Card or Blank"), or simply restart (reboot) your computer.

To exit hibernate mode, press the power button. The computer may take a short time to exit hibernate mode. You cannot make the computer exit hibernate mode by pressing a key or touching the touch pad or track stick. For more information on hibernate mode, see the documentation that came with your operating system.

4.6 Configuring Power Management Settings

You can use the QuickSet Power Management Wizard or Windows **Power Options Properties** to configure the power management settings on your computer. For more information about QuickSet, right-click the QuickSet icon in the taskbar and click **Help**.

4.6.1   Accessing Power Options Properties

Windows XP
Click **Start→ Control Panel→ Performance and Maintenance→ Power Options**.

Windows Vista
Click **Start→ Control Panel→ System and Maintenance→ Power Options**.

4.7 Charging the Battery

⊘ **NOTICE:** The battery temperature must be between 0^0C and 55^0C (32^0F and 131^0F) to charge. If the battery is not in this temperature range when a charge is attempted, the 🔋 light flashes alternately green and orange. This may happen when the battery has gotten hot from being used in your computer or in a hot environment. Disconnect the computer from the electrical outlet and allow the computer and the battery to cool to the charging temperature range. Then connect the computer to an electrical outlet to continue charging the battery.

📝 **NOTE:** With Dell™ ExpressCharge™, when the computer is turned off, the AC adapter charges a completely discharged battery to 80 percent in approximately 1 hour and to 100 percent in approximately 2 hours. Charge time is longer with the computer turned on. You can leave the battery in the computer as long as you like. The battery's internal circuitry prevents the battery from overcharging. Battery charge times may vary dependent upon the ambient temperature.

When you connect the computer to an electrical outlet or install a battery while the computer is connected to an electrical outlet, the computer checks the battery charge and temperature. If necessary, the AC adapter then charges the battery and maintains the battery charge.

For more information about resolving problems with a battery, see "Power Problems".

4.8 Replacing the Battery

Figure 4 1 Accessing the Battery Compartment

4.8.1   Removing the Battery

⚠️ **CAUTION: Before performing these procedures, turn off the computer, disconnect the AC adapter from the electrical outlet and the computer, disconnect the modem from the wall connector and computer, and remove any other external cables from the computer.**

⚠️ **CAUTION: Using an incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell. The battery is designed to work with your computer. Do not use a battery from other computers with your computer.**

🚫 **NOTICE:** You must remove all external cables from the computer to avoid possible connector damage. For information about replacing the second battery, if applicable, see "XBay".

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠️ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠️ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

To remove the battery:

1. If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.

2. Ensure that the computer is turned off.

3. If the 2 screws that secure the quarter-turn latches are installed, remove the 2 screws on the latches on the battery compartment using a #1 Philips screw driver. See "Bottom View" for the location of the battery compartment. If the 2 security screws are not installed, proceed to step 4.

4. Lift each latch and turn each a quarter-turn, toward the 'unlock' icon, to release the latching mechanism. Remove the compartment cover from the computer.

5. To remove the battery from the compartment, utilize the tab on the battery to assist in lifting the battery from the compartment.

To replace the battery, follow the removal procedure in the reverse order.

4.9 Storing a Battery

Remove the battery when you store your computer for an extended period of time. A battery discharges during prolonged storage. After a long storage period, recharge the battery fully (see "Charging the Battery") before you use it.
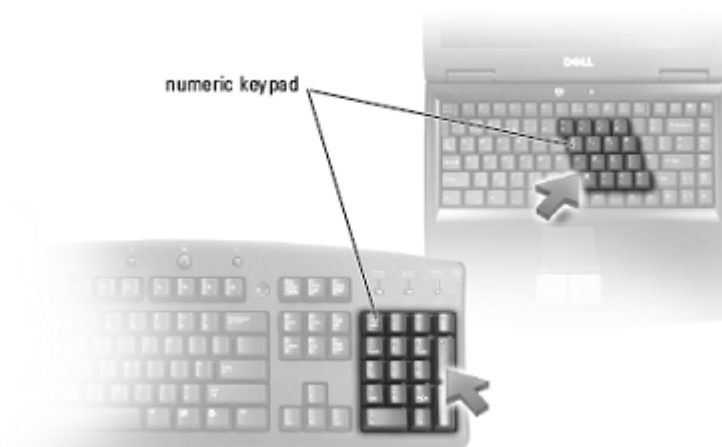
4.10   Battery Errors

To address error codes generated by the battery, refer to "Error Messages".

5   Using the Keyboards

The XTG D630 notebook provides you the choice between the standard sealed, full-sized keyboard or the sealed, full-sized, backlit, rubber keyboard.

5.1 Numeric Keypad

5 1 Keyboard Numeric Pad

The numeric keypad functions like the numeric keypad on an external keyboard. Each key on the keypad has multiple functions. The keypad numbers and symbols are marked in blue on the right of the keypad keys. To type a number or symbol, hold down **<Fn>** and press the desired key.

- To enable the keypad, press **<Num Lk>**. The 🔒 light indicates that the keypad is active.
- To disable the keypad, press **<Num Lk>** again.

5.2 Key Combinations

Keyboard Illumination
<Fn> and right-arrow key   Toggles the keyboard illumination lights on and off.

System Functions
<Ctrl><Shift><Esc> Opens the Task Manager window.

Battery
<Fn><F3>   Displays the Dell™ QuickSet Battery Meter
                                             (see "Dell™ QuickSet Battery Meter").

Display Functions
<Fn><F8>   Switches the video image to the next display option. The options
                                             include the integrated display, an external monitor, and both displays
                                             simultaneously.

<Fn><F7>   Scales between wide-screen and standard aspect ratio video
                                             resolutions.

<Fn> and left-arrow key   Activates the ambient light sensor, which controls brightness of the
                                             display based on light level in the current environment.

<Fn> and up-arrow key   Increases brightness on the integrated display only (not on an external
                                             monitor).

<Fn> and down-arrow key   Decreases brightness on the integrated display only (not on an external monitor).

Power Management

<Fn><Esc>   Activates a power management mode. You can reprogram this
                                             keyboard shortcut to activate a different power management mode
                                             using the **Advanced** tab in the **Power Options Properties** window
                                             (see "Accessing Power Options Properties").

<Fn><F1>   Puts the computer into hibernate, or sleep, mode. Dell QuickSet is
                                             required (see "Dell™ QuickSet").

Microsoft® Windows® Logo Key Functions

Windows logo key and **<m>**   Minimizes all open windows.

Windows logo key and **<Shift><m>**   Restores all minimized windows. This key combination
                                      functions as a toggle to restore minimized windows following the use of the
                                      Windows logo key and **<m>** key combination.

Windows logo key and **<e>**   Runs Windows Explorer.

Windows logo key and **<r>**   Opens the **Run** dialog box.

Windows logo key and **<f>**   Opens the **Search Results** dialog box.

Windows logo key and **<Ctrl><f>**   Opens the **Search Results-Computer** dialog box (if the
                                      computer is connected to a network).

Windows logo key and **<Pause>**   Opens the **System Properties** dialog box.

To adjust keyboard operation, such as the character repeat rate, open the **Control Panel**, click **Printers and Other Hardware**, and click **Keyboard**. For information about the **Control Panel**, access the Help and Support Center (click **Start→ Help and Support**).

5.3 Touch Pad and Track Stick

The touch pad detects the pressure and movement of your finger to allow you to move the cursor on the display. Use the touch pad and touch pad buttons as you would use a mouse.

📝 **NOTE:** The track stick is only supported on the standard keyboard.

Figure 5 2 Touch Pad and Track Stick
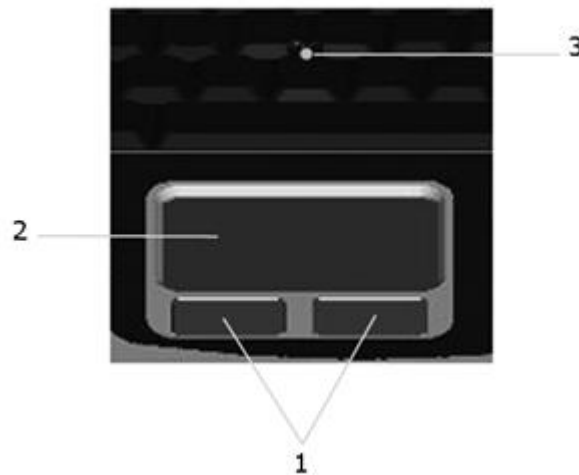
1	Touch pad buttons / Track stick buttons	2	Touch Pad	3	Track stick

- To move the cursor, lightly slide your finger over the touch pad.
- To select an object, lightly tap once on the surface of the touch pad or use your thumb to press the left touch-pad button.
- To select and move (or drag) an object, position the cursor on the object and tap twice on the touch pad. On the second tap, leave your finger on the touch pad and move the selected object by sliding your finger over the surface.
- To double-click an object, position the cursor on the object and tap twice on the touch pad or use your thumb to press the left touch-pad button twice.

You can also use the track stick to move the cursor. Press the track stick left, right, up, and down to change the direction of the cursor on the display. Use the track stick and the track stick buttons as you would use a mouse.

5.3.1   Customizing the Touch Pad and Track Stick

You can use the **Mouse Properties** window to disable the touch pad and track stick or adjust their settings.
1. Open the **Control Panel**, and then click **Mouse**. For information about the **Control Panel**, access the Help and Support Center (click **Start→ Help and Support**).

2. In the **Mouse Properties** window:
    * Click the **Device Select** tab to disable the touch pad and track stick.
    * Click the **Touch Pad** tab to adjust touch pad and track stick settings.
3. Click **OK** to save the settings and close the window.

5.3.2   Changing the Track Stick Cap

You can replace your track stick cap if it wears down from prolonged use. Contact Dell Customer Support.

1. Pull the cap off the track stick.
2. Align the new cap over the square track stick post and gently press the cap down onto the post.

> **NOTICE:** The track stick can damage the display if it is not properly seated on the post.

3. Test the track stick to ensure that the cap is seated properly.

5.4 Backlight Control for Optional Backlit Keyboard

The backlit, rubber, sealed full-sized keyboard provides a key to allow you to control when the backlight feature is on or off. The Backlight Control Button is located near the cursor control keys on the lower right side of the keyboard.

Figure 5 3 Backlit Keyboard Backlight Control
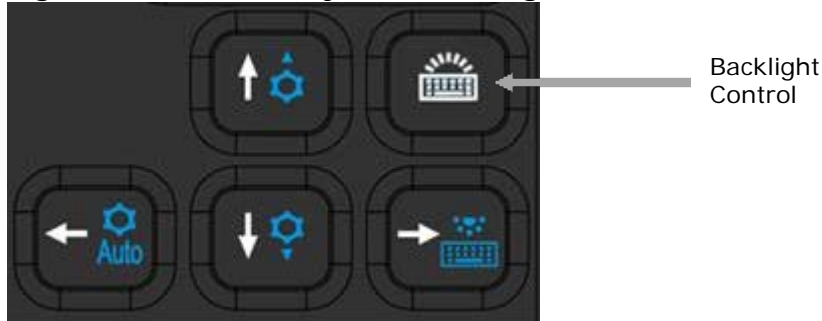
Backlight
Control

Backlight Control   Toggles the keyboard backlight on and off.

6   Using the DirectVue Displays

The XFR D630 is available in two display configurations; the standard DirectVue Display as well as the optional DirectVue Touch Display.

6.1 Adjusting Brightness

When your computer is running on battery power, you can conserve power by setting the brightness to the lowest comfortable setting by pressing **<Fn>** and the up- or down-arrow key on the keyboard.

> **NOTE:** Brightness key combinations only affect the display on your portable computer, not monitors or projectors that you attach to your portable computer or docking device. If your computer is connected to an external monitor and you try to change the brightness level, the Brightness Meter may appear, but the brightness level on the external device does not change.

You can press the following keys to adjust display brightness:

* Press **<Fn>** and the up-arrow key to increase brightness on the integrated display only (not on an external monitor).
* Press **<Fn>** and the down-arrow key to decrease brightness on the integrated display only (not on an external monitor).

6.2 Using the Ambient Light Sensor

The ambient light sensor is located on the bottom of the computer display panel. The ambient light sensor detects available environmental light and automatically increases or decreases the display backlighting to compensate for low-light and high-light environments.

You can enable or disable the ambient light sensor by pressing the **<Fn>** and left-arrow key combination.

NOTE: Do not cover the ambient light sensor with any adhesive labels. If covered up, the ambient light sensor automatically sets the display brightness to the minimum level.

Figure 6 1 Ambient Light Sensor Location

1	Ambient light sensor

The ambient light sensor is disabled when your computer is shipped to you. If you enable the ambient light sensor and then use any of the display brightness key combinations, the ambient light sensor is disabled and the display brightness is increased or decreased accordingly.

Dell™ QuickSet allows you to enable or disable the ambient light sensor. You can also adjust maximum and minimum brightness settings that are activated when you enable the ambient light sensor feature. For more information about QuickSet, right-click the QuickSet icon in the taskbar, and click **Help**.

✎ **NOTE:** Rebooting the computer returns the ambient light sensor to the last setting of enabled or disabled.

✎ **NOTE:** The ambient light sensor adjusts the display backlighting on your portable computer only. It does not control the brightness on any external monitors or projectors.

6.3 Switching the Video Image

When you start the computer with an external device (such as an external monitor or projector) attached and turned on, the image may appear on either the computer display or the external device.

Press **<Fn><F8>** to switch the video image between the display only, the external device only, or the display and the external device simultaneously.

6.4 Setting Display Resolution and Refresh Rate

To display a program at a specific resolution, both the graphics card and the display must support the program, and the necessary video drivers must be installed.

Before you change any of the default display settings, make a note of the default settings for future reference.

✎ **NOTE:** Use only the pre-installed video drivers, which are designed to offer the best performance with your pre-installed operating system.

If you choose a resolution or color palette that is higher than the display supports, the settings adjust automatically to the closest supported values.

1. Click the **Start** button and click **Control Panel**.
2. Under **Pick a category**, click **Appearance and Themes**.
3. Under **Pick a task**…, click the area you want to change, or under **or pick a Control Panel icon**, click **Display**.
4. In the **Display Properties** window, click the **Settings** tab.
5. Try different settings for **Color quality** and **Screen resolution**.

✎ **NOTE:** As the resolution increases, icons and text appear smaller on the screen.

If the video resolution setting is higher than that supported by the display, the computer enters pan mode. In pan mode,

the entire screen cannot be displayed at one time. For example, the taskbar that usually appears at the bottom of the desktop may no longer be visible. To view the rest of the screen, use the touch pad or track stick to pan up, down, left, and right.

🚫 **NOTICE:** You can damage an external monitor by using an unsupported refresh rate. Before adjusting the refresh rate on an external monitor, see the user's guide for the monitor.

6.5 Dual Independent Display Mode

You can attach an external monitor or projector to your computer and use it as an extension of your display (known as "dual independent display" or "extended desktop" mode). This mode allows you to use both screens independently and drag objects from one screen to the other, effectively doubling the amount of viewable work space.

1. Connect the external monitor, TV, or projector to the computer.
2. Under **Pick a category**, click **Appearance and Themes**.
3. Under **Pick a task**..., click the area you want to change, or under **or pick a Control Panel icon**, click **Display**.
4. In the **Display Properties** window, click the **Settings** tab.

📝 **NOTE:** If you choose a resolution or color palette that is higher than the display supports, the settings adjust automatically to the closest supported values. For more information, see your operating system documentation.

5. Click the monitor 2 icon, click the **Extend my Windows desktop onto this monitor** check box, and then click **Apply**.
6. Change **Screen resolution** to the appropriate sizes for both displays and click **Apply**.
7. If prompted to restart the computer, click **Apply the new color setting without restarting** and click **OK**.
8. If prompted, click **OK** to resize your desktop.
9. If prompted, click **Yes** to keep the settings.
10. Click **OK** to close the **Display Properties** window.

To disable dual independent display mode:

1. Click the **Settings** tab in the **Display Properties** window.
2. Click the monitor 2 icon, uncheck the **Extend my Windows desktop onto this monitor** option, and then click **Apply**.

If necessary, press **<Fn><F8>** to bring the screen image back to the computer display.

6.6 Swapping Primary and Secondary Displays

To swap your primary and secondary display designations (for example, to use your external monitor as your primary display after docking):

1. Click the **Start** button and click **Control Panel**.
2. Under **Pick a category**, click **Appearance and Themes**.
3. Under **Pick a task**..., click the area you want to change, or under **or pick a Control Panel icon**, click **Display**.
4. Click the **Settings tab**→ **Advanced**→ **Displays** tab.

See the documentation that came with your video card for additional information.

6.7 DirectVue™ Touch Display Information

If you purchased your XFR D630 Fully Rugged Notebook with the optional DirectVue Touch Display please review the following user instructions and tips.

The XFR D630 provides an optional touch screen display for entering and selecting data using an approved pointing device such as your finger, a passive stylus or any non-abrasive smooth blunt object that will not damage the touch display.

🚫 **NOTICE:** To ensure you properly care for and maintain your touch display, please refer to <u>Cleaning Your Computer</u> and adhere to the care instructions regarding the display.

⚠ **CAUTION: The optional DirectVue^{TM} Touch Display has been designed to accept finger touch as well as passive stylus input directly onto the screen. With the optional DirectVue^{TM} Touch Display, a stylus is included with the XFR D630 for use in selecting items on the touch screen. Other pointing devices can be used with the touch screen such as any non-abrasive, smooth or blunt object that will not damage the touch screen display. The touch screen surface can be damaged by ink pens, marker**

pens or other pointed or abrasive objects. The use of non-approved input devices that cause damage to the digitizer or LCD may not be covered by the limited warranty.

The touch screen is pre-configured and pre-calibrated at the factory, but may require further calibration to improve accuracy for entering or selecting data on the touch display. Please see the Tools section for information on Calibrating your XFR D630 Touch Display and using your stylus.

6.7.1   Accessing Drivers and Documentation

Your XFR D630 DirectVue Touch Display's drivers, touch-input parameters and documentation have been pre-loaded at the factory. For experienced users or IT administrators - if you need to re-install drivers, set up your XFR D630 Touch Display or modify parameters please refer to the pre-loaded XFR D630 *Touchkit* Utility documentation for detailed instructions and refer to the summary provided in *Touchkit* Configuration Utility.

You can launch the pre-loaded documentation by selecting **Start** -> **Programs** -> **Touchkit** -> **Document**.

6.7.2   Touchkit Configuration Utility

Your XFR D630 DirectVue Touch Display system incorporates EETI technology. *Touchkit* is a software utility tool that allows you to configure various touch features. You can launch *Touchkit* by clicking **Start** -> **Programs** -> *Touchkit* -> *Configure Utility*.

📝 **NOTE:** The touch screen is pre-configured and pre-calibrated at the factory, but may require further calibration to improve accuracy for entering or selecting data on the touch display, or to further configure it to your specific application.

Please refer to the pre-loaded documentation for the *Touchkit* Configuration Utility for a complete description of all its capabilities and functionality.

You can launch the pre-loaded documentation for the *Touchkit* Configuration Utility by selecting **Start** -> **Programs** -> **Touchkit** -> **Document** -> **User Guide for Windows 2000/XP** -> **Touchkit Utility**.

The *Touchkit* software utility consists of tabs that allow you to determine the best settings for your touch screen configuration.

- The **General** tab shows all of the touchkit touch screen controllers installed in your system
- The **Tools** tab provides access to calibration and touch position tools.
- The **Setting** tab provides access to the configuration of beeps, clicks and mouse emulation as well as selection of 9 point or 25 point calibration for linearization.
- The **Display** tab provides the tools for mapping the touch screen area to specific areas of the display. The default is full screen.
- The ***Edge Paramaters*** tab provides configuration for selecting items near the edge of the touch screen.
- The ***Hardware*** tab provides the model and firmware version of the Touchkit touch screen controller.
- The ***About*** tab provides the version of the Touchkit driver as well as providing a link for downloading the latest driver.

6.7.2.1   General

The general property page shows all the *Touchkit* touch screen controllers installed including RS232, USB and PS2 interfaces. The XFR D630 touch screen controller is a USB device.

6.7.2.2 Tools

The Tools property page provides the following information and functions which are selected by pressing the push buttons.

NOTE: Your touch screen is configured and calibrated at the factory. However, if you notice that the calibration is not as precise as you would like, you can use the 4 Points Calibration and/or the Linearization tool to provide a more accurate alignment of the touch screen.

- Graph of the **Linearization Curve** of the touch screen – for reference and troubleshooting purposes. See its usage in the discussion of the Linearization function.
- **4 Points Calibration** – Calibration aligns the touch panel with the video screen. The touch screen must be calibrated to allow for positional accuracy of the stylus or finger touch inputs.
- **Clear and Calibrate** – Clears the calibration/linearization parameters and allows you to perform the 4 points calibration again.
- **Linearization** (9 or 25 points linearization is set within the Setting tab) – the linearization function provides for more precise mapping of the stylus or finger touch inputs. After linearization is completed, the linearity of the touch screen will be shown in the Linearization Curve window.
- **Draw Test** - used for accuracy and performance checking.
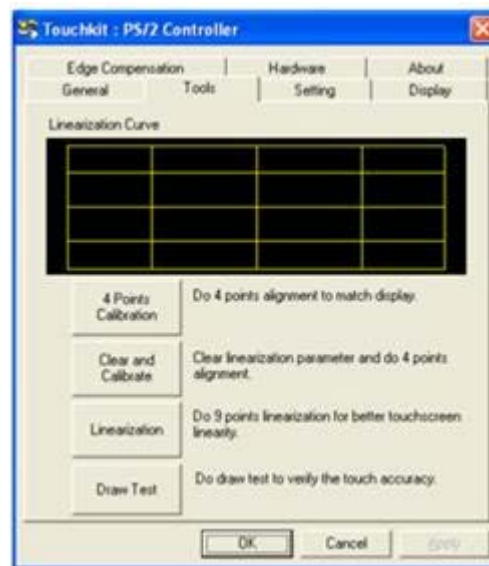
.
1. **4 Points Calibration**
   The touch screen must be calibrated before it can work accurately. This function pops up a new window to guide you through the 4 points calibration. You should follow the guide to touch and hold the blinking X symbol in the calibration window until it does not blink to make sure that the utility can gather enough data for computation. In addition, a time line bar is shown in the bottom of the window to indicate time elapsed. If the touch screen is not touched before the time line bar reaches the right end, the calibration task will be terminated automatically.

2. **Linearization**
   This function provides for more accurate touch screen positional alignment. The linearization function pops up a new window to guide you through the 9 or 25 points calibration. Configuring the function for 9 or 25 points calibration is

accessed in the Setting tab. You should follow the guide to touch and hold the blinking X symbol in the calibration window until it does not blink to make sure that the utility can gather enough data for computation. In addition, a time line bar is shown in the bottom of the window to indicate the time elapsed. If the touch screen is not touched before the time line bar reaches the right end, the calibration task will be terminated automatically.

1. Draw Test

This function is used for accuracy and performance checking. You can use the stylus or finger touch to draw or write across the displayed area.
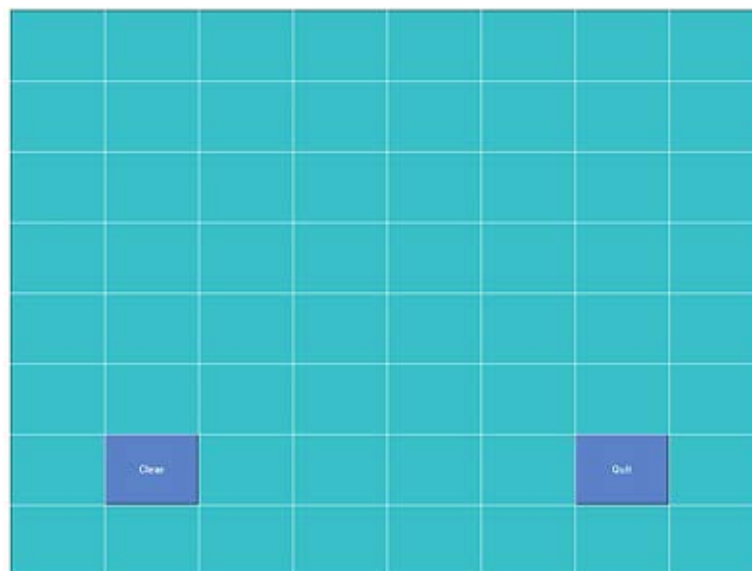
You can press the Clear button to clear the window. Press the Quit button to terminate the draw test.

6.7.2.3   Setting

The Setting property page provides the following buttons and check boxes:

1. **Beep**
   - **Beep On Touch**
     Check this check box to enable driver to generate a beep sound when touch touchscreen state is switched from untouched to touched state.
   - **Beep On Release**
     Check this check box to enable driver to generate a beep sound when touchecreen state is switched from touched state to untouch state.
   - **Frequency**
     Adjust this frequency to control the beep sound frequency generated by the driver.
   - **Duration**
     Adjust this duration to control the beep sound duration.

2. **Linearization Style**
   The *Touchkit* utility provides you with both 9 points and 25 points calibration for linearization. You can select the suitable kind of linearization type with this setting. The Linearization function is accessed under the <u>Tools</u> tab.

3. **Double Click Time**
   The double Click Time group is used to set system double click time. Changing this value will affect the double click behavior for all of the mice devices in the system. Two continuous clicks at the same area within this specified time period will be recognized as a double click event.

4. **Double Click Area**
   The double click area group is used to set the system double click area. Changing this value will affect the double click behavior for all of the mice devices in the system. Two continuous clicks within the specified area in the specified double click time will be recognized as a double click event.

5. **Mouse Emulation mode**
   There are 5 mouse emulation modes for the *Touchkit* touch screen controllers. Press on the button to change the emulation mode.
   - **Normal Mode**
     You can select this mode to select objects, and drag objects.
   - **Click On Touch**
     With this Click On Touch mode, the driver emulates a mouse click event when the touch screen state is switched from un-touched state to touched state. Then, the driver always generates a mouse move event and tracks the touch position until the touch screen state switches to the un-touch state.
   - **Click On Release**
     With this Click On Release mode, the driver emulates a mouse click event when the touch screen state is switched from touched state to un-touched state.
   - **Click On Touch without moving cursor**
     With this mode, the driver behaves similarly to the Click On Touch mode. The cursor does not move to the touch position except for the first touch point.
   - **Click On Release without moving cursor**
     With this mode, the driver behaves similarly to the Click On Release mode. The cursor does not move to the touch position except for the lift-off point.

6. **Option**
You can access advanced configuration functions with the Option button. Press the button, and the following window will appear.
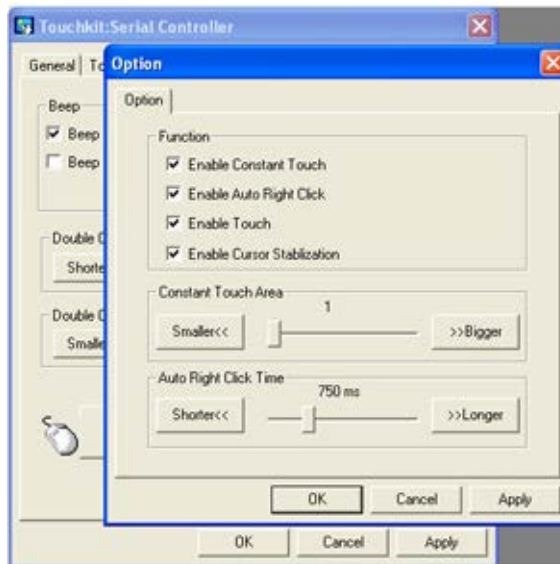
6.7.2.4   Display

The *Touchkit* driver supports multiple monitor and display systems. To work with multiple monitor systems, you need to perform the proper configuration to map the touch screen working area to the correct system display area using the Display property page.
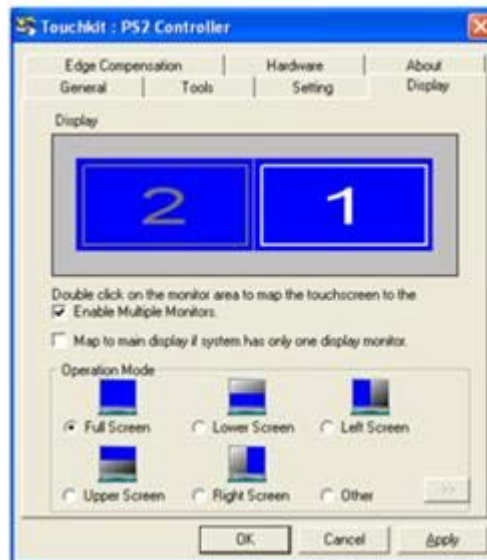
6.7.2.5   Edge Parameters

For some special touch screen applications where the edge area of the full screen cannot be reached, *Touchkit* provides you with this edge compensation tool to solve the problem and allow for touching the edge area without accuracy loss.

6.7.2.6 Hardware

The Hardware property page shows the model and firmware version of the *Touchkit* controller. The software will query the hardware information from the controller and show the information as illustrated here.

6.7.2.7 About

The About property page shows information regarding the *Touchkit* driver, including providing a link to allow you to download the latest driver.

7 Setting Up and Using Networks

Setting up a computer network provides connectivity between your computer and the Internet, another computer, or a network. For example, with a network set up in a home or small office you can print to a shared printer, access drives and files on another computer, browse other networks, or access the Internet. You can set up a local area network (LAN) using a network or broadband modem cable, or set up a wireless LAN (WLAN).

The Windows XP and Windows Vista operating systems provide wizards to help guide you through the process of networking computers. For more information about Networking, access the Help and Support Center (click **Start→ Help and Support**).

7.1 Connecting a Network or Broadband Modem Cable

Before you connect your computer to a network, the computer must have a network adapter installed and a network cable connected to it.

1. Connect the network cable to the network adapter connector on the back of your computer.

📝 **NOTE:** Insert the cable connector until it clicks into place, and then gently pull the cable to ensure that it is securely attached.

2. Connect the other end of the network cable to a network connection device or a network wall connector.

📝 **NOTE:** Do not use a network cable with a telephone wall connector.

Figure 7 1 Location of Network Adapter Connector on Rear Panel
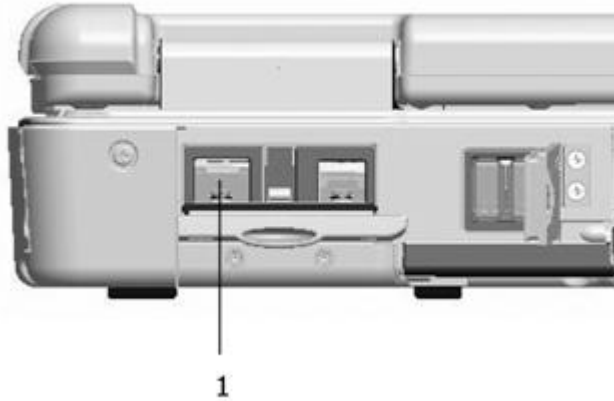
1	Network adapter connector

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠️ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠️ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

7.2 Setting Up a Network in the Microsoft® Windows® XP Operating System

1. Click **Start→ All Programs→ Accessories→ Communications→ Network Setup Wizard→ Next→ Checklist for creating a network**.

📝 **NOTE:** Selecting the connection method labeled **This computer connects directly to the Internet** enables the integrated firewall provided with Windows XP Service Pack 2 (SP2).

2. Complete the checklist.
3. Return to the Network Setup Wizard and follow the instructions in the wizard.

7.3 Setting Up a Network in the Microsoft Windows Vista™ Operating System

1. Click the Windows Vista Start button, 🪟, and click **Connect To→ Set up a connection or network**.
2. Select an option under **Choose a connection option**.
3. Click **Next**, and then follow the instructions in the wizard.

7.4 Wireless Local Area Network

A wireless local area network (WLAN) is a series of interconnected computers that communicate with each other over the air waves rather than through a network cable connected to each computer. In a
WLAN, a radio communications device called an access point or wireless router connects network computers and provides

Internet, or network, access. The access point or wireless router and the wireless network card in the computer communicate by broadcasting data from their antennas over the air waves.

7.4.1   What You Need to Establish a WLAN Connection

Before you can set up a WLAN, you need:
- High-speed (broadband) Internet access (such as cable or DSL)
- A broadband modem that is connected and working
- A wireless router or access point
- A wireless network card for each computer that you want to connect to your WLAN
- A network cable with a network (RJ-45) connector

7.4.2   Checking Your Wireless Network Card

Depending on what you selected when you purchased your computer, the computer has a variety of configurations. To confirm that your computer has a wireless network card and to determine the type of card, use one of the following:

- The **Start** button and the **Connect To** option
- The order confirmation for your computer

Start Button and Connect To Option

In Microsoft Windows XP, click **Start→ Connect To→ Show all connections**.

In Microsoft Windows Vista, click **Start→ Connect To→ View network computers and devices**.

If Wireless Network Connection does not appear under LAN or High-Speed Internet, you may not have a wireless network card.

If Wireless Network Connection appears, you have a wireless network card. To view detailed information about the wireless network card:

1. Right-click **Wireless Network Connection**.
2. Click **Properties**.

   The **Wireless Network Connection Properties** window appears. The wireless network card's name and model number are listed on the **General** tab.

   NOTE: If your computer is set to the **Classic Start** menu option, you can view network connections by clicking the **Start→ Settings→ Network Connections**. If Wireless Network Connection does not appear, you may not have a wireless network card.

The Order Confirmation for Your Computer

The order confirmation that you received when you ordered your computer lists the hardware and software that shipped with your computer.

7.4.3   Setting Up a New WLAN Using a Wireless Router and a Broadband Modem

1. Contact your Internet service provider (ISP) to obtain specific information about the connection requirements for your broadband modem.
2. Ensure that you have wired Internet access through your broadband modem before you attempt to set up a wireless Internet connection (see "Connecting a Network or Broadband Modem Cable").
3. Install any software required for your wireless router. Your wireless router may have been shipped with an installation media. Installation media usually contain installation and troubleshooting information. Install the required software according to the instructions provided by the router manufacturer.
4. Shut down your computer and any other wireless-enabled computers in the vicinity through the **Start** or menu.
5. Disconnect your broadband modem power cable from the electrical outlet.
6. Disconnect the network cable from the computer and the modem.
7. Disconnect the AC adapter cable from your wireless router to ensure that there is no power connected to the router.

   NOTE: Wait for a minimum of 5 minutes after disconnecting your broadband modem before you continue with the network setup.

8. Insert a network cable into the network (RJ-45) connector on the unpowered broadband modem.

9. Connect the other end of the network cable into the Internet network (RJ-45) connector on the unpowered wireless router.
10. Ensure that no network or USB cables, other than the network cable connecting the modem and the wireless router, are connected to the broadband modem.

📝 **NOTE:** Restart your wireless equipment in the order described below to prevent a potential connection failure.

11. Turn on *only* your broadband modem and wait for at least 2 minutes for the broadband modem to stabilize. After 2 minutes, proceed to step 12.
12. Turn on your wireless router and wait for at least 2 minutes for the wireless router to stabilize. After 2 minutes, proceed to the step 13.
13. Start your computer and wait until the boot process completes.
14. See the documentation that came with your wireless router to do the following in order to set up the wireless router:
    - Establish communication between your computer and your wireless router.
    - Configure your wireless router to communicate with your broadband router.
    - Find out your wireless router's broadcast name. The technical term for the name of your router's broadcast name is Service Set Identifier (SSID) or network name.
15. If necessary, configure your wireless network card to connect to the wireless network (see "Connecting to a WLAN").

7.4.4 Connecting to a WLAN

📝 **NOTE:** Before you connect to a WLAN, ensure that you have followed the instructions in "Wireless Local Area Network".

📝 **NOTE:** The following networking instructions do not apply to internal cards with Bluetooth® wireless technology or cellular products.

This section provides general procedures for connecting to a network using wireless technology. Specific network names and configuration details vary. See "Wireless Local Area Network" for more information about how to prepare for connecting your computer to a WLAN.

Your wireless network card requires specific software and drivers for connecting to a network. The software is already installed.

📝 **NOTE:** If the software is removed or corrupted, follow the instructions in the user documentation for your wireless network card. For information on the type of wireless network card that is installed in your computer, see "Checking Your Wireless Network Card".

Determining the Wireless Network Device Manager
Depending on the software installed on your computer, different wireless configuration utilities may manage your network devices:

- Your wireless network card's client utility
- The Windows XP or Windows Vista operating system

To determine which wireless configuration utility is managing your wireless network card in Windows XP:

1. Click **Start→ Settings→ Control Panel→ Network Connections**.
2. Right-click the **Wireless Network Connection icon**, and then click **View Available Wireless Networks**.

If the C**hoose a wireless network window** states **Windows cannot configure this connection**, the wireless network card's client utility is managing the wireless network card.

If the **Choose a wireless network** window states **Click an item in the list below to connect to a wireless network in range or to get more information**, the Windows XP operating system is managing the wireless network card.

To determine which wireless configuration utility is managing your wireless network card in Windows Vista:

1. Click **Start→ Connect To→ Manage wireless networks**.
2. Double-click a profile to open the wireless network properties screen.

For specific information about the wireless configuration utility installed on your computer, see your wireless network documentation in the Windows Help and Support Center (click **Start→ Help and Support**).

Completing the Connection to the WLAN

When you turn on your computer and a network (for which your computer is not configured) is detected in the area, a pop-up appears near the network icon in the notification area (in the lower-right corner of the Windows desktop).

Follow the instructions provided in any utility prompts that appear on your screen.

Once you have configured your computer for the wireless network that you selected, another pop-up notifies you that your computer is connected to that network.

Thereafter, whenever you log on to your computer within the range of the wireless network that you selected, the same pop-up notifies you of the wireless network connection.

> **NOTE:** If you select a secure network, you must enter a WEP or WPA key when prompted. Network security settings are unique to your network. Dell cannot provide this information.

> **NOTE:** Your computer can take up to 1 minute to connect to the network.

Monitoring the Status of the Wireless Network Card Through Dell QuickSet

The wireless activity indicator provides you with an easy way to monitor the status of your computer's wireless devices. To turn the wireless activity indicator on or off, click the QuickSet icon in the taskbar and select **Hotkey Popups**. If **Wireless Activity Indicator Off** is not checked, the indicator is on. If **Wireless Activity Indicator Off** is checked, the indicator is off.

The wireless activity indicator displays whether your computer's integrated wireless devices are enabled or disabled. When you turn the wireless networking function on or off, the wireless activity indicator changes to display the status.

For more information about the Dell QuickSet wireless activity indicator, right-click the QuickSet icon in the taskbar and select **Help**.

7.5 Mobile Broadband (or Wireless Wide Area Network)

A Mobile Broadband network, also known as a Wireless Wide Area Network (WWAN), is a high-speed digital cellular network that provides Internet access over a much wider geographical area than a WLAN, which typically covers only from 100 to 1000 feet. Your computer can maintain Mobile Broadband network access as long as the computer is within a cellular-data coverage zone. Contact your service provider for coverage of a high-speed digital cellular network.

> **NOTE:** Even if you are able to make a call from your cellular phone in a specific geographical location, that location may not necessarily be within a cellular-data coverage zone.

7.5.1 What You Need to Establish a Mobile Broadband Network Connection

> **NOTE:** Depending on your computer, you can use a Mini-Card or an ExpressCard with PCMCIA adapter to establish a Mobile Broadband network connection.

To set up a Mobile Broadband network connection, you need:
- A Mini-Card
- An activated Subscriber Identity Module (SIM) for your service provider

> **NOTE:** Only Cingular and Vodafone need a SIM card. Verizon, Sprint, and Telus do not use a SIM.

- The Dell Mobile Broadband Card Utility (already installed on your computer if you purchased the card when you purchased your computer, or on the media that accompanied your card if purchased separately from your computer).

  If the utility is corrupted or deleted from your computer, see the Dell Mobile Broadband Card Utility user's guide for instructions. The user's guide is available through the Windows Help and Support Center (click **Start→ Help and Support**) or on the media that accompanied your card if you purchased it separately from your computer.

7.5.2 Checking Your Dell Mobile Broadband Card

Depending on what you selected when you purchased your computer, the computer has a variety of configurations. To determine your computer configuration, see one of the following:
- Your order confirmation
- Microsoft Windows Help and Support Center

To check your Mobile Broadband card in the Windows Help and Support Center:

1. Click **Start→ Help and Support→ Use Tools to view your computer information and diagnose problems**.
2. Under **Tools**, click **My Computer Information→ Find information about the hardware installed on this computer**.

On the **My Computer Information - Hardware** screen, you can view the type of Mobile Broadband card installed in your computer as well as other hardware components.

NOTE: The Mobile Broadband card is listed under **Modems**.

7.5.3 Connecting to a Mobile Broadband Network

NOTE: These instructions only apply to Mini-Cards. They do not apply to WLAN cards.

NOTE: Before you connect to the Internet, you must activate Mobile Broadband service through your cellular service provider. For instructions and for additional information about using the Dell Mobile Broadband Card Utility, see the user's guide available through the Windows Help and Support Center (click **Start→ Help and Support**). The user's guide is also available on the media included with your Mobile Broadband card if you purchased the card separately from your computer.

Use the Dell Mobile Broadband Card Utility to establish and manage a Mobile Broadband network connection to the Internet:

1. Click the Dell Mobile Broadband Card Utility icon ![icon] on the Windows desktop, to run the utility.
2. Click **Connect**.

> **NOTE:** The **Connect** button changes to the **Disconnect** button.

3. Follow the instructions on the screen to manage the network connection with the utility.

Or

1. Click **Start→ All Programs→ Dell Wireless**.
2. Click **Dell Wireless Broadband** and follow the instructions on the screen.

7.5.4 Enabling/Disabling the Dell™ Mobile Broadband Card

NOTE: If you are unable to connect to a Mobile Broadband network, ensure that you have all the components for establishing a Mobile Broadband connection (see "What You Need to Establish a Mobile Broadband Network Connection", and then verify that your Mobile Broadband card is enabled by verifying the setting of the wireless switch.

You can turn your computer's wireless devices on and off with the wireless switch on the left side of the computer (see "Left Side View").

If the switch is in the "on" position, move the switch to the "off" position to disable the switch and the Mobile Broadband card. If the switch is in the "off" position, move the switch to the "on" position to enable the switch and the Dell Mobile Broadband card. For information about the wireless switch positions, see "Wireless Switch".

To monitor the status of your wireless device, see "Monitoring the Status of the Wireless Network Card Through Dell QuickSet" in "Connecting to a WLAN".

7.5.5 Managing Your Network Settings Through the Dell QuickSet Location Profiler

The Dell QuickSet Location Profiler helps you manage network settings that correspond to your computer's physical location. It includes two categories of profile settings:

- Location Profile Settings
- General Mobility Settings

You can use **Location Profile Settings** to create profiles for accessing the Internet with your computer in your office, home, or other public places with Internet services. **General Mobility Settings** allows you to change the way network

connections are handled. The profiles consist of different network settings and equipment that you need when using your computer in different locations.

For more information about Dell QuickSet, right-click the QuickSet icon in the taskbar and select **Help**.

7.5.6   Dell Wi-Fi Catcher™ Network Locator

The wireless switch on your Dell computer uses the Dell Wi-Fi Catcher Network Locator to scan specifically for WiFi WLAN in your vicinity. For more information about the wireless switch, see "Wireless Switch".

To scan for WiFi WLAN, slide and hold the switch in the "momentary" position for a few seconds. The Wi-Fi Catcher Network Locator functions regardless of whether your computer is turned on or off, in hibernate mode, or in standby mode, as long as the switch is configured through Dell QuickSet or the BIOS (system setup program) to control WiFi network connections.

Because the Wi-Fi Catcher Network Locator is disabled and not configured for use when your computer is shipped to you, you must first use Dell QuickSet to enable and configure the switch to control WiFi network connections.

For more information on the Wi-Fi Catcher Network Locator and to enable the feature through Dell QuickSet, right-click the QuickSet icon in the taskbar and select **Help**.

7.5.7   Microsoft® Windows® Firewall

Windows Firewall provides basic protection from unauthorized access to your computer while it is connected to the Internet. Windows Firewall is automatically enabled when you run the Network Setup Wizard.

When Windows Firewall is enabled for a network connection, the firewall icon appears with a red background in the **Network Connections** section of the **Control Panel**.

NOTE: Enabling Windows Firewall does not reduce the need for virus-checking software.

For more information, click **Start→ Control Panel→ Security→ Windows Firewall**, or access the Help and Support Center (click **Start→ Help and Support**).

8   Using Multimedia

8.1 Playing Media

NOTICE: Do not press down on the media tray when you open or close it. Keep the tray closed when you are not using the drive.

NOTICE: Do not move the computer while playing media.

1. Press the eject button on the front of the drive.
2. Pull out the tray

3. Place the disc, label side up, in the center of the tray and snap the disc onto the spindle.

NOTE: If you use a module that shipped with another computer, you need to install the drivers and software necessary to play DVDs or write data. For more information, see the *Drivers and Utilities* media (the *Drivers and Utilities* media is optional and may not be available for your computer or in certain countries).

4. Push the tray back into the drive.

To format media for storing data, to create music media, or to copy media, see the media software that came with your computer.

NOTE: Ensure that you follow all copyright laws when you create media.

A CD player includes the following basic buttons:

▶	Play.
◀◀	Move backward within the current track.
❚❚	Pause.
▶▶	Move forward within the current track.
■	Stop.
◀◀❙	Go to the previous track.
⏏	Eject.
❙▶▶	Go to the next track.

A DVD player includes the following basic buttons:

■	Stop.
↩	Restart the current chapter.
▶	Play.
▶▶	Fast forward.
❚❚	Pause.
◀◀	Fast reverse.
❙▶	Advance a single frame while in pause mode.
❙▶▶	Go to the next title or chapter.
⟳	Continuously play the current title or chapter.
◀◀❙	Go to the previous title or chapter.
⏏	Eject.

For more information on playing media, click **Help** on the CD or DVD player (if available).

8.2 Copying Media

NOTE: Ensure that you follow all copyright laws when you create media.

This section applies only to computers that have a CD-RW, DVD+/-RW, or CD-RW/DVD (combo) drive.

NOTE: The types of media drives offered by Dell may vary by country.

The following instructions explain how to make a copy using *Roxio Creator Plus - Dell Edition*. You can also use *Roxio Creator Plus* for other purposes, such as creating music CDs from audio files stored on your computer or backing up important data. For help, open *Roxio Creator Plus*, and then click the **question mark icon** in the upper-right corner of the window.

8.2.1 How to Copy Media

NOTE: CD-RW/DVD combo drives cannot write to DVD media. If you have a CD-RW/DVD combo drive and you experience recording problems, check for available software patches on the Sonic support website at www.sonic.com.

The DVD-writable drives installed in Dell computers can write to and read DVD+/-R, DVD+/-RW and DVD+R DL (dual layer) media, but cannot write to and may not read DVD-RAM or DVD-R DL media.

NOTE: Most commercial DVDs have copyright protection and cannot be copied using *Roxio Creator Plus*.

1. Open *Roxio Creator Plus*.
2. Under the **Copy** tab, click **Disc Copy**.
3. To copy media:

   - If you have one media drive, ensure that the settings are correct, and then click **Disc Copy**. The computer reads your source media and copies the data to a temporary folder on your computer hard drive.

     When prompted, insert a blank media into the drive and click **OK**.

   - If you have two media drives, select the drive into which you have inserted your source media, and then click **Disc Copy**. The computer copies the data from the source media to the blank one.

Once you have finished copying the source media, the media that you have created automatically ejects.

8.2.2 Using Blank Media

CD-RW drives can write to CD recording media only (including high-speed CD-RW media) while DVD-writable drives can write to both CD and DVD recording media.

Use blank CD-Rs to record music or permanently store data files. After the maximum storage capacity of a CD-R is reached, you cannot write to that CD-R again (see the Sonic documentation for more information). Use blank CD-RWs if you plan to erase, rewrite, or update information on the CD later.

Blank DVD+/-Rs can be used to permanently store large amounts of data. After you create a DVD+/-R disc, you may not be able to write to that disc again if the disc is *finalized* or *closed* during the final stage of the disc creation process. Use blank DVD+/-RWs if you plan to erase, rewrite, or update information on the disc later.

8.2.3 CD-Writable Drives

Media Type	Read	Write	Rewritable
CD-R	Yes	Yes	No
CD-RW	Yes	Yes	Yes

DVD-Writable Drives

Media Type	Read	Write	Rewritable
CD-R	Yes	Yes	No
CD-RW	Yes	Yes	Yes
DVD+R	Yes	Yes	No
DVD-R	Yes	Yes	No
DVD+RW	Yes	Yes	Yes
DVD-RW	Yes	Yes	Yes
DVD+R DL	Yes	Yes	No
DVD-R DL	Maybe	No	No
DVD-RAM	Maybe	No	No

8.2.4 Helpful Tips

- Use Microsoft® Windows® Explorer to drag and drop files to a CD-R or CD-RW only after you start *Roxio Creator Plus* and open a Creator project.
- Use CD-Rs to burn music CDs that you want to play in regular stereos. CD-RWs may not play in many home or car stereos.
- You cannot create audio DVDs with *Roxio Creator Plus.*
- Music MP3 files can be played only on MP3 players or on computers that have MP3 software installed.
- Commercially available DVD players used in home theater systems may not support all available DVD formats. For a list of formats supported by your DVD player, see the documentation provided with your DVD player or contact the manufacturer.
- Do not burn a blank CD-R or CD-RW to its maximum capacity; for example, do not copy a 650-MB file to a blank 650-MB CD. The CD-RW drive needs 1–2 MB of blank space to finalize the recording.
- Use a blank CD-RW to practice CD recording until you are familiar with CD recording techniques. If you make a mistake, you can erase the data on the CD-RW and try again. You can also use blank CD-RWs to test music file projects before you record the project permanently to a blank CD-R.
- See the Sonic website at www.sonic.com for additional information.

8.2.5 Adjusting the Volume

NOTE: When the speakers are muted, you do not hear the media playing.

1. Open the **Volume Control** window.
2. Click and drag the bar in the **Volume Control** column and slide it up or down to increase or decrease the volume.

For more information on volume control options, click **Help** in the **Volume Control** window.

The Volume Meter displays the current volume level, including mute, on your computer. Either click the QuickSet icon in the taskbar and select or deselect **Disable On Screen Volume Meter**, or press the volume control buttons to enable or disable the Volume Meter on the screen.

1	Volume icon	2	Volume meter	3	Mute icon

When the meter is enabled, adjust the volume with the volume control buttons.

For more information about QuickSet, right-click the icon in the taskbar and click **Help**.
You can also use the volume control buttons on your computer to adjust the volume (see "Front View").

8.2.6 Adjusting the Picture

If an error message notifies you that the current resolution and color depth are using too much memory and preventing DVD playback, adjust the display properties.

Microsoft® Windows® XP Operating System
1. Click **Start→ Control Panel→ Appearance and Themes**.
2. Under **Pick a task**…, click **Change the screen resolution**.
3. Under S**creen resolution**, click and drag the bar to reduce the resolution setting.
4. In the drop-down menu under **Color quality**, click **Medium (16 bit)**.
5. Click **OK**.

Microsoft Windows Vista™ Operating System
1. Click the Windows Vista Start button, , and click **Control Panel→ Appearance and Personalization**.
2. Under **Personalization**, click **Adjust Screen Resolution**.

3. Under **Resolution:** click and drag the bar to reduce the resolution setting.
4. In the drop-down menu under **Colors**, click **Medium (16 bit)** and click **OK**.

9   Using Cards

NOTE: Electrical and electronic devices are sensitive to electrostatic discharge (ESD). If a substantial ESD occurs, the device may reset and the device software may attempt to reinitialize a connection. If the software is not operational after an ESD occurrence, restart the modem software program.

9.1 Card Types

9.1.1   PC Cards

See "PC Card" for information on supported PC Cards.

NOTE: A PC Card is not a bootable device.

The PC Card slot has one connector that supports a single Type I or Type II card. The PC Card slot supports CardBus technology and extended PC Cards. "Type" of card refers to its thickness, not its functionality.

9.1.2   ExpressCards

See "Specifications" for information on supported ExpressCards.

NOTE: An ExpressCard is not a bootable device.

ExpressCards leverage PC Card technology to provide a fast and convenient way to add memory, wired and wireless network communications (including Mobile Broadband network [also known as WWAN] communications), multimedia, and security features to your computer. To use an ExpressCard in the PC Card slot, you must use an adapter (optional).

9.1.3   Smart Cards

Smart cards provide valuable tools for security, data storage, and special programs (see "Smart Cards").

9.1.4   Card Blanks

Your computer shipped with a plastic blank installed in the card slots. Blanks protect unused slots from dust and other particles. Save the blank for use when no card is installed in the slots; blanks from other computers may not fit your computer.

To remove a blank, see "Removing a Card or Blank".

9.1.5   Extended Cards

An extended PC Card (for example, a wireless network adapter) is longer than a standard PC Card and extends outside the computer. Follow these precautions when using extended PC Cards:

- Protect the exposed end of an installed card. Striking the end of the card can damage the system board.
- Always remove an extended PC Card before you pack the computer in its carrying case.

9.2 Installing a PC Card or ExpressCard

You can install a PC Card or ExpressCard in the computer while the computer is running. The computer automatically detects the card.

PC Cards and ExpressCards are generally marked with a symbol (such as a triangle or an arrow) to indicate which end to insert into the slot. The cards are keyed to prevent incorrect insertion. If card orientation is not clear, see the documentation that came with the card.

CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

9.2.1   PC Card

1. Lower the hinged door on the left side of the system that protects the PC card slot. See "Left Side View".
2. Hold the card with its orientation symbol pointing into the slot and the top side of the card facing up. The latch may need to be in the "in" position before you insert the card.
3. Slide the card into the slot until the card is completely seated in its connector.

   If you encounter too much resistance, do not force the card. Check the card orientation and try again.

The computer recognizes most PC Cards and automatically loads the appropriate device driver. If the configuration program tells you to load the manufacturer's drivers, use the floppy disk or CD that came with the PC Card.

9.2.2   ExpressCard
1. Place the ExpressCard in the adapter (the adapter is included with the ExpressCard).
2. Install the ExpressCard with adapter the same way as a PC Card (see "PC Cards").
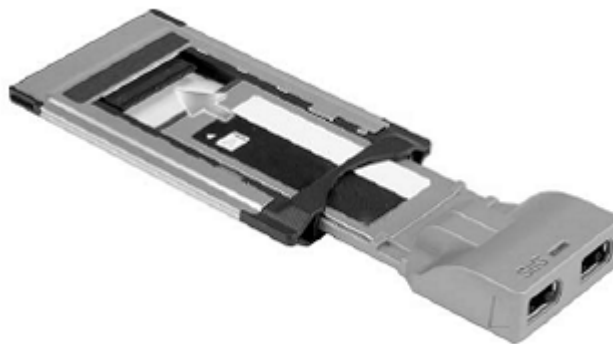
9.3 Removing a Card or Blank

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

⊘ **NOTICE:** Click the 🖴 icon in the taskbar to select a card and stop it from functioning before you remove it from the computer. If you do not stop the card in the configuration utility, you could lose data. Do not attempt to eject a card by pulling its cable, if one is attached.

Press the latch and remove the card or blank. For some latches, you must press the latch twice: once to pop the latch out, and then a second time to pop the card out.

10 Securing Your Computer

10.1 Security Cable Lock

📝 **NOTE:** Your computer does not ship with a security cable lock.

A security cable lock is a commercially available antitheft device. To use the lock, attach it to the security cable slot on your Dell computer. For more information, see the instructions included with the device. See "Left Side View" for the location of the security cable slot.

➡️ **NOTICE:** Before you buy an antitheft device, ensure that it will work with the security cable slot on your computer.

10.2 Smart Cards

📝 **NOTE:** For information on how to secure your computer while traveling, see "Traveling With Your Computer".

📝 **NOTE:** The smart card feature may not be available on your computer.

10.2.1 About Smart Cards

Smart cards are portable credit-card shaped devices with internal integrated circuits. The top surface of the smart card usually contains an embedded processor under the gold contact pad. The combination of the small size and integrated circuits make smart cards valuable tools for security, data storage, and special programs. Using smart cards can improve system security by combining something a user has (the smart card) with something only the user should know (a PIN) to provide more secure user authentication than passwords alone.

10.2.2 Installing a Smart Card

There are 2 models of smart card reader available for the XFR D630 notebook. The standard reader does not allow the smart card to be fully inserted into the notebook. The enclosed reader does allow for the full insertion of the smart card which allows for the protective hinged door to be closed.

10.2.2.1 Installing a Smart Card Into the Standard Smart Card Reader

You can install a smart card in the computer while the computer is running. The computer automatically detects the card.

To install a smart card into the standard smart card reader:

1. The smart card reader is located behind the Audio/Wi-Fi door. Lower the hinged door on the left side of the notebook that protects the smart card reader slot. See Figure 10-1 below.

Figure 10 1 Smart Card Location

1	Smart card slot

2. Hold the card so that the gold contact pad is facing upward and pointing toward the smart card slot. See Figure 10-2 below.

Figure 10 2 Smart Card
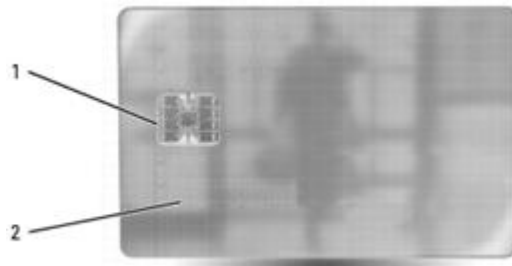
1	Gold contact pad	2	Smart card (top)

3. Slide the smart card into the smart card slot until the card is completely seated in its connector. The smart card will protrude approximately 1/2 inch from the slot. The smart card slot is located below the PC Card slot.

   If you encounter too much resistance, do not force the card. Check the card orientation and try again.

Figure 10 3 Standard Smart Card Reader

10.2.2.2   Installing a Smart Card into the Enclosed Smart Card Reader

You can install a smart card in the computer while the computer is running. The computer automatically detects the card.

To install a smart card into the enclosed smart card reader:

1. The smart card reader is located behind the Audio/Wi-Fi door. Lower the hinged door on the left side of the notebook that protects the smart card reader slot. See Figure 10-1 above.

2. Hold the card so that the gold contact pad is facing upward and pointing toward the smart card slot. See Figure 10-2 above.

3. Slide the smart card into the smart card slot until the card is completely seated in its connector.

   The smart card will be fully inside the card reader slot and you can close the protective hinged door while the card is inserted. See Figure 10-4 below.

   If you encounter too much resistance, do not force the card. Check the card orientation and try again.

Figure 10 4 Enclosed Smart Card Reader

📝 **NOTE:** To release the smart card, press in on the card edge and the reader will eject the card.

10.3   Passwords

Passwords prevent unauthorized access to your computer. When using passwords, observe the following guidelines:

- Choose a password that you can remember, but not one that is easy to guess. For example, do not use the names of family members or pets for passwords.
- It is recommended that you do not write down your password. If you do write it down, however, ensure that the password is stored in a secure place.
- Do not share your password with other people.
- Ensure that people are not watching you when you type your password.

⊙ **NOTICE:** Passwords provide a high level of security for data in your computer or hard drive. However, they are not foolproof. If you require more security, obtain and use additional forms of protection, such as smart cards, data encryption programs, or PC Cards with encryption features.

Use the **User Accounts** option in the **Control Panel** in the Microsoft® Windows® operating system to create user accounts or to change passwords. Once you create a user password, you must enter it each time you turn on or unlock your computer. If you do not enter a password within 2 minutes, the computer returns to its previous operating state.

For more information, see your Windows documentation.

10.3.1   About Passwords

📝 **NOTE:** Passwords are disabled when you receive your computer.

A primary (or system) password, an administrator password, and a hard drive password all prevent unauthorized access to your computer in different ways. The following table identifies types and features of passwords available on your computer.

Type of Password	Features
Primary (or system)	• Protects the computer from unauthorized access
Administrator	• Gives system administrators or service technicians access to computers for repair or reconfiguration • Allows you to restrict access to system setup in the same way a primary password restricts access to the computer • Can be used instead of the primary password
Hard drive	• Helps protect the data on your hard drive from unauthorized Access

📝 **NOTE:** Some hard drives do not support hard drive passwords.

When using passwords, observe the following guidelines:

- Choose passwords that you can remember, but not ones that are easy to guess. For example, do not use the names of family members or pets for passwords.
- It is recommended that you do not write down passwords. If you do write it down, however, ensure that the password is stored in a secure place.
- Do not share passwords with other people.
- Ensure that people are not watching you when you type your password(s).

NOTE: Passwords provide a high level of security for data in your computer or hard drive. However, they are not foolproof. If you require more security, obtain and use additional forms of protection, such as smart cards, data encryption programs, or PC Cards with encryption features.

If you forget any of your passwords, contact your system administrator.

10.3.2   Using a Primary (or System) Password

The primary password allows you to protect the computer from unauthorized access.
When you first start your computer, you must assign a primary password at the prompt.
If you do not enter a password within 2 minutes, the computer returns to its previous operating state.

NOTICE: If you disable the administrator password, the primary password is also disabled.

To add or change passwords, access **User Accounts** from the **Control Panel**.

If you have assigned an administrator password, you can use it instead of the primary password. The computer does not specifically prompt you for the administrator password.

10.3.3   Using an Administrator Password

The administrator password is designed to give system administrators or service technicians access to computers for repair or reconfiguration. The administrators or technicians can assign identical administrator passwords to groups of computers, allowing you to assign a unique primary password.

To set or change administrator passwords, access **User Accounts** from the **Control Panel**.

When you set an administrator password, the **Configure Setup** option becomes available in system setup. The **Configure Setup** option allows you to restrict access to system setup in the same way that a primary password restricts access to the computer.

The administrator password can be used instead of the primary password. Whenever you are prompted to enter the primary password, you can enter the administrator password.

NOTICE: If you disable the administrator password, the primary password is also disabled.

NOTE: The administrator password provides access to the computer, but it does not provide access to the hard drive when a hard drive password is assigned.

If you forget the primary password and do not have an administrator password assigned, or if you have both a primary and an administrator password assigned but forget them both, contact your system administrator.

10.3.4   Using a Hard Drive Password

The hard drive password helps protect the data on your hard drive from unauthorized access.

To assign or change a hard drive password, enter system setup (see "System Setup Program").

After assigning a hard drive password, you must enter it each time you turn on the computer and each time you restore the computer to normal operation from standby mode.

If the hard drive password is enabled, you must enter it each time you turn on the computer: A message appears asking for the hard drive password.

To continue, enter your password (with no more than eight characters) and press **<Enter>**.

If you do not enter a password within two minutes, the computer returns to its previous operating state.

If you enter the wrong password, a message tells you that the password is invalid. Press **<Enter>** to try again.

If you do not enter the correct password in three attempts, the computer tries to start from another bootable device if the **Boot First Device** option in system setup is set to allow start-up from another device. If the **Boot First Device** option is not set to allow the computer to start from another device, the computer returns to the operating state it was in when you turned it on.

If the hard drive password, the external hard-drive password, and the primary password are the same, the computer prompts you only for the primary password. If the hard drive password is different from the primary password, the computer prompts you for both. Two different passwords provide greater security.

> **NOTE:** The administrator password provides access to the computer, but it does not provide access to the hard drive when a hard drive password is assigned.

10.4 Trusted Platform Module (TPM)

> **NOTE:** The TPM feature supports encryption only if the operating system supports TPM. For more information, see the TPM software documentation and the help files that came with the software.

TPM is a hardware-based security feature that can be used to create and manage computer-generated encryption keys. When combined with security software, the TPM enhances existing network and computer security by enabling features such as file protection capabilities and protected e-mail. The
TPM feature is enabled through a system setup option.

> **NOTICE:** To secure your TPM data and encryption keys, follow the backup procedures documented in the Broadcom *Secure Foundation Getting Started Guide.* In the event of these backups being incomplete, lost, or damaged, Dell will be unable to assist in the recovery of encrypted data.

10.4.1 Enabling the TPM Feature

1. Enable the TPM software:
   a. Restart the computer and press **<F2>** during the Power On Self Test to enter the system setup program.
   b. Select **Security→ TPM Security** and press **<Enter>**.
   c. Under **TPM Security**, select **On**.
   d. Press **<Esc>** to exit the setup program.
   e. If prompted, click **Save/Exit**.

2. Activate the TPM setup program:
   a. Restart the computer and press **<F2>** during the Power On Self Test to enter the system setup program.
   b. Select **Security→ TPM Activation** and press **<Enter>**.
   c. Under **TPM Activation**, select **Activate** and press **<Enter>**.

> **NOTE:** You only need to activate the program once.

   d. Once the process is complete, the computer either restarts automatically or prompts you to restart your computer.

10.5 Security Management Software

The security management software is designed to utilize four different features to help you secure your computer:

- Log-in management
- Pre-boot authentication (using a fingerprint reader, smart card, or password)
- Encryption
- Private information management

10.5.1 Activating the Security Management Software

> **NOTE:** You must first enable the TPM in order for the security management software to have full functionality.

1. Enable the TPM feature (see "Enabling the TPM Feature").
2. Load the security management software:
   a. Turn on (or restart) your computer.
   b. When the DELL™ logo appears, press **<F2>** immediately. If you wait too long and the Windows logo

appears, continue to wait until you see the Windows desktop. Then shut down your computer and try again.

c. In the drop-down menu, select **Wave EMBASSY Trust Suite** and press **<Enter>** to create the icons for the software components on the computer desktop.

d. Press **<Esc>** to exit the setup program.

e. If prompted, click **Save/Exit**.

10.5.2 Using the Security Management Software

For information about how to use the software and the different security features, see the *Getting Started Guide* for the software:

Click **Start→ All Programs→ Wave EMBASSY Trust Suite→ Getting Started Guide**.

10.6 Computer Tracking Software

Computer tracking software may enable you to locate your computer if it is lost or stolen. The software is optional and may be purchased when you order your Dell computer, or you can contact your Dell sales representative for information about this security feature.

NOTE: Computer tracking software may not be available in certain countries.

NOTE: If you have computer tracking software and your computer is lost or stolen, you must contact the company that provides the tracking service to report the missing computer.

10.7 If Your Computer Is Lost or Stolen

- Call a law enforcement agency to report the lost or stolen computer. Include the Service Tag in your description of the computer. Ask that a case number be assigned and write down the number, along with the name, address, and phone number of the law enforcement agency. If possible, obtain the name of the investigating officer.

NOTE: If you know where the computer was lost or stolen, call a law enforcement agency in that area. If you do not know, call a law enforcement agency where you live.

- If the computer belongs to a company, notify the security office of the company.
- Contact Dell Customer Support to report the missing computer. Provide the computer Service Tag, the case number, and the name, address, and phone number of the law enforcement agency to which you reported the missing computer. If possible, give the name of the investigating officer.

The Dell Customer Support representative will log your report under the computer Service Tag and record the computer as missing or stolen. If someone calls Dell for technical assistance and gives your Service Tag, the computer is identified automatically as missing or stolen. The representative will attempt to get the phone number and address of the caller. Dell will then contact the law enforcement agency to which you reported the missing computer.

10.8 Cleaning Your Computer

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the <u>Safety Information</u> section of this manual.**

10.8.1 Computer, Keyboard, and Display

⚠ **CAUTION: Before you clean your computer, disconnect the computer from the electrical outlet and remove any installed batteries. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.**

NOTE: A soft, lint-free cloth is provided in your notebook's ship container.

- Use a can of compressed air to remove dust from between the keys on the keyboard.

NOTICE: To avoid damaging the computer or display, do not spray cleaning solution directly onto the display. Only use products specifically designed for cleaning displays, and follow the instructions that are included with the product.

- Moisten a soft, lint-free cloth with either water or a display cleaner, and wipe the display until it is clean.

⊖ **NOTICE:** To prevent damage to the antiglare coating, do not wipe the display with soap or alcohol.

- Moisten a soft, lint-free cloth with water and wipe the computer and keyboard. Do not allow water from the cloth to seep between the touch pad and the surrounding palm rest.

- To clean your monitor screen, lightly dampen a soft, clean cloth with water. You can also use a special screen-cleaning tissue or solution suitable for the monitor's antistatic coating.

- Wipe the keyboard, computer, and monitor plastics with a soft cleaning cloth moistened with a solution of three parts water and one part dishwashing detergent.

  Do not soak the cloth or let water drip inside your computer or keyboard.

10.8.2   Touch Pad

1. Shut down and turn off your computer.
2. Disconnect any attached devices from the computer and from their electrical outlets.
3. Remove any installed batteries (see "Replacing the Battery").
4. Moisten a soft, lint-free cloth with water, and wipe it gently across the surface of the touch pad. Do not allow water from the cloth to seep between the touch pad and the surrounding palm rest.

10.8.3   Mouse

⊖ **NOTICE:** Disconnect the mouse from the computer before cleaning the mouse.

If your screen cursor skips or moves abnormally, clean the mouse.

Cleaning a Non-Optical Mouse
1. Clean the outside casing of the mouse with a cloth moistened with a mild cleaning solution.
2. Turn the retainer ring on the underside of your mouse counterclockwise, and then remove the ball.
3. Wipe the ball with a clean, lint-free cloth.
4. Blow carefully into the ball cage or use a can of compressed air to dislodge dust and lint.
5. If the rollers inside the ball cage are dirty, clean the rollers with a cotton swab moistened lightly with isopropyl alcohol.
6. Recenter the rollers in their channels if they are misaligned. Ensure that fluff from the swab is not left on the rollers.
7. Replace the ball and retainer ring, and turn the retainer ring clockwise until it clicks into place.

Cleaning an Optical Mouse
Clean the outside casing of the mouse with a cloth moistened with a mild cleaning solution.

10.8.4   Floppy Drive

⊖ **NOTICE:** Do not attempt to clean drive heads with a swab. You might accidentally misalign the heads which prevents the drive from operating.

Clean your floppy drive using a commercially available cleaning kit. These kits contain pretreated floppy disks to remove contaminants that accumulate during normal operation.

10.8.5   CDs and DVDs

⊖ **NOTICE:** Always use compressed air to clean the lens in the CD/DVD drive, and follow the instructions that come with the compressed-air product. Never touch the lens in the drive.

If you notice problems, such as skipping, with the playback quality of your CDs or DVDs, try cleaning the discs.

1. Hold the disc by its outer edge. You can also touch the inside edge of the center hole.

⊖ **NOTICE:** To avoid damaging the surface, do not wipe in a circular motion around the disc.

2. With a soft, lint-free cloth, gently wipe the bottom of the disc (the unlabeled side) in a straight line from the center to the outer edge of the disc.

   For stubborn dirt, try using water or a diluted solution of water and mild soap. You can also purchase commercial

products that clean discs and provide some protection from dust, fingerprints, and scratches. Cleaning products for CDs are also safe to use on DVDs.

11 Troubleshooting

11.1 Dell Diagnostics

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

11.1.1 When to Use the Dell Diagnostics

If you experience a problem with your computer, perform the checks in "Lockups and Software Problems" and run the Dell Diagnostics before you contact Dell for technical assistance.

It is recommended that you print these procedures before you begin.

🠖 **NOTICE:** The Dell Diagnostics work only on Dell™ computers.

✎ **NOTE:** The *Drivers and Utilities* CD is optional and may not ship with your computer.

Enter the System Setup Program (see "System Setup Program"), review your computer's configuration information, and ensure that the device you want to test displays in system setup and is active.

Start the Dell Diagnostics from either your hard drive or from the optional *Drivers and Utilities* CD.

11.1.2 Starting the Dell Diagnostics From Your Hard Drive

The Dell Diagnostics is located on a hidden diagnostic utility partition on your hard drive.

✎ **NOTE:** If your computer cannot display a screen image, contact Dell.

1. If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions. Ensure the computer is connected to a known good electrical outlet.

2. Turn on (or restart) your computer.

3. Diagnostics can be invoked one of two ways:

    a. When the DELL™ logo appears, press **<F12>** immediately. Select Diagnostics from the boot menu and press **<Enter>**.

    ✎ **NOTE:** If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop. Then shut down your computer and try again.

    ✎ **NOTE:** Before attempting option 'b', the computer must be powered down completely.

    b. Press and hold the **<Fn>** key while powering the computer on.

    ✎ **NOTE:** If you see a message stating that no diagnostics utility partition has been found, run the Dell Diagnostics from the optional *Drivers and Utilities* CD.

    The computer runs the Pre-boot System Assessment (PSA), a series of initial tests of your system board, keyboard, hard drive, and display.

    - During the assessment, answer any questions that appear.

    - If a failure is detected, the computer stops and beeps. To stop the assessment and restart the computer, press **<N>**; to continue to the next test, press **<Y>**; to retest the component that failed, press **<R>**.

    - If failures are detected during the Pre-boot System Assessment, write down the error code(s) and

Dell.

If the Pre-boot System Assessment completes successfully, you receive the message: 'Booting Dell Diagnostic Utility Partition. Press any key to continue'.

4. Press any key to start the Dell Diagnostics from the diagnostics utility partition on your hard drive.

11.1.3   Starting the Dell Diagnostics From the *Drivers and Utilities* CD

1. Insert the *Drivers and Utilities* CD.

2. Shut down and restart the computer.

    When the DELL logo appears, press **<F12>** immediately.

    > **NOTE:** If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop; then shut down your computer and try again.

    > **NOTE:** The next steps change the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in the system setup program.

3. When the boot device list appears, highlight **IDE CD-ROM Device CD/DVD/CD-RW Drive** and press **<Enter>**.

4. Select the **Boot from CD-ROM** option from the menu that appears and press **<Enter>**.

5. Type **1** to start the menu and press **<Enter>** to proceed.

6. Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your computer.

7. When the Dell Diagnostics **Main Menu** appears, select the test you want to run.

11.1.4   Dell Diagnostics Main Menu

1. After the Dell Diagnostics loads and the **Main Menu** screen appears, click the button for the option you want.

> **NOTE:** It is recommended that you select **Test System** to run a complete test on your computer.

Option	Function
Test Memory	Run the stand-alone memory test
Test System	Run the System Diagnostics
Exit	Exit the Diagnostics

2. After you have selected the **Test System** option from the main menu the following menu appears:

> **NOTE:** It is recommended that you select **Extended Test** from the menu below to run a more thorough check of the devices in your computer.

Option	Function
Express Test	Performs a quick test of devices in the system. This typically can take 10 to 20 minutes
Extended Test	Performs a thorough check of devices in the system. This typically can take an hour or more.
Custom Test	Use to test a specific device or customize the tests to be run.
Symptom Tree	This option allows you to select tests based on a symptom of the problem you are having. This option lists the most common symptoms.

3. If a problem is encountered during a test, a message appears with an error code and a description of the problem. Write down the error code and problem description and contact Dell.

    > **NOTE:** The Service Tag for your computer is located on the bottom of your system. When you contact Dell, technical support will ask for your Service Tag number.

4. If you run a test from the **Custom Test** or **Symptom Tree** option, click the applicable tab described in the

following table for more information.

Tab	Function
Results	Displays the results of the test and any error conditions encountered
Errors	Displays error conditions encountered, error codes, and the problem description.
Help	Describes the test and may indicate requirements for running the test.
Configuration	Displays your hardware configuration for the selected device. The Dell Diagnostics obtains configuration information for all devices from the system setup program, memory, and various internal tests, and it displays the information in the device list in the left pane of the screen. The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test by changing the test settings.

5. When the tests are completed, close the test screen to return to the **Main Menu** screen. To exit the Dell Diagnostics and restart the computer, close the **Main Menu** screen.

6. Remove the Dell *Drivers and Utilities CD* (if applicable).

11.2   Dell Support Utility

The Dell Support Utility is installed on your computer and available from the Dell Support icon on the taskbar or from the **Start** button. Use this support utility for self-support information, software updates, and health scans of your computing environment.

11.2.1   Accessing the Dell Support Utility

Access the Dell Support Utility from the Dell Support icon on the taskbar or from the **Start** menu.

If the Dell Support icon does not appear in your taskbar:

1. Click the **Start** button and point to **Programs**.
2. Click **Dell Support** and point to **Dell Support Settings**.
3. Ensure that the **Show icon on the taskbar** option is checked.

> **NOTE:** If the Dell Support Utility is not available from the **Start** menu, contact Dell.

The Dell Support Utility is customized for your computing environment.

The Dell Support icon in the taskbar functions differently when you click, double-click, or right-click the icon.

11.2.2   Clicking the Dell Support Icon

Click or right-click the icon to perform the following tasks:

- Check your computing environment
- View the Dell Support Utility settings
- Access the help file for the Dell Support Utility
- View frequently asked questions
- Learn more about the Dell Support Utility
- Turn the Dell Support Utility off

Double-Clicking the Dell Support Icon

Double-click the icon to manually check your computing environment, view frequently asked questions, access the help file for the Dell Support Utility, and view Dell Support settings.

For more information about the Dell Support Utility, click the question mark (?) at the top of the Dell Support screen.

11.3   Drive Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠️ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

ENSURE THAT MICROSOFT® WINDOWS® RECOGNIZES THE DRIVE.
Click the **Start** button and click **My Computer**. If the floppy, CD, or DVD drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

TEST THE DRIVE
- Insert another floppy disk, CD, or DVD to eliminate the possibility that the original one is defective.
- Insert a bootable floppy disk and restart the computer.

CLEAN THE DRIVE OR DISK.

ENSURE THAT THE CD IS SNAPPED ONTO THE SPINDLE.

CHECK THE CABLE CONNECTIONS.

CHECK FOR HARDWARE INCOMPATIBILITIES.

RUN THE DELL DIAGNOSTICS — See "Dell Diagnostics".

11.3.1   Media Drive Problems

📝 **NOTE:** High-speed media drive vibration is normal and may cause noise, which does not indicate a defect in the drive or the media.

📝 **NOTE:** Because of different regions worldwide and different disc formats, not all DVD titles work in all DVD drives.

Problems writing to a CD/DVD-RW drive

CLOSE OTHER PROGRAMS — The CD/DVD-RW drive must receive a steady stream of data when writing. If the stream is interrupted, an error occurs. Try closing all programs before you write to the CD/DVD-RW.

TURN OFF STANDBY MODE IN WINDOWS BEFORE WRITING TO A CD/DVD-RW DISC — Search for the keyword *standby* in the Windows Help and Support Center for information on power management modes. To access the Help and Support Center, click **Start→ Help and Support**.

CHANGE THE WRITE SPEED TO A SLOWER RATE — See the help files for your media creation software.

If you cannot eject the CD, CD-RW, DVD, or DVD+RW drive tray
1. Ensure that the computer is shut down.
2. Straighten a paper clip and insert one end into the eject hole at the front of the drive; push firmly until the tray is partially ejected.
3. Gently pull out the tray until it stops.

If you hear an unfamiliar scraping or grinding sound
- Ensure that the sound is not caused by the program that is running.
- Ensure that the disk or disc is inserted properly.

11.3.2   Hard Drive Problems

ALLOW THE COMPUTER TO COOL BEFORE TURNING IT ON — A hot hard drive may prevent the operating system from starting. Try allowing the computer to return to within the operating temperature range before turning it on.

RUN CHECK DISK
1. Click the **Start** button and click **My Computer**.
2. Right-click **Local Disk C:**.
3. Click **Properties**.
4. Click the **Tools** tab.
5. Under **Error-checking**, click **Check Now**.
6. Click **Scan for and attempt recovery of bad sectors**.
7. Click **Start**.

11.4   E-Mail, Modem, and Internet Problems

Fill out the Diagnostics Checklist (see "<u>Diagnostics Checklist</u>") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the <u>Safety Information</u> in this manual.**

📝 **NOTE:** Connect the modem to an analog telephone jack only. The modem does not operate while it is connected to a digital telephone network.

CHECK THE MICROSOFT OUTLOOK® EXPRESS SECURITY SETTINGS — If you cannot open your e-mail attachments:

1. In Outlook Express, click **Tools**, click **Options**, and then click **Security**.
2. Click **Do not allow attachments** to remove the checkmark.

CHECK THE TELEPHONE LINE CONNECTION.

CHECK THE TELEPHONE JACK.

CONNECT THE MODEM DIRECTLY TO THE TELEPHONE WALL JACK.

USE A DIFFERENT TELEPHONE LINE —
• Verify that the telephone line is connected to the jack on the modem. (The jack has either a green label or a connector-shaped icon next to it.)
• Ensure that you hear a click when you insert the telephone line connector into the modem.
• Disconnect the telephone line from the modem and connect it to a telephone. Listen for a dial tone.
• If you have other telephone devices sharing the line, such as an answering machine, fax machine, surge protector, or line splitter, then bypass them and connect the modem directly to the telephone wall jack.

If you are using a line that is 3 m (10 ft) or more in length, try a shorter one.

RUN THE MODEM DIAGNOSTIC TOOL — Click the **Start** button, point to **All Programs** and then click **Modem Diagnostic Tool**. Follow the instructions on the screen to identify and resolve modem problems.

VERIFY THAT THE MODEM IS COMMUNICATING WITH WINDOWS —
1. Click the **Start** button and click **Control Panel**.
2. Click **Printers and Other Hardware**.
3. Click **Phone and Modem Options**.
4. Click the **Modems** tab.
5. Click the COM port for your modem.
6. Click **Properties**, click the **Diagnostics** tab, and then click **Query Modem** to verify that the modem is communicating with Windows.

If all commands receive responses, the modem is operating properly.

ENSURE THAT YOU ARE CONNECTED TO THE INTERNET — Ensure that you have subscribed to an Internet provider. With the Outlook Express e-mail program open, click **File**. If **Work Offline** has a checkmark next to it, click the checkmark to remove it and connect to the Internet. For help, contact your Internet service provider.

SCAN THE COMPUTER FOR SPYWARE — If you are experiencing slow computer performance, you frequently receive pop-up advertisements, or you are having problems connecting to the Internet, your computer might be infected with spyware. Use an anti-virus program that includes anti-spyware protection (your program may require an upgrade) to scan the computer and remove spyware.

11.5   Error Messages

Fill out the Diagnostics Checklist (see "<u>Diagnostics Checklist</u>") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the <u>Safety Information</u> section of this manual.**

If the message is not listed, see the documentation for the operating system or the program that was running when the message appeared.

AUXILIARY DEVICE FAILURE — The touch pad, track stick, or external mouse may be faulty. For an external mouse, check the cable connection. Enable the **Pointing Device** option in the system setup program. If the problem persists, contact Dell Customer Support.

BAD COMMAND OR FILE NAME — Ensure that you have spelled the command correctly, put spaces in the proper place, and used the correct pathname.

CACHE DISABLED DUE TO FAILURE — The primary cache internal to the microprocessor has failed. Contact Dell Customer Support.

CD DRIVE CONTROLLER FAILURE — The CD drive does not respond to commands from the computer (see "Dell Support Utility").

DATA ERROR — The hard drive cannot read the data (see "Dell Support Utility").

DECREASING AVAILABLE MEMORY — One or more memory modules may be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them (see "Memory Problems").

DISK C: FAILED INITIALIZATION — The hard drive failed initialization. Run the hard drive tests in the Dell Diagnostics (see "Dell Diagnostics").

DRIVE NOT READY — The operation requires a hard drive in the bay before it can continue. Install a hard drive in the hard drive bay (see "Drive Problems").

ERROR READING PCMCIA CARD — The computer cannot identify the PC Card. Reinsert the card or try another PC Card (see "Installing a PC Card or ExpressCard").

EXTENDED MEMORY SIZE HAS CHANGED — The amount of memory recorded in NVRAM does not match the memory installed in the computer. Restart the computer. If the error appears again, contact Dell Customer Support.

THE FILE BEING COPIED IS TOO LARGE FOR THE DESTINATION DRIVE — The file that you are trying to copy is too large to fit on the disk, or the disk is too full. Try copying the file to a different disk or use a larger capacity disk.

A FILENAME CANNOT CONTAIN ANY OF THE FOLLOWING CHARACTERS: \ / : * ? " < > | — Do not use these characters in filenames.

GATE A20 FAILURE — A memory module may be loose. Reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

GENERAL FAILURE — The operating system is unable to carry out the command. The message is usually followed by specific information—for example, Printer out of paper. Take the appropriate action.

HARD-DISK DRIVE CONFIGURATION ERROR — The computer cannot identify the drive type. Shut down the computer, remove the hard drive (see "Hard Drive Problems"), and boot the computer from media. Then shut down the computer, reinstall the hard drive, and restart the computer. Run the Hard-Disk Drive tests in the Dell Diagnostics (see "Dell Diagnostics").

HARD-DISK DRIVE CONTROLLER FAILURE 0 — The hard drive does not respond to commands from the computer. Shut down the computer, remove the hard drive (see "Hard Drive Problems"), and boot the computer from media. Then shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard-Disk Drive tests in the Dell Diagnostics (see "Dell Diagnostics").

HARD-DISK DRIVE FAILURE — The hard drive does not respond to commands from the computer. Shutdown the computer, remove the hard drive (see "Hard Drive Problems"), and boot the computer from media. Then shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard-Disk Drive tests in the Dell Diagnostics (see "Dell Diagnostics").

HARD-DISK DRIVE READ FAILURE — The hard drive may be defective. Shut down the computer, remove the hard drive (see "Hard Drive Problems"), and boot the computer from media. Then shut down the computer, reinstall the hard drive, and restart the computer. If the problem persists, try another drive. Run the Hard-Disk Drive tests in the Dell Diagnostics (see "Dell Diagnostics").

INSERT BOOTABLE MEDIA — The operating system is trying to boot to nonbootable media. Insert bootable media.

INVALID CONFIGURATION INFORMATION-PLEASE RUN SYSTEM SETUP PROGRAM — The system configuration information does not match the hardware configuration. The message is most likely to occur after a memory module is installed. Correct the appropriate options in the system setup program (see "System Setup Program").

KEYBOARD CLOCK LINE FAILURE — For external keyboards, check the cable connection. Run the Keyboard Controller test in the Dell Diagnostics (see ""Dell Diagnostics").

KEYBOARD CONTROLLER FAILURE — For external keyboards, check the cable connection. Restart the computer, and avoid touching the keyboard or the mouse during the boot routine. Run the Keyboard Controller test in the Dell Diagnostics (see "Dell Diagnostics").

KEYBOARD DATA LINE FAILURE — For external keyboards, check the cable connection. Run the Keyboard Controller test in the Dell Diagnostics (see "Dell Diagnostics").

KEYBOARD STUCK KEY FAILURE — For external keyboards or keypads, check the cable connection. Restart the

computer, and avoid touching the keyboard or keys during the boot routine. Run the Stuck Key test in the Dell Diagnostics (see "Dell Diagnostics").

MEMORY ADDRESS LINE FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE — A memory module may be faulty or improperly seated. Reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

MEMORY ALLOCATION ERROR — The software you are attempting to run is conflicting with the operating system, another program, or a utility. Shut down the computer, wait 30 seconds, and then restart it. Try to run the program again. If the error message still appears, see the software documentation.

MEMORY DATA LINE FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE — A memory module may be faulty or improperly seated. Reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

MEMORY DOUBLE WORD LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE — A memory module may be faulty or improperly seated. Reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

MEMORY ODD/EVEN LOGIC FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE — A memory module may be faulty or improperly seated. Reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

MEMORY WRITE/READ FAILURE AT ADDRESS, READ VALUE EXPECTING VALUE — A memory module may be faulty or improperly seated. Reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

NO BOOT DEVICE AVAILABLE — The computer cannot find the hard drive. If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device.

NO BOOT SECTOR ON HARD DRIVE — The operating system may be corrupted. Contact Dell Customer Support..

NO TIMER TICK INTERRUPT — A chip on the system board may be malfunctioning. Run the System Set tests in the Dell Diagnostics (see "Dell Diagnostics").

NOT ENOUGH MEMORY OR RESOURCES. EXIT SOME PROGRAMS AND TRY AGAIN — You have too many programs open. Close all windows and open the program that you want to use.

OPERATING SYSTEM NOT FOUND — Reinstall the hard drive (see "Drive Problems"). If the problem persists, contact Dell Customer Support.

OPTIONAL ROM BAD CHECKSUM — The optional ROM apparently failed. Contact Dell Customer Support.

A REQUIRED .DLL FILE WAS NOT FOUND — The program that you are trying to open is missing an essential file. Remove and then reinstall the program.

1. Click the **Start** button and click **Control Panel**.
2. Click **Add or Remove Programs**.
3. Select the program you want to remove.
4. Click **Remove** or **Change/Remove** and follow the prompts on the screen.
5. See the program documentation for installation instructions.

SECTOR NOT FOUND — The operating system cannot locate a sector on the hard drive. You may have a defective sector or corrupted FAT on the hard drive. Run the Windows error-checking utility to check the file structure on the hard drive. For instructions, access the Help and Support Center (click **Start→ Help and Support**). If a large number of sectors are defective, back up the data (if possible), and then reformat the hard drive.

SEEK ERROR — The operating system cannot find a specific track on the hard drive.

SHUTDOWN FAILURE — A chip on the system board may be malfunctioning. Run the System Set tests in the Dell Diagnostics (see "Dell Diagnostics").

TIME-OF-DAY CLOCK LOST POWER — System configuration settings are corrupted. Connect your computer to an electrical outlet to charge the battery. If the problem persists, try to restore the data by entering the system setup program. Then immediately exit the program. If the message reappears, contact Dell Customer Support.

TIME-OF-DAY CLOCK STOPPED — The reserve battery that supports the system configuration settings may require replacement. Contact Dell Customer Support.

TIME-OF-DAY NOT SET-PLEASE RUN THE SYSTEM SETUP PROGRAM — The time or date stored in the system setup program does not match the system clock. Correct the settings for the Date and Time options (see "System Setup Program").

TIMER CHIP COUNTER 2 FAILED — A chip on the system board may be malfunctioning. Run the System Set tests in

the Dell Diagnostics (see "Dell Diagnostics").

UNEXPECTED INTERRUPT IN PROTECTED MODE — The keyboard controller may be malfunctioning, or a memory module may be loose. Run the System Memory tests and the Keyboard Controller test in the Dell Diagnostics (see "Dell Diagnostics").

X:\ IS NOT ACCESSIBLE. THE DEVICE IS NOT READY — Insert a disk into the drive and try again.

WARNING: BATTERY IS CRITICALLY LOW — The battery is running out of charge. Replace the battery, or connect the computer to an electrical outlet. Otherwise, activate hibernate mode or shut down the computer.

11.6   IEEE 1394 Device Problems

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

ENSURE THAT THE IEEE 1394 DEVICE IS RECOGNIZED BY WINDOWS —
1. Click the **Start** button and click **Control Panel**.
2. Click **Printers and Other Hardware**.
    If your IEEE 1394 device is listed, Windows recognizes the device.

IF YOU HAVE PROBLEMS WITH AN IEEE 1394 DEVICE —
Contact the IEEE 1394 device manufacturer.

ENSURE THAT THE IEEE 1394 DEVICE IS PROPERLY INSERTED INTO THE CONNECTOR.

11.7   Keyboard Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

📝 **NOTE:** Use the integrated keyboard when running the Dell Diagnostics or the system setup program. When you attach an external keyboard, the integrated keyboard remains fully functional.

11.7.1   External Keyboard problems

📝 **NOTE:** When you attach an external keyboard, the integrated keyboard remains fully functional.

CHECK THE KEYBOARD CABLE — Shut down the computer. Disconnect the keyboard cable and check it for damage, and firmly reconnect the cable.

If you are using a keyboard extension cable, disconnect it and connect the keyboard directly to the computer.

CHECK THE EXTERNAL KEYBOARD —
1. Shut down the computer, wait 1 minute, and turn it on again.
2. Verify that the numbers, capitals, and scroll lock lights on the keyboard blink during the boot routine.
3. From the Windows desktop, click the **Start** button, point to **Programs**, point to **Accessories**, and click **Notepad**.
4. Type some characters on the external keyboard and verify that they appear on the display.

    If you cannot verify these steps, you may have a defective external keyboard.

TO VERIFY THAT THE PROBLEM IS WITH THE EXTERNAL KEYBOARD, CHECK THE INTEGRATED KEYBOARD —
1. Shut down the computer.
2. Disconnect the external keyboard.
3. Turn on the computer.
4. From the Windows desktop, click the **Start** button, point to **Programs**, point to **Accessories**, and click **Notepad**.
5. Type some characters on the internal keyboard and verify that they appear on the display.

    If the characters appear now but did not with the external keyboard, you may have a defective external keyboard. Contact Dell Customer Support.

RUN THE KEYBOARD DIAGNOSTICS TESTS — Run the PC-AT Compatible Keyboards tests in the Dell Diagnostics (see "Dell Diagnostics"). If the tests indicate a defective external keyboard, contact Dell Customer Support.

11.7.2   Unexpected characters

DISABLE THE NUMERIC KEYPAD — Press **<Num Lk>** to disable the numeric keypad if numbers are displayed instead of letters. Verify that the numbers lock light is not lit.

11.8   Lockups and Software Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

11.8.1   The computer does not start up

ENSURE THAT THE AC ADAPTER IS FIRMLY CONNECTED TO THE COMPUTER AND TO THE ELECTRICAL OUTLET.

11.8.2   The computer stops responding

⬤ **NOTICE:** You might lose data if you are unable to perform an operating system shutdown.

TURN THE COMPUTER OFF — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then restart your computer.

11.8.3   A program stops responding or crashes repeatedly

📝 **NOTE:** Software usually includes installation instructions in its documentation or on a floppy disk or CD.

END THE PROGRAM —
1. Press **<Ctrl><Shift><Esc>** simultaneously.
2. Click **Task Manager**.
3. Click the program that is no longer responding.
4. Click **End Task**.

CHECK THE SOFTWARE DOCUMENTATION — If necessary, uninstall and then reinstall the program.

11.8.4   A program is designed for an earlier Microsoft® Windows® operating system

RUN THE PROGRAM COMPATIBILITY WIZARD — The Program Compatibility Wizard configures a program so it runs in an environment similar to non-Windows operating system environments.

1. Click **Start→ All Programs→ Accessories→ Program Compatibility Wizard→ Next**.
2. Follow the instructions on the screen.

11.8.5   A solid blue screen appears

TURN THE COMPUTER OFF — If you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then restart your computer.

11.9   Other software problems

CHECK THE SOFTWARE DOCUMENTATION OR CONTACT THE SOFTWARE MANUFACTURER FOR TROUBLESHOOTING INFORMATION —

- Ensure that the program is compatible with the operating system installed on your computer.
- Ensure that your computer meets the minimum hardware requirements needed to run the software.

See the software documentation for information.
- Ensure that the program is installed and configured properly.
- Verify that the device drivers do not conflict with the program.
- If necessary, uninstall and then reinstall the program.

BACK UP YOUR FILES IMMEDIATELY.

USE A VIRUS-SCANNING PROGRAM TO CHECK THE HARD DRIVE, FLOPPY DISKS, OR CDS.

SAVE AND CLOSE ANY OPEN FILES OR PROGRAMS AND SHUT DOWN YOUR COMPUTER THROUGH THE Start MENU.

SCAN THE COMPUTER FOR SPYWARE — If you are experiencing slow computer performance, you frequently receive pop-up advertisements, or you are having problems connecting to the Internet, your computer might be infected with spyware. Use an anti-virus program that includes anti-spyware protection (your program may require an upgrade) to scan the computer and remove spyware.

RUN THE DELL DIAGNOSTICS — See "Dell Diagnostics". If all tests run successfully, the error condition is related to a software problem.

11.10   Memory Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

⊘ **NOTICE:** Your computer has one user-accessible SODIMM socket accessed from the bottom of the computer (DIMM B). DIMM B is also referred to as secondary memory. You can add or replace memory modules to the SODIMM sockets accessible from the bottom of the computer (DIMM B). However, you must not attempt to access the SODIMM socket located beneath the keyboard, DIMM A, without first contacting Dell Customer Support. DIMM A is also referred to as primary memory.

IF YOU RECEIVE AN INSUFFICIENT MEMORY MESSAGE —
- Save and close any open files and exit any open programs you are not using to see if that resolves the problem.
- See the software documentation for minimum memory requirements. If necessary, install additional memory (see "Memory").
- Reinstall the secondary memory modules (see "Memory") to ensure that your computer is successfully communicating with the memory. If this does not resolve the issue, contact Dell Customer Support.
- Run the Dell Diagnostics (see "Dell Diagnostics").

IF YOU EXPERIENCE OTHER MEMORY PROBLEMS —
- Reinstall the secondary memory modules (see "Memory") to ensure that your computer is successfully communicating with the memory. If this does not resolve the issue, contact Dell Customer Support.
- Ensure that you are following the memory installation guidelines (see "Memory").
- Run the Dell Diagnostics (see "Dell Diagnostics").

11.11   Network Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

11.11.1 General

CHECK THE NETWORK CABLE CONNECTOR — Ensure that the network cable is firmly inserted into both the network connector on the back of the computer and the network connector.

CHECK THE NETWORK LIGHTS ON THE NETWORK CONNECTOR — No light indicates that no network communication exists. Replace the network cable.

RESTART THE COMPUTER AND LOG ON TO THE NETWORK AGAIN.

CHECK YOUR NETWORK SETTINGS — Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.

11.11.2 Wireless Local Area Network (WLAN)

For information about troubleshooting wireless local area networks, see "Wireless Local Area Network".

11.11.3 Mobile Broadband (Wireless Wide Area Network)

NOTE: The Dell Mobile Broadband Card Utility user's guide is available through the Windows Help and Support Center. To access the Help and Support Center, click **Start→ Help and Support**.

NOTE: Remove any network cables from the computer and disable the WLAN card. To disable the WLAN card, click **Start→ Connect To→ Wireless Network Connection→ Disable**.

NOTE: The 📶 icon appears on the Windows desktop if the computer has a Dell Mobile Broadband card installed. Double-click the icon to launch the utility. Once the utility has launched, the icon appears in the notification area.

CANNOT CONNECT — The Dell Mobile Broadband Card must be activated on the network in order to connect. Once the Dell Mobile Broadband Card Utility has been launched, position the mouse over the icon in the taskbar to read the status of the connection. If the status indicates the mobile broadband card is not activated, see "Activate your Mobile Broadband card" for more information. If problems persist, contact your Mobile Broadband service carrier for details on your plan.

CHECK YOUR MOBILE BROADBAND NETWORK SERVICE — Contact your Mobile Broadband service carrier to verify coverage plan and supported services.

CHECK THE STATUS IN THE DELL MOBILE BROADBAND CARD UTILITY — Click the 📶 icon on the Windows desktop to launch the utility. Check the status in the main window:
*   No card detected – Restart the computer and launch the utility again.
*   Radio Off – Ensure the Mobile Broadband card is enabled by viewing the status in the Dell Mobile Broadband Card Utility. If the card is disabled, enable the Mobile Broadband card by clicking the **Turn Radio On** button in the main screen of the Dell Mobile Broadband Card Utility.
*   Searching – The Dell Mobile Broadband Card Utility has not yet located a Mobile Broadband network. If the searching state persists, ensure that the signal strength is adequate.
*   No service – The Dell Mobile Broadband Card Utility did not locate a Mobile Broadband network. Ensure that the signal strength is adequate. Restart the Dell wireless utility or contact your Mobile Broadband network provider.
*   Check your Mobile Broadband Network Service – Contact your Mobile Broadband network service provider to verify coverage plan and supported services.

ACTIVATE YOUR MOBILE BROADBAND CARD — Before you connect to the Internet, you must activate the Mobile Broadband service through your cellular service provider. For instructions and for additional information about using the Dell Mobile Broadband Card Utility, see the user's guide available through the Windows Help and Support Center (click **Start→ Help and Support**). The user's guide is also available on the media included with your Mobile Broadband card if you purchased the card separately from your computer.

11.12 PC Card Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

CHECK THE CARD — Ensure that the card is properly inserted into the connector.

ENSURE THAT THE CARD IS RECOGNIZED BY WINDOWS — Double-click the **Safely Remove Hardware** icon in the Windows taskbar. Ensure that the card is listed.

IF YOU HAVE PROBLEMS WITH AN DELL-PROVIDED CARD — Contact Dell Customer Support.

IF YOU HAVE PROBLEMS WITH A CARD NOT PROVIDED BY DELL — Contact the card manufacturer.

11.13 Power Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

CHECK THE POWER LIGHT — When the power light is lit or blinking, the computer has power. If the power light is blinking, the computer is in standby mode—press the power button to exit standby mode. If the light is off, press the

power button to turn on the computer.

CHARGE THE BATTERY — The battery charge may be depleted.
1. Reinstall the battery.
2. Use the AC adapter to connect the computer to an electrical outlet.
3. Turn on the computer.

NOTE: Battery operating time (the time the battery can hold a charge) decreases over time. Depending on how often the battery is used and the conditions under which it is used, you may need to purchase a new battery during the life of your computer.

CHECK THE BATTERY STATUS LIGHT — If the battery status light flashes orange or is a steady orange the battery charge is low or depleted. Connect the computer to an electrical outlet.

If the battery status light flashes green and orange, the battery is too hot to charge. Shut down the computer, disconnect the computer from the electrical outlet, and then let the battery and computer cool to room temperature.

If the battery status light rapidly flashes orange, the battery may be defective. Contact Dell Customer Support.

CHECK THE BATTERY TEMPERATURE — If the battery temperature is below 0° C (32° F), the computer may not startup. If this occurs, connect your computer to AC or DC approved power and the system will start up if within the operating specification range. See "Specifications".

TEST THE ELECTRICAL OUTLET — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

CHECK THE AC ADAPTER — Check the AC adapter cable connections. If the AC adapter has a light, ensure that the light is on.

CONNECT THE COMPUTER DIRECTLY TO AN ELECTRICAL OUTLET — Bypass power protection devices, power strips, and the extension cable to verify that the computer turns on.

ELIMINATE POSSIBLE INTERFERENCE — Turn off nearby fans, fluorescent lights, halogen lamps, or other appliances.

ADJUST THE POWER PROPERTIES — See "Configuring Power Management Settings".

RESEAT THE MEMORY MODULES — If the computer power light turns on but the display remains blank, reinstall the secondary memory modules (see "Memory"). If this does not resolve the issue, contact Dell Customer Support.

11.13.1 Ensuring Sufficient Power for Your Computer

Your computer is designed to use a 65-W or higher AC adapter.

Using AC adapters that are less-powerful than 65 W will cause you to receive a WARNING message.

11.13.2 Docking Power Considerations

Due to the extra power consumption when a computer is docked to an approved docking device, normal computer operation is not possible on battery power alone. Ensure that the AC adapter is connected to your computer when the computer is docked via the Desk Dock Adapter to the Dell D/Dock or D/Port, or approved in-vehicle DC power is connected to the Mobile Dock (MD) when installed in a vehicle.

11.13.3 Docking While the Computer Is Running

If a computer is connected to an approved docking device while the computer is running, presence of the docking device is ignored until the AC adapter is connected to the computer.

11.13.4 AC Power Loss While the Computer Is Docked

If a computer loses AC power while docked, the computer immediately goes into low-performance mode.

11.14 Printer Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

NOTE: If you need technical assistance for your printer, contact the printer's manufacturer.

ENSURE THAT THE PRINTER IS TURNED ON.

CHECK THE PRINTER CABLE CONNECTIONS —
*   See the printer documentation for cable connection information.
*   Ensure that the printer cables are securely connected to the printer and the computer.

TEST THE ELECTRICAL OUTLET — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

VERIFY THAT THE PRINTER IS RECOGNIZED BY WINDOWS —
1. Click the **Start** button, click **Control Panel**, and then click **Printers and Other Hardware**.
2. Click **View installed printers or fax printers**.
    If the printer is listed, right-click the printer icon.
3. Click **Properties** and click the **Ports** tab. For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

REINSTALL THE PRINTER DRIVER — See the printer documentation for instructions.

11.15   Scanner Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

📝 **NOTE:** If you need technical assistance for your scanner, contact the scanner's manufacturer.

CHECK THE SCANNER DOCUMENTATION — See the scanner documentation for setup and troubleshooting information.

UNLOCK THE SCANNER — Ensure that your scanner is unlocked if it has a locking tab or button.

RESTART THE COMPUTER AND TRY THE SCANNER AGAIN.

CHECK THE CABLE CONNECTIONS —
*   See the scanner documentation for cable connection information.
*   Ensure that the scanner cables are securely connected to the scanner and the computer.

VERIFY THAT THE SCANNER IS RECOGNIZED BY MICROSOFT WINDOWS —
1. Click **Start→ Control Panel→ Printers and Other Hardware**.
2. Click **Scanners and Cameras**.
    If your scanner is listed, Windows recognizes the scanner.

REINSTALL THE SCANNER DRIVER — See the scanner documentation for instructions.

11.16   Sound and Speaker Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

11.16.1 No Sound From Integrated Speakers

ADJUST THE WINDOWS VOLUME CONTROL — Double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted. Adjust the volume, bass, or treble controls to eliminate distortion.

ADJUST THE VOLUME USING KEYBOARD SHORTCUTS — Press **<Fn><End>** to disable (mute) or reenable the integrated speakers.

REINSTALL THE SOUND (AUDIO) DRIVER — See "Reinstalling Drivers and Utilities".

11.16.2 No Sound From External Speakers

ENSURE THAT THE SUBWOOFER AND THE SPEAKERS ARE TURNED ON — See the setup diagram supplied with the

speakers. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate distortion.

ADJUST THE WINDOWS VOLUME CONTROL — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

DISCONNECT HEADPHONES FROM THE HEADPHONE CONNECTOR — Sound from the speakers is automatically disabled when headphones are connected to the computer's headphone connector.

TEST THE ELECTRICAL OUTLET — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

ELIMINATE POSSIBLE INTERFERENCE — Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.

REINSTALL THE AUDIO DRIVER — See "Reinstalling Drivers and Utilities".

RUN THE DELL DIAGNOSTICS — See "Dell Diagnostics".

> **NOTE:** The volume control in some MP3 players overrides the Windows volume setting. If you have been listening to MP3 songs, ensure that you did not turn the player volume down or off.

11.16.3 No Sound From Headphones

CHECK THE HEADPHONE CABLE CONNECTION — Ensure that the headphone cable is securely inserted into the headphone connector.

ADJUST THE WINDOWS VOLUME CONTROL — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

11.17 Touch Pad or Mouse Problems

CHECK THE TOUCH PAD SETTINGS —
1. Click the **Start** button, click **Control Panel**, and then click **Printers and Other Hardware**.
2. Click **Mouse**.
3. Try adjusting the settings.

CHECK THE MOUSE CABLE — Shut down the computer. Disconnect the mouse cable, check it for damage, and firmly reconnect the cable.

If you are using a mouse extension cable, disconnect it and connect the mouse directly to the computer.

TO VERIFY THAT THE PROBLEM IS WITH THE MOUSE, CHECK THE TOUCH PAD —
1. Shut down the computer.
2. Disconnect the mouse.
3. Turn on the computer.
4. At the Windows desktop, use the touch pad to move the cursor around, select an icon, and open it.
   If the touch pad operates correctly, the mouse may be defective.

CHECK THE SYSTEM SETUP PROGRAM SETTINGS — Verify that the system setup program lists the correct device for the pointing device option. (The computer automatically recognizes a USB mouse without making any setting adjustments.)

TEST THE MOUSE CONTROLLER — To test the mouse controller (which affects pointer movement) and the operation of the touch pad or mouse buttons, run the Mouse test in the **Pointing Devices** test group in the Dell Diagnostics (see "Dell Diagnostics").

REINSTALL THE TOUCH PAD DRIVER — See "Reinstalling Drivers and Utilities".

11.18 Video and Display Problems

Fill out the Diagnostics Checklist (see "Diagnostics Checklist") as you complete these checks.

> ⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

11.18.1 If the Display is Blank

📝 **NOTE:** If you are using a program that requires a higher resolution than your computer supports, it is recommended that you attach an external monitor to your computer.

CHECK THE BATTERY — If you are using a battery to power your computer, the battery charge may be depleted. Connect the computer to an electrical outlet using the AC adapter, and turn on the computer.

TEST THE ELECTRICAL OUTLET — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

CHECK THE AC ADAPTER — Check the AC adapter cable connections. If the AC adapter has a light, ensure that the light is on.

CONNECT THE COMPUTER DIRECTLY TO AN ELECTRICAL OUTLET — Bypass power protection devices, power strips, and the extension cable to verify that the computer turns on.

ADJUST THE POWER PROPERTIES — Search for the keyword standby in the Windows Help and Support Center (click **Start→ Help and Support**).

SWITCH THE VIDEO IMAGE — If your computer is attached to an external monitor, press **<Fn><F8>** to switch the video image to the display.

11.18.2 If the Display is Difficult to Read

ADJUST THE BRIGHTNESS — Press **<Fn>** and the up- or down-arrow key

MOVE THE EXTERNAL SUBWOOFER AWAY FROM THE COMPUTER OR MONITOR — If your external speaker system includes a subwoofer, ensure that the subwoofer is at least 60 cm (2 ft) away from the computer or external monitor.

ELIMINATE POSSIBLE INTERFERENCE — Turn off nearby fans, fluorescent lights, halogen lamps, or other appliances.

ROTATE THE COMPUTER TO FACE A DIFFERENT DIRECTION — Eliminate sunlight glare, which can cause poor picture quality.

ADJUST THE WINDOWS DISPLAY SETTINGS —
1. Click the **Start** button and then click **Control Panel**.
2. Click **Appearance and Themes**.
3. Click the area you want to change or click the **Display** icon.
4. Try different settings for **Color quality** and **Screen resolution**.

RUN THE VIDEO DIAGNOSTICS TESTS — If no error message appears and you still have a display problem, but the display is not completely blank, run the **Video** device group in the Dell Diagnostics. If the problem persists, contact Dell Customer Support.

SEE "ERROR MESSAGES" — If an error message appears, see "Error Messages".

11.18.3 If Only Part of the Display is Readable

CONNECT AN EXTERNAL MONITOR —
1. Shut down your computer and connect an external monitor to the computer.
2. Turn on the computer and the monitor and adjust the monitor brightness and contrast controls.

If the external monitor works, the computer display or video controller may be defective. Contact Dell Customer Support.

12 System Setup Program

12.1   Overview

📝 **NOTE:** Your operating system may automatically configure most of the options available in the system setup program, thus overriding options that you set through the system setup program. (An exception is the **External Hot Key** option, which you can disable or enable only through the system setup program.) For more information on configuring features for your operating system, access the Help and Support Center (click **Start→ Help and Support**).

You can use the system setup program as follows:
- To set or change user-selectable features—for example, your computer password

- To verify information about the computer's current configuration, such as the amount of system memory

After you set up the computer, run the system setup program to familiarize yourself with your system configuration information and optional settings. You may want to write down the information for future reference.

The system setup screens display the current setup information and settings for your computer, such as:
- System configuration
- Boot order
- Boot (start-up) configuration and docking-device configuration settings
- Basic device-configuration settings
- System security and hard-drive password settings

NOTE: Unless you are an expert computer user or are directed to do so by Dell technical support, do not change the system setup settings. Certain changes might make your computer work incorrectly.

12.2 Viewing the System Setup Screens

1. Turn on (or restart) your computer.
2. When the DELL™ logo appears, press **<F2>** immediately. If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer and try again.

12.3 System Setup Screens

NOTE: For information about a specific item on a system setup screen, highlight the item and see the Help area on the screen.

On each screen, the system setup options are listed at the left. To the right of each option is the setting or value for that option. You can change settings that appear as white type on the screen. Options or values that you cannot change (because they are determined by the computer) appear less bright.

The upper-right corner of the screen displays help information for the currently highlighted option; the lower-right corner displays information about the computer. System-setup key functions are listed across the bottom of the screen.

12.4 Commonly Used Options

Certain options require that you reboot the computer for new settings to take effect.

12.4.1 Changing the Boot Sequence

The boot sequence, or *boot order*, tells the computer where to look to find the software needed to start the operating system. You can control the boot sequence and enable/disable devices using the **Boot Order** page of the system setup program.

NOTE: To change the boot sequence on a one-time-only basis, see "Performing a One-Time Boot".

The **Boot Order** page displays a general list of the bootable devices that may be installed in your computer, including but not limited to the following:
- Diskette Drive
- Modular bay HDD
- Internal HDD
- Optical Drive

During the boot routine, the computer starts at the top of the list and scans each enabled device for the operating system start-up files. When the computer finds the files, it stops searching and starts the operating system.

To control the boot devices, select (highlight) a device by pressing the down-arrow or up-arrow key, and then enable or disable the device or change its order in the list.
- To enable or disable a device, highlight the item and press the space bar. Enabled items appear as white and display a small triangle to the left; disabled items appear blue or dimmed without a triangle.
- To reorder a device in the list, highlight the device and then press **<u>** or **<d>** (not case-sensitive) to move the highlighted device up or down.

Boot sequence changes take effect as soon as you save the changes and exit the system setup program.

12.4.2   Performing a One-Time Boot

You can set a one-time-only boot sequence without entering the system setup program. (You can also use this procedure to boot the Dell Diagnostics on the diagnostics utility partition on your hard drive.)

1. Shut down the computer through the **Start** menu.
2. If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.
3. Connect the computer to an electrical outlet.
4. Turn on the computer. When the DELL logo appears, press **<F12>** immediately.
   If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then shut down your computer and try again.
5. When the boot device list appears, highlight the device from which you want to boot and press **<Enter>**.
   The computer boots to the selected device.

The next time you reboot the computer, the previous boot order is restored.

12.4.3   Changing Printer Modes

Set the **Parallel Mode** option according to the type of printer or device connected to the parallel connector. To determine the correct mode to use, see the documentation that came with the device.

Setting **Parallel Mode** to **Disabled** disables the parallel port and the port's LPT address, which frees computer resources for another device to use.

12.4.4   Changing COM Ports

Serial Port allows you to map the serial port COM address or disable the serial port and its address, which frees computer resources for another device to use.

13 Reinstalling Software

13.1   Drivers

13.1.1   What Is a Driver?

A driver is a program that controls a device such as a printer, mouse, or keyboard. All devices require a driver program.

A driver acts like a translator between the device and any other programs that use the device. Each device has its own set of specialized commands that only its driver recognizes.

Dell ships your computer to you with required drivers already installed—no further installation or configuration is needed.

🚫 **NOTICE:** The *Drivers and Utilities* media may contain drivers for operating systems that are not on your computer. Ensure that you are installing software appropriate for your operating system.

Many drivers, such as the keyboard driver, come with your Microsoft Windows operating system. You may need to install drivers if you:
- Upgrade your operating system.
- Reinstall your operating system.
- Connect or install a new device.

13.1.2   Identifying Drivers

If you experience a problem with any device, identify whether the driver is the source of your problem and, if necessary, update the driver.

Microsoft® Windows® XP
1. Click **Start→ Control Panel**.
2. Under **Pick a Category**, click **Performance and Maintenance**, and click **System**.
3. In the **System Properties** window, click the **Hardware** tab, and click **Device Manager**.

Microsoft Windows Vista™
1. Click the Windows Vista start button, , and right-click **Computer**.
2. Click **Properties→ Device Manager**.

Scroll down the list to see if any device has an exclamation point (a yellow circle with a "!") on the device icon.

If an exclamation point is next to the device name, you may need to reinstall the driver or install a new driver (see "Reinstalling Drivers and Utilities").

13.1.3   Reinstalling Drivers and Utilities

NOTICE: The *Drivers and Utilities* media provides approved drivers for Dell computers. If you install drivers obtained from other sources, your computer might not work correctly.

Installing Drivers in the Correct Order
Microsoft Windows XP (with service pack 2 and later) does not require a system driver installation order. However, the following order preference works best.

NOTE: The list below is a general overview of Dell portable systems. Actual system configurations may vary.

- **Notebook System Software (NSS)** - A compilation of critical Microsoft updates.
- **Intel Chipset** - Helps Windows control system board components and controllers.
- **Video Card** - Enhances video performance.
- **Network Interface Card (NIC)** - Enables and enhances the network controller.
- **Sound Card** - Enables and enhances the audio controller.
- **Modem** - Enables and enhances the modem.
- **Wireless Network Card** - Enables and enhances the wireless network controller.
- **Bluetooth® Module** - Enables and enhances the Bluetooth controller.
- **PCMCIA/Smartcard controller** - Enables and enhances the PCMCIA/SmartCard controller.
- **Touch Pad/Track Stick/Pointer** - Enhances the pointing device features.
- **Other** - Other devices and peripherals such as printers and digital cameras that are connected to the computer.

Using Windows Device Driver Rollback
If a problem occurs on your computer after you install or update a driver, use Windows Device Driver Rollback to replace the driver with the previously installed version.

Microsoft Windows XP
1. Click **Start→ My Computer→ Properties→ Hardware→ Device Manager**.
2. Right-click the device for which the new driver was installed and click **Properties**.
3. Click the **Drivers** tab→ **Roll Back Driver**.

Microsoft Windows Vista
1. Click the Windows Vista start button, , and right-click **Computer**.
2. Click **Properties→ Device Manager**.

NOTE: The **User Account Control** window may appear. If you are an administrator on the computer, click **Continue**; otherwise, contact your administrator to enter the Device Manager.

3. Right-click the device for which the new driver was installed and click **Properties**.
4. Click the **Drivers** tab→ **Roll Back Driver**.

If Device Driver Rollback does not resolve the problem, then use System Restore (see "Restoring Your Operating System") to return your computer to the operating state that existed before you installed the new driver.

Using the Drivers and Utilities Media
If using Device Driver Rollback or System Restore (see "Restoring Your Operating System") does not resolve the problem, then reinstall the driver from the *Drivers and Utilities* media.

1. Save and close any open files, and exit any open programs.
2. Insert the *Drivers and Utilities* CD.

    In most cases, the media starts running automatically. If it does not, start Windows Explorer, click your media drive directory to display the media contents, and then double-click the **autorcd.exe** file. The first time that you run the CD, it might prompt you to install setup files. Click **OK** and follow the instructions on the screen to continue.

3. From the **Language** drop-down menu in the toolbar, select your preferred language for the driver or utility (if available).

4. At the welcome screen, click **Next** and wait for the media to complete the hardware scan.
5. To detect other drivers and utilities, under **Search Criteria**, select the appropriate categories from the **System Model**, **Operating System**, and **Topic** drop-down menus.

A link or links appear(s) for the specific drivers and utilities used by your computer.

6. Click the link of a specific driver or utility to display information about the driver or utility that you want to install.
7. Click the **Install** button (if present) to begin installing the driver or utility. At the welcome screen, follow the screen prompts to complete the installation.

If no **Install** button is present, automatic installation is not an option. For installation instructions, either see the appropriate instructions in the following subsections, or click **Extract**, follow the extracting instructions, and then read the readme file.

If instructed to navigate to the driver files, click the media directory on the driver information window to display the files associated with the driver.

Manually Reinstalling Drivers

NOTE: After extracting the driver files to your hard drive as described in the previous section, reinstall the drivers.

Microsoft Windows XP

1. Click **Start→ My Computer→ Properties→ Hardware→ Device Manager**.
2. Double-click the type of device for which you are installing the driver (for example, **Audio** or **Video**).
3. Double-click the name of the device for which you are installing the driver.
4. Click the **Driver** tab→ **Update Driver**.
5. Click **Install from a list or specific location (Advanced)→ Next**.
6. Click **Browse** and browse to the location to which you previously copied the driver files.
7. When the name of the appropriate driver appears, click **Next**.
8. Click **Finish** and restart your computer.

Microsoft Windows Vista

1. Click the Windows Vista start button, [image], and right-click **Computer**.
2. Click **Properties→ Device Manager**.

NOTE: The **User Account Control** window may appear. If you are an administrator on the computer, click **Continue**; otherwise, contact your administrator to enter the Device Manager.

3. Double-click the type of device for which you are installing the driver (for example, **Audio** or **Video**).
4. Double-click the name of the device for which you are installing the driver.
5. Click the **Driver** tab→ **Update Driver→ Browse my computer for driver software**.
6. Click **Browse** and browse to the location to which you previously copied the driver files.
7. When the name of the appropriate driver appears, click the name of the driver→ **OK→ Next**.
8. Click **Finish** and restart your computer.

13.2   Using the Hardware Troubleshooter Tool

If a device is either not detected during the operating system setup or is detected but incorrectly configured, you can use the Hardware Troubleshooter to resolve the incompatibility.

Microsoft Windows XP

1. Click **Start→ Help and Support**.
2. Type 'hardware troubleshooter' in the search field and press **<Enter>** to start the search.
3. In the **Fix a Problem** section, click **Hardware Troubleshooter**.
4. In the **Hardware Troubleshooter** list, select the option that best describes the problem and click **Next** to follow the remaining troubleshooting steps.

Microsoft Windows Vista

1. Click the Windows Vista start button, [image] , and click **Help and Support**.
2. Type hardware troubleshooter in the search field and press **<Enter>** to start the search.
3. In the search results, select the option that best describes the problem and follow the remaining troubleshooting steps.

13.3   Restoring Your Operating System

You can restore your operating system in the following ways:
- Microsoft Windows XP System Restore and Microsoft Windows Vista System Restore return your computer to an earlier operating state without affecting data files. Use System Restore as the first solution for restoring your

operating system and preserving data files.

- If you received an *Operating System* CD with your computer, you can use it to restore your operating system. However, using the *Operating System* CD also deletes all data on the hard drive. Use the media *only* if System Restore did not resolve your operating system problem.

13.3.1   Using Microsoft® Windows® System Restore

The Windows operating systems provide a System Restore option which allows you to return your computer to an earlier operating state (without affecting data files) if changes to the hardware, software, or other system settings have left the computer in an undesirable operating state. Any changes that System Restore makes to your computer are completely reversible.

⊙ **NOTICE:** Make regular backups of your data files. System Restore does not monitor your data files or recover them.

✎ **NOTE:** The procedures in this document were written for the Windows default view, so they may not apply if you set your Dell computer to the **Windows Classic** view.

Starting System Restore

⊙ **NOTICE:** Before you restore the computer to an earlier operating state, save and close any open files and exit any open programs. Do not alter, open, or delete any files or programs until the system restoration is complete.

Microsoft Windows XP
1. Click **Start→ All Programs→ Accessories→ System Tools→ System Restore**.
2. Click either **Restore my computer to an earlier time** or **Create a restore point**.
3. Click **Next** and follow the remaining on-screen prompts.

Microsoft Windows Vista
1. Click the Windows Vista Start button, 🔘, and click **Help and Support**.
2. In the search box, type **System Restore** and press **<Enter>**.

✎ **NOTE:** The **User Account Control** window may appear. If you are an administrator on the computer, click **Continue**; otherwise, contact your administrator to continue the desired action.

3. Click **Next** and follow the remaining prompts on the screen.

In the event that System Restore did not resolve the issue, you may undo the last system restore.

13.3.2   Undoing the Last System Restore

⊙ **NOTICE:** Before you undo the last system restore, save and close all open files and exit any open programs. Do not alter, open, or delete any files or programs until the system restoration is complete.

Microsoft Windows XP
1. Click **Start→ All Programs→ Accessories→ System Tools→ System Restore**.
2. Click **Undo my last restoration** and click **Next**.

Microsoft Windows Vista
1. Click the Windows Vista Start button, 🔘, and click **Help and Support**.
2. In the search box, type **System Restore** and press **<Enter>**.
3. Click **Undo my last restoration** and click **Next**.

13.3.3   Enabling System Restore

✎ **NOTE:** Windows Vista does not disable System Restore regardless of low disk space. Therefore, the steps below apply only to Windows XP.

If you reinstall Windows XP with less than 200 MB of free hard-disk space available, System Restore is automatically disabled.

To see if System Restore is enabled:
1. Click **Start→ Control Panel→ Performance and Maintenance→ System**.

2. Click the **System Restore** tab and ensure that **Turn off System Restore** is unchecked.

13.3.4 Using the Operating System Media

13.3.4.1 Before You Begin

If you are considering reinstalling the Windows operating system to correct a problem with a newly installed driver, first try using Windows Device Driver Rollback (see "Using Windows Device Driver Rollback" in "Reinstalling Drivers and Utilities"). If Device Driver Rollback does not resolve the problem, then use "System Restore" to return your operating system to the operating state it was in before you installed the new device driver (see "Using Microsoft® Windows® System Restore").

🚫 **NOTICE:** Before performing the installation, back up all data files on your primary hard drive. For conventional hard drive configurations, the primary hard drive is the first drive detected by the computer.

To reinstall Windows, you need the following items:
- Dell™ *Operating System* CD
- Dell *Drivers and Utilities* CD

✎ **NOTE:** The Dell *Drivers and Utilities* media contains drivers that were installed during the assembly of the computer. Use the Dell *Drivers and Utilities* media to load any required drivers. Depending on the region from which you ordered your computer, or whether you requested the media, the Dell *Drivers and Utilities* media and *Operating System* media may not ship with your computer.

13.3.4.2 Reinstalling Windows

The reinstallation process can take 1 to 2 hours to complete. After you reinstall the operating system, you must also reinstall the device drivers, virus protection program, and other software.

🚫 **NOTICE:** The *Operating System* media provides options for reinstalling Windows XP. The options can overwrite files and possibly affect programs that are installed on your hard drive. Therefore, do not reinstall Windows XP unless a Dell technical support representative instructs you to do so.

1. Save and close any open files and exit any open programs.
2. Insert the *Operating System* media.
3. Click **Exit** if the Install Windows message appears.
4. Restart the computer.

   When the DELL logo appears, press **<F12>** immediately.

✎ **NOTE:** If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft® Windows® desktop; then, shut down your computer and try again.

✎ **NOTE:** The next steps change the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in the system setup program.

5. When the boot device list appears, highlight **CD/DVD/CD-RW Drive** and press **<Enter>**.
6. Press any key to **Boot from CD-ROM**.
7. Follow the instructions on the screen to complete the installation.

14 Adding and Replacing Parts

14.1 Before You Begin

This chapter provides procedures for removing and installing the components in your computer.
Unless otherwise noted, each procedure assumes that the following conditions exist:

- You have performed the steps in "Turning Off Your Computer" and "Before Working Inside Your Computer".
- You have read the safety information in the "Safety Information" section.
- A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.

14.1.1 Recommended Tools

The procedures in this document may require the following tools:
- Small flat-blade screwdriver
- Small Phillips screwdriver

14.1.2   Turning Off Your Computer

⬤ **NOTICE:** To avoid losing data, save and close any open files and exit any open programs before you turn off your computer.

1. Shut down the operating system:
   a. Save and close any open files, exit any open programs, click **Start**→ **Shut Down**→ **Shut down**→ **OK**. The computer turns off after the operating system shutdown process finishes.

2. Ensure that the computer and any attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for 4 seconds.

14.1.3   Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help ensure your own personal safety.

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

⚠ **CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket.**

⬤ **NOTICE:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

⬤ **NOTICE:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

⬤ **NOTICE:** To avoid damaging the computer, perform the following steps before you begin working inside the computer.

1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see "Turning Off Your Computer").
3. If the computer is connected to a docking device (docked), undock it. See the documentation that came with your docking device for instructions.

⬤ **NOTICE:** To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall connector.

4. Disconnect any telephone or network cables from the computer.
5. Close the display and turn the computer upside down on a flat work surface.

⬤ **NOTICE:** To avoid damaging the system board, you must remove the main battery before you service the computer.

6. Remove any installed modules, including a second battery, if installed (see "XBay").
7. Disconnect your computer and all attached devices from their electrical outlets.
8. Remove the battery (see "Replacing the Battery").
9. Press the power button to ground the system board.
10. Remove the computer stand, if it is attached.

⚠ **CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.**

⬤ **NOTICE:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

11. Remove any installed PC Cards from the PC Card slot (see "Removing a Card or Blank").

14.2   Memory

You can increase your computer memory by installing memory modules on the system board. See "Specifications" for information on the memory supported by your computer. Install only memory modules that are intended for your computer.

⚠️ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety Information section of this manual.**

⛔ **NOTICE:** If you remove your original memory modules from the computer during a memory upgrade, keep them separate from any new modules that you may have, even if you purchased the new modules from Dell. If possible, do not pair an original memory module with a new memory module. Otherwise, your computer may not function at optimal performance.

📝 **NOTE:** Memory modules purchased from Dell are covered under your computer warranty.

⛔ **NOTICE:** Your computer has one user-accessible SODIMM socket accessed from the bottom of the computer (DIMM B). DIMM B is also referred to as secondary memory. You can add or replace memory modules to the SODIMM sockets accessible from the bottom of the computer (DIMM B). However, you must not attempt to access the SODIMM socket located beneath the keyboard, DIMM A, without first contacting Dell Customer Support. DIMM A is also referred to as primary memory.

To add or replace a memory module in the DIMM B connector:

⛔ **NOTICE:** Insert memory modules at a 45-degree angle to avoid damaging the connector.

1. Follow the procedures in "Before You Begin".
2. Turn the computer bottom-side up, remove the 4 screws that secure the memory module cover, and then remove the cover.

Figure 14 1 Memory Module Cover Removal
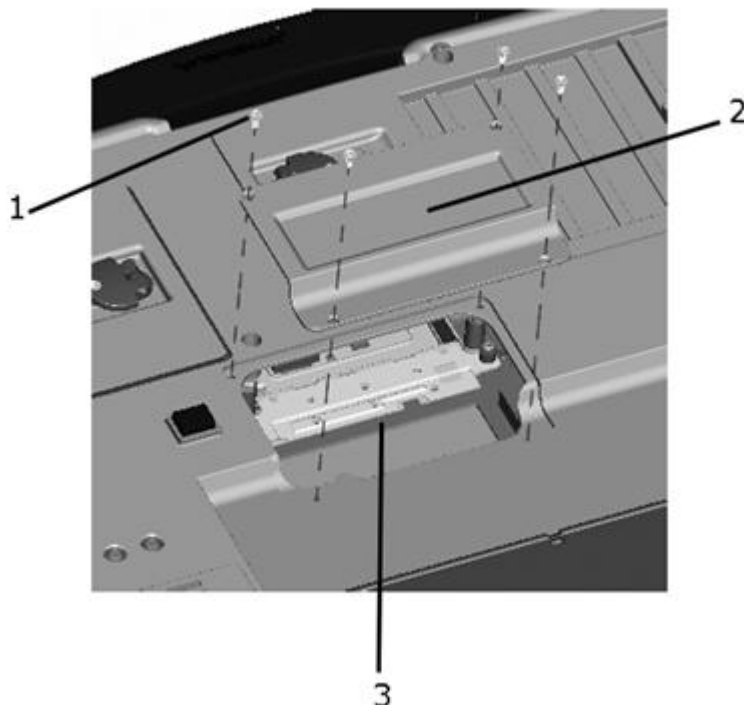
1	Screws (4)	2	Memory module cover	3	Memory module compartment

⛔ **NOTICE:** To prevent damage to the memory module connector, do not use tools to spread the memory-module securing clips.

3. If you are replacing a memory module, ground yourself and remove the existing module:

a. Use your fingertips to carefully spread apart the securing clips on each end of the memory module connector until the module pops up.
b. Remove the module from the connector.
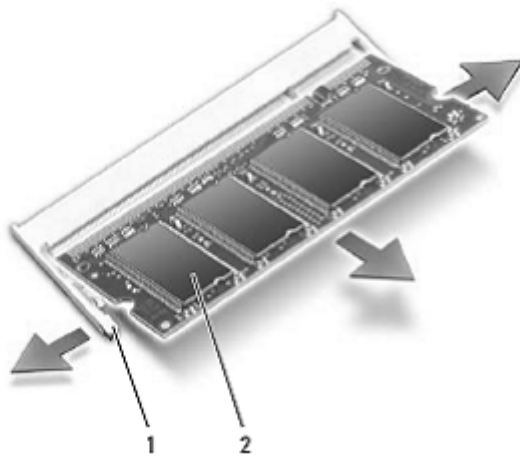
1	Securing clips (2 per connector)	2	Memory module

NOTICE: Insert memory modules at a 45-degree angle to avoid damaging the connector.

4. Ground yourself and install the new memory module:

NOTE: If the memory module is not installed properly, the computer may not boot properly. No error message indicates this failure.

a. Align the notch in the module edge connector with the tab in the connector slot.
b. Slide the module firmly into the slot at a 45-degree angle, and rotate the module down until it clicks into place. If you do not feel the click, remove the module and reinstall it.
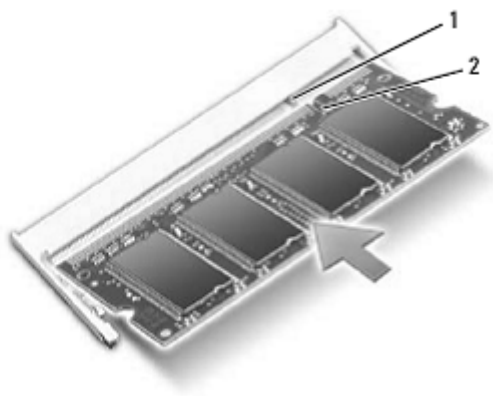
1	Tab	2	Notch

5. Replace the cover.

NOTICE: If the cover is difficult to close, remove the module and reinstall it. Forcing the cover to close may damage your computer.

6. Insert the battery into the battery bay, or connect the AC adapter to your computer and an electrical outlet.

7. Turn on the computer.

As the computer boots, it detects the additional memory and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer, click **Start→ Help and Support**, and then click **Computer Information**.

8. Replace the memory module cover.

14.3   Subscriber Identity Module (SIM) Card

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the <u>Safety Information</u> section of this manual.**

📝 **NOTE:** Only Cingular and Vodafone need a SIM card. Verizon, Sprint, and Telus do not use a SIM.

1. Remove the battery (see "<u>Replacing the Battery</u>").
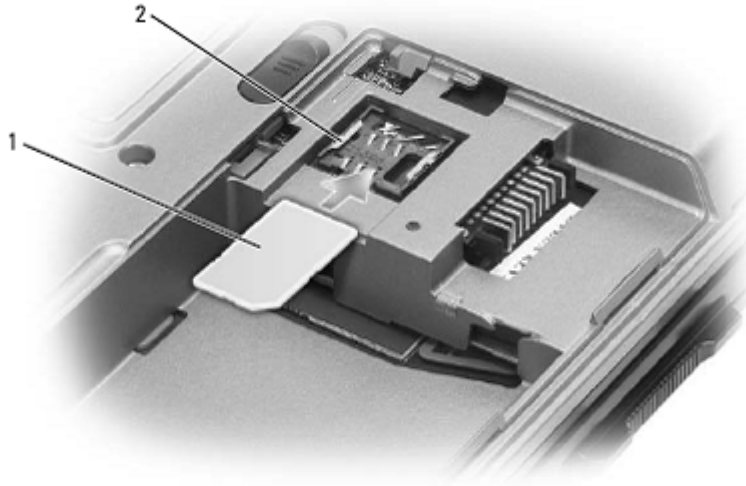
| 1 | SIM card | 2 | metal brackets (2) |

⊘ **NOTICE:** Do not touch the SIM card connectors to protect the card from electrostatic discharge (ESD). To prevent ESD, hold the card in your hand before you insert or remove the card.

2. With the cut-off corner on the card facing away from the card slot, insert the SIM card into the slot so that it slides under the metal tabs on the sides.

14.4   Hard Drive

📝 **NOTE:** You need the *Operating System* CD to install the Microsoft® Windows® operating system. You also need the *Drivers and Utilities* CD for your computer to install the drivers and utilities on the new hard drive.

⚠ **CAUTION: If you remove the hard drive from the computer when the drive is hot, *do not touch* the metal housing of the hard drive.**

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the <u>Safety Information</u> section of this manual.**

⚠ **CAUTION: Before performing these procedures, to prevent data loss, turn off the computer. Do not remove the hard drive while the computer is on, in standby mode, or in hibernate mode. Disconnect the AC adapter from the electrical outlet and the computer, disconnect the modem from the wall connector and computer, remove the battery (see "<u>Removing the Battery</u>") and remove any other external cables from the computer.**

⊘ **NOTICE:** Hard drives are extremely fragile; even a slight bump can damage the drive.

📝 **NOTE:** Dell does not guarantee compatibility or provide support for hard drives from sources other than Dell.

To replace the hard drive in the hard disk drive compartment:

1. Follow the procedures in "<u>Before You Begin</u>".

Figure 14 2 Accessing the Hard Disk Drive Compartment
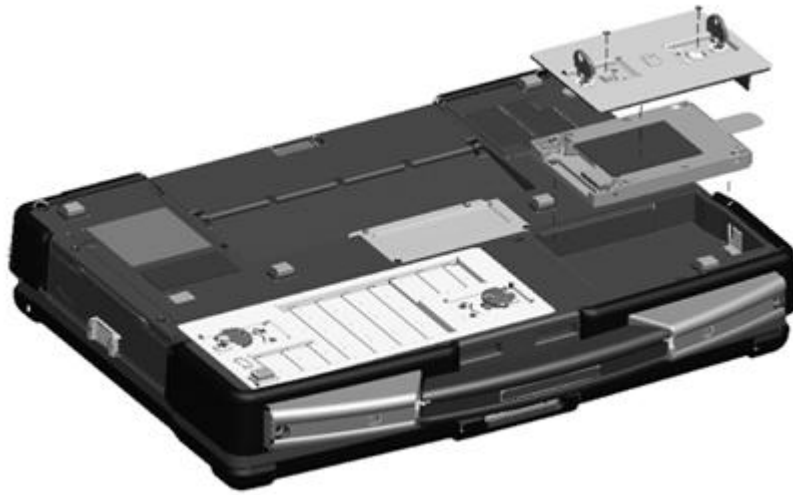
2. See "<u>Bottom View</u>" for the location of the hard disk drive compartment. If the 2 optional screws that secure the quarter-turn latches are installed, remove the 2 screws on the latches on the hard disk drive compartment using a #1 Philips screw driver. If the 2 security screws are not installed, proceed to step 3.

3. Lift each latch and turn each a quarter-turn, towards the 'unlock' icon, to release the latching mechanism. Remove the compartment cover from the computer.

4. Locate the tab on the hard disk drive and pull it back to disconnect the hard disk drive from the motherboard.

5. Continue to utilize the tab to assist in removing the hard disk drive from the compartment.

NOTICE: When the hard drive is not in the computer, store it in protective antistatic packaging. See "Protecting Against Electrostatic Discharge" in the "<u>Safety Information</u>" section.

6. Remove the new drive from its packaging.

    Save the original packaging for storing or shipping the hard drive.

NOTICE: Use firm and even pressure to slide the drive into place. If you use excessive force, you may damage the connector.

7. Slide the hard drive into the bay until it is fully seated.
8. Replace and secure the hard disk drive compartment cover with the quarter-turn latches.
9. Use the *Operating System* CD to install the operating system for your computer (see "<u>Using the Operating System CD</u>").
10. Use the *Drivers and Utilities* CD to install the drivers and utilities for your computer (see "<u>Reinstalling Drivers and Utilities</u>").

14.5   Returning a Hard Drive to Dell

Return your old hard drive to Dell in packaging comparable to that shown in the figure below. Otherwise, the hard drive may be damaged in transit.
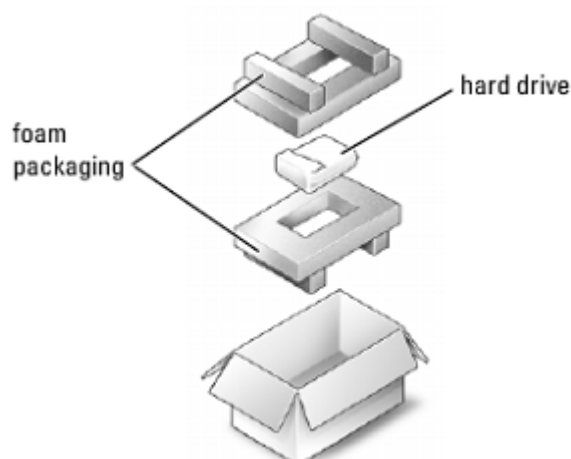
14.6   XBay Expansion Bay

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

⚠ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

➲ **NOTICE:** To prevent damage to devices, store them in a safe, dry place when they are not installed in the computer. Avoid pressing down on them or placing heavy objects on top of them.
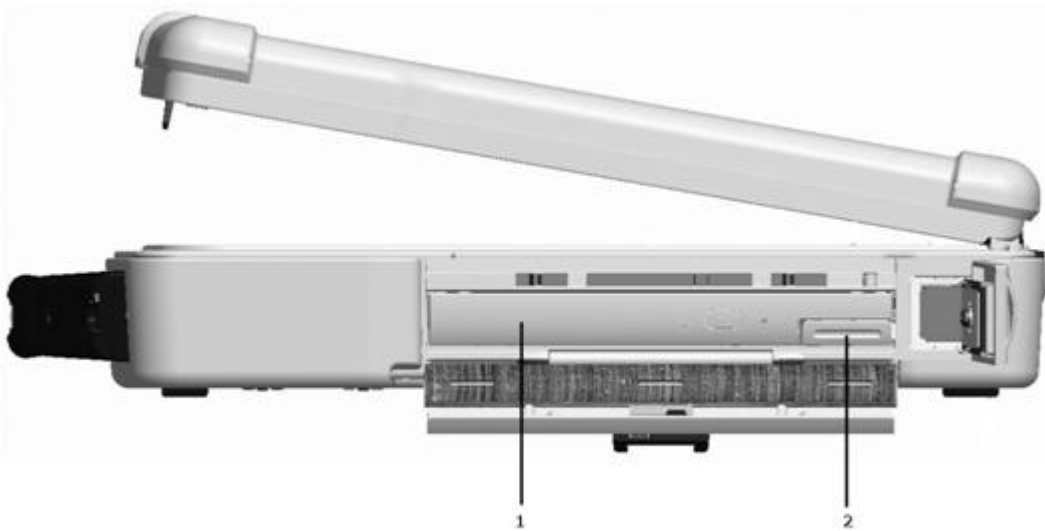
1	Optical drive	2	Device latch release

To remove a device from the XBay:

1. If the computer is running, double-click the **Safely Remove Hardware** icon on the taskbar, click the device you want to eject, and click **Stop**.
2. Unfasten the XBay device locking screw located on the bottom of the notebook.
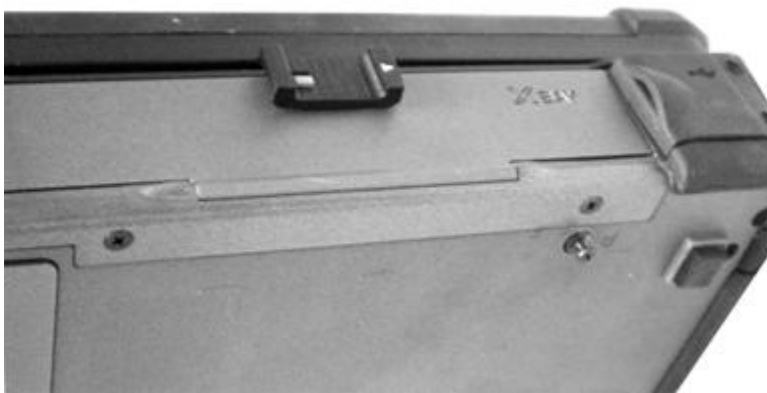
1	XBay protective door	2	Captive XBay device locking screw

3. Slightly pull the XBay device locking screw away from the chassis.

    📝 **NOTE:** The XBay device locking screw is a captive screw and cannot be removed.

4. Press the device latch release.
5. Pull the device out of the XBay.

To install a device into the XBay:

1. Push the new device into the XBay until it clicks into place.
2. Tighten the XBay device locking screw located on the bottom of the notebook.

14.7   Protective Doors

The XFR D630 utilizes 3 types of doors to provide a secure and protected environment for the connectors and devices of the notebook. The three types are:

- Compartment Doors
- Hinged Doors
- Friction Fit Doors

All 3 types of doors are components of the Armored Protection System that protects the XFR D630 in the most challenging environments.

This section provides the information required should you need to replace one of the doors.

14.7.1   Compartment Door

The compartment door is utilized on compartments accessed from the bottom of the computer, such as the battery and hard disk drive compartment doors.

If the entire compartment door should need to be replaced, contact Dell Customer Support.

Figure 14 3 Sample Compartment Door

Figure 14 4 Removing a Compartment Door

Step 1

Step 2

Step 3

Step 4

The figure above shows the sequence to remove a compartment door. Two quarter-turn latches are used to secure each compartment door to the computer. The removal of both the battery and disk compartment doors is shown.

To remove a compartment door follow these steps:

1. The quarter-turn latches on the compartment door can be secured with optional M2 screws. If the screws are present, remove them using a #1 Philips screw driver. If not, proceed to step 2.

Optional M2 screw
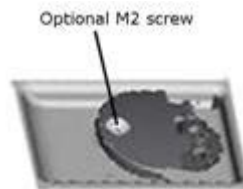
2. Lift the handle on the latch.
3. Turn the latch a quarter-turn in the direction of the 'unlock' icon.
4. Lift the compartment door away from the system.
5. Reverse this procedure to replace and secure the compartment door.

If a single quarter-turn latch should fail, it can be replaced. See the figure below for the construction of the quarter-turn latch assembly.

Figure 14 5 Replacing a Quarter-Turn Latch

14.7.2 Hinged Door

Figure 14 6 Sample Hinged Door
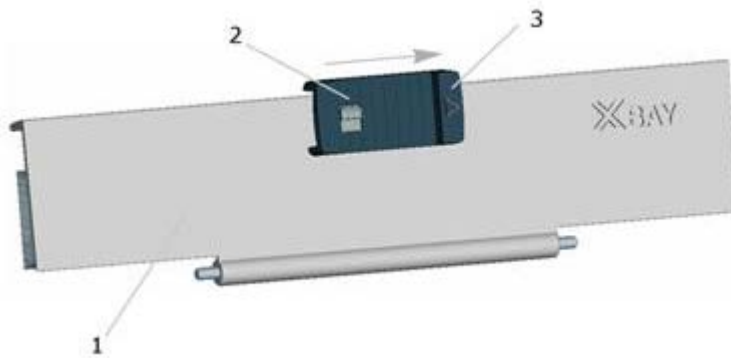
1	Hinged door	2	Latch locking mechanism	3	Arrow shows latch release direction

The dense magnesium hinged door is utilized on doors on the back and side panels of the computer to protect the devices and connectors from ingress. The hinged door is secured by a sliding latch.

The devices and/or connectors protected by these doors can be accessed by pushing the latch in the direction indicated by the arrow and then rotating the door away from the computer along its hinge. The door can be closed by rotating the door back along its hinge toward the computer, and pushing the latch until it is secured.

The latch on the hinged door can also be locked by sliding the lock on the latch up to the locked position as shown in the figure above.

Figure 14 7 Hinged Door Replacement
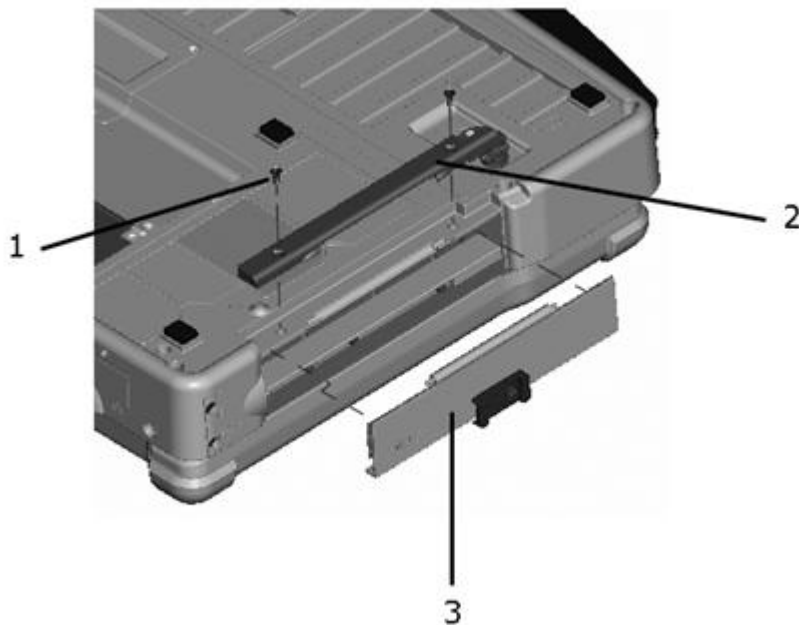
| 1 | Screws (2) | 2 | Hinge retaining bar | 3 | Hinged door |

To remove a hinged door:

> **NOTICE:** The number of screws and retaining bars will vary depending on the exact hinge assembly.

1. Follow the procedures in "Before You Begin".
2. Turn the computer bottom-side up, remove the screws that are securing the hinge retaining bar(s).
3. Lift the hinge retaining bar(s) away from the computer.
4. Slide the hinged door away from the system.
5. Reverse the procedure to install a new hinged door.

14.7.3   Friction Fit Door

Figure 14 8 Sample Friction Fit Door

The friction fit door is utilized on connectors and devices on the back and side panels of the computer to protect the devices and connectors from ingress.

The devices and/or connectors protected by these doors can be accessed by lifting the door away from the system and rotating it along the seam. Reverse this procedure to close and secure the cover.

Figure 14 9 Friction Fit Door Removal
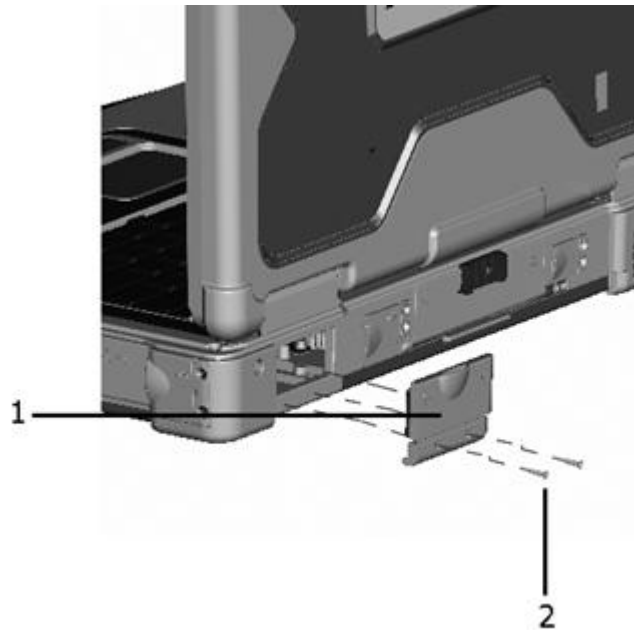
| 1 | Friction fit door | 2 | Screws (2) |

To remove a friction fit door:

> **NOTICE:** The number of screws will vary depending on the size of the door. The screws are clearly visible when viewing the system.

1. Follow the procedures in "Before You Begin".
2. Remove the screws that are securing the friction fit door.
3. Remove the friction fit door from the system.
4. Reverse the procedure to install a new friction fit door.

14.8   XFR D630 Handle

The XFR D630 is equipped with a factory installed handle. This section provides instructions for removing and installing

the handle if replacement is required.

Figure 14 10 Installation of the XFR D630 Handle Assembly
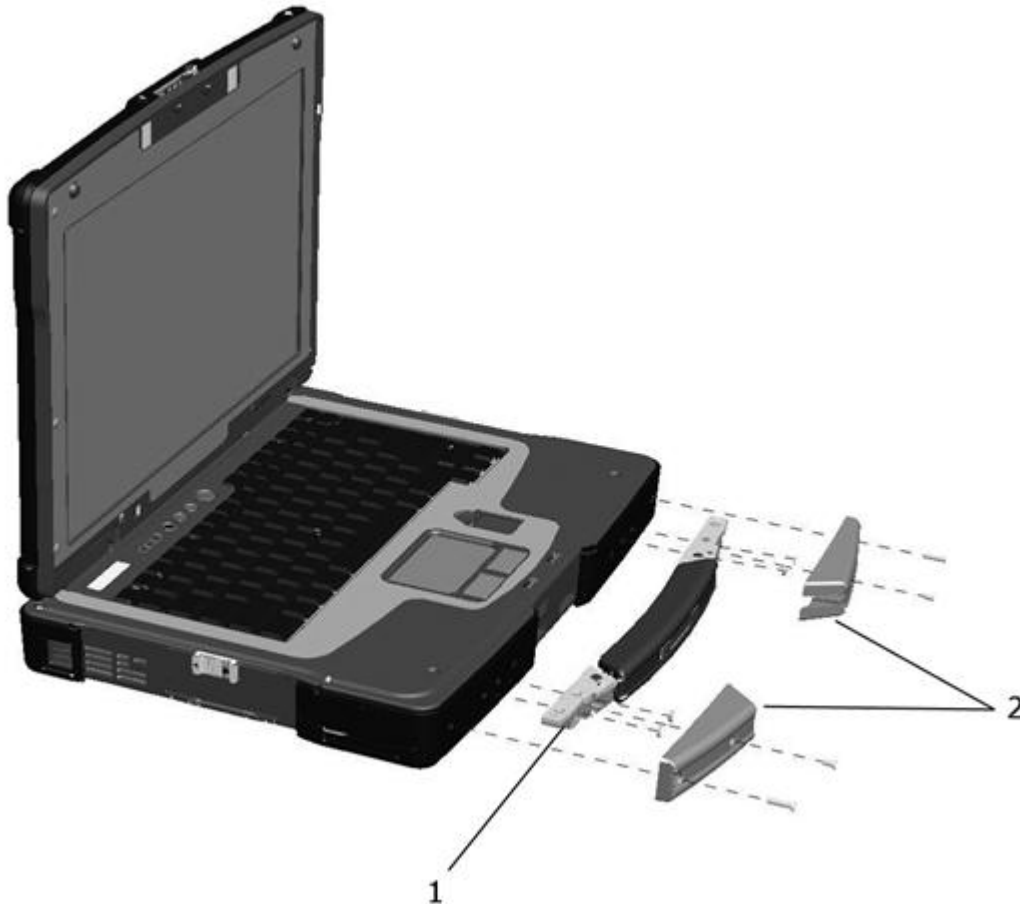
1	Main handle assembly	2	Handle cover (2)

14.8.1   Removing the Handle

1. Remove the 4 screws (2 on each handle cover) that secure the handle covers as shown in the figure above.

2. Remove the 6 screws (3 on each side) on the top of the handle assembly that secure the handle to the handle brackets.

3. Remove the 6 screws (3 on each side) that secure the main handle assembly.

14.8.2   Installing the Handle

1. Align the main handle assembly with the mounting holes in the front plate of the XFR D630 as shown in the figure above.

2. Secure the main handle assembly to the XFR D630 using the 6 screws provided.

3. Install the 6 screws (3 on each side) on the top of the handle assembly that secure the handle to the handle brackets.

4. Align each of the handle covers over the main handle assembly ends as shown.

5. If your XFR D630 is equipped with the optional Touch Screen, please refer to Replacing the Stylus Clip for instructions regarding installing the stylus clip onto one side of the handle assembly.

6. Secure the handle covers over the main handle assembly and to the XFR D630 with the 4 screws provided (2 on each side).

14.9   Should Strap Anchors (optional)

If your XFR D630 is equipped with the optional handle (see "<u>XFR D630 Handle</u>"), you can also install the shoulder strap anchors to allow for the use of a shoulder strap with your computer.

Figure 14 11 Shoulder Strap Anchors Installation
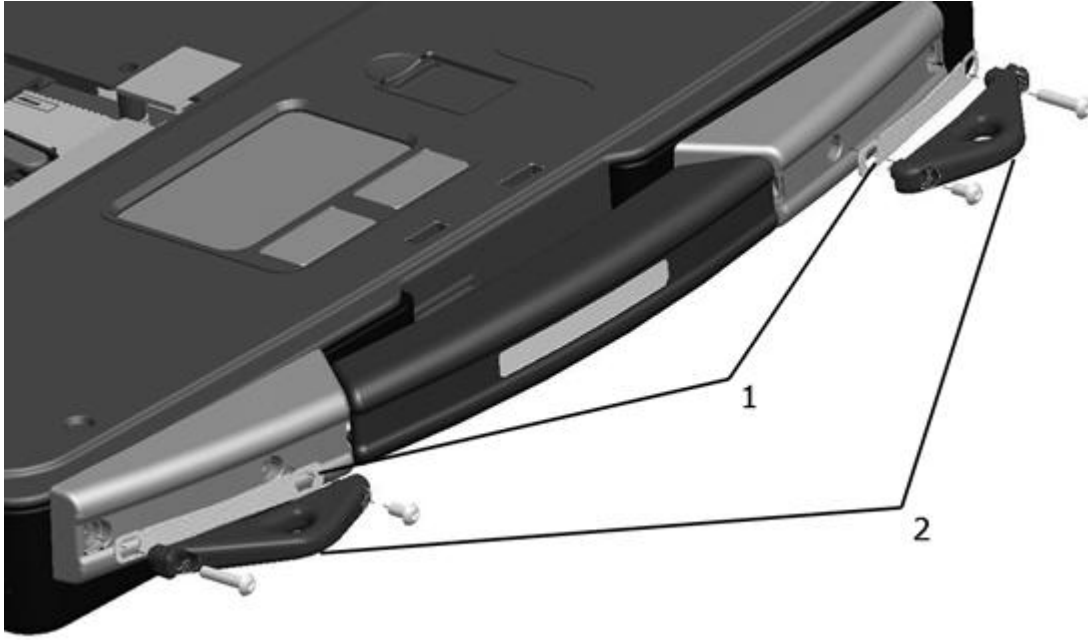
1	Shoulder strap anchor gasket (2)	2	Shoulder strap anchor (2)

To install the shoulder strap anchors:

1. If your handle is already installed, remove the 4 screws that secure the handle covers (see "<u>XFR D630 Handle</u>"). If the handle is not already installed, proceed to step 2.
2. Align the shoulder strap gaskets with the holes in the main handle assembly and the handle covers.
3. Align the shoulder strap anchors with the holes in the gasket and the handle.
4. Use the screws provided to attach the shoulder strap anchors to the XFR D630.

14.10   Stylus, Tether and Clip (DirectVue Touch Display option)

If your XFR D630 is configured with the DirectVue Touch Display, it will also be equipped with the optional stylus housing, stylus, stylus tether, and stylus clip.

To replace the stylus, stylus tether or stylus clip, follow the directions provided in the sections below.

Figure 14 12 XFR with Stylus
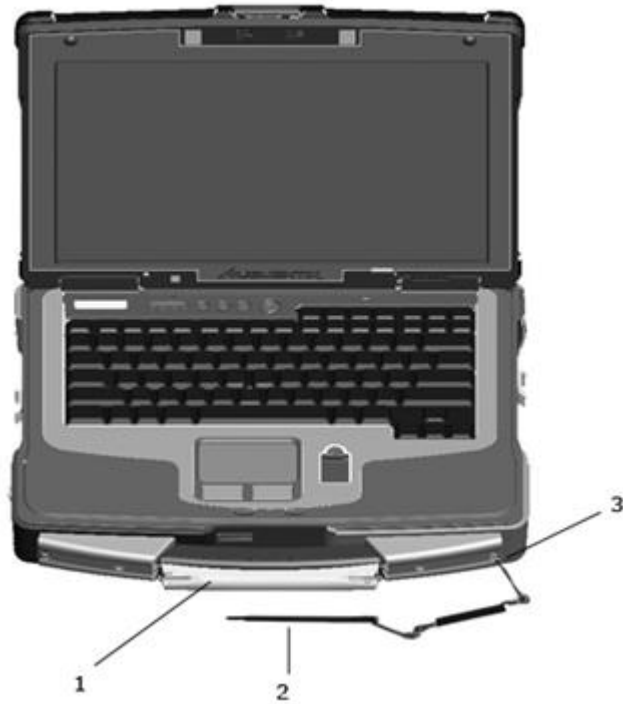
1	Stylus housing	2	Stylus and stylus tether	3	Stylus clip (for connection to the notebook)

NOTE: The stylus clip can be installed on either the left or right side of the handle.

14.10.1 Replacing a Stylus Clip

The stylus clip is installed on the handle assembly's end screw on the left or right side of the notebook. The stylus clip provides an eyelet into which the stylus tether can be routed to attach the stylus and stylus tether to the notebook
Figure 14 13 Stylus Clip Assembly

| 1 | Handle cover | 2 | Stylus clip | 3 | Screw |

Figure 14 14 Close Up View of Installed Stylus Clip

To replace the stylus clip:

1. Remove the screw on the end of the handle cover that secures the stylus clip. Note that the stylus clip can be installed on the end of either handle cover.
2. Remove the old stylus clip.
3. Place the new stylus clip between the handle cover and the screw.
4. Install and tighten the screw, ensuring the screw head secures the stylus clip in place.

14.10.2 Replacing a Stylus

Figure 14 15 Stylus and Tether

| 1 | Stylus | 2 | Stylus tether (with loops on each end) |

To replace the stylus:

1. Remove the tether and stylus from the stylus clip:
   a. At the stylus clip, loosen the looped end of the tether.
   b. Pull the stylus and tether through the loop until the tether is free from the stylus clip.

2. Remove the stylus from the tether:
    a. At the stylus, loosen the looped end of the tether.
    b. Pull the stylus and tether through the loop until the stylus is free from the tether.
3. Install the new stylus:
    a. Place one of the looped ends of the tether through the hole in the end of the new stylus and then place the free end of the tether through the loop.
    b. Pull the remainder of the tether through the loop until tight.
    c. Your new stylus is now attached to the tether.
4. Attach the stylus and tether to the stylus clip:
    a. Place the free end of the tether through the stylus clip.
    b. Pull the stylus and tether through the loop until tight.

14.10.3 Replacing a Stylus Tether

Figure 14 16 Stylus and Tether

| 1 | Stylus | 2 | Stylus tether (with loops on each end) |

To replace the tether:

1. Remove the tether and stylus from the stylus clip:
    a. At the stylus clip, loosen the looped end of the tether.
    b. Pull the stylus and tether through the loop until the tether is free from the stylus clip.
2. Remove the stylus from the tether:
    a. At the stylus, loosen the looped end of the tether.
    b. Pull the stylus and tether through the loop until the stylus is free from the tether.
3. Using the new tether:
    a. Place one of the looped ends of the tether through the hole in the end of the stylus and then place the free end of the tether through the loop.
    b. Pull the remainder of the tether through the loop until tight.
4. Attach the stylus and tether to the stylus clip:
    a. Place the free end of the tether through the stylus clip.
    b. Pull the stylus and tether through the loop until tight.

14.11   Flashing the BIOS

⚠ **CAUTION: Contact Dell Customer Support before attempting to flash the BIOS.**

If a BIOS-update program CD is provided, flash the BIOS from the CD. If you do not have a BIOS-update program CD, flash the BIOS from the hard drive.

14.11.1 Flashing the BIOS From a CD
1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.

📝 **NOTE:** If you use a BIOS-update program CD to flash the BIOS, set up the computer to boot from a CD before inserting the CD.

2. Insert the BIOS-update program CD, and restart the computer.

    Follow the instructions that appear on the screen. The computer continues to boot and updates the new BIOS. When the flash update is complete, the computer will automatically reboot.

3. Press **<F2>** during POST to enter the system setup program.

4. Press **<Alt>** and **<F>** to reset the computer defaults.

5. Press **<Esc>**, select **Save changes and reboot**, and press **<Enter>** to save configuration changes.

6. Remove the flash BIOS-update program CD from the drive and restart the computer.

14.11.2 Flashing the BIOS From the Hard Drive

1. Ensure that the AC adapter is plugged in, the main battery is properly installed, and a network cable is attached.

2. Turn on the computer.

3. Locate the latest BIOS update file for your computer at **support.dell.com**.

4. Click **Download Now** to download the file.

5. If the **Export Compliance Disclaimer** window appears, click **Yes, I Accept this Agreement**.

   The **File Download** window appears.

6. Click **Save this program to disk** and then click **OK**.

   The **Save In** window appears.

7. Click the down arrow to view the **Save In** menu, select **Desktop**, and then click **Save**.

   The file downloads to your desktop.

8. Click **Close** if the **Download Complete** window appears.

   The file icon appears on your desktop and is titled the same as the downloaded BIOS update file.

9. Double-click the file icon on the desktop and follow the instructions on the screen.

15 Dell™ QuickSet

NOTE: This feature may not be available on your computer.

Dell™ QuickSet provides you with easy access to configure or view the following types of settings:
- Network connectivity
- Power management
- Display
- System information

Depending on what you want to do in Dell™ QuickSet, you can start it by either clicking, double-clicking, or right-clicking the QuickSet icon in the Microsoft® Windows® taskbar. The taskbar is located in the lower-right corner of your screen.

For more information about QuickSet, right-click the QuickSet icon and select Help.

16 Traveling With Your Computer

16.1   Identifying Your Computer

- Attach a name tag or business card to the computer.
- Write down your Service Tag and store it in a safe place away from the computer or carrying case. Use the Service Tag if you need to report a loss or theft to law enforcement officials and to Dell.
- Create a file on the Microsoft® Windows® desktop called *if found*. Place information such as your name, address, and phone number in this file.
- Contact your credit card company and ask if it offers coded identification tags.

16.2   Packing the Computer

- Remove any external devices attached to the computer and store them in a safe place. Remove any cables attached to installed PC Cards, and remove any extended PC Cards.
- Fully charge the main battery and any spare batteries that you plan to carry with you.
- Shut down the computer.
- Disconnect the AC adapter.

NOTICE: When the display is closed, extraneous items on the keyboard or palm rest could damage the display.

- Remove any extraneous items, such as paper clips, pens, and paper, from the keyboard and palm rest and close the display.
- Use a carrying case to pack the computer and its accessories together safely.

NOTICE: If the computer has been exposed to extreme temperatures beyond the published operating specifications, allow it to acclimate to within the approved temperature range for 1 hour before turning it on.

- Protect the computer, the batteries, and the hard drive from hazards such as extreme temperatures beyond the published operating specifications, and overexposure to excessive sunlight, dirt, dust, or liquids.
- Pack the computer so that it does not slide around in the trunk of your car or in an overhead storage compartment.

16.3   Travel Tips

NOTICE: Do not move the computer while using the optical drive to prevent loss of data.

NOTICE: Do not check the computer as baggage.

- Consider disabling wireless activity on your computer to maximize battery operating time. To disable wireless activity, use the wireless switch (see "Enabling/Disabling the Dell™ Mobile Broadband Card").
- Consider changing your power management options to maximize battery operating time (see "Configuring Power Management Settings").
- If you are traveling internationally, carry proof of ownership—or of your right to use the computer if it is company-owned—to speed your passage through customs. Investigate the customs regulations of the countries you plan to visit, and consider acquiring an international carnet (also known as a *merchandise passport*) from your government.
- Find out what type of electrical outlets are used in the countries you will visit, and have appropriate power adapters.
- Check with your credit card company for information about the kinds of emergency travel assistance it offers to users of portable computers.

16.3.1   Traveling by Air

NOTICE: Do not walk the computer through a metal detector. Send the computer through an X-ray machine or have it hand-inspected.

- Ensure that you have a charged battery available in case you are asked to turn on the computer.
- Prior to entering the airplane, verify that using a computer is permitted. Some airlines forbid the use of electronic devices during flight. All airlines forbid the use of electronic devices during takeoff and landing.

17 Customer Support

17.1   Obtaining Assistance

If you experience a problem with your computer, you can complete the following steps to diagnose and troubleshoot the problem:

1. See "Troubleshooting" for information and procedures that pertain to the problem your computer is experiencing.

2. See "Dell Diagnostics" for procedures on how to run Dell Diagnostics.

3. Fill out the "Diagnostics Checklist".

4. If the preceding steps have not resolved the problem, contact Dell Customer Support.

17.2   Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell Customer Support. Have your invoice or packing slip handy when you call.

17.3   Product Information

If you need information about additional products available from Dell, or if you would like to place an order, contact Dell Customer Support.

17.4   Before You Call

📝 **NOTE:** Have your Service Tag information available (located on the bottom of your computer).

Remember to fill out the Diagnostics Checklist (see "Diagnostics Checklist"). If possible, turn on your computer before you call Dell for assistance and call from a telephone at or near the computer. You may be asked to type some commands at the keyboard, relay detailed information during operations, or try other troubleshooting steps possible only at the computer itself. Ensure that the computer documentation is available.

17.5   Diagnostic Checklist

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the safety instructions in the Safety section of this manual.**

Name:

Date:

Address:

Phone number:

Service Tag (bar code on the bottom of the computer):

Return Material Authorization Number (if provided by Dell support technician):

Operating system and version:

Devices:

Expansion cards:

Are you connected to a network? Yes No

Network, version, and network adapter:

Programs and versions:

See your operating system documentation to determine the contents of the system's start-up files. If the computer is connected to a printer, print each file. Otherwise, record the contents of each file before calling Dell.

Error message, beep code, or diagnostic code:

Description of problem and troubleshooting procedures you performed:

18 Specifications

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer, click **Start→ Help and Support** and select the option to **view information about your computer**.

Processor	
Processor type	Intel Core 2 Duo and Solo processors
L1 cache	32 KB per instruction, 32 KB data cache per core
L2 cache	2 MB per core
External bus frequency	800 MHz
System Information	
System chipset	Intel GM965 Express
Data bus width	64 bits
DRAM bus width	Dual-channel (2) 64-bit buses
Processor address bus width	36 bits
Flash EPROM	2 MB
Graphics bus	Internal graphics
PCI bus	32 bits
PC Card	
CardBus controller	02Micro OZ711EZ1
PC Card connector	One (supports one Type I or Type II card)
Cards supported	PC card: 3.3 V and 5 V
PC Card connector size	80 pins
PCI-E Card	
Flash Card Module (FCM)	512 MB, 1 GB
Memory	
Memory module connector	one user-accessible SODIMM socket
Memory module capacities	512 MG, 1 GB, 2 GB 4-GB capable
Memory type	DDR2 SODIMM
Minimum memory	512 MB
Maximum memory	4 GB
Smart Card	
Read/write capabilities	reads and writes to all ISO 7816 1/2/3/4 microprocessor cards (T=0, T=1)
Cards supported	3 V and 5 V
Program technology supported	Java cards
Interface speed	9600-115,200 BPS
EMV level	Level 1 certified
WHQL certification	PC/SC
Compatibility	Compatible within a PKI environment
Insert/eject cycles	Certified for up to 100,000 cycles
Ports and Connectors	
Serial	9-pin connector; 16550C-compatible, 16-byte buffer connector
Audio	Microphone connector, stereo headphones/speakers connector
Mini-Card	Two Type IIIA Mini-Card slots
Modem	RJ-11 port
Network Adapter	RJ-45 port

USB	Four 4-pin USB 2.0 compliant connectors
Video	15-hole connector
IEEE 1394	4-pin mini
D-Dock with Desk Dock Adapter	Standard D-Dock connector for devices such as a D-Dock advanced port replicators and expansion stations
D-Port with Desk Dock Adapter	Standard D-Port connector
Communications	
Modem:	
Type	v.92 Data/Fax MDC Modem
Controller	Softmodem
Interface	HAD Bus
Network Adapter	10/100/1000 Ethernet LAN on system board
Wireless	Internal WLAN, WWAN, and Bluetooth® wireless support (if optional cards are provided)
Video	
Video type:	integrated on system board, hardware accelerated
Data bus	Integrated video
Video controller	Intel® GMA X3100
Video memory	Up to 64MB (shared) at total system memory of less than 512MB Up to 256MB (shared) at total system memory of 512MB or greater
Audio	
Audio type	two-channel high definition audio (Azalia)
Audio controller	IDT STAC9205 Codec
Stereo conversion	24-bit (analog-to-digital and digital-to-analog)
Interfaces:	
Internal	High definition audio (Azalia)
External	Microphone-in connector, stereo headphones/speakers connector
Speaker	One 4-ohm speaker
Internal speaker amplifier	2-W channel into 4 ohms
Volume controls	Volume control buttons and program menus
Display	
Type (active-matrix TFT)	WXGA
Active area (X/Y)	303.74 x 189.84
LCD Viewable Dimensions:	
Height	189.74mm (7.47 inches)
Width	302.26mm (11.90 inches)
Diagonal	356.77mm (14.05 inches)

Keyboard	
Number of keys	87 (U.S. and Canada); 88 (Europe); 91 (Japan)
Layout	QWERTY/AZERTY/Kanji
Type	Standard
Touch Pad	
X/Y position resolution (graphics table mode)	240 cpi
Size:	
Width	73.0-mm (2.9-inch) sensor-active area
Height	42.9-mm (1.7-inch) rectangle

Track Stick	
X/Y position resolution (graphics table mode)	250 count/sec @ 100 gf
Size	Protrudes 0.5 mm higher than surrounding keycaps
Battery	
Type	6-cell "smart" lithium ion (56 WHr)
Dimensions:	
Depth	66.6 mm (2.62 inches)
Height	19.2 mm (0.76 inches)
Weight	0.33 kg (0.73 lb)
Voltage	11.1 VDC
Charge time (approximate)	
Computer off	Approximately 1 hour to 80% capacity
Operating time	Battery operating time varies depending on operating conditions and can be significantly reduced under certain power-intensive conditions. See "Using a Battery" for more information about battery life.
Life span (approximate)	300 charge/discharge cycles
Coin-cell battery	CR-2032

AC Adapter	
Input voltage	100–240 VAC
Input current (maximum)	1.5 A
Input frequency	50-60 Hz
Output current	4.34 A (maximum at 4-second pulse); 3.34 A (continuous)
Output power	65 W or higher
Rated output voltage	19.5 +/-1.0 VDC
Dimensions:	
Height	32 mm (1.27 inches)
Width	337 mm (13.31 inches)
Depth	238 mm (9.3 inches)

Biometric Fingerprint Reader (Optional)	
Type	UPEK TCS3 TouchStrip™ strip sensor with CMOS active capacitive pixel-sensing technology
Physical	
Height	57.66 mm (2.27 inches)
Width	346.96 mm (13.66 inches)
Depth	258.06 mm (10.16 inches)
Weight (with 6-cell battery and and CD drive, and without handle)	4.06 kg (8.96 lb)

📝 **NOTE:** Refer to the current XFR D630 Specification Sheet for environmental specifications and testing methods.

19 Safety Information

19.1   CAUTION: General Safety Instructions

Use the following safety guidelines to help ensure your own personal safety and to help protect your equipment and working environment from potential damage.

📝 **NOTE:** In this section, *equipment* refers to all portable devices (computers, port replicators, XBays, docking stations, and similar devices).

IMPORTANT NOTICE FOR HEALTHCARE ENVIRONMENTS: Dell products are not medical devices and are not listed under UL 60601 (or equivalent). As a result, they must not be used with six feet of a patient or in a manner that directly or indirectly contacts a patient.

19.1.1   SAFETY: General Safety

When setting up the equipment for use:

- Place the equipment on a hard, level surface. Leave 10.2 cm (4 in) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation. Restricting airflow can damage the computer or cause a fire.

- Do not stack equipment or place equipment so close together that it is subject to re-circulated or preheated air.

- Ensure that nothing rests on your equipment's cables and that the cables are not located where they can be stepped on or tripped over.

- Do not place your equipment in a closed-in wall unit or on a bed, sofa, carpet, or rug.

- Keep your equipment away from radiators and heat sources.

- Keep your equipment away from extremely hot or cold temperatures to ensure that it is used within the specified operating range.

- Do not push any objects into the air vents or openings of your equipment. Doing so can cause fire or electric shock by shorting out interior components.

- Avoid placing loose papers underneath your equipment.

When operating your equipment:

- Do not use your equipment in a wet environment, for example, near a bath tub, sink, swimming pool or in a wet basement.

- Do not use AC powered equipment during an electrical storm. Battery powered devices may be used if all cables have been disconnected.

- If your equipment includes an integrated or optional (PC Card) modem, disconnect the modem cable if an electrical storm is approaching to avoid the remote risk of electric shock form lightening via the telephone line.

- If your equipment includes a modem, the cable used with the modem should be manufactured with a minimum wire size of 26 American wire gauge (AWG) and an FCC-compliant RJ-11 modular plug.

- This equipment may contain Optical Disk Drives (ODD), CD-ROM, CDR/W, DVD, etc., which have built-in laser devices. To prevent any risk of exposure to laser radiation, do not disable or open any ODD assembly for any reason.

   These ODDs comply with safety requirements and are classified as Class 1 Laser Products, under US DHHS Standard and EN/IEC60825-1 Laser Safety Standard. These ODDs contain no user adjustments or serviceable or replaceable parts.

- Before you clean your equipment, disconnect the device from the electrical outlet. Clean your device with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.

- Clean the portable computer display with a soft, clean cloth and water. Apply the water to the cloth; then stroke the cloth across the display in one direction, moving from top of the display to the bottom. Remove moisture form the display quickly and keep the display dry. Long-term exposure to moisture can damage the display. Do *not* use a commercial window cleaner to clean your display.

- If your equipment does not operate normally – in particular, if there are any unusual sounds or smells coming from it – unplug it immediately and contact Dell Customer Support

19.1.2   SAFETY: When Working Inside Your System

Do not attempt to service the equipment yourself, except as explained in your Dell documentation or in instructions otherwise provided to you be Dell. Always follow installation and service instructions closely.

- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables, or perform maintenance or reconfiguration of your equipment during an electric storm.

PC Cards may become very warm during normal operation. Use care when removing PC Cards after their continuous operation.

19.1.3   SAFETY: General Power Safety

Observe the following guidelines when connecting your equipment to a power source:

- Check the voltage rating before you connect the equipment to an electrical outlet to ensure that the required voltage and frequency match the available power source.

- Do not plug the equipment power cables into an electrical outlet if the power cable is damaged.

- To prevent electric shock, plug the equipment power cables into properly grounded electrical outlets.

- If the equipment is provided with a 3-prong power cable, do not use adapter plugs that bypass the grounding feature, or remove the grounding feature from the plug or adapter.

- Norway and Sweden: If this product is provided with a 3-prong power cable, connect the power cable to a grounded electrical outlet only.

- If you use an extension power cable, ensure that the total ampere rating of the products plugged in to the extension power cable does not exceed the ampere rating of the extension cable.

- If you must use an extension cable or power strip, ensure the extension cable or power strip is connected to a wall power outlet and not to another extension cable or power strip. The extension cable or power strip must be designed for grounded plugs and plugged into a grounded wall outlet.

- If you are using a multiple-outlet power strip, use caution when plugging the power cable into the power strip. Some power strips may allow you to insert the plug incorrectly. Incorrect insertion of the power plug could result in permanent damage to your equipment, as well as risk of electric shock and/or fire. Ensure that the ground prong of the power plug is inserted into the mating ground contact of the power strip.

- Be sure to grasp the plug, not the cable, when disconnecting equipment from an electric socket.

When using the AC adapter:

- Use only the Dell provided AC adapter approved for use with this device. Use of another AC adapter may cause a fire or explosion.

- Place the AC adapter in a ventilated area, such as a desk top or on the floor, when you use it to run the computer or to charge the battery. Do not cover the AC adapter with papers or other items that will reduce cooling; also, do not use the AC adapter inside a carrying case.

- The AC adapter may become hot during normal operation of your computer. Use care when handling the adapter during or immediately after operation.

- It is recommended that you lay the adapter on the floor or desk so that the green light is visible. This will alert you if the adapter should accidentally go off due to external effects. If for any reason the green light goes off, disconnect the AC cord from the wall for a period of ten seconds, and then re-connect the power cord.

- Japan Only: Use on the Dell provided AC power cable with the AC adapter. Use of any other power cable may damage the device or AC adapter or may present a risk of fire or electric shock.

⚠ **CAUTION: When preparing your AC adapter for travel, wrap both of the cords around the adapter in the same direction as shown in the following picture. Failure to wrap the cords in the correct direction can result in damage to the cords not covered by the adapter warranty. Never use an AC adapter that shows signs of damage or excessive wear.**
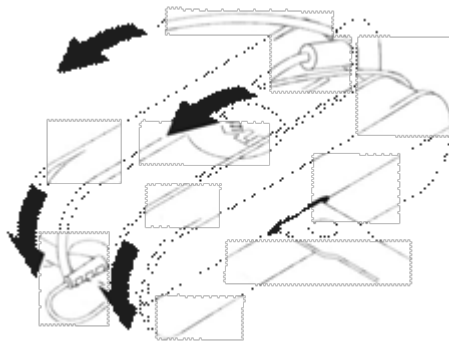
Connecting the AC Plug Adapter (Japan Only)

⚠ **CAUTION: When using the AC plug adapter, do no permit contact between the green ground wire and power leads because electrical shock, fire, or damage to your computer can occur.**

📝 **NOTE:** Some devices available in Japan do not include the AC plug adapter

1. Connect the metal ground connector to the grounding source on the outlet.

a. Loosen the grounding source

b. Slide the metal ground connector behind the grounding source, and then tighten the ground source.
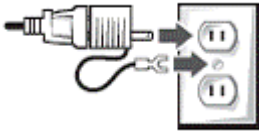
2. Connect the AC power cable to the outlet.

19.1.4   SAFETY: If Your System Gets Wet

⚠ **CAUTION: Before you begin any of the procedures in this section, see <u>SAFETY: General Safety</u> in this document.**

⚠ **CAUTION: Perform this procedure only after you are certain that it is safe to do so. If the computer is connected to an electrical outlet, it is recommended that you turn off AC power at the circuit breaker before attempting to remove the power cables from the electrical outlet. Use the utmost caution when removing wet cables from a live power source.**

1. Disconnect the AC adapter from the electrical outlet, and then, if possible, disconnect the AC adapter from the device.

2. Turn off any attached external devices, and disconnect them from their power sources and then from the device.

3. Remove the main battery from the battery bay, and if necessary, the second battery from the XBay. Wipe off the batteries and put them in a safer place to dry.

4. Contact Dell Customer Support.

📝 **NOTE:** Refer to the Limited Warranty document for information on your warranty coverage.

19.1.5   SAFETY: If You Drop or Damage Your Computer

⚠ **CAUTION: Before you begin any of the procedures in this section, see the <u>SAFETY: General Safety</u> section in this document.**

⚠ **CAUTION: If any internal components can be seen through damaged portions, or if smoke or unusual odors are detected, disconnect the device from the electrical outlet and contact Dell Customer Support.**

1. Save and close any open files, exit any open programs, and shut down the computer.

2. Disconnect the AC adapter from electrical outlet, and then, if possible, disconnect the AC adapter from the computer.

3. Turn off any attached external devices, then disconnect them from their power sources, and then from the computer.

4. If provided, remove and then reinstall the battery. If not battery powered, connect the device to the electrical outlet.

5. Turn on the device.

If the device does not start, or if any smoke or unusual odors are detected, or if you cannot identify the damaged components, contact Dell Customer Support.

📝 **NOTE:** Refer to the Limited Warranty document for information on your warranty coverage.

19.2   SAFETY: General Portable Device Safety

⚠ **CAUTION: Portable Device Safety Instructions**

Review the sections on <u>SAFETY: General Safety</u> and <u>SAFETY: General Power Safety</u> in this document.
Use the following portable device safety guidelines to help ensure your own personal safety and to help protect your device and working environment from potential damage.

- Do not store your computer in a low-airflow environment, such as a carrying case or a closed briefcase, while the computer is turned on. Restricting airflow can damage the computer and cause a fire.

- Do no allow your portable computer or adapter to operate with the base resting directly on exposed skin for extended periods of time. The surface temperature of the base will rise during normal operation, particularly when AC power is present. Allowing sustained contact with exposed skin can cause discomfort or burn.

- Disconnect all cables including the phone cable before opening the memory/modem access door.

19.2.1 SAFETY: Portable Device Power Safety

- Use only the Dell provided AC adapter approved for use with this device. Use of another AC adapter may cause a safety hazard. See the "Specifications" section for AC adapter electrical ratings.

- To remove the computer from all power sources from your portable computer, turn the computer off, disconnect the AC adapter from the electrical outlet, and remove any battery installed in the battery bay or XBay.

19.2.2 SAFETY: Portable Device Battery Safety

⚠ **CAUTION: Using an incompatible battery may increase the risk of fire or explosion. Replace the battery only with a compatible battery purchased from Dell that is designed to work with your computer. Do not use a battery from other computers with your computer.**

- A damaged battery may pose a risk of personal injury. Damage may include impact or shock that dents or punctures the battery, exposure to a flame, or other deformation. Do no disassemble the battery. Handle a damaged or leaking battery pack with extreme care. If the battery is damaged, electrolyte may leak from the cells or fire may result which may cause personal injury.

- Keep the battery away from children.

- Do not expose (store or place) your computer or battery pack to a heat source such as a radiator, fireplace, stove, electric heater, or other heat-generating appliance or otherwise expose it to temperatures in excess of 70^0C (158^0F). When heated to excessive temperatures, battery cells could vent or explode, posing a fire risk.

- Do not carry a battery pack in your pocket, purse, or other container where metal objects (such as keys) could short-circuit the battery terminals. The resulting excessive current flow can lead to extremely high temperatures and may cause damage to the battery pack or surrounding materials, or personal injury, such as burns.

- Dispose of used batteries properly See "Battery Disposal" in this document.

19.3 Ergonomic Instructions for Portable Computers

⚠ **CAUTION: Improper or prolonged keyboard use may result in injury.**

⚠ **CAUTION: Viewing a display or external monitor screen for extended periods of time may result in eye strain.**

19.4 Environmental Considerations for Portable Computers

19.4.1 Recycling Information

Dell recommends that customers dispose of their used computer hardware, monitors, printers, and other peripherals in an environmentally sound manner. Potential methods include reuse of parts or whole products and recycling of products, components, and/or materials.

After reviewing the information provided in this section, if you require additional information regarding the disposal of a product or component, contact Dell Customer Support.

19.4.2 Portable Display Lamp Disposal (U.S. only)

(Hg) THE LAMP(S) INSIDE THIS PRODUCT MAY CONTAIN(S) A SMALL AMOUNT OF MERCURY FOR ENERGY-EFFICIENT LIGHTING PURPOSES. MERCURY LAMPS IN THIS PRODUCT ARE LABELED ACCORDINGLY. PLEASE MANAGE THE LAMP ACCORDING TO LOCAL, STATE, OR FEDERAL LAWS. FOR MORE INFORMATION CONTACT THE ELECTRONIC INDUSTRIES ALLIANCE AT WWW.EIAE.ORG. FOR LAMP SPECIFIC DISPOSAL INFORMATION CHECK WITH WWW.LAMPRECYCLE.ORG.

19.4.3 Battery Disposal

⚠ **CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Do not dispose of the battery in a fire or with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.**

Your computer uses a lithium-ion or nickel-metal hydride (NiMH) and a reserve battery. For instructions

about replacing the battery in your computer, see "<u>Replacing the Battery</u>". The reserve battery is a long-life battery, and it is very possible that you will never need to replace it. However, should you need to replace the reserve battery, the procedure must be performed by an authorized service technician.

⚠ **CAUTION: Do not dispose of your computer's battery in a fire or with normal household waste. Battery cells may explode. Discard a used battery according to the manufacturer's instructions or contact your local waste disposal agency for disposal instructions. Dispose of a spent or damaged battery promptly.**

19.5 Hazardous Locations (UL 1604 and CSA C22.2 No. 213)

The following is applicable to UL 1604 and CSA C22.2 No. 213 compliant systems:

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations or non-hazardous locations only.

⚠ **WARNING - Explosion Hazard - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Do not utilize any of the connectors/hubs unless area is known to be non-hazardous**

⚠ **WARNING - Explosion Hazard - Substitution of Components may impair suitability for Class I, Division 2**

20 Regulatory Information

FCC Notices (U.S. Only)

FCC Class B
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio and television reception. 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.

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

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

⊘ **NOTICE:** The FCC regulations provide that changes or modifications not expressly approved by Dell Incorporated could void your authority to operate this equipment.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the system with respect to the receiver.
- Move the system away from the receiver.
- Plug the system into a different outlet so that the system and the receiver are on different branch circuits.

If necessary, consult a representative of Dell Incorporated or an experienced radio/television technician for additional suggestions.

The following information is provided on the device or devices covered in this document in compliance with the FCC regulations:

Product name: Dell^{TM} XFR D630
Model number: PP34L

Company name: Dell Inc.
                   Worldwide Regulatory Compliance & Environmental Affairs
                   One Dell Way
                   Round Rock, TX
                   512-338-4400

21 Glossary

Terms in this Glossary are provided for informational purposes only and may or may not describe features included with your particular computer.

A

AC — Alternating Current — The form of electricity that powers your computer when you plug the AC adapter power cable in to an electrical outlet.

ACPI — Advanced Configuration and Power Interface — A power management specification that enables Microsoft$^{®}$ Windows$^{®}$ operating systems to put a computer in standby or hibernate mode to conserve the amount of electrical power allocated to each device attached to the computer.

AGP — Accelerated Graphics Port — A dedicated graphics port that allows system memory to be used for video related tasks. AGP delivers a smooth, true-color video image because of the faster interface between the video circuitry and the computer memory.

AHCI — Advanced Host Controller Interface — An interface for a SATA hard drive Host Controller which allows the storage driver to enable technologies such as Native Command Queuing (NCQ) and hot plug.

ALS — Ambient Light Sensor — A feature that helps to control display brightness.

antivirus software — A program designed to identify, quarantine, and/or delete viruses from your computer.

Armored Protection System (APS) – The ruggedization technology that combines material selection, mechanical, thermal and structural designs and third party military testing to create highly rugged systems.

ASF — Alert Standards Format — A standard to define a mechanism for reporting hardware and software alerts to a management console. ASF is designed to be platform- and operating system independent.

B

battery life span — The length of time (years) during which a portable computer battery is able to be depleted and recharged.

battery operating time — The length of time (minutes or hours) that a portable computer battery powers the computer.

BIOS — Basic Input/Output System — A program (or utility) that serves as an interface between the computer hardware and the operating system. Unless you understand what effect these settings have on the computer, do not change them. Also referred to as system setup.

bit — The smallest unit of data interpreted by your computer.

Bluetooth$^{®}$ wireless technology — A wireless technology standard for short-range (9 m [29 feet]) networking devices that allows for enabled devices to automatically recognize each other.

boot sequence — Specifies the order of the devices from which the computer attempts to boot.

bootable media — A CD, DVD, or floppy disk that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable CD, DVD, or floppy disk available. Your *Drivers and Utilities* media is an example of bootable media.

bps — bits per second — The standard unit for measuring data transmission speed.

BTU — British Thermal Unit — A measurement of heat output.

bus — A communication pathway between the components in your computer.

bus speed — The speed, given in MHz, that indicates how fast a bus can transfer information.

byte – The basic data unit used by your computer. A byte is usually equal to 8 bits.

C

C — Celsius — A temperature measurement scale where 0° is the freezing point and 100° is the boiling point of water.

cache — A special high-speed storage mechanism which can be either a reserved section of main memory or an independent high-speed storage device. The cache enhances the efficiency of many processor operations.

L1 cache — Primary cache stored inside the processor.

L2 cache — Secondary cache which can either be external to the processor or incorporated into the processor

architecture.

carnet — An international customs document that facilitates temporary imports into foreign countries. Also known as a merchandise passport.

CD-R — CD recordable — A recordable version of a CD. Data can be recorded only once onto a CD-R. Once recorded, the data cannot be erased or written over.

CD-RW — CD rewritable — A rewritable version of a CD. Data can be written to a CD-RW disc, and then erased and written over (rewritten).

CD-RW drive — A drive that can read CDs and write to

CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

CD-RW/DVD drive — A drive, sometimes referred to as a combo drive, that can read CDs and DVDs and write to CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

clock speed — The speed, given in MHz, that indicates how fast computer components that are connected to the system bus operate.

CMOS — A type of electronic circuit. Computers use a small amount of battery-powered CMOS memory to hold date, time, and system setup options.

COA — Certificate of Authenticity — The Windows alpha-numeric code located on a sticker on your computer. Also referred to as the Product Key or Product ID.

Control Panel — A Windows utility that allows you to modify operating system and hardware settings, such as display settings.

controller — A chip that controls the transfer of data between the processor and memory or between the processor and devices.

CRIMM — Continuity Rambus In-line Memory Module — A special module that has no memory chips and is used to fill unused RIMM slots.

cursor — The marker on a display or screen that shows where the next keyboard, touch pad, or mouse action will occur. It often is a blinking solid line, an underline character, or a small arrow.

D

DDR SDRAM — Double-Data-Rate SDRAM — A type of SDRAM that doubles the data burst cycle, improving system performance.

DDR2 SDRAM — Double-Data-Rate 2 SDRAM — A type of DDR SDRAM that uses a 4-bit prefetch and other architectural changes to boost memory speed to over 400 MHz.

device — Hardware such as a disk drive, printer, or keyboard that is installed in or connected to your computer.

device driver — See driver.

DIMM — Dual In-line Memory Module — A circuit board with memory chips that connects to a memory module on the system board.

DIN connector — A round, six-pin connector that conforms to DIN (Deutsche Industrie-Norm) standards; it is typically used to connect PS/2 keyboard or mouse cable connectors.

DirectVue – A unique optical technology that combines higher backlit performance or NITS with anti reflective LCD films and other proprietary optics technology. Result is a Wide Aspect LCD that can be viewed in challenging lighting conditions including direct sunlight.

disk striping — A technique for spreading data over multiple disk drives. Disk striping can speed up operations that retrieve data from disk storage. Computers that use disk striping generally allow the user to select the data unit size or stripe width.

DMA — Direct Memory Access — A channel that allows certain types of data transfer between RAM and a device to bypass the processor.

docking device — provides port replication, cable management, and security features to adapt your notebook to a desktop workspace.

DMTF — Distributed Management Task Force — A consortium of hardware and software companies who develop management standards for distributed desktop, network, enterprise, and Internet environments.

domain — A group of computers, programs, and devices on a network that are administered as a unit with common rules and procedures for use by a specific group of users. A user logs on to the domain to gain access to the resources.

DRAM — Dynamic Random-Access Memory — Memory that stores information in integrated circuits containing capacitors.

driver — Software that allows the operating system to control a device such as a printer. Many devices do not work properly if the correct driver is not installed in the computer.

DSL — Digital Subscriber Line — A technology that provides a constant, high-speed Internet connection through an analog telephone line.

dual-core — A technology in which two physical computational units exist inside a single processor package, thereby increasing computing efficiency and multi-tasking ability.

dual display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as extended display mode.

DVD-R — DVD recordable — A recordable version of a DVD. Data can be recorded only once onto a DVD-R. Once recorded, the data cannot be erased or written over.

DVD+RW — DVD rewritable — A rewritable version of a DVD. Data can be written to a DVD+RW disc, and then erased and written over (rewritten). (DVD+RW technology is different from DVD-RW technology.)

DVD+RW drive — drive that can read DVDs and most CD media and write to DVD+RW (rewritable DVDs) discs.

DVI — Digital Video Interface — A standard for digital transmission between a computer and a digital videodisplay.

E

ECC — Error Checking and Correction — A type of memory that includes special circuitry for testing the accuracy of data as it passes in and out of memory.

ECP — Extended Capabilities Port — A parallel connector design that provides improved bidirectional data transmission. Similar to EPP, ECP uses direct memory access to transfer data and often improves performance.

EIDE — Enhanced Integrated Device Electronics — An improved version of the IDE interface for hard drives and CD drives.

EMI — ElectroMagnetic Interference — Electrical interference caused by electromagnetic radiation.

EPP — Enhanced Parallel Port — A parallel connector design that provides bidirectional data transmission.

ESD — ElectroStatic Discharge — A rapid discharge of static electricity. ESD can damage integrated circuits found in computer and communications equipment.

expansion card — A circuit board that installs in an expansion slot on the system board in some computers, expanding the capabilities of the computer. Examples include video, modem, and sound cards.

expansion slot — A connector on the system board (in some computers) where you insert an expansion card, connecting it to the system bus.

ExpressCard — A removable I/O card adhering to the PCMCIA standard. Modems and network adapters are common types of ExpressCards. ExpressCards support both the PCI Express and USB 2.0 standard.

extended display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as dual display mode.

extended PC Card — A PC Card that extends beyond the edge of the PC Card slot when installed.

F

Fahrenheit — A temperature measurement scale where 32° is the freezing point and 212° is the boiling point of water.

FBD — Fully-Buffered DIMM — A DIMM with DDR2 DRAM chips and an Advanced Memory Buffer (AMB) that speeds communication between the DDR2 SDRAM chips and the system.

FCC — Federal Communications Commission — A U.S. agency responsible for enforcing communications-related regulations that state how much radiation computers and other electronic equipment can emit.

fingerprint reader — A strip sensor that uses your unique fingerprint to authenticate your user identity to help secure your computer.

folder — A term used to describe space on a disk or drive where files are organized and grouped. Files in a folder can be

viewed and ordered in various ways, such as alphabetically, by date, and by size.

format — The process that prepares a drive or disk for file storage. When a drive or disk is formatted, the existing information on it is lost.

FSB — Front Side Bus — The data path and physical interface between the processor and RAM.

FTP — File Transfer Protocol — A standard Internet protocol used to exchange files between computers connected to the Internet.

G

G — Gravity — A measurement of weight and force.

GB — GigaByte — A measurement of data storage that equals 1024 MB (1,073,741,824 bytes). When used to refer to hard drive storage, the term is often rounded to 1,000,000,000 bytes.

GHz — gigahertz — A measurement of frequency that equals one thousand million Hz, or one thousand MHz. The speeds for computer processors, buses, and interfaces are often measured in GHz. graphics mode — A video mode that can be defined as x horizontal pixels by y vertical pixels by z colors. Graphics modes can display an unlimited variety of shapes and fonts.

GUI — Graphical User Interface — Software that interacts with the user by means of menus, windows, and icons. Most programs that operate on the Windows operating systems are GUIs.

H

hard drive — A drive that reads and writes data on a hard disk. The terms hard drive and hard disk are often used interchangeably.

heat sink — A metal plate on some processors that helps dissipate heat.

hibernate mode — A power management mode that saves everything in memory to a reserved space on the hard drive and then turns off the computer. When you restart the computer, the memory information that was saved to the hard drive is automatically restored.

HTTP — HyperText Transfer Protocol — A protocol for exchanging files between computers connected to the Internet.

Hyper-Threading — Hyper-Threading is an Intel technology that can enhance overall computer performance by allowing one physical processor to function as two logical processors, capable of performing certain tasks simultaneously.

Hz — hertz — A unit of frequency measurement that equals 1 cycle per second. Computers and electronic devices are often measured in kilohertz (kHz), megahertz (MHz), gigahertz (GHz), or terahertz (THz).

I

IC — Integrated Circuit — A semiconductor wafer, or chip, on which thousands or millions of tiny electronic components are fabricated for use in computer, audio, and video equipment.

IDE — Integrated Device Electronics — An interface for mass storage devices in which the controller is integrated into the hard drive or CD drive.

IEEE 1394 — Institute of Electrical and Electronics Engineers, Inc. — A high-performance serial bus used to connect IEEE 1394-compatible devices, such as digital cameras and DVD players, to the computer.

infrared sensor — A port that allows you to transfer data between the computer and infrared-compatible devices without using a cable connection.

integrated — Usually refers to components that are physically located on the computer's system board. Also referred to as built-in.

I/O — Input/Output — An operation or device that enters and extracts data from your computer. Keyboards and printers are I/O devices.

I/O address — An address in RAM that is associated with a specific device (such as a serial connector, parallel connector, or expansion slot) and allows the processor to communicate with that device.

IrDA — Infrared Data Association — The organization that creates international standards for infrared communications.

IRQ — interrupt request — An electronic pathway assigned to a specific device so that the device can communicate with the processor. Each device connection must be assigned an IRQ. Although two devices can share the same IRQ assignment, you cannot operate both devices simultaneously.

ISP — Internet Service Provider — A company that allows you to access its host server to connect directly to the Internet, send and receive e-mail, and access websites. The ISP typically provides you with a software package, user name, and access phone numbers for a fee.

K

Kb — kilobit — A unit of data that equals 1024 bits. A measurement of the capacity of memory integrated circuits.

KB — kilobyte — A unit of data that equals 1024 bytes but is often referred to as 1000 bytes.

key combination — A command requiring you to press multiple keys at the same time.

kHz — kilohertz — A measurement of frequency that equals 1000 Hz.

L

LAN — Local Area Network — A computer network covering a small area. A LAN usually is confined to a building or a few nearby buildings. A LAN can be connected to another LAN over any distance through telephone lines and radio waves to form a wide area network (WAN).

LCD — Liquid Crystal Display — The technology used by portable computer and flat-panel displays.

LED — Light-Emitting Diode — An electronic component that emits light to indicate the status of the computer.

local bus — A data bus that provides a fast throughput for devices to the processor.

LPT — Line Print Terminal — The designation for a parallel connection to a printer or other parallel device.

M

Mb — Megabit — A measurement of memory chip capacity that equals 1024 Kb.

Mbps — Megabits per second — One million bits per second. This measurement is typically used for transmission speeds for networks and modems.

MB — megabyte — A measurement of data storage that equals 1,048,576 bytes. 1 MB equals 1024 KB. When used to refer to hard drive storage, the term is often rounded to 1,000,000 bytes.

MB/sec — megabytes per second — One million bytes per second. This measurement is typically used for data transfer ratings.

Media bay — See XBay.

memory — A temporary data storage area inside your computer. Because the data in memory is not permanent, it is recommended that you frequently save your files while you are working on them, and always save your files before you shut down the computer. Your computer can contain several different forms of memory, such as RAM, ROM, and video memory. Frequently, the word memory is used as a synonym for RAM.

memory address — A specific location where data is temporarily stored in RAM.

memory mapping — The process by which the computer assigns memory addresses to physical locations at start-up. Devices and software can then identify information that the processor can access.

memory module — A small circuit board containing memory chips, which connects to the system board.

MHz — megahertz — A measure of frequency that equals 1 million cycles per second. The speeds for computer processors, buses, and interfaces are often measured in MHz.

Mini PCI — A standard for integrated peripheral devices with an emphasis on communications such as modems and NICs. A Mini PCI card is a small external card that is functionally equivalent to a standard PCI expansion card.

Mini-Card — A small card designed for integrated peripherals, such as communication NICs. The Mini-Card is functionally equivalent to a standard PCI expansion card.

modem — A device that allows your computer to communicate with other computers over analog telephone lines. Three types of modems include: external, PC Card, and internal. You typically use your modem to connect to the Internet and exchange e-mail.

module bay — See XBay.

MP — megapixel — A measure of image resolution used for digital cameras.

ms — millisecond — A measure of time that equals one thousandth of a second. Access times of storage devices are often measured in ms.

N

network adapter — A chip that provides network capabilities. A computer may include a network adapter on its system board, or it may contain a PC Card with an adapter on it. A network adapter is also referred to as a NIC (network

interface controller).

NIC — See network adapter.

notification area — The section of the Windows taskbar that contains icons for providing quick access to programs and computer functions, such as the clock, volume control, and print status. Also referred to as system tray.

ns — nanosecond — A measure of time that equals one billionth of a second.
NVRAM — nonvolatile random access memory — A type of memory that stores data when the computer is turned off or loses its external power source. NVRAM is used for maintaining computer configuration information such as date, time, and other system setup options that you can set.

O
optical drive — A drive that uses optical technology to read or write data from CDs, DVDs, or DVD+RWs. Example of optical drives include CD drives, DVD drives, CD-RW drives, and CD-RW/DVD combo drives.

P
parallel connector — An I/O port often used to connect a parallel printer to your computer. Also referred to as an LPT port.

partition — A physical storage area on a hard drive that is assigned to one or more logical storage areas known as logical drives. Each partition can contain multiple logical drives.

PC Card — A removable I/O card adhering to the PCMCIA standard. Modems and network adapters are common types of PC Cards.

PCI — Peripheral Component Interconnect — PCI is a local bus that supports 32-and 64-bit data paths, providing a high-speed data path between the processor and devices such as video, drives, and networks.

PCI Express — A modification to the PCI interface that boosts the data transfer rate between the processor and the devices attached to it. PCI Express can transfer data at speeds from 250 MB/sec to 4 GB/sec. If the PCI Express chip set and the device are capable of different speeds, they will operate at the slower speed.

PCMCIA — Personal Computer Memory Card International Association — The organization that establishes standards for PC Cards.

PIO — Programmed Input/Output — A method of transferring data between two devices through the processor as part of the data path.

pixel — A single point on a display screen. Pixels are arranged in rows and columns to create an image. A video resolution, such as 800 x 600, is expressed as the number of pixels across by the number of pixels up and down.

Plug-and-Play — The ability of the computer to automatically configure devices. Plug and Play provides automatic installation, configuration, and compatibility with existing hardware if the BIOS, operating system, and all devices are Plug and Play compliant.

POST — Power-On Self-Test — Diagnostics programs, loaded automatically by the BIOS, that perform basic tests on the major computer components, such as memory, hard drives, and video. If no problems are detected during POST, the computer continues the startup. processor — A computer chip that interprets and executes program instructions. Sometimes the processor is referred to as the CPU (central processing unit).

PS/2 — Personal System/2 — A type of connector for attaching a PS/2-compatible keyboard, mouse, or keypad.

PXE — pre-boot execution environment — A WfM (Wired for Management) standard that allows networked computers that do not have an operating system to be configured and started remotely.

Q
QuadCool – The multi-faceted Thermal Management System that combines enhanced forced convection and conductive cooling focused on the internal core system components, primary memory, storage and smart battery elements. QuadCool Technology moves heat away from core system components and elements to the exterior of the system.

R
RAID — Redundant Array of Independent Disks — A method of providing data redundancy. Some common implementations of RAID include RAID 0, RAID 1, RAID 5, RAID 10, and RAID 50.

RAM — Random-Access Memory — The primary temporary storage area for program instructions and data. Any information stored in RAM is lost when you shut down your computer.

readme file — A text file included with a software package or hardware product. Typically, readme files provide installation information and describe new product enhancements or corrections that have not yet been documented.

read-only — Data and/or files you can view but cannot edit or delete. A file can have read-only status if:
- It resides on a physically write-protected floppy disk, CD, or DVD.
- It is located on a network in a directory and the system administrator has assigned rights only to specific individuals.

refresh rate — The frequency, measured in Hz, at which your screen's horizontal lines are recharged (sometimes also referred to as its vertical frequency). The higher the refresh rate, the less video flicker can be seen by the human eye.

resolution — The sharpness and clarity of an image produced by a printer or displayed on a monitor. The higher the resolution, the sharper the image.

RFI — Radio Frequency Interference — Interference that is generated at typical radio frequencies, in the range of 10 kHz to 100,000 MHz. Radio frequencies are at the lower end of the electromagnetic frequency spectrum and are more likely to have interference than the higher frequency radiations, such as infrared and light.

ROM — Read-Only Memory — Memory that stores data and programs that cannot be deleted or written to by the computer. ROM, unlike RAM, retains its contents after you shut down your computer. Some programs essential to the operation of your computer reside in ROM.

RPM — Revolutions Per Minute — The number of rotations that occur per minute. Hard drive speed is often measured in rpm.

RTC — Real Time Clock — Battery-powered clock on the system board that keeps the date and time after you shut down the computer.

RTCRST — Real-Time Clock Reset — A jumper on the system board of some computers that can often be used for troubleshooting problems.

Rugged Redefined – The design and development system that delivers a higher performance and functionality platform, while maintaining the core system IT architecture of the base computing platform.

S
SAS — Serial Attached SCSI — A faster, serial version of the SCSI interface (as opposed to the original SCSI parallel architecture).

SATA — Serial ATA — A faster, serial version of the ATA (IDE) interface.

ScanDisk — A Microsoft utility that checks files, folders, and the hard disk's surface for errors. ScanDisk often runs when you restart the computer after it has stopped responding.

SCSI — small computer system interface — A high-speed interface used to connect devices to a computer, such as hard drives, CD drives, printers, and scanners. The SCSI can connect many devices using a single controller. Each device is accessed by an individual identification number on the SCSI controller bus.

SDRAM — Synchronous Dynamic Random-Access Memory — A type of DRAM that is synchronized with the optimal clock speed of the processor.

serial connector — An I/O port often used to connect devices such as a handheld digital device or digital camera to your computer.

Service Tag — A bar code label on your computer that identifies your computer when you call Dell Customer Support for customer service or technical support.

setup program — A program that is used to install and configure hardware and software. The setup.exe or install.exe program comes with most Windows software packages. Setup program differs from system setup.

shortcut — An icon that provides quick access to frequently used programs, files, folders, and drives. When you place a shortcut on your Windows desktop and double-click the icon, you can open its corresponding folder or file without having to find it first. Shortcut icons do not change the location of files. If you delete a shortcut, the original file is not affected. Also, you can rename a shortcut icon.

SIM — Subscriber Identity Module — A SIM card contains a microchip that encrypts voice and data transmissions. SIM cards can be used in phones or portable computers.

smart card — A card that is embedded with a processor and a memory chip. Smart cards can be used to authenticate a user on computers equipped for smart cards.

S/PDIF — Sony/Philips Digital Interface — An audio transfer file format that allows the transfer of audio from one file to another without converting it to and from an analog format, which could degrade the quality of the file.

standby mode — A power management mode that shuts down all unnecessary computer operations to save energy.

surge protectors — Prevent voltage spikes, such as those that may occur during an electrical storm, from entering the

computer through the electrical outlet. Surge protectors do not protect against lightning strikes or against brownouts, which occur when the voltage drops more than 20 percent below the normal AC-line voltage level. Network connections cannot be protected by surge protectors. Always disconnect the network cable from the network connector during electrical storms.

SVGA — Super-Video Graphics Array — A video standard for video cards and controllers. Typical SVGA resolutions are 800 x 600 and 1024 x 768. The number of colors and resolution that a program displays depends on the capabilities of the monitor, the video controller and its drivers, and the amount of video memory installed in the computer.

S-video TV-out — A connector used to attach a TV or digital audio device to the computer.

SXGA — Super-extended Graphics Array — A video standard for video cards and controllers that supports resolutions up to 1280 x 1024.

SXGA+ — Super-extended Graphics Array plus — A video standard for video cards and controllers that supports resolutions up to 1400 x 1050.

system board — The main circuit board in your computer. Also known as the motherboard.

system setup — A utility that serves as an interface between the computer hardware and the operating system. System setup allows you to configure user selectable options in the BIOS, such as date and time or system password. Unless you understand what effect the settings have on the computer, do not change the settings for this program.

T
TAPI — Telephony Application Programming Interface — Enables Windows programs to operate with a wide variety of telephony devices, including voice, data, fax, and video.

text editor — A program used to create and edit files that contain only text; for example, Windows Notepad uses a text editor. Text editors do not usually provide word wrap or formatting functionality (the option to underline, change fonts, and so on).

TPM — Trusted Platform Module — A hardware-based security feature that when combined with security software enhances network and computer security by enabling features such as file and e-mail protection.

travel module — A plastic device designed to fit inside the module bay of a portable computer to reduce the weight of the computer.

U
UAC — User Account Control— Microsoft Windows Vista™ security feature that, when enabled, provides an added layer of security between user accounts and access to operating system settings.

UMA — Unified Memory Allocation — System memory dynamically allocated to video.

UPS — Uninterruptible Power Supply — A backup power source used when the electrical power fails or drops to an unacceptable voltage level. A UPS keeps a computer running for a limited amount of time when there is no electrical power. UPS systems typically provide surge suppression and may also provide voltage regulation. Small UPS systems provide battery power for a few minutes to enable you to shut down your computer.

USB — Universal Serial Bus — A hardware interface for a low-speed device such as a USB-compatible keyboard, mouse, joystick, scanner, set of speakers, printer, broadband devices (DSL and cable modems), imaging devices, or storage devices. Devices are plugged directly in to a 4-pin socket on your computer or in to a multi-port hub that plugs in to your computer. USB devices can be connected and disconnected while the computer is turned on, and they can also be daisy-chained together.

UTP — Unshielded Twisted Pair — Describes a type of cable used in most telephone networks and some computer networks. Pairs of unshielded wires are twisted to protect against electromagnetic interference, rather than relying on a metal sheath around each pair of wires to protect against interference.

UXGA — Ultra extended Graphics Array — A video standard for video cards and controllers that supports resolutions up to 1600 x 1200.

V
video controller — The circuitry on a video card or on the system board (in computers with an integrated video controller) that provides the video capabilities—in combination with the monitor—for your computer.

video memory — Memory that consists of memory chips dedicated to video functions. Video memory is usually faster than system memory. The amount of video memory installed primarily influences the number of colors that a program can display.

video mode — A mode that describes how text and graphics are displayed on a monitor. Graphics based software, such as Windows operating systems, displays in video modes that can be defined as x horizontal pixels by y vertical pixels by z colors. Character-based software, such as text editors, displays in video modes that can be defined as x columns by y rows of characters.

video resolution — See resolution.

virus — A program that is designed to inconvenience you or to destroy data stored on your computer. A virus program moves from one computer to another through an infected disk, software downloaded from the Internet, or e-mail attachments. When an infected program starts, its embedded virus also starts. A common type of virus is a boot virus, which is stored in the boot sectors of a floppy disk. If the floppy disk is left in the drive when the computer is shut down and then turned on, the computer is infected when it reads the boot sectors of the floppy disk expecting to find the operating system. If the computer is infected, the boot virus may replicate itself onto all the floppy disks that are read or written in that computer until the virus is eradicated.

V — volt — The measurement of electric potential or electromotive force. One V appears across a resistance of 1 ohm when a current of 1 ampere flows through that resistance.

W

W — Watt — The measurement of electrical power. One W is 1 ampere of current flowing at 1 volt.

WHr — Hatt-Hour — A unit of measure commonly used to indicate the approximate capacity of a battery. For example, a 66-WHr battery can supply 66 W of power for 1 hour or 33 W for 2 hours.

wallpaper — The background pattern or picture on the Windows desktop. Change your wallpaper through the Windows Control Panel. You can also scan in your favorite picture and make it wallpaper.

WLAN — Wireless Local Area Network. A series of interconnected computers that communicate with each other over the air waves using access points or wireless routers to provide Internet access.

write-protected — Files or media that cannot be changed. Use write-protection when you want to protect data from being changed or destroyed. To write-protect a 3.5-inch floppy disk, slide its write-protect tab to the open position.

WWAN — Wireless Wide Area Network. A wireless highspeed data network using cellular technology and covering a much larger geographic area than WLAN.

WXGA — wide-aspect extended graphics array — A video standard for video cards and controllers that supports resolutions up to 1280 x 800."

X

XBay — A bay that supports devices such as optical drives, a second battery, or a second hard drive.

XGA — extended Graphics Array — A video standard for video cards and controllers that supports resolutions up to 1024 x 768.

Z

ZIF — Zero Insertion Force — A type of socket or connector that allows a computer chip to be installed or removed with no stress applied to either the chip or its socket.

Zip — A popular data compression format. Files that have been compressed with the Zip format are called Zip files and usually have a filename extension of .zip. A special kind of zipped file is a self-extracting file, which has a filename extension of .exe. You can unzip a self-extracting file by double-clicking it.

Zip drive — A high-capacity floppy drive developed by Iomega Corporation that uses 3.5-inch removable disks called Zip disks. Zip disks are slightly larger than regular floppy disks, about twice as thick, and hold up to 100 MB of data.