

# **V100 Operation Manual**

(This version is for Safety Approval only)

(October 2008)

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# Preface

This manual contains information that will help you operate the computer. It is divided into 8 chapters and 2 appendices.

- Chapter 1, **Getting Started**, takes you through the process of setting up the computer and identifying its external components.
- Chapter 2, **Operating Your Computer**, tells you how to use the computer's components and features.
- Chapter 3, **Managing Power**, provides information on power.
- Chapter 4, **Expanding Your Computer**, provides information on installing and using peripheral devices.
- Chapter 5, **Using BIOS Setup**, describes the BIOS Setup program that configures the computer's BIOS settings.
- Chapter 6, **Installing Software Drivers**, describes how to install the drivers and utilities supplied with the computer.
- Chapter 7, **Caring for the Computer**, gives you tips in care and maintenance.
- Chapter 8, **Troubleshooting**, gives solutions to common problems you may encounter when using the computer.
- Appendix A, **Specifications**, gives a brief specification of the computer.
- Appendix B, **Regulatory Information**, provides regulatory statements and safety notices on your computer.

## Notational Conventions

Throughout this manual, the following conventions are used to distinguish elements of text.

■ **NOTE:** identifies additional information that requires special attention.

■ **CAUTION:** identifies important information that, if not followed, may result in loss of data or damage to the computer.

Keyboard keys are shown in a bold typeset. For example:

Press the **Enter** key to complete.

When keys are joined by a plus sign (+), press the first key, and, while keeping the first key down, press the remaining keys, finally release all the keys. When necessary, keys are also shown in graphics.

A title, command, setup item, or button that you can see on the screen is shown in boldface. A value or an option that you can select for a setup item is shown in italic. For example:

Select **Power Schemes**, set it to *Portable/Laptop*, and then click the OK button.

# ***Getting Started***

Congratulations on purchasing this rugged computer.

This chapter first tells you step by step how to get the computer up and running. You will find instructions for these procedures:

- Unpacking
- Connecting to AC power
- Opening and closing the cover
- Turning on the computer
- Turning off the computer
- Attaching the grid-type hand strap

Then, you will find a section briefly introducing the external components of the computer. And the last section navigates you to the information you may need after the computer is ready for use.

# Getting the Computer Running

This section guides you through the procedures for getting the computer ready for operation.

## Unpacking

After unpacking the shipping carton, you should find these standard items:

- Notebook computer
- Accessories:
  - AC adapter
  - AC power cord
  - Grid-type hand strap
  - Driver disc
  - Stylus (option)
  - Digitizer pen (option)
  - Size “AAAA” battery (option)

Inspect all the items. If any item is damaged or missing, notify your dealer immediately.

Keep the shipping carton and packing materials in case you need to ship or store the computer in the future.

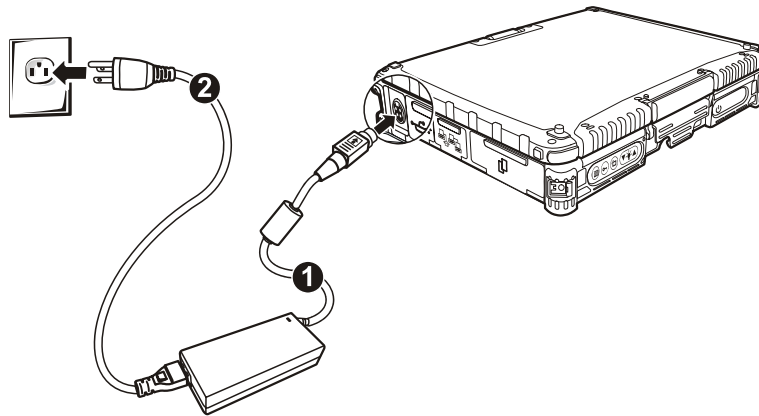
## Connecting to AC Power

The computer operates either on the external AC power or internal battery power. It is suggested that you use AC power when you start up the computer for the very first time.

**CAUTION:** Use only the AC adapter included with your computer. Using other AC adapters may damage the computer.

1. Make sure that the computer is turned off.

2. Plug the DC cord of the AC adapter to the power connector of the computer (❶).
3. Plug the female end of the AC power cord to the AC adapter and the male end to an electrical outlet (❷).



4. When the AC adapter is connected, power is being supplied from the electrical outlet to the AC adapter and onto your computer. Now, you are ready to turn on the computer.

**CAUTION:**

- When you disconnect the AC adapter, disconnect from the electrical outlet first and then from the computer. A reverse procedure may damage the AC adapter or the computer.
- When unplugging the connector, always hold the plug head. Never pull on the cord.

**NOTE:** When the AC adapter is connected, it also charges the battery pack. For information on using battery power, see Chapter 3.

## Opening and Closing the Cover

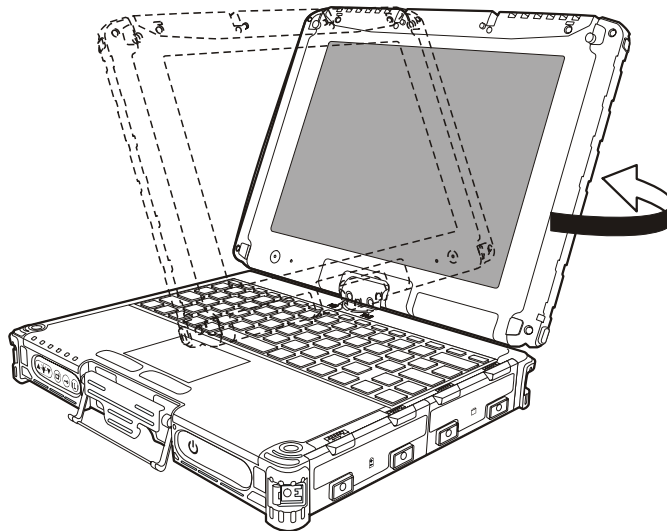
Open the top cover by pulling up on latch A and releasing latch B and lifting up the cover. You can tilt the cover forward or backward for optimal viewing clarity.

Close the top cover by closing the display. Then position latch B on the display side and bring latch A down to fix the display in place.

## Operating in Tablet Mode

In addition to being used as a regular notebook computer (Laptop mode), your computer can also be operated in Tablet mode. In Tablet mode, the computer can be operated using the touchscreen or active digitizer feature with the software keyboard (see chapter 2), and the tablet buttons (see later section on “Front Components”), instead of the internal keyboard and the touchpad.

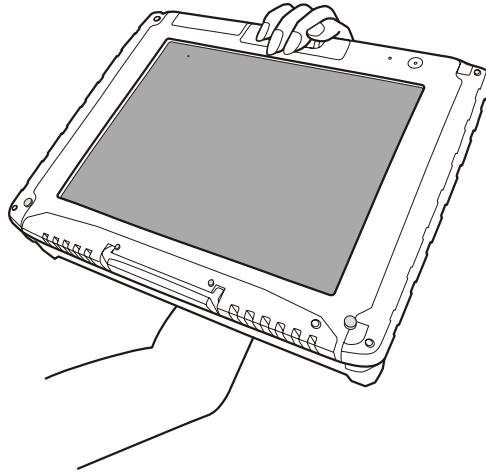
1. Open the top cover so that it is almost perpendicular with the keyboard of the computer.
2. Turn the display counter-clockwise by 180°.



**CAUTION:** Do not rotate the display more than 180°, or attempt to rotate the display clockwise.

3. Close the computer with the display facing up. Then pull up on the latch A.
4. Position the latch B on the display side, then bring latch A down to fix the display in place.

In Tablet mode, the computer can be operated while holding it as shown.



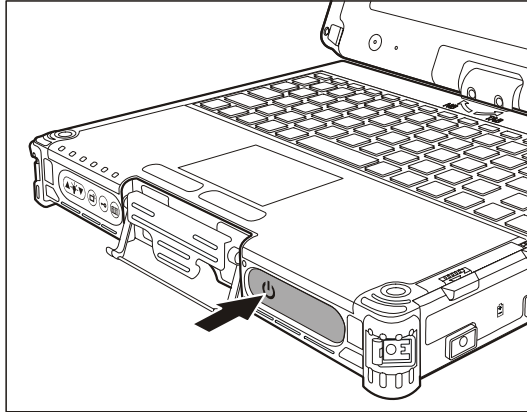
To return to Laptop mode, perform the steps for changing the computer into Tablet mode in reverse order.

## Turning On and Off the Computer

### Turning On

1. Make sure that the computer is connected to AC power.

2. Press the power button (⏻).



3. Each time the computer is turned on, it performs a Power-On Self Test (POST), and the operating system such as Windows should start.

## Turning Off

To turn off the computer power, use the “Shut Down” command of your operating system.

**NOTE:** There are other ways you can stop the computer so that you will be back to where you left off when you next turn on the computer. (See “Stopping the Computer” in Chapter 2 for information.)

**CAUTION:** If you have to turn the computer on again immediately after turning it off, wait for at least five seconds. Turning the computer off and on rapidly can damage it.



## Attaching the Hand Strap

The hand strap can be attached to any two sides of the four (option) corners of your computer.

Standard setup: two buckles on the left/right front side of your computer.

To release, press on the right spring latch first to detach the right side. Then release the left side.

Optional setup: buckles on four corners of your computer.

**CAUTION:**

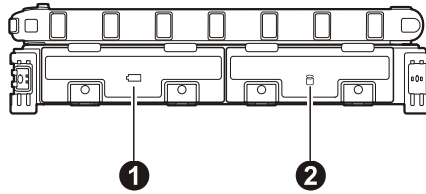
- The strap has been designed to carry only the weight of the computer. Therefore, be sure that the strap does not carry a weight that exceeds the weight of the computer. The strap may accidentally come loose from the computer.
- Do not use a strap that is damaged or about to tear.



# Taking a Look at the Computer

This section identifies the external components of the computer and briefly describes the function of each component.

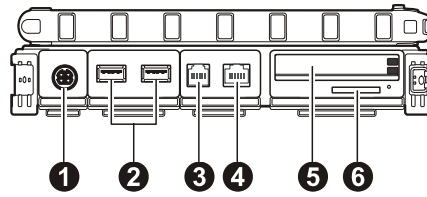
**NOTE:** Depending on the model you purchased, the appearance of your computer may not be exactly the same as those shown in this manual.






## Right-Side Components



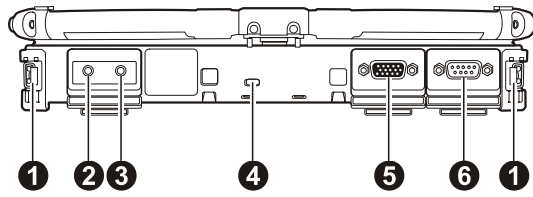
Ref	Component	Description
①	<b>Battery Pack Compartment</b> 	Inside is the battery pack that supplies power to your computer when external power is not connected.
②	<b>Hard Disk Drive Compartment</b> 	Inside is the hard disk drive.





## Left-Side Components






Ref	Component	Description
①	<b>Power Connector</b> 	Connects the AC adapter.
②	<b>USB Ports</b> 	Each of the two ports connects a USB device, such as a flash disk, printer, digital camera, joystick, and more.
③	<b>RJ-11 Connector</b> 	Connects the telephone line.
④	<b>RJ-45 Connector</b> 	Connects the LAN cable.
⑤	<b>ExpressCard Slot</b> (upper)	Accepts an ExpressCard for additional functions (option).
	<b>PCMCIA Slot</b> (lower)	Accepts a PC card for additional functions.
	OR	
	<b>PCMCIA Slot</b> (upper)	Accepts a PC card for additional functions.
	<b>Smart Card Reader</b> (lower)	Accepts a smart card for additional security feature (option).
⑥	<b>Card Reader</b> 	Accepts a SD (Secure Digital) card for removable storage media.

## Rear Components

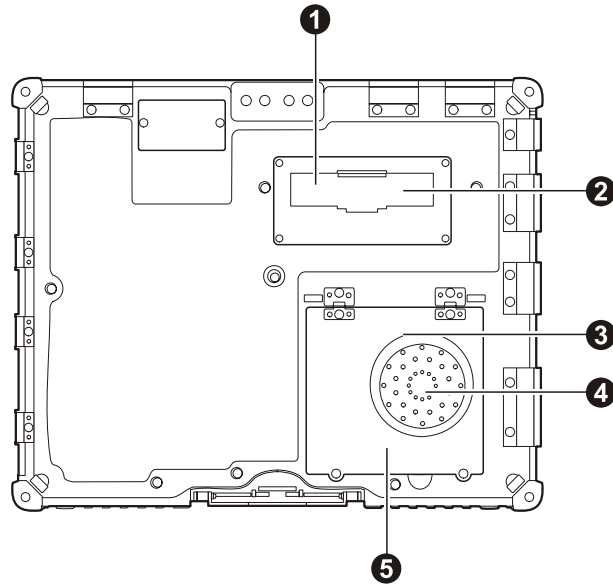


Ref	Component	Description
❶	<b>Hand Strap Holder</b>	The hand strap can be attached to the two holders for convenient handling of your computer.
❷	<b>Audio Output Connector</b> 	Connects a set of headphones, external speakers with amplifier, or an audio recording device.
❸	<b>Microphone Connector</b> 	Connects an external microphone.
❹	<b>Kensington Lock</b>	Locks the computer to a stationary object for security.
❺	<b>VGA Connector</b> 	Connects an external display monitor. NOTE: Depending on your model, this port could be a serial connector.
❻	<b>Serial Connector</b> 	Connects a serial mouse or serial communication device.

## Front Components

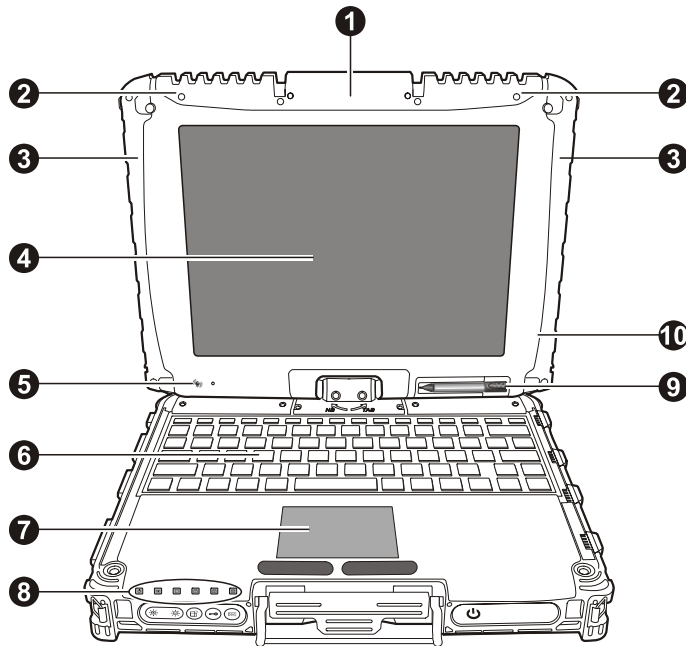
Ref	Component	Description
①	<b>Hand Strap Holder</b>	The hand strap can be attached to the two holders for convenient handling of your computer.
②	<b>EasyTap Utility Button</b>	Toggles the “EasyTap” utility ON and OFF.
③	<b>Sunlight-readable Button</b>	Toggles the sunlight-readable function ON and OFF.
④	<b>Reset Button</b> 	Serves as the Ctrl+Alt+Del keyboard buttons.
⑤	<b>Software Keyboard Button</b> 	Shows or hides the software keyboard on your LCD display.
⑥	<b>RF Button</b>	Toggles the wireless LAN ON and OFF.
⑦	<b>Top Cover Latch</b>	Locks the top cover.
⑧	<b>Power Button</b> 	Turns the computer power ON and OFF.

## Bottom Components








Ref	Component	Description
❶	<b>Antenna Connector</b>	Inside is the connector for using an external antenna.
❷	<b>Expansion Bus Connector</b>	Inside is the expansion bus connector for using a Port Replicator.
❸	<b>Wireless LAN (WLAN) Card Slot</b>	Inside is the mini PCI-E slot for using a mini PCI-E WLAN card.
❹	<b>Speaker</b>	Sends out sound and voice from your computer.
❺	<b>Memory Slot</b>	Inside is the memory slot for expanding the memory size of your computer.

## Top-open Components



Ref	Component	Description
①	<b>CMOS Camera</b>	Allows you to use your computer's camera function.
②	<b>WLAN Antenna</b>	Inside is the antenna for wireless LAN (local area network) transmission.
③		
④	<b>LCD Screen</b>	Displays the output of the computer.
⑤	<b>Light Sensor</b> (☉)	Adjusts the LCD brightness and optional keyboard backlight automatically surrounding.
⑥	<b>Keyboard</b>	Serves as the data input device of the computer.
⑦	<b>Touchpad</b>	Serves as the pointing device of the computer.
⑧	<b>Indicators</b>	Show the current status of the computer's devices.

Ref	Component	Description
		AC Power indicator Lights green when the computer is turned on and using AC power.
		Battery Charge indicator Lights green when the battery is fully charged. Lights yellow when the battery is being charged. Blinks yellow when the battery's capacity is below 10 %. Blinks green when battery's temperature is too high (over 60 °C).
		Hard disk drive in-use indicator Lights green when computer is accessing the hard disk drive. Lights red when optional hard disk drive heater is on for low temperature operation.
		RF (wireless LAN ) indicator
		Num Lock indicator
		Caps Lock indicator
<b>9</b>	<b>Stylus</b>	Provides a convenient way to use the touchscreen. Can be stretched for better grip and handling.
<b>10</b>		



# Where to Go from Here

As your computer is ready for operation, you may want to do any of the following now:

<b>For this purpose...</b>	<b>Do this...</b>
To know more about the computer...	Go on to the next chapter.
To install the operating system if your dealer has not already done so...	See the operating system manual.
To know more about the operating system...	Read the operating system manual.
To install the drivers if your dealer has not already done so...	See Chapter 6.
To charge the battery pack for the first time...	See “Charging the Battery Pack” in Chapter 3.

# *Operating Your Computer*

This chapter provides information about the use of the computer.

If you are new to computers, reading this chapter will help you learn the operating basics. If you are already a computer user but are new to notebook computers, you may choose to read only the parts containing information unique to your computer.

Described in this chapter are the operating basics of these components:

- Keyboard
- Touchpad
- Touchscreen
- Active Digitizer (option)
- Hard disk drive

And these features:

- Starting and stopping the computer
- Video features
- Audio features
- Communication features

# Starting and Stopping the Computer

There are a number of ways to start and stop the computer.

## Starting the Computer

You always start the computer using the power button.

A computer starts up with an operating system (OS) existing on the storage device such as the hard disk. The computer will automatically load the OS after you turn it on. This process is called booting.

**NOTE:** An operating system is the platform for all your software application programs to run on. Your computer uses the Microsoft Windows Vista operating system.

## Stopping the Computer

When you finish a working session, you can stop the computer by turning off the power or leaving the computer in Sleep or Hibernation mode:

To stop in this mode...	Do this...	To start up or resume again
Off	Follow the shutdown procedure of your operating system. This can prevent loss of unsaved data or damage to your software programs.  If the system is locked up because of hardware or software problems, press the power button to turn off the computer.	Press the power button.
Sleep	Depending on your settings in Windows, you can place the computer in Sleep mode by: <ul style="list-style-type: none"><li>• Closing the display cover</li><li>• Pressing the Fn+F10 hot key</li><li>• Pressing the power button</li></ul>	Press any key.

To stop in this mode...	Do this...	To start up or resume again
Hibernation	Depending on your settings in Windows, you can place the computer in Hibernation mode by: <ul style="list-style-type: none"><li>• Closing the display cover</li><li>• Pressing the power button</li></ul>	Press the power button.

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If you choose to stop in Sleep or Hibernation mode, you can return to where you left off the next time you start up the computer. (See “Power Management” in Chapter 3 for more information.)

# Using the Internal Keyboard

Your keyboard has all the standard functions of a full-sized computer keyboard plus a Fn key added for specific functions.

The standard functions of the keyboard can be further divided into four major categories:

- Typewriter keys
- Cursor-control keys
- Numeric keys
- Function keys

## Typewriter Keys

Typewriter keys are similar to the keys on a typewriter. Several keys are added such as the Ctrl, Alt, Esc, and lock keys for special purposes. When the lock keys (Caps Lock and Num Lk) are pressed, their corresponding indicators light up.

The Control (Ctrl) / Alternate (Alt) key is normally used in combination with other keys for program-specific functions. The Escape (Esc) key is usually used for stopping a process. Examples are exiting a program and canceling a command. The function depends on the program you are using.

## Cursor-Control Keys



**NOTE:** The word “cursor” refers to the indicator on the screen that lets you know exactly where on your screen anything you type will appear. It can take the form of a vertical or horizontal line, a block, or one of many other shapes.

## Numeric Keypad

A 15-key numeric keypad is embedded in the typewriter keys as shown next:



Numeric keys facilitate entering of numbers and calculations. When Num Lock is on, the numeric keys are activated; meaning you can use these keys to enter numerals.

**NOTE:**

- When the numeric keypad is activated and you need to type the English letter in the keypad area, you can turn Num Lock off or you can press Fn and then the letter without turning Num Lock off.
- Some software may not be able to use the numeric keypad on the computer. If so, use the numeric keypad on an external keyboard instead.

## Function Keys

On the top row of the keys are the function keys: F1 to F12. Function keys are multi-purpose keys that perform functions defined by individual programs.










## Fn Key

The Fn key, at the lower left corner of the keyboard, is used with another key to perform the alternative function of a key. The letter “Fn” and the alternative functions are identified by the color of blue on the keytop. To perform a desired function, first press and hold Fn, then press the other key.

## Hot Keys

Hot keys refer to a combination of keys that can be pressed any time to activate special functions of the computer. Most hot keys operate in a cyclic way. Each time a hot key combination is pressed, it shifts the corresponding function to the other or next choice.

You can easily identify the hot keys with the icons imprinted on the keytop. The hot keys are described next.

Key	Description
	Switches the wireless LAN radio on and off. <b>NOTE:</b> This function works only if an optional mini PCI-E wireless LAN card is installed.
	Decreases the sound volume.
	Increases the sound volume.
	Decreases the LCD brightness (64 levels).
	Increases the LCD brightness (64 levels).
	Switches the system sound output off (mute) and on.
	Switches LCD display on and off.
	Switches the display output when external devices are connected. <b>NOTE:</b> This function only applies to Plug & Play display devices.
	Serves as the sleep button that you can define with Windows' <b>Power Options</b> . (See the "Power Management" in Chapter 3.)

## Euro Symbol



You can press the euro dollar sign € on various keyboards.



- To press the euro sign on a United States-International keyboard, hold down the Alt Gr key and press 5 (which has an euro sign on it).
- To press the euro sign on a standard United States keyboard, hold down either of the Alt keys and type 0128 on the numeric keypad part of your keyboard.
- To press the euro sign on an UK keyboard, hold down the Alt Gr key and press 4 (which has an euro sign on it).



## Windows Keys


The keyboard has two keys that perform Windows-specific functions:

 Windows Logo key and  Application key.

The  Windows Logo key opens the **Start** menu and performs software-specific functions when used in combination with other keys. The  Application key usually has the same effect as a right mouse click. (See your Windows manual for more information.)

# Using the Software Keyboard

When using the computer in Tablet mode, you can use the software keyboard.

1. Press the software keyboard button (  ) and the software keyboard will appear onscreen.



2. Enter the characters with the stylus.

**| NOTE:** To protect the LCD display, use the stylus on your touchscreen.

# Using the Touchpad

**CAUTION:** Do not use a sharp object such as a pen on the touchpad. Doing so may damage the touchpad surface.

**NOTE:** For optimal performance of the touchpad, keep your fingers and the pads clean and dry. When tapping on the pad, tap lightly. Do not use excessive force.

The touchpad is a pointing device that allows you to communicate with the computer by controlling the location of the pointer on the screen and making selection with the buttons.

The touchpad consists of a rectangular pad (work surface) and a left and right buttons. To use the touchpad, place your forefinger or thumb on the pad. The rectangular pad acts like a miniature duplicate of your display. As you slide your fingertip across the pad, the pointer (also called cursor) on the screen moves accordingly. When your finger reaches the edge of the pad, simply relocate yourself by lifting the finger and placing it on the other side of the pad.

Here are some common terms that you should know when using the touchpad:

Term	Action
Point	Move your finger on the pad until the cursor points to the selection on the screen.
Click	Press and release the left button. –or– Tap gently anywhere on the pad.
Double-click	Press and release the left button twice in quick succession. –or– Tap twice on the pad rapidly.

Term	Action
Drag and drop	<p>Press and hold the left button, then move your finger until you reach your destination (drag). Finally, release the button (drop) when you finish dragging your selection to the destination. The object will drop into the new location.</p> <p>–or–</p> <p>Gently tap twice on the pad and on the second tap, keep your finger in contact with the pad. Then, move your finger across the pad to drag the selected object to your destination. When you lift your finger from the pad, the selected object will drop into place.</p>
Scroll	<p>To scroll is to move up and down or left and right in the working area on the screen.</p> <p>To move vertically, place your finger on the right or left edge of the pad and slide your finger up and down along the edge. To move horizontally, place your finger on the top or bottom edge of the pad and slide your finger left and right.</p> <p>This function works only after you install the touchpad driver supplied with the computer and it may not work for all applications.</p>

**TABLE NOTE:** If you swap the left and right buttons, “tapping” on the touchpad as an alternative method of pressing the left button will no longer be valid.

## Configuring the Touchpad

You may want to configure the touchpad to suit your needs. For example, if you are a left-handed user, you can swap the two buttons so that you can use the right button as the left button and vice versa. You can also change the size of the on-screen pointer, the speed of the pointer, and so on.

To configure the touchpad, go to **Control Panel → Hardware and Sounds → Mouse Properties**.

# Using the Touchscreen (Optional)

**NOTE:**

- Your computer comes with either the touchscreen function or the Active Digitizer feature.
- Make sure the touchscreen driver has been installed properly.

**CAUTION:** Do not use a sharp object such as a ballpoint pen or pencil on the touchscreen. Doing so may damage the touchscreen surface. Use your finger or the included stylus.

The touchscreen is a touch-sensitive device that allows you to easily use the computer without a mouse or touchpad to communicate with the computer by controlling the location of the pointer on the screen and making selection with the buttons.

Here are some common terms that you should know when using the touchscreen:

Term	Action
Click/Point	Tap gently on the touchscreen.
Double-click	Tap twice on the touchscreen rapidly.
Drag and drop	Press lightly on the touchscreen and move your finger until you reach your destination (drag). Finally, release your finger (drop) when you finish dragging your selection to the destination. The object will drop into the new location.

# Using the Active Digitizer Feature (Optional)

**NOTE:**

- Your computer comes with either the Active Digitizer feature or the touchscreen function.
- Make sure the digitizer driver has been installed properly.


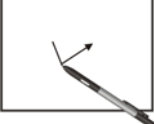
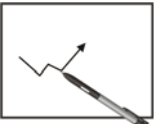
**CAUTION:** Do not use a sharp object such as a ballpoint pen or pencil on the LCD display. Doing so may damage the display surface. Use your included digitizer pen (option).


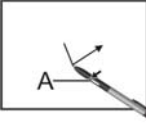
The active digitizer feature allows you to easily use the computer without a mouse, keyboard, or touchpad to communicate with the computer by using the optional digitizer pen.

When using the digitizer pen, be sure to install the included size “AAAA” battery.



Here are some common terms that you should know when using the active digitizer feature:

Term	Action
Move	 Move the cursor pointed by the digitizer pen.
Click/Point	 Tap gently on the display.
Double-click	 Tap twice on the display rapidly.

Term	Action
Drag and drop 	Press lightly on the display and move your digitizer pen until you reach your destination (drag). Finally, release your digitizer pen (drop) when you finish dragging your selection to the destination. The object will drop into the new location.
Right-click 	Press and hold down the digitizer pen button (A), then tap gently the object.

**CAUTION:**

- When the LCD display is used alone or with an external display simultaneously, the digitizer function cannot be used when the area of either display is set larger than the default setting of the display resolution.
- Even when only an external display is in use, the cursor will move on the external display if you touch the surface of the LCD display with the pen or bring the pen close to the surface of the LCD display when the digitizer driver is active. Therefore, do not touch the LCD display when only an external display is in use.
- The active digitizer feature cannot be used in the BIOS Setup program or when using the full screen in DOS mode.

**NOTE:**

- You can move the cursor by bringing the digitizer pen close to the screen, without actually touching the screen's surface.
- Do not move the digitizer pen too quickly. If the pen moves too quickly, the cursor may be unable to follow its movement.
- If you cannot click on the edge of the screen, hold the digitizer pen perpendicular to the display and try clicking again.

# Using the Hard Disk Drive

**WARNING:** DO NOT replace the hard disk drive by yourself. Refer all servicing to qualified personnel or your dealer.

Your computer comes with a removable hard disk drive as drive C. A hard disk drive is a storage device with non-removable, rotating, magnetic storage platters inside it. It is where your operating system and application software programs are stored.

Your hard disk drive is a 2.5-inch SATA (serial ATA) hard disk drive. This type of drive embodies the latest in fast, reliable mass storage by integrating all the control circuitry necessary for operation directly onto the drive itself.

You can enable the Advanced Host Controller Interface (AHCI), a programming interface for SATA host controllers. AHCI defines transactions between the SATA controller and software and enables advanced performance and usability with SATA. When the SATA AHCI mode is enabled, your system can support SATA native command queuing, aggressive power management, and so on.

The system may come with an optional heater that automatically turns on for low temperature operation.


**CAUTION:**

- Make regular backups of your data files from your hard disk drive to USB flash disks or other storage media.
- Never turn off or reset the computer while the hard disk drive in-use indicator is on.



# Using the Video Features

The video subsystem of your computer features:

- 10.4-inch wide TFT (Thin-Film Transistor) color LCD display with 1024×768 XGA resolution or
- Simultaneous display on LCD and external monitor, which is useful when you have a presentation as you can control the screen from your computer and face the audience at the same time (option)
- Multi-display capability, which allows you to expand your desktop on the screen to another display device so that you have more desktop space to work on
- Built-in light sensor (  ) to automatically adjust the LCD brightness and optional keyboard backlight
- Power Management
- Sunlight-readable LCD display (option)

**NOTE:**

- Before using the multi-display capability or taking advantage of the enhanced video capabilities, the VGA driver supplied with your computer must be installed.
- The computer enters the Sleep or Hibernation mode when the LCD is closed. If you want to use the computer with the LCD closed, set *Do Nothing* to the "When I Close the lid" option in the **Power Options** → **System Settings** Properties. Thus the computer does not enter the Sleep or Hibernation mode when the LCD is closed.

## Configuring the Display Modes

**NOTE:** When using an external CRT monitor, the resolution depends on the CRT monitor's supported resolution.

Your computer has been set to a default resolution and number of colors before shipment. You can view and change display settings through your operating system. See your operating system documentation or online help for specific information.

For displaying in higher resolutions, you can connect an external monitor that supports higher resolutions. (See “Connecting an External Monitor” in Chapter 4 for more information.)

# Using the Audio Features

**NOTE:**

- To take advantage of the enhanced audio capabilities, the audio driver supplied with your computer must be installed.
- If you experience interference while recording, try lowering the microphone recording volume.

The audio subsystem of your computer features:



- Built-in sound system for recording and playing sound on your computer
- Azalia interface (high density audio codec)
- Speaker (located on bottom side), and
- External audio connectors

Ways of playing and recording sound vary with the operating system used. See your operating system documentation or online help for specific information.

## Connecting Audio Devices

For higher audio quality, you can send or receive sound through external audio devices.

**NOTE:** After connecting an external audio device, make sure that you specify the use of the correct audio device in Windows.

- **Audio Output Connector** (  ) can be connected to speakers, headphones, or earphone set.
- **Microphone Connector** (  ) can be connected to an external microphone for recording voice or sound.

**NOTE:** When using the external speakers/headphones or microphone, you cannot use the internal one.

# Using the Communication Features

## Using the Modem

**NOTE:** To take advantage of the modem feature, the modem driver supplied with your computer must be installed.

The internal 56 K fax/data modem allows you to use the telephone line to communicate with others by fax, email, or connect to an online service or bulletin board.

To connect the telephone line to the modem, connect one end of the modem cable to the RJ-11 connector on the computer and the other end to the phone line.

**NOTE:**

- When using the communication software, you may have to disable power management.
- Set the COM port of the modem to COM3.
- Set parameters such as modem speed (baud rate) and line type (pulse dialing or tone dialing).
- Do not enter the Sleep mode when using the communication software.

## Using the LAN

**NOTE:** To take advantage of the LAN feature, the LAN driver supplied with your computer must be installed. (See chapter 6 for details.)

The internal 10/100/1000Base-T LAN (Local Area Network) module allows you to connect your computer to a network. It supports data transfer rate up to 1000 Mbps.

To connect the network cable to the LAN module, connect one end of the LAN cable to the RJ-45 connector on the computer and the other end to the network hub.

## Using the Wireless LAN

Depending on your model, an internal mini PCI-E wireless LAN (WLAN) card may have been pre-installed by your computer manufacturer at the factory. This card allows you to access corporate networks or the Internet in a wireless environment.

The WLAN features include:

- WEP (Wired Equivalent Privacy) 64/128-bit data encryption
- IEEE 802.11a/g/n standard compliance

Technology	802.11a	802.11g	802.11n
Stated Maximum Throughput (Mbps)	54	54	100 Mbps or more
Data Rates (Mbps)	54, 48, 36, 24, 18, 12, 9, 6	54, 36, 18, 9	100 ~ 210
Band (GHz)	5.15 ~ 5.35	2.4	2.4 / 5
Modulation Technology	OFDM (Orthogonal Frequency Division Multiplexing)	OFDM (Orthogonal Frequency Division Multiplexing)	Spatial multiplexing, uses MIMO (multiple-input multiple-output)

To take advantage of the WLAN feature, make sure that the WLAN driver is installed correctly. If your WLAN card was provided by your dealer instead of the computer manufacturer, contact your dealer for the correct driver to use.

### Installing the Mini PCI-E WLAN Card

In case the mini PCI-E WLAN card has not been installed in your computer, perform the following:

1. Remove the battery pack (see chapter 3) and make sure that the computer is not connected to AC power.
2. Carefully place the computer upside down.
3. Remove the two screws and open the compartment cover.

4. To install the card, match the notched part of the card with the socket's projected part, and firmly insert the card into the socket horizontally.
5. Secure with two screws.
6. Connect the antenna cable (see label for the correct one) to the "MAIN" and "AUX" antenna connectors on the card.
7. Close the compartment cover and secure with two screws.

## Turning Off/On the WLAN Radio

**NOTE:** The FAA (Federal Aviation Agency) has deemed it unsafe to operate wireless devices in aircraft as this may interfere with flight safety. Remember to turn off wireless LAN when using your computer in the airplane.

Your computer has a built-in Fn+F2 WLAN hot key to switch the WLAN on/off (see "Hot Keys" in Chapter 2).

If you need to temporarily turn off the radio, press Fn+F2. To resume network connection, press Fn+F2 again.

It takes approximately 30 seconds for your computer to make a successful WLAN connection and approximately 10 seconds to disconnect.

## Connecting to a Wireless Network

To connect to a wireless network:

1. Make sure that the WLAN radio is on (controlled by Fn+F2).
2. Click **Start** and then **Programs**.
3. Click **Intel PROSet Wireless** and then **Intel PROSet Wireless**.

4. If any wireless network is detected, the following window appears on screen.



5. Click to select a wireless network to connect to, and then click **Connect**.
6. Depending on the settings, you may be asked to enter a wireless security password (encryption key).

For more information on the Intel PROSet Wireless utility, click **Help?** in the Intel(R) PROSet/Wireless window.

## Using the GPS

**NOTE:**

- To take advantage of the GPS feature, the GPS driver supplied with your computer must be installed.
- You may need to install third-party software to fully take advantage of the GPS feature.

Navigation and positioning are crucial to so many activities. To try to figure out where you are and where you are going, you need GPS technology. The Global Positioning System (GPS) is a worldwide radio-navigation system.



# *Managing Power*

Your computer operates either on external AC power or on internal battery power.

This chapter tells you how you can effectively manage power. To maintain optimal battery performance, it is important that you use the battery in the proper way.

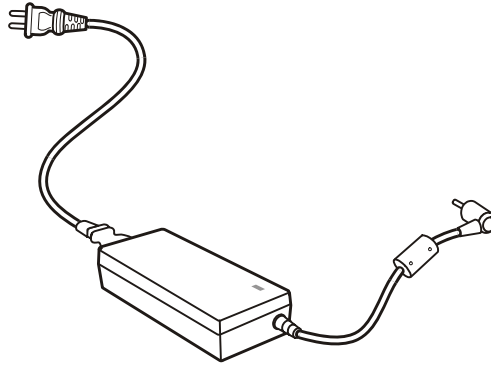
The topics in this chapter include:

- What is an AC adapter
- How to charge the battery pack
- When and how to initialize the battery pack
- How to use the Battery Automatic Calibration Utility
- How to check the battery level
- How to replace the battery pack
- What happens when the battery is low and what actions to take
- What is Power Management
- How to save power

# AC Adapter

**CAUTION:**

- The AC adapter is designed for use with your computer only. Connecting the AC adapter to another device can damage the adapter.
- The AC power cord supplied with your computer is for use in the country where you purchased your computer. If you plan to go overseas with the computer, consult your dealer for the appropriate power cord.
- When you disconnect the AC adapter, disconnect from the electrical outlet first and then from the computer. A reverse procedure may damage the AC adapter or computer.
- When unplugging the connector, always hold the plug head. Never pull on the cord.



The AC adapter serves as a converter from AC (Alternating Current) to DC (Direct Current) power because your computer runs on DC power, but an electrical outlet usually provides AC power. It also charges the battery pack when connected to AC power.

The adapter operates on any voltage in the range of 100~240 V AC.

# Battery Pack

The battery pack is the internal power source for the computer. It is rechargeable using the AC adapter.


The operating time of a fully charged battery pack depends on how you are using the computer. When your applications often access peripherals, you will experience a shorter operating time.

**NOTE:** Care and maintenance information for the battery is provided in the "Battery Pack Guidelines" section in Chapter 7.

## Charging the Battery Pack

**NOTE:**

- Charging will not start if the battery's temperature is below 0 °C (32 °F) or above 60 °C (140 °F).
- The charging process will stop and the Battery Charge Indicator flashes green when the battery's temperature gets above 60 °C (140 °F). If this happens, the battery pack may be damaged. Please contact your dealer.
- During charging, do not disconnect the AC adapter before the battery has been fully charged; otherwise you will get a prematurely charged battery.

To charge the battery pack, connect the AC adapter to the computer and an electrical outlet. The Battery Charge Indicator (  ) on the computer glows yellow to indicate that charging is in progress. You are advised to keep the computer power off while the battery is being charged. When the battery is fully charged, the Battery Charge Indicator is off.

It takes approximately 3 hours to fully charge the Li-Ion battery pack when the computer is off, and approximately 6 hours to fully charge the Li-Ion battery pack when the computer is on.

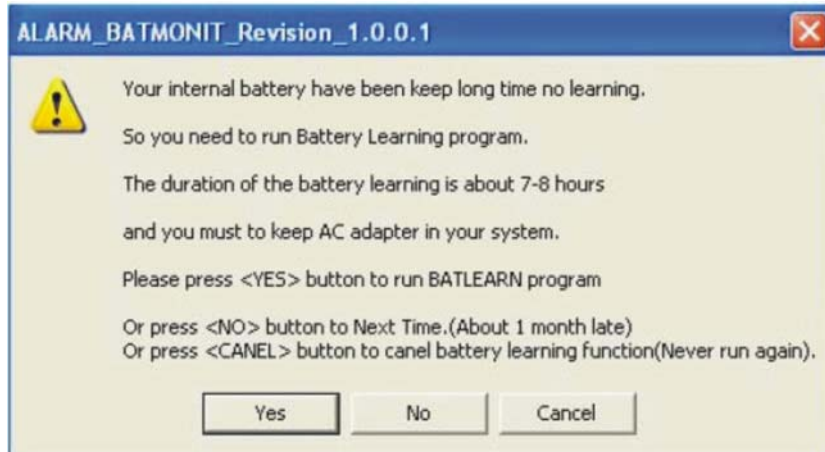
**CAUTION:** After the computer has been fully recharged, do not immediately disconnect and reconnect the AC adapter to charge it again. Doing so may damage the battery.

**NOTE:** The battery level may automatically lessen due to the self-discharge process (0.21 % per day), even when the battery pack is fully charged (100 %). This happens no matter if the battery pack is installed in the computer.

## Battery Automatic Calibration Utility

**NOTE:** To use the Battery Automatic Calibration Utility, the Battery Calibration driver supplied with your computer must be installed.

After installing the Battery Pack Automatic Calibration Utility, the **Battery Monitor** will call up the **Battery Learning** program every month. Before running **Battery Monitor**, it will check if the battery temperature is between 10 °C and 39 °C. When it is between 10 °C and 39 °C, the following screen appears.



Click **Yes** to run the **Battery Learning** program's recalibration function to fully charge the battery pack, discharge it completely, then fully charge it again.

Click **No** if you do not wish to run the **Battery Learning** program's recalibration function now.

Click **Cancel** if you do not wish the **Battery Monitor** to call up the **Battery Learning** program every month to run the **Battery Learning** program's recalibration function.

## Error Messages

The battery's performance would degrade as part of its normal wear-and-tear after using it for a considerable length of time. The **Battery Monitor** program would check the battery's condition and may display the following error messages. You are recommended to replace the battery.

Error Message	What it means ...
The Battery is BAD !! Battery Discharge FAIL, Discharge Timer <= Minimum Discharge Time	Battery's performance has gradually deteriorated. The discharge time is quite short.
The Battery is BAD !! Battery Charge FAIL, Charge Timer over time	Battery's performance has deteriorated. It cannot be charged.
The Battery is BAD !! Battery Charge FAIL, Charge Timer <= Minimum Charge time	Battery's performance has gradually deteriorated. Battery capacity is too little.
The Battery is BAD !! Battery Discharge FAIL, Discharge Timer >= Maximum Discharge Time	Battery's discharge circuit is bad. It cannot discharge.



**NOTE:** Running the Battery Learning program does not increase the battery's capacity.

**CAUTION:** Performing Battery Learning at frequent intervals will degrade the battery pack.

## Checking the Battery Level

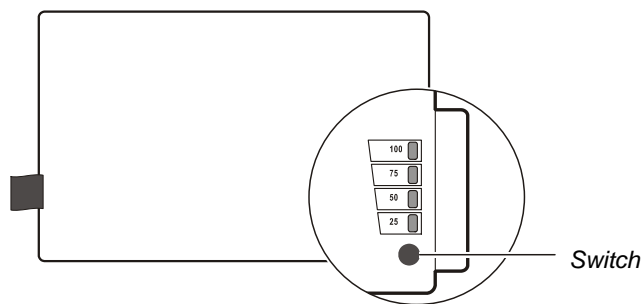
**NOTE:** Any battery level indication is an estimated result. The actual operating time can be different from the estimated time, depending on how you are using the computer.

### By Operating System

You can check the approximate battery level using the battery meter function of the operating system. To read the battery level in Windows, click the  icon on the taskbar. (Click the  icon if the computer is using AC power.)

### By Gas Gauge

On the exterior side of the battery pack is a gas gauge for displaying the estimated battery charge. When the battery pack is not installed in the computer and you want to know the battery charge, you can press the switch with a pointed device to see the corresponding value of indicator segment that light green. The value of the corresponding green segment indicates the relative percentage of the battery charge. The battery pack is fully discharged when you see no segment glowing green.



## Replacing the Battery Pack

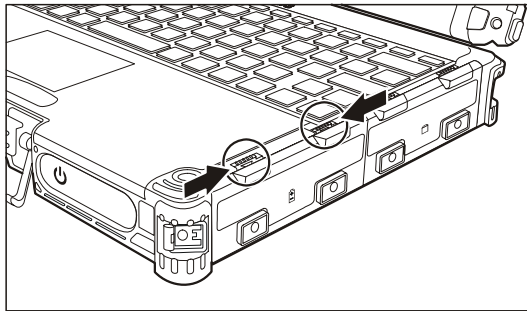
**CAUTION:**

- There is danger of explosion if the battery is incorrectly replaced. Replace the battery only with the computer manufacturer's optional battery packs. Discard used batteries according to the dealer's instructions.
- Do not attempt to disassemble the battery pack.

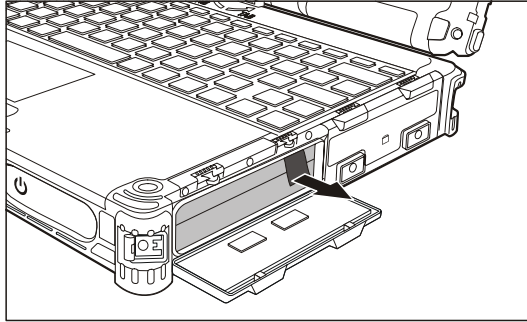
If you often rely on battery power for a long period of time while traveling, you may consider the purchase of an additional battery pack from your dealer and keep it with you in a fully charged state as a backup.

To replace the battery pack, follow these steps:

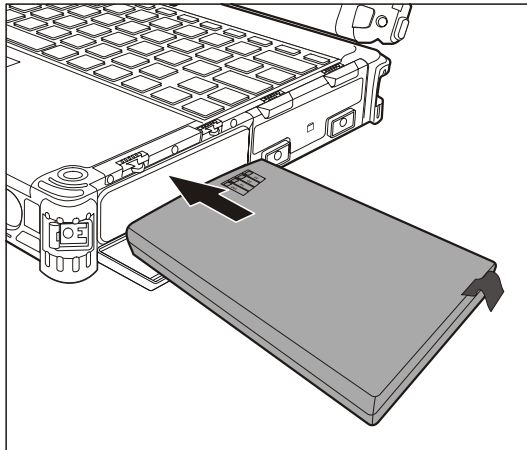
1. Make sure that the computer is not turned on or connected to AC power.
2. Locate the battery compartment on the right side of the computer.
3. Open the compartment cover by pressing on both sides of the release latch using your thumb and index fingers.



4. Pull on the ribbon strip to remove the battery pack.





5. Slide the new battery pack all the way into the slot. Make sure to observe the correct orientation (the ribbon strip must face outward for future battery back removal).



6. Close the compartment cover to secure the battery pack.



## Battery Low Signals and Actions

The battery icon  changes appearance to display the current state of the battery so that you can see how much charge remains (Windows default setting). When the battery charge is above 25 % the battery icon is green. When the battery charge reaches 25 % a yellow triangle with an exclamation point (!) appears above the green battery icon. When the charge reaches the low battery level a red circle with a white “X” appears above the green icon. The computer’s Battery Charge Indicator (  ) blinks yellow to alert you to take actions.

Immediately save your data upon Battery Low. The remaining operating time depends on how you are using the computer. If you are using the audio subsystem, PC card, hard or USB flash disk, the battery might run out of charge very quickly.

Always respond to Battery Low by placing your computer on Hibernation mode, turning off the computer, or connecting the AC adapter.

**CAUTION:**

- If you are using a PC card, do not access the card during battery low periods. This is because the access may take longer than the time it takes the battery to run out of charge, thus making your access to the card unsuccessful.
- If you fail to save your data when the battery completely runs out of charge, then you lose your data.

# Power Management

Your computer supports ACPI (Advanced Configuration and Power Interface) for power management. The power management feature allows you to reduce the power consumption for energy saving.

With an ACPI-compliant operating system such as Windows Vista, power supply to different computer components is controlled on an as-needed basis. This allows maximum power conservation and performance at the same time.

In general, Windows' power management works in this way:

What...	When...
Power to the hard disk is turned off	When the hard disk has been idle for a set period.
Power to the display is turned off	When the display has been idle for a set period.
The computer enters the Sleep mode. The hard disk and display are turned off and the entire system consumes less power.	When the entire system has been idle for a set period.
	When you press the Fn+F10 hot key. *
	When you close the cover. *
The computer enters the Hibernation mode. (See the next subsection for more information.)	When you press the power button. *
	When you press the Fn+F10 hot key. *
	When you close the cover. *
	When you press the power button. *

\* Depends on your settings in Windows.

For detailed information on power management, see Windows' Help.

# Hibernation

**NOTE:** Make sure that the hibernation feature is enabled in the "When I press the power button," "When I press the sleep button," and "When I close the lid" of the **Power Options** → **System Settings Properties** from the **Control Panel** → **Mobile PC** in Windows Vista.

Hibernation is a very useful feature. People frequently open many applications when they use computers. It takes some time to get all these applications open and running, and normally they all have to be closed before the computer can be turned off.

When you use the hibernation feature, you do not have to close the applications. The computer stores the state of your computer to a file on the hard disk and then shuts down. The next time you turn on your computer, you return to exactly where you left off.

# Power-Saving Tips

Aside from enabling your computer's power saving mode (see previous section), you can do your part to maximize the battery's operating time by following these suggestions.

- Do not disable Power Management. Choose a Windows power plan that saves power. A power plan is a collection of hardware and system settings that control how your computer manages power.
- Decrease the LCD brightness to the lowest comfortable level.
- Shorten the length of time before Windows turn off the display.
- Many USB devices use power just by being connected. If you use a USB mouse, you can save power by disconnecting the mouse and using the touchpad. If you use a USB flash drive, unplug it when you are not using it.
- If you work with an application that uses a PC card, exit the application when you finish using it.
- If you have a PC card installed, remove it when not in use. Some PC cards drain power even while they are inactive.
- Deactivate the WLAN function if you are not using it (see Chapter 2).
- Turn off the computer when you are not using it.

# *Expanding Your Computer*

You can expand the capabilities of your computer by connecting other peripheral devices. When using a device, be sure to read the instructions accompanying the device together with the relevant section in this chapter.

This chapter gives guidelines on installing and using these devices:

- External monitor (option)
- Serial device
- USB device
- Smart Card
- PC card
- ExpressCard
- Card Reader
- Port Replicator
- System memory

## Connecting an External Monitor (Optional)

If you want the benefits of a larger display screen with higher resolution, you can connect an external display monitor to your computer. Follow this procedure to connect an external monitor:

1. Make sure that the computer is not turned on.
2. Plug the monitor's D-type signal connector to the computer's VGA connector.
3. Plug one end of the monitor's power cord into the power socket on the monitor and the other end to an electrical outlet.
4. To use the monitor, turn on the monitor before turning on the computer.
5. The monitor should respond by default. If not, you can switch the display to the monitor or to both (simultaneous display), or to multi-display by pressing the Fn+F9 hot key. In Windows, you can also change the display through the **Display Settings Properties**.
6. You can change display settings through your operating system. See your operating system documentation or online help for specific information.

**CAUTION:** Do not disconnect the external monitor while the computer is in the Sleep mode or Hibernation mode. If no external monitor is connected when the computer resumes, the LCD might not display properly.

# Connecting a Serial Device

Your computer has one or two serial port (depending on model) for connecting a serial device such as a serial mouse or serial communication device (modem).

Follow this procedure to connect a serial device:

1. Make sure the computer is not turned on
2. Plug the device cable to the serial port on the rear of the computer.
3. Turn on the computer.

**NOTE:** Portable modems that derive power through the serial port cannot be used with the computer. Instead, use a modem that is powered by its own internal battery or external AC power.

# Connecting a USB Device

Your computer has two USB ports for connecting USB devices, such as a digital camera, scanner, printer, modem, and mouse.

The USB ports support transfer rates up to 12 MB/s for USB 1.1 devices and 480 MB/s for USB 2.0 devices.

To connect a USB device, simply plug the device cable to one of the USB ports.



## Using Smart Cards (Optional)

Your computer may have a smart card slot for additional security feature, providing tamper-proof storage of user and account identity. A smart card is a type of plastic card embedded with a computer chip that stores and transacts data between you (user) and the computer.

You need to install third-party smart card software to take advantage of the smart card feature.

### Inserting and Removing a Smart Card

To insert a smart card:

1. Locate the smart card slot.
2. Slide the smart card, with its label and embedded computer chip facing up into the slot.
3. When a new card is seated, use the third-party smart card software to allow your computer to read it.

To remove a smart card:

1. Make sure that the third-party smart card software is not accessing the smart card.
2. Pull the card out of the slot.

# Using PC Cards

Your computer has one or two PC card slots that support CardBus specifications. The slots can accommodate a type II card. Typical type II cards are flash memory, SRAM, modem, LAN, and SCSI cards.

## Inserting and Removing a PC Card


### NOTE:

- Some PC cards require additional system resources. Before using such PC card, you may have to free other system resources for the PC card.
- Although some PC cards can be inserted and removed without turning off the computer, you cannot remove or install PC cards during Sleep mode.

To insert a PC card:

1. Locate the PC card slot on the left side of the computer.
2. Slide the PC card, with its label facing up, into the slot until the eject button pops out.
3. When a new card is seated, the computer will detect it and try to install the appropriate driver. Follow the on-screen instructions to complete the process.

To remove a PC card:

1. Double-click on the **Safely Remove Hardware**  icon found on the Windows taskbar and the **Safely Remove Hardware** window appears on screen.
2. Select (highlight) the PC card from the list to disable the card.
3. Push the eject button and the card will slide out slightly.
4. Pull the card out of the slot.

# Using ExpressCards (Optional)

**NOTE:**

- The ExpressCard interface is not compatible with the PC card interface.
- To take advantage of the ExpressCard interface, the ExpressCard driver supplied with your system must be installed.

Your computer may have an ExpressCard slot.

ExpressCard supports the PCI Express and USB 2.0 serial data interfaces (supporting speeds of up to 2.5 Gbps and 480 Mbps respectively), improving speed in data transfer while conserving power usage.

## ExpressCard Type

The ExpressCard slot can accommodate a 54 mm (ExpressCard/54) or 34 mm (ExpressCard/34) wide ExpressCard. Typical ExpressCards support a very extensive range of applications including memory, wired and wireless communication cards, and security devices.

Shown next are the appearances of ExpressCards for your reference.




## Inserting and Removing an ExpressCard

To insert an ExpressCard:

1. Locate the ExpressCard slot on the left side of the computer.
2. Slide the ExpressCard, with its label facing up, all the way into the slot until the rear connectors click into place.
3. When a new card is seated, the computer will detect it and try to install the appropriate driver. Follow the on-screen instructions to complete the process.

To remove an ExpressCard:

1. Double-click on the **Safely Remove Hardware**  icon found on the Windows Vista taskbar and the **Safely Remove Hardware** window appears on screen.
2. Select (highlight) the ExpressCard from the list to disable the card.
3. Push the eject button and the card will slide out slightly.
4. Pull the card out of the slot.

# Using the Card Reader

**NOTE:**

- To use the Card Reader, the SD Reader driver supplied with your computer must be installed.
- If your hard disk is divided into several drives, make sure that all drives have been formatted before using the Card Reader. Otherwise, you may encounter problems when using the Card Reader.
- You can use only storage cards. Your Card Reader does not support cards with I/O (input/output) functions such as a wireless network card or Bluetooth card.

Your computer has a Card Reader. The Card Reader is a small drive for reading from and writing to removable storage cards (or called memory cards). The Card Reader supports Secure Digital (SD) cards.

Shown next is the appearance and size of Secure Digital (SD) card type for your reference.



24×32×2.1 (mm)

To insert a storage card:

1. Locate the Card Reader slot on the left side of the computer.
2. Align the card with its connector pointing to the slot and its label facing up. Slide the card into the slot until it reaches the end.
3. Windows will detect the card and assign it a drive name (typically E).

To remove a storage card:

1. Double-click **My Computer**.
2. Right-click the drive with the card and select **Eject**.
3. Pull the card out of the slot.

## Using the Port Replicator (Optional)

**NOTE:** To use the port replicator, the Vehicle Dock (1) and Vehicle Dock (2) driver supplied with your computer must be installed.

A port replicator is available as an option. This device eliminates the hassles of having you connect and disconnect the various cables when carrying your computer around and allows a variety of peripherals to be connected including a headphone or microphone, etc. The port replicator connects to the expansion bus connector at the bottom of your computer.

1. Slide open the expansion bus connector cover.
2. Connect your port replicator to the expansion bus connector.

For more detailed information, refer to the Operating Instructions of the port replicator.

**CAUTION:** Hot/warm docking and hot/warm undocking are not possible with the port replicator.

# System Memory Upgrade

You can upgrade your computer by changing system memory to a maximum of 4 GB on the DDR2 SO-DIMM slot.

**CAUTION:** RAM modules are extremely sensitive to static electricity. There are cases where static electricity generated by the human body has adversely affected such modules. When inserting or removing a RAM module, do not touch the terminals or internal components, insert objects other than the module, or allow foreign particles to enter. Doing so has been known to cause damage, fire, or electrical shock.

To install the RAM module:

1. Remove the battery pack (see chapter 3) and make sure that the computer is not connected to AC power.
2. Carefully place the notebook computer upside down.
3. Remove the two screws to open the compartment cover.
4. To install the RAM module, match the module's notched part with the socket's projected part and firmly insert the module into the socket at a 20-degree angle. Then push down until the retaining clips lock the module into position.

**CAUTION:** If the RAM module is difficult to insert or difficult to push down, do not force it. Check once more to ensure that the module is positioned correctly.

5. Close the compartment cover and secure with two screws.

# *Using BIOS Setup*

BIOS Setup Utility is a program for configuring the BIOS (Basic Input/Output System) settings of the computer.

BIOS is a layer of software, called firmware, that translates instructions from other layers of software into instructions that the computer hardware can understand. The BIOS settings are needed by your computer to identify the types of installed devices and establish special features.

This chapter tells you how to use the BIOS Setup program.



# When to Use BIOS Setup

## When to Use

You need to run BIOS Setup Utility when:

- You see an error message on the screen requesting you to run BIOS Setup Utility.
- You want to restore the factory default settings.
- You want to modify some specific settings according to the hardware.
- You want to modify some specific settings to optimize the system performance.

# When and How to Use the System Recovery Feature

## When to Use

You need to run System Recovery when:

- Your computer does not start correctly.
- Your Windows operating system does not start at all.
- You want to restore the factory default Windows settings.

## Starting System Recovery

**WARNING:** Using this feature will reinstall Windows to your system and configure it to the system's factory default settings. All data on the hard disk drive will be lost.

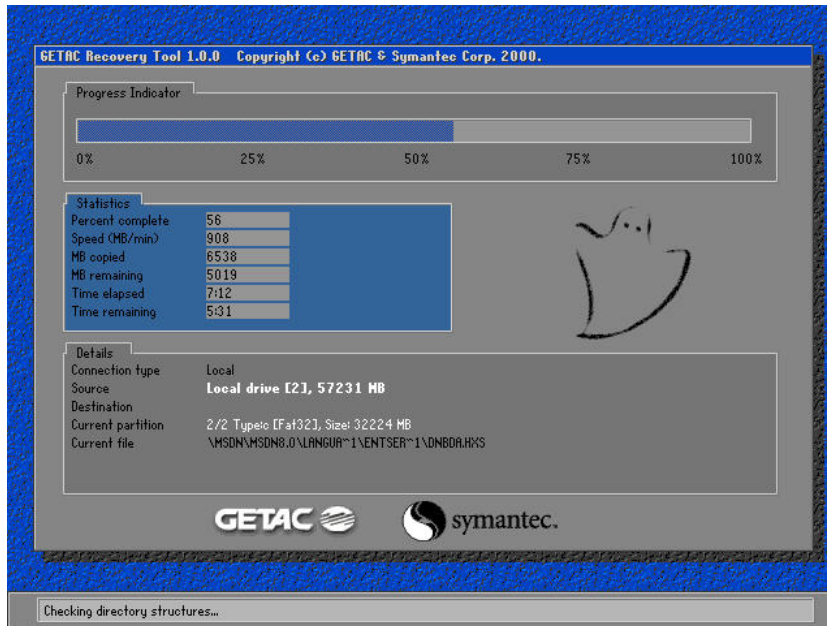
To run System Recovery:

1. During system startup when the following screen appears, press Ctrl + Alt + F2 keys for four seconds or press Enter and select HDI Recovery when a small window appears on the screen.

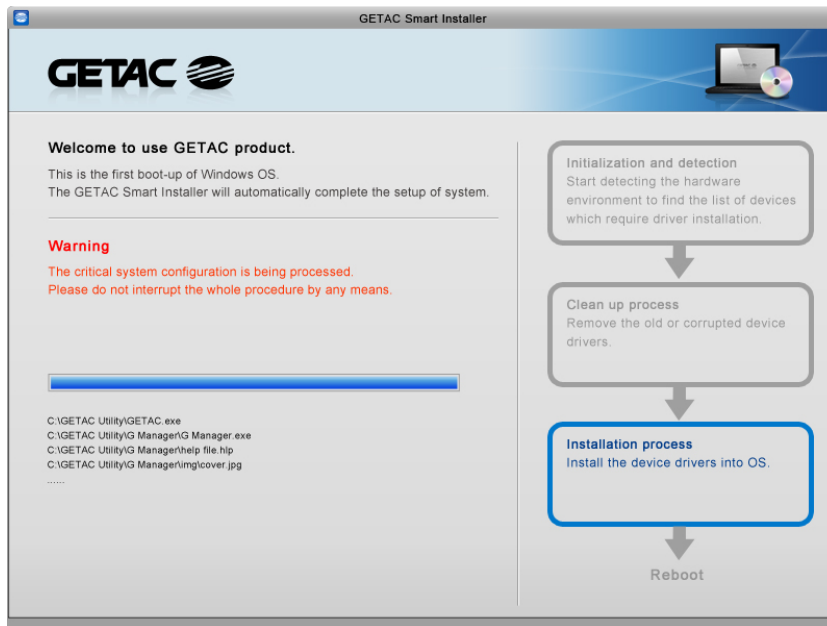


2. The message **This will help you reinstall Windows to the whole HDD to factory default. All data on HDD will be lost** appears on the screen to ask if you want to access System Recovery. Type 1 to continue or type 0 to exit.
3. A warning message appears as follows:  
\*\*\*\*\*  
**You must accept the following terms before performing the recovery process:**  
1. The recovery software is solely the purpose of reinstalling or restoring software associated with the hard disk of this operating GETAC machine.  
2. Except the above, no other use is granted hereunder.  
\*\*\*\*\*  
(1)Yes, I agree to the provisions of this agreement and wish to continue.  
(0)No, I do not agree to the provisions of this agreement and do not wish to continue.  
Type 1 to continue.

4. Type **Y** when the message **Are you sure you want to recover now?** (**Y**)Yes (**N**)No appears onscreen. The following screen appears and system will perform the recovery process and Windows operating system will be re-installed to its default setting:



5. After the recovery process has been completed successfully, the GSI (GETAC Smart Installer) screen is displayed at the first boot-up of Windows operating system.



6. GSI will automatically perform system hardware detection and driver installation. After GSI has completed the whole process successfully, system will reboot.

# ***Installing Software Drivers***

To take full advantage of the unique features of your computer, some operating systems require custom software, known as drivers, to be installed.

If you purchased the computer with Windows pre-installed, your dealer may have already installed the drivers. If not, you need to install the drivers using the disc supplied with your computer.

This chapter describes how to install the drivers.

# How to Use the Driver Disc

**NOTE:**

- The drivers may have been updated after this manual was published. For driver upgrade, please contact your dealer.
- This disc supports Windows Vista.
- The available items may differ according to your computer model.
- Do not remove the driver disc when installing the driver.

An autorun program is provided on the driver disc to help you easily install the drivers. As you insert the disc, the autorun program automatically starts. If you need to start the program manually, run the **Autorun.exe** program from the driver disc. The main screen appears.

# *Caring for the Computer*

Taking good care of your computer will ensure a trouble-free operation and reduce the risk of damage to your computer.

This chapter gives you guidelines covering these areas of maintenance:

- How to protect the computer
- What to note when using and storing the computer
- How to clean the computer
- What to note when using the battery pack
- What to note when traveling with the computer

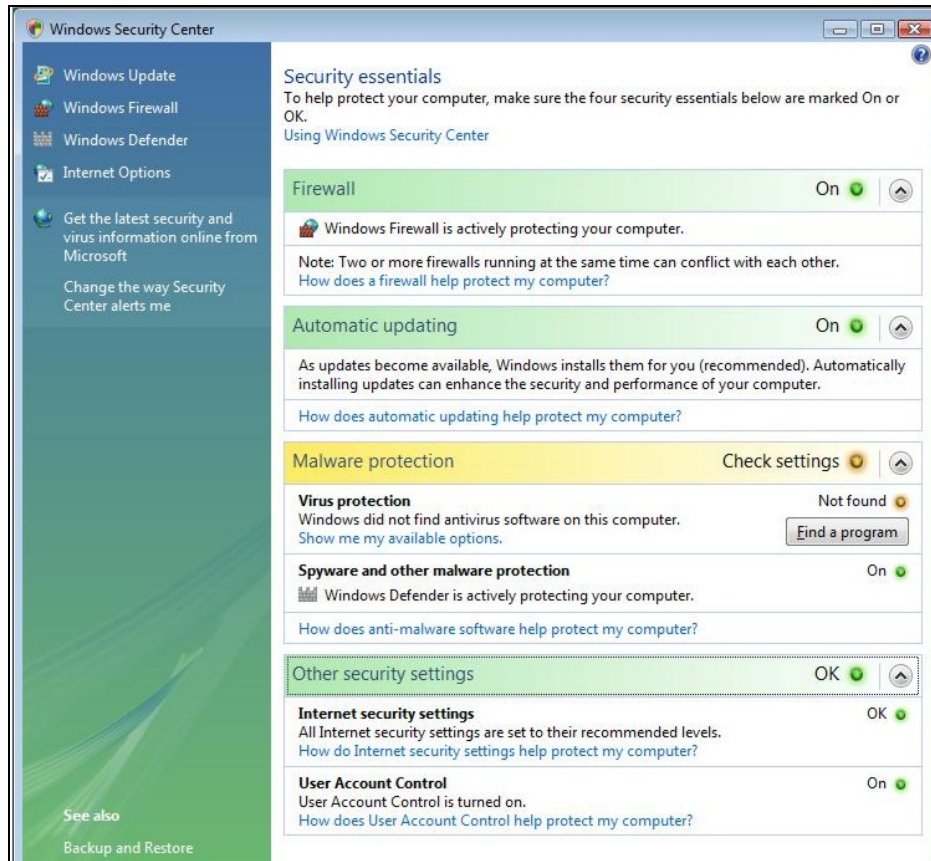


# Protecting the Computer

To safeguard the integrity of your computer data as well as the computer itself, you can protect the computer in several ways as described in this section.

## Using the Windows Security Center

Windows Security Center protects your computer against intrusion.



Windows Security Center alerts you to take action on the following security essentials:

- Windows Firewall
- Windows Update
- Malware Protection (anti-virus, anti-spyware)
- Others (Internet security, user account control)

For detailed information on Windows Security Center, see Windows' Help.

## Using the Cable Lock

You can use a Kensington-type cable lock to protect your computer against theft. The cable lock is available in most computer stores.

To use the lock, loop the lock cable around a stationary object such as a table. Insert the lock to the Kensington lock hole and turn the key to secure the lock. Store the key in a safe place.

# Taking Care of the Computer

## Location Guidelines

- Use the computer where the temperature is between 0 °C (32 °F) and 55 °C (131 °F).
- Avoid placing the computer in a location subject to high humidity, extreme temperatures, mechanical vibration, direct sunlight, or heavy dust.
- Do not cover or block any ventilation openings on the computer. For example, do not place the computer on a bed, sofa, rug, or other similar surface. Otherwise, overheating may occur that results in damage to the computer.
- Keep the computer at least 13 cm (5 inches) away from electrical appliances that can generate a strong magnetic field such as a TV, refrigerator, motor, or a large audio speaker.
- Do not move the computer abruptly from a cold to a warm place. A temperature difference of more than 10 °C (18 °F) will cause condensation inside the unit, which may damage the storage media.
- Do not place the computer on an unsteady surface.

## General Guidelines

- Do not place heavy objects on top of the computer when it is closed as this may damage the display.
- The screen surface is easily scratched. Do not use paper towels to clean the display. Avoid touching it with your fingers, pen, or pencil.
- To maximize the life of the backlight in the display, allow the backlight to automatically turn off as a result of power management. Avoid using a screen saver or other software that prevents the power management from working.

## Cleaning Guidelines

- Never clean the computer with its power on.
- Use a soft cloth moistened with water or a non-alkaline detergent to wipe the exterior of the computer.
- Gently wipe the display with a soft, lint-free cloth. Do not use alcohol or detergent on the display.
- Dust or grease on the touchpad can affect its sensitivity. Clean the pad by using adhesive tape to remove the dust and grease on its surface.

## Battery Pack Guidelines

- Recharge the battery pack when it is nearly discharged. When recharging, make sure that the battery pack is fully charged. Doing so may avoid harm to the battery pack.
- Operate the computer with the battery pack installed even when using external power. This ensures that the battery is fully charged.
- If you will not be using the computer for a long period of time (more than two weeks), remove the battery pack from the computer.
- If you remove the battery pack, make sure that the battery terminals do not contact any conductors such as metal objects or water. Otherwise, the battery may become unusable as a result of a short circuit.
- If you need to store the battery pack, store it in a cool, dry place. Never allow the temperature to exceed 60 °C (140 °F).
- Do not leave the battery pack in storage for more than 6 months without recharging it.

# When Traveling

- Before traveling with your computer, make a backup of your hard disk data into flash disks or other storage devices. As an added precaution, bring along an extra copy of your important data.
- Make sure that the battery pack is fully charged.
- Make sure that the computer is turned off and the top cover is securely closed.
- Do not leave objects in between the keyboard and closed display.
- Disconnect the AC adapter from the computer and take it with you. Use the AC adapter as the power source and as a battery-charger.
- Hand-carry the computer. Do not check it in as luggage.
- If you need to leave the computer in the car, put it in the trunk of the car to avoid exposing the computer to excessive heat.
- When going through airport security, it is recommended that you send the computer and flash disks through the X-ray machine (the device you set your bags on). Avoid the magnetic detector (the device you walk through) or the magnetic wand (the handheld device used by security personnel).
- If you plan to travel abroad with your computer, consult your dealer for the appropriate AC power cord for use in your country of destination.

# *Troubleshooting*

Computer problems can be caused by hardware, software, or both. When you encounter any problem, it might be a typical problem that can easily be solved.

This chapter tells you what actions to take when solving common computer problems. It is divided into three sections:

- Preliminary checklist
- Solving common problems
- Resetting the computer

# Preliminary Checklist

Here are helpful hints to follow before you take further actions when you encounter any problem:

- Try to isolate which part of the computer is causing the problem.
- Make sure that you turn on all peripheral devices before turning on the computer.
- If an external device has a problem, make sure that the cable connections are correct and secure.
- Make sure that the configuration information is properly set in the BIOS Setup program.
- Make sure that all the device drivers are correctly installed.
- Make notes of your observations. Are there any messages on the screen? Do any indicators light? Do you hear any beeps? Detailed descriptions are useful to the service personnel when you need to consult one for assistance.

If any problem persists after you follow the instructions in this chapter, contact an authorized dealer for help.

# Solving Common Problems

For easy reference, the problems are divided into these categories.

<b>Problem Type</b>	<b>Go to</b>
Battery Problems	P. 8-4
	P. 錯誤! 尙未定義書籤。
Display Problems	P. 8-4
Hardware Device Problems	P. 8-5
Hard Disk Drive Problems	P. 8-6
Keyboard, Mouse, and Touchpad Problems	P. 8-6
LAN Problems	P. 8-7
WLAN Problems	P. 8-7
Modem Problems	P. 8-7
PC Card Problems	P. 8-9
Power Management Problems	P. 8-9
Software Problems	P. 8-10
Sound Problems	P. 8-10
Startup Problems	P. 8-11
Other Problems	P. 8-12



## Battery Problems

**The battery does not charge (Battery Charge indicator does not light yellow).**

- Make sure that the AC adapter is properly connected.
- Make sure that the battery is not too hot or cold. Allow time for the battery pack to return to room temperature.
- Make sure that the battery pack is installed correctly.
- Make sure that the battery terminals are clean.

**The operating time of a fully charged battery becomes shorter.**

- If you often partially recharge and discharge, the battery might not be charged to its full potential. Initialize the battery to solve the problem. (See “Initializing the Battery Pack” in Chapter 3 for instructions.)

**The battery operating time indicated by the battery meter does not match the actual operating time.**

- The actual operating time can be different from the estimated time, depending on how you are using the computer. If the actual operating time is much less than the estimated time, initialize the battery. (See “Initializing the Battery Pack” in Chapter 3 for instructions.)

## Display Problems

**Nothing appears on the screen.**

- During operation, the screen may automatically turn off as a result of power management. Press any key to see if the screen comes back.
- The brightness level might be too low. Increase brightness by pressing the Fn+F6 hot key.
- The display output might be set to an external device. To switch the display back to the LCD, press the Fn+F9 hot key or change the display through the settings in Display Settings Properties.

**The characters on the screen are dim.**

- Adjust the brightness and/or contrast.

**Bad dots appear on the display at all times.**

- A small number of missing, discolored, or bright dots on the screen are an intrinsic characteristic of TFT LCD technology. It is not regarded as a LCD defect.

**Resolution cannot be adjusted to desired setting.**

- Make sure that the VGA driver is installed correctly.

**The external monitor displays nothing.**

- Make sure that the monitor is turned on.
- Make sure that the monitor's signal cable is properly connected.
- Switch the display to the monitor by pressing the Fn+F9 hot key or change the display through the settings in Display Settings Properties.

**Simultaneous display/multi-display does not work.**

- Make sure that you turn on the external monitor before turning on the computer.
- Press the Fn+F9 hot key to toggle through the display options or change the display through the settings in Display Settings Properties.

## Hardware Device Problems

**The computer does not recognize a newly installed device.**

- The device may not be correctly configured in the BIOS Setup program. Run the BIOS Setup program to identify the new type.
- Make sure if any device driver needs to be installed. (Refer to the documentation that came with the device.)
- Make sure if the device needs any jumper or switch settings. (Refer to the documentation that came with the device.)
- Check the cables or power cords for correct connections.

- For an external device that has its own power switch, make sure that the power is turned on.

## Hard Disk Drive Problems

### **The hard disk drive error message appears on the screen.**

- The hard disk drive has defects. Ask your dealer for help.

### **The hard disk drive operations seem slow.**

- The data files stored on the hard disk drive may be fragmented. Use a tool such as Window's **Disk Defragmenter** to defragment the files.

### **The hard disk drive in-use indicator glows without blinking.**


- The data files stored on the hard disk drive may be fragmented. Use a tool such as Window's **Disk Defragmenter** to defragment the files.

## Keyboard, Mouse, and Touchpad Problems

### **The keyboard does not respond.**

- Try connecting an external keyboard. If it works, contact an authorized dealer, as the internal keyboard cable might be loose.

### **The numeric keypad is disabled.**

- Make sure that the Num Lock is switched on. (Check if the Num Lock Indicator  glows or not.)

### **The external keyboard does not work.**

- Make sure that the keyboard cable is properly connected.

### **The USB mouse does not work.**

- Make sure that the mouse cable is properly connected.

### **The touchpad does not work, or the pointer is difficult to control with the touchpad.**

- Make sure that the touchpad is clean.

## LAN Problems

### **I cannot access the network.**

- Make sure that the LAN driver is correctly installed.
- Make sure that the LAN cable is properly connected to the RJ-45 connector and the network hub.
- Make sure that the network configuration is appropriate.
- Make sure that the user name or password is correct.

## WLAN Problems

### **I cannot use the WLAN feature.**

- Make sure that the mini PCI-E WLAN card is correctly installed.
- Make sure that the necessary driver(s) is correctly installed.
- Make sure that the WLAN feature is turned on.

### **Transmission quality is poor.**

- Your computer may be in an out-of-range situation. Move your computer closer to the Access Point or another WLAN device it is associated with.
- Check if there is high interference around the environment and solve the problem as described next.

### **Radio interference exists.**

- Move your computer away from the device causing the radio interference such as microwave oven and large metal objects.
- Plug your computer into an outlet on a different branch circuit from that used by the affecting device.
- Consult your dealer or an experienced radio technician for help.

### **I cannot connect to another WLAN device.**

- Make sure that the WLAN feature is turned on.

- Make sure that the SSID setting is the same for every WLAN device in the network.
- Your computer is not recognizing changes. Restart the computer.
- Make sure that the IP address or subnet mask setting is correct.

**I cannot communicate with the computer in the network when Infrastructure mode is configured.**

- Make sure that the Access Point your computer is associated with is powered on and all the LEDs are working properly.
- If the operating radio channel is in poor quality, change the Access Point and all the wireless station(s) within the BSSID to another radio channel.
- Your computer may be in an out-of-range situation. Move your computer closer to the Access Point it is associated with.
- Make sure that your computer is configured with the same security option (encryption) to the Access Point.
- Use the Web Manager/Telnet of the Access Point to check whether it is connected to the network.
- Reconfigure and reset the Access Point.

**I cannot access the network.**

- Make sure that the necessary driver(s) is correctly installed.
- Make sure that the network configuration is appropriate.
- Make sure that the user name or password is correct.
- You have moved out of range of the network.
- Turn off power management.

## Modem Problems

**The modem does not work.**

- Make sure that the modem driver is correctly installed.

- Make sure that the telephone line is properly connected.
- Make sure that the COM port in the communication software is correctly set.
- Turn off power management.

## PC Card Problems

### **The PC card does not work.**

- Make sure that the PC card is correctly seated.
- If the card requires an IRQ (Interrupt ReQuest), make sure that there is one available.

### **The PC card stops communicating properly.**

- The application may have been reset when the computer is turned off or in Sleep mode. Exit and restart the application.

## Power Management Problems

### **The computer does not enter Sleep or Hibernation mode automatically.**

- If you have a connection to another computer, the computer does not enter Sleep or Hibernation mode if the connection is actively in use.
- Make sure that the Sleep or Hibernation time-out is enabled.

### **The computer does not enter Sleep or Hibernation mode immediately.**

- If the computer is performing an operation, it normally waits for the operation to finish.

### **The computer does not resume from Sleep or Hibernation mode.**

- The computer automatically enters Sleep or Hibernation mode when the battery pack is empty. Do any one of the following:

- Connect the AC adapter to the computer.
- Replace the empty battery pack with a fully charged one.

**The computer does not enter Hibernation mode with the Fn+F10 hot keys.**

- Make sure that the Hibernation function is specified for the sleep button.
- You might be using a PC card that prevents the computer from entering Hibernation mode. To enter the mode, stop the communication program and then remove the card or stop the card.

## Software Problems

**An application program does not work correctly.**

- Make sure that the software is correctly installed.
- If an error message appears on the screen, consult the software program's documentation for further information.
- If you are sure the operation has stop, reset the computer. (See "Resetting the Computer" later in this chapter.)

## Sound Problems

**No sound is produced.**

- Make sure that the volume control is not set too low.
- Make sure that the audio driver is correctly installed.
- Make sure that the computer is not in Sleep mode.
- If using an external speaker, make sure that the speaker is properly connected.

**Distorted sound is produced.**

- Make sure that the volume control is not set too high or too low. In most cases, a high setting can cause the audio electronics to distort the sound.

**The sound system does not record.**

- Adjust the playback or recording sound levels.

**The external microphone or audio device does not work.**

- Make sure that the microphone is connected to the proper connector on the computer.
- Make sure that your computer is equipped with the driver needed.
- Click the speaker symbol on the taskbar and check the Windows volume control.
- Check the volume control of your computer.

## Startup Problems

**When you turn on the computer, it does not respond and the Power Indicator does not light green.**

- If you are using an external AC power, make sure that the AC adapter is correctly and securely connected. If so, make sure that the electrical outlet works properly.
- If you are using the battery power, make sure that the battery is not discharged.

**When you turn on the computer, it stops after POST.**

- Restart your computer.



## Other Problems

### **The date/time is incorrect.**

- Correct the date and time via the operating system or BIOS Setup program.
- After you have performed everything as described above and still have the incorrect date and time every time you turn on the computer, the RTC (Real-Time Clock) battery is at the end of its life. Call an authorized dealer to replace the RTC battery.

# Resetting the Computer

You may have to reset (reboot) your computer on some occasions when an error occurs and the program you are using hangs up.

If the computer operation seems to hang up, first wait. It is possible that the computer is processing data. Periodically check the hard disk drive in-use indicator, if it flashes irregularly, the program may be accessing data and preventing you from using the keyboard. If you are sure the operation has stopped and you cannot use the “restart” function of the operating system, reset the computer.

Reset the computer by any one of these methods:

- Press Ctrl+Alt+Del on your built-in keyboard or press the Reset button on the front panel.
- If the above action does not work, turn off the computer. Wait for at least five seconds and turn it on again.

**| CAUTION:** Resetting will cause any unsaved data to be lost.

# Specifications

NOTE: Specifications are subject to change without any prior notice.

Parts		Specifications
CPU		Intel® SU9400 Core 2 Duo ULV 1.4 GHz processor 800 MHz FSB (Front Side Bus), Thermal specifications 10 W
Cache Memory		3 MB L2 cache
Chipset	NorthBridge	Intel® GS45
	SouthBridge	ICH9M (small form factor)
BIOS		4 MB EEPROM, system and VGA BIOS, G-sensor support, Plug-and-Play, ACPI 2.0 capability, boot from SATA/LAN/USB devices (e.g., DVD Combo / DVD Dual / Flash / floppy drives), light sensor for LCD panel and keyboard backlight brightness control support, computrace
RAM (system)		Up to 4 GB, 200-pin × 1, DDR2 SO-DIMM, 1.25-inch high
Turbo Memory (option)		4 GB
Display	Panel	10.4-inch wide (4:3) TFT LCD, resolution up to 1024×768 XGA Touchscreen function (with pen holder) or Active Digitizer feature (option) NOTE: Both Touchscreen and Active Digitizer feature cannot exist at the same time. Sunlight-readable (option), brightness > 1200 nits after touchscreen or glass Night vision (option), brightness < 1.7 nits after touchscreen or glass, meets MIL-STD-3009
	Video controller	Integrated in Intel® GS45 chipset, DirectX® 10 support, dual view, LCD/CRT simultaneous display capability, ECO mode support
	Video memory	UMA, 384 MB (default)
	Video port	VGA Replaced with serial port (RS-232) – option Replaced with serial port (RS-422) – option

Parts		Specifications
Audio	Features	Azalia interface, left/right-channel analog output for line-out connector
	Speaker	One built-in
	Ports	Two audio ports for Line-out (green) / Mic-in (red)
Keyboard		Standard keys with numeric pad keys, 12 function keys, special Fn (Function) key and Windows keys Water-proof and dust-proof membrane, large character printing, water-proof rubber (option)
Pointing device		Glide touchpad with 2 buttons, capacitance-type
Hard disk drive		SATA interface, 5400 rpm support, 9.5 mm height 2.5-inch diameter HDD heater for low temperature -20 °C, solid state disk (option)
PCMCIA		Type II × 1 and ExpressCard/54/32 Type II × 1 and Smart Card Reader (option)
Card Reader (option)		Secure Digital (SD), SDHC-support
I/O ports		Two USB ports (USB 2.0 support), serial port (RS-232), RJ-45 port, RJ-11 port
Antenna	Wi-Fi 802.11a/b/g/n, MIMO	3 internal (pass-through for external antenna – option)
	GPS 1.5G	1 internal
Modem		Azalia interface, 56 Kbps, ITU V.90 MDC 1.5 internal fax modem
LAN		IEEE 802.3i 10Base-T / IEEE 802.3u 100Base-T / IEEE 802.3ab 1000Base-T Ethernet
Wireless LAN (option)		Intel® PRO 802.11a/g/n mini-card
Camera		1.3 M pixel
GPS		RS232 interface
Security		Kensington lock TPM 1.2 Smart Card Reader (integrated) will occupy one Type II PCMCIA slot – option
Docking		100-pin, engage with vehicle docking
Handle		Grip and cross-type hand strap
Accessories (option)		Stylus for touchscreen, active digitizer pen, vehicle docking (need to combine with docking connector)
Power	AC adapter	Universal 60 W; input: 100~240 V, 50/60 Hz; output: 19 V
	Battery	Li-ion smart 6-cell battery 5200 mAh / 11.1 V (option) Li-ion smart 9-cell battery 7800 mAh / 11.1 V user-swappable, under -20 °C combined with hard drive low temperature solution

Parts		Specifications
Dimension (L×W×H)		289.68×227.77×59.4 mm (11.4×8.97×2.3 inch)
Weight		Less than 2.5 kg (5.5 lb)
Environment	Temperature	Operating: 0 °C (32 °F) to 55 °C (131 °F) -20 °C (4 °F) to 55 °C (131 °F) – low temperature option Non-operating: -40 °C (-40 °F) to 70 °C (158 °F)
	Humidity	5 % to 95 % relative, non-condensing
	Altitude	Operating: 15,000 ft Non-operating: 40,000 ft
	Shock	Operating: 15 g, 11 ms half-sine wave Non-operating: 50 g, 11 ms half-sine wave
	Vibration	Sinusoidal wave vibration: Operating: 10~55 Hz / 0.075, 55~500 Hz / 1 g Non-operating: 10~55 Hz / 0.15, 55~500 Hz / 2 g Random vibration: Operating: MIL-STD-810F, 514.5C-1 – highway truck exposure Non-operating: MIL-STD-810F, 514.5C-17
	Drop	100 cm drop 26 times onto plywood plate surface
	Enclosure	IEC 529, MIL-STD-810F, IP54 / NEMA4 (with input/output doors closed)
	ESD	Air discharge: 0~8 KV (included) no error; 9~15 KV allow soft error Contact discharge: 0~6 KV (included) no error; 7~8 KV allow soft error
Regulation	EMC	FCC part 15, subpart B, class B
	Safety	CE, UL, TUV, TUV/CB
	Other	WHQL, E-mark, WEEE, EPEAT
Green Product Coverage	RoHS	6 European union banned materials, EPEAT silver
	Other	12 universal GP product banned materials, ENERGY STAR

# ***Regulatory Information***

This appendix provides regulatory statements and safety notices on your computer.

**NOTE:** Marking labels located on the exterior of your computer indicate the regulations that your model complies with. Please check the marking labels and refer to the corresponding statements in this appendix. Some notices apply to specific models only.

# On the Use of the System

## Class B Regulations

### USA

#### Federal Communications Commission Radio Frequency Interference Statement

**NOTE:**

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

**Please note:**

The use of a non-shielded interface cable with this equipment is prohibited.

5150-5250MHz is restricted to indoor use only.

## Canada

### Canadian Department of Communications Radio Interference Regulations Class B Compliance Notice

This Class B digital apparatus meets all requirements of the Canada Interference-Causing equipment regulations.

Cet appareil numérique de Classe B respecte toutes les exigences du Règlement Canadien sur le matériel brouilleur.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

## Safety Notices

### About the Battery

#### Caution Texts Concerning Lithium Batteries

##### **DANISH**

**ADVARSEL!** Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

##### **NORWEGIAN**

**ADVARSEL:** Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

##### **SWEDISH**

**WARNING:** Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

##### **FINNISH**

**VAROITUS:** Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan valmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.



**ENGLISH**

**CAUTION:** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

**DEUTSCH**

**VORSICHT:** Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleich-wertigen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

**FRENCH**

**ATTENTION:** Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

**Attention (for USA Users)**

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

**About the AC Adapter**

- Use only the AC adapter supplied with your computer. Use of another type of AC adapter will result in malfunction and/or danger.
- Do not use the adapter in a high moisture environment. Never touch the adapter when your hands or feet are wet.
- Allow adequate ventilation around the adapter when using it to operate the device or charge the battery. Do not cover the AC adapter with paper or other objects that will reduce cooling. Do not use the AC adapter while it is inside a carrying case.
- Connect the adapter to a proper power source. The voltage requirements are found on the product case and/or packaging.
- Do not use the adapter if the cord becomes damaged.
- Do not attempt to service the unit. There are no serviceable parts inside. Replace the unit if it is damaged or exposed to excess moisture.

## About the Modem

### Caution

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using the telephone function (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone function to report a gas leak in the vicinity of the leak.
- Do not use this product near water, for example near a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

### Caution (for USA Users)

To reduce the risk of fire, use only No.26 AWG or larger telecommunication line cord.

# On the Use of the RF Device

**| NOTE:** The information in this section applies to models with the wireless LAN module.

## USA and Canada Safety Requirements and Notices

**IMPORTANT NOTE:** This device complies with FCC RF Exposure limits set forth for an uncontrolled environment under 47 CFR 2.1093 paragraph (d)(2). End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### Radio Frequency Interference Requirements and SAR

The FCC with its action in ET Docket 93-62 has adopted a safety standard for human exposure to Radio Frequency (RF) electromagnetic energy emitted by FCC certified equipment. The wireless LAN module meets the Human Exposure limits found in OET Bulletin 65, 2001, and ANSI/IEEE C95.1, 1992. Proper operation of this radio according to the instructions found in this manual will result in exposure substantially below the FCC's recommended limits. The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.

Use in specific environments:

- The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.

- The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
- The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

#### Explosive Device Proximity Warning

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

#### Use on Aircraft Caution

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

## EMC Requirements

This device uses, generates and radiates radio frequency energy. The radio frequency energy produced by this device is well below the maximum exposure allowed by the Federal Communications Commission (FCC).

This device complies with the limits for a Class B digital device pursuant to Part 15 subpart C of the FCC Rules and Regulations. 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.

The FCC limits are designed to provide reasonable protection against harmful interference when the equipment is installed and used in accordance with the instruction manual and operated in a commercial environment. However, there is no guarantee that interference will not occur in a particular commercial installation, or if operated in a residential area.

If harmful interference with radio or television reception occurs when the device is turned on, the user must correct the situation at the user's own expense. The user is encouraged to try one or more of the following corrective measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION:** The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by the manufacturer could void the user's authority to operate this device.

## Canada Radio Frequency Interference Requirements

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence.

## European Union CE Marking and Compliance Notices

### Statements of Compliance

#### **English**

This product follows the provisions of the European Directive 1999/5/EC.

#### **Danish**

Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EC.

#### **Dutch**

Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

#### **Finnish**

Tämä tuote noudattaa EU-direktiivin 1999/5/EC määräyksiä.

#### **French**

Ce produit est conforme aux exigences de la Directive Européenne 1999/5/EC.

#### **German**

Dieses Produkt entspricht den Bestimmungen der Europäischen Richtlinie 1999/5/EC.

**Greek**

Το προϊόν αυτό πληροί τις προβλέψεις της Ευρωπαϊκής Οδηγίας 1999/5/EC.

**Icelandic**

Þessi vara stendst reglugerð Evrópska Efnahags Bandalagsins númer 1999/5/EC.

**Italian**

Questo prodotto è conforme alla Direttiva Europea 1999/5/EC.

**Norwegian**

Dette produktet er i henhold til bestemmelsene i det europeiske direktivet 1999/5/EC.

**Portuguese**

Este produto cumpre com as normas da Diretiva Européia 1999/5/EC.

**Spanish**

Este producto cumple con las normas del Directivo Europeo 1999/5/EC.

**Swedish**

Denna produkt har tillverkats i enlighet med EG-direktiv 1999/5/EC.

## Local Restrictions of 802.11a/g/n Radio Usage

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

The European variant is intended for use throughout the European Economic Area. However, authorization for use is further restricted in particular countries or regions within countries, as follows:

## General

European standards dictate maximum radiated transmit power of 100 mW Effective Isotropic Radiated Power (EIRP) and the frequency range 2400 – 2483.5 MHz.

## Belgium and the Netherlands

In Belgium and the Netherlands, the product may not be used outdoors. See the instructions next under the heading “Turning Off the Wireless LAN Radio.”

## France

### **Departments in Which the Wireless LAN Module Can Be Used (Indoors Only)**

The wireless LAN module can currently be used indoors only in the following 38 departments of mainland France. Please turn off your wireless LAN radio when operating the device in areas/places other than the 38 departments listed:

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



**Departments in Which the Wireless LAN Module's Maximum EIRP Not Shown in the Previous Table**

<b>Frequency Ranges (MHz)</b>	<b>Indoors</b>	<b>Outdoors</b>
2400 – 2446.5	10 mW	Not permitted
2446.5 – 2483.5	100 mW	100 mW on private property with Ministry of Defense approval

### Turning Off the Wireless LAN Radio

**NOTE:** Turning the wireless LAN radio off is not the same as disabling the wireless LAN card. It is not necessary to disable the card to meet the regulatory requirements.

While operating the computer in those French departments that do not allow use of the wireless LAN equipment, the user of the equipment must turn off the wireless LAN radio in order to comply with local regulations (see Chapter 2 for more information).