

USER'S MANUAL

LCD PC



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FCC Statement

(Federal Communications Commission)

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:

- Re orient 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 service representative or an experienced radio/TV technician for help.



Warning

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock, and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using this equipment with a telephone line (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit.

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

This Computer's Optical Device is a Laser Class I Product

Instructions for Care and Operation

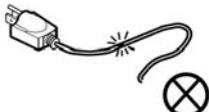
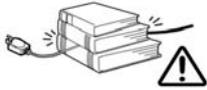
The computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.
5. **Take care when using peripheral devices.**

Power Safety

The computer has specific power requirements:

- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

<p><i>Do not plug in the power cord if you are wet.</i></p> 	<p><i>Do not use the power cord if it is broken.</i></p> 	<p><i>Do not place heavy objects on the power cord.</i></p> 
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Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines).



Mainboard Battery Note

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

Preface

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord is damaged or frayed.
- If the computer has been exposed to any liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.

Ergonomics

We designed your LCD PC system to be functional as well as attractive. To get most out of it, here are some suggestions on how to position and use the computer:

- The top third of the LCD (screen) should be at eye-level or slightly below.
- The LCD should be at least 18"/45cm. directly in front of you.
- If the screen resolution (e.g. 1024x768) makes you strain to read, change it: In **Windows** Control Panel, double-click **Display** (icon) and click **Settings** (tab). Then adjust the "Screen area" to something more comfortable (e.g. 800x600).
- Angle the LCD so that it doesn't reflect any light into your eyes.
- Use a chair which offers good back support (especially lower-back). The seat should allow your feet to rest flat on the floor or on a footrest directly in front of you.
- If possible, illuminate your work area with natural daylight or use a steady-glowing (non-flickering) light source.
- Place the keyboard and mouse so that your arms are at your sides and your forearms are roughly parallel to the floor. Your wrists should flex slightly downward as you work. Your neck and shoulders should also be relaxed.
- Take a break from the computer. Get up, stretch, flex your wrists, walk about, and look at something else for about 10 minutes every hour.

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Chapter 1: Quick Start Guide

Overview

This Quick Start Guide is a brief introduction to the basic features of your computer, to navigating around the computer and to getting your system started. The remainder of the manual covers the following:

- **Chapter 2** A guide to the **video, audio** and **power** saving features of the computer, and to the computer's **7-in-1 Card Reader, Wireless LAN, Bluetooth** and **Touch Panel modules** (some of which may be **optional** depending on your purchase configuration).
- **Chapter 3** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- **Chapter 4** An outline of the computer's built-in software, or **BIOS** (Basic Input Output System).
- **Chapter 5** Instructions for **upgrading** your computer.
- **Chapter 6** A **troubleshooting** guide.
- **Appendix A** Definitions of the **interface, ports/jacks** which allow your computer to communicate with external devices.
- **Appendix B** The computer's **specification**.

Advanced Users

If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to *“What to Install” on page 3 - 1*, *“BIOS Utilities” on page 4 - 1* and *“Upgrading The Computer” on page 5 - 1* in the User’s Manual. You may also find the notes marked with a  of interest to you.



Notes

Check the light colored boxes with the mark above to find detailed information about the computer’s features.

Beginners and Not-So-Advanced Users

If you are new to computers (or do not have an advanced knowledge of them) then the information contained in the Quick Start Guide should be enough to get you up and running. Eventually you should try to look through all the documentation (more detailed descriptions of the functions, setup and system controls are covered in the remainder of the User’s Manual), but do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the notes marked with a  as indicated in the margin. For a more detailed description of any of the interface ports and jacks see *“Interface (Ports & Jacks)” on page A - 1*.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the  symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. *Windows XP* etc.) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find this manual refers to the following operating systems:

- *Microsoft Windows XP (Home & Professional Editions)*



Drivers

If you are installing new system software, or are re-configuring your computer for a different system, you will need to install the drivers listed in ***“Drivers & Utilities” on page 3 - 1***. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed in ***Table 3 - 1, on page 3 - 6***. You will be unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you), refer to ***“What to Install” on page 3 - 1*** for installation instructions.

System Startup

1. Remove all packing materials, CDs/DVDs, floppy disks, and any PC Cards.
2. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
3. Attach the AC power cord to the AC-In jack on the right of the computer. Then plug the AC power cord into an outlet.
4. Push the power button to turn the computer “on”.



Shutdown

Please note that you should always shut your computer down by choosing the **Shut Down/Turn Off Computer** command from the **Start** menu in **Windows**. This will help prevent hard disk or system problems.

Model Types and Design Differences

There two model types (pictured below) in this LCD PC series. The model types differ in physical appearance (**Model A**'s optical CD/DVD device bay is located on the left side of the computer; **Model B**'s is at the front) and their specifications.



Model A



Model B

Figure 1 - 1 - Model Types & Design Differences

System Map: Front View

1. LCD Panel
2. Speakers
3. LED Indicators
4. Power Button
5. Optical (CD/DVD) Device Bay (**Model B** Only - see page 1 - 10 for **Model A**)
6. Keyboard Holder (**Model B** Only)



CD/DVD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or similar object that may break and become lodged in the hole.

Media Warning

Don't try to remove a floppy disk/CD/DVD while the system is accessing it. This may cause the system to "crash".

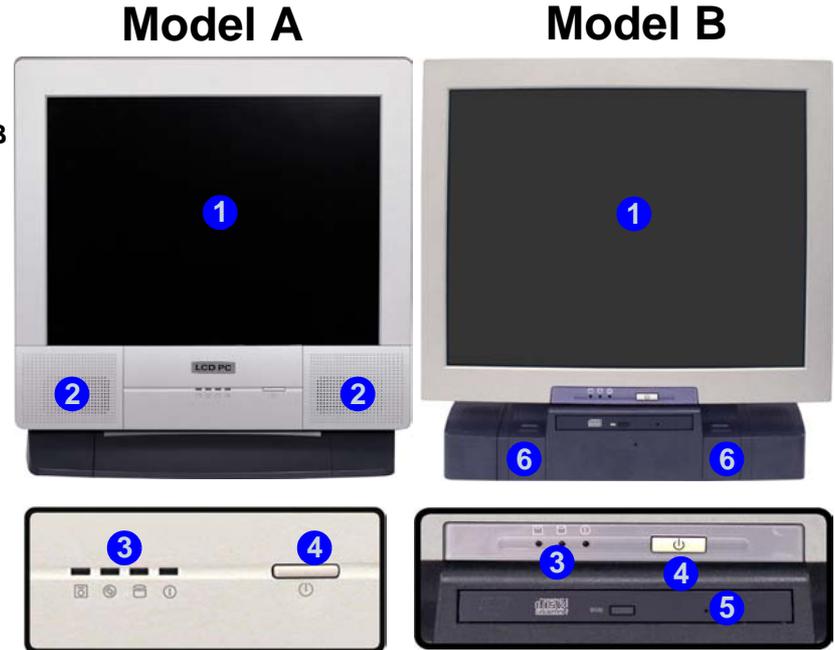


Figure 1 - 2 - Front View

LED Indicators

The LED indicators on the computer display helpful information about the current status of the computer.

Table 1 - 1 - LED Indicators & Power Button

Icon	Color	Description
	Green	Floppy Disk Drive Activity
	Green	Hard Disk Drive Activity
	Green	System Power is On
	Flashing Orange	System is in Standby Mode



System Shutdown Warning

After shutting the computer down, allow time for the system to shut down properly (i.e. the fan stops turning) before attempting to turn the system on again.

Power Button

When the computer is on, you can use the power button as a hot-key button when it is pressed for less than **4 seconds**. Use **Power Options** in the “*Windows*” control panel to configure this feature.



Forced Off

If the system “hangs”, and the **Ctrl + Alt + Del** key combination doesn’t work, press the power button for **4 seconds** to force the system to turn itself off.

Power Button as Standby or Hibernate Button

If you are using an ACPI-compliant OS, such as *Windows XP*, the power button can be designated as **Standby** or **Hibernate** button within the OS’s “Power Options” subsystem (see your OS’s documentation, or “[Configuring the Power Button](#)” on page 2 - 18 for details).

Optical (CD/DVD) Device

There is a bay for a 5.25" optical (CD/DVD) device (12.7mm height). The actual device will depend on the model you purchased (see *“Storage” on page B - 3*). The optical device is usually labeled **“Drive D:”** and may be used as a boot device if properly set in the BIOS (see *“Boot Menu” on page 4 - 12*).

Loading Discs

To insert a CD/DVD, press the open button ❶ and carefully place a CD/DVD onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray’s spindle). Gently push the CD/DVD tray in until its lock “clicks” and you are ready to start. The busy indicator ❷ will light up while data is being accessed, or while an audio/video CD, or DVD, is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole ❸ to open the tray.



Figure 1 - 3 - Optical (CD/DVD Device)

Handling CDs or DVDs

Proper handling of your CDs/DVDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CDs/DVDs can be accessed.

Note the following:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

DVD Regional Codes

DVD region detection is device dependent, not OS-dependent. You can select your module's region code 5 times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

Changing DVD Regional Codes

1. Go to the **Control Panel** and double-click **System > Hardware** (tab).
2. Click **Device Manager**, then click the **+** next to **DVD/CD-ROM drives**.
3. Double-click on the DVD-ROM device to bring up the **Properties** box, and select the **DVD Region** (tab) to bring up the control panel to allow you to adjust the regional code.

Region	Geographical Location
1	USA, Canada
2	Western Europe, Japan, South Africa, Middle East & Egypt
3	South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
4	South & Central America, Mexico, Australia, New Zealand
5	N Korea, Russia, Eastern Europe, India & Most of Africa
6	China



Table 1 - 2 - DVD Regional Coding

System Map: Left View

Figure 1 - 4 - Left View

1. Floppy Disk Drive Module
2. Vent
3. Hard Disk Drive Bay
4. Optical (CD/DVD) Device Bay
(**Model A** Only)



CD/DVD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or similar object that may break and become lodged in the hole.

Media Warning

Don't try to remove a floppy disk/CD/DVD while the system is accessing it. This may cause the system to "crash".

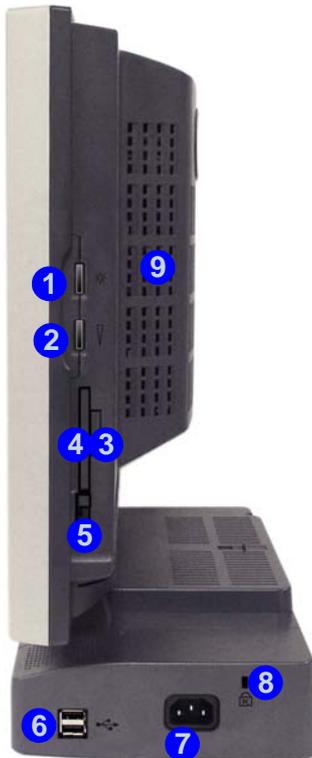


Model A



Model B

System Map: Right View



7-in-1 Card Reader Formats

The card reader allows you to use the most popular digital storage card formats (see page [2 - 12](#)):

- MMC (MultiMedia Card)
- SD (Secure Digital)
- MS (Memory Stick)
- MS Pro (Memory Stick Pro)
- MS Duo (requires PC adapter)
- Mini SD (requires PC adapter)
- RS MCC (requires PC adapter)

The PC Card Slot

The computer is equipped with a PCMCIA 3.3V/5V slot (see page [2 - 13](#)).

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within **Windows**, and **the volume control knob on the right of the computer**. Click the volume icon  in the taskbar to check the setting (see ***“Audio Features” on page 2 - 11***).

Figure 1 - 5 - Right View

1. LCD Brightness Control Knob
2. Volume Control Knob
3. 7-in-1 Card Reader
4. PC Card Slot
5. PC Card Eject Button
6. 2 * USB 2.0 Ports
7. AC-In Jack
8. Security Lock Slot
9. Vent

Note: Only **Model B** is pictured (right and rear views), however the port locations etc. are identical to **Model A**.

System Map: Rear View

Figure 1 - 6 - Rear View

1. Carrying Handle
2. Headphone-Out Jack
3. Line-In Jack
4. Microphone-In Jack
5. RJ-45 LAN Jack
6. RJ-11 Phone Jack
7. 2 * USB 2.0 Ports
8. Unpowered - IEEE 1394 Port
9. Printer/Parallel Port
10. Serial Port
11. External Monitor Port
12. Vents
13. Hard Disk Bay Screw



Handle Warning

We strongly recommend using both hands to move the computer (one hand gripping the handle and the other gripping the base) to avoid accidentally dropping it.

Port Warning

The computer can only accept one keyboard at a time. Don't try to install more than one keyboard at the same time. Doing so may cause resource conflicts and make the system unstable.



IEEE 1394

The IEEE 1394 port only supports **SELF POWERED** IEEE 1394 devices.



Windows XP Start Menu & Control Panel

Most of the control panels, utilities and programs within *Windows XP* (and most other *Windows* versions) are accessed from the **Start** menu. When you install programs and utilities they will be installed on your hard disk drive, and a shortcut will usually be placed in the **Start** menu and/or the desktop. To customize the look of the **Start** menu, right-click **Start**, and select **Properties** from the menu.



Figure 1 - 7 - Start Menu & Control Panel

In many instances throughout this manual you will see an instruction to open the **Control Panel**. The **Control Panel** is accessed from the **Start** menu, and it allows you to configure the settings for most of the key features in *Windows* (e.g. power, video, network, audio etc.). *Windows XP* provides basic controls for many of the features, however many new controls are added (or existing ones are enhanced) when you install the drivers listed in *Table 3 - 1, on page 3 - 6*. To see all controls it may be necessary to toggle off Category View.

Video Features

Your computer has built-in **Intel** on-board video. You can switch display devices, and configure display options, from the **Display Properties** control panel in *Windows* as long as the appropriate **video driver** is installed (see “*Advanced Video Controls*” on page 2 - 2).

To access Display Properties in *Windows*:

1. Click **Start**, point to **Settings** and click **Control Panel** (or just click **Control Panel**).
2. Double-click **Display** (icon) - In the **Appearances and Themes** category.
3. Click **Settings** (tab) in the **Display Properties** dialog box.
4. Move the slider to the preferred setting in **Screen resolution** ① (*Figure 1 - 8 on page 1 - 15*).
5. Click the arrow, and scroll to the preferred setting in **Color quality** ② (*Figure 1 - 8 on page 1 - 15*).
6. Click **Advanced** (button) ③ (*Figure 1 - 8 on page 1 - 15*) to bring up the **Advanced properties** tabs.
7. Click **Intel(R) Graphics Media Accelerator Driver for Mobile** (tab), and click **Graphics Properties** (button) to make any video adjustments you require.
8. You can also access **Display Properties** by right-clicking the desktop and scrolling down and clicking **Properties**. Click **Settings** (tab) and adjust as above.
9. You can also access **Intel(R) GMA Driver for Mobile** from the taskbar icon  menu.

Display Devices & Options

Besides the built-in LCD, you can also use an **external VGA monitor** (CRT) or **external Flat Panel Display** connected to the external monitor port as your display device.

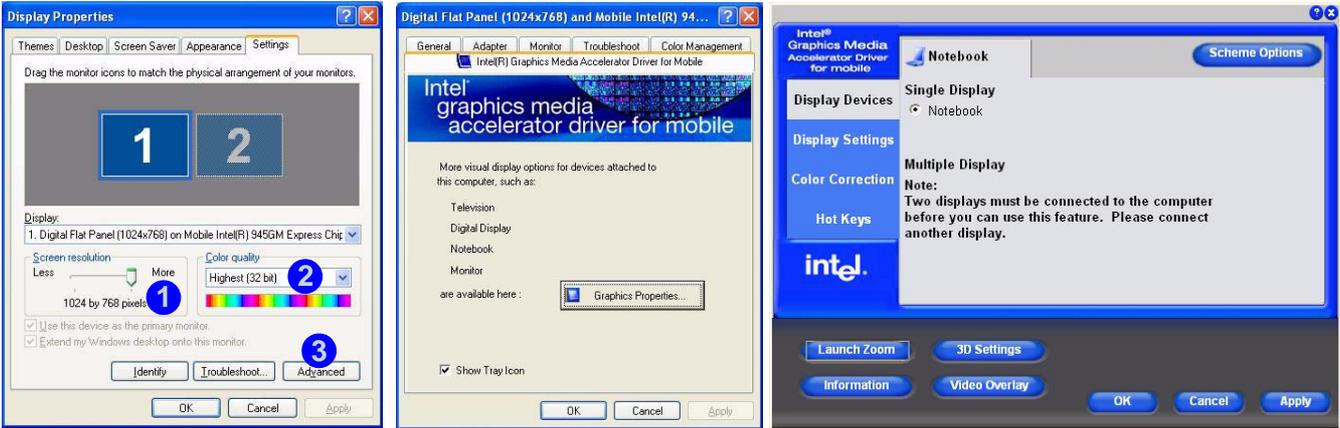


Figure 1 - 8 - Display Properties Desktop

Intel Display Mode	Description
Single Mode	One of the connected displays is used as the display device
Twin Mode	This mode will drive multiple displays with the same content and resolutions, color quality etc.
Intel(R) Dual Display Clone Mode	Both connected displays output the same view and may be configured independently
Extended Desktop Mode	Both connected displays are treated as separate devices, and act as a virtual desktop

Table 1 - 3 - Display Options

Power Management Features

The Power Options control panel in *Windows* (see page *1 - 13*) allows you to configure power management features for your computer. You may conserve power through individual components such as the monitor or hard disk (by means of **Power Schemes**), or you may use either **Standby** or **Hibernate** mode to conserve power throughout the system (enable **Hibernate** support from the control panel as pictured in *Figure 1 - 9*). Using some form of power management greatly increases the life span of the LCD.

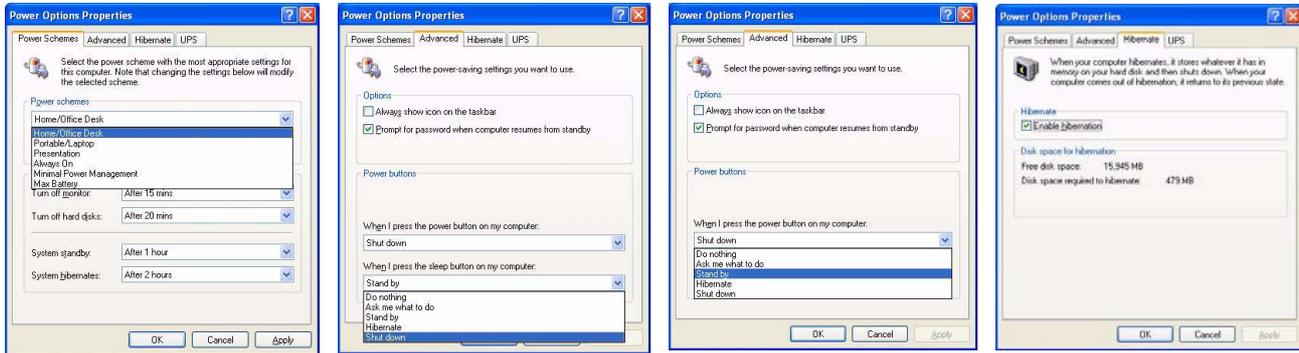


Figure 1 - 9 - Power Options

Adding a Printer

The most commonly used peripheral is a printer. The following conventions will help you to add a printer, however it is always best to refer to the printer manual for specific instructions and configuration options.

USB Printer

Most new printers have a USB interface connection. You may use any one of the ports to connect the printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Turn ON the computer.
3. Turn ON the printer.
4. Connect the printer's USB cable to one of the USB ports on the computer.
5. **Windows** will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Parallel Printer

This is still a very common type of printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Connect the printer's parallel cable to the Parallel port.
3. Turn ON the printer, then the computer.
4. **Windows** will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Chapter 2: Advanced Controls

Overview

This chapter covers:

- Advanced Video Controls
- Audio Features
- 7-in-1 Card Reader
- PC Card Slot
- Power Management
- Intel PRO/Wireless WLAN Module
- 802.11b/g WLAN Module
- Bluetooth Module
- Touch Panel Module



Drivers

You are unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you), refer to ***“What to Install”*** on page 3 - 1 for installation instructions.



DVMT Notes

The default memory setting is **128MB**, and this may be adjusted to either **64MB** or **224MB**. See *“Total Graphics Memory: (Advanced Menu)” on page 4 - 9*.

DVMT is not local video memory.

DVMT will not function in MS-DOS. DOS uses the legacy memory indicated.

*Figure 2 - 1
DVMT Memory
Requirements*

Advanced Video Controls

This section is about making adjustments for the LCD display, and switching display devices. The basic settings for configuring the display are outlined in *“Video Features” on page 1 - 14*.

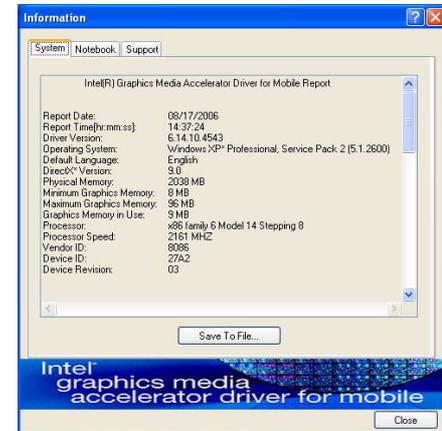
Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much (up to **224MB**) system memory (RAM) as needed to the video system (**the video driver must be installed - see page 3 - 1**). DVMT returns whatever memory is no longer needed to the operating system.



Information Tab

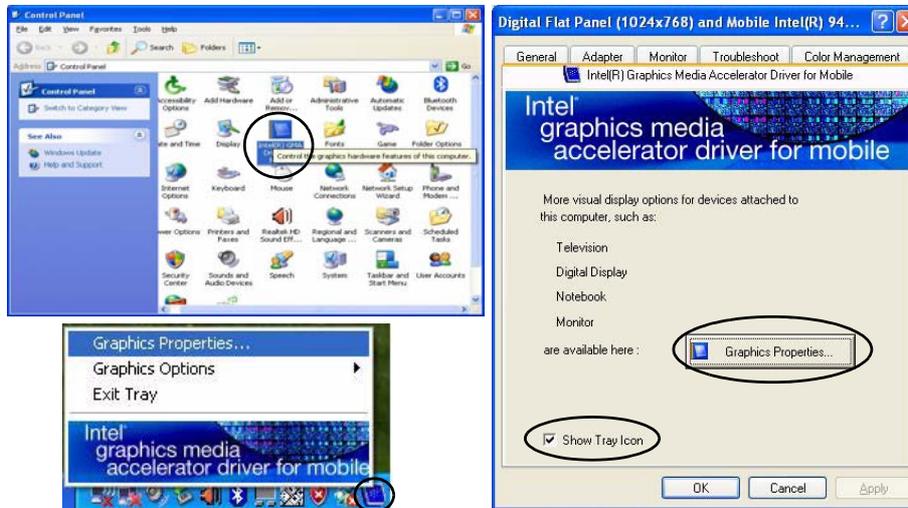
The **information** tab in **Graphics Properties** in the **intel(R) Graphics Media Accelerator Driver** (tab) lists details of your computer's memory etc. See *“Intel Graphics Properties” on page 2 - 3* to see how to access this Information tab.



Intel Graphics Properties

More advanced video configuration options are provided by the **Intel(R) Graphics Media Accelerator Driver for Mobile**.

1. Open **Display Properties** (see *“Video Features” on page 1 - 14*) and click **Advanced**.
2. Click the **Intel(R)...** tab and click **Graphics Properties** (button).
3. You can also access **Graphics Properties** from the **Windows Intel(R) GMA Driver for Mobile** control panel, or from the taskbar icon  menu.



Taskbar Icon

You can also access the controller properties from the taskbar. Click on the icon to bring up the menu and scroll to **Graphics Properties**.

If you cannot see the tray icon go to the **Intel(R) Graphics Media Accelerator Driver** tab (in the **Display Properties > Advanced** options) and click the **“Show Tray Icon”** tick-box.

Figure 2 - 2
Intel Graphics Properties

Advanced Controls

2



Help Menus

Right-click on many of the items in the tabs to bring up the "What's This?" button.

Click the "What's This?" button to bring up the help menu.

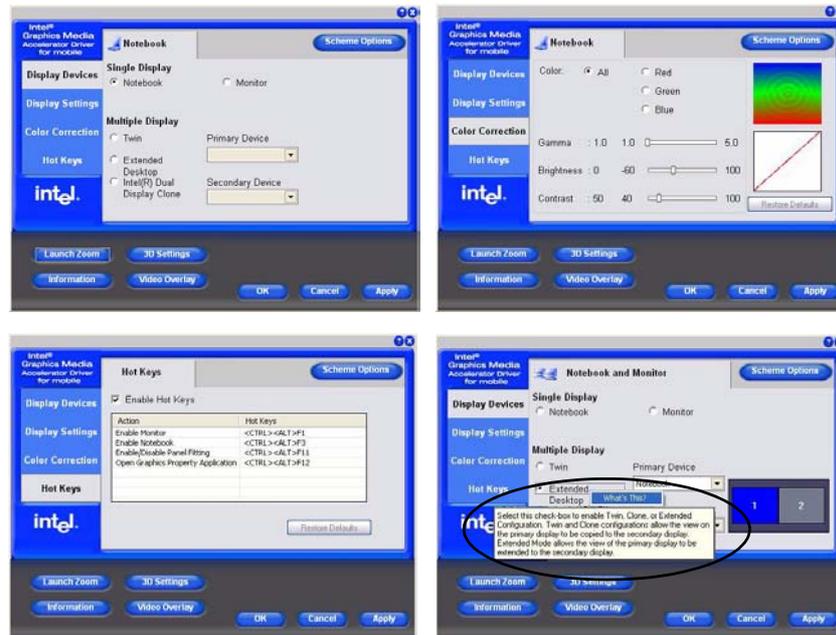
Multiple Display

At least one other display must be attached in order to view **Multiple Display** options.

Figure 2 - 3

Intel Graphics Media Accelerator Driver for mobile
(Control Panel Tabs)

You may make changes to the devices, color, schemes, **Hot Keys** etc. by clicking the appropriate menu item or button. Click **Information** (button) to obtain useful information about the graphics properties of the computer, and see the **Support** tab in **Information** to get weblinks to the latest information on the Intel Website.



Scheme Options

Use Scheme Options to configure quick settings for applications which require specific resolution and color settings in order to run properly e.g. games, multimedia programs. To set the scheme options:

1. Open the **Intel(R) GMA Driver for Mobile** control panel (see *"Intel Graphics Properties" on page 2 - 3*).
2. Configure your display configuration, resolution etc. as per your requirements from **Display Settings**.
3. Click on **Scheme Options** (button).
4. Type a name for the scheme.
5. If you want to automatically launch an application when running the scheme click on **Browse** (button).
6. **Browse** to the executable file for the application you want to set the scheme for (see sidebar), and click **Open** to select it.
7. Click **Save** to save the settings (you can click in the **"Restore the display settings after exiting this application"** box to return to your original settings when you exit the program).
8. Click **OK** to exit Scheme Options.
9. Click the taskbar icon  and scroll to **Select Scheme** to choose the scheme to run.



Application.exe

You will need to locate the actual **application executable (.exe) file**, not just the shortcut. To find the application right-click its **shortcut** on the desktop click **Properties**. Click the **Shortcut** (tab) and see where the executable file is located by clicking the **Find Target** (button). Note the location and you will then be able to browse to this file.

Figure 2 - 4
Select Scheme



Intel Display Note

Note that the notebook (i.e. the built-in LCD) is the default Primary display device and may not be changed.

Attaching Other Displays

Besides the built-in LCD, you can also use an external monitor/flat panel display as a display device. The following are the display options:

1. The built-in LCD **OR** an external monitor/flat panel display connected to the external monitor port (**Single Display**).
2. The built-in LCD **AND** an external monitor/flat panel display connected to the external monitor port (**Multiple Display**).

If you want to use an external display, follow these instructions.

1. Attach your external monitor to the external monitor port, and turn it on.
2. Go to the **Intel (R) GMA Driver for Mobile** control panel (see *[“Intel Graphics Properties” on page 2 - 3](#)*).
3. Click to choose the display option from the **Multiple or Single Display** menu.
4. Click **Apply** (and **OK** to confirm the settings change) and **OK** (button).



Figure 2 - 5
Display Devices

Display Modes

Single Display

Only one of your attached displays is used.

Twin

This mode will drive multiple displays with the same content and resolutions, color quality etc. See *“Twin Mode Support” on page 2 - 8* for more information.

Extended Desktop

This mode allows a desktop to span multiple displays and acts as a large workspace. This creates a lot more screen area for display. Use the **Display Properties** (tab) to drag the monitors to match the physical arrangement you wish to use, or you may also use the **Windows Display Properties** (control panel) to configure the relative size and position.

Intel(R) Dual Display Clone

This mode will drive multiple displays with the same content. Each device may be configured independently for different resolutions, refresh rates, color quality etc. Use this feature to display the screen through a projector for a presentation.



Twin Mode Support

The **Twin** mode option will only appear if the LCD PC (notebook) and external monitor support the same resolution (e.g. 1280 * 800). Check any documentation supplied with an external monitor to see supported resolutions.

To Enable Intel(R) Dual Display Clone Mode

1. Attach your external monitor to the external monitor port, and turn it on.
2. Go to the **Intel (R) GMA Driver for Mobile** control panel (see [“Intel Graphics Properties” on page 2 - 3](#)).
3. Click to choose **Intel(R) Dual Display Clone** or **Twin** from **Display Device** (tab).
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.



Clone Mode

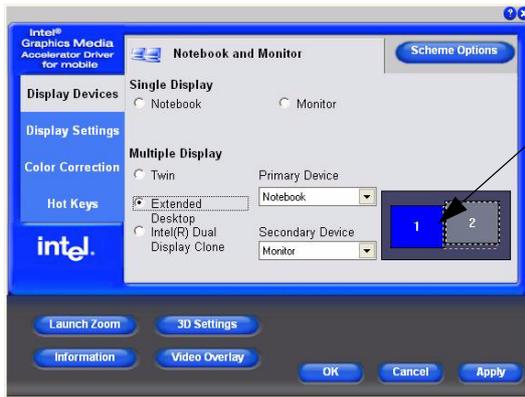


Twin Mode

Figure 2 - 6
Display Devices & Settings

To Enable Extended Desktop Mode:

1. Attach your external monitor to the external monitor port, and turn it on.
2. Go to the **Intel (R) GMA Driver for Mobile** control panel (see *"Intel Graphics Properties" on page 2 - 3*).
3. Click to choose **Extended Desktop** from **Display Device** (tab).
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.



Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the secondary display may be extended left/right/above/below the primary display).

Click **Display Settings** to make any adjustments required.

You can also enable the Extended Desktop mode from the **Display Properties** control panel (see page *2 - 10*).



Display Settings Extended Desktop

You can have different Colors, Screen Area and Monitor Refresh Rates for each display device **provided your monitor can support them**.

You can drag the monitor icons to match the physical layout of your displays. Icons and programs may also be dragged between the displays.

Figure 2 - 7
**Extended Desktop
Mode**



Display Settings Extended Desktop

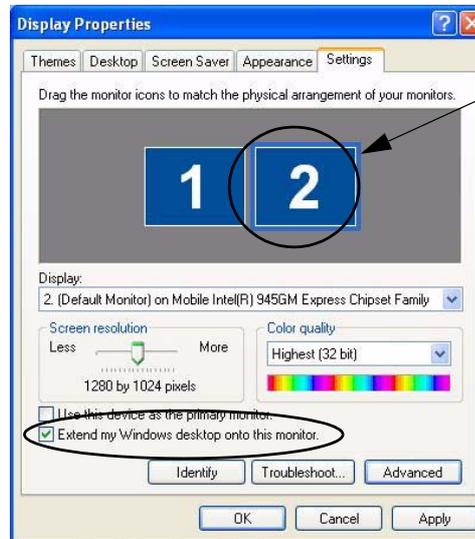
Use the control panel to drag the monitors to match the physical arrangement you wish to use.

You can drag any icons or windows across to either display desktop, which makes it possible to have one program visible in one of the displays, and a different program visible in the other display.

Figure 2 - 8
**Display Properties
(Extended Desktop)**

To Enable Extended Desktop (Display Properties)

1. Attach your external monitor to the external monitor port, and turn it on.
2. Click **Start**, point to **Settings** (or click **Control Panel**) and click **Control Panel** (if you are in **Category View** choose **Appearance and Themes**).
3. Double-click **Display** (icon).
4. In the **Display Properties** dialog box, click **Settings** (tab).
5. Click the monitor icon (e.g. **2**), and make sure you have checked “**Extend my Windows desktop onto this monitor.**” and click **Apply**.



Click the appropriate monitor icon (e.g. **2**) to be able to select the option to extend the desktop on to it.

In this example the Primary monitor **1** is on the left, the secondary display **2** is on the right.

Audio Features

You can configure the audio options on your computer from the **Sounds and Audio Devices**  **Windows** control panel (see *Figure 1 - 7 on page 1 - 13*), or from the **Realtek HD Audio Manager**  icon in the taskbar/control panel (this will bring up the Realtek Audio Configuration menus).



2



Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within **Windows** (and the **volume control knob** on the computer). Click the Volume icon on the taskbar to check the setting.

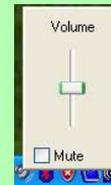


Figure 2 - 9
Realtek Audio Control Panel



Card Reader Cover

Make sure you keep the rubber cover provided in the card reader when not in use. This will help prevent foreign objects and/or dust getting in to the card reader.

Figure 2 - 10
Right View

1. Card Reader

7-in-1 Card Reader

The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device, and can be accessed in the same way as your hard disk (s). Make sure you install the Card Reader driver (see *“PCMCIA/Card Reader” on page 3 - 8*).



- MMC (MultiMedia Card)
- SD (Secure Digital)
- MS (Memory Stick)
- MS Pro (Memory Stick Pro)
- MS Duo (requires PC adapter*)
- Mini SD (requires PC adapter*)
- RS MMC (requires PC adapter*)

***Note:** The PC adapters are usually supplied with these cards.

PC Card Slot

The computer is equipped with a PCMCIA 3.3V/5V slot for **one type II** PCMCIA CardBus PC Card Slot. Make sure you install the PCMCIA/Card Reader driver (see *“PCMCIA/Card Reader” on page 3 - 8*).

Inserting and Removing PC Cards

- Align the PC Card with the slot and push it in until it locks into place.
- To remove a PC Card, simply press the eject button **1** next to the slot.



PC Card Slot Cover

Make sure you keep the cover in the PC Card slot when not in use. This will help prevent foreign objects and/or dust getting in to the PC Card Slot.

Figure 2 - 11
Right View

1. PC Card Eject Button



Shutdown

Note that you should always shut your computer down by choosing the **Shut Down/Turn Off Computer** command from the **Start** menu in **Windows**. This will help prevent hard disk or system problems.

Forced Off

If the system “hangs”, and the **Ctrl + Alt + Del** key combination doesn’t work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

Power Management

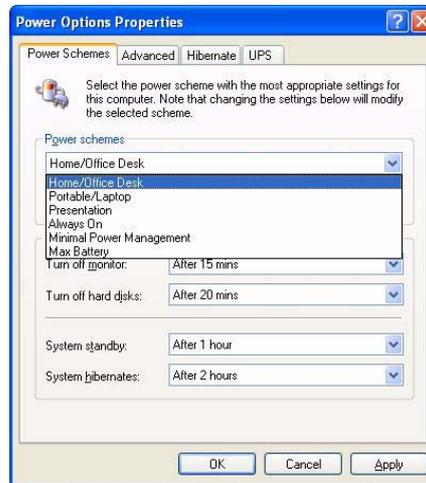
The computer uses the ACPI power management system to conserve power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system.

Using some form of power management greatly increases the life span of the LCD.

When the computer is on, you can use the power button as a Standby/Hibernate/Shutdown hot-key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will shut the computer down). Use **Power Options** in the **Windows** control panel to configure this feature.

Power Schemes

You can set your computer to conserve power through individual components by means of **Power Schemes**. You can also adjust the settings for each scheme to set the monitor to turn off after a specified time, and the computer's hard disk motor to turn off if the hard disk drive has not been accessed for a specified period of time (if the system reads or writes data, the hard disk motor will be turned back on). The schemes may also be set to set a specified time for the system to enter **Standby** or **Hibernate** modes (see *“System Power Options” on page 2 - 16*).



Choose the **Home/Office Desk** scheme for maximum performance.



Resuming Operation

The system can resume from Monitor or Hard Disk Standby by pressing a key on your keyboard.

Figure 2 - 12
Power Schemes



Power Button as Standby or Hibernate Button

Fully ACPI-compliant operating systems, (such as **Windows XP**) allow you to use the OS's "Power Options" control panel to set the power button to send the system into Standby or Hibernate mode (see your OS's documentation, or "**Configuring the Power Button**" on [page 2 - 18](#) for details).

System Power Options

You can use the system power options to stop the computer's operation and restart where you left off. This system features **Standby** and **Hibernate** sleep mode levels (**Hibernate** mode will need to be enabled by clicking the option in the **Hibernate** tab in the **Power Options** control panel - [Figure 2 - 13 on page 2 - 17](#)).

Hibernate Mode vs. Shutdown

Hibernate mode and Shutdown are the same in that the system is off and you need to press the power button to turn it on. Their main difference is:

When you come back from hibernation, you can return to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

You can use either method depending on your needs.

Standby Mode vs. Hibernate Mode

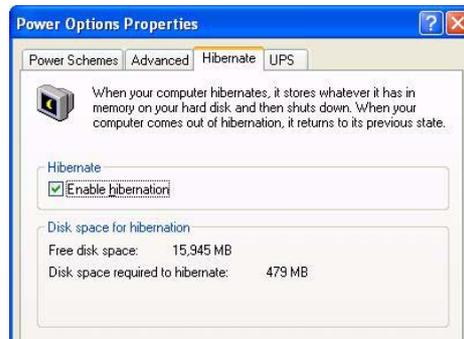
If you want to stay away from your work for just a while, you can put the system on standby instead of in hibernation. It takes a longer time to wake up the system from **Hibernate** mode than from **Standby** mode.

Standby

Standby saves the least amount of power, but takes the shortest time to return to full operation. During Standby the hard disk is turned off, and the CPU is made to idle at its slowest speed. All open applications are retained in memory. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter Standby mode to save power.

Hibernate

Hibernate uses no power and saves all of your information on a part of the HDD before it turns the system off. Although it saves the most power it takes the longest time to return to full operation. You will need to enable Hibernate mode from the **Hibernate** tab in the Power Options control panel. **The system will resume from Hibernate mode by pressing the power button.**



System Resume

The system can resume from Standby mode by:

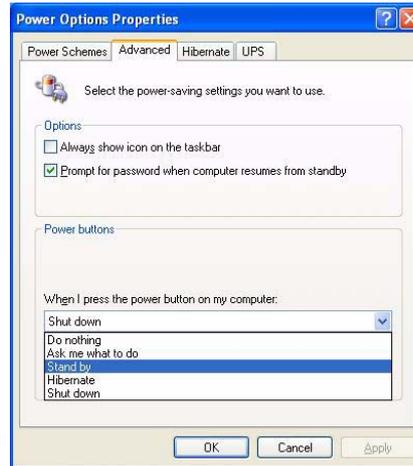
- Pressing the power button
- An alarm resume that is enabled and expires
- An incoming call received on the modem (if enabled)
- Network card activity (if enabled)

Figure 2 - 13
Enable Hibernation

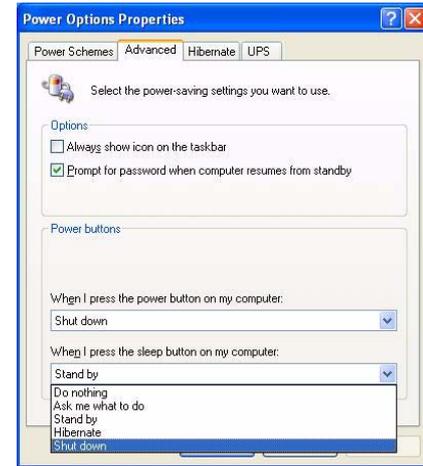
Configuring the Power Button

The power button may be set to send the computer in to either **Standby** or **Hibernate** mode (**Figure 2 - 14**). In **Standby** mode, the Power LED will flash orange. In **Hibernate** mode the Power LED will be off.

Figure 2 - 14
**Power Options
(Advanced - Power
Buttons)**



Power Button



Sleep/Resume (Sleep) Button
(if your keyboard supports this function)

Intel PRO/Wireless WLAN Module

If you have included an **Intel PRO/Wireless 3945ABG (802.11a/b/g)** PCIe WLAN module in your purchase option, **make sure you install the drivers in the order indicated in [Table 3 - 1](#), on [page 3 - 6](#).**

To get help on the network settings you can view the **User Guide** from the **Intel PROSet / Wireless** menu.



Figure 2 - 15
Installation Screen



User Guide

You can view the User Guides from the **Device Drivers & Utilities + User's Manual CD-ROM**.

Click **Optional** (button) and then click the **Unlock** button. Click **1.Wireless Lan > Yes**.

Click **View User Guide** (button) as per **Figure 2 - 15 on page 2 - 19**.

Figure 2 - 16
**Intel PROSet/
Wireless**

Intel WLAN Driver Installation

1. Insert the **Device Drivers & Utilities + User's Manual CD-ROM** into the CD/DVD drive.
2. Click **Optional > Yes**.
3. Click **1.Install Wireless Lan Driver > Yes**.
OR
Navigate (**Browse..**) to **D:\Others\WLAN\Intel\Autorun.exe** and click **OK**.
4. Click **Install Software** (button).
5. Click the button to accept the license and click **Next > Next > OK**.
6. Click **OK** to complete the installation.



7. You can configure the settings by going to the **Intel (R) PROSet Wireless** control panel (**Start > Programs/All Programs > Intel PROSet Wireless**), or by double-clicking the taskbar icon .

802.11b/g WLAN Module

If your purchase option includes the **802.11b/g** Wireless LAN module, follow the procedure below for driver installation instructions. You can then configure the options from the Wireless Configuration Utility by clicking the icon in the *Windows* control panel, or in the taskbar.

Wireless LAN (802.11b/g) Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual CD-ROM* into the CD/DVD drive.
2. Click **Optional > Yes**.
3. Click **1.Install Wireless Lan Driver > Yes**.
OR
Navigate (**Browse..**) to **D:\Others\WLAN\AW\Setup.exe** and click **OK**.
4. Choose the language you prefer, and click **OK**.
5. Click **Next** (click **Continue Anyway** if a warning appears).
6. Click **Finish** to complete the installation.
7. The operating system is the default setting for Wireless LAN control in *Windows XP* (see overleaf).
8. Access any available wireless networks from **Network Connections > Wireless Network Connection** menu in *Windows* (see sidebar overleaf), or click the icon  in the taskbar, and click **View Wireless Connections**.

Network Connection

Use the **Windows Network Connections** control panel to access available wireless networks (**Start > Settings > Network Connections** or **Start > Connect To > Show all Connections**).

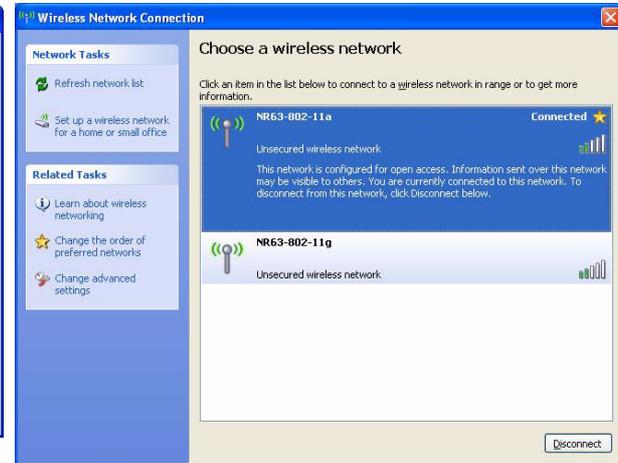
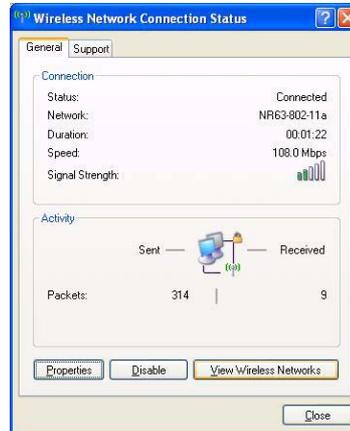


Figure 2 - 17
Wireless Network
Control Panels

Bluetooth Module

If your purchase option includes the **Bluetooth** module, follow the procedure below for driver installation instructions.

Bluetooth Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual CD-ROM* into the CD/DVD drive.
2. Click **Optional > Yes**.
3. Click **2.Install Bluetooth Driver > Yes**.
OR
Click **Start** (menu) > **Run...** and navigate (**Browse...**) to **D:\Others\Bluetooth\SETUP.exe** and click **OK**.
4. Click **Install Drivers and Application v2.12**.
5. Choose the language you prefer, and click **OK**.
6. Click **Next**.
7. Click the button to accept the license agreement, and then click **Next**.
8. Click **Next > Next > Install**.
9. Click **Finish > Yes** to restart the computer.
10. The **IVT Corporation BlueSoleil - Main Window** will appear on restart.
11. Configure the settings by going to the **IVT Corporation BlueSoleil - Main Window** control panel (**Start > Programs/All Programs > IVT BlueSoleil > BlueSoleil**), or click the taskbar icon .



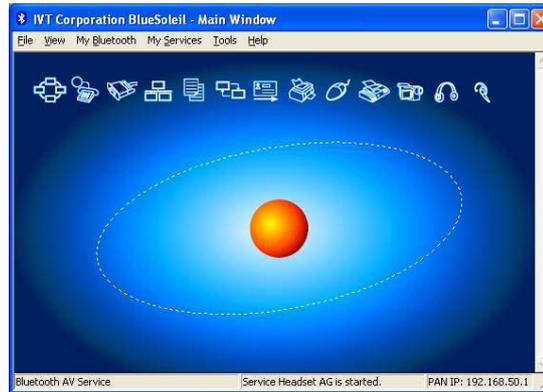
User Guide

View the BlueSoleil User Guides from the **Help** Menu (or press the **F1** key) in the **IVT Corporation BlueSoleil - Main Window**.

The Manual in Adobe .pdf format is on the **Device Drivers & Utilities + User's Manual CD-ROM**.

Click **Browse CD** (button) and navigate (Browse...) to **D:\Others\Bluetooth\Manual\Manual.pdf**.

Figure 2 - 18
Bluetooth Control Panel & User Guides



Send To Bluetooth

Right-Click to select any file and scroll down to **Send To... Bluetooth Device**.



Touch Panel Module

If your purchase option includes the **Touch Panel** module, follow the procedure below for driver installation instructions.

The Touch Panel is a device for pointing (controlling input positioning) on the computer's display screen by sensing finger movement, and downward pressure. It is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports.

Touch Panel Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual CD-ROM* into the CD/DVD drive.
2. Click **Optional > Yes**.
3. Click **3.Install Touch Panel Driver > Yes**.

OR

Navigate (**Browse...**) to **D:\Drivers\Others\Touch Panel\SETUP.exe** and click **OK**.

4. Click **Next**.
5. Click **Finish** to restart the computer.
6. Calibrate the Touch Panel from the **TouchSet Utility** (see over).



Touch Panel Pointing Device

Do not use any sharp or pointed objects as your input device e.g. the end of a pen or pencil. You could use your finger or stylus pen (PDA type) to move the cursor.



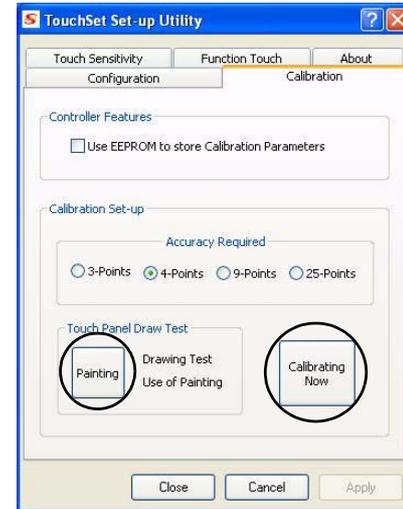
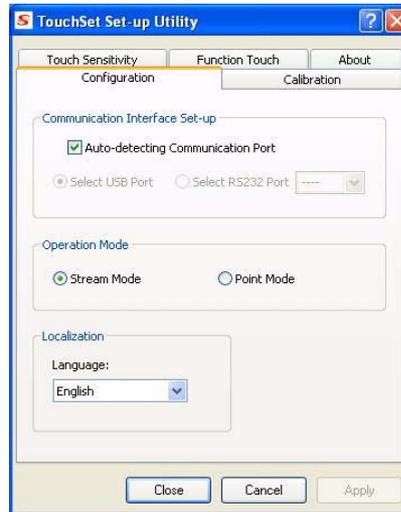
Help Guide

Open the **Help** file from **Start > Programs/All Programs > TouchSet Touch Panel > Help** for further information on using the Touch Panel.

Figure 2 - 19
TouchSet Set-up Utility

Calibrating the Touch Panel

1. Configure the settings from the **TouchSet Utility** control panel (**Start > Programs/All Programs > TouchSet Touch Panel**), or double-click the desktop icon .
2. Click the **Calibration** tab and click the **Calibrating Now** button.
3. Use the input device to touch the cross  at the different positions on screen.
4. Click the **Painting** button to test the calibration.



Chapter 3: Drivers & Utilities

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the computer's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities.

What to Install

The *Device Drivers & Utilities + User's Manual CD-ROM* contains the drivers and utilities necessary for the proper operation of the computer.

Module Driver Installation

The procedures for installing drivers for the **Wireless LAN**, **Bluetooth** and **TouchPad** modules are provided in *"Advanced Controls" on page 2 - 1*. Make sure that the drivers are installed in the order indicated in *Table 3 - 1, on page 3 - 6*.

Navigate (Browse..) to D:

You will notice that many of the instructions for driver installation require you to “**Navigate (Browse) to D:**”. We assume that you will install all drivers and utilities from the built-in CD device and it is assigned to “**Drive D:**”. In addition, all file extensions can be seen

In this case “D:” is the drive specified for your CD device. Not all computers are setup the same way, and some computers have the CD listed under a different drive letter - e.g. if you have two hard drives (or hard disk partitions) one may be designated as “Drive C:” and the other as “Drive D:”. In this case the CD device may be designated as “Drive E:” - Please make sure you are actually navigating to the correct drive letter for the CD device.

When you click the **Browse** (button) after clicking **Run** in the **Start** menu you will see the “**Look in:**” dialog box at the top of the **Browse** window. Click the scroll button to navigate to **My Computer** to display the devices and drive letters.

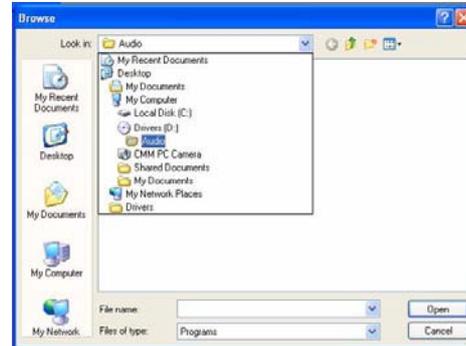
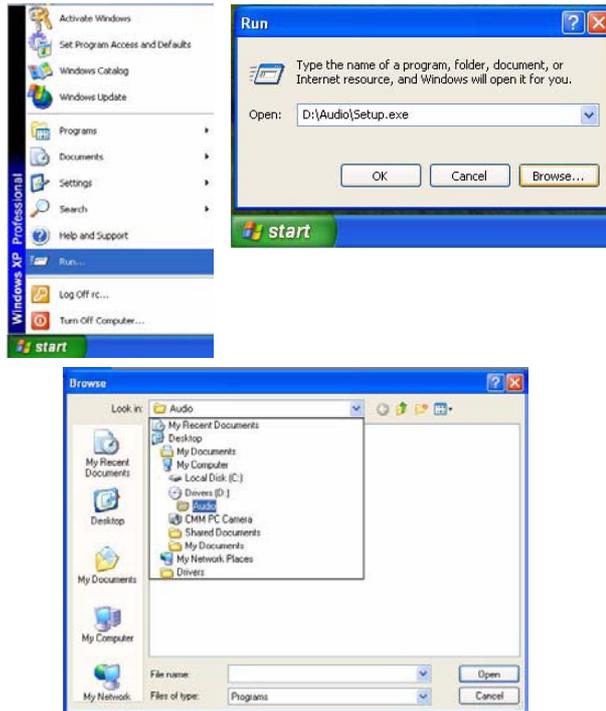


Figure 3 - 1 - Navigate (Browse..) to..

Service Packs

Check the warnings on the following pages regarding installation of the appropriate **Service Pack** for your *Windows XP* OS. Make sure you have installed the appropriate Service Pack **before** installing all the drivers.



Service Pack Installed

To see which **Service Pack** is currently installed on your computer go to the **General** tab of the **System** control panel. Right-click the **My Computer** icon on the desktop or in the **Start** menu and select **Properties**. The Service Pack currently installed on your system will be listed under the "**System:**" heading. (If no Service Pack information is listed, then no Service Pack is installed.)



Windows XP Service Pack 2

Make sure you install **Windows XP Service Pack 2** (or a Windows XP version which includes Service Pack 2) **before installing any drivers**. Service Pack 2 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 2** (i.e. your Windows XP version does not include Service Pack 2) then follow these instructions:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **System** (icon); **System** (icon) is in **Performance and Maintenance** (category).
3. Click the **Hardware** (tab) > **Device Manager** (button).
4. Click "+" next to **Other Devices** (if its sub-items are not shown).
5. Right-click **Universal Serial Bus (USB) Controller** and select **Uninstall** > **OK** (if you don't see the item then there is no need to take any further action).
6. Restart the computer and it will find the USB 2.0 controller.

Authorized Driver Message

If you receive a message telling you that the driver you are installing is not authorized (**Digital Signature Not Found**), just click **Yes** or **Continue Anyway** to ignore the message and continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of *Windows* you are currently using. All the drivers provided will have already received certification for *Windows*.

Version Conflict Message

During driver installation if you encounter any “file version conflict” message, please click **Yes** to choose to keep the existing (newer) version.

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver. To do this go to the **Control Panel** in the *Windows OS* and double-click the **Add/Remove Programs** item. **If you see the individual driver listed** (if not see below), uninstall it, following the on screen prompts (it may be necessary to restart the computer). Go to the appropriate section of the manual to complete the update/reinstall procedure for the driver in question.

If the driver is not listed in the **Add/Remove Programs** item:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Start > Control Panel**).
2. Double-click **System** (icon); System (icon) is in **Performance and Maintenance** (category).
3. Click **Hardware** (tab) > **Device Manager** (button).
4. Double-click the **device** you wish to update/reinstall the driver for (you may need to click “+”).
5. Look for the **Update Driver** button (check the **Driver** tab) and follow the on screen prompts.

Driver Installation

Insert the *Device Drivers & Utilities + User's Manual* CD-ROM and click **Install WinXP Drivers** (button) > **Yes**, or **Optional** (button) > **Yes** to access the **Optional** driver menu.

If you wish to install the drivers **manually**, see page 3 - 6.



Figure 3 - 2 - Drivers Installer Screen 1

1. Check the driver installation order from [Table 3 - 1 on page 3 - 6](#) (the drivers must be installed in **this order**) which is the same as that listed in the **Drivers Installer** menu below.
2. Click to select the driver you wish to install, and after installing each driver it will become grayed out (if you need to reinstall any driver, click the **Unlock** button).
3. Follow the instructions for each individual driver installation procedure as listed in the following pages.



Figure 3 - 3 - Drivers Installer Screen 2

WinXP SP2 Driver	Page #
Install the appropriate Service Pack for WinXP	Page 3 - 3
Chipset	Page 3 - 7
Video	Page 3 - 7
Audio	Page 3 - 7
Modem	Page 3 - 8
LAN	Page 3 - 8
PCMCIA/Card Reader	Page 3 - 8
Intel Wireless LAN	Page 2 - 20
802.11 b/g Wireless LAN	Page 2 - 21
Bluetooth	Page 2 - 23
Touch Panel	Page 2 - 25

Table 3 - 1 - Driver Installation

Service Pack Installation

Make sure you install the appropriate service pack for your operating system before installing any drivers (see “*Windows XP Service Pack 2*” on page 3 - 3).

New Hardware Found

If you see the message “**New Hardware Found**” (**Found New Hardware Wizard**) during the installation procedure (other than when outlined in the driver install procedure), click **Cancel** to close the window, and follow the installation procedure as directed.

Manual Driver Installation

If you wish to install the drivers manually, click the **Exit** button and **Yes** to quit the *Drivers Installer* application, and then follow the manual installation procedure for each driver. The manual installation procedure begins with instructions on how to browse to the executable file; “Click **Start** (menu) > **Run..**”.

Chipset

1. Click **Install WinXP Drivers > Yes**.
2. Click **1.Install Chipset Driver > Yes**.
OR
Navigate (**Browse..**) to
D:\Drivers\00Chipset\Setup.exe and click
OK.
3. A DOS window will appear and the driver will begin to install.
4. Click **Next > Yes > Next**.
5. Click **Finish** to restart the computer.

Video

1. Click **Install WinXP Drivers > Yes**.
2. Click **2.Install Video Driver > Yes**.
OR
Navigate (**Browse..**) to
D:\Drivers\01VGA\Setup.exe and click **OK**.
3. Click **Next > Yes**.
4. Click **Finish** to restart the computer.

Audio

1. Click **Install WinXP Drivers > Yes**.
2. Click **3.Install Audio Driver > Yes**.
OR
Navigate (**Browse..**) to
D:\Drivers\02Audio\Setup.exe and click **OK**.
3. Click **Next** (click **Continue Anyway** if a *Hardware Installation* warning appears, and click **Cancel** if a *“Found New Hardware Wizard”* appears).
4. Click **Finish** to restart the computer (click **Cancel** if a *Found New Hardware Wizard* appears after restart).

Modem

1. Click **Install WinXP Drivers > Yes.**
2. Click **4.Install Modem Driver > Yes.**
OR
Navigate (**Browse...**) to
D:\Drivers\03Modem\setup.exe and click **OK.**
3. Click **OK.**
4. Double-click the icon  in the taskbar to access the **Motorola SM56 Modem Helper** for configuration.



Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel > Phone and Modem Options**).

LAN

1. Click **Install WinXP Drivers > Yes.**
2. Click **5.Install LAN Driver > Yes.**
OR
Navigate (**Browse...**) to
D:\Drivers\04Lan\setup.exe and click **OK.**
3. Click **Next > Install.**
4. Click **Finish.**
5. The network settings can now be configured.

PCMCIA/Card Reader

1. Click **Install WinXP Drivers > Yes.**
2. Click **6.Install PCMCIA Driver > Yes.**
OR
Navigate (**Browse...**) to
D:\Drivers\05PCMCIA\setup.exe and click **OK.**
3. Click **Next.**
4. Click the button to accept the license and then click **Next.**
5. Click **Finish.**

Wireless LAN

See the installation procedure in *“Intel WLAN Driver Installation” on page 2 - 20* or *“Wireless LAN (802.11b/g) Driver Installation” on page 2 - 21*.

Bluetooth

See the installation procedure in *“Bluetooth Driver Installation” on page 2 - 23*.

Touch Panel

See the installation procedure in *“Touch Panel Driver Installation” on page 2 - 25*.

Chapter 4: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software:

Diagnostics: The **POST** (Power-On Self Test)

Configuration: The **PhoenixBIOS Setup Utility**

If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in the *PhoenixBIOS Setup Utility*. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: *Don't make any changes unless you are sure of what you are doing*. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.



BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Setup* and restore the *Setup Defaults* with **<F9>**.



POST Screen

1. BIOS information
2. CPU type
3. Memory status
4. Enter **Setup** prompt appears only during **POST**

Note: The **POST** screen as pictured is for guideline purposes only. The **POST** screen on your computer may appear slightly different.

Figure 4 - 1
POST Screen

The Power-On Self Test (POST)

Each time you turn on the computer, the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM (memory).

As the **POST** proceeds, the computer will tell you if there is anything wrong. If there is a problem that prevents the system from booting, it will display a system summary and prompt you to run the **PhoenixBIOS Setup Utility**.

If there are no problems, the **Setup** prompt will disappear and the system will load the operating system. Once that starts, you can't get into **Setup** without rebooting.

```
Phoenix TrustedCore(tm) NB
Copyright 1985-2005 Phoenix Technologies Ltd.
All Rights Reserved
Bios Ver: XXXXX 1
KBC/EC Firmware Revision: XXXX

CPU = 1 Processors Detected, Cores per Processor 2
Genuine Intel(R) CPU T2600 @ 2.16GHz 2
503M System RAM Passed 3
2048 KB L2 Cache
System BIOS shadowed
Video BIOS shadowed
Fixed Disk 0: HDS722580VLSA80
ATAPI CD-ROM: TSSTcorpCD/DVDW TS-L632D
Mouse intialized

Press <F2> to enter SETUP 4
```

Failing the POST

Errors can be detected during the **POST**. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized service center as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) followed by the prompt:

- Press <F1> to resume
- <F2> to enter Setup

Press **F1** to see if the boot process can continue. It may work, without the correct configuration.

Press **F2** to run the **Setup** program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

The Setup Program

The **PhoenixBIOS Setup Utility** tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter the **PhoenixBIOS Setup Utility**, turn on the computer and press **F2** during the **POST**. The prompt (*Press F2 to Enter Setup*) seen in *Figure 4 - 1* is usually present for a few seconds after you turn on the system. If you get a “Keyboard Error”, (usually because you pressed **F2** too quickly) just press **F2** again.

If the computer is already on, reboot using the **Ctrl + Alt + Delete** combination and then hold down **F2** when prompted. The **PhoenixBIOS Setup Utility** main menu will appear.

Setup Screens

The following pages contain additional advice on **portions** of the *Setup*.

Along the top of the screen is a menu bar with five (**5**) menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to *Setup*.

Instructions on how to navigate each screen are in the box along the bottom of the screen. If these tools are confusing, press **F1** to call up a **General Help** screen, then use the arrow keys to scroll up or down the page.

The **Item Specific Help** on the right side of each screen explains the highlighted item and has useful messages about its options.

If you see an arrow ► next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

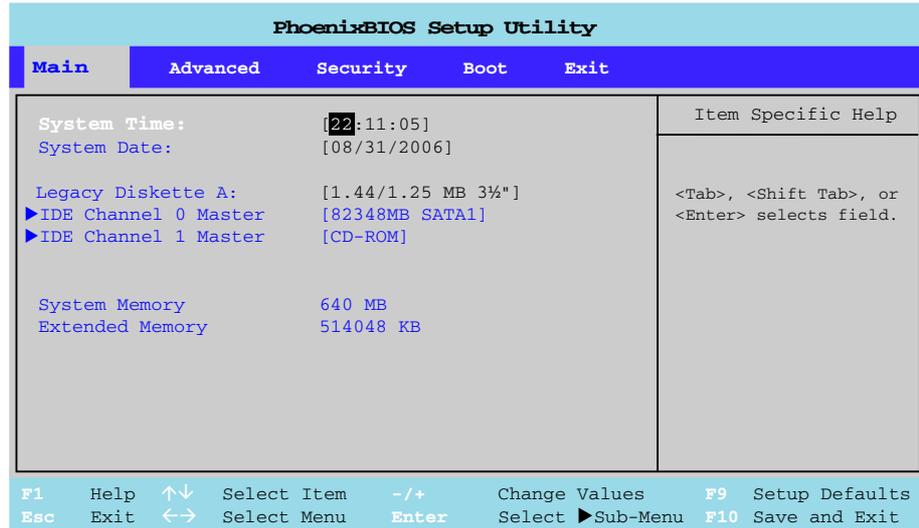


Setup Menus

The **Setup** menus shown in this section are for **reference** only. Your computer's menus will indicate the configuration appropriate for your model and options.

Main Menu

Figure 4 - 2
Main Menu



System Time & Date (Main Menu)

The hour setting uses the 24-hour system (i.e., 00 = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

Legacy Diskette A: (Main Menu)

This control allows you to enable/reconfigure the internal floppy disk drive.

IDE Channel 0/1 Master (Main Menu)

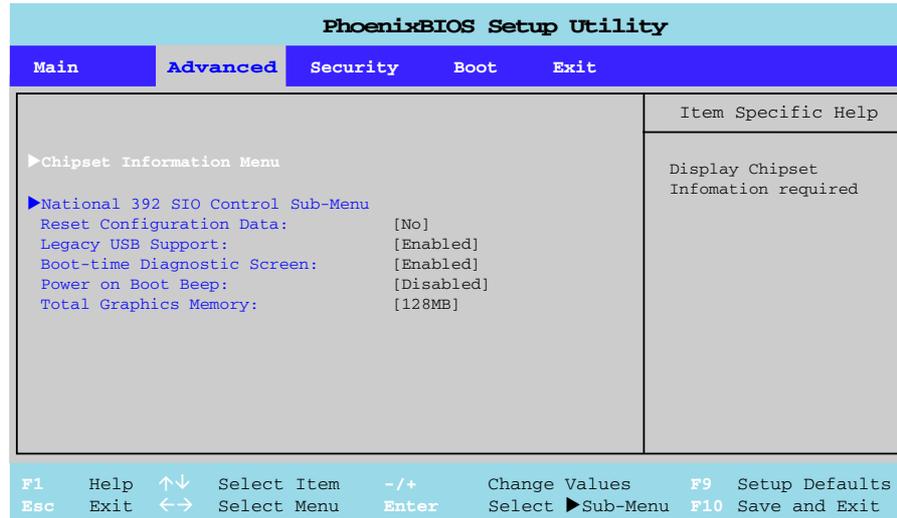
Press **Enter** here to open the sub-menu to show the configuration of hard disks and CD/DVD device(s) on the computer's IDE Channels. Use the **Auto** (Type:) setting to have the items configured automatically for you.

System/Extended Memory (Main Menu)

This item contain information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed, the amount used by devices, and the unused memory available to the operating system (OS).

Advanced Menu

Figure 4 - 3
Advanced Menu



Chipset Information Menu (Advanced Menu)

Press **Enter** here to open the sub-menu which displays information on the CPU and BIOS version.

National 392 SIO Control Sub-Menu

The sub-menu here allows you to configure the **serial** and **parallel** ports, and the **floppy disk controller**.

Reset Configuration Data: (Advanced Menu)

This item is set to “**No**” as default. You can change the setting to “**Yes**” if you have installed a new add-on which has reconfigured the system, resulting in such a serious system conflict that the operating system is unable to boot.

Legacy USB Support: (Advanced Menu)

Choose “**Enabled**” if you intend to use **USB** devices in systems which do not normally support USB functionality (e.g. *DOS*). The default setting is “**Enabled**” and does not need to be changed if you intend to use your USB devices in *Windows*.

Boot-time Diagnostic Screen: (Advanced Menu)

Use this menu item to enable/disable the Boot-time Diagnostic Screen (or POST screen - see “*The Power-On Self Test (POST)*” on page 4 - 2).

Power On Boot Beep: (Advanced Menu)

Use this menu to enable/disable the single beep sound at the end of the POST. This item is “**Disabled**” by default.

Total Graphics Memory: (Advanced Menu)

Press **Enter** here to select the amount of pre-allocated graphics memory. The default setting is **128MB**, and this may be adjusted to either **64MB** or **224MB**.



Security Menu

The changes you make here affect the access to the **Setup** utility itself, and also access to your machine as it boots up after you turn it on. These settings do not affect your machine or network passwords which will be set in your software OS.

Security Menu

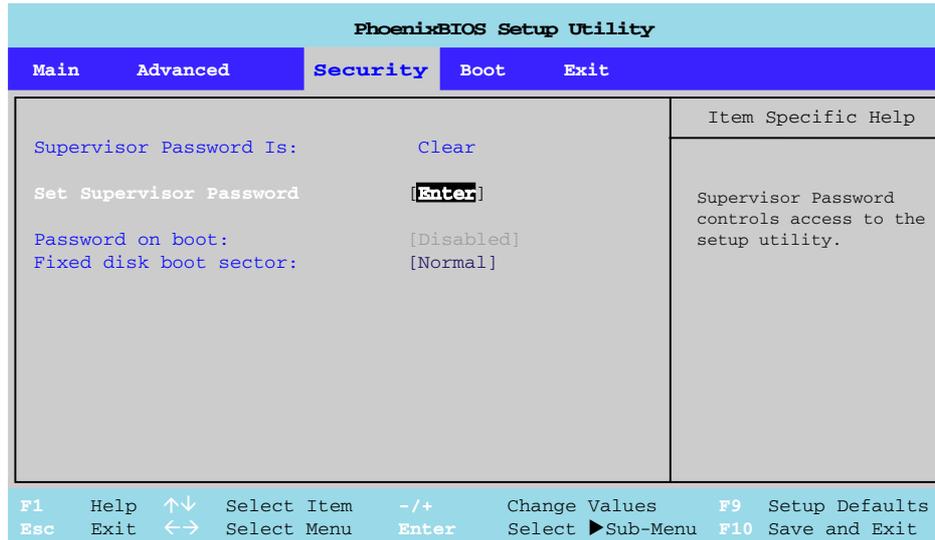


Figure 4 - 4
Security Menu

Set Supervisor Password (Security Menu)

You can set a password for access to the *Setup* utility. This will not affect access to the computer OS, (only the *Setup* utility) unless you choose to set a *Password on Boot* (see below).

Password on boot: (Security Menu)

Specify whether or not a password should be entered to boot the computer. If “**Enabled**” is selected, only users who enter a correct password can boot the system (see the warning in the sidebar). The default setting is “**Disabled**”.

Note: To clear existing passwords press **Enter** and type the existing password, then press **Enter** for the new password (without typing any password entry) and **Enter** again to confirm the password clearance.

Fixed disk boot sector: (Security Menu)

If you choose “**Write Protect**” this will protect against viruses being written to the hard disk boot sector (this is not a substitute for installing an anti-virus program).



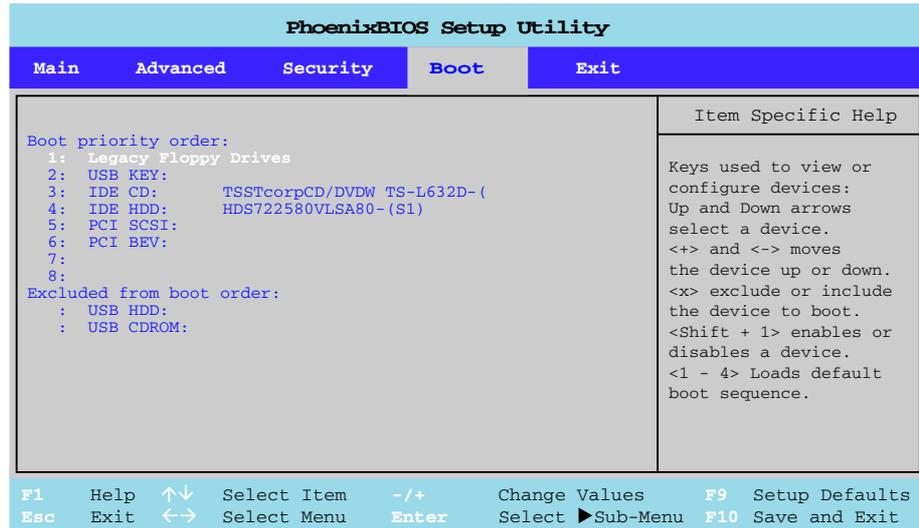
Password Warning

If you set a boot password (Password on boot is “Enabled”), **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Boot Menu

Figure 4 - 5
Boot Menu



When you turn the computer on it will look for an operating system (e.g. *WindowsXP*) from the devices listed in this menu, and **in this priority order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the **Boot priority order**. Item specific help on the right is available to help you move devices up and down the order.

Exit Menu

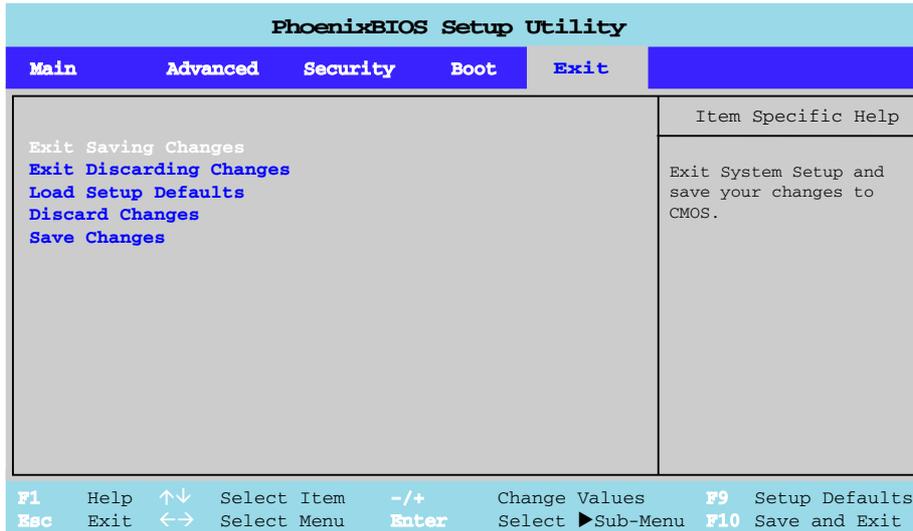


Figure 4 - 6
Exit Menu

Choosing to *Discard Changes*, or *Exit Discarding Changes*, will wipe out any changes you have made to the *Setup*. You can also choose to restore the original *Setup* defaults that will return the *Setup* to its original state, and erase any previous changes you have made in a previous session.

Chapter 5: Upgrading The Computer

Overview

This chapter contains information on upgrading the computer. Follow the steps outlined to make the desired upgrades. If you have any trouble or problems you can contact your service representative for further help. Before you begin you will need:

- A small crosshead or Phillips screwdriver
- A small regular slotted (flathead) screwdriver
- An antistatic wrist strap

Before working with the internal components you will need to wear an antistatic wrist strap to ground yourself because static electricity may damage the components.

The chapter includes:

- Upgrading the Hard Disk Drive
- Upgrading the System Memory (RAM)
- Upgrading the Optical Device (Model A)
- Upgrading the Optical Device (Model B)

Please make sure that you review each procedure before you perform it.



Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.



Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines).

When Not to Upgrade

These procedures involve opening the system's case, adding and sometimes replacing parts.

You should **not** perform any of these upgrades if:

- Your system is still under warranty or a service contract
- You don't have all the necessary equipment
- You're not in the correct environment
- You doubt your abilities

Under any of these conditions, contact your service representative to purchase or replace the component(s).



Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning the computer on.

Upgrading the Hard Disk Drive

The hard disk drive is used to store your data internally in the computer. It is mounted at the left side and can be taken out to accommodate other 3.5" IDE hard disk drives of the same or higher capacity.

1. Unplug the power cord and disconnect all peripheral cables (including the phone line) from the computer.
2. Turn **off** the computer and turn it around so that you may comfortably access the left side.
3. Remove screw **1** from the HDD Bay **2**.



HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

Figure 5 - 1
Hard Disk Drive Bay

Upgrading The Computer

- Pull the HDD assembly **3** out of the bay and disconnect cables **4** & **5**.

Figure 5 - 2
Hard Disk Drive
Assembly
Removal



- Remove screws **6** - **9**, and lift the hard disk out of the case.

Figure 5 - 3
Hard Disk Drive
Assembly Screws

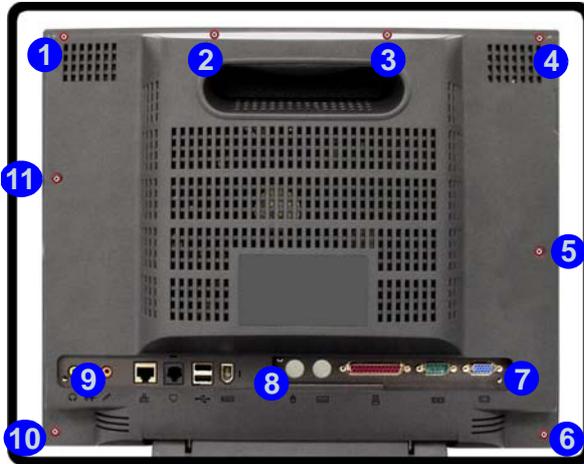


- Insert the new hard disk, and reverse the removal procedures to install the new hard disk.

Upgrading the System Memory (RAM)

The computer can accommodate up to 2GB of memory in two DIMM sockets. See *“Memory” on page B - 3* for more details.

1. Unplug the power cord and disconnect all peripheral cables (including the phone line) from the computer.
2. Turn **off** the computer.
3. Place the computer with its LCD display facing down on a clean, dry, level surface.
4. Remove screws **1** - **11** from the rear of the computer.



Card Reader/PC Card Slots

Make sure you remove any cards or covers in the 7-in-1 Card Reader and PC Card slot before removing the rear case cover.



Warranty Warning

Note that the procedure to upgrade or replace the memory involves extensive disassembly of the system. We strongly recommend that you do not upgrade/replace the system memory yourself. Please contact your service representative for assistance.

Supported RAM Module Types

Use **ONLY** the RAM module types indicated in *“Memory” on page B - 3*.

Figure 5 - 4
Rear Case Screws

Upgrading The Computer

Figure 5 - 5
Rear Case
Removal

5. Carefully remove the rear cover **12** and set it aside.
6. The memory sockets will now be visible at point **13** on the mainboard.

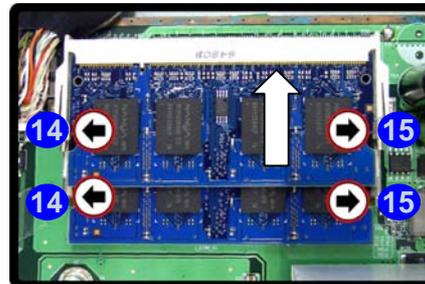


Model A

Model B

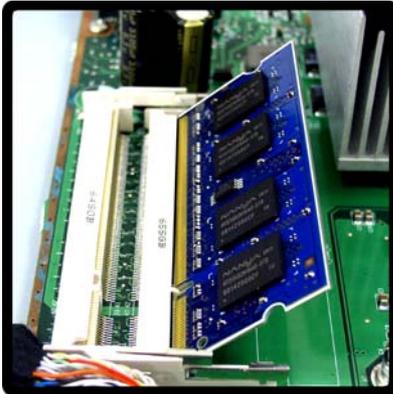
7. Carefully push the two latches (**14** and **15**) toward the sides of the socket to release the module.

Figure 5 - 6
RAM Removal



8. Push the latches to release the second module if necessary.
9. The module will “pop-up” slightly, and you may remove it.

10. Insert the new module. The module will only fit one way as defined by the pin alignment.
11. Make sure the module is seated as far into the slot as it will go (DO NOT FORCE IT). The latches will click into place on the sides of the module. Make sure they are secure.



12. Reverse the procedures to put the computer back together, and do not forget all the screws. When you restart the computer the new memory configuration should be registered.
13. If the system doesn't properly detect the new memory, **and you are sure they are properly "seated"**, you may need to run the *Setup* utility.

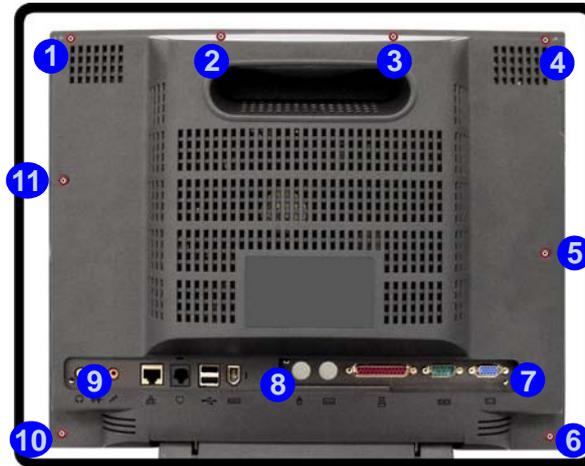
Figure 5 - 7
**RAM Module
Insertion**

Upgrading the Optical Device (Model A)

1. Unplug the power cord and disconnect all peripheral cables (including the phone line) from the computer.
2. Turn **off** the computer.
3. Place the computer with its LCD display facing down on a clean, dry, level surface.
4. Remove screws ① - ⑪ from the rear of the computer.

5

Figure 5 - 8
Rear Case Screws



- Carefully remove the rear cover **12** and set it aside.
- The optical device will now be visible at point **13** on the mainboard.



Figure 5 - 9
Model A
Rear Case
Removal

- Remove screws **14 - 16**, and disconnect cable **17**, from the optical device.
- Remove the optical device, and remove the screws in order to separate the optical device from the bracket.
- Reverse the removal procedures to install the new optical device.

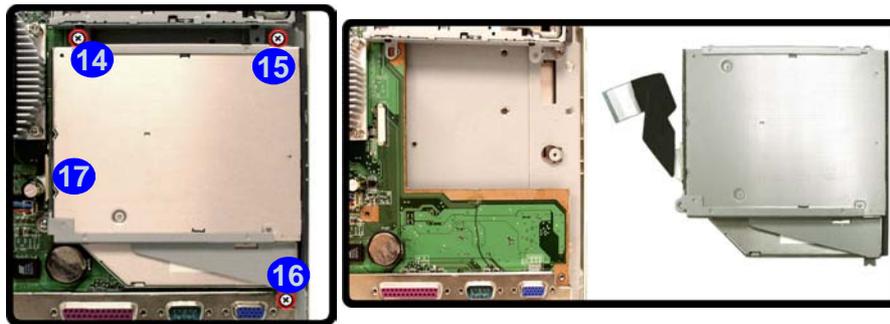
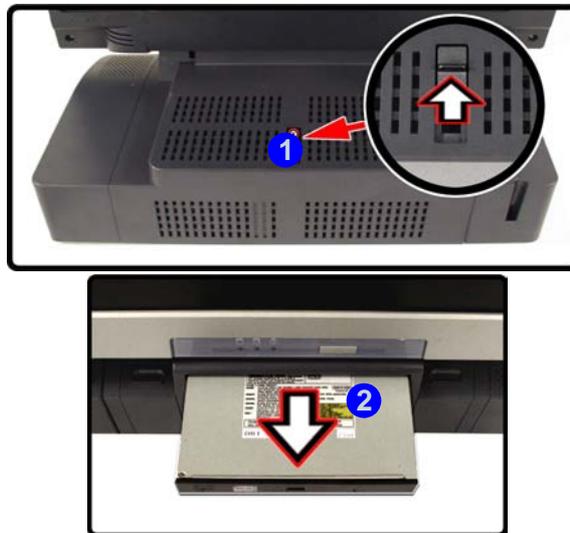


Figure 5 - 10
Model A
Optical Device
Removal

Upgrading the Optical Device (Model B)

1. Unplug the power cord and disconnect all peripheral cables (including the phone line) from the computer.
2. Locate the optical device eject switch and remove screw **1**.
3. Push the optical device eject switch to slide the optical device assembly **2** out of the bay.
4. Remove the optical device, and reverse the removal procedures to install the new optical device.

Figure 5 - 11
Model B
Optical Device
Removal



Chapter 6: Troubleshooting

Overview

Should you have any problems with your computer, before consulting your service representative, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service representative. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

- **Power** - Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working.
- **Connections** - Check all the **cables** to make sure that there are no **loose connections** anywhere.
- **Power Savings** - Make sure that the system is not in **Hibernate** or **Standby** mode by pressing the keys configured in your *Power Options* (see “*Power Management*” on page 2 - 14) or power button to wake-up the system.
- **Boot Drive** - Make sure there are no **floppy disks, optical media and/or USB storage devices** in any connected drive when you start up your machine (this is a common cause of the message “*Invalid system disk - Replace the disk, and then press any key*” / “*Remove disks or other media. Press any key to restart*”).

Backup and General Maintenance

- Always **backup** your important data, and keep copies of your OS and programs safe, but close to hand. Don't forget to note the **serial numbers** if you are storing them out of their original cases, e.g. in a CD wallet.
- Run **maintenance programs** on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.
- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Supervisor** password for the BIOS (see *“Boot Menu” on page 4 - 12*).
- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).



Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Viruses

- Install an **Anti-Virus** program and keep the **definitions file** (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. **Anti-Virus** programs are commercially available and the **definitions file updates** are usually downloadable directly from the internet.
- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note:** You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowledge.
- Keep a "**Boot Floppy Disk**" or "**Bootable CD-ROM/DVD-ROM**" (this disk provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many **Anti-Virus** programs will also provide such a disk (or at least instructions on how to make one).

Upgrading and Adding New Hardware/Software

- Do not be tempted to make changes to your **Windows Registry** unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.
- Don't open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.
- Read the **documentation**. We can assume, since you are reading this that you are looking at the computer's manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled "**READ ME**" or "**READ ME FIRST**".
- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.
- Make sure you have installed the **drivers** for any new hardware you have installed (latest **driver files** are usually available to download from vendor's websites).

Troubleshooting

- Thoroughly check any **recent changes** you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.
- Don't over complicate things. The less you have to deal with then the easier the source of the problem may be found; **Example** - if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Problems & Possible Solutions

Problem	Possible Cause - Solution
Nothing appears on screen.	<p><i>The screen saver is activated.</i> Press any key or move the mouse to return to your display.</p> <p><i>The system is in a power saving mode.</i> Press the power button for less than 4 seconds. If the computer does not turn on again then it was most likely shut down, or has no power source. Check the cables, outlets, power strips etc. (see “Configuring the Power Button” on page 2 - 18).</p>
You forget the boot password.	<p><i>If you forget the password, you may have to discharge the battery of the CMOS.</i> Contact your service representative for help.</p>
<div style="border: 2px solid red; border-radius: 15px; padding: 10px; background-color: #ffcccc;">  <p>Password Warning</p> <p>If you choose to set a boot password, NEVER forget your password. The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.</p> </div>	
The sound cannot be heard or the volume is very low.	<p><i>The volume might be set too low.</i> Check the volume control knob, and click the Speaker icon  on the taskbar to check the Windows setting (see “Audio Features” on page 2 - 11).</p>

Troubleshooting

Problem	Possible Cause - Solution
The CD/DVD cannot be read.	<i>The CD/DVD is dirty.</i> Clean it with a CD-ROM cleaner kit.
The CD/DVD disc tray will not open when there is a disc in the tray.	<i>The CD/DVD disc is not correctly placed in the tray.</i> Gently try to remove the disc using the eject hole (see “Loading Discs” on page 1 - 8).
The DVD regional codes can no longer be changed.	<i>The code has been changed the maximum 5 times.</i> See “Changing DVD Regional Codes” on page 1 - 9 .
The system freezes or the screen goes dark.	<i>The system’s power saving features have timed-out.</i> Press a key on the keyboard, or press the power button if no LEDs are lit.
The system never goes into a power saving mode.	Power Options features are not enabled. Go to the Windows Power Options menu and enable the features you prefer (see “System Power Options” on page 2 - 16). Make sure you have enabled Hibernate mode from the control panel.
The Wireless LAN/Bluetooth modules cannot be configured.	<i>The driver(s) for the module(s) have not been installed.</i> Make sure you have installed the driver for the appropriate module (see the instructions for the appropriate module in “802.11b/g WLAN Module” on page 2 - 21 / “Bluetooth Module” on page 2 - 23).

Appendix A: Interface (Ports & Jacks)

Overview

The following chapter will give a quick description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

Item	Description
External Monitor Port 	Connect an external display to this port to allow dual video or simultaneous display on the LCD and external display (see <i>“Attaching Other Displays” on page 2 - 6</i>).
Headphone-Out Jack 	Headphones or speakers may be connected through this jack. Note: Set your system's volume to a reduced level before connecting to this jack.
Line-In Jack 	The Line-In jack allows you to play audio sources through the computer's speakers.
Microphone-In Jack 	Plug an external microphone in to this jack to record on your computer.

Interface (Ports & Jacks)

Item	Description
<p>IEEE 1394a Port</p> 	<p>This port will allow high speed connection to various peripheral devices, e.g. external disk drives and digital cameras (see note below).</p> <div data-bbox="485 286 1406 456" style="border: 2px solid green; border-radius: 15px; padding: 10px; text-align: center;"> IEEE 1394 The IEEE 1394a port only supports SELF POWERED IEEE 1394 devices.</div>
<p>Printer/Parallel Port</p> 	<p>This parallel printer port supports ECP (Extended Capabilities Port) and EPP (Enhanced Parallel Port) mode.</p>
<p>RJ-11 Phone Jack</p> 	<p>This port connects to the built-in modem. You may plug the telephone line directly into this RJ-11 telephone connection. Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.</p>
<p>RJ-45 LAN Jack</p> 	<p>This port supports LAN (Network) functions. Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.</p>
<p>Security Lock Slot</p> 	<p>To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.</p>

A - 2 Interface (Ports & Jacks)

Item	Description
Serial Port 	Connect a serial type mouse to this port.
USB 2.0/1.1 Ports 	These USB 2.0 compatible ports (USB 2.0 is fully USB 1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device).

Interface (Ports & Jacks)

A

Appendix B: Specifications



Latest Specification Information

The specifications listed in this Appendix are correct at the time of going to press. Certain items (particularly processor types/speeds and CD/DVD device types) may be changed or updated due to the manufacturer's release schedule. Check with your service center for details.

Specifications

Feature	Specification	
Processor Types	Intel® Core™ 2 Duo Processor (478-pin) Micro-FC-PGA Package T7200/ T7400/ T7600	65nm (65 Nanometer) Process Technology 4MB On-die L2 Cache & 667MHz FSB 2.0/ 2.16/ 2.33 GHz
	Intel® Core™ 2 Duo Processor (478-pin) Micro-FC-PGA Package T5500/ T5600	65nm (65 Nanometer) Process Technology 2MB On-die L2 Cache & 667MHz FSB 1.66/ 1.83 GHz
	Intel® Core™ Duo Processor (478-pin) Micro-FC-PGA Package T2300/ T2400/ T2500/ T2600/ T2700	65nm (65 Nanometer) Process Technology 2MB On-die L2 Cache & 667MHz FSB 1.66/ 1.83/ 2.0/ 2.16/ 2.33 GHz
	Intel® Core™ Solo Processor (478-pin) Micro-FC-PGA Package T1300/ T1400	65nm (65 Nanometer) Process Technology 2MB On-die L2 Cache & 667MHz FSB 1.66/ 1.83 GHz
	Intel® Celeron® M Processor (478-pin) Micro-FCPGA Package 410/ 420/ 430/ 440/ 450	65nm (65 Nanometer) Process Technology 1MB On-die L2 Cache & 533MHz FSB 1.46/ 1.60/ 1.73/ 1.86/ 2.0 GHz
Core Logic	Intel 945GM + ICH7-M	
LCD	<u>Model A</u> 15.0" XGA Anti-Glare Type Flat Panel TFT (1024*768) Touch Panel (Factory Option) Hard Glass (Factory Option)	<u>Model B</u> 17.0" SXGA Anti-Glare Type Flat Panel TFT (1280*1024) Touch Panel (Factory Option) Hard Glass (Factory Option)

Feature	Specification	
Security	Security (Kensington® Type) Lock Slot	BIOS Password
Memory	Two 200 Pin SO-DIMM Sockets Supporting DDRII (DDR2) 533/667 MHz 64-bit Wide DDRII (DDR2) Data Channels Memory Expandable up to 2GB (256/ 512/ 1024 MB DDRII Modules) (Note: Do Not Use Other Module Types)	
Video Controller	Intel 945GM Integration Intel® Graphics Media Accelerator 950 (Intel® GMA 950) Dynamic Video Memory Technology DVMT - Supports up to 224MB of Video Memory (dynamically allocated from system memory where needed)	
BIOS	4MB Flash ROM	Phoenix BIOS
Storage	One 3.5", 25.4mm (h) Hard Disk (HDD) with SATA (Serial) Interface One 3.5", 1.44MB 3-Mode Floppy Disk Drive One changeable 12.7mm(h) Optical Device (CD/DVD) Type Drive (see " Optional " on page C - 5 for drive options)	
Audio	Intel AZALIA High Definition Audio Interface 3D Stereo Enhanced Sound System Sound-Blaster PRO™ Compatible	2 * Built-In Speakers Built-In Microphone, Line-In & Headphone Jacks
PC Card Sockets	Supports One Type II PCMCIA Slot (Cardbus Support)	
Card Reader	Embedded 7-in-1 Card Reader (SD/ MMC/ MS/ MS PRO/ MS Duo/ Mini SD/ RSMMC)	

Specifications

Feature	Specification	
Interface	One Serial Port One Parallel Port One External Monitor Port One Headphone-Out Jack One Microphone-In Jack One Line-In Jack	Four USB 2.0 Ports One RJ-45 Jack for LAN One RJ-11 Jack for Modem One AC-In Jack One IEEE 1394a Port (Un-Powered)
Communication	1GB PCIe Ethernet LAN MDC 56K Fax Modem - V.90 & V.92 Compliant Intel PRO/Wireless 3945ABG PCIe Interface Wireless LAN Module (Optional) 802.11 b/g Wireless LAN Module (Optional) USB (2.0) Bluetooth Module (Factory Option)	
Power Management	Supports ACPI 2.0	Supports Wake On Modem Ring Supports Wake On LAN
Power	Full Range - 90W Built-in AC adapter	
Environmental Spec	Temperature Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C	Relative Humidity Operating: 20% ~ 80% Non-Operating: 10% ~ 90%
Dimensions & Weight	<u>Model A</u> 369mm (W) * 188mm (D) * 384mm (H) 8.2Kg+/- 5% With Touch Screen 7.9Kg+/- 5% Without Touch Screen Tilt (0-15 deg), Swivel (270 deg)	<u>Model B</u> 395mm (W) * 179mm (D) * 418mm (H) 10.1Kg+/- 5% With Touch Screen 9.8Kg+/- 5% Without Touch Screen Tilt (0-15 deg), Swivel (270 deg)

B - 4 Specifications

Feature	Specification
Optional	<p><u>Optical Drive Module Options:</u></p> <p>Combo Drive Module DVD-Dual Drive Module DVD Super Multi Drive Module</p> <p>Intel PRO/Wireless 3945ABG PCIe Interface Wireless LAN Module</p> <p>802.11 b/g Wireless LAN Module</p> <p>Touch Panel (Factory Option) USB (2.0) Bluetooth Module (Factory Option)</p> <p>Hard Glass (Factory Option)</p>

Specifications

B