USER'S MANUAL

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FCC Statement
(Federal Communications Commission)

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

Operation is subject to the following two conditions:

1. This device may not cause interference.

   And

2. This device must accept any interference, including interference that may cause undesired operation of the device.

FCC RF Radiation Exposure Statement:

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

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 (Full Range AC/DC Adapter – AC Input 100 - 240V, 50 - 60Hz, DC Output 19V, 4.74A).

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 1 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.
5. **Take care when using peripheral devices**.

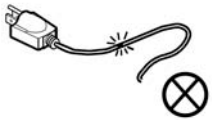
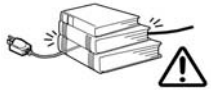
Power Safety

The computer has specific power requirements:

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 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.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

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.

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.

Ergonomics

We designed your Multimedia 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 makes you strain to read, then adjust the resolution to something more comfortable (see ***"Video Features" on page 1 - 14***).
- Angle the LCD (see ***"Tilting the LCD Screen" on page 1 - 7***) 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.

Lighting

Proper lighting and comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display-viewing angle to find the best position.

LCD Screen Care

To prevent **image persistence** on LCD monitors (caused by the continuous display of graphics on the screen for an extended period of time) take the following precautions:

- Set the *Windows* **Power Plans** to turn the screen off after a few minutes of screen idle time.
- Use a rotating, moving or blank screen saver (this prevents an image from being displayed too long).
- Rotate desktop background images every few days.
- Turn the monitor off when the system is not in use.

Carrying the Computer

We strongly recommend using both hands to move the computer (one hand gripping the handle area and the other gripping the computer) to avoid accidentally dropping it. Be careful that objects such as belt buckles etc. do not scratch the screen while it is being carried.

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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 using some of the main features of the computer e.g. the **storage devices** (**hard disk**, **optical device**, **7-in-1 card reader**, **ExpressCard/34/54**) **Audio** & **Printer**.
- **Chapter 3** The computer's **power** saving options.
- **Chapter 4** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- **Chapter 5** An outline of the computer's built-in software or **BIOS** (Basic Input Output System).
- **Chapter 6** Instructions for **upgrading** your computer.
- **Chapter 7** A quick guide to the computer's **Bluetooth**, **Wireless LAN, PC Camera**, **Touch Screen** and **Turbo Memory** modules (some of which may be **optional** depending on your purchase configuration).
- **Chapter 8** A **troubleshooting** guide.
- **Appendix A** Definitions of the **interface**, **ports**/**jacks** which allow your computer to communicate with external devices.
- **Appendix B** Information on the **Intel video** driver controls.
- **Appendix C** The computer's **specification**.
- **Appendix D** Information on the **Windows XP** OS**.**

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 4 - 1*, *"BIOS Utilities" on page 5 - 1* and *"Upgrading The Computer" on page 6 - 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 this 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 Vista*/*Windows XP*) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.

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 4 - 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 4 - 1, on page 4 - 3***. 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 4 - 1*** for installation instructions.

Ports and Jacks

See ***"Computer Ports and Jacks" on page A - 2*** for a description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

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 the following operating systems are supported.

Operating System & Version Supported	Note
*Windows XP - SP2 (Home or Professional)	
Windows Vista - SP1 (64-bit) Home Basic Edition	In order to run ***Windows Vista*** without limitations or decreased performance, your computer requires a minimum **1GB** of system memory (RAM).
Windows Vista - SP1 (64-bit) Home Premium Edition	
Windows Vista - SP1 (64-bit) Business/Enterprise/Ultimate Editions	

Table 1 - 1 **- Operating Systems Supported**

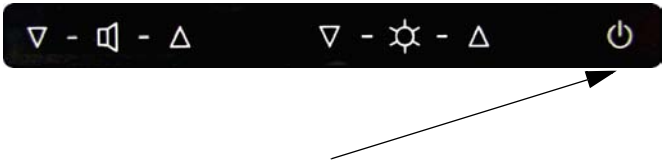
Note**: For information on the ***Windows XP OS (specifically power, video and driver information) see ***"Windows XP Information" on page D - 1***.

Windows Vista Service Pack 1

Make sure you install **Windows Vista Service Pack 1** (or a ***Windows Vista*** version which includes Service Pack 1) **before installing any drivers**. Go to the Microsoft website for download details, or contact your service center.

System Startup

1. Remove all packing materials, CDs/DVDs and floppy disks etc.
2. Securely attach any peripherals you want to use with the computer to their ports (e.g keyboard and mouse etc.)
3. Attach the AC/DC adapter to the DC-In jack located under the LCD, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
4. Push the power button at the front of the computer (under the LCD) to turn the computer “on”.



Power Button (located under the LCD)

Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Lock Button Menu** in ***Windows Vista***. This will help prevent hard disk or system problems.

Figure 1 - 1 **- AC/DC Adapter Plugged-In/Power Button**

System Map: Front View

1. Optional Built-In PC Camera
2. LCD (With **Optional** Touch Panel)
3. Power & System Activity LED Indicators
4. Volume Buttons (under the LCD)
5. Brightness Buttons (under the LCD)
6. Power Button (under the LCD)
7. USB Ports
8. Microphone-In Jack
9. Headphone/Speaker-Out Jack
10. DC-In Jack (under the LCD)
11. 2 * COM Ports (under the LCD)
12. External Monitor Port (under the LCD)
13. eSATA Port (under the LCD)
14. 2 * USB Ports (under the LCD)
15. RJ-11 Phone Jack (under the LCD)
16. RJ-45 LAN Jack (under the LCD)

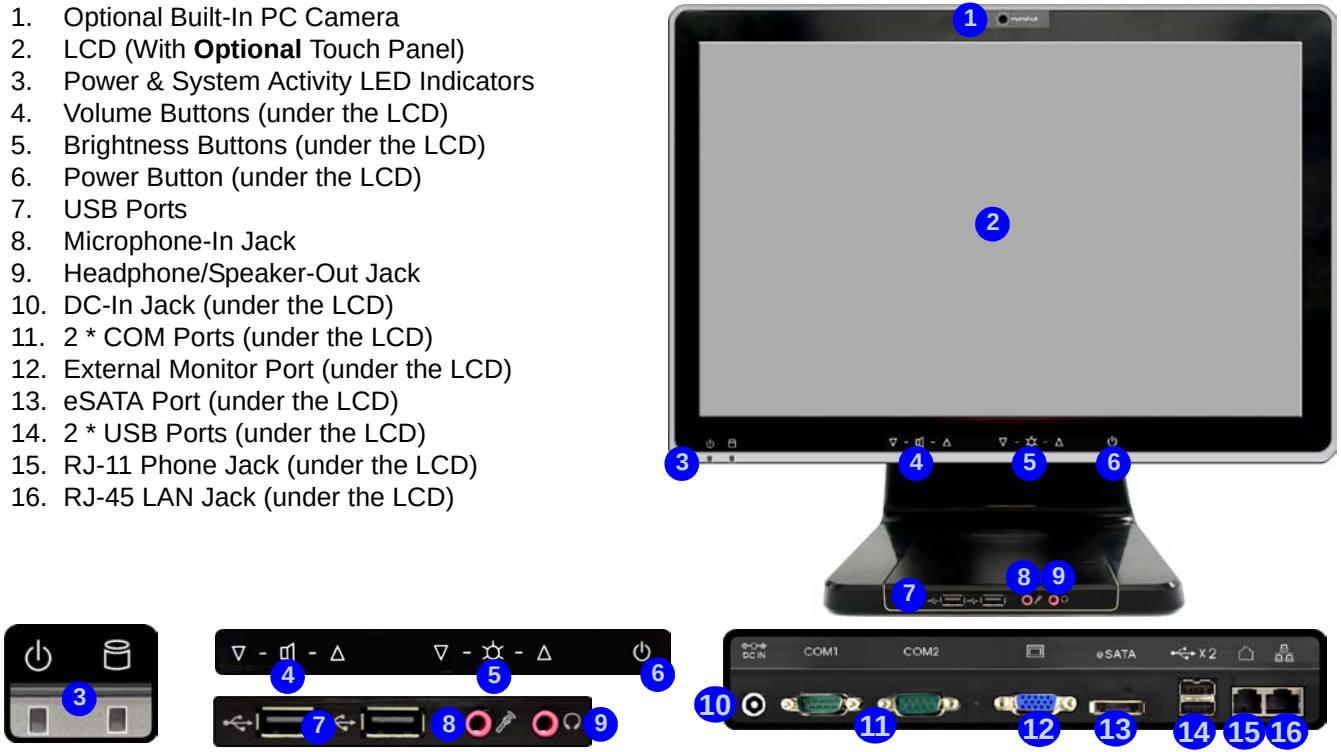


Figure 1 - 2 **- Front View**

Tilting the LCD Screen

It is possible to tilt the LCD screen in order to get the best possible viewing angle of the screen without glare etc. Apply pressure with one hand at the base of the computer, while carefully pushing the LCD screen to tilt it to the appropriate viewing angle.

Moving the Computer

We strongly recommend using both hands to move the computer. You can use one hand to grip the computer by the stand, and the other to hold the top of the LCD screen.

It is recommended that you carry the computer with the LCD facing your body to avoid scratching the surface against other objects. However take care not to scratch the LCD with any personal items, belt fittings or jewelry etc.(one hand gripping the stand and the other gripping the top of the computer to avoid accidentally dropping it).

Figure 1 - 3 **- LCD Screen Tilt**

Keyboard Options

There are two keyboard **options** for this computer series. These keyboards may include embedded numerical keypads for easy numeric data input and/or function keys/hot keys to allow you to change operational features instantly. Some keyboards may require a driver to access all available functions etc.

Figure 1 - 4 **- Optional Wireless Keyboard & Mouse Kit**

A USB port located behind the rear top cover is designed to house the receiver for the USB wireless Keyboard & Mouse Kit (or a USB transceiver for any Keyboard/Mouse). See ***"Wireless Keyboard & Mouse USB Receiver" on page 6 - 5*** for more information.

LED & Hot Key Indicators

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

Icon	Color	Description
	Green	The computer is On
	Blinking Green	The computer is in Sleep Mode
	Orange	The AC/DC Adapter is Plugged in & the Computer is Powered Off
	Green	System Activity

Table 1 - 2 **- LED Indicators**

Visual indicators for brightness and volume are available when the **hot key** utility is installed (see ***"Hot Key" on page 4 - 6***). When the driver is installed, an icon  will appear in the taskbar.

Note that these indicators illustrate the volume and brightness level changes when adjusted by the brightness and volume buttons on the computer itself (some keyboards may provide their own indicators).

Hot Key Icon	Description
	Volume Decrease/Increase
	Brightness Decrease/Increase

Table 1 - 3 **- Hot Key Indicators**

System Map: Left View

Figure 1 - 5
Left View

1. Stand
2. S/PDIF-Out Jack
3. Headphone-Out Jack
4. Microphone-In Jack
5. Line-In Jack
6. Mini-IEEE 1394 Port
7. HDMI-Out Port
8. 1 * USB 2.0 Port
9. 7-in-1 Card Reader
10. ExpressCard Slot (see page *2 - 7*)

ExpressCard Slot

The ExpressCard Slot accepts either **ExpressCard/34** or **ExpressCard/54** formats.

7-in-1 Card Reader

The card reader allows you to use the most popular digital storage card formats:

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)

Mini-IEEE 1394 Port

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

System Map: Right View

Figure 1 - 6 **- Right View**

1. Stand
2. Optical Device Drive Bay (for CD/DVD Device - see page ***2 - 3***)

Changing DVD Regional Codes

Go to the **Control Panel** and double-click **Device Manager (Hardware and Sound)**, then click the **+** next to **DVD/CD-ROM drives**. Double-click on the DVD-ROM device to bring up the **Properties** dialog box, and select the **DVD Region** (tab) to bring up the control panel to allow you to adjust the regional code (see ***"DVD Regional Codes" on page 2 - 5***).

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.

CD 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".

System Map: Rear View

Figure 1 - 7
Rear View

1. Stand
2. Rear Component Cover
3. Vent/Fan Intake
4. Security Lock Slot
5. Carrying Handle Area

CPU

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

Overheating

To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.

Carrying the Computer

We strongly recommend using both hands to move the computer (one hand gripping the handle area and the other gripping the computer) to avoid accidentally dropping it. Be careful that objects such as belt buckles etc. do not scratch the screen while it is being carried.

Windows Vista Start Menu & Control Panel

Most of the control panels, utilities and programs within ***Windows Vista*** (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. Right-click the **Start menu** icon , and then select **Properties** if you want to customize the appearance of the **Start** menu.

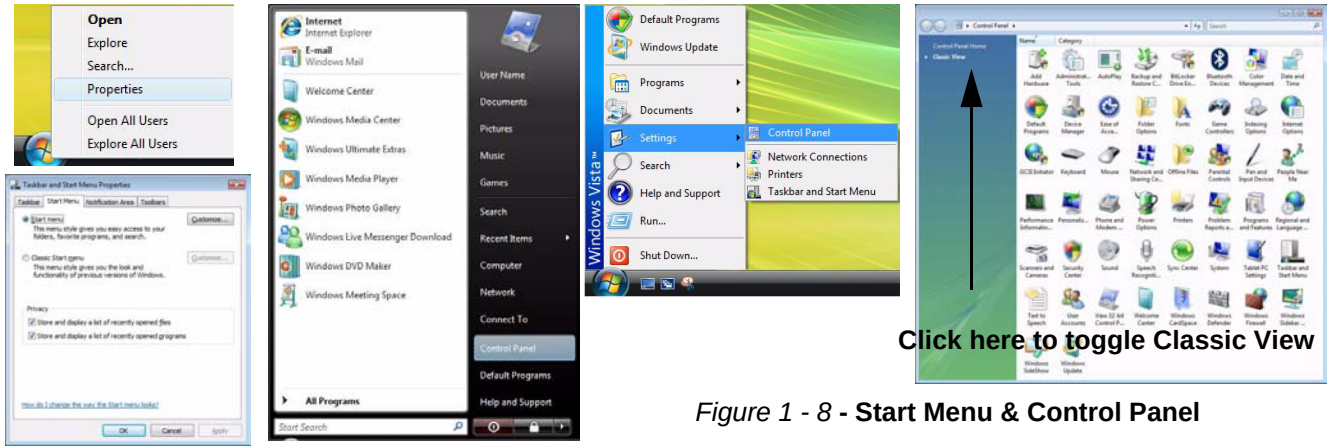


Figure 1 - 8 **- Start Menu & Control Panel**

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 Vista*** 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 4 - 1, on page 4 - 3***. To see all controls it may be necessary to toggle to Classic View on.

Video Features

You can switch display devices, and configure display options, from the **Display Settings** control panel (in **Personalization**) in ***Windows Vista*** as long as the appropriate **Intel video driver** is installed. For more detailed video information see ***"Intel Video Driver Controls" on page B - 1***.

To access Display Settings in ***Windows Vista***:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Adjust screen resolution** under the **Appearance and Personalization** menu (or double-click **Personalization > Display Settings**).
3. Move the slider to the preferred setting in **Resolution:** 1 (***Figure 1 - 9 on page 1 - 15***).
4. Click the arrow, and scroll to the preferred setting In **Colors:** 2 (***Figure 1 - 9 on page 1 - 15***).
5. Click **Advanced Settings** (button) 3 (***Figure 1 - 9 on page 1 - 15***) and click **Intel(R) GMA Driver for mobile** (tab).
6. Click **Graphics Properties (button)** 4 (***Figure 1 - 9 on page 1 - 15***) to access the **Intel GMA** control panel (this control panel can also be accessed by double-clicking **Intel(R) GMA Driver for mobile** in the ***Windows*** control panel if **Classic View** is selected - see ***Figure 1 - 8 on page 1 - 13***).
7. The **Intel GMA** control panel can also be accessed by clicking the icon  in the taskbar and selecting **Graphics Properties** from the 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.

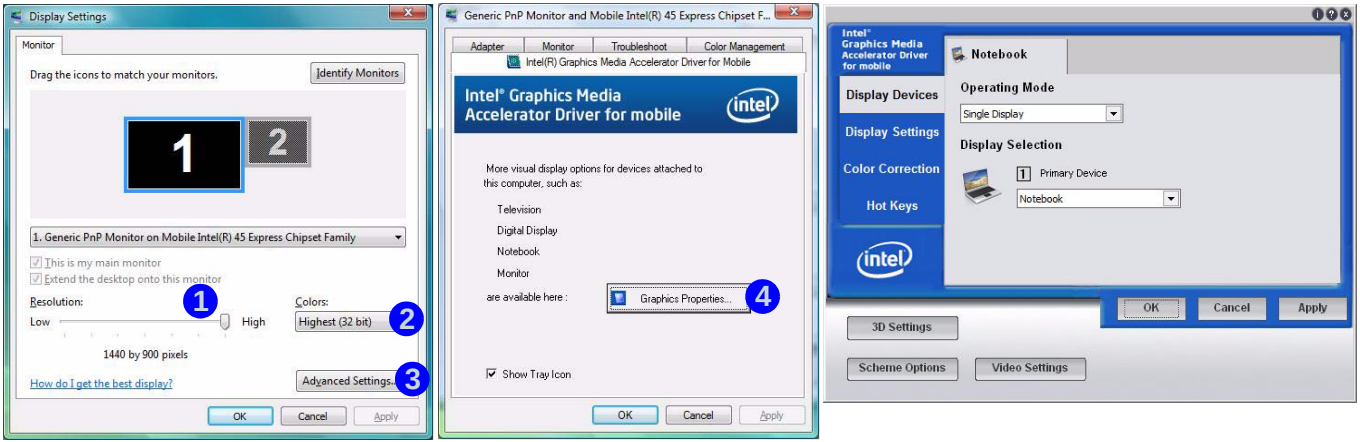


Figure 1 - 9 **- Display Properties Desktop**

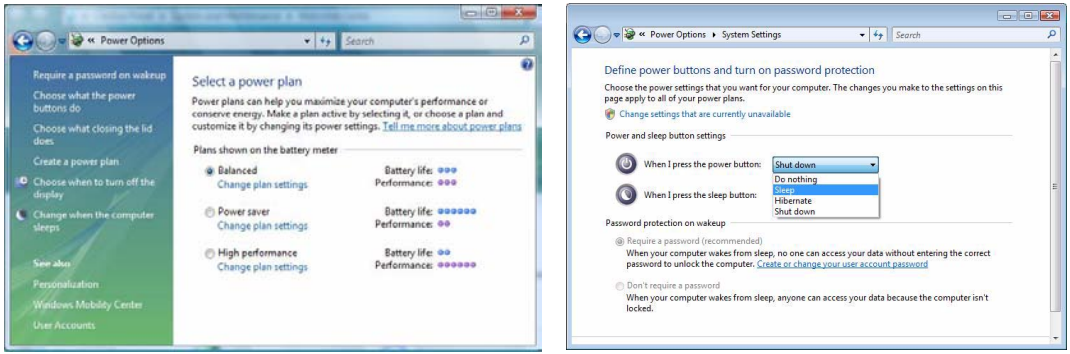
Intel Display Mode	Description
Single Mode	One of the connected displays is used as the display device
Intel(R) Dual Display Clone Mode	Both connected displays output the same view and may be configured independently
Extended Desktop Mode	Both connected displays are treated as separate devices, and act as a virtual desktop

Table 1 - 4 **- Display Options**

Power Options

The **Power Options** (**Hardware and Sound** menu) control panel icon in ***Windows*** (see page ***1 - 13***) allows you to configure power management features for your computer. You can conserve power by means of **power plans** and configure the options for the **power button**, **sleep button**, **display** and **sleep** mode from the left menu. Note that the **power saver** plan may have an affect on computer performance.

Click to select one of the existing plans, or click ***Create a power plan*** in the left menu and select the options to create a new plan. Click ***Change Plan Settings*** and click ***Change advanced power settings*** to access further configuration options.



Note: **Sleep** is the default power saving state in ***Windows Vista***

Figure 1 - 10 **- Power Options**

Chapter 2: Features & Components

Overview

Read this chapter to learn more about the following main features and components of the computer:

- Hard Disk Drive
- Optical (CD/DVD) Device
- 7-in-1 Card Reader
- ExpressCard Slot
- Audio Features
- Adding a Printer

Power Safety

Before attempting to access any of the internal components of your computer please ensure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

Hard Disk Drive

The hard disk drive is used to store your data in the computer. The hard disk can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5 mm.

The hard disk is accessible from the rear of your computer as seen below. For further details see *"Upgrading the Hard Disk Drive" on page 6 - 6*.

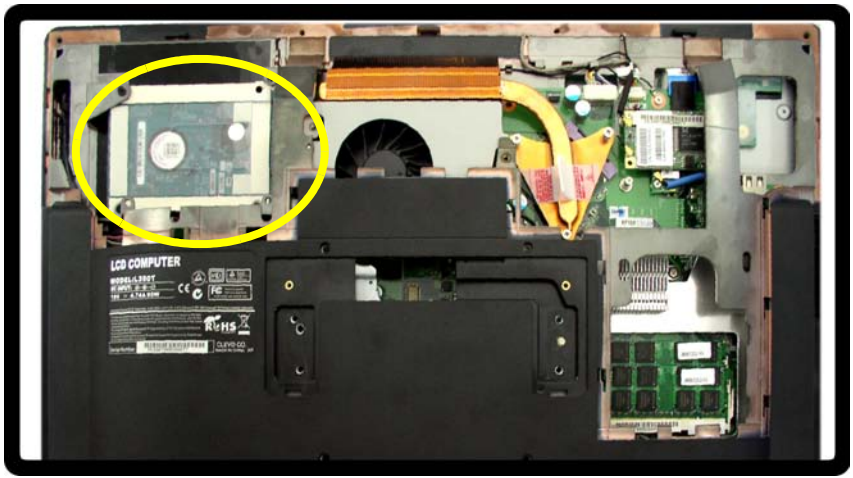


Figure 2 - 1
Hard Disk Location

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 module you purchased (see *"Storage" on page C - 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 5 - 14*).

Loading Discs

To insert a CD/DVD, press the open button 1 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 2 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 3 to open the tray.

Figure 2 - 2
Optical Device

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within ***Windows***. Click the **Volume** icon on the taskbar to check the setting (see *"Audio Features" on page 2 - 8*).

CD Emergency Eject

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

Disk Eject Warning

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

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

To change the DVD regional codes see *"Changing DVD Regional Codes" on page 1 - 11*.

DVD Regional Coding	
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

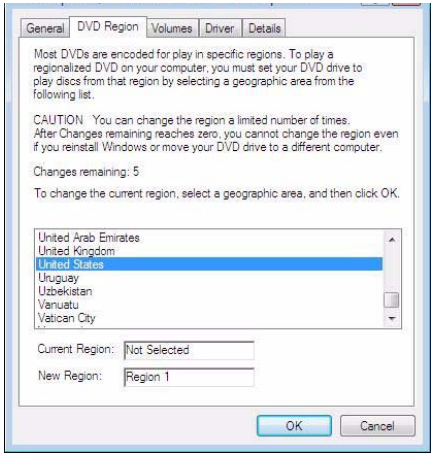


Table 2 - 1
DVD Regional Coding

Card Reader Cover

Make sure you keep the cover in the card reader when not in use. This will help prevent foreign objects and/or dust getting in to the 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 ***"ExpressCard/Card Reader" on page 4 - 6***).

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

Figure 2 - 3
Front View

1. Card Reader

ExpressCard Slot

The computer is equipped with an **ExpressCard/34/54** slot that reads Express Card/34 and ExpressCard/54 formats. ExpressCards are the successors to PCMCIA (PC Cards).

ExpressCard/54 is used for applications which require a larger interface slot, e.g. CompactFlash card reader. The number denotes the card width; 54mm for the Express Card/54 and 34mm for the ExpressCard/34. Make sure you install the Card Reader driver (see *"ExpressCard/Card Reader" on page 4 - 6*).

Inserting and Removing ExpressCards

- Align the ExpressCard with the slot and push it in until it locks into place.
- To remove an ExpressCard, simply press the card to eject it.

Figure 2 - 4
ExpressCard Slot

1. ExpressCard Slot

ExpressCard Slot Cover

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

Sound Volume Adjustment

The sound volume level is set using the volume control within ***Windows*** (and the volume function keys on the computer). Click the volume icon in the taskbar to check the setting.

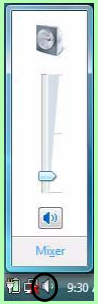
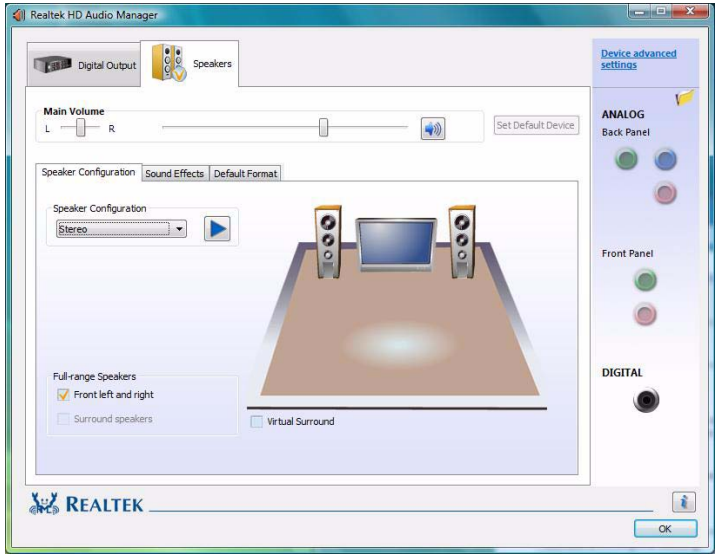


Figure 2 - 5
Realtek Audio Manager

Audio Features

You can configure the audio options on your computer from the **Sound** control panel in ***Windows***, or from the **Realtek HD Audio Manager** icon in the taskbar/ control panel (right-click the taskbar icon to bring up an audio menu). You can adjust the volume by means of the volume buttons on the computer.

Right-click the icon to access the menu above.



Audio Jacks

Note that the system has two sets of audio jacks as well as internal speakers. **All the audio jacks cannot function at the same time** and are therefore assigned a priority order depending on your audio connections.

- **Priority 1** = The **audio jacks at the front of the computer**. Thus the audio jacks at the side of the computer and the internal speakers are disabled (e.g if you connect headphones to the headphone-out jack at the front of the computer then speakers/headphones connected to the headphone-out jack at the side of the computer are disabled).
- **Priority 2** = The **audio jacks at the side of the computer**. Thus the internal speakers are disabled (e.g if you connect speakers to the headphone-out jack at the side of the computer then the internal speakers are disabled).
- **Priority 3** = The **internal speakers**. If there are no audio connections to any of the audio jacks, then the audio output will default to the internal speakers.

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 current 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. The install instructions are in the sidebar, however you will need to purchase a parallel to USB converter.

Parallel Printer

After setting up the printer attach the parallel cable to the printer.

Connect the printer's parallel cable to the Parallel to USB converter, and then plug the converter into the USB port.

Turn ON the printer, then turn ON the computer.

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 3: Power Management

Overview

To conserve power, especially when using the battery, your computer power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system.

This chapter covers:

- Turning on the Computer
- Power Plans
- System Power Options
- Configuring the Power Button

The computer uses enhanced power saving techniques to give the operating system (OS) direct control over the power and thermal states of devices and processors. For example, this enables the OS to set devices into low-power states based on user settings and information from applications.

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

OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

(**Note**: All pictures used on the following pages are from the ***Windows Vista*** OS.)

Hibernate Mode In Windows Vista SP1

If you are using ***Windows Vista SP1*** with **4GB RAM** installed, see page ***8 - 9*** for information on **Hibernate**.

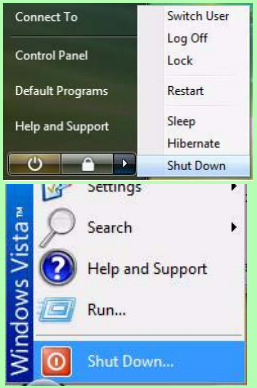
Turning on the Computer

To turn the computer on simply press the power button (see *"System Startup" on page 1 - 5*).

When the computer is on, you can use the power button as a Sleep/Hibernate hotkey button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down). Use **Power Options** (**Hardware and Sound** menu) control panel in ***Windows Vista*** to configure this feature.

Shut Down

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Lock Button Menu** in ***Windows Vista***. 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 Button Sleep

Sleep is the default power mode when the power button is pressed for less than 4 seconds. You may configure the options for the power button from the **Power Options** (**Hardware and Sound** menu) control panel in ***Windows Vista*** (see your OS's documentation, or *"Configuring the Power Button" on page 3 - 7* for details).

Power Plans

The computer can be configured to conserve power by means of **power plans**. You can use (or modify) an existing **power plan**, or create a new one.

The settings may be adjusted to set the **display** to turn off after a specified time, and to send the computer into **Sleep** after a period of inactivity.

Click ***Change plan settings*** and then click ***Change advanced power settings*** to access further configuration options in **Advanced Settings**.

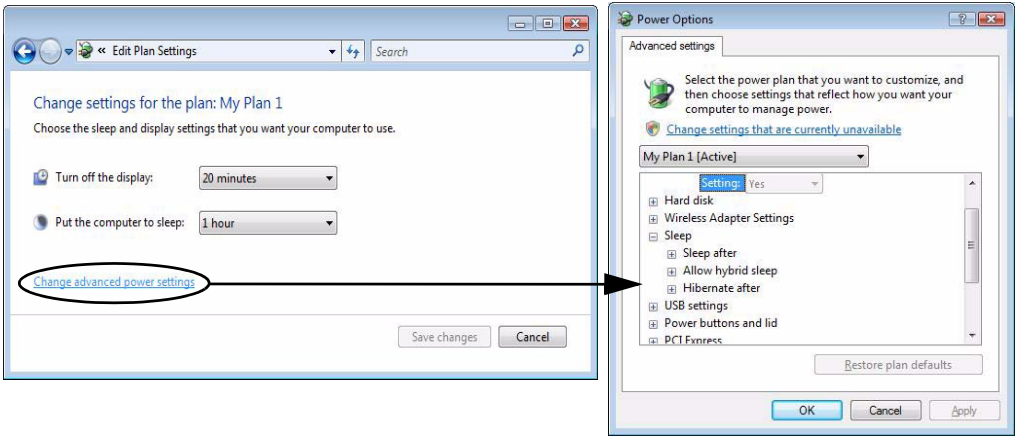


Figure 3 - 1
Power Plan Advanced Settings

Resuming Operation

See ***Table 3 - 1, on page 3 - 8*** for information on how to resume from a power-saving state.

Password

It is recommended that you enable a password on system resume in order to protect your data.

Each ***Windows* power plan** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance.

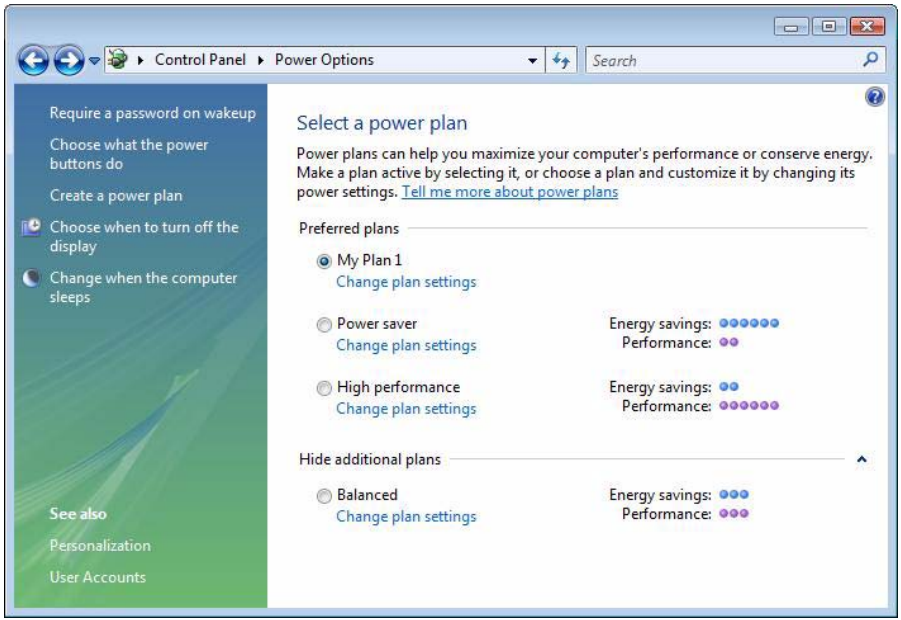


Figure 3 - 2
Power Plans

System Power Options

You can use the system power options to stop the computer's operation and restart where you left off. The system features **Sleep** and **Hibernate** power saving states.

Hibernate vs. Shut Down

Hibernate and Shut Down 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.

Sleep vs. Hibernate

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

Sleep Button

The **Power Button** in the Start Menu (in Classic View use the Shut Down button) can be used to send the computer into a power-saving state.

Note that **Sleep** is the default power saving state in ***Windows Vista***.

Hibernate Mode In Windows Vista SP1

If you are using ***Windows Vista SP1*** with **4GB RAM** installed, see page ***8 - 9*** for information on **Hibernate**.

Sleep

Sleep uses very little system power, and takes a short time to return to full operation. After an extended period of time in **Sleep** the computer will save the contents of system memory (e.g. any open documents and applications) to the hard disk and shut the system down. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter **Sleep** mode to save power.

Hibernate

Hibernate uses no power and saves all of your information on a part of the hard disk 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 **Advanced Settings** in power plans, or you put the system directly into **Hibernate** mode from the **Lock Button Menu**. **The system will resume from Hibernate mode by pressing the power button**.

Figure 3 - 3
Lock Button Menu

Configuring the Power Button

The power button may be set to send the computer in to either **Sleep** or **Hibernate**. In **Sleep**, the LED will blink green. In **Hibernate** the LED will be orange. If only the display is turned off, the LED will remain green.

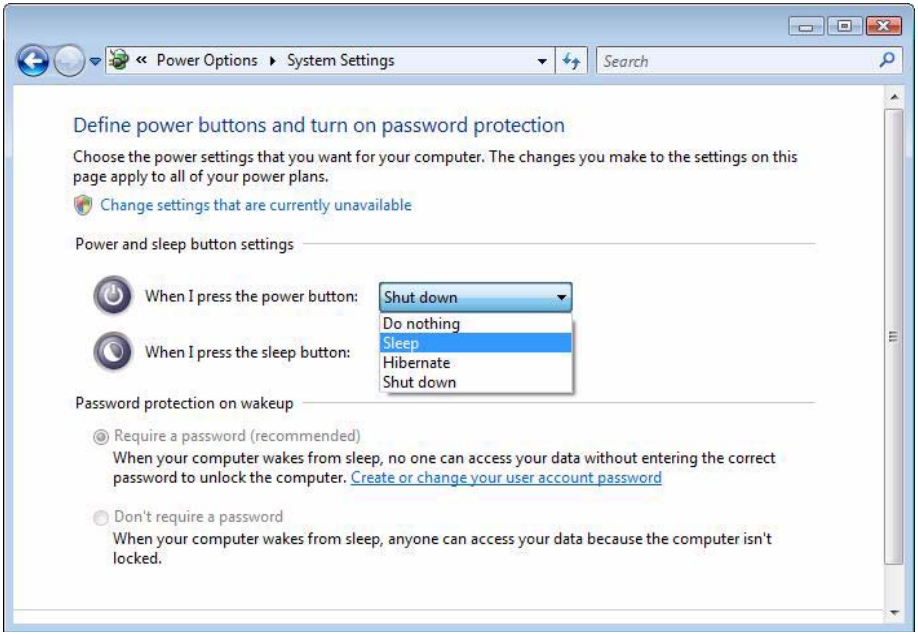


Figure 3 - 4
Power Options Define Power Buttons

Password Protection

It is recommended that you enable a password on wake up in order to protect your data.

However you can disable this setting from the **Power Options** menu by clicking ***Require a password on wakeup*** in the left menu, and selecting the options (click ***Change settings that are currently unavailable***).

Resuming Operation

You can resume operation from power-saving states by pressing the power button, or in some cases pressing the sleep button (see your keyboard documentation).

Table 3 - 1 **Resuming Operation**

Power Status	Icon Color	To Resume
Power Off	Off	Press the Power Button
Sleep	Blinking Green	Press the Power Button Press the Sleep Button (on your keyboard)
Hibernate	Orange (AC/DC adapter)	Press the Power Button

Power Button

When the computer is on, you can use the power button as a Sleep/Hibernate hot-key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force shut the computer to shut down).

Chapter 4: 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*** disc contains the drivers and utilities necessary for the proper operation of the computer.

Table 4 - 1, on page 4 - 3 lists what you need to install and **it is very important that the drivers are installed in the order indicated** (see *"Driver Installation" on page D - 21* for ***Windows XP*** driver information).

Module Driver Installation

The procedures for installing drivers for the **Wireless LAN**, **PC Camera, Touchscreen Utility** and **Intel Turbo Memory** (and **Intel Matrix Storage**) are provided in *"Modules & Options" on page 7 - 1*. Make sure that the drivers are installed in the order indicated in *Table 4 - 1, on page 4 - 3*. Only install drivers for modules included in your purchase option.

Driver Installation

Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Install Drivers*** (button)/***Option Drivers*** (button).

Figure 4 - 1 **- Drivers Installer Screen 1**

1. Check the driver installation order from ***Table 4 - 1, on page 4 - 3*** (**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, 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 on the following pages.

Figure 4 - 2 **- Drivers Installer Screen 2**

Driver - *Windows Vista* with Service Pack 1	Page #
Chipset	*Page 4 - 5*
Video	*Page 4 - 5*
Audio	*Page 4 - 5*
Modem	*Page 4 - 5*
LAN	*Page 4 - 5*
ExpressCard/Card Reader	*Page 4 - 6*
Hot Key	*Page 4 - 6*
e-SATA Support	*Page 7 - 24*
Wireless LAN Module	*Page 7 - 6*
PC Camera Module	*Page 7 - 12*
Touch Screen Module	*Page 4 - 7*
Intel Turbo Memory Module	*Page 7 - 24*

Table 4 - 1 **- Driver Installation**

Manual Driver Installation

Click ***Browse CD*** (button) in the *Drivers Installer* application and browse to the executable file in the appropriate driver folder.

Windows Update

After installing all the drivers make sure you enable **Windows Update** in order to get all the latest security updates etc. (all updates will include the latest **hotfixes** from Microsoft). See ***"Windows Update" on page 4 - 6*** for instructions.

Windows Vista Service Pack 1

Make sure you install **Windows Vista Service Pack 1** (or a Windows Vista version which includes Service Pack 1) **before installing any drivers**. Go to the Microsoft website for download details, or contact your service center.

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 **Programs and Features** icon (**Programs** > **Uninstall a program**). Click to select the driver (if it is not listed see below) and click **Uninstall**, and then follow the on screen prompts (it may be necessary to restart the computer). Reinstall the driver as outlined in this chapter.

If the driver is not listed in the **Programs and Features** menu:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Double-click **Device Manager** (**Hardware and Sound > Device Manager**).
3. Double-click the **device** you wish to update/reinstall the driver for (you may need to click "+" to expand the selection).
4. Click **Driver** (tab) and click the **Update Driver** or **Uninstall** button and follow the on screen prompts.

User Account Control (Win Vista)

If a **User Account Control** prompt appears as part of the driver installation procedure, click **Continue** or **Allow**, and follow the installation procedure as directed.

Windows Security Message

If you receive a ***Windows*** security message as part of the driver installation process. Just click ***"Install this driver software anyway"*** or **Install** to 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***.

New Hardware Found

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

Driver Installation Procedure

Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Install Drivers*** (button), or ***Option Drivers*** (button) to access the **Optional** driver menu.

Chipset

1. Click **1.Install Chipset Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Video

1. Click **2.Install Video Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Audio

1. Click **3.Install Audio Driver > Yes**.
2. Click **Next > Next**.
3. Click **Finish** to restart the computer.

Modem

1. Click **4.Install Modem Driver > Yes**.
2. Click **OK**.
3. The modem is ready for dial-up configuration.

Modem Country Selection

Go to the **Phone and Modem Options** control panel (**Hardware and Sound**) and make sure the modem country selection is appropriate for you.

LAN

1. Click **5.Install LAN Driver > Yes**.
2. Click **Next > Install**.
3. Click **Finish**.
4. The network settings can now be configured.

ExpressCard/Card Reader

1. Click **6.Install CardReader Driver > Yes.**
2. Click **Next > Install**.
3. Click **Finish** to complete the installation.

Hot Key

1. Click **7.Install Hotkey Driver > Yes**.
2. Click **Next** > **Install**.
3. Click **Finish > Finish** to restart your computer.

e-SATA Support

See ***"Intel Turbo Memory & Matrix Storage Setup and Driver Installation" on page 7 - 28*** for instructions on installing this driver to enable the e-SATA port.

Windows Update

After installing all the drivers make sure you enable **Windows Update** in order to get all the latest security updates etc. (all updates will include the latest **hotfixes** from Microsoft).

To enable **Windows Update make sure you are connected to the internet**:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Check for updates** (**Security**), or double-click **Security Center** and click **Windows Update**.
3. Double-click **Check for updates (button)**.
4. The computer will now check for updates (you need to be connected to the internet).
5. Click **Install now** (button) to install the updates.

Optional Drivers

See the pages indicated for the driver installation procedures for any modules included in your purchase option. Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Option Drivers*** (button) to access the optional driver menu.

Figure 4 - 3 **- Optional Drivers**

Bluetooth Module

Note: The operating system is the default setting for Bluetooth control in *Windows Vista*. See ***"Bluetooth Module" on page 7 - 2*** for configuration instructions.

Wireless LAN Module

See the introduction in ***"Wireless LAN Module" on page 7 - 6***, and check the installation procedure.

PC Camera Module

See the introduction in ***"PC Camera Module" on page 7 - 12***, and check the installation procedure.

Touch Screen Module

See the introduction in ***"Touch Screen Module" on page 7 - 19***, and check the installation procedure.

Intel Turbo Memory Technology Driver

See the introduction in ***"Intel Turbo Memory Module" on page 7 - 28***, and check the installation procedure. **Note this driver is also required to enable support for the e-SATA port**.

Chapter 5: 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 ***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 ***Setup***. 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 *Set-up* and restore the ***Set-up Defaults*** with <**F9**>.

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 ***Setup***.

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.

The screen which appears at startup depends on whether or not you have enabled/disabled the Boot-time Diagnostic Screen (see ***"Boot-time Diagnostic Screen (Advanced Menu)" on page 5 - 10***).

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

Entering Setup

To enter the ***Setup Utility***, turn on the computer and press **F2** during the **POST**. The prompt (***Press F2 to Enter Setup***) seen on page *5 - 2* 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 ***Setup Utility*** main menu will appear.

Setup Screens

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

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

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, and 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.

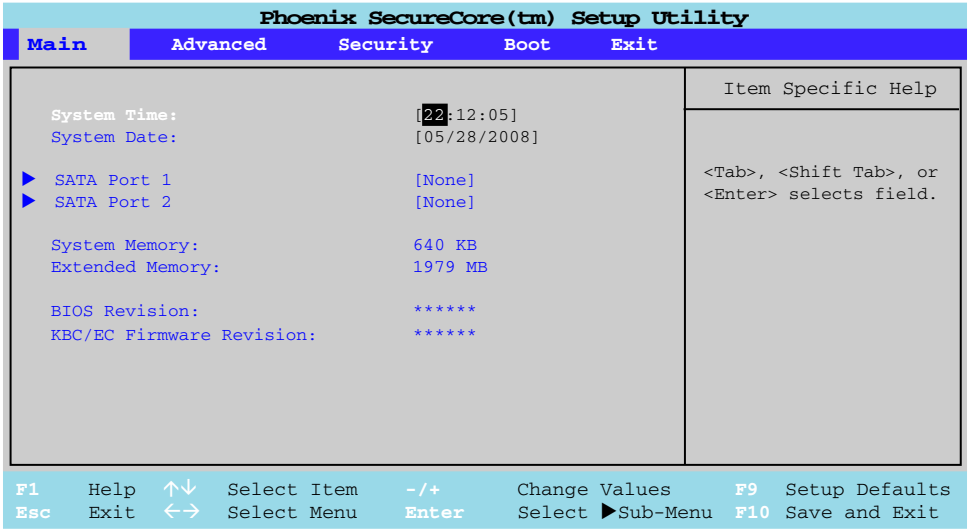
If you see an arrow ▶ next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

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 5 - 1
Main Menu



System Time & Date (Main Menu)
The hour setting uses the 24-hour system (i.e., ØØ = 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.

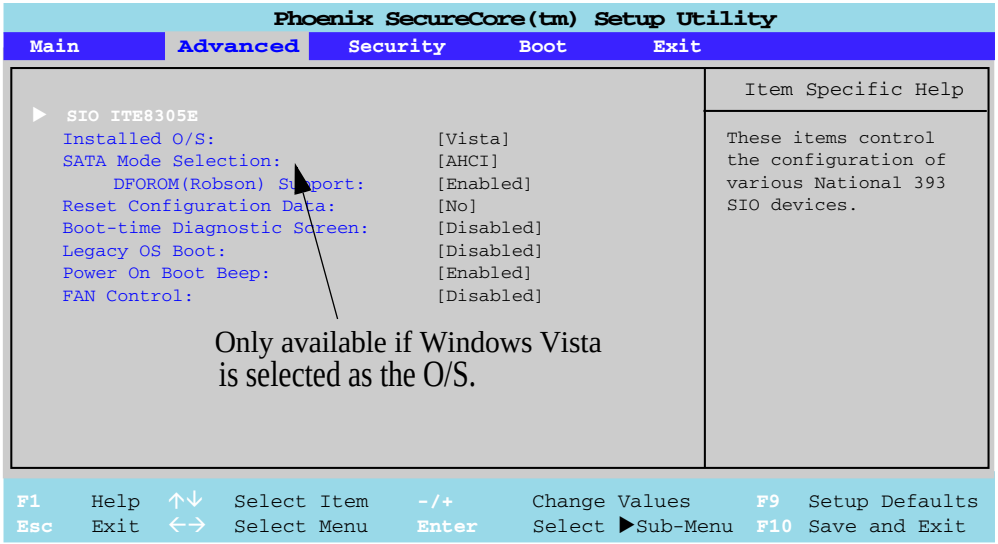
SATA Port 1/2 (Main Menu)
Pressing **Enter** opens the sub-menu to show the configuration of a hard disk or optical device drive on the computer's SATA Ports. Use the ***Auto*** (Type:) setting to have the items configured automatically for you.

System/Extended Memory (Main Menu)
This item contains information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed.

BIOS Revision/KBC/EC Firmware Revision (Main Menu)
This item contains information on the BIOS version etc. and is not user configurable.

Advanced Menu

Figure 5 - 2
Advanced Menu



SIO ITE8305E (Advanced Menu)
The sub-menu here allows you to adjust settings for the computer's **serial ports**.

Installed O/S (Advanced Menu)
This setting tells the computer what kind of operating system you're using. Make sure you choose the correct setting for your O/S in order to prevent system problems. Note: If you select the ***Vista*** O/S then the **SATA Mode Selection** menu will become available. If you are installing the ***Windows XP*** O/S make sure you have set the appropriate operating system here in order to prevent system problems.

SATA Mode Selection (Advanced Menu)
This menu is only available if you select the **Vista** O/S as your operating system. You can configure SATA (Serial ATA) control to operate in either **IDE** (native/compatible) or **AHCI** (Advanced Host Controller Interface) modes from this menu. The **SATA mode** should be set to **AHCI** mode for this system (unless you are sure your hard disk can only operate in **IDE** mode). If you are unsure of the mode your hard disk supports contact your service center. Note the following:

- If you have installed the ***Windows Vista*** O/S with AHCI enabled, **DO NOT** disable it (see sidebar).
- The **SATA** mode should be set to **AHCI** if you have included an ***Intel Turbo Memory (Robson) NAND flash memory*** card module in your purchase option. You can then enable the option from the *DFOROM (Robson) Support Menu*.
- The **SATA** mode should be set to **AHCI, and the** *DFOROM (Robson) Support Menu* setting should be set to **"Enabled"** to support eSATA port hot-swapping.

SATA Mode Selection

If you have installed the ***Windows Vista*** operating system with **AHCI** mode enabled (default setting), **DO NOT** disable AHCI mode (if you wish to disable AHCI mode you will need to reinstall the *Windows VIsta* OS).

SATA Mode & eSata Port

The eSATA port only supports hot-swapping if you have selected **AHCI** mode in ***SATA Mode Selection***, and **enabled DFOROM (Robson) Support**.

DFOROM (Robson) Support (Advanced Menu > SATA Mode Selection [AHCI]
This item will only be available if you have selected **AHCI** in **SATA Mode Selection**. The option should be enabled if you have included an optional **Intel Turbo Memory Module** in your purchase configuration, or you want to support eSATA port hot-swapping. You should then install the driver as per the instructions in ***"Intel Turbo Memory & Matrix Storage Setup and Driver Installation" on page 7 - 24***.

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.

Boot-time Diagnostic Screen (Advanced Menu)
Use this menu item to enable/disable the Boot-time Diagnostic Screen (or POST) screen.

Legacy OS Boot (Advanced Menu)
Enable this item to support only system boot from the Legacy OS (e.g *Windows Vista*). If disabled the system will attempt to boot from the EFI (Extensible Firmware Interface) before the Legacy OS.

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.

Fan Control (Advanced Menu)
This menu item allows you to set the fan cooling behavior under light system activity (if you choose **Automatic** the system will adjust the fan cooling as appropriate for the system activity).

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

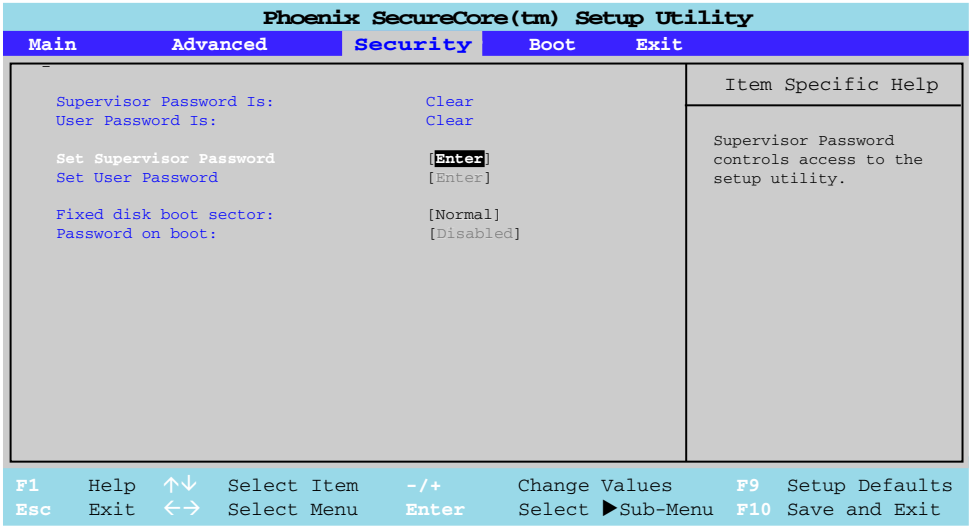


Figure 5 - 3
Security Menu

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**).

Set User Password (Security Menu)
You can set a password for user mode 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). Many menu items in the **Setup Utility** cannot be modified in user mode. You can only set the user password after you have set the supervisor password.

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 - see ***"Viruses" on page 8 - 4***).

Password on boot (Security Menu)
Specify whether or not a password should be entered to boot the computer (**you may only set a password on boot if a supervisor password is enabled**). 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.

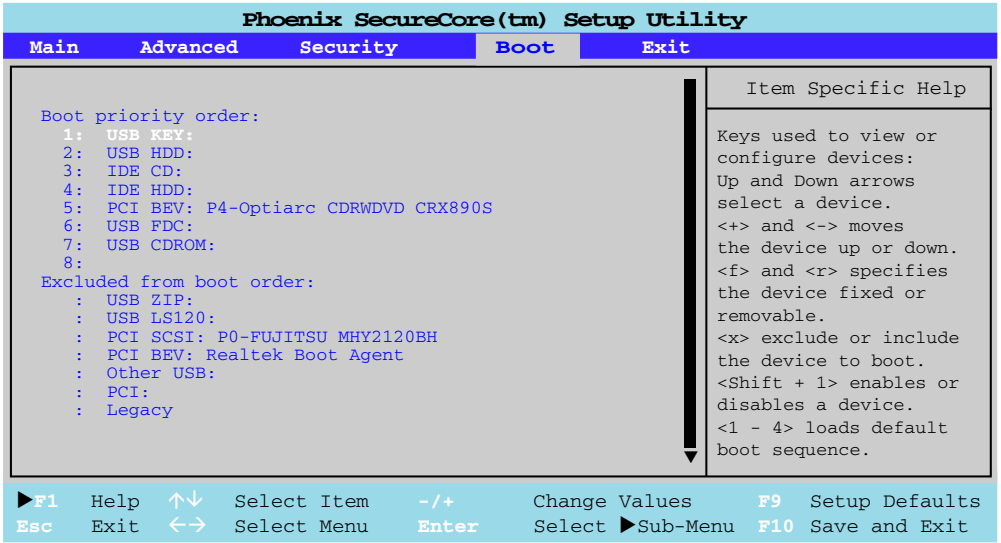
Password Warning

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 5 - 4
Boot Menu



When you turn the computer on it will look for an operating system (e.g. ***Windows Vista***) 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

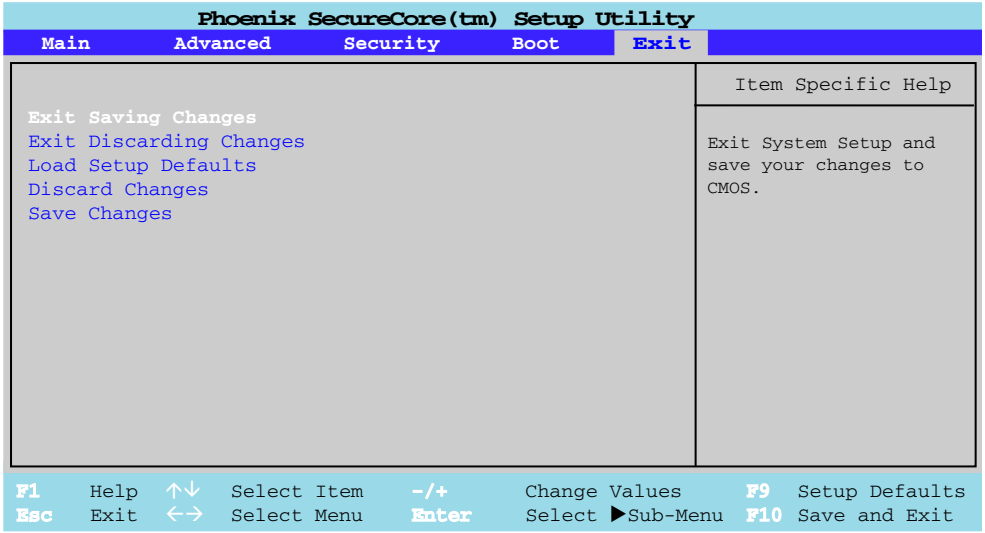


Figure 5 - 5
Exit Menu

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 6: 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.

Warranty Warning

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

The chapter includes:

- Removing the Rear Top Cover
- Wireless Keyboard & Mouse USB Receiver
- Upgrading the Hard Disk Drive
- Upgrading the System Memory (RAM)

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

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.

Removing the Rear Top Cover

Before undertaking any upgrade procedure it is necessary to remove the rear top cover to access the components.

1. Turn **off** the computer and disconnect all cables and peripherals.
2. Carefully place the computer flat with the LCD facing down (make sure you cover the LCD to avoid scratches) so that you may access the rear cover.
3. Remove screws 1 - 4.

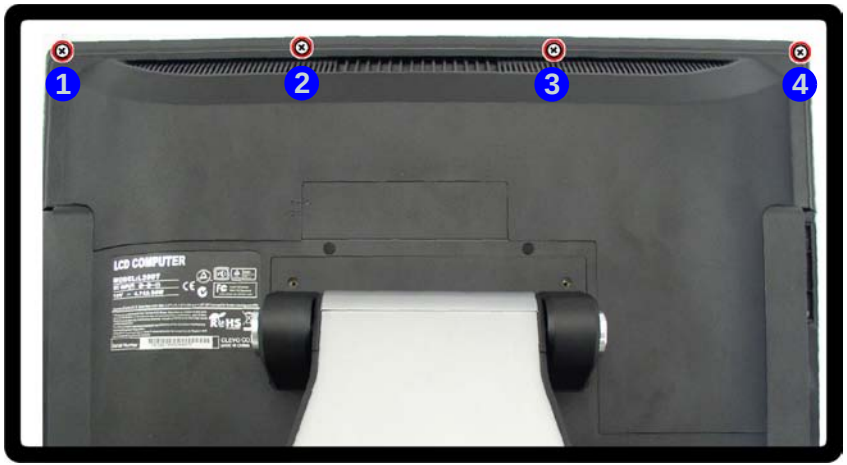


Figure 6 - 1
Rear Top Cover Screws

4. Slide the rear top cover until the arrow is aligned with the unlock icon 5.

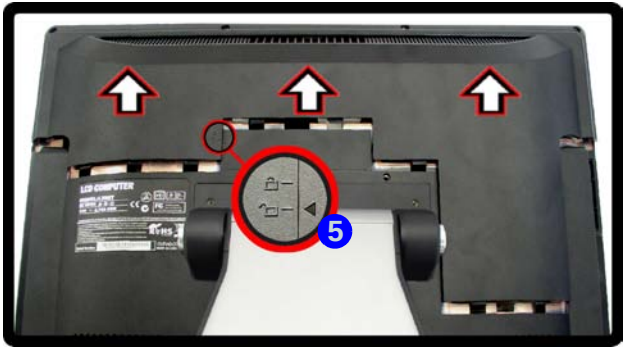


Figure 6 - 2
Rear Top Cover Unlock

5. When the arrow is aligned with the unlock icon you can remove the rear top cover 6.

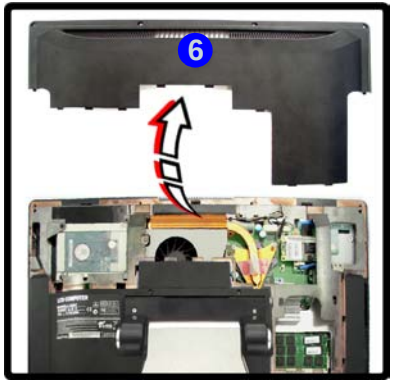


Figure 6 - 3
Rear Top Cover Removal

Wireless Keyboard & Mouse USB Receiver

If your purchase includes an optional Wireless Keyboard & Mouse Kit you can use the USB port located behind the rear top cover to house the USB receiver.

1. Remove the rear cover (see *"Removing the Rear Top Cover" on page 6 - 3*).
2. Insert the USB receiver 1 into the USB port 2.
3. Replace the rear top cover and screws.

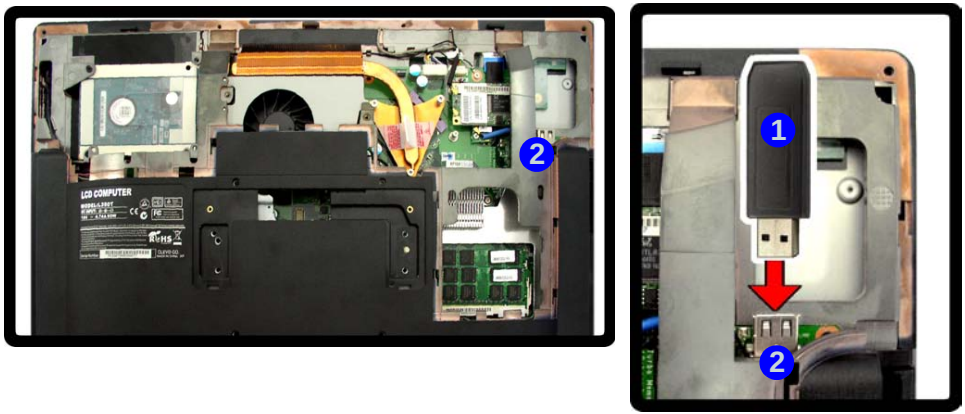


Figure 6 - 4
USB Port for Wireless Keyboard & Mouse Kit

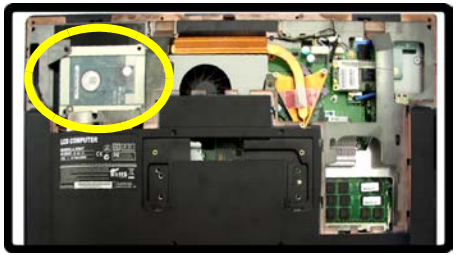
HDD System Warning

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.

Upgrading the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h) (see *"Storage" on page C - 3*). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in *"Driver Installation" on page 4 - 2*), when setting up a new hard disk.

1. Remove the rear cover (see *"Removing the Rear Top Cover" on page 6 - 3*).
2. Remove screws 1 - 3.



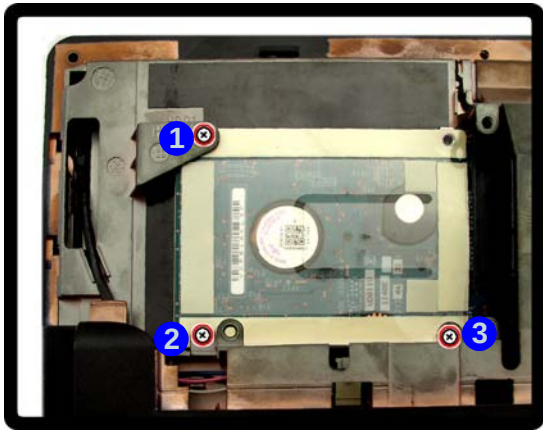


Figure 6 - 5
Hard Disk Screws

Hard Disk Slot

Make sure you install the hard disk into the lower slot on the mainboard.

3. Firstly slide the hard disk in the direction of arrow 4, and then slide it in the direction of arrow 5 to remove it.

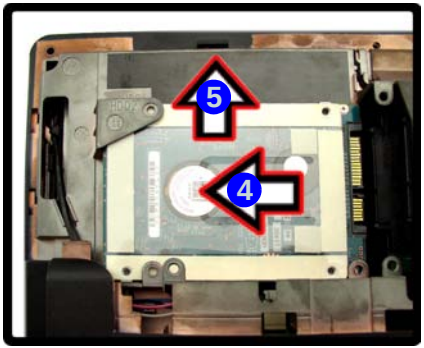


Figure 6 - 6
Hard Disk Assembly Removal

4. Remove the adhesive hard disk cover 6.

Figure 6 - 7
Hard Disk Cover Removal

5. Reverse the process to install a new hard disk.

Upgrading the System Memory (RAM)

The computer has **two** memory sockets for 200 pin Small Outline Dual In-line (SO-DIMM) **DDRII (DDR2)** type memory modules (see *"Memory" on page C - 2* for details of supported module types).

The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Remove the rear cover (see *"Removing the Rear Top Cover" on page 6 - 3*).
2. The RAM is located at point 1.

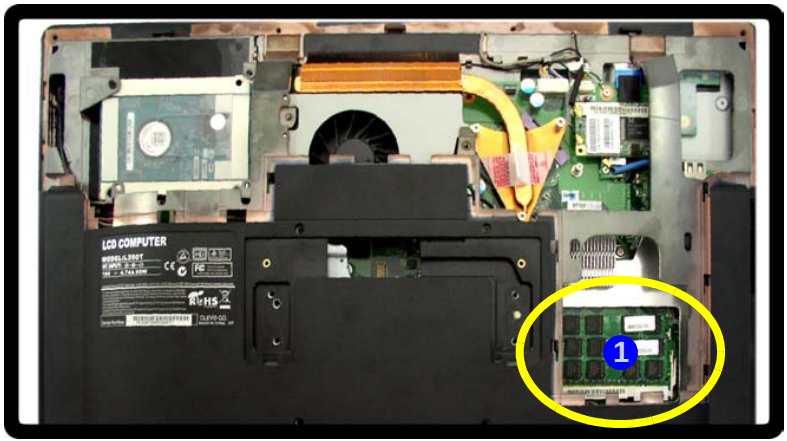
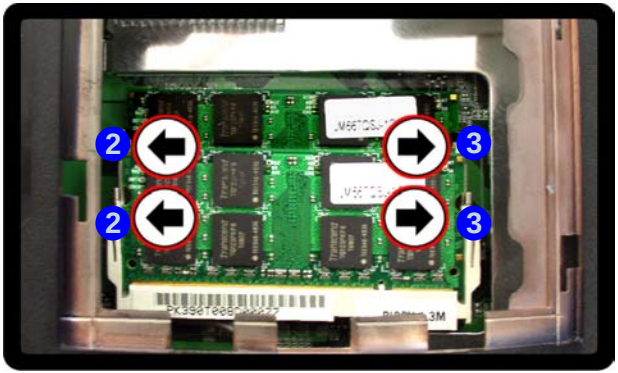


Figure 6 - 8
RAM Location

3. Gently pull the two release latches on the sides of the memory socket in the direction indicated by the arrows (2 & 2) in ***Figure 6 - 9***.



4. The RAM module will pop-up, and you can remove it.
5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the module bay cover and screws.
10. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

Figure 6 - 9
RAM Module Removal

Warranty

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

Unauthorized tampering with the HDD may also violate your warranty.

Upgrading the Processor

If you want to upgrade your computer by replacing the existing processor with a faster/new one you will need to contact your customer service representative. We recommend that you do not do this yourself, since if it is done incorrectly you may damage the processor or mainboard.

Chapter 7: Modules & Options

Overview

This chapter contains information on the following modules, which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

- Bluetooth Module
- Wireless LAN Module
- PC Camera Module
- Touch Screen Module
- Intel Turbo Memory Module

Bluetooth Module

The **optional** Bluetooth module allows you to connect your computer to Bluetooth enabled devices such as other computers, desktop computers, mobile phones, printers, digital cameras, PDAs, headsets etc. using a short-range radio frequency.

The operating system's **Bluetooth Devices** control panel is used to configure the Bluetooth settings in ***Windows Vista***, and therefore does not require a driver.

Bluetooth Data Transfer

Note that the transfer of data between the computer and a Bluetooth enabled device is supported **in one direction only (simultaneous data transfer is not supported)**. Therefore if you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process from the computer has been completed.

Bluetooth Configuration in Windows Vista

Setup your Bluetooth Device so the Computer Can Find it

1. Turn your Bluetooth device (e.g. PDA, mobile phone etc.) on.
2. Make the device discoverable (to do this check your device documentation).

To Turn the Bluetooth Module On

1. A Bluetooth icon will appear in the taskbar (see sidebar).
2. You can then do any of the following to access the **Bluetooth Devices** control panel.

- **Double-click** the icon to access the **Bluetooth Devices** control panel.
- Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**), and then click **Bluetooth Devices** (**Hardware and Sound**).
- **Click/Right-click** the icon and choose an option from the menu.

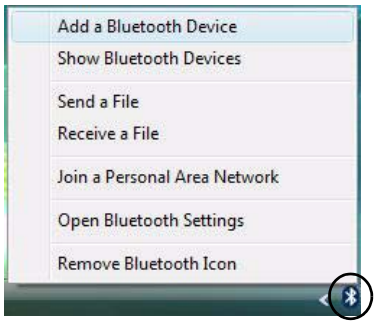


Figure 7 - 1
Bluetooth Devices & Click Icon Menu

Bluetooth Taskbar Icon

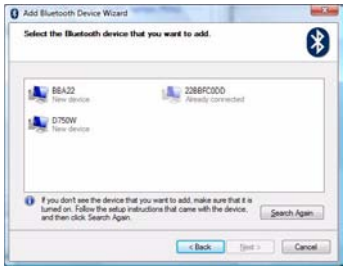
If you cannot see the Bluetooth icon in the taskbar, access the **Bluetooth Devices** control panel. Click **Options** (tab), and make sure that **Show Bluetooth icon in the notification area** check box (**Connections**) has a tick inside it.

7

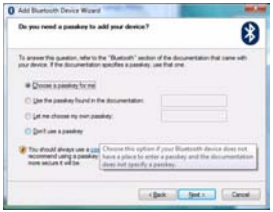
To Add a Bluetooth Device

1. Access the **Bluetooth Devices** control panel.
2. Click **Options** (tab), and make sure that ***Allow Bluetooth devices to connect to this computer*** check box (**Connections**) has a tick inside it.
3. Click **Devices** (tab), and then click **Add**.
4. The **Add Bluetooth Device Wizard** will appear.
5. Click to select "***My device is set up and ready to be found***", and then click **Next**.

Figure 7 - 2
Add Bluetooth Device Wizard



6. The ***Wizard*** will then search for any available Bluetooth devices within range.
7. Click to select the device you want to communicate with, and click **Next**.
8. Select an appropriate passkey option and click **Next**.



9. Click **Finish**.

> **Passkey Options**
>
> You can allow the system to choose a passkey for you. You will then be prompted to enter the generated passkey on your Bluetooth device.

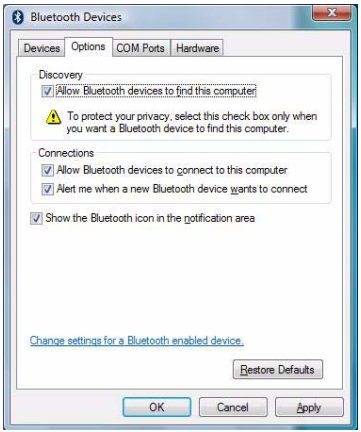
Figure 7 - 3
Passkey Option

To Change Settings for the Bluetooth Device

1. Access the **Bluetooth Devices** control panel.
2. Click on the device you want to change and click **Properties** to:
   - Change the **name** of the device (click **General**, type a new name and click **OK**).
   - Enable/Disable a **service** (click **Services**, clear/tick the check box next to the service and click **OK**).

To Make your Computer Discoverable to Bluetooth Devices

1. Access the **Bluetooth Devices** control panel.
2. Click **Options**, and make sure that ***Allow Bluetooth devices to find this computer*** check box (**Discovery**) has a tick inside it.
3. Make sure that ***Alert me when a new Bluetooth device wants to connect*** check box (**Connections**) has a tick inside it, if you want to be notified when a Bluetooth device wants to connect.



Bluetooth Help

To get help on Bluetooth configuration and settings, select **Help and Support** from the **Start** menu. Type Bluetooth in the **Search Help** box, and select an item from the returned search results to get more information.

Figure 7 - 4
Bluetooth Devices Options

Wireless LAN Module

If you have included an **Intel® Wi-Fi Link 5100/5300 Series (802.11 a/g/n) WLAN** module, or **3rd Party 802.11b/g WLAN module** in your purchase option, install the driver as per the procedure overleaf.

Make sure you install the drivers in the order indicated in ***Table 4 - 1, on page 4 - 3***.

Intel® Wi-Fi Link 5100/5300 Series (802.11 a/g/n) Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **1.Install WLAN Driver > Yes**.
4. Click **Next > Next**.
5. Click the button to accept the license and click **Next**.
6. Click **Next > Next > Finish**.

Note: The operating system is the default setting for Wireless LAN control in ***Windows Vista*** (see overleaf).

802.11b/g Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **1.Install WLAN Driver > Yes**.
4. Choose the language you prefer and click **Next**.
5. Click **Next > Install**.
6. Click **Finish** to restart the computer.

Note: The operating system is the default setting for Wireless LAN control in ***Windows Vista*** (see overleaf).

Connecting to a Wireless Network

Make sure the Wireless LAN module is turned on (see page *7 - 11*).

1. **Click** the taskbar wireless icon, and then click **Connect to a network** (or **right-click** the icon, and then click **Connect to a network**).

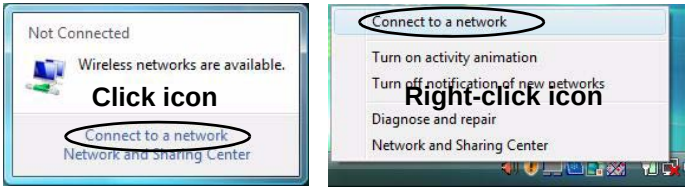


Figure 7 - 5
Taskbar Menus

2. In the **Show** list, click to choose **Wireless** from the drop-down menu.
3. A list of currently available networks will appear.

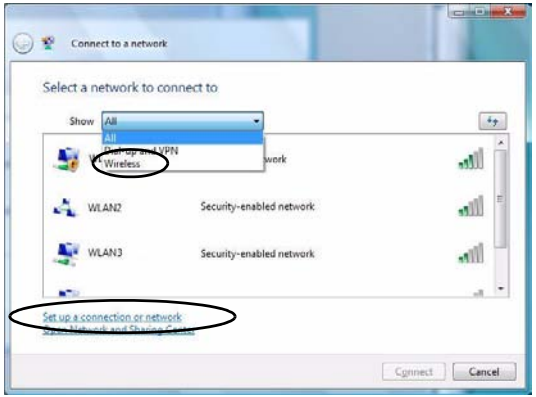


Figure 7 - 6
Connect to a Network

Network and Sharing Center

You can also use the **Network and Sharing Center** control panel in Windows (**Network and Internet**) to connect to any available wireless networks.

4. Click a network, and then click **Connect**.
5. If you do not see a network you want to connect to, click **Set up a connection or network** (a list of options will appear allowing manual searching, and creating a new network).

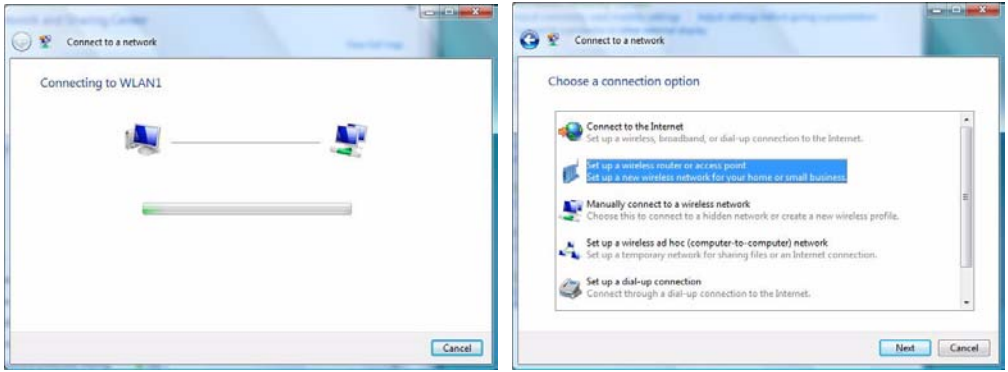


Figure 7 - 7
Connecting

6. Move the cursor over the taskbar icon to see the connection status (see below).

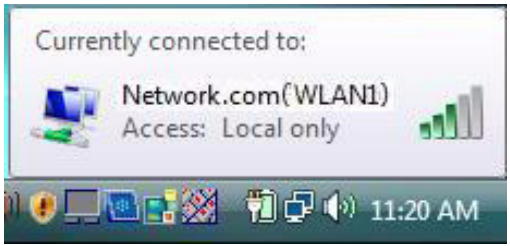


Figure 7 - 8
Connection Status

Security Enabled Networks

You should try to make sure that any network you are connecting to is a secure network.

Connecting to unsecure networks may allow un-authorized access to your computer, documents, websites and files etc.

7. To disconnect from the wireless network you can click the taskbar wireless icon, and then select **Connect or disconnect** to access the network menu, and click Disconnect (or **right-click** the icon, and then click **Disconnect from**).

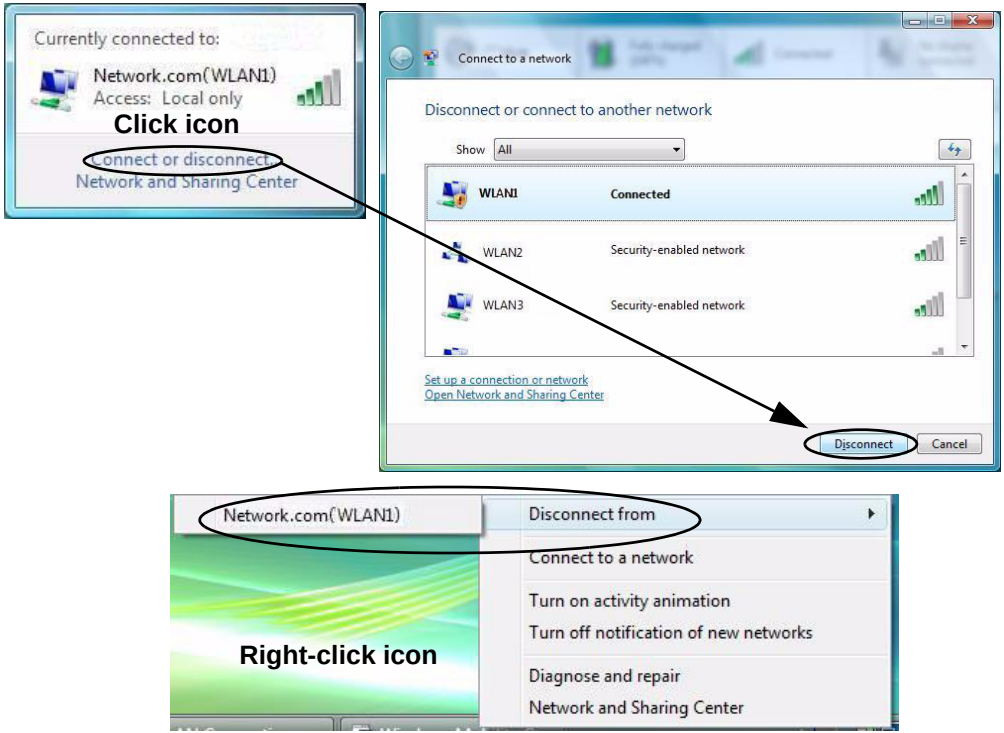


Figure 7 - 9
Disconnecting

Windows Mobility Center

The **Windows Mobility Center** control panel provides an easy point of access for information on battery status, power plans used and wireless device status etc.

To access the Windows Mobility Center:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Double-click **Windows Mobility Center** (**Mobile PC**).
3. Click the button to **Turn wireless off/on**, or click the icon to access the network menu.

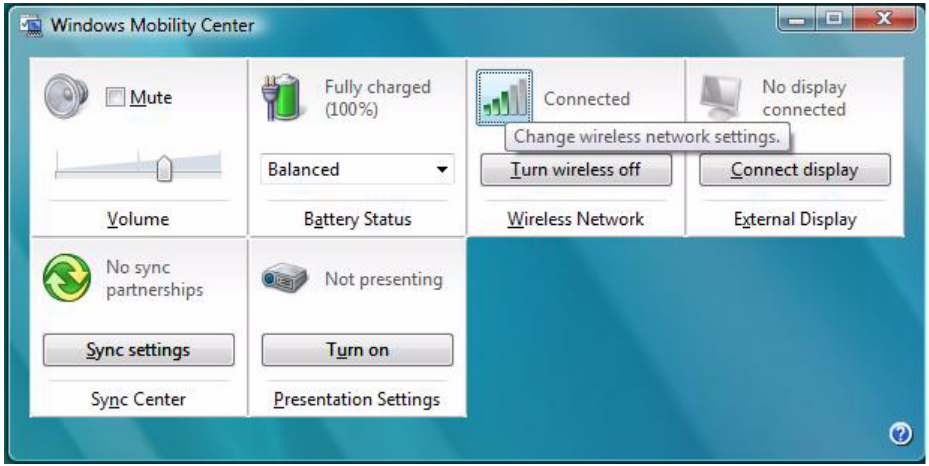


Figure 7 - 10
Windows Mobility Center

PC Camera Module

There PC Camera module uses the **BisonCap** application to capture video files. Install the driver as per the instructions below.

Latest PC Camera Driver Information

Check the ***Device Drivers & Utilities + User's Manual disc***, and any accompanying insert pages, for the latest updated information on the PC Camera driver, which may override the information provided here.

PC Camera Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Install Camera Driver** > **Yes**.
4. Choose the language you prefer and click **Next** > **Next**.
5. Click **Finish** to restart the computer.
6. Run the **BisonCap** application program from the **BisonCam** shortcut on the desktop, or from the **BisonCam** item in the **Start** > **Programs/All Programs** menu.

2.0M PC Camera Screen Refresh

The 2.0M PC Camera module supports a frame rate of 12 fps. If you find that the screen refresh rate is subject to lag or stuttering, then **reduce the window size**, or adjust the **Output Size** and/or **Color Space Compression**.

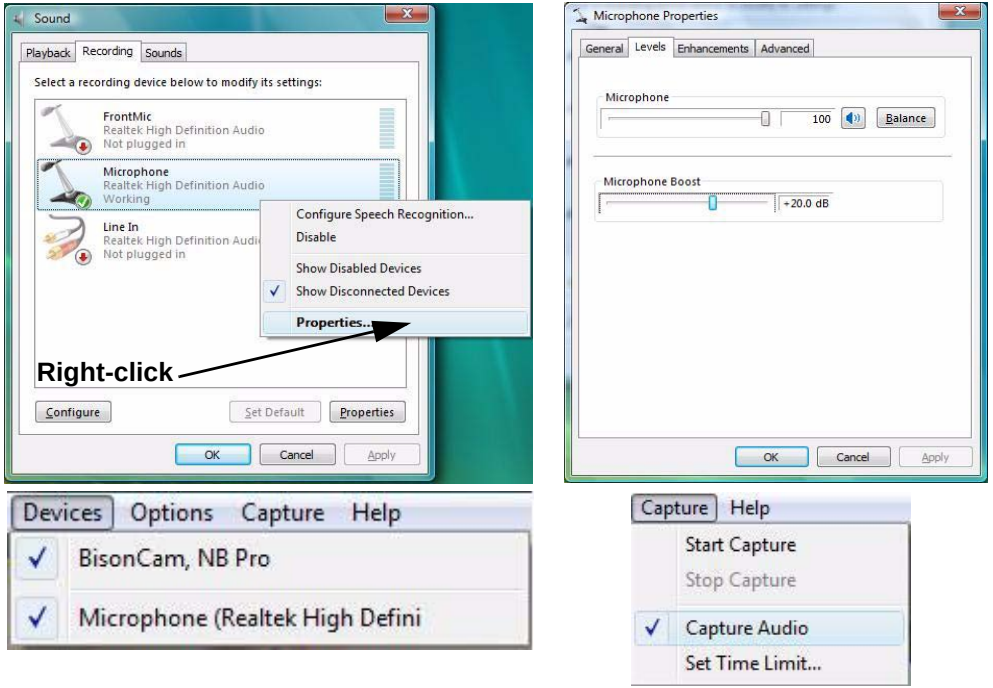
To reduce **Output Size** and/or **Color Space Compression** run the **BisonCap** application, click **Options** and select **Video Capture Pin**. Adjust the settings from the appropriate pull-down menu.

PC Camera Audio Setup

If you wish to capture video & **audio** with your camera, it is necessary to connect a microphone to either of the microphone ports and then setup the audio recording options in ***Windows*** as follows.

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Sound** (**Hardware and Sound**).
3. Click **Recording** (tab).
4. Right-click **Microphone** (for the microphone-in jack on the left side of the computer) or **FrontMic** (for the microphone-in jack on the base of the computer) and make sure the item is not disabled.
5. Double-click **Microphone/FrontMic** (or select **Properties** from the right-click menu).
6. Click **Levels** (tab), and adjust the **Microphone/FrontMic** and **Microphone Boost** sliders to the level required.
7. Click **OK** and close the control panels.
8. Run the **BisonCap** application program from the **Start > Programs/All Programs > BisonCam** menu.
9. Go to the **Devices** menu heading and select **Microphone/FrontMic** (it should have a tick alongside it).
10. Go to the **Capture** menu heading and select **Capture Audio** (it should have a tick alongside it).

Figure 7 - 11
Audio Setup for PC Camera



BisonCap

BisonCap is a video viewer for general purpose video viewing and testing, and capturing video files to .avi format.

1. Run the **BisonCap** program from the **Start > Programs/All Programs > BisonCam** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check ***"PC Camera Audio Setup" on page 7 - 13***) and select **Start Capture**.
3. Click **OK** (the file location will be displayed in the pop-up box) to start capturing the video, and press **Esc** to stop the capture (you can view the file using the **Windows Media Player**).

Set Capture File

Prior to capturing video files you may select the **Set Capture File...** option in the **File** menu, and set the file name and location before capture (this will help avoid accidentally overwriting files). Set the name and location then click **Open**, then set the **"Capture file size:"** and click **OK**. You can then start the capture process as above.

Note the important information in ***"Reducing Video File Size" on page 7 - 16*** in order to save file space, and help prevent system problems.

Pre-Allocating File Space

You may pre-allocate the file size (**File > Allocate File Size**) for the capture file in the **BisonCap** program.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

See also ***"Reducing Video File Size" on page 7 - 16***.

Reducing Video File Size

Note that capturing high resolution video files requires a substantial amount of disk space for each file. After recording video, check the video file size (right-click the file and select **Properties**) and the remaining free space on your hard disk (go to **My Computer**, right-click the hard disk, and select **Properties**). If necessary you can remove the recorded video file to a removable medium e.g. CD, DVD or USB Flash drive.

Note that the ***Windows Vista*** system requires a minimum of **15GB** of free space on the **C: drive** system partition. In order to prevent system problems it is recommended that you save the captured video file to a location other than the **C: drive** (see ***"Set Capture File" on page 7 - 15***), limit the file size of the captured video (see ***"Pre-Allocating File Space" on page 7 - 15***) or reduce video resolution (see below).

To Reduce Video Resolution Output Size:

1. Run the **BisonCap** program.
2. Go to **Options** and scroll down to select **Video Capture Pin...**.
3. Click the **Output Size** drop box and select a lower resolution size in order to reduce the captured file size.

Eliminating Screen Flicker

If you find that the video screen in the **BisonCap** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **BisonCap** program.
2. Go to **Options** and scroll down to select **Video Capture Filter...**.
3. Click either **50Hz** or **60Hz** under **Frequency** in **Property Page** (tab).

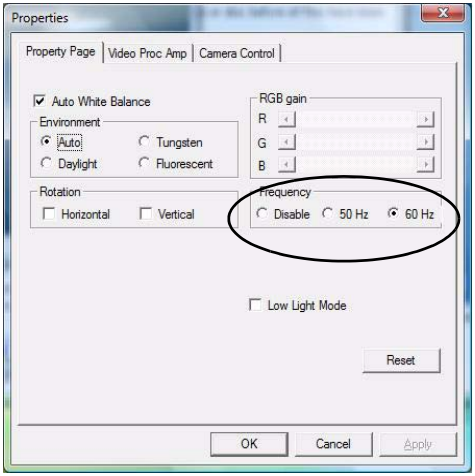


Figure 7 - 12
Video Capture Filter

Zoom

The **BisonCap** program allows you to zoom the camera in and out.

1. Run the **BisonCap** program.
2. Go to **Zoom** and select **Zoom Out/Zoom In.**

Figure 7 - 13
Zoom/Setting

Taking Still Pictures

The **BisonCap** programs allows you to take still pictures.

1. Run the **BisonCap** program.
2. Go to **Options** and select **Take Picture**.
3. The picture (in JPEG format) will be placed in the **Snapshot** folder  on the desktop.

Snapshot Folder

The Snapshot folder's default location is on the desktop. Do not move this folder or an error may appear when you try to take a still picture.

If you accidentally delete or move the folder, you can create a new Snapshot folder on the desktop in order to capture the files.

Touch Screen Module

If you have included a Touch Screen module in your purchase option, you should obtain a stylus pen to interact with the computer in the same way you would use a mouse (use a stylus pen to tap/double-tap on-screen buttons etc.). Calibrate the touch screen before using your stylus pen. Make sure you install the driver as indicated below.

Touch Screen Utility Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Install TouchScreen Utility > Yes**.
4. Click **Install**.
5. Click **OK** to restart the computer.

Touch Screen Input Device

Do not use any sharp or pointed objects as your input device e.g. the end of a pen or pencil. You should preferably only use a stylus pen (PDA type) as your input device.

Be very careful not to press too hard with the stylus pen when using it as the input device.

Calibrating the Touch Screen

1. Click **Start**, and click **Programs/All Programs** and point to **Touch Utilities** (folder), and then click **Touch Configuration program** (or double-click the desktop icon).
2. Click **Calibration** (button).

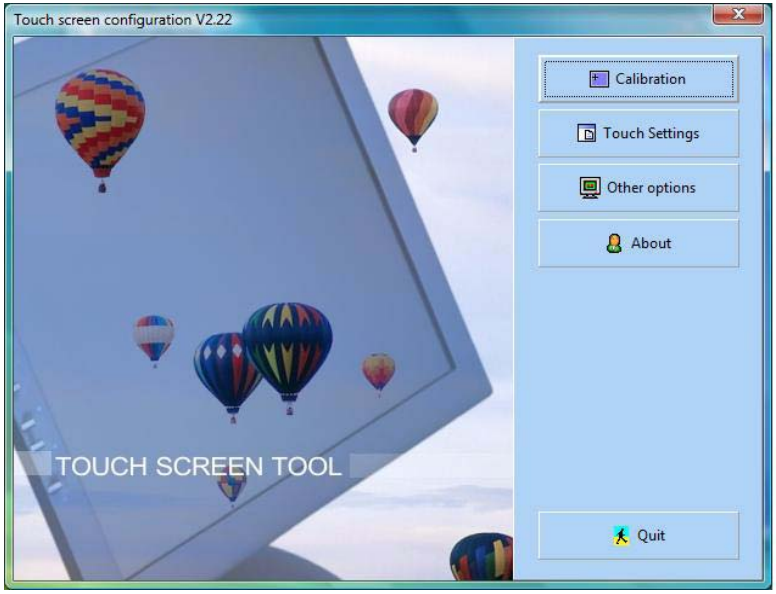


Figure 7 - 14
Touch Screen Configuration

3. Click to choose the number of points in **Calibration Precision**, and then click **Calibrate** (button).

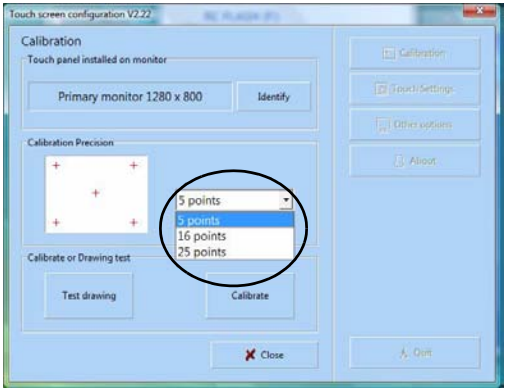


Figure 7 - 15
Calibration Precision

4. Use the stylus pen to touch the center of the cross sign until the **OK** sign appears in the center of the cross.

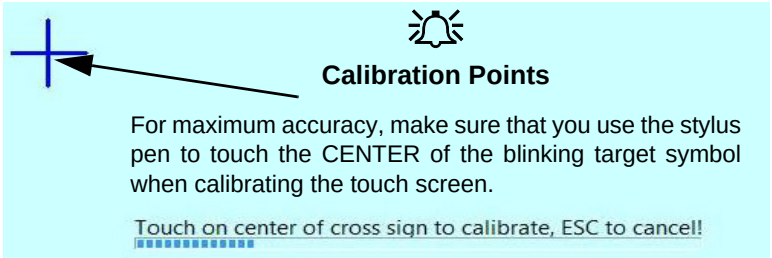


Figure 7 - 16
Touch On Cross

7

5. When the **Test Drawing** appears, write on the screen to test the calibration (press the **spacebar** to clear any drawing, or **Esc** to exit).

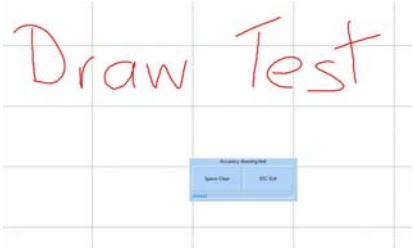


Figure 7 - 17
Test Drawing

6. Click **Close** to exit Calibration.
7. Click **Touch Settings** (button) to adjust any touch setting (mouse) options.

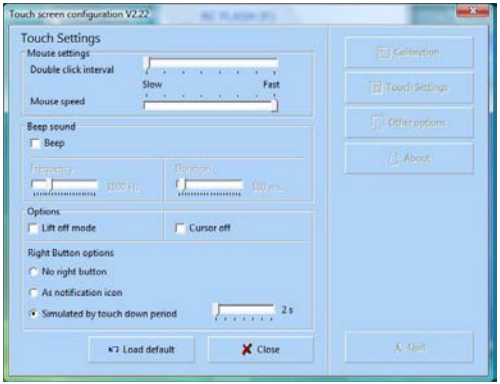


Figure 7 - 18
Touch Settings

Tablet PC Input Panel

When not in use the **Tablet PC Input Panel** (not available in ***Windows Vista Home Basic Edition***) docks at the side of the screen (and may be docked at either side of the screen at any height) with just a small portion visible. Move the pen over the TIC and then tap it to activate it. The input panel allows you to input text without the use of a keyboard. You can use the writing pad (write continuously), character pad (write one character at a time) or on-screen keyboard to input text. Use the **Help** menu for further information.

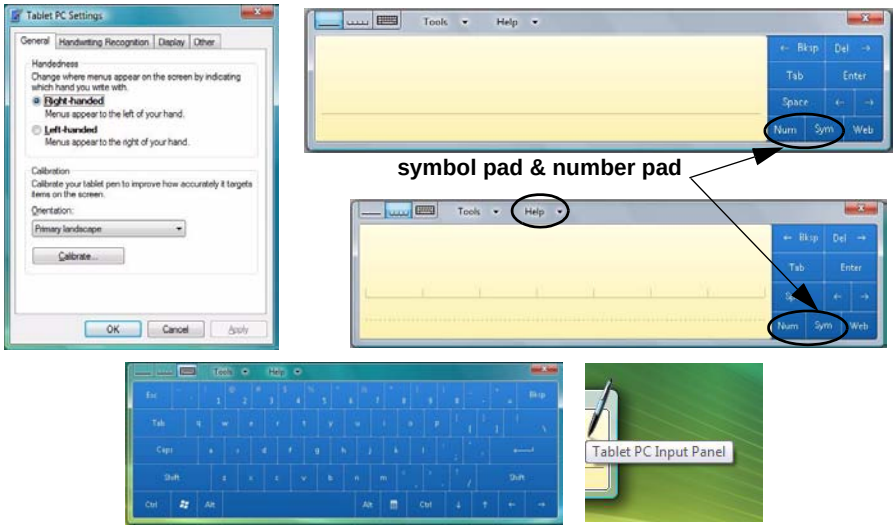


Figure 7 - 19
Tablet PC Input Panel & Tablet PC Settings Control Panel

Tablet PC Settings

Tablet PC settings may be customized from the **Tablet PC Settings** in *Windows Vista* (***Windows Vista Home Basic Edition*** does not support Handwriting Recognition). Access the control panel as follows:

Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).

Click **Mobile PC** and double-click **Tablet PC Settings** (or just double-click **Tablet PC Settings**).

e-SATA Port Support

Note that **the Intel Matrix Storage driver is required to enable the e-SATA port** even if you have not included an *Intel Turbo Memory* module in your purchase configuration.

Follow the instructions provided here in order to install the driver.

Intel Turbo Memory Module

If you have included an Intel Turbo Memory (Robson) NAND flash memory card module in your purchase option, then you will need to install the driver as per the instructions below (do not install this driver in ***Windows XP***).

Intel Turbo Memory Technology (also known as **Robson flash memory**) is an Intel technology that reduces the time it takes for a computer to boot up, to load applications, and to write data to the hard drive. ***Intel Turbo Memory Technology*** is supported in *Windows Vista* only (it also supports *Windows Vista* features such as ReadyBoost, ReadyDrive, and Superfetch).

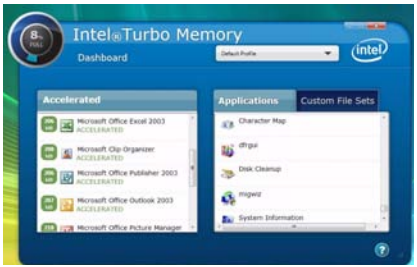
Intel Turbo Memory & Matrix Storage Setup and Driver Installation

1. Start-up the computer and press <**F2**> to enter the **BIOS** (see ***"The Setup Program" on page 5 - 4***).
2. Go to the **Advanced** menu, select "***Installed O/S***" and make sure "***Vista***" is the selected option (see ***"Advanced Menu" on page 5 - 8***).
3. Go to the "***SATA Mode Selection***" item and make sure "***AHCI***" is selected.
4. Go to the "***DFOROM (Robson) Support***" item and make sure "***Enabled***" is selected.
5. Go to the **Exit** menu (see ***"Exit Menu" on page 5 - 15***) and select "***Exit Saving Changes***" (or press **F10** and select "**Yes**" then press Enter) and press Enter to exit the BIOS and reboot the computer.

6. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
7. Click **Option Drivers** (button).
8. Click **4.Install TM&iMSM Driver > Yes**.
9. Click **Next > Yes > Next > Next**.
10. Click **Finish** to restart the computer.

If you have a **4GB** Turbo Memory Module (see below). For Turbo Memory Modules less than 4GB (see overleaf):

1. Run the **Intel® Turbo Memory Dashboard** from the **Programs/All Programs** menu (**Intel® Turbo Memory**) or from the desktop shortcut.
2. The **Intel® Turbo Memory Dashboard** allows you to select files and applications to accelerate and therefore open faster and display quicker.
3. Applications will be listed in the **Applications** pane window on the right.
4. To accelerate any application drag the icon into the **Accelerated** pane on the left (the available memory is indicated in the top left).



Windows Security Message

If you receive a ***Windows*** security message as part of the driver installation process. Just click ***"Install this driver software anyway"*** or ***"Install"*** to continue the installation procedure.

Help

Click the **Help** icon to bring up the menu and click to select and help topic.

Figure 7 - 20
Intel Turbo Memory Dashboard

1. Run the **Intel® Turbo Memory Console** from the **Programs/All Programs** menu (**Intel® Turbo Memory**).

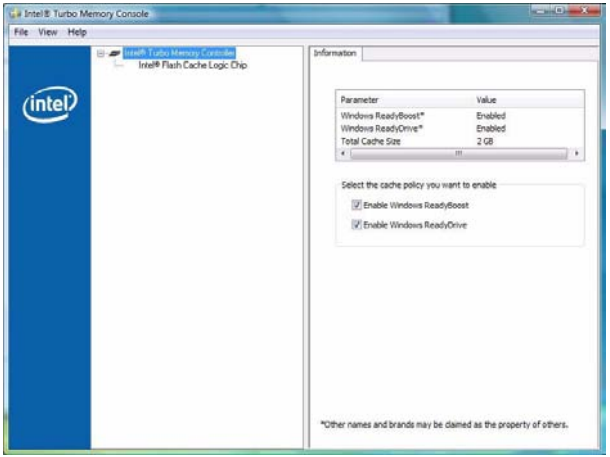


Figure 7 - 21
Intel Turbo Memory Console

- **Windows ReadyBoost** - uses **flash memory** as a hard-drive caching solution.
- **Windows ReadyDrive** - uses **hybrid drives** as a hard-drive caching solution

Chapter 8: 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. Check the **LED Power & Communication Indicators** (see ***"LED & Hot Key Indicators" on page 1 - 9***) to see the computer's power status.
- **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 **Sleep** mode by pressing the keys configured in your *Power Options*, or power button, to wake-up the system.
- **Brightness** - Check the brightness of the screen by pressing the brightness buttons to adjust the brightness.
- **Display Choice** - Make sure the system is not set to "external only" display if an external display is attached.
- **Boot Drive** - Make sure there are no **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 *"Security Menu" on page 5 - 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. 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 "**Bootable CD-ROM/DVD-ROM/USB storage device**" (this CD/DVD/USB device 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
The computer feels too hot.	Make sure the computer is properly ventilated and the Vent/Fan intakes are not blocked. If this doesn't cool it down, put the system into **Hibernate** mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see ***"Overheating" on page 1 - 12***). Make sure you're using the correct adapter.
Nothing appears on screen.	*The system is in a power saving mode*. Press the power button or any configured sleep/resume key combination. *The screen controls need to be adjusted.* Press the brightness buttons to adjust the settings. If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check any attached monitor's own brightness and contrast controls. *The* ***screen saver*** *is activated.* Press any key on the keyboard.
No image appears on the external monitor I have plugged in and powered on.	*You haven't installed the video driver and configured it appropriately from the* ***Control Panel****.* See for instructions on installing and configuring the video driver.
The sound cannot be heard or the volume is very low.	*The volume might be set too low.* Check the volume control in the ***Volume Control Panel*** in the *Windows* taskbar, or use the volume buttons to adjust the setting (see ***"Audio Features" on page 2 - 8***/***"Audio Features" on page D - 4***) to adjust.
The compact disc cannot be read.	*The compact disc is dirty.* Clean it with a CD-ROM cleaner kit.

Problem	Possible Cause - Solution
The compact disc tray will not open when there is a disc in the tray.	*The compact disc is not correctly placed in the tray.* Gently try to remove the disc using the eject hole (see ***"Loading Discs" on page 2 - 3***).
The DVD regional codes can no longer be changed.	*The code has been changed the maximum **5** times.* See ***"DVD Regional Codes" on page 2 - 5***/ ***"DVD Regional Codes" on page D - 2***.
You forget the boot password.	*If you forget the password, you may have to discharge the battery of the CMOS.* Contact your service representative for help.
Password Warning 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.	
A file cannot be copied to/from a connected **Bluetooth** device.	*The transfer of data between the computer and a Bluetooth enabled device is supported **in one direction only (simultaneous data transfer is not supported)***. If you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process from the computer has been completed

Problem	Possible Cause - Solution
The **system "hangs"** (a blank screen appears and the OS will not load) at the POST/start up.	*You have disabled **AHCI** mode in the BIOS*. If you have installed the ***Windows Vista*** operating system with **AHCI** mode enabled (default setting), **DO NOT** disable AHCI mode (if you wish to disable AHCI mode you will need to reinstall the *Windows VIsta* OS). To correct this problem press **F2** at startup to enter the BIOS, enable AHCI mode, and then save the setting (see ***"SATA Mode Selection (Advanced Menu)" on page 5 - 9***). Make sure you have selected the appropriate O/S for your system in the BIOS e.g. ***Windows Vista/Windows XP*** etc. Setting the incorrect O/S can also cause the system to "hang" (see ***"Installed O/S (Advanced Menu)" on page 5 - 9***).
The **Hibernate** function has disappeared.	*You have a computer with **4GB** of RAM and have installed **Windows Vista Service Pack 1***. This is a known issue if your computer has **4GB** of RAM and is running ***Windows Vista Service Pack 1***. To re-enable **Hibernate** mode go to the **Command Prompt** and type the command "**powercfg -h on**" (make sure you are logged on as an Administrator): 1. Click **Start** (menu button). 2. Type "**cmd**" in the **Start Search** box. 3. Double click the **Command Prompt** cmd when it appears in the menu. 4. Type "**powercfg -h on**" in the Command Prompt window. 5. Close the Command Prompt window. 6. The **Hibernate** function will now be enabled.

Problem	Possible Cause - Solution
No sound can be heard from the internal/external speakers/headphones.	*You have plugged in headphones or speakers to the audio jacks at the front of the computer.* Note that the system has two sets of audio jacks as well as internal speakers. **All the audio jacks cannot function at the same time** and are therefore assigned a priority order depending on your audio connections. **Priority 1** = The **audio jacks at the front of the computer**. Thus the audio jacks at the side of the computer and the internal speakers are disabled (e.g if you connect headphones to the headphone-out jack at the front of the computer then speakers/headphones connected to the headphone-out jack at the side of the computer are disabled). **Priority 2** = The **audio jacks at the side of the computer**. Thus the internal speakers are disabled (e.g if you connect speakers to the headphone-out jack at the side of the computer then the internal speakers are disabled). **Priority 3** = The **internal speakers**. If there are no audio connections to any of the audio jacks, then the audio output will default to the internal speakers.

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.

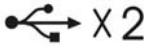
Computer Ports and Jacks

Item	Description
Card Reader Port MMC/SD/MS	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.
COM/Serial Ports COM1 COM2	The COM/serial is a communication interface for data transfer, through which information transfers in or out one bit at a time. This port can be used to connect the computer to devices such as terminals and peripherals.
DC-In Jack DC IN	Plug the supplied AC/DC adapter into this jack to power your computer.
e-SATA Port eSATA	Plug external Serial ATA hard drives into this **e-SATA** (**external Serial Advanced Technology Attachment**) port. Not: The eSATA port only supports hot-swapping if you have selected **AHCI** mode in ***SATA Mode Selection in the BIOS*** (see ***"SATA Mode & eSata Port" on page 5 - 10***), enabled DOFORM support (see ***"DFOROM (Robson) Support (Advanced Menu > SATA Mode Selection [AHCI]" on page 5 - 10***) and installed the Intel Matrix Storage driver (see ***"Intel Turbo Memory & Matrix Storage Setup and Driver Installation" on page 7 - 24***). If you have selected ***IDE*** mode, then hot-swapping devices connected to the eSATA port is not supported. Note that hot-swapping is NOT supported in the ***Windows XP*** O/S.

Item	Description
External Monitor (VGA) Port 	This port allows you to connect an external monitor, or Flat Panel Display, to get dual video or simultaneous display on the LCD and external monitor/FPD (see ***"Configuring Other Displays from Intel® GMA Driver for Mobile" on page B - 6***).
HDMI-Out Port HDMI	The HDMI-Out (**High-Definition Multimedia Interface**) is an audio/video connector interface for transmitting uncompressed digital streams. This allows you to connect an external monitor, TV or Flat Panel Display etc. as a display device (see ***"Attaching Other Displays" on page B - 5***) by means of a HDMI cable. **Note that HDMI carries both audio and video signals**. Note the HDMI configuration for audio output (see ***"HDMI Audio Configuration" on page B - 7***).
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
Mini-IEEE 1394 Port 	This allows high-speed connection to various peripheral devices, e.g. external disk drives and digital cameras (**see note below**).  **IEEE 1394** The Mini-IEEE 1394 ports only support **SELF POWERED** IEEE 1394 devices.
RJ-11 Phone Jack 	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.
RJ-45 LAN Jack 	This port supports LAN (Network) functions. **Note**: Broadband (e.g. ADSL) modems usually connect to the LAN port.
Security Lock Slot 	To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.
S/PDIF-Out Jack 	This S/PDIF (Sony/Philips Digital Interface Format) Out Jack allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for “5.1” or ‘dts’ surround sound.

Item	Description
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).

Appendix B: Intel Video Driver Controls

The basic settings for configuring the LCD are outlined in *"Video Features" on page 1 - 14*.

Intel Video Driver Installation

Make sure you install all the drivers in the order indicated in *Table 4 - 1, on page 4 - 3*.

Video

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
1. Click **2.Install Video Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much system memory (RAM) as needed to the video system (**the video driver must be installed**). DVMT returns whatever memory is no longer needed to the operating system.

DVMT Notes

DVMT is not local video memory.

DVMT is not user-configurable.

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

Taskbar Icon

The **Intel GMA** control panel can also be accessed by clicking the icon in the taskbar and selecting **Graphics Properties** from the menu.

If you cannot see the tray icon click the "**Show Tray Icon**" tickbox in the **Intel(R) Graphics Media Accelerator for Mobile** tab.

Intel Graphics Properties

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

1. Open the **Display Settings** control panel (see *"Video Features" on page 1 - 14*) and click **Advanced Settings** (button).
2. Click the **Intel(R)...** tab and click **Graphics Properties** (button).

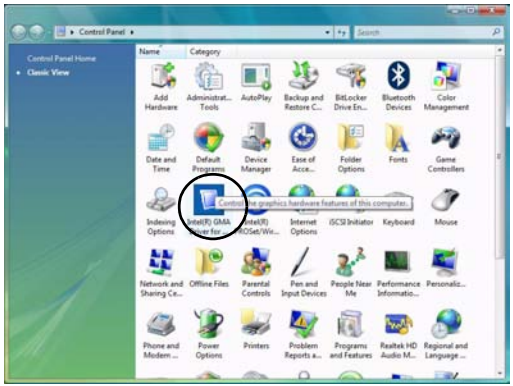
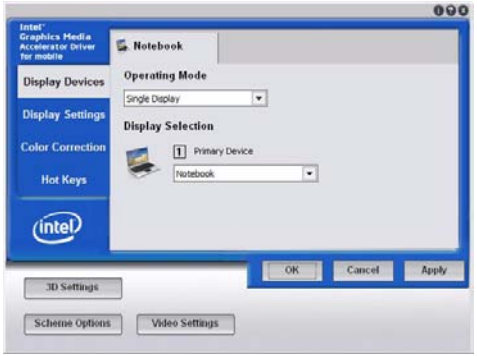
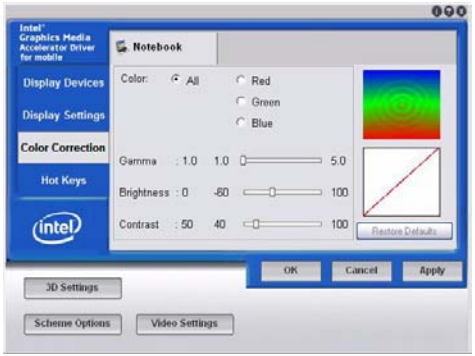
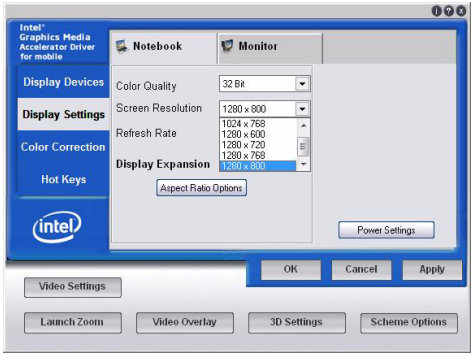


Figure B - 1
Intel Graphics Properties

You may make changes to the devices, color, schemes, **Hot Keys** etc. by clicking the appropriate menu item or button.







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.

Display Selection

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

Figure B - 2
Intel Graphics Media Accelerator Driver for mobile (Control Panel Tabs)

B

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.

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 **Display Settings** control panel and click **Advanced Settings** (button).
2. Click the **Intel(R)...** tab and click **Graphics Properties** (button).
3. Configure your display configuration, resolution etc. as per your requirements from **Display Settings**.
4. Click on **Scheme Options** (button).
5. Type a name for the scheme then click **Save**.
6. If you want to automatically launch an application when the scheme is applied, click the tickbox ("**Automatically launch an application when the scheme is applied**") and then click on **Browse** (button).
7. **Browse** to the executable file for the application you want to set the scheme for (see sidebar), and click **Open** to select it.
8. Click **Save (Save > OK)** 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).
9. Click **OK** to exit the window.
10. Click the taskbar icon and **Select Scheme** to run the scheme.

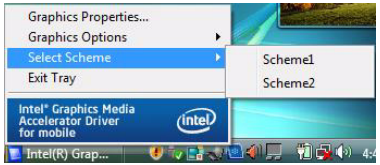


Figure B - 3
Select Scheme

Attaching Other Displays

Besides the built-in LCD you can also use an external monitor/flat panel display/TV (TV through HDMI-Out port only), connected to the external monitor port or to the HDMI-Out port (High-Definition Multimedia Interface) as your 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 or HDMI-Out port (**Single Display**).
2. The built-in LCD **AND** an external monitor/flat panel display connected to the external monitor port or HDMI-Out port (**Multiple Display**).

HDMI

Note that **HDMI** supports video and **audio** signals (see page ***B - 7***).

Configuring Other Displays from Windows Vista

1. Attach your external display to the external monitor port or HDMI-Out port, and turn it on.
2. Go to the **Windows Mobility Center** control panel (**Mobile PC > Adjust commonly used mobility settings**) and click ***Connect display***.
3. Click on any of the buttons to configure the displays to your preference, or click **Display Settings** to access the control panel.

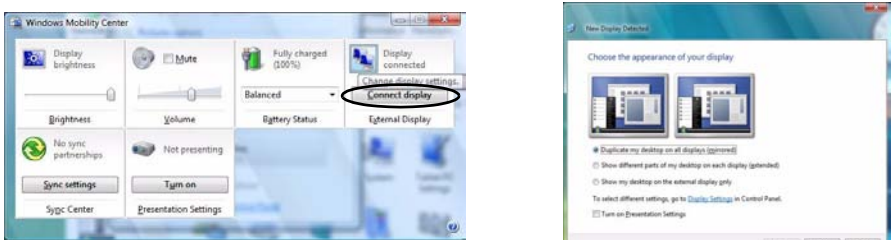


Figure B - 4
Windows Mobility Center & New Display Detected

Display Selection

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

Configuring Other Displays from Intel® GMA Driver for Mobile

1. Attach your external display to the external monitor port or HDMI-Out port, and turn it on.
2. Go to the **Intel(R) GMA Driver for mobile** control panel (see *"Intel Graphics Properties" on page B - 2*) and click **Display Devices**.
3. Click to choose the display mode from the **Operating Mode** menu.
4. Choose which device is to be the **Primary Device/Secondary Device** from the **Display Selection** menu.
5. Click **Apply** (and **OK** to confirm the settings change) and **OK** (button).

Figure B - 5
Display Devices

HDMI Audio Configuration

As HDMI (High-Definition Multimedia Interface) carries both **audio** and video signals you will need to configure the audio output as per the instructions below.

Windows Audio Setup for HDMI

1. Connect a device with HDMI support to the HDMI-Out port.
2. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
3. Click **Sound** (**Hardware and Sound**).
4. Click **Playback** (tab), and click to select **HDMI Device**.
5. Click **Set Default** (button).
6. Click **OK** to close the **Sound** control panel.

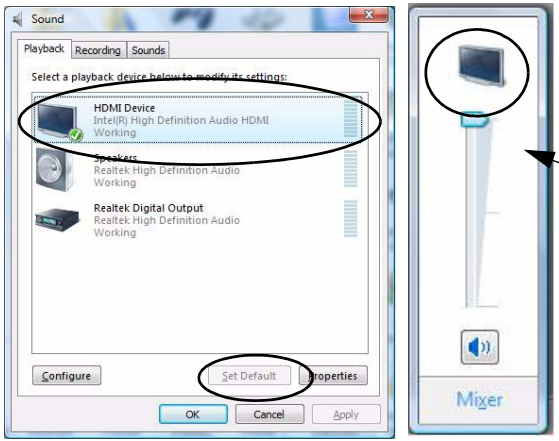


Figure B - 6
HDMI Device

Click the taskbar volume indicator when **HDMI Device** is selected, and you will note that the icon at the top of the volume level indicator has changed.

Other Applications

If you are using a third party application to play DVDs etc. you will need to consult the application's documentation to see the appropriate audio configuration (the application must support digital to analog translation).

HDMI Notes

- Connect a device with HDMI support to the HDMI-Out port **BEFORE** attempting to play audio/video sources through the device.
- If you disconnect the HDMI cable the default audio playback device will not revert to speakers until the computer is restarted (if you do not wish to restart the computer then go to the **Sound** control panel and select **Speakers** as the default audio playback device).

HDMI Video Configuration

1. Connect an HDMI cable from the HDMI-Out port to your external display.
2. Configure your external display as per the instructions in ***"Configuring Other Displays from Intel® GMA Driver for Mobile" on page B - 6***.
3. Set up your external display (TV or LCD) for HDMI input (see your display device manual).
4. You can now play video/audio sources through your external display.

Display Modes

Single Display

Only one of your attached displays is used.

Intel(R) Dual Display Clone (mirrored)

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.

Extended Desktop (extended)

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** control panel to drag the monitors to match the physical arrangement you wish to use, or you may also use the **Extended Desktop Settings** control panel tab in **Graphics Properties** to configure the relative size and position.

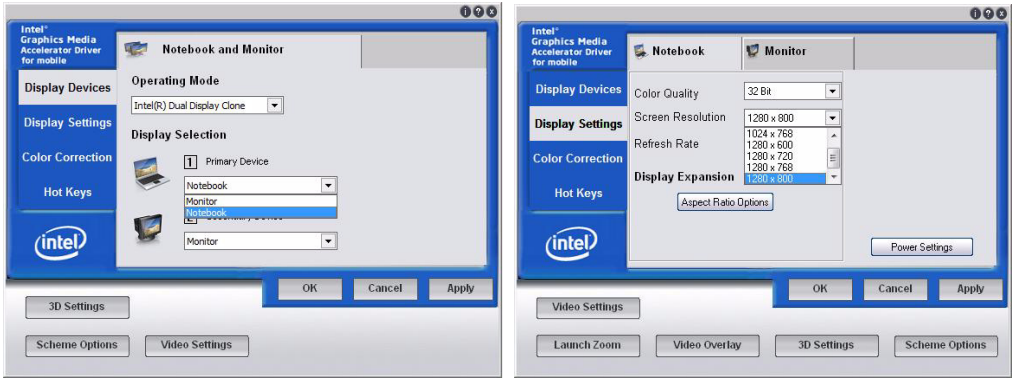
Video Settings

Click **Video Settings** (button) in the **Intel(R) GMA Driver for mobile** control panel to access settings for **Video Quality, Color Control** and **Video Scaling**.

To Enable Intel(R) Dual Display Clone

1. Attach your external display to the external monitor port or HDMI-Out port, and turn it on.
2. Go to the **Intel(R) GMA Driver for mobile** control panel (see ***"Intel Graphics Properties" on page B - 2***) and click **Display Devices**.
3. Click to choose **Intel(R) Dual Display Clone (Operating Mode)**.
4. Choose which device is to be the **Primary Device/Secondary Device** from the **Display Selection** menu.
5. Click **Apply**, and **OK** to confirm the settings change.
6. Click **Display Settings** to adjust the settings for the attached devices.

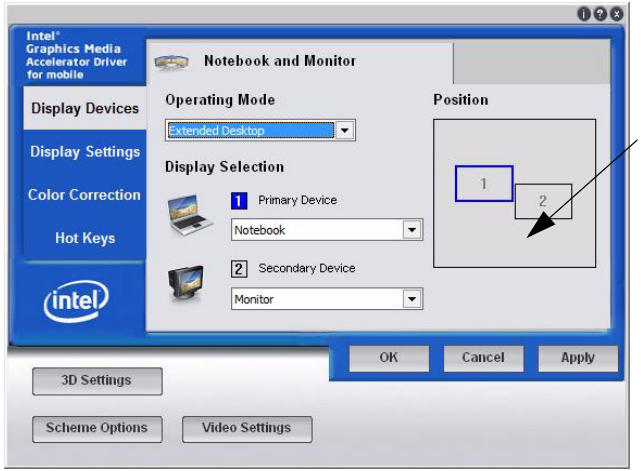
Figure B - 7
Display Devices & Settings



B

To Enable Extended Desktop

1. Attach your external display to the external monitor port or HDMI-Out port, and turn it on.
2. Go to the **Intel(R) GMA Driver for mobile** control panel (see ***"Intel Graphics Properties" on page B - 2***) and click **Display Devices**.
3. Click to choose **Extended Desktop (Operating Mode)**.
4. Choose which device is to be the **Primary Device/Secondary Device** from the **Display Selection** menu.
5. Click **Apply**, and **OK** to confirm the settings change.
6. 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.

Display Settings Extended Desktop

You can have different **Color Quality**, **Screen Resolution** and **Refresh Rate** settings for each display device provided your device 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 B - 8
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.

Using Windows Vista to Enable Extended Mode

1. Attach your external display to the external monitor port or HDMI-Out port, and turn it on.
2. If a **New Display Detected** window does not appear in ***Windows Vista***, go to the **Windows Mobility Center** control panel (**Mobile PC > Adjust commonly used mobility settings**) and click ***Connect display***.
3. Click to select ***Show different parts of my desktop on each display (extended)***.
4. Click **Right** or **Left** under **Extend your desktop**.
5. Click **Apply > OK**.

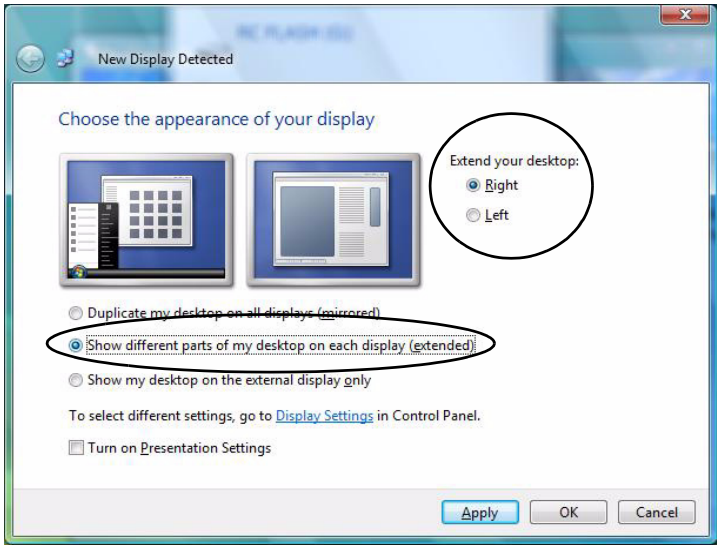
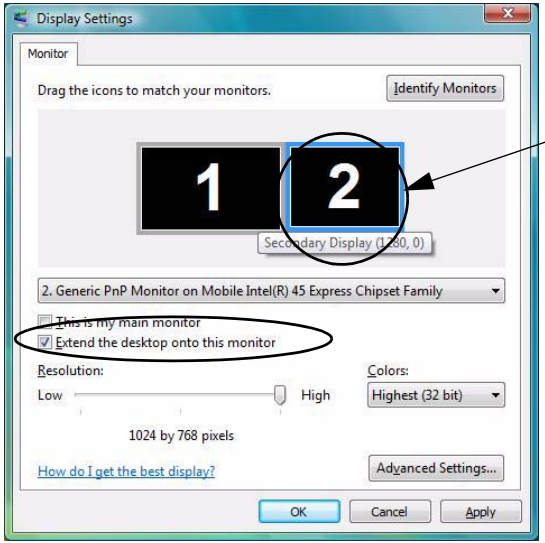


Figure B - 9
Display Properties (Extended Desktop)

Using Display Settings to Enable Extended Mode

1. Attach your external display to the external monitor port or HDMI-Out port, and turn it on.
2. Open the **Display Settings** control panel (see *"Video Features" on page 1 - 18*).
3. Click the monitor icon (e.g. 2), and make sure you have checked "**Extend the 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 Display 1 is on the left, the Secondary Display 2 is on the right.

Figure B - 10
Display Properties (Extended Desktop)

B

Appendix C: 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.

Feature	Specification	
Processor	Intel® Core™2 Duo Processor (478-pin) Micro-FC-PGA Package, Socket P TDP: 35W **T9400/ T9600**	45nm (45 Nanometer) Process Technology 6MB On-die L2 Cache & 1066MHz FSB **2.53/ 2.8 GHz**
	Intel® Core™2 Duo Processor (478-pin) Micro-FC-PGA Package, Socket P TDP: 25W **P9500**	45nm (45 Nanometer) Process Technology 6MB On-die L2 Cache & 1066MHz FSB **2.53 GHz**
	Intel® Core™2 Duo Processor (478-pin) Micro-FC-PGA Package, Socket P TDP: 25W **P8400/ P8600**	45nm (45 Nanometer) Process Technology 3MB On-die L2 Cache & 1066MHz FSB **2.26/ 2.40** GHz
Core Logic	Intel GM45 + ICH9M Chipset	
LCD	19" WXGA+ (1440*900) Flat Panel TFT Hard Glass (**Factory Option**) Touch Panel (**Factory Option**)	
Memory	Two 200 Pin SO-DIMM Sockets Supporting **DDRII (DDR2**) 667 MHz/ 800 MHz 64-bit Wide DDRII (DDR2) Data Channel Memory Expandable up to 4GB (1024/ 2048 MB **DDRII** Modules)	

Feature	Specification	
Video Adapter	**Intel GM45 Integrated Video** Intel® Gen 5.0 Integrated Graphics Engine Integrated High Definition Multimedia Interface (**HDMI**) Supports DirectX10 3D Graphics Engine Accelerator	
BIOS	One 32Mb Flash ROM	Phoenix™ BIOS
Storage	One Changeable 12.7mm(h) Optical Device (CD/DVD) Type Drive (see *"Optional" on page C - 5* for drive options) with SATA (Serial) Interface Changeable 2.5" 9.5 mm (h) HDD with SATA (Serial) Interface	
Audio	Intel High Definition Audio Interface (HDA) 3D Stereo Enhanced Sound System Sound-Blaster PRO™ Compatible	S/PDIF Digital Output 2 * Built-In Speakers
Security	Security (Kensington® Type) Lock Slot	BIOS Password
Keyboard	Standard USB Keyboard (**Option**) or RF Keyboard with Receiver (**Option**)	
Interface	Five USB 2.0 Ports (Three for VESA Support) One HDMI-Out Port One Headphone-Out Jack One Microphone-In Jack One S/PDIF Output Jack One eSATA Port (IDE mode only and does not support	One RJ-11 Jack for Plug & Play Fax/Modem One RJ-45 Jack for 10Mb/ 100Mb Fast Ethernet One DC-in Jack One External Monitor Port One Mini-IEEE 1394a Port One Line-In Jack Two COM Ports

Feature	Specification
Card Reader	Embedded 7-in-1 Card Reader (MS/ MS Pro/ SD/ Mini SD/ MMC/ RS MMC/ MS Duo) **Note:** MS Duo/ Mini SD/ RS MMC Cards Require a PC Adapter
ExpressCard Slot	ExpressCard/34/54 Slot
Mini-Card Slots	One Mini-Card Slot for **Wireless LAN Module**
Communication	Built-In 56K MDC Plug & Play Fax/Modem v.90/92 Compliant Built-In Gigabit Ethernet LAN Bluetooth 2.0 + EDR (Enhanced Data Rate) Module (**Factory Option**) 1.3M or 2.0M Pixel USB PC Camera Module (**Factory Option**) **Wireless LAN Module Options:** Intel® WiFi Link 5300 Series (3*3 - 802.11a/g/n) Wireless LAN Mini-Card Module (**Option**) Intel® WiFi Link 5100 Series (1*2 - 802.11a/g/n) Wireless LAN Mini-Card Module (**Option**) 3rd Party 802.11b/g Wireless LAN MiniCard Module with USB Interface (**Option**)
Power Management	Supports ACPI 3.0 Supports Wake on LAN Supports Resume from Modem Ring
Power	Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 4.74A (**90** Watts)
Environmental Spec	Temperature Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C Relative Humidity Operating: 20% ~ 80% Non-Operating: 10% ~ 90%

Feature	Specification	
Dimensions & Weight	450mm (w) * 312mm (d) * 66.5mm (h)	11kg
Optional	Combo Drive Module DVD Dual (Super Multi) Drive Module **Wireless LAN Module:** Intel® WiFi Link 5300 Series (3*3 - 802.11a/g/n) Wireless LAN Mini-Card Module (**Option**) Intel® WiFi Link 5100 Series (1*2 - 802.11a/g/n) Wireless LAN Mini-Card Module (**Option**) 3rd Party 802.11b/g Wireless LAN MiniCard Module with USB Interface (**Option**)	1.3M or 2.0M Pixel USB PC Camera Module (**Factory Option**) Bluetooth 2.0 + EDR (Enhanced Data Rate) Module (**Factory Option**)

C

Appendix D: Windows XP Information

This Appendix contains information (including control panel information, driver installation etc.) for users of the ***Windows XP OS***.

DVD Regional Codes

Changing DVD Regional Codes

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

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.

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 D - 1 **- DVD Region Codes**

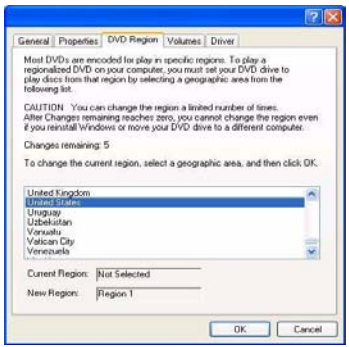


Figure D - 1 **- DVD Regions**

D

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. You can customize the look of the **Start** menu by right-clicking the **Start** menu and selecting **Properties** from the menu.

Figure D - 2 **- 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. To see all controls it may be necessary to toggle off Category View.

Audio Features

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

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 function keys on the computer). Click the Volume icon on the taskbar to check the setting.

Figure D - 3 **- Realtek Audio Configuration Menus**

Audio Jacks

Note that the system has two sets of audio jacks as well as internal speakers. **All the audio jacks cannot function at the same time** and are therefore assigned a priority order depending on your audio connections.

- **Priority 1** = The **audio jacks at the front of the computer**. Thus the audio jacks at the side of the computer and the internal speakers are disabled (e.g if you connect headphones to the headphone-out jack at the front of the computer then speakers/headphones connected to the headphone-out jack at the side of the computer are disabled).
- **Priority 2** = The **audio jacks at the side of the computer**. Thus the internal speakers are disabled (e.g if you connect speakers to the headphone-out jack at the side of the computer then the internal speakers are disabled).
- **Priority 3** = The **internal speakers**. If there are no audio connections to any of the audio jacks, then the audio output will default to the internal speakers.

Video Features

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.

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 D - 4 on page D - 7*).
5. Click the arrow, and scroll to the preferred setting in **Color quality** 2 (*Figure D - 4 on page D - 7*).
6. You can also access **Display Properties** by right-clicking the desktop and scrolling down and clicking **Properties**. Click **Settings** (tab) and adjust as above.
7. Open the **Display Properties** control panel, and click **Advanced** (button) 3 (*Figure D - 4 on page D - 7*) to bring up the Advanced properties tabs.
8. Click the **Intel(R) Graphics Media Accelerator Driver for Mobile** tab, and click **Graphics Properties** (button) to make any video adjustments you require.
9. You can also access **Graphics Properties** from the ***Windows*** **Intel(R) GMA Driver for Mobile** control panel, or from the taskbar icon  .

Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much system memory (RAM) as needed to the video system (**the video driver must be installed**). DVMT returns whatever memory is no longer needed to the operating system.

Display & Graphics Properties

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 for Mobile** tab and click the "**Show Tray Icon**" tickbox. Alternatively right-click the desktop and select **Graphics Options > Tray Icon > Enable**.

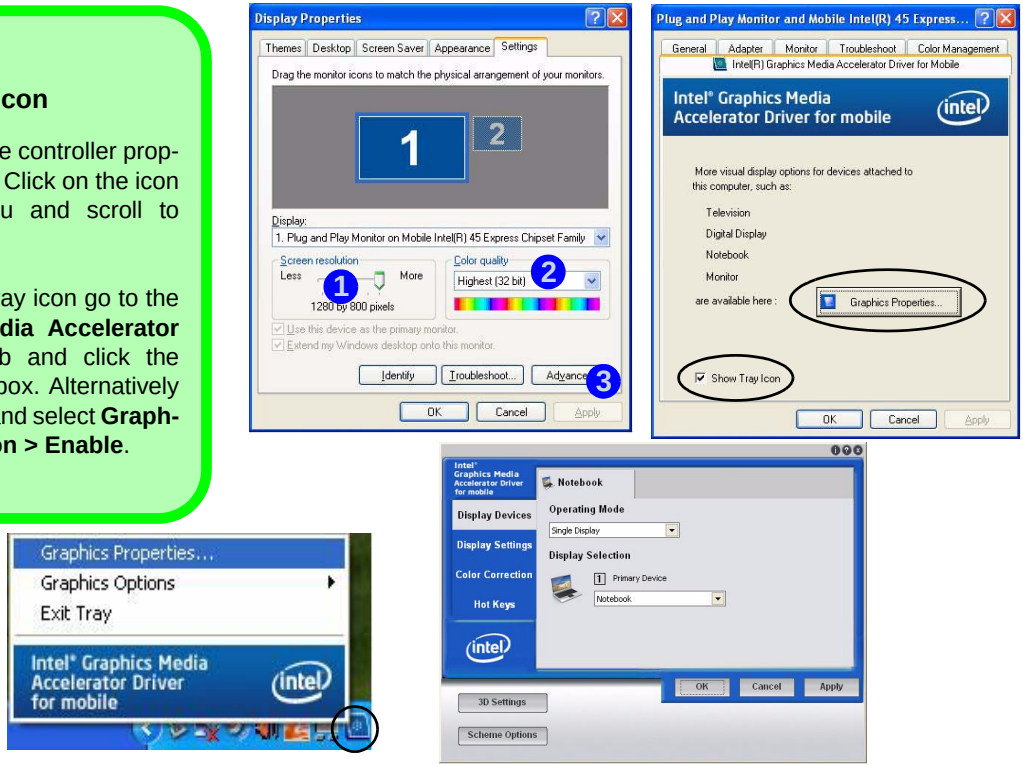
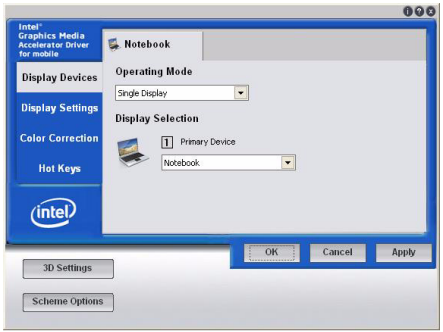


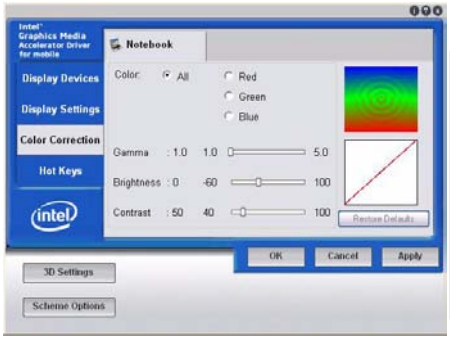
Figure D - 4 **- Display & Graphics Properties**

D

Windows XP Information

You may make changes to the devices, color, schemes, **Hot Keys** etc. by clicking the appropriate menu item or button.





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.

Figure D - 5 **- Intel GMA Driver for Mobile**

Display Devices & Options

Besides the built-in LCD, you can also use an **external VGA monitor** (CRT) or **external Flat Panel Display** as your display device. A VGA monitor/Flat Panel Display connects to the external monitor port. The following display modes are available.

Intel Display Mode	Description
Single Display	One of the connected displays is used as the display device
Multiple Display - Intel(R) Dual Display Clone	Both connected displays output the same view and may be configured independently
Multiple Display - Extended Desktop	Both connected displays are treated as separate devices, and act as a virtual desktop

Figure D - 6 **- Display Options**

Display Selection

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

Attaching Other Displays

If you prefer to use a monitor or flat panel display, connect it to the external monitor port on the left of the computer.

1. Attach your external display to the external monitor port, and turn it on.
2. Go to the **Intel(R) GMA Driver for mobile** control panel and click **Display Devices**.
3. Click to choose the display option from the **Operating Mode** menu.
4. Click **Apply**, and **OK** to confirm the settings change.

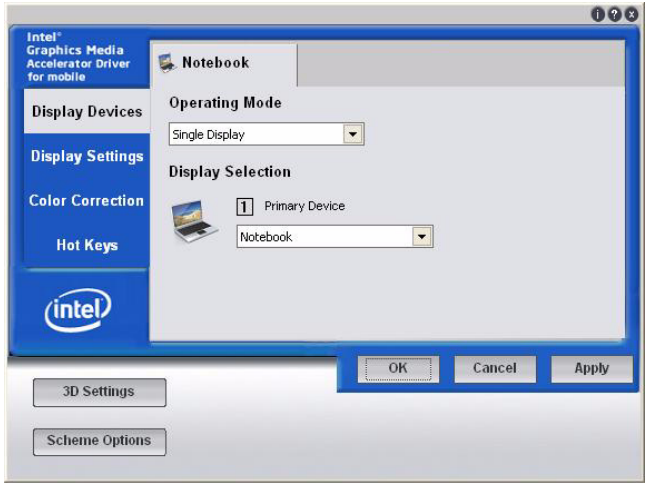


Figure D - 7
Display Devices

To Enable Intel(R) Dual Display Clone (Intel GMA)

1. Attach your external display to the external monitor port, and turn it on.
2. Go to the **Intel(R) GMA Driver for mobile** control panel and click **Display Devices**.
3. Click to choose **Intel(R) Dual Display Clone** (**Operating Mode**).
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.

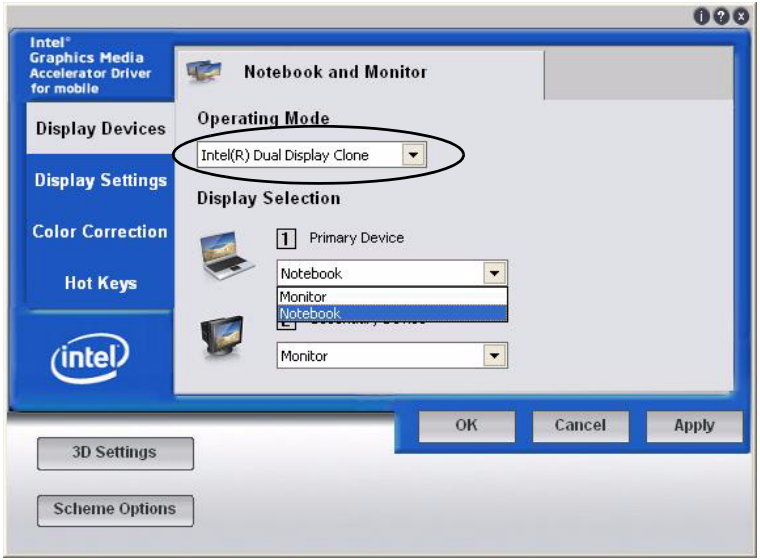


Figure D - 8 **- Display Devices - Intel(R) Dual Display Clone**

D

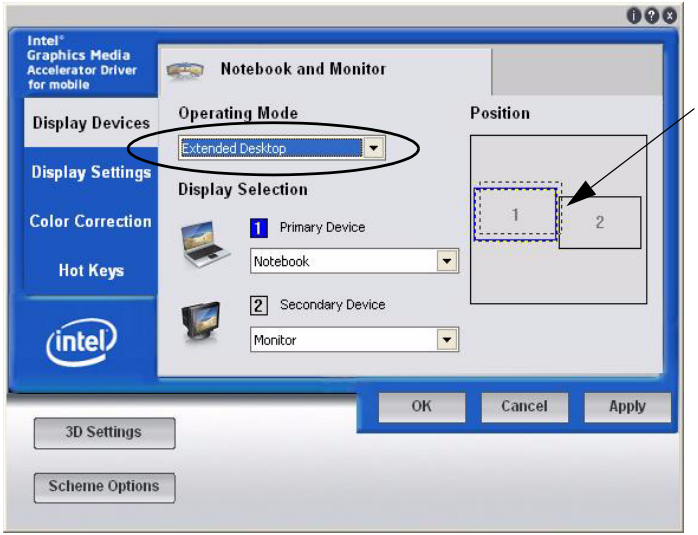
To Enable Extended Desktop (Intel GMA)

1. Attach your external display to the external monitor port, and turn it on.
2. Go to the **Intel(R) GMA Driver for mobile** control panel and click **Display Devices**.
3. Click to choose **Extended Desktop** (**Operating Mode**).
4. Click **Apply**, and **OK** to confirm the settings change.
5. Click **Display Settings** to adjust the settings for the attached devices.

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.



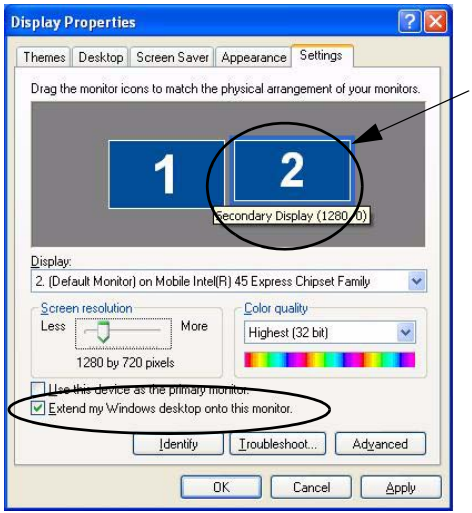
Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the Secondary Device may be extended left/right/above/below the Primary Device).

Click Display Settings to make any adjustments required.

Figure D - 9 **- Display Devices - Extended Desktop**

To Enable Extended Desktop (Windows 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 Display 1 is on the left, the Secondary Display 2 is on the right.

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 D - 10 **- Display Properties (Extended Desktop)**

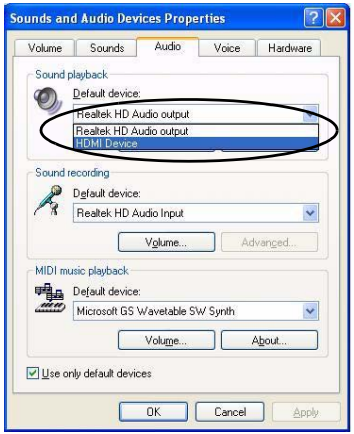
HDMI Audio Configuration

As HDMI (High-Definition Multimedia Interface) carries both **audio** and video signals you will need to configure the audio output as per the instructions below.

Windows Audio Setup for HDMI

1. Connect a device with HDMI support to the HDMI-Out port.
2. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices** icon (**Sounds, Speech, and Audio Devices** in Category View).
3. Click **Audio (tab)**.
4. Click **Default device** (**Sound Playback**) and select **HDMI Device**.
5. Click **OK** to close the control panel (see overleaf).

Figure D - 11
Sounds and Audio Devices Properties



HDMI Notes

- Connect a device with HDMI support to the HDMI-Out port **BEFORE** attempting to play audio/video sources through the device.
- If you disconnect the HDMI cable the default audio playback device will not revert to speakers until the computer is restarted (if you do not wish to restart the computer then go to the **Sound** control panel and select **Speakers** as the default audio playback device).

HDMI Video Configuration

1. Connect an HDMI cable from the HDMI-Out port to your external display.
2. Configure your external display as per the instructions in ***"Attaching Other Displays" on page D - 10***.
3. Set up your external display (TV or LCD) for HDMI input (see your display device manual).
4. You can now play video/audio sources through your external display.

Other Applications

If you are using a third party application to play DVDs etc. you will need to consult the application's documentation to see the appropriate audio configuration (the application must support digital to analog translation).

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 D - 18*).

Resuming Operation

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

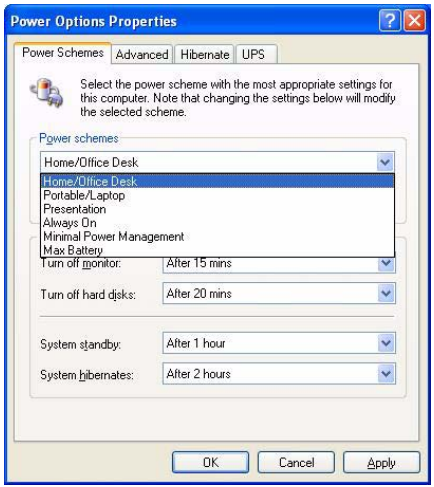


Figure D - 12
Power Schemes

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

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 D - 20*** 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 D - 13 on page D - 19***).

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

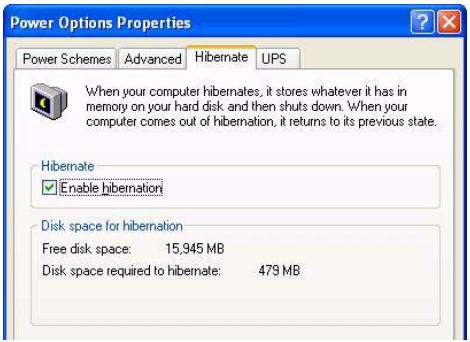
If you want to stay away from your work for just a while, you can put the system on standby instead of in hibernation. It takes a longer time to wake up the system from **Hibernate** mode than from **Standby** mode.

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:

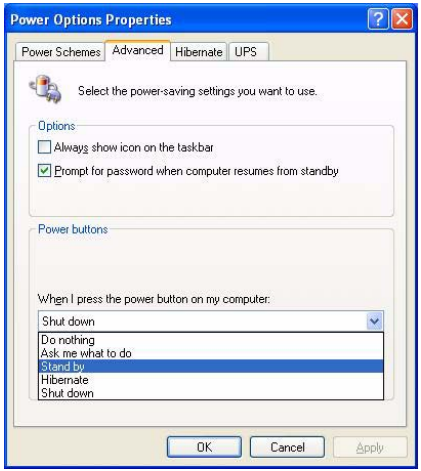
- Pressing the power button
- An alarm resume that is enabled and expires
- An incoming call received on the modem (if enabled)
- Network card activity (if enabled)

Figure D - 13
Enable Hibernation

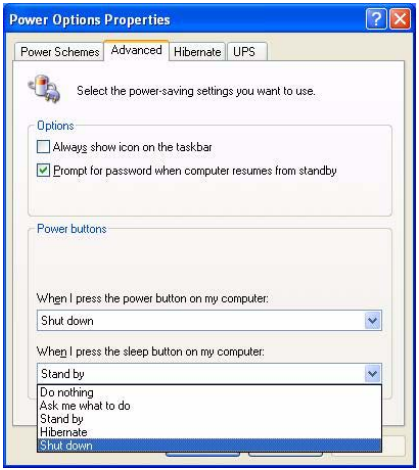
Configuring the Power Button

The power button may be set to send the computer in to either **Standby** or **Hibernate** mode. In **Standby** mode, the Power LED will blink green. In **Hibernate** the LED will be orange. If the only the display is turned off, the LED will remain green.

Figure D - 14
Power Options (Advanced - Power Buttons)



Power Button



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

Driver Installation

Insert the ***Device Drivers & Utilities + User's Manual CD-ROM***, click ***Install Drivers/Option Drivers*** (button) and then click the appropriate driver name from the ***Drivers Installer*** menu. Follow the instructions to install the driver. Alternatively click **Start**, navigate (**Browse..**) to the executable file and then follow the manual setup instructions.

Figure D - 15 **- Drivers Installer Screen 1**

1. Check the driver installation order from ***Table 5*** (**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, after installing each driver it will become greyed out (if you need to reinstall any driver, click the **Unlock** button).
3. Follow the instructions for each individual driver installation procedure as listed on the following pages.

Figure D - 16 **- Drivers Installer Screen 2**

WinXP SP2 Driver	Page #
Chipset	*Page D - 23*
Video	*Page D - 23*
Audio	*Page D - 23*
Modem	*Page D - 24*
LAN	*Page D - 24*
CardReader	*Page D - 24*
Hot Key	*Page D - 24*
Wireless LAN Module	*Page D - 25*
PC Camera Module	*Page D - 35*
Touch Screen Module	*Page D - 41*

Table 5 **- Driver Installation**

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.

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.

Driver Installation Procedure

Insert the ***Device Drivers & Utilities + User's Manual disc***, click ***Install Drivers/Option Drivers*** (button) and then click the appropriate driver name from the ***Drivers Installer*** menu.

Chipset

1. Click **1.Install Chipset Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish**.

Video

1. Click **2.Install Video Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Audio

1. Click **3.Install Audio Driver > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

Modem

1. Click **4.Install Modem Driver > Yes**.
2. Click **OK**.
3. The modem is ready for dial-up 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 **5.Install LAN Driver > Yes**.
2. Click **Next**.
3. Click **Install > Finish**.
4. The network settings can now be configured.

CardReader

1. Click **6.Install CardReader Driver > Yes**.
2. Click **Next > Install**.
3. Click **Finish**.

Hot Key

1. Click **7.Install Hotkey Utility > Yes**.
2. Click **Next > Install**.
3. Click **Finish > Finish** to restart the computer.

Optional Drivers

See the pages indicated for the driver installation procedures for any modules included in your purchase option. Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Option Drivers*** (button) to access the optional driver menu.

Figure D - 17 **- Optional Drivers**

Bluetooth Module

Note: The operating system is the default setting for Bluetooth control in *WindowsXP*, and does not require a driver. See ***"Bluetooth Module" on page D - 26*** for configuration instructions.

Wireless LAN Module

See the introduction in ***"Wireless LAN Module" on page D - 31***, and check the installation procedure.

PC Camera Module

See the introduction in ***"PC Camera Module" on page D - 35***, and check the installation procedure.

Touch Screen Module

See the introduction in ***"Touch Screen Utility Installation" on page D - 41***, and check the installation procedure.

Bluetooth Module

The operating system's **Bluetooth Devices** control panel is used to configure the Bluetooth settings in ***Windows XP***, and therefore does not require a driver..

Bluetooth Data Transfer

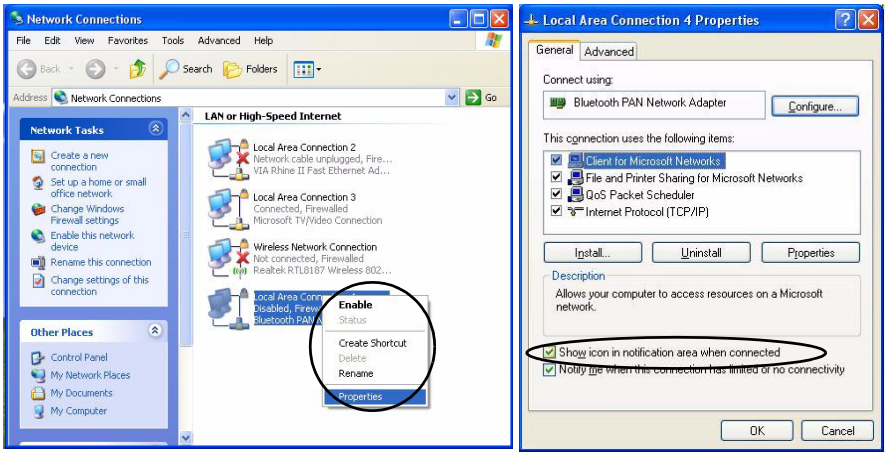
Note that transferring data between the computer and a Bluetooth enabled device is supported **in one direction only (simultaneous data transfer is not supported)**.

Therefore if you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process from the computer has been completed.

Bluetooth Local Area Connection Icon

If you want to display the Local Area Connection icon for the Bluetooth connection in the taskbar, set it up as follows:

1. Access the **Network Connections** control panel in ***Windows*** (**Start > Settings > Network Connections OR Start > Connect To > Show all Connections**) or by clicking the taskbar icon .
2. Right-click the Bluetooth connection icon, and select **Properties**.
3. Click to put a tick (if none is present) in the "***Show icon in the notification area when connected***" box and click **OK**.
4. Close the control panels and the icon for the Bluetooth local area connection will be displayed in the taskbar **when connected** (see sidebar and overleaf).



Bluetooth Taskbar Icon

If you cannot see the Bluetooth icon in the taskbar, access the **Bluetooth Devices** control panel. Click **Options** (tab), and make sure that **Show Bluetooth icon in the notification area** check box has a tick inside it.

Bluetooth Configuration in Windows XP

Setup your Bluetooth Device so the Computer Can Find it

1. Turn your Bluetooth device (e.g. PDA, mobile phone etc.) on.
2. Make the device discoverable (to do this check your device documentation).

To Turn the Bluetooth Module On

1. A Bluetooth icon will appear in the taskbar (see sidebar).
2. You can then do any of the following to access the **Bluetooth Devices** control panel.

- **Double-click** the icon to access the **Bluetooth Devices** control panel.
- Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**), and then click **Bluetooth Devices** (**Network and Internet Connections**).
- **Click/Right-click** the icon and choose an option from the menu.

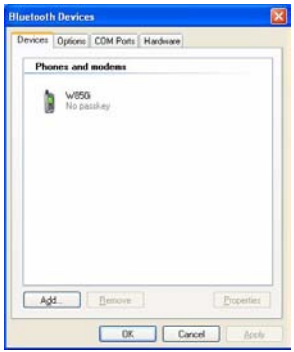


Figure D - 18
Bluetooth Devices & Click Icon Menu

D

To Add a Bluetooth Device

1. Access the Bluetooth Devices control panel.
2. Click **Options** (tab), and make sure that ***Allow Bluetooth devices to connect to this computer*** check box (**Connections**) has a tick inside it.
3. Click **Devices** (tab), and then click **Add**.
4. The **Add Bluetooth Device Wizard** will appear.
5. Click to select "***My device is set up and ready to be found***", and then click **Next**.

Figure D - 19
Add Bluetooth Device Wizard

6. The ***Wizard*** will then search for any available Bluetooth devices within range.
7. Click to select the device you want to communicate with, and click **Next**.
8. Select an appropriate passkey option and click **Next**.

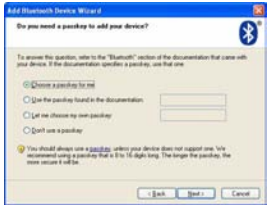


Figure D - 20
Passkey Option

Passkey Options

You can allow the system to choose a passkey for you. You will then be prompted to enter the generated passkey on your Bluetooth device.

9. Click **Finish**.

D

To Change Settings for the Bluetooth Device

1. Access the **Bluetooth Devices** control panel.
2. Click on the device you want to change and click **Properties** to:

- Change the **name** of the device (click **General**, type a new name and click **OK**).
- Enable/Disable a **service** (click **Services**, clear/tick the check box next to the service and click **OK**).

To Make your Computer Discoverable to Bluetooth Devices

1. Access the **Bluetooth Devices** control panel.
2. Click **Options**, and make sure that ***Turn discovery on*** check box (**Discovery**) has a tick inside it.
3. Make sure that ***Alert me when a new Bluetooth device wants to connect*** check box (**Connections**) has a tick inside it, if you want to be notified when a Bluetooth device wants to connect.

Figure D - 21
Bluetooth Devices Options

Wireless LAN Module

If you have included an **Intel® Wi-Fi Link 5100/5300 Series (802.11 a/g/n) WLAN** or **3rd Party 802.11 b/g WLAN** module in your purchase option, install the driver as outlined in the following pages.

Download Prerequisite Files for Intel WLAN

Before beginning the **Intel® Wi-Fi Link 5100/5300 Series** driver installation process for ***Windows XP*** it is necessary to make sure you have a working internet connection. You will then be pointed to download the required Windows Installer 3.1 and Microsoft MSXML 6.0 files.

Intel WLAN Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. **Option Drivers** (button).
3. Click **1.Install WLAN Driver > Yes**.
4. Click **Next > Next** to link to the required prerequisites on the internet.
5. Click **Download** (button) to download the **Windows Installer** executable (.exe) file to the computer's hard disk.
6. Double-click (or click the **Run** button) to install the **Windows Installer** file and follow the on-screen instructions for file installation.
7. You will be required to restart the computer to complete the file installation.
8. Repeat steps **1** to **4** to get to the appropriate download location**.**
9. Click **Download** (button) to download the **Microsoft MSXML** file to the computer's hard disk (if you are unsure of which file to download for you processor you can click **Run** instead of acknowledging the file, and you will be informed if the file is appropriate or not).
10. Follow the on-screen instructions for file installation.
11. After the files have been installed click **Next > Next.**
12. Click the button to accept the license and click **Next > Next > Next**.
13. Click **Finish** to complete the installation.
14. Configure the settings by going to the **Intel PROSet Wireless WiFi Connection Utility** (**Start > Programs/All Programs > Intel PROSet Wireless WiFi Connection Utility**), or by double-clicking the taskbar icon  .
15. Click to select any available network, and click **Connect** to establish a connection.
16. If you do not see your Wireless Access Point click **Refresh** (button).
17. Click **Help** (link) to bring up the **Help** Menu.

18. Make sure that the **WiFi On** button is selected.

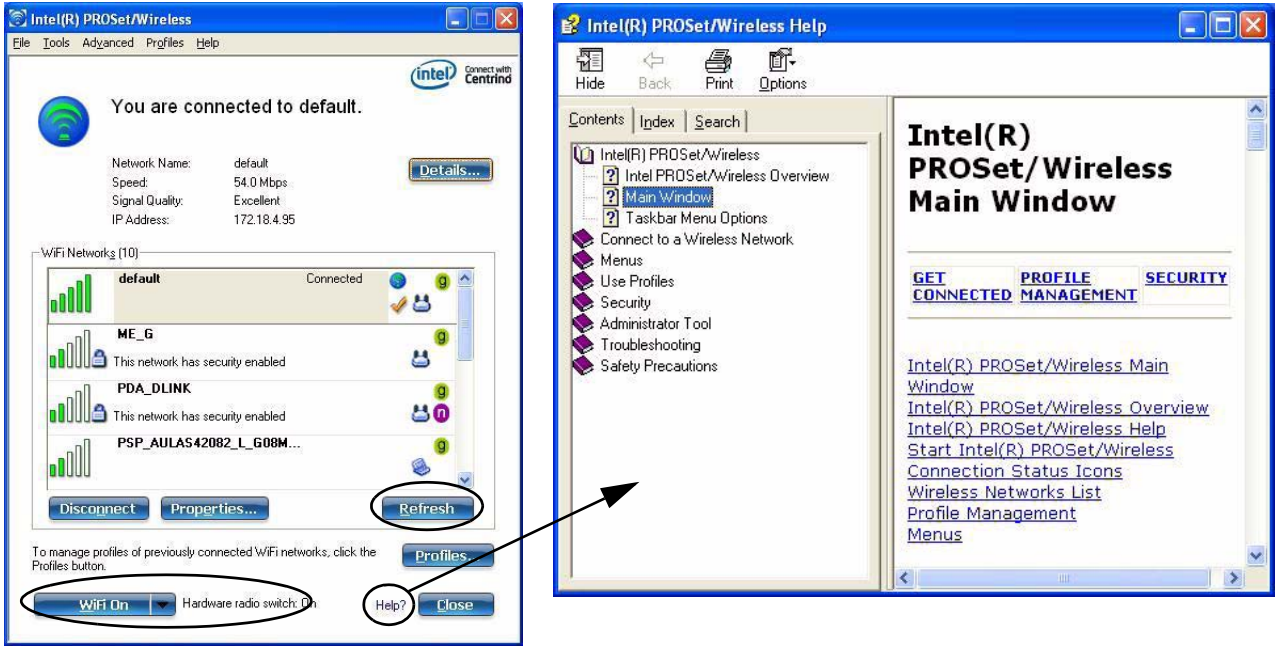


Figure D - 22 **- Intel PROSet Wireless WiFi Connection Utility**

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**).

802.11b/g WLAN Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. **Option Drivers** (button).
3. Click **1.Install WLAN Driver > Yes**.
4. Choose the language you prefer and click **Next**.
5. Click **Next > Install**.
6. Click **Finish** to restart the computer.
7. The operating system is the default setting for Wireless LAN control in ***Windows XP***.
8. Access any available wireless networks from **Network Connections > Wireless Network Connection** menu in ***Windows*** (or click the icon  in the taskbar), and click **View Wireless Connections**.

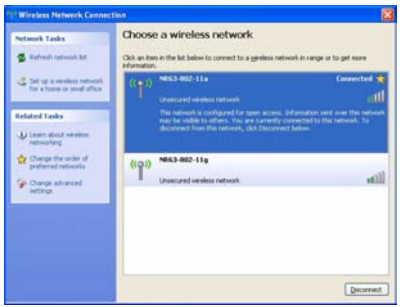


Figure D - 23
Wireless Network Control Panels

D

PC Camera Module

There PC Camera module uses the **BisonCap** application to capture video files.

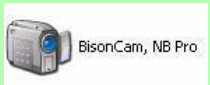
PC Camera Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.Install Camera Driver > Yes**.
4. Choose the language you prefer and click **Next**.
5. Click **Next > Finish** to restart the computer.
6. Run the **BisonCap** application program from the **BisonCam** shortcut on the desktop, or from the **BisonCam** item in the **Start > Programs/All Programs** menu.

Taking Still Pictures

Double-click the **My Computer** icon on the desktop, or go the **Start** menu and point to **My Computer**, then click it.

Double-click the camera icon. Click **Take a new picture** in the **Camera Tasks** box.



PC Camera Audio Setup

If you wish to capture video & **audio** with your camera, it is necessary to setup the audio recording options in ***Windows***.

1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices** icon (**Sounds, Speech, and Audio Devices** in Category View).
2. Click **Advanced** in the **Volume > Device volume** tab.
3. Click **Options** and scroll down and click **Properties**.
4. Select **Realtek HD Audio input** from the **Mixer device** menu.
5. Make sure the **Mic Volume/Front Mic** (check box) is checked, then click **OK**.
6. Select either the **Mic Volume** or **Front Mic and** boost the volume in the **Recording** section (in the Recording Control menu) as high as it will go.
7. Close the **Recording Control** window, and then click **OK**.
8. Run the **BisonCap** application program from the **Start > Programs/All Programs > BisonCam** menu.
9. Go to the **Devices** menu heading and select **Realtek HD Audio Input** (it should have a tick alongside it).
10. Go to the **Capture** menu heading and select **Capture Audio** (it should have a tick alongside it).

BisonCap

BisonCap is a video viewers for general purpose video viewing and testing, and for capturing video files to .avi format.

1. Run the **BisonCap** application from the **Start > Programs/All Programs > BisonCam** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check ***"PC Camera Audio Setup" on page D - 36***) and select **Start Capture**.
3. Click **OK** (the file location will be displayed in the pop-up box) to start capturing the video, and press **Esc** to stop the capture (you can view the file using the **Windows Media Player**).

Set Capture File

Prior to capturing video files you may select the **Set Capture File...** option in the **File** menu, and set the file name and location before capture (this will help avoid accidentally overwriting files). Set the name and location then click **Open**, then set the **"Capture file size:"** and click **OK**. You can then start the capture process as above.

Note the important information in *"Reducing Video File Size" on page D - 38* in order to save file space, and help prevent system problems.

Pre-Allocating File Space

You may pre-allocate the file size (**File > Allocate File Space**) for the capture file in the **BisonCap** program.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

See also ***"Reducing Video File Size" on page D - 38***.

Reducing Video File Size

Note that capturing high resolution video files requires a substantial amount of disk space for each file. After recording video, check the video file size (right-click the file and select **Properties**) and the remaining free space on your hard disk (go to **My Computer**, right-click the hard disk, and select **Properties**) If necessary you can remove the recorded video file to a removable medium e.g. CD, DVD or USB Flash drive.

Note that the ***Windows XP*** system requires a minimum of **1.5GB** of free space on the **C: drive** system partition. In order to prevent system problems it is recommended that you save the captured video file to a location other than the **C: drive** (see ***"Set Capture File" on page D - 37***), limit the file size of the captured video (see ***"Pre-Allocating File Space" on page D - 37***) or reduce video resolution (see below).

To Reduce Video Resolution Output Size:

1. Run the **BisonCap** program.
2. Go to **Options** and scroll down to select **Video Capture Pin...**.
3. Click the **Output Size** drop box and select a lower resolution size in order to reduce the captured file size.

Eliminating Screen Flicker

If you find that the video screen in the **BisonCap** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **BisonCap** program.
2. Go to **Options** and scroll down to select **Video Capture Filter...**.
3. Click either **50Hz** or **60Hz** under **Frequency** in **Property Page** (tab).

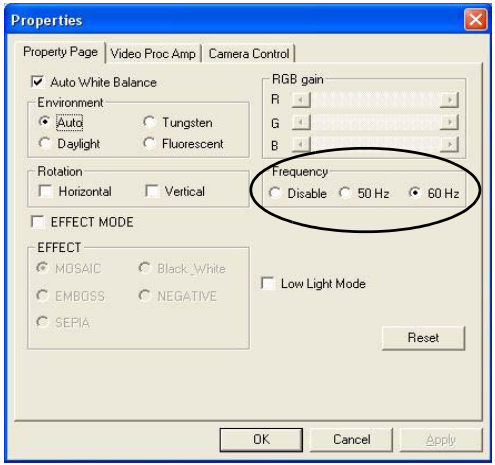


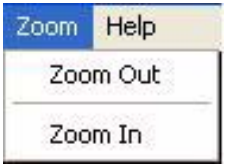
Figure D - 24
Video Capture Filter

Zoom

The **BisonCap** program allows you to zoom the camera in and out.

1. Run the **BisonCap** program.
2. Go to **Zoom** and select **Zoom Out/Zoom In.**
3. Go to **Options** and scroll down to select **Setting** (Use the slider to adjust the zoom level, and click **OK** to save the setting).

Figure D - 25
Zoom/Setting



Taking Still Pictures

The **BisonCap** program allows you to take still pictures.

1. Run the **BisonCap** program.
2. Go to **Options** and select **Take Picture**.
3. The picture (in JPEG format) will be placed in the **Snapshot** folder 

on the desktop.

Snapshot Folder

The Snapshot folder's default location is on the desktop. Do not move this folder or an error may appear when you try to take a still picture.

If you accidentally delete or move the folder, you can create a new Snapshot folder on the desktop in order to capture the files.

Touch Screen Module

If you have included a Touch Screen module in your purchase option, you should obtain a stylus pen to interact with the computer in the same way you would use a mouse (use a stylus pen to tap/double-tap on-screen buttons etc.). Calibrate the touch screen before using your stylus pen. Make sure you install the driver as indicated below.

Touch Screen Utility Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Install TouchScreen Utility > Yes**.
4. Click **Install**.
5. Click **OK** to restart the computer.

Touch Screen Input Device

Do not use any sharp or pointed objects as your input device e.g. the end of a pen or pencil. You should preferably only use a stylus pen (PDA type) as your input device.

Be very careful not to press too hard with the stylus pen when using it as the input device.

Calibrating the Touch Screen

1. Click **Start**, and click **Programs/All Programs** and point to **Touch Utilities** (folder), and then click **Touch Configuration program** (or double-click the desktop icon).
2. Click **Calibration** (button).

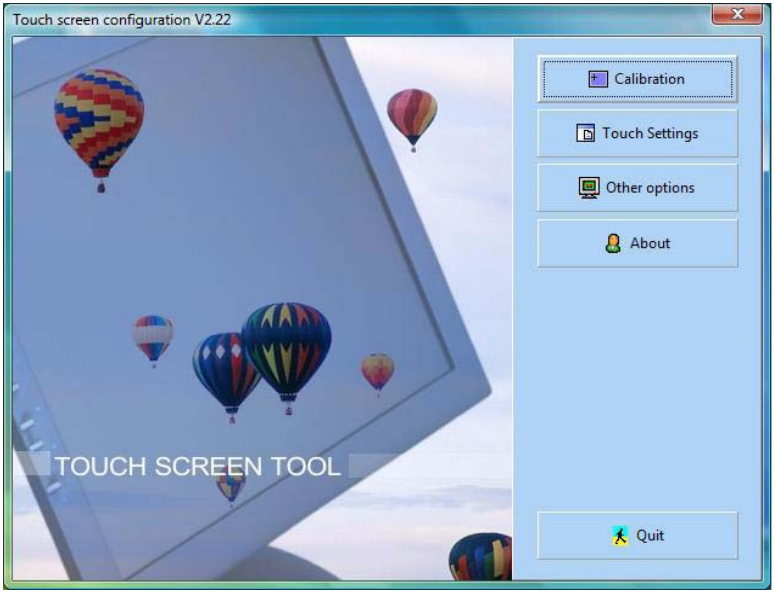


Figure D - 26
Touch Screen Configuration

3. Click to choose the number of points in **Calibration Precision**, and then click **Calibrate** (button).

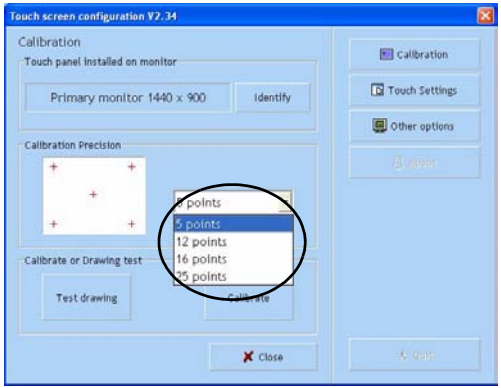


Figure D - 27
Calibration Precision

4. Use the stylus pen to touch the center of the cross sign until the **OK** sign appears in the center of the cross.

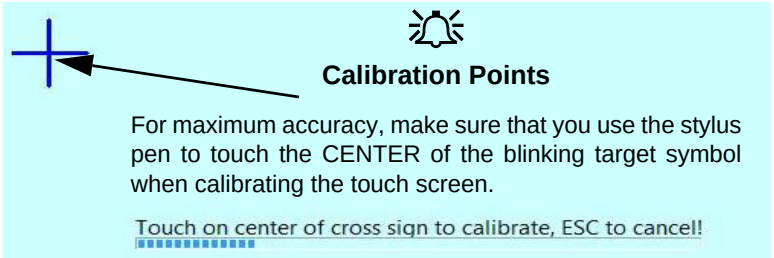


Figure D - 28
Touch On Cross

5. When the **Test Drawing** appears, write on the screen to test the calibration (press the **spacebar** to clear any drawing, or **Esc** to exit).

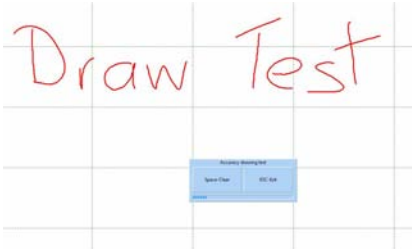


Figure D - 29
Test Drawing

6. Click **Close** to exit Calibration.
7. Click **Touch Settings** (button) to adjust any touch setting (mouse) options.

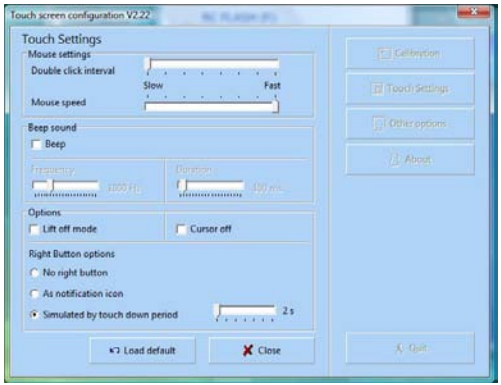


Figure D - 30
Touch Settings

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