USER'S MANUAL

notebook

V10.1.00

Notice

The company reserves the right to revise this publication or to change its contents without notice. Information contained herein is for reference only and does not constitute a commitment on the part of the manufacturer or any subsequent vendor. They assume no responsibility or liability for any errors or inaccuracies that may appear in this publication nor are they in anyway responsible for any loss or damage resulting from the use (or misuse) of this publication.

This publication and any accompanying software may not, in whole or in part, be reproduced, translated, transmitted or reduced to any machine readable form without prior consent from the vendor, manufacturer or creators of this publication, except for copies kept by the user for backup purposes.

Brand and product names mentioned in this publication may or may not be copyrights and/or registered trademarks of their respective companies. They are mentioned for identification purposes only and are not intended as an endorsement of that product or its manufacturer.

©December 2010

Trademarks

Intel and **Intel Core** are trademarks/registered trademarks of Intel Corporation.

R&TTE Directive

This device is in compliance with the essential requirements and other relevant provisions of the R&TTE Directive 1999/5/EC.

This device will be sold in the following EEA countries: Austria, Italy, Belgium, Liechtenstein, Denmark, Luxembourg, Finland, Netherlands, France, Norway, Germany, Portugal, Greece, Spain, Iceland, Sweden, Ireland, United Kingdom, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Slovakia, Poland, Slovenia.

EuP-Standby and Off Mode Power Consumption Statement:

The figures below note the power consumption of this computer in compliance with European Commission (EC) regulations on power consumption in off mode or standby mode:

* Standby Mode   < 2W
* Off Mode   < 1W

CE Marking

This device has been tested to and conforms to the regulatory requirements of the European Union and has attained CE Marking. The CE Mark is a conformity marking consisting of the letters "CE". The CE Mark applies to products regulated by certain European health, safety and environmental protection legislation. The CE Mark is obligatory for products it applies to: the manufacturer affixes the marking in order to be allowed to sell his product in the European market.

This product conforms to the essential requirements of the R&TTE directive 1999/5/EC in order to attain CE Marking. A notified body has determined that this device has properly demonstrated that the requirements of the directive have been met and has issued a favorable certificate of expert opinion. As such the device will bear the notified body number 0560 after the CE mark.

The CE Marking is not a quality mark. Foremost, it refers to the safety rather than to the quality of a product. Secondly, CE Marking is mandatory for the product it applies to, whereas most quality markings are voluntary.

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:

• **Model A** - Full Range AC/DC Adapter - AC Input 100 - 240V, 50 - 60Hz, DC Output 19V, 9.47A (**180W**) minimum.
• **Model B** - Full Range AC/DC Adapter - AC Input 100 - 240V, 50 - 60Hz, DC Output 19V, 6.3A (**120W**) minimum.
• **Model C** - Full Range AC/DC Adapter - AC Input 100 - 240V, 50 - 60Hz, DC Output 19V, 11.57A (**220W**) minimum.

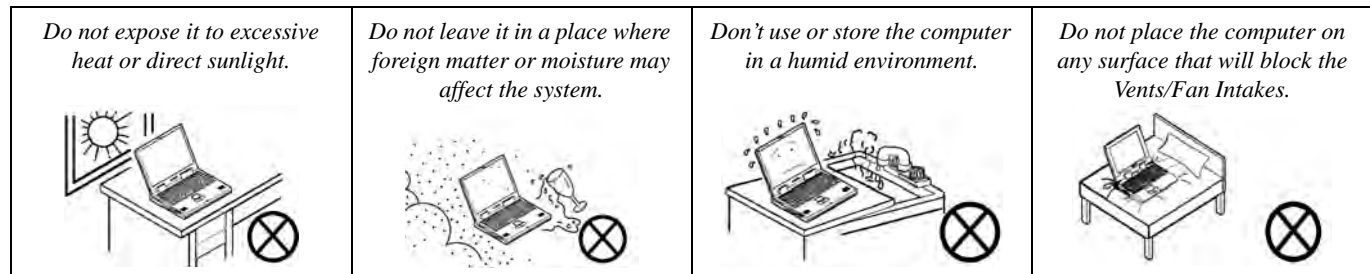## This Computer's Optical Device is a Laser Class 1 Product

Instructions for Care and Operation

The notebook 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.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*

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.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface that will block the Vents/Fan Intakes.*

3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.

4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*

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

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*

Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC/DC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- 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 (i.e. AC/DC adapter or car adapter).
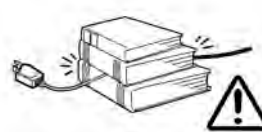
> ☼
> **Power Safety Warning**
> Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

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.*

Polymer Battery Precautions

Note the following information which is specific to polymer batteries only, and where applicable, this overrides the general battery precaution information overleaf.

- Polymer batteries may experience a slight expansion or swelling, however this is part of the battery's safety mechanism and is not a cause for concern.
- Use proper handling procedures when using polymer batteries. Do not use polymer batteries in high ambient temperature environments, and do not store unused batteries for extended periods.

See also the general battery precautionary information overleaf for further information.

General Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not remove any batteries from the computer while it is powered on.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

🔔

Battery Disposal & Caution

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

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

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 or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other 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.

Travel Considerations

Packing

As you get ready for your trip, run through this list to make sure the system is ready to go:

1. Check that the battery pack and any spares are fully charged.
2. Power off the computer and peripherals.
3. Close the display panel and make sure it's latched.
4. Disconnect the AC/DC adapter and cables. Stow them in the carrying bag.
5. The AC/DC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
6. Put the notebook in its carrying bag and secure it with the bag's straps.
7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
8. Anticipate customs - Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your "papers" are handy.

🔔
Power Off Before Traveling

Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the Vents/Fan Intakes to be blocked. To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intakes while the computer is in use.

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 8: Troubleshooting, keep these points in mind:

Hand-carry the notebook - For security, don't let it out of your sight. In some areas, computer theft is very common. Don't check it with "normal" luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the computer, hard disk, floppy disks, and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them (you may be asked to turn it on). **Note**: Some airports also scan luggage with these devices.

Fly safely - Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can - If an electrical outlet is available, use the AC/DC adapter and keep your battery(ies) charged.

Keep it dry - If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.

Remember to:
- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and a comfortable viewing angle can reduce eye strain and shoulder and neck muscle fatigue.

• 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.

Cable TV Safety

If you have included a **TV Tuner** in your purchase option then pay careful attention to the following:

• Make sure that your CATV system installer has connected the Coaxial cable shield to the grounding system of the building, as close to the point of cable entry as practical.
• This reminder is provided to call the CATV system installer's attention to Article 820-93 of the NEC (Section 54, Part I of the Canadian Electrical Code).
• The TV antenna supplied with any TV Tuner module is intended for indoor use only. Please do not use your TV Tuner module outdoors.

Contents

Quick Start Guide

Storage Devices, Mouse, Audio & Printer

Power Management

Drivers & Utilities

BIOS Utilities

Upgrading The Computer

Modules

Troubleshooting

Interface (Ports & Jacks)

NVIDIA Video Driver Controls

Specifications

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**, **card reader**)**, TouchPad** & **Mouse, Audio Features** & **Printer**.
- **Chapter 3**   The computer's **power** management 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 **PC Camera, Wireless LAN, Fingerprint, Bluetooth & WLAN Combo and 3.75G** 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 **NVIDIA** Video driver controls.
- **Appendix C** The computer's **specification**.

Advanced Users

If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to *"Drivers & Utilities" 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 7*) 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 appropriate drivers. 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 *"Drivers & Utilities" on page 4 - 1* for installation instructions.

Ports and Jacks

See *"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 *Windows 7* operating system is supported.

Note: In order to run *Windows 7* without limitations or decreased performance, your computer requires a minimum **1GB** of system memory (RAM).

Model Differences

This notebook series includes **three** different model types that mainly differ as indicated in the table below. Note that your model may appear slightly different from those pictured in this manual.

Feature	Model A	Model B	Model C
Case Color	Rubber Style Paint	Standard Paint	
CPU Type Supported	See *"Specifications" on page A - 1* for more details		
Core Logic	Intel® HM65 Chipset		Intel® HM67 Chipset
Display Type Supported	15.6" (39.62cm) FHD (1920 * 1080) 16:9 Panel	15.6" (39.62cm) HD+ (1600 * 900) 16:9 Panel	17.3" (43.94cm) FHD (1920 * 1080) 16:9 Panel
Video Cards Supported	nVIDIA® GeForce GTX 485M PCIe * 16 Video Card nVIDIA® GeForce GTX 460M PCIe * 16 Video Card	nVIDIA® GeForce GTX 460M PCIe * 16 Video Card	nVIDIA® GeForce GTX 485M PCIe * 16 Video Card nVIDIA® GeForce GTX 470M PCIe * 16 Video Card
Power Supply	Full Range AC adapter **180W**, AC in 100~240V, 50~60Hz, DC output 19V, 9.47A	Full Range AC adapter **120W**, AC in 100~240V, 50~60Hz, DC output 20V, 6A	Full Range AC adapter **220W**, AC in 100~240V, 50~60Hz, DC output 19V, 11.57A

Table 1 - 1 **- Model Differences**

See *"Specifications" on page A - 1* for more details (note that only **Model C** supports RAID level 0/1).

System Startup

1. Remove all packing materials, and place the computer on a stable surface.
2. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
3. Attach the AC/DC adapter to the DC-In jack at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
4. Use one hand to raise the lid/LCD to a comfortable viewing angle (it is preferable not to exceed 135 degrees); use the other hand (as illustrated in *Figure 1 - 1* below) to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
5. Raise the lid/LCD to a comfortable viewing angle, and press the power button on the top left of the computer **for about 2 - 3** seconds to turn the computer "**on**" (note that the **power LED** on the front of the computer **will turn from orange to green** when the computer powers on).

135°

🖉

Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Start** menu in *Windows 7*. This will help prevent hard disk or system problems.

Figure 1 - 1 **- Computer with AC/DC Adapter Plugged-In/Opening the Lid/LCD**

System Map: LCD Panel Open - Models A & B

⚠️

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices (e.g. WLAN or Bluetooth) aboard aircraft is usually prohibited. Make sure any wireless modules are OFF if you are using the computer aboard aircraft.

Use the appropriate function key combination to toggle power to any wireless modules, and check the indicators to see if any modules are powered on or not (see *Table 1 - 4, on page 1 - 11*/*Table 1 - 2, on page 1 - 9*).

Figure 1 - 2
LCD Panel Open

1. Built-In PC Camera
2. LCD
3. LED Lock Indicators
4. Power Button
5. Speakers
6. LED Status Indicators
7. Keyboard
8. Built-In Microphone
9. TouchPad and Buttons
10. Fingerprint Reader (**Optional**)

Note that the Touchpad and Buttons valid operational area is that indicated within the red dotted lines above.

Figure 1 - 3
LCD Panel Open

1. Built-In PC Camera
2. LCD
3. Speakers
4. LED Indicators
5. Power Button
6. Keyboard
7. Built-In Microphone
8. TouchPad and Buttons
9. Fingerprint Reader (**Optional**)

Note that the Touchpad and Buttons valid operational area is that indicated within the red dotted lines above.

System Map: LCD Panel Open - Model C

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices (e.g. WLAN or Bluetooth) aboard aircraft is usually prohibited. Make sure any wireless modules are OFF if you are using the computer aboard aircraft.

Use the appropriate function key combination to toggle power to any wireless modules, and check the indicators to see if any modules are powered on or not (see *Table 1 - 4, on page 1 - 11/Table 1 - 2, on page 1 - 9*).

LED Indicators

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

Icon	Color Models A & B	Color Model C	Description
🔒1	Blue	White	Number Lock is Activated
🔒A	Blue	White	Caps Lock is Activated
🔒↓	Blue	White	Scroll Lock is Activated
💾	Blue	White	Hard Disk Activity
((ᵗ))	Blue	White	The (**optional**) Wireless LAN Module is Powered On
((ᴮᵀ))	Blue	Orange	The (**optional**) Bluetooth Module is Powered On

Table 1 - 2 **- LED Lock & Status Indicators**

Icon	Color	Description
🔋III	Orange	The Battery is Charging
	Blinking Orange	The Battery has Reached Critically Low Power Status
	Green	The Battery is Fully Charged
⟿/⏻	Orange	DC Power is Plugged In
	Green	The Computer is On
	Blinking Green	The Computer is In Sleep Mode

Table 1 - 3 **- LED Power Indicators**

Keyboard

The keyboard has an embedded numerical keypad for easy numeric data input, and features function keys to allow you to change operational features instantly. See *Table 1 - 4, on page 1 - 11* for full function key combination details.
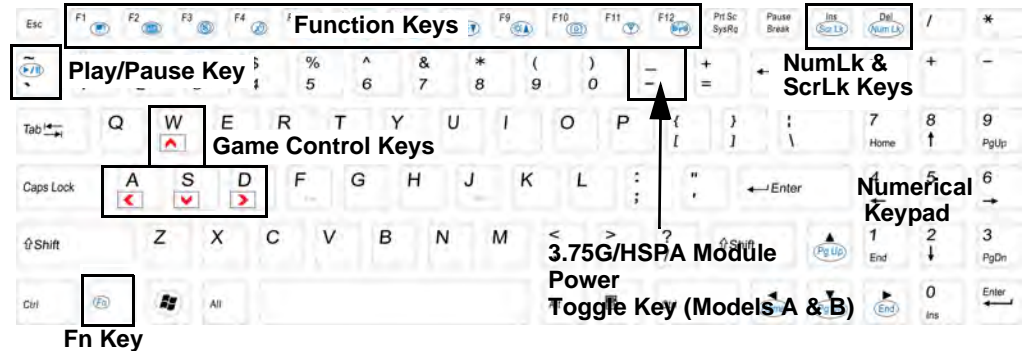
Figure 1 - 4 **- Keyboard**

 Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

Function Keys & Visual Indicators

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down. In addition to the basic function key combinations; visual indicators (see the table below) are available when the Hot Key driver is installed. After installing the driver an icon will appear in the taskbar.

Keys	Function/Visual Indicators		Keys	Function/Visual Indicators	
Fn + ~	Play/Pause (in Audio/Video Programs)		Fn + F7	Display Toggle	
Fn +	3.75G Module Power Toggle (**Models A & B Only**)		Fn +F8/F9	Brightness Decrease/ Increase	
Fn + F1	Touchpad Toggle		Fn + F10	PC Camera Power Toggle	
Fn + F2	Turn LCD Backlight Off (Press a key to or use Touchpad to turn on)		Fn + F11	*WLAN Module Power Toggle	
Fn + F3	Mute Toggle		Fn + F12	Bluetooth Module Power Toggle	
Fn + F4	Sleep Toggle		Fn + NumLk	Number Lock Toggle	
Fn +F5/F6	Volume Decrease/ Increase		Fn + ScrLk	Scroll Lock Toggle	
*Make sure that Wireless is **ON** in the **Windows Mobility Center** to ensure proper wireless function key behavior (see page *3 - 11*).			Fn + 5	(**Model C Only**) Audio Toggle - Toggle between Standard & Enhanced Audio (see page *2 - 9*)	

Table 1 - 4 - Function Keys & Visual Indicators

Figure 1 - 5
Front View

1. LED Power Indicators
2. Vent/Fan Intake
3. eSATA/USB 2.0 Combo Port
4. HDMI-Out Port
5. DVI-Out Port
6. DC-In Jack
7. Security Lock Slot (**Model C Only**)
8. Consumer Infrared Transceiver (**Model C Only** for Optional TV Tuner)

System Map: Front & Rear Views

Models A & B

Models A & B

Model C

Model C

🖊
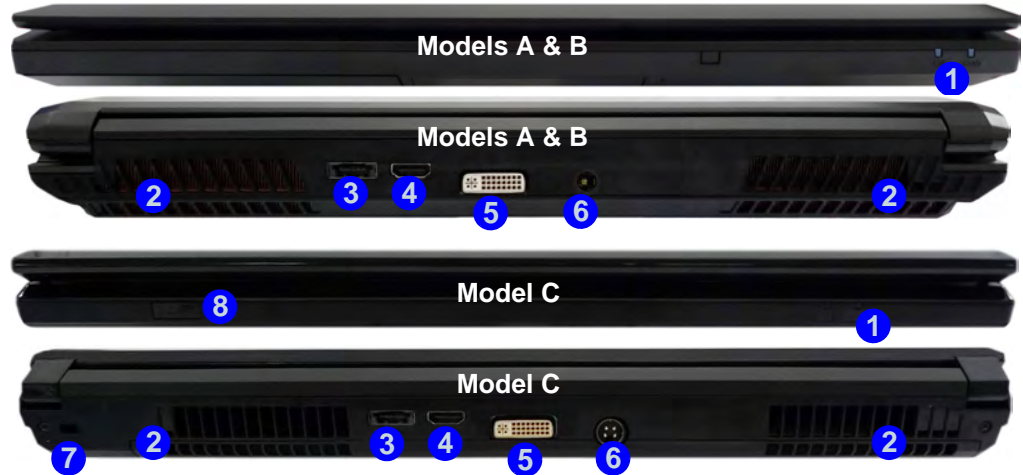
HDMI Port

Note that the HDMI Port supports video and audio signals to attached external displays (see *"HDMI Audio Configuration" on page B - 13*).

Note that THX TruStudio Pro will be disabled when you are connecting to an external display through an HDMI connection (see *"THX TruStudio Pro Audio" on page 7 - 88*).

System Map: Right View
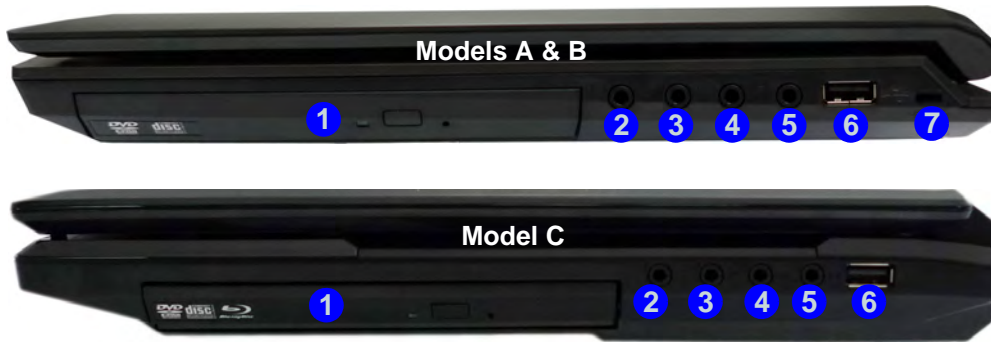
Figure 1 - 6
Right View

Models A & B

Model C

1. Optical Device Drive Bay
2. Headphone Jack
3. Microphone Jack
4. S/PDIF-Out Jack
5. Line-In Jack
6. 1 * USB 2.0 Port
7. Security Lock Slot (**Models A & B Only**)

🖉

USB 2.0 or 3.0 Ports

USB 3.0 ports are denoted by their blue color; USB 2.0 ports are colored black.

☼

USB Ports

Note that the connections to the USB ports only fit one way, do not force them.

Figure 1 - 8
Left View

1. RJ-45 LAN Jack
2. 2 * USB 3.0 Ports
3. 1 * USB 2.0 Port
4. Mini-IEEE 1394a Port
5. Multi-in-1 Card Reader
6. CATV Antenna Jack (Model C Only for TV Tuner Option)

System Map: Left View

Models A & B

Model C

🖉

USB 3.0 Ports & USB Port Power

USB 3.0 ports are denoted by their blue color; USB 2.0 ports are colored black. Note that the USB 3.0 port requires a driver installation (see *"USB 3.0" on page 4 - 7*), does not support wake on USB and is not operational under DOS. USB 2.0 port ③ can supply power when the system is off but still powered by the AC/DC adapter.

Multi-in-1 Card Reader

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

MMC (MultiMedia Card) / RSMMC
SD (Secure Digital) / Mini SD / SDHC / SDXC
MS (Memory Stick) / MS Pro / MS Duo

🖉

Mini-IEEE 1394a Port

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

System Map: Bottom View - Models A & B
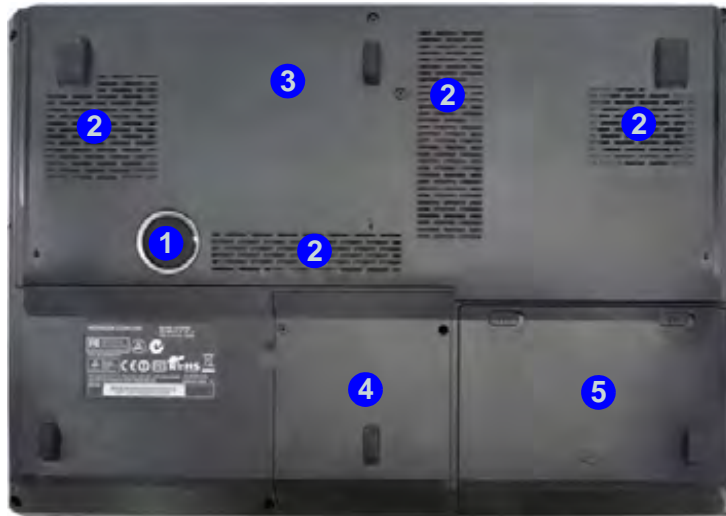
Figure 1 - 9
Bottom View

1. Sub Woofer
2. Fan Outlet/Intake
3. Component Bay
   Cover
4. HDD Bay
5. Battery

🖉

Battery Information

Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See *"Battery Information" on page 3 - 10* for full instructions.

☼

Overheating

To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s) while the computer is in use.

Figure 1 - 10
Bottom View

1. Sub Woofer
2. Fan Outlet/Intake
3. Component Bay Cover
4. Primary HDD Bay
5. Secondary HDD Bay
6. Battery
7. Speakers
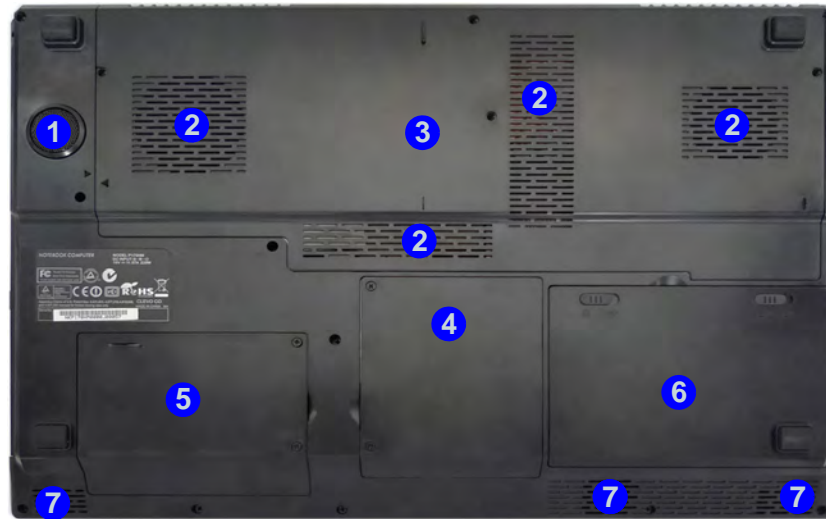
System Map: Bottom View - Model C

> 🔔
>
> **Overheating**
>
> To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s) while the computer is in use.

> 🖉
>
> **Battery Information**
>
> Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See *"Battery Information" on page 3 - 10* for full instructions.

Windows 7 Start Menu & Control Panel

Most of the control panels, utilities and programs within *Windows 7* (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.
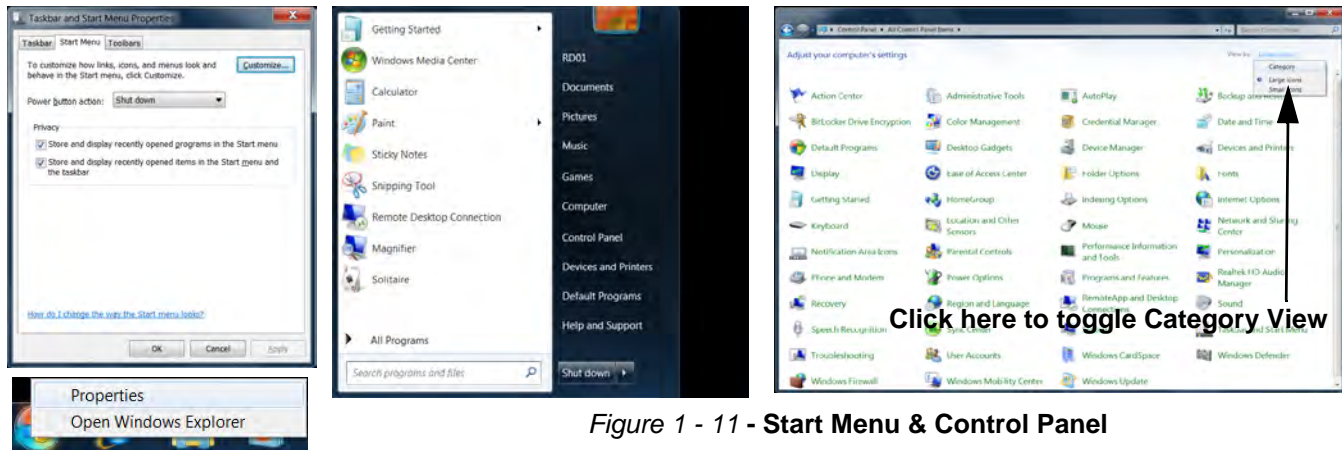
Figure 1 - 11 **- Start Menu & Control Panel**

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 7* 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* to view the control panel icons.

Video Features

You can switch display devices, and configure display options, from the **Display** control panel (in **Appearances and Personalization**) in *Windows 7*.

To access **Display (Control Panel) and Screen Resolution** in *Windows*:
1. Click **Start** and click **Control Panel**.
2. Click **Display** (icon) - In the **Appearances and Personalization** category.
3. Click **Adjust Screen Resolution/Adjust resolution**.
OR
4. Alternatively you can right-click the desktop and select **Screen resolution** 1 (*Figure 1 - 12 on page 1 - 19*).
5. Use the dropbox to select the screen **Resolution** 2 (*Figure 1 - 12 on page 1 - 19*).

🖉
NVIDIA Video Controls

More detailed video controls are provided by the **NVIDIA Control Panel**. For more detailed information see *"NVIDIA Control Panel" on page 1 - 20* and *Appendix B*.

You can also access the control panels by right-clicking the desktop and selecting **NVIDIA Control Panel** 2 (*Figure 1 - 13 on page 1 - 20*).

Screen Resolution

> 🖊
>
> **Video Options**
>
> Note that card types, specifications and drivers are subject to continual updates and changes. Check with your service center for the latest details on video cards supported.
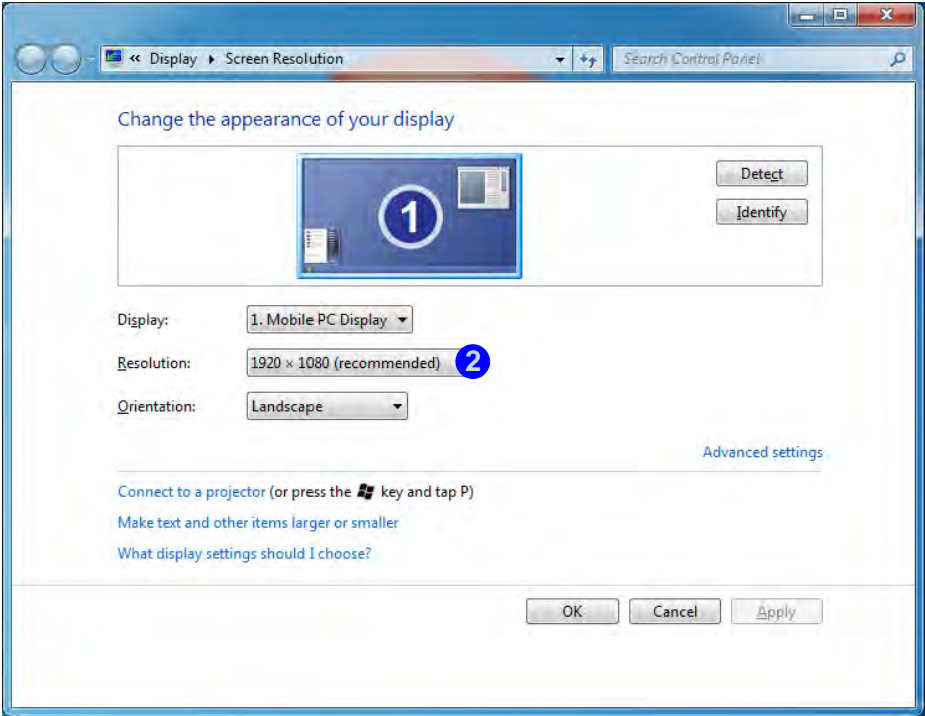
Figure 1 - 12 **- Screen Resolution**

NVIDIA Control Panel

You can access the **NVIDIA Control Panel** as follows:

1. Click **Start**, and click **Control Panel**.
2. Click **NVIDIA Control Panel** ❶ (*Figure 1 - 13*) - In the **Appearances and Personalization** category.
3. See *"NVIDIA Video Driver Controls" on page B - 1* for full details on control panels etc.

OR

4. You can also access the control panel by right-clicking the desktop and selecting **NVIDIA Control Panel** ❷.
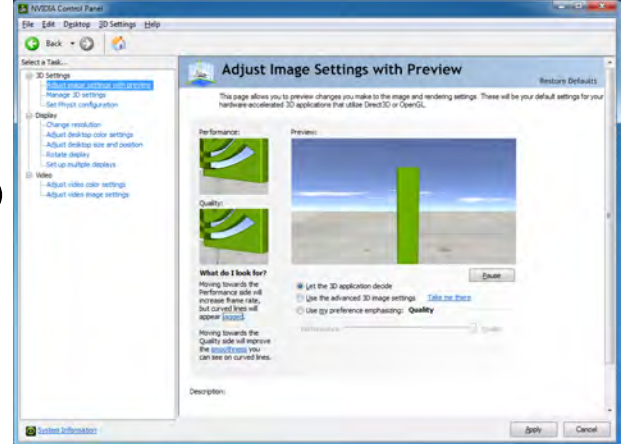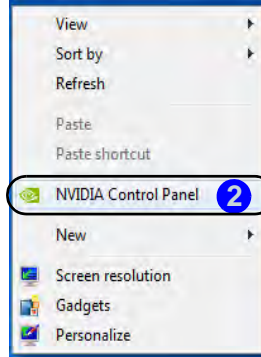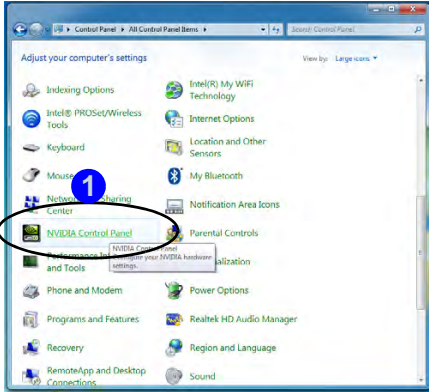
Figure 1 - 13 **- NVIDIA Control Panel**

Power Options

The **Power Options** (**Hardware and Sound** menu) control panel icon in *Windows* (see page *1 - 16*) 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**, **computer lid (when closed)**, **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.

Pay attention to the instructions on battery care in *"Battery Information" on page 3 - 10*.
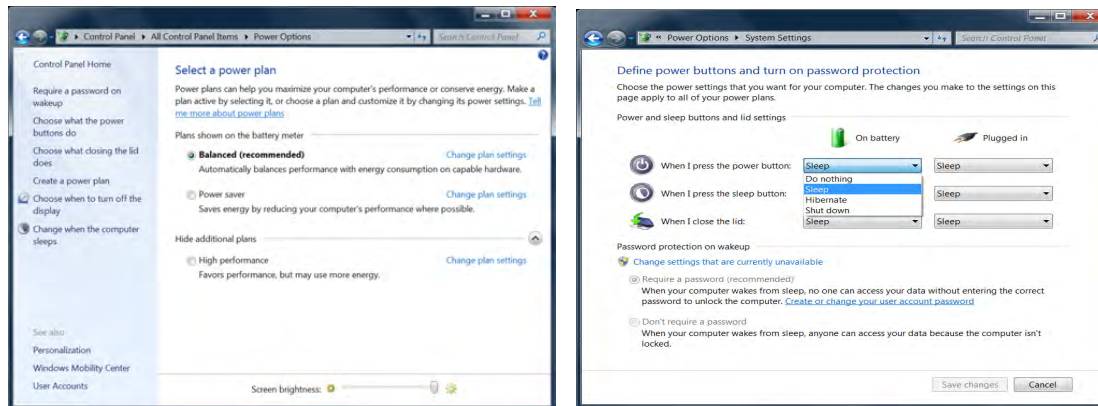
Figure 1 - 14 **- Power Options**

Chapter 2: Storage Devices, Mouse, Audio & Printer

Overview

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

- Hard Disk Drive
- Optical Device
- Multi-in-1 Card Reader
- Audio Features
- TouchPad and Buttons/Mouse
- Adding a Printer

2

⌇

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.

Figure 2 - 1
Hard Disk Location

Hard Disk Drive

The hard disk drive(s) is used to store your data in the computer. The hard disks) can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5 mm. The primary hard disk bay **1** is accessible from the bottom of your computer as seen below. Note that only **Model A/B** is pictured, however the procedure for removing the primary hard disk from **Model C** is identical.

Further details on removing and inserting the hard disk are available in *"Upgrading the Hard Disk Drive(s)" on page 6 - 6*.

Model C computers feature a **primary** and **secondary** hard disk bay (you may have a second hard disk installed as part of a RAID). See *"Removing the Hard Disk from the Secondary HDD Bay (Model C Only)" on page 6 - 11*.

Optical Device

There is a bay for a 5.25" optical (CD/DVD) device (12.7mm height). The actual device will depend on the model you purchased (see *"Storage" on page C - 4*). 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 - 13*).

Loading Discs

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

🖉

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.

Peripherals must be connected before you turn on the system.

Figure 2 - 2
Optical Device

2

☼

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.

2

DVD Regional Codes

To change the DVD regional codes:

1. Go to the **Control Panel**
2. Double-click **Device Manager (Hardware and Sound)**, then click the **+** next to **DVD/CD-ROM drives**.
3. 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.

<table>
<tr><td>

General | DVD Region | Volumes | Driver | Details

Most DVDs are encoded for play in specific regions. To play a regionalized DVD on your computer, you must set your DVD drive to play discs from that region by selecting a geographic area from the following list.

CAUTION You can change the region a limited number of times. After Changes remaining reaches zero, you cannot change the region even if you reinstall Windows or move your DVD drive to a different computer.

Changes remaining: 5

To change the current region, select a geographic area, and then click OK.

United Arab Emirates
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Vatican City

Current Region: Not Selected

New Region: Region 1

OK   Cancel

</td><td>

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

</td></tr>
</table>

🖉

DVD Region Note

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.

Figure 2 - 3
DVD Region Codes

2

🖊

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.

Figure 2 - 4
Left View

1. Card Reader

Multi-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 *"Card Reader" on page 4 - 7*).

- MMC (MultiMedia Card) / RSMMC
- SD (Secure Digital) / Mini SD / SDHC / SDXC
- MS (Memory Stick) / MS Pro / MS Duo

Note: Some of these cards require PC adapters that are usually supplied with the cards.

2

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). The volume may also be adjusted by means of the **Fn** + **F5/F6** key combination (see *Table 1 - 4, on page 1 - 11*).

Right-click the icon 📢 to access the menu above.
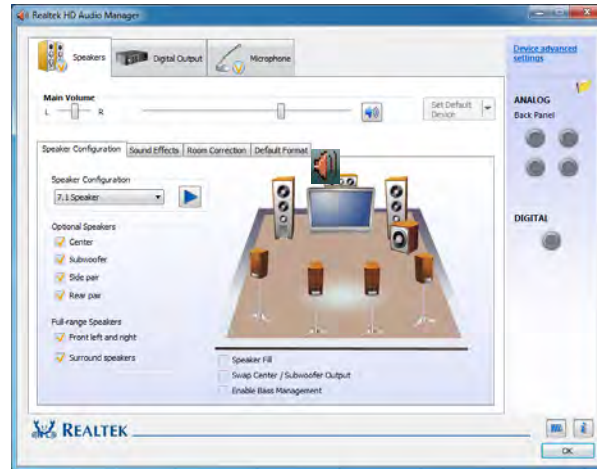
See *"HDMI Audio Configuration" on page B - 13* for a description of the audio configuration when connecting an HDMI supported display device.
See *"THX TruStudio Pro Audio" on page 7 - 88* for more information on the THX TruStudio Pro Audio setup.

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.

Headphone Configuration

It is recommended that you set the **Speaker Configuration** to **Stereo** (not to 5.1 or 7.1 Speaker) when listening through headphones in order to maximize audio quality.

Figure 2 - 5
Realtek Audio Manager

2

Setup for Audio Recording

To record audio sources on your computer at optimum quality follow the instructions below:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**) and make sure you are in **Classic View**.
2. Click **Realtek HD Audio Manager** (or right-click the taskbar icon and select **Sound Manager**).
3. Click **Microphone Effects** (tab) in **Microphone** (tab), and then click to select **Noise Suppression** (button), or adjust the **Recording Volume** level to around **60**, to obtain the optimum recording quality.
4. Click **OK** to close the control panel and save the settings.

Figure 2 - 6
Realtek Audio Manager - Recording Setup
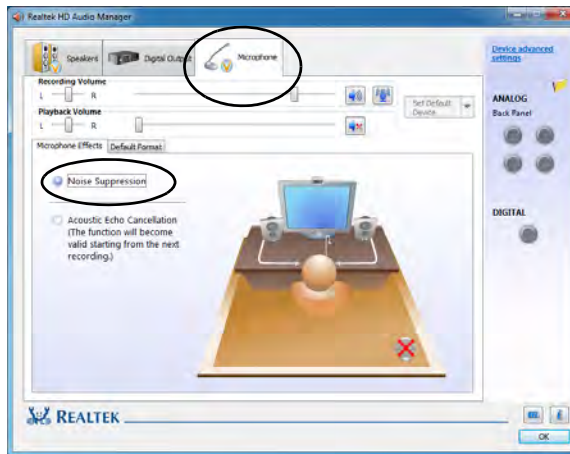
Setup for 5.1 or 7.1 Surround Sound

To setup your system for 5.1 or 7.1 surround sound you will need to connect the audio cables to the Headphone-Out, Line-In, Microphone-In jack and S/PDIF-Out jacks (*note: the S/PDIF jack is used for 7.1 surround sound only*).

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**) and make sure you are in **Classic View**.
2. Click **Realtek HD Audio Manager** (or right-click the taskbar icon 🔊 and select **Sound Manager**).
3. Click **Speakers** (tab) and click **Speaker Configuration** (tab).
4. Select **5.1 or 7.1 Speaker** from the **Speaker Configuration** pull-down menu.

Connector Settings

🖉

Auto Popup Dialog

You should enable the auto popup dialog to automatically detect when a device has been plugged-in. If disabled, double-click **connector settings** 📁 and click the box to enable the auto popup detection of plugged-n devices.

⚠

THX Audio & HDMI

Note that the THX audio effects **do not apply** to audio generated through an HDMI connection (see page *7 - 76*).

Fn + 5 Audio Toggle (Model C Only)

The **Fn + 5** key combination allows you to toggle the audio system between stereo and surround modes. The stereo mode will allow for a louder audio volume.

Note that if you have stereo mode enabled, and attempt to demo the speaker configuration, then the sound will only be enabled through the front and rear speakers (**see page *2 - 11***).

Figure 2 - 7
Speaker Configuration (7.1)

2

5. Plug the **front speaker** cables into the **Headphone-Out Jack**.
6. Plug in the other cables (you may require an adapter to connect each cable to the appropriate jack e.g a stereo mini to dual RCA adapter) from your speakers as follows:

- Line-In Jack = Rear Speaker Out
- Microphone-In Jack = Center/Subwoofer Speaker Out
- S/PDIF-Out Jack = Side Speaker Out (**for 7.1 Surround Sound Only**)

7. As you plug in each cable a dialog box will pop up (see *"Auto Popup Dialog" on page 2 - 9*).
8. Click to put a tick in the appropriate box according to the speaker plugged-in (e.g. Rear Speaker Out), and then click **OK** to save the setting.
9. Click **OK** to exit **Realtek HD Audio Manager**.

Figure 2 - 8
Connected Device Auto Popup

Note: Side Speaker Out is required for 7.1 Surround only.

Audio Notes for Model C Computers (Fn + 5)

Model C computers (**Model C** only) feature the **Fn +5** key combination to **toggle** between standard audio and enhanced audio. Note the following which applies to **software mode audio configuration through the computer's internal speakers only** (this does not apply to surround sound when configured through external Quadrophonic, 5.1 or 7.1 speaker systems):

• When the **Speaker Configuration** in **Realtek HD Audio Manager** is set to **Stereo**, you can use the **Fn + 5** key combination to help increase the volume through the speakers.

• When the **Speaker Configuration** in **Realtek HD Audio Manager** is set to **5.1/ 7.1 Speaker**, the best audio configuration will be obtained with the combination of the **Speaker Configuration** set to **Quadrophonic**/**5.1/7.1 Speaker**, and the **THX TruStudio AP turned ON**.

Note that the **Fn + 5** key combination is a toggle so you will need to press the key combination to test if the affect is applied or not.

2

🖊

Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

TouchPad and Buttons/Mouse

The TouchPad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The TouchPad buttons function in much the same way as a two-button mouse.

Once you have installed the TouchPad driver (see *"TouchPad" on page 4 - 7*) you can configure the functions from the Mouse control panel in *Windows*, or by double-clicking the TouchPad driver icon ![icon] on the **taskbar**. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information at www.synaptics.com.

🖉
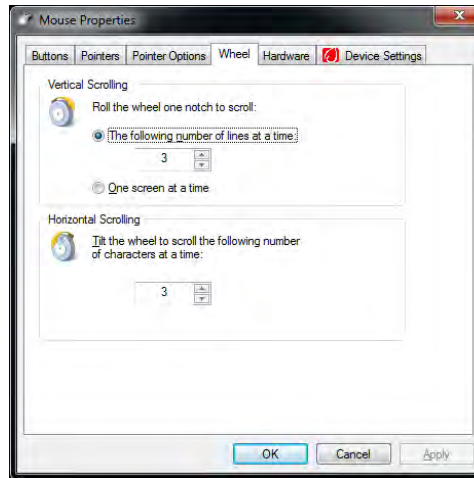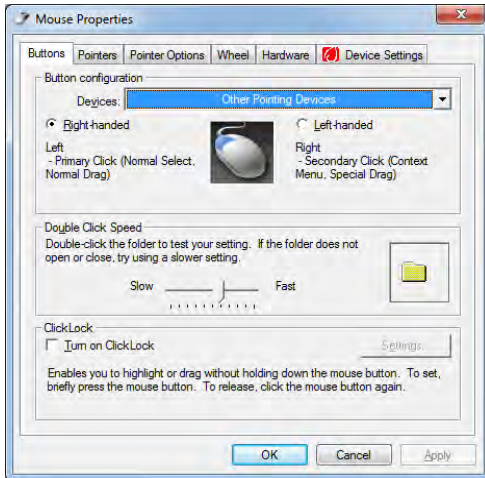
TouchPad Scrolling

This computer model series may feature different TouchPad versions.

These TouchPads may differ in their vertical scrolling function in most scrollable windows.

Some TouchPads require sliding the finger up and down on the right of the TouchPad to scroll the window. Other versions require tapping/holding down the finger at the top right or bottom right of the TouchPad to scroll the window.

Figure 2 - 9
Mouse Properties

2

🖊

Show Video

You can get a clearer view of the gestures involved by clicking the **Show Video** option for each gesture item.

Select the gesture (**Pinch Zoom, Rotating, Three Fingers Down and Three Finger Flick**) in the **Device Settings > Settings** left tree menu and click the **Show Video** button to see the demonstration video.

For more details on any of the gestures see the **help** in the lower part of the right menu window.

Figure 2 - 10
Mouse Properties - Device Settings

Gestures and Device Settings

The Synaptics Gestures Suite application allows you to use a specific gesture (action) on the surface of the TouchPad to perform specific actions to manipulate documents, objects and applications.

You can configure the settings from the Device Settings tab in **Mouse Properties**:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Mouse** (**Hardware and Sound**).
3. Click **Device Settings** (tab) and click **Settings**.
4. Use the menu tree on the left to access the user configurable settings.
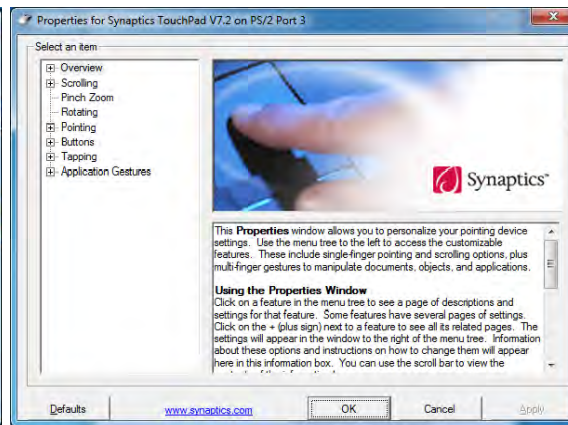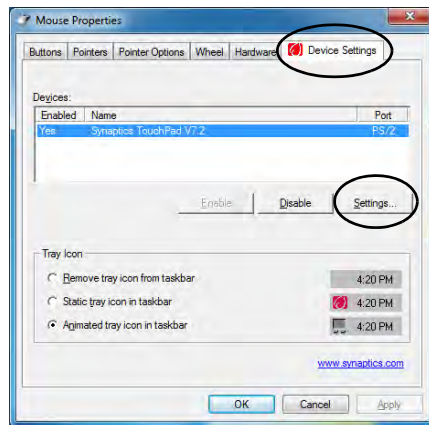
Scrolling

The Two-Finger scrolling feature works in most scrollable windows and allows you to scroll horizontally and vertically. Place two fingers, slightly separated, on the TouchPad surface and slide both fingers in the direction required (in a straight continuous motion).

Figure 2 - 11
Scrolling Gesture

Zooming

The Pinch Zoom gesture can be used to perform the same function as a scroll wheel in *Windows* applications that support CTRL + scroll wheel zoom functionality. Place two fingers on the TouchPad (for best results use the tips of the fingers) and slide them apart to zoom in, or closer together to zoom out.

Figure 2 - 12
Zooming Gesture

2

Rotating

Use the Pivot Rotate gesture to rotate objects (e.g. photos) in 90 degree increments. Place a finger down on the left "target" zone and keep it stationary. Place another finger near the middle of the TouchPad and slide it in a circular motion around the stationary finger (clockwise or counterclockwise) to rotate the object.

Figure 2 - 13
Rotating Gesture

Three Finger-Flick/Three Fingers Down (Press)

The Three Finger-Flick gesture may be used to enhance navigation with a variety of applications such as browsing the Internet or scrolling through a photo viewer. The Three Fingers Down gesture may be used to launch user-selectable applications.

Figure 2 - 14
Flick/Press Gesture

2
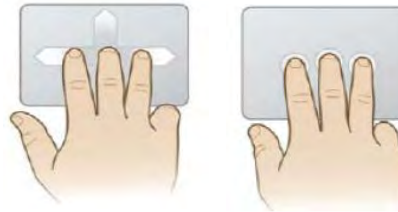
Adding a Printer

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

USB Printer

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

Install Instructions:

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

Parallel Printer

This is still a very common type of printer. The install instructions are in the sidebar (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.

2

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:

- The Power Sources
- Turning On the Computer
- Power Plans
- Power-Saving States
- Configuring the Power Buttons
- Battery Information

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.

3

✎

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 7** OS.)

3

The Power Sources

The computer can be powered by either an AC/DC adapter or a battery pack.

AC/DC Adapter

Use only the AC/DC adapter that comes with your computer. The wrong type of AC/DC adapter will damage the computer and its components (see page *C - 5*).

1. Attach the AC/DC adapter to the DC-In jack at the rear of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC/DC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button on the top left of the computer **for about 2 - 3 seconds** to turn the computer "on" (note that the power LED on the front of the computer will turn from orange to green when the computer powers on).

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. **To increase battery life, let the battery discharge completely before recharging** (see *"How do I completely discharge the battery?" on page 3 - 14*).

We recommend that you do not remove the battery. For more information on the battery, please refer to *"Battery Information" on page 3 - 10*.
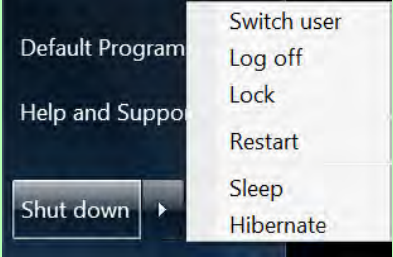
Turning On the Computer

Now you are ready to begin using your computer. To turn it on simply press the power button on the front panel.

When the computer is on, you can use the power button as a Stand by/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.

🖉

Shut Down

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

Default Program	Switch user
	Log off
Help and Suppo	Lock
	Restart
Shut down ▸	Sleep
	Hibernate

🖉

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 as Stand by or Hibernate Button

You can use the OS's **Power Options** control panel to set the power button to send the system into Stand by or Hibernate mode (see your OS's documentation, or *"Configuring the Power Buttons" on page 3 - 8* for details).

3

Password

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

Figure 3 - 1
Power Plan Advanced Settings (Win 7)

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**.

3

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 (especially under DC/battery power).

Choose **High performance** (you may need to click **Show additional plans** to view the High performance plan) for maximum performance when the computer is powered from an AC power source. Choose the **Power saver** (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered.

Click to Show/Hide additional power plans
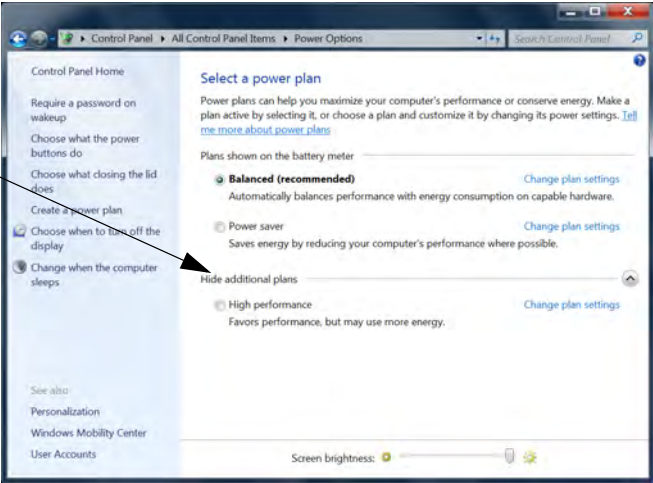
Figure 3 - 2
Power Plans (Win 7)

3

Power-Saving States

You can use power-saving states to stop the computer's operation and restart where you left off. *Win 7* uses the **Sleep, Hibernate** and **Shut Down** power-saving states.

Sleep

In **Sleep** all of your work, settings and preferences are saved to memory before the system sleeps. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter **Sleep** to save power.

The PC wakes from **Sleep within seconds** and will return you to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

If your mobile PC in **Sleep** is running on battery power the system will use only a minimum amount of power. After an extended period the system will save all the information to the hard disk and shut the computer down before the battery becomes depleted.

3

Hibernate

Hibernate uses the least amount of power of all the power-saving states and saves all of your information on a part of the hard disk before it turns the system off. If a power failure occurs the system can restore your work from the hard disk; if a power failure occurs when work is saved only to memory, then the work will be lost. **Hibernate** will also return you to where you last left off within seconds. You should put your mobile PC into **Hibernate** if you will not use the computer for a period of time, and will not have the chance to charge the battery.

Shut down

You should **Shut down** the computer if you plan to install new hardware (don't forget to remove the battery and follow all the safety instructions in **Chapter 6**), plan to be away from the computer for several days, or you do not need it to wake up and run a scheduled task. Returning to full operation from **Shut down** takes longer than from **Sleep** or **Hibernate**.
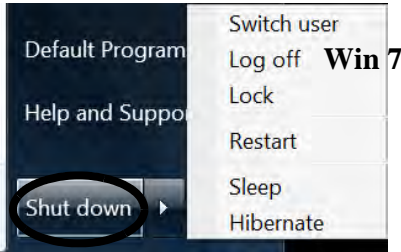
Figure 3 - 3
Start Menu Power

3

🖉

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*).

Figure 3 - 4
Power Options Define Power Buttons

Configuring the Power Buttons

The power/sleep button (**Fn** + **F4** key combo) and closed lid may be set to send the computer in to a power-saving state. Click **Choose what the power buttons do** on the left menu in **Power Options** to bring up the menu.
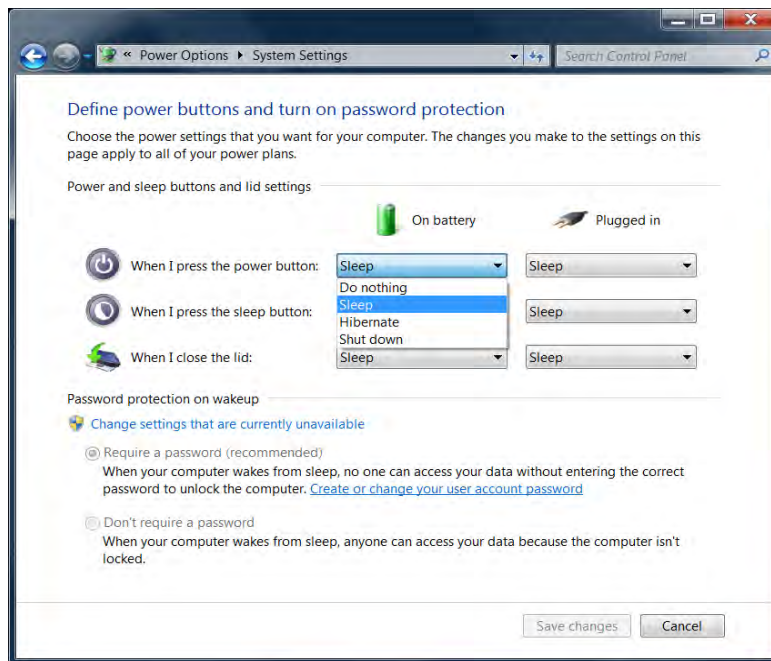
Resuming Operation

You can resume operation from power-saving states by pressing the power button, or in some cases pressing the sleep button (**Fn** + **F4** key combo).

Power Status	Icon 🖵/⏻ Color	To Resume
Power Off	Off	Press the Power Button
Sleep	Blinking Green	Press the Power Button Press the Sleep Button (Fn + F4 Key Combo)
Hibernate	Off (battery) Orange (AC/DC adapter)	Press the Power Button
Display Turned Off	Green	Press a Key or Move the Mouse/Touchpad

🖉

Power Button

When the computer is on, you can use the power button as a Sleep/Hibernate/Shut Down hot key 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).

🖉

Closing the Lid

If you have chosen to send the computer to **Sleep** when the lid is closed, raising the lid will wake the system up.

Table 3 - 1
Resuming Operation

3

3

⚠️

Low Battery Warning

When the battery is critically low, immediately connect the AC/DC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.

Battery Information

Follow these simple guidelines to get the best use out of your battery.

Battery Power

Your computer's battery power is dependent upon many factors, including the programs you are running, and peripheral devices attached. You can set actions to be taken (e.g. Shut down, Hibernate etc.), and set critical and low battery levels from power plan **Change plan settings > Change advanced power settings** (see *Figure 3 - 1 on page 3 - 4*).

Click the battery icon 🔋 in the taskbar to see the current battery level and charge status.

Figure 3 - 5
Battery Icon (Taskbar) & Battery Advanced Settings

3
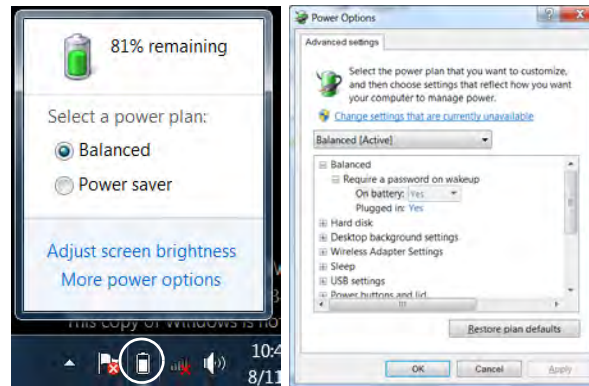
Conserving Battery Power

- Use a **power plan** that conserves power (e.g **Power saver**), however note that this may have an affect on computer performance.

- Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC/DC adapter.

- Reduce the amount of time before the display is turned off.

- Close wireless, Bluetooth, modem or communication applications when they are not being used.

- Disconnect/remove any unnecessary external devices e.g. USB devices, ExpressCards etc.
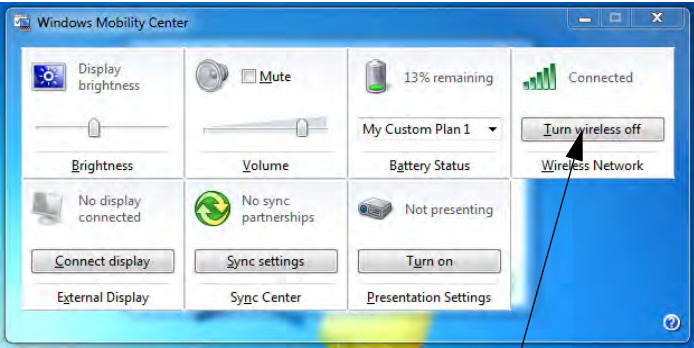
Make sure Wireless is ON to ensure proper function key behavior.

🖉

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.

⚠️

Wireless Hot Keys

The computer's wireless function keys will not function properly if **Wireless** is turned **OFF** in the **Windows Mobility Center** control panel.

The wireless indicators may show that the WLAN module is powered on, however if wireless is OFF in the Mobility Center, the module will not be powered on.

Make sure that Wireless is **ON** in the Mobility Center to ensure proper function key behavior.

Figure 3 - 6
Windows Mobility Center

3

Battery Life

Battery life may be shortened through improper maintenance. **To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days**.

We recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason (e.g. long term storage) see *"Removing the Battery" on page 6 - 3*.

New Battery

Always completely discharge, then fully charge, a new battery (see *"Battery FAQ" on page 3 - 14* for instructions on how to do this).

Recharging the Battery with the AC/DC Adapter

The battery pack automatically recharges when the AC/DC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. (Refer to *"LED Indicators" on page 1 - 8* for information on the battery charge status, and to *"Battery Information" on page 3 - 10* for more information on how to maintain and properly recharge the battery pack.)

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances.
- DO NOT expose the battery to fire or high temperatures, it may explode.
- DO NOT connect the metal terminals (+, -) to each other.

> 🔔
> ### Damaged Battery Warning
>
> Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your service center. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.

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

3

3

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer even if a message indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own.

1. Save and close all files and applications.
2. **Create** a **power plan** for discharging the battery and set all the options to **Never**.
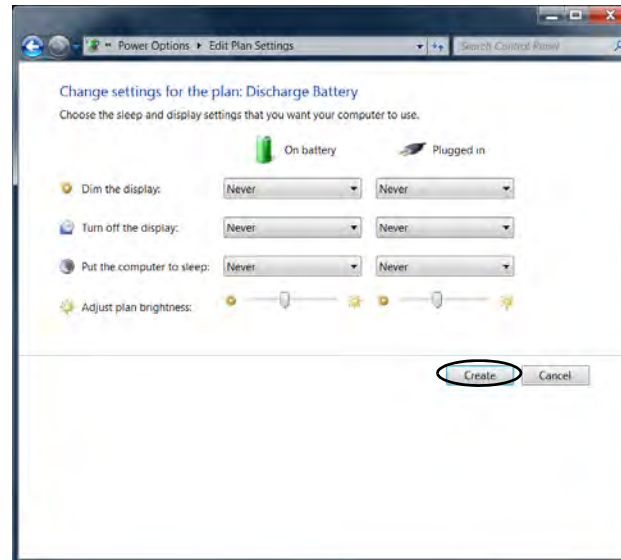
Figure 3 - 7
Power Plan Create

3. Click *Change plan settings* (after creating it) and click *Change plan settings >* *Change advanced power settings*.
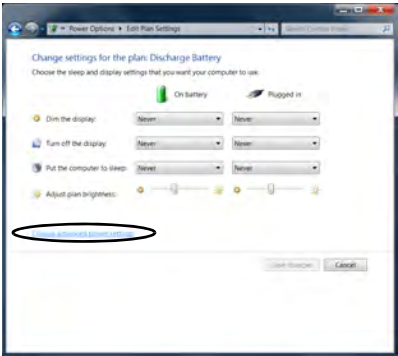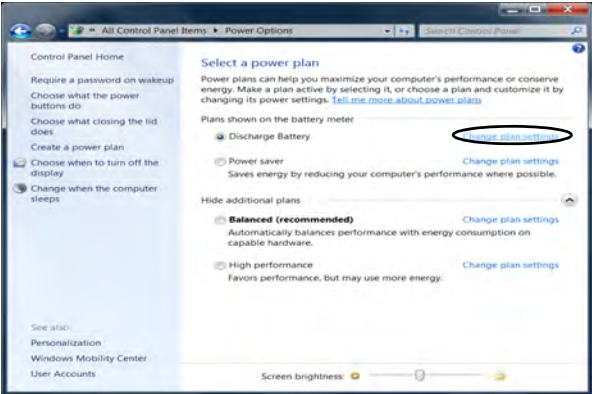
Figure 3 - 8
Change Plan Settings / Change Advanced Power Settings

3

4. Scroll down to **Battery** and click **+** to expand the battery options.
5. Choose the options below (click **Yes** if a warning appears):

Figure 3 - 9
**Power Options
Advanced Settings -
Battery**
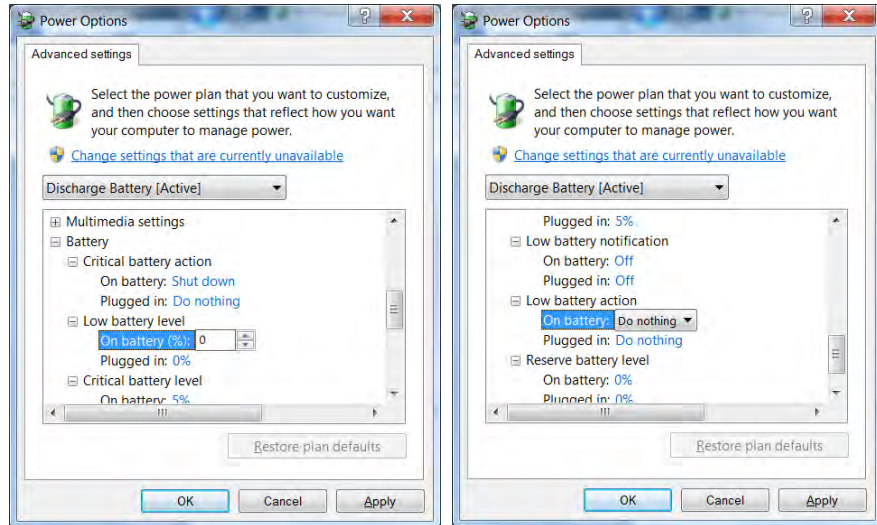
- Low battery levels = 0%
- Critical battery Levels = 1%
- Low battery action = Do Nothing
- Critical battery action (On battery) = Shut Down
- Critical battery action (Plugged in) = Do Nothing

3

How do I fully charge the battery?

When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?

Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Power Management

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**.

Module Driver Installation

The procedures for installing drivers for the **PC Camera, WLAN**, **Fingerprint, Combination Bluetooth & WLAN, 3.75G** and **Consumer Infrared** (for TV tuner remote) modules (you should also install the **THX Studio Pro Audio** and **Intel Rapid Storage Technology** drivers as instructed in Chapter 7) are provided in *"Modules" on page 7 - 1*.

4

Driver Installation

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

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, (you should note down the drivers as you install them).
3. Follow the instructions for each individual driver installation procedure as listed on the following pages.

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

Windows 7 Driver	Page	Windows 7 Driver	Page
Chipset	*Page 4 - 6*	*PC Camera Module*	*Page 7 - 15*
Video (VGA)	*Page 4 - 6*	*Wireless LAN Module*	*Page 7 - 23*
LAN	*Page 4 - 6*	*Fingerprint Reader Module*	*Page 7 - 42*
Card Reader	*Page 4 - 7*	*Bluetooth Module*	*Page 7 - 49*
TouchPad	*Page 4 - 7*	*3.75G/HSPA Module* **(Models A & B Only)**	*Page 7 - 66*
USB 3.0	*Page 4 - 7*	*Consumer Infrared Driver* (for TV Tuner) **(Model C Only)**	*Page 7 - 86*
Hot Key	*Page 4 - 7*	*THX TruStudio Pro Audio* (recommended installation)	*Page 7 - 88*
MEI Driver	*Page 4 - 7*	*Intel Rapid Storage Technology*	*Page 7 - 8*
Audio	*Page 4 - 7*		

Table 4 - 1 **- Driver Installation**

Note that for Intel and 3rd party WLAN & Bluetooth Combo modules you need to install both the WLAN & Bluetooth drivers.

4

Manual Driver Installation

Click the **Browse CD/DVD** 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 - 8* for instructions.

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

If a **User Account Control** prompt appears as part of the driver installation procedure, click **Continue**/**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.

4

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.

🖉

Driver Installation General Guidelines

The driver installation procedure outlined in this Chapter (and in **Chapter 7 Options & Modules**), are accurate at the time of going to press.

Drivers are always subject to upgrade and revision so the exact procedure for certain drivers may differ slightly. As a general guide follow the default on screen instructions for each driver (e.g. **Next > Next > Finish**) unless you are an advanced user. In many cases a restart is required to install the driver.

Chipset

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

Video (VGA)

1. Click **2.Install VGA Driver > Yes**.
2. Click **AGREE AND CONTINUE** (button) to accept the terms of the license agreement.
3. Click **Next**.
4. Click the **RESTART NOW** button to restart the computer.

After Video (VGA) driver has been installed, and the system restarted, the OS will automatically run the "Winsat.exe" to rate the performance. Allow time for this process to finish and do not restart during this process (if you have restarted the system see *"Windows Update" on page 4 - 8*).

LAN

1. Click **3.Install LAN Driver > Yes**.
2. Click **Install.**
3. Click **Finish** to complete the installation.

Card Reader

1. Click **4.Install Cardreader Driver > Yes**.
2. Click **Install.**
3. Click **Finish** to complete the installation.

TouchPad

1. Click **5.Install Touchpad Driver > Yes**.
2. Click **Next**.
3. Click the button to accept the license, and then click **Next**.
4. Click **Finish > Restart Now** to restart the computer.

Hot Key

1. Click **6.Install Hotkey AP > Yes**.
2. Click **Next > Next**.
3. Click **Finish > Finish** to restart your computer.

USB 3.0

1. Click **7.Install USB 3.0 Driver > Yes**.
2. Click **Next**.

3. Click the button to accept the license and then click **Next**.
4. Click **Install > Finish**.

MEI Driver

1. Click **8.Install MEI Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish**.

Audio

1. Click **9. Install Audio Driver > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

After installing the audio driver the system will not return to the **Drivers Installer** screen. To install any of the optional drivers, eject the *Device Drivers & Utilities + User's Manual* disc and then reinsert it (or double-click the disc icon in My Computer), and click **Option Drivers** (button) to access the optional driver menu.

(See Over)

4

Drivers & Utilities

It is recommended that you install the **THX Tru Studio Pro Audio** application (see *"THX TruStudio AP Installation" on page 7 - 88*) and **Intel Rapid Storage Technology** driver (see *"IRST Driver Installation" on page 7 - 8* - required for AHCI & RAID mode).

🖉

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 **Windows Update** (System and Security/Security).
3. 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 begin checking for the updates.
6. Click **Install updates** (button) to install the updates.

Windows Experience Index

After Video (VGA) driver has been installed, and the system restarted, the OS will automatically run the "Winsat.exe" to rate the performance. If you have restarted the system during this time then follow the instructions below to update the information.

After the drivers are installed follow this procedure to ensure an accurate rating from the *Windows Experience Index* (make sure the AC/DC adapter is plugged in):

1. Click **Start**, and click **Control Panel**.
2. Click **Performance Information and Tools** (**System and Security > System > Check the Windows Experience Index**).
3. Click "**Rate this computer/Refresh Now/Rerun the assessment**".
4. The computer will take a few minutes to assess the system performance.
5. Close the control panel.

Optional Drivers

See the pages indicated for the driver installation procedures for any modules included in your purchase option.
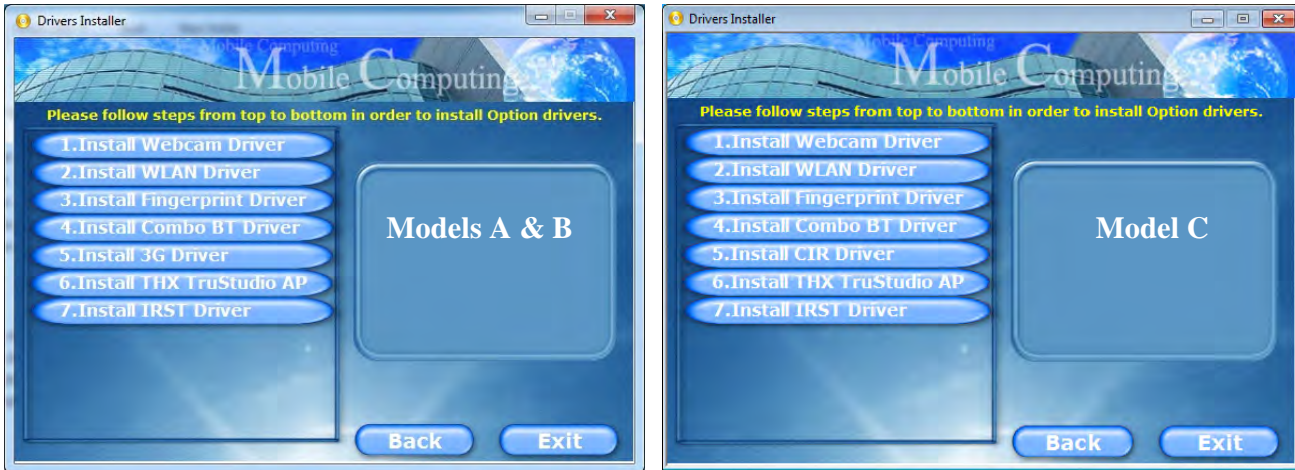
Figure 4 - 3 **- Optional Drivers Installer Screen**

Note that for Intel and 3rd party WLAN & Bluetooth Combo modules you need to install both the WLAN & Bluetooth drivers.

4

PC Camera

See the install procedure in *"PC Camera Module" on page 7 - 14*.

Wireless LAN

See the appropriate install procedure for your WLAN module in *"Wireless LAN Module" on page 7 - 22*.

Fingerprint Reader Module

See the install procedure in *"Fingerprint Reader Module" on page 7 - 42*.

Bluetooth & WLAN Combo Module

See *"3rd Party Bluetooth Combo Driver Installation" on page 7 - 49* or *"Intel Bluetooth Combo Driver Installation" on page 7 - 57*.

3.75G/HSPA Module (Models A & B Only)

See the introduction in *"3.75G/HSPA Module" on page 7 - 62*, and check the installation procedure.

Consumer Infrared (for TV Tuner Remote - Model C Only)

See the install procedure in *"TV Tuner Module" on page 7 - 85*.

THX TruStudio AP

See the install procedure in *"THX TruStudio Pro Audio" on page 7 - 88*.

Intel Rapid Storage Technology Driver

See the install procedure in *"Intel Rapid Storage Technology" on page 7 - 8*.

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.

> 冼
> **BIOS Screens**
>
> Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.
>
> BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.

5

The Power-On Self Test (POST)

If you enable the **Boot-time Diagnostic Screen** in the Setup Utility, 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.

5

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!) and you can then press **F7** for boot options.

Press **F2** (and give the system a few seconds to enter *Setup*) 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.

☼

**BIOS Settings
Warning**

Incorrect settings can
cause your system to
malfunction. To correct
mistakes, return to *Set-
up* and restore the *Pre-
vious Values* with
<F2>, or **Optimized De-
faults** with <F3>.

5

The Setup Utility

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

Entering Setup

To enter *Setup*, turn on the computer and press **F2** (and give the system a few sec-
onds to enter *Setup*) during the **POST** (or press **F7** for boot options). The prompt
"*Press F2 to Enter Setup*" 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.
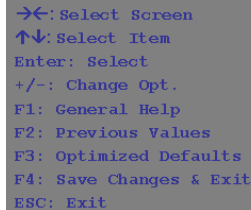
If the computer is already on, reboot using the **Ctrl** + **Alt** + **Delete** combination and
then hold down **F2** when prompted. The *Setup* main menu will appear.

To see the boot options press F7.

Setup Screens

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

Instructions on how to navigate each screen are in the box at the bottom right side of the screen.

```
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
```

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 upper 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.

5

🖉

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.

Figure 5 - 1
Navigation Menu

Main Menu

Figure 5 - 2
Main Menu

```
           Aptio Setup Utility - Copyright (C) 2010 American Megatrends Inc.
   Main  Advanced  Security  Boot  Exit

   System Date                     [Thu 12/09/2010]       Set the Date. Use Tab to
   System Time                     [09:56:26]             switch between Data elements.

 ▶ SATA Port 0 SAMSUNG HM16OH (160.0GB)
 ▶ SATA Port 1 Not Present
 ▶ SATA Port 2 HL-DT-ST BDVD ATAPI
 ▶ SATA Port 3 SAMSUNG HM16OH (160.0GB)

   System Memory:                  640 KB
   Extended Memory:                2048 MB (DDR3)

   MB Series:                      **********
   BIOS Revision:                  **********
   KBC/EC firmware Revision:       **********            →←: Select Screen
                                                         ↑↓: Select Item
   VGA Card:                       nVIDIA G GTX 460M     Enter: Select
   VBIOS Revision:                 **********            +/-: Change Opt.
   VBIOS Build Card:               **********            F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save Changes & Exit
                                                         ESC: Exit


           Version ******** Copyright (C) 2010 American Megatrends. Inc.
```

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 0/2/3 (Main Menu)
Pressing **Enter** opens the sub-menu to show the configuration of a optical Device/
HDD on the computer's SATA Ports.

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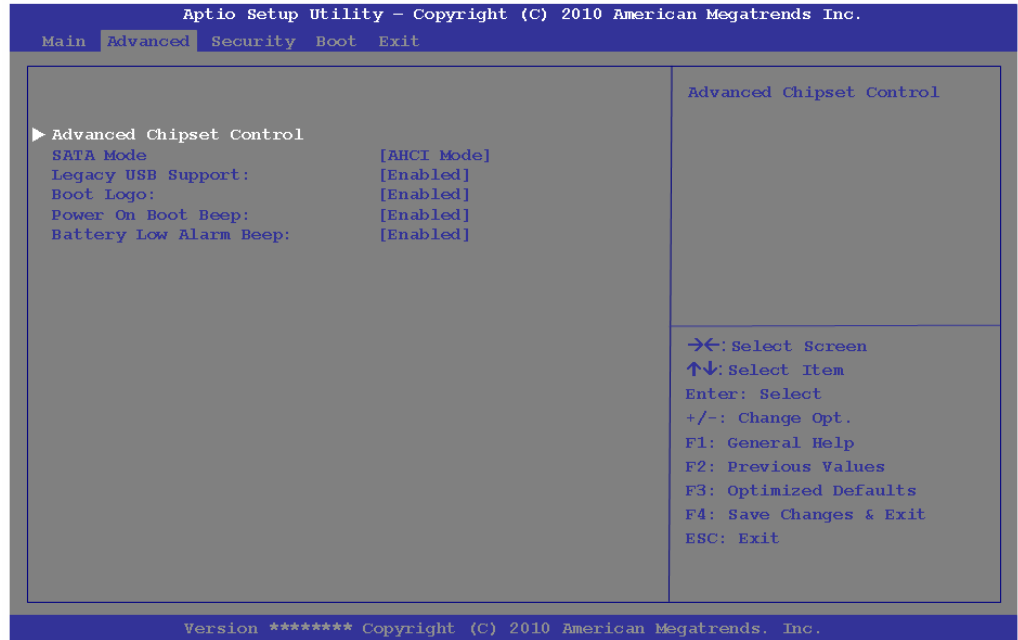This item contains information on the system memory, and is not user configurable.
The system will auto detect the amount of memory installed.

*MB Series / BIOS Revision / KBC/EC firmware Revision / VGA Card etc. (Main
Menu)*
This item contains information on the BIOS version and video card etc., and is not
user configurable.

5

Advanced Menu

Figure 5 - 3
Advanced Menu

```
                  Aptio Setup Utility – Copyright (C) 2010 American Megatrends Inc.
    Main  Advanced  Security  Boot  Exit

 ▶ Advanced Chipset Control                          Advanced Chipset Control
   SATA Mode                    [AHCI Mode]
   Legacy USB Support:          [Enabled]
   Boot Logo:                   [Enabled]
   Power On Boot Beep:          [Enabled]
   Battery Low Alarm Beep:      [Enabled]




                                                    →←:Select Screen
                                                    ↑↓:Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save Changes & Exit
                                                    ESC: Exit


                  Version ******** Copyright (C) 2010 American Megatrends. Inc.
```

Advanced Chipset Control (Advanced Menu)
The sub-menu here allows you to adjust the **Bluetooth Power Setting**.

Bluetooth Power Setting (Advanced Menu > Advanced Chipset Control)
You can adjust the Bluetooth module power setting to your preference. The default setting (**Disabled**) will see the Bluetooth module powered off when the system is started up or restarted. Enabling the power setting will have the module retain the last power status (on or off) before any restart or shut down.

SATA Mode (Advanced Menu)
You can configure SATA (Serial ATA) control to operate in **IDE** (native/compatible), **AHCI** (Advanced Host Controller Interface) or **RAID** (Redundant Array of Independent disks) modes from this menu. The **SATA Mode** should be set **BEFORE installing an operating system**, and after you have backed up all necessary files and data (see sidebar). See *"Setting Up SATA RAID Mode" on page 7 - 2* for details. Make sure you install the **Intel Rapid Storage Technology application** if you have set the SATA Mode to **RAID** or **AHCI** *"IRST Driver Installation" on page 7 - 8*.

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

5

> ☼
>
> **SATA Mode Selection**
>
> If you have installed the *Windows 7* operating system with either **IDE**, **AHCI or RAID** mode enabled, **DO NOT** disable the set mode (if you wish to disable the set mode you will need to reinstall the *Windows 7* OS).

Boot Logo: (Advanced Menu)
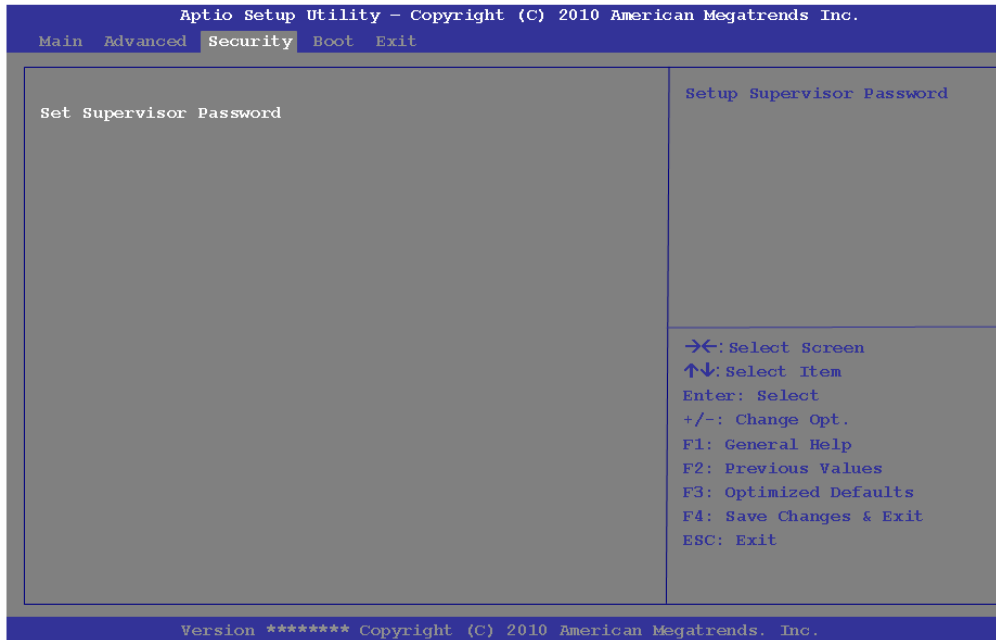Use this menu item to enable/disable the Boot Logo screen at system startup.

Power On Boot Beep (Advanced Menu)
Use this menu item to enable/disable the beep as the computer starts up.

Battery Low Alarm Beep: (Advanced Menu)
Use this menu item to enable/disable the battery low alarm beep.

5

Security Menu

```
          Aptio Setup Utility - Copyright (C) 2010 American Megatrends Inc.
  Main  Advanced  Security  Boot  Exit

   Set Supervisor Password                        Setup Supervisor Password






                                            →←:Select Screen
                                            ↑↓:Select Item
                                            Enter: Select
                                            +/-: Change Opt.
                                            F1: General Help
                                            F2: Previous Values
                                            F3: Optimized Defaults
                                            F4: Save Changes & Exit
                                            ESC: Exit



          Version ******** Copyright (C) 2010 American Megatrends. Inc.
```

Set Supervisor Password (Security Menu)
You can set a password for access to the **Aptio Setup Utility**. This will not affect access to the computer OS (only the **Aptio Setup Utility**).

🖉

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.

Figure 5 - 4
Security Menu

☼

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.

5

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.

Boot Menu

```
        Aptio Setup Utility - Copyright (C) 2010 American Megatrends Inc.
  Main  Advanced  Security  Boot  Exit


  Boot Sequence:                                 Keys used to view or configure
  1: SATA ODD         P2: HL-DT-ST BDDVDRW CT30N devices:
  2: USB ODD                                     Up and Down arrows select a
  3: SATA HDD         P0: SAMSUNG HM16OHI         device.
  4: SATA HDD         P4: SAMSUNG HM16OHI         <F5> and <F6> moves the device
  5: SATA HDD                                     up or down.
  6: USB KEY
  7: USB KEY
  8: USB HDD
  9: USB HDD
  10:PCI BEV          JMC25X Gigabit Ethernet Controller

                                                 →←:Select Screen
                                                 ↑↓:Select Item
                                                 Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save Changes & Exit
                                                 ESC: Exit

        Version ******** Copyright (C) 2010 American Megatrends. Inc.
```

Figure 5 - 5
Boot Menu

BIOS Screens

Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.

BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.

When you turn the computer on it will look for an operating system (e.g. *Windows 7*) 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 Sequence**. Item specific help on the right is available to help you move devices up and down the order.

Boot Sequence (Boot Menu)
Use the arrow keys to move up and down the menu and use the **F5** and **F6 keys** to move the device's boot priority up and down the list (the selected device will be highlighted in white).

5

Exit Menu

```
Aptio Setup Utility — Copyright (C) 2010 American Megatrends Inc.
Main  Advanced  Security  Boot  Exit


 Save Changes and Reset                          Reset the system after saving
 Exit Discarding Changes                         the changes.
 Load Setup Defaults
 Discard Changes
 Save Changed




                                                 →←:Select Screen
                                                 ↑↓:Select Item
                                                 Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save Changes & Exit
                                                 ESC: Exit



Version ******** Copyright (C) 2010 American Megatrends. Inc.
```

Figure 5 - 6
Exit Menu

5

Click *Save Changes and Exit* to save all changes made. 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.

5

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.

The chapter includes:

- Removing the Battery
- Upgrading the Optical Device (Model A/B)
- Upgrading the Optical Device (Model C)
- Upgrading the Hard Disk Drive(s)
- Upgrading the System Memory (RAM)

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

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

6

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).

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

Upgrading the 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.

> 逆
>
> **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).
>
> It is advisable to also remove your battery in order to prevent accidentally turning the machine on. **Before removing the battery disconnect the AC/DC adapter from the computer first.**

6

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery. **Before removing the battery disconnect the AC/DC adapter from the computer first**. Note that only **Model A/B** is pictured, however the procedure for removing the battery from **Model C** is identical.

1. Turn the computer off, remove the AC/DC adapter and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. Slide the latch **2** in the direction of the arrow, and hold it in place.
4. Slide the battery in the direction of the arrow **3**.
5. Lift the battery out of the compartment **4**.

Warranty Warning

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

6
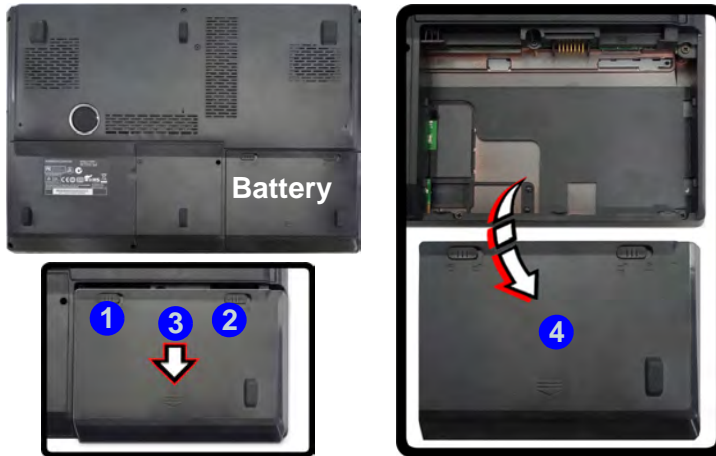
Figure 6 - 1
Battery Removal

Upgrading the Optical Device (Model A/B)

1. Locate the hard disk bay cover and remove screws **1** & **2**.
2. Remove the hard disk bay cover **3**.
3. Remove the screw at point **4**, and use a screwdriver to carefully push out the optical device at point **5**.
4. Reverse the process to install any new optical (CD/DVD) device.
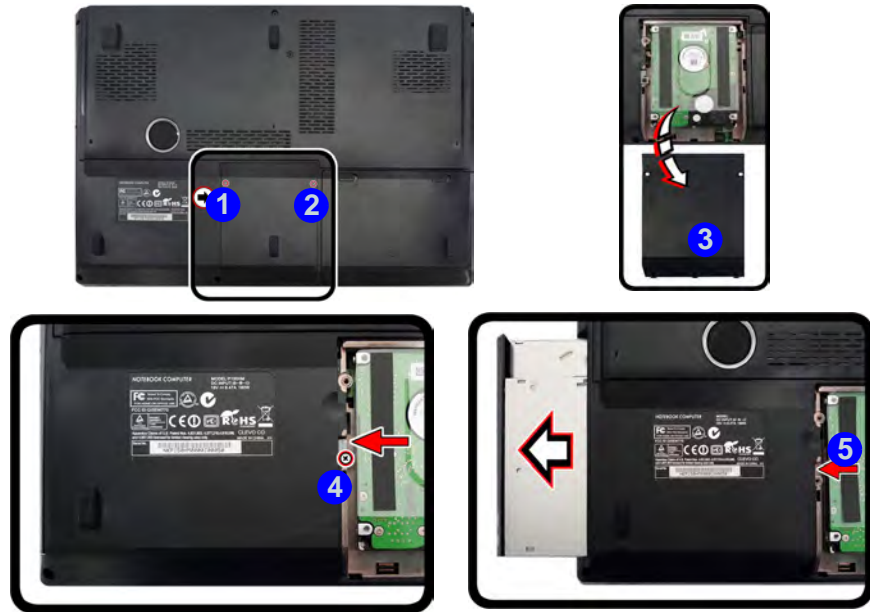
Figure 6 - 2
Removing the Optical (CD/DVD) Device

Upgrading the Optical Device (Model C)

1. Locate the **secondary** hard disk bay cover and remove screws ❶ & ❷.
2. Remove the hard disk bay cover ❸.
3. Remove the screw at point ❸, and use a screwdriver to carefully push out the optical device out of the bay.
4. Reverse the process to install any new optical (CD/DVD) device.
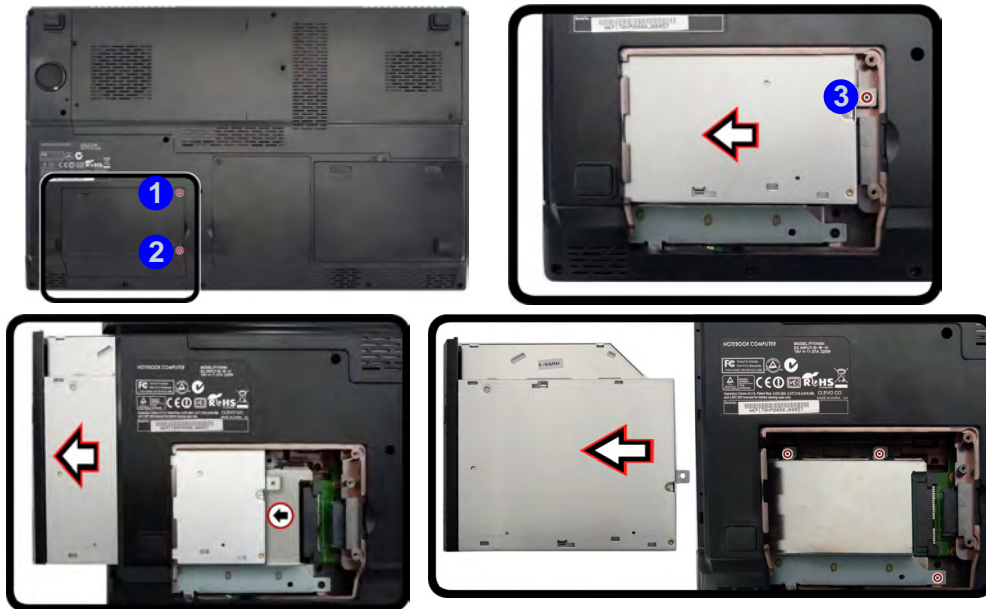
Figure 6 - 3
Removing the Optical (CD/DVD) Device

6

Upgrading the Hard Disk Drive(s)

The hard disk Drive(s) 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 *"Drivers & Utilities" on page 4 - 1*), when setting up a new hard disk.

Model C computers feature a **primary** and **secondary** hard disk bay (you may have a second hard disk installed as part of a RAID). The procedure for removing the primary hard disk is the same for all models (see overleaf), and see also *"Removing the Hard Disk from the Secondary HDD Bay (Model C Only)" on page 6 - 11*.

🔔 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.

6

Removing the Hard Disk from the Primary HDD Bay

Note that only **Model A/B** is pictured, however the procedure for removing the primary hard disk from **Model C** is identical.

1. Turn the computer off, remove the AC/DC adapter, turn it over and remove the battery.
2. Locate the hard disk bay cover and remove screws ❶ & ❷.
3. Remove the hard disk bay cover by levering the cover at point ❸.
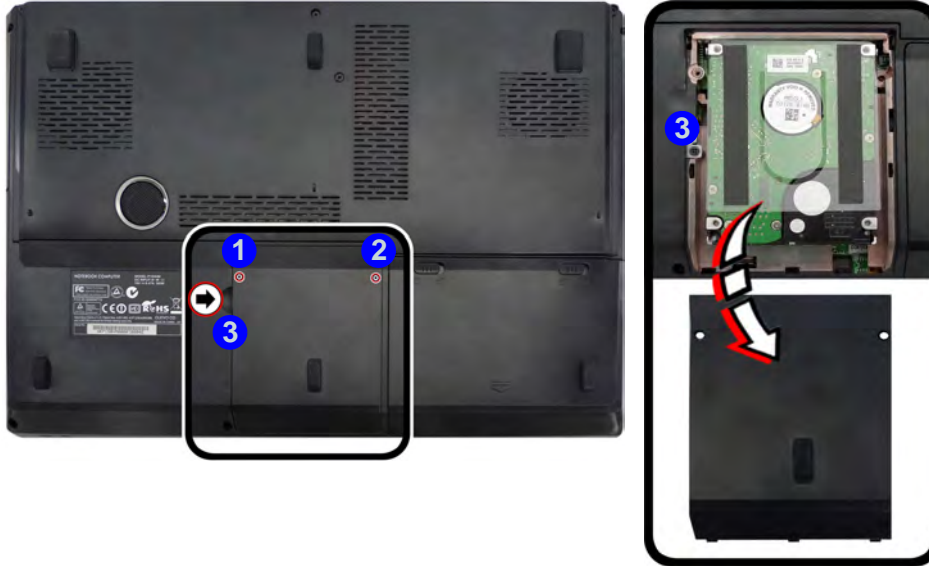
> ☼
>
> **RAID Hard Disks**
>
> All hard disks in a RAID should be identical (the same size and brand) in order to prevent unexpected system behavior.

Figure 6 - 4
HDD Bay Cover Screws & Cover Removal

4. Slide the HDD assembly in the direction of arrow **4**.
5. Remove the hard disk assembly **5**.

Figure 6 - 5
Hard Disk Assembly Removal

6
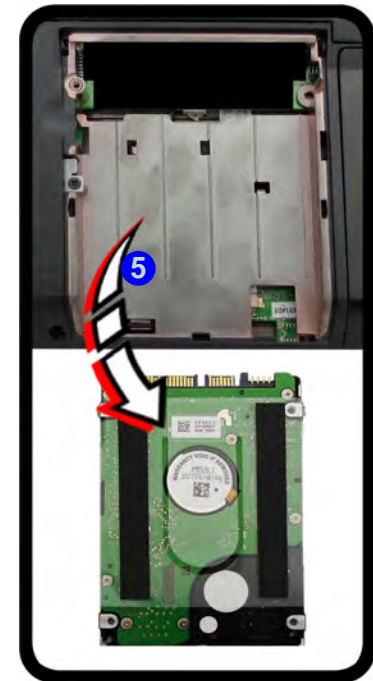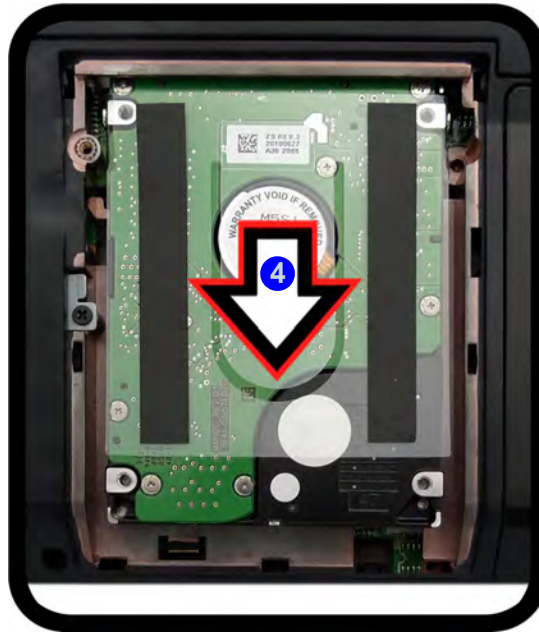
6. Remove screws **6** & **7** and the insulation plate **8**.
7. Reverse the process to install a new disk and do not forget to install the insulation plate.
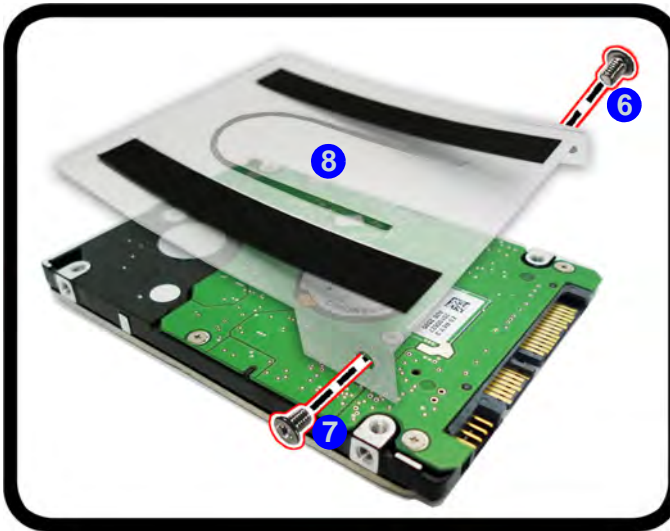
Figure 6 - 6
Hard Disk Insulation Plate Removal

Inserting the Hard Disk Into the Primary HDD Bay

1. Make sure the HDD assembly is aligned with the black taped area **1**.
2. When aligned, carefully insert the HDD assembly **2** into the case so that the connectors line up.
3. Replace the hard disk bay covers and screws.
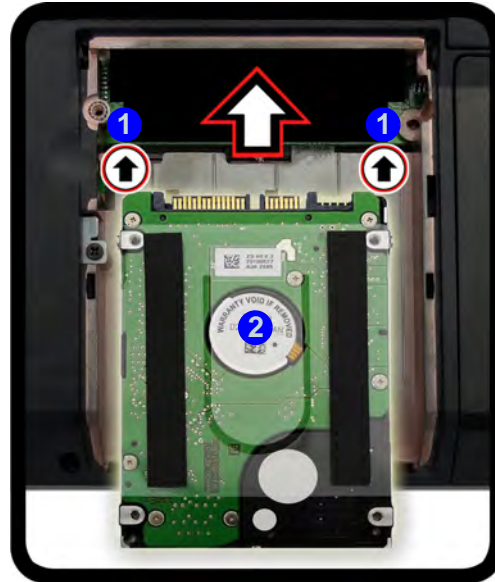
Figure 6 - 7
**Primary HDD
Assembly Insertion**

Removing the Hard Disk from the Secondary HDD Bay (Model C Only)

Note that the **secondary** hard disk (if installed) is located under the optical device bay (CD/DVD).

1. Turn the computer off, remove the AC/DC adapter, turn it over and remove the battery.
2. Remove the optical device (see *"Upgrading the Optical Device (Model C)" on page 6 - 5*)
3. When the optical device is removed the secondary HDD assembly will be visible.
4. Remove screws ❶ - ❸ from the secondary HDD assembly.

RAID Hard Disks

All hard disks in a RAID should be identical (the same size and brand) in order to prevent unexpected system behavior.

6

Figure 6 - 8
Secondary HDD Assembly Screws

5. Slide the secondary HDD assembly in the direction of the arrow ④ (it will not move fully out of the bay),
6. Lift the secondary HDD assembly ⑤ up out of the bay (in the reverse direction to arrow ④).

6
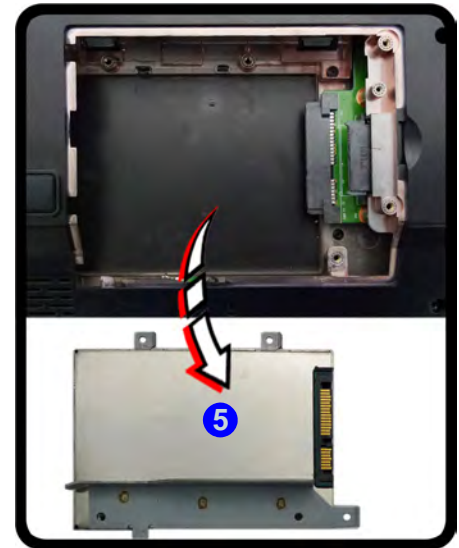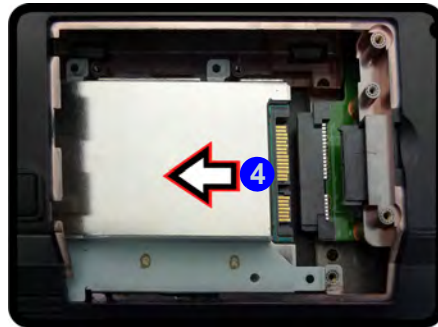
Figure 6 - 9
Secondary HDD Assembly Removal

7. Remove screws **6** - **9** and the insulation plate **10**.
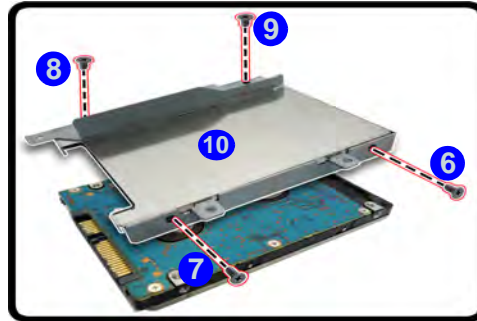
Figure 6 - 10
**Secondary
Hard Disk Insulation
Plate Removal**

8. Reverse the process to install a new disk (make sure you install the insulation plate).
9. Slide the HDD assembly into the bay at an angle as illustrated.
10. Make sure the insulation plate slides under the HDD bay guide at point **11**.
11. Slide the assembly in the direction of the arrow **12** and secure the assembly with the screws (see *Figure 6 - 8 on page 6 - 11*).
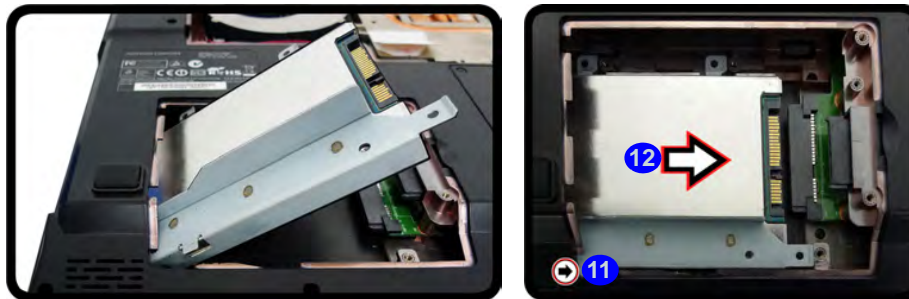
Figure 6 - 11
**Secondary
Hard Disk Assembly
Installation**

Upgrading the System Memory (RAM)

The computer has **four** memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) **DDR III (DDR3)** type memory modules (see *"Memory" on page C - 3*). The total memory size is automatically detected by the POST routine once you turn on your computer.

Note that **four SO-DIMMs are only supported by Quad-Core CPUs**; **Dual-Core CPUs support two SO-DIMMs maximum (see** *"Memory" on page C - 3* **for full details).**

Two primary memory sockets are located under component bay cover (the bottom case cover), and two secondary memory sockets are located under the keyboard (not user upgradable). If you are installing only two RAM modules then they should be installed in the primary memory sockets under the component bay cover.

Note that the RAM located under the keyboard is not user upgradable. Contact your service center for more information if you wish to upgrade the memory in the secondary memory sockets.

6

Replacing the Primary System Memory Modules

1. Turn **off** the computer, and turn it over and remove the battery.
2. Remove screws ❶ - ❹ from the bottom of the computer.

Models A & B

Model C
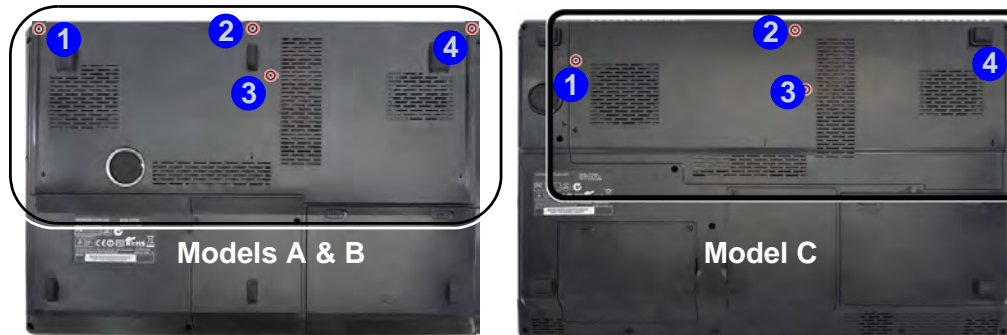
Figure 6 - 12
**Bottom Cover
Screws**

6

3. Slide the bottom cover until the cover and case indicators ❺ are aligned.

Figure 6 - 13
Bottom Cover Move

4. Lift the bottom cover **6** off the computer case.

Figure 6 - 14
Bottom Cover Removal

☼

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.
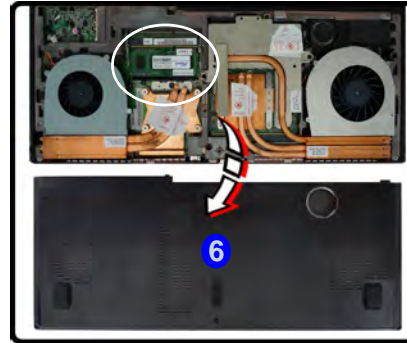
5. Gently pull the two release latches (**7** & **8**) on the sides of the memory sockets) in the direction indicated below.

Figure 6 - 15
RAM Module Removal
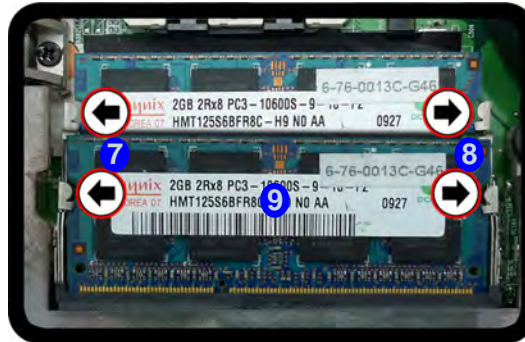
6. The RAM module **9** will pop-up, and you can remove it.

7.   Pull the latches to release the second module if necessary.
8.   Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory socket.
9.   The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. DO NOT FORCE the module; it should fit without much pressure.
10. Press the module in and down towards the mainboard until the socket levers click into place to secure the module.
11. Replace the component bay cover (see the preceding pages).

6

Upgrading The Computer

Chapter 7: Modules

Overview

This chapter contains the information on the various modules (some of which are **optional**) which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

The chapter includes information on the following:

- Setting Up SATA RAID Mode
- PC Camera Module
- Wireless LAN Module
- Fingerprint Reader Module
- Bluetooth Module
- 3.75G/HSPA Module
- TV Tuner Module
- THX TruStudio Pro Audio

7

7

Setting Up SATA RAID Mode

AHCI Mode

Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced serial ATA features such as Native Command Queuing (for maximum hard disk efficiency and performance). AHCI mode can be supported by one or two hard disks. Make sure you install the **Intel® Rapid Storage Technology** application if you have set up your hard disk(s) in **AHCI** mode (see *"Intel Rapid Storage Technology" on page 7 - 8*)

RAID

To configure your RAID (Redundant Array of Independent Disks) system in Striping (RAID 0), Mirroring (RAID 1) or Recovery modes (see *Table 7 - 1, on page 7 - 3*) you will require **at least two identical** (see sidebar) hard disks. Note that if you are using **Advanced format hard disks that have a 4KB physical sector size**, and you are **installing** a *Windows 7* release pre **Service Pack 1**, you will need to install a driver from the *Device Drivers & Utilities + User's Manual disc* at OS installation (**see page** *8 - 18*).

Intel® Rapid Storage Technology Application

Make sure you install the **Intel® Rapid Storage Technology** application if you have set up your hard disk(s) in **RAID** mode (see *"Intel Rapid Storage Technology" on page 7 - 8*).

RAID Level	Description
RAID 0	Identical drives reading and writing data in parallel to **increase performance**. RAID 0 implements a striped disk array and the data is broken into blocks and each block is written to a separate disk drive.
RAID 1	Identical drives in a mirrored configuration used to **protect data**. Should a drive that is part of a mirrored array fail, the mirrored drive (which contains identical data) will handle all the data. When a new replacement drive is installed, data to the new drive is rebuilt from the mirrored drive to restore fault tolerance.
Recovery	Two Identical drives copying data between a master and a recovery disk. This provides more control over how data is copied between the master and recovery drives, fast volume updates and the ability to view the data in *Windows Explorer*.

Table 7 - 1
RAID Levels

🖉

Array Types

A **Mirrored Array** (**RAID 1**) provides full data protection, as data can simply be copied from a healthy disk to a replacement for any failed disk.

A **Striped Array** (**RAID 0**) is **NOT** fault-tolerant. The failure of one drive will result in the loss of all data in the array. It is designed to increase disk performance by spreading the I/O load across the channels and drives.

Prepare the following before setting up your serial ATA hard disks in **RAID** mode:

1. The *Microsoft Windows 7 OS DVD*.
2. A hard disk installed in the Primary HDD bay.
   AND
   A **second** (identical) hard disk installed in the Secondary HDD bay.
3. The *Device Drivers & Utilities + User's Manual* disc.

Note that if you are using **Advanced format hard disks that have a 4KB physical sector size**, and you are **installing** a *Windows 7* release pre **Service Pack 1**, you will need to install a driver from the *Device Drivers & Utilities + User's Manual disc* at OS installation (**see page**).

SATA RAID Setup Procedure (BIOS)

1. Start-up your notebook computer and press <**F2**> to enter the **BIOS**.
2. Go to the **Advanced** menu, select "**SATA Mode**" and press Enter (see page *5 - 8*).

- Select "**RAID Mode**".

3. Press **Esc** and go to the **Boot** menu.
4. Set the *DVD-ROM Drive* (make sure the *Microsoft Windows 7 OS DVD* is inserted) as the first device in the boot order from the **Boot** menu (see *"Boot Menu" on page 5 - 15*).
5. Select **Save Changes and Exit** from the **Exit** menu (or press **F4** and Enter) and press **Enter** to exit the BIOS and reboot the computer.
6. See the instructions in *"RAID Setup (Intel Matrix)" on page 7 - 5*.

RAID Setup (Intel Matrix)

1. As the computer starts up press **Ctrl + i** to enter RAID configuration menu.
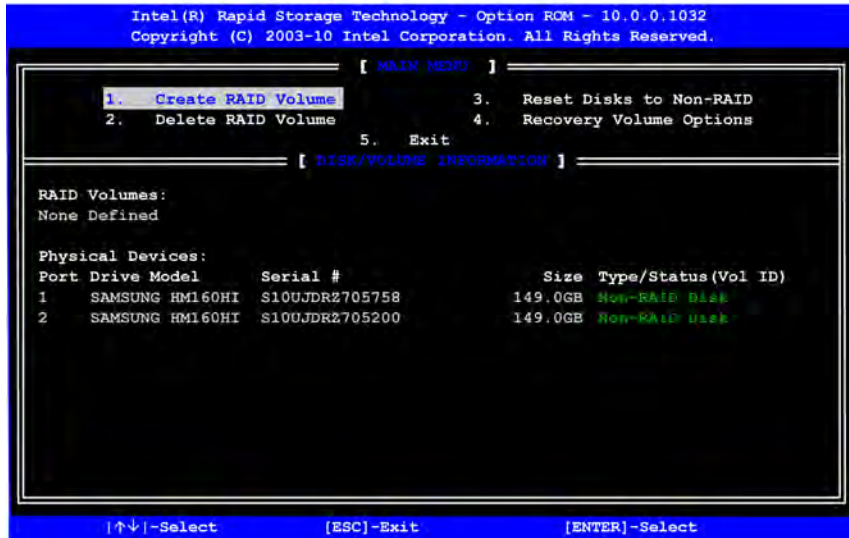
2. Select **1.Create RAID Volume** and press Enter.
3. Type the **RAID volume name** and then press Tab or Enter to advance to the next field.
4. Specify (use the up and down arrow keys) the **RAID level** (**RAID 0, RAID 1 or Recovery** - see *Table 7 - 1, on page 7 - 3*) and then press Tab or Enter to advance to the next field.

Figure 7 - 1
Intel(R) Rapid Storage Technology Option ROM

7

🖉

Recovery Level

When selecting disks for the Recovery RAID level you will need to use the **Tab** key to select a **Master** disk, and the **Space** key to select a **Recovery** disk.

You can select the synchronization between the disks to be **Continuous** (automatic) or **On Request** (manually).

5. Press Enter and the system will select the physical disks to use.
6. Press Enter and select (if applicable) the Strip Size (best set to default).
7. Press Enter and select the Capacity size (best set to default).
8. Press Enter to select **Create Volume**.
9. Press Enter to create the volume, and confirm the selection by pressing **Y**.
10. This will now return to the main menu.

P

Recovery Level

When selecting disks for the Recovery RAID level you will need to use the **Tab** key to select a **Master** disk, and the **Space** key to select a **Recovery** disk.

You can select the synchronization between the disks to be **Continuous** (automatic) or **On Request** (manually).

Figure 7 - 2
RAID Created

11. Select **5.Exit** and press Enter, then press **Y** to exit the RAID configuration menu.

7

12. Make sure the *Windows 7* OS DVD is in the DVD drive. and as the computer starts up it will automatically boot from the *Windows 7* OS DVD (you will be prompted to press a key to boot from the DVD).
13. Press **Enter** to continue installing the operating system as normal (see your *Windows* documentation if you need help on installing the *Windows* OS - see sidebar).
14. Install the *Windows* drivers from the *Device Drivers & Utilities + User's Manual* disc as per *Table 4 - 1, on page 4 - 3* (make sure you install the Intel Rapid Storage Technology driver - see *"IRST Driver Installation" on page 7 - 8*).

🖉

Win7 (pre SP1) & Advanced Format Disks in a RAID

Note that if you are installing a **Windows 7** OS **pre Service Pack 1**, and you are using **Advanced format hard disks that have a 4KB physical sector size,** you will need to install a driver from the *Device Drivers & Utilities + User's Manual disc* at OS installation (see page *8 - 18*).

7

Intel Rapid Storage Technology

The **Intel Rapid Storage Technology application** provides high-performance SATA and SATA RAID capabilities. Install the **Intel Rapid Storage Technology application** to support your **RAID** system or SATA drive if set up in **AHCI mode** in the BIOS (see *"SATA Mode (Advanced Menu)" on page 5 - 9*).

IRST Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual* disc into the CD/ DVD drive.
2. Click **Option Drivers** (button).
3. Click **7.Install IRST Driver > Yes**.
4. Click **Next > Next > Yes > Next > Next**.
5. Click **Finish** to restart the computer (you will need to restart the system again after the computer has rebooted).

See the following pages for more information if you have set your hard disks up in a RAID configuration.

7

Intel® Rapid Storage Technology for RAID Systems

Intel® Rapid Storage Technology application displays status information on your RAID configuration. Run the **Intel® Rapid Storage Technology** application from the **Intel** item in the **All Programs** menu.

When the **Intel® Rapid Storage Technology** application is launched the system will open the **Status** window. Here you can view the general health of the storage system. Various volume creation and management options are available depending on the system's status.
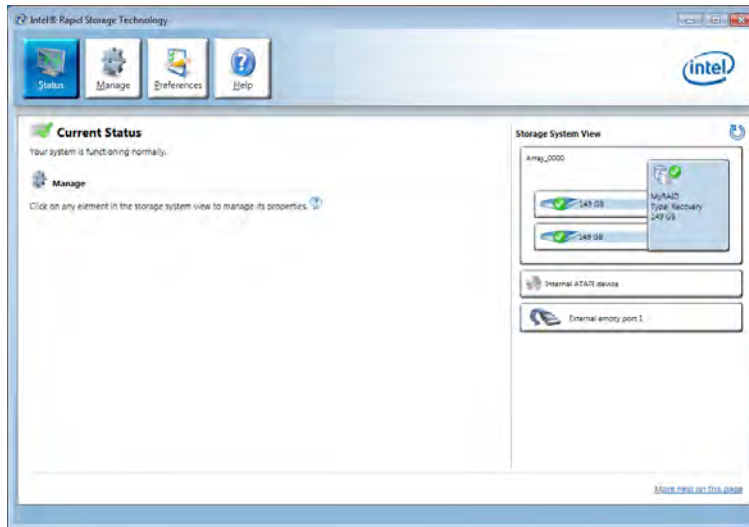
Figure 7 - 3
Intel® Rapid Storage Technology Status

📝

Help

Click the **Help** (or press **F1**) menu button at the top of the **Intel® Rapid Storage Technology** application.

Click **Contents** to view the general list of subjects covered, click **Index** or **Search** for a more specific help topics on a particular item.

Click **More help on this page** at the bottom of any page for page specific help.

Figure 7 - 4
Intel® Rapid Storage Technology Help

7

Intel® Rapid Storage Technology Help

If a hard drive member of a RAID volume is reported as "**Degraded**" or "**Failed**" it may be possible to recover the volume. If the volume cannot be restored then you will need to recreate the RAID volume and restore the data from a back up. Click the **Help** menu (or press **F1**) for instructions on how to recover or recreate RAID Volumes.
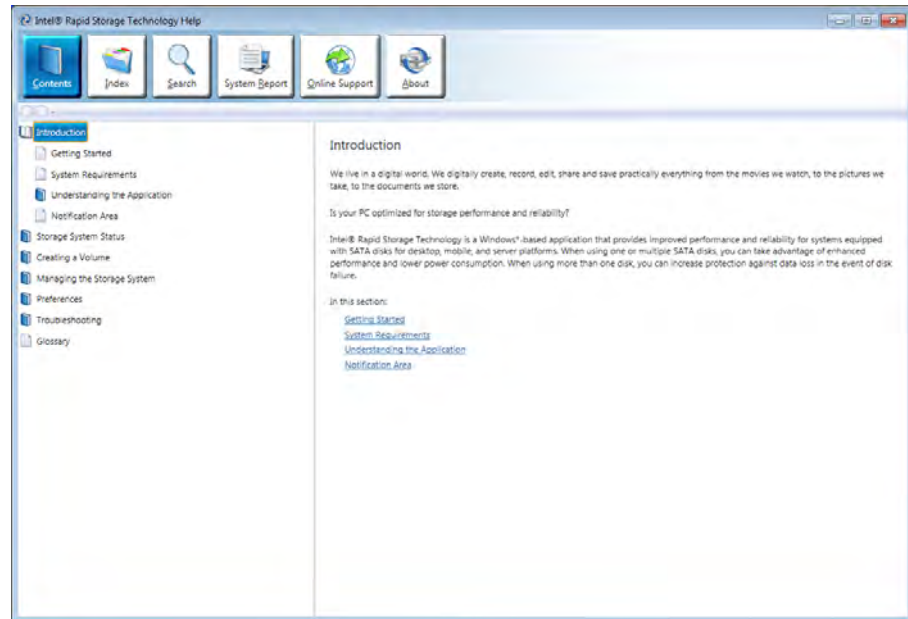
RAID Volume Data Verification and Repair

The RAID volume data verification process identifies any inconsistencies or bad data on a RAID 0 or RAID 1 volume. The table outlines what occurs for each RAID level:

RAID Level	Verify	Verify & Repair
RAID 0	Bad blocks are identified.	N/A
RAID 1	Bad blocks are identified. Data on the mirrored drive is compared to data on the source drive.	Bad blocks are reassigned. If the data on the mirrored drive does not match the data on the source drive, the data on the mirrored drive is overwritten by the data on the source.

Table 7 - 2
RAID Level Verification & Repair Status

7

Replacing and Reverting Recovery and Master Volumes

If a master or recovery drive fails you will need to add a new identical drive and re-build the recovery volume to the drive. You can also revert the master drive to the state of the previous volume update. For details on how to do this see the help file *"Intel® Rapid Storage Technology Help" on page 7 - 10*.

See over for details on how to verify and repair RAID volume data. Verification will identify and repair data inconsistencies on the volume.

Verifying and Repairing RAID Volume Data

1. Before verifying the volume data you will need to initialize the volume.
2. Run the **Intel® Rapid Storage Technology** application from the **Intel** item in the **Programs/All Programs** menu.
3. Click **Manage** and click **Advanced**.
4. Click **Initialize** and click **Yes** (button) to begin the process.
5. The completion percentage will be listed under **Status**.

Figure 7 - 5
Intel® Rapid Storage Technology Initialize

7
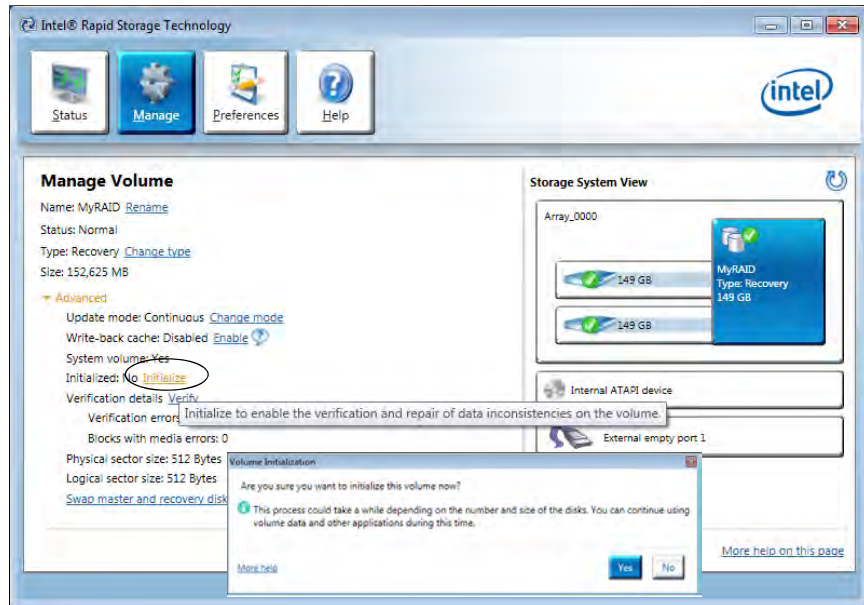
6. Click **Advanced** and click **Verify**, then click **Verify** (button) to begin the process.
7. The completion percentage will be listed under **Status** (verifying and repairing).
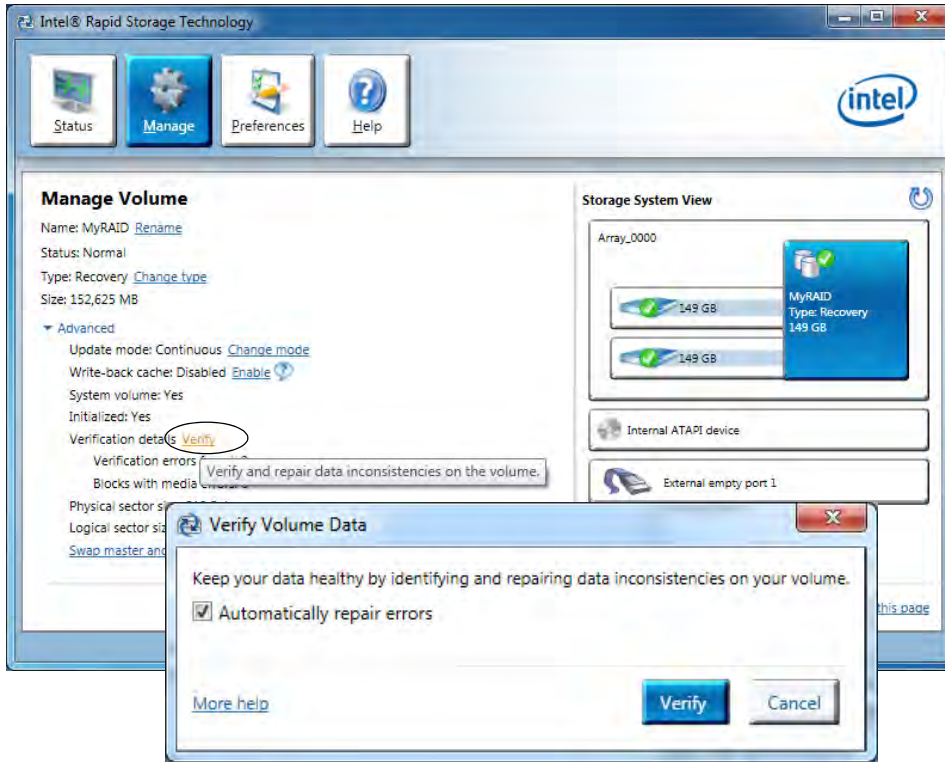
Figure 7 - 6
Intel® Rapid Storage Technology Verify

🔔

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 Display

The PC Camera application software needs to be run while the *default notebook LCD* is the selected display device.

After a camera picture is obtained on the default notebook LCD, you may then use the **Fn + F7** to toggle through the display modes (give the screen time to refresh).

PC Camera Module

Before installing the driver, make sure the PC Camera is on. **Use the Fn + F10 key combination** to toggle power to the to the PC Camera module. When the PC Camera module is powered on the indicator will briefly be displayed. Make sure you install the drivers in the order indicated in .

There are a number of different camera modules available with this computer model series. You will have the appropriate application installed for your camera (note that some versions of the camera application do not support the zoom function). **Make sure you access the application via the desktop shortcut**.

🔔

PC Camera Application and Power-Saving States

If the computer enters **Sleep** or **Hibernate** mode while running the camera application, the program will stop running, and will need to be restarted when the system resumes from the power-saving state.

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 **1.Install Webcam Driver > Yes**.
4. Click **Next > Install > Finish** to restart the computer.
   OR
   Choose the language you prefer and click **Next > Next > Finish**.
   OR
   Click **Next > Finish** to restart the computer.
5. Run the camera application program from the desktop shortcut (if the hard-
   ware is turned off use the **Fn** + **F10** key combination to turn it on again).

7

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. 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** (Realtek High Definition Audio) and make sure the item is not disabled.
5. Double-click **Microphone** (or select **Properties** from the right-click menu).
6. Click **Levels** (tab), and adjust the **Microphone** and **Microphone Boost** sliders to the level required.
7. Click **OK** and close the control panels.
8. Run the camera application program from the desktop shortcut.
9. Go to the **Devices** menu heading and select **Microphone** (**Realtek....**) (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).

7

Right-click
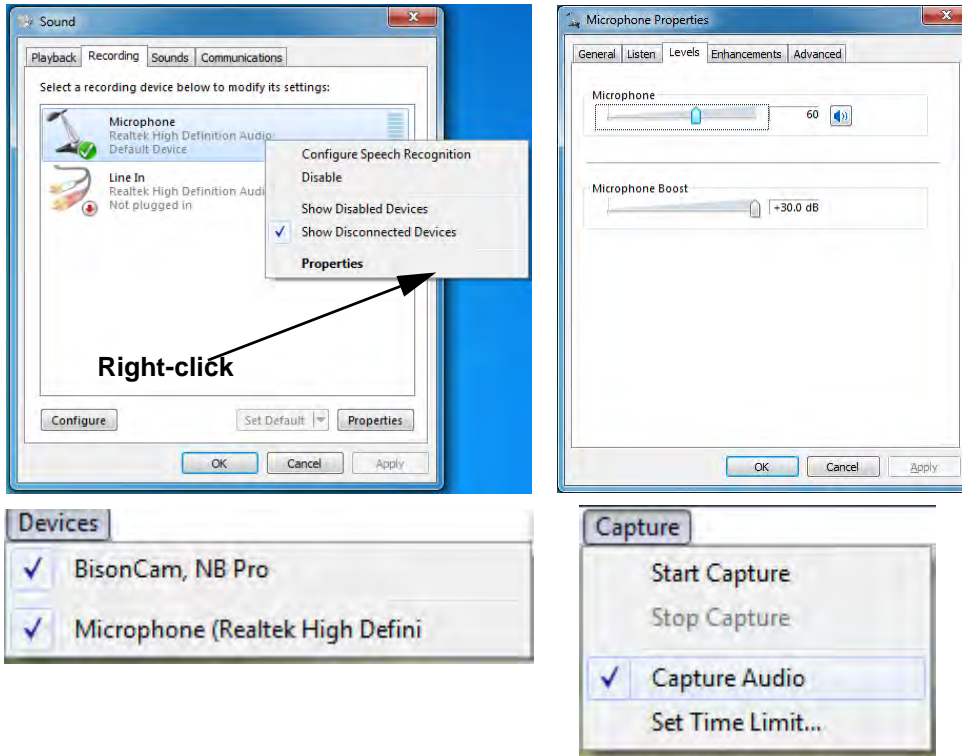
Figure 7 - 7
Audio Setup for PC Camera

7

Camera Application

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

1. Run the camera application from the desktop shortcut (it is recommended that you **set the capture file** before the capture process - **see below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check *"PC Camera Audio Setup" on page 7 - 16*) and select **Start Capture**.
3. Click **OK/Yes** (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 on the previous page.

Note the important information in *"Reducing Video File Size" on page 7 - 19* **in order to save file space, and help prevent system problems.**

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* 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 - 18*), limit the file size of the captured video or reduce video resolution (see below).

To Reduce Video Resolution Output Size:

1. Run the camera application program from the desktop shortcut.
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.
4. Click **OK**.

🔔

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, including the figures pictured here.

7

Figure 7 - 8
Video Capture Filter

Eliminating Screen Flicker

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

1.   Run the camera application from the desktop shortcut.
2.   Go to **Options** and scroll down to select **Video Capture Filter...**.
3.   Click either **50Hz** or **60Hz** under **Frequency (Anti Flicker)**.
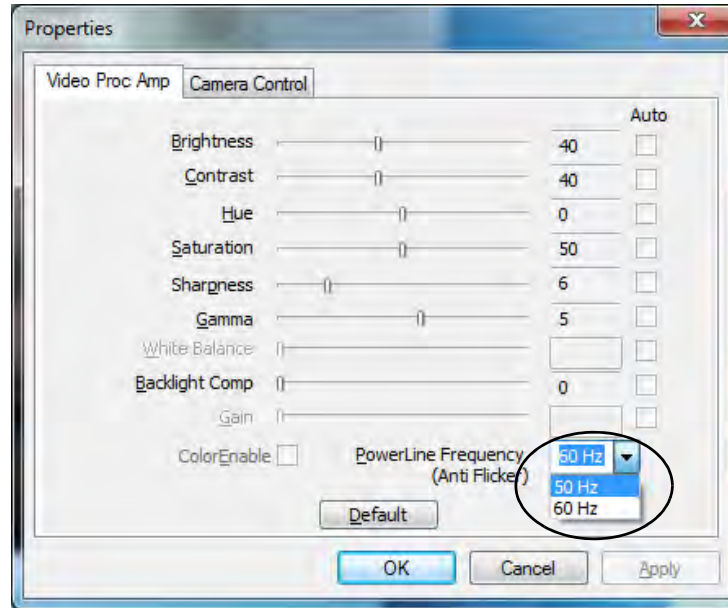
Taking Still Pictures

The camera application allows you to take still pictures.

1. Run the camera application from the desktop shortcut.
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.

7

7

Wireless LAN Module

If you have included an **Intel®** or **3rd Party 802.11b/g/n WLAN module** in your purchase option, make sure that the Wireless LAN module is on before installing the driver.

Use the Fn + F11 key combination to toggle power to the Wireless LAN module. When the WLAN module is powered on the indicator will briefly be displayed. Make sure you install the drivers in the order indicated in *Table 4 - 1, on page 4 - 3*. The operating system is the default setting for Wireless LAN control in *Windows 7*.

Wireless should be turned **ON** in the **Windows Mobility Center** to ensure proper wireless function key behavior (see *"Wireless Hot Keys" on page 7 - 41*).

Intel® Wi-Fi Link Series Driver Installation

If you see the message "**Found New Hardware**" click **Cancel** to close the window.

1. Make sure the module is powered on, then insert the *Device Drivers & Utilities + User's Manual* disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.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* (see overleaf).

802.11b/g/n Driver Installation

1. Make sure the module is powered on, then insert the *Device Drivers & Utilities + User's Manual* disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **2.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 7* (see overleaf).

🖉

Intel(R) PROSet/ Wireless

Access the **Intel PRO-Set Wireless** tools (Statistics and Diagnostic tools) from the Start menu (Start > Programs/All Programs > **Intel PROSet Wireless**). These tools provide diagnostic and statistical information only (use the WLAN control in *Windows* to connect to a WLAN access point).

7

 🖉

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.

7

Figure 7 - 9
Click Taskbar Icon Menu & Network and Sharing Center

Connecting to a Wireless Network in Windows 7

Make sure the Wireless LAN module is turned on.

1.   **Click** the taskbar wireless icon 📶, and then double-click an access point to connect to or click to **Open Network and Sharing Center** if you do not see a network you want to connect to in the taskbar menu (a list of options will appear allowing setting changes, and creating a new network).
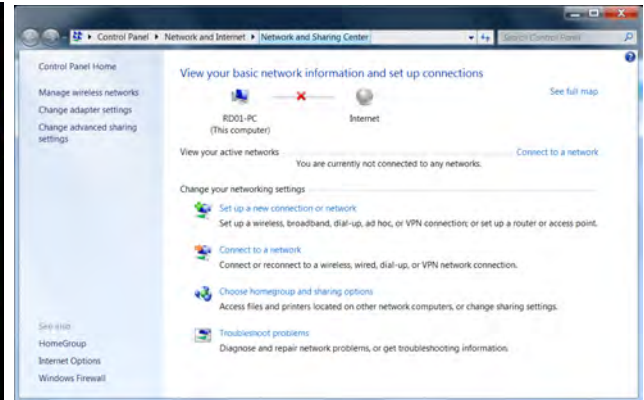
2. You may need to enter a security key for any access point to which you are trying to connect.
3. Click to select a network location (e.g. **Home, Work or Public**).
4. Click "**View or change settings in Network and Sharing Center**" to access further options for the connection.
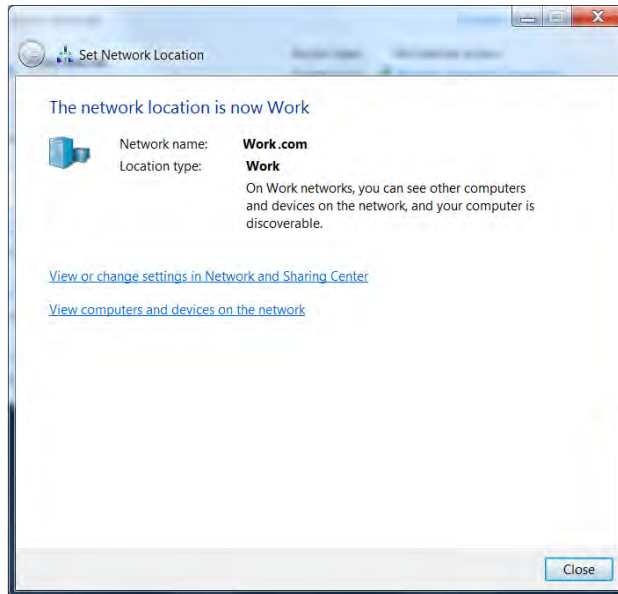
Figure 7 - 10
Network Location Set

Wireless LAN Module 7 - 25

> ☼
> **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 unauthorized access to your computer, documents, websites and files etc.

Figure 7 - 11
Click Taskbar Icon
Menu - Disconnect

5. Click the taskbar icon 📶 to see any currently connected networks.
6. To disconnect from the wireless network you can click the taskbar wireless icon 📶, click the active connection and then click **Disconnect** (button).

Intel® My WiFi Configuration

Intel® My WiFi Technology uses your WLAN (**for Intel WLAN modules only**) module to allow you to connect up to eight other WiFi enabled devices (e.g. digital cameras, other computers, cell phones, handheld devices etc.) to your computer (similar to Bluetooth), while still connecting to the Internet through your WiFi wireless connection. Intel® My WiFi Technology offers greater range and speed than other personal area networks, and does not require an access point.

🖉

Intel® My WiFi Help

To get help on **Intel® My WiFi** configuration and settings, access the **Intel® My WiFi Utility** from the **Start** menu (Start > Programs/All Programs > Intel PRO-Set Wireless > Intel My WiFi Technology), or by clicking the taskbar icon . Click the **Help** icon Help and select a help topic from the **Contents** menu.

7

Intel® My WiFi Configuration

You can configure the My WiFi settings as follows.

1. Access the **Intel® My WiFi Utility** from the **Start** menu (**Start** > **Programs/All Programs** > **Intel PROSet Wireless > Intel My WiFi Technology**), or by double-clicking the taskbar icon .
2. Click **Enable** (on the first run of the program there will be no connected devices listed).
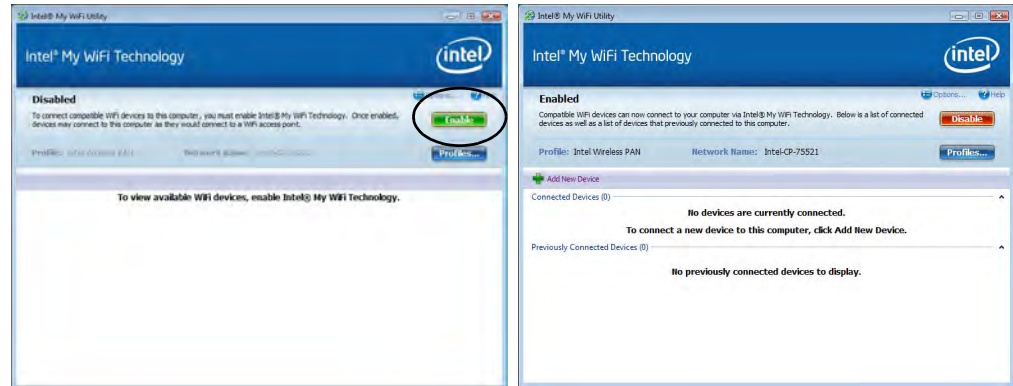
7

Figure 7 - 12
Intel® My WiFi Utility

3. Click **Start** and click **Control Panel**.
4. Click **Network and Sharing Center** (**Network and Internet**).
5. Click **Change adapter settings**.
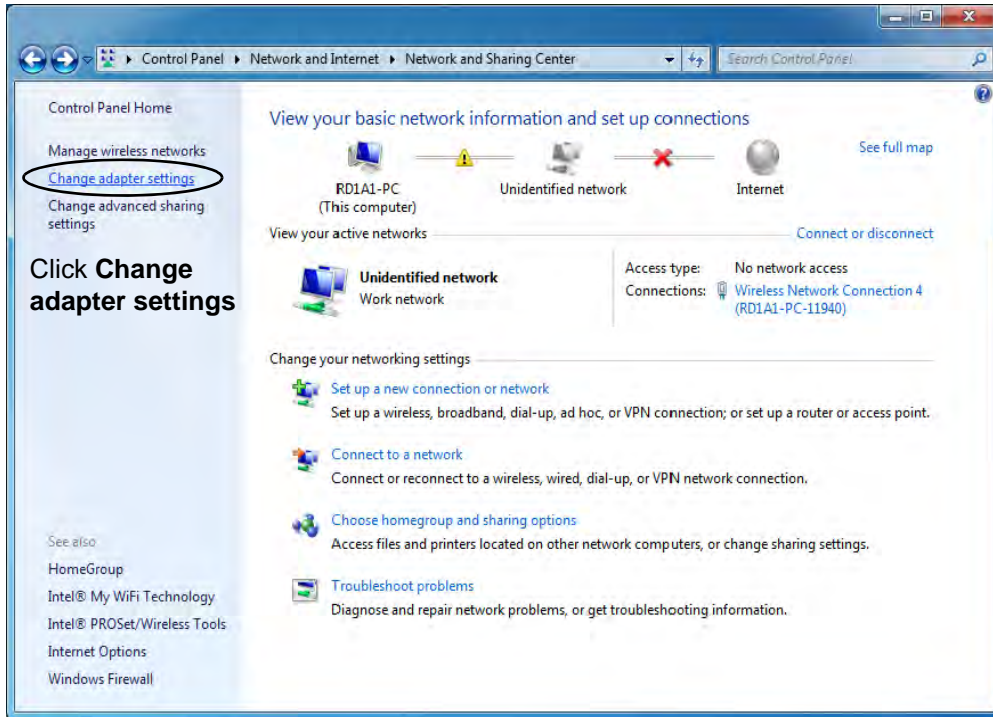
Figure 7 - 13
Network and Sharing Center

6. Right-click **Wireless Network Connection** and select **Properties**.

Figure 7 - 14
Network Connections

Right-click **Wireless Network Connection** and select **Properties**.

7
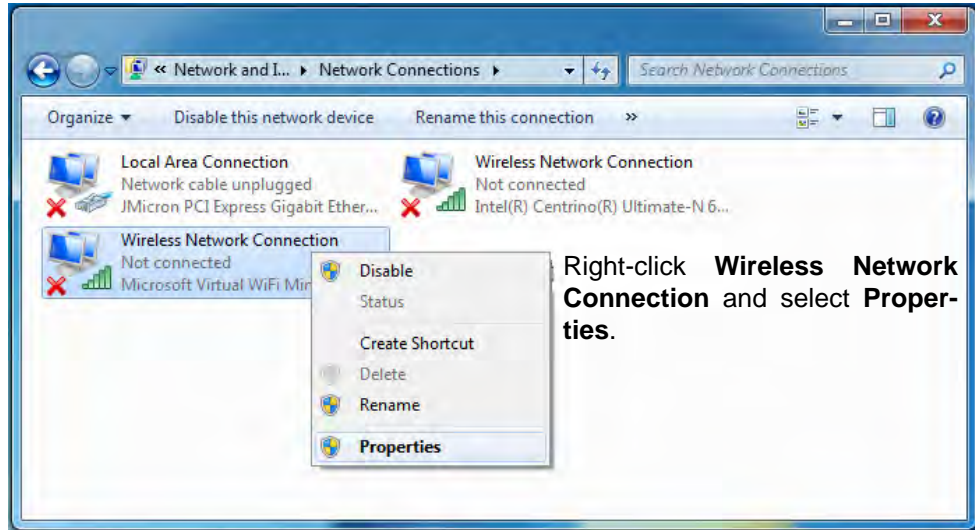
7. Click **Sharing (tab)** and select "**Allow other network users to connect through this computer's Internet connection**".
8. Select **Wireless Network Connection** under **Home networking connection**.
9. Click **OK**.

Click "**Allow other network users to connect through this computer's Internet connection**".

Select **Wireless Network Connection**.
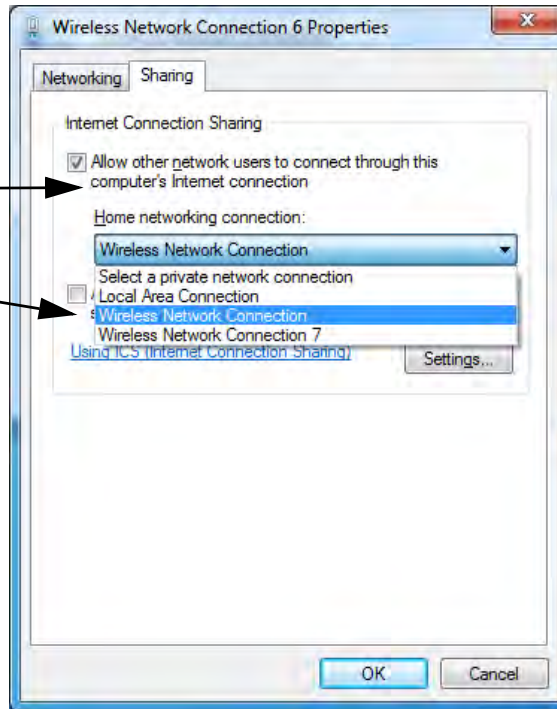
Figure 7 - 15
Wireless Network Connection Properties - Sharing

7

10. Access the **Intel® My WiFi Utility** from the **Start** menu (**Start** > **Programs/All Programs** > **Intel PROSet Wireless > Intel My WiFi Technology**), or by double-clicking the taskbar icon ⬛.

11. Click **Profiles** Profiles... .
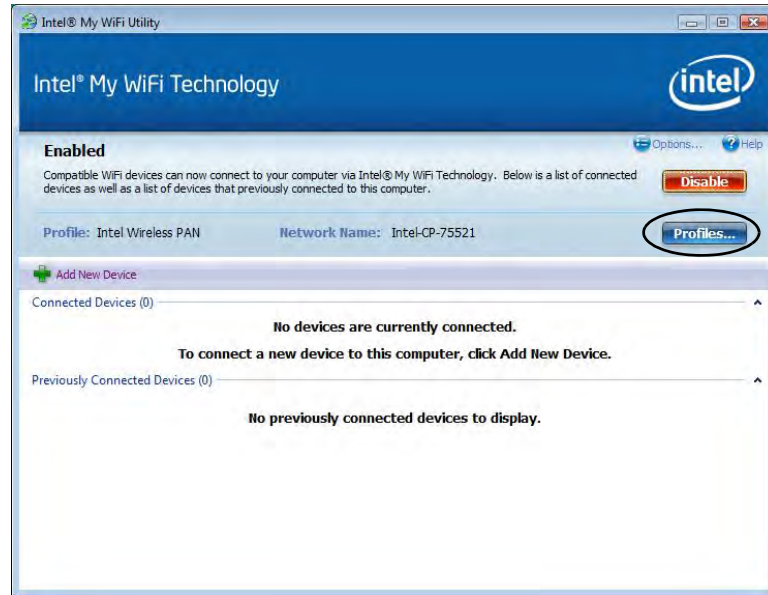
Figure 7 - 16
Intel® My WiFi Utility - Profiles

12. Click **Profiles,** click **Intel Wireless PAN** and click **Edit** or **New (Note that all preset settings may not be editable - see sidebar)**.

Figure 7 - 17
Profiles

13. You can change the **Profile Name** and **Network Name** to your personal preferences in **General** (tab).

🖊

Profile Settings

Profiles that are **preset may not be fully editable**. To edit all the profile settings, click **New** to create a new profile and adjust the settings to your preferences.

🖊

Profile and Network Names

The **Profile Name** is the name as displayed on your computer in the **Network Connections** control panel (see *Figure 7 - 19 on page 7 - 34*).

The **Network Name (SSID)** is the name the devices see when they try to connect to your computer.
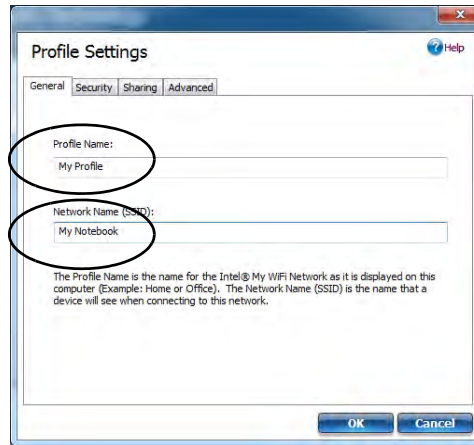
Figure 7 - 18
Intel® My WiFi Profile Settings - General

14. Click **Security** (tab).
15. Change the **Security Type** to **WEP** and the **Encryption Type** to **64bit**.
16. Enter a password (8 characters long) in the **Password** box.
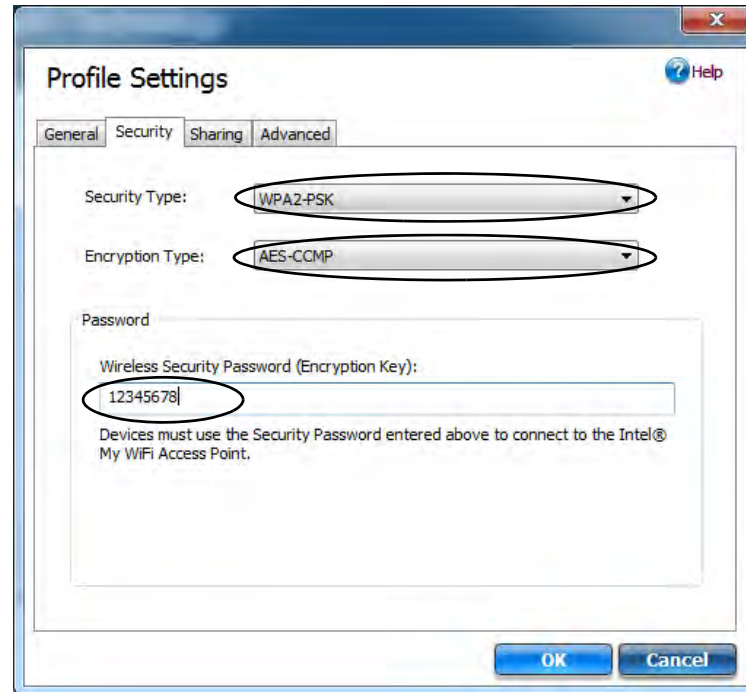
Figure 7 - 19
**Intel® My WiFi
Profile Settings -
Security**

7

17. Click **Sharing** (tab).
18. It is recommended that the **Filter Network Traffic** and **DHCP and DNS Server**
    are **Disabled**.
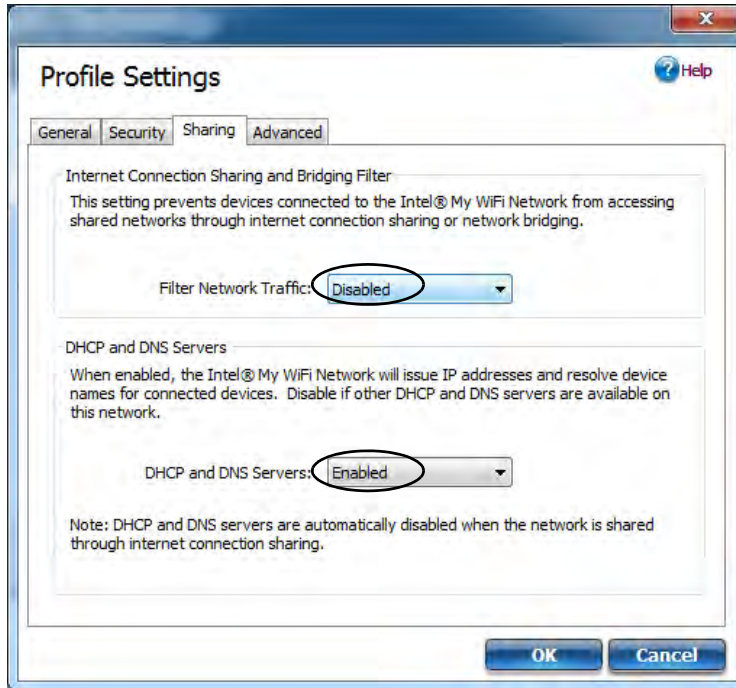
Figure 7 - 20
**Intel® My WiFi
Profile Settings -
Sharing**

19. Click **Advanced** (tab).
20. It is recommended that the **Default Channel** is set to **Channel 1, 6** or **11**.
21. Click **OK** to save the settings.
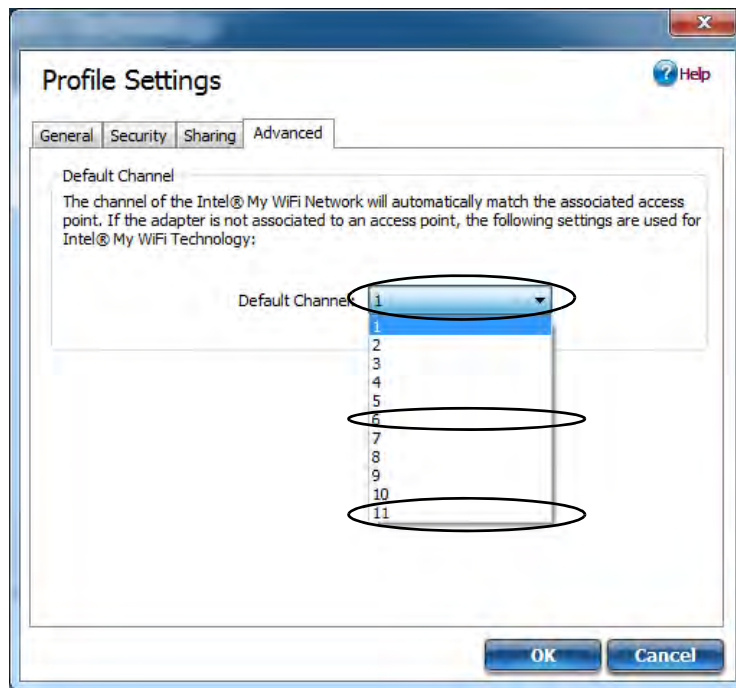
7

Figure 7 - 21
**Intel® My WiFi
Profile Settings -
Advanced**

22. Double-click **Wireless Network Connection** in **Network Connections**.
23. Click **Details** to display the **Network Connection Details**.
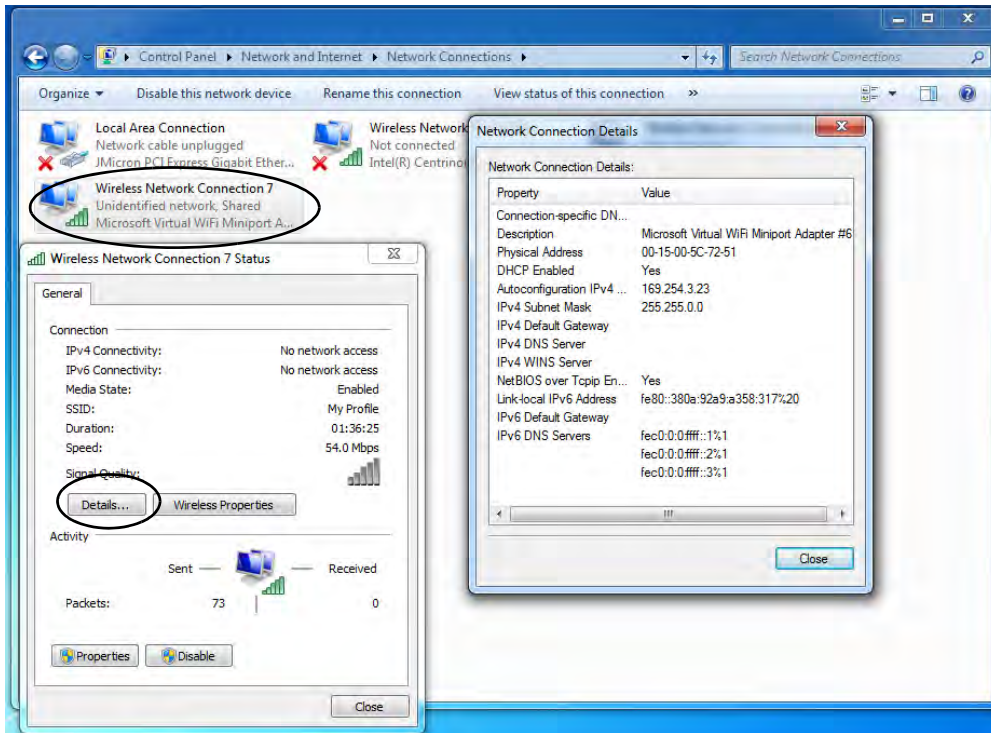
Figure 7 - 22
Wireless Network Connection Details

24. Access the **Intel® My WiFi Utility** from the **Start** menu (**Start** > **Programs/All Programs** > **Intel PROSet Wireless > Intel My WiFi Technology**), or by clicking the taskbar icon [image].

25. To add a new device follow the instructions in the devices' user guide for connecting to a WiFi network.

26. Click **Add New Device** in **Intel® My WiFi Utility** to confirm the security settings detail.
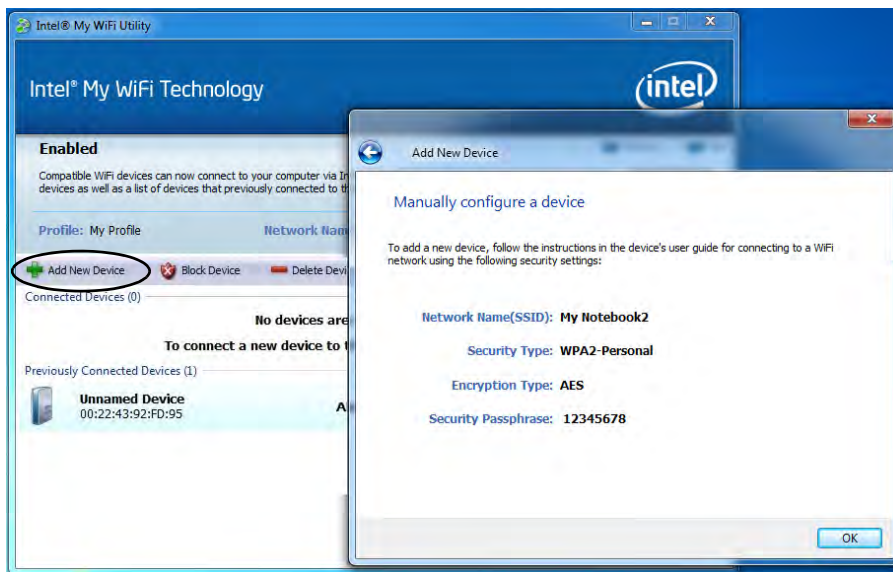
Figure 7 - 23
Intel® My WiFi Utility (Add New Device)

Intel WLAN Module High-Speed Data Transfer Configuration

You will need to configure the following settings to enable high-speed wireless data transfer as supported by Intel Wireless LAN modules (note this information applies to Intel WLAN modules only).

1. Go the *Windows* control panel and double-click **Device Manager** (in **Hardware and Sound** under **Devices and Printers**).

7

Figure 7 - 24
**Devices and
Printers
(Device Manager)**

2. Click **Network adapters** to expand the sub-menu.
3. Double-click the **Intel WiFi Link ....** module.
4. Click **Advanced** (tab).
5. Click **802.11n Channel Width for band 2.4** under "**Property**:".
6. Click the pull-down menu under "**Value:**"
7. Click to select **Auto**.
8. Click **OK** and close the control panels.
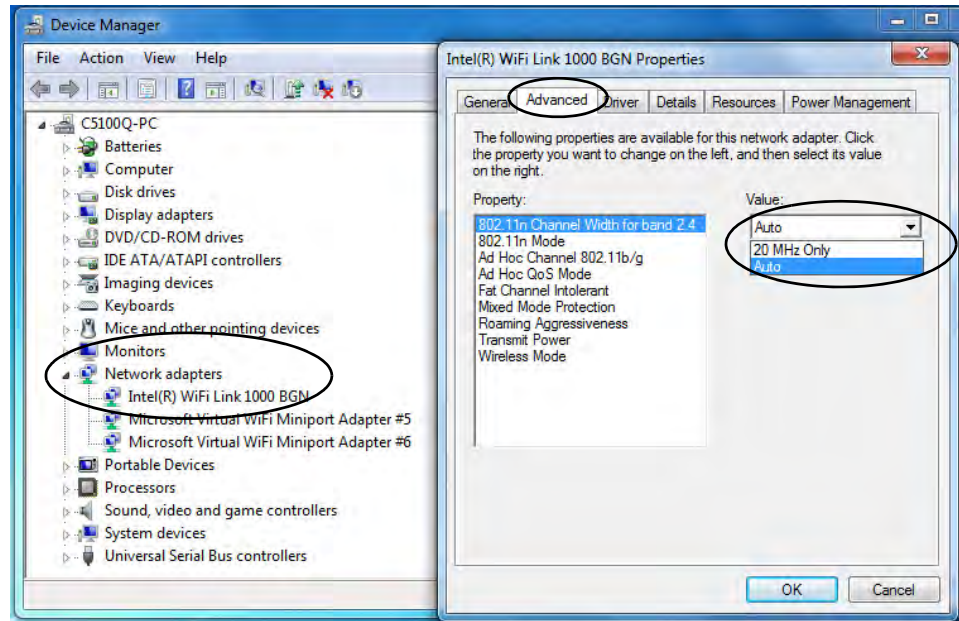
Figure 7 - 25
**Intel WiFi Link
Properties
(Advanced)**

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 .ıll to access the network menu.
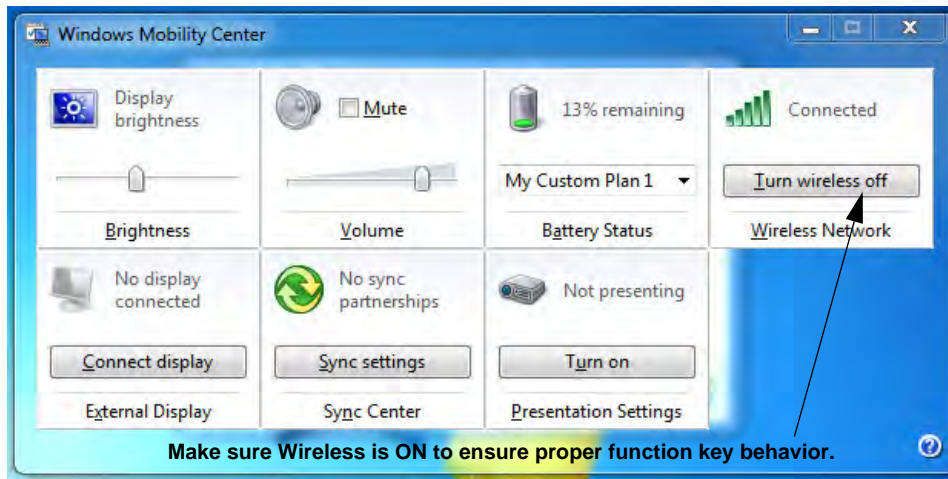
Make sure Wireless is ON to ensure proper function key behavior.

Wireless Hot Keys

The computer's wireless function keys will not function properly if **Wireless** is turned **OFF** in the **Windows Mobility Center** control panel.

The wireless indicators 🌐🌐 🌐🌐 may show that the WLAN module is powered on, however if wireless is OFF in the Mobility Center, the module will not be powered on.

Make sure that Wireless is **ON** in the Mobility Center to ensure proper function key behavior.

Figure 7 - 26
Windows Mobility Center

Fingerprint Reader Module

The **fingerprint reader Protector Suite Software** provides a high level of security for your computer. A further level of security and control is provided in the BIOS (see *"Security Menu" on page 5 - 11*).

The **fingerprint reader** and **Protector Suite Software** allow you to:

- Access or Lock your computer
- Protect sensitive files
- Display and file your favorite web pages
- Fill in frequently used dialogs
- Run your favorite applications

If you have included the fingerprint reader in your purchase option you will need to install the driver as per the instructions below.

Make sure you have administrator's rights to your computer, and have a *Windows* password enabled for full security protection.

Before beginning the enrollment process it is recommended that you go through the fingerprint tutorial (see *Figure 7 - 27 on page 7 - 44*).

〉✕〈

Password Warning

If you set passwords for any of the security modules, **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.

7

Fingerprint Reader Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual* disc into the CD/
    DVD drive.
2. Click **Option Drivers**.
3. Click **3.Install FingerPrint Driver > Yes**.
4. Click **Next > Next > Next**.
5. Click **Finish > Yes** to restart the computer.
6. Click the tray icon , scan a finger or click **Start > Programs/All Pro-
    grams > Protector Suite > Control Center and** then begin the enrollment
    process (see over).

7

> ☼
>
> **Fingerprint Enrollment**
>
> Note that it is strongly recommended that you **enroll more than one finger in case of injury etc.**

7

Figure 7 - 27
Fingerprint Enrollment

User Enrollment

1. Click **Start > Programs/All Programs > Protector Suite > Control Center**, or double click the taskbar icon [icon] (click **Initialize**).
2. On the first run of the program you will be asked to click the **Accept** button to accept the license.
3. If you have not set a *Windows* password you will be prompted to do so (**note**: If you have not set a password **Protector Suite** cannot secure access to your computer).
4. Click **Submit** when you have entered password.
5. You will then be prompted to enroll your fingerprints (you can click **Tutorial** to get help with fingerprint enrollment at any time).

6. Click the button above any of the fingers to begin the enrollment process for that finger.
7. Swipe the finger until the progress bar reaches **100%** to enroll that finger.
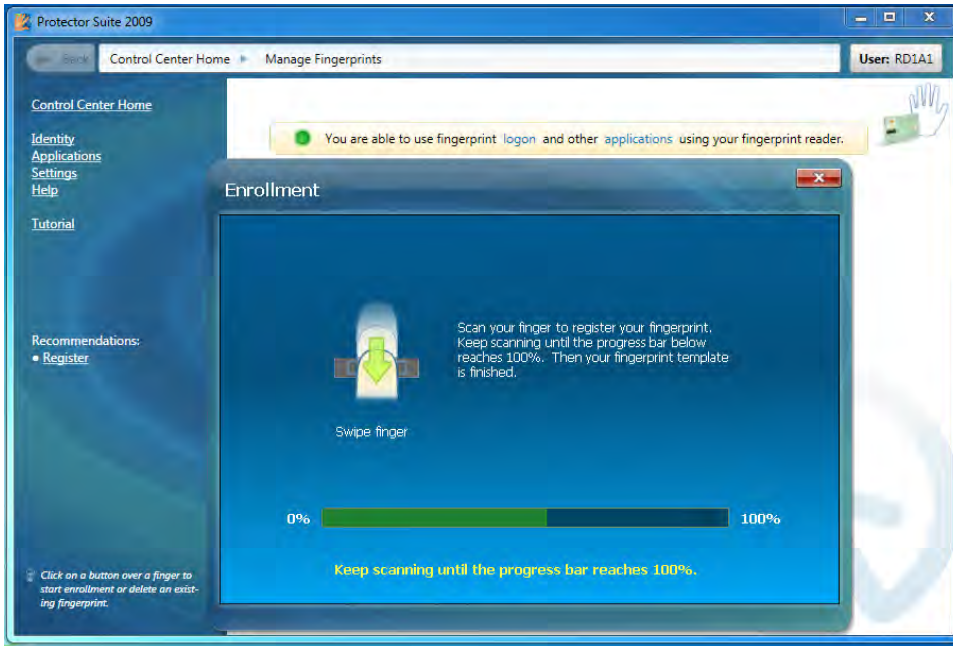
⚠️
Fingerprint Enrollment

Note that it is strongly recommended that you **enroll more than one finger in case of injury etc.**

Figure 7 - 28
Fingerprint Enrollment Progress

8. Close the **Protector Suite 2009** window.

9. Right-click the taskbar icon and select **Start Control Center** (and then swipe a finger) to allow you to **Edit Fingerprints**, register **Applications**, edit **Settings** and access the **Help** menu etc. You can also run the **Control Center** etc. from the **Protector Suite** item in the **Programs/All Programs** menu

10. Click "**Help**" to get more information on any topic.

11. You can also run the **Tutorial**, or **Product Tour** video to get more information.

Figure 7 - 29
Control Center & Biomenu
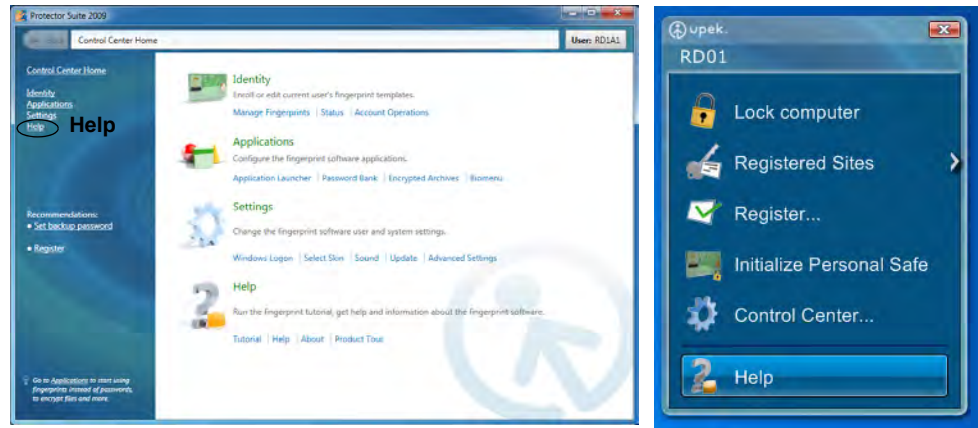
12. If you swipe your finger over the reader at any time you can access the **Biomenu** to **lock the computer**, **register websites**, access the **Personal Safe,** open the **Control Center** and access the **Help** menu.

Fingerprint Control Center Features

Application Launcher
The **Application Launcher** allows you to register applications to be launched when assigned to a particular finger. Simply copy the application icon on to one of the registered fingers and ten click OK to close the application window. Once registered the application will launch when you swipe the appropriate finger across the sensor.

Password Bank
The **Password Bank** stores registrations of user names, passwords and other settings for web sites etc.

Personal Safe
The **Personal Safe** is an encrypted area assigned on your hard drive that allows you to store files and folders to be protected by fingerprint protection.

🖉

Help

For more information on these and other features simply access "**Help**" in the **Fingerprint Control Center** and select the item from the menu on the left.

7

7

Bluetooth Module

If your purchase option includes the **Combination Wireless LAN & V3.0 Bluetooth module** (either **Intel** or **3rd Party**) then install the driver as instructed overleaf. Follow the instructions on page *7 - 54* to configure the Bluetooth settings.

Use the Fn + F12 key combination to toggle power to the Bluetooth module. When the Bluetooth module is powered on the indicator 🔵🔶 will briefly be displayed.

🖉

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.

- For **3rd party Bluetooth modules** see the installation procedure see *"3rd Party Bluetooth Combo Driver Installation" on page 7 - 49* and *"3rd Party Bluetooth & WLAN Combo Settings" on page 7 - 50*.

- For **Intel Bluetooth modules** see the installation procedure see *"Intel Bluetooth Combo Driver Installation" on page 7 - 57* and *"Intel Bluetooth Combo Driver Installation" on page 7 - 57*.

3rd Party Bluetooth Combo Driver Installation

Note this driver is required only for the combo Bluetooth and WLAN module only.

1. **Before installing the driver make sure the Bluetooth module is powered on** (use **Fn** + **F12** key combination), then insert the *Device Drivers & Utilities + User's Manual* disc into the CD/DVD drive. If a *Found New Hardware* window appears, click **Cancel** in all windows that appear, and then proceed to install the driver as below.
2. Click **Option Drivers** (button).
3. Click **4.Install Combo BT Driver > Yes**.
4. Choose the language you prefer and click **OK**.
5. Click **Next**.
6. Click the button to accept the license and click **Next**.
7. Click **Next >** *(select if you want to create an icon to appear on the desktop)* **Next > Install**.
8. Click **Finish**.
9. The **My Bluetooth** icon 🚯 will appear on the desktop and the **Bluetooth** item will be installed in the **Programs/All Programs** menu.
10. See *"3rd Party Bluetooth Networking Setup" on page 7 - 53* for information on Bluetooth networking.

🖉

High Speed Bluetooth Data Transfer

The **Combination Wireless LAN & V3.0 Bluetooth module** supports high speed (V3.0) data transfer. However to achieve such transfer speeds, **both devices must support high speed data transfer**.

To obtain high speed (V3.0) data transfer make sure that both the WLAN and Bluetooth modules are powered on.

Check your Bluetooth compatible device's documentation to confirm it supports high speed data transfer.

7

> 🖉
>
> **Bluetooth Module & Resuming From Sleep Mode**
>
> The Bluetooth module's default state will be off after resuming from the **Sleep** power-saving state. Use the key combination (**Fn + F12**) to power on the Bluetooth module after the computer resumes from Sleep.

Figure 7 - 30
My Bluetooth Settings

3rd Party Bluetooth & WLAN Combo Settings

This information applies to the combo Bluetooth and WLAN module only.

1. Make sure the Bluetooth module is powered on.
2. Double-click the **My Bluetooth** application on the desktop (or access it from the **Programs/All Programs** menu).
3. Click **My Bluetooth Settings** (menu heading).

4. Click **General Settings** 🔧 to change the computer *name that other Bluetooth devices will see*, and click the tickbox to *Allow Bluetooth devices to find this computer*
5. Click **OK** to confirm the settings.
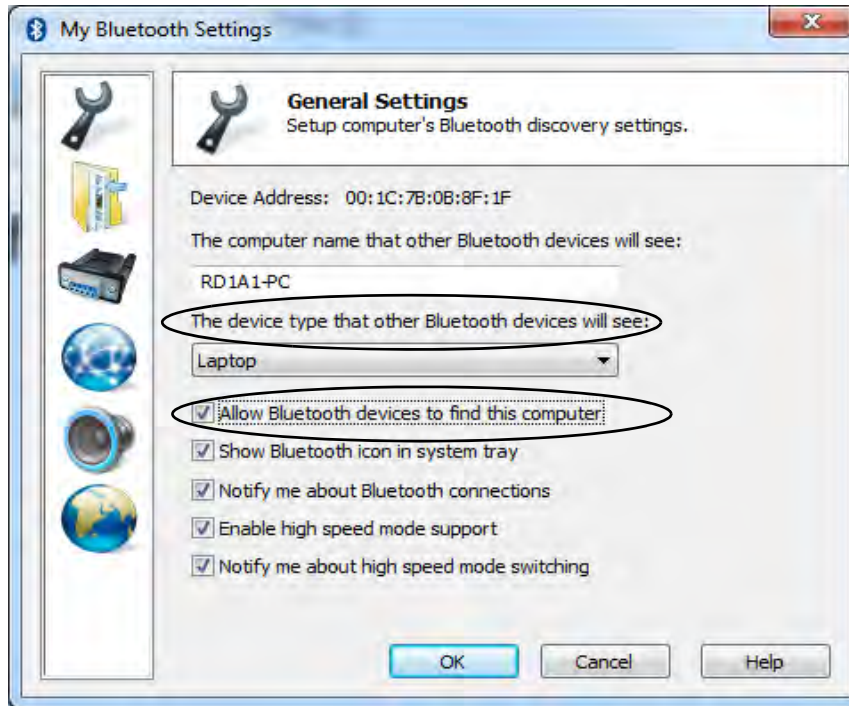
Figure 7 - 31
General Settings

6. Click **File Transfer Settings** to *Enable sharing of my files with other Bluetooth devices*.
7. Click **OK** to confirm the settings.
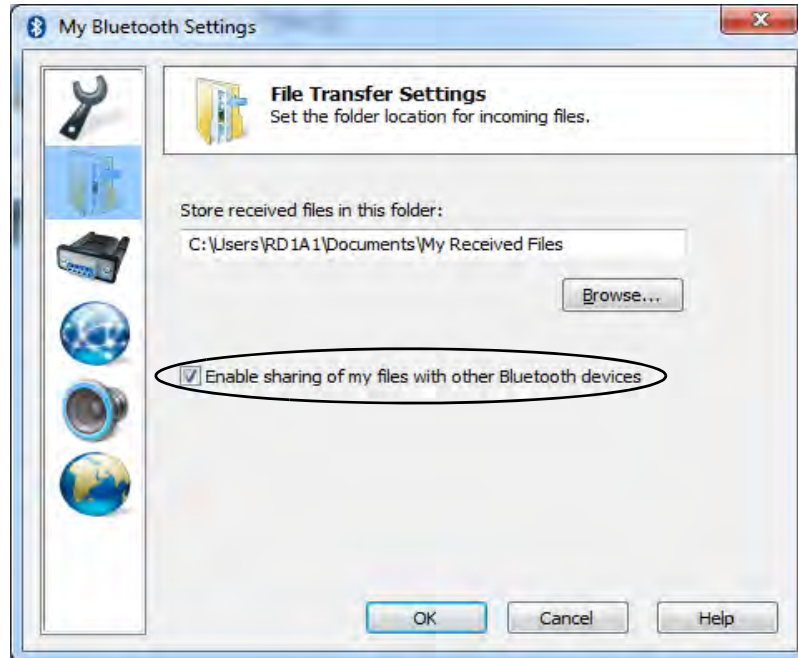
Figure 7 - 32
File Transfer Settings

3rd Party Bluetooth Networking Setup

This information applies to the combo Bluetooth and WLAN module only.

1. Make sure the Bluetooth module is powered on.
2. Double-click the **My Bluetooth** application on the desktop (or access it from the **Programs/All Programs** menu).
3. Click **My Bluetooth Settings** (see *Figure 7 - 30 on page 7 - 50*).

Figure 7 - 33
Network Settings
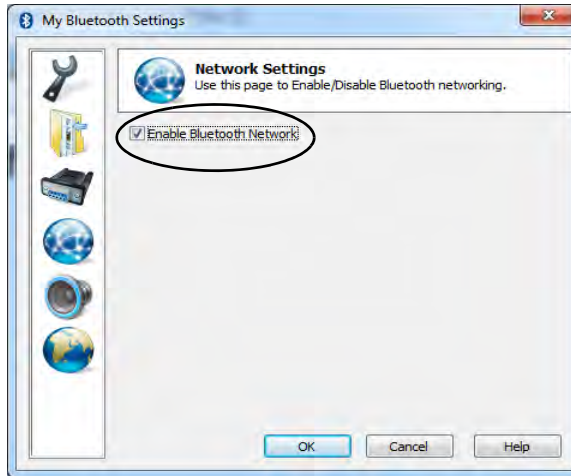
4. Click **Network Settings** (make sure the Bluetooth module is powered on.
5. Click **Enable Bluetooth Network** and click **OK**.
6. A message will appear in the taskbar to confirm that the network driver has been installed.

Bluetooth Module 7 - 53

7

Bluetooth Module & Resuming From Sleep Mode

The Bluetooth module's default state will be off after resuming from the **Sleep** power-saving state. Use the key combination (**Fn + F12**) to power on the Bluetooth module after the computer resumes from Sleep.

3rd Party Bluetooth & WLAN Combo Module Configuration

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. Press the **Fn + F12** key combination to power on the Bluetooth module.

To Add a Bluetooth Device

1. Double-click the **My Bluetooth** application on the desktop (or access it from the **Programs/All Programs** menu).
2. Double-click the device you want to pair with the computer (if no devices appear press **F5** or click the **Refresh** button to search for devices).
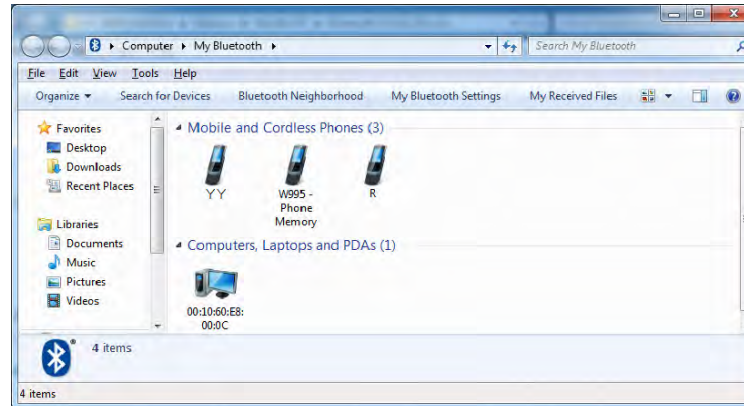
Figure 7 - 34
My Bluetooth Devices

3. You will then be presented with a menu of options to select from.

Figure 7 - 35
Bluetooth Device Options

4. Click the appropriate button to connect to the device.

5. You may need to allow the connection from your device, and you will then need to provide a passcode from the device.
6. You can then enter the passcode on the computer and click **OK** to establish the connection.
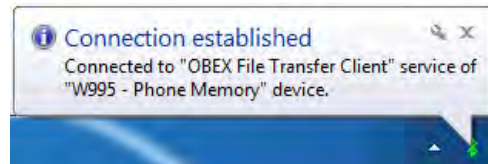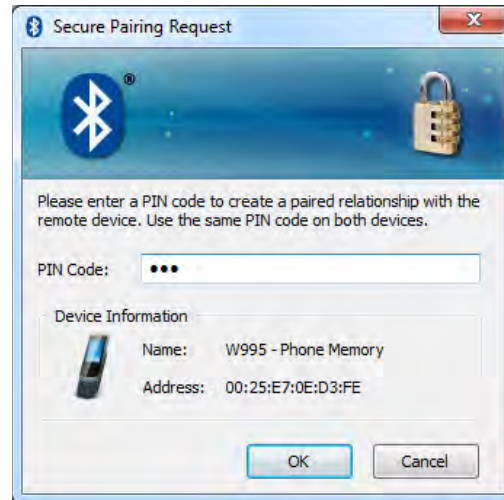
7

Figure 7 - 36
Bluetooth Pairing Code & Connection Established

Intel Bluetooth Combo Driver Installation

Note this driver is required only for the Intel combo Bluetooth and WLAN module only.

1. **Before installing the driver make sure the Bluetooth module is powered on** (use **Fn + F12** key combination), then insert the *Device Drivers & Utilities + User's Manual* disc into the CD/DVD drive. If a *Found New Hardware* window appears, click **Cancel** in all windows that appear, and then proceed to install the driver as below.
2. Click **Option Drivers** (button).
3. Click **4.Install Combo BT Driver > Yes**.
4. Click **Next > Next**.
5. Click the button to accept the license and click **Next**.
6. Click **Next > Finish**.
7. See over for configuration instructions.

Note that, at the time of going to press, **Intel® Centrino Advanced 6230** WLAN & Bluetooth V3.0+HS combo modules use the standard Bluetooth configuration in *Windows 7* (see *"Intel Bluetooth Combo Driver Installation" on page 7 - 57*). **Do not use** the Bluetooth & WLAN Combo settings information outlined from page *7 - 50* to page *7 - 56*. See also *"Intel® Centrino Advanced 6230 WLAN & Bluetooth V3.0+HS Combo Modules" on page 8 - 17*.

🖉

High Speed Bluetooth Data Transfer

The **Combination Wireless LAN & V3.0 Bluetooth module** supports high speed (V3.0) data transfer. However to achieve such transfer speeds, **both devices must support high speed data transfer**.

To obtain high speed (V3.0) data transfer make sure that both the WLAN and Bluetooth modules are powered on.

Check your Bluetooth compatible device's documentation to confirm it supports high speed data transfer.
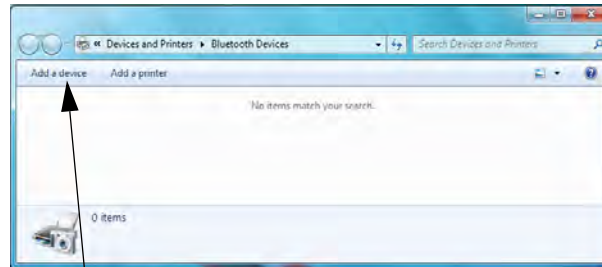
7

Standard Bluetooth Configuration in Windows 7

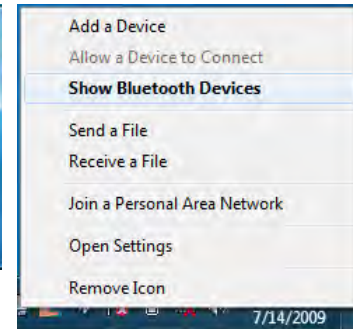### Setup your Bluetooth Device so the Computer Can Find it

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. Press the **Fn + F12** key combination to power on the Bluetooth module.
2. A Bluetooth icon will appear in the taskbar.
3. You can then do any of the following to access the **Bluetooth Devices** control panel.

- **Double-click** the taskbar icon to access the **Bluetooth Devices** control panel.
- **Click/Right-click** the taskbar icon and choose an option from the menu.


Add a device

Right-Click Taskbar Icon

🖉

Add a Device

Click **Start**, and click **Control Panel** and then click **Devices and Printers (Hardware and Sound)**. Click **Add a device** to search for any available Bluetooth devices.

Bluetooth Module & Resuming From Sleep Mode

The Bluetooth module's default state will be off after resuming from the **Sleep** power-saving state. Use the key combination (**Fn + F12**) to power on the Bluetooth module after the computer resumes from Sleep.

Figure 7 - 37
Bluetooth Devices & Click Icon Menu

7

To Add a Bluetooth Device
1. Access the **Bluetooth Devices** control panel and click **Add a device**.
2. Double-click the device you want to pair with the computer.
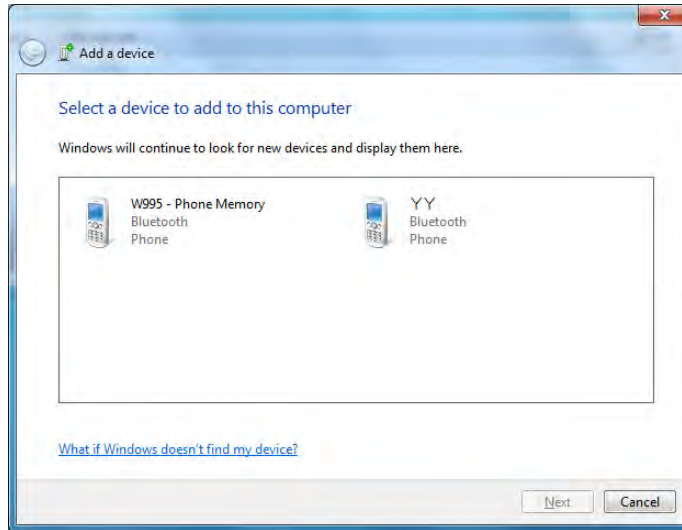
3. On first connection the computer will provide you with a pairing code to be entered onto the device.

Figure 7 - 38
Add a Device

🖉

Pairing Options

If a device has been previously connected then the pairing option menu will appear when you attempt subsequent connections. You can choose to have the computer create a pairing code for you, use the device's existing pairing code or you can pair certain devices without using a code.

7

4. Enter the code into your Bluetooth enabled device and follow any on-screen instructions to complete the pairing.

Figure 7 - 39
Pairing Code Example

 🖉
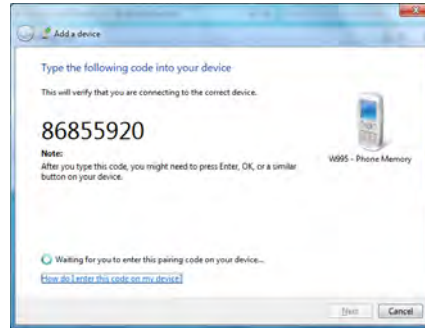
Pairing Codes

The example outlined here shows a connection to a mobile device. Other devices e.g. computers, may have a slightly different connection procedure, and may require you to confirm a pairing code is correct on both devices. Follow the on-screen instructions to complete the pairing.

5. *Windows* will check to see if any drivers are required to complete the pairing.
6. Follow any on-screen instructions on the computer if device drivers are required to be installed.
7. Click **Close**.

Figure 7 - 40
Pairing Complete & Bluetooth Device Enabled
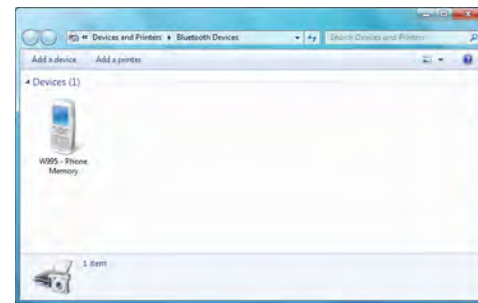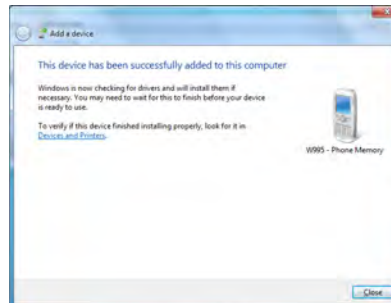
To Change Settings for the Bluetooth Device

1.   Click the taskbar icon and select **Show Bluetooth Devices**.
2.   Right-click on the device you want to change and click **Properties** to:

•   Change the **name** of the device (click **Bluetooth**, 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.   Click the taskbar icon and select **Open Settings**.
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 the *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.

🖉
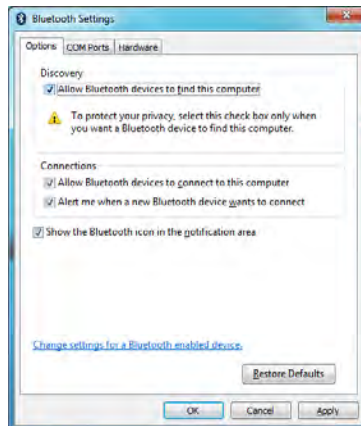
Bluetooth Help

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.

7

Figure 7 - 41
Bluetooth Settings - Options

3.75G/HSPA Module

(Models A & B Only)

If you have included an **optional 3.75G**/**HSPA** (High Speed Packet Access) module (see *"Communication" on page D - 6* for specification details) in your purchase option, you will have the appropriate application (**BandLuxe HSDPA Utility**) provided for your module. Follow the instructions *on page 7 - 63* to install the USIM card (supplied by your service provider), and then install the application (see over for further details).


🔔

Important Notice - 3.75G/HSPA & Bluetooth/Wireless LAN Modules

In order to comply with FCC regulations you should NOT operate the 3.75G/HSPA module and the Bluetooth/Wireless LAN modules at the same time as this may disrupt radio frequency, and cause interference. When the 3.75G/HSPA module is powered on, make sure that the Bluetooth/Wireless LAN modules are powered off.

3.75G/HSPA Module USIM Card Installation

Follow the instructions below to install the USIM card (which will be provided by your service provider).

1. Turn the computer off, remove the AC/DC adapter and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. Slide the latch **2** in the direction of the arrow, and hold it in place.
4. Slide the battery in the direction of the arrow **3**.
5. Lift the battery out of the compartment **4**.

<div style="border: 2px solid red;">

☼
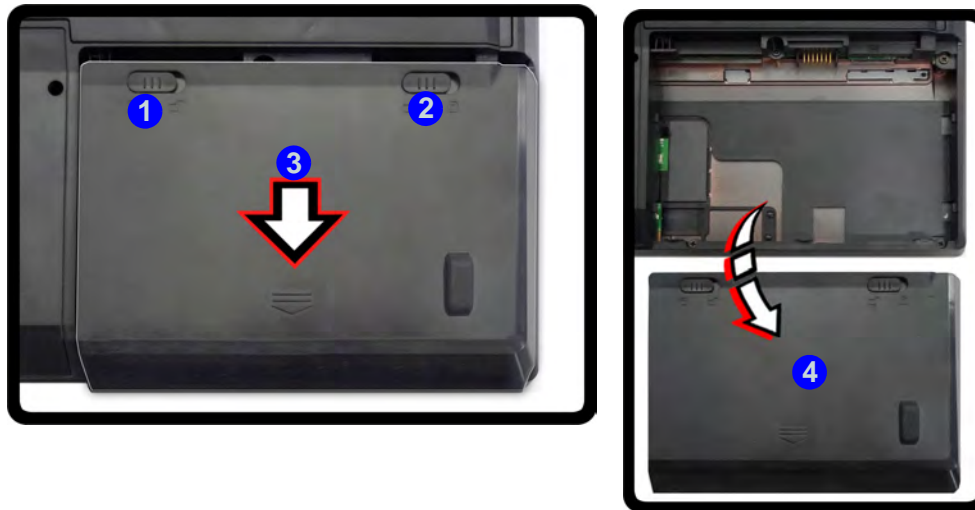
Power Safety Warning

Before you undertake any installation procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.
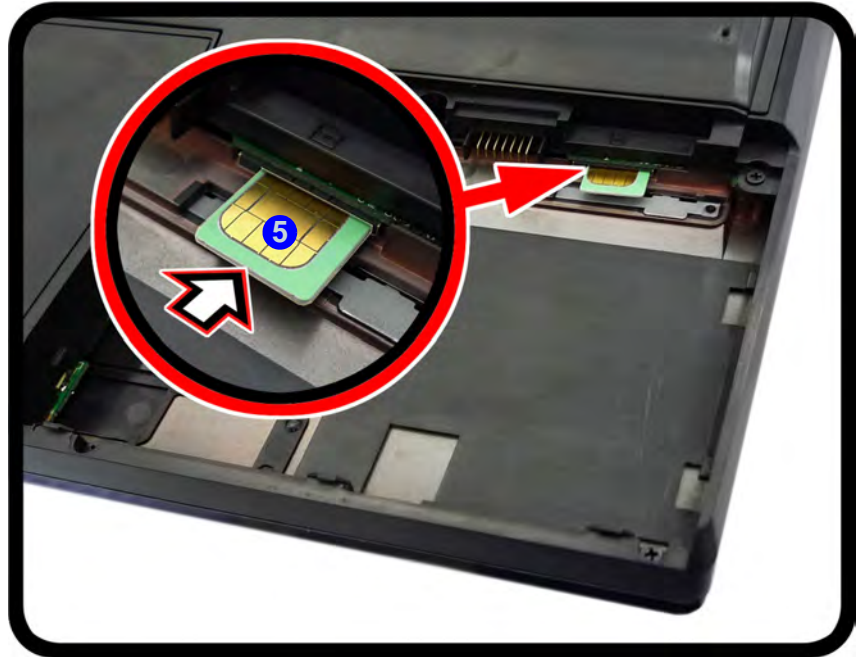
USIM Card Orientation

Note that the USIM card's readable side (with the gold-colored contacts) should face upwards as illustrated.

</div>

Figure 7 - 42
Battery Removal

6. Remove the battery.
7. Insert the USIM card **5** as illustrated below until it clicks fully into position, and replace the battery.

Figure 7 - 43
USIM Card Insertion

Before installing the application, make sure that the 3.75G/HSPA module is ON (installing the driver with the module off will not allow the software to detect the module hardware correctly). Use the **Fn** + ▦ **key combination** (see *"Function/Hot Key Indicators" on page 1 - 12*) **to toggle power to the 3.75G/HSPA module**. When the 3.75G/HSPA module is powered on, the on-screen indicator will briefly be displayed. Make sure you install the drivers in the order indicated in *Table 4 - 1, on page 4 - 3*. **Note that exiting the application does NOT turn off the 3.75G/HSPA module**.

- **BandLuxe HSDPA Utility** - See *"BandLuxe HSDPA Utility Installation" on page 7 - 66* for driver installation information and *"BandLuxe HSDPA - Connection Manager" on page 7 - 67* for instructions on using the **BandLuxe HSDPA Utility**.

🖉

3.75G/HSPA Modules & System Wake Up

Note that the 3.75G modules **DO NOT** support system wake up on 3.75G/HSPA modem activity.

7

☼

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the **Fn +** ▢ key combination to toggle power to the 3.75G/HSPA module, and check the on-screen indicator to see if the module is powered on or not (see *Table 1 - 5, on page 1 - 10*).
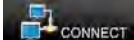
7

BandLuxe HSDPA Utility

With the **3.75G**/**HSPA** module and USIM card (supplied by your service provider) installed you may then install the **BandLuxe HSDPA Utility**. The **BandLuxe HSDPA Utility** allows you to directly access your HSPA internet service from the computer.

BandLuxe HSDPA Utility Installation

1. Enable power to the module by pressing the **Fn** + ▢ key combination (give the module about 10 seconds to power on - the on screen icon 🔵🔵 will indicate the module's power status).
2. If a *Found New Hardware* window appears, click **Cancel** (click **Cancel** for all *Found New Hardware* windows that appear).
3. Insert the *Device Drivers & Utilities + User's Manual disc* into your external optical device drive.
4. Click **Option Drivers** (button).
5. Click **5.Install 3G Driver > Yes**.
6. Choose the language you prefer and click **OK > Next**.
7. Click the button to accept the license and click **Next**.
8. Click **Next > Install**.
9. Click **Finish**.
10. Access the **BandLuxe HSDPA Utility** from the **Start** menu (**Connection Manager** 🔲 Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).

BandLuxe HSDPA - Connection Manager

The connection information is stored on the USIM card supplied by the service provider (where this is not the case you may need to create a profile - see *"Creating a Profile" on page 7 - 70*).

1. Power on the 3.75G/HSPA module using the **Fn +** ▢ key combination.
2. Access the **Connection Manager** from the **Start** menu (**Connection Manager** ▢ Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
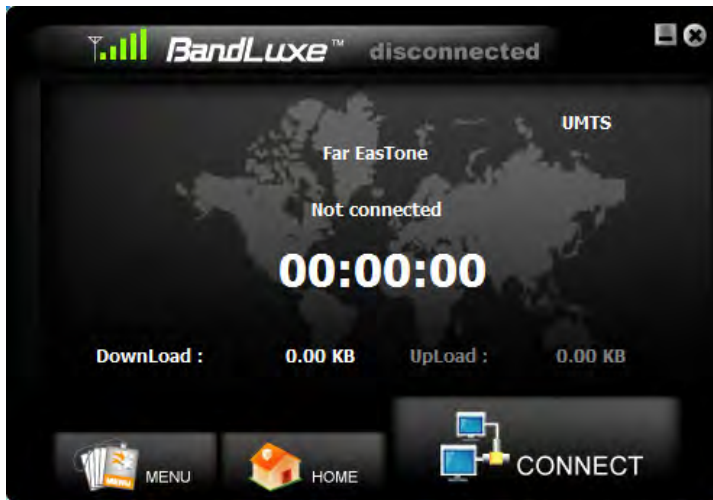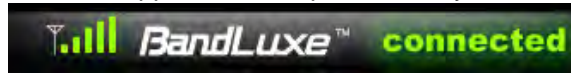3. Click **CONNECT** ▢ .

Figure 7 - 44
**BandLuxe
Connection
Manager
(Not connected)**

7

4. The system will connect to your network (you may need to set your network connection to home, work or public on the first connection).
5. The connected icon will appear at the top of the utility screen.

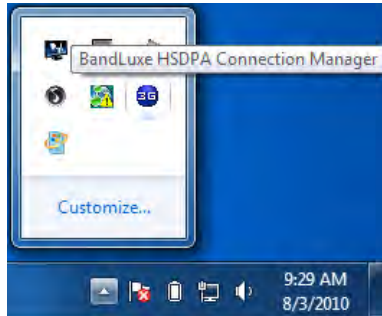6. You can then access the internet, download e-mail etc. as per any internet connection.

7

Figure 7 - 46
**BandLuxe
Connection
Manager
(Connected)**

7. While you are connected the taskbar icon will display the connected icon ⬚, and the taskbar will display the connected icon ⬚.

Figure 7 - 47
Taskbar Icon (Connected)

8. To disconnect from the service provider, click the **Disconnect** ⬚ icon, or click the close icon at the top right of the utility, and click **Yes** to confirm.
9. The program will disconnect from the service provider.
10. The module will still be on, and you will need to press the **Fn +** ⬚ key combination to turn it off.
11. If you are unsuccessful in connecting this way you may need to add a profile with information provided by your service provider (see over).

Creating a Profile

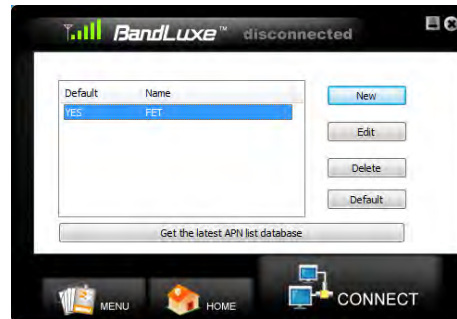1. Access the **Connection Manager** from the **Start** menu (**Connection Manager** Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
2. Click the **Menu > Profile**.

Figure 7 - 48
Menu - Profile

3. The default profile will display the service provider's name from the USIM card.

Figure 7 - 49
Default Profile

4. Click **New** (button) and input any **Network Settings** required by your service provider (all fields may not need to be filled in).
5. The profile name is used to identify your profile if a number of profiles are used.
6. You will need to check with your service provider to confirm if the **User Name** and **Password** are required.
7. You will need to enter the **Access Point Name** and phone **Number** as supplied by the service provider.
8. Click **Save** to save the profile.

🖉

Password

The password can be any combination of letters and numbers, and is case sensitive. Check with your service provider to confirm that a user name and password are required.

Figure 7 - 50
Profile Detail

New SIM Card

If you switch to a different SIM card, then the default profile will no longer be valid. You will need to create a new profile as described here. If you do not have access to all the information necessary to create a new profile you should uninstall the BandLuxe software and then reinstall it. The new default profile should obtain the information from the SIM card.

Figure 7 - 51
Profile Set as Default

9. Click the newly created profile in the profile window and then click **Default** (button) to set the profile as the default connection (note that only one profile may be stored as the default connection).
10. The newly created profile will now be stored as the default connection when you click **Connect** in the **Connection Manager Home** screen.
11. To use a profile click to select it, and then click **Apply** (button) and the settings will be transferred to **Connection Manager**.

Choosing a Profile

If you need to switch stored profiles follow the instructions below:

1. Access the **Connection Manager** from the **Start** menu (**Connection Manager**), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
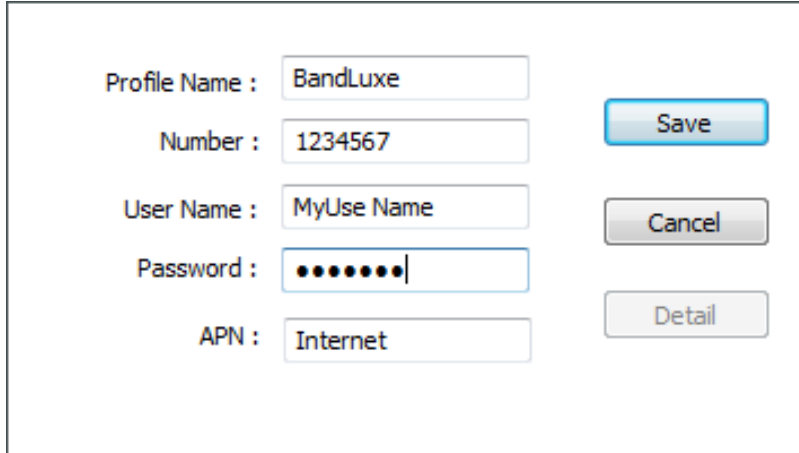2. Click the **Menu > Profile**.
3. Highlight the profile required and click **Default**.
4. Click **OK** to confirm.
5. **YES** will be displayed alongside the chosen default profile.
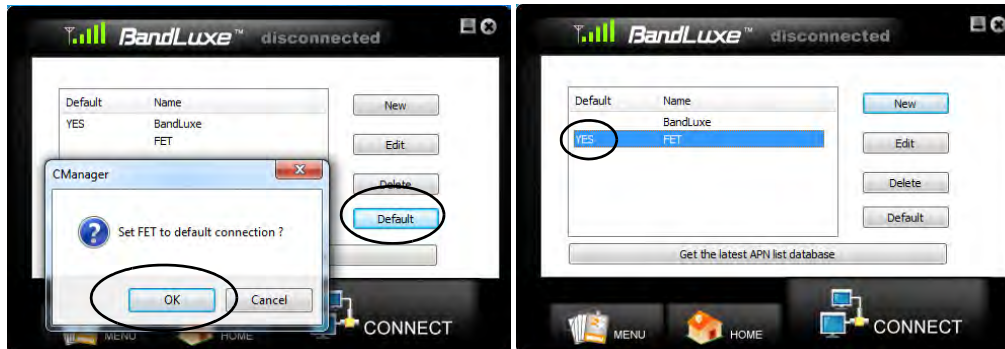
Figure 7 - 52
Choosing a Profile

7

🖉

Get the Latest Access Point Name Database

The **Profile** menu allows you to update the **Access Point Name (APN)** list. When the network connection is established, click the **Get the latest APN list database (button)** to update the information.

Figure 7 - 53
Profile Properties (General)

7

Editing a Profile

If you need to edit stored profiles follow the instructions below:

1. Access the **Connection Manager** from the **Start** menu (**Connection Manager** ![icon] Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
2. Click the **Menu > Profile**.
3. Highlight the profile required and click **Edit**.
4. You will then be able to access the **General** tab (you will need to confirm with your service provider for any changes to make here, and the other tabs are generic to *Windows*).
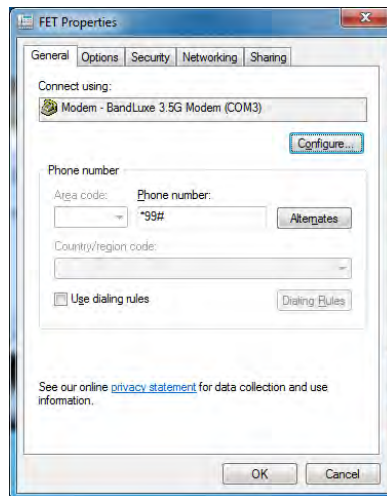
Text Messaging Service (SMS)

In addition to standard internet services you may also send and receive SMS text messages using the **Connection Manager**, if your service supports SMS.

Inbox

The **Inbox** will contain any received SMS. Click to select the message and it will scroll open above. Select the message and press the **Save**, **Delete** or **Reply** buttons to perform the appropriate function. Unread messages are displayed as closed envelope icons , and read messages are open displayed as envelope icons .
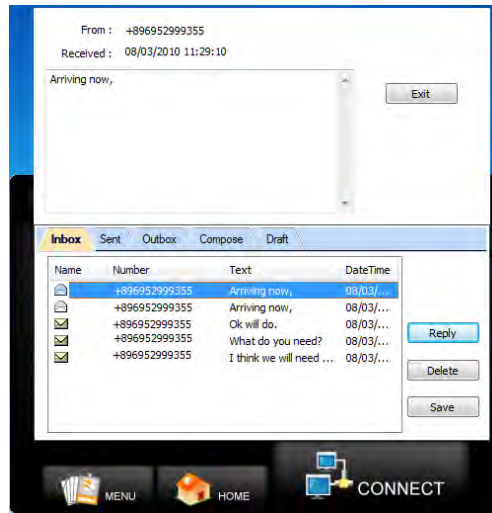
Incoming Messages

If the program is open (you do not have to be connected) you will be notified of incoming messages in the taskbar (see *"SMS - Preference" on page 7 - 79* for settings detail).
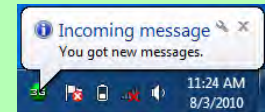
Figure 7 - 54
SMS Inbox with Message Open

Contact List Types

Select a contact from the **SIM** card.

Select a contact from the **Outlook** address book.

Select a contact from the **Band-Luxe** contact list.

Figure 7 - 55
SMS Contact List

Sent

The **Sent** folder contains any successfully sent SMS. Select the message and press the **Delete** to erase the record.

Outbox

The **Outbox** folder contains any completed but unsent SMS. Select the message and press **Send** or **Delete** as appropriate.

Compose

Click **Compose** to create a new message. You can enter the telephone number in the **To** field, or click the contact button [...] to add a contact from a list. The contact list allows you to choose 3 contact options (see sidebar).

Click a contact and click **Select** to choose it, and click **Exit** to return to the **Compose** screen.

Name	Number	
Rty	0992999355	Select
Test	1256125363561	
hyger	0536461951	Exit
Ter	0921553725	

Template

A template can store text that is used regularly in messages, and can be easily inserted in to any new SMS.

Click **Template** (button) to view any stored templates. Click to highlight a template and click **Select** (button) to insert it into the message. Click **New** (button) to create a new template, and **Save** (button) to add it to the existing list.

To delete a template click to highlight it, and click **Delete** (button) to delete it.
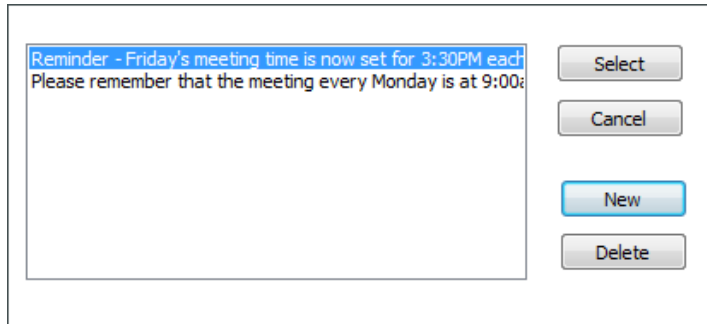
Figure 7 - 56
Template List

Draft

The Draft folder contains messages that have been composed but not yet sent. Click to highlight a message in the draft window and click **Edit** (button) to return to the **Compose** window to finish the message editing.

Setting

The **Setting** menu allows you to edit the programs basic parameters.

1. Access the **Connection Manager** from the **Start** menu (**Connection Manager** 📧 Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
2. Click the **Menu > Setting**.
3. Click the appropriate tab heading to edit the settings.
4. After you have edited the settings, click **Save** (button) to confirm the changes.

General

Click the **Auto connect on startup** checkbox to have the program automatically connect to the internet when the program is run. Click **Save** (button) to confirm the changes.

🖊

Language

The Connection Manager offers multiple language interfaces. Click the menu and select a language from the dropbox. Click Save (button) to implement the changes. You will then return to the home screen with chosen language selected.

Figure 7 - 57
Setting - General

SMS - Preference

Click the **New SMS Notify** checkbox to be automatically notified when a new SMS arrives. If enabled a the incoming message notification will appear in the taskbar,
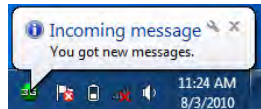
Figure 7 - 58
Incoming SMS Notification

and an envelope icon will appear in the upper left corner of the **Home** screen when a new message arrives.
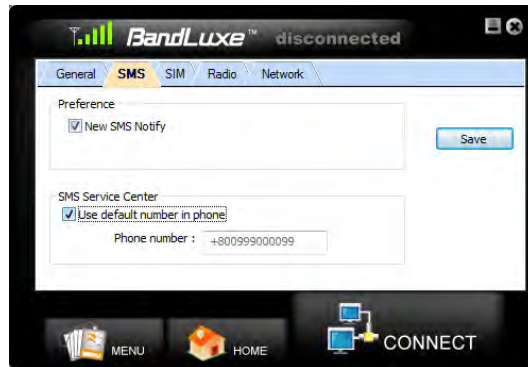
Figure 7 - 59
Setting - SMS

SMS - SMS Service Center

Click the **Use default number in phone** checkbox to use the default number from the USIM card, or uncheck to manually input a new service center number. Click **Save** (button) to confirm the changes.

SIM

This menu allows you to edit the USIM card **Personal Identification Number** (**PIN**) and **Enable/Disable** the PIN if necessary. Press **Apply** after making any changes. A SIM card must be inserted for this function to be activated.

Figure 7 - 60
Setting - SIM

7

If a PIN code is enabled, the input will be requested during USIM card initialization. After 3 incorrect PIN code entries the USIM card will be locked, and you will need to contact your service provider to unlock it.

Radio

Set the appropriate network search options from the dual mode setting menu. Click **Apply** (button) after making any changes.
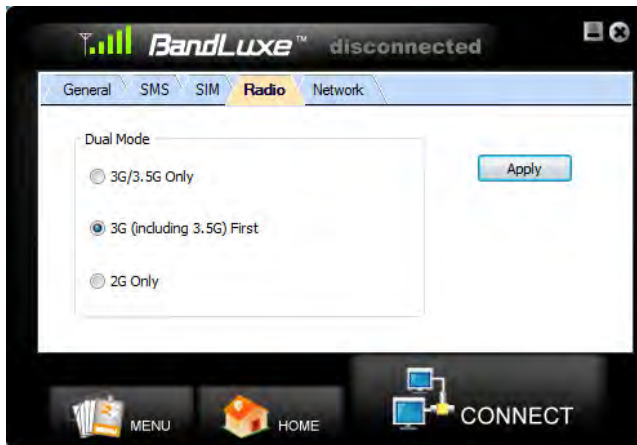
Figure 7 - 61
Setting - Radio

Note: 2G/3G/3.5G data transferring will be disconnected when you apply a new Radio setting.

Figure 7 - 62
**Setting - Network &
Prefer List**

7

Network - Network Selection

Edit the network selection settings from this menu. The **Standard (auto)** setting will search for networks in the order specified in the **Prefer** list. Click **Standard (auto) > Next** to view and adjust the **Prefer** list. The Prefer list is displayed at the top of the screen, and the bottom of the screen lists all available networks. Click **Scan** to bring up a list of all available networks.

Click to highlight a network in the **Prefer** list, and click the up arrow on the left to move it up the list (to increase its preference); click the down arrow to decrease the preference. Clicking the red icon removes the highlighted network from the **Prefer** list.

In the bottom list, highlight a network and click the up arrow above to move that network to the Prefer list. Click **Save** (button) to confirm the changes.

The **Manual** setting allows you to choose a network from all available. Click **Manual > Next** to view the list. Click to highlight a network from the list, and click **Select** (button) to choose the network, or **Cancel** (button) to make no change.
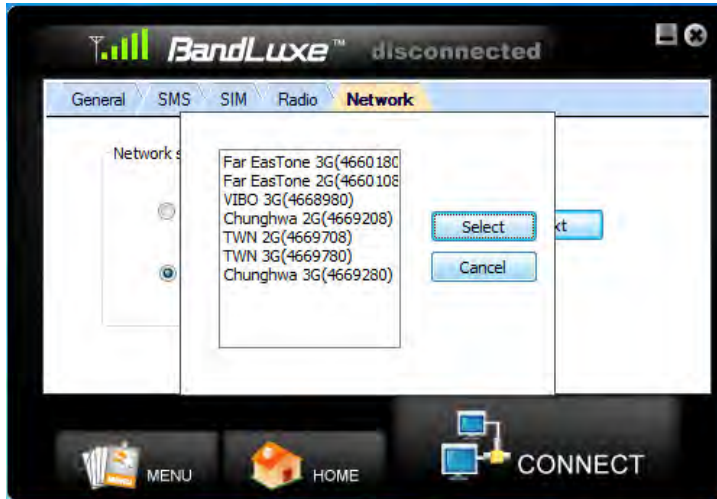
Figure 7 - 63
Setting - Network Manual

Statistics & Information

The **Statistics** screen displays a graph of recent upload and download activity. No data will be displayed if there is no current connection.

1. Access the **Connection Manager** from the **Start** menu (**Connection Manager**
   Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
2. Click the **Menu > Statistics**.
3. Click **Connection Log** (tab) to see data counting by each and total connection status (for reference only).
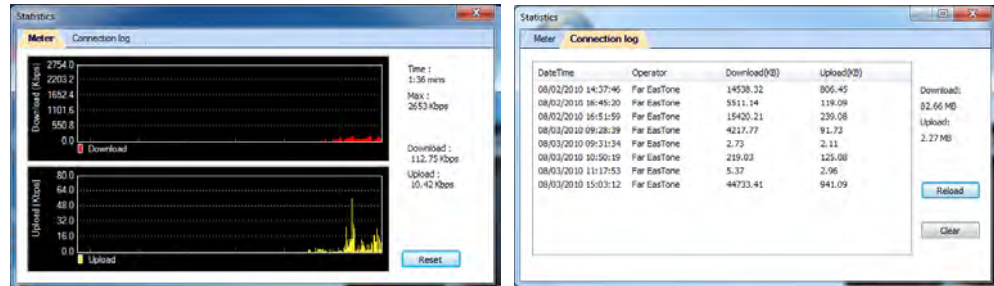
Figure 7 - 64
**Statistics &
Connection Log**

The **Information** screen displays **Version** or **Signal** specifications.

1. Access the **Connection Manager** from the **Start** menu (**Connection Manager**
   Connection Manager), or (**Start > Programs/All Programs > BandLuxe > BandLuxe HSDPA Utility R11 > Connection Manager**).
2. Click the **Menu > Information**.
3. Click **About, USSID or STK** (tab) to view the appropriate information.

TV Tuner Module

(Model C Only)

If your purchase configuration includes the **optional** USB Mini-Card TV Tuner module, you will be supplied with a remote control unit and appropriate fittings for the module. Software support for the TV Tuner module is provided by *Windows Media Center* in *Windows 7 (not included in Starter or Home Basic versions)*. A driver is provided on the *Device Drivers & Utilities + User's Manual* disc for the remote control supplied with the TV Tuner.

The optional TV Tuner allows you to watch TV, play music CDs, video conference and capture still images and video on your PC.

The Cable (CATV) antenna will only be enabled when a TV Tuner module is installed. Make sure you connect the TV antenna.

🔆

TV Antenna

The TV antenna supplied with any TV Tuner module is intended for indoor use only. Please do not use your TV Tuner module outdoors.

TV Tuner Remote

Point the remote at the consumer **IR transceiver** to change channels etc.

Figure 7 - 65
TV Tuner Transceiver/Jack

1. Consumer Infrared Transceiver
2. CATV Antenna Jack

🔔

TV Tuner Module Support

Note that the TV Tuner module options in *Windows 7* is supported by the **Windows Media Center** software which comes built-in to all the *Windows 7 versions except Starter and Home Basic*.

If your purchase includes a TV Tuner option, and you are reconfiguring your system for a different system, you should install any *Windows 7* version except *Starter* and *Home Basic*.

7

Consumer Infrared Driver

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

Windows Media Center

1. This TV Tuner module is fully supported by *Windows Media Center* in *Windows 7 (not included in Starter or Home Basic versions)*.
2. Run *Windows Media Center* directly from the **Start** menu (**Start > Programs > Windows Media Center**).
3. *Windows Help and Support* provides information on the **Windows Media Center** functions. Click **Start** 🏁 and select **Help and Support**, and then type "*Media Center*" in the **Search Help** box and click the magnifying glass icon 🔍 to bring up the results.

Digital TV Broadcast Signal

The antenna is the most crucial factor in receiving a clear digital terrestrial TV broadcast signal. The **passive** antenna provided should provide a clear signal when placed beside a window. If the signal is not clear then you can purchase an **active** antenna (it should also be placed beside a window) to improve the signal. You should also check with any related government website which provides information on digital terrestrial TV coverage for your area. Note that (unlike standard analog TV) if the digital signal is weak then no picture will appear on the TV at all.

TV Recording and Power Plans

If you intend to use the **optional** TV Tuner to record live TV, then go to the **Power Options** control panel and create a power plan (see *"Power Plans" on page 3 - 4*) to prevent the power saving options from adjusting the computer's performance level.

Remote Control Unit

The remote control unit allows you to remotely start and send the system into a power saving state, to run *Windows Media Center* and to navigate the *Media Center* menus etc. The remote control unit also gives full control over all TV and video functions.

冷

CATV Cable Safety

Make sure that your CATV system installer has connected the Co-axial cable shield to the grounding system of the building, as close to the point of cable entry as practical.

This reminder is provided to call the CATV system installer's attention to Article 820-93 of the NEC (Section 54, Part I of the Canadian Electrical Code).

7

> ⚠
>
> **THX TruStudio & Speaker Configuration**
>
> Note that **THX TruStudio Pro will be disabled** when you are connecting to an external display through an **HDMI connection**.

THX TruStudio Pro Audio

Install the **THX TruStudio AP** to allow you to configure the audio settings to your requirements for the best performance in games, music and movies.

THX TruStudio AP Installation

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

THX TruStudio Pro Activation

On the first run of THX TruStudio Pro you will need to **activate** the application.

1. To activate the application you will need to be connected to the internet.
2. Double-click the **THX Activate** icon 📇 on the desktop and click the **Activate** button.
3. The program will connect to the internet to verify the activation key.
4. Click **Finish** to complete the application activation.
5. Restart the computer after the process is complete.

THX TruStudio Pro Application

The application can be run from the shortcut in the **Start** menu (**Start > All Programs >Creative > THX TruStudio Pro Settings**).

Power On/Off ➞

Menu

Collapse/Expand View

🔔 THX Audio & HDMI

Note that the THX audio effects **do not apply** to audio generated through an HDMI connection.

Fn + 5 Audio Toggle (Model C Only)

The **Fn + 5** key combination allows you to toggle the audio system between stereo and surround modes.

Note that if you press the key combination to switch to stereo mode then the THX TruStudio Pro will be disabled.

Figure 7 - 66
THX TruStudio Pro Menu

THX TruStudio Pro Audio 7 - 89

THX Control Panel

Each control has an On/Off button to allow you to enable/disable the control, and most controls feature a slider to adjust the levels (the subwoofer may be turned on/off).

Figure 7 - 67
THX TruStudio Pro Controls

7

- **Surround:** Provides virtual sound channels to control the level of immersion.
- **Crystalizer:** Enhances audio to make it sound livelier.
- **Speaker:** Enhances the bass level of the sound system.
- **Smart Volume:** Minimizes sudden volume changes to avoid the need for constant adjustment.
- **Dialog Plus:** Enhances dialogue levels for movies etc.

THX TruStudio Pro & HDMI

1. When you connect an HDMI display to the HDMI-Out port,the THX Tru Studio Pro controls will be disabled.
2. A warning box will pop-up and will prompt *"Do you want to select another audio device now?"*.
3. Click **No** to continue using the HDMI audio output from your external display (do not attempt to select another audio device when connected to the external HDMI display).
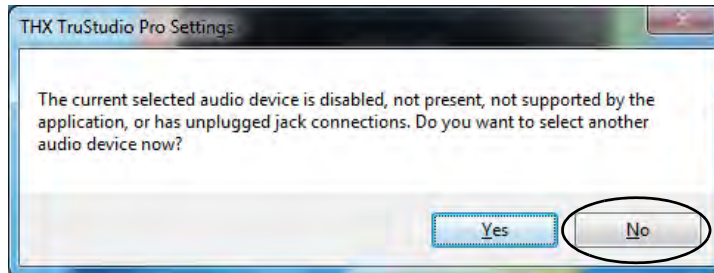
Figure 7 - 68
THX TruStudio Pro HDMI Display Warning

7

Modules

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.

8

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 Indicators** (see *"LED 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 P*ower Options* (see *"Configuring the Power Buttons" on page 3 - 8*), the **Fn** + **F4** key combination, or power button to wake-up the system.

- **Brightness** - Check the brightness of the screen by pressing the **Fn** + **F8 and F9** keys to adjust the brightness (see *Table 1 - 4, on page 1 - 11*).

- **Display Choice** - Press **Fn** + **F7** to make sure the system is not set to "external only" display.

- **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*").

8

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 **Boot** password for the SCU (see *"Security Menu" on page 5 - 11*).

- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).

🔔
Warranty

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

Viruses

- Install an **Anti-Virus** program and keep the **definitions file** (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. **Anti-Virus** programs are commercially available and the **definitions file updates** are usually downloadable directly from the internet.

- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note**: You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowledge.

- Keep a "**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).

8

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).

• 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.

8

Troubleshooting

- 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.

8

Problems & Possible Solutions

Problem	Possible Cause - Solution
You turned the **power on** but it doesn't work.	*Battery missing / incorrectly installed.* Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The **Battery LED power** indicator, is blinking orange.	*Low Battery.* Plug in the AC power source. If the computer doesn't start up immediately, turn it off then on again.
You are losing **battery power** too quickly.	*The system is using too much power.* If your *OS* has a *Power Options* scheme (see *"Power Plans" on page 3 - 4*) check its settings. You may also be using a USB device/external device that is drawing a lot of power.
Actual **battery operating time** is shorter than expected.	*The battery has not been fully discharged before being recharged.* Make sure the battery is fully discharged and recharge it completely before reusing (see *"Battery Information" on page 3 - 10*). Check the settings of any active power plan (see *"Power Plans" on page 3 - 4*). *A peripheral device/USB device is consuming a lot of power.* Turn off/remove the unused device to save power.
Unwelcome numbers appear when typing.	*If the LED is lit, then Num Lock is turned ON.* (see *"LED Indicators" on page 1 - 7*).

8

Troubleshooting

Problem	Possible Cause - Solution
The **computer feels too hot**.	Make sure the computer is properly ventilated and the vents/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 - 15*). Make sure you're using the correct adapter.
	Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the vents/fan intakes to be blocked.
Nothing appears on screen.	*The system is in a power saving mode.* Toggle the **Fn + F4** (see *"Configuring the Power Buttons" on page 3 - 8*).
	\ *The screen controls need to be adjusted.* Toggle the screen control **Fn + F8/F9** key combinations. If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls.
	The computer is set for a different display. Toggle the screen display key **Fn + F7** combination. If an external monitor is connected, turn it on.
	*The **screen saver** is activated.* Press any key or touch the **TouchPad**.
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 *"NVIDIA Video Driver Controls" on page B - 1* for instructions on installing and configuring the video driver.

8

Problem	Possible Cause - Solution
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.

Problem	Possible Cause - Solution
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, use the key combination **Fn + F5** and **F6** to adjust the system volume (see *"Audio Features" on page 2 - 7*) to adjust.
The **compact disc** cannot be read.	*The compact disc is dirty.* Clean it with a CD-ROM cleaner kit.
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*.

8

Troubleshooting

Problem	Possible Cause - Solution
The **TouchPad** doesn't work.	*The Touchpad has been disabled*. Press the Touchpad toggle (**Fn + F1**) key combination (make sure you have installed the Touchpad driver.
The **system freezes** or the screen goes dark.	*The system's power saving features have timed-out*. Use the AC/DC adapter, press a key on the keyboard, or press the sleep (**Fn + F4**) key combination, or press the power button if no LEDs are lit.
The system never goes into a **power saving mode**.	Power Options features are not enabled. Go to the *Windows* Power Options menu and enable the features you prefer (see *"Power-Saving States" on page 3 - 6*). Make sure you have enabled **Hibernate** mode from the control panel.
The **Wireless LAN/ Bluetooth/PC Camera modules** cannot be **detected**.	*The modules are off.* Check the appropriate LED indicator to see if the modules are on or off (see *Table 1 - 4, on page 1 - 11*). If the LED indicator is not illuminated, then press the appropriate function key combination in order to enable the modules.
The **Wireless LAN/ Bluetooth/PC Camera modules** cannot be **configured**.	*The driver(s) for the module(s) have not been installed*. Make sure you have installed the driver for the appropriate module (see the instructions in *Chapter 7 "Modules"* for the appropriate module).

8

Problem	Possible Cause - Solution
When a **DVD** is played in **Windows Media Player/ Media Center**, the **audio track** in other languages (commentaries etc.) **is not clear** if connected to the S/PDIF-Out Jack.	*This is an issue with Windows Media Player/Media Center and audio output through the S/PDIF-Out Jack.* We recommend that you use the **Power DVD** application to play DVDs.
Nothing appears on the screen when the **PC Camera** software is run.	*You have selected an external display as the default display device*. The PC Camera application software needs to be run while the *default notebook LCD* is the selected display device. After a camera picture is obtained on the default notebook LCD, you may then use the **Fn + F7** to toggle through the display modes (give the screen time to refresh). If you have selected an external display as your display device do not run the PC Camera software application until you have switched back to the notebook LCD.
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
The **Bluetooth** module is **off** after resuming from Sleep.	*The Bluetooth module's default state will be off after resuming from the Sleep power-saving state*. Use the key combination (**Fn + F12**) to power on the Bluetooth module after the computer resumes from Sleep.

8

Troubleshooting

Problem	Possible Cause - Solution
The **Wireless LAN indicators** show that the WLAN module is powered on, however the module does not connect.	*The WLAN module is turned off in the **Windows Mobility Center**.* The computer's wireless function keys will not function properly if **Wireless** is turned **OFF** in the **Windows Mobility Center** control panel. Make sure that Wireless is **ON** in the Mobility Center to ensure proper function key behavior (see *"Wireless Hot Keys" on page 7 - 41*).
No sound can be heard through an **HDMI** connected display device.	*You have not configured the HDMI audio output.* See *"HDMI Audio Configuration" on page B - 13*.
Audio Volume is too low when listening through **headphones**.	*You have set the Speaker Configuration to 5.1 or 7.1 Speaker.* It is recommended that you set the **Speaker Configuration** to **Stereo** (not to 5.1 or 7.1 Speaker) when listening through headphones in order to maximize audio quality. See *"Audio Features" on page 2 - 7*.
The **THX TruStudio Pro** audio controls don't work when the system is connected to an **external display through an HDMI cable**.	*Note that THX TruStudio Pro will be disabled when you are connecting to an external display through an HDMI connection.* See *"THX TruStudio Pro & HDMI" on page B - 16*.

8

Bluetooth Connection Problems

If you are experiencing problems connecting to some Bluetooth devices (in particular certain mobile phones and headsets) it maybe necessary to download and install the **Windows Mobile Device Center** software (for *Windows Vista* and *Windows 7*). Go to the Microsoft website and search for the **Microsoft Windows Device Center Driver for *Windows Vista* (*64-bit or 32-bit*) and *Windows 7* (*64-bit or 32-bit*)**, and then download the driver.

1. Install the *Microsoft Windows Device Center Driver* as appropriate for your operating system.
2. *Windows Vista* will automatically configure the driver for you, however *Windows 7* requires further configuration.
3. Make sure the Bluetooth device is powered on.
4. Go the *Windows 7* control panel and double-click **Device Manager** (**Hardware and Sound > Devices and Printers**).
5. **Bluetooth Peripheral Device(s)** will be listed under **Other Devices** (note this will only be listed if you have connected, or tried to connect to, a Bluetooth device previously).
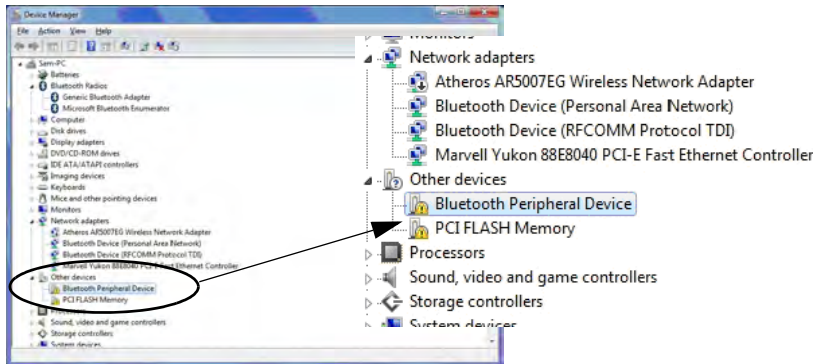

Figure 8 - 1 **- Device Manager**

8

🖉

Bluetooth Peripheral Devices

You will need to repeat the procedure listed here for all **Bluetooth Peripheral Devices** listed under **Other Devices** i.e. until there are no more **Bluetooth Peripheral Devices** listed under this menu heading.

6. Right-click **Bluetooth Peripheral Device** and click on *Update Driver Software*.
7. Click **Browse my computer for driver software**.
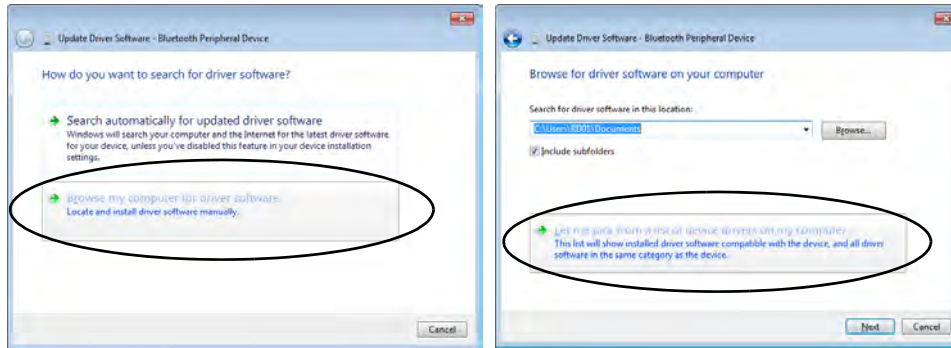8. Click **Let Me pick from a list of device drivers on my computer**.

Figure 8 - 2 **- Browse my computer.../Let me pick from...**
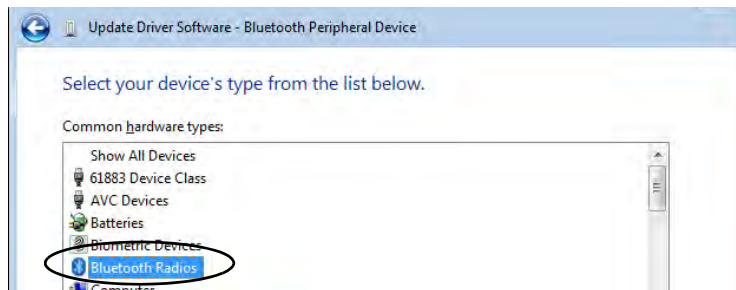
8

9. Select **Bluetooth Radios** from the list.

Figure 8 - 3 **- Select Bluetooth Radios**

10. A list of drivers will appear with **Manufacturer** on one side and **Model** in the other.
11. Choose **Microsoft Corporation** (make sure you choose the full name **Microsoft Corporation** and do not choose **Microsoft** - Note that you must have installed the **Microsoft Windows Device Center Driver** for **Microsoft Corporation** to appear in the list).
12. Select **Windows Mobile-based device support** from the **Model** list.
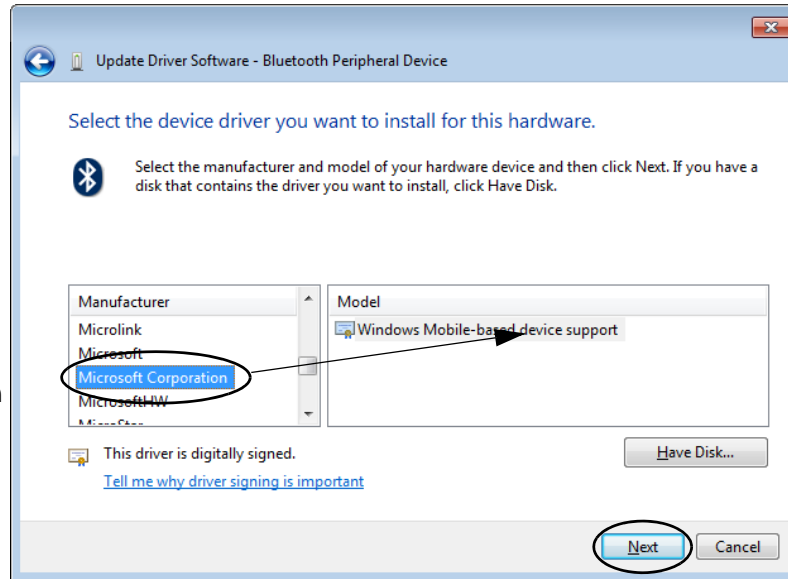
Make sure you select **Microsoft Corporation**

Figure 8 - 4 **- Select Device Driver**

13. Click **Next > Yes** and the driver will install.
14. Click **Close** to complete the installation.

15. The **Device Manager** should now display the **Windows Mobile-based device support** under **Bluetooth Radios**.
16. You will need to repeat the process for any other **Bluetooth Peripheral Devices** listed under **Other Devices**.
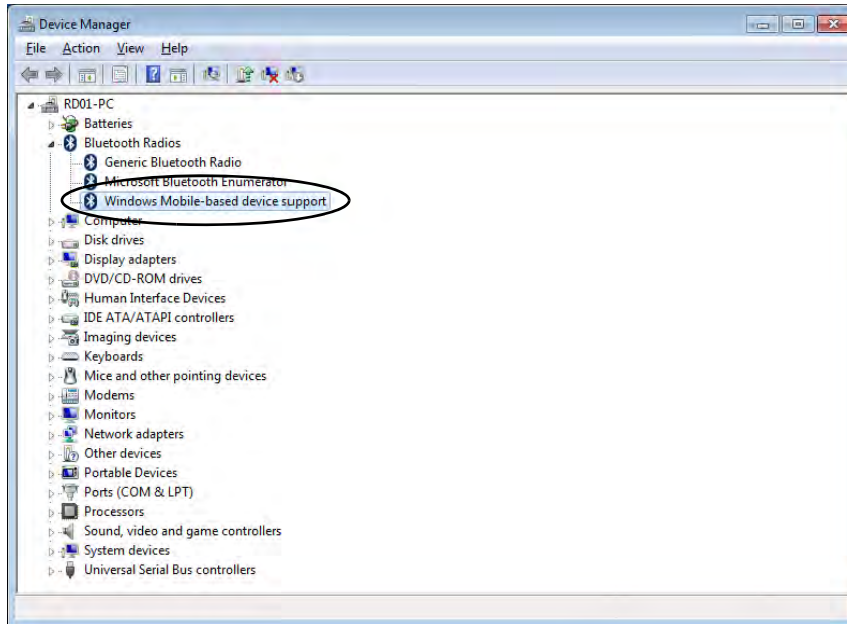

Figure 8 - 5 **- Device Manager - Bluetooth Radio**

Intel® Centrino Advanced 6230 WLAN & Bluetooth V3.0+HS Combo Modules

Note that, at the time of going to press, **Intel® Centrino Advanced 6230** WLAN & Bluetooth V3.0+HS combo modules use the standard Bluetooth configuration in *Windows 7* (see *"Intel Bluetooth Combo Driver Installation" on page 7 - 57*). **Do not use** the Bluetooth & WLAN Combo settings information outlined from page *7 - 50* to page *7 - 56*.

Driver Release Update

Note also that, at the time of going to press, this module does not support high speed Bluetooth (V3.0) data transfer. **Intel** have scheduled a driver release to allow this module to support high speed data transfer, so please check with Intel or your service center for details.

8

Installing Windows 7 (pre Service Pack 1) for RAID Systems with Advanced Format Disks

The following information is only applicable under the following conditions:

- You are configuring your SATA hard disks in a **RAID**.
- You are using **Advanced Format hard disks** that have a **4KB physical sector size**.
- You are using a *Windows 7* version that **DOES NOT include Service Pack 1** on the DVD disc.

Windows 7 versions **pre Service Pack 1** (i.e. those that do not include the installation of Service Pack 1 from the actual DVD disc) require a driver to support Advanced Format hard disks with a 4KB physical sector size when used in a RAID.

This driver is included on the *Device Drivers & Utilities + User's Manual disc* but you will need to go to an operable computer and copy the driver to a USB Flash drive, external USB hard disk or external floppy disk drive and floppy diskette, as it is required as part of the *Windows 7* system installation process.

1. Go to the operable computer and insert a USB Flash drive, external USB hard disk or external USB floppy disk drive and floppy diskette.
2. Insert the *Device Drivers & Utilities + User's Manual* disc into the CD/DVD drive of the operable computer.
3. Copy the **f6flpy** folder from the location below (D: denotes your DVD drive) on the *Device Drivers & Utilities + User's Manual* disc to the USB Flash drive, external USB hard disk or floppy diskette.

- **D:\Option\00_IRST\f6flpy**

4. Press a key at system startup to begin installing *Windows* from your *Microsoft Windows 7* disc (make sure the DVD device is set at the top of the **Boot Sequence** in the BIOS - see *"Boot Sequence (Boot Menu)" on page 5 - 14*).
5. Click **Install Now**.
6. Make sure your USB Flash drive, external USB hard disk or external USB floppy disk drive and floppy diskette is attached to one of the USB ports on the computer.
7. Click "**I accept the license terms**" tickbox and click **Next**.
8. Click **Custom (advanced)**.
9. Click to select **Load Driver** when the "**Where do you want to install Windows?**" screen appears.
10. Click **Browse** and browse to the location you copied the files to on your USB Flash drive, external USB hard disk or external USB floppy disk drive and floppy diskette (X: denotes your USB Flash drive, external USB hard disk or external USB floppy disk drive):

• **Windows 7 32bit - X:\f6flpy\f6flpy-x32\iaStor.inf**
• **Windows 7 64bit - X:\f6flpy\f6flpy-x64\iaStor.inf**

11. Click **Next** (or format the drive to your preferences).
12. Follow the on-screen instructions to install the *Windows 7* operating system.
13. Install the *Windows* drivers from the *Device Drivers & Utilities + User's Manual* disc as per *Table 4 - 1, on page 4 - 3* (make sure you install the Intel Rapid Storage Technology driver - see *"IRST Driver Installation" on page 7 - 8*).

8

Troubleshooting

Appendix A: Interface (Ports & Jacks)

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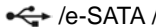
The following chapter will give a quick description of the ports & jacks which allow your computer to communicate with external devices, connect to the internet etc.

A

Ports and Jacks

Item	Description
Card Reader ☐ MMC / SD / MS	The card reader allows you to use the following digital storage cards: MMC (MultiMedia Card) / RSMMC SD (Secure Digital) / Mini SD / SDHC / *SDXC Compatible* MS (Memory Stick) / MS Pro / MS Duo Push the card into the slot and it will appear as a removable device.
Cable (CATV) Antenna Jack (**Model C Only**) CATV	Use this jack to connect a CATV cable if you have included the **optional** Mini-PCI TV Tuner in your purchase for Model C computers.
Consumer Infrared Transceiver	The **consumer infrared** transceiver at the **front** of the computer allows the computer to communicate with the remote control unit supplied with the **optional** TV Tuner.
DC-In Jack	Plug the supplied AC/DC adapter into this jack to power your computer.
DVI-Out Port	The DVI-Out (**Digital Visual Interface**) Port is a video connector interface. This allows you to connect an external monitor, TV or Flat Panel Display etc. as a display device (see *"Display Devices" on page B - 5*) by means of a DVI cable. If you are using an older type of monitor you will need to use a converter to convert the signal from DVI to VGA.

A

Item	Description
e-SATA / USB 2.0 Combo Port ⟵ /e-SATA /	This **e-SATA** (**external Serial Advanced Technology Attachment**) port allows you to plug-in external Serial ATA hard drives. This port also serves as a USB 2.0 port.
HDMI-Out Port **HDMI**	The HDMI-Out (**High-Definition Multimedia Interface**) port 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 *"Configuring an External Display using the NVIDIA Control Panel" on page B - 7*) by means of a HDMI cable. **Note that HDMI carries both audio and video signals** (see *"HDMI Audio Configuration" on page B - 13*).
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. Note that audio input through Line-in will default to the **mute** setting. To set up your audio sources to play through the Line-in jack go to the **Sound** control panel and make sure the Mute box is not ticked.
Microphone-In Jack	Plug an external microphone in to this jack to record on your computer.

A

Interface (Ports & Jacks)

Item	Description
Mini-IEEE 1394a Port **IEEE 1394**	This allows high-speed connection to various peripheral devices, e.g. external disk drives and digital cameras (**see note below**). 🖉 **IEEE 1394a** The Mini-IEEE 1394 ports only support **SELF POWERED** IEEE 1394 devices.
RJ-45 LAN Jack	This port supports LAN (Network) functions. **Note**: Broadband (e.g. ADSL) modems usually connect to the LAN port.
S/PDIF-Out Jack	This S/PDIF (**Sony/Philips Digital Interface Format**) Out Port allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for "5.1" or 'dts' surround sound.
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.

A

Item	Description
USB 2.0/1.1 Ports USB 3.0 Port	These USB (**Universal Serial Bus**) 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). The USB 3.0 ports are denoted by their blue color; USB 2.0 ports are colored black. USB 3.0 will transfer data much faster than USB 2.0, and is backwards-compatible with USB 2.0. Note that the USB 3.0 port requires a driver installation (see *"USB 3.0" on page 4 - 7*), does not support wake on USB and is not operational under DOS. *Note: One USB2.0 port can supply power when the system is off but still powered by the AC/DC adapter* - see *"USB 3.0 Ports & USB Port Power" on page 1 - 14*.

A

Interface (Ports & Jacks)

A

Appendix B: NVIDIA Video Driver Controls

The basic settings for configuring the LCD are outlined in *"Video Features" on page 1 - 16*.

NVIDIA Video Driver Installation

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

1. Insert the *Device Drivers & Utilities + User's Manual* disc and click **Install Drivers** (button).
1. Click **2.Install VGA Driver > Yes**.
2. Click **AGREE AND CONTINUE** (button) to accept the terms of the license agreement.
3. Click **Next**.
4. Click the **RESTART NOW** button to restart the computer.

After Video (VGA) driver has been installed, and the system restarted, the OS will automatically run the "Winsat.exe" to rate the performance. Allow time for this process to finish and do not restart during this process (if you have restarted the system see *"Windows Update" on page 4 - 8*).

> ✎
>
> **Video Card Options**
>
> Note that card types, specifications and drivers are subject to continual updates and changes. Check with your service center for the latest details on video cards supported (**see *"Video Adapter Options" on page C - 3*, or contact your service center for details**).

B

NVIDIA Control Panel (Win 7)

More advanced video configuration options are provided in the **NVIDIA Control Panel** tab.

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Double-click **NVIDIA Control Panel** (click "**Classic View**" from the left of the menu if you are in **Control Panel Home**).

🖉

NVIDIA Control Panel

To access the **Ge-Force.....** control panel from the desktop; right-click the **desktop**, then click **NVIDIA Control Panel**.
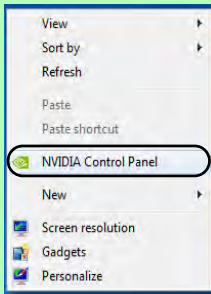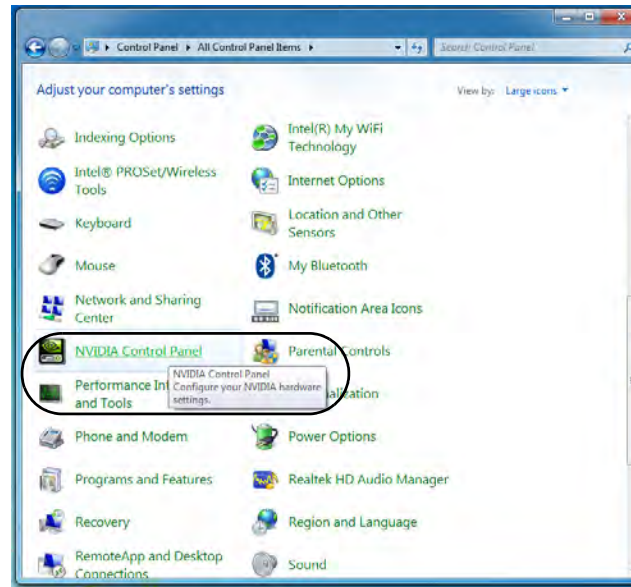

Figure B - 1

NVIDIA GeForce..... Control Panel

B

The **NVIDIA Control Panel** provides additional video configuration controls and tools which allow quick access to features such as display configuration, 3D Settings and Help menus etc.

B

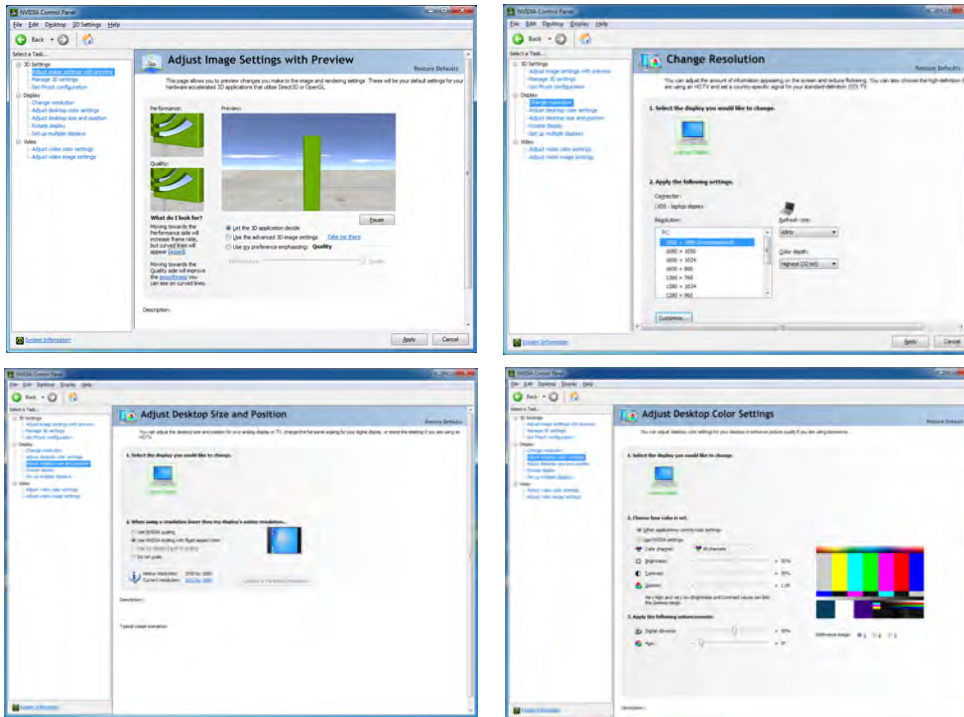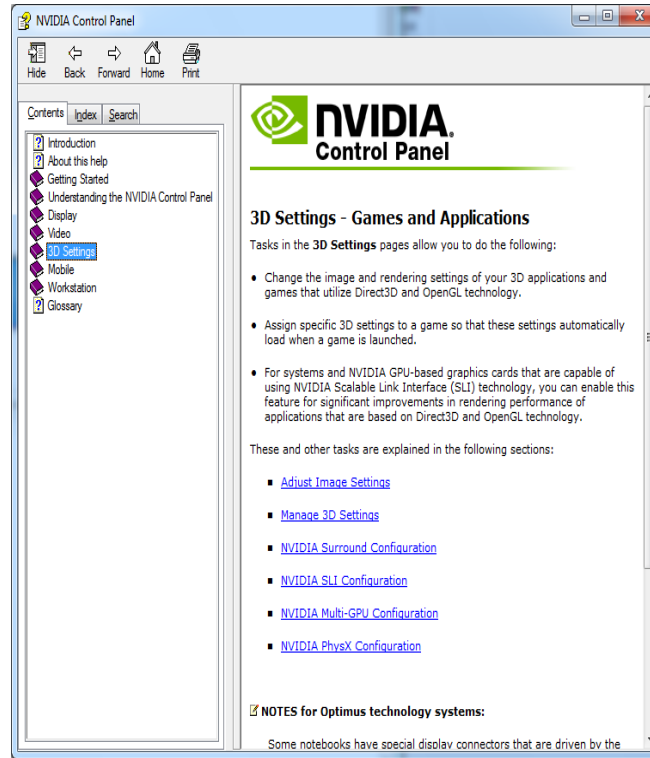*Figure B - 2*
NVIDIA Control Panels

The **Help** menus provide index and search features, and direct links to the NVIDIA website etc.

Figure B - 3
Help Menu

B

Display Devices

Note that you can use a DVI cable connected to the DVI-Out port, or an HDMI (High-Definition Multimedia Interface) cable connected to the HDMI-Out port to connect an external display (if you are using an older type of monitor you can use a converter to convert the signal from DVI to VGA). See your display device manual to see which formats are supported.

1. The built-in LCD.
2. An external display connected to the DVI-Out Port.
3. An external display/TV (if the TV supports an HDMI connection) connected to the HDMI-Out Port.

🖉

Display Devices

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

*   The built-in LCD.
*   An external display connected to the DVI-Out port.
*   An external display connected to the HDMI-Out port.

Note that HDMI supports video and audio signals.

Note that **THX TruStudio Pro will be disabled** when you are connecting to an external display through an **HDMI connection**.

B

Display Modes

Single Display Mode
Only one of your displays is used.

Duplicate Displays
Duplicate simply shows an exact copy of the Primary display desktop on the other display(s). This mode will drive multiple displays with the same content.

Extend Desktop
Extend Desktop treats both connected displays as separate devices, and they act as a virtual desktop resulting in a large workspace. When enabled, you can drag any icons or windows across to the other display desktop. It is therefore possible to have one program visible in one of the displays, and a different program visible in the other display.

B

Configuring an External Display using the NVIDIA Control Panel

You can use the **NVIDIA control panel** to configure any attached displays.

1. Attach your external display to the DVI-Out Port or HDMI-Out port, and turn it on.
2. Go to **NVIDIA Control Panel** (see page *B - 2*).
3. Double-click **Display** (if the sub-menus are not visible)**,** and then click **Set up multiple displays**.
4. Any attached display will appear under "**1.Select the displays you want to use.**"
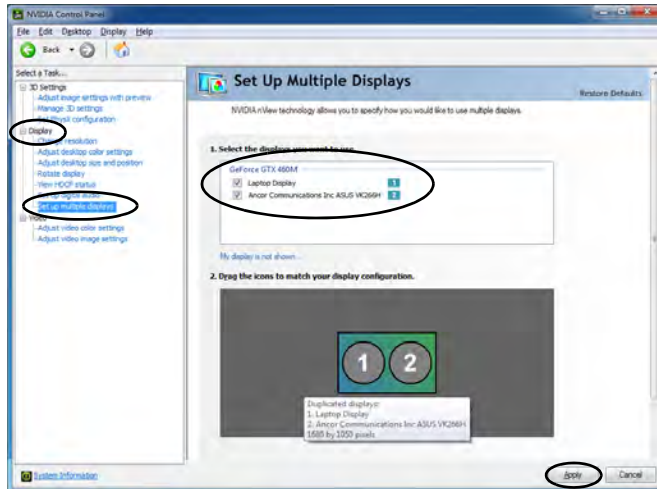
5. Click the tickbox alongside any display you wish to use.
6. Click **Apply > Yes** to save any changes made (the **Apply** button will appear in the bottom right of the control panel when changes have been made).

🖉

Display Not Shown

If the attached display does not appear in the *"1.Select the displays you want to use."* window, click *"My Display is not shown..."* and then click the appropriate button to force detection of the missing display.
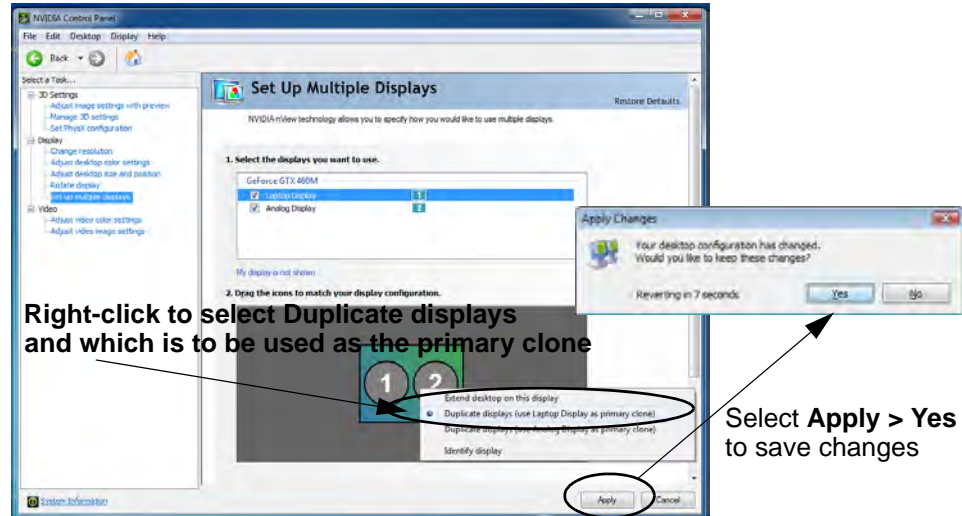
Figure B - 4
Set Up Multiple Displays

B

Duplicating the Displays

1. Attach your external display to the DVI-Out Port or HDMI-Out port, and turn it on.
2. Go to **NVIDIA Control Panel** (see page *B - 2*).
3. Double-click **Display** (if the sub-menus are not visible)**,** and then click **Set up multiple displays**.
4. Any attached display will appear under *"1.Select the displays you want to use."*
5. Click the tickbox alongside any display you wish to use.
6. Right-click one of the display icons and click "**Duplicate displays...."** (select which is to be the primary display) to duplicate the desktop on both displays.

Figure B - 5
Duplicate Displays

Right-click to select Duplicate displays and which is to be used as the primary clone

Select **Apply > Yes** to save changes

7. Click **Apply > Yes** to save any changes.

Extending the Display

1.   Attach your external display to the DVI-Out Port or HDMI-Out port, and turn it on.
2.   Go to **NVIDIA Control Panel** (see page *B - 2*).
3.   Double-click **Display** (if the sub-menus are not visible)**,** and then click **Set up multiple displays**.
4.   Click to select a primary display under *"1.Select the displays you want to use."*
5.   Right-click one of the display icons and click "**Extend Desktop on this display...."** to extend the desktop across both displays.

Select **Apply > Yes** to save changes

Click to select the display to be used as the primary display

Right-click Extend desktop on this display
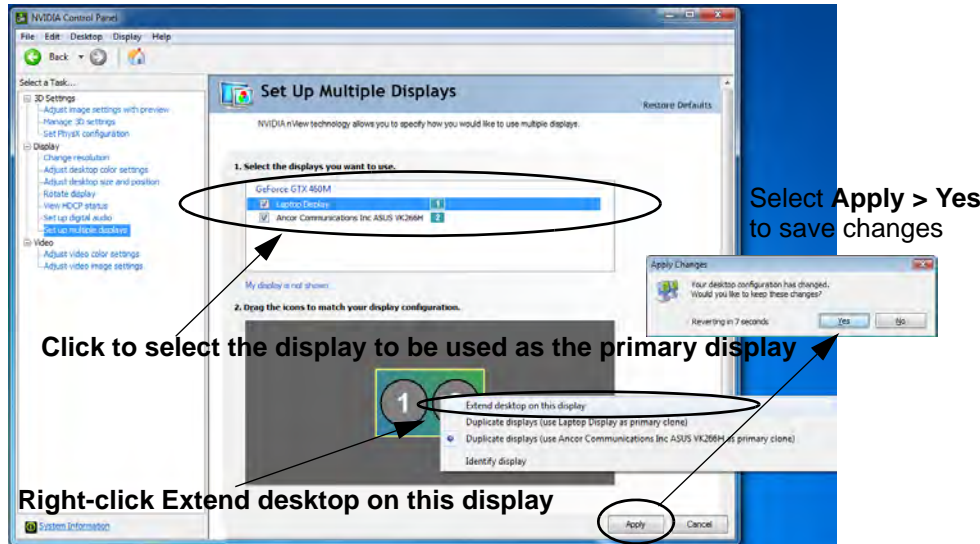
6.   Click **Apply > Yes** to save any changes.

🖉

Changing the Primary Display on Extended Displays

If you want to switch the primary display if the displays are extended then right-click the secondary display icon. Select "**Make this the Windows primary display**". **Click Apply > Yes** to save the change.

Figure B - 6
Extend the Display

B

P

Function Key Combination

You can use the **Fn + F7** key combination to toggle through the display options:

• Notebook Only
• External Display Only
• Notebook + External Display

Make sure you give the displays enough time to refresh.

Figure B - 7
Screen Resolution Multiple Displays (Win 7)

Attaching Other Displays (Win 7)

Configuring an External Display in Windows 7

1. Attach your external display to the DVI-Out Port or HDMI-Out port, and turn it on.
2. Go to the **Screen resolution** control panel.
3. Click the **Detect** button.
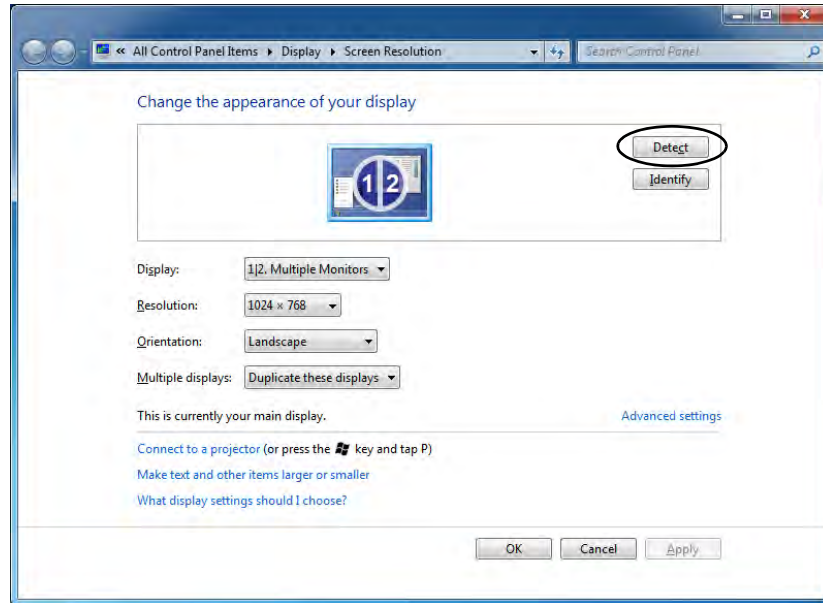4. The computer will then detect any attached displays.

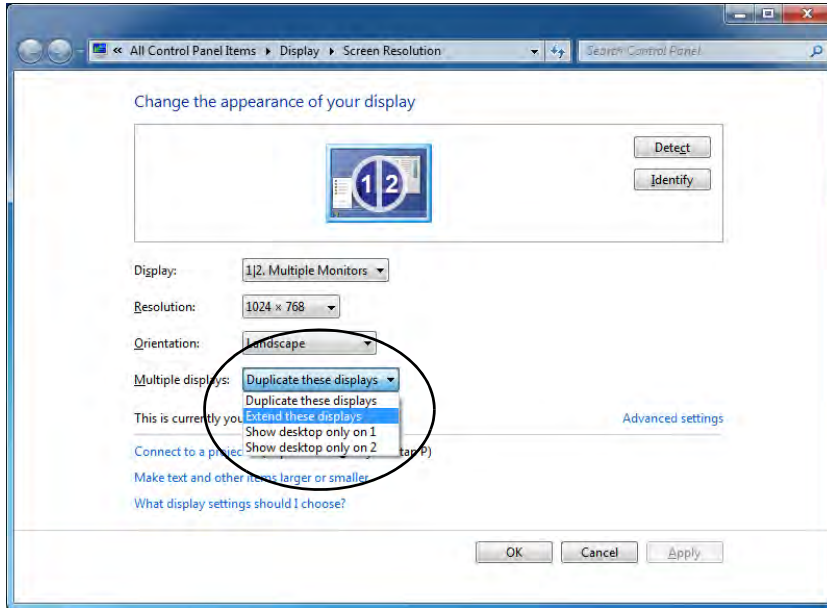5.   You can configure the displays from the **Multiple Displays** menu.

Figure B - 8
**Screen Resolution
Multiple Display
Options
(Win 7)**

B

- Duplicate these displays - Shows an exact copy of the main display desktop on the other display(s)
- Extend these displays - Treats both connected displays as **separate** devices
- Show desktop only on 1/2 - Only one of your displays is used.

Using the Windows Logo Key ⊞ + P Key Combination to Switch Displays
You can also use the ⊞ + **P** key combination to quickly change display configuration and modes (this is particularly useful when attaching a projector) in *Windows 7*.

1. Attach your external display to the external monitor port and turn it on.
2. Press the ⊞ + **P** key combination.
3. An on-screen menu will pop up.
4. Use the cursor keys (or ⊞ + **P**) to select the appropriate configuration from the menu, and press Enter to confirm the selection.

Figure B - 9
⊞ + P Display
Configuration
Selection
(Win 7)

HDMI Audio Configuration

As HDMI (High-Definition Multimedia Interface) carries both **audio** and video signals you can configure the audio output from the **NVIDIA control panel** and **Sound** control panel. The settings will depend upon the external HDMI display you have connected to.

When you connect a display to the HDMI-Out Port then the **Set up digital audio** item will appear under **Display**. Click *"Change Windows Sound Settings"* (button) to access the **Sound** control panel.
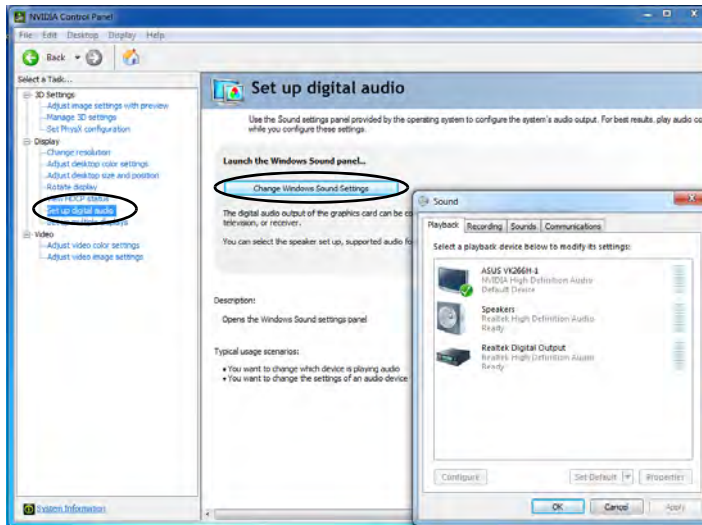
Figure B - 10
**NVIDIA Control Panel -
Set up digital audio**

B

Windows Audio Setup for HDMI

In some cases it will be necessary to go to the Sound control panel and manually configure the HDMI audio output.

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Sound** 🔊 (**Hardware and Sound**).
3. Click **Playback** (tab)
4. The playback device will be selected.
5. In some cases you may need to select the audio device and click **Set Default** (button).
6. Double-click the device to access the control panel tabs.

Figure B - 11
Sound Playback Options

B
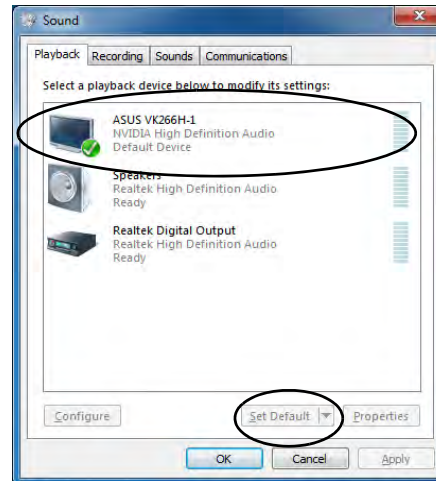
7.   Adjust the HDMI settings from the control panel tabs.
8.   Click **OK** to close the **Sound** control panel.

Figure B - 12
**HDMI Device
Properties**

B

NVIDIA Video Driver Controls

HDMI Notes

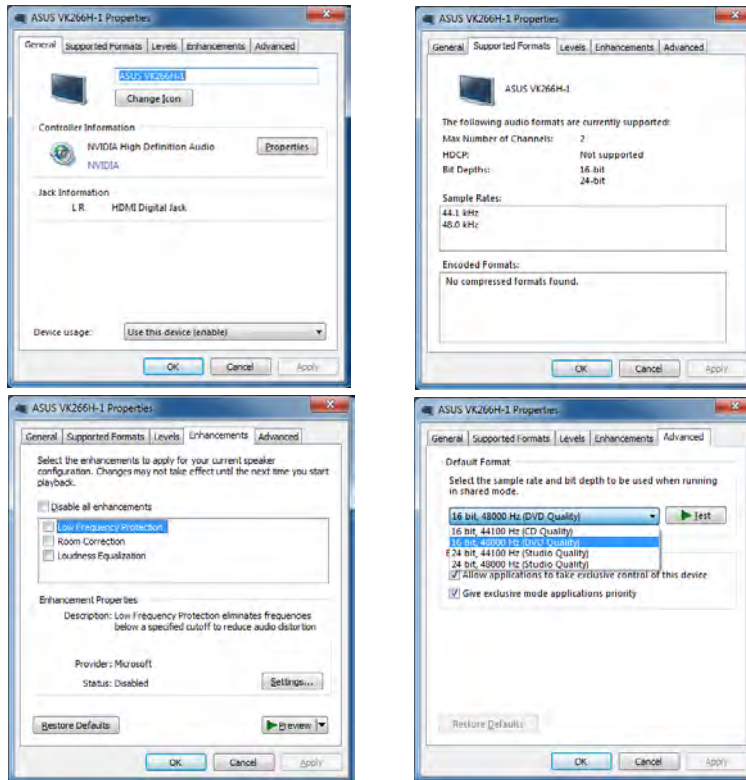- Connect a device with HDMI support to the HDMI-Out port **BEFORE** attempting to play audio/video sources through the device.

- Under certain conditions, if the HDMI cable is disconnected, 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 an External Display using the NVIDIA Control Panel" on page B - 7*.
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.

THX TruStudio Pro & HDMI

1. When you connect an HDMI display to the HDMI-Out port, the THX TruStudio Pro controls will be disabled.
2. A warning box will pop-up and will prompt *"Do you want to select another audio device now?"*.
3. Click **No** to continue using the HDMI audio output from your external display (do not attempt to select another audio device when connected to the external HDMI display).

HDCP Status

If your external display is HDCP (High Bandwith Digital Content protection) compatible then the NVIDIA control panel will display the HDCP system status.

Figure B - 13
HDCP Status

NVIDIA Video Driver Controls
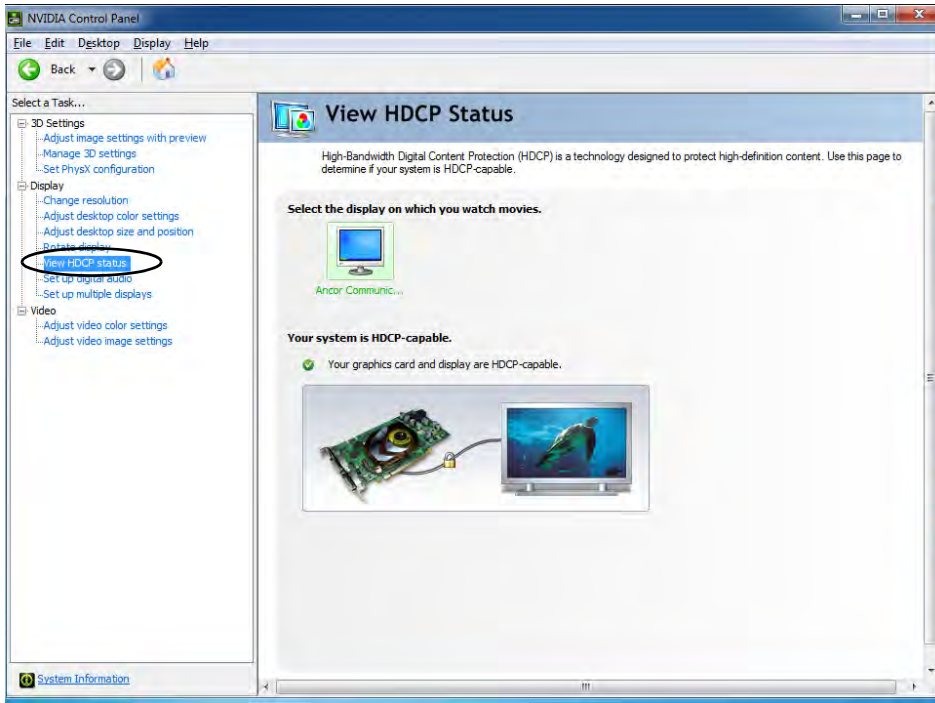
B

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, updated or delayed due to the manufacturer's release schedule. Check with your service center for details.

C

Specifications

Processor

Note all processor packages are rPGA988B

Models A& C Only:
Intel® Core i7-2920XM (2.5GHz) - Extreme Quad-Core Mobile Processor
8M L3 Cache, 32nm (32 Nanometer), DDR3-1600MHz, TDP 55W

==============================

Models B & C Only:
Intel® Core i5-2410M (2.3GHz) Mobile Processor
3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

Intel® Core i3-2310M (2.1GHz) Mobile Processor
3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

Processor

Models A, B & C:
Intel® Core i7-2820QM (2.3GHz) Quad-Core Mobile Processor
8M L3 Cache, 32nm (32 Nanometer), DDR3-1600MHz, TDP 45W

Intel® Core i7-2720QM (2.2GHz) Quad-Core Mobile Processor
6M L3 Cache, 32nm (32 Nanometer), DDR3-1600MHz, TDP 45W

Intel® Core i7-2630QM (2.0GHz) Mobile Processor
6M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 45W

Intel® Core i7-2520M (2.5GHz) Mobile Processor
3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

Processor

Model C Only:
Intel® Core i7-2620M (2.7GHz) Mobile Processor
4M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

Intel® Core i7-2540M (2.6GHz) Mobile Processor
3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

Core Logic

Models A & B:
Intel® HM65 Chipset

Model C:
Intel® HM67 Chipset

C

Memory

Dual Channel **DDRIII (DDR3)**

*Four 204 Pin SO-DIMM Sockets Supporting **DDRIII (DDR3)** 1066MHz/1333/1600** MHz Memory Modules

*Memory Expandable up to 16GB Compatible with 2GB or 4GB Modules

Note: Four SO-DIMMs are only supported by Quad-Core CPUs; Dual-Core CPUs support two SO-DIMMs maximum

Note: 1600 MHz Memory Modules are only supported by Quad-Core CPUs (i7-2920XM, i7-2820QM & i7-2720QM) to a maximum of two 2GB SO-DIMMs.

Display

Model A:
15.6" (39.62cm) FHD (1920 * 1080) 16:9 Panel
Model B:
15.6" (39.62cm) HD+ (1600 * 900) 16:9 Panel
Model C:
17.3" (43.94cm) FHD (1920 * 1080) 16:9 Panel

Supports eDP & LVDS Panels

Video Adapter Options

Models A, B & C:
nVIDIA® GeForce GTX 460M PCIe * 16 Video Card
1.5GB GDDR5 Video RAM On Board
Supports Microsoft DirectX® 11.0
Supports HDCP
Supports DVI Dual Link
Supports HDMI 1.4
NVIDIA PhysX™
GeForce CUDA™ Technology

Video Adapter Options

Models A & C:
nVIDIA® GeForce GTX 485M PCIe * 16 Video Card
2GB GDDR5 Video RAM On Board
Supports Microsoft DirectX® 11.0
Supports HDCP
Supports DVI Dual Link
Supports HDMI 1.4
NVIDIA PhysX™
GeForce CUDA™ Technology

Model C:
nVIDIA® GeForce GTX 470M PCIe * 16 Video Card
1.5GB GDDR5 Video RAM On Board
Supports Microsoft DirectX® 11.0
Supports HDCP
Supports DVI Dual Link
Supports HDMI 1.4
NVIDIA PhysX™
GeForce CUDA™ Technology

BIOS

One 32Mb SPI Flash ROM
AMI BIOS

C

Specifications

Storage

One 12.7 mm Super Multi/Blu-Ray Combo/Blu-Ray Writer SATA Optical Device Drive (**Factory Option**)

One (**Factory Option**) Changeable 2.5" 9.5 mm (h) **SATA** (Serial) Hard Disk

Model C:
Up to Two (**Factory Option**) Changeable 2.5" 9.5 mm (h) **SATA** (Serial) Hard Disks with RAID Level 0/1 Support

Audio

High Definition Audio
3D Enhanced Sound System
S/PDIF Digital Output
Built-In Microphone
THX TruStudio Pro
7.1CH Audio output supported by headphone, microphone, S/PDIF & Line-In Jack

Models A & B:
2 Built-In Speakers and One Sub Woofer
Model C:
5 Built-In Speakers and One Sub Woofer

Keyboard & Pointing Device

Full Size Winkey Keyboard with Numeric Keypad with WASD Gaming Marking
Built-In TouchPad (with Multi Gesture Functionality)

Interface

Two USB 3.0 Ports
Two USB 2.0 Ports (*Note: One USB2.0 port can supply power when the system is off but still powered by the AC/DC adapter* - see *"USB 3.0 Ports & USB Port Power" on page 1 - 14*)

One eSATA Port (SATA Interface, USB 2.0 Combo)
One Mini-IEEE1394a Port
One DVI-I Dual Link Out Port
One HDMI-Out (High-Definition Multimedia Interface) Port
One Microphone-In Jack
One Headphone/Speaker-Out Jack
One S/PDIF Out Jack
One Line-In Jack
One RJ-45 LAN Jack
One DC-In Jack

Interface

Model C:
One CATV Input Jack for TV Antenna (for TV Tuner Mini-Card)

Slots

Two Mini-Card Slots:

Slot 1 for WLAN or WLAN & Bluetooth Combo Half Mini-Card Module with PCIe and USB Interface

Models A & B:
Slot 2 for UMTS/HSPA 3.75G Full Size Mini-Card Module with USB Interface (Compatible with Mini-Card with PCIe Interface)

Model C:
Slot 2 for TV Tuner Full Size Mini-Card Module with USB Interface (**Factory Option**)

C

Card Reader

Embedded Multi-In-1 Card Reader
- MMC / RSMMC
- SD / Mini SD / SDHC /
  SDXC Compatible
- MS / MS Pro / MS Duo

Note: Some of these cards require PC adapters that are usually supplied with the cards.

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN

Intel® Centrino Advanced 6230 2*2 (802.11 a/g/n) Half Mini-Card PCIe WLAN + Bluetooth V3.0+HS Combo Module (**Factory Option**)

Intel® Centrino Advanced 6300 3*3 (802.11 a/g/n) Half Mini-Card PCIe WLAN Module (**Factory Option**)

(802.11b/g/n) Half Mini-Card PCIe **WLAN Module** (**Factory Option**)

(802.11b/g/n) Half Mini-Card PCIe WLAN + Bluetooth V3.0+HS Combo Module (**Factory Option**)   (cont'd over)

Communication

2.0M Pixel PC Video Camera Module (**Factory Option**)

Models A & B:
UMTS/HSPDA-based 3.75G Module with USB Half Mini-Card Interface (**Factory Option**)
Quad-band GSM/GPRS (850 MHz, 900 MHz, 1800 MHz, 1900 MHz)
UMTS WCDMA FDD (2100 MHz)
Note that UMTS modes CAN NOT be used in North America

Security

Security (Kensington® Type) Lock Slot
BIOS Password
Fingerprint Reader Module (**Factory Option**)

Operating System

Windows® 7
Note that the TV Tuner module is supported by the **Windows Media Center** software. **Windows Media Center** is not included in **Starter** or **Home Basic** versions of *Windows 7*.

Power Management

Supports Wake on LAN
Supports Wake on USB
Energy Star 5.0

Power

Model A:
Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 9.47A (**180 Watts**)

Model B:
Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 6.3A (**120 Watts**)

Model C:
Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19V, 11.57A (**220 Watts**)

Removable 8-cell cylinder 76.96Wh (5200mAh) Main Battery

C

Specifications

Environmental Spec

Temperature
Operating: 5°C - 35°C
Non-Operating: -20°C - 60°C

Relative Humidity
Operating: 20% - 80%
Non-Operating: 10% - 90%

Physical Dimensions & Weight

Models A & B:
376mm (w) * 256mm (d) * 35 - 43mm (h)

3.1kg with ODD and Battery

Model C:
412mm (w) * 276mm (d) * 45.4 - 41.8mm (h)

3.9kg with ODD and Battery