# USER'S MANUAL



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### **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
- 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 with an AC Input of 100 240V, 50 60Hz, DC Output of 19V, 3.42A or 18.5, 3.5A (65 Watts) minimum AC/DC Adapter.

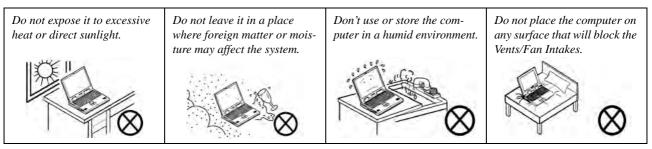
### **Instructions for Care and Operation**

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

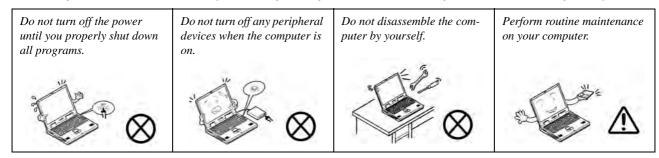
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



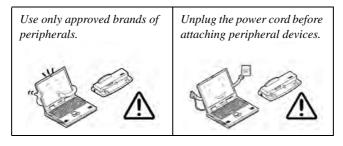
Keep it dry, and don't overheat it. Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



- Avoid interference. Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
- 4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



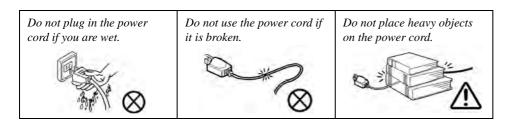
5. Take care when using peripheral devices.



### **Power Safety**

The computer has specific power requirements:

- 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).





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.

### **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.

### **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 documents are prepared.



### **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 vent(s)/fan intake(s)/outlet(s) to be blocked. To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s)/outlet(s) 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 comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

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

### **LCD Screen Care**

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

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

### **LCD Electro-Plated Logos**

Note that in computers featuring a raised LCD electro-plated logo, the logo is covered by a protective adhesive. Due to general wear and tear, this adhesive may deteriorate over time and the exposed logo may develop sharp edges. Be careful when handling the computer in this case, and avoid touching the raised LCD electro-plated logo. Avoid placing any other items in the carrying bag which may rub against the top of the computer during transport. If any such wear and tear develops contact your service center.

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### **Chapter 1: Quick Start Guide**

### **Overview**

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

- Chapter 2 A guide to using some of the main features of the computer e.g. the storage devices (hard disk, card reader & ExpressCard), Touchpad & Mouse, Audio & Printer.
- **Chapter 3** The computer's **power** saving options.
- **Chapter 4** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- Chapter 5 An outline of the computer's built-in software or **BIOS** (Basic Input Output System).
- Chapter 6 Instructions for upgrading your computer.
- Chapter 7 A quick guide to the computer's PC Camera, Wireless LAN, Fingerprint Reader, 3.75G, Bluetooth and Trusted Platform (TPM) 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 video driver controls.
- **Appendix C** The computer's **specification**.

### **Quick Start Guide**

### Advanced Users

If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to "What to Install" on page 4-1, "BIOS Utilities" on page 5-1 and "Upgrading The Computer" on page 6 - 1 in the reminder of the User's Manual. You may also find the notes marked with a of interest to you.

### **Beginners and Not-So-Advanced Users**

### B Notes

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

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

### **Warning Boxes**

No matter what your level please pay careful attention to the warning and safety information indicated by the XX 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 drivers listed in "*Drivers & Utilities*" on page 4 - 1. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed. 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 *Chapter 4* for installation instructions.

### **Ports and Jacks**

See "Notebook 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.

### **Quick Start Guide**

### System Startup

- 1. Remove all packing materials.
- 2. Place the computer on a stable surface.
- 3. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
- 4. Attach the AC/DC adapter to the DC-In jack on the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
- 5. Use one hand to raise the lid/LCD to a comfortable viewing angle (**do not exceed 120 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).





### Shutdown

# 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.

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

### 1 - 4 System Startup

### **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 that this manual refers to the *Windows 7* operating system.

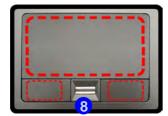
### B

### Windows OS

In order to run *Windows* **7** without limitations or decreased performance, your computer requires a minimum **1GB** of system memory (RAM), however if you are running *Windows* **7 64** *bit* your computer requires a minimum **2GB** of system memory (RAM).

### Figure 1 - 2 LCD Panel Open

- Built-In PC Camera (Optional)
- 2. LCD
- Power Button
- 4. Keyboard
- 5. Built-In Microphone
- 6. Touchpad & Buttons
- 7. LED Indicators
- 8. Fingerprint Reader Sensor



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

### System Map: LCD Panel Open



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### 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 key combinations (or WLAN Switch for wireless LAN only) to toggle power to the WLAN/Bluetooth and 3.75G modules, and check the LED indicator or onscreen icon to see if the modules are powered on or not (see Table 1 - 2, on page 1 - 9/ Table 1 - 1, on page 1 - 7).

### **LED Indicators**

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

| Icon          | Color           | Description  | lcon                         | Color  | Description  |
|---------------|-----------------|--|------------------------------|--------|--|
| <b>₽</b> /(b) | Orange          | DC Power is Plugged In                                 | Ú                            | Blue   | Power Button   |
|               | Blinking Orange | The Powered USB Port is On*                            |                              |        |  |
| 270           | Green           | The Computer is On                                     | 8                            | Green  | Hard Disk Activity   |
|               | Blinking Green  | The Computer is in Sleep<br>Mode                       | (test)                       | Green  | The ( <b>optional</b> ) Wireless LAN<br>Module is Powered On |
|               | Orange          | The Battery is Charging                                | (( <b>(((((((((((((</b>      | Orange | The ( <b>optional</b> ) Bluetooth<br>Module is Powered On    |
| ( 111         | Green           | The Battery is Fully Charged                           |                              |        |  |
|               | Blinking Orange | The Battery has Reached<br>Critically Low Power Status | Table 1 - 1 - LED Indicators |        |  |

<sup>\*</sup>Note: The powered USB 2.0 port (see *Figure 1 - 6 on page 1 - 12*) may be toggled on /off by means of the **Fn** + **Power Button** key combination. When the powered USB port is on it will supply power when the system is off but still powered by the AC/DC adapter plugged into a working outlet, or powered by the battery with a capacity level above 20% (this may not work with certain devices - see page 8 - 11).



### Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

### NumLk & ScrLk

Hold down the **Fn Key** and either NumLk or ScrLk to enable number or scroll lock, and check the LED indicator for status.

### Keyboard

The keyboard has a numerical keypad for easy numeric data input, and features function keys to allow you to change operational features instantly. See *Table 1 - 2*, *on page 1 - 9* for full function key combination details.

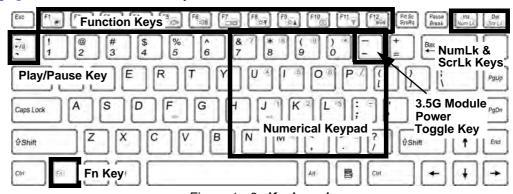


Figure 1 - 3 - Keyboard



### **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/Hot Key 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 are available when the hot key utility is installed.

| Keys                 | Function  |  | Keys          | Func                             | ction      |
|----------------------|---|--|---------------|----------------------------------|------------|
| Fn + Power<br>Button | Powered USB 2.0 Port Power Toggle                                     |  | Fn + F8/F9    | Brightness Decrease/<br>Increase |            |
| Fn + ~               | Play/Pause (in Audio/Video Programs)                                  |  | Fn + F10      | PC Camera Power Toggle           | ON OF O    |
| Fn + F1              | TouchPad Toggle   |  | Fn + F11      | WLAN Module Power Toggle         |            |
| Fn + F2              | Turn LCD Backlight Off<br>(Press a key to or use TouchPad to turn on) |  | Fn + F12      | Bluetooth Module Power<br>Toggle |            |
| Fn + F3              | Mute Toggle   |  | Fn +<br>NumLk | Number Lock Toggle               | ON 1 OFF 1 |
| Fn + F4              | Sleep Toggle  |  | Fn + ScrLk    | Scroll Lock Toggle               | ON Scr Scr |
| Fn + F5/F6           | Volume Decrease/<br>Increase  |  |               | Caps Lock Toggle                 | ON A OFF A |
| Fn + F7              | Display Toggle  |  |               |                                  |            |

Table 1 - 2 - Function & Hot Key Indicators

# Figure 1 - 4 Front & Top Views (with Optional Docking Station)

- 1. LED Indicators
- 2. WLAN Switch
- 3. Docking Station (**Optional**)
- Alignment Markers

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### **WLAN Switch**

Use the WLAN Switch (for Wireless LAN only) to toggle power to the WLAN module. The position of the WLAN switch governs the power status of the WLAN module at startup, and upon resuming from a power saving state (see "Wireless LAN Switch" on page 7 - 11).

### System Map: Front & Top Views





### **Docking**

If your purchase includes the docking station, align the markers on the top case of the computer with that on the docking station before docking (see the accompanying docking station for full details of the docking procedure). If your purchase does not include the docking station, the marker will still appear on the computer's top case but may be disregarded.

### System Map: Left View



### Multi-In-1 Card Reader

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

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

### **USB 3.0 Ports**

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.

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### External Monitor Port & RJ-45 LAN Jack

If you are using a VGA cable plugged into the external monitor port, and a network cable connected to the RJ-45 LAN jack, it is recommended that you insert the VGA cable before inserting the LAN cable.

### **USB Port/Card Reader Power**

Note that power to the USB ports and card reader may be enabled/disabled in the BIOS (see "USB Ports/Card Reader Power (Advanced Menu)" on page 5 - 9).

### Figure 1 - 5 Left View

- DC-In Jack
- 2. External Monitor Port
- 3. RJ-45 LAN Jack
- 4. e-SATA Port/ USB 2.0 Combo Port
- 5. HDMI-Out Port
- 6. 2 \* USB 3.0 Ports
- 7. ExpressCard Slot (see page 2 7)
- 8. Multi-In-1 Card Reader



### **Optical Device Drives**

To install applications and drivers etc. you will need to attach an external optical CD/DVD device to the USB ports.

### **Quick Start Guide**

### Figure 1 - 6 Right & Rear Views

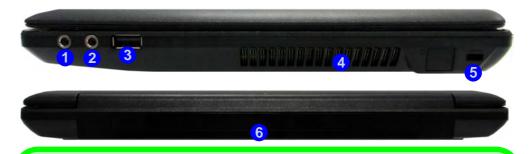
- Microphone-In Jack
- Headphone-Out Jack
- 3. 1 \* Powered USB 2.0 Port
- 4. Fan Intake/Vent
- 5. Security Lock Slot
- 6. Battery



### Optical Device Drives

To install applications and drivers etc. you will need to attach an external optical CD/DVD device to the USB ports.

### System Map: Right & Rear Views



### Powered USB 2.0 Port

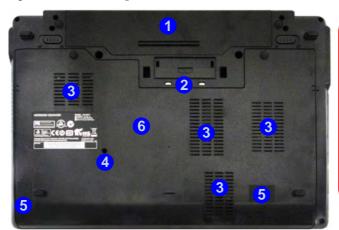
The powered USB 2.0 port 3 can supply power when the system is off but still powered by the AC/DC adapter plugged into a working outlet, or powered by the battery with a capacity level above 20% (this may not work with certain devices - see page 8 - 11). Toggle power to this port by using Fn + power button. Power to this port may be enabled/disabled in the BIOS (see "USB Ports/Card Reader Power (Advanced Menu)" on page 5 - 9).



### **Overheating**

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

# **System Map: Bottom View**





#### **CPU**

The CPU is not a user serviceable part.

#### **Overheating**

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

# Figure 1 - 7 Bottom View

- Battery
- 2. Docking Port
- 3. Fan Intake/Vent
- 4. Drainage Outlet
- 5. Speakers
- 6. Component Bay Cover



#### **Docking Port Cover**

If your purchase option includes the docking station, make sure you keep the cover closed when the computer is not docked in the station. This will help prevent foreign objects and/or dust getting in to the contact area.

If your purchase option does not include the docking station, an insert will be provided to prevent accidentally opening the docking port. Do not attempt to open the cover or remove the insert in this case.

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#### **Battery Information**

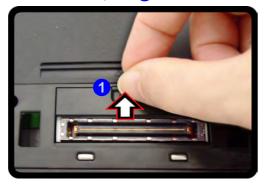
Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

#### **Quick Start Guide**

# **Docking Port**

Follow the instructions below **before** connecting the computer to the docking station, if included in your purchase configuration. Failure to open the cover of the docking port before connecting the computer to the docking station may result in irreparable damage to the connector on the docking station.

- Turn the computer over.
- 2. Slide the docking port cover latch in the direction of the arrow at point 1 to open the cover.
- 3. After disconnecting the computer from the docking station, slide the docking port cover latch in the direction of the arrow at point 2.



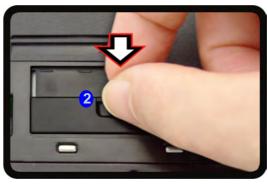


Figure 1 - 8 - Opening and Closing the Docking Port

# **近**

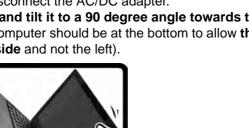
### Docking Port Cover

Make sure you keep the cover closed when the computer is not docked in the station. This will help prevent foreign objects and/or dust getting in to the contact area

# What to do if you Spill Liquid on the Computer

The keyboard incorporates a drainage system that minimizes the chances of liquid spillages on the keyboard penetrating the inside components of the computer. Liquid spilled on the computer is drained towards the right side of the computer. There is no guarantee that all water can be prevented from entering the computer, and damage resulting from spillages is not covered in the warranty. However if you follow the steps outlined here you should be able to prevent water from entering the sensitive parts of the computer and causing damage.

- 1. If you spill liquid on the computer immediately save any data required and then shut the computer down and disconnect the AC/DC adapter.
- Carefully lift the computer up and tilt it to a 90 degree angle towards the right side (i.e. that right side of the computer should be at the bottom to allow the water to drain away from the right side and not the left).





#### **Warranty Warning**

Note that the keyboard drainage system is designed to help prevent and minimize damage from liquid spillages on the computer keyboard. However damage resulting from spillages is not covered in the warranty.

Figure 1 - 9
Drain any Liquid to the Right Side

#### **Quick Start Guide**

- 3. Move the computer to a dry place and wipe any liquid off the keyboard and bottom of the computer using a clean, soft, dry cloth.
- 4. Remove the battery.
- 5. Leave the computer resting on its right side (while placed on a clean, soft, dry cloth) to dry out for about three hours.



Figure 1 - 10
Rest the Computer
on the Right Side to
Dry

Contact your service center to have the computer examined for any problems, but
do not attempt to turn the computer back on again until after it has been
examined.

# 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.

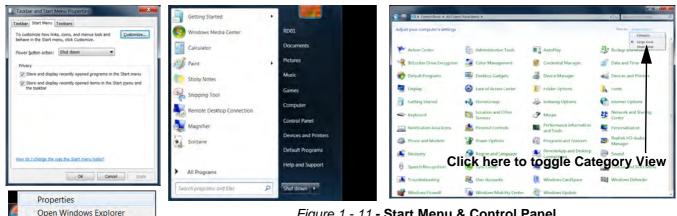


Figure 1 - 11 - Start Menu & Control Panel

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.

#### **Quick Start Guide**

## **Video Features**

You can switch display devices, and configure display options, from the **Display** control panel (in **Appearances** and **Personalization**) in *Windows 7* (see over). For more detailed video information see "*Video Driver Controls*" on page *B* - 1. To access **Display** (Control Panel) and Screen Resolution in *Windows*:

- Click Start and click Control Panel.
- Click Display (icon) In the Appearances and Personalization category.
- Click Adjust Screen Resolution/Adjust resolution.
- 4. Alternatively you can right-click the desktop and select **Screen resolution**.
- 5. Use the dropbox to select the screen **Resolution** (*Figure 1 12*).
- 6. Click **Advanced settings 2** (*Figure 1 12*) to bring up the **Advanced** properties tabs.

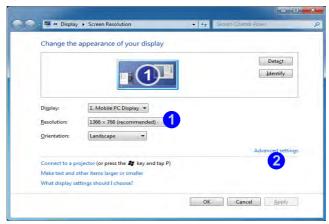


Figure 1 - 12 - Screen Resolution

To access the *Intel(R) Graphics and Media Control Panel*:

- Click Advanced settings (2) (Figure 1 12 on page 1 18) in the Display Settings control panel in Windows.
- 2. Click Graphics Properties (button) 3 (Figure 1 13) in the Intel Graphics & Media Control Panel tab.

#### OR

3. Right-click the desktop and select **Graphics Properties** from the menu.

#### OR

4. Click the icon [24] 4 (Figure 1 - 13) in the taskbar and select Graphics Properties from the menu.

#### OR

5. Access the Intel(R) Graphics and Media Control Panel from the Windows control panel in Classic View.

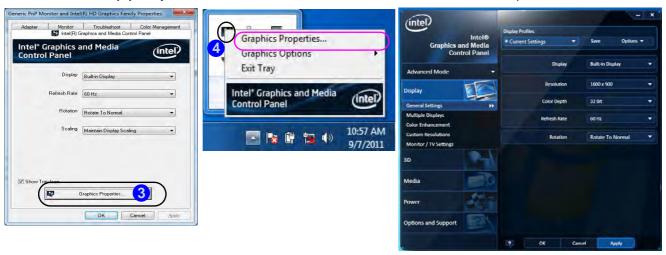


Figure 1 - 13 - Intel Graphics and Media Control Panel

#### **Quick Start Guide**

# **Power Options**

The **Power Options** (**Hardware and Sound** menu) control panel icon in *Windows* (see page *1 - 13*) allows you to configure power management features for your computer. You can conserve power by means of **power plans** and configure the options for the **power button**, **sleep button**, **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 - 11.

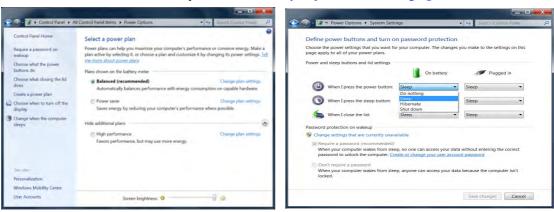


Figure 1 - 14 - Power Options

# **Chapter 2: Features & Components**

### **Overview**

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

- Hard Disk Drive
- Multi-In-1 Card Reader
- ExpressCard Slot
- Touchpad and Buttons/Mouse
- Audio Features
- Adding a Printer



# External Optical (CD/DVD) Device Drives

To install applications and drivers etc. you will need to attach an external optical CD/DVD device to the USB ports.

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#### **Power Safety**

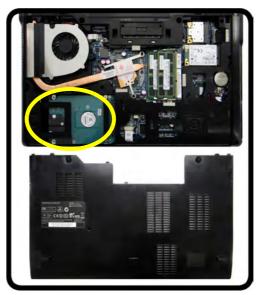
Before attempting to access any of the internal components of your computer please ensure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

Figure 2 - 1
Hard Disk Location

# **Hard Disk Drive**

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

The hard disk is accessible from the bottom of your computer as seen below. For further details see "Upgrading the Hard Disk Drive" on page 6 - 5.



# 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 "CardReader" on page 4 - 6.

- MMC (MultiMedia Card) / RS MMC
- 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.





#### **Card Reader Cover**

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

Figure 2 - 2 Left View

1. Card Reader



# ExpressCard Slot Cover

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

# Figure 2 - 3 Left View

 ExpressCard Slot

# **ExpressCard Slot**

The computer is equipped with an **ExpressCard/34/54** slot that reads Express Card/34 and ExpressCard/54 formats. ExpressCards are the successors to PCMCIA (PC Cards). Make sure you install the Card Reader driver (see "*CardReader*" *on page 4 - 6*).

ExpressCard/54 is used for applications which require a larger interface slot, e.g. CompactFlash card reader. The number denotes the card width; 54mm for the Express Card/54 and 34mm for the ExpressCard/34.



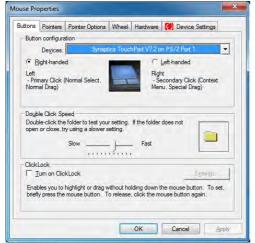
## **Inserting and Removing ExpressCards**

- Align the ExpressCard with the slot and push it in until it locks into place (as pictured in the generic figure below).
- To remove an ExpressCard, simply press the card to eject it.

# **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 - 6) you can configure the functions by double-clicking the Touchpad driver icon  $\blacksquare$  in the notification area. You may then configure the Touchpad tapping, buttons, scrolling (see sidebar), pointer motion and sensitivity options to your preferences.







#### **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 - 4
Mouse Properties

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#### **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.

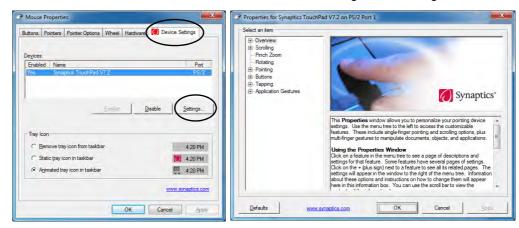
Figure 2 - 5
Mouse Properties Device Settings

### **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).
- 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).



### 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 - 6
Scrolling Gesture



#### **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.

Figure 2 - 7
Zooming Gesture

### **Features & Components**

#### **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 - 8
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 - 9
Flick/Press
Gesture





# **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.



Right-click the icon to access the menu above.



# Sound Volume Adjustment

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



Figure 2 - 10
Realtek Audio
Manager

### **Optimizing Audio Recording**

Follow these instructions to optimize your audio recording.

- 1. Double-click the taskbar icon **(a)** to bring up the **Realtek HD Audio Manager**.
- 2. Click the Microphone tab.
- Click the Noise Suppression button to prevent any background noise or feedback.
- 4. Click **OK** to close the **Realtek HD Audio Manager**.



Figure 2 - 11
Optimizing Audio
Recording

# Adding a Printer

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

#### **USB Printer**

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

#### Install Instructions:

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

#### **Parallel Printer**

This is still a very common type of printer. The install instructions are in the sidebar, however you will need to purchase a parallel to USB converter.



#### **Parallel Printer**

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

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

Turn ON the printer, then turn ON the computer.

Windows will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

# **Chapter 3: Power Management**

### **Overview**

To conserve power, especially when using the battery, your computer power management conserves power by controlling individual components of the computer (the LCD 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
- Energy Star Power Saving
- 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.



#### **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.)

# **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.

- 1. Attach the AC/DC adapter to the DC-in jack on the left 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 to turn "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 - 15).

We recommend that you do not remove the battery. For more information on the battery, please refer to "Battery Information" on page 3 - 11.

# **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.





#### 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).



# Resuming Operation

See *Table 3 - 1, on page 3 - 9* for information on how to resume from a power-saving state.

#### **Password**

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

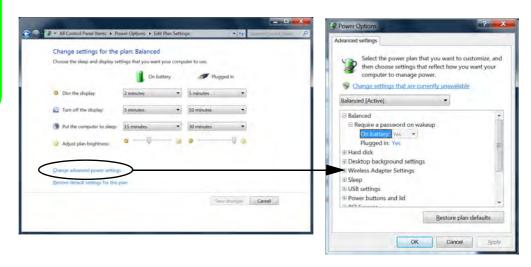
Figure 3 - 1
Power Plan
Advanced Settings
(Win 7)

# **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**.



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. The recommended **Balanced** power plan will balance power saving and performance.

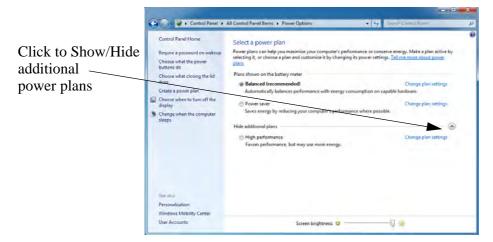


Figure 3 - 2
Power Plans

# **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.

#### 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



#### 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 ( $\mathbf{Fn} + \mathbf{F4}$  key combo).

| Power Status       | Icon (D./(I) 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)          | Press the Power Button                     |
|                    | Orange (AC/DC adapter) |  |
| 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

# Taskbar Icon

If the taskbar icon does not appear then click the taskbar arrow and select Customize.



Select Show icon and notifications alongside the Hot key icon and click OK. The icon will now appear in the taskbar.

Figure 3 - 5
Energy Star Menu

# **Energy Star Power Saving**

This system supports **Energy Star** power management features that place computers (CPU, hard drive, etc.) into a low-power sleep modes after a designated period of inactivity. If you want to enable Energy Star power saving then follow these instructions:

- Right-click the taskbar icon (see sidebar).
- 2. Select Power Conservation Modes. Power Conservation Modes
- 3. Select **Energy Star** to use the Energy Star power management and override other power saving settings.



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#### **Conservation Modes**

The default **Energy Star** setting will result in maximum power saving, but with the possible loss of some performance.

Setting the mode to **Balance** will give power saving matched with performance.

**Performance** will give optimum computer performance but with less power conservation.

# **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.





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# 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.

Figure 3 - 6
Battery Icon
(Taskbar) & Battery
Advanced Settings

### **Power Management**



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.

# Figure 3 - 7 Windows Mobility Center

### **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.



### **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 - 15 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 - 7 for information on the battery charge status, and to "Battery Information" on page 3 - 11 for more information on how to maintain and properly recharge the battery pack.)

### **Power Management**



#### 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

### **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.

### **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.

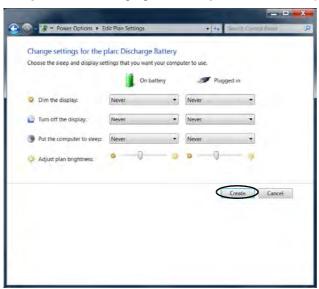


Figure 3 - 8
Power Plan Create

### **Power Management**

 Click Change plan settings (after creating it) and click Change plan settings > Change advanced power settings.

\* All Control Panel Items \* Power Options Control Panel Home Select a power plan Power plans can help you maximize your computer's performance or conserve Require a password on wakeup energy. Make a plan active by selecting it, or choose a plan and customize it by Choose what the power changing its power settings. Tell me more about power plans buttons do Choose what closing the lid Discharge Battery Create a power plan Power saver Choose when to turn off the Saves energy by reducing your computer's performance where possible. Change when the computer Hide additional plans Balanced (recommended) Automatically balances performance with energy consumption on capable hardware. Favors performance, but may use more energy. Personalization Windows Mobility Center User Accounts Screen brightness: 0

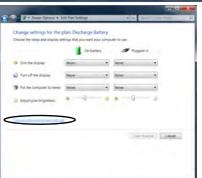


Figure 3 - 9
Change Plan
Settings / Change
Advanced Power
Settings

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

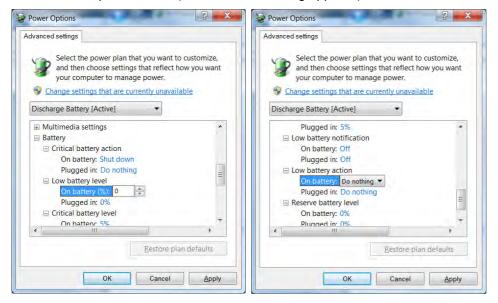


Figure 3 - 10
Power Options
Advanced Settings Battery

- 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

## **Power Management**

## 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.

# **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** (all drivers provided are for *Windows 7 with Service Pack 1*).

The procedures for installing drivers for the PC Camera, Wireless LAN, Security (Fingerprint & TPM). 3.75G/HSPA and Bluetooth & WLAN Combo modules are provided in "Modules & Options" on page 7 - 1.



#### **Driver Installation & Power**

When installing drivers make sure your computer is powered by the AC/DC adapter connected to a working power source. Some drivers draw a significant amount of power during the installation procedure, and if the remaining battery capacity is not adequate this may cause the system to shut down and cause system problems (note that there is no safety issue involved here, and the battery will be rechargeable within 1 minute).

#### **Drivers & Utilities**

## **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

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



Figure 4 - 2 - Drivers Installer Screen 2

| Drivers for Windows 7 with Service Pack 1 |            |  |             |
|---|------------|--|-------------|
| Chipset                                   | Page 4 - 6 | PC Camera Module   | Page 7 - 2  |
| Video (VGA)                               | Page 4 - 6 | Wireless LAN Module  | Page 7 - 10 |
| LAN                                       | Page 4 - 6 | Fingerprint Reader Module  | Page 7 - 30 |
| CardReader                                | Page 4 - 6 | 3.75G/HSPA Module  | Page 7 - 35 |
| Touchpad                                  | Page 4 - 6 | Bluetooth & WLAN Combo Module  | Page 7 - 60 |
| Hot Key                                   | Page 4 - 7 | Intel Rapid Storage Technology<br>(required for hard disks in AHCI mode) | Page 7 - 74 |
| USB 3.0                                   | Page 4 - 7 | Trusted Platform Module  | Page 7 - 75 |
| MEI Driver                                | Page 4 - 7 |  |             |
| Audio                                     | Page 4 - 7 |  |             |

Table 4 - 1 - Driver Installation

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

#### **Drivers & Utilities**

#### **Manual Driver Installation**

Click *Browse CD/DVD* (button) in the *Drivers Install-er* 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:

- 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).
- 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** or **Allow**, and follow the installation procedure as directed.

## **Windows Security Message**

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

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

#### **New Hardware Found**

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



#### **Driver Installation 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.

Make sure any modules (e.g. PC Camera, WLAN or 3.75G/HSPA) are **ON** before installing the appropriate driver.

#### **Drivers & Utilities**

#### **Driver Installation Procedure**

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

## 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 Next > Yes > Next > Next.
- 3. Click **Finish** to restart the computer.

**Note**: After installing the video driver go to the **Display/Display Settings** control panel to adjust the video settings to the highest resolution.

#### LAN

- 1. Click **3.Install LAN Driver > Yes**.
- 2. Click Install Drivers and Software > Next.
- 3. Click the button to accept the license and click **Next**.
- 4. Click **Next > Install**.
- 5. Click Finish.
- 6. The network settings can now be configured.

## CardReader

- 1. Click **4.Install Cardreader Driver > Yes**.
- 2. Click **Install**.
- 3. Click Finish.

## **Touchpad**

- 1. Click **5.Install Touchpad Driver > Yes**.
- 2. Click Next.
- 3. Click the button to accept the license agreement and 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 the computer.

#### **USB 3.0**

- 1. Click **7.Install USB 3.0 Driver > Yes**.
- 2. Click Next.
- 3. Click the button to accept the license agreement and click **Next**.
- 4. Click Install.
- 5. Click Finish.
- 6. Click **Finish**.

### OR

- 7. Choose the language you prefer and click **OK**.
- 8. Click Next.
- 9. Click the button to accept the license agreement and click **Next**.
- 10. Click **Finish**.

#### **MEI Driver**

- 1. Click **8.Install MEI Driver > Yes**.
- 2. Click (click the button to "Install Intel® Control Center") 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.

Note that after installing the audio driver the system will not return to the *Drivers Installer* screen. To install any of the optional drivers listed overleaf, 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.

It is recommended you now also install the **Intel Rap- id Storage Technology** driver (see "*IRST Driver In- stallation*" *on page 7 - 74* - required for AHCI mode hard disks).



#### **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:

- Click Start, and click Control Panel (or point to Settings and click Control Panel).
- 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).
- Click Install now (button) to begin checking for the updates.
- Click **Install updates** (button) to install the updates.

## **Windows Experience Index**

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 - Drivers Installer - Option Drivers Menu

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

#### **PC Camera Module**

See "PC Camera Module" on page 7 - 2,.

#### **Wireless LAN Module**

See "Wireless LAN Module" on page 7 - 10.

## **Fingerprint Module**

See "Fingerprint Reader Module" on page 7 - 30.

#### 3.75G/HSPA Module

See "3.75G/HSPA Module" on page 7 - 35.

#### **Bluetooth Combo Module**

See "Bluetooth & WLAN Combo Module" on page 7 - 60.

## **Intel Rapid Storage Technology Driver**

See "Intel Rapid Storage Technology" on page 7 - 74.

### **Trusted Platform Module**

See "Trusted Platform Module" on page 7 - 75.

## **Chapter 5: BIOS Utilities**

## **Overview**

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

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

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



#### **BIOS 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.



## BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Setup* and restore the *Previous Values* with <F2>, or Optimized Defaults with <F3>.

## 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.

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

To enter *Setup*, turn on the computer and press **F2** (give the system a few seconds to enter *Setup*). If the **Boot Logo** is enabled the **F2** on screen will be **highlighted** to illustrate that the system is processing the request during the **POST** (or press **F7** for boot options). 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** and choose your preferred boot device.

## 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** (the **F7** on screen will be **highlighted** to illustrate that the system is processing the request) for boot options.

Press **F2** (give the system a few seconds to enter *Setup*; the **F2** on screen will be highlighted to illustrate that the system is processing the request) 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.



### **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

## **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

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 per next to an item, press **Enter** to go to a sub-menu on that sub-ject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

## **Main Menu**



Figure 5 - 2
Main Menu

System Time & Date (Main Menu)

The hour setting uses the 24-hour system (i.e.,  $\emptyset\emptyset$  = 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.

#### **BIOS Utilities**

#### SATA Port # (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

This item contains information on the BIOS version etc., and is not user configurable.

## **Advanced Menu**



Figure 5 - 3
Advanced Menu

Advanced Chipset Control (Advanced Menu)

The sub-menu here allows you to adjust the **Bluetooth Power Setting** and enable/disable **Intel Virtualization Technology** and **Intel AMT SPI** protection.



# SATA Mode Selection

If you have installed the *Windows* 7 operating system with either IDE or AHCI 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).

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.

Intel Virtualization Technology (Advanced Menu > Advanced Chipset Control) Intel(R) Virtualization Technology enables a CPU to act as if it were several CPUs working in parallel in order to allow several operating systems to run at the same time in the same machine.

*Intel AMT SPI Protected (Advanced Menu > Advanced Chipset Control) Intel(R) AMT SPI* protection may be enabled/disabled from this menu item.

SATA Mode Selection (Advanced Menu)

You can configure SATA (Serial ATA) control to operate in **IDE** (native/compatible), **AHCI** (Advanced Host Controller Interface) 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).

## Legacy USB Support (Advanced Menu)

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

### Boot Logo (Advanced Menu)

Use this menu item to enable/disable the **Boot Logo** screen at system startup. If you disable the **Boot Logo** you will not see the **F2 Enter Setup** or **F7 Boot Options** prompts on the screen, however you can still press these keys, while the boot screen is displayed, to perform the Enter Setup or Boot Option functions.

#### 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.

## USB Ports/Card Reader Power (Advanced Menu)

These menu items allow you to enable/disable power to the card reader or USB ports when required to do so in order to save power.

# **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

## **Security Menu**



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**). If you set a supervisor password you can then add a **user password** and **password on boot**.

## Set User Password (Security Menu)

You can set a password for user mode access to the **Aptio Setup Utility**. This will not affect access to the computer OS, (only the *Setup* utility) unless you choose to set a *Password on Boot* (see below). Many menu items in the **Aptio Setup Utility** cannot be modified in user mode. **You can only set the user password after you have set the supervisor password**.

## Password on boot (Security Menu)

Specify whether or not a password should be entered to boot the computer (**you may only set a password on boot if a supervisor password is enabled**). If "*Enabled*" is selected, only users who enter a correct password can boot the system (**see the warning in the sidebar**). The default setting is "*Disabled*".

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



#### **Password Warning**

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

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

## TPM Configuration (Security Menu)

This sub-menu will allow you to enable/disable Trusted Platform Module (TPM) support, and to configure the TPM State. Select **TPM Configuration** and press Enter to access the sub-menu. Press Enter to access the **TPM Support** menu and select **Enable** to display the full TPM configuration menu (see "*Trusted Platform Module*" on page 7 - 96 for details).

Figure 5 - 5
TPM Support



## TPM State (Security Menu > TPM Support Enabled)

Select **TPM State**, press Enter and select **Enable** to change the TPM state to enabled. You will then need to press **F4** to save the changes and restart the computer.

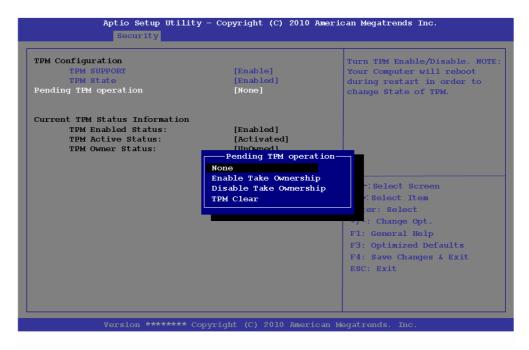


Figure 5 - 6
TPM State (Enabled)

As the computer restarts press **F2** to enter the BIOS again and go to the **TPM Configuration menu**.

Pending TPM operation (Security Menu > TPM Support & TPM State Enabled) Select **Pending TPM operation**, press Enter and select the option you require (if you are initializing TPM you should select **Enable Take Ownership**). You will then need to press **F4** to save the changes and restart the computer.

Figure 5 - 7
Pending TPM
operation
(Enable Take
Ownership)



## **Boot Menu**



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.

Figure 5 - 8
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.

### **BIOS Utilities**

Boot Sequence (Boot Menu)

Use the arrow keys to move up and down the menu and use the + and - **keys** to move the device's boot priority up and down the list (the selected device will be highlighted in white).

## **Exit Menu**



Click *Save Changes and Reset* 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.

Figure 5 - 9
Exit Menu

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
- Removing/Replacing the Component Bay Cover
- Upgrading the Hard Disk Drive
- Upgrading the System Memory (RAM)

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



## **Warranty Warning**

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

## **Upgrading The Computer**



# 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.

## When Not to Upgrade

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

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

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

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



### **Removal Warning**

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

## **Upgrading the Processor**

If you want to upgrade your computer by replacing the existing processor with a fast-er/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.

## Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

- 1. Turn the computer off, 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.
- Slide the battery out in the direction of the arrow 3.







#### **Warranty Warning**

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

Figure 6 - 1
Battery Removal

## **Upgrading The Computer**

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#### **Warranty Warning**

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

Figure 6 - 2
Component Bay
Cover Removal

## Removing/Replacing the Component Bay Cover

- 1. Turn **off** the computer, and turn it over and remove the battery.
- 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. Carefully slide the cover in the direction of the arrow 3 to align with the markers on the case 4, and then lift the cover 5 off the computer.
- 5. When reinserting the cover align the markers on the case 4 and cover first, and then slide the cover until it clicks into place.







## **Upgrading the Hard Disk Drive**

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



# 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 discs required to install your operating system and programs.

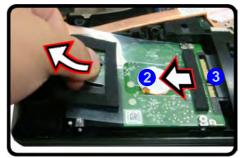
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

## **Upgrading The Computer**

- 1. Turn off the computer, and turn it over and remove the bottom cover (see "Removing/Replacing the Component Bay Cover" on page 6 4).
- 2. Raise the plastic tab 1.
- 3. Slide the hard disk assembly in the direction of arrow 2 until you can see the (gold colored) HDD connector 3.

Figure 6 - 3
Hard Disk Move





4. When the connector can be viewed, lift the assembly up in the direction of arrow remove the HDD assembly from the bay.

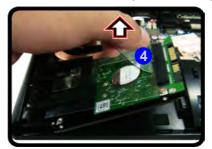




Figure 6 - 4
Hard Disk Removal

5. Remove the screw(s) 5 & 6 and the adhesive cover 7.

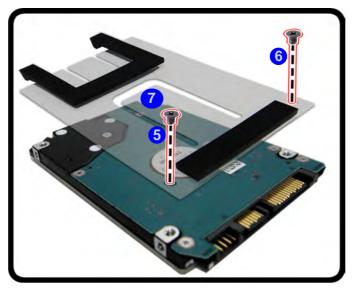


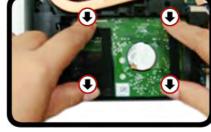
Figure 6 - 5
Hard Disk Cover
Removal

### **Upgrading The Computer**

### Reinserting the HDD

 To reinsert the HDD assembly hold it carefully at the four corners between your thumb and forefinger.

Figure 6 - 6
Hard Disk Insertion



## Hard Disk Handling

Do not press down on the center off the hard disk as tis area houses the hard disk drive motor.

- 2. Insert the HDD directly down into the bay vertically.
- Press and slide the HDD assembly at the area illustrated (1) (do not press on the center area - see sidebar) the direction of arrows to make sure the HDD fits securely into the connector.





4. Press down on the rubber case 2 to ensure the assembly is properly seated before replacing the cover and screws.



Figure 6 - 8
Seat the Assembly

5. Replace the component bay cover (see "Removing/Replacing the Component Bay Cover" on page 6 - 4).

## **Upgrading the System Memory (RAM)**

The computer has **two** memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) **DDRIII (DDR3)** type memory modules (see "*Memory*" *on page C - 2* for details of supported module types).

- 1. Turn **off** the computer, and turn it over and remove the bottom cover ("Removing/Replacing the Component Bay Cover" on page 6 4).
- 2. The memory (RAM) slots will be visible at point 1.

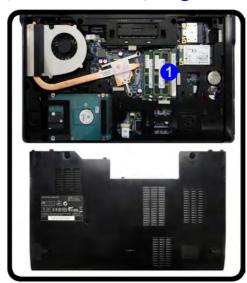


Figure 6 - 9
Memory (RAM)
Location

Gently pull the two release latches on the sides of the memory socket in the direction indicated by the arrows (2 & 3) in Figure 6 - 10.



4. The RAM module will 4 pop-up, and you can remove it.



### Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (JDIMM1)** socket. In this case this is the **lower memory socket** (the socket closest to the mainboard).



Figure 6 - 10
RAM Module
Release Latches



### **Contact Warning**

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

Figure 6 - 11
RAM Module
Removal

### **Upgrading The Computer**

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

# **Chapter 7: Modules & Options**Overview

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

- PC Camera Module
- Wireless LAN Module
- Fingerprint Reader Module
- 3.75G/HSPA Module

- Bluetooth & WLAN Combo Module
- Intel Rapid Storage Technology
- Trusted Platform Module
- Intel® vPro<sup>TM</sup> Technology

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### 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.



### **Important Notice**

If your purchase option includes both **Wireless LAN** and **3.75G/HSPA** modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

#### 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.



## Driver Installation & Module Power

Make sure any modules (e.g. WLAN, PC Camera, 3.75G/HSPA & Bluetooth modules) are **ON** before installing the appropriate driver.



## 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 Module**

Before installing the **PC Camera** driver, make sure that the optional PC Camera is on. **Use the Fn + F10 key combination** (see "Function/Hot Key Indicators" on page 1 - 9) to toggle power to the PC Camera module. Make sure you install the drivers in the order indicated in Table 4 - 1, on page 4 - 3. When the PC Camera module is powered on, the indicator will briefly be displayed.

There are a number of different camera modules available with this computer model series. You will have the appropriate application installed for your camera. **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 Uninstallation**

If you need to uninstall the driver, then uninstall the **WebCam Installer** item from the **Programs and Features** control panel in **Windows**.

### **PC Camera Driver Installation**

- 1. Make sure the module is powered on, and then 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 > Finish** to restart the computer.
- 5. Run the camera application program from the desktop shortcut (if the hardware is turned off use the Fn + F10 key combination to turn it on again).



### PC Camera Screen Refresh

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

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

### **PC Camera Audio Setup**

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

- 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** and make sure the item is not disabled.
- 5. Double-click **Microphone** (or select **Properties** from the right-click menu).
- 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** (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).
- To obtain the best sound recording quality enable Noise Suppression in the Realtek HD Audio Manager control panel (see "Optimizing Audio Recording" on page 2 - 10).

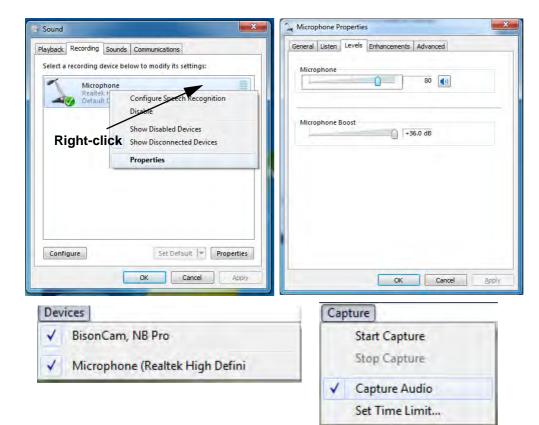


Figure 7 - 1
Audio Setup for PC
Camera

### **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 Set Capture File below).
- 2. Go to the **Capture** menu heading (if you wish to capture audio check "**PC Camera Audio Setup" on page 7 4**) and select **Start Capture**.
- Click OK (the file location will be displayed in the pop-up box) to start capturing the video, and press Esc to stop the capture (you can view the file using the Windows Media Player).

### Set Capture File

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

Note the important information in "*Reducing Video File Size*" on page 7 - 7 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 - 6), 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.
- 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

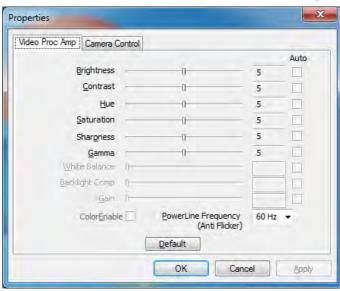
Check the **Device Drivers & Utilities + User's Manual disc**, and any accompanying insert pages, for the latest updated information on the PC Camera driver, which may override the information provided here, including the figures pictured.

Figure 7 - 2
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 PowerLine Frequency.



## B

### **Camera Options**

The video capture filter figure pictured here may appear slightly different for some camera modules. To adjust the antiflicker properties look under the headings Anti Flicker/Frequency/PowerLine Frequency.

### **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**.
- The picture (in JPEG format) will be placed in the Snapshot folder desktop.



on the

## 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.



### 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 + F11 key combination or WLAN Switch to toggle power to the WLAN module, and check the indicator to see if the module is powered on or not (see Table 1 - 2, on page 1 - 9/ Table 1 - 1, on page 1 - 7).

### **Wireless LAN Module**

If you have included an **Intel**® **or 3rd Party** Wireless LAN (or WLAN & Bluetooth combo) module in your purchase option, make sure that the WLAN module is on before installing the driver.

Use the Fn + F11 key combination (see "Function/Hot Key Indicators" on page 1 - 9) or WLAN switch to toggle power to the Wireless LAN module. Make sure you install the drivers in the order indicated in Table 4 - 1, on page 4 - 3. When the WLAN module is powered on the indicator will briefly be displayed.

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

### Wireless LAN Switch

The Wireless LAN switch allows you to quickly and easily toggle power to the WLAN module when necessary.



You can also use the Fn + F11 key combination (see page 1 - 9) or the Windows Mobility Center (see page 7 - 28) button to toggle power to the WLAN module, however these are overridden by the WLAN switch. Check the LED indicator for the WLAN power status and note the following:

- When the computer boots up, the default WLAN module's power setting will be according to the WLAN switch position e.g. if the computer starts up with the WLAN switch in the "ON" position, then the WLAN module will be on.
- If the computer enters a power saving state, then default WLAN module's power setting upon resuming will be according to the WLAN switch position (even if you have used the Fn + F11 key combination or the Windows Mobility Center button to power off the WLAN module prior to the computer entering the power saving state) e.g. if the computer resumes from a power saving state with the WLAN switch in the "ON" position, then the WLAN module will be on.

Figure 7 - 3
Front View

1. WLAN Switch



### **WLAN Switch**

Note that the WLAN Switch toggles power to the WLAN module only, and will not affect the power status of the Bluetooth (including the Bluetooth component of combo modules) or 3.75G/HSPA modules.

### 3rd Party WLAN Driver Installation

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

- 1. **Make sure the module is powered on**, and 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.
- 6. Click **Finish** to restart the computer.

### Intel® WLAN Driver Installation

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

- 1. **Make sure the module is powered on**, and 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).

### Connecting to a Wireless Network in Windows 7

Make sure the Wireless LAN module is turned on.

1. Click the taskbar notification area wireless icon 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).





Network and Sharing Center

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.

Figure 7 - 4
Click Taskbar Icon
Menu & Network
and Sharing Center

- 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 - 5
Network Location
Set



- 5. Click the taskbar icon **and** to see any currently connected networks.





## 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 - 6
Click Taskbar Icon
Menu - Disconnect



### 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 PROSet Wireless > Intel My WiFi Technology), or by clicking the taskbar icon Click the Help icon and select a help topic from the Contents menu.

### 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 Configuration

You can configure the My WiFi settings as follows.

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

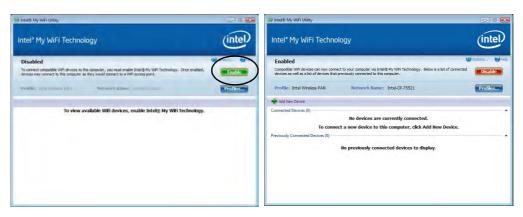


Figure 7 - 7
Intel® My WiFi
Utility

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

Figure 7 - 8
Network and
Sharing Center



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



Figure 7 - 9
Network
Connections

- 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.

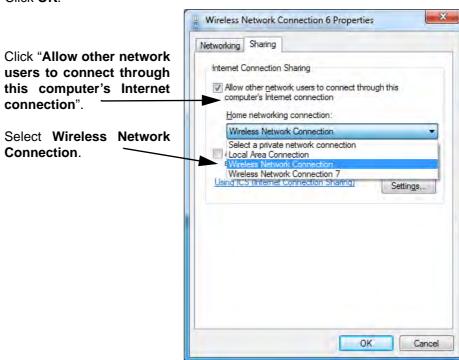


Figure 7 - 10
Wireless Network
Connection
Properties Sharing

- 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 - 11 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).** 





### **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.

Figure 7 - 13 Intel® My WiFi Profile Settings -General



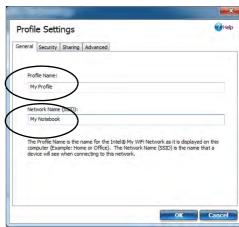
13. You can change the **Profile Name** and **Network Name** to your personal preferences in **General** (tab).

### B

#### **Profile and Network Names**

The **Profile Name** is the name as displayed on your computer in the **Network Connections** control panel (see *Figure 7 - 14 on page 7 - 23*).

The **Network Name (SSID)** is the name the devices see when they try to connect to your computer.



- 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 - 14
Intel® My WiFi
Profile Settings Security

- 17. Click Sharing (tab).
- 18. It is recommended that the **Filter Network Traffic** and **DHCP and DNS Server** are **Disabled**.



Figure 7 - 15 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.

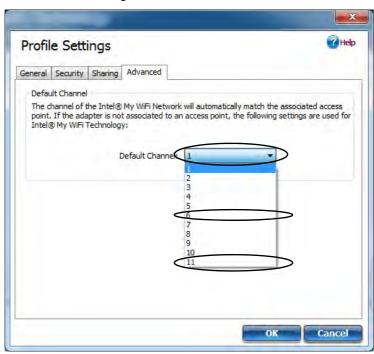
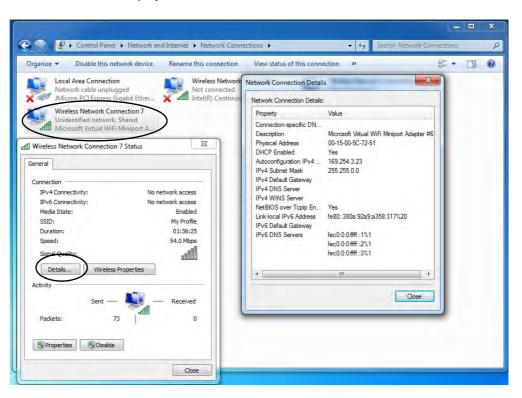


Figure 7 - 16
Intel® My WiFi
Profile Settings Advanced

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

Figure 7 - 17
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 ...
- 25. To add a new device follow the instructions in the devices' user guide for connecting to a WiFi network.
- Click Add New Device in Intel® My WiFi Utility to confirm the security settings detail.



Figure 7 - 18
Intel® My WiFi
Utility
(Add New Device)

### **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:

- 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 it to access the network menu.



Figure 7 - 19
Windows Mobility
Center

## **Security Modules (Fingerprint & TPM)**

The encrypted channel between the **Trusted Platform Module security chip** (see "*Trusted Platform Module*" on page 7 - 75) and the **fingerprint reader** with **AuthenTec TrueSuite** software (see "*Fingerprint Reader Module*" on page 7 - 30) 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 - 10).

The **fingerprint reader** with the **Protector Suite** software allows you to:

- Access or Lock your computer
- Protect sensitive files
- · Access frequently used websites using your fingerprint
- Fill in frequently log on information



### **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.

## **Fingerprint Reader Module**

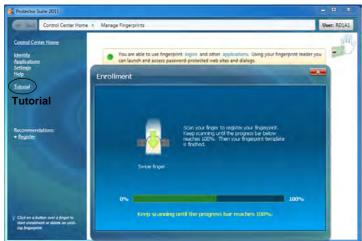
The fingerprint reader module provides a high level of security for your computer. Make sure you have administrator's rights to your computer, and have a *Windows* password enabled for full security protection.

### **Fingerprint Reader Driver Installation**

- 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 Programs > Protector Suite > Control Center and** then begin the enrollment process (see over).

#### **User Enrollment**

- Click Start > All Programs > Protector Suite > Control Center, or double click the notification area icon (click Initialize).
- 2. On the first run of the program you will be asked to click the **Accept** button to accept the license.
- 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).



# Fingerprint Enrollment

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

Figure 7 - 20
Fingerprint
Enrollment



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

Figure 7 - 21
Fingerprint Status

- 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.
- Repeat the process for all the fingers you wish to enroll (see sidebar), and then click Save and Continue.
- Enter a backup password and click Apply.
- 10. Close the fingerprint status window.



- 11. Click the taskbar notification area icon (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
- 12. Click "Help" in Control Center Home to get more information on any topic.
- 13. You can also run the **Tutorial**, or **Product Tour** video to get more information.





Figure 7 - 22
Control Center &
Biomenu

- 14. See "Help" on page 7 80 for further details.
- 15. 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.



## 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.

## **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.

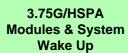
## 3.75G/HSPA Module

If you have included an **optional 3.75G/HSPA** (High Speed Packet Access) module (see "*Communication*" *on page C - 4* for specification details) in your purchase option, you will have the appropriate application provided for your particular module. Follow the instructions *on page 7 - 37* 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.



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

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 - 10) 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, on page 4 - 3. Note that exiting the application does NOT turn off the 3.75G/HSPA module.

Wireless Manager - See "Wireless Manager Installation" on page 7 - 38 for driver installation information and "Wireless Manager Application" on page 7 - 39 for instructions on using Wireless Manager.

#### 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, 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 out in the direction of the arrow 3.
- 5. Insert the USIM card 4 as illustrated below until it clicks fully into position, and replace the battery.









## 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).

#### **USIM Card Orientation**

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

Figure 7 - 23
Battery Removal &
USIM Card Insertion



## 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 indicator to see if the module is powered on or not (see *Table 1 - 2*, on page 1 - 9/ Table 1 - 1, on page 1 - 7).

## Wireless Manager

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

## **Wireless Manager 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 **4.Install 3G Driver > Yes**.
- 6. Click **Next > Next > Install**.
- 7. Click Finish.
- 8. Access the **Wireless Manager** application from the **Start** menu or the desktop shortcut

## **Wireless Manager Application**

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 - 45).

- Power on the 3.75G/HSPA module using the Fn + key combination.
- Access the Wireless Manager application from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut ...
- You may be required to enter you PIN number and click OK.
- 4. Click the **Connect** button (a **Profile** needs to be selected, and in most cases this will be pre-configured).





#### **PIN Number**

The PIN number for your USIM card will be supplied by your service provider. You usually have a limited number of attempts to enter the correct PIN number.

If you fail to enter the PIN number correctly you will be blocked from accessing the USIM card and you will need a **PUK** (Personal Unblocking Key), supplied by your service provider, to unlock it.

Figure 7 - 24
Wireless Manager
(Not connected)



Figure 7 - 25
Wireless Manager
(Connected)

- 5. The system will connect to your network.
- 6. **Connected** will appear above the timer icon (the timer will indicate your connected time for the current session)  ${}^{\text{Connected}}_{lacktriangletop}$ .
- 7. You can then access the internet, download e-mail etc. as per any internet connection.



8. Click the Wireless Manager notification area icon to view the connection status, or wireless icon to view the Mobile Broadband Connection status.



Figure 7 - 26
Notification Area
Icons (Connected)

9. The indicator technology. will display the s

will display the signal strength and radio access

- 10. To disconnect from the service provider, click the **Disconnect** button (note that if you click the close icon at the top right of the screen the application will minimize to the system tray, however the application will still be running; to exit the application right-click the notification area icon and click **Disconnect** or **Exit Wireless Manager**).
- 11. The program will disconnect from the service provider.
- 12. The module will still be on, and you will need to press the **Fn** + key combination to turn it off.
- 13. If you are unsuccessful in connecting this way you may need to add a profile with information provided by your service provider (see the following pages).



### **Profiles**

- 1. Access the Wireless Manager application from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut ...
- 2. Click the **Settings > Advanced.**
- 3. Click the **Profiles** (tab).

Figure 7 - 27
Advanced Settings Profiles



 Multiple profiles may be available from the USIM card and the first time the application starts it may require you to select a profile (Set Profile) to use for your connection.

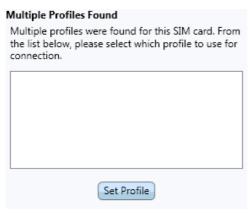


Figure 7 - 28
Multiple Profiles
Found

#### **Automatic Profile Selection**

If **Automatic selection** is chosen, then the application will search the operator profile database for a profile that matches the details on your USIM card. If a correct profile is found it will be automatically selected as your profile.

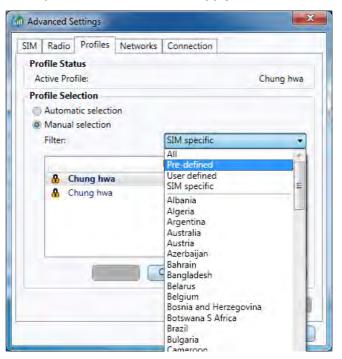
#### **Manual Profile Selection**

If Manual selection is chosen, then you can select a profile from the applications's operator profile database, or you can create a new profile.

## **Selecting a Profile**

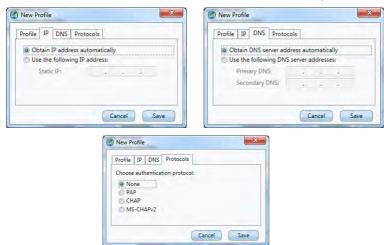
- Click Manual selection (button).
- 2. Click the **Filter** to view the drop-down list.
- 3. Select the Profile you wish to use and click **Apply** to confirm the selection.

Figure 7 - 29
Profile - Manual
Selection (Filter)



### **Creating a Profile**

- Click Manual selection (button).
- Click the New.
- 3. Enter a name you prefer for the profile.
- Enter the Access Point Name (APN).
- 5. Enter the **User Name** and **Password** if required (some service providers may not require this information and the fields may then be left blank).
- 6. If your service provider requires **IP address**, **DNS** and **Protocols** to be entered, click the appropriate tab and enter the supplied information (otherwise leave blank).
- 7. Click **Save** to save the profile information.
- The profile will be stored under User defined in the Filter drop-down list.





## **Deleting a Profile**

To delete a profile click to select **Manual selection** and select the profile and click **Delete**.

## **Modifying a Profile**

To modify a profile click to select Manual selection and select the profile and click Edit. Change the settings as required and then click Save (note that only user defined profiles may be edited).

Figure 7 - 30
New Profile IP, DNS
& Protocols

## **Settings**

The **Settings** tab allows you at adjust the application features. Click to put a tick in **Launch Wireless Manager at Windows startup** to launch the application at *Windows* Startup.

Figure 7 - 31
Settings



The **Advanced** settings allows more detailed configuration. To access the **Advanced** settings:

- 1. Access the Wireless Manager program from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut ...
- Click the Settings > Advanced.
- 3. Click the tab to edit any particular setting.

#### SIM

Most USIM cards are protected by a Personal Identity Number (PIN). You may turn on or off the **Request PIN at startup** (click **Apply** to save any changes). You can also **Change PIN** (you will need to enter the new PIN in the two fields provided and click **Apply** to save any changes).

#### Radio

Radio needs to be turned on before you can make any connection (note this is not the same as powering the module off/on using the  $\mathbf{Fn} + \square$  key combination), but you may turn it off when required. **Automatic** mode is the recommended setting for most 3G networks as it will use 3G where available. All **Frequency bands** are selected as default (click **Apply** to save any changes).





## Ø

#### **PIN Notes**

You will have to enter your current PIN to change the PIN settings.

Request PIN at startup will apply only after you have shut the computer down and restarted it (not just restarted).

## Radio & Power Saving States

You can choose to have the radio turned on or off during **Hibernate** or **Sleep** power saving states.

Figure 7 - 32
Advanced Settings
SIM & Radio

## 汀

## Warning

Note that some applications automatically transmit data when connected, and you may be charged for the data transfer. Some auto connection/connection settings may lead to expensive roaming charges.

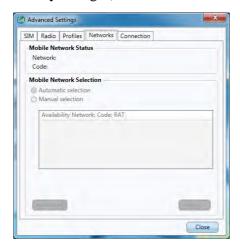
Figure 7 - 33
Advanced Settings
Networks &
Connection

#### **Networks**

The mobile network list lists available networks at your location, and allows you to select a network which to connect. You must disconnect before being able to select a network.

#### Connection

You can set the **Wireless Manager** to automatically connect at *Windows* startup (however the module must be powered on, and radio must be turned on). You can also automatically connect when resuming from a power-saving state (click **Apply** to save any changes). Click **Default** to return to the original default settings.





## **Text Messaging Service (SMS)**

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

## **SMS Utility**

- 1. Access the Wireless Manager application from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut ...
- 2. Click SMS and the SMS Utility will then start.
- The indicator in the upper right corner will display if radio is currently on or off (radio must be on in order to send/receive messages).



Figure 7 - 34
SMS Utility Open

## Messages

Click the **Messages** tab to access the tabs displaying text messages. The tabs at the top of the menu display the **Inbox**, **Drafts**, **Outbox**, **Sent** and **Trash** menus.

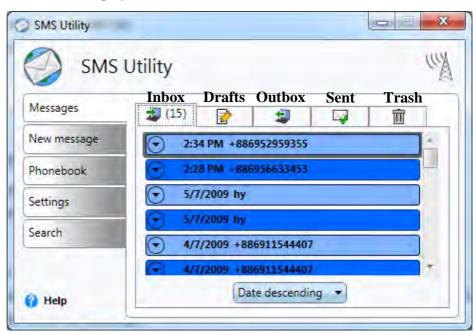


Figure 7 - 35
SMS Utility
Messages

Text messages are automatically saved to your computer and may be sorted in ascending or descending order by name or date.

## **Sending a Text Message**

- 1. Access the Wireless Manager application from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut ...
- 2. Click **SMS** and the **SMS Utility** will then start.
- 3. Click the New Message tab.
- 4. Enter the phone number in the **To** field (multiple numbers may be entered separated by a semicolon (;), or click the phonebook icon to select a name from the phonebook.
- 5. Select any contact's phone number and click **OK** (you can click a check box to select multiple contacts or more than one phone number for each contact).
- 6. Type the message body in the **Message** field (to a **maximum of 160 characters**).

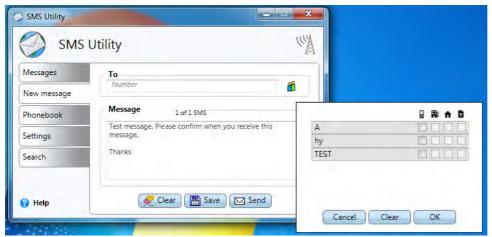


Figure 7 - 36
SMS Utility - New
Message

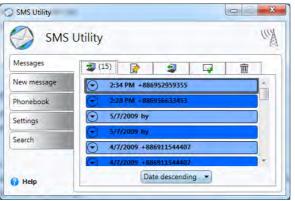
- 7. Click **Send** send to send the message or **Save** save to save the message in the **Drafts** folder.
- 8. Clicking the **Clear** icon Clear clears both the **Message** and **To** fields.
- If radio is on then the message will be sent, however if the radio is off the message will be stored in the Outbox.

Note that you do not have to connect to the network to Send/Receive SMS messages.

#### Inbox

Any received text messages will be displayed in the **Inbox**. The number of unread messages will be displayed in parenthesis in the inbox tab. Unread messages will be displayed in a darker color then the read messages, and incoming messages will be displayed briefly in the Notification Area.

Figure 7 - 37
SMS Utility - Inbox &
New Message
Received
Notification





## **Messages**

• **Opening a text message**: Double-click the message and the message will open in a new window (to close it click the close icon in the top right of the message).



Figure 7 - 38
Close Message

- **Previewing a text message**: Click the preview icon and the message preview will open. Click the icon again to close the preview.
- **Replying to a text message**: Double-click the message and click **Reply**. Type the reply in the message field and click **Send** to send the message (or **Save** to save it in **Drafts**.
- **Forwarding a text message**: Double-click the message and click **Forward**. Type the recipients name in the **To** field or click the icon to select recipients from the **phonebook**.
- Deleting a text message: Right-click the message select Delete selected. To delete all messages in the folder right-click any message and select Delete All. Holding down the Ctrl key and selecting messages allows you to multiple select messages for deletion (choose Delete selected). Deleted message will be sent to the Trash folder. To permanently delete messages right-click and select Delete selected or Delete All (or you may choose to Recover/Recover All) and click Yes to confirm.

## **Phonebook**

The **Phonebook** allows you to view and edit all your frequently used contacts, and is divided into **Contacts** and **Groups** . To access the **Phonebook**:

- 1. Access the Wireless Manager application from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut .
- 2. Click **SMS** and the **SMS** Utility will then start.
- 3. Click the **Phonebook** tab.

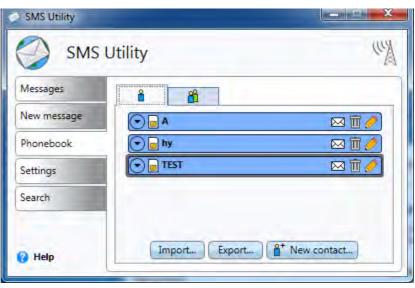
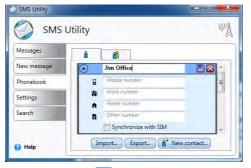


Figure 7 - 39
SMS Utility Phonebook
(Contacts)

#### Contacts

• New Contact: Click the New contact button \*\* New contact.\* to create a contact. Add the name and at least one phone number (Mobile, Work, Home and Other fields are available) for the contact. Click the \*\* icon to expand the number details. Select Synchronize with SIM to synchronize the contact information with your USIM card. Click the Save icon \*\* to save the information.



- Edit Contact: Click the edit icon to make changes to a contact detail, and click save to confirm the changes.
- **Delete Contact**: Click the delete icon to delete a contact from the phone-book.
- Send a message to a Contact: Click the message icon ✓ to send a text message to any contact.



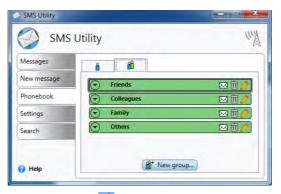
Figure 7 - 40
SMS Utility
New Contact

## **Groups**

You can organize existing contacts into groups from the **Groups** tab.

• New Group: Click the New group button \*\*New group.\*\* to create a group. Click the \*\* icon to expand the group details, and click a check box to add at least one phone number from the contacts for the group. Click the **Save** icon \*\* to save the information.

Figure 7 - 41
SMS Utility
Groups



- Edit Group: Click the edit icon of to make changes to a contact detail, and click save to confirm the changes, or close to exit without making changes.
- **Delete Group**: Click the delete icon to delete a group from the phonebook.
- Send a message to a Group: Click the message icon 

  to send a text message to any group.

  □ to send a text message to any group.

## **SMS Settings**

The SMS Utility **Settings** tab allows you at adjust the SMS features.



The **Advanced** settings allows more detailed configuration. To access the **Advanced** settings:

- 1. Access the Wireless Manager application from the Start menu (Start > All Programs > Wireless Manager > Wireless Manager) or the desktop shortcut ...
- 2. Click SMS and the SMS Utility will then start.
- Click the Settings > Advanced.
- 4. Click the tab to edit any particular setting.

## Figure 7 - 42 SMS Utility Settings



## **SMS Settings**

Message Length: You can set the number of blocks that can be sent (up to a length of 10 blocks).

Message validity period: This sets the period after which the message will be deleted from the SMS center and therefore not forwarded to the recipient(s) when they come online.

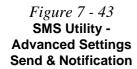
Display information messages: You can choose whether to allow information messages to automatically appear on screen or not.

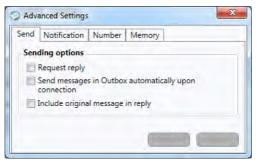
#### Send

Click **Delivery Report** to automatically request a reply from a recipient. If you click to **Send messages in Outbox automatically upon connection** then messages written when the radio is off, will then be sent automatically the next time radio is turned on. You can also choose to **Include original message in reply**.

#### **Notification**

This menu allows you to enable/disable **Show animation on new message** to get an animated notification of newly received messages. Enabling **Play sound on new message** will play an audio notification upon receipt of new messages.





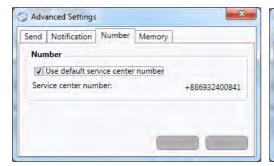


#### Number

You can choose to **Use default service center number** or you can uncheck the box and add your number manually if your service provider supplies a different number (click **Apply** to save the change or **Default** to return to the default number).

### **Memory**

Phonebook memory status displays the number of contacts displayed on the USIM card.



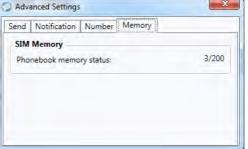


Figure 7 - 44
SMS Utility Advanced Settings
Number & Memory



### 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 + F12 key combination to toggle power to the Bluetooth module, and check the LED indicator to see if the module is powered on or not (see *Table 1 - 2*, on page 1 - 9/ Table 1 - 1, on page 1 - 7).

## **Bluetooth & WLAN Combo 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 from the appropriate page (see below).

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 combo modules see the installation procedure see "3rd Party Bluetooth Combo Driver Installation" on page 7 61 and "3rd Party Bluetooth & WLAN Combo Settings" on page 7 62.
- For Intel Bluetooth combo modules see the installation procedure see "Intel Bluetooth Combo Driver Installation" on page 7 69 and "Standard Bluetooth Configuration in Windows 7" on page 7 70.

## **3rd Party Bluetooth Combo Driver Installation**

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

- Before installing the driver make sure the Bluetooth module is powered
  on (use Fn + F12 key combination), then insert the *Device Drivers & Utili-*ties + 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 **5.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 **Bluetooth** item will be installed in the **All Programs** menu.
- 10. See "*Bluetooth Networking Setup*" *on page 7 65* 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.



# Bluetooth Module & Resuming From Sleep Mode

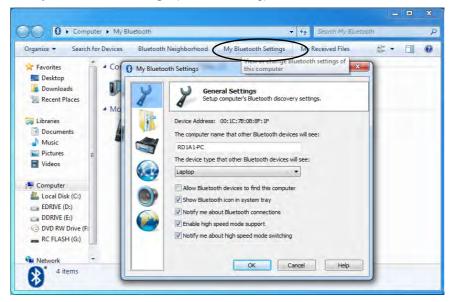
The Bluetooth module's default state will be off after resuming from the Sleep power-saving state. Use the key combination (Fn + F12) to power on the Bluetooth module after the computer resumes from Sleep.

Figure 7 - 45
My Bluetooth
Settings

## 3rd Party Bluetooth & WLAN Combo Settings

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

- 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 - 46
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 - 47
File Transfer
Settings

## **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 45 on page 7 62).



Figure 7 - 48
Network Settings

- 4. Click **Network Settings** (make sure the Bluetooth module is powered on.
- 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 & 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 - 49
My Bluetooth
Devices

## 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

- 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).



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



Figure 7 - 50
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.
- You can then enter the passcode on the computer and click **OK** to establish the connection.



Figure 7 - 51
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.

- 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 **5.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® Wireless-N 1030** and **Advanced-N 6230** WLAN & Bluetooth V3.0+HS combo modules use the standard Bluetooth configuration in *Windows 7* (see "*Standard Bluetooth Configuration in Windows 7*" *on page 7 - 70*). **Do not use** the Bluetooth & WLAN Combo settings information outlined from page 7 - 62 to page 7 - 68. See also "*Intel® Centrino Advanced 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.



#### 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 - 52

Bluetooth Devices &
Click Icon Menu

#### Standard Bluetooth Configuration in Windows 7

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

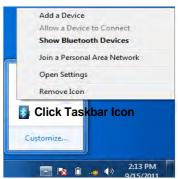
- 1. Turn your Bluetooth device (e.g. PDA, mobile phone etc.) on.
- Make the device discoverable (to do this check your device documentation).

#### 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.
- You can then do any of the following to access the Bluetooth Devices control panel.
- **Double-click** the taskbar icon 1 to access the **Bluetooth Devices** control panel.
- Click/Right-click the taskbar icon 3 and choose an option from the menu.

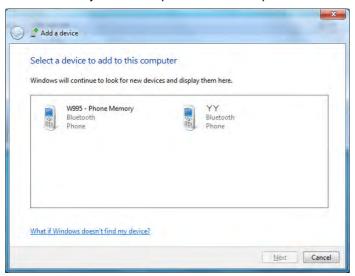






#### To Add a Bluetooth Device

- 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.



#### **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.

Figure 7 - 53
Add a Device

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

Figure 7 - 54
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 onscreen 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.





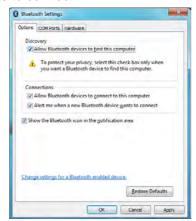


#### To Change Settings for the Bluetooth Device

- 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.

Figure 7 - 56
Bluetooth Settings Options

## **Intel Rapid Storage Technology**

Install the Intel Rapid Storage Technology to support your SATA drive if set up in AHCI mode in the BIOS (see "SATA Mode (Advanced Menu)" on page 5 - 8).

#### **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 **6.Install IRST Driver > Yes**.
- 4. Click (click the button to "Install Intel® Control Center") Next > Yes > Next > Next.
- 5. Click **Finish** to restart the computer (you will need to restart the system again after the computer has rebooted).

<sup>\*</sup> The Intel® Control Center provides a central starting point for Intel applications to make it easier to find programs required. Access the Intel® Control Center from the Start > All Programs > Intel > Intel® Control Center.

## **Trusted Platform Module**

The **TPM security chip** allows you to create and manage digital certificates for user and platform authentication. This type of security is usually administered within large enterprises and organizations, and therefore requires implementation by a system administrator before users can access security features.

Individual users can use the TPM as an authentication with the fingerprint reader.

Make sure you have administrator's rights to your computer, and have a *Windows* password enabled for full security protection. In addition **Make sure you prepare** a removable media (e.g. a USB flash drive) to store passwords etc. before beginning the TPM initialization process.

Before setting up the TPM functions you must initialize the security platform.

#### **Enabling & Activating TPM**

- Restart the computer.
- Enter the Aptio Setup Utility pressing F2 during the POST/startup.
- Use the arrow keys to select the Security menu
- 4. Select **TPM Configuration** and press Enter.
- 5. Select **TPM Support** and press Enter, select **Enable** and press Enter.
- Select TPM State, press Enter and select Enabled to change the TPM state to enabled. You will then need to press F4 to save the changes and restart the computer.

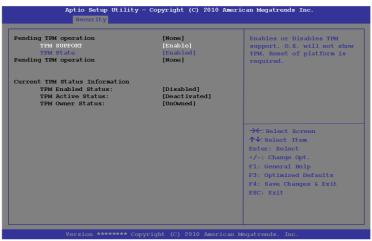


Figure 7 - 57
TPM State
(Enabled)

 As the computer restarts press F2 to enter the BIOS again and go to the TPM Configuration menu.  Select Pending TPM operation, press Enter and select the option you require (if you are initializing TPM you should select Enable Take Ownership) and press Enter. You will then need to press F4 to save the changes and restart the computer.

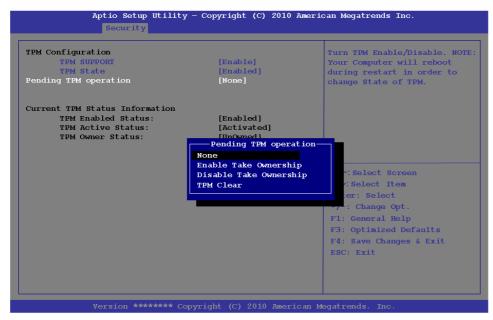


Figure 7 - 58
Pending TPM
operation
(Enable Take
Ownership)

9. You can now **install the TPM driver** (see "Trusted Platform Module (TPM) Driver Installation" on page 7 - 78) and then initialize the TPM.

#### Trusted Platform Module (TPM) Driver Installation

- 1. Make sure you have enabled and activated the TPM in the BIOS before installing the driver (if you do not do see the note below).
- 2. Insert the *Device Drivers & Utilities + User's Manual* disc into the CD/DVD drive.
- 3. Click **Option Drivers** (button).
- 4. Click **7.Install TPM Driver > Yes**.
- 5. Click Install > Next.
- 6. Click the button to accept the license and click **Next**.
- 7. Click Next > Next > Install.
- 8. Click **Finish > Yes** to restart the computer.

If you have installed the driver without enabling and activating the TPM first, a confirmation message will appear on restart.

Figure 7 - 59
TPM Confirmation
Message

(if the driver is installed without TPM being enabled and activated in the BIOS) A configuration change was requested to enable, activate, and allow the creation of an operator authentication value that permits temporary deactivation of the TPM  $\,$ 

Press [F10] to enable, activate, and allow the creation of an operator authentication value that permits temporary deactivation of the TPM Press ESC to reject this change request and continue

Press **F10** to enable and activate the TPM and you can then configure as overleaf. However it is recommended that you enter the BIOS and take ownership (see page **7-77**) of the TPM before configuration in *Windows*. Alternatively press **Esc** to continue without making changes the TPM.

#### **Initializing TPM**

- 1. Run the application from the Infineon Security Platform Solution > Manage Security Platform item in the Start > All Programs menu.
- Click User Settings (tab) and click Yes, or right-click the icon in the notification area of the taskbar, and select Security Platform Initialization (or click the Security Platform State taskbar bubble).
- The Quick Initialization method will automatically be selected for you (if you need to use advanced settings provided by your network administrator then select Advanced Initialization).
- 4. You will need to use a removable media (e.g. a USB Flash Drive) to store passwords and data (keep the media in a safe place until required).
- 5. Select the drive you want to use from the drop-down menu and click Next.

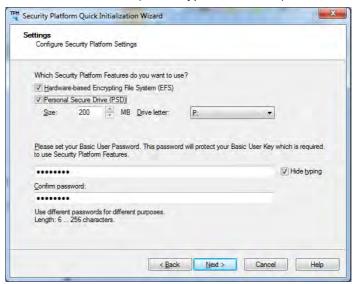


Figure 7 - 60
Security Platform
Quick Initialization
Wizard

- Choose the Security Platform Features you want to use by clicking the appropriate tickbox.
- 7. Enter a Basic User Password (and re-type to confirm it) and click Next.

Figure 7 - 61
Settings





- 8. Click Next to confirm the settings.
- 9. The computer will then initialize the settings.
- Click Finish.
- 11. Click the tabs and control panels to adjust the settings.
- 12. Double-click the taskbar icon to access the Infineon Security Platform Settings Tool, or right-click the taskbar icon and select a menu item.

### **Infineon Security Platform Settings Tool**

The Infineon Security Platform Settings Tool allows you to manage and check the TPM state, manage your password information, and to backup and restore the TPM data. As TPM is usually administered within large enterprises and organizations, your system administrator will need to assist you in managing the information here.





#### Menus

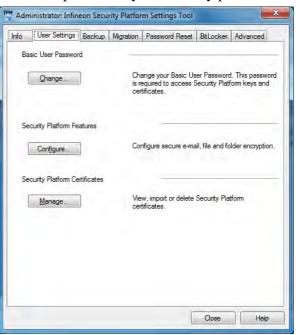
Note that not all the menus pictured here will be available for access. The menu items that appear will be dependent on your configuration settings etc. (see the **Help** file for full details).

Figure 7 - 62
Infineon Security
Platform Settings
Tool

#### **User Settings**

This page allows the settings to be configured for the currently logged in Infineon Security Platform user including the ability to change the password, configure secure e-mail, file and folder encryption and Enhanced Authentication. You can also import or delete certificates protected by the security platform.

Figure 7 - 63
Infineon Security
Platform Settings
Tool (User Settings)



#### **Backup**

Here you can configure backup and restore operations. Backup files contain the computer identification and user identification information which is used to match the machine name and user name with the current machine and user during restoration.

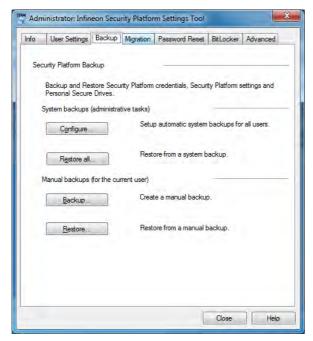


Figure 7 - 64
Infineon Security
Platform Settings
Tool (Backup)

#### Migration

The Migration tab is used to help securely transfer keys and certificates from one platform to another.

Figure 7 - 65
Infineon Security
Platform Settings
Tool (Migration)



#### **Password Reset**

Use Password Reset to reset basic user passwords when required.

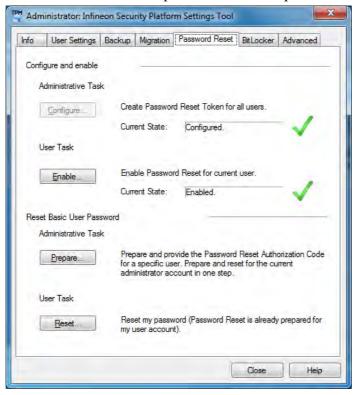
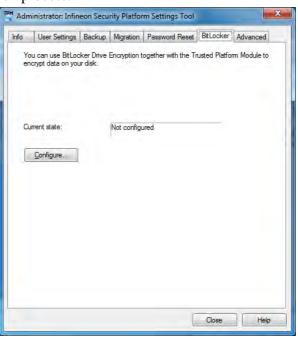


Figure 7 - 66
Infineon Security
Platform Settings
Tool
(Password Reset)

#### **BitLocker**

BitLocker Drive Encryption can be used in conjunction with the TPM to encrypt data on the disk and is done via the **Microsoft BitLocker Control Panel Applet**. Click **Configure** and select a drive to be encrypted and then follow the Wizard to begin the encryption process.

Figure 7 - 67
Infineon Security
Platform Settings
Tool
(BitLocker)



Access the Microsoft **BitLocker Drive Encryption** control panel applet from the *Windows* control panel (**System and Security**).

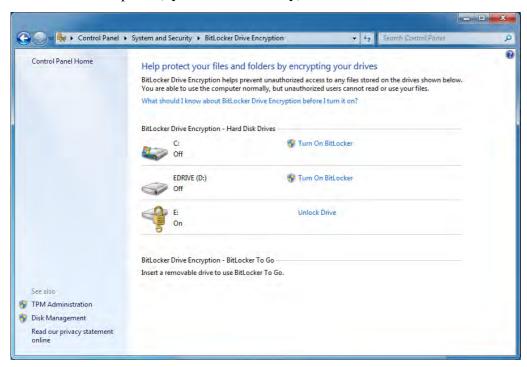
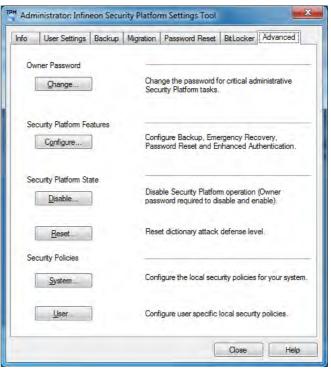


Figure 7 - 68
BitLocker Drive
Encryption

#### **Advanced**

Configure all the Security Platform owner and policy settings from the Advanced tab. The settings that can be changed are for the local computer only.

Figure 7 - 69
Infineon Security
Platform Settings
Tool
(Advanced)



## Intel® vPro™ Technology

Intel® vPro<sup>TM</sup> Technology is supported by Model B computers only. This set of technology features, built into the computer's motherboard, allows Information Technology departments remote access to the computer. This allows the IT department to monitor, maintain and manage computers regardless of the state of the operating system or the computer's power state. This can be done over a wired or corporate wireless network, or even outside the corporate firewall through a wired LAN connection.

#### **Accessing the Intel Management Engine**

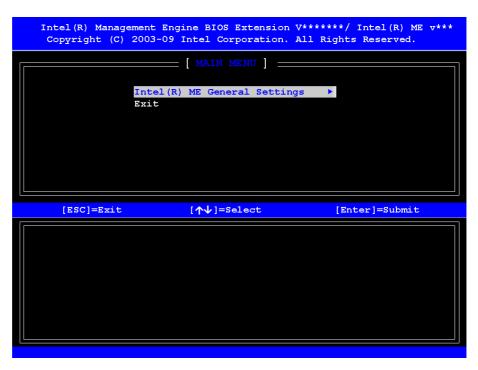
To access the **Intel Management Engine** press Ctrl + P at startup. Your system administrator will need to assist you in managing the information as applicable to your enterprise. Note the following password information for the Intel Management Engine:

• The default password is "admin" (without quotes).

If you get an "Error - Intel(R) ME password change rejected" message when creating a new password, then note the following parameters for creating a password:

- between 8 and 32 characters long
- Contain both upper and lower case Latin characters
- Have at least one numeric character
- Have at least one ASCII non-alphanumeric character (!, @, #, \$,%, ^, &, \*)

Figure 7 - 70
Intel(R) Management
Engine
(Password Creation)



Once you have entered the password you will then be taken to the platform configuration screen.

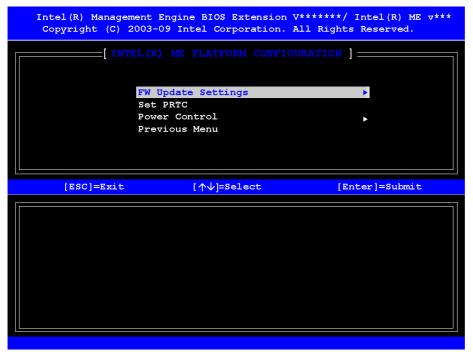


Figure 7 - 71
Intel(R) Management
Engine
(Platform
Configuration)

The platform configuration screen allows you to setup Intel ME as per your requirements (consult your IT administrator for the actual settings required).

## **Chapter 8: Troubleshooting**

## **Overview**

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

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

## **Basic Hints and Tips**

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

- **Power** Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working. Check the **LED Indicators** (see "*LED Indicators*" *on page 1 7*) to see the computer's power status.
- Connections Check all the cables to make sure that there are no loose connections anywhere.
- Power Savings Make sure that the system is not in **Hibernate** or **Sleep** mode by pressing the keys configured in your Power Options (see "Power-Saving States" on page 3 6), 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.
- **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 (this is a common cause of the message "Invalid system disk Replace the disk, and then press any key" / "Remove disks or other media. Press any key to restart").

## **Backup and General Maintenance**

- Always backup your important data, and keep copies of your OS and programs safe, but close to hand.
   Don't forget to note the serial numbers if you are storing them out of their original cases, e.g. in a CD wallet.
- Run **maintenance programs** on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.
- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Supervisor** password for the BIOS (see "The Setup Utility" on page 5 2).
- 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).

## **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.
- Don't over complicate things. The less you have to deal with then the easier the source of the problem may be found; **Example** if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

## **Problems and Possible Solutions**

| Problem  | Possible Cause - Solution  |
|--|--|
| You turned on the <b>power</b> 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 <b>LED power</b> indicator [ , is blinking orange. | Low Battery. Plug in the DC power source. If the computer doesn't start up immediately, turn it off then on again.   |
| You are <b>losing battery power</b> 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 <b>battery operating time</b> 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 - 11).  |
|  | Power Options have been disabled. Go to the <b>Control Panel</b> in Windows and re-enable the options.   |
|  | A peripheral device/USB device is consuming a lot of power. Turn off/remove the unused device to save power.   |

| Problem   | Possible Cause - Solution   |
|---|---|
| The computer feels too hot.   | Make sure the computer is properly ventilated and the Vent/Fan intakes are not blocked. If this doesn't cool it down, put the system into <b>Hibernate</b> mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see "Overheating" on page 1 - 13). 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 Vent/Fan intakes to be blocked.  |
| Nothing appears on screen.  | The system is in a power saving mode. Toggle the sleep/resume key combination, Fn + F4 (see "Configuring the Power Buttons" on page 3 - 8).   |
|   | The screen controls need to be adjusted. Toggle the screen control key combinations Fn + F8/F9. 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 combination, <b>Fn + F7</b> . 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 <b>external monitor</b> I have plugged in and powered on. | You haven't installed the video driver and configured it appropriately from the <b>Control Panel</b> . See <b>Appendix B</b> for instructions on installing and configuring the video driver.   |

### 8 - 8 Problems and Possible Solutions

| Problem                               | Possible Cause - Solution  |
|---------------------------------------|--|
| You forget the <b>boot password</b> . | If you forget the password, you may have to discharge the battery of the CMOS. Contact your service representative for help. |

## 须

#### **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.

| The sound cannot be heard or the <b>volume</b> is very low. | The volume might be set too low. Check the volume control in the <b>Volume Control Panel</b> in the <b>Windows</b> taskbar, or use the key combination <b>Fn + F5</b> and <b>F6</b> (see "Function/Hot Key Indicators" on page 1 - 9) to adjust. |
|---|--|
| <b>Unwelcome numbers</b> appear when typing.                | If the LED $\widehat{\Box}$ is lit, then Num Lock is turned <b>ON</b> . (see "LED Indicators" on page 1 - 7).  |



#### Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may not work.

| Problem   | Possible Cause - Solution   |
|---|---|
| The <b>system freezes</b> or the screen goes dark.                  | The system's power saving features have timed-out. Use the AC/DC adapter, press the sleep (Fn + F4) key combination, or press the power button if no LEDs are lit.  |
| The system never goes into a <b>power</b> saving mode.              | Power Options features are not enabled. Go to the <i>Windows</i> Power Options menu and enable the features you prefer (see "Power-Saving States" on page 3 - 6). Make sure you have enabled <b>Hibernate</b> mode from the control panel.  |
| The Wireless LAN or Bluetooth modules cannot be detected.           | The modules are off. Check the LED indicator and/or function key indicator to see if the WLAN/Bluetooth module is on or off (see "LED Indicators" on page 1 - 7). If the LED indicator is off, then press the Fn + F11 (WLAN)/WLAN Switch or Fn + F12 (Bluetooth) key combination(s) in order to enable the modules (see Table 1 - 2, on page 1 - 9). |
| The PC Camera module cannot be detected.                            | The module is off. Press the Fn + F10 key combination in order to enable the module (see "Function/Hot Key Indicators" on page 1 - 9). Run the camera application to view the camera picture.   |
| 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 for the appropriate module in "Modules & Options" on page 7 - 1).   |

| Problem   | Possible Cause - Solution   |
|---|---|
| A file cannot be copied to/from a connected <b>Bluetooth</b> 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 device to your computer until the file transfer process from the computer has been completed. |
| The <b>Bluetooth</b> module is <b>off</b> 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.   |
| I am sliding my finger up and down on the right side of the <b>Touchpad to scroll</b> a Window and the <b>Touchpad does not respond</b> .   | There are different Touchpad versions available on this computer, and this version requires tapping/holding to scroll. Either tap repeatedly, or hold the finger down, at the top or bottom right of the Touchpad (depending on the scrolling direction required) to scroll the window.   |
| The computer is off (or in Sleep Mode) but powered by the AC/DC adapter plugged in to a working outlet, or by battery with a capacity above 20%. I have plugged a device into the powered USB port in order to charge it, but the device is not charging. | The port is not powered on. Toggle power to the port using the Fn + power button combination.  This function may not work with certain external USB compliant devices (check your device's documentation). If this is the case, power the computer on and connect the external USB device in order to charge it.  |

| Problem  | Possible Cause - Solution   |
|--|---|
| I previously turned off the WLAN module using the Fn + F11 key combination (or Windows Mobility Center button), but upon returning to the machine the LED indicator shows the WLAN module is ON. | The computer entered a power saving state with the WLAN Switch in the ON position, and upon resuming from the power saving state the WLAN module turned ON. The position of the WLAN switch governs the power status of the WLAN module at startup, and upon resuming from a power saving state. This is the case even if you have previously turned the module off using the Fn + F11 key combination or Windows Mobility Center button prior to the computer entering a power saving state. |
| The USB port or card reader do not appear to be working.   | The power to the USB port or card reader has been dis baled in the BIOS. Go to the BIOS and enable the particular item.   |



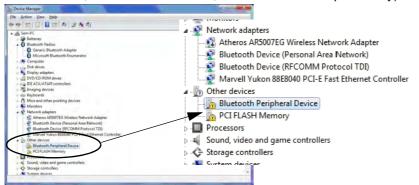
#### **USB Port/Card Reader Power**

Note that power to the USB ports and card reader may be enabled/disabled in the BIOS (see "USB Ports/Card Reader Power (Advanced Menu)" on page 5 - 9).

# **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.
- Go the Windows 7 control panel and double-click Device Manager (Hardware and Sound > Devices and Printers).
- 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).



# P

#### **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.

Figure 8 - 1 - Device Manager

- 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.

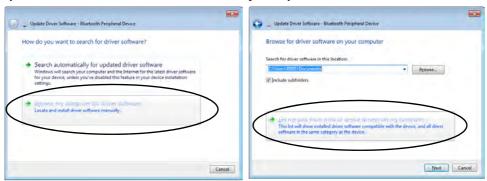


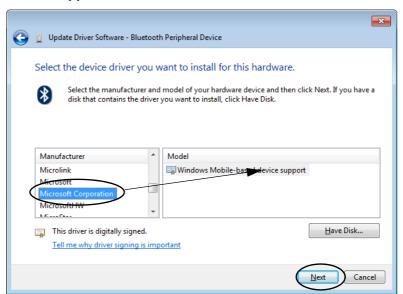
Figure 8 - 2 - Browse my computer.../Let me pick from...

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.

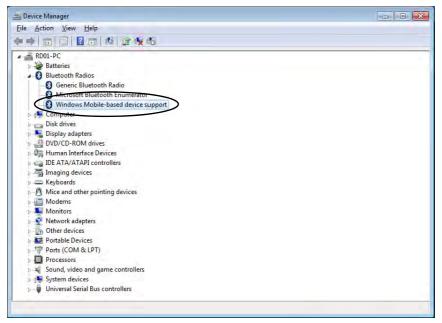


Figure 8 - 5 - Device Manager - Bluetooth Radio

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

Note that, at the time of going to press, **Intel® Centrino® Wireless-N 1030** and **Advanced-N 6230** WLAN & Bluetooth V3.0+HS combo modules use the standard Bluetooth configuration in *Windows 7* (see "*Standard Bluetooth Configuration in Windows 7*" *on page 7 - 70*). **Do not use** the Bluetooth & WLAN Combo settings information outlined from page 7 - 62 to page 7 - 68.

#### **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.

# **Appendix A: Interface (Ports & Jacks)**

### **Overview**

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



**USB Port/Card Reader Power** 

Note that power to the USB ports and card reader may be enabled/disabled in the BIOS (see "USB Ports/Card Reader Power (Advanced Menu)" on page 5 - 9).

### Interface (Ports & Jacks)

# **Notebook Ports and Jacks**

| Item                        | Description  |
|-----------------------------|--|
| Card Reader Port SD/MMC/MS  | The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device.  |
| DC-In Jack                  | Plug the supplied AC/DC adapter into this jack to power your computer.   |
| e-SATA/USB Port<br>e-SATA   | This is a combined <b>e-SATA</b> ( <b>external Serial Advanced Technology Attachment</b> )/ USB 2.0 compatible port.   |
|                             | Plug external Serial ATA hard drives into this e-SATA (external Serial Advanced Technology Attachment) port. See "USB 2.0/1.1 Ports*" on page A - 4 for USB port information.  |
| External Monitor (VGA) Port | This port allows you to connect an external monitor, or Flat Panel Display, to get dual video or simultaneous display on the LCD and external monitor/FPD.   |
| HDMI-Out Port<br>HDMI       | The HDMI-Out ( <b>High-Definition Multimedia Interface</b> ) 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 by means of a HDMI cable. <b>Note that HDMI carries both audio and video signals</b> . |

# Interface (Ports & Jacks)

| Item               | Description  |
|--------------------|--|
| Headphone-Out Jack | Headphones or speakers may be connected through this jack. <b>Note</b> : Set your system's volume to a reduced level before connecting to this jack. |
| Microphone-In Jack | Plug an external microphone in to this jack to record on your computer.  |
| RJ-45 LAN Jack     | This port supports LAN (Network) functions.  Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.                                     |
| Security Lock Slot | To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.                        |

# Interface (Ports & Jacks)

| Item                             | Description   |
|----------------------------------|---|
| USB 2.0/1.1 Ports*  USB 3.0 Port | These USB 2.0 compatible ports (USB 2.0 is fully USB 1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device). |
|                                  | 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) and does not support wake on USB.   |
|                                  | *Note: The powered USB 2.0 port (see "System Map: Right & Rear Views" on page 1 - 12) may be toggled on /off by means of the Fn + Power Button key combination. When the powered USB port is on it will supply power when the system is off but still powered by the AC/DC adapter plugged into a working outlet, or powered by the battery with a capacity level above 20% (this may not work with certain devices - see page 8 - 11).   |

# **Appendix B: Video Driver Controls**

The basic settings for configuring the LCD are outlined in "Video Features" on page 1 - 18.

### **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).
- Click 2.Install VGA Driver > Yes.
- 2. Click Next > Yes > Next > Next.
- 3. Click **Finish** to restart the computer.

**Note**: After installing the video driver go to the **Display/Display Settings** control panel to adjust the video settings to the highest resolution.

## **Dynamic Video Memory Technology**

Intel<sup>®</sup> DVMT automatically and dynamically allocates as much (up to **1748MB**) system memory (RAM) as needed to the integrated video system (**the video driver must be installed**). DVMT returns whatever memory is no longer needed to the operating system.



### **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.

#### **DVMT Notes**

DVMT is not local video memory.

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

# Application Mode

Note that all figures pictured, and instructions outlined here are based on the **Advanced Mode**.

Figure B - 1
Intel® G&M
Control Panel

# Intel® Graphics & Media Control Panel

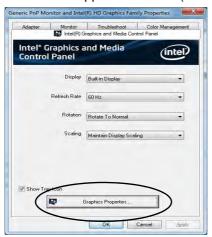
Advanced video configuration options are provided by the **Intel® Graphics and Media Control Panel**. To access the control panel:

- 1. Click Advanced settings in the Screen Resolution control panel in Windows.
- Click the Intel(R)... tab and click Graphics Properties (button).

#### OR

3. Right-click the desktop and select  ${f Graphics\ Properties}$  from the menu.  ${f OR}$ 

- 4. Double-click the Intel(R) G&M control panel in Windows.
- 5. Choose the application mode (Basic, Advanced or Wizard) required (see sidebar).





You may make changes to any of the graphics properties by clicking the appropriate menu tab on the left of the menu and adjusting the settings on the right.









# **Options & Support**

Click **Options & Support** and select an item from the sub-menu to bring up the help and support topics.

You will need to be connected to the Internet to access the key resource links.

#### **Multiple Display**

At least one other display must be attached in order to view multiple display selection options.

Figure B - 2
Intel® G&M
Control Panel Tabs



# 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.

Note that HDMI supports video and audio signals.

**Table B - 1 Display Modes** 

## **Display Devices & Options**

Besides the built-in LCD you can also use an external monitor/flat panel display/TV connected to the external monitor port or to the HDMI-Out port (High-Definition Multimedia Interface) as your display device. The table below outlines the display options.



#### **Attaching Displays**

When you first attach an external display you may find that the desktop does not occupy the full screen area. Use either the display's auto adjust/configure controls, or the Intel(R) G&M control panel to configure the full screen display.

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

# **Attaching Other Displays**

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

#### To Clone Displays:

- 1. Attach your display to the external monitor port or HDMI-Out port, and turn it on.
- 2. Go to the Intel(R) G&M control panel and click Display > Multiple Displays.
- 3. Click Operating Mode and select Clone Displays from the menu.
- 4. Click **Apply**, and **OK** to confirm the settings change.
- 5. You can switch the **Primary/Secondary Display** from the menu.



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### **Multiple Display**

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

#### **General Settings**

Click **General Settings** to access settings the options for any attached display.

Figure B - 3
Display > Multiple
Displays (Clone)

### Display Settings Extended Desktop

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

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

Figure B - 4
Display > Multiple
Displays (Extended)

#### To Enable Extended Desktop:

- 1. Attach your display to the external monitor port or HDMI-Out port, and turn it on.
- 2. Go to the Intel(R) G&M control panel and click Display > Multiple Displays.
- 3. Click Operating Mode and select Extended Desktop from the menu.
- 4. Click **Apply**, and **OK** to confirm the settings change.



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

Click General Settings to make any adjustments required.

#### **Display Profiles**

You can save display settings to be loaded at any time.

- 1. Go to the Intel(R) G&M control panel and click Display.
- Configure the General Settings, Multiple Displays, Color Enhancement, Custom Resolution & Monitor/TV Settings to your preferences.
- 3. Click **Apply**, and **OK** to confirm the settings change.
- 4. Click the **Save** button at the top of the General Settings, Multiple Displays or Color Enhancement menus (under **Display Profiles**).
- 5. Type a name for the **Profile** and click **OK**.
- The Profile will be listed under Display Profiles.
- Select the profile from the pull-down menu and click Apply, and OK to confirm the settings change.

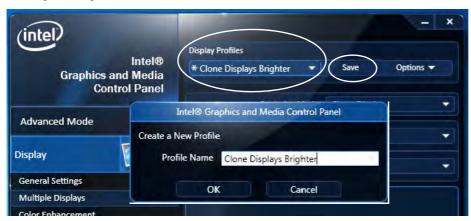


Figure B - 5
Intel® G&M
Profiles



# 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.

Note that HDMI supports video and audio signals.

Figure B - 6
Screen Resolution
Multiple Displays
(Win 7)

# Configuring an External Display in Windows 7

You can also use the **Screen Resolution** control panel in *Windows 7* to configure an external display.

- 1. Attach your display to the external monitor port or HDMI-Out port, and turn it on.
- Go to the Screen resolution control panel (see "Video Features" on page 1 -18).
- 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 - 7
Screen Resolution
Multiple Display
Options
(Win 7)

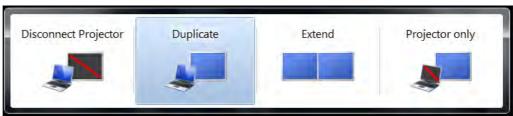
- Duplicate these displays Shows an exact copy of the main display desktop on the other display(s)
- Extend these displays Treats both connected displays as **separate** devices
- Show desktop only on 1/2 Only one of your displays is used.

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.

- Attach your display to the external monitor port or HDMI-Out port, and turn it on.
- Press the  $\mathbf{r} + \mathbf{P}$  key combination.
- 3. An on-screen menu will pop up.
- Use the cursor keys (or  $\mathbf{R} + \mathbf{P}$ ) to select the appropriate configuration from the menu, and press Enter to confirm the selection.

Figure B - 8 🚌 + P Display Configuration Selection (Win 7)



# **HDMI Audio Configuration**

HDMI (High-Definition Multimedia Interface) carries both **audio** and video signals. Configure the audio output as per the instructions below.

- 1. Connect a device with HDMI support to the HDMI-Out port.
- 2. Click Start, and click Control Panel (or point to Settings and click Control Panel).
- 3. Click Sound (Hardware and Sound), and click Playback (tab).
- Depending on your display, the playback device may be selected automatically; however in some cases you may need to select the audio device and click **Set Default** (button).

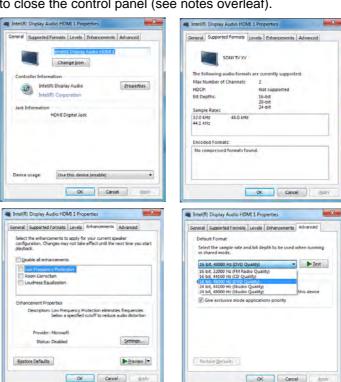


Figure B - 9
Sound - HDMI
Device
(Set Default)

#### **Video Driver Controls**

- Double-click the connected HDMI device (or right-click and select Properties) to adjust the HDMI settings from the control panel tabs.
- Click **OK** to close the control panel (see notes overleaf).

*Figure B - 10* **HDMI Device Properties** 



#### **HHDMI Notes**

- Connect a device with HDMI support to the HDMI-Out port **BEFORE** attempting to play audio/video sources through the device.
- To play audio sources through your external display's (TV or LCD) speakers you will need to go to the audio configuration control panel on the display and configure the audio input accordingly (see your display device manual).

#### **HDMI Video Configuration**

- 1. Connect an HDMI cable from the HDMI-Out port to your external display.
- 2. Configure your external display as per the instructions in "Attaching Other Displays" on page B 5.
- Set up your external display (TV or LCD) for HDMI input (see your display device manual).
- 4. You can now play video/audio sources through your external display.



### **Other Applications**

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

# **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.

### **Specifications**

#### **Processors For All Models**

Note all processor packages are rPGA

#### Intel® Core i7-2640M (2.8GHz)

4M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Core i7-2620M (2.7GHz)

4M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Core i5-2540M (2.6GHz)

3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Core i5-2520M (2.5GHz)

3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### **Processor For Model A Only**

Note all processor packages are rPGA

These processors are available for Model A computers only:

#### Intel® Core i5-2410M (2.3GHz)

3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Core i3-2330M (2.2GHz)

3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Core i3-2310M (2.1GHz)

3M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Pentium® B950 (2.10GHz)

2M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### Intel® Pentium® B940 (2.00GHz)

2M L3 Cache, 32nm (32 Nanometer), DDR3-1333MHz, TDP 35W

#### **Core Logic**

#### Model A:

Intel® HM65 Express Chipset

#### Model B:

Intel® QM67 Express Chipset

#### **Display**

13.3" / 33.78cm 16:9 HD (1366 \* 768) TFT LCD

#### Memory

Dual Channel DDRIII (DDR3)

Two 204 Pin SO-DIMM sockets supporting DDR3 1333MHz (real operational frequency depends on the FSB of the processor)

Memory Expandable up to **8GB** (using 2GB / 4GB SO-DIMM Modules)

#### Video

# Intel® Integrated GPU (Intel® HD Graphics 3000):

Dynamic Frequency Intel® DVMT Shared Memory Architecture up to 1748MB

Microsoft DirectX®10 Compatible

#### **BIOS**

One 32Mb SPI Flash ROM (**Model A**) One 64Mb SPI Flash ROM (**Model B**) AMI BIOS

#### **Storage**

One Changeable 2.5" / 9.5 mm (h) HDD with SATA (Serial) Interface Anti-Shock System

#### Audio

High Definition Audio Interface Built-In Microphone 2 \* Built-In Speakers

#### **Keyboard, Pointing Device & Buttons**

Isolated A4 Size Keyboard with Anti-Spray Support

Built-in Touchpad with Multi-Gesture and Scrolling Functionality

#### **Card Reader**

One ExpressCard™ (54/34) Slot

Embedded Multi-In-1 Card Reader

- MMC/ RS MMC
- SD/ Mini SD / SDHC/ SDXC
- MS/ MS Pro/ MS Duo

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

#### Slot

Two Mini-Card Slots:

**Slot 1** for Half Size Mini-Card WLAN Module with PCIe & USB Interfaces

**Slot 2** for Full Size 3.75G Module with USB Interface (**Factory Option**)

#### Interface

One Powered USB 2.0 Port

Two USB 3.0 Ports

One eSATA Port (USB/eSATA Combo)

One HDMI (1.4a) Out Port

One External Monitor Port

One Headphone-Out Jack

One Microphone-In Jack

One RJ-45 LAN Jack

One DC-In Jack

One Docking Port (Factory Option)

### **Specifications**

#### Communication

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

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

1.3M Pixel PC Camera Module (Factory Option)

UMTS/HSPDA-based **3.75G Module** with 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

#### **Communication (Model A Only)**

Intel® Centrino® Wireless-N 1000 1\*2 (802.11 b/g/n) Half Mini-Card PCIe WLAN Module (Factory Option)

Intel® Centrino® Wireless-N 1030 1\*2 (802.11 b/g/n) Half Mini-Card PCIe WLAN + Bluetooth V3.0+HS Combo Module (Factory Option)

**3rd Party WLAN** 802.11b/g/n Half Mini-Card Module with PCIe Interface (**Factory Option**)

3rd Party Combo WLAN (802.11b/g/n) and Bluetooth v3.0+HS Half Mini-Card Module with PCle Interface (Factory Option)

#### **Power Management**

Supports Wake on LAN Supports Wake on USB Energy Star 5.0

#### Power

Full Range AC/DC Adapter AC input 100 - 240V, 50 - 60Hz, DC Output 19V, 3.42A or 18.5V, 3.5A (65 Watts)

Removable 6 Cell Smart Lithium Ion Battery Pack 62.16WH

#### Security

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

#### For Model B Only:

Trusted Platform Module 1.2

Intel® vPro Support

#### **Indicators**

LED Indicators - Power/Suspend, Battery, HDD, Bluetooth/Wireless LAN

#### **Operating System**

Windows® 7 with Service pack 1

#### **Design Features**

Power to all USB / Card Reader ports/ slots can be switched on/off in the BIOS

WLAN Switch

#### **Environmental Spec**

Temperature

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

Relative Humidity

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

#### **Dimensions & Weight**

330mm(w) \* 225mm(d) \* 24.5 - 32mm(h)

1.78kg with Battery