About this User's Manual

This user's manual is designed to let you easily find the information you need to get the most from your notebook.

- Introduces you to the features of your notebook.
- Gives you the useful details on using your notebook.
- Tells you how to look after your notebook, whether at home or traveling.
- Introduces you to BIOS, the nervous system of your notebook, and how to change its fundamental settings.

There is no need to read the manual from the beginning to end. Simply find your way to the section that interests you using the table of contents, or browse through the manual.

You will come across the following icons in this manual:

 Helpful pointers and tricks to get more from your notebook

 To help you note and avoid possible damage to your notebook's hardware or software, or loss of your work

 Points out possible damage to property, personal injury or death

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Safety Instructions

Use the following safety guidelines to help protect yourself and your notebook.

General Warnings

- Do not operate your portable computer for an extended period of time with the base resting directly on your body. With extended operation, heat can potentially build up in the base. Allowing sustained contact with the skin could cause discomfort or, eventually, a burn.
- Do not attempt to service the computer yourself. Always follow installation instructions closely.
- To avoid personal injury from electric shock or fire:
  - Completely power down the computer when replacing memory modules, cleaning the computer, its components, or chassis, or performing operations requiring similar steps. To do this, first turn the power off at the power switch, remove the battery, and then disconnect the AC adapter from the electrical outlet or from any other type of external power source, such as an external battery.
  - Do not operate the computer near water, for example, near a bathtub, kitchen sink or laundry tub, in a wet basement, by a swimming pool, or in the rain.
  - Do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during an electrical storm.
  - Avoid using the wired LAN during an electrical storm, as a remote risk of electric shock from lightning exists.
  - Do not push objects into the air vents or openings of your notebook or accessories. Doing so can short out interior components and may cause fire or electric shock.
  - When installing memory modules, ground yourself by touching a grounded conductive surface, such as a device with a grounded plug. Avoid touching the pins and leads on the memory module or internal circuitry of the computer.
- When setting up the computer for work, place it on a level surface.
- Handle components with care. Hold a component such as a memory module by its edges, not its pins.
- If the battery pack leaks and the fluid get in your eyes, do not rub them. Instead, rinse your eyes with clean running water and immediately seek medical attention. Otherwise, eye injury may be resulted.
- If acid leaking from the battery pack contacts your skin or clothing, immediately wash it away with the running water. Otherwise, the skin inflammation may occur.

Operate the computer at the recommended temperature range of +5^{o}C to +35^{o}C (+41^{o}F to +95^{o}F). Store it at a temperature of -20^{o}C to +60^{o}C (+4^{o}F to +140^{o}F).

Power Cord & Adapter Warnings

- See the installation instructions before connecting to the power supply.
- Use only the power cord indicated in this manual.
- Power cord sets for use in other countries must meet the requirements of that country. Use the appropriate AC adapter and power cord for your locale.
- If you use an extension cord with your AC adapter, ensure that the total ampere rating of the products plugged into the extension cord does not exceed the ampere rating of the extension cable.
- When using your power cord, make sure to position it around objects so it will not be cut or punctured.
- When you disconnect a cable, pull on its connector on its strain relief loop, not on the cable itself. As you pull out the connector, keep it evenly aligned to avoid bending any connector pins. Also, before you connect a cable make sure both connectors are correctly oriented and aligned.
- Be sure that nothing rests on your AC adapter's power cable and that the cable is not located where it can be tripped over or stepped on.
- Use only the AC adapters that are approved for use with this computer. Use of another type of adapter may risk fire or explosion.
- Before you connect the computer to a power source, ensure that the voltage rating of the AC adapter matches that of the available power source.
  - 115 V/60 Hz in most of North and South America and some Far Eastern countries such as South Korea and Taiwan.
  - 100 V/50 Hz in eastern Japan and 100 V/60Hz in western Japan.
  - 230 V/50 Hz in most of Europe, the Middle East, and the Far East.
  - If you use an extension cable with your AC adapter, ensure that the total ampere rating of the products plugged in to the extension cable does not exceed the ampere rating of the extension cable.
- Place the AC adapter in a ventilated area, such as a desktop or on the floor, when you use it to run the computer or to charge the battery. Do not cover the AC adapter with papers or other items that will be reduced to cool; also, do not use the AC adapter while it is inside a carrying case.
- Disconnect power cords and cables by grasping the connector, not by pulling on the cable itself. As you pull out the connector, keep it evenly aligned to avoid bending any connector pins. Before you connect a cable, please make sure both connectors are correctly aligned.
- To remove power from the computer, turn it off, remove the battery, and disconnect the AC adapter from the electrical outlet.

Battery Pack Warnings

- Do not carry a battery in your pocket, purse, or other container where metal objects (such as car keys) could short-circuit the battery terminals. The resulting excessive current flow can cause extremely high temperatures and may result in damage from burns.
- Danger of explosion may occur if battery is incorrectly replaced. Replace only with the same or equivalent type battery recommended by the manufacturer.
- Do not dispose of batteries in a fire. They may explode. Check with local authorities for disposal instructions.
- Do not use or leave the battery pack near a heat source. Heat can melt the insulation and damage other safety features, possibly leading it to leak acid, overheat, emit smoke, burst and/or ignite.
- Do not immerse the battery pack in water or allow it to get wet. Its protective features can be damaged. Abnormal chemical reactions may occur, possibly leading it to leak acid, overheat, emit smoke, burst and/or ignite.
- Do not crush, disassemble, puncture, or incinerate the short external contacts of a battery pack.
- Do not connect the positive (+) and negative (-) terminals with a metal object such as wire. Short-circuiting may occur leading the battery pack to leak acid, overheat, emit smoke, burst and/or ignite.
- Do not use an apparently deformed or damaged battery pack, which may leak acid, overheat, emit smoke, burst and/or ignite.

If the battery pack leaks, gives off a bad odor, generates heat, becomes discolored or deformed, or in any way appears abnormal during use, recharging or storage, immediately remove it from the computer or charger and stop using it.

Battery Pack Disposal

- Dispose of the lithium ion battery packs at approved disposal sites only. To locate an appropriate site, contact the solid waste disposal officials where you live or look for a rechargeable battery recycling website that lists disposal locations near you.
- Do not dispose of battery packs in a fire, throw them in a trash receptacle, put them in a recycling bin not intended for their disposal, or otherwise discard them in a manner that may result in their being hazardous to the environment.

Important Safety Instructions

Read these instructions carefully and save them for reference in future.

1. Follow all warnings and instructions reminded you about this product.
2. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3. Do not use this product near water.
4. Do not place this product on an unstable cart, stand, or table. It may be broken to cause some serious damage of itself.

5. Slots and openings in the cabinet and the back or bottom are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, and also do not block or cover these openings. Avoid placing the product on a bed, sofa, rug, or similar surface to prevent from blocking these openings. This product should never be placed near or over a radiator or a heat register, or in an enclosure unless proper ventilation is provided.
6. This product should be operated from the type of power indicated on the marking label. If you are not sure the type of power available, consult your dealer or local power company.
7. Do not allow anything to rest on the power cord. Do not locate this product where people will step on the cord.
8. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.
9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill any kind of liquid on the product.
10. Do not attempt to service this product by yourself. As opening or removing covers, you will be exposed to the dangerous voltages or other risks. Refer all servicing to qualified service personnel.
11. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power cord or plug is damaged or frayed.
    b. As liquid is spilled into the product.
    c. The product is exposed to rain or water.
    d. If the product does not operate normally when the operating instructions are followed, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
    e. The product has been dropped or the cabinet has been damaged.
    f. The product exhibits a distinct change in performance, indicating a need for service.

EMC Regulatory Information

This product is designed and tested to comply with the following related EMC (Electromagnetic compatibility) standards.

FCC Notice

“Declaration of Conformity Information”

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 .If the equipment is not installed or used in accordance with the instructions; it 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 of following measures:

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Canadian Notice (Canada Only)

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

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conformé à la norme NMB-003 du Canada.

Norwegian Notice (Norway Only)

For Class I equipment: In Norway, it intend to be connected to CABLE DISTRIBUTION SYSTEMS, the screen of a coax cable is required to be galvanic isolated from the protective earth. The Norwegian text is that “Må kun tilkoples kabel-TV nett via galvanisk isolator.”

CE Notice (European Union)

EU Declaration of Conformity

The product conforms to the following standards:
Supplementary Information: “The product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and/or the R&TTE Directive 1999/05/EEC.”

CE

This product is carrying the CE-Mark in accordance with the related European Directives.

BSMI Notice (Taiwan Only)

Most Compal computer products are classified by the Bureau of Standards, Meteorology and Inspection (BSMI) as Class B information technology equipment (ITE).

This (marked on the product) indicates the product complies with the BSMI standard.

BSMI 通告 (僅限於台灣地區)

如果您在電腦的底部、側面或背面板上找到一個  標誌，則適用於以下部份的相關規定：

此設備經測試證明符合BSMI(經濟部標準檢驗局)之乙類數位裝置的限定規定。這些限制的目的是爲了在住宅區安裝時，能防止有害的干擾，提供合理的保護。此設備會產生，使用並散發射頻能量；如果未遵照製造廠商的指導手冊來安裝和使用，可能會干擾無線電通訊。但是，這並不保證在個別的安裝中不會產生干擾。您可以透過關閉和開啓此設備來判斷它是否會對廣播和電視收訊造成干擾；如果確實如此，我們建議您嘗試以下列一種或多種方法來排除干擾：

- 重新調整天線的接收方向或重新放置接收天線。
- 增加設備與接收器的距離。
- 將設備連接至不同的插座，使設備與接收器連接在不同的電路上。
- 請向經銷商或有經驗的無線電/電視技術人員查詢，以獲得幫助。

Specifications

CPU

- Penryn Processor
  - (35w)900,T3000,T3100,T3300,T4400,T4500

Chipset

- Intel GL40 chipset

Memory

- Support DDR3-800/1066
- Support 2 So-DIMMS, up to Max. 4GB

Display

- 14" LED backlight LCD(1366*768), 5.2 mm Panel

Graphics Chip

- No

Audio

- HD Audio, Speakers (1x2W), Microphone-in and headphone-out

Camera (Option)

- 1.3m Web Camera w/ internal MIC
- No

Keyboard

- chocolate-cap KB
- 86/87 keys support with 101/102 key emulation without stick-point
- Windows key, Application key Standard pitch, 2.5mm travel length
- Multi-Language support

Hard Disk Drive (HDD)

- SATA HDD
- 9.5mm, 2.5" S-ATA HDD (5400/7200rpm)

Optical Disc Drive (ODD)

- SATA ODD
- Fixed 12.7mm height (SATA)
- DVD Super-Multi (DVD-RAM/-R/-RW/+R/+RW), 8X write
- Support Double Layer Recording is required

Communication

- No modem
- No PCI-Express
- LAN: 10/100,1000 Giga LAN

- Wireless LAN: 802.11 a/b/g/n via Mini-Card (option)
- Bluetooth

Pointing Device

- Normal Track Pad with up/down scroll zone and two buttons，and also support Multi-finger feature.

Flash card reader

- 3-in-1 card reader (SD,MMC,MS)

I/O Ports

- USB x 3
- RJ45 x 1
- VGA port x 1
- Microphone-in x 1, Headphone-out × 1

TV tuner

- NO

System Status Indicators

- 1 Caps Lock (Blue)
- 1 Num Lock (Blue)
- 1 Power Button LED (Blue)
- 1 LED for IDE HDD activity (Blue)
- 1 LED for System status (Power On/ Suspend) (Blue)
- 1 LED for Battery status (Charging/ Full/ L1/ L2) (Blue/Amber)
- 1 LED for Blue tooth/Wireless Card (Amber)

Control Button

- Power button (support software off, 4 sec)x 1
- Magnetic lid switch control for system standby/ wakeup or suspend/ resume
- Kill Switch to On/Off Wireless Device for wireless control

AC Adapter

- 65W AC adapter

Battery

- 6-cell battery
- 6-cell Li-On, 18650 type, 4300/4800mAh
- Life Cycle: 70% Design Capacity after 300 Cycles in 25degreeC

Software

- Insyde BIOS

OS

- Windows 7 Ultimate 32bit (XP Driver ready)

Mini Card

- One Mini card slot for WLA Half size card

Security

- BIOS Password/ Kensington lock

Regulatory

- EMI: FCC-B, CE, CCC, A,C-Tick, VCCI, BSMI
- Safety: Compliant to UL/CSA, TUV, CB
- PTT: FCC-Part 68, CTR 21
- MDA2005 Compliant /Energy Star /WHQL LOGO

Environment

- Temperature: Operating: 5 - 35°C / Storage: -20 - 65°C
- Humidity: 10 - 90% without condensation.
- Altitude
  - Operating sea level up to 10,000 ft
  - Storage sea level up to 40,000 ft

Thermal

- Thermal capacity could support TAT TDP% or 3Dmark2006 operation at 35C ambient

Application

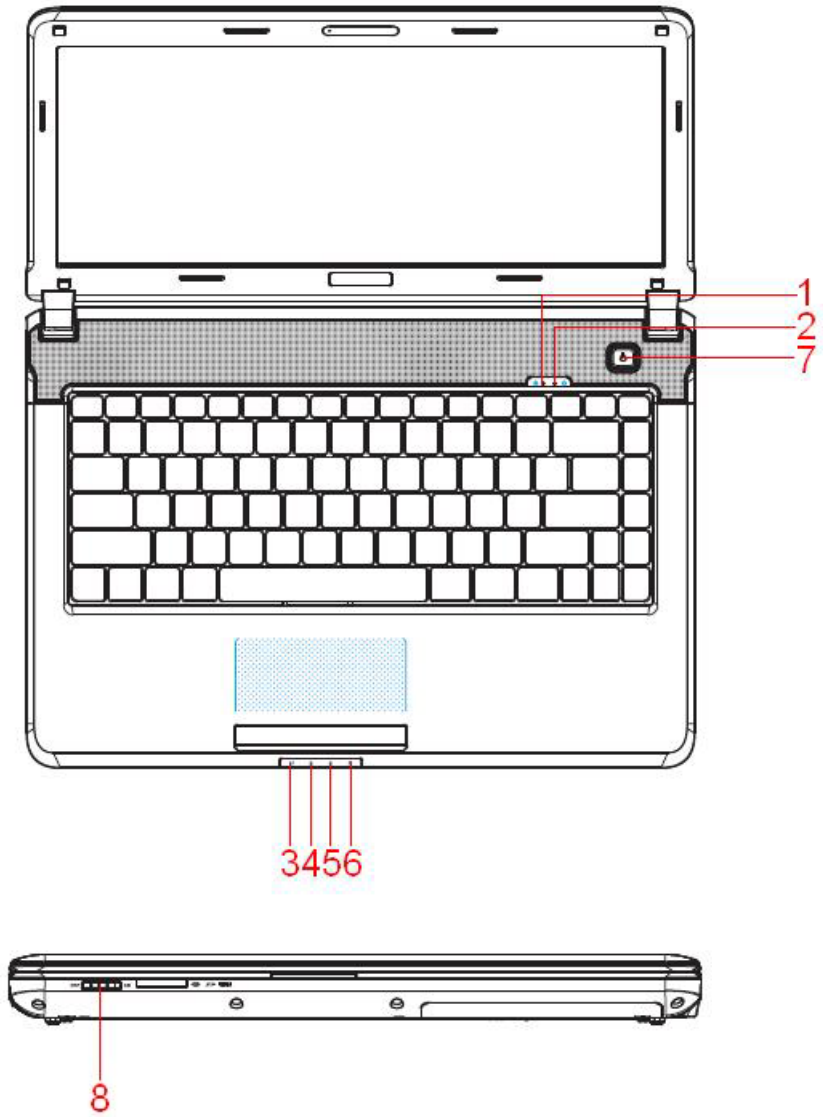
- Driver CD W/User Manual

Chapter 1

Introducing Your Notebook

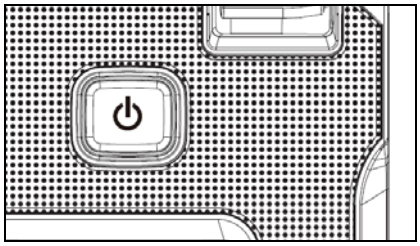
Front and Rear Side

The following picture shows the front side of your notebook.



1	Num Lock	5	HDD
2	Caps Lock	6	Power
3	Wireless	7	Power Key
4	Battery	8	Kill switch button

1.1.1 Power Key Buttons



Press to turn your notebook on.

Windows 7, which comes preinstalled, goes into the shutdown sequence automatically if you press the power button while on.

In Windows 7, you can configure this in Control Panel > System and Maintenance or Hardware and Sound > Power Options > Change plan settings > Change advanced power settings.

1.1.2 Wireless Switch Button

The following is two state of kill switch button

1, when Kill switch Button is ON:

Users could press Fn+F12 to turn on Wireless LAN and Bluetooth, and press Fn+F12 to turn off Wireless LAN and Bluetooth also.

2, When Kill switch Button is OFF:

It's no use to press Fn+F12 to turn on or turn off Wireless LAN and Bluetooth.

1.1.3 Power LED (Blue)

Power LED and Suspend LED indicate the systems power states by user combinations，
The flashing Power On LED indicates your notebook is in standby mode.

1.1.4 Battery LED (Blue/Amber) ( )

Battery states LED is one dual-color LED indicator both of Blue and Amber color.

1.1.5 HDD accessing state Blue LED ( )

Reflect the activities of Blue Led.

Note: LED is controlled directly by hardware.

1.1.6 Num Lock LED (Blue)

Number Lock LED (Blue): Number Lock State of Keyboard.

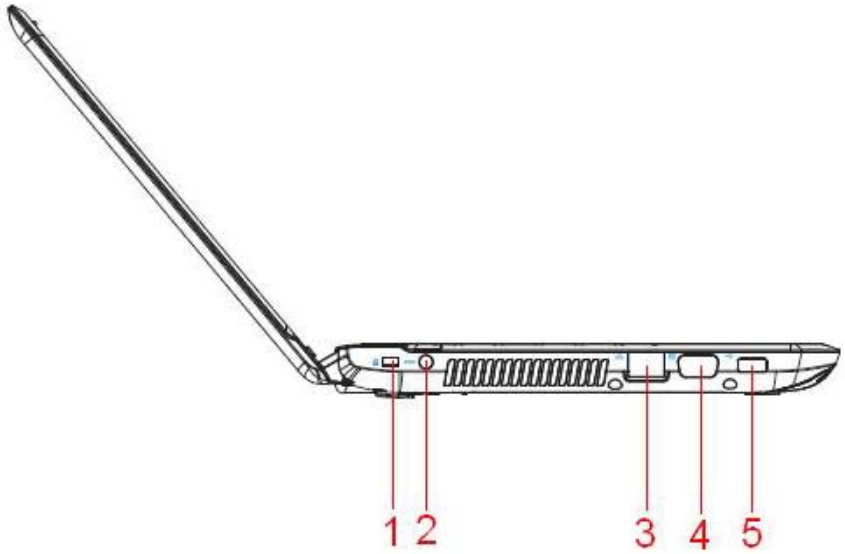
1.1.7 Caps Lock LED (Blue)

Caps lock LED (Blue): Caps Lock State of Keyboard

NOTE: In normal mode (Cursor and Num function are disable), when users press Hot Key, the Cursor LED will be on. When users press Hot Key, the Cursor LED will be off.

Left Side

The following picture shows the left side of your notebook.



1	Kensington Lock
2	DC-IN
3	RJ-45
4	VGA
5	USB

1.1.8 Kensington Lock

A Kensington Security Slot is a small, metal-reinforced hole found on almost all small or portable computer and electronics equipment, particularly on expensive and/or relatively light ones, such as laptops, computer monitors, desktop computers, gaming consoles, and video projectors. It is used for attaching a lock-and-cable apparatus, in particular those from Kensington.

1.1.9 AC Adapter Connector

Use this connector to attach the AC adapter to your notebook. You can connect an AC adapter when your notebook is switched on or off.

While the AC adapter works with electrical outlets worldwide, power connectors and power strips vary by country. Ensure you use a compatible cable or correctly connect the cable to the power strip or electrical outlet. Failure to do so may cause fire or damage to equipment.

1.1.10 LAN (RJ-45)

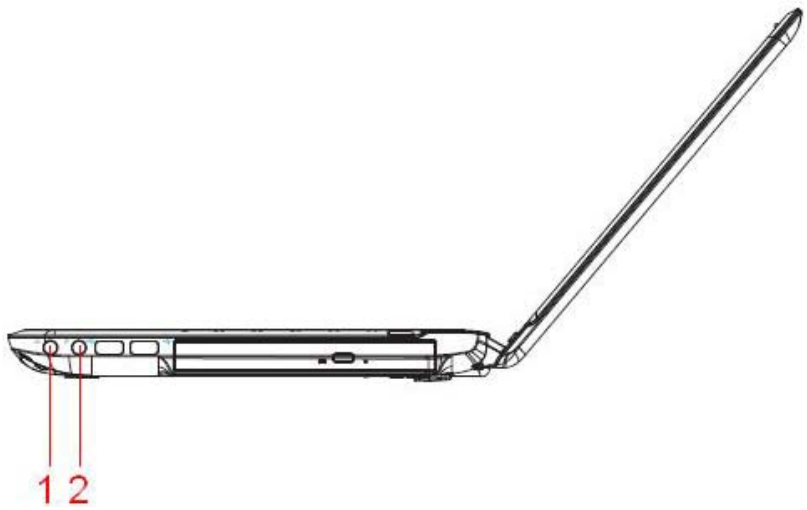
The LAN allows you to connect your notebook to an internet line with a standard RJ-45 connector.

1.1.11 VGA Port

Use this port to connect an external monitor to your computer.

Right Side

The following picture shows the right side of your notebook.



1	Headphone
2	MIC

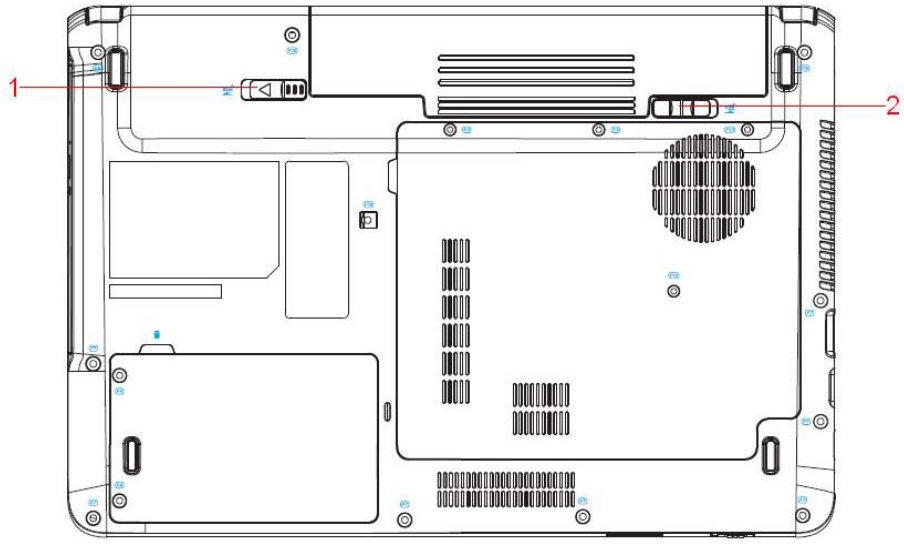
1.1.12 USB Ports

Use this port to connect a USB device, such as a mouse, external keyboard, or printer to the computer.

USB is a peripheral expansion standard that supports data-transfer rates up to 480 Mbps. USB peripherals have a single standard for cables and connectors. You can install and remove USB devices while the computer is on. This is called “hot swapping”.

Back Side

The following picture shows the back side of your notebook.



1	Battery latch Knob
2	Battery Lock Knob

1.1.13 Battery latch Knob

The Battery Latch Knob secures the battery pack. To release, slide the latch and then remove the battery pack from the bay.

Chapter 2

Caring for Your Notebook

2.1 Caring for Your Notebook

- Cleaning Your Notebook and Keyboard
- Cleaning the Display
- Cleaning the Touch Pad
- Cleaning the CD/DVD Drive
- Precautions

Never spray cleaning products directly onto your notebook's case or display. Only use products designed for cleaning computer displays.

2.1.1 Cleaning Your Notebook and Keyboard

Shut your notebook down, turn it off and disconnect it from the electrical outlet and any external devices, such as the printer.

Remove the battery pack.

Use the brush attachment of your vacuum cleaner to gently remove dust from your notebook's openings and keyboard.

Use a slightly moistened soft, lint-free cloth to wipe your notebook and keyboard. *Use only the water or the recommended computer cleaner.*

2.1.2 Cleaning the Display

Shut your notebook down, turn it off and disconnect it from the electrical outlet and any external devices, such as the printer.

Remove the battery pack.

Use a slightly moistened soft, lint-free cloth to wipe your notebook's display. *Use only the water or the recommended computer cleaner*.

2.1.3 Cleaning the Touch Pad

Shut your notebook down, turn it off and disconnect from the electrical outlet and any external devices, such as the printer.

Remove the battery pack.

Use a slightly moistened soft, lint-free cloth to carefully wipe the Touch Pad, being careful not to allow the moisture into the gaps of your notebook. *Use only the water or the recommended computer cleaner*.

2.1.4 Cleaning the CD/DVD Drive

Never touch the lens. Use only the compressed air to clean the lens.

If you encounter the difficulty in playing CDs or DVDs, including skipping over, please clean the unlabelled side of the disc with a soft, lint-free cloth or use the commercial product.

2.1.5 Precautions

- Do not spill the liquid on the keyboard. If the liquid is spilt on the keyboard, turn your notebook off immediately. Leave off overnight to let it completely dry out before using it again.
- Do not turn off your notebook if the drive light indicates the drive is active. Turning off your notebook while it is reading from or writing to a disk may damage the disk, the drive, or both.
- Keep your notebook and disks away from the objects that generate the strong magnetic fields, such as the stereo speakers. Information on disks is stored magnetically. Placing the magnet too close to the disk can erase the important files.
- Scan all new files for viruses. This precaution is especially important for the files you receive via email, disk or download from the Internet. You will need the special program to scan for viruses. For further information, please contact with your notebook dealer.
- To ensure HDD function and the integrity of the saved data, please follow the instructions below:
    - Protect your notebook from any impact during its operation.
    - Do not use your notebook during the transportation such as in the car.
    - Do not put your notebook in the car if it is directly exposed under the sun.
    - Do not place any heavy objects on the LCD monitor.
    - Use the AC adapter coming with the package instead of other adapters.

2.2 Traveling

- Identifying Your Notebook
- Packing Your Notebook
- Traveling Tips
- If Your Notebook is Lost or Stolen

2.2.1 Identifying Your Notebook

Attach a nametag or business card to your notebook, or use the permanent marker or stencil to write a unique identifying mark (such as your driver's license number) on the case.

Create a file on the Desktop called **if found**. Place information such as your name, address, and telephone number in this file.

Contact your credit card company to ask if it offers coded identification tags.

2.2.2 Packing Your Notebook

- Remove any external devices attached to your notebook and store them in a safe place.
- Fully charge the main battery and any spare batteries you plan to carry with you.
- Turn off your notebook or put the computer into hibernate mode.
- Disconnect the AC adapter.
- Remove any extraneous items, such as paper clips, pens, and papers, from the keyboard and then close the display.
- Pack your notebook and accessories in their carry case.
- Avoid packing the computer with items such as shaving cream, colognes, perfumes, or food.
- Protect your notebook, the batteries, and the hard drive from hazards such as extreme temperatures, dirt, dust, liquids, or overexposure to sunlight.
- Pack your notebook so that it does not slide around in the trunk of the car or in an overhead storage compartment.

When traveling in the air, never check in your notebook as baggage.

2.2.3 Travel Tips

- If you are traveling abroad, you can carry the proof of ownership—or of your right for using your notebook if it is company-owned—to speed your passage through customs. Investigate the customs regulations of the countries you plan to visit and consider acquiring an international carnet (also known as a merchandise passport) from your government.
- Ensure that you know which electrical outlets are used in the countries you will visit, and prepare the appropriate power adapters.
- Check with your credit card company for information about any kinds of emergency travel assistance it offers to the users of the portable computers.
- When traveling in the air, please ensure that you have a charged battery available in case you are asked to turn on your notebook.
- Before using your notebook on the airplane, please verify that such usage is permitted. Some airlines forbid the use of electronic devices during the flight. All airlines forbid the use of electronic devices during taking-off and landing.

Never pass your notebook through a metal detector. Send it through an X-ray machine, or have it manually inspected.

2.2.4 If Your Notebook is Lost or Stolen

Call a law enforcement agency to report your notebook lost or stolen. Ask that a case number be assigned and write down the number, along with the name, address, and telephone number of the law enforcement agency. If possible, please obtain the name of the investigating officer.

If your notebook belongs to the company, notify its security office.

Chapter 3

Peripherals

3.1 SD/MMC/MS Cards

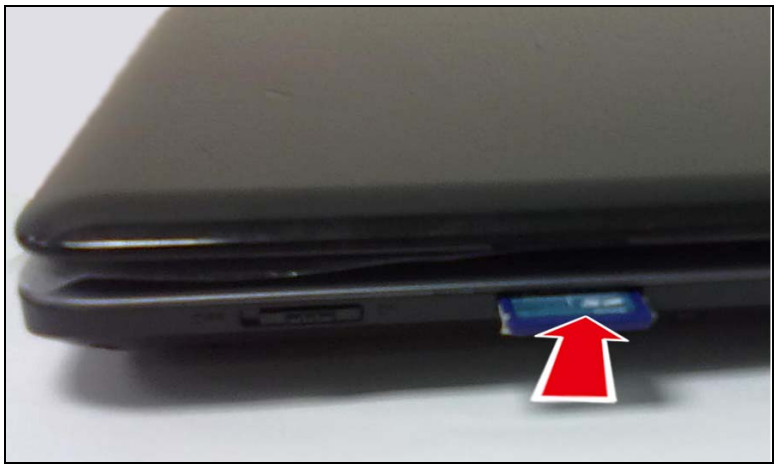
- Installing a SD/MMC/MS Card
- Removing a SD/MMC/MS Card

Before removing an SD/MMC/MS card, stop it running from the configuration utility on the taskbar. Failure to do so could result in the data loss.

3.1.1 Installing a SD/MMC/MS Card

SD/MMC/MS card, with hot-plug feature, allow you to install and remove cards when your notebook is running. The card will be detected automatically after being installed.

Usually SD/MMC/MS Cards have a mark or symbol to show which end to insert into the slot. Insert the card according to the orientation symbol, and slide the card into the slot. Check the documents that came with your card if the orientation is unclear.



Hold the SD/MMC/MS card with its orientation symbol pointing into the slot and the topside of the card facing up.

Slide the card into the slot until it clicks into the connector.

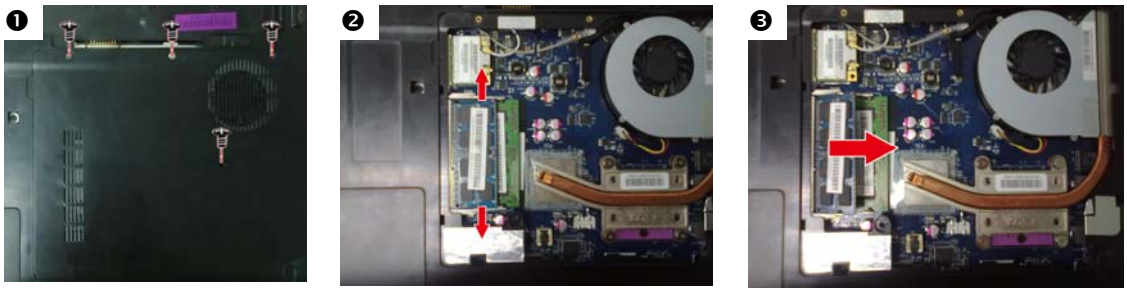
If you encounter too much resistance, do not force the card. Check the card orientation and try again.

3.1.2 Remove a SD/MMC/MS Card

To remove the SD/MMC/MS card, please push it in gently and then it ejects automatically.

3.2 Memory Modules

You can add more memory modules to your notebook to improve its performance.



To install a memory module:

Make sure the computer is turned off.

Remove the four screws securing the memory module cover.

Lift off the memory module cover.

There are two memory module ports. The current memory module in your notebook already occupies the one. Place the new memory module in the second slot, matching up the notch along its connector rim with the tooth in the connection slot.

When the module is secured, please press down gently until it snaps into place.

Depending on how much additional memory you require, you may need to replace the original memory module.

To remove a memory module:

Make sure the computer is turned off.

Remove screw securing the memory module cover.

Lift off the memory module cover.

Pop out both silver latches holding the memory module into place. The module pops up.

Grasp the outer edges of the memory module with the thumb and forefinger, and then gently remove it.

Chapter 4

The BIOS Setup Program

4.1 Introduction

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor the operation of your notebook to your individual work needs. A ROM-based configuration utility displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in nonvolatile battery backed-up CMOS RAM, which saves this information even when the power is turned off. When the computer is turned back on, the system is configured with the values found in CMOS. Via easy-to-use menus, you can configure such items as:

- Boot devices

The settings made in the Setup program intimately affect how your notebook performs. It is important, therefore, to first understand all the available options, and second, to make settings appropriate for the way you use your notebook. This chapter guides you through the Setup program by providing the clear explanations for all Setup options.

A standard configuration has already been set in the Setup program by the factory technicians. However, eventually you may want to customize your system to suit your own performance needs. It is recommended that you read this chapter and become familiar with the configurations that can be made in the BIOS.

The next section explains how to move around in the Setup program, as well as how to specify and save your new settings. A brief discussion of the optional settings among the different submenus follows.

4.2 Navigating through the BIOS Setup Program

- Accessing the BIOS Setup Program
- Launching Submenus
- Saving Changes and Exiting the Setup Program

The Setup program has been designed to make it as easy to use as possible. It is a menu driven program, which means you can scroll through the various directories and make your selections among the various predetermined choices. If you accidentally configure a setting, use the BIOS hot keys to return to the previous value. The hot keys are discussed in more detail later in this chapter.

When turning on your notebook for the first time you may be prompted to run the BIOS Setup program. A warning message may appear on the screen if the hardware configuration is changed or the POST fails. This message will inform you of any errors or invalid settings and prompt you to run the Setup program to correct the problem.

Even if you are not prompted by a message instructing you to use the Setup program, at some time in the future you may want to change the configuration of your notebook. It will then be necessary to reconfigure your system using the Setup program so that your notebook can recognize these changes.

The list below gives a few examples of reasons why you may want or need to run the BIOS Setup program.

- You have set up your notebook for the first time and you got a message stating that you should run the BIOS Setup program.
- You want to redefine the communication ports to prevent any conflicts.

The few examples listed above are by no means complete.

4.3 System Controls

4.3.1 Buttons

4.3.1.1 Power Button

The activity of the power button is as follows:

- If system is Off/Hibernate: System will be turned on while Power switch is depressed by more than 100 ms
- If system is in Standby state: System will resume while Power switch is depressed by more than 100 ms.
- If system on with legacy mode: depress this button will turn off power.

If system is running in ACPI OS, the power button acts as the sleep button, and let OS controls the policy of power button which is defined in Power Option under the OS.

4.3.1.2 Power Button Over-ride

Holding down the Power Button for 4 seconds will cause an unconditional transfer to the off state without notifying the operating system.

4.3.1.3 Lid switch

If the system is running under legacy mode:

- Closing the lid will turn off LCD backlight.

If the system is running under ACPI mode:

- The operating system will determine what action to take when the lid is opened and closed.

The function of lid switch will follow the OS setting in power management (Nothing, Standby or Hibernate). If nothing, the backlight must turn off when the lid is closed.

4.3.2 System status indicators

Please refer to Keyboard BIOS specification.

4.4 Core BIOS Features

4.4.1 Multi Boot

The notebook can support Multi-Boot for selecting the boot sequence of Hard Drive, Removable Devices, CD-ROM/DVD Drive and Network in Setup.

4.4.2 Quiet Boot

Quiet Boot replaces the customary technical messages during POST with a more visually pleasing and comfortable display (OEM screen). During POST, right after the initialization of VGA, The notebook displays an illustration called the OEM screen during system boot instead of the traditional POST screen that displays the normal diagnostic messages.

The OEM screen stays up until just before the operating system loads unless:

- Pressing <Esc> to switch to the POST screen and the boot process will continue until the end of POST.
- Pressing <F2> to enter Setup.
- Pressing <F12> to enter Boot Menu.
- Whenever POST detects a non-terminal error, it switches to the POST screen near the end of POST, just prior to prompting for a password.
- If the BIOS or an option ROM request keyboard input, the system switches over to the POST screen with prompts for entering the information. POST continues from there with the regular POST screen.

4.4. 3 Boot Block

The Flash ROM used in many systems today offer the customer the advantage of electronically reprogramming the BIOS without physically replacing the BIOS ROM. This advantage, however, does create a possible hazard: power failures or fluctuations that occur during updating the Flash ROM can damage the BIOS code, making the system unbootable. To prevent this possible hazard, many Flash ROM include a special non-volatile region that can never be erased. This region, called the boot block, contains a fail-safe recovery routine. If the boot block finds corrupted BIOS, it prompts the end user to insert a diskette, from which it loads several files that replace the corrupted BIOS on the Flash ROM with an uncorrupted one.

4.5 Thermal management

Please refer to Keyboard BIOS specification.

4.6 Power Management for ACPI mode

4.6.1 Introduction

The notebook supports ACPI. The system will dynamically switch to ACPI mode for configuration and power management when an ACPI OS is loaded.

When ACPI is not loaded and enabled, the power management function will be disabled.

4.6.2 System Time-outs

If the system is running in ACPI mode, system Time-outs is handled by the operating system. BIOS time-outs are disabled. System time-outs are set using the control panel power applet.

4.6.3 System Power Management

The overall system can be in one of the system power states as described below:

ACPI mode	Power Management
Mech. Off (G3)	All devices in the system are turned off completely.
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices such as the CPU and hard disk may be power managed in this state.
S3 Sleeping State	CPU set power down VGA Suspend New Card Suspend Audio Suspend Hard Disk Power Down ODD Power Down Super I/O Power Down
S4 Sleeping State	System Saves all system states and data onto disk prior to power off the whole system.

4.6.4 Device Power Management

Under ACPI mode, the device specific power management supported by this notebook includes the CPU throttling, monitor power management and the hard disk.

4.6.4.1 CPU power management

- ACPI mode

The operating system detects when the system is idle and places the CPU in one of the 3 CPU low power states (C1, C2, C3) depending on how much latency it believes the system can afford.

The C1 state is simply the CPU halt instruction.

The C2 state is the CPU stop grant state.

The C3 state is the CPU stops clock state. The CPU stays in this state until an interrupt occurs.

4.6.4.2 Hard Disk

The operating system uses the spin down timer of the hard drive to set time-outs. The BIOS time-out of the hard disk must be disabled in ACPI mode. The user can sets the hard disk spin down time-out in the control panel power applet.

4.6.4.3 Display Device

The monitor can be turned off after a period of no activity based on the settings of the OS.

4.6.4.4 System Wake Up Sources

The table below lists the wake up events for all low power states:

Events	S3	S4	S5	Process required
Any key	Yes	No	No	No
Power button	Yes	Yes	Yes	No
LAN (On board)	Yes	Yes	No	Yes
RTC	Yes	Yes	No	Yes
Critical low battery	Yes	No	No	Yes

Field ‘Process Required’ identifies that further process for the occurred events must be processed during wake up or resume procedure.

4.6.4.4.1 LAN

LAN (On board)

S3(Standby): LAN is supported wake-up from S3 w/ AC/DC mode.
S4(Hibernation): LAN just only support wake-up from S4 w/ AC only.

S5: LAN is supported wake-up from S5 w/ AC.

Real Time Clock Alarm

The Real Time Clock alarm interrupt will wake the system from Standby (DC/AC) / Hibernation (AC mode)

Critical Low Battery

Critical low battery event can wake the system from Standby (DC mode) in ACPI mode.

4.6.5 Hibernation

To support the hibernate state, the save to disk partition or file will be created by the operating system if the user select to enable the hibernation.

It is the responsibility of the operating system to save the system state to a disk file and restore the system state when it is turned back on.

4.7 ACPI (Advanced Configuration and Power Interface)

4.7.1 Introduction

The Advanced Configuration and Power Interface (ACPI) is a well-specified power management and configuration mechanism. It evolves the existing collection of power management codes, APM, PnP BIOS, and Etc.

4.7.2 ACPI Sleep Status

BIOS must support the following sleep states – S3, S4 and S5.

4.7.3 Fast Resume

BIOS must hands off the control to the operating system within the following time limits:

	Required
S3->S0	2seconds

*Measured using the Microsoft **VTS (Velocity) tool.**

In addition, total resume time from S3 must be completed within 5 seconds.

4.7.4 Power State Transition Diagram

The state transition diagram in ACPI mode is as follows:

From (State)	Leave By Condition	Enter (State)
S3	Power Button	S0
	On board LAN	
	Any key	
	Alarm	
	Critical low battery(Only in DC mode)	
S4	Power Button	S0
	On board LAN (Only in AC mode)	
	RTC(Only in AC mode)	
S5	Power Button	S0
S0	Press Lid switch (depends on ACPI OS setting)	S3
	Standby icon in shutdown menu in Windows.	
	ACPI OS timer expired	
	Critical low battery (depends on ACPI OS setting)	
S0	Press Lid switch (depends on ACPI OS setting)	S4

	Press Power Button (depends on ACPI OS setting)	
S0	Press Lid switch (depends on ACPI OS setting)	S5
	Press Power Button (depends on ACPI OS setting)	

4.7.5 Storage Devices and Batteries

Possible storage devices are FDD, HDD, CD-ROM and DVD-ROM

- Floppy Disk and Hard Disk, CD-ROM and DVD-ROM

  The BIOS must report the correct types of these devices if the drive is installed in the system during POST. Two devices, which belong to the same category, are not supported in this notebook.

- Batteries

  The BIOS must follow ACPI specification and report the correct number of the installed battery and status.

4.7.6 Bootable Device

The system is capable of booting from onboard HDD, CD ROM, DVD-ROM, external USB Floppy and USB ATA Flash device.

4.7.7 Embedded controller

The keyboard controller will act as the ACPI embedded controller and support the ACPI EC protocol and interface.

4.8 PC2001

The notebook must meet Microsoft Logo requirements in accordance with the PC2001 Guide and the Microsoft Logo test programs.

4.9 Miscellaneous Features

4.9.1 Single BIOS ROM

Intel:

Before Calpella platform:

Sharer ROM: The System BIOS and Keyboard BIOS are combined; Rom size is depended on project design, 2M or 1M.

After Calpella platform:

Non-Sharer ROM: The Size of System BIOS is 2MByte (Include BIOS and Ignition ME) The Size of Keyboard BIOS is 128K (EEPROM is inside EC BIOS area)

AMD:

Sharer ROM: The System BIOS and Keyboard BIOS are combined; Rom size is depended on project design, 2M or 1M.

4.9.2 USB Support

This feature allows the use of a USB keyboard to access BIOS Setup and to be used in DOS without additional drivers. USB floppy boot and Crisis Recovery from USB floppy is also supported. The driver provides other USB devices support after loading the operating system.

4.9.3 Flash utility – one BIOS ROM only

The flash utility can be used to program both system and keyboard BIOS at the same time.

4.9.4 Crisis Recovery

This feature provides an opportunity for system that cannot boot up. With a crisis floppy diskette, the system can perform crisis recovery by using internal PS2 keyboard.

To perform crisis recovery using keyboard, do the following:

Power off the system.

Plug-in the USB floppy drive with crisis floppy diskette inserted.

Hold down Fn + B keys.

Plug-in AC adapter and make sure it is powered.

Power on the system from off state (i.e. cold boot) while holding down <Fn+B> key.

After POST, release <Fn+B> key. The system should boot from floppy and perform crisis recovery action.

4.9.5 VGA Support

This section describes the expected behavior when a video monitor is connected to the VGA port on the notebook .The feature needs VGA driver support

The BIOS will use both the RGB and pin 11 methods to determine the presence of an external VGA monitor.

Video modes supported on the secondary display path (need VGA driver support)

Supported video modes and timings please refer to the technical reference of VGA vendor. In particular, text mode and standard VGA modes are not supported.

4.10 Customer Specific Features

4.10.1 Display of System Type and BIOS Version Number on Boot

BIOS Version V1.00*

Note: * The numbers of BIOS version will be changed.

4.10.2 CMOS RAM management

For UEFI Code, CMOS just reserve for kernel code/Chipset code, the variable storage had been replaced by flash part

4.10.3 System Management BIOS(SM BIOS) version 2.4 (DMI 2.0)

Limited DMI 2.0 BIOS information are provided:

BIOS version number is type 0 data item.

Type 1:

- System serial number – 64 alphanumeric characters with 12-character bundle number
- System manufacturer name – 16 alphanumeric characters
- System product name – 32 alphanumeric characters
- System version – 32 alphanumeric characters
- UUID – 32 Hexadecimal numbers

Type 2:

- System manufacturer name – 16 alphanumeric characters
- Motherboard Product name – ‘NCL50’
- System serial number – 64 alphanumeric characters with 12-character bundle number

Type 3:

- System manufacturer name – 16 alphanumeric character
- System serial number – 64 alphanumeric characters with 12-character bundle number
- Asset tag number – 128 alphanumeric characters

4.10.4 EEPROM

There is one EEPROM that is used to store many important system and user data in the notebook (some data are reserved for future to use)). The size of the EEPROM is 2K bytes.

The EEPROM map is listing as below:

Name	Offset	Comments
System Serial Number	00h – 1Fh 20h – 3Fh	32 bytes of Serial number. 32 bytes of Bundle number.
Manufacturer name	40h – 4Fh	16 bytes for DMI type 1/2/3
System version	50h – 6Fh	32 bytes of System version for DMI type 1.
UUID	70h – 7Fh	16 bytes for UUID for DMI type 1.
System product name	80h – 9Fh	32 bytes of System product name.
DMI type 11	A0h – DDh	62 bytes for DMI type 11
Unused	DEh – DFh	Unused
GUID	E0h – E7h	8 bytes for GUID
Born On Date	E8h – EAh	3 bytes for born on date
Reserved	EBh - EFh	Reserved
Keyboard type	F0h	Define for US/UK/JP keyboard
Keyboard BIOS used	F1h	1 byte for Keyboard BIOS used
Branding	F2h	1 byte for Branding.
Process ID for factory	F3h – F4h	Identification ID for test process control
Reserved for keyboard	F5h – F6h	Reserved 2 bytes for keyboard used
Unused	F7h – FDh	Unused
EEPROM initialized flag	FEh	Set to AAh when the EEPROM get initialized.
Assettag number	200h – 23Fh	64 bytes for DMI Type 3
LAN MAC Address	240h – 245h	6 bytes for LAN without EEPROM
Unused	246h – 25Fh	Unused
ACPI OEM ID	260h – 265h	6 bytes for ACPI OEM ID
Unused	266h – 26Fh	Unused
ACPI OEM Table ID	270h – 277h	8 bytes for ACPI OEM Table ID
Reserved	278h - 7FFh	Reserved

4.11 System Setup

4.11.1 Invoking setup

The setup function can be invoked by pressing F2 when “Press <F2> to enter Setup” message is prompted on the bottom of screen during POST.

During setup, all Fn function keys and power saving functions are disabled.

4.11.2 Setup screens

4.11.2.1 Main Menu

<table>
<tr><td colspan="4">InsydeH20 Setup Utility</td></tr>
<tr><td colspan="4">Main Security Boot Exit</td></tr>
<tr><td colspan="2">System Time</td><td>[12:00:00]</td><td rowspan="11">Details see the following
Help Information</td></tr>
<tr><td colspan="2">System Date</td><td>[01/01/2009]</td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2">Processor Type</td><td>Type,XXXGHZ</td></tr>
<tr><td colspan="2">Total Memory</td><td>XXX MB</td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2">System BIOS Version</td><td>X.XX.XX</td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td>F1 Help</td><td>↑↓ Select Item</td><td>F5/F6 Change Values</td><td>F9 Setup Defaults</td></tr>
<tr><td>Esc Exit</td><td>←→ Select Screen</td><td>Enter Select ▸ SubMenu</td><td>F10 Save and Exit</td></tr>
</table>

System Time and System Date

The hour is displayed with 24-hour format. The values set in these two fields take effect immediately.

Processor Type

This field shows CPU type and speed.

Total Memory

This field reports the memory size of the extended memory with an integer in the system.

Help information

System Time

[hh:mm:ss]This is the help for the hour field. Range is from 0 to 23. INCREASE/REDUCE:+/-.

[hh:mm:ss]This is the help for the minute field. Range is from 0 to 59. INCREASE/REDUCE:+/-.

[hh:mm:ss]This is the help for the second field. Range is from 0 to 59. INCREASE/REDUCE:+/-.

System Date

[mm:dd:yy]This is the help for the month field. Range is from 1 to 12.(Error checking will be done against month/day/year combinations that are not supported.) INCREASE/REDUCE:+/-.

[mm:dd:yy]This is the help for the day field. Range is from 1 to 31.(Error checking will be done against month/day/year combinations that are not supported.) INCREASE/REDUCE:+/-.

[mm:dd:yy]This is the help for the year field. Range is from 2000 to 2099.(Error checking will be done against month/day/year combinations that are not supported.) INCREASE/REDUCE:+/-.

4.11.2.2 Security Menu

This menu shows the security setting, Supervisor Password, HDD Password and Power on Password.

<table>
<tr><td colspan="4">InsydeH20 Setup Utility</td></tr>
<tr><td colspan="4">Main Security Boot Exit</td></tr>
<tr><td colspan="2">Supervisor Password</td><td>Clear</td><td rowspan="11">Details see the following help information</td></tr>
<tr><td colspan="2">Set Supervisor Password</td><td></td></tr>
<tr><td colspan="2">Power on Password</td><td>[Disabled]</td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2">HDD Password Status</td><td>No Accessed</td></tr>
<tr><td colspan="2">Set HDD Password</td><td></td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td></td></tr>
<tr><td>F1 Help</td><td>↑↓ Select Item</td><td>F5/F6 Change Values</td><td>F9 Setup Defaults</td></tr>
<tr><td>Esc Exit</td><td>←→ Select Screen</td><td>Enter Select
▸ SubMenu</td><td>F10 Save and Exit</td></tr>
</table>

Supervisor Password

Show the Password status: Clear or Set

Set Supervisor/ HDD Password

Install or Change the password. The length of password should not be greater than 8.

Power on Password

Enable or disable the Power on Password. You only can enable/disable Power on password after the Supervisor password is set.

HDD Password Status

This item will show HDD Password Status.

Help information

Set Supervisor Password

Install or change the password and the length of password must be greater than one word.

Power on password

Enable: System will ask input password on post time. Disable: System will ask input pass

word when go to Setup Utility.

Set HDD Password

Lock Harddisk and the length of password must be greater than one word.

4.11.3 Boot Menu

This menu allows the user to decide the order of boot devices to load the operating system. Bootable devices include the diskette drive in module bay, the onboard hard disk drive in module bay.

InsydeH20 Setup Utility	
Main Security **Boot** Exit	
Boot priority order:	Details see the following Help Information
Floppy Drive : XXXXXXXXXX	
Hard Disk Drive : XXXXXXXXXX	
CD/DVD-ROM Drive:XXXXXXXXXXX	
USB HDD : XXXXXXXXXX	
USB CDROM : XXXXXXXXXX	
Network boot: XXXXXXXXXX	

F1 Help	↑↓ Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	←→ Select Screen	Enter Select ▸ SubMenu	F10 Save and Exit

Help information

Use <↑>or <↓> to select a device, then press <F5> to move it down the list, or <F6> to

Move it up the list. Press <Esc> to escape the menu

4.11.4 Exit Menu

InsydeH20 Setup Utility			
Main Security Boot **Exit**			
Exit Saving Changes		Details see the following Help Information	
Exit Discarding Changes			
Load Optimal Defaults			
F1 Help	↑↓ Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	←→ Select Screen	Enter Select ▸ SubMenu	F10 Save and Exit

Exit Saving Changes

Allows the user to save changes to NV Storage and reboot system. The following message is prompted when user press “Enter” on the item.

Exit Saving Changes?
[Yes] [No]

Yes: Save Changes, Exit SETUP and reboot

No: Back to previous screen

Exit Discarding Changes

Allows the user to discard changes and continue the boot operation. The following message is prompted when user press “Enter” on the item.

Exit Discarding Changes?
[Yes] [No]

Yes: Discard Changes and Continue the boot operation.

No: Back to previous screen.

Load Optimal Defaults

Allows the user loads default value in CMOS Setup. The following message is prompted when user press “Enter” on this item:

Load Optimal Defaults?
[Yes] [No]

It still stay in Setup when press a key.

Help information

Exit Saving Changes

Exit system setup and save your changes.

Exit Discarding Changes

Exit system setup and without saving your changes.

Load Optimal Defaults

Load Optimal Defaults.

4.12 OS Compatibility

Windows 7 Ultimate 32bit (XP Driver ready)