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## **Preface**

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### ***Limitation of Liability***

While reasonable efforts have been made to ensure the accuracy of this manual, the manufacturer and distributor assume no liability resulting from errors or omissions in this manual, or from the use of the information contained herein.

### ***Notice:***

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**Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cables and a non-shielded AC power cord must be used in order to comply with emission limits.**

This equipment is to be used with power supply:

90W

There is no internal power supply.

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# Chapter

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## **Before you Start**

### ***Conventions of This Manual***

Use this manual will help you get the most from your notebook computer.

If you are an experienced user of computers and/or Microsoft's Windows operating systems, you might find it useful to read the Quick Start Guide that comes along with your accessories.

If you are a less experienced user, you should go through the manual carefully before using your system.

Whether or not you are an experienced user, you should consult the Troubleshooting Chapter if you encounter any problems with your notebook.

### ***Safety Precautions***

This section is designed to assist you in identifying potentially unsafe conditions while working with this product. Required safety features have been installed in the computer to protect you from injury. However, you should use good judgment to identify potential safety hazards:

Please read these safety instructions carefully.

1. Please keep this User's Manual for later reference.
2. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or cloth for cleaning.
3. For pluggable equipment, that the socket-outlet shall be installed near the equipment and shall be easily accessible.
4. Please keep this equipment from humidity.
5. Lay this equipment on a reliable surface when installed. A drop or fall could cause injury.

- 
6. Make sure to use the right voltage for the power source when connecting the equipment to the power outlet.
  7. Place the power cord in such a way that people can not step on it. Do not place anything on top of the power cord.
  8. All cautions and warnings on the equipment should be noted.
  9. If the equipment is not used for a long time, disconnect the equipment from the main power outlet to avoid being damaged by transient overvoltage.
  10. Never pour any liquid into the opening, this could cause fire or electrical shock.
  11. Never open the equipment. For safety reasons, the equipment should only be opened by a qualified service personnel.
  12. If on the following situation arises, get the equipment checked by a service personnel:
    - a. The Power cord or plug is damaged.
    - b. Liquid has penetrated into the equipment.
    - c. The equipment has been exposed to moisture.
    - d. The equipment has not worked well or you cannot get it work according to the user's manual.
    - e. The equipment has dropped and damaged.
    - f. If the equipment has obvious signs of breakage.
  13. Do not leave this equipment in an environment unconditioned, storage temperature above 60°C (140°F), it may damage the equipment.
  14. The unit can be operated at an ambient temperature of max. 5°C ~ 35°C.
  15. The sound pressure level of the operator's position according to IEC 704-1: 1982 is equal or less than 70 dB(A).
  16. Power Cord Requirements

The power cord set used with the AC adaptor must meet the requirements of the country where you use the AC adaptor, whether it is 100-240 Vac. The following information explains the requirements for power cord set selection.

    - The cord set must be approved by the country in which it is used.
    - The appliance coupler must have a configuration for mating with a CEE7/EN60320/IEC 320/NEMA/ JIS C 8303 appliance inlet.

A. For U.S. and Canada:

    - The cord set must be UL Listed and CSA Certified.



- 
- The minimum specifications for the flexible cord are No. 18 AWG, (2) Type SPT-2, and (3) 2-conductor.

**B.** For Japan:

- All components of the cord set must bear a "PSE" mark and in accordance with the Japanese Dentori Law.
- The minimum specifications for the flexible cord are .75mm<sup>2</sup> conductors, (2) Type VCTR or VCTFK, and (3) 2-conductor.
- The cord set must have minimum rated current capacity of 7 A.
- The attachment plug must be a two-pole, grounded type with a Japanese Industrial Standard C8303 (15 A, 125 VAC) configuration.

**C.** For Other Countries:

- The cord set fittings must bear the certification mark of the agency responsible for evaluation in a specific country.
- The flexible cord must be of a HAR (harmonized) type H03VVH2-F.
- The cord set must have a current capacity of at least 2.5 Amperes and voltage rating of 125 or 250 Vac.













**CAUTION... MODEL MB50IAx-MB51IAx (x=0~9) IS DESIGNED TO USE WITH THE FOLLOWING AC ADAPTER MODEL ONLY 90W ADP:**

- Delta Electronic, Inc.  
ADP-90SB AB(90W, 2pin)  
ADP-90SB BB(90W, 3pin)
- HUNTKEY ELECTRONIC CO., LTD  
HKA09019047-8D(90W, 2PIN)  
HKA06519047-6D(90W, 3PIN)


**17.** When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons. These precautions include the following:

- Do not use this product near water, for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.

- 
-  Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
  -  Do not use the telephone to report a gas leak in the vicinity of the leak.
  -  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 instructions.
- 18.** Do not use the AC adapter near open water or other liquids. Never spill liquid into the AC adapter.
- 19.** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Never remove the battery pack while the power is on as this may result in data loss when the system loses power.
- 20.** The input receptacle is used as the main disconnecting device.
-  **CAUTION...** This part is hot. Be careful.
-  **VORSICHT...** Diese Flachewird sehr heiss.
- When you see this symbol, be careful as this spot may be very hot.**
- 21.** Laser Warning: Laser Class I Product Caution - Invisible laser radiation when open avoid exposure to beam. The optical drive used with this computer is certified as a Class1 laser device according to the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard and International Standards IEC 60825-1 (EN60825-1). The device is not considered harmful, but the following precautions are recommended:
-  Do not open the unit.
  -  Avoid direct exposure to the laser beam.
  -  If the unit requires service, contact an authorized service center.
  -  Ensure proper use by reading and following the instructions carefully.
  -  Do not attempt to make any adjustment of the unit.
-

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*Class 1 Laser Product*  
*Appareil A Laser De Classe 1*  
*Laserschutzklasse 1 Produkt*

 **WARNING....** Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increase the potential hazard to your eyes. For your safety, have this equipment serviced only by an authorized service provider.

*Wichtige Sicherheitshinweise*

1. Bitte lesen Sie diese Hinweis sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Versenden Sie Keine Flüssig- oder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlußsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
8. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
9. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
10. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
11. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. Elektrischen Schlag auslösen.
12. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.

- 
- 13.** Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu Überprüfung.:
- a.** Netzlabel oder Netzstecker sind beschädigt.
  - b.** Flüssigkeit ist in das Gerät eingedrungen.
  - c.** Das Gerät war Feuchtigkeit ausgesetzt.
  - d.** Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  - e.** Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  - f.** Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
- 14. VORSICHT:** Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.
- 15.** Dieses Schaltnetzteil kann bis zu einer Außentemperatur von maximal 5°C → 35°C.
- 16.** Die Ausgangswerte dürfen nicht die auf dem Label angegebenen Werte überschreiten.
- 17.** Anforderungen an das Stromkabel
- Das Kabel-Set, das an das Netzteil angeschlossen wird, muss den Anforderungen des Landes, in dem Sie das Netzteil einsetzen, genügen, je nachdem, ob die Netzspannung 100-240V Wechselspannung beträgt.
- Das Kabel-Set muss für das Land, in dem es eingesetzt wird, zugelassen sein.
  - Der Gerätestecker des Kabels muss in eine CEE7/EN60320/IEC 320/NEMA/ JIS C 8303 Buchse passen.
- A.** Für die USA und Kanada:
- Das Kabel-Set muss UL-gelistet und CSA zertifiziert sein.
  - Die Minimalanforderungen für das Kabel entsprechen No. 18 AWG. (2) Type SPT-2, und (3) 2-conductor.
- B.** Für Japan:
- Alle Teile des Kabel-Sets müssen entsprechend dem japanischen Dentori Law mit einem „PSE“ markiert sein
-

- Die Minimalanforderungen für das Kabel sind .75m<sup>2</sup> Leiter. (2) Type VCTF oder VCTFK, und (3) 2-conductor.
- Der Kabelsatz muss mindestens für eine Stromstärke von 7A geeignet sein.
- Der Wandstecker muss ein zweipoliger geerdeter Steckertyp gemäß dem Japanese Industrial Standard C8303 (15A, 125 VAC) sein.

**C.** Für andere Länder:

- Die Zubehörteile des Kabel-Sets müssen das Prüfsiegel derjenigen Stelle, die in dem jeweiligen Land für die Sicherheitsprüfung zuständig ist, tragen.
- Das Kabel muss vom HAR (harmonisierten) Typ H03VVH2-F sein.
- Das Kabel-Set muss eine Stromkapazität von mindestens 2,5 Ampere haben und Spannungen von 125 oder 250 V Wechselstrom gestatten.



**VORSICHT...** Mit dem MB50IAx-MB51IAx (x=0~9) muss ein AC-Adapter folgenden Modells verwendet werden

**90W ADP:**

- Delta Electronic, Inc.  
ADP-90SB AB(90W, 2pin)  
ADP-90SB BB(90W, 3pin)
- HUNTKEY ELECTRONIC CO., LTD  
HKA09019047-8D(90W, 2PIN)  
HKA06519047-6D(90W, 3PIN)

**18.** Bei der Benutzung Ihres Telefongerätes sollten Sie immer die grundlegenden Sicherheitsmaßnahmen beachten, um das Risiko von Feuer, Stromschlägen und Verletzungen zu minimieren. Zu beachten sind u.a. folgende Punkte:

- Benutzen Sie das Gerät nicht in der Nähe von Wasser, wie zum Beispiel Badewanne, Waschbecken, Spülbecken, Waschbottich, in feuchten Kellerräumen oder in der Nähe von Schwimmbecken.
- Benutzen Sie kein Telefon (ausgenommen schnurlose Modelle) während eines Gewitters. Es besteht das geringe Restrisiko eines Blitzschlages.
- Benutzen Sie das Telefon nicht um ein Gasleck zu melden, falls es sich in der Nähe des Lecks befindet.

- 
- Verwenden Sie nur die in diesem Benutzerhandbuch angegebenen Stromkabel und Batterien. Werfen Sie die Batterien nicht ins Feuer, sie könnten explodieren. Informieren Sie sich über die örtlichen Bestimmungen bezüglich der Entsorgung.
  - 19. Benutzen Sie das Netzteil nicht in unmittelbarer Nähe zu Wasser oder anderen Flüssigkeiten. Gießen Sie nie Flüssigkeiten über das Netzteil.
  - 20. Es besteht Explosionsgefahr, wenn der Akku nicht ordnungsgemäß ersetzt wird. Ersetzen Sie den Akku nur durch einen Akku gleichen oder äquivalenten Typs, der vom Hersteller empfohlen wird. Entsorgen Sie Akkus entsprechend den Anweisungen des Herstellers. Entfernen Sie den Akku auf keinen Fall bei eingeschaltetem notebook, da hierdurch Daten verloren gehen könnten.
  - 21. Der Netzeingabeanschluss dient als Hauptschalter des Geräts.


### *Things you must remember before working on your computer*

#### *Let your computer acclimate itself*

Your notebook can easily stand temperature extremes but it doesn't like rapid changes in temperature, like going from the cold outdoors to a warm office.

Rapid changes in temperature can cause water droplets to condense inside your case, threatening to damage the electronic parts inside.

After receiving your notebook when it's hot or cold outside, try not to power up the computer immediately, let the computer adjust to the room temperature gradually at least for three to four hours.

 **WARNING....** If your system arrives in cold weather, do not apply power to the computer or monitor until they have been allowed to come to room temperature.

#### *Heat, Cold, Humidity, and Glare*

- Find a suitable place for your computer that's not too hot, too cold, too dark, or too bright. Glare can make it hard to read the screen.
- Try to avoid the computer components from being destroyed if

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it is overheated, so try to allow plenty of room for air to circulate around the case.

- Do not block the ventilation opening.
- Do not place your computer in direct sunlight.

### *Suitable place to work*

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Your computer will run well wherever you're comfortable but extreme temperature and humidity can be challenging to your system's parts.

There are some things you can tolerate that the computer can't – things like static electricity, dust, water, steam and oil. In case you decide to pull over for roadside computing, try to choose a clean, comfortable work area for your system.

A lithium-ion battery pack will be available when you are traveling. If you are running your system for the first time on battery power, remove the battery from the package, install it into the system and recharge the battery to fully prepare for service.

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# Chapter

# 2





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## **Introduction**



**NOTE....** Please use the adapter recommended in this manual.

### ***Preparing your Computer***



- ① Install the battery pack
- ② Connecting the AC adapter
- ③ Opening the display panel
- ④ Turning on your computer

---

## Knowing your Computer

With the LCD screen open, you will see several features important for operating your notebook computer.

 **WARNING....** To avoid damage to the display panel:

1. Try not to slam the display upon closing it.
2. Try not to place any object on top when it is closed or open.
3. Be sure the system is turned off or in suspend mode before you close the display panel.

*Front View*

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 **NOTE....** Picture is only for reference



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## ① Camera (Optional)



### NOTE....

For best system performance, image is compressed when using the Crazy Talk Camsuite PRO's preview function. Photographs taken with 'snapshot' retain its original quality.

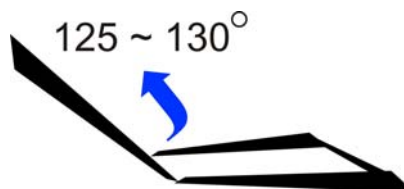
## ② Microphone

## ③ LCD Display



### WARNING....

This LCD panel can only support up to a maximum opening of 125-130 degrees, please do not push it forcibly.



## ④ Power/Suspend Button

- Press for 1~1.5 seconds to turn on the system.
- Press and hold for at least 4 seconds to turn off the system.
- Press the power / suspend button again to return from the suspend mode.

## ⑤ Multi Media Buttons



1. Recovery,
2. Silent mode,
3. Touchpad lock,
4. Graphic switch
5. Media player application,
6. Play/Pause,
7. Stop mode,
8. Volume Bar (leftmost for volume down, rightmost for volume up)

## ⑥ Keyboard



**NOTE....** The keyboard differs for each territory

- ⑦ Touchpad
- ⑧ Touchpad Buttons
- ⑨ LED Indicator



- Power ON: Blue
- RF On: Blue
- HDD R/W: Blinking Blue
- Battery LED status
  - Charging: Blinking Blue
  - Full: Blue
  - Battery Low (<6%): Blinking Red

### *Left Views*

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① DC In

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② Ethernet / LAN Port

**NOTE....** When using a LAN, please use an EMI Shielding Cable to minimize an interference when transmitting

③ CRT Port

④ HDMI Port (Option)

⑤ USB 2.0 Port or 3.0 Port (Either one)

**NOTE....** This system provides two USB 2.0 or two USB 3.0 (optional) chargeable ports.

*Right View*

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① Stereo Headphone Jack

② Microphone/Audio Line-in Jack

③ USB 2.0/E-SATA combo

④ 6-in-1 Card Reader SD / SDXC / SDHC / MS / MMC / MS Pro Memory Card

⑤ Optical Drive

⑥ Kensington Lock

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*Bottom View*

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- ① Battery Lock
- ② Battery Compartment
- ③ Battery Release Latch

---

# Chapter

# 3



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## **Getting Started**

### ***Connecting to a Power Source***

#### ***Connecting the AC Adapter***

A universal AC adapter is provided to supply your computer with power and also charge the computer's battery pack. The adapter's AC input voltage can range anywhere from 100 to 240 volts, covering the standard voltages available in almost every country. To connect the computer to an external power source:




 **WARNING....** Do not use inferior extension cords as this may result in damage to your notebook. The notebook comes with its own AC adapter. Do not use a different adapter to power the computer and other electrical devices.

Whenever possible, keep the AC adapter plugged into the notebook and an electrical outlet to recharge the battery.



---

 **WARNING....** Never turn off or reset your notebook while the hard disk is in use status icon is lit; doing so can result in loss or destruction of your data. Always wait at least 5 seconds after turning off your notebook before turning it back on; turning the power on and off in rapid succession can damage the notebook's electrical circuitry.

### *Turning On Your Notebook Computer*

Hold the button down for a second or two and release. The Power-On Self Test (POST) runs automatically.

After the POST is completed, the computer reads the operating system from the hard disk drive into computer memory (this is commonly referred to as "booting" a computer). If your OS (Operating System such as Windows Vista.... Etc.) is installed, it should start automatically.

To turn the notebook off, save your work and close all open applications, click on **Start**, then **Shut Down** and select **Shut down the computer** and click "Yes" or press the power button for 4-6 seconds.


### *Operating on Battery Power*

Your computer comes with a rechargeable battery pack that lets you operate the computer without an external power source. When the battery pack is fully charged, you can operate the computer under the following conditions:


The battery pack initially has a full charge.

No peripheral devices are installed.

The disk/DVD-ROM drives run no more than 10% of the time

 **WARNING....** Only use batteries that are approved by an authorized dealer. All batteries are not the same and therefore should not be treated as such. Using the wrong battery could cause serious damage to your computer and yourself through toxic emissions.

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

 **WARNUNG....** Explisionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

### *Installing and Removing the Battery Pack*

*To Install the Battery Pack:*

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### *To Remove the Battery Pack:*

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### *Charging the Battery Pack*

The installed battery pack charges automatically any time the computer is connected to the AC adapter and an external power source. It is a good idea to occasionally discharge the battery pack fully to preserve its operating performance.

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# Chapter

# 4



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## **Using the Notebook Computer**

### ***Adjusting the LCD Screen Display***

The LCD screen display can be adjusted by the following key combinations.

- Fn + F4  
Changes Display Mode: LCD-only, CRT/HDMI-only and simultaneous LCD&CRT/HDMI.
- Fn + F7  
Decrease the brightness level.
- Fn + F8  
Increase the brightness level.

### ***LCD Care***

LCD screens are delicate devices that need careful handling. Please pay attention to the following precautions:

When you are not using the computer, keep the LCD screen closed to protect it from dust.

If you need to clean your LCD screen, use a soft tissue to gently wipe the LCD surface.

Do not put your fingers or sharp objects directly on the surface and never spray cleaner directly onto the display.

Do not press on, or store any objects on the cover when it is closed. Doing so may cause the LCD to break.

### ***External CRT Display***

You can hook up an external monitor through the 15-pin CRT connector.

- LCD only
- CRT only
- Simultaneous LCD&CRT

---

You can switch between these display configurations by pressing the key combination **[Fn] + [F4]**.

### *The Notebook's Hot Key Controls*

- Fn + Esc  
Enable/Disable Bluetooth
- Fn + F1  
Enter Suspend mode.
- Fn + F2  
Enter Silent mode.
- Fn + F3  
Mute On/Off.
- Fn + F4  
Changes Display Mode: LCD-only, CRT/HDMI-only and simultaneous LCD&CRT/HDMI
- Fn + F5  
Decrease the speaker volume.
- Fn + F6  
Increase the speaker volume.
- Fn + F7  
Decrease the brightness level.
- Fn + F8  
Increase the brightness level.
- Fn + F9  
Enable/Disable the touchpad.
- Fn + F10  
Enable/Disable the WLAN
- Fn + F11  
Enable/Disable the CCD camera

### *The TouchPad*

The touchpad is a rectangular electronic panel located just below your keyboard. You can use the static-sensitive panel of the touchpad and slit it to move the cursor. You can use the buttons below the touchpad as left and right mouse buttons.



### ***TouchPad Precautions***

The TouchPad is a pressure sensitive device. Please take note of the following precautions.

- Make sure the TouchPad does not come into contact with dirt, liquids or grease.
- Do not touch the TouchPad if your fingers are dirty.
- Do not rest heavy objects on the TouchPad or the TouchPad buttons.

You can use the TouchPad with Microsoft Windows as well as non-Windows applications.

### ***Connecting an External Tracking Devices***

The system will only enable you to use one tracking device whether it is an internal or external tracking device.

### ***Data Storage and Retrieval***

Data storage and retrieval are two of the most fundamental tasks you will perform when working with your computer. The Notebook is equipped with a hard disk drive (HDD).

The HDD is removable allowing for easy upgrades.

---

## ***Power Saving Modes***

This section contains information on the notebook's power system, including the AC Adapter, the battery system, recharging the battery, and tips for conserving battery power.

The power system is comprised of two parts, the AC Adapter and the battery system. The AC Adapter converts AC power from a wall outlet to the DC power required by the computer.

### ***The Battery Power System***

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Before using the computer on battery power for the first time, check the battery status icon on the Windows Toolbar to make sure the battery is fully charged.

See Battery Status later in this section for a description and explanation of the Windows Battery icon.

Charging the battery takes about 2.5 hours to charge when the system is in off state. If possible, always charge the battery completely.



**NOTE....** If you use the battery so frequently that it exceed more than 20 times by fully discharging/charging in a single month alone, we recommend you to perform the “Battery Calibration” process every 3 months to maintain the battery life.

Please refer to the topic on “Battery Calibration” describing how to calibrate your system battery discussed in the latter part of this chapter.

If you discover the battery life is getting shorter, please perform the “Battery Calibration” process immediately.

## ***Removing the Battery Pack***

To remove the battery pack from its compartment, please refer to Chapter 3, ***Inserting and Removing the Battery Pack***.

### ***Preparing the Battery Pack for Use (Battery Calibration)***

---

Before using the battery pack for the first time, battery pack should be calibrated in order to get accurate reporting of remaining battery life status..



---

To calibrate the battery pack follows the instructions below:

1. Insert the battery into the battery compartment and turn on the notebook. If the battery is completely without power go to the next step. Otherwise, let the battery run down until the battery low-low warning beeps are heard. The system will automatically enter Suspend mode.
2. Turn the notebook off. Connect the AC adapter and let the battery fully recharge. When the battery charge indicator turns off, the battery is fully charged.
3. Turn On the notebook, let the battery run down until the battery is in low-low state and you hear a warning beeps. The system will automatically enter the Suspend mode. You can now connect the AC adapter.
4. The battery pack is now calibrated properly.

In general, using the battery until the low-low battery-warning indicator appears and fully recharges the battery each time (full discharge/charge cycle) will ensure the accurate reporting of the battery gauge status.


### *Automatic Battery Pack Charging Function*

---

To charge the battery, while the battery pack is in the notebook, plug the AC adapter into the notebook and an electrical outlet.

The charging time is approximately 3-4 hours when the notebook is turned off and approximately 6-7 hours when the notebook is turned on.

When the battery is fully charged, the battery charge indicator becomes off.

 **NOTE....** If system runs at heavy loading or in high temperature environment, the battery may not be fully charged. You need to continue to charge it with the AC adapter plugged in until the charging LED turns off.

### *Battery Status*

---

Windows 7 has an applet in the Control Panel that will display an icon in the Windows taskbar indicating when the notebook is running on battery power or is attached to the AC adapter.

This applet also displays a meter that indicates how much charge is remaining in the battery.

---

## *Battery Low Warning*

---

When the pack initially reaches the “Battery Low” state approximately 7 ~ 10 minutes of the usable battery life is left.

You will hear an audible beep signal every 15 seconds alerting you to the “Battery Low” status. When the battery power reaches the “Battery Low Low” status the beeping sound will accelerate.

Your battery now has 1 ~ 2 minutes of battery charge remaining. You must save your data or connect AC power immediately; otherwise, you may lose your data.

Sound	Meaning
Continuous beeping every 5 seconds	Battery Low: Indicates that there is 7 to 10 minutes charge remaining.
Beeping accelerates	Battery Low Low: Indicates that there is 1 to 2 minutes of battery charge remaining. Save your work and turn off the notebook, or connect the AC adapter.

When there is only one minute of battery charge remaining, the notebook will suspend to the HDD and power off. You should connect AC power and resume save your work.



**WARNING....** Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Never remove the battery pack while the power is on as this may result in data loss when the system loses power.

## *Resetting the System*

After installing a software application package, you may be prompted to reset the system to load the changed operating environment.

To reset the system, or “reboot,” press the **[Ctrl]+[Alt]+[Delete]** keys simultaneously. This is known as “**warm boot**.” This key combination acts as “**software**” reset switch when you encounter hardware or software problems, which lock up the notebook.

If this key combination does not shut down the notebook, you can reset the notebook by using the notebook’s power button. Should

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the notebook lock up for some reason, pressing this button powers the notebook off.

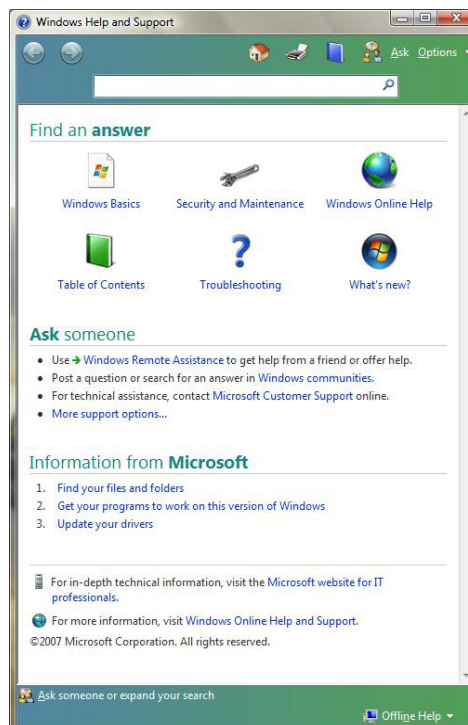
## *Adjusting the Brightness*

To adjust the brightness on the LCD screen, press and hold down the **[Fn]** key in the lower left hand corner of the keyboard and press the **[F8]** key to increase the brightness or **[F7]** to decrease the brightness.

## *Using the Windows*

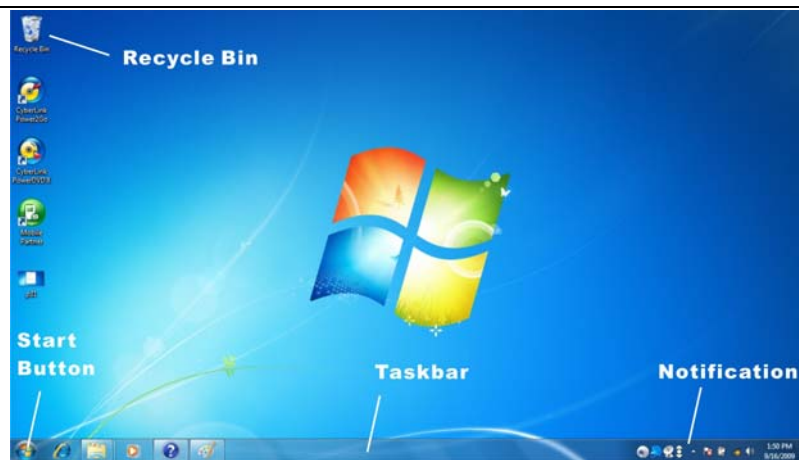
### *Help Windows*

For Windows 7 help, click **Start → Help and Support** icon will open the dialog box.



### *Desktop*

Desktop may vary differently on the software installed in your notebook with different or additional shortcuts.

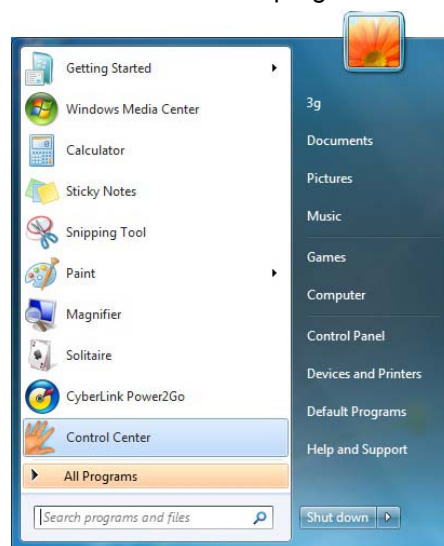


### ***Recycle Bin***

Used for storing deleted files in case you want to recover and save it in your system. The files will only be deleted from the Recycle Bin permanently only if you empty it by right clicking your mouse and select the “Empty Recycle Bin”.

### ***Start Button***

Allows easy access to all Windows programs.



---

The **Start** menu allows you to adapt and show the programs used most frequently. If you wish to keep an item, right click the item and click **Pin to Start menu**.

**Log Off** will enable the current user to log off and allows a new user to log on.

**Turn Off Computer** allows you to shut down, restart, and Stand by modes for power saving purposes.

### ***Taskbar***

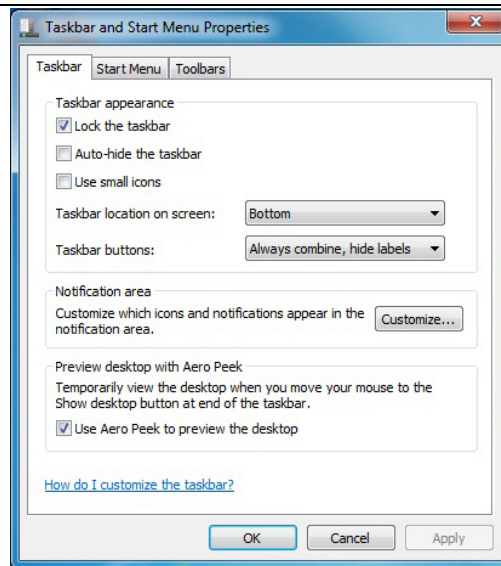
When you open a program, its icon is displayed at the taskbar for you to conveniently move between programs by clicking the relevant button.

To add or remove toolbars from the taskbar: right click an empty spot on the taskbar, select **Toolbars → choose the toolbar you want to add**.

### ***Notification***

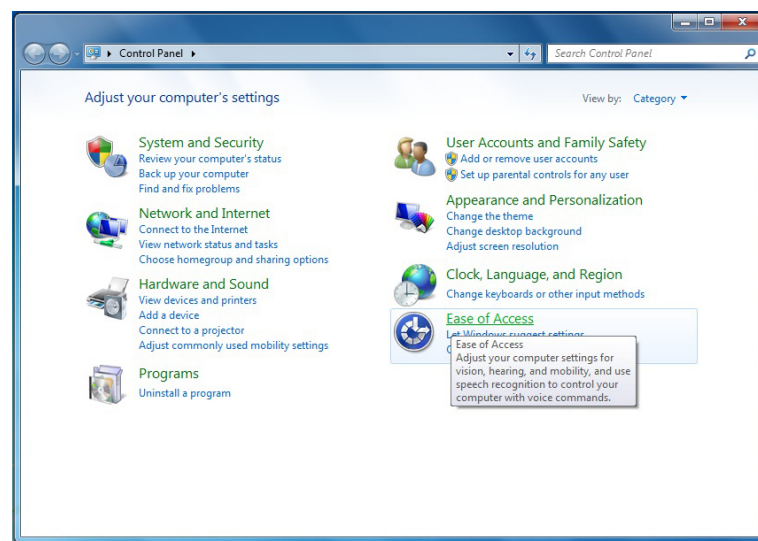
The icons that appear here are for quick access to some programs and computer functions that you frequently used. To prevent Windows 7 from hiding icons:

From an empty spot on the **Taskbar**, right click your mouse and select the **Properties**, remove the checked mark on the **Auto-hide the taskbar**.



## Control Panel

It is in this area that you can change how Windows looks and works. Click **Start → Control Panel** dialog box. There are two interfaces – **Classic View**.



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# Chapter

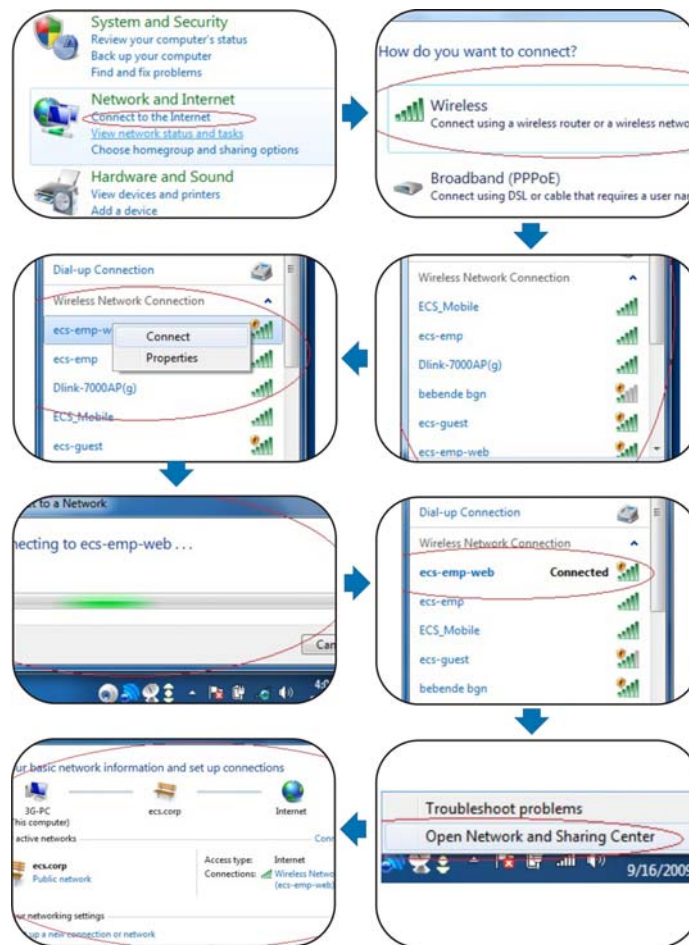
# 5



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## **Internet Connection**

### *Using Wireless LAN Network for Connection to Internet*





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# Chapter

# 6



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## *Running BIOS Setup*

The Setup Utility is a hardware configuration program built into your computer's BIOS (Basic Input/Output System). It runs and maintains a variety of hardware functions. It is menu-driven software, which allows you to easily configure and change the settings.

The BIOS contains manufacturers default settings for the computer's standard operations. However, there are occasions when you may be required to modify the default settings in the BIOS.

The BIOS allows you to set up passwords to limit access to users. This is an important feature because a great deal of vital information is carried within the computer nowadays. Unauthorized access can be prevented. Later in this chapter, you will learn how to use this security feature.

### *Entering the BIOS Setup Screen*

First turn on the power. When the BIOS performs the POST (Power-On Self Test), press DEL key quickly to activate the BIOS Setup Utility.



**NOTE....** You may need to press F2 key fairly quickly. Once the system begins to load Windows, you may have to retry by cycle-power on again

### *Leaving the BIOS Setup Screen*

When you have finished modifying the BIOS settings, exit the BIOS. It takes a few seconds to record changes in the CMOS.

## BIOS Action Keys

Function Key	Command	Description
ESC	Exit	Leaves a sub-menu to return to the previous menu OR exits the BIOS setup while saving changes.
Enter	Go to Sub Screen	Shows the Sub Menu
F1	General Help	Shows the Help Screen
F9	Default	Set as default
F10	Save and Exit	Saves changes and reboots the computer.
<Tab>	Select a field	Selects the next field.
↑	Select an item	Selects the next upper item.
↓	Select an item	Selects the next lower item.
⇒	Select a menu	Selects the right item
⇐	Select a menu	Selects the left item
-	Lower value	Selects the lower value within a field.
+	Higher value	Selects the higher value within a field.

## Modifying the BIOS Settings

The BIOS setup main menu is subdivided into sub-menus. Each menu item is described in this section.

### Main Setup

Phoenix SecureCore (tm) Setup Utility					
Main	Info	Advanced	Security	Boot	Exit
System Time: [23:01:53] System Date: [01/21/2011]  SATA Mode [AHCI] ▶ SATA Port 1 [SAMSUNGHM321HI-(S1)] ▶ SATA Port 2 [TSSCorpCDDVDWTS-L633C-(S3)]  CPU ID: 000206A7 MicroCode Patch ID: 0000000C System Memory: 4096MB					Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field.
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults		
Esc Exit	⇐⇒ Select Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit		

Phoenix SecureCore (tm) Setup Utility		
Main		
SATA Port 1 [SAMSUNG HM321HI-(S1)]	Item Specific Help	
Type: [Auto] LBA Format Total Sectors: 976773168 Maximum Capacity: 500GB SATA1 Multi-Sector Transfers: [16 Sectors] LBA Mode Control: [Enabled] 32 Bit I/O: [Disabled] Transfer Mode: [FPIO 4 / DMA 2] Ultra DMA Mode: [Mode 5] SMART Monitoring: Enabled	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.	
F1 Help	↑↓ Select Item	-/+ Change Values
Esc Exit	←→ Select Menu	Enter Select ▶ Sub-Menu
		F9 Setup Defaults
		F10 Save and Exit

Phoenix SecureCore (tm) Setup Utility		
Main		
SATA Port 2 [TSSTcorp CDDVDW TS-L633C-(S3)]	Item Specific Help	
Type: [Auto] Multi-Sector Transfers: [Disabled] LBA Mode Control: [Disabled] 32 Bit I/O: [Disabled] Transfer Mode: [FPIO 4 / DMA 2] Ultra DMA Mode: [Mode 5] SMART Monitoring: Disabled	User = you enter parameters of hard-disk drive installed at this connection. Auto = autotypes hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.	
F1 Help	↑↓ Select Item	-/+ Change Values
Esc Exit	←→ Select Menu	Enter Select ▶ Sub-Menu
		F9 Setup Defaults
		F10 Save and Exit

---

## Info Setup

---

Phoenix SecureCore (tm) Setup Utility					
Main	Info	Advanced	Security	Boot	Exit
<p>BIOS Information</p> <p>BIOS Version : 0.1100.STD</p> <p>KBC Version : 0.26</p> <p>Processor:</p> <p>CPU Type Intel ® Core (TM) i3-2310M CPU @ 2.10GHz</p> <p>CPU ID: 000206A7</p> <p>MicroCode Patch ID: 0000000C</p> <p>System Memory: 4096 MB</p>					
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults		
Esc Exit	←→ Select Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit		

---

## Advanced

---

Phoenix SecureCore (tm) Setup Utility					
Main	Info	Advanced	Security	Boot	Exit
Execute Disable Bit [Enabled]				Item Specific Help	
				When enabled, if OS supports the "No Execute Page Protection" Technology, the OS can set memory pages as not executable.	
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults		
Esc Exit	←→ Select Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit		

## Security

Phoenix SecureCore (tm) Setup Utility						
Main		Info	Advanced	Security	Boot	Exit
Supervisor Password Is:		Clear		Item Specific Help		Supervisor Password controls access to the setup utility.
User Password Is:		Clear				
Set Supervisor Password		[Enter]				
Set User Password		[Enter]				
Diskette access:		[Supervisor]				
Fixed disk boot sector:		[Normal]				
Password on boot:		[Disabled]				
F1 Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults
Esc Exit	←→	Select Menu	Enter	Select ► Sub-Menu	F10	Save and Exit

## Boot Setup

Phoenix SecureCore (tm) Setup Utility						
Main		Info	Advanced	Security	Boot	Exit
Boot Priority order: 1: SATA CD: TSSTcorp CDDVDW TS-L633F- 2: USB CDROM: 3: USB KEY: 4: USB HDD: 5: SATA HDD: TOSHIBA MK5065GSX-(S1) 6: PCI BEV: Realtek PXE B04 D00 7: 8: Excluded from boot order: : USB FDC:					Item Specific Help	
					Keys used to view or configure devices: Up and Down arrows select a device. <+> and <-> moves the device up or down. <f> and <r> specifies the device fixed or removable. <x> exclude or include the device to boot. <Shift + 1> enables or disables a device. <1 - 4> Loads default boot sequence.	
F1 Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults
Esc Exit	←→	Select Menu	Enter	Select ► Sub-Menu	F10	Save and Exit

---

## *Exit Setup*

---

Phoenix SecureCore (tm) Setup Utility					
Main	Info	Advanced	Security	Boot	Exit
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes					Item Specific Help
					Exit System Setup and save your changes to CMOS.
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults		
Esc Exit	←→ Select Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit		

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# Chapter

# 7





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## *Super POSH (Optional)*

**Super POSH** is an integrated AP which has great benefit for the system. It includes “**Super Power**” “**Super OSD**” “**Super Speed**” and “**Super HDD**.”

These applications enable you to run the power saving scheme in your system, enable shortcut icon, optimize your system configuration, and detect your system current status.



**Super POSH System Tray**



Use your mouse left button by clicking once on the icon will show the status bar.

Use your mouse left button by clicking twice on the icon will show the controller at the right side of the screen and main page.



The main functions are as follows:

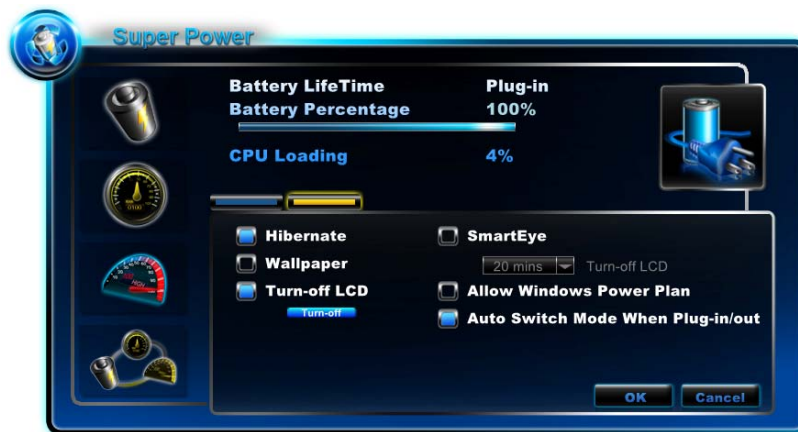
**Capslock / Silent mode / Touchpad / WLAN / Webcam / Bluetooth / Numlock / Scroll lock / Brightness / (sound) volume / Discrete / UMA**

## Super Power







Super Power provides an integrated page for user to control power management.

It could increase battery life and provides effectiveness of your system.



There are 4 Modes for selection with their description shown below:

Mode	Icon	Description
Power saving		Decrease system performance to provide more battery life
Normal		Balance system performance
High performance		Provide system best performance
Dynamic switch		Switch to "Power saving" & "Normal" mode automatically on battery mode, and auto switch to "High performance" mode when plug-in.

### Power Status

Show Current Power Source from AC or Battery.



Battery mode



Plug-in and Charging




Plug-in and Full



AC only

### Setting Page



Monitor	LCD will be turned off after the interval time and setting of the OS if keyboard or mouse is not operated and no movie/game
HDD	System will spin down disk after the interval time and setting to OS.
Stand by	System will sleep after the interval time and setting to OS. Adjust range is "Never" to "5hrs".
Brightness	Show the LCD monitor brightness level through EC sent out code. *Brightness level synchronize with Fn-key.
CPU Power Saving	Lower CPU level in order to save power
Hibernate	If users disable Hibernate, the option of Hibernate will not show in "Setting Page." System will hibernate after the interval time and setting to OS. <ul style="list-style-type: none"> <li>Adjust range is "Never" to "6hrs".</li> <li>Setting the idle time to hibernate must longer than Standby.</li> </ul>
Default	 If "default" was checked, mode would switch to default setting.
<p>* Press "OK" after the change "Monitor" "HDD" "Stand by" and "Hibernate" items, and setting would be applied.</p> <p>* Setting would be applied and saved automatically after the change "Brightness" "CPU Power Saving" and "Default."</p>	

### Advanced Page



Hibernate	If users disable Hibernate, the option of Hibernate will not show in "Setting Page." Default: <b>ON</b>
-----------	--

Wallpaper	Desktop background will be white.
Turn off LCD	Press button to turn off the LCD immediately. Default: <b>ON</b>
Turbo mode	Overclocking CPU instantly. <ul style="list-style-type: none"> <li>Function options depend on the definition of product specification.</li> </ul>
Advance power engine	Drop efficacy to save the battery power. <ul style="list-style-type: none"> <li>Function options depend on the definition of product specification.</li> </ul>
SmartEye	LCD will be turn off automatically if user leaves for a definite time. <ul style="list-style-type: none"> <li>Only when plug-in and webcam on.</li> <li>If webcam is busy when executing the Super POSH, Smarteye will be turn off automatically.</li> </ul>
Allow Windows Power Plan	Enable select Windows or Super POSH's power plan
Auto Switch Mode when Plug-in/out	The system will switch mode automatically. When adaptor is plug in, the system will switch to High Performance mode. When the adaptor is unplug, the system will switch to Power Saving mode. Default: <b>ON</b> <ul style="list-style-type: none"> <li>Dynamic switch mode has higher priority.</li> </ul>
Power off Audio	Turn off audio power instantly to save the battery power. <ul style="list-style-type: none"> <li>Function options depend on the definition of product specification.</li> </ul>

### ***Quickkey for Super Power***

Press Quick key to switch among each power management modes and on-screen display.



---

### **Warning:**

If the percentage of battery was under 10%, there will pop a warning window on task icon.



### ***Super OSD (On-Screen-Display)***



Super OSD provides several styles and locations selection of OSD. And also could get the current status of OSD from status bar.



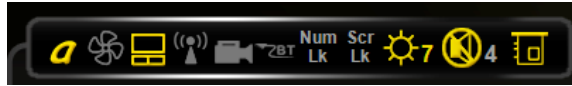
>> or << to preview function and OSD pictures.



---

■ OSD Style: Blue, Green and Orange.

Status:



This area displayed the current status of OSD. Status bar will auto detect device connected in your system. If the color of the icon is yellow, it means the function is working. If the color of the icon is gray, it means the function is turn off.

The value of volume and brightness also show at the side. The icon of status bar depends on product specification.



Caps Lock On/Off



Silent Mode On/Off



TouchPad On/Off



Power of WiFi On/Off



Webcam On/Off



Bluetooth On/Off



Number Lock On/Off



Scroll Lock On/Off



Brightness Level (0~7)



Mute On/Off



Volume Level (0~10)



3G On/Off



Moving status bar:

It would show on the screen as OS ones. It can be vertical or horizontal, and can be moved arbitrarily.

Volume Level Definition: Volume level value are as below

Level	0	1	2	3	4	5	6	7	8	9	10
Volume Value	0	1 ~ 10	11 ~ 20	21 ~ 30	31 ~ 40	41 ~ 50	51 ~ 60	61 ~ 70	71 ~ 80	81 ~ 90	91~ 100

\* When adjusting the volume level, volume value will become

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current level x10 automatically.

There are two options to either enable or disable the OSD.

- Uncheck the “**Disable OSD**”, the system will not show the OSD picture.
- Uncheck the “**Display OSD Status bar**”, Status bar will be closed.



*MMB- depends on product specification.*



OSD location: There are 9 locations for choosing.



An example is shown below where the OSD is shown on the lower right corner of the screen.

































Super OSD functions are as follows:

The function will depend on the definition of product specification.

Function	Preview		
Bluetooth			
Silent mode			
Mute (speaker only)			
Volume			
Brightness			
Touchpad			
Wireless			
Webcam			
3G			
Caps Lock			
Num Lock			

---

Scroll lock			
Web browser			
Media player			
Play			
Previous			
Rewind			
Stop			
Fast forward			
Next			
VGA/UMA			

## *Super Speed*




Super Speed optimizes and cleans the system to obtain the best effectiveness and fragmentation.



### *Optimizing Windows Setting:*

Click “**Optimize**” button after selecting the optimizing options to improve system performance. Click “**Restore**” button to restore the system to original status. After “Optimize” or “Restore” are executed, please reboot the computer for the changes to take effect.

Click  will pop a .txt file describing the detailed information about the options

The options are described in the following table:

Options	Description
Visual Effect	Modify visual effect setting to increase the performance of the system.
Service	Terminate uncommon programs running in the background when Windows is running.
Boot	Speed up the time for booting up the system.
Shutdown	Speed up the time to shutdown the system.
Network	Modify network setting to improve the performance of the network.
System	Modify system setting to increase the performance of the system.

---

### **System Disk Cleanup:**

- Click “**Analyze**” button to analyze the system.



- Click “**Free**” button after selecting the options to free up system disk space.



The options are described in the following table:

Options	Description
System temporary files	Clean the unnecessary files in Windows
Internet temporary file	Clean the browsing history in Internet Explorer
Recycle bin	Clean the Recycle Bin in Windows

### **System Disk Defragment:**

This will show the **HDD health status** according to “Super HDD” page. It will state a suggestion whether the HDD should be defragmented.

---

### Status & Picture

---



### Super HDD



Super HDD displays the health status of HDD and information of CPU and RAM.







Information of main HDD: Name, Type, Partitions and Total Size. Use scroll bar to choose the partition, it will display File system, Total Size and Free Size of in partitions.

### Hard Disk Menu

#### Normal:

Show the *HDD Health Index* according to S.M.A.R.T result.

HDD Health Index	Condition
 Healthy	HDD status will be healthy if all status of items are normal.
 Warning	HDD status is in warning state if there are more than one warning item.
 Danger	HDD status is in danger state if there are more than one danger item.
 Not Support	HDD does not support this function.

### Advanced :

Normal Advanced						
ID	Description	Data	Cur...	W...	Thr...	Sta...
1	Read Error Rate	0	100	100	50	OK
2	Throughput Performance	0	100	100	50	OK
3	Spin-Up Time	1011	100	100	1	OK
4	Start/Stop Count	37...	100	100	0	OK
5	Reallocated Sectors Co...	0	100	100	50	OK
7	Seek Error Rate	0	100	100	50	OK
8	Seek Time Performance	0	100	100	50	OK


There were 46 attributes from S.M.A.R.T to determine the *HDD health Index*.

Item's status depends on 3 main values: A: threshold, B: worst, and C: current value. The rule of judging conditions as stated in the following items:

### CPU

Information of the main CPU: **CPU Name**, **CPU Tag**, **Cores Number**, **Max clock Speed** and **Current Clock Speed**.

Super POSH will auto detect the maximum temperature of CPU, and display on the following table:

Display	Status	Percentage of limit temperature	Color
	Normal	Under 69%	Green
	Warning	70~89%	Orange
	Danger	90~100%	Red

### RAM:

Information of main RAM: **Total Memory Size**, **Free Memory Size**, **Percentage of used RAM** and **Usage Processes Number**.

---

### Warning:

If the status of HDD and CPU is *Danger*, a warning window will pop up on the POSH icon.



### Setting page



**A:** Show “about” in the top area. Include: Icon, Version, release date and information of every pages.

**B:** Setting Options:

Advanced setting of super POSH.

Options	Description	Status
ToolTip	Whether show ToolTip and Warning message	ON/ OFF
Refresh time	Refresh battery status time <b>* Refresh time would affect synchronized time with OS and discharge time.</b>	1,2,3,5,10,30sec, 1,2,3,5min

**C:** Company information:

A customized area.

Depend on the definition of customer. Show Company name, email, address...etc. Logo dimension (pixels): 350 x 80

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# Chapter

8





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## **Troubleshooting**

Your computer has been fully tested and complies with the system specifications before shipping. However, incorrect operations and/or mishandling may cause problems.

This chapter provides a reference for identifying and correcting common hardware and software problems that you may encounter.

When you encounter a problem, you should first try to go through the recommendations in this chapter. Instead of returning the computer and waiting for repair, you may easily solve the problems by considering the following scenarios and possible solutions. If the error continues, contact your reseller for service information.

Before taking further actions, consider the following suggestions:

- Check to see if the problem persists when all the external devices are removed.
- Check to see that the blue light indicator on the AC adapter is lit.
- Check to see the power cord is properly plugged to the wall outlet and to the computer.
- Check to see the power indicator of the computer is on.
- Check to see if your keyboard is operational by pressing and holding any key.
- Check for any incorrect or loose cable connections. Make sure the latches on the connectors latch securely on to the receptor end.
- Be sure you have not performed an incorrect setting on the hardware devices in the BIOS Setup utility. A faulty setting may cause the system to misbehave. If you are not sure of the changes you made, try to restore all the settings to factory defaults.

- 
- Be sure all the device drivers are installed properly. For example, without the audio driver properly installed, the speakers and microphone will not work.
  - If external devices such as USB cameras, scanner, printer do not function correctly when connected to the system, it is usually the device's own problem. Consult the device's manufacturer first.
  - Some software programs, which have not gone through rigorous coding and testing, may cause problems during your routine use. Consult the software vendor for problem solving.
  - Legacy peripheral are not plug-and-play capable. You need to restart the system with these devices powered up and connected first.
  - Be sure to go to BIOS SETUP and load DEFAULT SETTING after BIOS re-flash.

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# Chapter

# A



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## **Specification**

### **O.S.**

- Supports Windows 7 Home Premium

### **CPU**

- Support Intel Sandy Bridge SV Dual Core CPU (32nm process ), rPGA Type
  - Frequency (no turbo boost function)  
i3-2310M (2.1GHz)
  - Frequency (Base/Turbo boost)  
i5-2410M (2.3GHz / 2.9GHz ; 2.6GHz)  
i5-2520M (2.5GHz / 3.2GHz ; 2.9GHz)  
i5-2540M (2.6GHz / 3.3GHz ; 3.0GHz)  
i7-2620M (2.7GHz / 3.4GHz ; 3.1GHz)

### **GPU**

- AMD Seymour-XT (64bit), TDP 12-15 W (MB51IAx)
- AMD Whistler-XT (128bit), TDP 30-35W (MB50IAx)

### **Memory**

- DDRIII DDR3 speed up to 1333/1066MHz
- RAM socket \* 2
- Standard system DRAM module 4GB supported
- System DDR3 up to 8GB (8GB only for 64bits OS)

### **Core Logic**

- Intel Cougar Point (HM65)

### **Audio Codec**

- Realtek ALC269Q-GR

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### ***Card reader (6 in 1)***

- Support SD / SDXC / SDHC / MS / MMC / MS Pro Memory Card

### ***LAN Controller***

- Supports 10/100/1,000Mb/Sec
- PCI-E interface

### ***WLAN/Bluetooth Combo***

- WiFi + Bluetooth combo solution module
- WLAN : IEEE802.11b/g/n, 1TX1R, PCI-e interface
- Bluetooth 3.0+HS (High Speed) with Motorola AP (Need to enable WLAN & BT at the same time), USB interface
- Support Half-MiniCard (HMC) type only

### ***Camera CCD (Optional)***

- Support 1.3M HD/1.3M camera

### ***Keyboard***

- 339.7mm length skirt type KB

### ***Pointing Device***











- PS2 Touch Pad with 2 buttons
- Support gesture function

### ***LCD***




- 15.6" HD(high definition), resolution 1366 x 768
- Support 16:9 5.2mm thickness LED panel

### ***Battery Pack***



- 4 cell, 2200mAh
  - SIMPLO MB50-4S2200-S1B1
  - Gallopwire MB50-4S2200-G1L3
- 6 cell, 4400mAh
  - SIMPLO MB50-3S4400-S1B1
  - Gallopwire MB50-3S4400-G1L3
- 6 cell, 5200mAh

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-  SIMPLO MB50-3S5200-S1B1
  -  SIMPLO MB50-3S5200-S1L5
  -  Gallopwire MB50-3S5200-G1L5
  -  8 cell, 4400mAh
  -  SIMPLO MB50-4S4400-S1B1
  -  Gallopwire MB50-4S4400-G1L3
  -  8 cell, 5200mAh
  -  SIMPLO MB50-4S5200-S1B1
  -  SIMPLO MB50-4S5200-S1L5
  -  Gallopwire MB50-4S5200-G1L5





### ***AC-Adapter***

-  Automatics Voltage adjustment between 100 and 240VAC, 50/60Hz, LV5 -19V, 90 Watts. 3 Pin/2 Pin
-  Delta Electronic, Inc.  
ADP-90SB AB(90W, 2pin)  
ADP-90SB BB(90W, 3pin)
-  HUNTKEY ELECTRONIC CO., LTD  
HKA09019047-8D(90W, 2PIN)  
HKA06519047-6D(90W, 3PIN)



### ***Speaker/MIC***

-  Build-in 2 speakers, 1.5W 4Ω
-  Internal Microphone support

### ***BIOS***

-  Supports PnP, ACPI 3.0
-  Support external USB flash memory card boot up.
-  Be with Phoenix BIOS and 4MB flash ROM
-  Phoenix Secured core with UEFI support

### ***Power Management (default: Silent mode)***

-  Proprietary Technology of Battery Life and System performance Extension.
-  Support Silent Mode

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### ***Physical Outline***

- Dimension:  
375.8mm x 253mm x 34.37~40.06mm (w/ rubber foot)  
375.8mm x 253mm x 30.04~36.32mm (w/o rubber foot)
- Weight:  
2.3 Kg w/ 4 cell battery  
2.4 Kg w/ 6 cell battery  
2.5 Kg w/ 8 cell battery

### ***EMI***

- CE/CCC

### ***RF***

- CE, R&TTE report/document

### ***Safety***

- CB/CCC