# Acer

## Ferrari 1000
## Service Guide

Service guide files and updates are available on the ACER/CSD web.   For more information, please refer to http://csd.acer.com.tw

# Revision History

Please refer to the table below for the updates of notebook Ferrari 1000 service guide.

| Date | Chapter | Updates |
| --- | --- | --- |
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|  |  |  |
|  |  |  |

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# Conventions

The following conventions are used in this manual:

| | |
|---|---|
| SCREEN MESSAGES | Denotes actual messages that appear on screen. |
| NOTE | Gives bits and pieces of additional information related to the current topic. |
| WARNING | Alerts you to any damage that might result from doing or not doing specific actions. |
| CAUTION | Gives precautionary measures to avoid possible hardware or software problems. |
| IMPORTANT | Reminds you to do specific actions relevant to the accomplishment of procedures. |

# Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reason, if a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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# System Specification

## Specification

### Operating System

- Windows Vista™ Capable

- Windows Vista™ Premium Ready

- Genuine Windows® XP Professional x 64 Edition

- Genuine Windows® XP Professional (Service Pack 2)

- Genuine Windows® XP Home Edition (Service Pack 2)

- Genuine Windows® XP Media Center Edition 2005

### Platform

- AMD Turion™ 64 X2 dual-core TL-52/TL-56/TL-60 (1.6/1.8/2.0GHz, 2 x 512KB L2 cache) or TL-50 (1.6GHz, 2 x 256KB L2 cache) processor, supporting AMD PowerNow!™ Technology, AMD HyperTransport™ Technology and Enhanced Virus Protection technology

- Simultaneous 32-bit and 64-bit Windows® compatible support

- ATI Radeon® Xpress 1150 chipset

### System Memory

- Up to 2GB of DDR2 667MHz memory, upgradeable to 4GB using two soDIMM modules (dual-channel support)

### Display and Graphics

- 12.1" WXGA 200-nit Acer CrystalBrite™ high-brightness TFT LCD, 1280 x 800 pixel resolution, 16/10 viewing ratio, supporting simultaneous multi-window viewing on dual displays via Acer GridVista™

- 12.1" WXGA 200-nit high-brightness TFT LCD, 1200 x 800 pixel resolution, 16/10 viewing ratio, supporting simultaneous multi-window viewing on dual displays via Acer GridVista™

- ATI Radeon® Xpress 1150 integrated 3D graphics, with up to 512MB HyperMemory™ (up to 256MB of dedicated system memory, or up to 256MB of shared system memory), supporting ATI PowerPlay™ 5.0, Microsoft® DirectX® 9.0, PCI Express®

- MPEG-2/DVD hardware-assisted capability

- 16.7 million colors

- Simultaneous LCD and CRT display, with LCD panel resolution at 70Hz refresh rate up to 2048 x 1536 resolution on non-interlaced CRT display

- External resolution/refresh rate:

    - 2048 x 1536: 70/60Hz

    - 1920 x 1440: 75/60Hz

    - 1600 x 1200: 100/85/75/60Hz

    - 1400 x 1050: 60Hz

---

- 1280 x 1024: 120/100/85/75/60Hz
- 1280 x 768: 60Hz
- 1024 x 768: 200/160/120/100/85/75/70/60Hz
- 800 x 600: 200/160/120/100/85/75/72/70/60Hz

## Audio

- High-Definition audio support
- S/PDIF (Sony/Philips Digital Interface) support for digital speakers
- Audio system with two built-in speakers
- MS Sound compatible
- Built-in microphone

## Storage Subsystem

- 100/120/160GB serial ATA hard disk driver
- External IEEE 1394 bus-powered 8X Slot-load DVD Super Multi double layer:
  - Read: 24X CD-RW, 24X CD-ROM, 24X CD-R, 8X DVD+R, 8X DVD-R, 8X DVD-ROM, 4X DVD+RW, 4X DVD-RW, 3X DVD-RAM, 2.4X DVD+R (double layer)
  - Write: 24X CD-R, 8X DVD+R, 8X DVD-R, 4X DVD+RW, 4X DVD-RW, 4X CD-RW, 2.4X DVD+R (double layer), 2X DVD-RAM
- 5-in-1 card reader, supporting Secure Digital (SD), MultiMediaCard (MMC), Memory Stick® (MS), Memory Stick PRO™ (MS PRO), xD-Picture Card™ (xD)

## Communication

- Acer Video Conference featuring Voice and Video over Internet Protocol (VVoIP) support via Acer OrbiCam™ and optional Acer Ferrari Bluetooth® VoIP phone
- Acer OrbiCam™ 1.3 megapixel CMOS camera (LCD panel-mounted), featuring (for selected model):
  - 225 degree ergonomic rotation
  - Acer VisageON technology
  - Acer PrimaLite technology
- Modem: 56K ITU V.92 with PTT approval; Wake-on-Ring ready
- LAN: Gigabit Ethernet; Wake-on-LAN ready
- WPAN: Bluetooth® 2.0 + EDR (Enhanced Data Rate)
- WLAN: Acer InviLink™ Nplify™ 802.11b/g or 802.11a/b/g Wi-Fi CERTIFIED™ solution, supporting Acer SignalUp™ wireless technology

## Input Devices

- 84/85-key Acer TouchFine™ keyboard
- Touch pad pointing device
- 12 function keys, four cursor keys, two Windows® keys, hotkey controls, embedded numeric keypad, international language support
- Four easy-launch buttons: Empowering Key, email, Internet and user-programmable button
- Two front-access communication switches: WLAN and Bluetooth® (two-way spring switch)

## I/O Interface

- 124-pin Acer ezDock
- PC Card slot (Type II)
- 5-in-1 card reader (SD/MMC/MS/MS PRO/xD)
- Three USB 2.0 ports
- 6-pin IEEE 1394 port
- Fast Infrared (FIR) port
- External display (VGA) port
- S-video/TV-out (NTSC/PAL) port
- Headphones/speaker/line-out jack with S/PDIF support
- Microphone-in jack
- Line-in jack
- Ethernet (RJ-45) port
- Modem (RJ-11) port
- DC-in jack for AC adapter

## Power Subsystem

- ACPI 2.0 CPU power management standards: Stand-by and Hibernation power-saving modes support
- 57W 5200mAh 6-cell Li-ion battery pack and 22W 2000mAh 3-cell Li-Ion battery pack
- Five-hour battery life with two battery packs
- Acer QuicCharge™ technology:
    - 80% charge in 1 hour
    - 2-hour rapid charge system-off
    - 2.5-hour charge-in-use
- 65W AC adapter

## Security

- Acer DASP (Disk Anti-Shock Protection)
- Acer GraviSense and Acer Anti-Theft HDD protection technologies
- Kensington lock slot
- BIOS user and supervisor passwords

## Software

- Acer Empowering Technology
    - Acer ePower Management
    - Acer ePresentation Management
    - Acer eDataSecurity Management
    - Acer eRecovery Management
    - Acer eSettings Management
    - Acer ePerformance Management
- Acer GridVista™

- Acer Launch Manager
- Norton AntiVirus™
- CA eTrust® Antivirus 64-bit Edition
- Adobe® Reader®
- CyberLink® PowerDVD™
- NTI CD-Maker™
- Acer Voice Connection Manager
- Acer OrbiCam

## Dimensions and Weight

- 302.3 (W) x 221.28 (D) x 20.8/34.5 (H) mm (11.90 x 8.72 x 0.82/1.36 inches)
- 1.70 kg (3.63 lbs.) with 6-cell Li-Ion battery pack
- 1.55 kg (3.3 lbs.) with 3-cell Li-Ion battery pack

## Environment
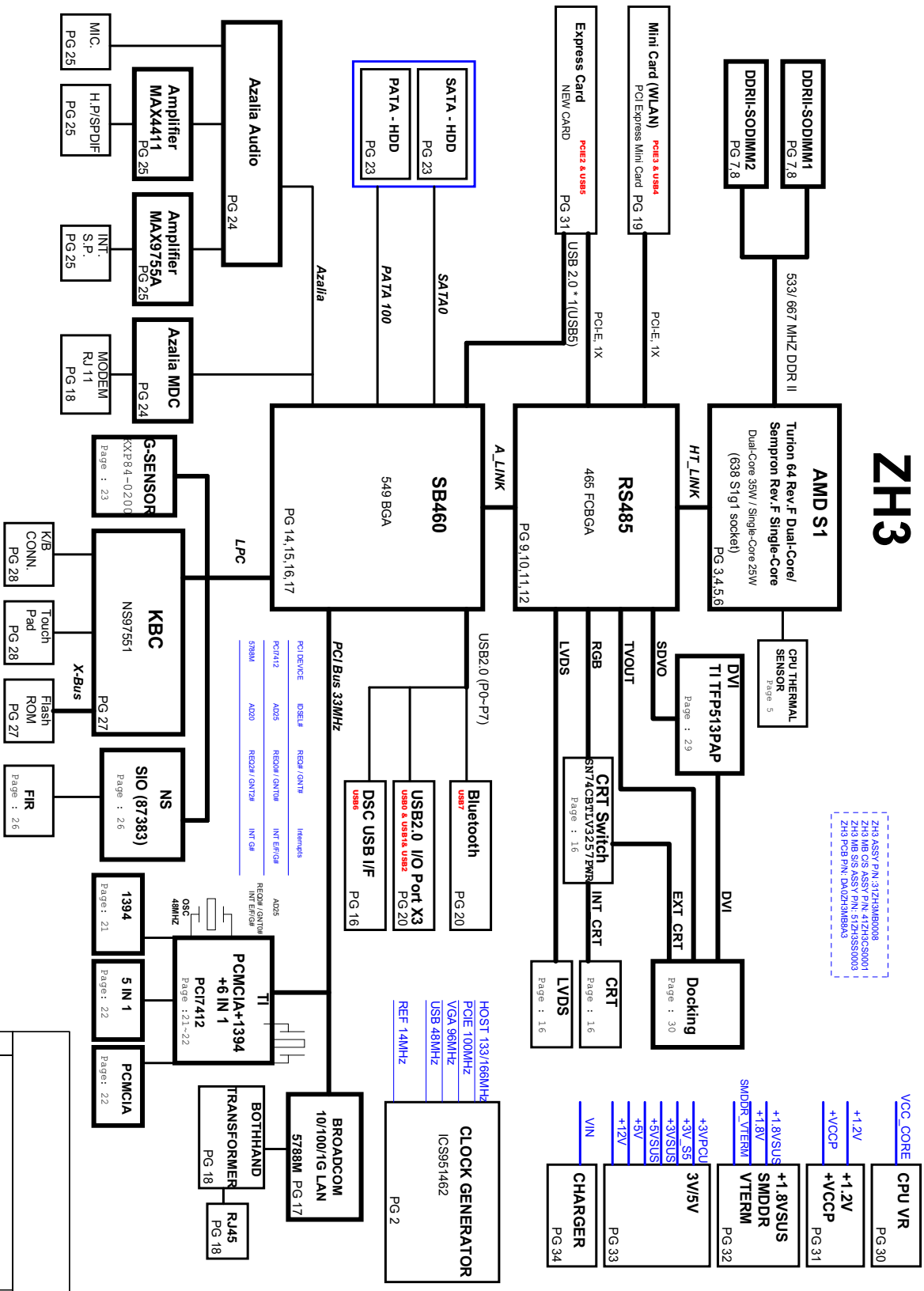
- Temperature:
    - Operating: 5 ºC to 35 ºC
    - Non-operating: -20 ºC to 65 ºC
- Humidity (non-condensing):
    - Operating: 20% to 80%
    - Non-operating: 20% to 80%

**Note:** This specifications listed above are for reference only. The exact configuration depends on the model purchased.

**Warning!**For safety reasons, do not use non-compliant parts when you add or change components.

# Block Diagram

# ZH3

MIC. PG 25

H.P/SPDIF PG 25

Amplifier MAX4411 PG 25

INT. S.P. PG 25

Amplifier MAX9755A PG 25

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MODEM RJ.11 PG 18

Azalia MDC PG 24

Express Card NEW CARD PG 31

PCIE2 & USB5

Mini Card (WLAN) PCI Express Mini Card PG 19

PCIE3 & USB4

SATA - HDD PG 23

PATA - HDD PG 23

DDRII-SODIMM2 PG 7,8

DDRII-SODIMM1 PG 7,8

533/ 667 MHZ DDR II

USB 2.0 * 1 (USB5)

PCI-E 1X

PCI-E 1X

Azalia

PATA 100

SATA0

AMD S1
Turion 64 Rev.F Dual-Core/
Sempron Rev.F Single-Core
Dual-Core 35W / Single-Core 25W
(638 S1g1 socket)
PG 3,4,5,6

HT_LINK

A_LINK

RS485
465 FCBGA
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SB460
549 BGA
PG 14,15,16,17

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G-SENSOR KXP84-02010 Page : 23

K/B CONN. PG 28

Touch Pad PG 28

Flash ROM PG 27

FIR Page : 26

KBC NS97551 PG 27

SIO (87383) Page : 26

LPC

X-Bus

PCI/Bus 33MHz

USB2.0 (P0-P7)

PCI DEVICE

PCI7412

5788M

IDSEL#

AD25

REQ0# / GNT0#

REQ1# / GNT1#

REQ2# / GNT2#

REQD# / GNTD#
INT E/F/G#

AD25

Interrupts

INT E/F/G#

INT G#

LVDS

RGB

TVOUT

SDVO

DVI
TI TFP513PAP
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CRT Switch
SN74CB1LV3257PWR
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INT CRT

EXT CRT

DVI

DSC USB I/F PG 16

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USB7

USB2.0 I/O Port X3
USB0 & USB1& USB2
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5 IN 1 Page: 22

PCMCIA Page: 22

PCMCIA+1394
+6 IN 1
PCI7412
Page : 21-22

OSC 48MHz

BOTHHAND TRANSFORMER PG 18

RJ45 PG 18

BROADCOM
10/100/1G LAN
5788M PG 17

CLOCK GENERATOR
ICS951462
PG 2

HOST 133/166MHz
PCIE 100MHz
VGA 96MHz
USB 48MHz

REF 14MHz

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Docking Page : 30

VCC_CORE

+1.2V

+VCCP

CPU VR PG 30

+1.2V
+VCCP PG 31

+1.8VSUS
SMDDR
VTERM PG 32

SMDDR_VTERM
+1.8V
+1.8VSUS

VIN
+12V
+5V
+5VSUS
+3VSUS
+3V_S5
+3VPCU

3V/5V PG 33

CHARGER PG 34

ZH3 ASSY P/N :31ZH3MB0008
ZH3 MB C/S ASSY P/N :41ZH3CS0001
ZH3 MB S/S ASSY P/N :51ZH3SS0003
ZH3 PCB P/N: DA0ZH3MB6A3

# Outlook Tour

## Front View



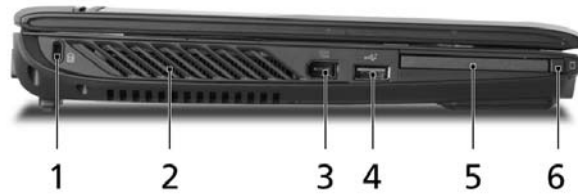| # | Item | Description |
|---|------|-------------|
| 1 | Built-in camera | 1.3 megapixel web camera for video communication. |
| 2 | Display screen | Also called Liquid-Crystal Display (LCD), displays computer output. |
| 3 | Power button | Turns the computer on and off. |
| 4 | Keyboard | Serves for entering data into your computer. |
| 5 | Palmrest | Comfortable support area for your hands when you use the computer. |
| 6 | Touchpad | Touch-sensitive pointing device which functions like a computer mouse |
| 7 | Click buttons (left and right) | The left and right buttons function like the left and right mouse buttons; the center button serves as a four-way scroll button. |
| 8 | Status indicators | Light-Emitting Diodes (LEDs) that light up to show the status of the computer's functions and components. |
| 9 | Easy-launch buttons | Buttons for launching frequently used programs. |
| 10 | Microphone | Internal microphone for sound recording. |

# Closed Front View
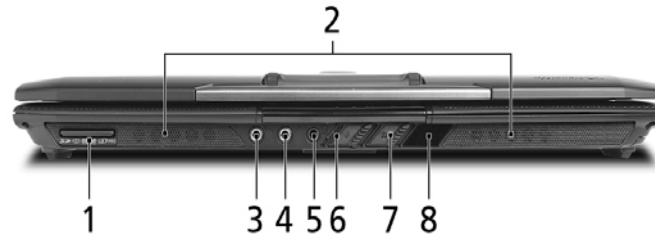


| # | Icon | Item | Description |
|---|------|------|-------------|
| 1 | MS  PRO  MULTIMEDIACARD  SD  xD | 5-in-1 card reader | Accepts Memory Stick (MS), Memory Stick Pro (MS PRO), Multi Media Card (MMC), Secure Digital (SD) and xD-Picture Card (xD) (manufacturing option). |
| 2 | N/A | Speakers | Left and right speakers deliver stereo audio output. |
| 3 | ((↔)) | Line-in jack | Accepts audio line-in devices (e.g., audio CD player, stereo walkman). |
| 4 | | Microphone-in jack | Accepts input from external microphones. |
| 5 | SPDIF | Headphones/speaker/ line-out jack with S/ PDIF support | Connects to audio line-out devices (e.g., speakers, headphones). |
| 6 | | Bluetooth communication button/indicator | Enables/disables the Bluetooth communication. Indicates the status of Bluetooth communication' |
| 7 | | Wireless communication button/indicator | Enables/disables the wireless function. Indicates the status of wireless LAN communication. |
| 8 | N/A | Infrared port | Interfaces with the infrared devices (e.g., infrared printer and IR-aware computer). |

# Left View



| # | Icon | Item | Description |
|---|------|------|-------------|
| 1 | 🔒 | Kensington lock slot | Connects to a Kensington-compatible computers security lock. |
| 2 | N/A | Ventilation slots | Enable the computer to stay cool, even after prolonged use. |
| 3 | 1394 | 6-pin IEEE 1394 port | Connects to IEEE 1394 devices. |
| 4 | ⛐ | USB 2.0 ports | Connect to USB 2.0 devices (e.g., USB mouse, USB camera). |
| 5 | ▯ | PC Card slot | Accepts one Type II PC Card. |
| 6 | N/A | PC Card slot eject button | Ejects the PC Card from the slot. |
| 4 | N/A | Optical disk access indicator | Lights up when the optical drive is active. |
| 5 | N/A | Slot-load optical drive eject button | Ejects the optical disk from the drive. |
| 6 | N/A | Slot-load optical drive | Internal optical drive; accepts CDs or DVDs. |

# Right View



| # | Icon | Item | Description |
|---|------|------|-------------|
| 1 | ⛐ | USB 2.0 ports | Connect to USB 2.0 devices (e.g., USB mouse, USB camera). |
| 2 | ⛓ | Ethernet (RJ-45) port | Connects to an Ethernet 10/100-based or 10/100/1000-based networks. |
| 3 | ▭ | Modem (RJ-11) port | Connects to a phone line. |
| 4 | ▭ | External display (VGA) port | Connects to an external display device (e.g., external monitor, LCD projector). |

# Rear View



| # | Icon | Item | Description |
|---|------|------|-------------|
| 1 |  | 124-pin Acer ezDock connector | Connects to Acer ezDock. |
| 2 | N/A | Battery | Powers the computer. |
| 3 |  | DC-in jack | Connects to an AC adapter. |

# Base View
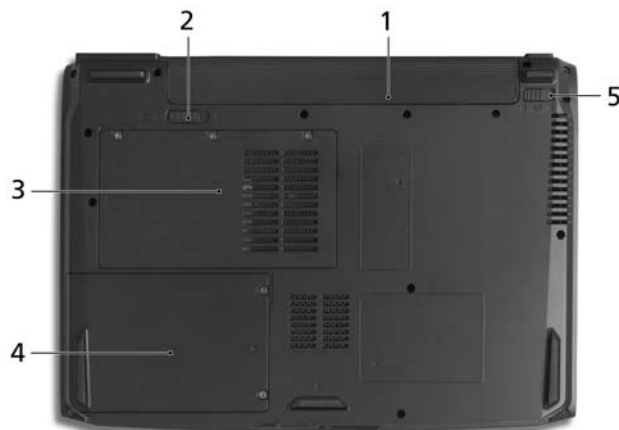


| # | Item | Description |
|---|------|-------------|
| 1 | Battery bay | Houses the computer's battery pack. |
| 2 | Battery release latch | Releases the battery for removal. |
| 3 | Memory compartment | Houses the computer's main memory. |
| 4 | Hard disk bay | Houses the computer's hard disk (secured with screws). |
| 5 | Battery lock | Locks the battery in position. |

# Mouse

## Upper View



| # | Item | Description |
|---|------|-------------|
| 1 | Left click button | Press the left button to perform selection and execution functions. |
| 2 | Scroll wheel | Scrolls up or down a page. The scroll wheel mimics your cursor pressing on the right scroll bar of Windows applications. |
| 3 | Right click button | Press the right button to perform selection and execution functions. |
| 4 | Status indicator | Light-Emitting Diodes (LEDs) that light up to show the status of the computer's functions and components. |

## Bottom View



| # | Icon | Item | Description |
|---|------|------|-------------|
| 1 |  | Bluetooth button | Press the button to turn on Bluetooth communication. |
| 2 | N/A | Power button | Turns the mouse on and off. |

# External Optical Disk Drive

## Front View



| # | Item | Description |
|---|------|-------------|
| 1 | Eject button | Ejects the optical disk when the computer is on. |

## Connecting the Optical Drive



Please connect the 1394 cable to the 1394 port. Press the drive eject button to eject the optical disk when the computer is on.

# Indicators

The computer has several easy-to-read status indicators.



| Icon | Item | Description |
|------|------|-------------|
| 🔒A | Caps Lock | Lights up when Caps Lock is activated. |
| 🔒1 | Num Lock | Lights up when Num Lock is activated. |
| ◆ | HDD | Indicates when the hard disk drive is active. |
| 💡 | Power | Lights when the computer is on. |
| ✳ | Bluetooth | Indicates the status of Bluetooth communication |
| ⊘ | Wireless LAN | Indicates the status of wireless LAN communication |
| 🔋 | Battery | Lights when the battery is being charged. |

**Note:** The light shows amber when the battery is charging. The light shows green when the system is under AC mode.

# Easy-launch Buttons

There are several conveniently located easy-launch buttons. They are one user-programmable button, web browser button, mail button, and Acer Empowering Key $e$. Press $e$ to run the Acer Empowering Technology. Although the mail and web browser buttons are pre-set to E-mail and Internet programs, they can be redefined by users. To set the web browser, mail and programmable buttons, run the Acer Launch Manager.



| Easy-launch button | Default application |
|---|---|
| $e$ | Acer Empowering Technology (user-programmable) |
| Mail | E-mail application (user-programmable) |
| Web browser | Internet browser (user-programmable) |
| P | User-programmable |

# Touchpad

The built-in touchpad is a pointing device that senses movement on its surface. This means the cursor responds as you move your finger across the surface of the touchpad. The central location on the palmrest provides optimum comfort and support.

## Touchpad Basics

The following items will show you how to use the touchpad.



- Move your finger across the touchpad **(2)** to move the cursor.
- Press the left **(1)** and right buttons located beneath the touchpad to perform selection and execution functions. These two buttons are similar to the left and right buttons on a mouse. Tapping on the touchpad is the same as clicking the left button.

| Function | Left button (1) | Right button | Main touchpad (2) |
|---|---|---|---|
| Execute | Quickly click twice. | X | Tap twice (at the same speed as double-clicking a mouse button). |
| Select | Click once | X | Tap once |
| Drag | Click and hold. Then slide your finger across the touchpad to drag the cursor over the selection. | X | Tap twice (at the same speed as double-clicking a mouse button); rest your finger on the touchpad on the second tap and drag the cursor. |
| Access context menu | X | Click once | X |
| Scroll | X | X | Tap the arrows to move up/down. |

**Note:** Keep your fingers, as well as the surface of the touchpad dry and clean. The touchpad is sensitive to your finger movements: the lighter the touch, the better the response. Tapping hard will not increase the touchpad's responsiveness.

# Using the Keyboard

The full-sized keyboard includes an embedded numeric keypad, separate cursor, lock, Windows, function and special keys.

## Lock keys and Embedded Numeric Keypad

The keyboard has three lock keys which you can toggle on and off.

| Lock Key | Description |
|---|---|
| Caps Lock | When Caps Lock is on, all alphabetic characters are typed in uppercase. |
| Num Lock <Fn> + <F11> | When Num Lock is on, the right hand side numeric keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). When Num Lock is off, the keys assume cursor and other shortcut functions. |
| Scroll Lock <Fn> + <F12> | When Scroll Lock is on, the screen moves one line up or down when you press the up or down arrow keys respectively. scroll Lock does not work with some applications. |

The embedded numeric keypad functions like a desktop numeric keypad. It is indicated by small characters located on the upper right corner of the keycaps. To simplify the keyboard legend, cursor-control key symbols are not printed on the keys.

| Desired access | Num Lock on | Num Lock off |
|---|---|---|
| Number keys on embedded keypad | Type numbers in a normal manner. | N/A |

| Desired access | Num Lock on | Num Lock off |
|---|---|---|
| Cursor-control keys on embedded keypad | Hold **<Shift>** while using cursor-control keys. | Hold **<Fn>** while using cursor-control keys. |
| Main keyboard keys | Hold **<Fn>** while typing letters on embedded keypad. | Type the letters in a normal manner. |

# Windows keys



The keyboard has two keys that perform Windows-specific functions.

| Key | Icon | Description |
|---|---|---|
| Windows key | | Press alone. This key has the same effect as clicking on the Windows Start button. It launches the Start menu. It can also be used with other keys to provide a variety of functions: |
| | | + **<Tab>**: Activates the next Taskbar button. |
| | | + **<E>**: Opens the My Computer window. |
| | | + **<F1>**: Opens Help and Support. |
| | | + **<F>**: Opens the Find (All Files dialog box). |
| | | + **<R>**: Opens the Run dialog box. |
| | | + **<M>**: Minimizes all windows. |
| | | **<Shift>** + + **<M>**: Undoes the minimize all windows action. |
| Application key | | This key has the same effect as clicking the right mouse button. It opens the application's context menu. |

# Hotkeys

The computer employs hotkeys or key combinations to access most of the computer's controls like screen brightness, volume output and the BIOS utility. To activate hotkeys, press and hold the **<Fn>** key before pressing the other key in the hotkey combination.



| Hot Key | Icon | Function | Description |
|---|---|---|---|
| <Fn> + <F1> | ? | Hot key help | Displays help on hotkeys. |
| <Fn> + <F2> |  | Acer eSettings | Launches the Acer eSettings in Acer Empowering Technology. |
| <Fn> + <F3> |  | Acer ePower Management | Launches the Acer ePower Management in Acer Empowering Technology. |
| <Fn> + <F4> | $Z^z$ | Sleep | Leads the computer to Sleep mode. |
| <Fn> + <F5> |  | Display toggle | Switches the display output between the display screen, external monitor (if connected) and both. |
| <Fn> + <F6> |  | Screen blank | Turns off the display screen backlight to save power. Press any key to return. |
| <Fn> + <F7> |  | Touchpad toggle | Turns the internal touchpad on and off. |
| <Fn> + <F8> |  | Speaker toggle | Turns the speakers on and off. |
| **<Fn> + <↑>** |  | Volume up | Increases the sound volume. |
| **<Fn> + <↓>** |  | Volume down | Decreases the sound volume. |
| **<Fn> + <→>** |  | Brightness up | Increases the screen brightness. |
| **<Fn> + <←>** |  | Brightness down | Decreases the screen brightness. |

# Special keys

You can locate the Euro symbol and the US dollar sign on the upper-center and/or bottom-right side of the keyboard.



### The Euro Symbol

1. Open a text editor or word processor.
2. Hold **<Alt Gr>** key then press the number **<5>** key on the upper-center side of the keyboard.

   **Note:** Some fonts and software do not support the Euro symbol. Please refer to www.microsoft.com/typography/faq/faq12.htm for more information.

### The US Dollar Sign

1. Open a text editor or word processor.
2. Hold **<Shift>** and then press the US dollar sign on the **<4>** key on the upper-center side of the keyboard.

   **Note:** This function varies according to the language settings.

# Using the Bluetooth Optical Mouse

The Ferrari notebook comes with a Bluetooth optical mouse.

## Installation

Installation of the Bluetooth mouse is simple. Enable Bluetooth functionality by pressing the Bluetooth communication button on the front panel.

1. Turn the mouse upside down. Make sure the power switch is ON. Press and hold the **Connect** button for three seconds. The mouse is now in pairing mode and is ready to connect to the computer.

2. On the notebook, open **My Bluetooth Places** by double-clicking on the Bluetooth icon.

3. From the menu bar, select **Bluetooth** and then **Bluetooth Setup Wizard**.

4. Select **I want to find a specific Bluetooth device and configure how this computer will use its devices**. Then click **Next**.

5. From the drop-down menu, select **Show mice, keyboards and joysticks**, and then click on the **Search Again** button.

6. The Acer mouse will be discovered. Click on the Acer mouse icon, and then click **Next**.

7. The services that are available from the device will be listed. Select **Bluetooth Mouse** and click **Finish**.

8. Wait while the mouse is installed. This may take several seconds.

9. The mouse is now connected. Move the mouse to verify the connection.

## Usage

Use the Bluetooth mouse as you would a traditional mouse. For optimal performance, use a mouse pad. Using the Bluetooth mouse on a transparent or reflective surface will inhibit the ability of the optical sensor to track the cursor.

# Acer Bluetooth® VoIP Phone

## Layout



| # | Icon | Item | Description |
|---|------|------|-------------|
| 1 | N/A | PC Card (PCMCIA) interface connector | Connects the computer's PCMCIA card interface. |
| 2 | N/A | Speaker | Speaker delivers audio output. |
| 3 | N/A | Volume up/down button | Increases/decreases the sound volume. |
| 4 | ⏻ | Power button | Turns the phone on and off. |
| 5 | ❋ | Bluetooth connection/ pairing button | Enables/disables the Bluetooth function. |
| 6 | 🔊 | Speakerphone button | Enables/disables the speakerphone function. |
| 7 | N/A | Microphone | Internal microphone for sound recording. |
| 8 | N/A | Flip | Flips out internal microphone. |
| 9 | N/A | Bluetooth connection/ pairing indicator | Indicates the Bluetooth connection/pairing status. |
| 10 | N/A | Charge/Power indicator | Indicates the computer's charge/power status. |

## LED Indicators

| LED | Color | Status | Description |
|---|---|---|---|
| Bluetooth connection/ pairing indicator | Blue | Blinking fast | The phone is in pairing mode. |
| | | Blinking slow | The phone is linking with the notebook. |
| | | Off | The phone is not paired or linked with the notebook. |
| Charge/Power indicator | Amber | On | The phone is charging. |
| | | Off | The phone is fully-charged. |
| | | Blinking | The phone needs to be recharged. |

## Charging the Phone

You need to charge the phone before initial use. It takes approximately four hours for a full charge. To charge the phone:

1. Turn the notebook on.
2. Locate the PC Card (PCMCIA) slot.
3. Insert the phone to the slot label up. Make sure that the phone is completely pushed on the slot.
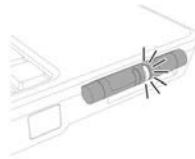
> **Note:** The notebook detects the device and displays a **New Device Wizard** window. Click **No**, **not this time**, then close the window.

4. The power/charge indicator lights up during charge and turns off when the battery is full. Eject the phone from the PC Card slot when charging is finished.

# Using Acer Voice Connection Manager (VCM)

## Installing Acer VCM

> **Note:** Quit all applications before installing Acer VCM. The Acer VCM requires system restart after installation.

Please follow the steps below to install the Acer VCM application in the notebook.

1. Place the Acer VCM installation CD to the optical drive.
2. Explore the installation CD, then locate and double-click on the **AcerVCM Setup.exe** file to start installation.
3. Follow screen instructions to proceed.

## Info Bar



After restart, the Acer VCM displays an info bar that provides information on the current audio device and IM (Instant Messaging) service status. Press (X) to close this bar.

## Acer VCM Menu

Right-click the Acer VCM icon on the system tray to display a pop-up menu. You can use this menu to manage the VCM functions.
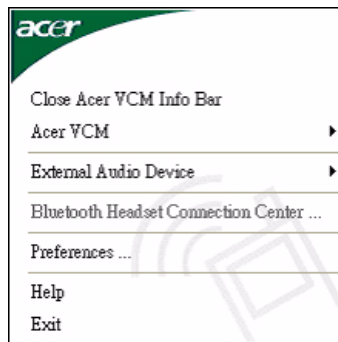


| Item | Function |
|------|----------|
| Close/Open Acer VCM Info Bar | Hides or displays the info bar. |
| Acer VCM | Enables or disables the Acer VCM. |
| External Audio Device | Allows you to select the external audio device. |
| Bluetooth Headset Connection center | Allows you to scan and connect a Bluetooth headset device to the notebook. |
| Preferences | **IM Control** tab allows you to arrange your IM priority. **General** tab allows you to set the hotkeys for audio and IM functions. |
| Help | Opens the online help file. |
| Exit | Closes the Acer VCM menu. |

# Connecting the Phone to Your Notebook

The Acer VCM Bluetooth Headset Connection Center is a convenient tool to connect the phone to your notebook.

To connect the phone to your notebook:

1. Eject the phone from the PC Card slot, if necessary, then press the phone power button for three seconds. The phone beeps twice and the charge/power LED flashes to indicate that the phone is on.

2. Press the Bluetooth connection/pairing button for three seconds to put the phone in **pair-link mode**. The phone beeps twice, and the connection/pairing and charge/power LEDs flash alternately.

3. Right-click the Acer VCM icon on the task bar, then select **Bluetooth Headset Connection Center** from the pop-up menu. If you have not paired any Bluetooth headset devices with the notebook previously, Acer VCM automatically scans all Bluetooth headset devices within range, then displays them in the **Bluetooth Headset List** with a **New** status. Otherwise, any previously paired Bluetooth headset device shows **Read to Use**.
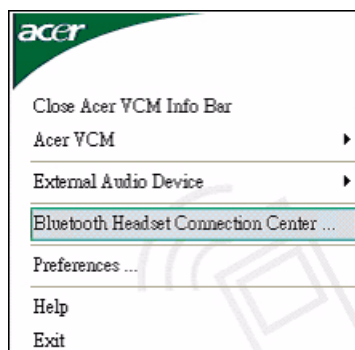


4. Click the **Acer Bluetooth VoIP Phone** from the list, then click **Connect**. Acer VCM automatically pairs the phone to the notebook, then changes the phone status to **Default Use**.
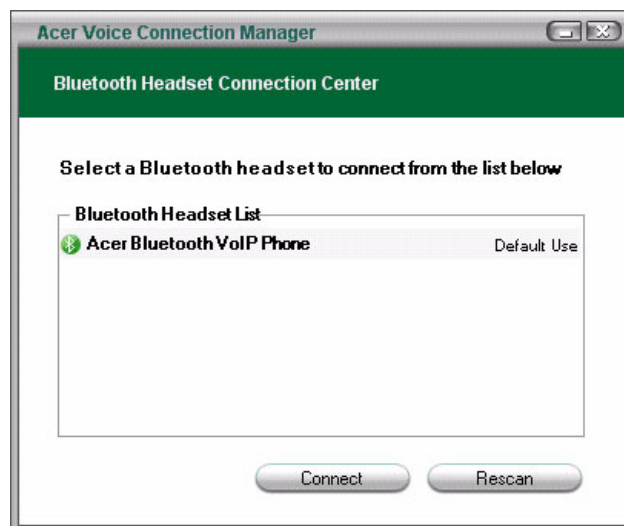


**Note:** Click Rescan if the Acer Bluetooth VoIP Phone does not appear on the list. After pairing, Acer VCM automatically connects the phone to the notebook each time you turn the phone on. There is no need to connect the phone again.

# Using the Phone

You can use the phone in handheld or hands-free (speaker phone) mode. When you receive an internet call from your instant messaging service (i.e. MSN® Messenger, Skype), press the Bluetooth connection/pairing button. The incoming call voice automatically diverts to the phone speaker so you can receive the call.

> **Note:** You can only receive/answer internet calls through the phone when it is linked to the notebook. Every time you turn the phone on, Acer VCM automatically links it to the notebook. When linked, the Bluetooth connection/pairing indicator on the phone blinks slowly.

To switch to hands-free mode, rotate the phone flip counterclockwise, then press the speaker phone button. Refer to the illustration on the right.

# Acer OrbiCam

The Acer OrbiCam is a 1.3 megapixel CMOS camera appropriately mounted on top of the LCD panel. The camera's 225-degree ergonomic rotation allows you to capture high-resolution photos or videos up front or at the back of the LCD panel. The Acer OrbiCam fully supports the Acer Video Conference technology so you transmit the best video conference quality over an instant messenger service.

## Front View
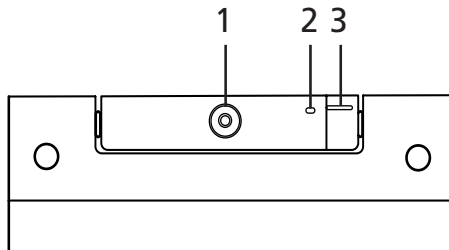


| # | Item |
|---|---|
| 1 | Lens |
| 2 | Power indicator |
| 3 | Rubber grip |

## Rotating the Acer OrbiCam

The Acer OrbiCam rotates 225 degrees counterclockwise to achieve the desired angle. Refer to the illustrations below:
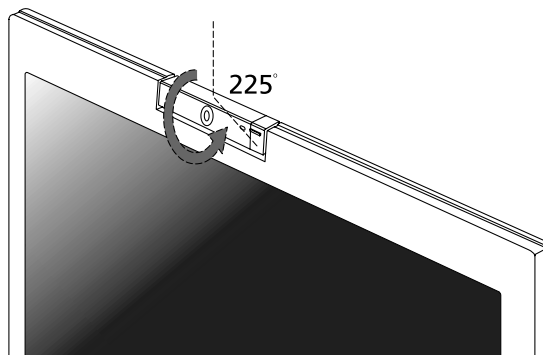


**Note:** Do NOT rotate the camera clockwise to prevent damage to the device.

For your convenience, the camera snaps 45 degrees to match the position of your face in front or at the back of the LCD panel.

---

# Launching the Acer OrbiCam

To launch the Acer OrbiCam, double-click on the Acer OrbiCam icon on the screen, or Click Start > All Programs > Acer > Acer OrbiCam. The Acer OrbiCam capture window will appear as below.
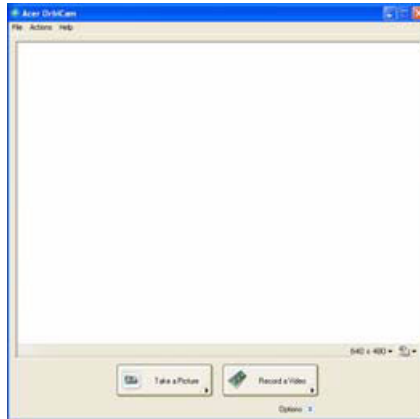


# Changing the Acer OrbiCam Settings

**Resolution**

To change the capture resolution, click the displayed resolution at the bottom right corner of the capture window, then select the desired resolution.

> **Note:** Setting the camera resolution to 640 x 480 or larger does not change the capture window size.
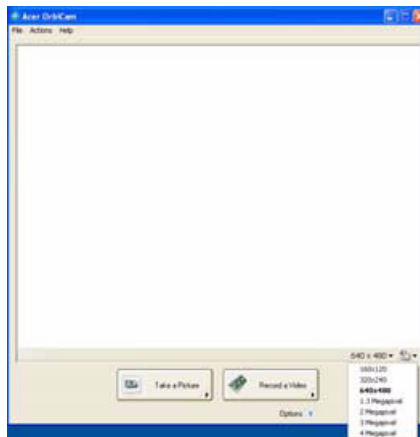
**Options**

Click **Options** to display the **Window**, **Preview**, and **Folder** tabs. Use the options to change the capture window size, preview settings, and the folder for captured photos or videos.
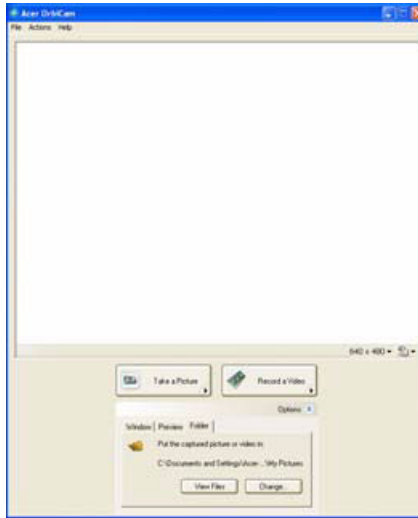


**Camera Settings**

**Basic Settings**

Click the Camera Settings icon on the bottom right corner of the capture display, then select **Camera Settings** from the pop-up menu. You can adjust the **Video**, **Audio**, and **Zoom/Face tracking** options from this window.
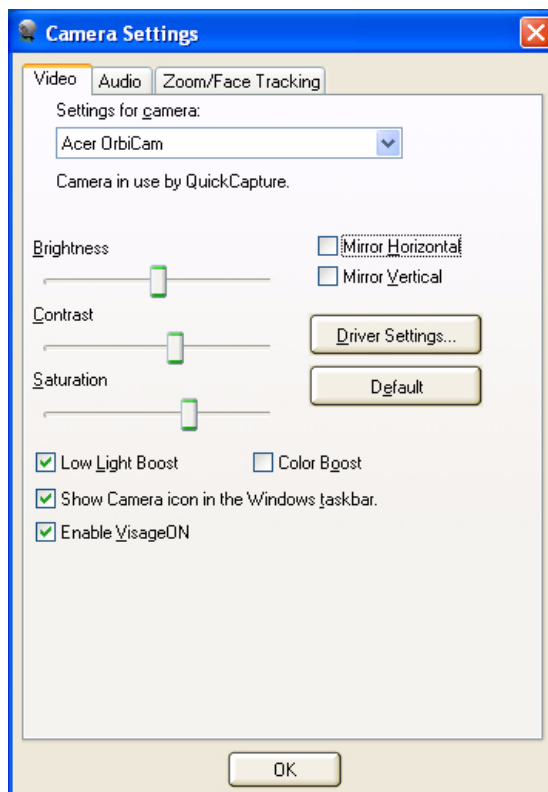
**Capture Settings**

From the Camera Settings window, click the **Driver Settings** button. The **Properties** window will appear.
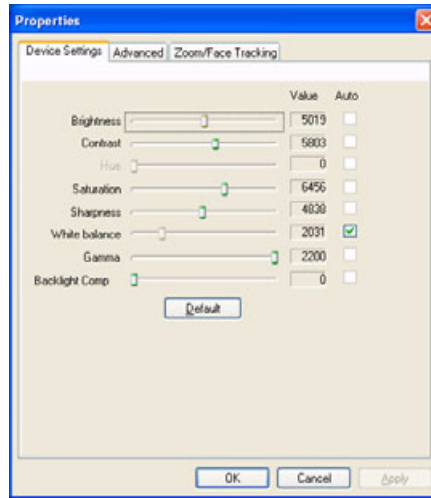


**Device Settings** allows you to change the camera brightness, contrast, hue, saturation, sharpness, etc.

**Advanced Settings** allows you to achieve gain control, implement image mirror, select image enhancements and anti-flicker settings, and turn on/off the camera indicator.

**Zoom/Face Track Settings** allows you to adjust the zoom level and turn the face tracking feature on or off.

## Capturing Photos or Videos

To capture a photo or a video clip, rotate the Acer OrbiCam to get the desired angle, then click the **Take a Picture** or **Record a Video** button. The **Windows Picture and Fax Viewer** or the **Windows Media Player** automatically launches to display or play a preview of the photo or video clip.

> **Note:** By default, all photos and videos are saved in the **My Pictures** and **My Videos** folder.

# Using the Acer OrbiCam as Webcam

The Acer OrbiCam is automatically selected as the capture device of any instant messenger (IM) application. To use the Acer OrbiCam as a webcam, open the IM service, then select the video/webcam feature. You can now broadcast from your location to an IM partner anywhere in the world.

**Enabling the Acer VisageON**

The Acer VisageON technology comes with two features: Face tracking and Video effects. The Face Tracking feature tracks your head movement and automatically centers your face in the capture window. The video effects feature allows you to select and apply an effect to your video transmissions.

> **Note:** The face tracking feature is not capable of centering your face beyond the capture window frame. Minimal head movements are tracked more efficiently.

Please follow the steps below to enable the Acer VisageON.

1. Right click on this icon, then select **VisageON** from the pop-up menu.
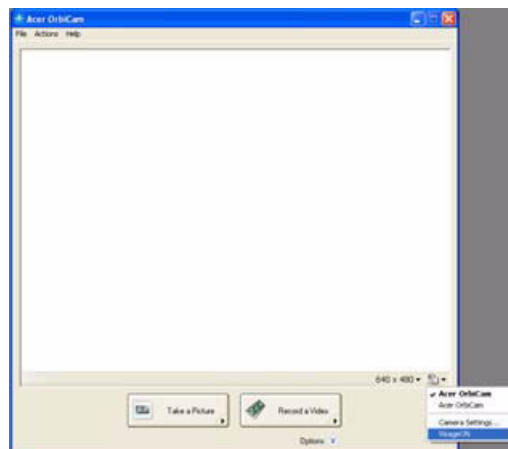


The VisageON window will appear as below:



2. Select and apply a video effect in the left section of the VisageON window. Change the face tracking settings and options in the right section.

**Using the Face Tracking Feature**

To use the face tracking feature:

1. Click the left icon down arrow button, then select Single User or Multiple Users from the pop-up menu. For multiple users, the face tracking feature automatically centers all the users' face in the capture window, otherwise the utility centers the face of the user closest to the camera.
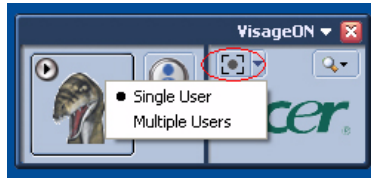


2. Click the right icon to zoom in/out or reset the current view.
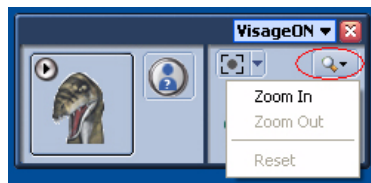


3. Click VisageON to display a menu that allows to change the configuration of the camera, face tracking and video effects settings.
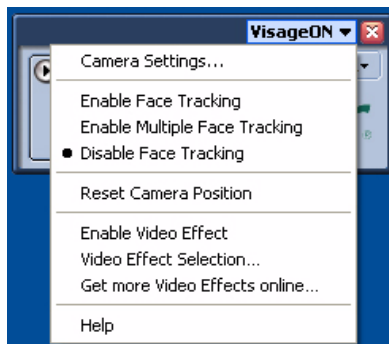


**Using Video Effects (selected models only)**

The **Video Settings** section allows you to select an avatar or accessory video effect from the list. To select an effect:

1. Click the encircled icon to display the available video effects. The **Video Effect Selection** window will appear as below.
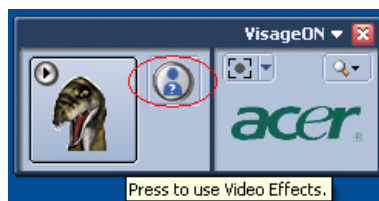
2.  Click on a video effect to use. The selected effect appears in the video effects section of the VisageON window.
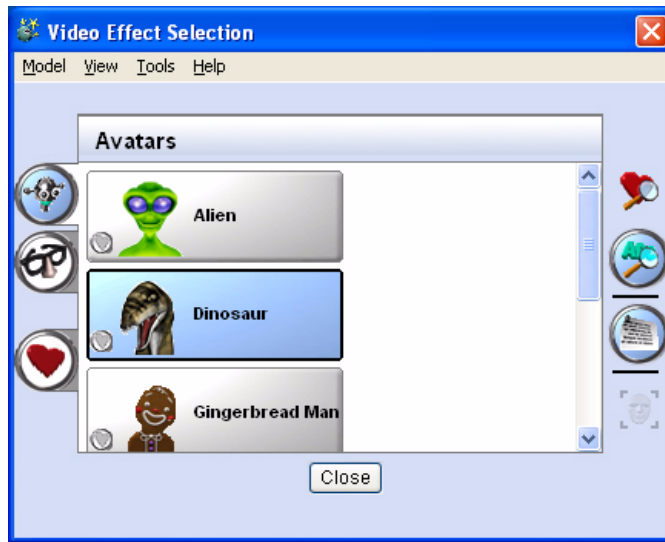


**Note:** 1. When using avatars, you may have to calibrate the face points to achieve better tracking. Follow screen instructions in the VisageON window to continue. 2. You may use video effects when using the camera for IM chat/video sessions or call conferences.

# Acer Empowering Technology

Acer's innovative Empowering Technology toolbar makes it easy to have access to the frequently used functions and manage the notebook. Displayed by default in the upper-right corner of the screen, it features the following handy utilities:

- **Acer ePower Management** extends battery power via versatile usage profiles.
- **Acer ePresentation Management** connects to a projector and adjusts dispaly settings conveniently.
- **Acer eDataSecurity Management** protects data with passwords and advanced encryption algorithms (for selected models).
- **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.
- **Acer eSettings Management** accesses system information and adjusts settings easily.
- **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry setting.



For more information, right click on the Empowering Technology toolbar, then select the Help or Tutorial function.

## Empowering Technology Password

Before using Acer eLock Management and Acer eRecovery Management, You must initialize the Empowering Technology password. Right click on the Empowering Technology toolbar and select **Password Setup** to do so. If you do not initialize the Empowering Technology password, you will be prompted to do so when running Acer eLock Management or Acer eRecovery Management for the first time.

> **Note:** If you lose your password, there is no method to reset it except by reformatting your notebook or taking your notebook to an Acer Customer Service Center. Be sure to remember or write down your password.

# Acer ePower Management

Acer ePower Management features a straightforward user interface. To launch it, select Acer ePower Management from the Empowering Technology interface.

### AC Mode (Adapter Mode)

The default setting is Maximum Performance. You can adjust CPU speed, LCD brightness and other settings, or click on buttons to turn the following functions on/off: wireless LAN, Bluetooth, CardBus, fireware (1394), wired LAN and optical device if supported.

### DC Mode (Battery Mode)

There are four pre-defined profiles: Entertainment, Presentation, Word Processing, and Battery Life. You can also define up to three of your own.

### To Create a New Power Profile

1. Change power settings as desired.
2. Click **Save as...** to save to a new power profile.
3. Name the newly created profile.
4. Select whether this profile is for Adapter or Battery mode, then click **OK**.
5. The new profile will appear in the profile list.

### Battery Status

For real-time battery life estimates based on current usage, refer to the panel on the upper half side of the window.

For additional options, click **Settings** to:

- Set alarms.
- Reload factory defaults.
- Select what actions to be taken when the cover is closed or the power button is pressed.
- Set passwords for accessing the system after Hibernation or Stand-by.
- View information about Acer ePower Management.

# Acer ePresentation Management

Acer ePresentation Management lets you project your computer's display to an external device or projector using the hotkey: **<Fn> + <F5>**. If auto-detection hardware is implemented in the system and the external display supports it, your system display will be automatically switched out when an external display is connected to the system. For projectors and external devices that are not auto-detected, launch Acer ePresentation Management to choose an appropriate display setting.

**Note:** If the restored resolution is not correct after disconnecting a projector, or you need to use an external resolution that is not supported by Acer ePresentation Management, adjust your display settings using Display Properties or the utility provided by the graphics vendor.

# Acer eDataSecurity Management (for selected models)

Acer eDataSecurity Management is a handy file encryption utility that protects the files from being accessed by unauthorized persons. It is conveniently integrated with Windows Explorer as a shell extension for quick and easy data encryption/decryption and also supports on-the-fly file encryption for MSN Messenger and Microsoft Outlook.

The Acer eDataSecurity Management setup wizard will prompt you for a supervisor password and default encryption. This encryption will be used to encrypt files by default, or you can choose to enter your own file-specific password when encrypting a file.

> **Note:** The password used to encrypt a file is the unique key that the system needs to decrypt it. If you lose the password, the supervisor password is the only other key capable of decrypting the file. If you lose both passwords, there will be no way to decrypt your encrypted file! Be sure to safeguard all related passwords!

File Decryption dialog:

**File Decryption:** _____

Password:

Note: _____
If you forget the password, You can use the Supervisor Password instead.

**Warning on Desktop Search Tools**

OK    Cancel



File Encryption dialog:

Enter a password (4 to 12 characters):

Enter it again to confirm:

**Note:** _____

Files already encrypted will not be encrypted again.

**Warning on Desktop Search Tools**

OK    Cancel
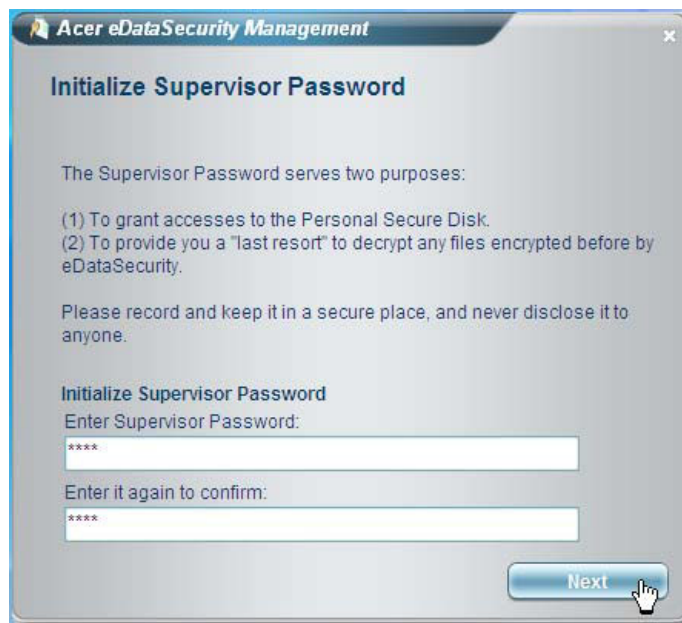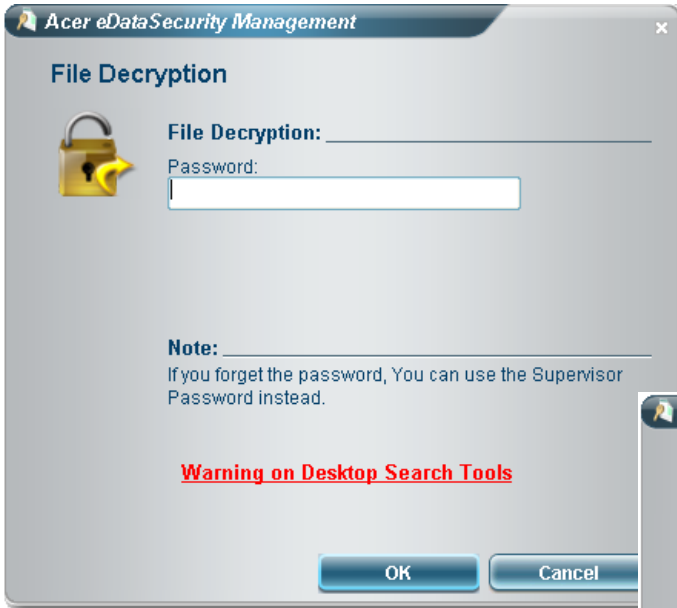
# Acer eRecovery Management

Acer eRecovery Management is a powerful utility with the need for recovery disks provided by the manufacturer. The Acer eRecovery Management utility occupies space in a hidden partition on the system's HDD. Be default, user-created backups are stored on D:\ drive. Acer eRecovery Management provides:

- Password protection
- Recovery of applications and drives
- Image or data backup:
    - Backup to HDD (set recovery point)
    - Backup to CD or DVD
- Image/data recovery tools:
    - Recovery from a hidden partition (factory defaults)
    - Recovery from the HDD (most recent user-defined recovery point)
    - Recovery from CD or DVD
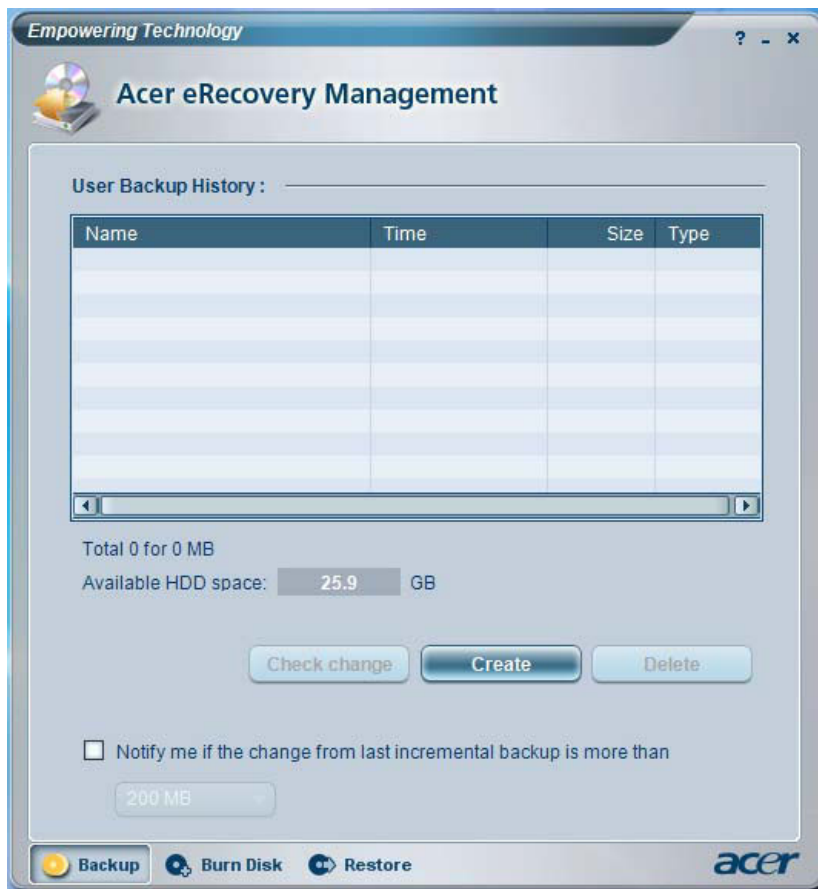


**Note:** If the computer did not come with a Recovery CD or System CD, please use Acer eRecovery Management's **System backup to optical disk** feature to burn a backup image to CD or DVD. To ensure the best results when recovering the system using a CD or Acer eRecovery Management, detach all peripherals (except external Acer ODD, if equipped), including the Acer ezDock.

# Acer eSettings Management

Acer eSettings Management allows you to inspect hardware specification, change BIOS passwords or other Windows settings, and to monitor the system health status.

Acer eSettings Management also:

- Provides a simple graphical user interface for navigation.
- Displays general system status and advanced monitoring for power users on Acer computer.
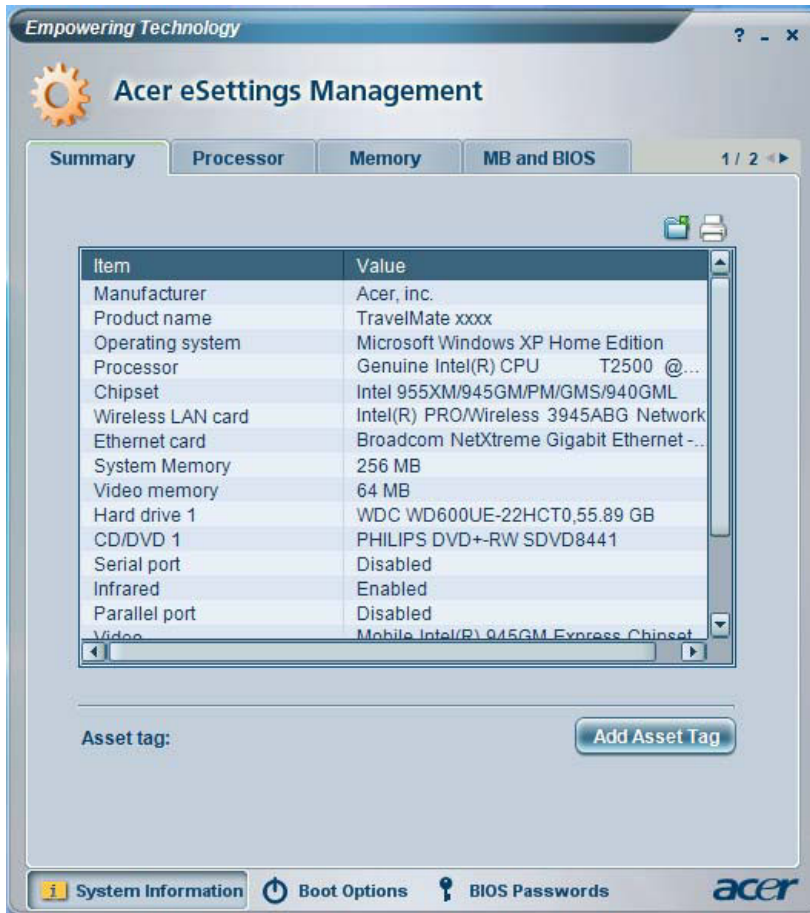
# Acer ePerformance Management

Acer ePerformance Management is a system optimization tool that boosts the performance of the Acer notebook. It provides an express optimization method to release unused memory and disk space quickly. The user can also enable advanced options for full control over the following options:

- Disk optimization: removes unneeded items and files.
- Speed optimization: improves the usability and performance of the Windows XP system.
- Memory optimization: releases unused memory and check usage.
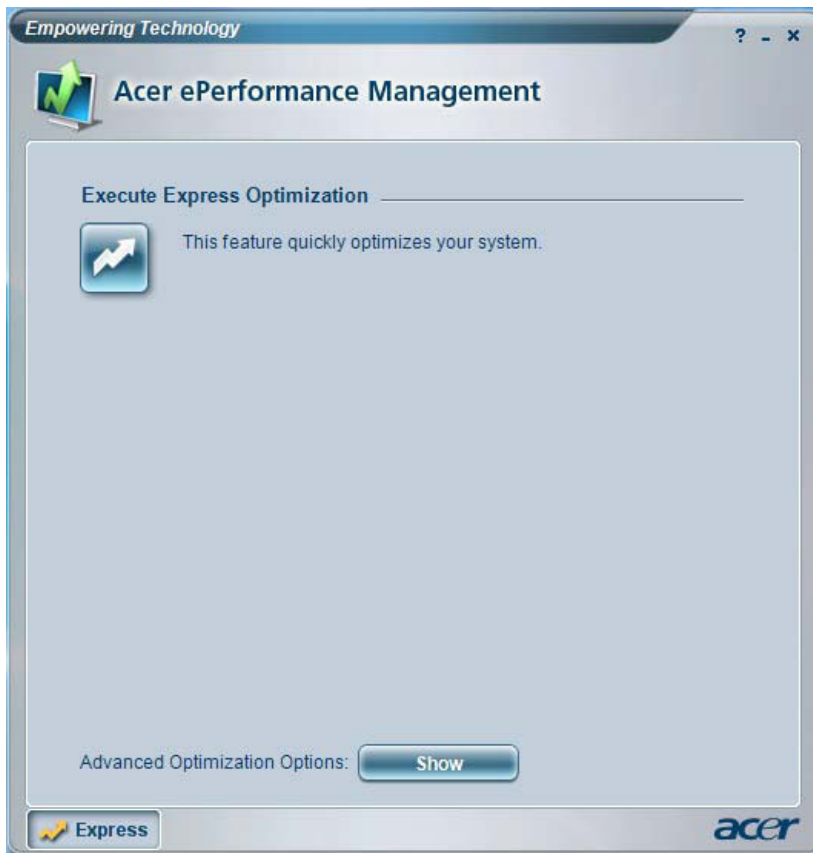
# Using the System Utilities

**Note:** The system utilities work under Microsoft Windows XP only.

## Acer GridVista (dual-display compatible)

**Note:** This feature is only available on certain models.

To enable the dual monitor feature of the notebook, first ensure that the second monitor is connected, then select **Start**, **Control Panel**, **Display** and click on **Settings**. Select the secondary monitor **(2)** icon in the display box and then click the check box **Extend my windows desktop onto this monitor**. Finally, click **Apply** to confirm the new settings and click **OK** to complete the process.
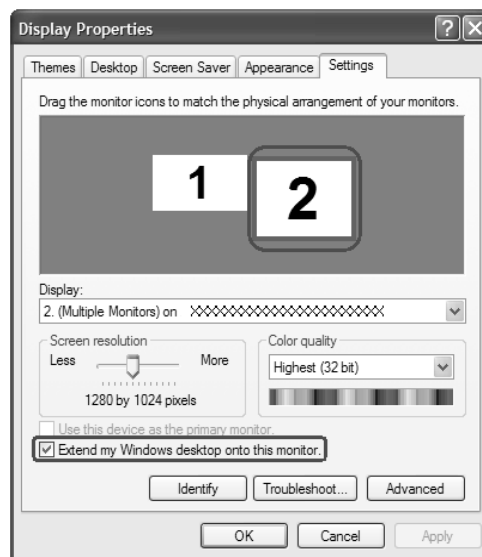


Acer GridVista is a handy utility that offers four pre-defined display settings so you can view multiple windows on the same screen. To access this function, please go to Start > All Programs and click on Acer GridVista. You may choose any one of the four display settings indicated below:



Acer Gridvista is dual-display compatible, allowing two displays to be partitioned independently. Acer GridVista is simple to set up:

1.  Run Acer GridVista and select your preferred screen configuration for each display from the task bar.

2.  Drag and drop each window into the appropriate grid.

3.  Enjoy the convenience of a well-organized desktop.
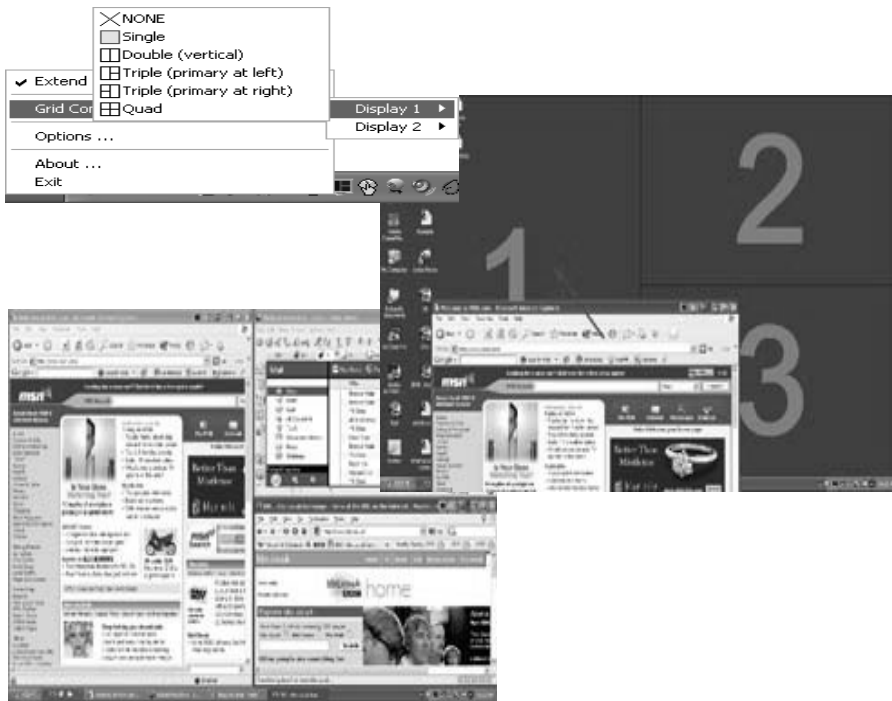
**Note:** Please ensure that the resolution setting of the second monitor is set to the manufacturer's recommended value.

# Launch Manager
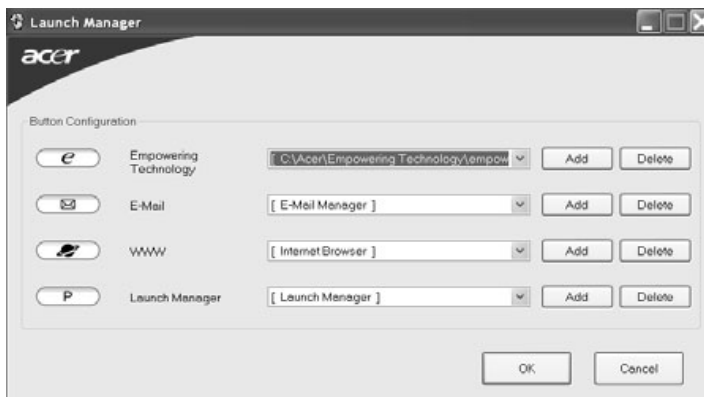


Launch Manager allows you to set the four easy-launch buttons located above the keyboard. You can access the Launch Manager by clicking on Start > All Programs > Launch Manager to start the application.

# Norton AntiVirus

Norton AntiVirus is an anti-virus software that finds and repairs infected files, and protects against viruses to keep you computer data safe and secure.

## How do I check for viruses?

A Full System Scan scans all files on your computer. To perform a system scan:

1. Start Norton Antivirus: Double click on the **Norton AntiVirus** Icon on the desktop or click on the **Start** menu in the Windows task bar, highlight **Programs**, and select **Norton Antivirus**.

2. In the Norton Antivirus main window, click **Scans**.
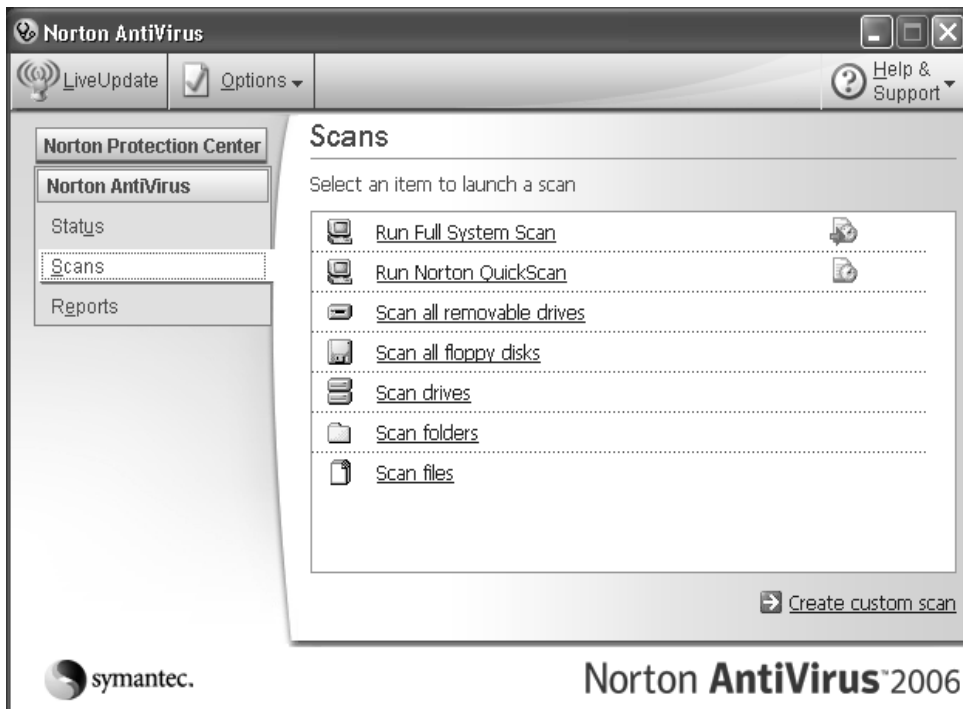


3. In the **Scans** panel, click **Run Full System Scan**.

4. When the scan is complete, a scan summary appears. Click **Finished**.

You can schedule customized virus scans that tun unattended on specific dates and times or at periodic intervals. If you are using the computer when the scheduled scan begins, it runs in the background so that you do not have to stop working.

For more information, please refer to the Norton AntiVirus Help menu.

# Hardware Specification and Configuration

### Processor

| Item | Specification |
|------|---------------|
| Type | AMD Turion™ 64 X2 dual-core TL-50/TL-52/TL-56/TL-60 processor |
| Feature | • AMD 638-pin Lidless Micro PGA package<br>• 64-bit integer registers, 48-bit virtual addresses, 40-bit physical addresses<br>• Eight new 64-bit integer registers (16 total)<br>• Eight new 64-bit SSE registers (16 total) |
| Power | • Multiple low power states<br>• System Management Mode (SMM)<br>• ACPI compliant, including support for processor performance states<br>• AMD PowerNow!™ technology is designed to dynamically switch between multiple low power states based on application performance requirements |

### System Main Chipset

| Item | Specification |
|------|---------------|
| Core logic | ATi RS485M + ATi SB460 |
| System clock | ICS ICS951462 |
| BIOS ROM | SST 39VF080 |
| KBC | NSPC97551 |
| PCMCIA & IEEE 1394 & Memory card reader | PCI7412ZHK |
| Super I/O | NSPC87383 |
| IR | Vishay TFU6102F |
| Audio Codec & Amplifier | Realtek ALC883D Azalia Codec and Amplifier Maxim MAX4411 |
| LAN | Broadcom 5788M |

### North Bridge

| Item | Specification |
|------|---------------|
| Chipset | ATi RS485M |
| Package | 465-pin FCBGA package, 21mm x 21mm |
| Feature | • 200/400/800/1000MHz HyperTransport interface support<br>• One x 16 graphics interface used by another device<br>• Highly-optimized 128-bit engine, capable of processing multiple pixels per clock<br>• Integrated dual 24-bit LVDS interface<br>• 595Mbps/channel with 85MHz pixel clock rate<br>• External displays (e.g., flat panel, CRT or TV) via a DVO port support<br>• ACPI states S1, S3, S4 and S5 fully supported |
| Power | 1.8V core, 3.3V, 5V CMOS I/O |

## South Bridge

| Item | Specification |
|---|---|
| Chipset | ATi SB460 |
| Package | 549-pin BGA package |
| Feature | • PCI2.3 interface (6 PCI Request/Grant pairs)<br>• Bus master IDE controller (Ultra 100/66/33 support)<br>• Serial ATA controller<br>• USB1.1 & 2.0 host controllers<br>• Compliant with AC'97 2.3 interface<br>• Low pin count (LPC) interface<br>• RAID Striping (RAID 0) support<br>• IRQ controller<br>• Enhanced DMA controller, interrupt controller, times, RTC<br>• ACPI Power management |
| Power | 1.8V core, 3.3V, 5V CMOS I/O |

## System Clock

| Item | Specification |
|---|---|
| Chip | ICS ICS951462 or pin compatible device |
| Package | 64-pin TSSOP |
| Feature | • Spread spectrum function support for reducing EMI<br>• SM bus interface support |
| Clock synthesizer | • 133/166MHz for CPU<br>• 100MHz clock buffer for RS485M, SB460 and PCI-E device, SATA, Docking station<br>• 96MHz RS485M<br>• 48MHz for USB clock inside SB460<br>• 33MHz PCI clock for PC device, SIO, LPC<br>• 14.31818MHz for SB460 and Audio |
| Power | 3.3V |

## System Memory

| Item | Specification |
|---|---|
| Feature | • DDRII 533/667MHz SDRAM memory interface design<br>• 0MB DDR RAM on board<br>• Two SODIMMS slots<br>• Maximum memory up to 4GB (with two 2GB SODIMMs) |

## Hard Disk Drive

| SEAGATE | | |
|---|---|---|
| Model | | |
| ST9160821AS | ST9120821AS | ST9100824AS |
| Formatted Gbytes (512 bytes/sector): 160 / 120 / 100 | | |
| Physical read/write head: 4 / 4 / 4 | | |
| Discs: 2 / 2 / 2 | | |
| Spindle Speed (RPM): 5400 / 5400 / 5400 | | |

| SEAGATE |
|---|
| I/O data transfer rate (Mbytes/sec. max.): 150 / 150 / 150 |
| Internal transfer rate (Mbytes/sec. max.): 57.6 / 57.6 / 57.6 |
| ATA data transfer mode supported:<br>SATA 1.0, SATA II, PIO modes 0-4, Multiword DMA modes 0-2, Ultra DMA modes 0-6 |
| Cache buffer: 8MB |
| Bytes per sector: 512 / 512 / 512 |
| Voltage tolerance: +5.0V +/- 5% |

| TOSHIBA | | HGST |
|---|---|---|
| Model | | |
| MK1234GSX | MK1032GSX | HTS541616J9SA00 |
| Formatted Gbytes (512 bytes/sector): 120 / 100 | | 160 |
| Physical read/write head: 4 / 4 | | 4 |
| Discs: 2 / 2 | | 2 |
| Spindle Speed (RPM): 5400 / 5400 | | 5400 |
| Internal transfer rate (Mbits/sec. max.): 244.7~474.4 / 236.1~456.0 | | N/A |
| I/O data transfer rate (Mbytes/sec. max.): 150 / 150 | | 150 |
| ATA data transfer mode supported: ATA7, SATA 1.0a, SATA II 1.2, Multi word DMA, Ultra DMA modes, Advanced PIO mode settings and commands | | N/A |
| Cache buffer (MB): 8 / 16 | | 8 |
| Bytes per sector: 512 / 512 | | 512 |
| Voltage tolerance: +5.0V +/- 5% | | +5.0V +/- 5% |

**Optical Disk Drive**

| Item | Description |
|---|---|
| Vendor and model name | PANASONIC NSM8XSL1393<br>8X SUPER MULTI (DL) EXTERNAL UJ-85J SLOT IN LF |
| Buffer memory | 2MB |
| Interface | ANSI ATA/ATAPI-5 |
| Applicable disc format | • DVD (read): DVD-ROM single layer, DVD-ROM dual layer, DVD-R 4.7GB, DVD-R 3.95GB, DVD-R dual layer, DVD-RW 4.7GB, DVD-RAM, 4.7GB, DVD+R single layer, DVD+R dual layer, DVD+RW, DVD-Video<br>• DVD (write): DVD-R 4.7GB, DVD-R dual layer, DVD-RW 4.7GB, DVD-RAM 4.7GB, DVD+R single layer, DVD+R dual layer, DVD+RW<br>• CD (read): CD-ROM, CD-R, CD-RW, CD-DA (audio play), Video-CD<br>• CD (write): CD-R, CD-RW |
| Loading mechanism | Manual load |
| Power requirement | max. 2100mA |
| Input voltage | 5V +/- 5% (Operating) |

**BIOS ROM**

| Item | Description |
|---|---|
| Type | SST 39VF080 |
| Package | 40-pin TSOP |
| Block Size | 64KB per block |
| Supply current | Active current: 15mA (typical)<br>Standby current: 4uA (typical) |
| Remark | The 32-pin PLCC package 1MB Flash ROM SST 39VF080 is used for BIOS, keyboard encoder and power controller codes. It occupies system memory area E0000-FFFFF. After posting system, the shadow RAM function will be enabled. |

**BIOS**

| Item | Description |
|---|---|
| Vendor | Phoenix |
| Version | Phoenix BIOS V0.3104 |
| Feature | • 1MB flash RIOM for system BIOS<br>• Suspend to RAM (S3) / Disk (S4)<br>• Various hot keys for system control<br>• Support boot option: HDD / Removable device (media bay device) / all USB ports<br>• Support protocols: SMBIOS 2.3, PCI 2.2, WFM 2.0<br>• ACPI 1.0b compliance with AMD PowerNow!<br>• DMI utility for BIOS serial number configurable/asset tag<br>• Y2K solution support<br>• BIOS virus protection<br>• WinFlash support<br>• Wake on LAN from S3<br>• Wake on LAN from S4 in AC mode |

**KBC**

| Item | Description |
|------|-------------|
| Chip | NSPC97551 |
| Package | LQFP 176-pin package |
| Features | • Host interface, based on Intel's LPC interface specification Revision 1.0<br>• PC01 REV 0.3 and ACPI 1.0b compliant<br>• 16-bit RISC core with 2MB address space, speed up to 20MHz<br>• Share BIOS flash memory (internal and/or external)<br>• 84 GPIO ports with variety of wake-up events<br>• Extremely low current consumption in idle mode<br>• JTAG-based debugger interface<br>• Software and hardware controlled clock throttling |

**PCMCIA Express Card**

| Item | Description |
|------|-------------|
| Chip | PCI7412ZHK |
| Feature | • PC card 95 supported with 1x Type II PCI card bus<br>• Express card/34 slot support (co-existence with one PCMCIA) |

**IEEE 1394**

| Item | Description |
|------|-------------|
| Chip | PCI 7412ZHK |
| Feature | • PCI single chip solution with PCI 2.2 compliant<br>• OHCI V1.1<br>• IEEE 1394.A 6-pin |

**IR Interface**

| Item | Description |
|------|-------------|
| Chip | Vishay TFU6102F |
| Feature | • Compliant to the IrDA standard up to 4 Mbit/sec. transfer rate<br>• Low power consumption (< 3mA supply current)<br>• Power shutdown mode (< 5uA shutdown current in full temperature range)<br>• Tri-state-receiver output floating when in shutdown mode |

**LAN Interface**

| Item | Description |
|------|-------------|
| LAN controller | Broadcom 5788MG |
| Feature | • File deployment support<br>• WOL from S5 support<br>• LDCM support |

## Audio Codec & Amplifier

| Item | Description |
|---|---|
| Chip | Realtek ALC883D Azalia Codec and Amplifier Maxim MAX9710 |
| Feature | • HD audio<br>• SNR > 85, high-performance DACs with 95dB SNR (A-weighting), ADCs with 85dB SNR (A-weighting)<br>• Internal microphone<br>• Two speakers, at least 1.5W/30cc for each<br>• 2* digital microphone array<br>• VoIP function support<br>• Universal jack function support |

## Wireless LAN

| Item | Description |
|---|---|
| Card type | Mini-PCI |
| Features | • 802.11a/b/g or 802.11b/g or 802.11n/EWC<br>• Built-in two or three antennae<br>• Placed on the top of LCD or on the sides of LCD latches |

## MDC Card

| Item | Description |
|---|---|
| Controller | ATi SB460 |
| Features | • 56K, V.90/V.92, WWDAA<br>• Wake-on-Ring support<br>• Apply CISPR22<br>• MDC 1.5 card |
| Connector type | RJ-11 |

## Super I/O

| Item | Description |
|---|---|
| Chip | NS PC87383 |
| Package | 64-pin TQFP package |
| Feature | • Parallel interface support:<br>  1. An Enhanced Parallel Port (EPP) compatible with EPP 1.9, EPP1.7 of the Xircom specification support too<br>  2. An Extended Capabilities port that is IEEE 1284 compliant including level 2<br>• UART serial port interface:<br>  1. MIDI baud rate support<br>  2. Infrared support on UART2 (IrDA 1.1 support)<br>• PnP support:<br>  1. Flexible IRQs, DMAs and base addresses<br>  2. IRQs multiplexed to the ten supported IRQs |
| Power consumption | 5V, 25 ~ 55mA |

**Battery**

| Item | Specification | |
|---|---|---|
| Vendor & model name | Panasonic Hummingbird 3 cell 2.0H | Panasonic Hummingbird 6 cell |
| Rating voltage (within one hour after quick charging) | 10.8V | 11.1V |
| Typical capacity (in standard charging) | 2250mAh | 4700mAh |
| Minimum capacity (in standard charging) | 2150mAh | 4500mAh |
| Standard charging (constant voltage, constant current) | 12.6V max., 430mA max. x eight hours | 12.6V max., 900mA max. x eight hours |
| Quick charging (constant voltage, constant current) | 12.6V max. 1500mA max. 100mA end | 12.6V max., 3150mA max. 60mA cut |
| Standard discharging (constant current) | 430mA (9V end) | 900mA (9V end) |
| Surroundings temperature range for shipped battery | less than one month: -20 °C ~ 45°C | Assumed percentage of recoverable capacity: 80% |
| | less than six months: -20°C ~ 30°C | |
| | less than one year: -20°C ~ 20°C | |
| Item | Specification | |
| Vendor & model name | Sanyo Hummingbird 3 cell 2.0 | Sanyo Hummingbird 6 cell |
| Nominal capacity | 1900mAh | 4600mAh |
| Typical capacity | 2000mAh | 4800mAh |
| Nominal voltage | 11.1V | 11.1V |
| End voltage | 9V | 9V |
| Charging current max. | 1500mAh | 3000mAh |
| Discharging Wattage max. | 35W | 60W |
| Charging voltage | 12.6V +/- 0.09V | 12.6V +/- 0.09V |
| Surroundings temperature range for shipped battery | less than one month: -20 °C ~ 60°C | Assumed percentage of recoverable capacity: 80% |
| | less than three months: -20°C ~ 45°C | |
| | less than one year: -20°C ~ 25°C | |

**LCD 12.1"**

| Item | Specification | | | |
|---|---|---|---|---|
| Vendor & Model name | AUO 12.1 WXGA B121EW03-V3 GLARE | AUO 12.1 WXGA B121EW03-V1 NON-GLARE | TOSHIBA 12.1 WXGA LTD121EXQQ (G) | TOSHIBA 12.1 WXGA LTD121EXUQ (AG) |
| Screen Diagonal | 12.1" WXGA | 12.1" WXGA | 12.1" WXGA | 12.1" WXGA |
| Active area | 261.12 (W) x 163.2 | 261.12 (W) x 163.2 (H) | 261.12 (W) x 163.2 (H) | 261.12 (W) x 163.2 (H) |
| Display resolution | 1280 x 3 (RGB) x 800 | 1280 x 3 (RGB) x 800 | 1280 x 3 (RGB) x 800 | 1280 x 3 (RGB) x 800 |
| Display mode | normally white | normally white | normally white | normally white |
| Surface treatment | Glare, Hardness 3H, Reflectance 4.3% | Anti-Glare, Hardness 3H, Haze 25% | Glare, Hard Coat 3H | Anti-Glare, Hard Coat 3H |
| Pixel arrangement | RGB vertical stripe | RGB vertical stripe | RGB vertical stripe | RGB vertical stripe |
| Pixel pitch (mm) | 0.204 (H) x 0.204 (V) | 0.204 (H) x 0.204 (V) | 0.204 (H) x 0.204 (V) | 0.204 (H) x 0.204 (V) |
| Typical white luminance (cd/ m$^2$) also called brightness | 180 (typical) | 180 (typical) | 200 (typical) | 210 (typical) |
| Contrast ratio | 400 (typical) | 400 (typical) | 600 (typical) | 300 (typical) |
| Respond time (msec.) | Rise: 10 decay: 15 | Rise: 10 Decay: 15 | Rise + Decay: 50 max. | Rise + Decay: 50 max. |
| Normal input voltage of power supply | +3.3V (typical) | +3.3V (typical) | +3.3V (typical) | +3.3V (typical) |
| Power consumption | 4.5Watt max. | 4.5Watt max. | 400mA max. | 400mA max. |
| Weight | 250 g | 250 g | 235 g | 230 g |
| Physical size (mm) | 275.82 (W) x 178 (V) x 5.2 (T) | 275.82 (H) x 178 (V) x 5.2 (T) | 275.8 (W) x 178 (H) x 5.5 (D) | 275.8 (W) x 178 (H) x 5.5 (D) |
| Electrical interface | 1 channel LVDS | 1 channel LVDS | LVDS CLK+, CLK- IN0+, IN0- IN1+, IN0- IN2+, IN2- | LVDS CLK+, CLK- IN0+, IN0- IN1+, IN0- IN2+, IN2- |
| Color support | 262,144 colors | 262,144 colors | 262,144 colors | 262,144 colors |

**AC Adaptor**

| Item | Specification | |
|---|---|---|
| Vendor & Model name | LiteOn 65W, PA01650-02 QY YELLOW 1.7X5.5X11 LF | DELTA 65W SADP-65KB DBRF YELLOW 1.7X5.5X11LF |
| Input feature | | |
| Rated voltage | 100V / 240V | 100V / 240V |
| Input voltage range | from 90Vac to 265Vac | from 90Vac to 264Vac |
| Frequency range | from 47Hz to 63Hz | from 47Hz to 63Hz |

| Item | Specification | |
|---|---|---|
| Steady AC current | less than 1.6A rms | less than 1.5A rms (100Vac, 240Vac / 3.42A load) |
| Output feature | | |
| Rated voltage | 19V | 19V |
| Voltage range | 18.05V to 19.95V | from 18.05V to 19.95V (0A to 3.42A output at DC cable end) |
| Rated power | 65W | 65W |
| Output ripple and noise | less than 380mVp-p | less than 350mVp-p |
| Turn on delay time | within five seconds (measured from AC on point to the 90% point of the output voltage) | within two seconds at 115 Vac input voltage |
| Environment | • Operating<br><br>Temperature: 0 to 40ºC<br>Relative Humidity: 8 to 90%, non-condensing<br>Relative humidity: -31 to 60ºC<br>• Shipping and Storage<br><br>Temperature: -30ºC to 85ºC<br>Relative Humidity: 5 to 95%, non-condensing | • Temperature<br><br>Operating: 0 to 40ºC<br>Storage: -31ºC to 60ºC<br>• Humidity<br><br>Operating: 20% to 80%<br>Storage: 10% to 90% |

**System Fan True Value Table**

| Item | Description |
|---|---|
| Level 0 | Fan on = 50ºC, Fan off = 45ºC, Fan RPM = 2850, 29 dBA |
| Level 1 | Fan on = 60ºC, Fan off = 55ºC, Fan RPM = 3300, 33 dBA |
| Level 2 | Fan on = 73ºC, Fan off = 68ºC, Fan RPM = 3800, 38 dBA |
| Level 3 | Fan on = 83ºC, Fan off = 78ºC, Fan RPM = 4200, 40 dBA |
| Throttling 50% | On = 92ºC, Off = 86ºC |

**Port Replicator**

| Item | Description |
|---|---|
| Features | • 120 pins for signals and four pins for power<br>• Power supplied from Acer ezDock<br>• Max. six USB ports support<br>• Two 1394 ports support, one cable-powered and the other bus-powered<br>• One new card socket and one PCMCIA card socket support<br>• GigaLAN and modem support<br>• Line-in, HP-out, Mic-in and SPDIF-out support<br>• Analog VGA, TV out and DVI-D support<br>• One parallel port, one serial and two PS2 port for legacy devices |

# System Utilities

## BIOS Setup Utility

The BIOS Setup Utility is a hardware configuration program built into your computer's BIOS (Basic Input/Output System). Your computer is already properly configured and optimized, and you do not need to run this utility. However, if you encounter configuration problems, you may need to run Setup. Please also refer to Chapter 4 Troubleshooting when problem arises.

To activate the BIOS Utility, press ⌷ during POST (when "Press <F2> to enter Setup" message is prompted on the bottom of screen). The setup screen displays BIOS as follows:

| Function | Item |
|---|---|
| Information | Display the system informations |
| Main | Allows the user to specify standard IBM PC AT system parameters |
| Advanced | Provides advanced settings of the system |
| Security | Provides security settings of the system |
| Boot | Allows the user to specify the boot options |
| Exit | Allows the user to save CMOS setting and exit Setup |

During setup, all Fn function keys and power saving functions are disabled. There are five menu options: Main, Advanced, Security, Boot and Exit. Follow these instructions below

- To choose a menu, use the cursor left/right keys (⌷⌷).

- To choose a parameter, use the cursor up/down keys (⌷⌷).

- To change the value of a parameter, press ⌷ or ⌷ .

- Press ⌷ while you are in any of the menu options to go to the Exit menu.

- In any menu, you can load default settings by pressing ⌷ . You can also press ⌷ to save any changes made and exit the BIOS Setup Utility.

    **NOTE:** You can change the value of a parameter if it is enclosed in square brackets. Navigation keys for a particular menu are shown on the bottom of the screen. Help for parameters are found in the Item Specific Help part of the screen. Read this carefully when making changes to parameter values.
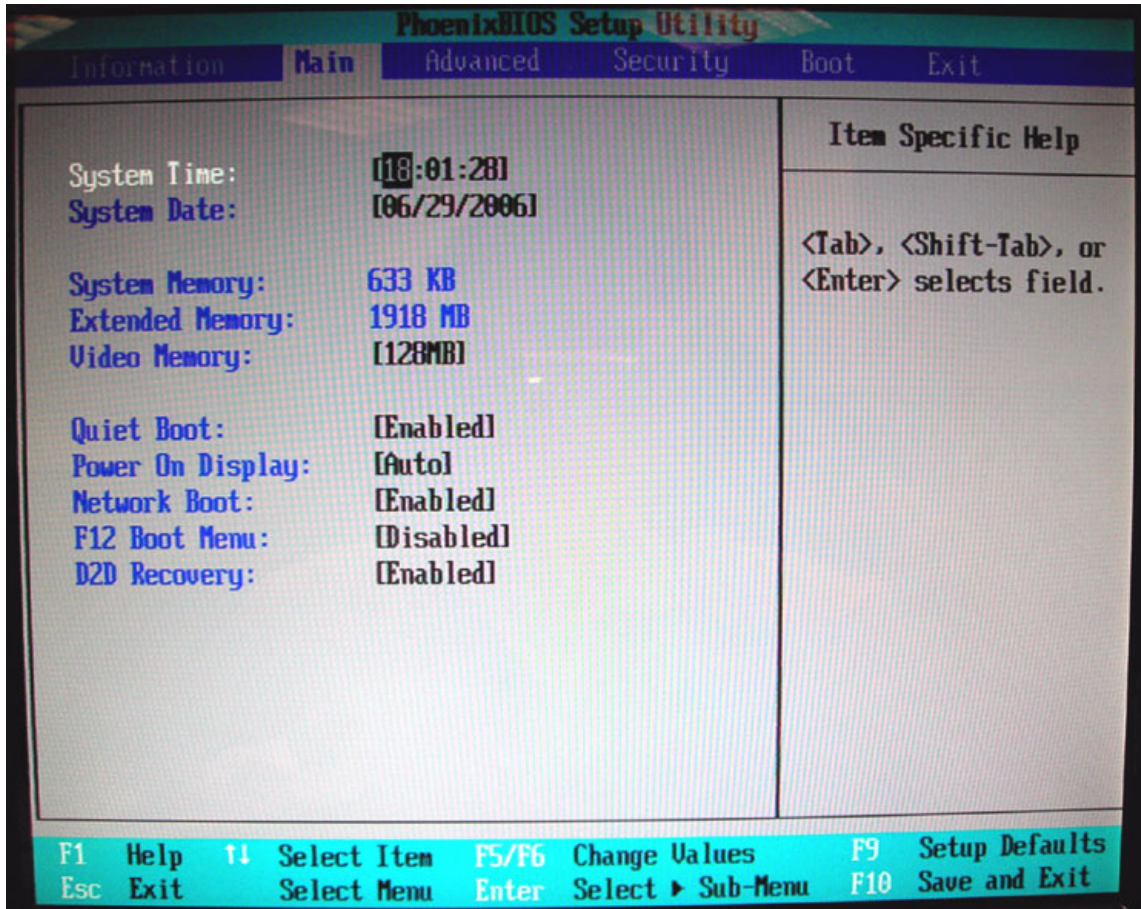
# Information
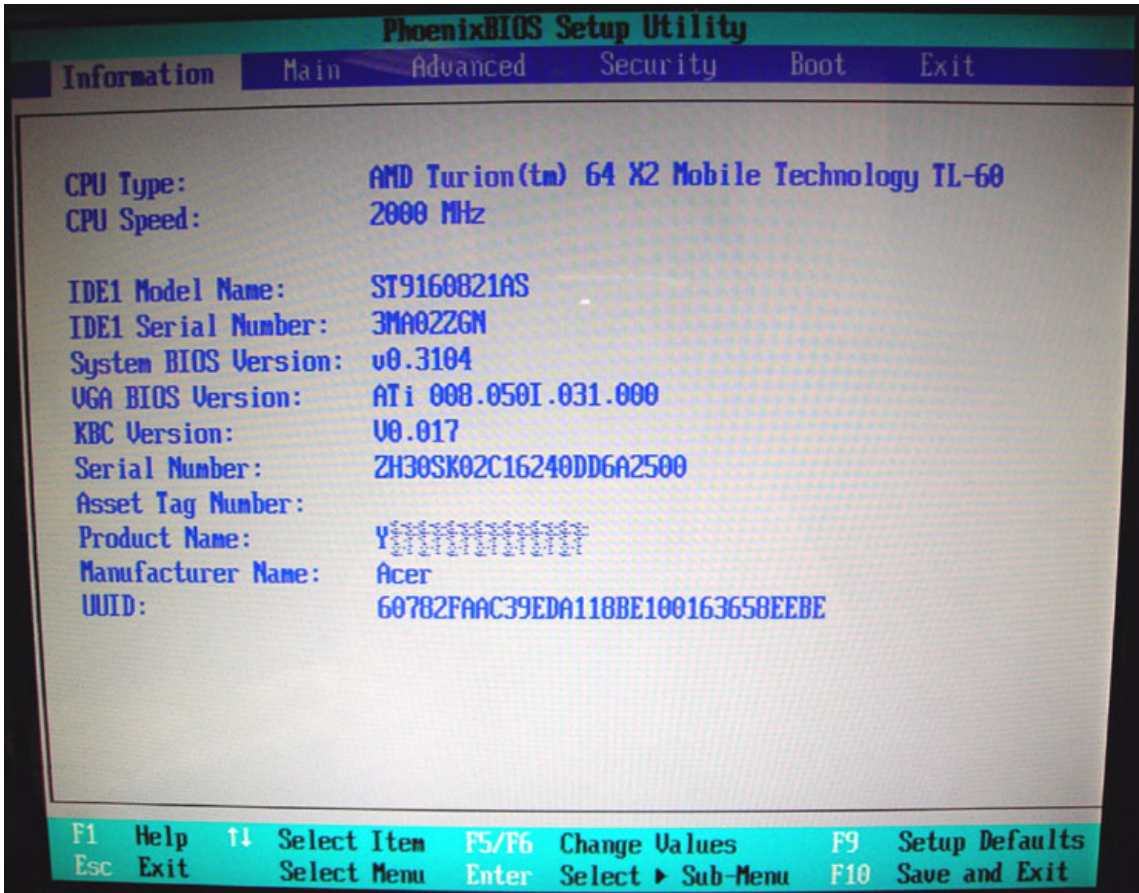


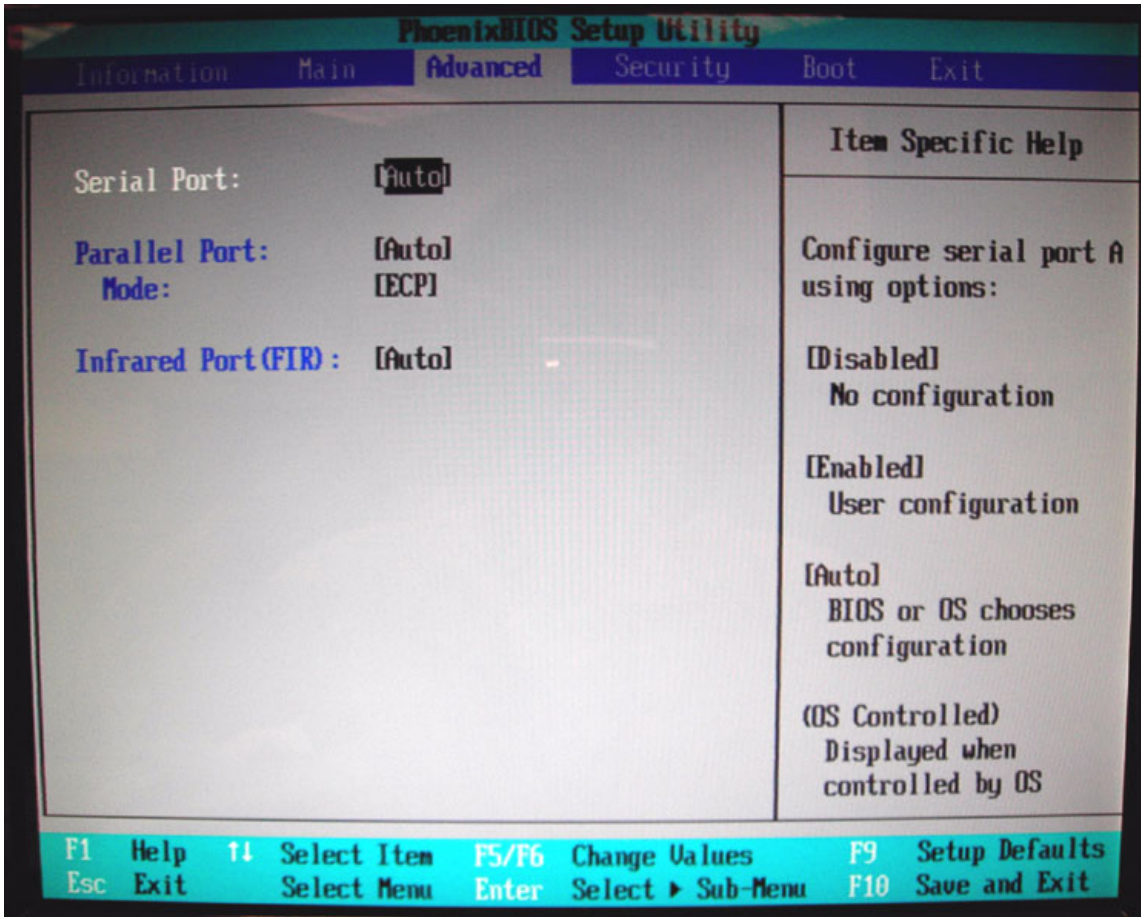| Parameter | Description |
|---|---|
| CPU Type | This item will show the CPU information of the system. |
| CPU Speed | This item will show the CPU clock speed. |
| IDE1 Model Name | This item will show the Model name of HDD installed on Primary IDE master. The hard disk model name is automatically detected by the system. If there is no hard disk present or unknown type, "None" should be shown on this field |
| IDE1 Serial Number | This item will show the Serial number of HDD installed on Primary IDE master. If no Hard disk or other devices are installed on Primary IDE master, then it will display a blank line |
| System BIOS Version | This field reports the BIOS version of system |
| VGA BIOS Version | This field reports the VGA version of the system |
| KBC Version | This field reports the keyboard controller version of the system |
| Serial Number | This item will show the Serial number of system. |
| Asset Tag Number | This item will show the Asset Tag number of the system. |
| Product Name | This field will show product name. |
| Manufacturer Name | This field will show manufacturer name. |
| UUID | This will be visible only when there is an internal LAN device present. |

# Main



| Parameter | Description |
|---|---|
| System Time / System Date | The hours are displayed with 24 hours format. The values set in these two fields take effect immediately. |
| System Memory | This field reports the memory size of system base memory. The size is fixed to 640KB. |
| Extended Memory | This field reports the memory size of the extended memory in the system. Extended Memory size = Total memory size - 1 MB |
| Video Memory | VGA Memory size = 128MB |
| Quiet Boot | Customer Logo display will be shown during POST when it is selected. |
| Power on display | **Auto**: During power on process, the system will detect if any display device is connected on external video port. If any external display device is connected, the power on display will be in CRT (or projector) only mode. Otherwise it will be in LCD only mode.<br>**Both**: Simultaneously enable both the integrated LCD screen and the system's external video port (for an external CRT or projector). |
| Network boot | When this is selected, Boot from LAN feature is enabled. When this is not selected, Boot from LAN feature is then disabled. |
| F12 Boot Menu | When this is selected, users can modify device boot priority by pressing F12 key during POST. When this is not selected, device boot priority will not be adjustable during POST. |
| D2D Recovery | Allow user to enable/disable the Disk-to-Disk recovery |

# Advanced

The Advanced menu screen contains parameters involving your hardware devices. It also provides advanced settings of the system.



| Parameter | Description | Option |
|-----------|-------------|--------|
| Serial Port | Configure serial port A using options:<br>[Disabled]: No configuration<br>[Enabled]: User configuration<br>[Auto]: BIOS or OS chooses configuration<br>(OS Controlled) Displayed when controlled by OS | Disabled<br>Enabled<br>Auto |
| Infrared Port | Configure serial port B using options:<br>[Disabled]: No configuration<br>[Enabled]: User configuration<br>[Auto]: BIOS or OS chooses configuration<br>(OS Controlled) Displayed when controlled by OS | Disabled<br>Enabled<br>Auto |
| Parallel Port | Configure serial port B using options:<br>[Disabled]: No configuration<br>[Enabled]: User configuration<br>[Auto]: BIOS or OS chooses configuration<br>(OS Controlled) Displayed when controlled by OS | Disabled<br>Enabled<br>Auto |

| Parameter | Description | Option |
|-----------|-------------|--------|
| Mode | Set the mode for the parallel port | Output only<br>Bi-directional<br>EPP<br>ECP |

# Security
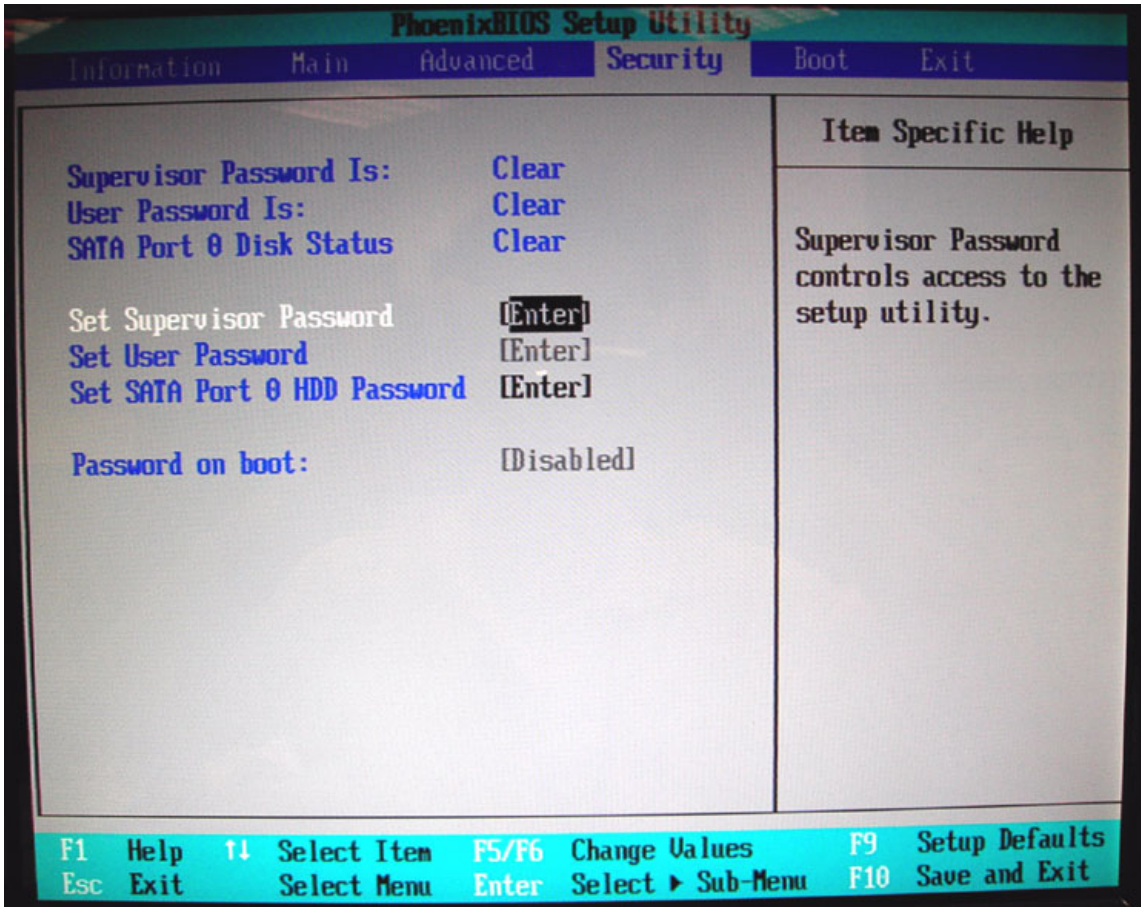


The system supports three levels of password protection. The password support consists of a Supervisor Password, User Password, and Hard Disk Password. All the passwords are stored in a non-volatile storage device (EEPROM).

All the passwords obeys the following rules:

- Password Policy
  - All the passwords can be set or cleared in BIOS Setup Security screen.
  - The password entry consists of eight alphanumeric characters. At least one character must be assigned.
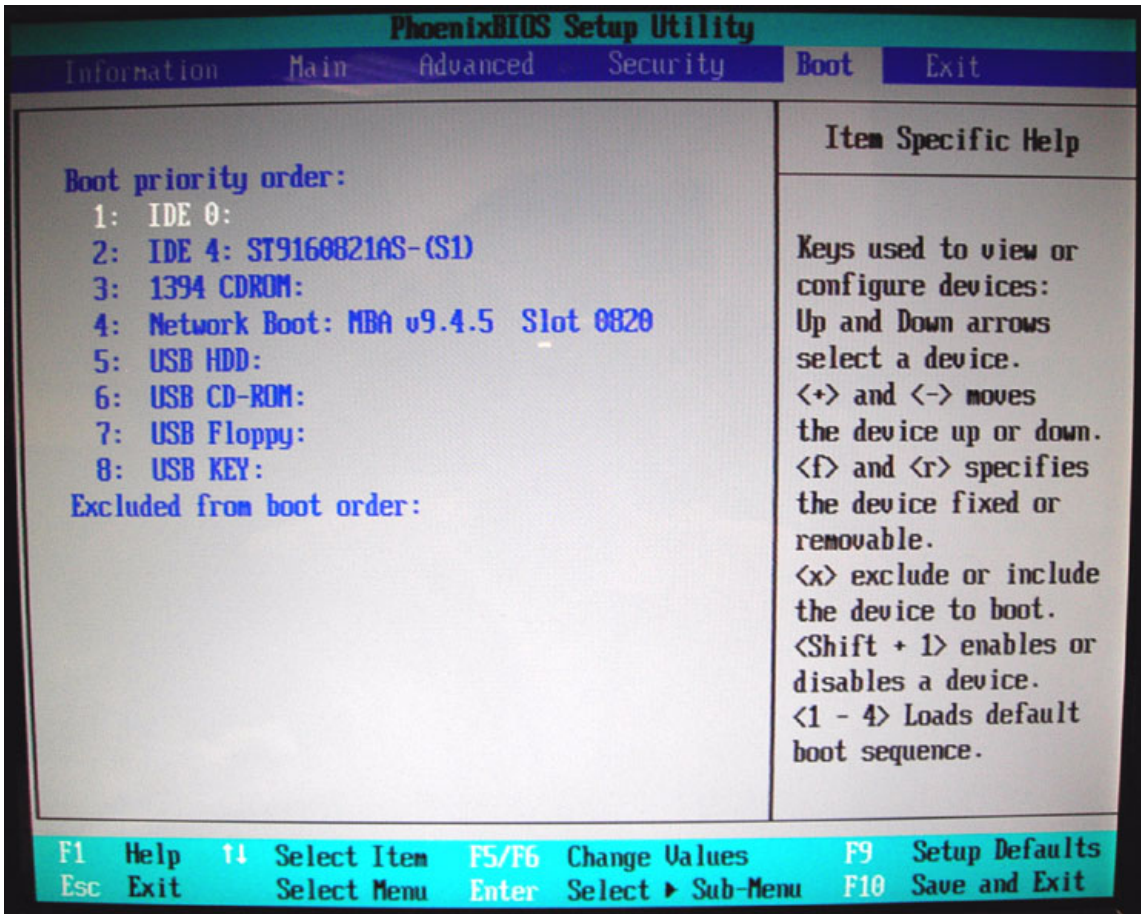  - The valid keys are listed in the table below:

| Symbol Character | Symbol Name |
| --- | --- |
| A-Z | letters A to Z (not case sensitive) |
| 0-9 | numerical characters |
| - | dash |
| = | equal sign |
| [ | left bracket |
| ] | right bracket |

| Symbol Character | Symbol Name |
|---|---|
| . | period |
| , | comma |
| ; | semi-colon |
| / | slash |
| \ | back slash |

- • The users can not change or remove password during resuming from S4.
- • The max. number of times to retry the password is limited to three.
- • Supervisor Password:
  - • Supervisor Password controls the access of the whole BIOS Setup Utility. If the Supervisor Password is set, the system will pop up the password dialog box to ask for the password when the users press <F2> for entering BIOS Setup Utility.
  - • If the Supervisor Password is set and Password on boot is enabled, the system will pop up the password dialog box to ask for the password when the system is powered on or resumes for S4 state.
  - • If the users fail three times consecutively in password verification, the system will be hung up and the users need to manually power off the system.
- • User Password:
  - • If the User Password is set, the system will pop up the password dialog box to ask for the password when the users press <F2> for entering BIOS Setup Utility.
  - • If the Supervisor Password is not set at first, the User Password can not be set. If the Supervisor Password is cleared, the User Password will be cleared, too.
  - • If the User Password is set and Password on boot is enabled, the system will pop up the password dialog box to ask for the password when the system is powered on or resumes for S4 state.
  - • If the users fail three times consecutively in password verification, the system will be hung up and the users need to manually power off the system.
- • Set Supervisor Password / User Password:
  - • Highlight the item and press "Enter", a dialog box will be shown to ask the users to enter new password and confirm new password.
  - • If the users want to reset password, a current password will be required to be tapped in at first. If the current password is correct, the users are permitted to enter new password and confirm new password for verification. If the verification is OK, the password setting will be complete after the users press "Enter".
  - • If the password entered does not match the current password, a dialog box will be shown to ask to re-enter the password.
- • Set HDD Password: When shown as "Locked", the hard drive password currently can not be changed or disabled. To change or disable it, turn off the system and enter Setup immediately after turning it back on. Press "Enter" to input change, or disable hard drive password.
- • Password on Boot: It allows the user to specify whether or not a password is required to boot.

# Boot

This menu allows the users to decide the order of bootable devices to load the operating system. It identifies all the bootable devices in the system and attempts to boot them in the order specified. Bootable devices include the diskette drive in module bay, the hard disk and the CD-ROM/DVD drive in module bay and onboard LAN device.

```
                    PhoenixBIOS Setup Utility
  Information   Main   Advanced   Security   Boot   Exit

                                            Item Specific Help

  Boot priority order:
   1:  IDE 0:
   2:  IDE 4: ST9160821AS-(S1)               Keys used to view or
   3:  1394 CDROM:                           configure devices:
   4:  Network Boot: MBA v9.4.5  Slot 0820   Up and Down arrows
   5:  USB HDD:                              select a device.
   6:  USB CD-ROM:                           <+> and <-> moves
   7:  USB Floppy:                           the device up or down.
   8:  USB KEY:                              <f> and <r> specifies
  Excluded from boot order:                  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   F5/F6  Change Values    F9   Setup Defaults
  Esc  Exit         Select Menu   Enter  Select ▶ Sub-Menu  F10  Save and Exit
```

| Parameter | Description |
|-----------|-------------|
| Boot priority order | Keys used to view or configure devices: Up and Down arrows select a device. <+> and <-> move 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. |

# Exit
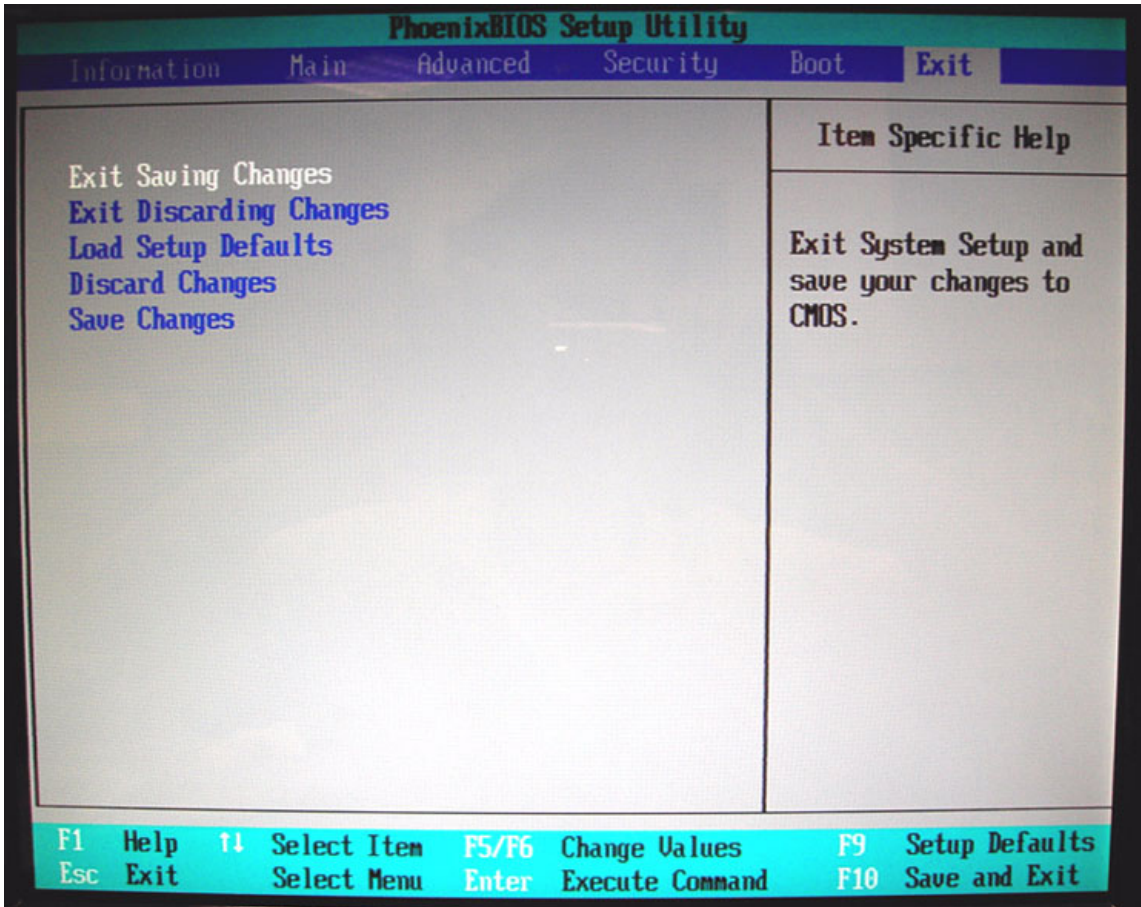


| Parameter | Description |
|---|---|
| Exit Saving Changes | Exit System Setup and save your changes to CMOS |
| Exit Discarding Changes | Exit utility without saving Setup data to CMOS |
| Load Setup Default | Load default values for all SETUP items |
| Discard Changes | Load previous values from CMOS for all SETUP items |
| Save Changes | Save Setup Data to CMOS |

# BIOS Password Removal SOP
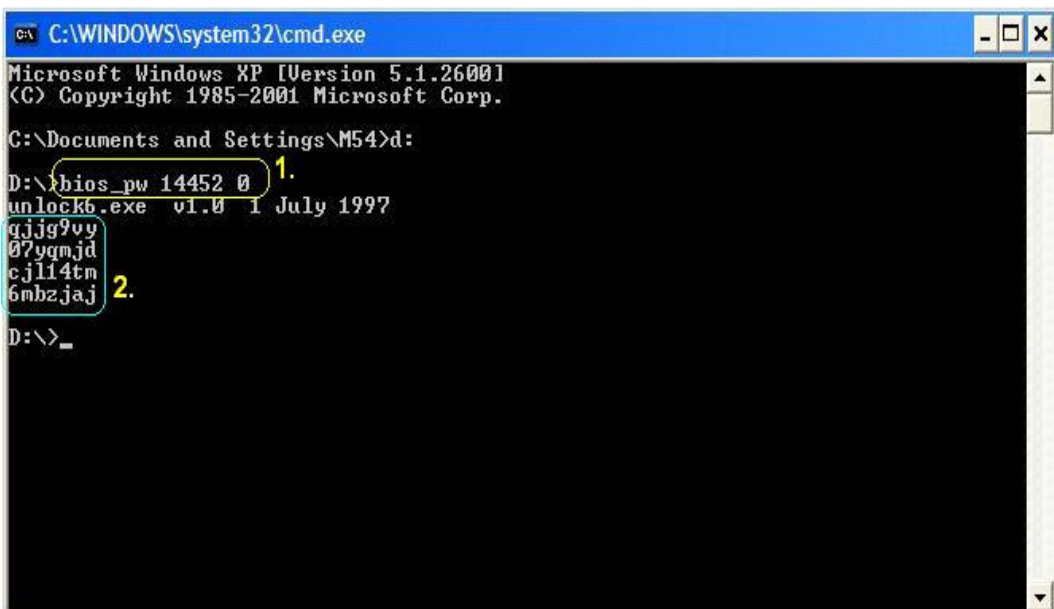
Please follow the steps below to remove the BIOS password.

**Step One Machine 1**

Key in wrong Supervisor Password three times and **System Disabled** will show.
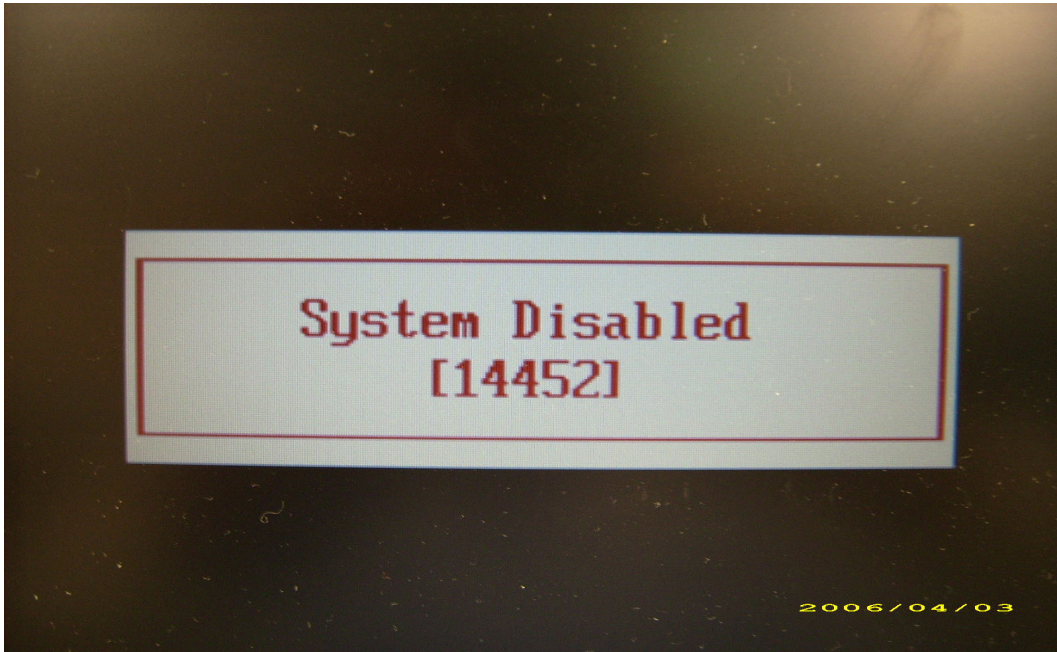


**Step Two Machine 2: Run BIOS_PW.EXE**

1. Key in **bios_pw 14452 0**
2. Then choose one string.

## Step Three Machine 1

1. Reboot system and key in **qjjg9vy** or **07yqmjd** in the BIOS user password column.

# HDD Password Removal SOP

Please follow the steps below to remove the HDD password.

**Step One Machine 1**

1. Key in wrong HDD password three times and **HDD password error code** will come out.
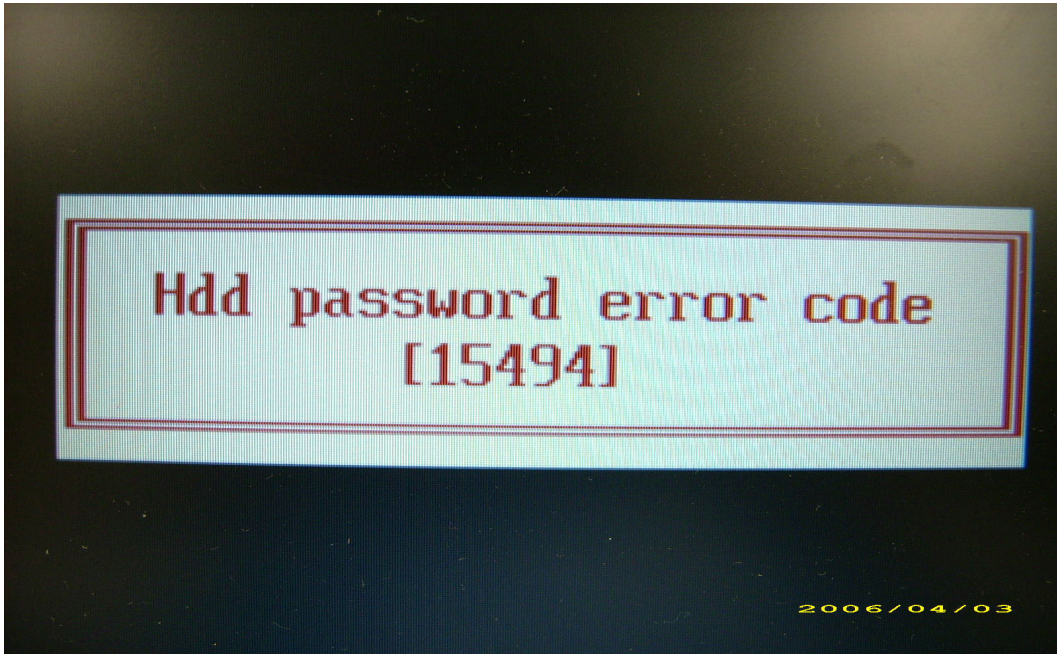


**Step Two Machine 2: Run HDD_PW.EXE**

1. Key in **hdd_pw 15494 0**
2. Select **2 (upper case ASCII Code)**.
3. Then choose one string.
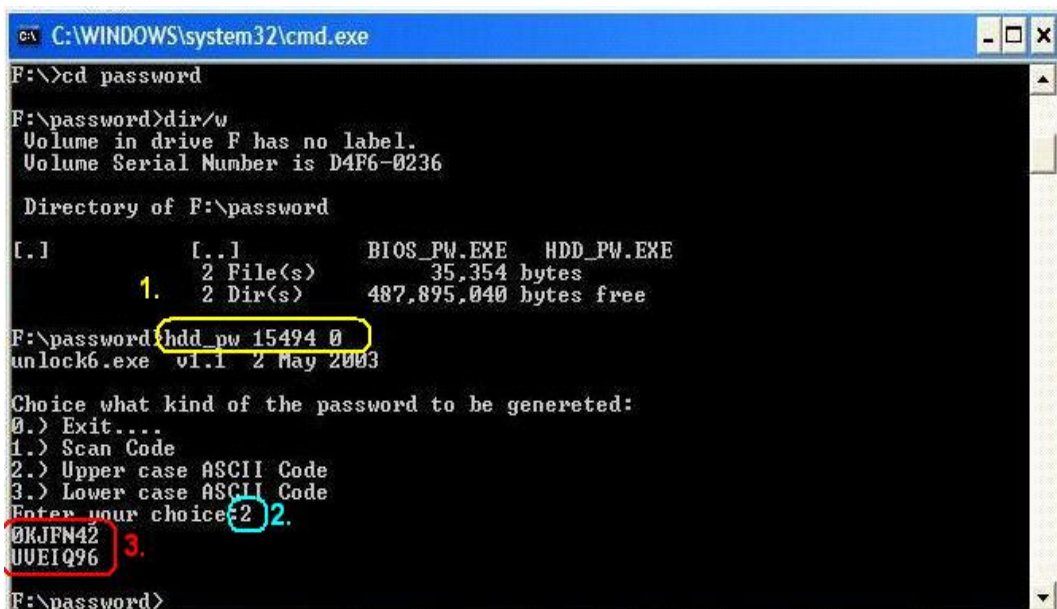
**Step Three Machine 1**

Reboot system and key in **0KJFN42** or **UVEIQ96** in the HDD user password column.
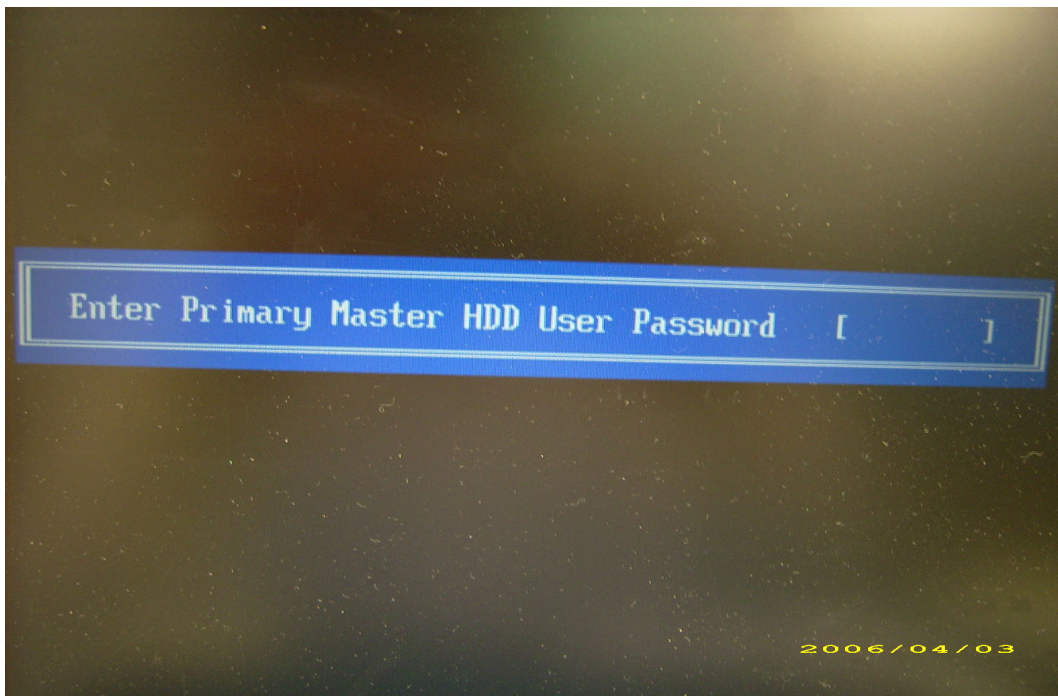
# Machine Disassembly and Replacement

## General Information

This chapter contains step-by-step procedures on how to disassemble the Ferrari 1000 for maintenance and troubleshooting.

To disassemble the notebook, you need the tools below:

- Wrist ground strap and conductive mat for preventing electrostatic discharge
- Small Philips screw driver
- Flat head screw driver
- Hexagonal driver
- Tweezers

    **NOTE:** The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components. When you remove the stripe cover, please be careful not to scrape the cover.

## Before You Begin

Before proceeding with the disassembly procedure, you have to make sure that:

- The system and all peripherals are powered off.
- The AC adaptor and all power and signal cables from the system are unplugged.
- The battery pack is removed.

    **NOTE:** There are several types of screws used to secure the main unit. The screws vary in length. Please refer to the screws table after the flowchart. Group the same type of screws together during service disassembling. Please also remember the screw location for each screw type. If you fasten the screws on the wrong location, the long screws may cause irrecoverable damage to the main board.

# Disassembly Procedure Flowchart

The flowchart gives you a graphic representation on the entire disassembly and reassembly and instructs you how to remove the components.
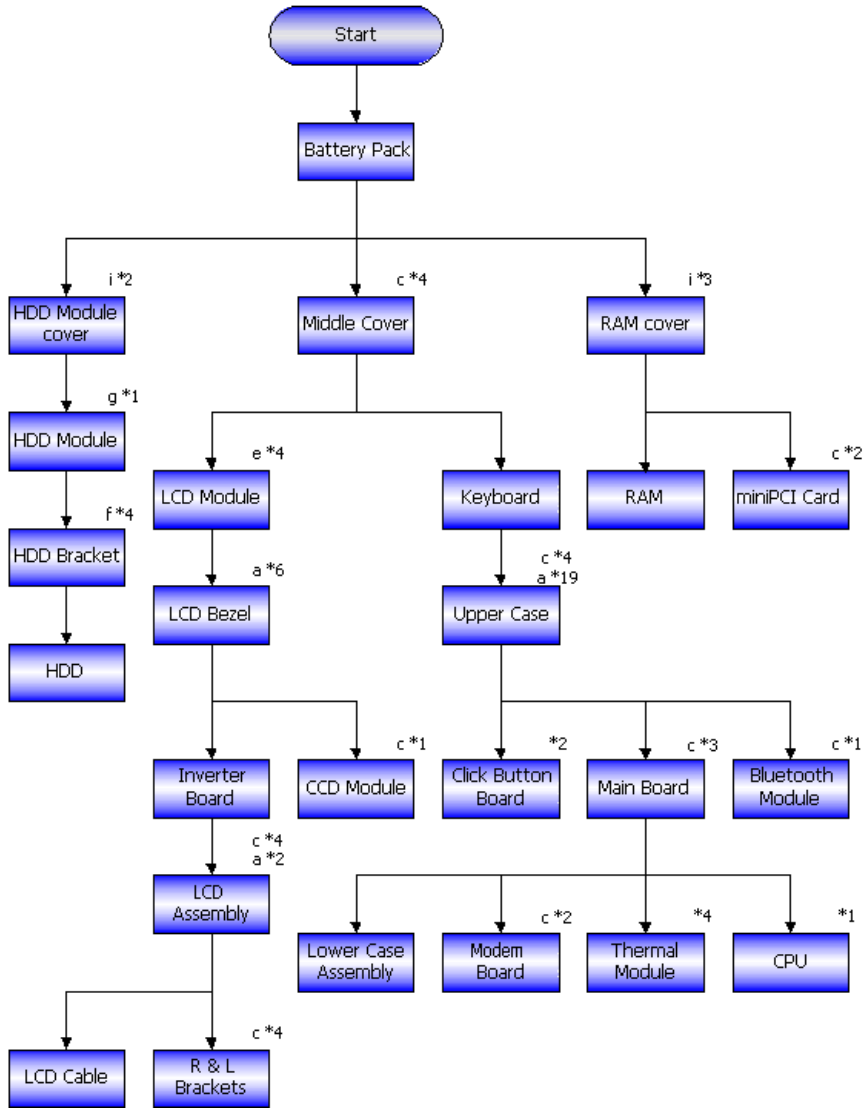


| # | Description | Acer Part No. |
|---|---|---|
| a | SCREW M2*5-I(BZN)(NYLOK) | 86.FR6V7.001 |
| b | SCREW M1.6*4.0-I (NI)(NYLOK) | 86.FR6V7.002 |
| c | SCREW M2.0*3.0-I(BZN)(NYLOK) | 86.FR6V7.003 |
| d | SCREW M2*2.5-I(NI)(NYLOK) | 86.FR6V7.004 |
| e | SCREW M2.5*6-I(BNI)(NYLOK) | 86.A08V7.004 |
| f | SCREW M3*0.5+3.5I | 86.A03V7.011 |
| g | SCREW M2.5*4.0-I(NYLOK)EU | 86.A03V7.009 |
| h | I2.5*4T-BKAGH(4,0.8) | 86.FR6V7.005 |
| i | SCREW M2.5*4-I(BNI) | 86.T23V7.009 |

# Disassembly Procedure

## Removing the Battery Pack

1. Unlock the battery lock to the end as the arrow indicates.
2. Slide the battery latch to the end and hold it. Then remove the battery pack.

## Removing the HDD Module

1. Release the two screws fastening the HDD module cover.
2. Detach the HDD module cover.
3. Release the screw securing the HDD module.
4. Pull the HDD module then lift the HDD module as the arrow indicates.

# Removing the RAM Module/Mini PCI Card

1. Release the three screws holding the RAM and Mini PCI card cover.

2. Then remove the cover.

3. Press the RAM module locks at the same time as the arrows indicate. The RAM module will pop up then detach it. Repeat this step to detach another RAM module.

4. Disconnect the main and the auxiliary antennae. The main antenna is black and the auxiliary antenna is white. The gray cable is protected by a plastic cover and serves for nothing in this model.

5. Release the two screws holding the Mini PCI card.

6. The Mini PCI card will pop up then detach it.
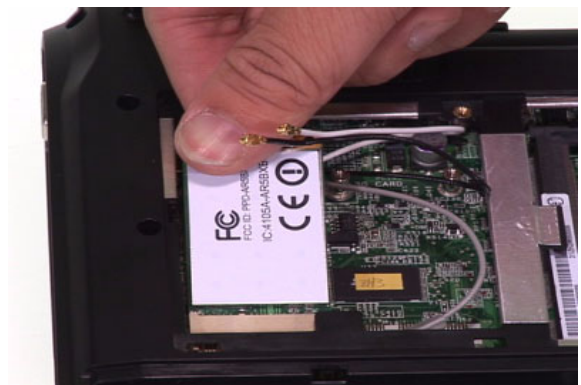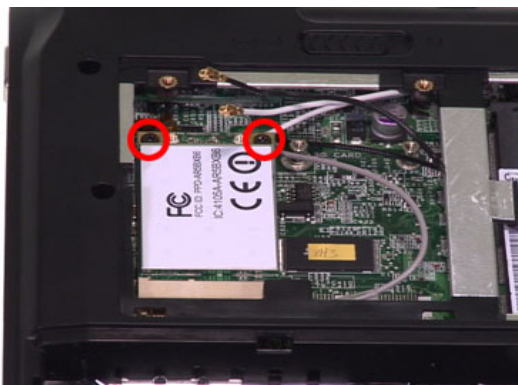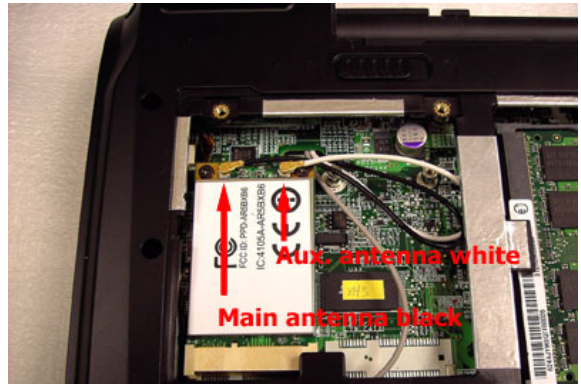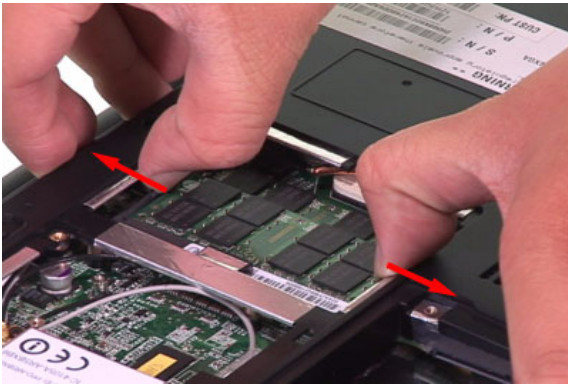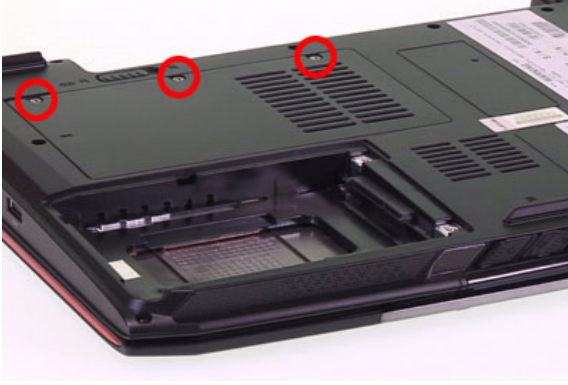
# Removing the Keyboard

1. Release the left latch securing the keyboard plate.
2. Release the right latch securing the keyboard plate.
3. Carefully detach the keyboard plate and place the keyboard plate as shown.
4. Release the keyboard FFC lock carefully because it is fragile. Then detach the keyboard plate.
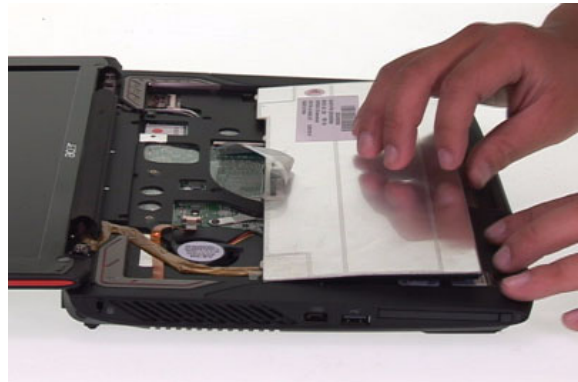
# Removing the LCD Module from the Main Unit

After removing the keyboard plate, please follow the steps below to remove the LCD module.

1. Slightly pull out the main and the auxiliary antennae and the gray cable.
2. Disconnect the microphone cable.
3. Release the four screws holding the LCD module.
4. Slightly pull out the four cables then remove the LCD module.
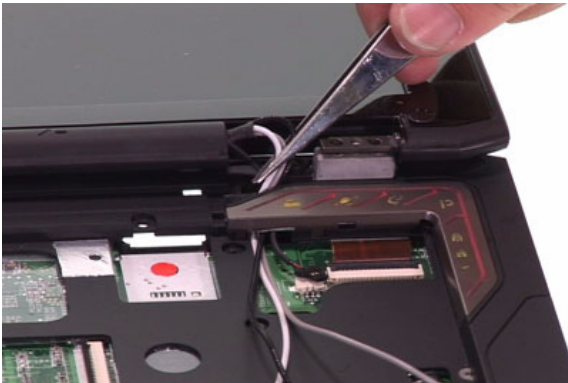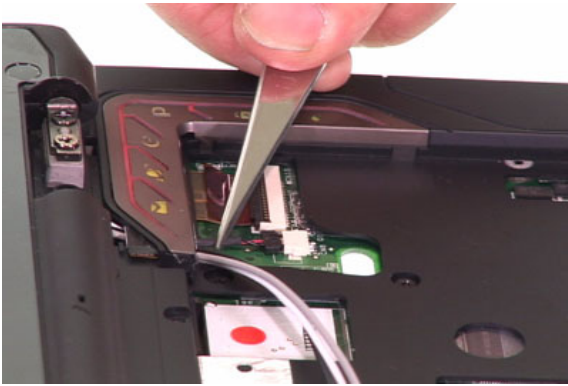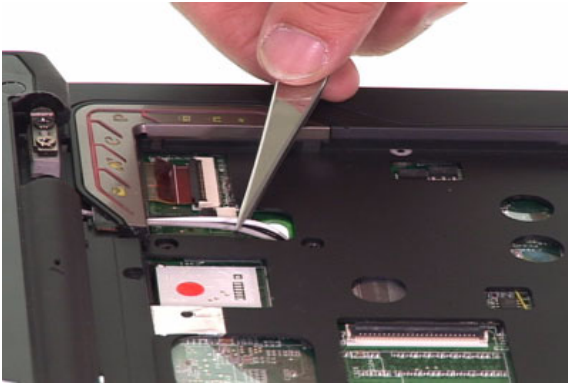
# Disassembling the Main Unit

## Separating the Upper Case and the Lower Case

1. Carefully release the button board FFC lock then disconnect the button board FFC.
2. Slightly release the click button board FFC lock then disconnect the click button board FFC.
3. Release the power button board lock then disconnect the power button board FFC.
4. Release the five screws securing the upper case and the lower case on the upper side.
5. Release the 18 screws securing the upper case and the lower case on the bottom side. The screw indicated by arrow is under the rubber cushion so you have to remove the rubber cushion at first.
6. Then detach the upper case from the main unit.
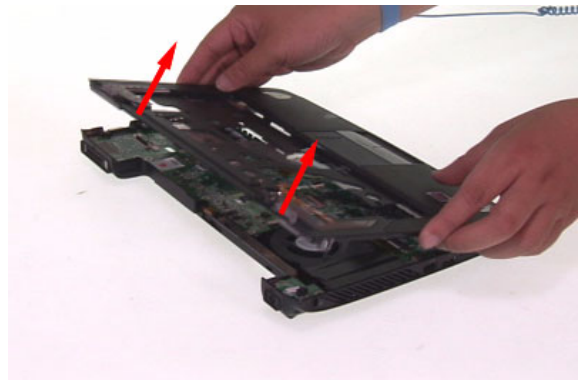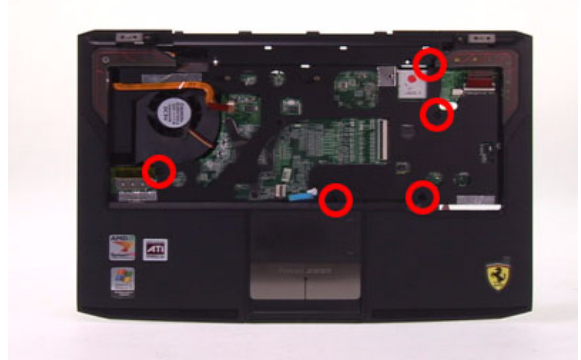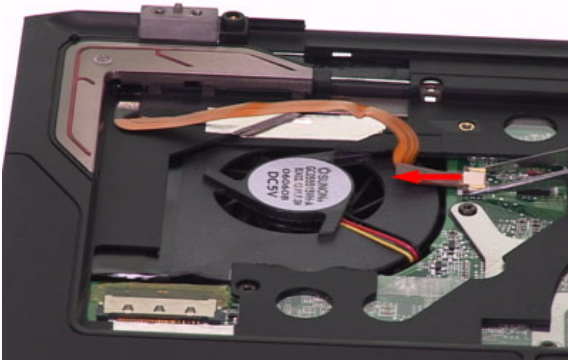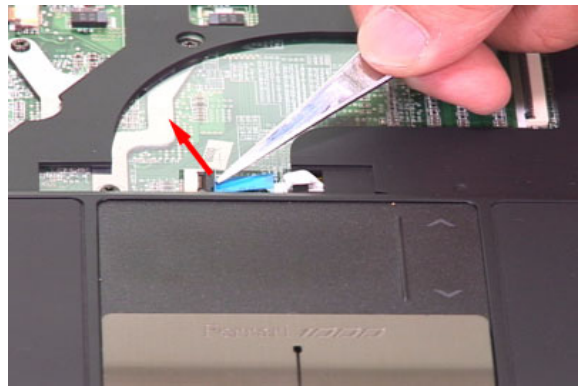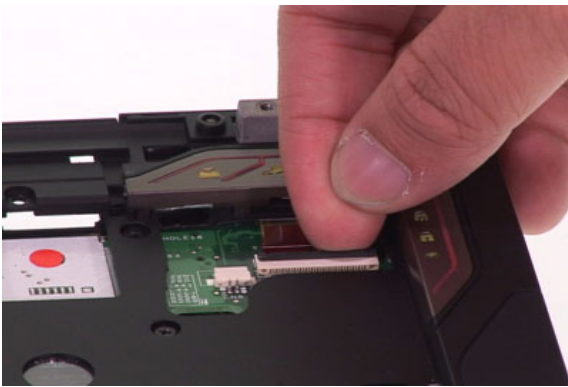
## Removing the Bluetooth Module

1. Disconnect the Bluetooth module cable.
2. Release the screw holding the Bluetooth module then detach the Bluetooth module.
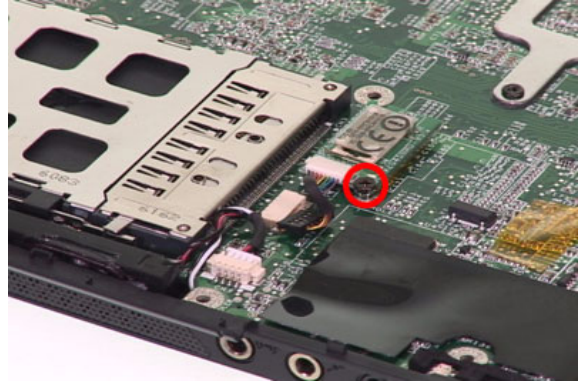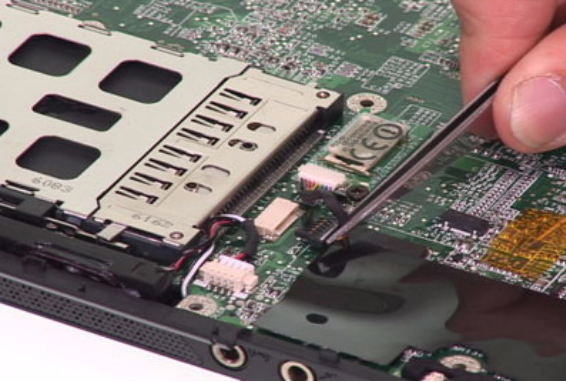


## Removing the Main Board

1. Disconnect the speaker cable.
2. Slightly pull the edge of the lower case as the arrow indicates because the DC board is stuck by the edge of the lower case. Then detach the DC board from the lower case.
3. Release the three screws securing the main board.
4. Slightly pull the edge of the lower case as the arrow indicates because the main board is stuck by the edge of the lower case. Then detach the main board.
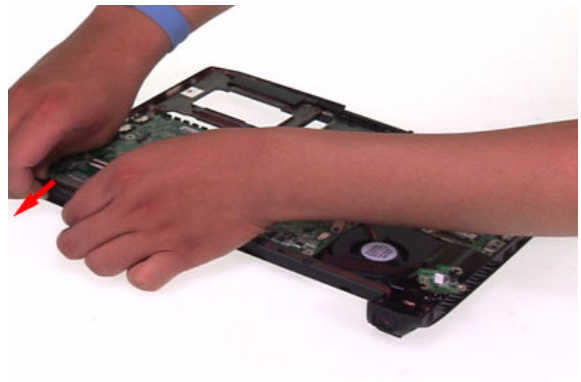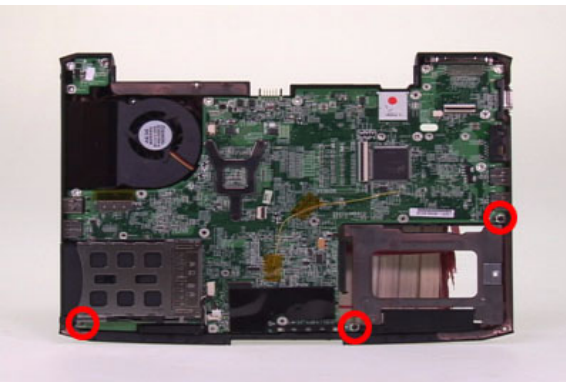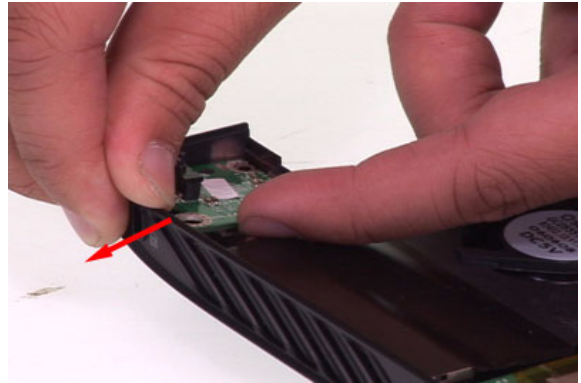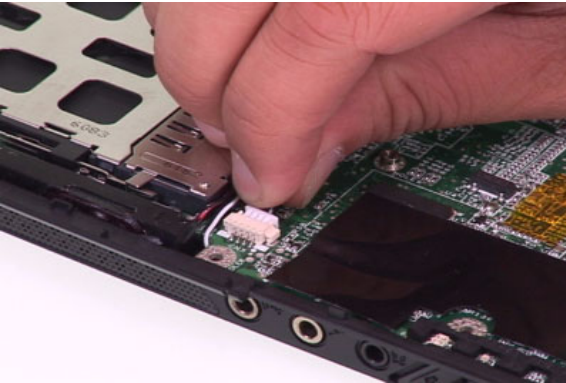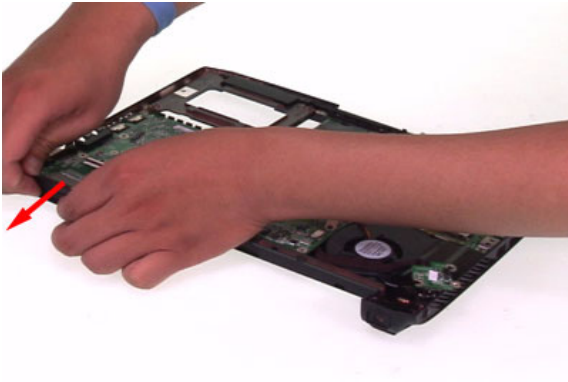
## Removing the Modem Board

1. Release the screw holding the modem board.
2. Detach the modem board from the main board and disconnect it.
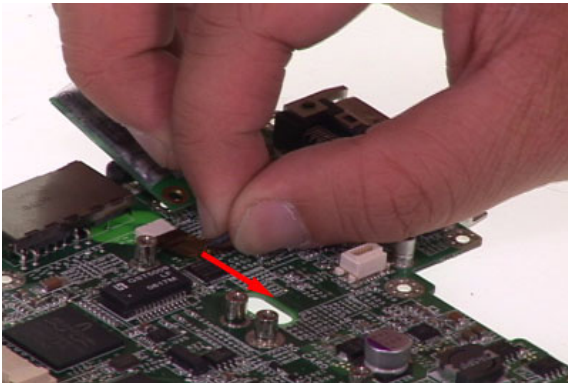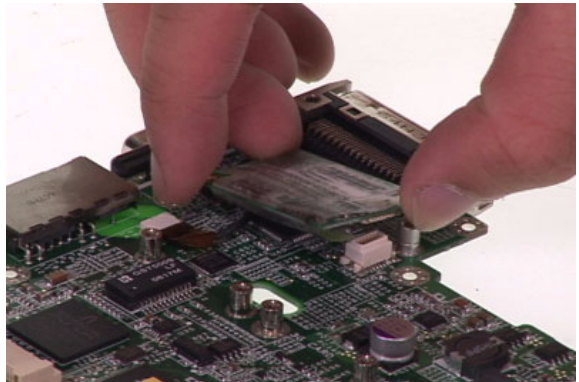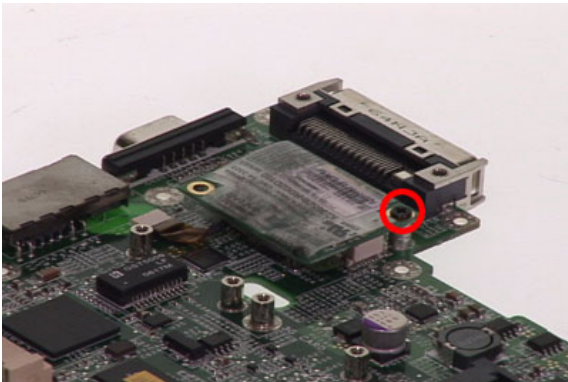
## Removing the Thermal Module

1. Slightly disconnect the system fan cable.
2. Release the four screws holding the thermal module then detach the thermal module.
3. Disconnect the DC board cable.
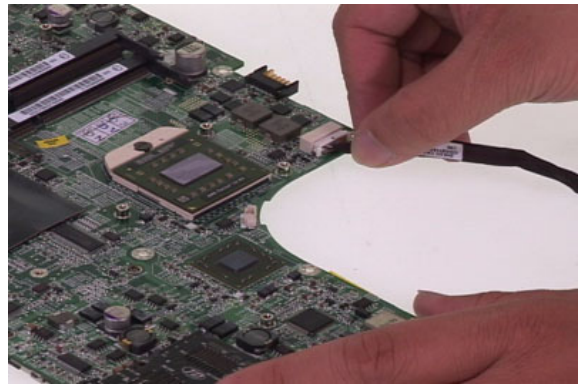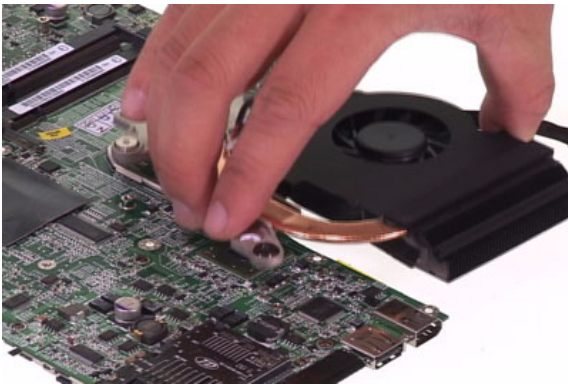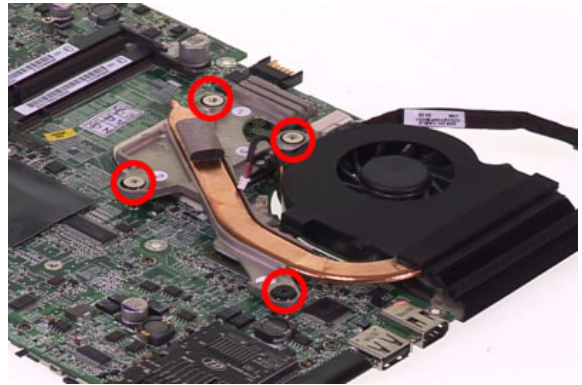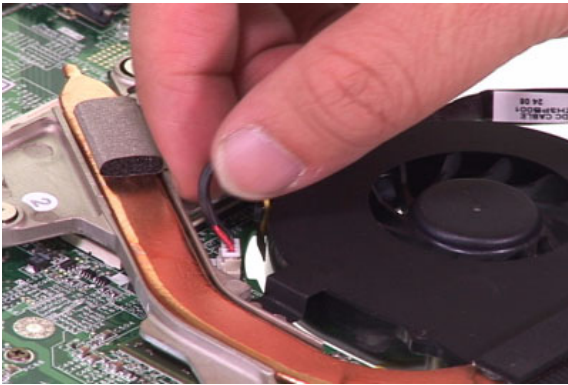
## Removing the CPU

1. Release the screw securing the CPU by turning the flat-headed screw driver counter clockwise.
2. Then carefully detach the CPU from the socket.
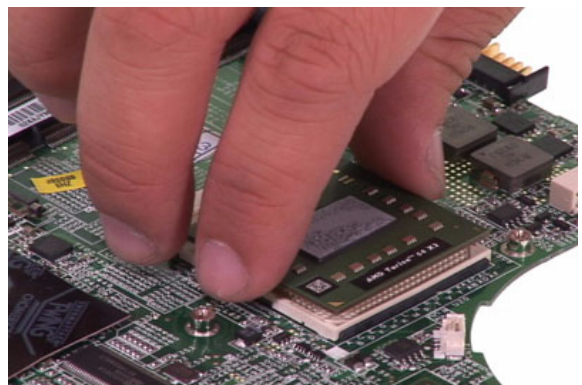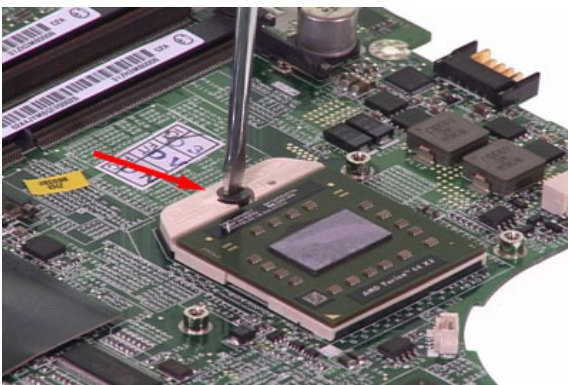
# Disassembling the LCD Module

## Removing the LCD Bezel

1. Detach the mylars covered on screws then release the six screws securing the LCD bezel.
2. Carefully detach the LCD bezel from the LCD module as shown till the LCD bezel is total removed.

## Removing the Inverter Board

1. Carefully disconnect the LVDS cable.
2. Carefully disconnect the LCD cable then remove the inverter board.
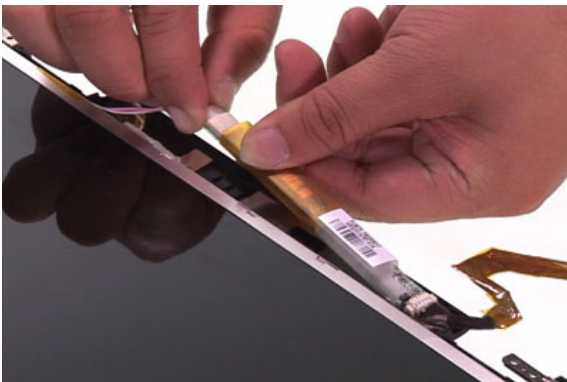
## Detaching the LCD Panel and the CCD Module

1. Release the seven screws securing the LCD panel and the CCD module.
2. Then remove the LCD panel and the CCD module together.
3. Put the LCD panel and the CCD module on a flat and stable surface.
4. Carefully disconnect the CCD module.
5. Tear off the tape holding the LCD cable.
6. Carefully pull and disconnect the LCD cable.

   **NOTE:** When you remove the CCD module and the LCD cable, please do not press the LCD panel.
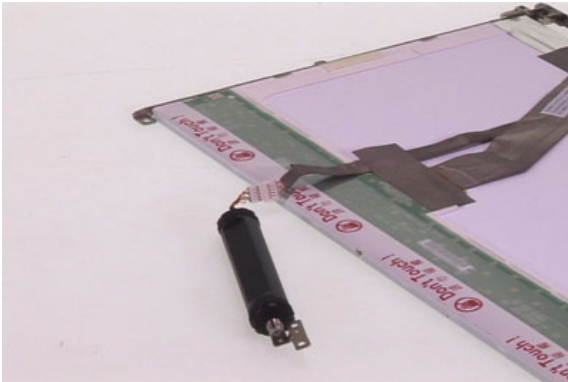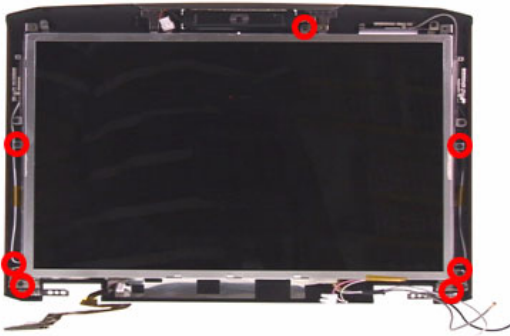
## Removing the LCD Brackets

1. Release the four screws securing the left and the right LCD brackets.
2. Then remove the left and the right LCD brackets.
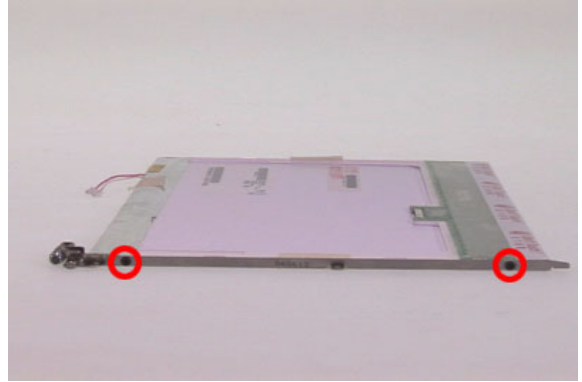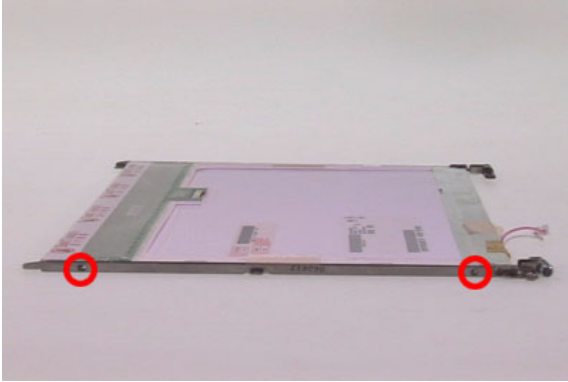
# Troubleshooting

Please use the following procedures as a guide for computer problems.

> **NOTE:** The diagnostic tests are intended to test only Acer products. Non-Acer products, prototype cards, or modified options may occur errors or invalid responses.

1. Obtain the detailed fail symptoms as many as possible.
2. Verify the symptoms by attempting to recreate, running the diagnostic tests or repeating the same operation.

# System Check Procedures

## External Diskette Drive Check

Do the following procedures to isolate the possible effects from a controller, driver, or diskette. A writable, diagnostic diskette is required.

**NOTE:** Make sure that the diskette does not have more than one label attached. Multiple labels may cause damage to the drive or make the drive fail.

1. Boot from the diagnostic diskette and start the diagnostic programs.
2. See if FDD test is passed as the programs run the FDD test.
3. Follow the instructions in the message window.

If errors occur with the internal diskette driver, reconnect the diskette connector on the system board. If the errors still remain:

1. Reconnect the external diskette drive.
2. Replace the external diskette driver.
3. Replace the main board.

## External CD-ROM Drive Check

Do the following procedures to isolate the possible effects from a controller, driver, or CD-ROM.

**NOTE:** Make sure that the CD-ROM does not have any label attached. The label may cause damage to the drive or make the drive fail.

1. Boot from the diagnostic diskette and start the diagnostic programs.
2. See if CD-ROM test is passed when the programs run the CD-ROM test.
3. Follow the instructions in the message window.

If errors occur, reconnect the connector on the system board. If the errors still remain:

1. Reconnect the external CD-ROM drive.
2. Replace the external CD-ROM drive.
3. Replace the main board.

## Keyboard or Auxiliary Input Device Check

Remove the external keyboard if the internal keyboard is under test. If the internal keyboard does not work or an unexpected error appears, make sure that the flexible cable extending from the internal keyboard is correctly connected on the system board. If the keyboard is correctly connected, run the Keyboard test.

If errors occur, do the following procedures in sequence to correct the problems. Do not replace a non-defective FRU.

1. Reconnect the keyboard cable.
2. Replace the keyboard.
3. Replace the main board.

The following auxiliary input devices are supported by this computer.

- Numeric keypad

- External keyboard

If any of these devices do not function, reconnect the cable and repeat the anterior procedures.

# Memory Check

Follow the procedures below to correct the memory errors.

1. Boot from the diagnostic diskette and start the diagnostic programs.
2. Go to the diagnostic memory in the test items.
3. Press F2 in the test items.
4. Follow the instructions in the message window.

   **NOTE:** Make sure that the DIMM is correctly inserted into the connector. A wrong connection will cause errors.

# Power System Check

To verify the symptoms, power on the computer by using the following power sources separately.

1. Remove the battery pack.
2. Connect the power adaptor and check the power supply.
3. Disconnect the power adaptor and install the battery pack, then check the power supply.

If you think there is a power supply problem, please go to **Check the Power Adaptor** and **Check the Battery Pack** in this chapter.

# Check the Power Adaptor

Unplug the power adaptor cable from the computer and measure the output voltage at the plug of the power adaptor cable. See the illustration and follow the procedures below.
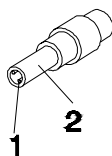
pin 1: +19V to +20.5V
pin 2: 0V, ground

1. If the voltage is not correct, replace the power adaptor.
2. If the voltage is within the range:
   
   (1) Replace the system board.
   
   (2) If the problem is still not resolved, see **Undetermined Problems**.
   
   (3) If the voltage is not correct, go to the next step.

   **NOTE:** An audible noise from the power adaptor does not always indicate a defect.

3. If the power-on indicator does not light up, check the power cord of the power adaptor for continuity and correct installation.
4. If the operational charge does not work, see **Check the Battery Pack**.

# Check the Battery Pack

Follow the procedures below to check the battery pack.

**From software, this helps to identify the problem is on recharging or discharging.**

1. Check the Power Management in Control Panel.
2. Then confirm that the parameters shown in the screen for Current Power Source and Total Battery Power Remaining are correct.
3. Repeat the step 1 and step 2 for both battery and adaptor.

**From hardware, this helps to identify whether you should replace the battery pack or not.**

1. Power off the system.
2. Remove the battery pack and measure the voltage between terminals one (+) and seven (-). There are seven terminals totally. See the illustration below.
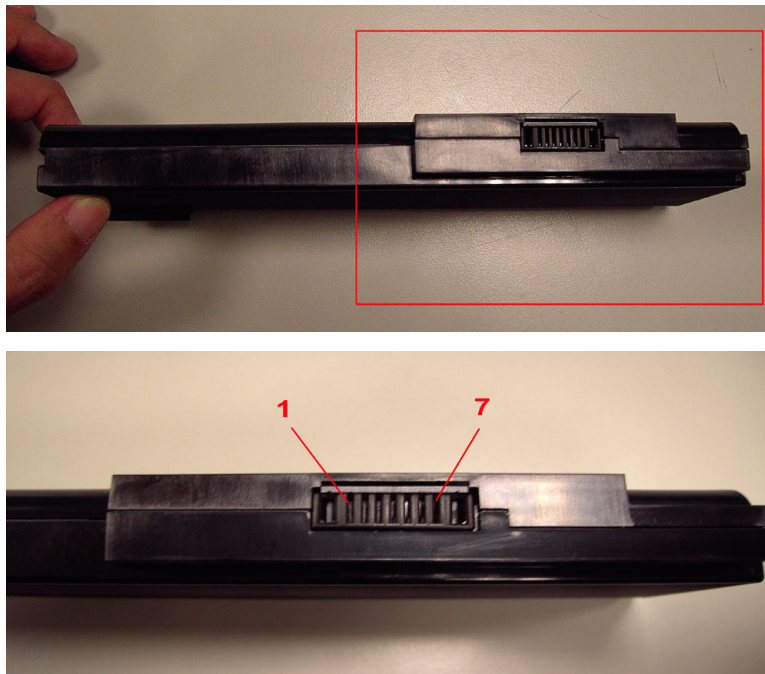
3. If the voltage is still less than 7.5V after recharging, replace the battery.

**If the battery status indicator does not light up, remove the battery pack. After the battery pack returns to room temperature, reinstall it to the system.**

**If the charge indicator does not light up, replace the battery pack. If the charge indicator still does not light up, replace the AC / DC charger board.**

# Touchpad Check

**If the touchpad does not work, follow the procedures one at a time to correct the problem. Do not replace a non-defective FRU.**

1. Reconnect the touchpad cables.
2. Replace the touchpad.
3. Replace the system board.

After you use the touchpad, the pointer drifts on the screen for a short time. This self-acting pointer movement will occur when a slight, steady pressure is applied to the touchpad pointer. This symptom is not a hardware problem.

# Power-On Self-Test (POST) Error Message

The POST error message index lists the error message and their possible causes.

**NOTE:** Perform the FRU replacement or actions in the sequence shown in Error Message List, if the FRU replacement does not solve the problem, put the original part back in the computer. Do not replace a non-defective FRU.

The error messages are listed in the coming pages to indicate the BIOS signals on the screen and the error symptoms classified by functions. If the symptom is not included on the list, please refer to **Undetermined Problems**.

**NOTE:** Most of the error messages occur during POST. Some of them show information about a hardware device, for example, the size of memory installed. Others may indicate problems with a device, such as the way it has been configured.

**NOTE:** If the system fails after you make changes in the BIOS Setup Utility menus, please reset the computer. Enter Setup and install Setup defaults to correct the errors.

## Index of Error Messages

**Error Code List**

| Error Code | Error Message |
|---|---|
| 006 | Equipment Configuration Error Causes:<br>• CPU BIOS Update Code Mismatch<br>• IDE Primary Channel Master Drive Error<br>The causes will be shown before **Equipment Configuration Error**. |
| 010 | Memory Error at xxxx:xxxx:xxxxh (R: xxxxh, W: xxxxh) |
| 070 | Real Time Clock Error |
| 071 | CMOS Battery Bad |
| 072 | CMOS Checksum Error |
| 110 | System disabled.<br>Incorrect password is specified. |
| No error code | Battery critical low: In this situation BIOS will issue four short beeps then shut down system, no message will be shown. |
| No error code | Thermal critical high: In this situation BIOS will shut down the system, no message will be shown. |

**Error Message List**

| Error Message | FRU/Action in Sequence |
|---|---|
| Failure Fixed Disk | Reconnect hard disk drive connector.<br>Run **Load Default Settings** in BIOS Setup Utility.<br>Hard disk drive<br>System board |
| Stuck Key | see **Keyboard or Auxiliary Input Device Check**. |
| Keyboard error | see **Keyboard or Auxiliary Input Device Check**. |
| Keyboard Controller Failed | see **Keyboard or Auxiliary Input Device Check**. |
| Keyboard locked - Unlock key switch | Unlock external keyboard |
| Monitor type does not match CMOS - Run Setup | Run **Load Default Settings** in BIOS Setup Utility. |

| Error Message | FRU/Action in Sequence |
|---|---|
| Shadow RAM Failed at offset: nnnn | BIOS ROM<br>System board |
| System RAM Failed at offset: nnnn | DIMM<br>System board |
| Extended RAM Failed at offset: nnnn | DIMM<br>System board |
| System battery is dead - Replace and run Setup | Replace RTC battery and Run BIOS Setup Utility to reconfigure system time, then reboot system. |
| System CMOS checksum bad - Default configuration used | RTC battery<br>Run BIOS Setup Utility to reconfigure system time, then reboot system. |
| System timer error | RTC battery<br>Run BIOS Setup Utility to reconfigure system time, then reboot system.<br>System board |
| Real time clock error | RTC battery<br>Run BIOS Setup Utility to reconfigure system time, then reboot system.<br>System board |
| Previous boot incomplete - Default configuration used | Run **Load Default Settings** in BIOS Setup Utility.<br>RTC battery<br>System board |
| Memory size found by POST differed from CMOS | Run **Load Default Settings** in BIOS Setup Utility.<br>DIMM<br>System board |
| Diskette drive A error | Check the drive is defined with the proper diskette type in BIOS Setup Utility.<br>See **External Diskette Drive Check**. |
| Incorrect Drive A type - run Setup | Check the drive is defined with the proper diskette type in BIOS Setup Utility. |
| System cache error - Cache disabled | System board |
| CPU ID: | System board |
| DMA Test Failed | DIMM<br>System board |
| Software NMI Failed | DIMM<br>System board |
| Fail-Safe Timer NMI Failed | DIMM<br>System board |
| Device Address Conflict | Run **Load Default Settings** in BIOS Setup Utility.<br>RTC battery<br>System board |
| Allocation Error for device | Run **Load Default Settings** in BIOS Setup Utility.<br>RTC battery<br>System board |
| Failing Bits: nnnn | DIMM<br>BIOS ROM<br>System board |
| Fixed Disk n | None |

| Error Message | FRU/Action in Sequence |
|---|---|
| Invalid System Configuration Data | BIOS ROM<br>System board |
| I/O device IRQ conflict | Run **Load Default Settings** in BIOS Setup Utility.<br>RTC battery<br>System board |
| Operating system not found | Enter Setup and see if fixed disk and drive A: are properly identified.<br>Diskette drive<br>Hard disk drive<br>System board |
| No beep, power-on indicator turns off and LCD is blank. | Power source (battery pack and power adapter). See **Power System Check**.<br>Ensure every connector is connected correctly.<br>Reconnect the DIMM.<br>LED board<br>System board |
| No beep, power-on indicator turns on and LCD is blank. | Power source (battery pack and power adapter). See **Power System Check**.<br>Reconnect the LCD connector.<br>Hard disk drive<br>LCD inverter ID<br>LCD cable<br>LCD Inverter<br>LCD<br>System board |
| No beep, power-on indicator turns on and LCD is blank. But you can see POST on an external CRT. | Reconnect the LCD connectors.<br>LCD inverter ID<br>LCD cable<br>LCD inverter<br>LCD<br>System board |
| No beep, power-on indicator turns on and a blinking cursor shown on LCD during POST. | Ensure every connector is connected tightly and correctly.<br>System board |
| No beep during POST but system runs correctly. | Speaker<br>System board |

# Phoenix BIOS Beep Codes

| Beep Code | Post Code | Description | What to Check (Recommended) |
|-----------|-----------|-------------|------------------------------|
| 1-1-1-3 | 02h | Verify Real Mode. | • Check the processor.<br>• Check the main board. |
| 1-1-2-1 | 04h | Get CPU type. | • Check the processor.<br>• Check the main board. |
| 1-1-2-3 | 06h | Initialize system hardware. | • Check the main board. |
| 1-1-3-1 | 08h | Initialize cache to initial POST values. | • Check the main board. |
| 1-1-3-2 | 09h | Set in POST flag. | • Check the main board. |
| 1-1-3-3 | 0Ah | Initialize CPU registers. | • Check the processor.<br>• Check the main board. |
| 1-1-4-1 | 0Ch | Initialize cache to initial POST values. | • Check the secondary cache.<br>• Check the processor.<br>• Check the main board. |
| 1-1-4-3 | 0Eh | Initialize I/O. | • Make sure all the cards are securely inserted into the system.<br>• Make sure that there are no physical problems with the main board or internal connections.<br>• Disable all shadowing of expansion adapter ROMs and see if that fixes the problem.<br>• Remove all unnecessary expansion cards (basically, everything but the video card) and see if the problem goes away. If it does, the problem is probably one of the expansion cards you removed. If not, your problem lies elsewhere. Try to isolate the problem by inserting one expansion card at a time back into the system and seeing which on e triggers the problem. |
| 1-2-1-1 | 10h | Initialize Power Management. | • Check the main board. |
| 1-2-1-2 | 11h | Load alternate registers with initial POST values. | • Check the main board. |
| 1-2-1-3 | 12h | Jump to UserPatch0. | • Check the main board. |
| 1-2-2-1 | 14h | Initialize keyboard controller. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 1-2-2-3 | 16h | BIOS ROM checksum. | • Check the main board. |
| 1-2-3-1 | 18h | 8254 timer initialization. | • Check the main board. |
| 1-2-3-3 | 1Ah | 8237 DMA controller initialization | • Treat as an expansion card problem.<br>• Check the main board. |

| Beep Code | Post Code | Description | What to Check (Recommended) |
|---|---|---|---|
| 1-2-4-1 | 1Ch | Reset Programmable Interrupt Controller | • Treat as an expansion card problem.<br>• Check the main board. |
| 1-3-1-1 | 20h | Test DRAM refresh. | • Check the system memory.<br>• Check the main board. |
| 1-3-1-3 | 22h | Test 8742 keyboard controller. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 1-3-2-1 | 24h | Set ES segment register to 4GB. | • Check the main board. |
| 1-3-3-1 | 28h | Autosize DRAM. | • Check the system memory.<br>• Check the main board. |
| 1-3-3-3 | 2Ah | Clear 512K base RAM. | • Check the system memory.<br>• Check the main board. |
| 1-3-4-1 | 2Ch | RAM failure on address line xxxx. | • Check the system memory.<br>• Check the main board. |
| 1-3-4-3 | 2Eh | RAM failure on data bits xxxx of low byte of memory bus. | • Check the system memory.<br>• Check the main board. |
| 1-4-1-3 | 32h | Test CPU bus-clock frequency. | • Check the processor.<br>• Check the main board. |
| 1-4-2-1 | 34h | COMS RAM read/write failure. | • Check the main board. |
| 1-4-2-4 | 37h | Reinitialize the chipset. | • Check the main board. |
| 1-4-3-1 | 38h | Shadow system BIOS ROM. | • Check the expansion cards.<br>• Check the system memory.<br>• Check the main board. |
| 1-4-3-2 | 39h | Reinitialize the cache. | • Check the secondary cache.<br>• Check the processor.<br>• Check the main board. |
| 1-4-3-3 | 3Ah | Autosize cache. | • Check the secondary cache.<br>• Check the processor.<br>• Check main board. |
| 1-4-4-1 | 3Ch | Configure advanced chipset registers. | • Check the main board. |
| 1-4-4-2 | 3Dh | Load alternate registers with CMOS values. | • Check the main board. |
| 2-1-1-1 | 40h | Set Initial CPU speed. | • Check the main board. |
| 2-1-1-3 | 42h | Initialize interrupt vector. | • Treat as an expansion card problem.<br>• Check the main board. |
| 2-1-2-1 | 44h | Initialize BIOS interrupt. | • Treat as an expansion card problem.<br>• Check the main board. |
| 2-1-2-3 | 46h | Check ROM copyright notice. | • Check the main board. |

| Beep Code | Post Code | Description | What to Check (Recommended) |
|---|---|---|---|
| 2-1-2-4 | 47h | Initialize manager for PCI Options ROMs. | • Treat as an expansion card problem.<br>• Check the serial port(s).<br>• Check the parallel port(s).<br>• Check the main board. |
| 2-1-3-1 | 48h | Check video configuration against CMOS. | • Check the video card.<br>• Make sure the system memory is working properly.<br>• Check the main board. |
| 2-1-3-2 | 49h | Initialize PCI bus and devices. | • Treat as an expansion card problem.<br>• Check the serial port(s).<br>• Check the parallel port(s).<br>• Check the main board. |
| 2-1-3-3 | 4Ah | Initialize all video adapters in system. | • Check the video card.<br>• Make sure the system memory is working properly. |
| 2-1-4-1 | 4Ch | Shadow video BIOS ROM. | • Check the expansion cards.<br>• Check the system memory.<br>• Check the main board. |
| 2-1-4-3 | 4Eh | Display copyright notice. | • Check the video card.<br>• Check the main board. |
| 2-2-1-1 | 50h | Display CPU type and speed. | • Check the video card. |
| 2-2-1-3 | 52h | Test keyboard. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 2-2-2-1 | 54h | Set key click if enabled. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 2-2-2-3 | 56h | Enable keyboard. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 2-2-3-1 | 58h | Test for unexpected interrupts. | • Treat as an expansion card problem.<br>• Check the main board. |
| 2-2-3-3 | 5Ah | Display prompt "Press F2 to enter SETUP". | • Check the video card.<br>• Check the main board. |
| 2-2-4-1 | 5Ch | Test RAM between 512 and 640K. | • Check the system memory.<br>• Check the main board. |
| 2-3-1-1 | 60h | Test expanded memory. | • Check the system memory.<br>• Check the main board. |
| 2-3-1-3 | 62h | Test extended memory address lines. | • Check the system memory.<br>• Check the main board. |
| 2-3-2-1 | 64h | Jump to UserPatch1. | • Check the main board. |
| 2-3-2-3 | 66h | Configure advanced cache registers. | • Check the secondary cache.<br>• Check the processor.<br>• Check the main board. |

| Beep Code | Post Code | Description | What to Check (Recommended) |
|-----------|-----------|-------------|------------------------------|
| 2-3-3-1 | 68h | Enable external and CPU caches. | • Check the secondary cache.<br>• Check the processor.<br>• Check the main board. |
| 2-3-3-2 | 69h | Initialize SMI handler. | • Check the main board. |
| 2-3-3-3 | 6Ah | Display external cache size. | • Check the video card.<br>• Check the main board. |
| 2-3-4-1 | 6Ch | Display shadow message. | • Check the video card.<br>• Check the main board. |
| 2-3-4-3 | 6Eh | Display non-disposable segments. | • Check the video card.<br>• Check the main board. |
| 2-4-1-1 | 70h | Display error messages. | • Check the video card.<br>• Check the main board. |
| 2-4-1-3 | 72h | Check for configuration errors. | • Check the main board. |
| 2-4-2-1 | 74h | Test real-time clock. | • Check the main board. |
| 2-4-2-3 | 76h | Check for keyboard errors. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 2-4-4-1 | 7Ch | Set up hardware interrupts vectors. | • Treat as an expansion card problem.<br>• Check the main board. |
| 2-4-4-3 | 7Eh | Test coprocessor if present. | • Check the processor.<br>• Check the main board. |
| 3-1-1-1 | 80h | Disable onboard I/O ports. | • Treat as an expansion card problem.<br>• Check the serial port(s).<br>• Check the parallel port(s).<br>• Check the main board. |
| 3-1-1-3 | 82h | Detect and install external RS232 ports. | • Treat as an expansion card problem.<br>• Check the serial port(s).<br>• Check the parallel port(s).<br>• Check the main board. |
| 3-1-2-1 | 84h | Detect and install external parallel ports. | • Treat as an expansion card problem.<br>• Check the serial port(s).<br>• Check the parallel port(s).<br>• Check the main board. |
| 3-1-2-3 | 86h | Reinitialize onboard I/O ports. | • Treat as an expansion card problem.<br>• Check the serial port(s).<br>• Check the parallel port(s).<br>• Check the main board. |
| 3-1-3-1 | 88h | Initialize BIOS data area. | • Check the main board. |
| 3-1-3-3 | 8Ah | Initialize extended BIOS data area. | • Check the main board. |
| 3-1-4-1 | 8Ch | Initialize floppy controller. | • Check the HDD.<br>• Check the floppy disk drive(s).<br>• Check the main board. |

| Beep Code | Post Code | Description | What to Check (Recommended) |
|-----------|-----------|-------------|------------------------------|
| 3-2-1-1 | 90h | Initialize hard disk controller. | • Check the HDD.<br>• Check the floppy disk drive(s).<br>• Check the main board. |
| 3-2-1-2 | 91h | Initialize local bus hard disk controller. | • Check the HDD.<br>• Check the floppy disk drive(s).<br>• Check the main board. |
| 3-2-1-3 | 92h | Jump to UserPatch2. | • Check the main board. |
| 3-2-2-1 | 94h | Disable A20 address line. | • Check the keyboard.<br>• Check keyboard controller.<br>• Check the main board. |
| 3-2-2-3 | 96h | Clear huge ES segment register. | • Check the main board. |
| 3-2-3-1 | 98h | Search for option ROMs. | • Check the main board. |
| 3-2-3-3 | 9Ah | Shadow for option ROMs. | • Check the expansion cards.<br>• Check the system memory.<br>• Check the main board. |
| 3-2-4-1 | 9Ch | Set up Power Management. | • Check the main board. |
| 3-2-4-3 | 9Eh | Enable hardware interrupts. | • Treat as an expansion card problem.<br>• Check the main board. |
| 3-3-1-1 | A0h | Set time of day. | • Check the main board. |
| 3-3-1-3 | A2h | Check key lock. | • Unlock the key lock if it is locked.<br>• Investigate possible problem with the key lock switch. If it is either unlocked already or not present on the system case.<br>• Check the main board. |
| 3-3-3-1 | A8h | Erase F2 prompt. | • Check the video card.<br>• Check the main board. |
| 3-3-3-3 | AAh | Scan for F2 key stroke. | • Check the main board. |
| 3-3-4-1 | ACh | Enter SETUP. | • Check the main board. |
| 3-3-4-3 | AEh | Clear in-POST flag. | • Check the main board. |
| 3-4-1-1 | B0h | Check for errors. | • Check the main board. |
| 3-4-1-3 | B2h | POST done - prepare to boot operating system. | • Check the main board. |
| 3-4-2-1 | B4h | One beep. | • Check the main board. |
| 3-4-2-3 | B6h | Check password (optional). | • Check the main board. |
| 3-4-3-1 | B8h | Clear global descriptor table. | • Check the main board. |
| 3-4-4-1 | BCh | Clear parity checkers. | • Check the main board. |
| 3-4-4-3 | BEh | Clear screen (optional). | • Check the video card.<br>• Check the main board. |
| 3-4-4-4 | BFh | Check virus and backup reminders. | • Check the main board. |

| Beep Code | Post Code | Description | What to Check (Recommended) |
|---|---|---|---|
| 4-1-1-1 | C0H | Try to boot with INT 19. | • Check the HDD.<br>• Check the floppy disk drive(s).<br>• Check the main board. |
| 4-2-1-1 | D0H | Interrupt handler error. | • Treat as an expansion card problem.<br>• Check the main board. |
| 4-2-1-3 | D2h | Unknown interrupt. | • Treat as an expansion card problem.<br>• Check the main board. |
| 4-2-2-1 | D4h | Pending interrupt error. | • Treat as an expansion card problem.<br>• Check the main board. |
| 4-2-2-3 | D6h | Initialize option ROM error. | • Check the main board. |
| 4-2-3-1 | D8h | Shutdown error. | • Check the main board. |
| 4-2-3-3 | DAh | Extended Block Move. | • Check the main board. |
| 4-2-4-1 | DCh | Shutdown error. | • Check the main board. |
| 4-2-4-3 | DEh | Keyboard controller failure. | • Check the keyboard.<br>• Check the keyboard controller.<br>• Check the main board. |
| 4-3-1-3 | E2h | Initialize the chipset. | • Check the main board. |
| 4-3-1-4 | E3h | Initialized refresh counter. | • Check the main board. |
| 4-3-2-1 | E4h | Check for Forced Flash. | • Check the main board. |
| 4-3-2-2 | E5h | Check HW status of ROM. | • Check the main board. |
| 4-3-2-3 | E6h | BIOS ROM is OK. | • Check the main board. |
| 4-3-2-4 | E7h | Do a complete RAM test. | • Check the system memory.<br>• Check the main board. |
| 4-3-3-1 | E8h | Do OEM initialization. | • Check the main board. |
| 4-3-3-2 | E9h | Initialize interrupt controller. | • Treat as an expansion card problem.<br>• Check the main board. |
| 4-3-3-3 | EAh | Read in bootstrap code. | • Check the HDD.<br>• Check the floppy disk drive.<br>• Check the main board. |
| 4-3-3-4 | EBh | Initialize all vectors. | • Treat as an expansion card problem.<br>• Check the main board. |
| 4-3-4-1 | ECh | Boot the Flash program. | • Check the main board. |
| 4-3-4-2 | EDh | Initialize the boot device. | • Check the HDD.<br>• Check the floppy disk drive(s).<br>• Check the main board. |
| 4-3-4-3 | EEh | Boot code was read OK. | • Check the HDD.<br>• Check the floppy disk drive(s).<br>• Check the main board. |

# Index of Symptom-to-FRU Error Message

## LCD-Related Symptoms

| Symptom/Error | Action in Sequence |
|---|---|
| LCD backlight doesn't work. LCD is too dark. LCD brightness cannot be adjusted. LCD contrast cannot be adjusted. | Enter BIOS Utility to execute **Load Setup Default Settings**, then reboot system. Reconnect the LCD connectors. Keyboard (if contrast and brightness function key do not work). LCD inverter ID LCD cable LCD inverter LCD System board |
| Unreadable LCD screen Missing pels in characters Abnormal screen Wrong color displayed | Reconnect the LCD connector. LCD inverter ID LCD cable LCD inverter LCD System board |
| LCD has extra horizontal or vertical lines displayed. | LCD inverter ID LCD inverter LCD cable LCD System board |

## Indicator-Related Symptoms

| Symptom/Error | Action in Sequence |
|---|---|
| Indicator incorrectly remains off or on, but system runs correctly. | Reconnect the inverter board Inverter board System board |

## Power-Related Symptoms

| Symptom/Error | Action in Sequence |
|---|---|
| Power shuts down during operation. | Power source (battery pack and power adapter). See **Power System Check**. Battery pack Power adapter Hard drive & battery connection board System board |
| The system doesn't power on. | Power source (battery pack and power adapter). See **Power System Check**. Battery pack Power adapter Hard drive & battery connection board System board |
| The system doesn't power-off. | Power source (battery pack and power adapter). See **Power System Check**. Hold and press the power switch for more than 4 seconds. System board |

| Symptom/Error | Action in Sequence |
|---|---|
| Battery can't be charged. | See **Check the Battery Pack**.<br>Battery pack<br>System board |

### PCMCIA-Related Symptoms

| Symptom/Error | Action in Sequence |
|---|---|
| System cannot detect the PC Card (PCMCIA). | PCMCIA slot assembly<br>System board |
| PCMCIA slot pin is damaged. | PCMCIA slot assembly |

### Memory-Related Symptoms

| Symptom / Error | Action in Sequence |
|---|---|
| Memory count (size) appears different from actual size. | Enter BIOS Setup Utility to execute **Load Default Settings**, then reboot system.<br>DIMM<br>System board |

### Speaker-Related Symptoms

| Symptom/Error | Action in Sequence |
|---|---|
| In Windows, multimedia programs, no sound comes from the computer. | Audio driver<br>Speaker<br>System board |
| Internal speakers make noise or emit no sound. | Speaker<br>System board |

### Power Management-Related Symptoms

| Symptom/Error | Action in Sequence |
|---|---|
| The system will not enter hibernation. | Keyboard (if control is from the keyboard)<br>Hard disk drive<br>System board |
| The system does not enter hibernation mode and four short beeps every minute. | Press Fn + F4  and see if the computer enters hibernation mode.<br>Touchpad<br>Keyboard<br>Hard disk connection board<br>Hard disk drive<br>System board |
| The system does not enter standby mode after closing the LCD. | LCD cover switch<br>System board |
| The system does not resume from hibernation mode. | Hard disk connection board<br>Hard disk drive<br>System board |
| The system does not resume from standby mode after opening the LCD. | LCD cover switch<br>System board |
| Battery fuel gauge in Windows does not go higher than 90%. | Remove battery pack and let it cool for two hours.<br>Refresh battery (continue to use battery until power off, then charge battery).<br>Battery pack<br>System board |
| System hangs intermittently. | Reconnect hard disk/CD-ROM drives.<br>Hard disk connection board<br>System board |

**Peripheral-Related Symptoms**

| Symptom/Error | Action in Sequence |
|---|---|
| System configuration does not match the installed devices. | Enter BIOS Setup Utility to execute **Load Default Settings**, then reboot system. <br> Reconnect hard disk/CD-ROM/diskette drives. |
| External display does not work correctly. | Press Fn + F5, LCD/CRT/Both display switching <br> System board |
| USB does not work correctly. | System board |
| Print problems | Ensure the **Parallel Port** in the "Onboard Devices Configuration" of BIOS Setup Utility is set to Enabled. <br> Onboard Devices Configuration <br> Run printer self-test. <br> Printer driver <br> Printer cable <br> Printer <br> System Board |
| Serial or parallel port device problems. | Ensure the **Serial Port** in the Devices Configuration" of BIOS Setup Utility is set to Enabled. <br> Device driver <br> Device cable <br> Device <br> System board |

**Keyboard/Touchpad-Related Symptoms**

| Symptom/Error | Action in Sequence |
|---|---|
| Keyboard (one or more keys) does not work. | Reconnect the keyboard cable. <br> Keyboard <br> System board |
| Touchpad does not work. | Reconnect touchpad cable. <br> Touchpad board <br> System board |

**Modem-Related Symptoms**

| Symptom/Error | Action in Sequence |
|---|---|
| Internal modem does not work correctly. | Modem phone port <br> Modem combo board <br> System board |

**NOTE:** If you can not correct the problems according to the anterior tables, see **Undetermined Problems**.

# Intermittent Problems

Intermittent system hang problems can be caused by a variety of reasons that have nothing to do with a hardware defect, such as cosmic radiation, electrostatic discharge, or software errors. FRU replacement should be considered only when a recurring problem exists.

When analyzing an intermittent problems, follow the procedures below:

1. Run the advanced diagnostic test for the system board in loop mode at least 10 times.

2. If no error is detected, do not replace any FRU.

3. If any error is detected, replace the FRU. Rerun the test to verify that there are no more errors.

# Undetermined Problems

The diagnostic problems does not identify which devices fail, which devices are incorrectly installed, whether a short circuit happens, or whether the system is inoperative.

**NOTE:** Verify if all devices attached are supported by the computer.

**NOTE:** Verify if the power supply used at the time of failure is operating correctly. You can refer to **Power System Check**.

**Follow the procedures below to isolate the failing FRU. Do not isolate non-defective FRU.**

1. Power off the computer.
2. Visually check the devices. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Battery Pack
   - Hard disk drive
   - DIMM
   - CD-ROM / Diskette drive module
   - PC cards
4. Power on the computer.
5. Determine if the problem has been resolved.
6. If the problem does not recur, reconnect the removed devices one at a time until you find the failed FRU.
7. If the problem remains, replace the following FRU one at a time. Do not replace a non-defective FRU.
   - System board
   - LCD assembly

# Jumper and Connector Location

## Main Board

### Bottom Side
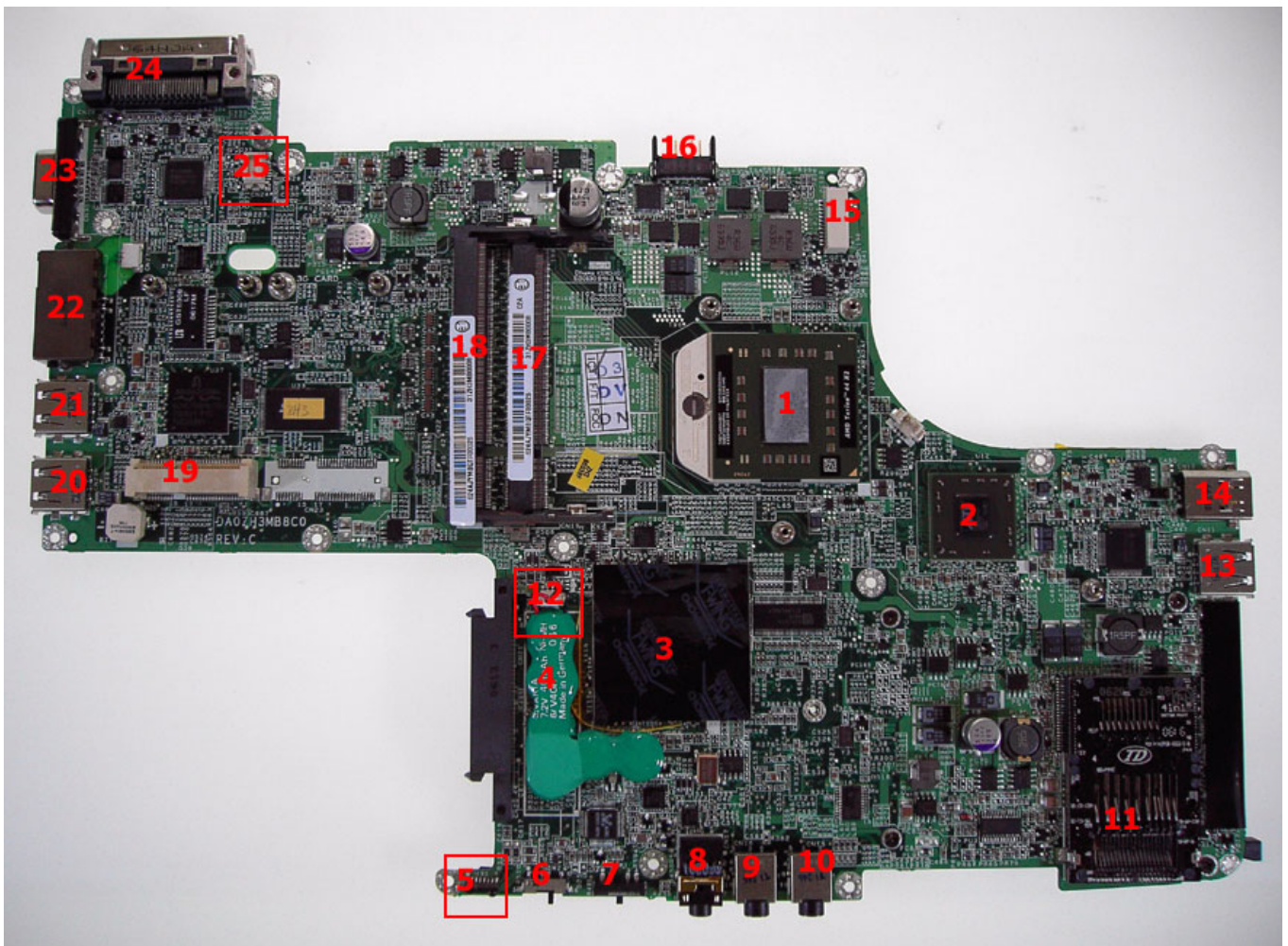


| # | Description | # | Description |
|---|-------------|---|-------------|
| 1 | Processor | 2 | North bridge chipset |
| 3 | South bridge chipset | 4 | RTC battery |
| 5 | FIR | 6 | Wireless switch |
| 7 | Bluetooth switch | 8 | SPDIF / Line-out CONN. |
| 9 | Mic CONN. | 10 | Line-in CONN. |
| 11 | 5-in-1 card reader | 12 | RTC battery CONN. |
| 13 | USB CONN. | 14 | 1394 CONN. |

| # | Description | # | Description |
|---|---|---|---|
| 15 | DC board CONN. | 16 | System battery pack CONN. |
| 17 | DDR2 SODIMM | 18 | DDR2 SODIMM |
| 19 | Wireless LAN card CONN. | 20 | USB CONN. |
| 21 | USB CONN. | 22 | RJ11 & RJ45 CONN. |
| 23 | CRT CONN. | 24 | Docking CONN. |
| 25 | Modem card CONN. | | |

# Upper Side
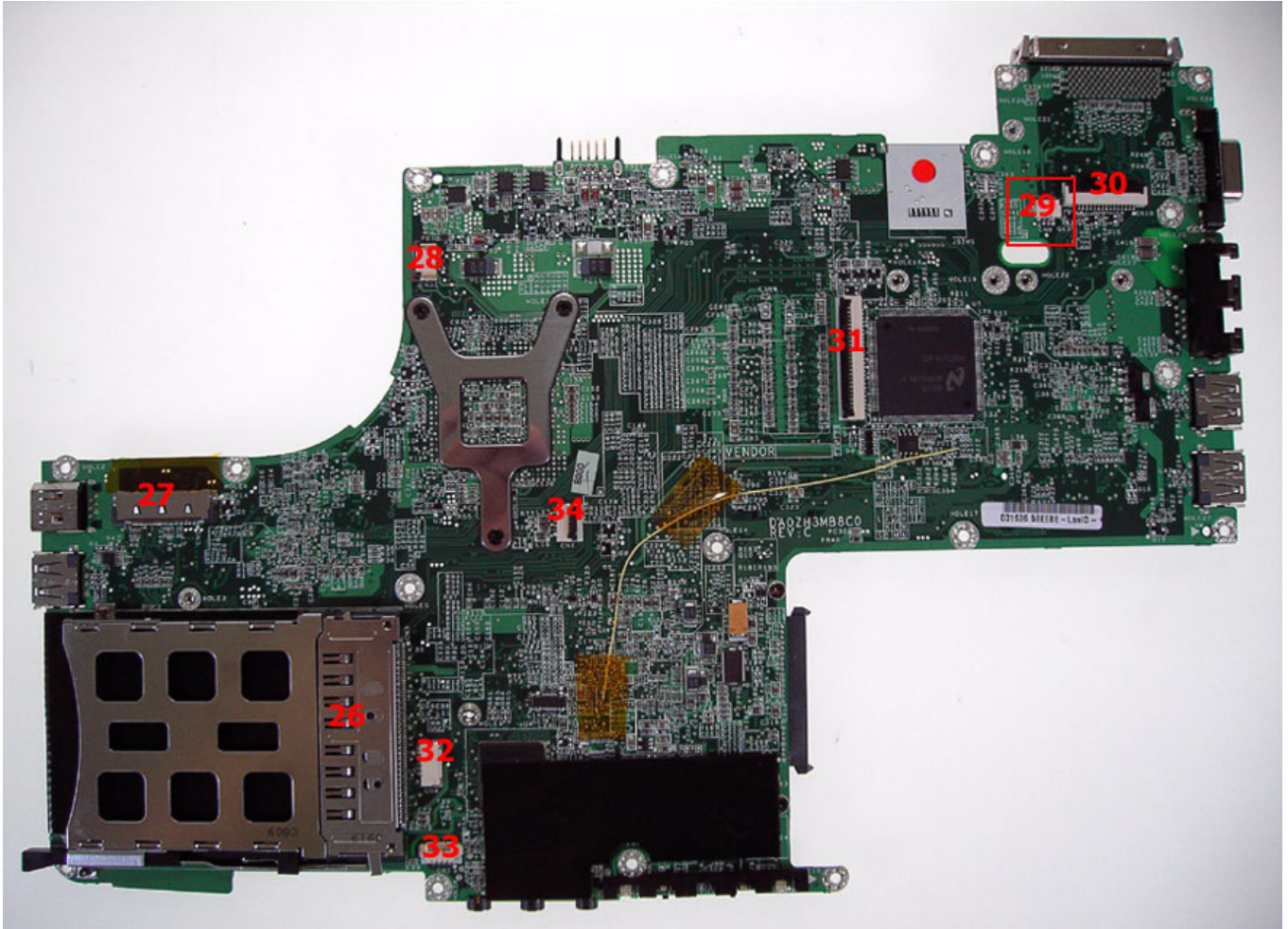


| # | Description | # | Description |
|---|---|---|---|
|   | Processor | 26 | PCMCIA CONN. |
| 27 | LVDS CONN. | 28 | Power board CONN. |
| 29 | Microphone CONN. | 30 | Button board CONN. |
| 31 | Keyboard FFC CONN. | 32 | Bluetooth module CONN. |
| 33 | Speaker CONN. | 34 | Touch pad FFC CONN. |

# FRU (Field Replaceable Unit)

This chapter offers the FRU (Field Replaceable Unit) listing in global configuration of Ferrari 1000. Please refer to this chapter whenever you order the parts to repair or for RMA (Return Merchandise Authorization).

Please note that when ordering FRU part, you should check the most-up-to-date information available on your regional web or channel. For whatever reasons, a part number is changed, it will NOT be noted on the printed service guide. For Acer authorized service providers, your Acer office may have a different part number code from those given in the FRU list of this printed service guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for service.
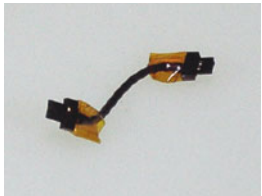
NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose them properly, or follow the rules set by your regional Acer office on how to return it.
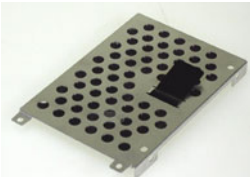
# Parts and Exploded Diagram

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| ADAPTER | | | |
| N/A | ADAPTER 65W 3 PIN Delta SADP-65KB DBRF LF | ZH2 ADPTER Delta S/P | AP.06501.010 |
| N/A | ADAPTER 65W 3 PIN LITE-ON PA1650-02 QY LF ZL6C ADP 19V LITEON S/P | ZL6C ADP 19V LITEON S/P | AP.06503.013 |
| BATTERY | | | |
| N/A | BATTERY SANYO LI-ION 3S1P 3CELL 2000mAH HR | ZH3 BATT SANYO 3S1P 3CELL S/P | BT.00303.005 |
| N/A | BATTERY PANASONIC LI-ION 3S1P 3CELL 2000mAH HR | ZH3 BATT PANA 3S1P 3CELL S/P | BT.00305.002 |
|  | BATTERY SANYO LI-ION 3S2P 6CELL 2600mAH | ZH3 BATT SANYO 3S2P 6CELL S/P | BT.00603.022 |
| N/A | BATTERY PANASONIC LI-ION 3S2P 6CELL 2600mAH | ZH3 BATT PANA 6CELL S/P | BT.00605.010 |
| BOARD | | | |
|  | MODEM 56K (MDC)T60M845.02 EU | MODEM 56K (MDC)T60M845.02 EU | 54.AA7V7.001 |
|  | BLUETOOTH MODULE FOXCONN T60H928.01 W/ANTENNA | BLUETOOTH MODULE (T60H928.01) | 54.TAXV7.001 |
|  | MINI PCI WIRELESS BOARD FOXCONN 802.11b/g GOLAN T60H938.03 | FOXCONN WL BG Atheros XB62 S/P | 54.FR5V7.002 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
|  | LCD INVERTER BOARD | ZH3 LCD INVERTER S/P | 19.FR6V7.001 |
| N/A | MINI PCI WIRELESS BOARD FOXCONN 802.11ABG T60H921.10 | Foxconn 'Minicard_ABG(Atheros XB62) | 54.FR5V7.003 |
| N/A | MINI PCI WIRELESS BOARD FOXCONN ATHEROS 802.11N T60H971.00 | ZH3 FOX WL ATHEROS T60H971.00 S/P | 54.FR6V7.001 |
| N/A | MINI PCI WIRELESS BOARD FOXCONN BROADCOM 802.11N T60H971.01 | ZH3 FOX WL 11N BROADCOM T60H971.01 S/P | 54.FR6V7.002 |
| N/A | TOUCHPAD BOARD | ZH3 TP/B ASSY S/P | 55.FR6V7.001 |
| N/A | POWER BOARD | ZH3 DC/B ASSY  S/P | 55.FR6V7.002 |
| CABLE | | | |
| N/A | POWER CORD JAPAN | ZB1 POWER CORD (JAPANESE) ROHS S/P | 27.TAXV7.003 |
| N/A | POWER CORD PRC (3 PIN) | ET2S POWER CORD S/P-PRC | 27.A03V7.003 |
| N/A | POWER CORD (UK) | ET2S POWER CORD SPARE PART-UK | 27.A03V7.004 |
| N/A | POWER CORD DANISH (3 PIN) | ET2S POWER CORD S/P-DANISH | 27.A03V7.006 |
| N/A | POWER CORD AF-S (INDIA) | ZL6A POWER CORD S/P INDIA S.P. | 27.A50V7.001 |
| N/A | POWER CORD ISRAEL (3 PIN) | ZL6A POWER CORD S/P-ISR S.P | 27.A50V7.002 |
| N/A | POWER CORD AU W/ LABEL (3 PIN) | ZL6A POWER CORD S/P-AU S.P. | 27.A50V7.003 |
| N/A | POWER CORD US-110V (BSMI) | ZL3E POWER CORD S/P-TWN | 27.A99V7.002 |
| N/A | POWER CORD AF (3 PIN) | ZI5 POWER CORD S/P-AF | 27.T48V7.001 |
| N/A | POWER CORD THAI | ZL3E POWER CORD S/P-THAI | 27.A99V7.003 |
| N/A | POWER CORD SWISS 3 PIN | ZE1 POWER CORD 3P SWISS S.P. | 27.A99V7.004 |
| N/A | POWER CORD ITALIAN 3PIN | EI2 POWER CORD 3P ITALY S.P. | 27.A99V7.005 |
| N/A | POWER CORD (CONTINENTAL) | EI2 POWER CORD 3P CONTINENTAL S.P. | 27.FR5V7.001 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
|  | MODEM CABLE | CABLE ASSY ZH3 MDDEM S/P | 50.FR6V7.001 |
|  | BLUETOOTH CABLE | CABLE ASSY ZH3 BLUETOOTH S/P | 50.FR6V7.002 |
| N/A | POWER BOARD CABLE | CABLE ASSY ZH3 DC S/P | 50.FR6V7.003 |
|  | LCD CABLE ASSY 12.1 IN. FOR CCD | ZH3 LCD CABLE 12.1 FOR CCD S/P | 50.FR6V7.003 |
| CASE/COVER/BRACKET ASSEMBLY | | | |
|  | MIDDLE COVER | ZH3 KB COVER ASSY S/P | 42.FR6V7.001 |
|  | "UPPER CASE W/TP, CABLE" | ZH3 TOP CASE SUB ASSY S/P | 60.FR6V7.001 |
|  | "LOWER CASE W/ SPEAKER, RUBBER FOOT" | ZH3 BASE CASE ASSY S/P | 60.FR6V7.002 |
|  | RAM DOOR | ZH3 RAM DOOR ASSY S/P | 42.FR6V7.002 |
|  | DUMMY SD CARD | ZH3 SD DUMMY CARD ASSY S/P | 42.FR6V7.003 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| | DUMMY PCMCIA CARD | PCMCIA-DUMMY-CARD-ZC1 S/P | 42.FR6V7.004 |
| N/A | LCD COVER CARBON W/ 3G ANTENNA FOR CCD | ZH3 LCD COVER N-G CARBON S/P | TBD |
| | LCD BRACKET W/HINGE - L | ZH3 HINGE-BKT-L-SZS-ZH3 S/P | 33.FR6V7.002 |
| | LCD BRACKET W/HINGE - R | ZH3 HINGE-BKT-R-SZS-ZH3 S/P | 33.FR6V7.003 |
| | LCD COVER CARBON W/ ANTENNA FOR CCD | ZH3 LCD COVER CARBON ASSY S/P | 60.FR6V7.003 |
| | "LCD BEZEL ASSY W/ MIC, RUBBER FOR CCD" | ZH3 LCD BEZEL ASSY S/P | 60.FR6V7.004 |
| CPU / PROCESSOR | | | |
| | AMD MOBILE TURION 64 X2 TL50 (ATTL50) 1.6G (Cache 128K/256K) | ZC3 AMD CPU Turion TL50 1.6G S/P | KC.TTL02.500 |
| N/A | AMD MOBILE TURION 64 X2 TL52 (ATTL52) 1.6G (Cache 128k/512k) | ZC3 AMD CPU Turion TL52 1.6G S/P | KC.TTL02.520 |
| N/A | AMD MOBILE TURION 64 X2 TL56 (ATTL56) 1.8G (Cache 128k/512k) | ZC3 AMD CPU Turion TL56 1.8G S/P | KC.TTL02.560 |
| N/A | AMD MOBILE TURION 64 X2 TL60 (ATTL60) 2.0G (Cache 128k/512k) | ZC3 AMD CPU Turion TL60 2.0G S/P | KC.TTL02.600 |
| DVD RW DRIVE | | | |
| N/A | EXTERNAL PANASONIC SUPER MULTI UJ-85J SLOT IN LF | ZH3 ODD PANA SUPER MULTI UJ-85J S/P | KU.00807.043 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| HDD | | | |
|  | 100G SEAGATE 2.5 5400RPM SATA 8M ST9100824AS (-189) MERCURY 2 LF FW:3.06 | TBD | KH.10001.009 |
| N/A | "100G TOSHIBA 2.5""5400RPM SATAMK1032GSX ARIES-B FREE-FALL LF FW:AS021J" | TBD | KH.10004.004 |
| N/A | 120G TOSHIBA MK1234GSX(Rohs) (Free-fall) | TBD | KH.12004.004 |
| N/A | 120G SEAGATE ST9120821AS(-189) | TBD | KH.12001.026 |
| N/A | 120G WD WD1200BEVS-22LAT0 | ZH3 120G WD WD1200BEVS S/P | KH.12008.016 |
| N/A | 160G SEAGATE 2.5 IN. 5400RPM ST9160821AS VENUS SATA LF FW: 3.ALA | TBD | KH.16001.021 |
| N/A | 160G SEAGATE 2.5 IN. 5400RPM ST9160821A VENUS LE FW:3.ALA | ZH3 160G SEAGATE ST9160821A S/P | KH.16001.020 |
| N/A | "HDD DOOR W/ CUSION, RUBBER FOOT" | ZH3 HDD DOOR ASSY S/P | 42.FR6V7.005 |
|  | HDD BRACKET | ZH3 HDD BRACKET S/P | 33.FR6V7.001 |
| KEYBOARD | | | |
|  | FR1000 KEYBOARD DARFON US International | ZH3 K/B (UI) S/P | KB.FR607.001 |
| N/A | FR1000 KEYBOARD DARFON Chinese | ZH3 K/B (TAIWAN) S/P | KB.FR607.002 |
| N/A | FR1000 KEYBOARD DARFON Spanish | ZH3 K/B (SPANISH) S/P | KB.FR607.003 |
| N/A | FR1000 KEYBOARD DARFON Thai | ZH3 K/B (THAI) S/P | KB.FR607.004 |
| N/A | FR1000 KEYBOARD DARFON Brazilian Portuguese | ZH3 K/B (BRAZIL) S/P | KB.FR607.005 |
| N/A | FR1000 KEYBOARD DARFON Korea | ZH3 K/B (KOREAN) S/P | KB.FR607.006 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| N/A | FR1000 KEYBOARD DARFON UK | ZH3 K/B (UK) S/P | KB.FR607.007 |
| N/A | FR1000 KEYBOARD DARFON German | ZH3 K/B (GERMAN) S/P | KB.FR607.008 |
| N/A | FR1000 KEYBOARD DARFON Italian | ZH3 K/B (ITALIAN) S/P | KB.FR607.009 |
| N/A | FR1000 KEYBOARD DARFON French | ZH3 K/B (FRENCH) S/P | KB.FR607.010 |
| N/A | FR1000 KEYBOARD DARFON Swiss/G | ZH3 K/B (SWISS) S/P | KB.FR607.011 |
| N/A | FR1000 KEYBOARD DARFON Portuguese | ZH3 K/B (PORTUGUESE) S/P | KB.FR607.012 |
| N/A | FR1000 KEYBOARD DARFON Belgium | ZH3 K/B (BELGIUM) S/P | KB.FR607.014 |
| N/A | FR1000 KEYBOARD DARFON Sweden | ZH3 K/B (SWEDISH) S/P | KB.FR607.015 |
| N/A | FR1000 KEYBOARD DARFON Czech | ZH3 K/B (CZECH) S/P | KB.FR607.016 |
| N/A | FR1000 KEYBOARD DARFON Hungarian | ZH3 K/B (HUNGARIAN) S/P | KB.FR607.017 |
| N/A | FR1000 KEYBOARD DARFON Norway | ZH3 K/B (NORWEGIAN) S/P | KB.FR607.018 |
| N/A | FR1000 KEYBOARD DARFON Danish | ZH3 K/B (DANISH) S/P | KB.FR607.019 |
| N/A | FR1000 KEYBOARD DARFON Turkish | ZH3 K/B (TURKISH) S/P | KB.FR607.020 |
| N/A | FR1000 KEYBOARD DARFON Canadian French | ZH3 K/B (FRA-CAN) S/P | KB.FR607.021 |
| N/A | FR1000 KEYBOARD DARFON Japanese | ZH3 K/B (JAPAN) S/P | KB.FR607.022 |
| N/A | FR1000 KEYBOARD DARFON Greek | ZH3 K/B (GREEK) S/P | KB.FR607.023 |
| N/A | FR1000 KEYBOARD DARFON Hebrew | ZH3 K/B (HEBREW) S/P | KB.FR607.024 |
| N/A | FR1000 KEYBOARD DARFON Russian | ZH3 K/B (RUSSIAN) S/P | KB.FR607.025 |
| N/A | FR1000 KEYBOARD DARFON Croatia (CR) | ZH3 K/B (CROATIA) S/P | KB.FR607.027 |
| N/A | FR1000 KEYBOARD DARFON Arabic | TBD | KB.FR607.013 |
| N/A | FR1000 KEYBOARD DARFON Slovenia (SLO) | TBD | KB.FR607.026 |
| N/A | ZH3 K/B (CHINA) | ZH3 K/B (CHINA) S/P | TBD |
| N/A | ZH3 K/B (DUTCH) | ZH3 K/B (DUTCH) S/P | TBD |
| N/A | ZH3 K/B (LA) | ZH3 K/B (LA) S/P | TBD |
| N/A | ZH3 K/B (USA) | ZH3 K/B (USA) S/P | TBD |
| N/A | ZH3 K/B (ICELAND) | ZH3 K/B (ICELAND) S/P | TBD |
| N/A | ZH3 K/B (POLAND) | ZH3 K/B (POLAND) S/P | TBD |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| **LCD** | | | |
|  | LCD 12.1 IN. LCD MODULE NON GLARE W/ CCD ASSY | ZH3 AU 12.1 LCD W/ OWWAN ASSY S/P | 6M.FR6V7.001 |
| N/A | LCD 12.1 IN. LCD MODULE GLARE W/CCD ASSY | ZH3 TOS 12.1 LCD W/ OWWAN GL S/P | 6M.FR6V7.002 |
| N/A | LCD 12.1 IN. TFT WXGA AU B121EW03-V1 NON-GLARE | ZH3 LCD 12.1 WXGA AU N-G S/P | LK.12105.005 |
| N/A | LCD 12.1 IN. TFT WXGA AU B121EW03-V3 GLARE | ZH3 LCD 12.1 WXGA AU V3 S/P | LK.12105.006 |
| N/A | LCD 12.1 IN. TFT WXGA TOSHIBA LTD121EXUQ NON-GLARE | ZH3 LCD 12.1 WXGA TOSHIBA N-G S/P | LK.1210F.012 |
| N/A | LCD 12.1 IN. TFT WXGA TOSHIBA LTD121EXQQ GLARE | ZH3 LCD 12.1 LTD121EXQQ S/P | LK.1210F.013 |
| N/A | LCD 12.1 IN. TFT WXGA QDI QD12TL02-01 GLARE | ZH3 LCD 12.1 WXGA QDI QD12TL02 S/P | LK.12109.002 |
| **CCD MODULE** | | | |
|  | CCD MODULE | ZH3 CCD ASSY S/P | 57.FR6V7.001 |
| **MEMORY** | | | |
|  | SDIMM 1GB DDRII667 NANYA NT1GT64U8HA0BN-3C | ZH3 1GB DDRII667 NANYA S/P | KN.1GB03.009 |
| N/A | SO-DIMM DDRII667 1GB SAMSUNG M470T2953CZ3-CE6 | TBD | KN.1GB0B.005 |
| N/A | SODIMM DDRII533 1GB NANYA NT1GT64UH8A0BN-37B (PB-FREE) | TBD | KN.1GB03.006 |
| N/A | MEMORY 1G DDR II 533 INFINEON HYS64T128021HDL-3.7-B (.09u) | ZH3 1G DDRII533 INFINEON S/P | KN.1GB02.030 |
| N/A | MEMORY SAMSUNG DDRII 533 1GB M470T2953CZ3-CD5 LF | ZH2A RAM(1G)DDR2 M470T2953CZ3-CD5 S/P | KN.1GB0B.004 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| N/A | MEMORY 512MB DDRII 667 NANYA NT512T64UH8A1FN-3C | ZC1 NANYA DDRII667 512MB RAM S/P | KN.51203.025 |
| N/A | SO-DIMM DDRII667 512MB SAMSUNG M470T6554CZ3-CE6 LF | TBD | KN.5120B.018 |
| N/A | Hynix SO512MBII6 HYMP564S64BP6-Y5 LF (.09UM) | TBD | KN.5120G.014 |
| N/A | "MEMORY NANYA, DDRII533 512MB NT512T64UH8A1FN-37B (PB-FREE)" | ZB1 RAM(512M)DDR2 NANYA S/P | KN.51203.023 |
| N/A | SDIMM 512M DDRII533 HYNIX HYMP564S64BP6-C4 | ZB2 RAM(512M)DDR2 S/P | KN.5120G.013 |
| N/A | INFINEON 'SO-DIMM DDRII667 1GB HYS64T128021HDL-3S-B (.09U/G) | TBD | KN.1GB02.029 |
| MAIN BOARD | | | |
|  | "MAINBOARD ATIRS485M SATA W/ CARD READER,PCMCIA W/O CPU MOMERY" | ZH3 SATA BASE UNIT | MB.FR606.001 |
| HEATSINK | | | |
|  | THERMAL MODULE | ZH3 THERMAL MODULE ASSY S/P | 60.FR6V7.005 |
| SPEAKER | | | |
| N/A | SPEAKER ASSY | ZH3 SPEAKER ASSY S/P | 23.FR6V7.001 |
| N/A | MICROPHONE | ZH3 MICROPHONE CABLE S/P | 23.FR6V7.002 |
| MISCELLANEOUS | | | |
| N/A | RUBBER FOOT | "BASE-FOOT-M-ZH3 (GAZH3011, REV3A)" | 47.FR6V7.001 |
| N/A | "LCD-RUBBER-TOP-L-ZH3 (GAZH3007, REV3A)" | ZH3 LCD-RUBBER-TOP-L-ZH3 S/P | 47.FR6V7.002 |
| N/A | "LCD-RUBBER-TOP-R-ZH3 (GAZH3008, REV3A)" | ZH3 LCD-RUBBER-TOP-R-ZH3 S/P | 47.FR6V7.003 |
| N/A | "LCD-RUBBER-SIDE-ZH3 (GAZH3009, REV3A)" | ZH3 LCD-RUBBER-SIDE-ZH3 S/P | 47.FR6V7.004 |
| N/A | "BASE-FOOT-HD-ZH3 (GAZH3001, REV3A)" | ZH3 BASE-FOOT-HD-ZH3 S/P | 47.FR6V7.005 |

| PART PHOTO | PARTNAME | DESCRIPTION | ACER PART NO. |
|---|---|---|---|
| N/A | HDD-IN-RUBBER-ZH3 | ZH3 HDD-IN-RUBBER-ZH3 S/P | 47.FR6V7.006 |
| N/A | "BASE-FOOT-R-ZH3 (GAZH3002, REV3A)" | ZH3 BASE-FOOT-R-ZH3 S/P | 47.FR6V7.007 |
| N/A | "BASE-FOOT-L-ZH3 (GAZH3003, REV3A) " | ZH3 BASE-FOOT-L-ZH3 S/P | 47.FR6V7.008 |
| N/A | "BASE-FOOT-ZH3 (GAZH3004, REV3A)" | ZH3 BASE-FOOT-ZH3 S/P | 47.FR6V7.009 |
| N/A | "KB-COVER-SCREW-CAP-ZH3 (FCZH3029, REV3A)" | ZH3 KB-COVER-SCREW-CAP-ZH3 S/P | 47.FR6V7.010 |
| SCREW | | | |
| N/A | SCREW M2*5-I(BZN)(NYLOK) | SCREW M2*5-I(BZN)(NYLOK) | 86.FR6V7.001 |
| N/A | SCREW M1.6*4.0-I (NI)(NYLOK) | SCREW M1.6*4.0-I (NI)(NYLOK) | 86.FR6V7.002 |
| N/A | SCREW M1.6*4.0-I (NI)(NYLOK) | SCREW M1.6*4.0-I (NI)(NYLOK) | 86.FR6V7.003 |
| N/A | SCREW M2*2.5-I(NI)(NYLOK) | SCREW M2*2.5-I(NI)(NYLOK) | 86.FR6V7.004 |
| N/A | "I2.5*4T-BKAGH(4,0.8)" | "I2.5*4T-BKAGH(4,0.8)" | 86.FR6V7.005 |
| N/A | SCREW M2.5*4-I(BNI) | SCREW M2.5*4-I(BNI) | 86.T23V7.019 |
| N/A | SCREW M2.5*6-I(BNI)(NYLOK) | SCREW M2.5*6-I(BNI)(NYLOK) | 86.A08V7.004 |
| N/A | SCREW M3*0.5+3.5I | SCREW M3*0.5+3.5I | 86.A03V7.011 |
| N/A | SCREW M2.5*4.0-I(NYLOK)EU | SCREW M2.5*4.0-I(NYLOK)EU | 86.T23V7.009 |

| Item | Part No. | Description | Q'TY |
|---|---|---|---|
| 1 | 47ZH3TCTN02 | ZH3 TOP CASE SUB ASSY | 1 |
| 2 | 3JZH3KATN09 | ZH3 KB COVER ASSY | 1 |
| 3 | 37ZH3BATN00 | ZH3 BASE CASE ASSY | 1 |
| 4 | 3AZH3HDTN08 | ZH3 HDD DOOR ASSY | 1 |
| 5 | 3BZH3RDTN04 | ZH3 RAM DOOR ASSY | 1 |
| 6 | 3CZH3TATN08 | ZH3 THERMAL MODULE ASSY | 1 |
| 7 | 3MZH3CATN01 | ZH3 SD DUMMY CARD ASSY | 1 |
| 8 | 35ZH3DB0006 | DC BOARD ASSY-ZH3 | 1 |
| 9 | DD0ZH3PB001 | CABLE ASSY ZH3 DC (24/24P,1A) | 1 |
| 10 | 31ZH3MB0016 | ZH3 MB ASSY | 1 |
| 11 | 28ZC1BTTN11 | ZC1 BLUETOOTH ASSY | 1 |
| 12 | AD60M955006 | MODEM 56K (MDC) T60M955.00 | 1 |
| 13 | DD0ZH3MD002 | CABLE ASSY ZH3 MODEM (2P/2P,1A) | 1 |
| 14 | AA0001210A1 | AU GLARE-B121EW03-V3 250g,200nits,25ms | 1 |
| 15 | 3LZH3CATN00 | ZH3 CCD ASSY | 1 |
| 16 | 38ZH3LBTN06 | ZH3 LCD BEZEL ASSY | 1 |
| 17 | 39ZH3LCTN02 | ZH3 LCD COVER CARBON ASSY | 1 |
| 18 | 2ZH3BTLI608 | BATT (6 Cell) GROUP | 1 |
| 19 | AEZH3TNR012 | K/B(UI)ZH3(AEZH3TNR,3A)API | 1 |
| 20 | FBZH3004018 | HINGE-BKT-L-SZS | 1 |
| 21 | FBZH3005014 | HINGE-BKT-R-SZS | 1 |
| 22 | DD0ZH3LC001 | CABLE ASSY ZH3 12.1' W/CCD (30/20P,1A) | 1 |
| 23 | AS023170031 | INV MODULE ZH1(8-20V,V=700,REV:A1A) | 1 |
| 24 | MS20050I001 | SCREW M2*5-I(BZN)(NYLOK) | 29 |
| 25 | MS20030IEH4 | SCREW M2.0*3.0-I(BZN)(NYLOK) | 19 |
| 26 | MM25060IL69 | SCREW M2.5*6-I(BNI)(NYLOK) | 4 |
| 27 | GAZH3011013 | BASE-FOOT-M-ZH3(GAZH3011,REV3A) | 1 |
| 28 | | WIRELESS CARD | 1 |
| 29 | MM25040IL60 | SCREW M2.5*4.0-I(NYLOK)EU | 1 |
| 30 | AB160821012 | ZH3 SEAGATE HDD SATA (160G) | 1 |
| 31 | FBZH3002015 | HDD-BRACKET-ZH3(FBZH3002,REV3A) | 1 |
| 32 | MS30035I354 | SCREW M3*0.5+3.5I | 4 |
| 33 | EBZC1042016 | PCMCIA-DUMMY-CARD-ZC1(EBZC1042,REV3A) | 1 |

IZH3U8UTN35    ZH3 ASSEMBLY

Assembly NO.    DESCRIPTION

ZH3

KEVIN

HANSS

HANSS

3A

| RANGE | TOLERENCE |
|---|---|
| 0-10 | ±0.10 |
| 10-50 | ±0.15 |
| 50-100 | ±0.20 |
| 100- | ±0.25 |

X

X

X

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