Acer

Ferrari 5000
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 Ferrari 5000 service guide.

Date	Chapter	Updates

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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

Platform

- AMD Turion^{TM} 64 X2 dual-core TL-50/TL-52/TL-56/TL-60 (1.6/1.8/2.0GHz, 1MB L2 cache) or TL-50 (1.6GHz, 512KB L2 cache) processor, supporting AMD PowerNow!^{TM} Technology, AMD HyperTransport^{TM} Technology and Enhanced Virus Protection and 3DNow!^{TM} Professional technology

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

- ATI Radeon® Xpress 1150 chipset

System Memory

- Up to 2GB of DDR2 533/667MHz memory, upgradeable to 4GB using two soDIMM modules (dual-channel support)

Display and Graphics

- 15.4" WSXGA + high-brightness (200 nit) Acer CrystalBrite^{TM} TFT LCD, 1680 x 1050 pixel resolution, 16 ms response time, supporting simultaneous multi-window viewing on dual displays via Acer GridVista^{TM}

- 15.4" WXGA + high-brightness (200 nit) Acer CrystalBrite^{TM} TFT LCD, 1200 x 800 pixel resolution, 16 ms response time, supporting simultaneous multi-window viewing on dual displays via Acer GridVista^{TM}

- ATI Mobility^{TM} Radeon® X1600 up to 512MB HyperMemory^{TM} (256MB of dedicated GDDR3 VRAM; 256MB of shared system memory), supporting ATI PowerPlay^{TM} 5.0, Microsoft® DirectX® 9.0, PCI Express®

- ATI DualView^{TM} and simultaneous multi-window viewing via Acer GridVista^{TM}

- MPEG-2/DVD hardware-assisted capability

- S-video/TV-out (NTSC/PAL) support

- HDMI^{TM} (High Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

- 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: 85/75/70/66/60Hz
    - 1600 x 1200: 120/100/85/75/60Hz
    - 1280 x 1024: 180/160/120/100/90/85/75/70/60Hz
    - 1024 x 768: 200/160/120/100/90/85/75/72/70/60Hz
    - 800 x 600: 200/160/120/100/90/85/75/72/70/60Hz

Audio

- 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

- 80/100/120/160GB serial ATA hard disk driver higher ATA/100 hard disk drive
- Optical drive options:
    - 1X HD DVD-ROM drive:
      - Read: 24X CD-RW, 24X CD-R, 24X CD-ROM, 8X DVD+R, 8X DVD-R, 8X DVD-ROM, 6X DVD-ROM (double layer), 4X DVD+R (double layer), 4X DVD-R (double layer), 4X DVD+RW, 4X DVD-RW, 3X DVD-RW, 1X HD DVD-R, 1X HD DVD-ROM
      - Write: CD-R, 4X DVD+RW, 4X DVD-RW, 4X DVD+R, 4X DVD-R, 3X DVD-RAM, 2.4X DVD+R (double layer), 2X DVD-R (double layer)
    - 8X DVD Super Multi double layer:
      - Read: 24X CD-RW, 24X CD-ROM, 24X CD-R, 8X DVD+R, 8X DVD-R, 4X DVD+RW, 4X DVD-RW, 3X DVD-RAM, 2.4DVD+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 Bluetooth® VoIP phone
- Acer OrbiCam™ integrated 1.3 megapixel CMOS camera, featuring:
    - 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™ 802.11b/g or 802.11a/b/g Wi-Fi CERTIFIED™ solution, supporting Acer SignalUp™ wireless technology

Input Devices

- 88/89-key Acer TouchFine™ keyboard with 5-degree curve, inverted "T" cursor layout, 2.5 mm (minimum) key travel
- Touch pad with 4-way scroll button
- 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, Bluetooth®

I/O Interface

- One ExpressCard™ /34 slot
- One PC Card slot (Type II)
- One 5-in-1 card reader (SD/MMC/MS/MS PRO/xD)
- Four USB 2.0 ports
- One IEEE 1394 port
- One Fast Infrared (FIR) port
- One HDMI™ port
- One External display (VGA) port
- One 124-pin Acer ezDock port
- One S-Video/TV-out (NTSC/PAL) port
- One Headphones/speaker/line-out jack with S/PDIF support
- One Microphone-in jack
- One Line-in jack
- One Ethernet (RJ-45) port
- One Modem (RJ-11) port
- One DC-in jack for AC adapter

Power Subsystem

- ACPI 2.0 CPU power management standards: Stand-by and Hibernation power-saving modes support
- 87W 7800mAh (9-cell) Li-ion battery pack
- Acer QuicCharge™ technology:
    - 80% charge in 1 hour
    - 2-hour rapid charge system-off
    - 2.5-hour charge-in-use
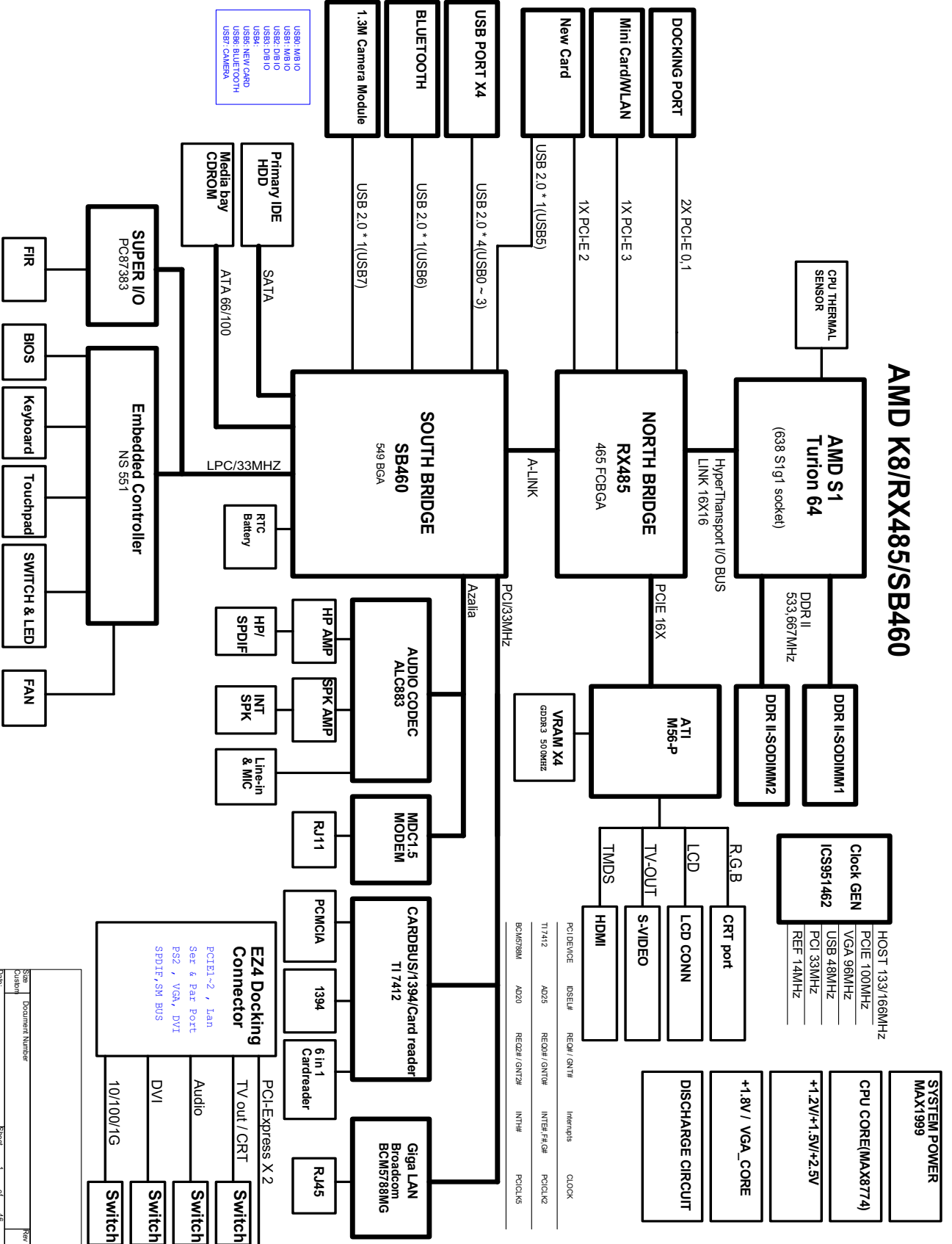- 3-pin 65/90W AC adapter

Dimensions and Weight

- 364 (W) x 271 (D) x 26.3/38 (H) mm (14.33 x 10.66 x 1.03/1.49 inches)
- 3.0 kg (6.6 lbs.) with 9-cell 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%

Block Diagram

AMD K8/RX485/SB460

USB0: M/B I/O
USB1: M/B I/O
USB2: D/B I/O
USB3: D/B I/O
USB4:
USB5: NEW CARD
USB6: BLUETOOTH
USB7: CAMERA

Block	Connection
DOCKING PORT	2X PCI-E 0,1
Mini Card/WLAN	1X PCI-E 3
New Card	1X PCI-E 2
USB PORT X4	USB 2.0 * 4(USB0 ~ 3)
BLUETOOTH	USB 2.0 * 1(USB6)
1.3M Camera Module	USB 2.0 * 1(USB7)
	USB 2.0 * 1(USB5)

SUPER I/O PC87383

Media bay CDROM
Primary IDE HDD

FIR

ATA 66/100
SATA

Embedded Controller NS 551

BIOS
Keyboard
Touchpad
SWITCH & LED
FAN

LPC/33MHZ

SOUTH BRIDGE SB460 549 BGA

RTC Battery

NORTH BRIDGE RX485 465 FCBGA

A-LINK

AMD S1 Turion 64 (638 S1g1 socket)

CPU THERMAL SENSOR

HyperThransport I/O BUS
LINK 16X16

DDR II 533,667MHz

DDR II-SODIMM2
DDR II-SODIMM1

PCIE 16X
PCI/33MHz
Azalia

AUDIO CODEC ALC883

HP AMP
SPK AMP

HP/ SPDIF
INT SPK
Line-in & MIC

MDC1.5 MODEM
RJ11

ATI M56-P

VRAM X4 GDDR3 500MHZ

TMDS
TV-OUT
LCD
R.G.B

HDMI
S-VIDEO
LCD CONN
CRT port

PCMCIA
1394
6 in 1 Cardreader

CARDBUS/1394/Card reader TI 7412

EZ4 Docking Connector
PCIE1~2 , Lan
Ser & Par Port
PS2 , VGA, DVI
SPDIF,SM BUS

PCI-Express X 2
TV out / CRT
Audio
DVI
10/100/1G

Switch
Switch
Switch
Switch

Giga LAN Broadcom BCM5788MG
RJ45

	PCI DEVICE	TI7412	BCM5788M	
IDSEL#	REQ# / GNT#	AD25	AD20	
Interrupts	REQ0# / GNT0#	REQ3# / GNT3#	REQ2# / GNT2#	INTH#
CLOCK	INTE#,F#,G#	INTER,F#,G#		
	PCICLK2	PCICLK5		

Clock GEN ICS951462

HOST 133/166MHz
PCIE 100MHz
VGA 96MHz
USB 48MHz
PCI 33MHz
REF 14MHz

SYSTEM POWER MAX1999

CPU CORE(MAX8774)

+1.2V/+1.5V/+2.5V

+1.8V / VGA_CORE

DISCHARGE CIRCUIT

Outlook Tour

Front View

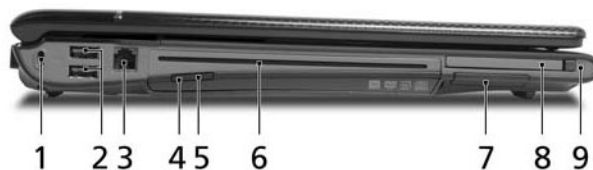| #	Item	Description
1	Built-in camera	1.3 megapixel web camera for video communication.
2	Display screen	Also called Liquid-Crystal Display (LCD), displays computer output.
3	Microphone	Internal microphone for sound recording.
4	Keyboard	Serves for entering data into your computer.
5	Palmrest	Comfortable 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, center 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	Power button	Turns the computer on and off.
9	Easy-launch buttons	Buttons for launching frequently used programs.

Closed Front View
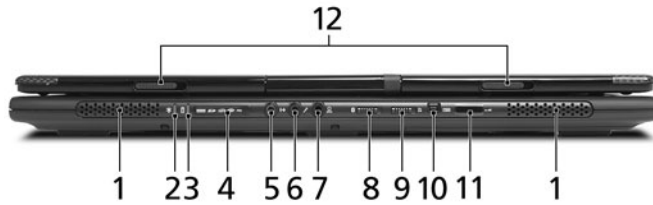
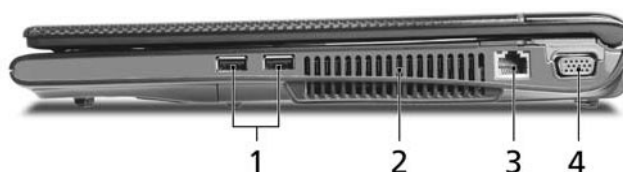| #	Icon	Item	Description
1	N/A	Speakers	Left and right speakers deliver stereo audio output.
2		Power indicator	Indicates the computer's power status.
3		Battery indicator	Indicates the computer's battery status.
4		Five-in-one card reader	Accepts Memory Stick, Memory Stick Pro, Multi Media Card (MMC), Secure Digital (SD) and xD-Picture Card.
5		Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman).
6		Microphone-in jack	Accepts input from external microphones.
7		Headphones/speaker/line-out jack with S/PDIF support	Connects to audio line-out devices (e.g., speakers, headphones).
8		Wireless communication button/indicator	Enables/disables the wireless function. Indicates the status of wireless LAN communication.
9		Bluetooth communication button/indicator	Enables/disables the Bluetooth communication. Indicates the status of Bluetooth communication'
10	1394	Four-pin IEEE 1394 port	Connects to IEEE 1394 devices.
11		CIR receiver	Receives signals from a remote control.
12	N/A	Latch	Locks and releases the lid.

Left View

#	Icon	Item	Description
1	🔒	Kensington lock slot	Connects to a Kensington-compatible computers security lock.
2	⚡	Two USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
3	⬜	Modem (RJ-11) port	Connects to a phone line.
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.
7	N/A	ExpressCard/34 slot	Accepts an ExpressCard/34 module.
8	⬛	PC Card slot	Accepts one Type II PC Card.
9	N/A	PC Card slot eject button	Ejects the PC Card from the slot.

**NOTE:** The slot-load optical drive can only accept 12 cm disks.

Right View

#	Icon	Item	Description
1	⚡	Two USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
2	N/A	Ventilation slots	Enable the computer to stay cool, even after prolonged use.
3	🖧	Ethernet (RJ-45) port	Connects to an Ethernet 10/100-based or 10/100/1000-based networks.
4	⬜	External display (VGA) port	Connects to an external display device (e.g., external monitor, LCD projector).

Rear View

#	Icon	Item	Description
1	**HDMI**	HDMI port	Supports high definition digital video connections.
2	🖳	124-pin Acer ezDock connector	Connects to Acer ezDock.
3	(S→	S-video port/TV out port (NTSC/PAL) port	Connects to a television or display device with S-video input
4	▬▬▬	DC-in jack	Connects to an AC adapter.

Base View
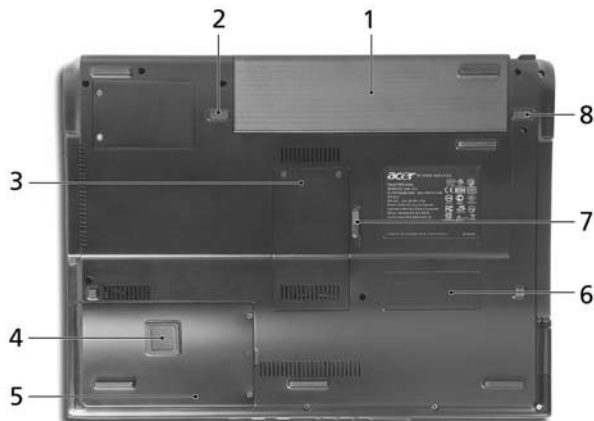
#	Item	Description
1	Battery bay	Houses the computer's battery pack.
2	Battery lock	Locks the battery in position.
3	Wireless LAN and memory compartments	Houses the computer's WLAN and main memory (secured with screws).
4	Acer DASP (Disk Anti-Shock Protection)	Protects the hard disk drive from shocks and bumps.
5	Hard disk bay	Houses the computer's hard disk (secured with screws).
6	Optical drive bay	Houses the computer's optical drive.
7	Optical drive bay release latch	Releases the optical drive for removal.
8	Battery release latch	Releases the battery for removal.

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
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.

Hot Key	Icon	Function	Description
<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. Either directly press the **<Euro>** key on the bottom-right side of the keyboard, or 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. Either directly press the **<$>** key on the bottom-right side of the keyboard, or hold **<Shift>** and then press the US dollar sign on the number **<4>** key.

NOTE: This function varies according to the language settings.

Indicators

The computer has several easy-to-read status indicators. The front panel indicators are visible even when the computer cover is closed up.

Icon	Item	Description
	HDD	Indicates when the hard disk drive is active.
	Caps Lock	Lights up when Caps Lock is activated.
	Num Lock	Lights up when Num Lock is activated.
	Power	Lights when the computer is on.
	Battery	Lights when the battery is being charged.
	Bluetooth	Indicates the status of Bluetooth communication
	Wireless LAN	Indicates the status of wireless LAN communication

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

Use the touchpad as follows:
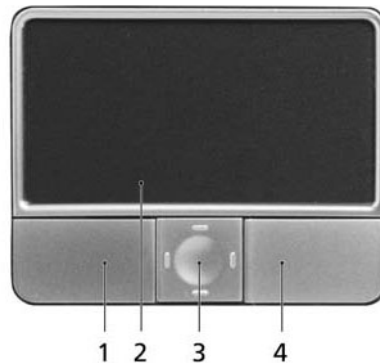
- Move your finger across the touchpad (2) to move the cursor.
- Press the left (1) and right (4) buttons located on the edge of the touchpad to perform selection and execution functions. These two buttons are similar to the left and right buttons on a mouse. Tapping on the touchpad (2) is the same as clicking the left button.
- Use the four-way scroll (3) button to scroll up or down and move left or right a page. This button mimics your cursor pressing on the right scroll bar of windows applications.

Function	Left button (1)	Right button (4)	Main touchpad (2)	Center button (3)
Execute	Quickly click twice.	X	Tap twice (at the same speed as double-clicking a mouse button).	X
Select	Click once	X	Tap once	X
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.	X
Access context menu	X	Click once	X	X
Scroll	X	X	X	Click and hold to move up/down/left/right.

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.

NOTE: By default, vertical and horizontal scrolling is enabled on your touchpad. It can be disabled under Mouse settings in Windows Control Panel.

Using the Bluetooth Wireless Optical Mouse

The Ferrari series notebook computer comes with a Bluetooth wireless optical mouse, including two rechargeable batteries.

Installation

Installation of the Bluetooth mouse is simple. Enable Bluetooth functionality by pressing the Bluetooth communication button on the front side of the main unit. Press the **Bluetooth** button on the base of the Bluetooth mouse and the operating system will detect and install the mouse automatically.

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. The Bluetooth mouse can be used with rechargeable batteries, traditional batteries, or without batteries and just the USB charging cable.

Recharging the Bluetooth Mouse
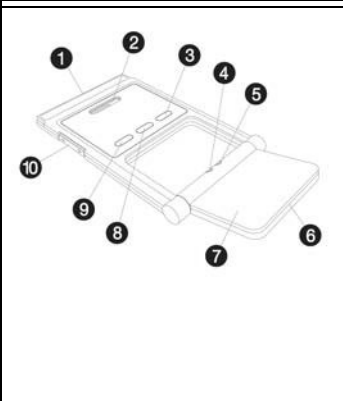
The Bluetooth mouse comes with two rechargeable AA batteries and a USB charging cable. To recharge the mouse, plug one end of the charging cable into the USB port of the notebook computer and the other end into the Bluetooth mouse. Under normal circumstances, it takes approximately five hours to fully charge the Bluetooth mouse.
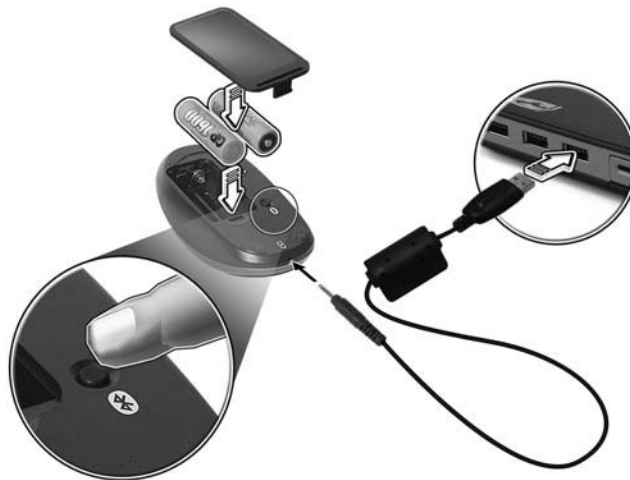
NOTE: Do not use the USB charging cable with traditional non-rechargeable batteries! It may result in equipment damage or other conditions hazardous to your health by using non-rechargeable batteries.

Acer Bluetooth® VoIP Phone

VoIP Phone Layout

	#	Description
	1	PC Card (PCMCIA) interface connector
	2	Speaker
	3	Power button
	4	Bluetooth connection/pairing indicator
	5	Charge/Power indicator
	6	Microphone
	7	Flip
	8	Bluetooth connection/pairing button
	9	Speaker phone button
	10	Volume up/down button

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.
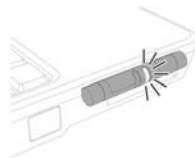
NOTE: The notebook detects the device and displays a **New Device Wizard** window. Click **No, not this time**, then close the window.

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.

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.

Using Acer VCM

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.
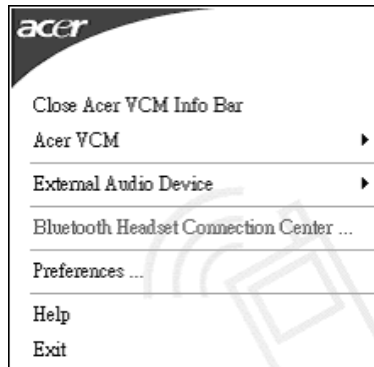
Item	Function
Close/Open Acer VCM Info Bar	Hides or displays the info bar.
Acer VCM	Enables or disables the Acer VCM.
External Audio Device	Allows you to select the external audio device.
Bluetooth Headset Connection center	Allows you to scan and connect a Bluetooth headset device to the notebook.
Preferences	**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**.
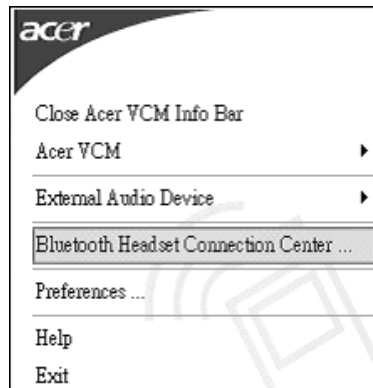
4. Click the **Acer Bluetooth VoIP Phone** from the list, then click **Connect**. Acer VCM automatically pairs the phone to the notebook, then changes the phone status to **Default Use**.
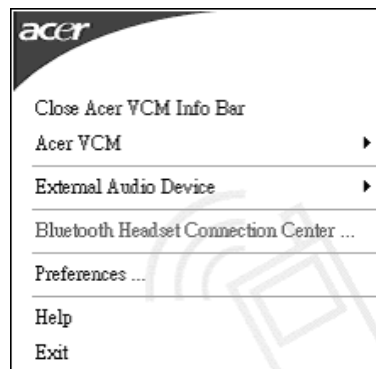
NOTE: Click Rescan if the Acer Bluetooth VoIP Phone does not appear on the list. After pairing, Acer VCM automatically connects the phone to the notebook each time you turn the phone on. There is no need to connect the phone again.

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.
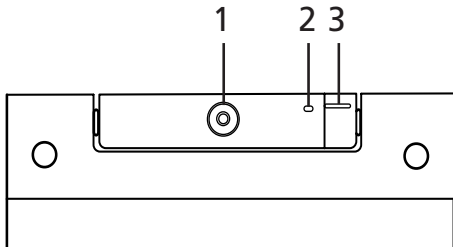
#	Item
1	Lens
2	Power indicator
3	Rubber grip

Rotating the Acer OrbiCam

The Acer OrbiCam rotates 225 degrees counterclockwise to achieve the desired angle. Refer to the illustrations below:
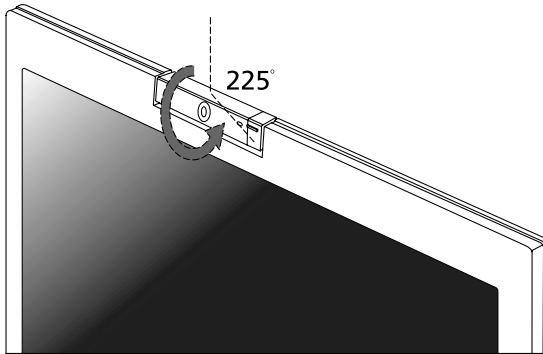
For your convenience, the camera snaps 45 degrees to match the position of your face in front or at the back of the LCD panel.

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

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.
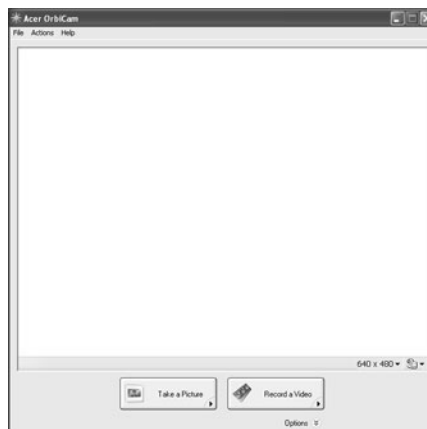
Changing the Acer OrbiCam Settings

Resolution

To change the capture resolution, click the displayed resolution at the bottom right corner of the capture window, then select the desired resolution. Setting the camera resolution to 640 x 480 or larger does not change the capture window size.
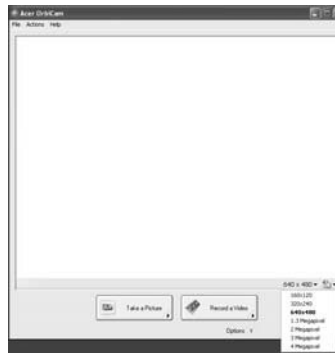
Options

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.
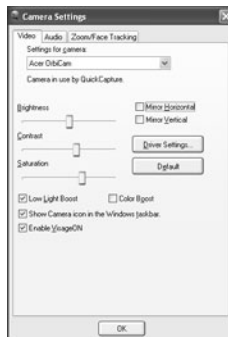
- **Capture settings**: From the Camera Settings window, click the **Driver Settings** button. The **Properties** window will appear.

- **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.

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.
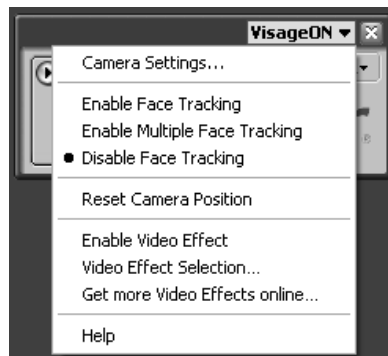
Using Video Effects

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.
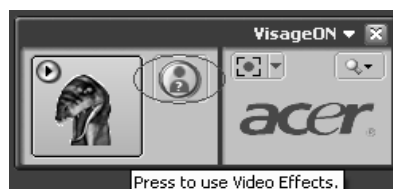
2. Click on a video effect to use. The selected effect appears in the video effects section of the VisageON window.
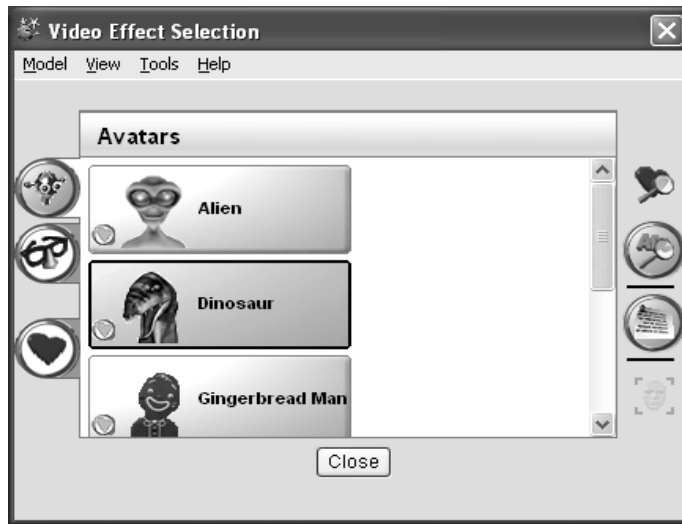
NOTE: When using avatars, you may have to calibrate the face points to achieve better tracking. Follow screen instructions in the VisageON window to continue.

NOTE: 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.
- **Acer eLock Management** limits access to external storage media.
- **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry setting.
- **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.
- **Acer eSettings Management** accesses system information and adjusts settings easily.

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 eDataSecurity Management

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!

Acer eDataSecurity Management

Initialize Supervisor Password

The Supervisor Password serves two purposes:

(1) To grant accesses to the Personal Secure Disk.
(2) To provide you a "last resort" to decrypt any files encrypted before by eDataSecurity.

Please record and keep it in a secure place, and never disclose it to anyone.

Initialize Supervisor Password
Enter Supervisor Password:

Enter it again to confirm:

Next

Acer eDataSecurity Management

File Decryption

File Decryption:
Password:

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

Warning on Desktop Search Tools

OK   Cancel

Acer eDataSecurity Management

File Encryption

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 eLock Management

Acer eLock Management is a security utility that allow you to lock up your removable data, optical and floppy drives to ensure that data can not be stolen while your notebook is unattended.

- Removable data devices: includes USB disk drives, USB pen drives, USB flash drives, USB MP3 drives, USB memory card readers, IEEE 1394 disk drives and any other removable disk drives that can be mounted as a file system when plugged into the system.
- Optical drive devices: includes any kind of CD-ROM or DVD-ROM drives.
- Floppy disk drives: 3.5-inch disks only.
- Interfaces: includes serial port, parallel port, infrared (IR), and Bluetooth.

To activate Acer eLock Management, a password must be set at first. Once set, you may apply locks to any of the three kinds of devices. Lock(s) will be set without any reboot necessary, and will remain locked after rebooting, until unlocked.

NOTE: If you lose the password, there is no method to reset it except by reformatting the notebook or taking the notebook to an Acer Customer Service Center. Be sure to remember or write down the password.
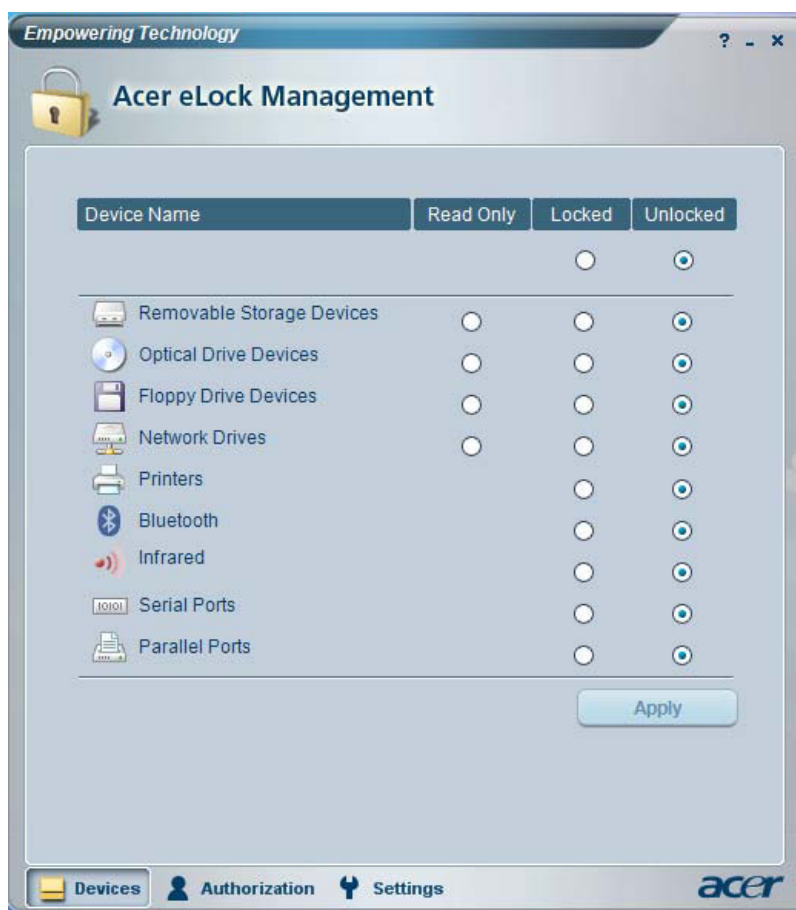
Acer ePerformance Management

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.

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
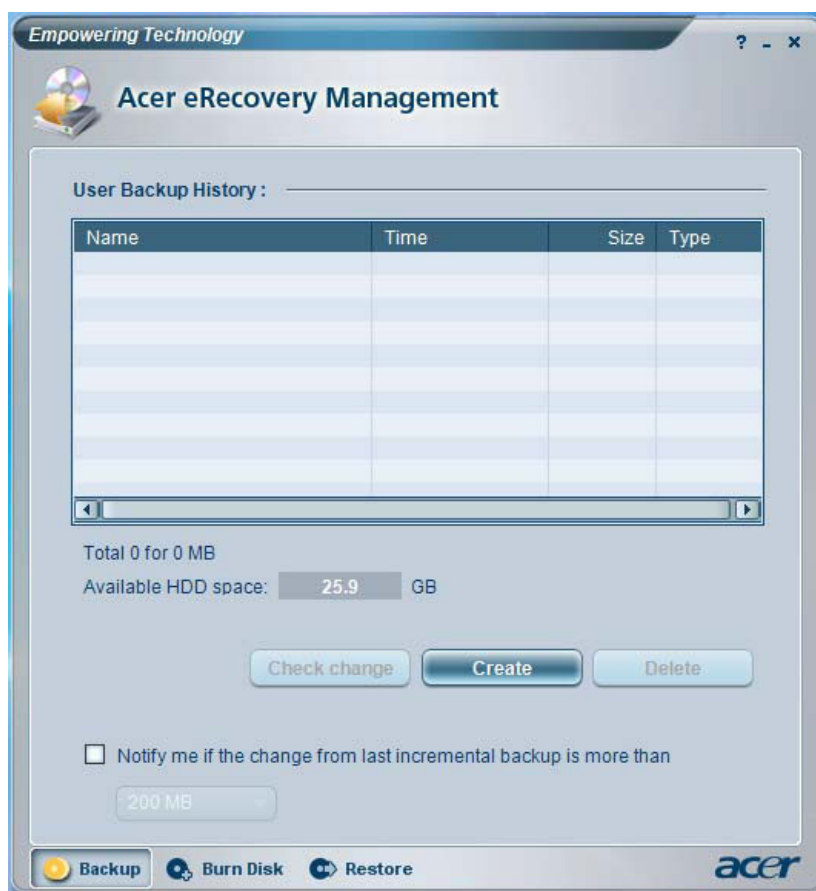
NOTE: If the computer did not come with a Recovery CD or System CD, please use Acer eRecovery Management's "System backup to optical disk" feature to burn a backup image to CD or DVD. To ensure the best results when recovering the system using a CD or Acer eRecovery Management, detach all peripherals (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.
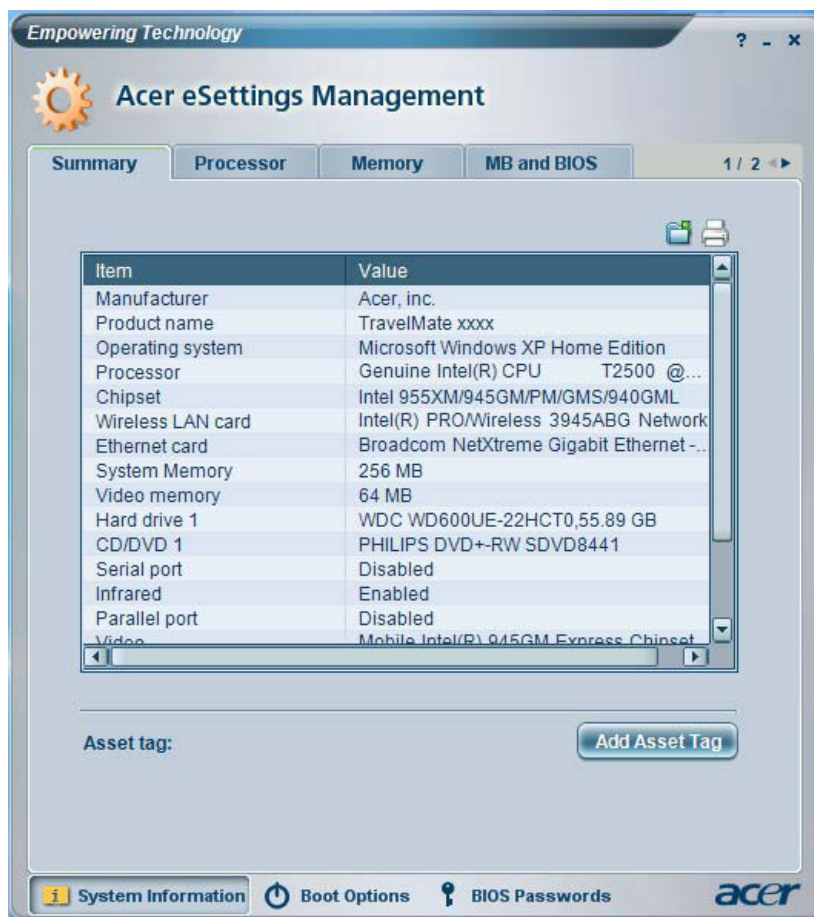
Acer ePower Management

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.
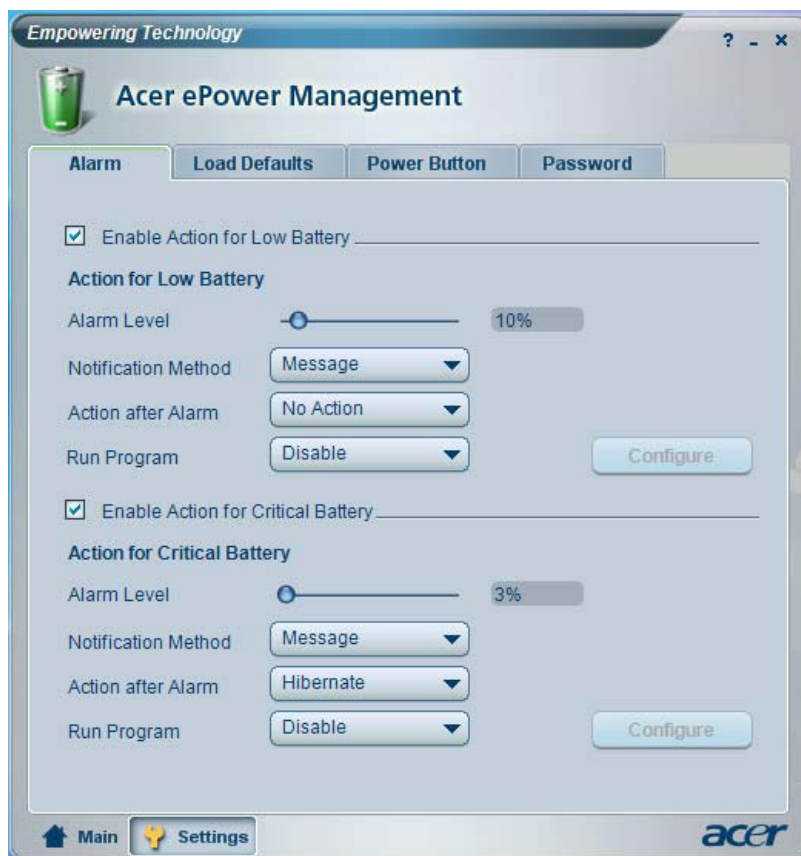
Acer ePresentation Management

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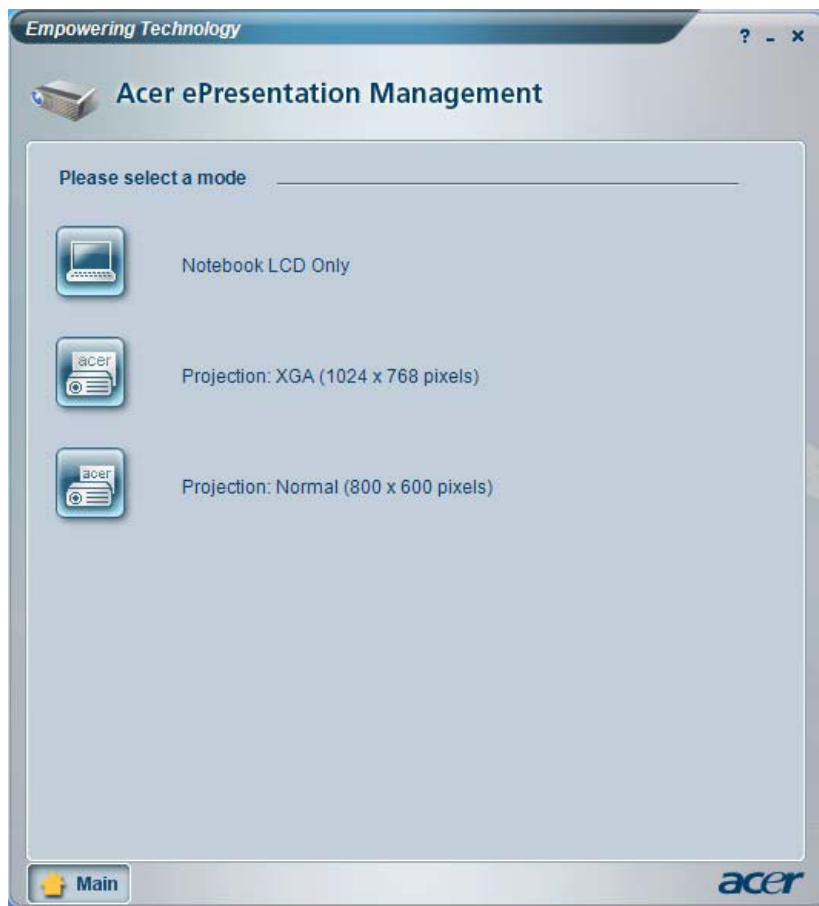
NOTE: If the restored resolution is not correct after disconnecting a projector, or you need to use an external resolution that is not supported by Acer ePresentation Management, adjust your display settings using Display Properties or the utility provided by the graphics vendor.

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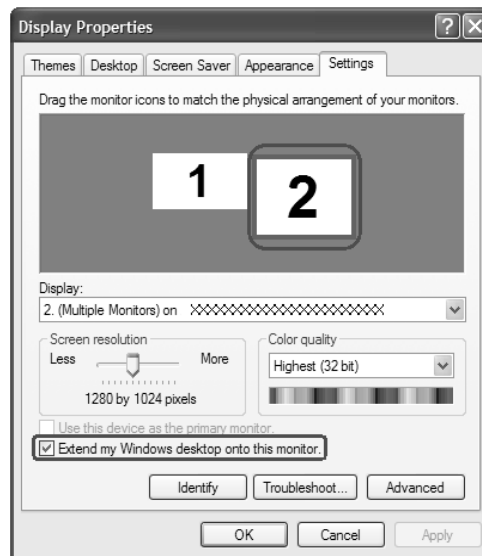
Acer GridVista is a handy utility that offers four pre-defined display settings so you can view multiple windows on the same screen. To access this function, please go to Start > All Programs and click on Acer GridVista. You may choose any one of the four display settings indicated below:

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.
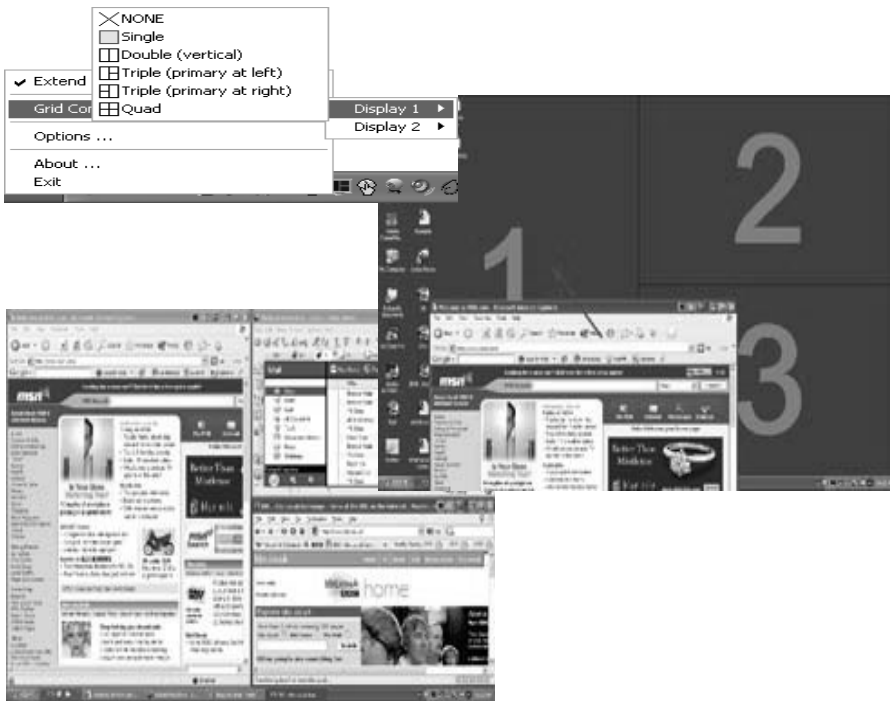
NOTE: Please ensure that the resolution setting of the second monitor is set to the manufacturer's recommended value.

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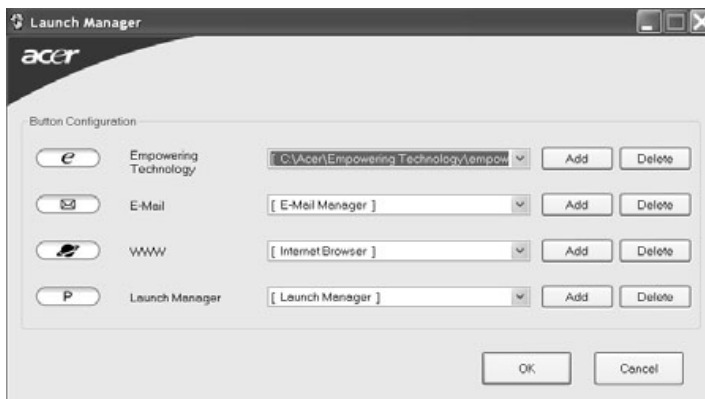
Launch Manager allows you to set the four easy-launch buttons located above the keyboard. You can access the Launch Manager by clicking on Start > All Programs > Launch Manager to start the application.

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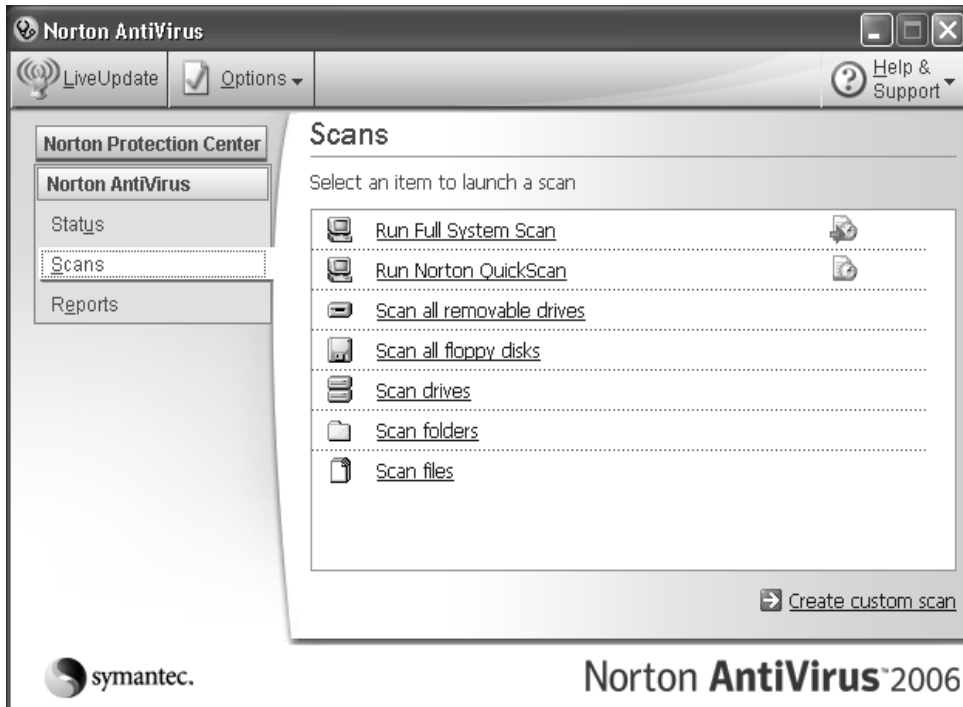
3. In the **Scans** panel, click **Run Full System Scan**.

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^{TM} 64 X2 dual-core TL-50/TL-52/TL-56/TL-60 processor
Feature	• AMD64 technology features uncompromising 64-bit and 32-bit performance • Vastly expands memory address ability with 40-bit physical addresses, 48-bit virtual addresses • Doubles the number of internal registers with eight additional (16 total) 64-bit integer registers and eight additional (16 total)128-bit SSE/SSE2/SSE3 registers • One 16-bit link supporting up to 1600MHz • Up to 6.4GB/s peak HyperTransport^{TM} I/O bandwidth • Supports industry-standard widely-available PC2-3200 (DDR2-400), PC2-4200 (DDR3-533), PC2-4300 (DDR2-533), and PC-5300 (DDR2-667) unbuffered SODIMMs • Up to 10.7GB/s memory bandwidth • Dual channel, 128-bit interface
On-die second (L2) cache	• TL-52/TL-56/TL-60: 512KB • TL-50: 256MB

System Main Chipset

Item	Specification
Core logic	ATi RX485 + ATi SB460
System clock	ICS ICS951462
BIOS ROM	SST 39VF080
VGA	ATi M56P VGA controller with VRAM 256MB
KBC	NSPC97551
PCMCIA & IEEE 1394 & Memory card reader	TI7412
Super I/O	NSPC87383
IR	Vishay TFU6102F
Audio Codec & Amplifier	Realtek ALC883D Azalia Codec and Amplifier Maxim MAX9710
LAN	Broadcom 5788MG

North Bridge

Item	Specification
Chipset	ATi RX485
Package	Micro-FCBGA 465-pin
Feature	• Processor host bus support • Integrated SDRAM controller up to 4GB (2 SODIMMs support) • Integrated SDRAM clock buffer, 2 SODIMMs support • External Graphics interface for PCI Express Architecture support

South Bridge

Item	Specification
Chipset	ATi SB460
Package	BGA 540-pin
Feature	• Upstream accelerated Hub architecture interface for access to GMCH • PCI2.3 interface (6 PCI Request/Grant pairs) • Bus master IDE controller (Ultra 100/66/33 support) • Serial ATA controller • USB1.1 & 2.0 host controllers • AC'97 2.3 interface • Low pin count (LPC) interface • IRQ controller • Enhanced DMA controller, interrupt controller, times, RTC • Power management

System Clock

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

System Memory

Item	Specification
Feature	• DDRII 533/667MHz SDRAM memory interface design • 0MB DDR RAM on board • Two SODIMMS slots • Maximum memory up to 2GB for 32-bit OS, 4GB for 64-bit OS (with two 1GB/2GB SODIMMs)

Hard Disk Drive

SEAGATE			
Model			
ST9160821AS	ST9120821AS	ST9100824AS	ST98823AS
Formatted Gbytes (512 bytes/sector): 160 / 120 / 100 / 80			
Physical read/write head: 4 / 4 / 4 / 4			
Discs: 2 / 2 / 2 / 2			
Spindle Speed (RPM): 5400 / 5400 / 5400 / 5400			
I/O data transfer rate (Mbytes/sec. max.): 150 / 150 / 150 / 150			
Internal transfer rate (Mbytes/sec. max.): 57.6 / 57.6 / 57.6 / 57.6			

SEAGATE
ATA data transfer mode supported: 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 / 512
Voltage tolerance: +5.0V +/- 5%

TOSHIBA		
Model		
MK1234GSX	MK1032GSX	MK8032GSX
Formatted Gbytes (512 bytes/sector): 120 / 100 / 80		
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 / 214~422		
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		
Cache buffer: 8 / 16 / 8		
Bytes per sector: 512 / 512 / 512		
Voltage tolerance: +5.0V +/- 5%		

SAMSUNG	
Model	
HM120JI	HM100JI
Formatted Gbytes (512 bytes/sector): 120 / 100	
Physical read/write head: N/A	
Discs: N/A	
Spindle Speed (RPM): 5400 / 5400	
Internal transfer rate (Mbits/sec. max.): 495 / 495	
I/O data transfer rate (Mbytes/sec. max.): 150 / 150	
ATA data transfer mode supported: SATA	
Cache buffer: 8 / 8	
Bytes per sector: 512 / 512	
Voltage tolerance: +5.0V +/- 5%	

Optical Disk Drive

Item	Description		
Vendor and model name	TOSHIBA 1X HD DVD ROM TS-L802A	PANASONIC 8X SUPER MULTI UJ-85	PIONEER 8X SUPER MULTI DVR-K06RS
Buffer memory	N/A	2MB	2MB
Interface	• ATAPI standard: SFF-8020i • SFF-8090i Ver. 5 (DVD commands) • MMC standard (CD-R, CD-RW commands)	ATAPI, ANSI ATA/ ATAPI-5	ATAPI interface: SFF-8020, SFF-8090
Applicable disc format	• DVD (read): DVD-ROM, DVD-ROM dual layer, DVD-R, DVD-R dual layer, DVD-RW, DVD+R, DVD-R dual layer, DVD+RW, DVD-RAM, HD DVD-ROM, HD DVD-R • DVD (write): DVD-R, DVD-R dual layer, DVD-RW, DVD+R, DVD+R dual layer, DVD+RW, DVD-RAM • CD (read): CD-DA, CD-ROM, CD-R, CD-RW • CD (write): CD-R, CD-RW, HS-RW, US-RW	• DVD (read): DVD-ROM single layer, DVD-ROM double 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 double layer, DVD+RW, DVD-Video • DVD (write): DVD-R 4.7GB, DVD-R, DVD-RW 4.7GB, DVD-RAM 4.7GB, DVD+R single layer, DVD+R double layer • CD (read): CD-ROM, CD-R, CD-RW, CD-DA (audio play), CD-DA (Read), Video-CD • CD (write): CD-R, CD-RW	• DVD (read): DVD-ROM dual and single layer, DVD-R, DVD-RW, DVD-R dual layer, DVD+R double layer, DVD+R, DVD+RW, DVD-RAM, DVD-Video dual and single layer • DVD (write): DVD-R, DVD-R dual layer, DVD-RW, DVD+R, DVD+R dual layer, DVD+RW, DVD-RAM • CD (read): CD-ROM, Video CD, CD-DA, CD-TEXT, Mixed-CD, CD-Extra, CD-R, CD-RW • CD (write): CD-R, CD-RW
Loading mechanism	Manual load	Manual load	Slot load
Power requirement	max. 1270mA	max. 1800mA	max. 1300mA
Input voltage	5V +/- 5% (Operating)	5V +/- 5% (Operating)	5V +/- 5% (Operating)

BIOS ROM

Item	Description
Type	SST 39VF080, 1MB CMOS Boot Block Flash Memory
Package	40-pin TSOP
Block Size	64KB per block
Supply current	Active current: 15mA (typical) Standby current: 4uA (typical)

Item	Description
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 V0.2303
Feature	• 1MB flash RIOM for system BIOS • Suspend to RAM (S3) / Disk (S4) • Various hot keys for system control • Support boot option: HDD / Removable device (media bay device) / all USB ports • Support protocols: SMBIOS 2.3, PCI 2.2, WFM 2.0 • ACPI 1.0b compliance with AMD PowerNow! • DMI utility for BIOS serial number configurable/asset tag • Y2K solution support • BIOS virus protection • WinFlash support • Wake on LAN from S3 • Wake on LAN from S4 in AC mode

VGA Interface

Item	Description
Chip	ATi M56P with VRAM 256MB
Package	BGA 708-pin
Features	• PCI-E interface support • 3D graphics texturing enhancements • Integrated transform and lighting • Integrated two channels of 24-bit LVDS transmitter • Integrated TV decoder to support competitive and S-video with both PAL and NTSC • 128/256MB DDR3 memory support • DVD-ready motion compensation for MPEG-2 • Full ACPI compliant • ZV port support

KBC

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

PCMCIA Express Card

Item	Description
Chip	TI 7412
Feature	• PC card 95 supported with 1x Type II PCI card bus • Express card/34 slot support (co-existence with one PCMCIA)

IEEE 1394

Item	Description
Chip	TI 7412
Feature	• PCI single chip solution with PCI compliant • OHCI V1.1 • IEEE 1394.A 4-pin

Super I/O

Item	Description
Chip	NS PC87383
Package	TQFP 64-pin

Feature	• Parallel interface support:
	  1. An Enhanced Parallel Port (EPP) compatible with EPP 1.9, EPP1.7 of the Xircom specification support too
	  2. An Extended Capabilities port that is IEEE 1284 compliant including level 2
	• UART serial port interface:
	  1. MIDI baud rate support
	  2. Infrared support on UART2 (IrDA 1.1 support)
	• PnP support:
	  1. Flexible IRQs, DMAs and base addresses
	  2. IRQs multiplexed to the ten supported IRQs

Power consumption	5V, 25 ~ 55mA

IR Interface

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

LAN Interface

Item	Description
LAN controller	Broadcom 5788MG
Feature	• PCI Giga support • WOL from S5 support • LDCM support

Audio Codec & Amplifier

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

Wireless LAN

Item	Description
Card type	Mini-PCI

Item	Description
Features	• 802.11a/b/g or 802.11b/g • Built-in two antennas • Placed on the top of LCD on the sides of LCD latches

MDC Card

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

Battery

Item	Specification
Vendor & model name	Panasonic 7800mAh / Sanyo 2600mAh
Features	• 9-cell Li-Ion cylindrical battery • 87W

Port Replicator

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

LCD 15.4"

Item	Specification				
Vendor & Model name	QDI QD15AL02-01 QD15AL02-02	QDI QD15TL07-02	CMO N154Z1-L01	CMO N154I2-L02	AUO B154EW02-V1
Screen Diagonal	15.4" WSXGA	15.4" WXGA	15.4" WSXGA	15.4" WXGA	15.4" WXGA
Active area	331.2 (W) x 207.0 (H)	331.2 (W) x 207.0 (H)	331.2 (W) x 207.0 (H)	335.0 (W) x 210.7 (H)	331.2 (W) x 207.0 (H)
Display resolution	1680 x 3 (RGB) x 1050	1280 x 3 (RGB) x 800	1680 x 3 (RGB) x 1050	1280 x 3 (RGB) x 800	1280 x 3 (RGB) x 800
Display mode	normally white	normally white	normally white	normally white	normally white
Surface treatment	• QD15AL02-01 non-glare + Hardness 3H • QD15AL02-02 glare + Hard Coating 3H	glare + Hard Coating 3H	non-glare + Hard Coating 3H	glare + Hard Coating 3H	glare + Hardness 3H
Pixel arrangement	RGB vertical stripe	RGB vertical stripe	RGB vertical stripe	RGB vertical stripe	RGB vertical stripe
Pixel pitch (mm)	0.1971 (H) x 0.1971 (V)	0.2588 (H) x 0.2588 (V)	0.1971 (H) x 0.1971 (V)	0.2588 (H) x 0.2588 (V)	0.2588 (H) x 0.2588 (V)
Typical white luminance (cd/m^2) also called brightness	200 (typical)	185 (typical)	185 (typical)	200 (typical)	200 (typical)
Contrast ratio	400 (typical)	400 (typical)	350 (typical)	400 (typical)	400 (typical)
Respond time (msec.)	Rise: 6 Decay: 10	Rise: 6 Decay: 10	Rise:4 Decay: 12	Rise: 5 Decay: 11	Rise:4 Decay: 12
Normal input voltage of power supply	+3.3V (typical)	+3.3V (typical)	+3.3V (typical)	+3.3V (typical)	+3.3V (typical)
Power consumption (watt)	4.38 (typical)	4.38 (typical)	4.2 (typical)	4.2 (typical)	4.2 (typical)
Weight	585g	585g	580g	540g	500g
Physical size (mm)	344.5 (W) x 222.5 (V) x 6.5 (T)	344.0 (H) x 222.0 (V) x 6.35 (T)	344.0 (W) x 222.0 (H) x 6.2 (D)	344.0 (W) x 222.0 (H) x 6.2 (D)	344.0 (W) x 222.0 (H) x 6.1 (D)
Electrical interface	2 channels LVDS	1 channel LVDS	LVDS	30-pin LVDS interface	1 channel LVDS
Color support	262,144 colors	262,144 colors	262,144 colors	262,144 colors	262,144 colors

AC Adaptor

Item	Specification	
Vendor & Model name	LiteOn PA-1900-04QB	Delta 90W ADP-90SB BBAHF
Input feature		

Item	Specification	
Rated voltage	for 100Vac or 240Vac input AC voltage	for 100Vac or 240Vac input AC voltage
Input voltage range	from 90Vac to 264Vac	from 90Vac to 265Vac
Rated frequency	for 50Hz or 60Hz	for 50Hz or 60Hz
Frequency range	from 47Hz to 63Hz	from 47Hz to 63Hz
Steady AC current	less than 1.5A rms at 100Vac input and maximum load	less than 1.5A rms at 100Vac input and maximum load
Output feature		
Rated voltage	19V	19V
Voltage range	18.05V to 20V	from 18.2V to 19.8V
Rated power	90 W	90 W
Output ripple and noise	less than 300mVp-p	less than 300mVp-p
Turn on delay time	within two seconds at 115 Vac input voltage	within two seconds at 115 Vac input voltage
Temperature	Operating: 0 to 40ºC Non-operating: -31 to 60ºC	Operating: 0 to 40ºC Non-operating: -31 to 60ºC

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 **m** 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:

- To choose a menu, use the cursor left/right keys (zx).
- To choose a parameter, use the cursor up/down keys (wy).
- To change the value of a parameter, press p or q.
- 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 t. You can also press u 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

```
                          PhoenixBIOS Setup Utility
    Info.          Main        Advanced      Security       Boot        Exit


    CPU Type:                 AMD Turion(tm) 64 X2 Mobile Technology TL-60
    CPU Speed                 2000 MHz

    IDE1 Model Name:     ST9120821AS
    IDE1 Serial Number:  3PL0L3JL
    ATAPI Model Name:  PIONEER DVD-RW DVR-K06RS
    System BIOS Version: V0.2303
    VGA BIOS Version: ATi 009.012.001.015.000000
    KBC Version:08.10

    Serial Number:    2C30SK05C1619014B32500
    Asset Tag Number:  None
    Product Name:
    Manufacturer Name:  Acer
    UUID:   E0FB8AE073D1DA1192B700163647D4ED



    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
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

		PhoenixBIOS Setup Utility			
Info.	Main	Advanced	Security	Boot	Exit

	Item Specific Help
System Time: [11:59:38] System Date: [02/20/2006] System Memory: 640 KB Extended Memory: 1022 KB Video Memory 256 MB Quiet Boot: [Enabled] Power on Display: [Auto] Network boot [Enabled] F12 Boot Menu: [Disabled] D2D Recovery: [Enabled]	<Tab>, <Shift-Tab>, or <Enter> selects field.

F1 Help	↑↓ Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	←→ Select Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit

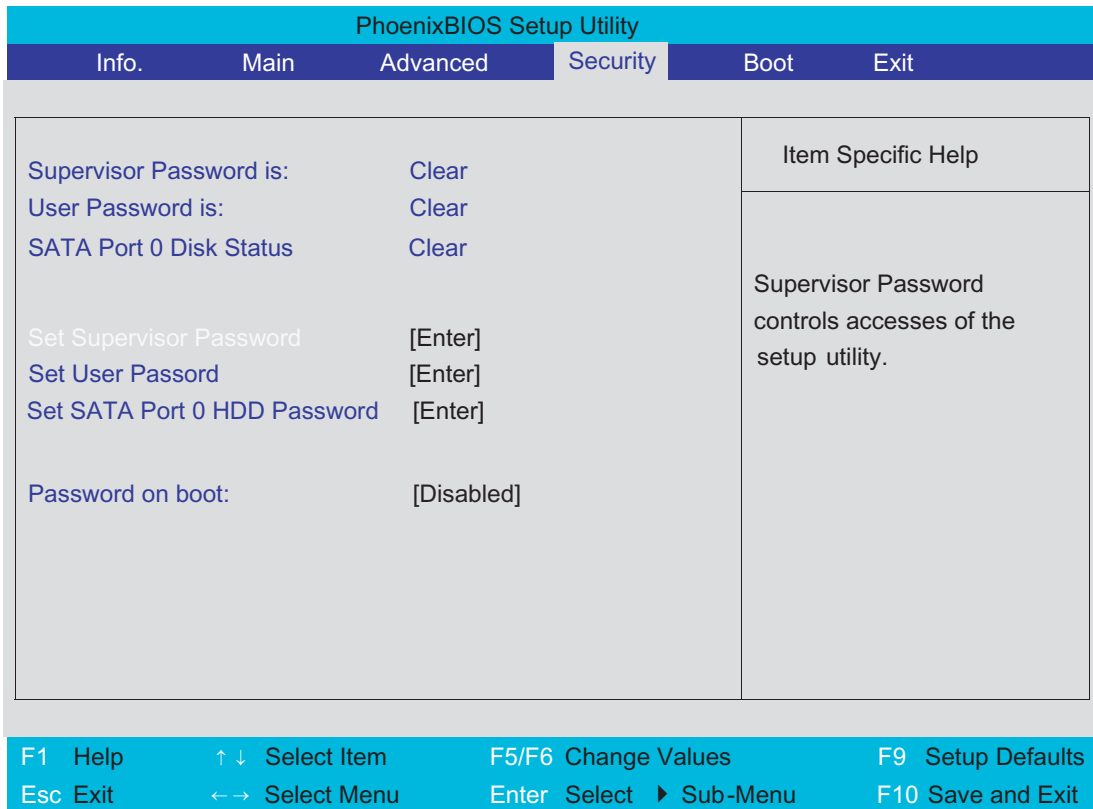| Parameter	Description
System Time / System Date	The hours are displayed with 24 hours format. The values set in these two fields take effect immediately.
System Memory	This field reports the memory size of system base memory. The size is fixed to 640KB.
Extended Memory	This field reports the memory 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. **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.

PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

		Item Specific Help
Serial Port:	[Auto]	
		Configure Infrared Port using oprions:
Parallel Port:	[Auto]	
Mode:	[ECP]	[Disabled]
		No configuration
Infrared Port(FIR):	[Auto]	
		[Enabled]
		User configuration
		[Auto]
		BIOS or OS chooses
		configuration
		(OS Controlled)
		Displayed when
		controlled by OS

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

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

Security

PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

		Item Specific Help
Supervisor Password is:	Clear	
User Password is:	Clear	
SATA Port 0 Disk Status	Clear	Supervisor Password controls accesses of the setup utility.
Set Supervisor Password	[Enter]	
Set User Passord	[Enter]	
Set SATA Port 0 HDD Password	[Enter]	
Password on boot:	[Disabled]	

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

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).

- Password Policy:

    All the passwords will obey the following rules:

    - 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
.	period
,	comma
;	semi-colon
/	slash

Symbol Character	Symbol Name
\	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.
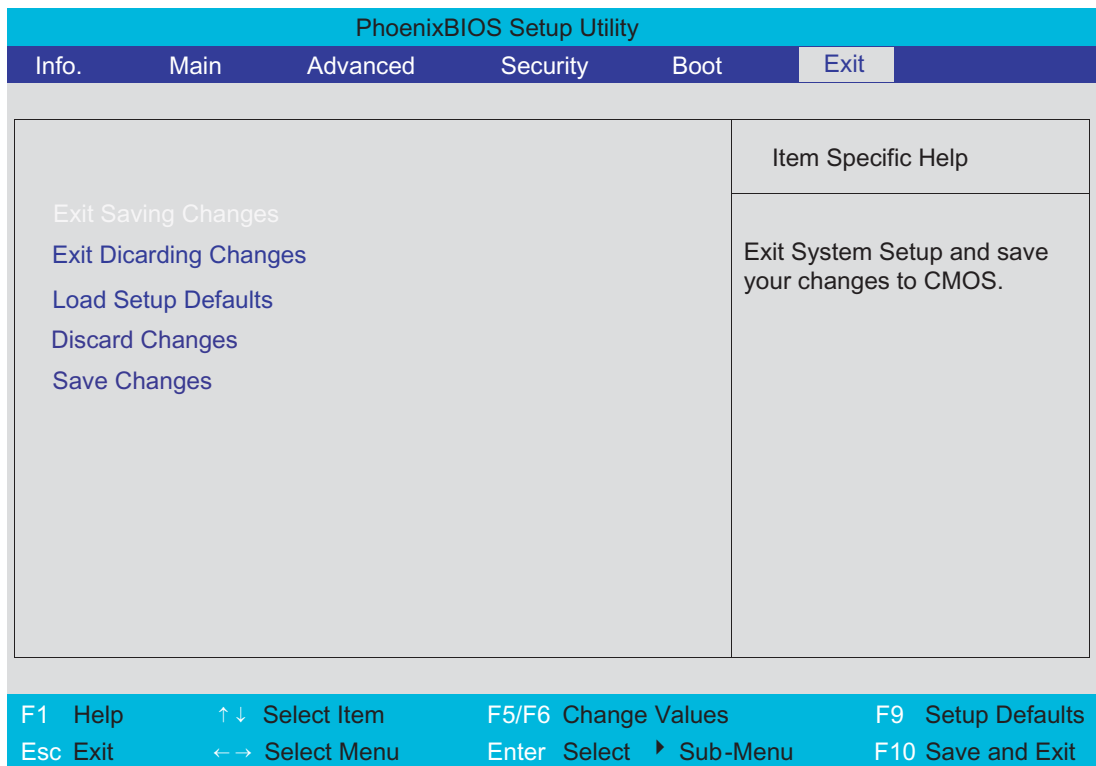
Boot

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					
Info.	Main	Advanced	Security	Boot	Exit

Boot priority order:

  1: IDE 4:   ST9120821AS-(S1)
  2: IDE 5:
  3: IDE CD: PIONEER DVD-RW DVD-K06RS
  4: Network Boot: MBA v9.0.12 Slot 0E20
  5: USB HDD:
  7: USB Floppy:
  8: USB KEY:
Excluded from boot order:

Item Specific Help

Keys used to view or configure devices:
Up and Down arrows select a device.
<+> and <-> moves the device up or down.
<f> and <r> specifies the device fixed or removable.
<x> exclude or include the device to boot.
<Shift + 1> enables or disables a device.
<1- 4 > Loads default boot sequence.

F1 Help	↑↓ Select Item	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

PhoenixBIOS Setup Utility						
Info.	Main	Advanced	Security	Boot	Exit	

Item Specific Help

Exit Saving Changes
Exit Dicarding Changes
Load Setup Defaults
Discard Changes
Save Changes

Exit System Setup and save your changes to CMOS.

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
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.
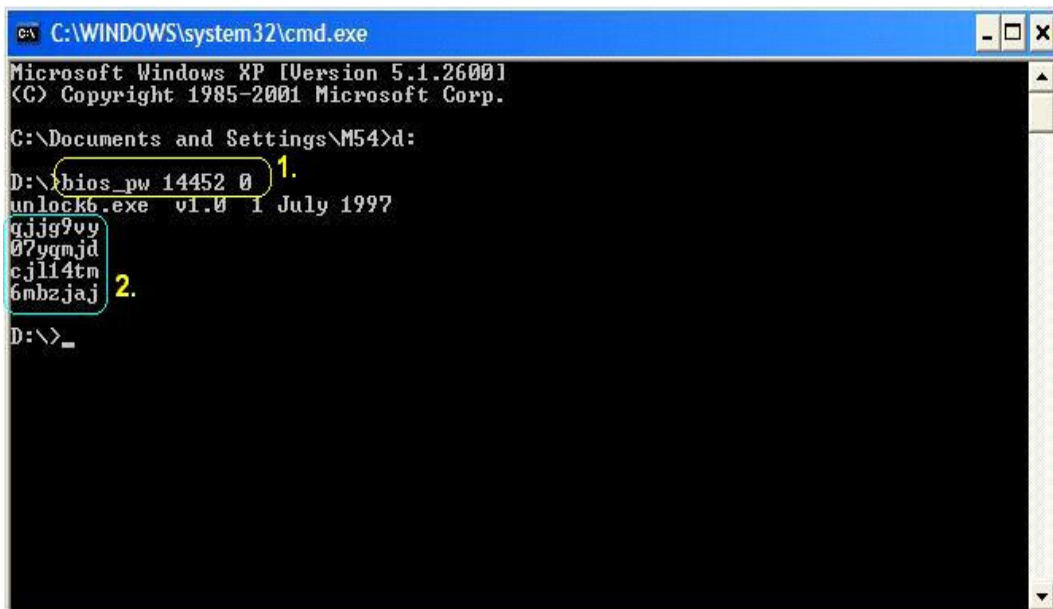
Step One Machine 1

Key in wrong Supervisor Password three times and **System Disabled** will show.
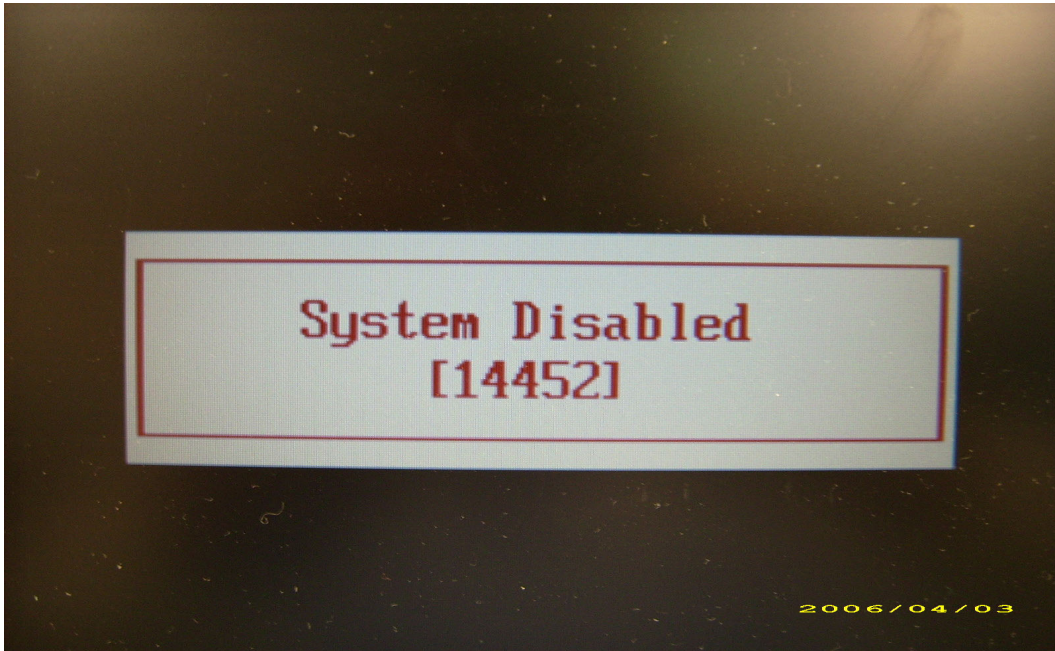
Step Two Machine 2: Run BIOS_PW.EXE

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.
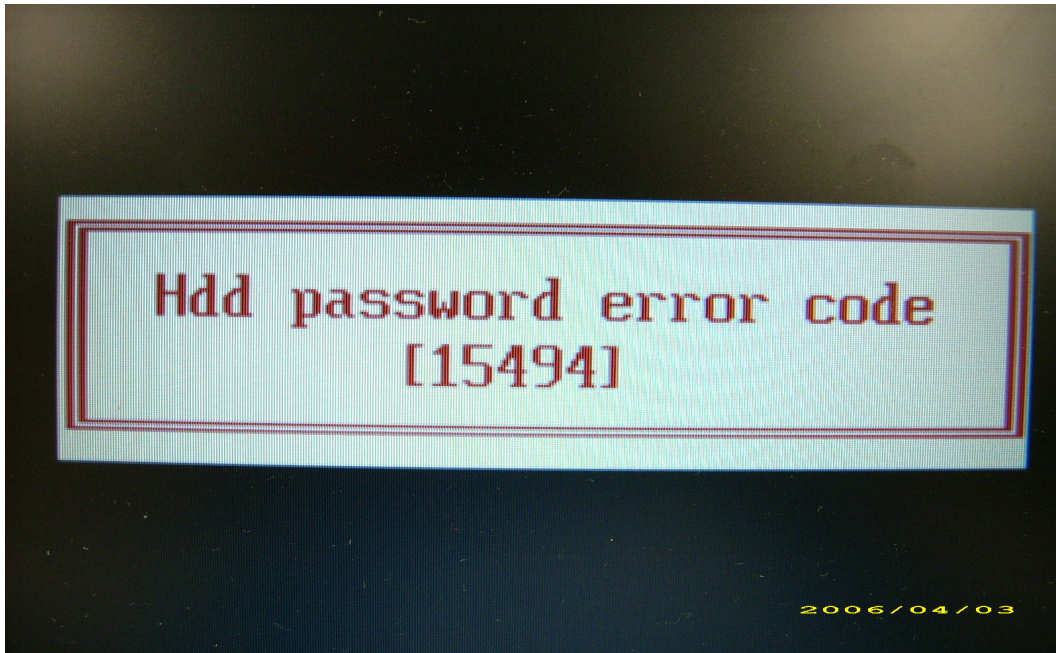
Step Two Machine 2: Run HDD_PW.EXE

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

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

To disassemble the computer, 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.

General Information

Before You Begin

Before proceeding with the disassembly procedure, you have to make sure that:
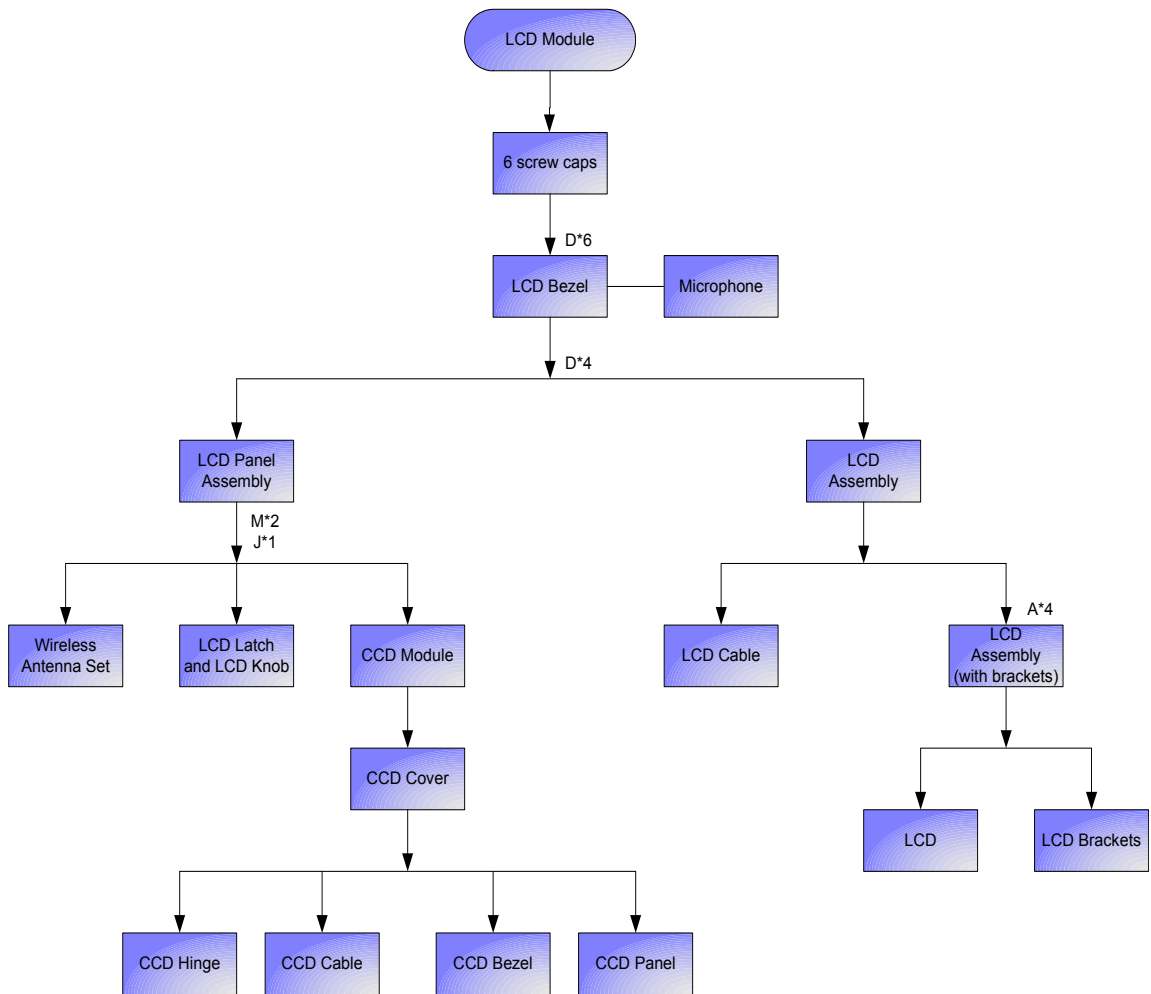
1. The system and all peripherals are powered off.
2. The AC adaptor and all power and signal cables from the system are unplugged.
3. The battery pack is removed.

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.

```
                            ┌──────────────┐
                            │    Start     │
                            └──────────────┘
                                   │
                            ┌──────────────┐
                            │   Battery    │
                            └──────────────┘
                                   │
        ┌──────────┬──────────────┼──────────────────┐
     L*2│       L*2│           L*2│                  │
 ┌──────────┐ ┌──────────┐ ┌──────────────┐  ┌──────────────┐
 │HDD Cover │ │DIMM Cover│ │ Wireless LAN │  │  ODD Module  │
 └──────────┘ └──────────┘ │    Cover     │  └──────────────┘
      │D*1         │        └──────────────┘        │C*4
 ┌──────────┐ ┌──────────┐      │J*2          ┌──────┴──────┐
 │HDD Module│ │  Memory  │ ┌──────────────┐ ┌──────────┐┌──────────┐
 └──────────┘ │ Modules  │ │ Wireless LAN │ │   ODD    ││ODD and   │
   ┌──┴──┐    └──────────┘ │    Card      │ │ Bracket  ││ODD Board │
┌────────┐┌──────┐         └──────────────┘ └──────────┘└──────────┘
│  HDD   ││ HDD  │              │J*2
│Bracket ││      │         ┌──────────────┐
└────────┘└──────┘         │ Hinge Cover  │
                           │  Assembly    │
 ┌──────────┐              └──────────────┘
 │ Keyboard │            ┌───────┴────────┐
 └──────────┘         J*2│             J*3│
                  ┌──────────┐    ┌──────────┐
                  │ Keyboard │    │Hinge Cover│
                  └──────────┘    └──────────┘
                       │D*4              │
                  ┌──────────┐    ┌──────────┐  ┌──────────┐
                  │LCD Module│    │  Launch  │──│  Launch  │
                  └──────────┘    │  Board   │  │  Cable   │
                   J*7 on the fron└──────────┘  └──────────┘
                   B*2 on the front
                   J*3 on bottom
                   D*14 on bottom
```
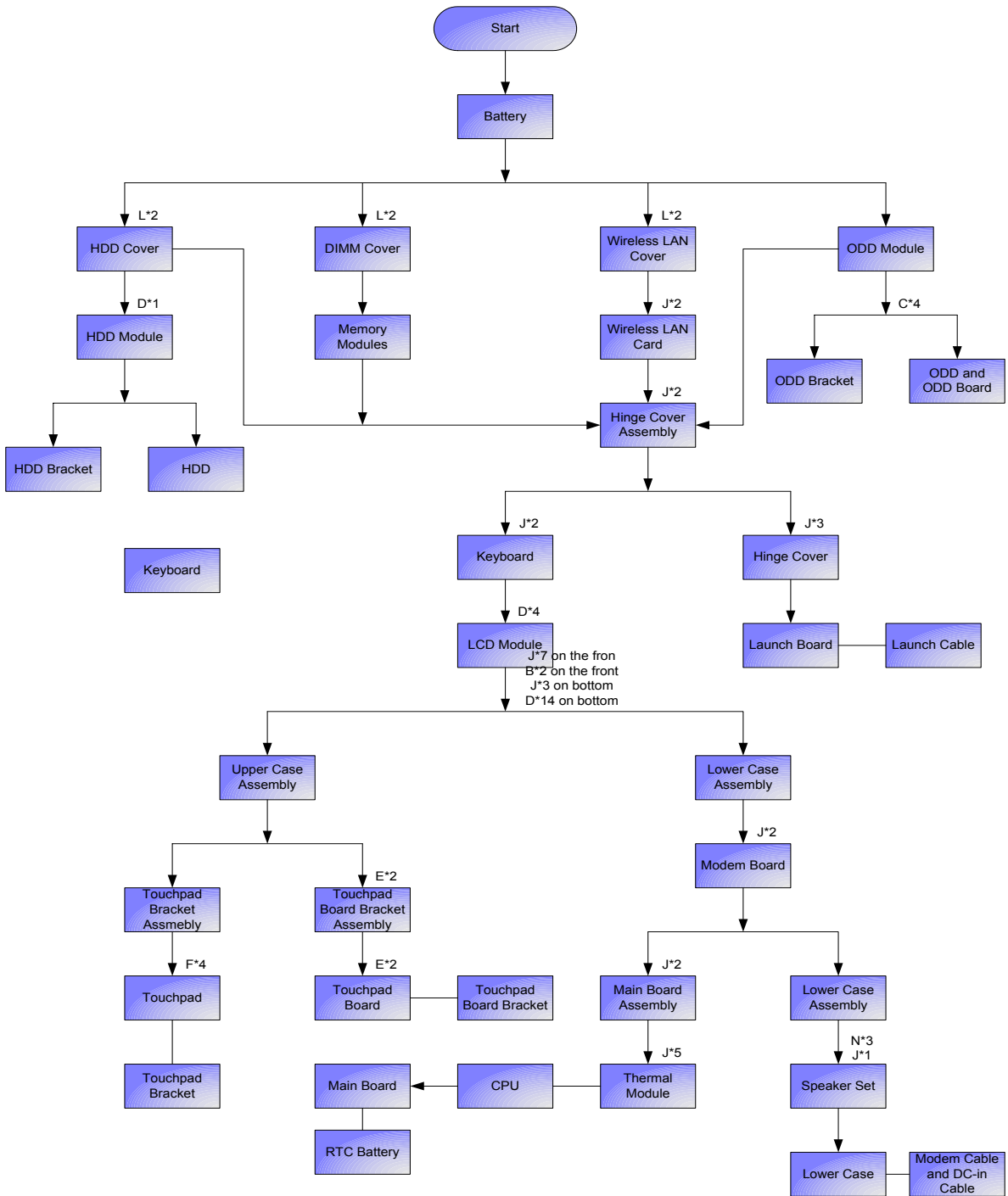
No.	Description	Part No.	Quanta Part No.
A	SCREW M2.0*2.5-I(NI)(NYLOK)	86.A03V7.012	MM20030ICI3
B	SCREW M2.5*6-I(BNI)(NYLOK)	86.T25V7.012	MM25030IL65
C	SCREW M2.0*3.0-I-NI-NYLOK	86.T23V7.006	MM20050ICI2
D	SCREW M2.0*6.0-I-NI-NYLOK	86.A08V7.004	MM25060IL69
E	SCREW M2.5*2-I (NI,NYLOK)	86.T23V7.018	MS25020IF05
F	SCREW M2.5*3-I(NI,NYLOK)	86.A03V7.010	MM25030ICI7
I	SCREW M3*0.5+3.5I	86.FR5V7.001	MS30035I354
J	SCREW M2.5*4.0-I(BKAG)(NYLOK)	86.T25V7.013	MM25040I243
L	SCREW M2.5*4-I(BNI)	TBD	MS25045I008
M	SCREW M2.5*4-I(NI, NYLOK)	TBD	MS25040IE91
N	SCREW M2.5*4-I(BNI)(NYLOK)	TBD	MS25040BA89

Disassembly Procedure

Removing the Battery Pack

1. Slide the battery lock.
2. Slide the battery latch and release the battery pack then remove it.

Removing the Memory Module

1. Release the two screws fastening the DIMM cover.
2. Remove the DIMM cover.
3. Pop out the memory modules then remove it.
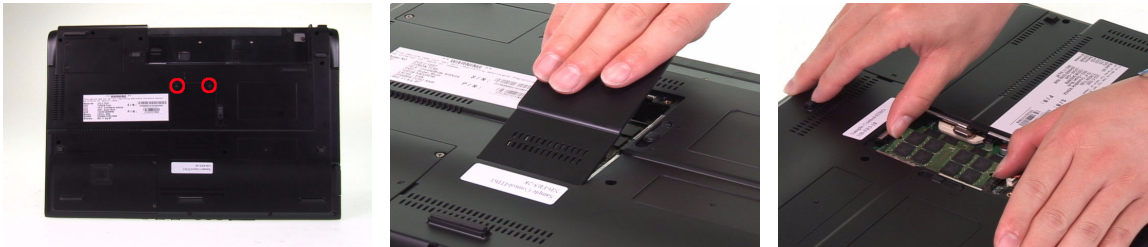
Removing the HDD Module/Mini PCI Card/ODD Module

1. Remove the four screws holding the HDD cover.
2. Detach the HDD cover from the main unit.

3. Then remove the screw fastening the HDD module.

4. Disconnect the HDD module (pull the HDD module outwards as shown) and remove it.

5. Remove the two screw fastening the wireless cover.

6. Then remove the wireless cover.

7. Disconnect the wireless antenna.

8. Remove the two screws holding the wireless LAN card.

9. Take out the wireless LAN card from the socket.

10. Release the ODD latch as shown.

11. Detach the ODD module from the main unit.
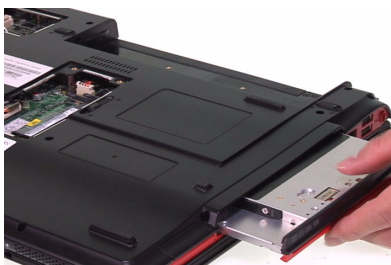
Removing the LCD Module from the Main Unit

1. Remove the two screws fastening the middle cover.
2. Open the lap top as shown.
3. Then detach the middle cover and place it as shown.
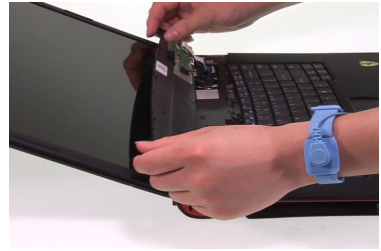
4. Disconnect the launch board cable from the main board.
5. Remove the middle cover (with launch board and launch board cable).
6. Disconnect the launch board cable from the launch board.
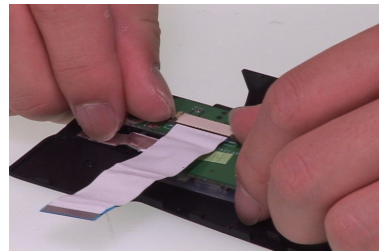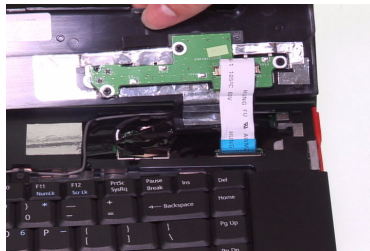
7. Remove the three screws holding the launch board to the middle.
8. Then remove the launch board from the middle cover.
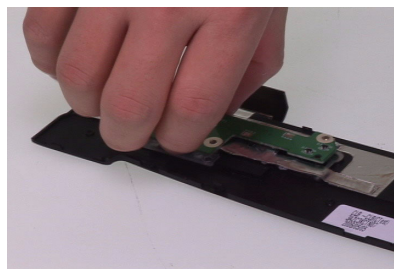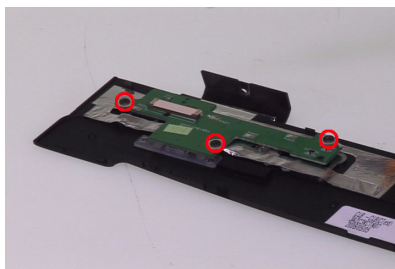
9. Turn over the keyboard and place it as the image shows.
10. Disconnect the keyboard cable from the main board then remove the keyboard.
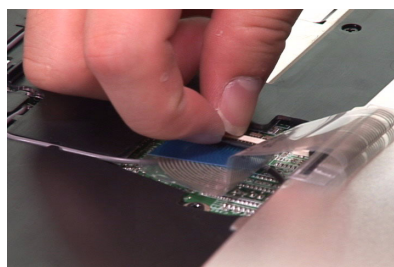
11. Disconnect the microphone cable and the touchpad board cable from the main board.

12. Disconnect the LCD cable from the main board.

13. Take out the microphone cable from the upper case.
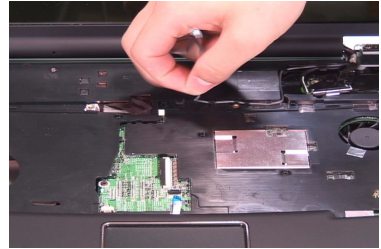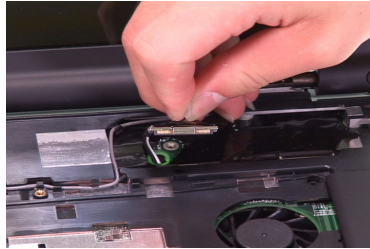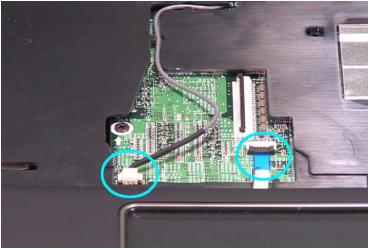

14. Pull out the wireless antenna set from the back side.

15. Remove the four screws holding the LCD module.

**16.** Detach the LCD module from the laptop.
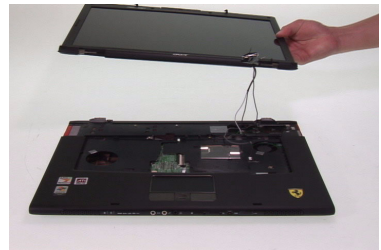
Disassembling the Main Unit

Separating the Upper Case and the Lower Case

1. Remove the nine screws holding the upper case and the lower case assembly on the front side.

2. Remove the 16 screws fastening the upper case and the lower case assembly on the bottom side.
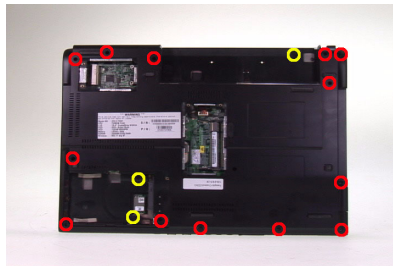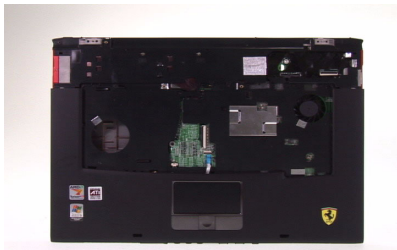

3. Turn over the main unit and disconnect the bluetooth cable from the main board.

4. Disconnect the power board cable from the main board on the bottom side.

5. Carefully detach the upper case assembly from the lower case assembly.
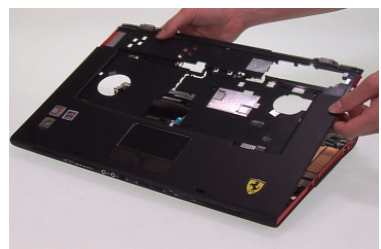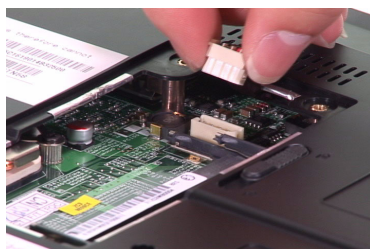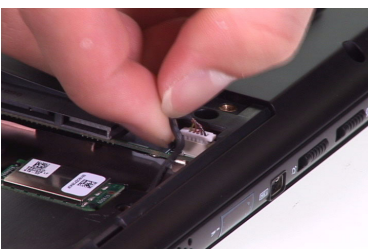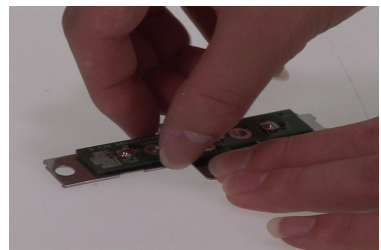
Disassembling the Upper Case Assembly

1. Detach the bluetooth module from the upper case.
2. Disconnect the bluetooth cable from the bluetooth board.
3. Tear off the mylar fastening the touchpad to touchpad board cable.
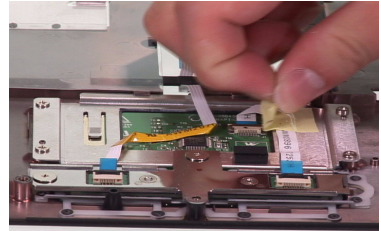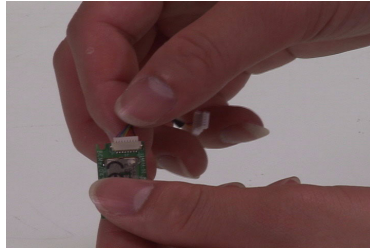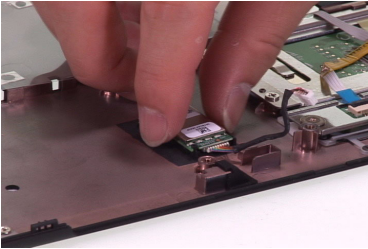
4. Disconnect the touchpad to touchpad board cable and remove it.
5. Disconnect the touchpad cable and detach it from the touchpad.
6. Remove the two screws holding the touchpad bracket.
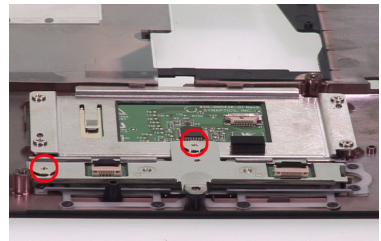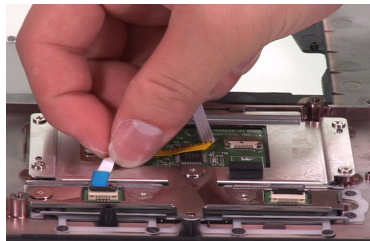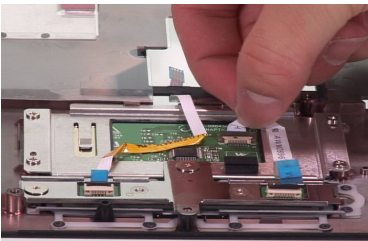
7. Detach the touchpad board bracket (with touchpad board) from the upper case.
8. Remove the two screws fastening the touchpad board to the touchpad board bracket.
9. Detach the touchpad board from the bracket.
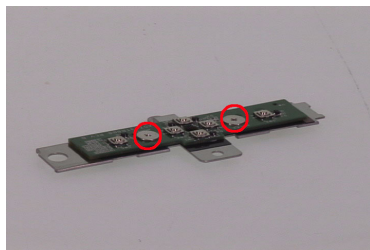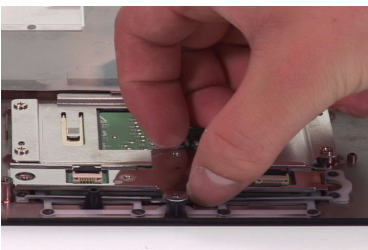
10. Remove the four screws fastening the touchpad bracket.
11. Detach the touchpad bracket from the upper case.
12. Then remove the touchpad.
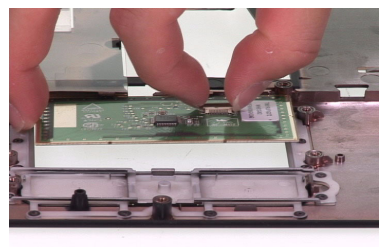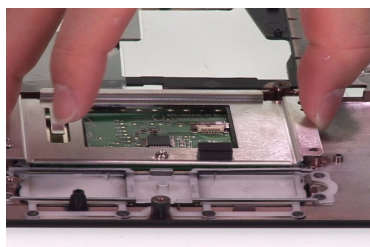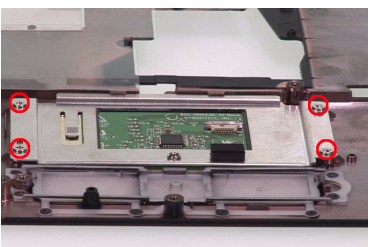
Disassembling the Lower Case Assembly

1. Disconnect the (1) DC-in cable, (2) modem cable and the (3) USB cable.
2. Take the power board out of the lower case.
3. Disconnect the USB cable from the main board and detach the cable from the lower case.
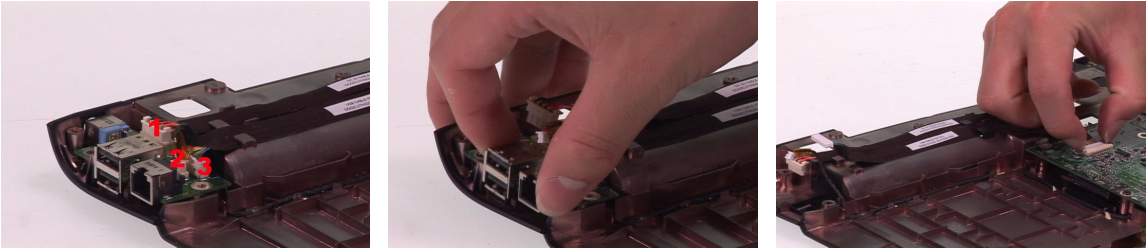
4. Press the dummy PC card button and remove the dummy PC card.
5. Detach the dummy expand card from the lower case.
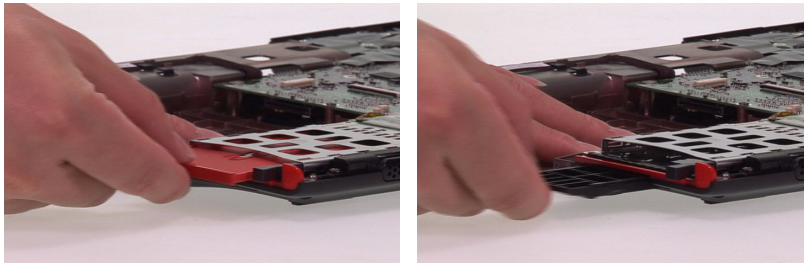
6. Tear off the mylar fastening the modem cable.
7. Disconnect the modem cable from the modem board.
8. Remove the two screws holding the modem board.
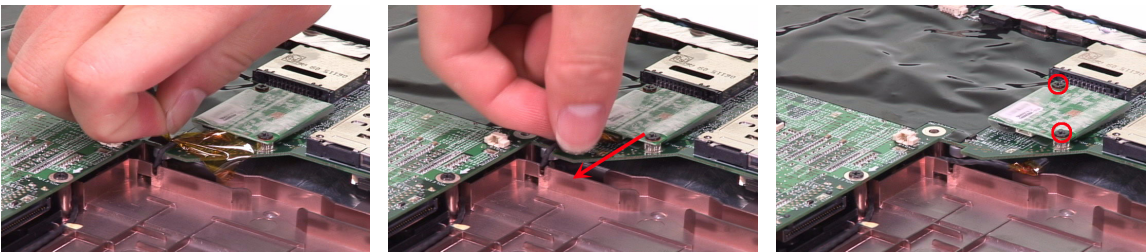
9. Disconnect the modem board from the main board.
10. Disconnect the speaker set cable from the main board.
11. Remove the two screws fastening the main board assembly to the lower case.
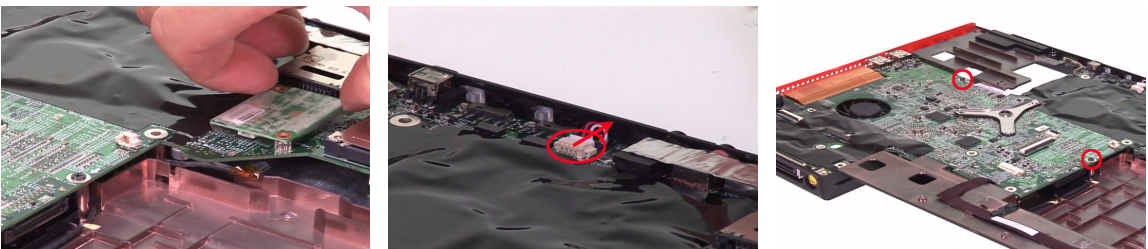
12. Cautiously take out the main board assembly from the lower case.

13. Remove the four screws holding the speaker set to the lower case.

14. Detach the foil fastening the speaker cable to the lower case.
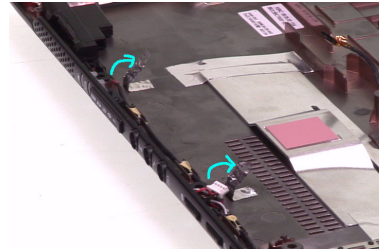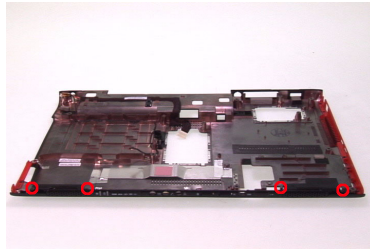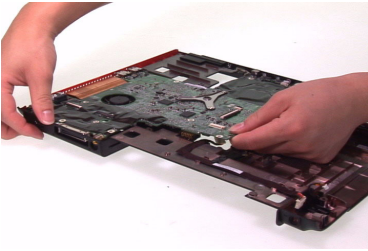
15. Then detach the speaker set from the lower case.

16. Then take out the modem cable from the lower case as well.

17. Detach the DC-in cable from the lower case.
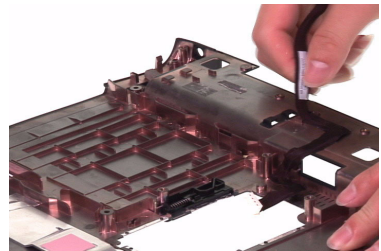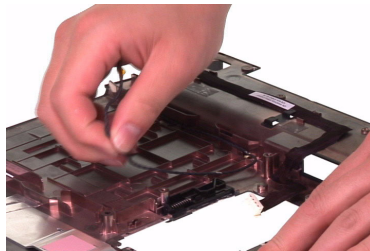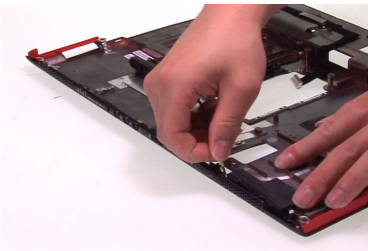
18. Disconnect the RTC battery then detach it from the main board.

19. Disconnect the thermal module cable connector from the main board.

20. Remove the five screws fastening the thermal module to the main board.
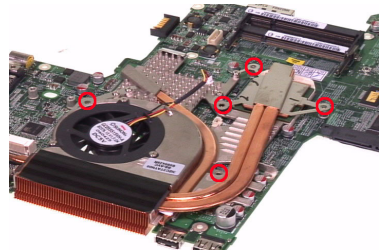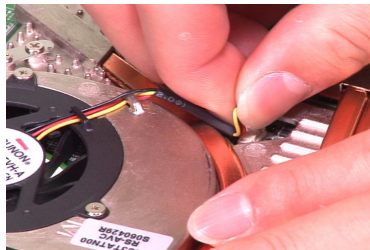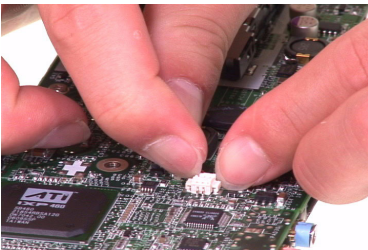
21. Remove the thermal module from the main board.

22. Use a flat-headed screwdriver to release the CPU lock. Please turn clock-wise.

23. Then carefully take out the CPU from the CPU socket on the main board.
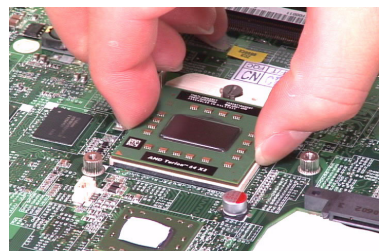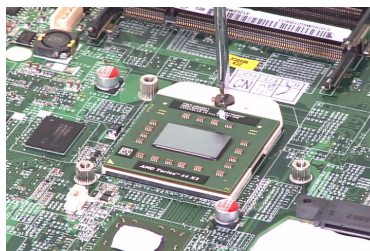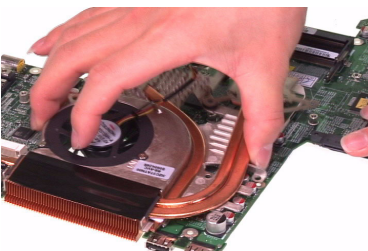
Disassembling the LCD Module

1. Remove the six screw caps on the LCD bezel.

2. Then remove the six screws fastening the LCD bezel to the LCD module.
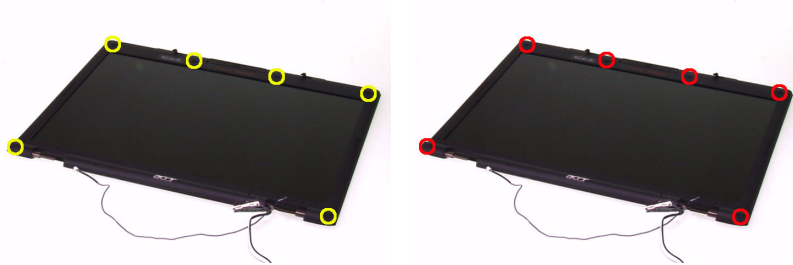
3. Carefully detach the LCD bezel from the LCD module.

4. Detach the microphone from the LCD bezel.

5. Disconnect the LVDS cable and LCD cable from the inverter then remove the inverter.
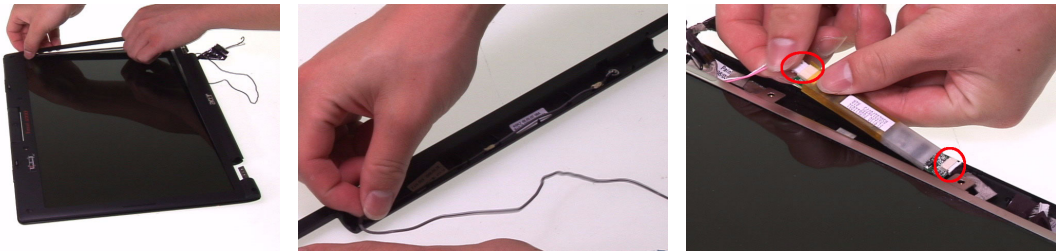
6. Disconnect the CCD cable and the LCD cable.

7. Remove the four screws fastening the LCD assembly to the LCD cover.

8. Then take out the LCD assembly from the LCD cover.

9. Tear off the foil attach onto the wireless antenna set to the LCD cover. Please detach the foil on both side.

10. Remove the two screws holding the wireless antenna set to the LCD cover.
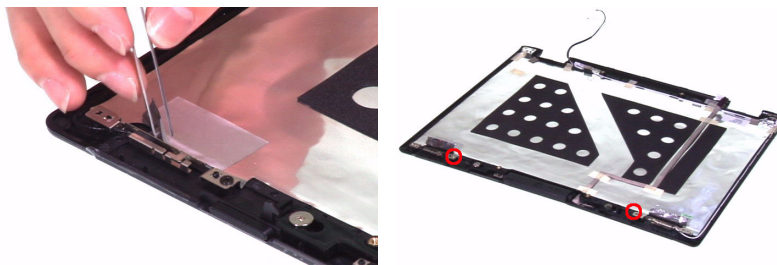
11. Detach the antenna set from the LCD cover.

12. Remove the two screws fastening the LCD latch.
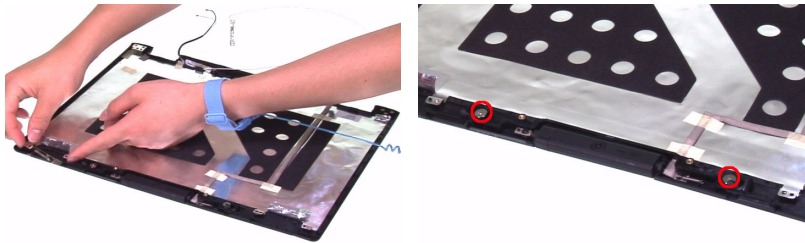
13. Then carefully detach the latch knob from the LCD cover.

14. Take out the LCD latch (with the small spring) from the LCD cover.

15. Remove the screws holding the CCD module (digital camera module) to the LCD cover.
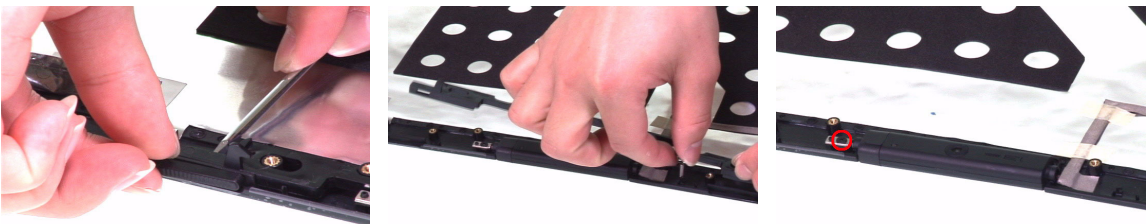
16. Detach the CCD cable from the LCD cover and remove the CCD module

17. Remove the CCD cover from the CCD module.

18. Detach the CCD bezel from the CCD module

19. Remove the two screws fastening the CCD board to the CCD cover.

20. Then take out the CCD board from the CCD cover.
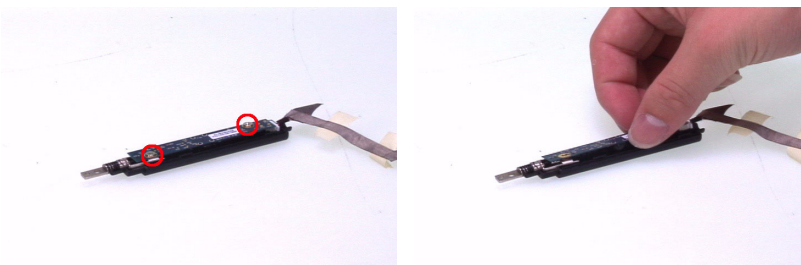
21. Take out the CCD hinge from the CCD cover as well.

22. Disconnect the CCD cable from the CCD board.

23. Remove the two screws fastening the left LCD bracket to the LCD.
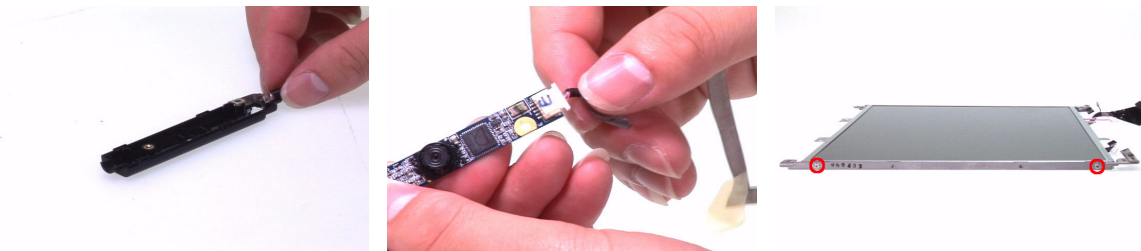
24. Remove the left LCD bracket.

25. Remove the two screws holding the right LCD bracket.
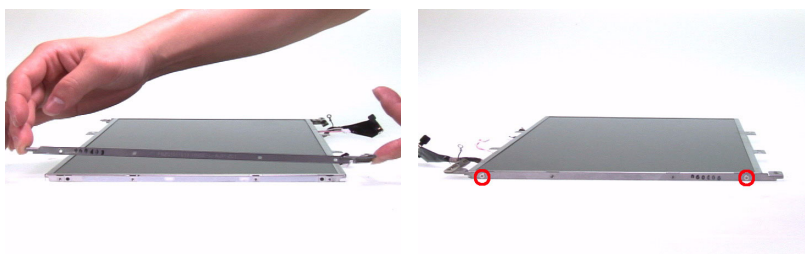
26. Remove the right LCD bracket.

27. Tear off the mylar fastening the LCD cable and disconnect the LCD cable from the LCD.
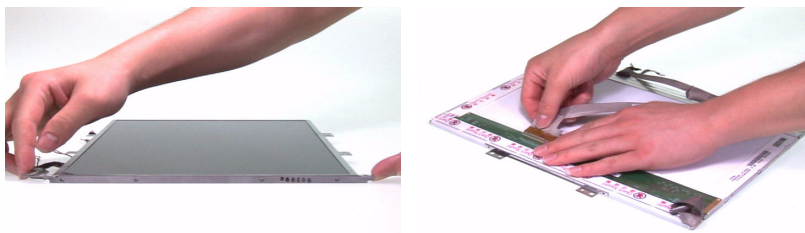
Disassembling the External Modules

HDD Module

1. Remove two screws holding the HDD bracket to the HDD.

2. Remove another two screws fastening HDD bracket to HDD on the other side.

3. Carefully detach the HDD from the bracke.t

ODD Module

1. Remove the four screws fastening the ODD bracket to the ODD.

2. Remove the ODD bracket form the ODD.

3. Detach the ODD board from the ODD.

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.
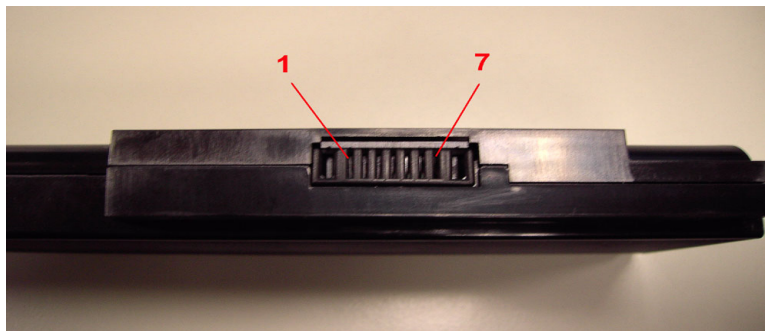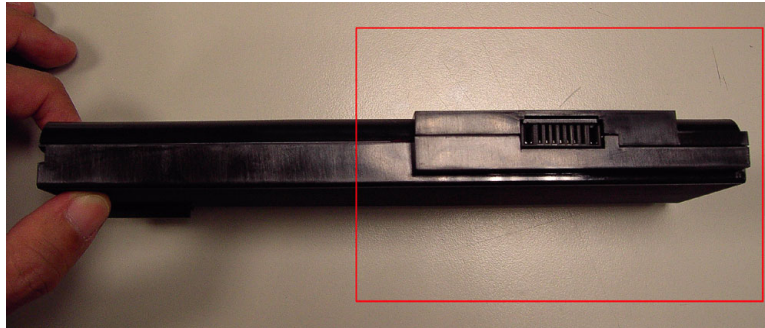
3. If the voltage is still less than 7.5V after recharging, replace the battery.

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: • CPU BIOS Update Code Mismatch • IDE Primary Channel Master Drive Error 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. 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. Run **Load Default Settings** in BIOS Setup Utility. Hard disk drive 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.
Shadow RAM Failed at offset: nnnn	BIOS ROM System board

Error Message	FRU/Action in Sequence
System RAM Failed at offset: nnnn	DIMM System board
Extended RAM Failed at offset: nnnn	DIMM 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 Run BIOS Setup Utility to reconfigure system time, then reboot system.
System timer error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board
Real time clock error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board
Previous boot incomplete - Default configuration used	Run **Load Default Settings** in BIOS Setup Utility. RTC battery System board
Memory size found by POST differed from CMOS	Run **Load Default Settings** in BIOS Setup Utility. DIMM System board
Diskette drive A error	Check the drive is defined with the proper diskette type in BIOS Setup Utility. 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 System board
Software NMI Failed	DIMM System board
Fail-Safe Timer NMI Failed	DIMM System board
Device Address Conflict	Run **Load Default Settings** in BIOS Setup Utility. RTC battery System board
Allocation Error for device	Run **Load Default Settings** in BIOS Setup Utility. RTC battery System board
Failing Bits: nnnn	DIMM BIOS ROM System board
Fixed Disk n	None
Invalid System Configuration Data	BIOS ROM System board

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

POST Code

Code	Beeps	For Boot Block in Flash ROM
E0h		Initialize the chipset.
E1h		Initialize the bridge.
E2h		Initialize the CPU.
E3h		Initialize the system timer.
E4h		Initialize system I/O.
E5h		Check force recovery boot.
E6h		Checksum BIOS ROM.
E7h		Go to BIOS.
E8h		Set Huge Segment.
E9h		Initialize Multi Processor.
EAh		Initialize OEM special code.
EBh		Initialize PIC and DMA.
ECh		Initialize Memory type.
EDh		Initialize Memory size.
EEh		Shadow Boot Block.
EFh		System memory test.
F0h		Initialize interrupt vectors.
F1h		Initialize Run Time Clock.
F2h		Initialize video.
F3h		Initialize System Management Mode.
F4h	1	Output one beep before boot.
F5h		Boot to Mini DOS.
F6h		Clear Huge Segment.
F7h		Boot to Full DOS.

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**.
	Battery pack
	System board

PCMCIA-Related Symptoms

Symptom/Error	Action in Sequence
System cannot detect the PC Card (PCMCIA).	PCMCIA slot assembly 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. DIMM System board

Speaker-Related Symptoms

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

Power Management-Related Symptoms

Symptom/Error	Action in Sequence
The system will not enter hibernation.	Keyboard (if control is from the keyboard) Hard disk drive 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. Touchpad Keyboard Hard disk connection board Hard disk drive System board
The system does not enter standby mode after closing the LCD.	LCD cover switch System board
The system does not resume from hibernation mode.	Hard disk connection board Hard disk drive System board
The system does not resume from standby mode after opening the LCD.	LCD cover switch System board
Battery fuel gauge in Windows does not go higher than 90%.	Remove battery pack and let it cool for two hours. Refresh battery (continue to use battery until power off, then charge battery). Battery pack System board

Symptom/Error	Action in Sequence
System hangs intermittently.	Reconnect hard disk/CD-ROM drives. Hard disk connection board 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. Reconnect hard disk/CD-ROM/diskette drives.
External display does not work correctly.	Press Fn + F5, LCD/CRT/Both display switching 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. Onboard Devices Configuration Run printer self-test. Printer driver Printer cable Printer System Board
Serial or parallel port device problems.	Ensure the **Serial Port** in the Devices Configuration" of BIOS Setup Utility is set to Enabled. Device driver Device cable Device System board

Keyboard/Touchpad-Related Symptoms

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

Modem-Related Symptoms

Symptom/Error	Action in Sequence
Internal modem does not work correctly.	Modem phone port Modem combo board 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
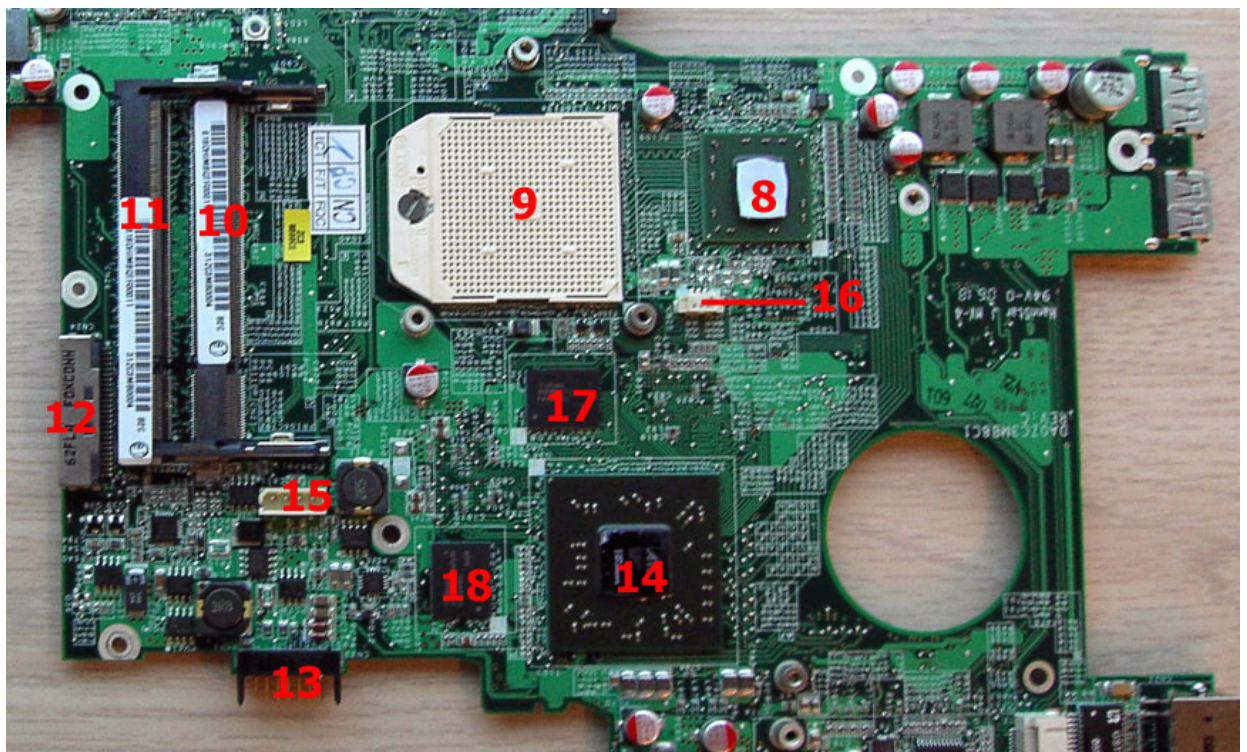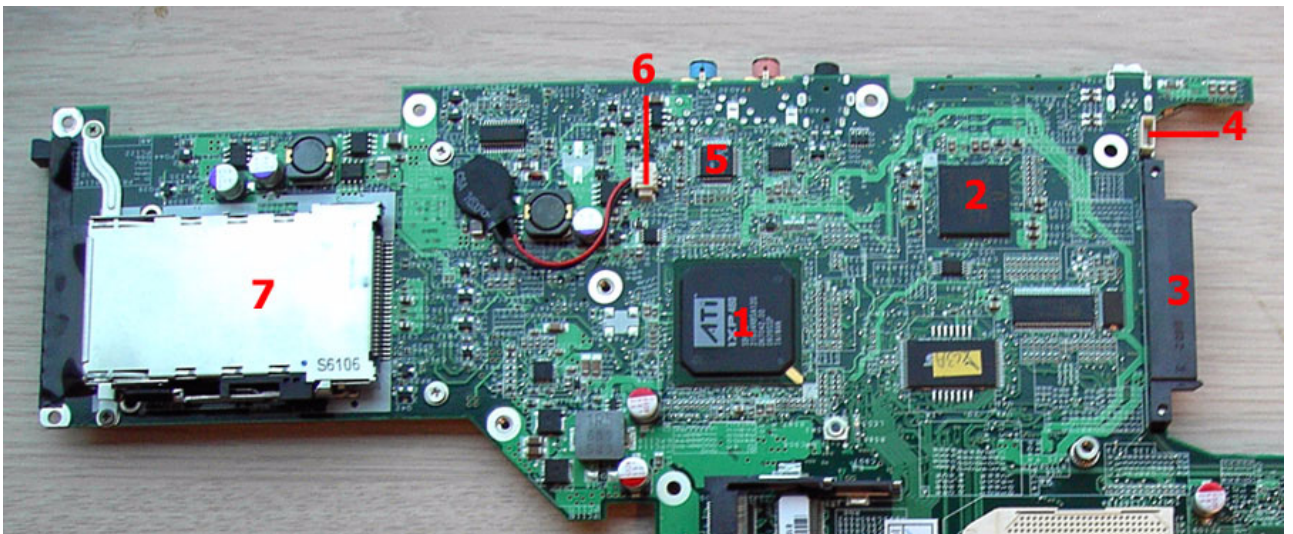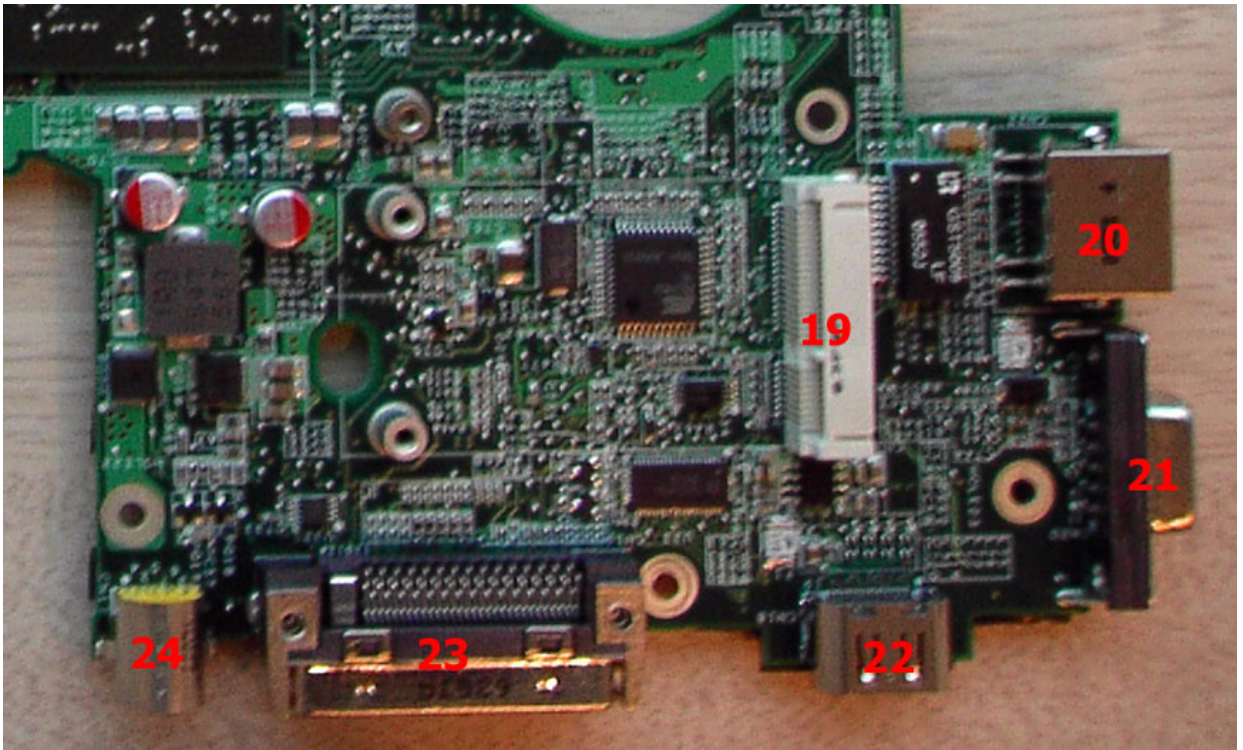
#	Description	#	Description
1	South Bridge	2	BIOS ROM
3	SATA connector	4	Bluetooth module connector
5	Audio Codec	6	RTC battery connector
7	New card connector	8	North bridge
9	CPU socket	10	DDR2 RAM slot1
11	DDR2 RAM slot2	12	Media bay connector
13	Battery pack connector	14	VGA chip
15	Four-pin USB cable connector	16	System fan connector
17	VRAM	18	VRAM
19	Mini card connector	20	RJ45 W/ LED
21	CRT connector	22	HDMI connector
23	Docking connector	24	S-Video connector

Top Side
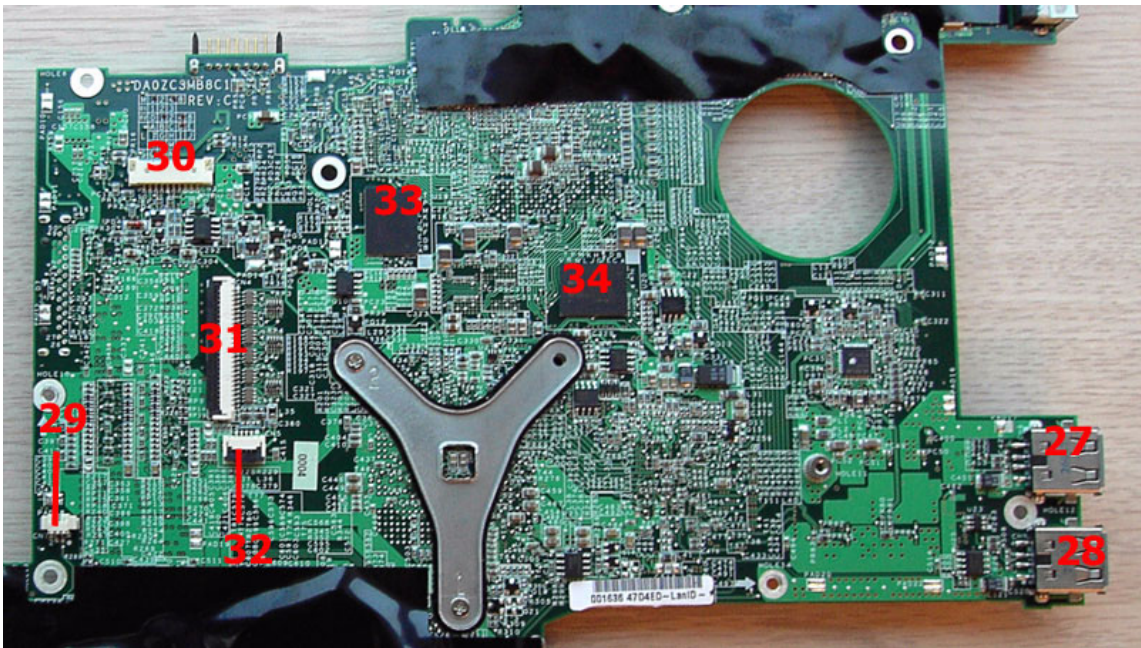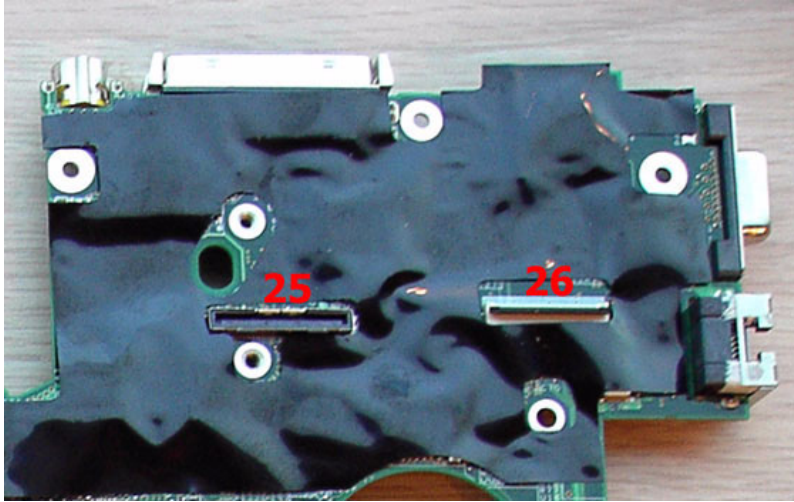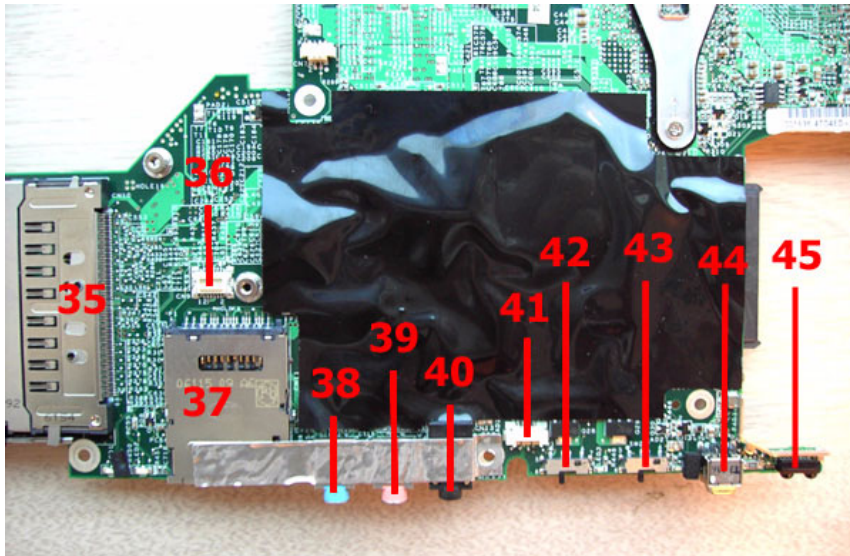
#	Description	#	Description
25	LCD connector	26	Main board to button board FFC connector
27	USB1	28	USB2
29	Mic connector	30	Daughter board cable to main board connector
31	Keyboard FFC connector	32	Touch pad FFC connector
33	VRAM	34	VRAM
35	PCMCIA card connector	36	MDC connector
37	5-in-1 card reader	38	Audio jack / line in
39	Audio jack / mic	40	SPDIF (line out)
41	Speaker connector	42	Bluetooth switch
43	Wireless switch	44	1394 connector
45	FIR		

Jumper Setting SOP

1. Remove the RTC battery.
2. Short CN31pin 1 and pin 2 to clear CMOS.

FRU (Field Replacement Unit) List

This chapter offers the FRU (Field Replacement Unit) list in global configuration of Ferrari 5000. Refer to this chapter whenever you order the parts to repair or for RMA (Return Merchandise Authorization).

Please note that when ordering FRU parts, 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

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
ADAPTER			
N/A	ADAPTER 90W 3 PIN LITEON PA-1900-04QB ROHS	ZC1 ADAPTER LITE-ON S/P	AP.09003.009
N/A	ADAPTER 90W 3 PIN DELTA ADP-90SB BBAHF ROHS	ZC1 ADAPTER Delta S/P	AP.09001.005
N/A	LSE-90W SLS0202C19A157 LF BLUE 1.7X5.5X11 LF	ZB2 ADAPTER LSE-90W S/P	AP.09006.006
BATTERY			
	BATTERY SANYO-LI-ION COMO 9CELL2.6	ZC1 BATTERY(SANYO 9 CELL)S/P	BT.00903.006
	BATTERY PANASONIC-LI-ION COMO 9CELL2.6	ZC1 BATTERY(PANASO NIC 9 CELL)S/P	BT.00905.002
MAIN BOARD			
	"MAINBOARD M56P256S INF-ATMEL W/READER,NEW CARD,PCMICA W/O CPU MEMORY"	ZC3 MB-INF-ATMEL ASSY S/P	MB.FR506.005
	"MAINBOARD M56P256S SAM-ATMEL W/READER,NEW CARD,PCMICA W/O CPU MEMORY"	ZC3 MB-SAM-ATMEL ASSY S/P	MB.FR506.002
BOARD			
	MODEM BOARD T60M845.02	ZB1 MODEM 56K(MDC) EU S/P	54.AA7V7.001
	MODEM BOARD T60M955.00	ZC3 MODEM UniZion T60M955.00 S/P	54.FR5V7.001
	BLUETOOTH MODULE FOXCONN T60H928.01 W/ ANTENNA	ZC1 FOX BULETOOTH(T60H9 28.01)S/P	54.TAXV7.001
	MINI PCI WIRELESS BOARD FOXCONN 802.11b/g GOLAN T60H938.03	ZC3 FOX wireless b/g T60H938.03 S/P	54.FR5V7.002
	MINI PCI WIRELESS BOARD FOXCONN 802.11ABG T60H921.10	ZC3 FOX wireless ABG T60H921.10 S/P	54.FR5V7.003
	TOUCHPAD BOARD	ZC3 TP/B ASSY S/P	55.FR5V7.001

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
BUTTON BOARD	ZC3 Button Board ASSY S/P	55.FR5V7.002
USB/DCIN BOARD	ZC3 USB Board ASSY S/P	55.FR5V7.003
OPTICAL DEVICE CONNECTOR BOARD	ZC3 CD ROM Board ASSY S/P	55.FR5V7.004
LCD INVERTER BOARD W/ TYPE	"ZF1 INV (8-20V,V=700,REV=A1 A) S.P.?"	19.TAXV7.001
DIGITAL LIGHT DEVICE			
CCD MODULE W/ CABLE	ZC3 CCD MOUDLE W/CABLE S/P	57.FR5V7.001
POWER CABLE			
N/A	POWER CORD US 3PIN ROHS	ZB1 PWR CORD US S/P	27.TAXV7.001
N/A	POWER CORD EU 3 PIN ROHS	ZB1 PWR CORD (CEE) S/P	27.TAXV7.002
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

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
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 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 US (3 PIN)	ET2S POWER CORD S/P-US	27.A03V7.001
N/A	POWER CORD (CONTINENTAL)	EI2 POWER CORD 3P CONTINENTAL S.P.	27.FR5V7.001
CABLE			
	MODEM CABLE	"ZC3 CABLE MDC(2/ 2P,REV2A)S/P"	50.FR5V7.001
	FFC CABLE - TP/B TO MB LF	"ZC1 CABLE MB-TP/ B(122.5MM,4/4,2A) S/P"	50.TAXV7.002

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
	FFC CABLE - BUTTON BD TO MB LF	"ZC1 CABLE BUTTON BD(60MM,16/16,2A) S/P"	50.TAXV7.003
	FFC CABLE - TP/B TO TP LF	"ZC1 CABLE TP/B-TP(76MM,12/12,2A) S/P"	50.TAXV7.004
	CABLE - USB 10/10P	"ZC1 CABLE USB(10/10P,REV1A)S/P"	50.TAXV7.005
	CABLE - DCIN 4/4P	"ZC1 CABLE DCIN(5/5P,REV1A)S/P"	50.TAXV7.006
	LCD CABLE - 15.4 IN. WSXGA	ZC1 CABLE 15.4 WSXGA+ID5(40/40P R1A) S/P	50.TAXV7.007
	BLUETOOTH CABLE	"ZC1 CABLE BT(5/8P,REV1A)LF S/P"	50.TAXV7.008
N/A	HDMI TO DVI EXTRA CABLE	HDMI TO DVI EXTRA CABLE	50.FR5V7.002
CASE / COVER / BRACKET ASSEMBLY			
	MIDDLE COVER	ZC3 KB COVER ASSY S/P	42.FR5V7.001
	UPPER CASE W/TP	ZC3 TOP ASSY S/P	60.FR5V7.001
	"LOWER CASE W/SPEAKER, MODEM CABLE ,RUBBER"	ZC3 BASE CASE ASSY S/P	60.FR5V7.002
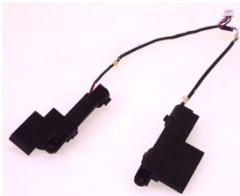
CATEGORY	Partname	DESCRIPTION	ACER PART NO.
	TP BOARD SUPPORT BRACKET	ZC1 TP BD SUPPORT BRACKET S/P	33.TAXV7.001
	HDD BRACKET	ZC1 HDD BRACKET S/P	33.TAXV7.002
	RAM DOOR	ZC3 RAM DOOR ASSY S/P	42.FR5V7.003
	MINI CARD DOOR	ZC3 MINI CARD DOOR ASSY S/P	42.FR5V7.004
	DUMMY NEW CARD	ZC3 DUMMY-NEW-CARD S/P	42.FR5V7.005
	DUMMY PCMCIA CARD	ZC3 PCMCIA-DUMMY-CARD S/P	42.FR5V7.006
	OPTICAL DEVICE HOLDER	ZC1 ODD-HOLDER S/P	42.TAXV7.006
	SUPER MULTI BEZEL PIONEER SLOT IN	ZC3 SUPER MULTI BEZEL PIONEER ASSY	42.FR5V7.007
	"HDD DOOR W/CUSION, RUBBER"	ZC3 HDD DOOR ASSY S/P	42.FR5V7.008
N/A	HD DVD G BASE BEZEL	ZC3 HD DVD BEZEL ASSY S/P	TBD

| CATEGORY	Partname	DESCRIPTION	ACER PART NO.
	LCD BRACKET W/HINGE 15.4 IN. - L	ZC1 HINGE-L S/P	33.TAXV7.004
	LCD BRACKET W/HINGE 15.4 IN. - R	ZC1 HINGE-R S/P	33.TAXV7.005
	LCD PANEL CARBON 15.4 IN. W/LOGO ANTENNA CCD MODULE	ZC3 15.4 LCD COVER Carbon ASSY S/P	60.FR7V5.004
	LCD BEZEL W/RUBBER PAD 15.4 IN.	ZC3 15.4 LCD BEZEL ASSY S/P	60.FR7V5.005
COMMUNICATION MODULE			
	WIRELESS LAN ANTENNA	ZC1 ANTENNA(81.ED415.009)S/P	50.TAXV7.011
CPU			
	AMD MOBILE TURION 64 X2 TL50 (ATTL50) 1.6G (Cache 128K/256K)	ZC3 AMD CPU Turion TL50 1.6G S/P	KC.TTL02.500
	AMD MOBILE TURION 64 X2 TL52 (ATTL52) 1.6G (Cache 128k/512k)	ZC3 AMD CPU Turion TL52 1.6G S/P	KC.TTL02.520
	AMD MOBILE TURION 64 X2 TL56 (ATTL56) 1.8G (Cache 128k/512k)	ZC3 AMD CPU Turion TL56 1.8G S/P	KC.TTL02.560
	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			
	DVD SUPER MULTI MODUEL PIONEER DVR-K06RS SLOT IN	ZC3 SUPPER MULTI (PIONEER)SLOT-IN ASSY	6M.FR5V7.001
	DVD SUPER MULTI DRIVE PIONEER DVR-K06RS SLOT IN	ZB2 DVD SUPER DRIVE DVR-K06RS S/P	KU.00805.027
N/A	"HD DVD MODULE TOSHIBA TS-L802A,LF GBASE"	ZC3 HD DVD (TOSHIBA) ASSY	TBD
N/A	"HD DVD DRIVE TOSHIBA TS-L802A,LF GBASE"	ZC3 HD DVD ROM TOSHIBA TS-L802A S/P	KV.01H01.001

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
Hard Disk Drive			
	"80G HGST 2.5' 5.4K SATA 1.5G NCQ MORAGA+HTS541080G9SA00 ,C60D"	ZB1 HDD 80G SATA HTS541080G9SA00 HGST SP	KH.08007.015
	80G SEAGATE 2.5 5400RPM SATA 8M ST988323AS (-189) MERCURY 2 LF FW:3.06	ZC3 SEAGATE HDD 80G ST988323AS ASSY S/P	KH.08001.027
	"80G TOSHIBA 2.5"" 5400RPM SATAMK8032GSX ARIES-B FREE-FALL LF FW:AS111J"	ZH2A HDD(80G)MK8032G SX-RZK S/P	KH.08004.007
	100G SEAGATE 2.5 5400RPM SATA 8M ST9100824AS (-189) MERCURY 2 LF FW:3.06	ZC3 SEAGATE HDD 100G ST9100824AS S/P	KH.10001.009
	"100G TOSHIBA 2.5""5400RPM SATAMK1032GSX ARIES-B FREE-FALL LF FW:AS021J"	ZH2A HDD(100G)MK1032 GSX-RZK S/P	KH.10004.004
	100G HGST 2.5' SATA 1.5G NCQMORAGA+HTS541010G9 SA00 FW:S60D	ZB1 HDD100G SATA HTS541010G9SA00 HGST SP	KH.10007.005
	"100G WD 2.5"" 5400RPM SATA8M WD1000BEVS- 22LAT0 ML60 LF FW:T0"	ZC3 100G WD1000BEVS- 22LAT0 S/P	KH.10008.002
	120G SEAGATE 2.5 5400RPM SATA 8M ST9120821AS (-189) MERCURY 2 LF FW:3.06	ZC3 SEAGATE 120G ST9120821AS S/P	KH.12001.026
	"120G TOSHIBA 2.5"" 5.4K SATAI1.5G W/NCQ MK1234GSX ARIES-B FREE-FALL LF FW:AH001J"	ZH2A HDD(120G)MK1234 GSX-RZK S/P	KH.12004.004
	"160G SEAGATE 2.5""" 5400RPM ST9160821AS VENUS SATA LF FW: 3.ALA"	ZC3 SEAGATE 160G ST9160821AS S/P	KH.16001.021
Keyboard			
	TM8200 KEYBOARD DARFON US INTERNATIONAL	ZC1 K/B MODULE (UI) S/P	KB.TAX07.001
	TM8200 KEYBOARD DARFON CHINESE	ZC1 K/B MODULE (TAIWAN) S/P	KB.TAX07.002
	TM8200 KEYBOARD DARFON SPANISH	ZC1 K/B MODULE (SPANISH) S/P	KB.TAX07.003
	TM8200 KEYBOARD DARFON THAI	ZC1 K/B MODULE (THAI) S/P	KB.TAX07.004
	TM8200 KEYBOARD DARFON BRAZILIAN PROTUGESE	ZC1 K/B MODULE (BRAZIL) S/P	KB.TAX07.005
	TM8200 KEYBOARD DARFON KOREA	ZC1 K/B MODULE (KOREAN) S/P	KB.TAX07.006

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
	TM8200 KEYBOARD DARFON UK	ZC1 K/B MODULE (UK) S/P	KB.TAX07.007
	TM8200 KEYBOARD DARFON GERMAN	ZC1 K/B MODULE (GERMAN) S/P	KB.TAX07.008
	TM8200 KEYBOARD DARFON ITALIAN	ZC1 K/B MODULE (ITALIAN) S/P	KB.TAX07.009
	TM8200 KEYBOARD DARFON FRENCH	ZC1 K/B MODULE (FRENCH) S/P	KB.TAX07.010
	TM8200 KEYBOARD DARFON SWISS/G	ZC1 K/B MODULE (SWISS) S/P	KB.TAX07.011
	TM8200 KEYBOARD DARFON PORTUGUESE	ZC1 K/B MODULE (PORTUGUESE) S/P	KB.TAX07.012
	TM8200 KEYBOARD DARFON ARABIC	ZC1 K/B MODULE (ARAB-EN) S/P	KB.TAX07.013
	TM8200 KEYBOARD DARFON BELGIUM	ZC1 K/B MODULE (BELGIUM) S/P	KB.TAX07.014
	TM8200 KEYBOARD DARFON SWEDEN	ZC1 K/B MODULE (SWEDISH) S/P	KB.TAX07.015
	TM8200 KEYBOARD DARFON CZECH	ZC1 K/B MODULE (CZECH) S/P	KB.TAX07.016
	TM8200 KEYBOARD DARFON HUNGAIAN	ZC1 K/B MODULE (HUNGARIAN) S/P	KB.TAX07.017
	TM8200 KEYBOARD DARFON NORWAY	ZC1 K/B MODULE (NORWEGIAN) S/P	KB.TAX07.018
	TM8200 KEYBOARD DARFON DANISH	ZC1 K/B MODULE (DANISH) S/P	KB.TAX07.019
	TM8200 KEYBOARD DARFON TURKISH	ZC1 K/B MODULE (TURKISH) S/P	KB.TAX07.020
	TM8200 KEYBOARD DARFON CANADIAN FRENCH	ZC1 K/B MODULE (FRA-CAN) S/P	KB.TAX07.021
	TM8200 KEYBOARD DARFON JAPANESE	ZC1 K/B MODULE (JA) S/P	KB.TAX07.022
	TM8200 KEYBOARD DARFON GREEK	ZC1 K/B MODULE (GREEK) S/P	KB.TAX07.023
	TM8200 KEYBOARD DARFON HEBREW	ZC1 K/B MODULE (HEBREW) S/P	KB.TAX07.024
	TM8200 KEYBOARD DARFON RUSSIAN	ZC1 K/B MODULE (RUSSIAN) S/P	KB.TAX07.025
	TM8200 KEYBOARD DARFON SLOVENIA (SLO)	ZC1 K/B MODULE (SLOVAK) S/P	KB.TAX07.026
	TM8200 KEYBOARD DARFON CROATIA (CR)	ZC1 K/B MODULE (CROATIAN) S/P	KB.TAX07.027
LCD			
N/A	LCD MODULE 15.4 WSXGA+ GLARE	ZC3 LCD 15.4 WSXGA+ GLARE ASSY	6M.FR5V7.003
N/A	LCD MODULE 15.4 WXGA+ GLARE	ZC3 LCD 15.4 WXGA GLARE ASSY	6M.FR5V7.004

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
	LCD 15.4 IN. WXGA QDI QD15TL07-02 GLARE 16MS LF	ZL6C LCD QDI QD15TL07-02 GLARE S/P	LK.15409.009
	LCD 15.4 IN. WXGA AUO B154EW02 V1 GLARE 16MS LF	"ZB2 LCD(TFT)15.4""B154EW02 V1(WXGA) S/P"	LK.15405.014
	LCD 15.4 IN. WXGA CMO N154I2-L02 GLARE 16MS LF	"ZB2 LCD(TFT)15.4""N154I2-L02(WXGA) S/P"	LK.1540D.012
	LCD 15.4 IN. WSXGA+ QDI QD15AL02-02 GLARE LF	ZC3 15.4 WSXGA+ QD15AL02-02 GLARE S/P	LK.15409.015
	LCD 15.4 IN. WSXGA+ CMO N154Z1-L02 GLARE LF	ZC3 15.4 WSXGA+ CMO N154Z1-L02(GLARE) S/P	LK.1540D.010
MEMORY			
	SO-DIMM DDRII 533 512MB HYMP564S64BP6-C4 LF (.09UM) (HYNIX)	ZC3 HYNIX DDRII 533 512MB RAM S/P	KN.5120G.013
	NANYA SO-DIMM DDRII533 512MB NT512T64UH8A1FN-37B LF	ZC1 NANYA DDRII533 512MB RAM S/P	KN.51203.023
	SAMSUNG SO-DIMM DDRII533 512MB M470T6554CZ3-CD500 LF	ZE1 RAM DDRII5 512MB SUM S/P	KN.5120B.015
	NANYA SO-DIMM DDRII667 512MB NT512T64UH8A1FN-3C LF	ZC1 NANYA DDRII667 512MB RAM S/P	KN.51203.025
	SO-DIMM DDRII 667 512MB HYMP564S64BP6-Y5 LF (.09UM) (HYNIX)	ZC3 DDRII 667 512MB HYNIX RAM S/P	KN.5120G.014
	SO-DIMM DDRII 667 512MB HYS64T64020HDL-3S-B (.09U/G) (INFINEON)	ZC3 DDRII 667 512MB INFINEON RAM S/P	KN.51202.035
	SO-DIMM DDRII 667 512MB NT512T64UH8A1FN-3C LF (NANYA)	ZC1 NANYA DDRII667 512MB RAM S/P	KN.51203.025
	SO-DIMM DDRII 667 512MB M470T6554CZ3-CE6 LF (SAMSUNG)	ZC3 DDRII 667 512MB SAMSUNG RAM S/P	KN.5120B.018
	NANYA SO-DIMM DDRII533 1GB NT1GT64UH8A0BN-37B LF	ZC1 NANYA DDRII533 1GB RAM S/P	KN.1GB03.006
	SO-DIMM DDRII 667 1GB HYS64T128021HDL-3S-B (.09U/G) (INFINEON)	ZC3 DDRII 667 1GB INFINEON RAM S/P	KN.1GB02.029
	SO-DIMM DDRII 667 1GB M470T2953CZ3-CE6 (SAMSUNG)	ZC3 DDRII 667 1GB SAMSUNG RAM S/P	KN.1GB0B.005

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
HEATSINK			
	THERMAL MODULE	ZC3 THERMAL Module ASSY S/P	60.FR7V5.003
SPEAKER			
	SPEAKER	ZC3 SPEAKER PB3010KMG04-9LB3 S/P	23.FR5V7.001
POINTING DEVICE			
N/A	FERRARI 5000 BLUETOOTH MOUSE	FERRARI 5000 BLUETOOTH MOUSE	MS.FR507.001
MISCELLANEOUS			
N/A	"LCD-RUBBER-PAD1-ZC1(GAZC1002,REV3A)LF"	ZC1 LCD-RUBBER-PAD1 S/P	47.TAXV7.001
N/A	"LCD-RUBBER-L-ZC1(GAZC1003,REV3A)LF"	ZC1 LCD-RUBBER-L S/P	47.TAXV7.002
N/A	"LCD-RUBBER-R-ZC1(GAZC1004,REV3A)LF"	ZC1 LCD-RUBBER-R S/P	47.TAXV7.003
N/A	LCD-BEZEL RUBBER	ZC1 LCD-BEZEL-RUBBER S/P	47.FR5V7.001
N/A	RUBBER FOOT - SMALL	ZC1 RUBBER-FOOT(GAZC1012)S/P	47.TAXV7.005
N/A	RUBBER FOOT- LONG	ZC1 RUBBER-FOOT(GAZC1011)S/P	47.TAXV7.006
N/A	RUBBER FOOT	ZC1 DASP-RUBBER-SCR S/P	47.FR5V7.002
SCREWS			
N/A	SCREW M2.0*2.5-I(NI)(NYLOK)	ET2S SCREW MM2.0X3.0 SPARE PART	86.A03V7.012
N/A	SCREW M2.5*6-I(BNI)(NYLOK)	ZG1S I2.5*3M-BNIH(M2.5L3) S/P	86.T25V7.012
N/A	SCREW M2.0*3.0-I-NI-NYLOK	ZI1S SCREW M2.0X5-I-NI-NYLOK S/P	86.T23V7.006
N/A	SCREW M2.0*6.0-I-NI-NYLOK	DT1 SCREW MM25060IL69 SPARE PART	86.A08V7.004
N/A	"SCREW M2.5*2-I (NI,NYLOK)"	ZI1S SCREW M2.5X2-I-NI-NYLOK S/P	86.T23V7.018

CATEGORY	Partname	DESCRIPTION	ACER PART NO.
N/A	"SCREW M2.5*3-I(NI,NYLOK)"	ET2S SCREW MM2.5X3.0 SPARE PART	86.A03V7.010
N/A	SCREW M2.5*4-I(BNI)	ZI1S SCREW M2.5X4-I-BNI S/P	86.T23V7.019
N/A	SCREW M2.5*4.0-I(NYLOK)EU	ZI1S SCREW M2.5X4-I-NYLOK S/P	86.T23V7.009
N/A	SCREW M3*0.5+3.5I	ZG1S BRACKET KIT S/P	86.FR5V7.001
N/A	SCREW M2.5*4.0-I(BKAG)(NYLOK)	ZG1S I2.5*4M-BKAGHY(M2.5L4) S/P	86.T25V7.013
N/A	SCREW M2*3-I(BNI)(NYLOK)	ZI1S SCREW M2X3-I-BNI-NYLOK S/P	86.T23V7.014
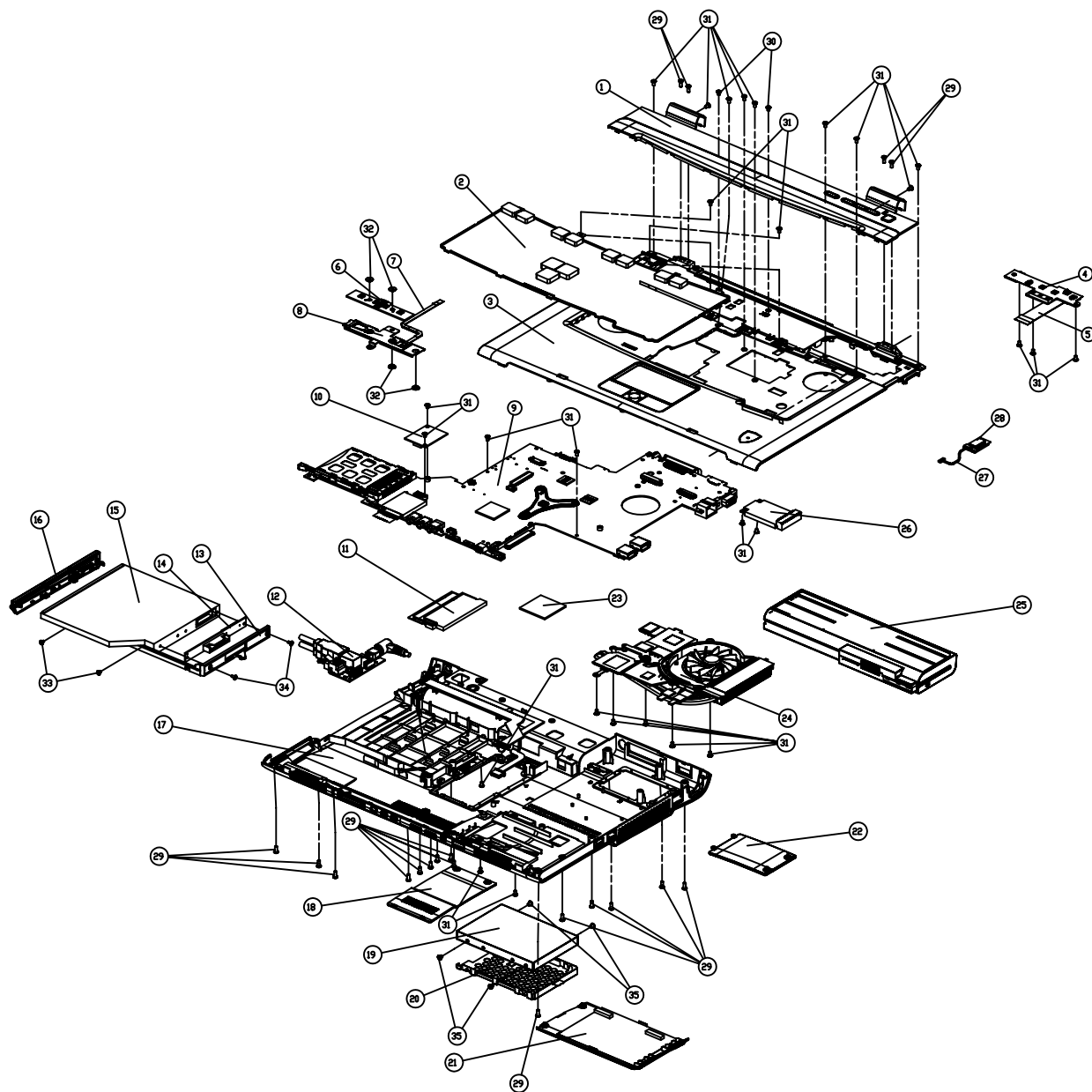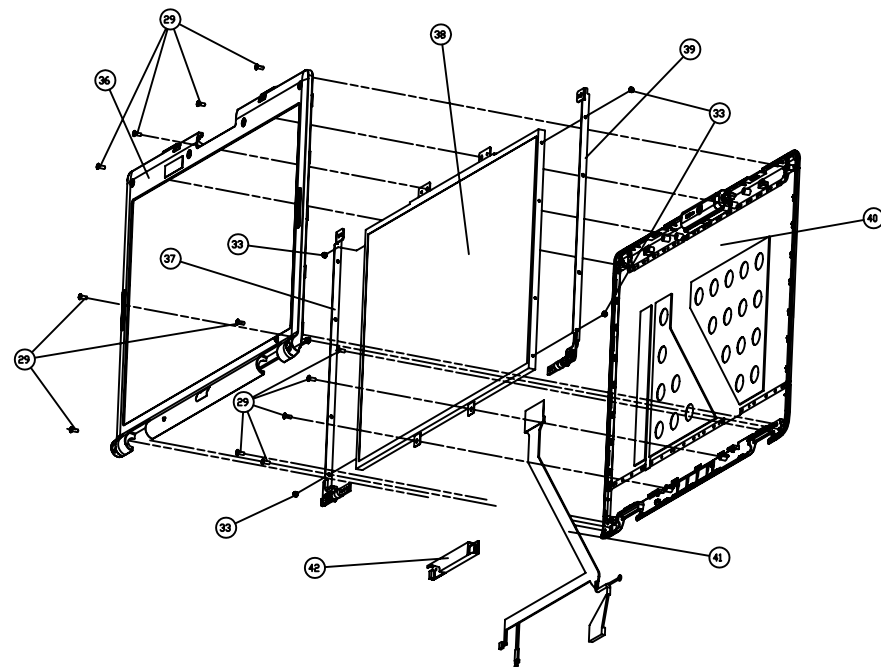
ITEM	DESCRIPTION	QTY
1	ZC3 KB COVER ASSY	1
2	K/B MODULE	1
3	ZC3 TOP CASE SUB ASSY	1
4	ZC3 BUTTON/B ASSY	1
5	CABLE FFC ZC1 BUTTON BD (60MM,16/16,2A))	1
6	ZC3 TP/B ASSY	1
7	CABLE FFC ZC1 MB-TP/B (122.5MM,4/4,2A))	1
8	TP-BD-BKT-ZC1	1
9	ZC3 MB ASSY	1
10	ZC3 MODEM ASSY	1
11	RAM DDRII MODULE	1
12	ZC3 USB/B ASSY	1
13	ODD-HOLDER-ZC1	1
14	ZC3 CDROM/B ASSY	1
15	ODD BODY	1
16	ZC3 ODD BEZEL ASSY	1
17	ZC3 BASE CASE ASSY	1
18	ZC3 RAM DOOR ASSY	1
19	HDD BODY	1
20	HDD-BRACKET-ZC1	1
21	ZC3 HDD DOOR ASSY	1
22	ZC3 MINI CARD DOOR ASSY	1
23	CPU AMD	1
24	ZC3 THERMAL MODULE ASSY	1
25	ZC3 BATTERY MODULE	1
26	WLAN MINICARD	1
27	CABLE ASSY ZC1 BT	1
28	BLUETOOTH ASSY	1
29	SCREW M2.5*6-I(BNI) (NYLOK)	31
30	SCREW M2.5*3-I(NI,NYLOK)	2
31	SCREW M2.5*4.0-I(BKAG) (NYLOK))	28
32	SCREW M2.5*2-I (NI,NYLOK)	4
33	SCREW M2.0*3.0-I-NI-NYLOK	6
34	SCREW M2.0*5.0-I-NI-NYLOK	2
35	SCREW M3*0.5+3.5I	4
36	ZC3 LCD BEZEL ASSY	1
37	HINGE-L-JAR-ZC1	1
38	LCD PANEL	1
39	HINGE-R-JAR-ZC1	1
40	ZC3 LCD COVER CARBON ASSY	1
41	CABLE ASSY ZC1	1
42	INV MODULE	1

SCALE 1.000