

**Acer**

**Travelmate 4720/4320  
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>

PRINTED IN TAIWAN

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# Revision History

Please refer to the table below for the updates made on Travelmate 4720/4320 service guide.

Date	Chapter	Updates

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## Conventions

The following conventions are used in this manual:

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

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## 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, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, 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

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## Features

Below is a brief summary of the computer's many feature:

### Platform

- ❑ Intel® Core™ 2 Duo Mobile Processor T7300/T7500/T7700 (4 MB L2 cache, 2/2.2/2.4 GHz, 800 MHz FSB) and T7100 (2 MB L2 cache, 1.8 GHz, 800 MHz FSB) supporting Intel 64 architecture
- ❑ Mobile Intel GM965 Express chipset
- ❑ Intel Wireless WiFi Link 4965AGN (dual-band quad-mode 802.11a/b/g/Draft-N) network connection, supporting Acer SignalUp™ with InviLink™ Nplify™ wireless technology
- ❑ Intel PRO/Wireless 3945ABG (dual-band tri-mode 802.11a/b/g) Wi-Fi CERTIFIED® network connection, supporting Acer SignalUp™ wireless technology

### Display and Graphics

- ❑ 14.1" WXGA TFT LCD, 1280 x 800 pixel resolution, supporting simultaneous multi-window viewing via Acer GridVista™
- ❑ Mobile Intel GM965 Express chipset with integrated 3D graphics, featuring Intel Graphic Media Accelerator (GMA) X3000 with up to 256 MB of Intel Dynamic Video Memory Technology 4.0 (8MB of dedicated system memory, up to 256MB of shared system memory), supporting Microsoft® DirectX® 9 and DirectX 10
- ❑ Dual independent display support
- ❑ 16.7 million colors
- ❑ MPEG-2/DVD hardware-assisted capability
- ❑ S-video/TV-out (NTSC/PAL) support

### Storage Subsystem

- ❑ 80/120/160 GB or larger hard disk drive with Acer DASP (Disk Anti-Shock Protection) enhancement
- ❑ Optical drive options:
  - ✦ DVD-Super Multi double-layer drive
  - ✦ DVD/CD-RW combo drive
- ❑ 5-in-1 card reader supporting Secure Digital (SD), MultiMediaCard (MMC), Memory Stick® (MS), Memory Stick PRO™ (MS PRO), xD-Picture Card™ (xD)

### Input Devices

- ❑ 88-/89-key Acer FineTouch™ keyboard with 5-degree curve, inverted "T" cursor layout; 2.5mm (minimum) key travel
- ❑ Seamless touchpad pointing device with 4-way scroll button (for selected models)
- ❑ Seamless touchpad pointing device with Acer BioProtect fingerprint reader supporting Acer FingerNav 4-way control function (for selected models)
- ❑ 12 function keys, four cursor keys, two Windows® keys, hotkey controls, embedded numeric keypad, international language support, independent Euro and US dollar sign keys

- 
- Easy-launch buttons: Acer Empowering Key, Internet, email, user-programmable
  - Productivity keys: Lock, Presentation, Sync
  - Front-access communication switches: WLAN and Bluetooth®

## Audio

- Two built-in Acer 3DSonic stereo speakers
- Intel® High Definition Audio support
- Built-in microphone
- MS-Sound compatible

## Communication

- Acer Video Conference featuring:
  - ✦ Integrated Acer CrystalEye webcam supporting enhanced Acer PrimaLite™ technology
  - ✦ Optional Acer Bluetooth® VoIP phone
- WLAN: Intel Wireless WiFi Link 4965AGN (dual-band quad-mode 802.11a/b/g/Draft-N) network connection, supporting Acer SignalUp™ with InviLink™ Nplify™ wireless technology, or Intel PRO/Wireless 3945ABG (dual-band tri-mode 802.11a/b/g) Wi-Fi CERTIFIED® network connection, supporting Acer SignalUp™ wireless technology
- WPAN: Bluetooth® 2.0+EDR (Enhanced Data Rate)
- LAN: Gigabit Ethernet; Wake-on-LAN ready
- Modem: 56K ITU V.92 with PTT approval; Wake-on-Ring ready

## I/O Interface

- PC Card slot (one Type II)
- 5-in-1 card reader (MS/MS PRO/MMC/SD/xD)
- Four USB 2.0 ports
- IEEE 1394 port
- Fast Infrared (FIR) port
- External display (VGA) port
- S-video/TV-out (NTSC/PAL) port
- Headphones/speaker/line-out jack
- Line-in jack
- Microphone jack
- Ethernet (RJ-45) port
- Modem (RJ-11) port
- DC-in jack for AC adaptor

## Power Subsystem

- ACPI 3.0 CPU power management standard: supports Standby and Hibernation power-saving modes
- 44 W 4000 mAh Li-ion battery pack (6-cell)
- 3-pin 65 W AC adaptor



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## Dimensions and weight

- ❑ Width: 331 mm (13.03 in.)
- ❑ Depth: 248 mm (9.76 in.)
- ❑ Height: 29.7/41.08 mm (1.17/1.62 in.)
- ❑ Weight (with 6-cell battery pack): 2.4 kg (5.29 lbs.)

## Environment

- ❑ Temperature:
  - Operating: 5° C to 35° C
  - Non-operating: -20° C to 65° C
- ❑ Humidity (non-condensing):
  - operating: 20%~80%
  - Non-operating: 20%~80%

# Your Acer Notebook Tour

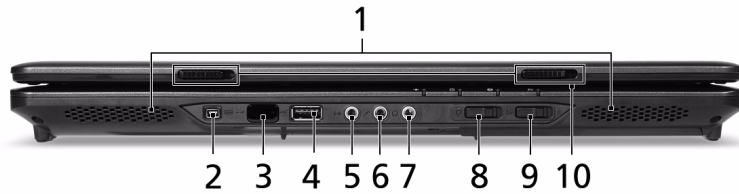
After knowing your computer features, let us show you around your new TravelMate computer.









## Front View



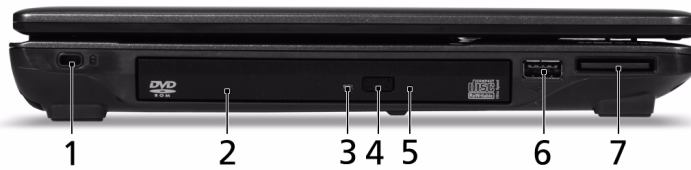
#	Item	Description
1	Acer CrystalEye	0.3 megapixel web camera for video communication.
2	Microphone	Internal microphone for sound recording.
3	Display screen	Also called Liquid-Crystal Display (LCD), displays computer output.
4	Status indicators	Light-Emitting Diodes (LEDs) that light up to show the status of the computer's functions and components.
5	Keyboard	For entering data into your computer.
6	Palmrest	Comfortable support area for your hands when you use the computer.
7	Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
8	Click buttons (left, center and right)	The left and right buttons function like the left and right mouse buttons. <b>Note:</b> The center button serves as a 4-way scroll button (for selected models) or Acer BioProtect fingerprint reader supporting Acer FingerNav 4-way control function. (for selected models)
9	Status indicators	Light-Emitting Diodes (LEDs) that light up to show the status of the computer's functions and components.
10	Easy-launch buttons	Buttons for launching frequently used programs.
11	Power button	Turns the computer on and off.
12	Productivity keys	Three productivity keys give users one-touch access to protection and manageability features for a more secure, smarter and easier way to work.
13	Empowering key	Launch Acer Empowering Technology

## Closed Front View



#	Icon	Item	Description
1		Speakers	Left and right speakers deliver stereo audio output.
2		IEEE 1394 port (6-pin)	Connects to IEEE 1394 devices.
3		Infrared port	Interfaces with infrared devices (e.g., infrared printer and IR-aware computer).
4		USB 2.0 port	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
5		Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman, mp3 player)
6		Microphone jack	Accepts inputs from external microphones.
7		Headphones/speaker/line-out jack	Connects to audio line-out devices (e.g., speakers, headphones).
8		Bluetooth communication switch	Enable/disable the Bluetooth function. (manufacturing option).
9		Wireless communication switch	Enable/disable the wireless function. (manufacturing option).
10		Latch	Locks and releases the lid.

## Left View



#	Icon	Item	Description
1		Kensington lock slot	Connects to a Kensington-compatible computer security lock.
2		Optical drive	Internal optical drive; accepts CDs or DVDs
3		Optical disk access indicator	Lights up when the optical drive is active.
4		Optical drive eject button	Ejects the optical disk from the drive.
5		Emergency eject hole	Ejects the optical drive tray when the computer is turned off.
6		USB 2.0 port	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
7		5-in-1 card reader	Accepts Secure Digital (SD), MultiMediaCard (MMC), Memory Stick (MS), Memory Stick Pro (MS PRO), and xD-Picture Card. <b>Note:</b> Only one card can operate at any given time.

## Right View




#	Icon	Item	Description
1		PC Card slot eject button	Ejects the PC Card from the slot.
2		PC Card slot	Accepts one Type II PC Card.
3		Two USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
4		S-Video/TV-out (NTSC/PAL) port	Connects to a television or display device with S-video input.
5		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000-based network.
6		External display (VGA) port	Connects to a display device (e.g., external monitor, LCD projector).
7		DC-in jack	Connects to an AC adapter.

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## Rear Panel



#	Icon	Item	Description
1		Ventilation slots	Enable the computer to stay cool, even after prolonged use.
2		Modem (RJ-11) port	Connects to a phone line.

## Bottom Panel










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

# Indicators

The computer has four easy-to-read status indicators:



The front panel indicators are visible even when the computer cover is closed up.

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

**NOTE:** Battery LED status during charging:

- **Amber:** Charging.
- **Green:** Charging complete.

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# Easy-launch Buttons

There are several conveniently located easy-launch buttons. They are: mail, Web browser, Empowering Key <e> and one user-programmable button.

Press <e> to run the Acer Empowering Technology. The mail and Web browser buttons are pre-set to email and Internet programs, but can be reset by users. To set the Web browser, mail and programmable buttons, run the Acer Launch Manager.



Icon	Easy-launch button	Default application
e	Acer Empowering Technology	Acer Empowering Technology (User-programmable)
✉	Mail	Email application (user-programmable)
🌐	Web browser	Internet browser (user-programmable)
P	Programmable key	User-programmable




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# Productivity Keys

Three productivity keys give users one-touch access to protection and manageability features for a more secure, smarter and easier way to work.

- ❑ Lock key - quickly locks and secures your system when you need to leave your desk.
- ❑ Presentation key - prepares your system display for presentation, a handy shortcut for busy professionals.
- ❑ Sync key - synchronizes your system to an externally attached storage device, for convenient backup.



Icon	Easy-launch button	Default application
	Lock	Launch Windows Lock function
	Presentation	Minimizes your open windows and prepares your display for presenting
	Sync	Launch NTI Shadow



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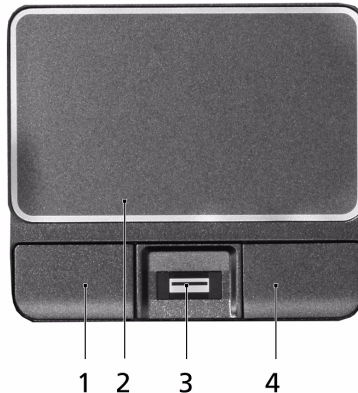
# Touchpad

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



## Touchpad Basics

The following teaches you how to use the touchpad:



- Move your finger across the touchpad **(2)** to move the cursor.
- Press the left **(1)** and right **(4)** buttons located beneath the touchpad to perform selection and execution functions. These two buttons are similar to the left and right buttons on a mouse. Tapping on the touchpad is the same as clicking the left button.
- Use the 4-way scroll **(3)** button (for selected models) or Acer BioProtect fingerprint reader **(3)** supporting Acer FingerNav 4-way control function (for selected models) to scroll up or down and move left or right a page. This button or fingerprint reader 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	Click twice quickly.		Tap twice (at the same speed as double-clicking the mouse button).	
Select	Click once.		Tap once.	
Drag	Click and hold, then use finger to drag the cursor on the touchpad		Tap twice (at the same speed as double-clicking a mouse button) then hold finger to the touchpad on the second tap to drag the cursor.	
Access context menu		Click once		
Scroll				Click and hold to move up/down/left/right.

**NOTE:** When using the touchpad, keep it - and your fingers - dry and clean. The touchpad is sensitive to finger movement; hence, the lighter the touch, the better the response. Tapping too hard will not increase the touchpad's responsiveness.

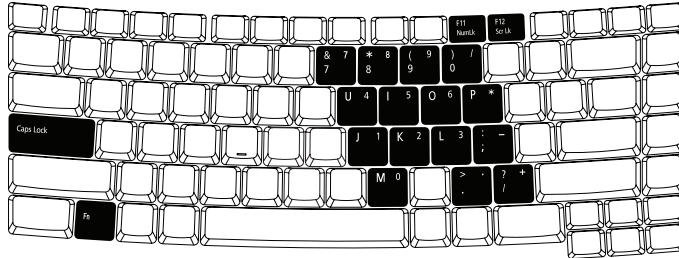
**NOTE:** By default, vertical and horizontal scrolling is enabled on your touchpad. It can be disabled under Mouse settings in Windows Control Panel.

# Using the Keyboard

The keyboard has full-sized keys and an embedded keypad, separate cursor keys, two Windows keys and twelve function keys, and two 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 typed are in uppercase.
Num Lock <Fn> + <F11>	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when you need to do a lot of numeric data entry. A better solution would be to connect an external keypad.
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

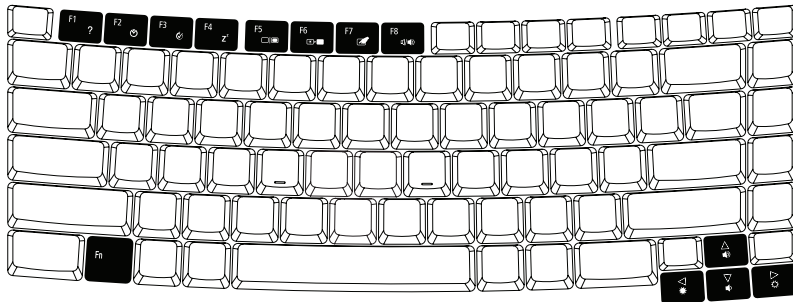
The keyboard has two keys that perform Windows-specific functions.

Key	Icon	Description
Windows key		<p>Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu.</p> <p>It can also be used with other keys to provide a variety of functions:</p> <ul style="list-style-type: none"> <li>&lt;  &gt; : Open or close the Start menu</li> <li>&lt;  &gt; + &lt;D&gt;: Display the desktop</li> <li>&lt;  &gt; + &lt;E&gt;: Open Windows Explore</li> <li>&lt;  &gt; + &lt;F&gt;: Search for a file or folder</li> <li>&lt;  &gt; + &lt;G&gt;: Cycle through Sidebar gadgets</li> <li>&lt;  &gt; + &lt;L&gt;: Lock your computer (if you are connected to a network domain), or switch users (if you're not connected to a network domain)</li> <li>&lt;  &gt; + &lt;M&gt;: Minimizes all windows</li> <li>&lt;  &gt; + &lt;R&gt;: Open the Run dialog box</li> <li>&lt;  &gt; + &lt;T&gt;: Cycle through programs on the taskbar</li> <li>&lt;  &gt; + &lt;U&gt;: Open Ease of Access Center</li> <li>&lt;  &gt; + &lt;X&gt;: Open Windows Mobility Center</li> <li>&lt;  &gt; + &lt;BREAK&gt;: Display the System Properties dialog box</li> <li>&lt;  &gt; + &lt;SHIFT+M&gt;: Restore minimized windows to the desktop</li> <li>&lt;  &gt; + &lt;TAB&gt;: Cycle through programs on the taskbar by using Windows Flip 3-D</li> <li>&lt;  &gt; + &lt;SPACEBAR&gt;: Bring all gadgets to the front and select Windows Sidebar</li> <li>&lt;CTRL&gt; + &lt;  &gt; + &lt;F&gt;: Search for computers (if you are on a network)</li> <li>&lt;CTRL&gt; + &lt;  &gt; + &lt;TAB&gt;: Use the arrow keys to cycle through programs on the taskbar by using Windows Flip 3-D</li> </ul> <p><b>Note:</b> Depending on your edition of Windows Vista, some shortcuts may not function as described.</p>
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.

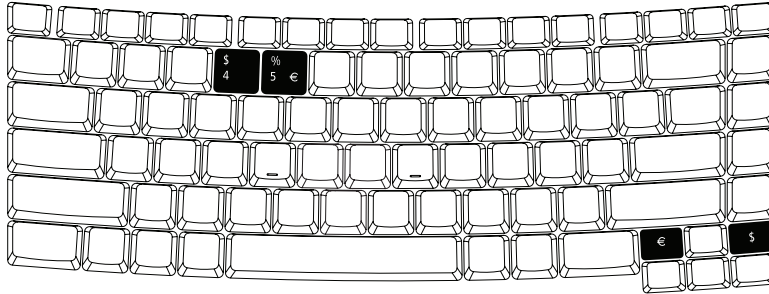


Hot Key	Icon	Function	Description
Fn-F1	?	Hot key help	Displays help on hot keys.
Fn-F2		Acer eSettings	Launches the Acer eSettings in Acer eManager.
Fn-F3		Acer ePower Management	Launches the Acer ePowerManagement in Acer eManager.
Fn-F4	Z <sup>z</sup>	Sleep	Puts the computer in Sleep mode.
Fn-F5		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
Fn-F6		Screen blank	Turns the display screen backlight off 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-w		Volume up	Increases the speaker volume.
Fn-y		Volume down	Decreases the speaker volume.
Fn-x		Brightness up	Increases the screen brightness.
Fn-z		Brightness down	Decreases the screen brightness

---

# Special Keys

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



## The Euro symbol

1. Open a text editor or word processor.
2. Either press <€> at the bottom-right of the keyboard, or hold <Alt Gr> and then press the <5> key at the upper-center of the keyboard.

**NOTE:** Some fonts and software do not support the Euro symbol. Please refer to [www.microsoft.com/typography/faq/faq12.htm](http://www.microsoft.com/typography/faq/faq12.htm) for more information.

## The US dollar sign

1. Open a text editor or word processor.
2. Either press <\$> at the bottom-right of the keyboard, or hold <Shift> and then press the <4> key at the upper-center of the keyboard.

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

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# Acer Empowering Technology

The Empowering Technology toolbar makes it easy for you to access frequently used functions and manage your new Acer system. Displayed by default in the upper half of your screen, it provides access to the following utilities:

- Acer eNet Management** hooks up to location-based networks intelligently.
- Acer ePower Management** optimizes battery usage via customizable power plans.
- Acer ePresentation Management** connects to a projector and adjusts display settings.
- Acer eDataSecurity Management** protects data with passwords and encryption.
- Acer eLock Management** limits access to external storage media.
- 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

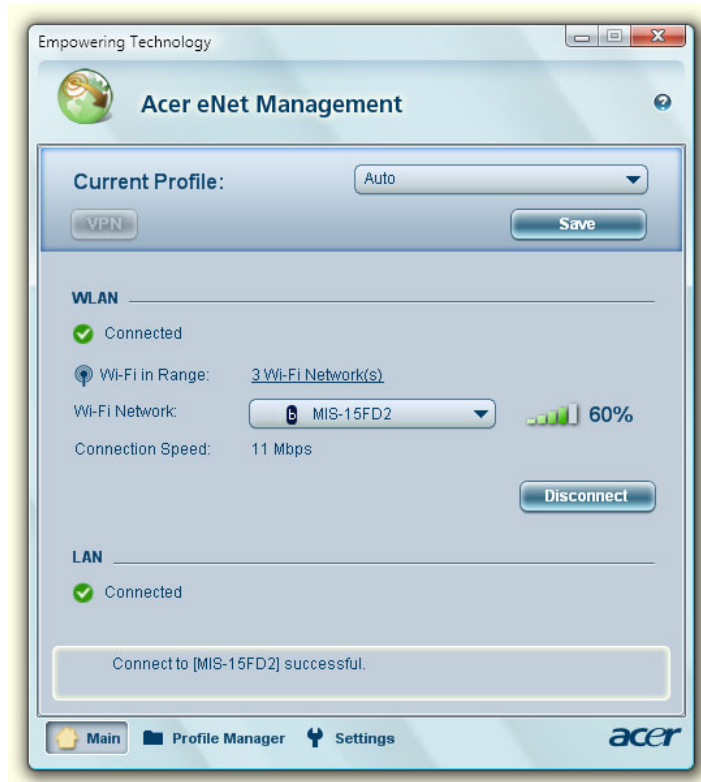
Before using Acer eLock Management and Acer eRecovery Management, you must initialize the Empowering Technology password. Right-click on the Empowering Technology toolbar and select **"Password Setup"** to do so. If you have not initialized the Empowering Technology password and run Acer eLock Management or Acer eRecovery Management, you will be asked to create it.

**NOTE:** If you lose the Empowering Technology password, there is no way to reset it except by reformatting your system. Make sure to remember or write down your password!

## Acer eNet Management

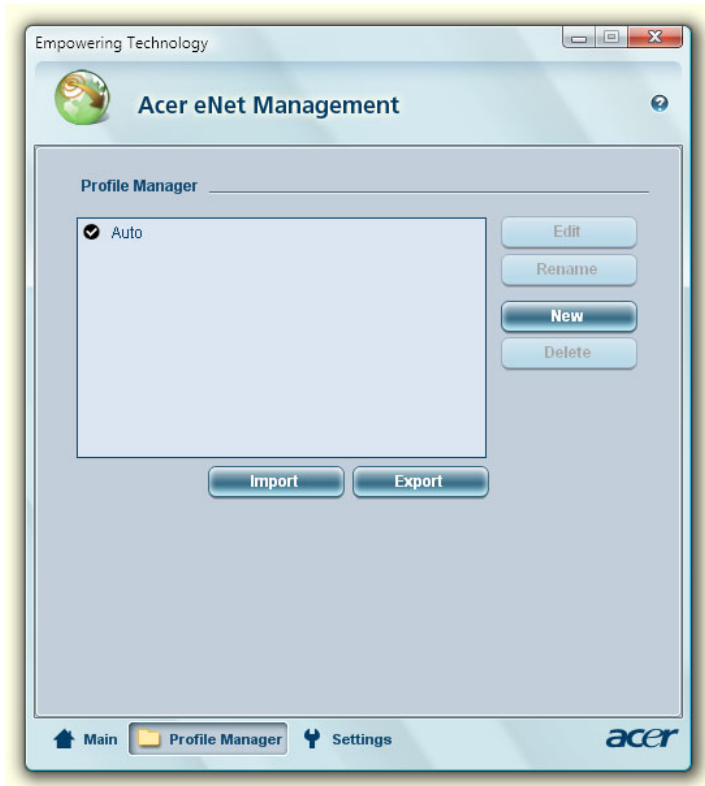
Acer eNet Management helps you quickly connect to both wired and wireless networks in a variety of locations. To access this utility, select "**Acer eNet Management**" from the Empowering Technology toolbar or run the program from the Acer Empowering Technology program group in Start menu. You can also set Acer eNet Management to start automatically when you boot up your PC.

Acer eNet Management automatically detects the best settings for a new location, while offering you the option to manually adjust the settings to match your needs.





Acer eNet Management can save network settings for a location to a profile, and automatically switch to the appropriate profile when you move from one location to another. Settings stored include network connection settings (IP and DNS settings, wireless AP details, etc.), as well as default printer settings. Security and safety concerns mean that Acer eNet Management does not store username and password information.



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# Acer ePower Management

Acer ePower Management features a straightforward user interface for configuring your power management options. To access this utility, select "**Acer ePower Management**" from the Empowering Technology toolbar, run the program from the Acer Empowering Technology program group in Start menu, or right-click the Windows power icon in the system tray and select "**Acer ePower Management**".

## Using Power Plans


Acer ePower Management comes with three predefined power plans: Balanced, High performance and Power saver. You can also create customized power plans. You can create, switch between, edit, delete and restore power plans, as described below.

View and adjust settings for On Battery and Plugged In modes by clicking the appropriate tabs. You can open Windows power options by clicking "**More Power Options**".

**NOTE:** You cannot delete the predefined power plans.

### To create a new power plan:

Creating customized power plans allows you to save and quickly switch to a personalized set of power options.

1. Click the Create Power Plan icon. 
2. Enter a name for your new power plan.
3. Choose a predefined power plan to base your customized plan on.
4. If necessary, change the display and sleep settings you want your computer to use.
5. Click "**OK**" to save your new power plan.

### To switch between power plans:

1. Select the power plan you wish to switch to from the drop-down list.
2. Click "**Apply**".


### To edit a power plan:

Editing a power plan allows you to adjust system settings like LCD brightness and CPU speed. You can also turn on/off system components to extend battery life.


1. Switch to the power plan you wish to edit
2. Adjust settings as required.
3. Click "**Apply**" to save your new settings.

### To delete a power plan:

You cannot delete the power plan you are currently using. If you want to delete the active power plan, switch to another one first.

1. Select the power plan you wish to delete from the drop-down list.
2. Click the Delete Power Plan icon. 

## Battery status

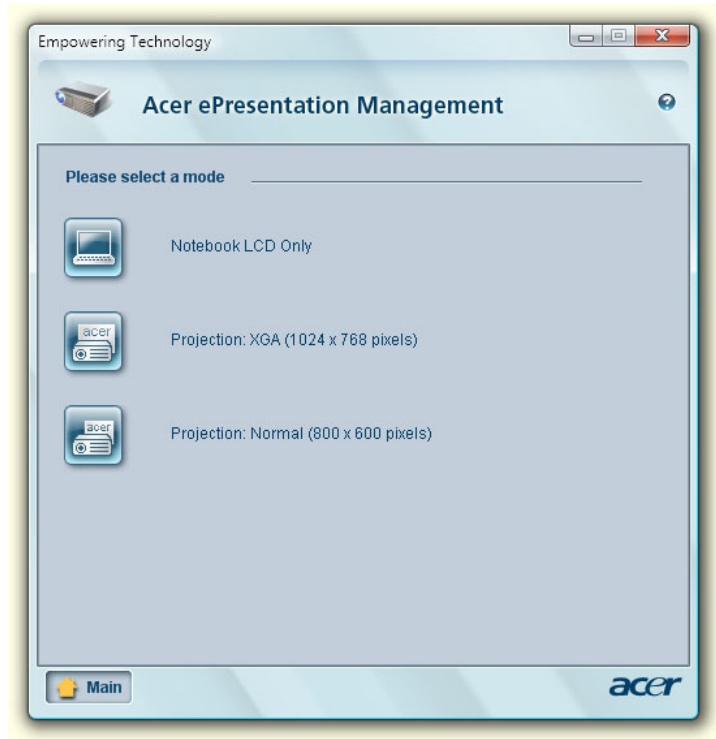
For real-time battery life estimates based on current usage, refer to the panel in the upper half of the window. Click the  to view estimated battery life in sleep and hibernate modes.



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## Acer ePresentation Management

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



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

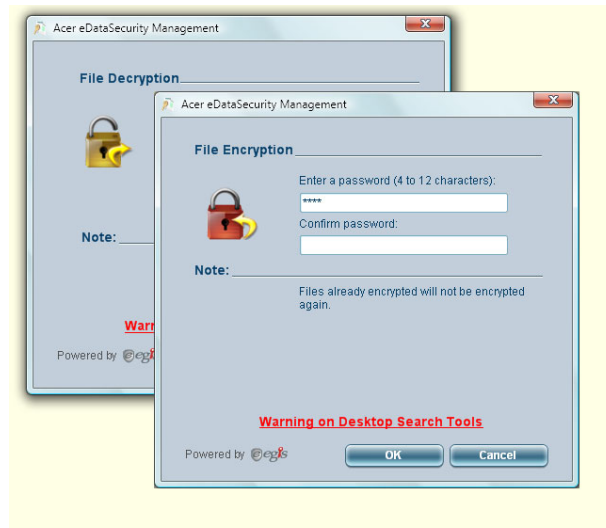
# Acer eDataSecurity Management

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

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

Acer eLock Management is simple yet effective utility that allows you to lock removable storage, optical and floppy drive devices to ensure that data can't be stolen while your system is unattended.

- Removable Storage 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 storage devices that can be mounted as a file system when plugged into the system.
- Optical Drive Devices — includes any kind of CD-ROM, DVD-ROM, HD-DVD or Blu-ray drive devices.
- Floppy Drive Devices — 3.5-inch floppy drives only.

To use Acer eLock Management, the Empowering Technology password must be set first. Once set, you can apply locks to any of the devices types. Lock(s) will immediately be set without any reboot necessary, and will remain after rebooting, until removed.

**NOTE:** If you lose the Empowering Technology password, there is no method to reset it except by reformatting your system. Make sure to remember or write down your password.

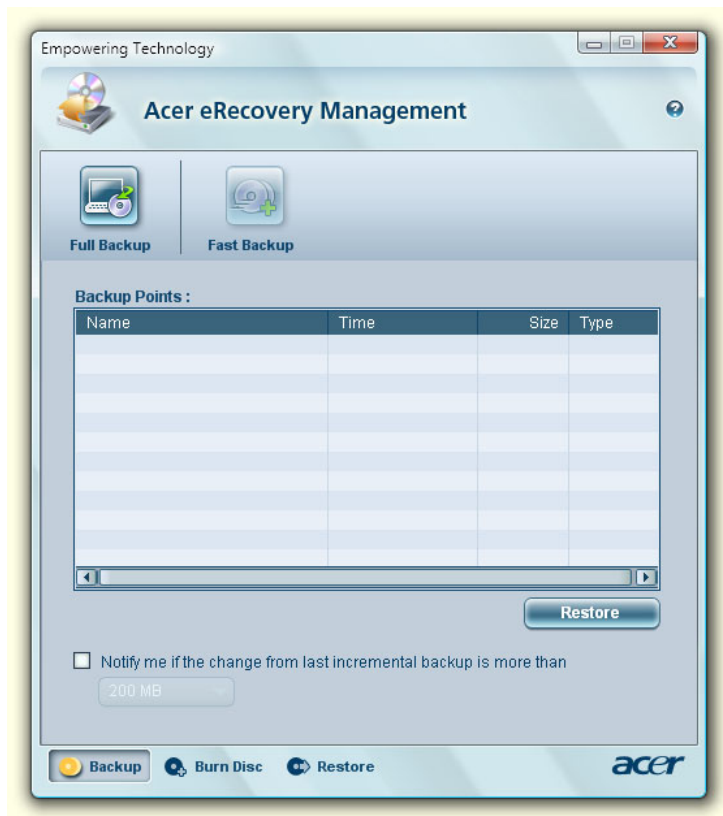


# Acer eRecovery Management

Acer eRecovery Management is a versatile backup utility. It allows you to create full or incremental backups, burn the factory default image to optical disc, and restore from previously created backups or reinstall applications and drivers. By default, user-created backups are stored to the D:\ drive.

Acer eRecovery Management provides you with:

- Password protection (Empowering Technology password)
- Full and incremental backups to hard disk or optical disc
- Creation of backups:
  - Factory default image
  - User backup image
  - Current system configuration
  - Application backup
- Restore and recovery:
  - Factory default image
  - User backup image
  - From previously-created CD/DVD
  - Reinstall applications/drivers



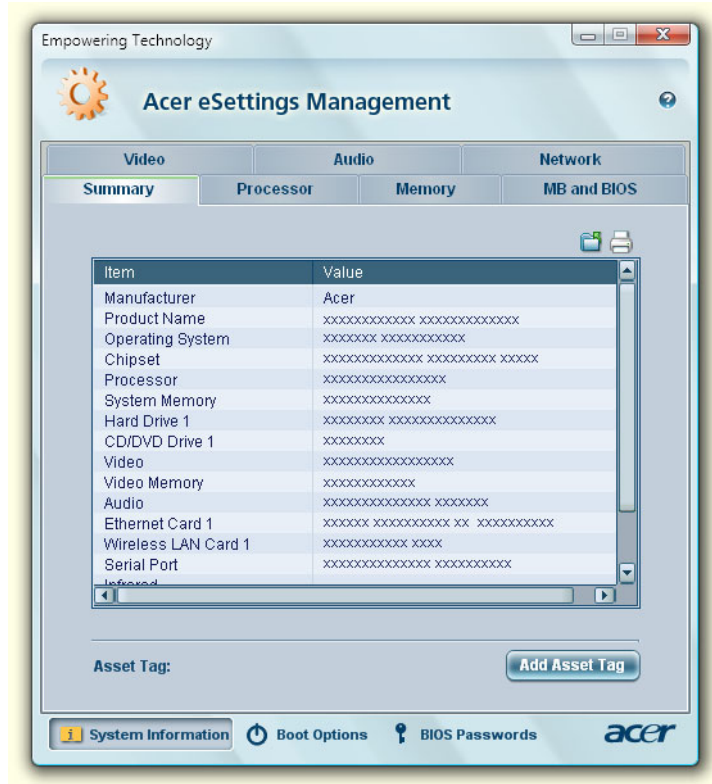
**NOTE:** If your computer did not come with a Recovery CD or System CD, please use Acer eRecovery Management's "System backup to optical disc" feature to burn a backup image to CD or DVD. To ensure the best results when recovering your system using a CD or Acer eRecovery Management, detach all peripherals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

# Acer eSettings Management

Acer eSettings Management allows you to inspect hardware specifications, set BIOS passwords and modify boot options.

Acer eSettings Management also:

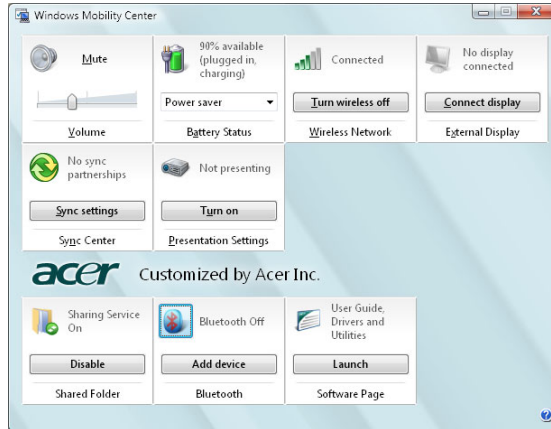
- Provides a simple graphical user interface for navigation.
- Prints and saves hardware specifications.
- Lets you set an asset tag for your system.





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# Windows Mobility Center



The Windows Mobility Center collects key mobile-related system settings in one easy-to-find place, so you can quickly configure your Acer system to fit the situation as you change locations, networks or activities. Settings include display brightness, power plan, volume, wireless networking on/off, external display settings, display orientation and synchronization status.

Windows Mobility Center also includes Acer-specific settings like Bluetooth Add Device (if applicable), sharing folders overview/sharing service on or off, and a shortcut to the Acer user guide, drivers and utilities.

## To launch Windows Mobility Center:

- Use the shortcut key <  > + <X>
- Start Windows Mobility Center from the Control panel
- Start Windows Mobility Center from the Accessories program group in the Start menu

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# Using the System Utilities

## Acer Bioprotect (for selected models)

Acer BioProtect Fingerprint Solution is a multi-purpose fingerprint software package integrated with the Microsoft® Windows® operating system. Utilizing the uniqueness of one's fingerprint features, Acer BioProtect Fingerprint Solution has incorporated protection against unauthorized access to your computer with Pre-Boot Authentication (PBA), centralized password management with Password Bank, and fast application/website launching and login with Acer FingerLaunch.

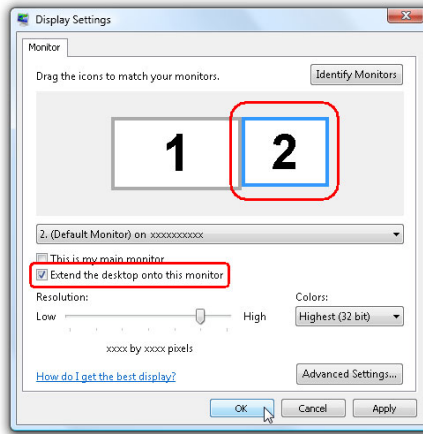
Acer BioProtect Fingerprint Solution also allows you to navigate through web browsers and documents using Acer FingerNav. With Acer BioProtect Fingerprint Solution, you can now enjoy an extra layer of protection for your personal computer, as well as the convenience of accessing your daily tasks with a simple swipe of your finger!

For more information refer to the Acer BioProtect help files.

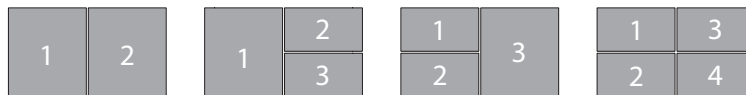


# Acer GridVista (dual-display compatible)

To enable the dual display feature of your notebook, first ensure that a second display is connected, then, open the **Display Settings** properties box using the Control Panel or by right-clicking the Windows desktop and selecting **Personalize**. Select the secondary monitor (**2**) icon in the display box and then click the check box **Extend the 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:

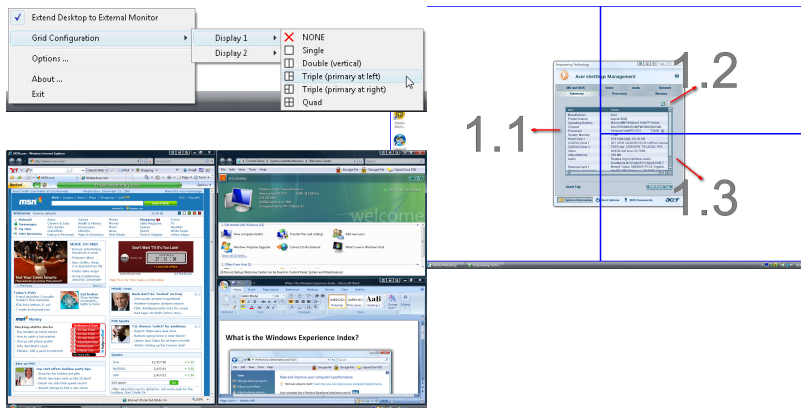


Double (vertical), Triple (primary at left), Triple (primary at right), or Quad

Acer GridVista is dual-display compatible, allowing two displays to be partitioned independently.

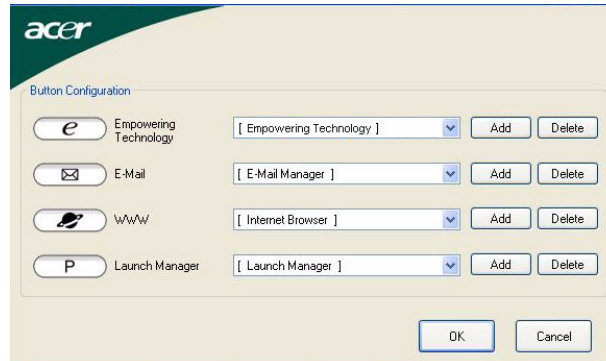
Acer GridVista is simple to set up:

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

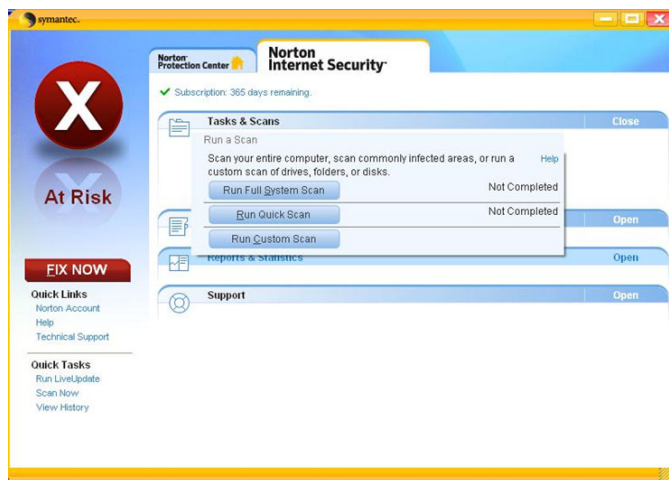
You can access the Launch Manager by clicking on **Start, All Programs**, and then **Launch Manager** to start the application.

## Norton Internet Security

Norton Internet Security is an anti-virus utility that can protect against viruses, keeping your data safe and secure.

### How do I check for viruses?

1. Double-click the **Norton Internet Security** icon on the Windows desktop.
2. Select **Tasks & Scans**.
3. Select **Run Scan** to scan your system.



4. When the scan is complete, review the results of the scan.

**NOTE:** For optimal security, run a Full System Scan when scanning your computer for the first time.

You can schedule customized virus scans that run 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 refer to the Norton Internet Security help files.

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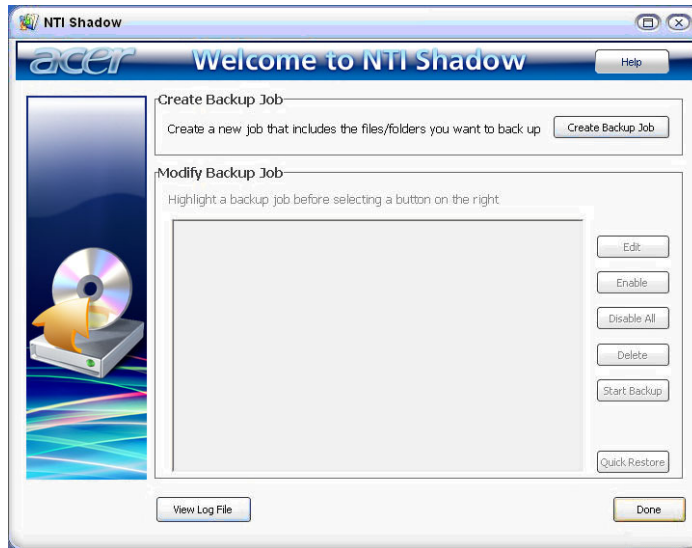
# NTI Shadow

NTI Shadow allows users to schedule continuous backup jobs that copy the contents of one or more folders (the "backup source") to another location (the "backup destination"). The backup jobs are continuous because they are scheduled to regularly update the data in the backup folder either continuously or in user-defined intervals. You can schedule a job to run every certain number of minutes, on certain days at a specified time, or whenever any data in the backup source are modified.

Shadow can also be configured to archive file versions. If this option is enabled, then any file that is saved or overwritten will trigger Shadow to archive the previous version of the file. The file versions are stored in a Revisions folder in the backup destination. Users can configure how many versions of a file to maintain.

Shadow supports backups on local hard drives, USB/FireWire external hard drives, USB pen drives, NAS devices, and any drive with drive letter access.

Launch the utility is as easy as pressing one buttons. For more information refer to the NTI Shadow help files.



# Hardware Specifications and Configurations

## Processor

Item	Specification			
CPU type	Intel Core 2 Duo T7100 Mobile Processor	Intel Core 2 Duo T7300 Mobile Processor	Intel Core2 Duo T7500 Mobile Processor	Intel Core 2 Duo T7700 Mobile Processor
Clock Speeds	1.8 GHz	2.0 GHz	2.2 GHz	2.4 GHz
L2 Cache	2 MB	4 MB	4 MB	4 MB
Front Side Bus	800 MHz			
Socket Interface	Socket P (PGA/BGA)			

## System Board Major Chipsets

Item	Specification
System core logic	Intel GM965 Express + Intel ICH8M chipset
HDD controller	Intel ICH8M chipset
Memory controller	Intel GM965 Express chipset
Video controller	Intel GM965 Express chipset
Audio controller	Codec ALC268
PCMCIA controller	TI7412
LAN controller	Intel ICH8M + Broadcom 5785KMLG chipsets
Modem controller	Intel ICH8M chipset
Keyboard controller	Winbond WPC8768L

## Hard Disk Drive Interface

Item	Specification											
Vendor	Hitachi Travelstar 5K160				Toshiba				Western Digital			
Model Name	HGST HTS5 41660 J9SA 00	HGST HTS5 41680 J9SA 00	HGST HTS5 41612 J9SA 00	HGST HTS5 41616 J9SA 00	MK60 37GS X	MK80 37GS X	MK12 37GS X	MK16 37GS X	WD60 0BEV S	WD80 0BEV S	WD12 00BE VS	WD16 00BE VS
Form factor and Interface type	2.5 inch Serial ATA											
Capacity (GB)	60	80	120	160	60	80	120	160	60	80	120	160
Sector size (Bytes)	512				N/A				512			
Data heads	2	2	4	4	2	2	4	4	N/A			
Data disks	1	1	2	2	1	1	2	2	N/A			
Rotational speed (RPM)	5400				5400				5400			
Data buffer (MB)	8				8				8			
Media transfer rate (Mbytes/s, max)	540				300				600			

## Hard Disk Drive Interface

Item	Specification		
Interface transfer rate (Mbytes/s, max)	150	N/A	150
Voltage tolerance	5V(DC) +/- 5%	5V(DC) +/- 5%	5V(DC) +/- 5%

## BIOS

Item	Specification
BIOS vendor	Phoenix
BIOS Version	v0.25
Supported protocols	ACPI 1.0b/2.0/3.0 compliance, PCI 2.2, System/HDD Password Security Control, INT 13h Extensions, PnP BIOS 1.0a, SMBIOS 2.4, BIOS Boot Specification, Simple Boot Flag 1.0, Boot Block, PCI Bus Power Management Interface Specification, USB Specification 1.1/2.0, IEEE 1394 1.0, USB/1394 CD-ROM Boot Up support, PC Card Standard 1995 (PCMCIA 3.0 Compliant Device), IrDA 1.0, HD audio, WfM 2.0, Preboot Execution Environment 2.1, Boot Integrity Service Application Program Interface (BIS) 1.0, PC2002/2005 compliant, Intel Enhanced SpeedStep Technology, Intel DPST support, ASF 2.0, TPM v1.2, AHCI support, iAMT 2.5

## System Memory

Item	Specification									
Memory controller	Intel GM965 Express chipset									
DIMM socket number	2 sockets									
Supports maximum memory size	2 GB for 32 bit OS, 4 GB for 64bit OS									
Vendor	Samsung			Hynix			Nanya		Promos	
Model name	M470T6554E	M470T2953EZ3-CE6	M470T2953EZ3-CD5	HYMP564S6Y5	HYMP512S64CP8-Y5	HYMP512S64CP8-C4	NT512T64UH8B0FN-3C	NT1GT64UH8B0BN-3C	V916764B24Q BFW-F5	
DIMM type	DDR2 Synchronous DRAM									
DIMM speed (MHz)	667		533	667		533	667		667	
DIMM size	512MB	1GB	1GB	512MB	1GB	1GB	512MB	1GB	512MB	

## Video

Item	Specification
VGA controller	Intel GM965 Express chipset with integrated 3D graphics
Features	Intel Graphic Media Accelerator (GMA) X3000 with up to 256 MB of Intel Dynamic Video Memory Technology 4.0 (8MB of dedicated system memory, up to 256MB of shared system memory), supporting Microsoft DirectX 9 and DirectX 10

## Audio

Item	Specification
Audio controller	Realtek ALC268 Codec
Features	Two built-in Acer 3DSonic stereo speakers, Supports high definition audio, Built-in microphone, MS-sound compatible

## PCMCIA Port

Item	Specification
PCMCIA controller	TI7412
Card type support	Type-II
Number of slot	One

## LAN

Item	Specification
LAN controller	Intel ICH8M + Broadcom 5785KMLG chipsets
LAN connector type	RJ45
Features	Onboard Gigabit Ethernet, PCI-E interface, support ASF 2.0

## Wireless LAN module

Item	Specification	
Vendor	Intel	
Model name	Wireless WiFi Link 4965AGN	PRO/Wireless 3945ABG
Data throughput	54 Mbps	54 Mbps
Protocol	802.11a/b/g	802.11 a/b/g
Interface	PCI bus (mini PCI socket for wireless module)	PCI bus (mini PCI socket for wireless module)

## Modem

Item	Specification
Modem controller	Intel ICH8M chipset
Baud rate	56 K
Modem connector type	RJ11

## Bluetooth Module

Item	Specification
Vendor	Foxconn
Model name	T60H928.01
Protocol	Bluetooth 2.0
Connector type	Mini USB



### Keyboard and Input Devices

Item	Specification
Keyboard controller	Winbond WPC8768L
Model name	Acer FineTouch keyboard
Features	5-degree curve, 88-/89- key, inverted "T" cursor layout, 2.5 mm (minimum) key travel, touchpad pointing device with 4-way scroll button or Acer BioProtect fingerprint reader supporting Acer Finger Nav 4-way control function, hotkey controls, embedded numeric keypad, multi-language support, three easy-launch buttons, three productivity keys, and two front-access communication switches

### Combo Drive Interface

Item	Specification	
Vendor	Sony	Panasonic
Model name	Slim Combo CRX880A	UJDA-780
Drive type	Internal Slim CD-RW/DVD combo drive	
Data transfer rate	Write: <ul style="list-style-type: none"> <li>• CD-R: 24X</li> <li>• CD-RW: 24X</li> </ul>	Read: <ul style="list-style-type: none"> <li>• DVD-ROM: 8X</li> <li>• CD-ROM: 24X</li> </ul>
Buffer Memory	2 MB	2 MB
Interface	IDE	IDE
Applicable disc format	CD-R, CD-RW (Multi speed, High speed, Ultra-speed and Ultra-speed plus) CD-DA, CD-ROM (mode 1), CD-ROM XA (Mode 2, Form 1, Form 2), CD-I, CD-i Bridge, Video-CD, Karaoke CD, Photo CD, Enhanced CD, CD Plus, CD Extra, i-trax CD, CD-Text DVD-ROM, DVD-Video, DVD-Audio, SACD (Hybrid), UDF DVD, DVD-R/RW, DVD+R/RW, DVD+/-R DL, DVD-RAM V1.0/ V2.1	
Power supply	5 V DC	N/A

### DVD Drive Interface

Item	Specification		
Vendor	Sony	Pioneer	Panasonic
Model name	AD-7530A	DVR-K17RS	UJ-850
Drive type	Internal Slim DVD/CD writer		

## DVD Drive Interface

Item	Specification		
Data transfer rate	Write: <ul style="list-style-type: none"> <li>CD-R: 24X CAV</li> <li>CD-RW: 24X CAV</li> <li>DVD-R/+R/+RW/-RW (single layer): 6X, 8X ZCLV</li> <li>DVD-R/+R (double layer): 8X CAV</li> <li>DVD-RAM: 5X ZCLV</li> </ul> Read: <ul style="list-style-type: none"> <li>CD-R/RW/ROM: 24X Max</li> <li>DVD-ROM (single layer): 8X</li> <li>DVD-ROM (double layer): 6X</li> <li>DVD-RAM: 5X ZCLV.</li> <li>DVD-R/+R/+RW/-RW (single layer): 8X CAV</li> <li>DVD-R/+R (double layer): 6X CAV</li> </ul>	Write: <ul style="list-style-type: none"> <li>CD-R: 24X</li> <li>CD-RW: 24X</li> <li>DVD-RW: 6X</li> <li>DVD-R/+R/+RW: 8X</li> </ul> Read: <ul style="list-style-type: none"> <li>DVD-RAM: 5X</li> </ul>	Write: <ul style="list-style-type: none"> <li>CD-R: 24X</li> <li>CD-RW: 16X</li> <li>DVD-R: 8X</li> <li>DVD-RW: 4X</li> <li>DVD-RAM: 5X</li> <li>DVD+R(DL): 2.4X</li> <li>DVD+R: 8X</li> <li>DVD+RW: 4X</li> </ul> Read: <ul style="list-style-type: none"> <li>CD-R/RW/ROM: 24X</li> <li>DVD-R/RW/ROM: 8X</li> </ul>
Buffer Memory	2 MB		
Interface	Enhanced IDE(ATAPI) compatible		
Applicable disc format	DVD-RAM, DVD-R/RW, DVD+R (SL, DL)/RW, CD-R/RW, DVD-ROM, DVD-RAM, DVD-R, DVD-RW, DVD+R (SL, DL), DVD+RW; CD-R, CD-RW, CD-ROM, CD-ROM XA, CD-DA, CD-I, CD-Extra, CD-Text, Photo CD, Video CD		
Power supply	5V DC		

## Battery

Item	Specification							
Vendor	Panasonic		Sanyo		Sony		Simplo	
Battery Type	Li-Mn	Li-ion	Li-ion		Li-ion		Li-Mn	Li-ion
Pack capacity	6 cell: 2.0 mAh	6 cell: 2.4 mAh	6 cell: 2.0 mAh	6 cell: 2.4 mAh	6 cell: 2.0 mAh	6 cell: 2.4 mAh	6 cell: 2.0 mAh	6 cell: 2.4 mAh

## LCD

Item	Specification			
Vendor	AUO	CMO	LG	Samsung
Model name	B141EW04-V3 (Non-glare) B141EW04-V4 (Glare)	N141I3-L01 (Non-glare) N141I3-L02 (Glare)	LP141WX1-TLA1 (Non-glare) LP141WX1-TLA2 (Glare)	LTN141W3-L01-0 (Non-glare) LTN141W3-L01-G (Glare)
Screen diagonal (mm)	14.1" WXGA			
Display resolution (pixels)	1280 x 800	1280 x 800	1280 x 768	1280 x 800
Aspect ratio	16:10	N/A	15:9	N/A

## LCD

Item	Specification			
Active area (mm)	303.36 x 189.6	N/A	305.8 x 183.2	303.4 x 189.6
Pixel pitch (mm)	0.237	N/A	0.2385 (107)	0.237
Mode	TN	N/A	N/A	N/A
Number of colors	262 K	262 K	262,144 (6 bit)	262 K
Color saturation (NTSC%)	45	N/A	45%	N/A
Typical white luminance (cd/m <sup>2</sup> ) also called brightness	200	220	185 (typ.5p)	200
Contrast ratio	400:1	300:1	500:1	500:1
Response time (optical rise time + fall time) (msec)	16	16	25	25
Power consumption (watt)	5.1	5.3	N/A	N/A
Supply voltage (v)	3.3	N/A	N/A	N/A
Backlight	1 CCFL	N/A	N/A	N/A
Outline dimensions (mm)	319.5 x 205.5 x 5.2	319.5 x 205.5 x 5.2	320.0 x 199.0 x 5.5	319.5 x 205.5 x 5.5
Weight (g)	400	400	400	390

## LCD Inverter

Item	Specification		
Vendor	YEC	Foxconn	RoHS
Model name	YNV-W02	T621240	VK.21189.406

## AC Adapter

Item	Specification		
Vendor	Delta	Lite-On	Lishin
Model Name	ADP-65KB DBE ADP-65KB DFA	PA-1650-02 WR PA-1650-02 AC	0335A19A54
Output rating	19 V/3.42 A, 65 W	19 V/3.42 A, 65 W	19 V/3.42 A, 65 W
Input (Vac)	90 ~ 270	100 ~ 240	90 ~ 265

## System Power Management

ACPI mode	Power Management
Off	<ul style="list-style-type: none"> <li>Mech. Off (G3): All devices in the system are turned off completely.</li> <li>Soft Off (G2/S5): OS initiated shutdown. All devices in the system are turned off completely.</li> </ul>
On	<ul style="list-style-type: none"> <li>Working (G0/S0): Individual devices such as the CPU and hard disk may be power managed in this state.</li> <li>Suspend to RAM (S3): CPU set power down, VGA Suspend, PCMCIA Suspend, Audio Power Down, Hard Disk Power Down, CD-ROM Power Down, and Super I/O Low Power mode.</li> <li>Save to Disk (S4): Also called Hibernation Mode. System saves all system states and data onto the disc prior to system shutdown.</li> </ul>



# System Utilities

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## BIOS Setup Utility

The BIOS Setup Utility is a hardware configuration program built into your system's BIOS (Basic Input/Output System). Since most systems are already properly configured and optimized, there is no need to run this utility. The BIOS setup utility stores basic settings for your system. You will need to run this utility if you encounter configuration problems. Refer to Chapter 4 Troubleshooting when problem arises.

## Entering BIOS Setup

Power on the system to start the system POST process. During bootup, press **F2** to enter the BIOS setup screen.

**NOTE:** You must press **F2** while the system is booting. This key does not work during any other time.

## BIOS Setup Primary Menus

There are several tabs on the setup screen corresponding to the six primary BIOS menus.

- Information
- Main
- Advanced
- Security
- Boot
- Exit

In the descriptive table following each of the screen illustrations, settings in **boldface** are the default and suggested parameter settings.

## BIOS Setup Navigation Keys

Note the following reminders when moving around the Setup utility.

- Use the **Left** and **Right** arrow keys to move to the next page or to return to the previous screen.
- Use the **Up** and **Down** arrow keys to select an item.
- Use the **+** and **-** keys to select an option.

**NOTE:** You can configure a parameter that is enclosed in square brackets. Grayed-out items have fixed settings and are not user-configurable.

- Use the **Enter** key to display a submenu screen.

**NOTE:** When a parameter is preceded by an **arrow** or (**>**), it means that a submenu screen is available.

- Press **F1** for General Help using the BIOS setup.
- Press **F9** to load the default configuration.
- Press **F10** to save changes and close the BIOS setup.
- Press **Esc** to close the BIOS setup.

**NOTE:** The parameters on the screens shown in this Guide display default system values. These values may not be the same as those in the system. System information is subject to different models.

# Information Menu

Phoenix TrustedCore(tm) Setup Utility

Information	Main	Advanced	Security	Boot	Exit
-------------	------	----------	----------	------	------

```

CPU Type:                Intel (R) Core (TM)2 Duo CPU  T7300 @ 2.00GHz
CPU Speed:               2000 MHz
IDE0 Model Name:        XXXXXXXXXXXX-(XX)
IDE0 Serial Number:     XXXXXXXX
IDE1 Model Name:        None
IDE1 Serial Number:     None
ATAPI Model Name:       XXXXXXXXXXXX-XXX XX-XXXX-(XX)
System BIOS Version:    VX.XX
VGA BIOS Version:       XX-XXX XXXXXX.XXX.XXX.XXXXXX
KBC Version:            XX.XX
Serial Number:          XXXXXXXXXXXXXXXXXXXXXXXX
Asset Tag Number:       None
Product Name:           TravelMate/Extensa 5XXX
Manufacturer Name:      Acer
UUID:                   XXXxXxXX-xXxX-XXxx-xXXx-xXXxXXxXxxXX
                    
```

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

Parameter	Description
CPU Type	Type of processor currently installed in the system.
CPU Speed	Speed of the processor currently installed in the system.
IDE0 Model Name	Model name of HDD installed on the primary IDE channel.
IDE0 Serial Number	Serial number of HDD installed on the primary IDE channel.
IDE1 Model Name	Model name of devices installed on the secondary IDE channel. The hard disk drive or optical drive model name is automatically detected by the system.
IDE1 Serial Number	Serial number of devices installed on the secondary IDE channel.
ATAPI Model Name	Model name of the ATAPI CD/DVD-ROM drive installed in the system.
System BIOS Version	Version number of the BIOS setup utility.
VGA BIOS Version	Version number of the VGA firmware.
KBC Version	Version number of the keyboard controller.
Serial Number	Serial number of the system.
Asset Tag Number	Asset tag number of the system.
Product Name	Product name of the system.
Manufacturer Name	Name of the manufacturer of this system.
UUID	Visible only when an internal LAN device is present. UUID=32bytes

**NOTE:** The system configuration information varies in different models.

# Main Menu

Phoenix TrustedCore(tm) Setup Utility

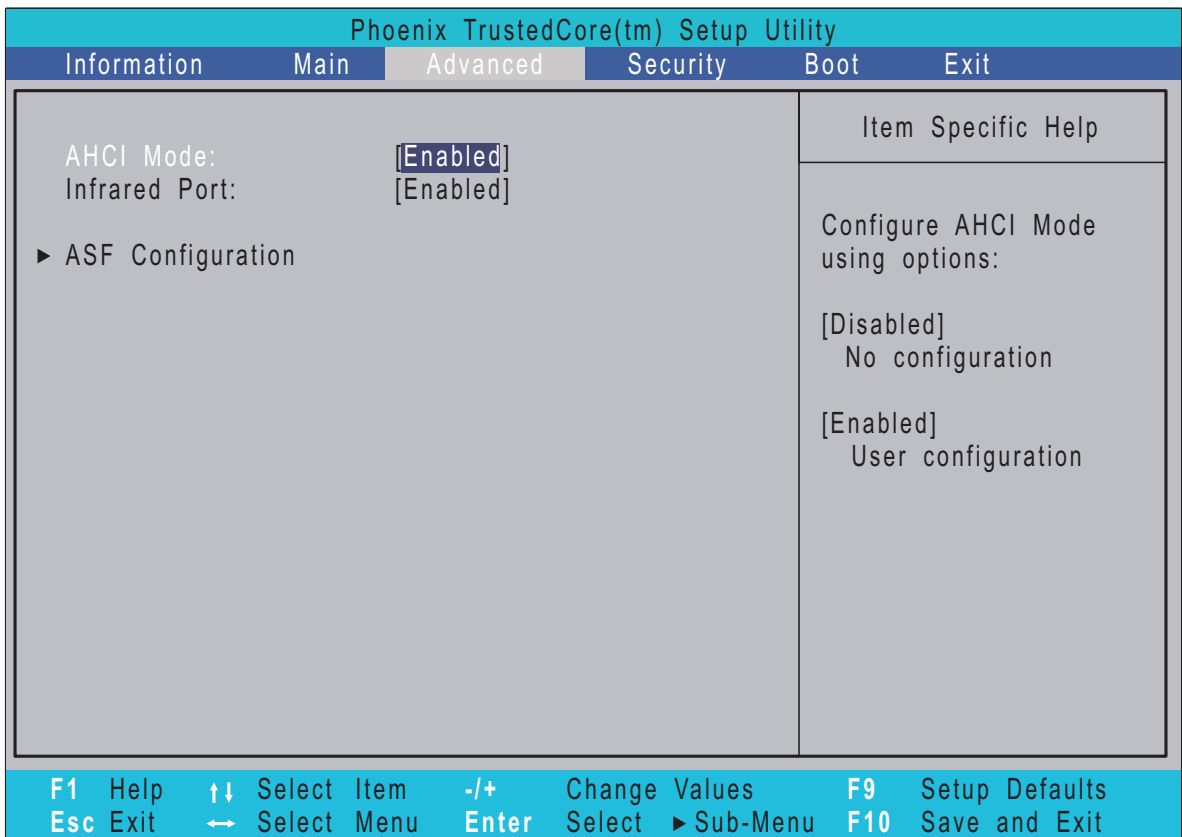
Information	Main	Advanced	Security	Boot	Exit
-------------	------	----------	----------	------	------

<p>System Time:            [10:10:10]</p> <p>System Date:            [04/28/2007]</p> <p>System Memory:         640 KB</p> <p>Extended Memory:      2046 MB</p> <p>Video Memory:         256 MB</p> <p>Quiet Boot:             [Enabled]</p> <p>Network Boot:          [Enabled]</p> <p>F12 Boot Menu:         [Disabled]</p> <p>D2D Recovery:          [Enabled]</p>	<p style="text-align: center;">Item Specific Help</p> <p>&lt;Tab&gt;, &lt;Shift-Tab&gt;, or &lt;Enter&gt; selects field.</p>
---	--

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

Parameter	Description	Format/Option
System Time	Set the system time following the hour-minute-second format.	Format: HH:MM:SS (hour:minute:second)
System Date	Set the date following the weekday-month-day-year format.	Format MM/DD/YYYY (month/day/year)
System Memory	Total size of system memory detected during POST.	
Extended Memory	Total size of extended memory during POST.	
Video Memory	Total size of VGA memory.	
Quiet Boot	When Enabled, the BIOS splash screen is displayed during startup.	<b>Enabled</b> Disabled
Network Boot	When Enabled, the system can be booted from another PC on your LAN, such as a remote server.	<b>Enabled</b> Disabled
F12 Boot Menu	When Enabled, pressing the F12 key during POST brings up a menu of devices that you can select to boot.	<b>Disabled</b> Enabled
D2D Recovery	Enables or disables disk-to-disk recovery. D2D recovery is a method of restoring the system to factory configurations without using recovery CDs.	<b>Enabled</b> Disabled

# Advanced Menu



Parameter	Description	Format/Option
AHCI Mode	Enables or disables access to SATA connectors via the AHCI (Advanced Host Controller Interface) Option ROM. AHCI is an interface specification that allows the storage driver to enable advanced SATA features such as Native Command Queuing and hot plug.	<b>Enabled</b> Disabled
Infrared Port	Enables or disables the infrared port.	<b>Enabled</b> Disabled
ASF Configuration	Press <b>Enter</b> to configure the Alert Standard Format feature.	



# Security Menu

Phoenix TrustedCore(tm) Setup Utility					
Information	Main	Advanced	Security	Boot	Exit
Supervisor Password Is: Clear User Password Is: Clear Secondary MAS.Disk Status: Clear  Set Supervisor Password [Enter] Set User Password [Enter] Set Secondary MAS.Disk Password [Enter]  Password on Boot: [Disabled]				Item Specific Help  Supervisor Password controls access of the whole setup utility. It can be used to boot up when Password on boot is enabled.	
<b>F1</b> Help <b>↑↓</b> Select Item <b>-/+</b> Change Values <b>F9</b> Setup Defaults <b>Esc</b> Exit <b>←→</b> Select Menu <b>Enter</b> Select <b>▶</b> Sub-Menu <b>F10</b> Save and Exit					

Parameter	Description	Option
Supervisor Password Is	Indicates whether a supervisor password has been assigned.	<b>Clear</b> or Set
User Password Is	Indicates whether a user password has been assigned.	<b>Clear</b> or Set
Secondary MAS.Disk Status	Indicates whether a hard disk drive password has been assigned.	<b>Clear</b> or HDD Password Set
Set Supervisor Password	Press <b>Enter</b> to configure the supervisor password.	
Set User Password	Press <b>Enter</b> to configure the user password.	
Set Secondary MAS.Disk Password	Press <b>Enter</b> to configure the hard disk drive password.	
Password on Boot	Enables or disables security check during POST.	<b>Disabled</b> or Enabled

**NOTE:** Refer to the “Removing a System Password” section for more information on how to remove a password.

---

## Setting a System Password

1. Use the **up/down** keys to select a password parameter (Set Supervisor Password, Set User Password, or Set Secondary MAS.Disk Password), then press **Enter**. A Password box will appear.
2. Type a password then press **Enter**.  
The password may consist of up to six alphanumeric characters (A-Z, a-z, 0-9).
3. Retype the password to verify the first entry then press **Enter** again.
4. Press **F10**.
5. Select **Yes** to save the new password and close the Setup Utility.

## Changing a System Password

1. Use the **up/down** keys to select a password parameter (Set Supervisor Password, Set User Password, or Set Secondary MAS.Disk Password), then press **Enter**.
2. Type the original password then press **Enter**.
3. Type a new password then press **Enter**.
4. Retype the password to verify the first entry then press **Enter** again.
5. Press **F10**.
6. Select **Yes** to save the new password and close the Setup Utility.

## Removing a System Password

1. Use the **up/down** keys to select a password parameter (Set Supervisor Password, Set User Password, or Set Secondary MAS.Disk Password), then press **Enter**.
2. Enter the current password then press **Enter**.
3. Press **Enter** twice without entering anything in the new and confirm password fields.
4. After doing this, the system automatically sets the related password parameter to **Clear**.

# Boot Menu

This menu allows you to set the drive priority during system boot-up. The system will attempt to boot from the first device on the list. If the first device is not available, it will continue down the list until it reaches an available device. BIOS setup will display an error message if the drive(s) specified is not bootable.

Phoenix TrustedCore(tm) Setup Utility					
Information	Main	Advanced	Security	Boot	Exit
Boot priority order:  1: IDE0: XXXXXXXXXXXX-(XX) 2: IDE1: 3: CD/DVD: XXXXXXXXXXXX-XXX XX-XXXX-XX 4: PCI LAN: MBA vXX.X.X Slot XXXX 5: USB HDD: 6: USB FDD: 7: USB Key: 8: USB CD/DVD ROM:				Item Specific Help  Use <↑> or <↓> to select a device, then press <F6> to move it up the list, or <F5> to move it down the list. Press <Esc> to escape the menu.	
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults		
Esc Exit	←→ Select Menu	Enter Select	▶ Sub-Menu	F10 Save and Exit	

# Exit Menu

Phoenix TrustedCore(tm) Setup Utility

Information
Main
Advanced
Security
Boot
Exit

Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes	<p style="text-align: center; background-color: #cccccc; margin: -5px -5px 5px -5px;">Item Specific Help</p> Exit System Setup and save your changes to CMOS.
--	---

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

Parameter	Description
Exit Saving Changes	Save changes made and close the BIOS setup.
Exit Discarding Changes	Discards changes made and close the BIOS setup.
Load Setup Defaults	Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.
Discard Changes	Discards all changes made in the BIOS setup.
Save Changes	Saves changes made in the BIOS setup.

# Machine Disassembly and Replacement

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

## Disassembly Requirements

To disassemble the computer, you need the following tools:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge
- Flat screwdriver
- Philips screwdriver
- Hex screwdriver
- Plastic flat screwdriver
- Plastic 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.

---

# General Information

## Pre-disassembly Instructions

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.



3. Place the system on a flat, stable surface.
4. Remove the battery pack. See "Removing the Battery Pack" on page 51.

---

## Disassembly Process

The disassembly process is divided into the following stages:

- External module disassembly
- Main unit disassembly
- LCD module disassembly

The flowcharts provided in the succeeding disassembly sections illustrate the entire disassembly sequence. Observe the order of the sequence to avoid damage to any of the hardware components. For example, if you want to remove the mainboard, you must first remove the keyboard, then disassemble the inside assembly frame in that order.

### Main Screw List

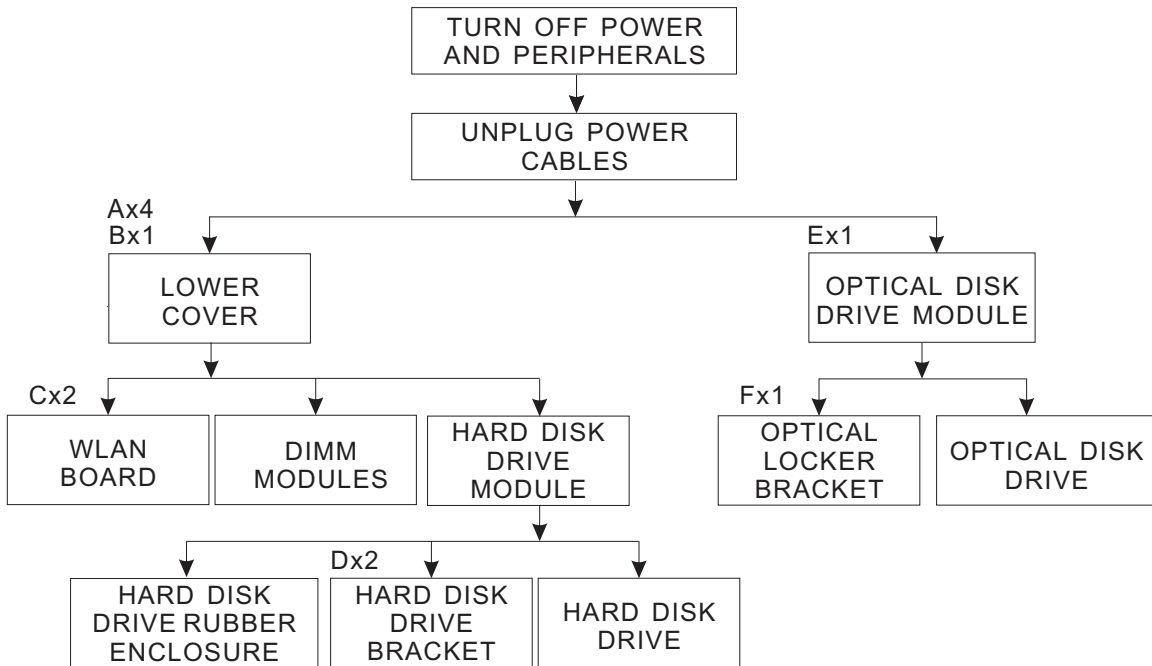
Item	Screw	Color	Part No.
A	M2 x L4	Black/Silver	86.9A552.4R0
B	M2 x L18	Black	86.00G64.720
C	M2 x L3	Silver	86.9A552.3R0
D	M3 x L4	Silver	86.9A524.4R0
E	M2.5 x L6	Black	86.00E33.736
F	M2 x L2.5	Silver	86.00F22.722
G	M2 x L3	Silver	86.00C07.220
H	M2.5 x L5 (torque 1.6)	Black	86.00F87.735
	M2.5 x L5 (torque 3.0)		
I	M2.5 x L5 (torque 2.5)	Black	86.00F00.735

# External Module Disassembly Process

## External Modules Disassembly Flowchart

The flowchart below gives you a graphic representation on the entire disassembly sequence and instructs you on the components that need to be removed during servicing. For example, if you want to remove the mainboard, you must first remove the keyboard, then disassemble the inside assembly frame in that order.

### EXTERNAL MODULE DISASSEMBLY



### Screw List

	Screw	Part No.
A	M2 x L4	86.9A552.4R0
B	M2 x L18	86.00G64.720
C	M2 x L3	86.9A552.3R0
D	M3 x L4	86.9A524.4R0
E	M2.5 x L6	86.00E33.736
F	M2 x L2.5	86.00F22.722



---

## Removing the Battery Pack

1. Turn base unit over.
2. Slide the battery lock/unlock latch to the unlock position (1).



3. Slide and hold the battery release latch to the release position (2), then remove the battery from the main unit (3).



## Removing the SD Dummy Card

1. See “Removing the Battery Pack” on page 51.
2. Push against the card, as if you were pushing it further into the slot, letting the card spring out.



3. Remove the card from the slot.



## Removing the Express Dummy Card

1. See “Removing the Battery Pack” on page 51.
2. Push the eject button all the way in to release the button.



3. Push it again to eject the dummy card.

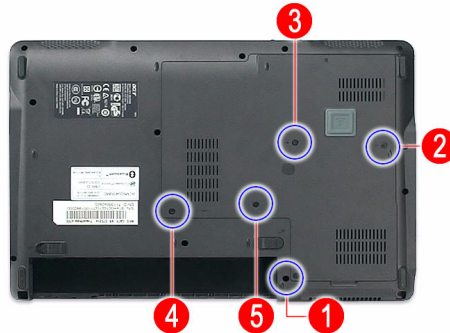


4. Remove the card from the slot.



## Removing the Lower Cover

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. Loosen the four screws (A) on the lower cover.

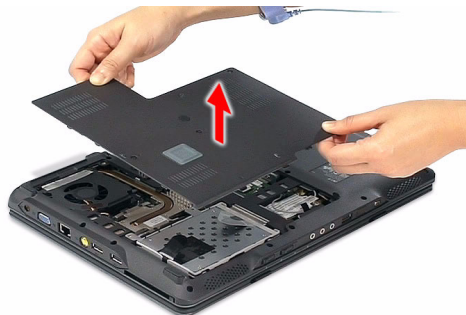


Step	Size (Quantity)	Color	Torque
1~4	M2 x L4 (4)	Black	1.6 kgf-cm

5. Remove the screw (B) on the lower cover.

Step	Size (Quantity)	Color	Torque
5	M2 x L18 (1)	Black	1.6 kgf-cm

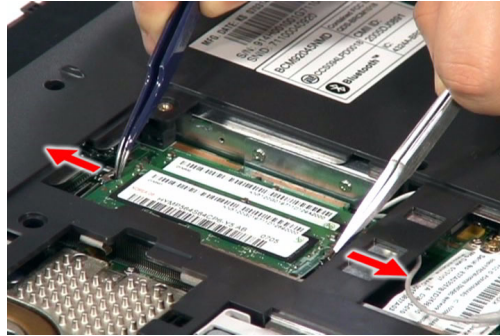
6. Use a plastic screw driver to pry open the lower cover.
7. Remove the lower cover from the lower case.



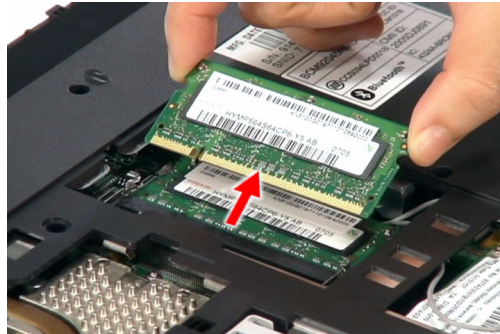
## Removing the DIMM

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.

5. Push out the latches on both sides of the DIMM socket to release the DIMM.



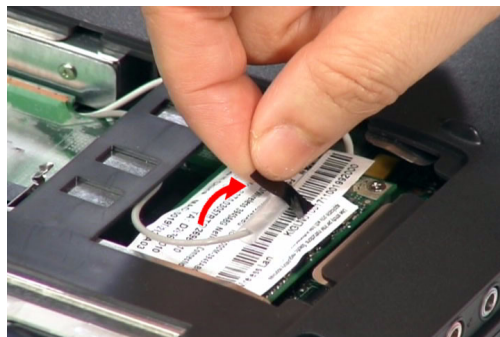
6. Remove the DIMM module.



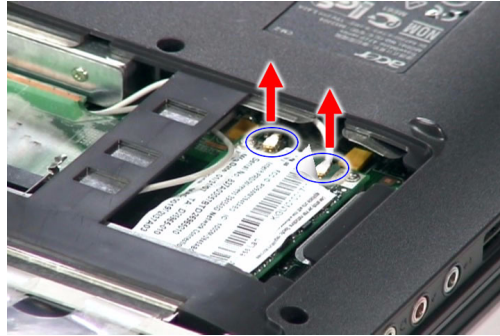
7. Do the same on the other board.

## Removing the WLAN Board Modules

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. Remove the mylar tape from the cable.



- Disconnect the two antenna cables from the WLAN board, then move the antennas away from the board.

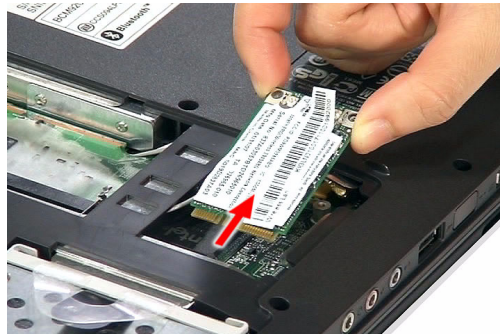


- Remove the two screws (C) on the WLAN board to release the WLAN board.



Step	Size (Quantity)	Color	Torque
1~2	M2 x L3 (2)	Silver	1.6 kgf-cm

- Detach the WLAN board from the WLAN socket.



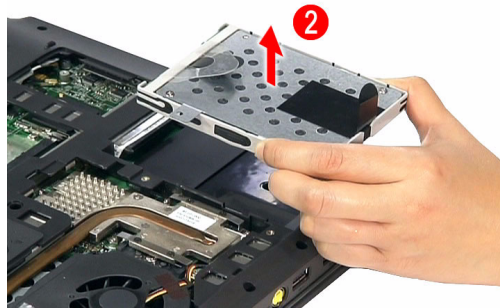
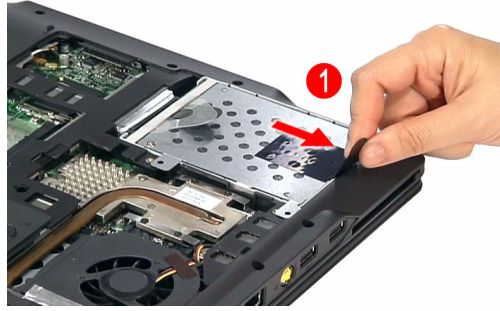
**NOTE:** When attaching the antennas back to the WLAN board, make sure the cable are routed properly.

## Removing the Hard Disk Drive Module

- See “Removing the Battery Pack” on page 51.
- See “Removing the SD Dummy Card” on page 51.
- See “Removing the Express Dummy Card” on page 52.
- See “Removing the Lower Cover” on page 53.

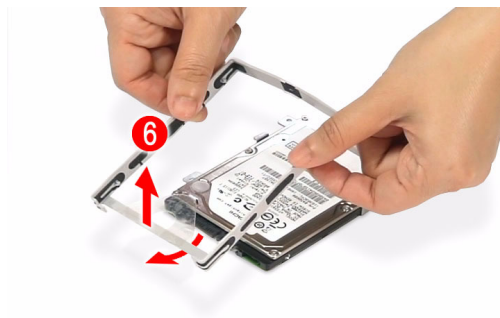


5. Pull the HDD module out by pulling on the mylar attached to it, gently slide-out the HDD module from its bay.

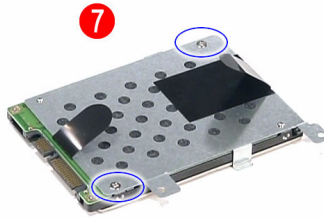


**NOTE:** To prevent damage to device, avoid pressing down on it or placing heavy objects on top of it.

6. Remove the HDD rubber enclosure by gently prying open the enclosure, starting on either side (3) and proceeding down the bottom (4) and towards the top of the disk (5), then pull it up to detach from the HDD module (6).

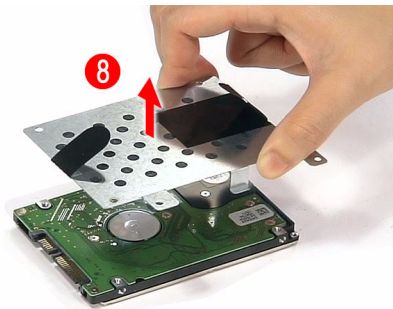


7. Remove the two screws (D) on the HDD bracket.



Step	Size (Quantity)	Color	Torque
7	M3 x L4 (2)	Silver	1.6 kgf-cm

8. Remove the bracket as shown.



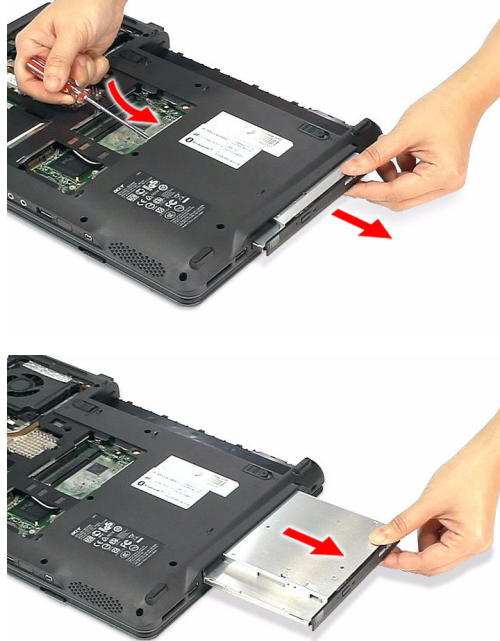
## Removing the Optical Drive Module

1. See "Removing the Battery Pack" on page 51.
2. See "Removing the SD Dummy Card" on page 51.
3. See "Removing the Express Dummy Card" on page 52.
4. See "Removing the Lower Cover" on page 53.
5. Turn the base unit over, then remove the screw (E) on the bottom side of the unit.



Step	Size (Quantity)	Color	Torque
1	M2.5 x L6 (1)	Black	1.6 kgf-cm

- Using the flat screwdriver, press the end of the module forward, then slide out the optical drive module from the main unit.



- Remove the two screws (F) securing the optical bracket and remove the locker bracket from the optical disk drive module.



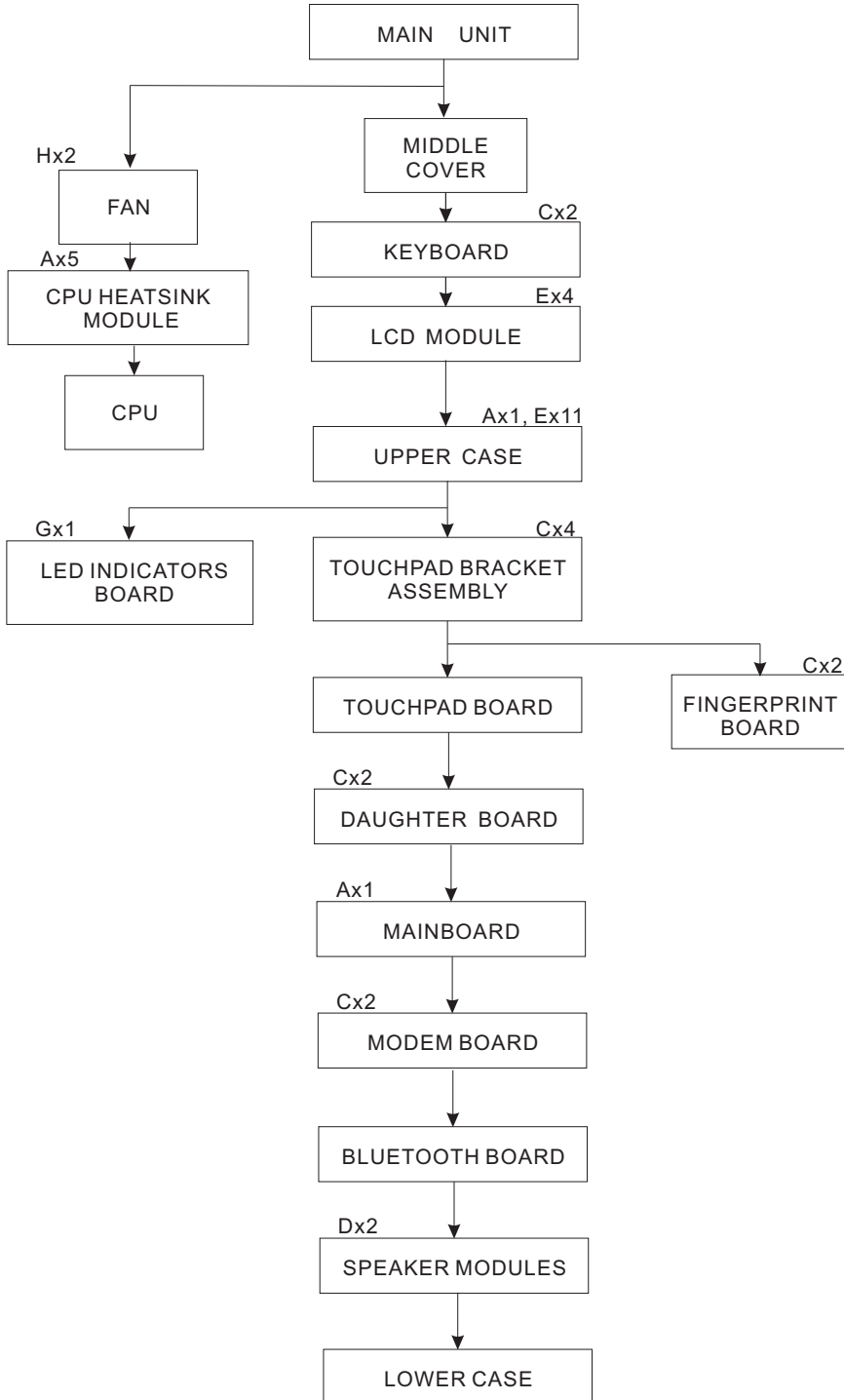
Step	Size (Quantity)	Color	Torque
1-2	M2 x L2.5 (2)	Silver	1.6 kgf-cm



# Main Unit Disassembly Process

## Main Unit Disassembly Flowchart

### MAIN UNIT DISASSEMBLY

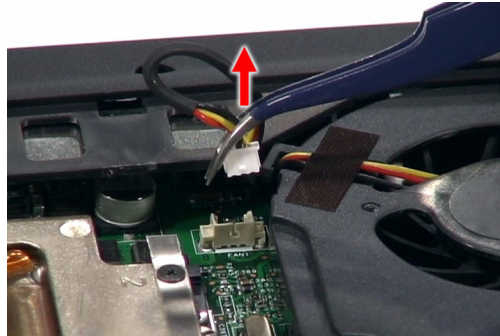


## Screw List

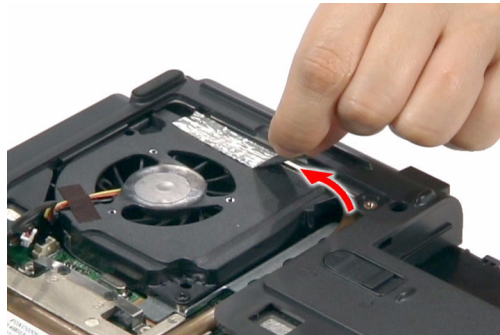
	Screw	Part No.
A	M2 x L4	86.00G64.720
C	M2 x L3	86.9A552.3R0
D	M3 x L4	86.9A524.4R0
E	M2.5 x L6	86.00E33.736
G	M2 x L3	86.00C07.220
H	M2.5 x L5 (torque 1.6) M2.5 x L5 (torque 3.0)	86.00F87.735

## Removing the Fan Module

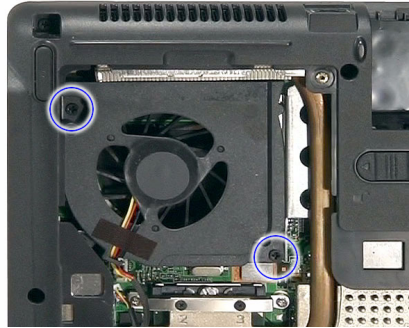
1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. Detach the heatsink cable.



6. Detach the tin foil tape on the fan.

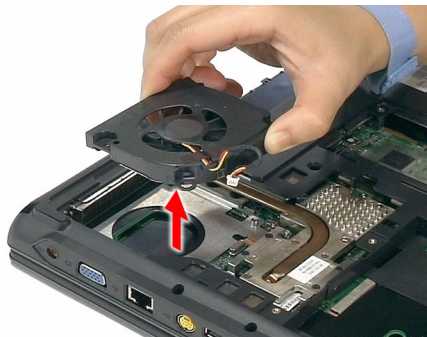


7. Remove the screws (H) securing the fan to the main unit.



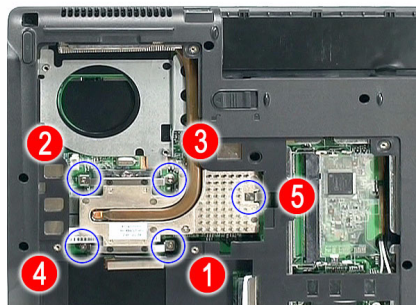
Step	Size (Quantity)	Color	Torque
1-2	M2.5 x L5 (2)	Black	1.6 kgf-cm

8. Remove the fan from the main unit.



## Removing the CPU Heatsink Module

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. Unfasten the screws (A) securing the heatsink in the order shown.

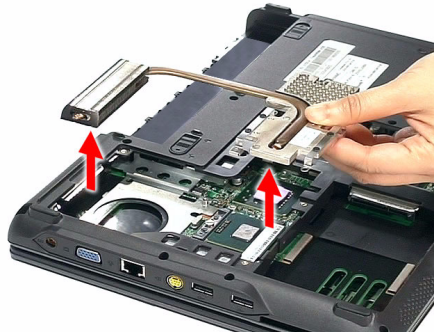


Step	Size (Quantity)	Color	Torque
1-5	M2 x L4 (5)	Silver	1.6 kgf-cm

7. Carefully pull the heatsink out of the edge of the main unit.



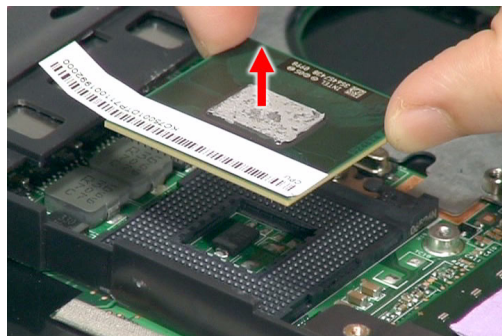
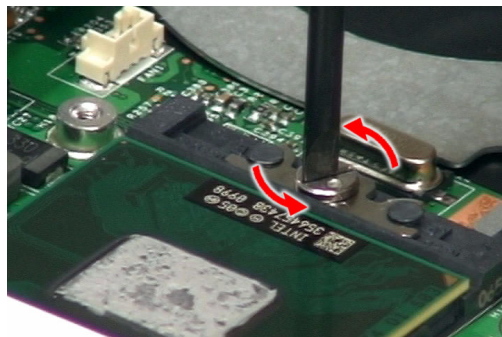
8. Remove the heatsink.



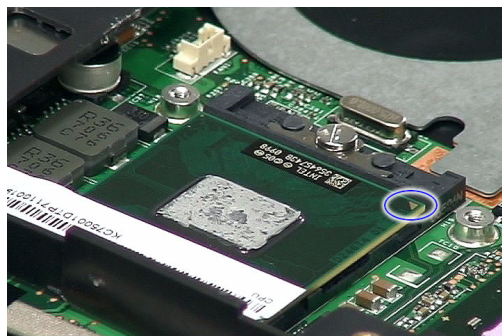
## Removing the CPU

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.

- Using a flat screwdriver, turn the CPU socket latch counter-clockwise to release the CPU, then remove the CPU.



**NOTE:** When installing the CPU, make sure to install the CPU with PIN 1 at the corner as shown.



---

## Removing the Middle Cover

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. Open the LCD screen all the way to facilitate the easy removal of the middle cover.
8. Carefully insert the flat screwdriver under the side of the middle cover and gently pry up the middle cover.



9. Continue prying the middle cover until the full length of the cover releases from the main unit, then remove the cover.





## Removing the Keyboard

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the Middle Cover” on page 64.
3. Remove the two screws (G) securing the keyboard.

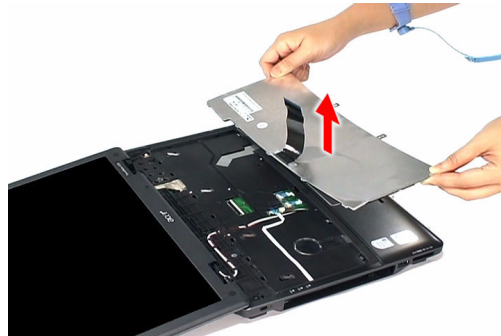
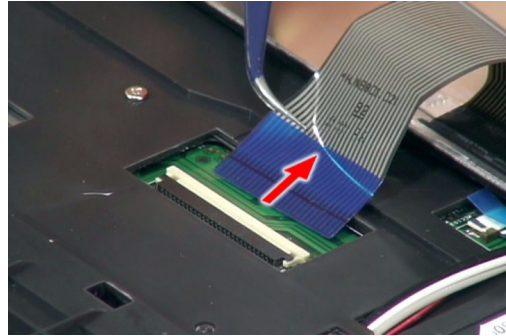
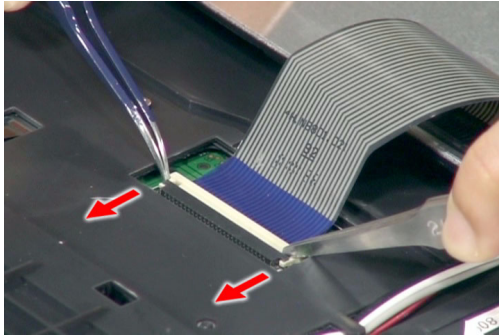


Step	Size (Quantity)	Color	Torque
1-2	M2 x L3 (2)	Silver	1.6 kgf-cm

4. Carefully pry up and out the keyboard and turn it over.

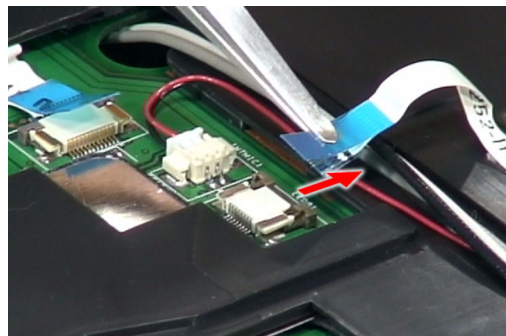
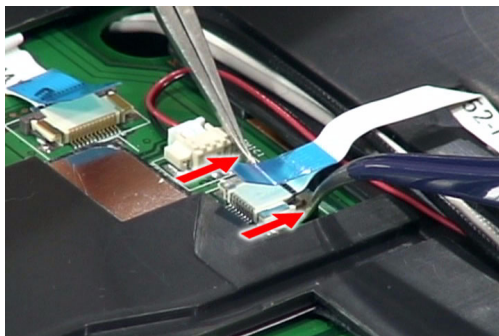


5. Disconnect the keyboard cable from the mainboard to remove the keyboard.



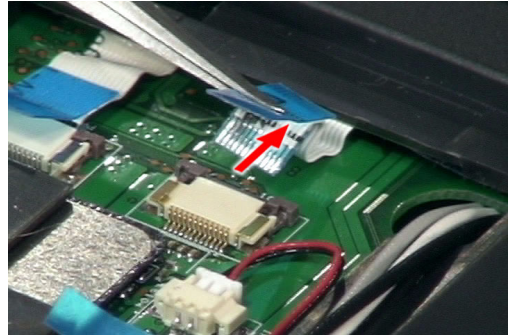
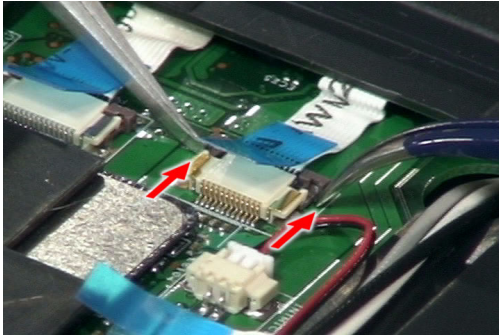
## Removing the LCD Module

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. Disconnect the LED cable.

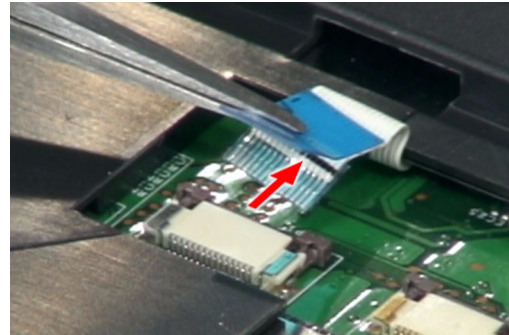
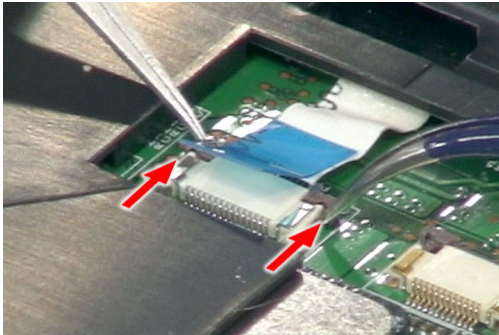




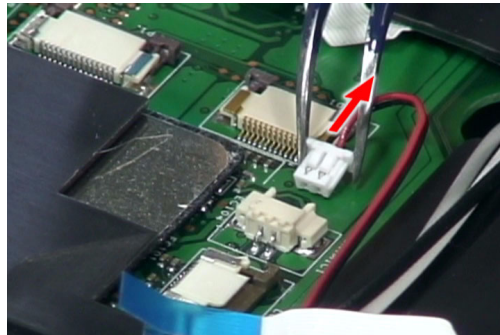
11. Disconnect the fingerprint cable.



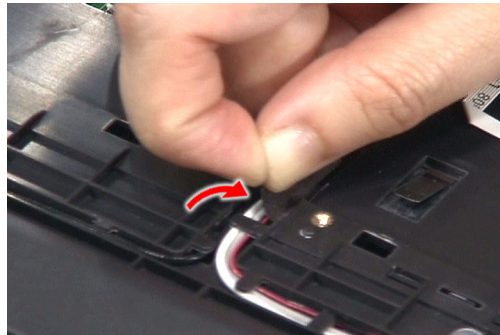
12. Disconnect the touchpad cable.



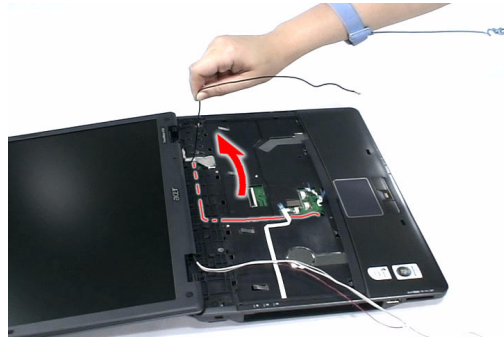
13. Disconnect the internal microphone cable.



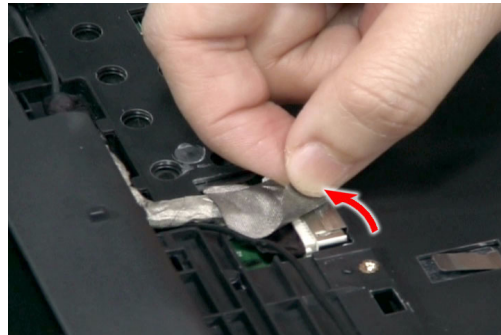
14. Detach the mylar tape securing the mic and antenna cables to the upper case.



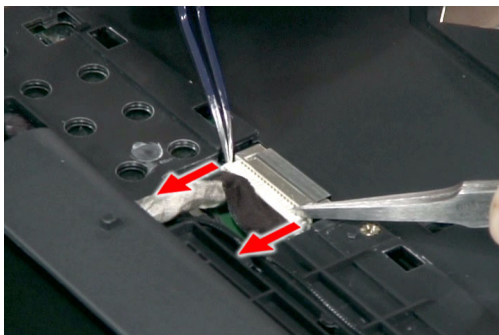
15. Carefully release the cables from the latches as shown.



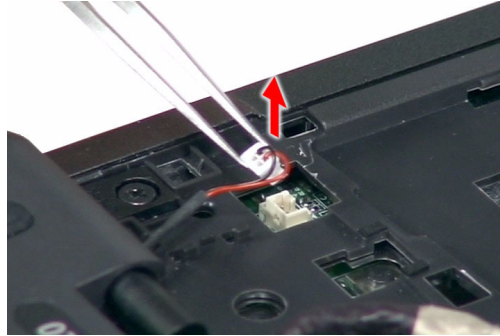
16. Detach the mylar tape from the LCD coaxial cable.



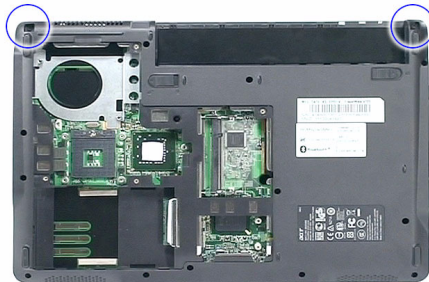
17. Disconnect the LCD coaxial cable from the mainboard.



18. Disconnect the cover switch cable from the mainboard.

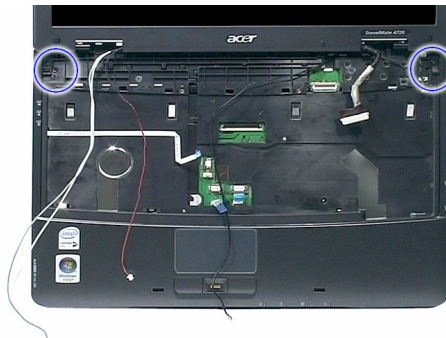


19. Turn the system over and remove the two screws (E) from the base of the unit.



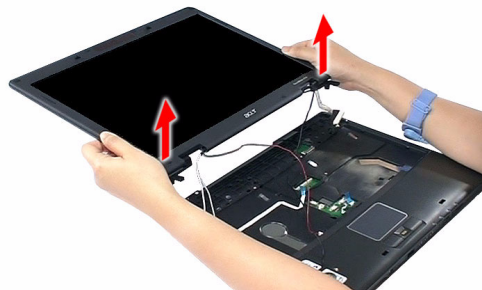
Step	Size (Quantity)	Color	Torque
1~2	M2.5 x L6 (2)	Black	3.0 kgf-cm

20. Remove the two screws (E) from the left and right hinge of the LCD module.



Step	Size (Quantity)	Color	Torque
1~2	M2.5 x L6 (2)	Black	3.0 kgf-cm

21. Carefully remove the LCD module from the base unit.

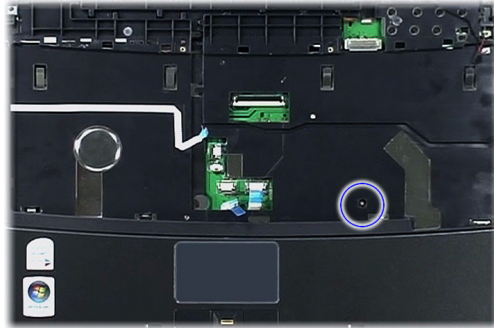


**NOTE:** Make sure the cables are routed well before connecting the cables back to the unit.



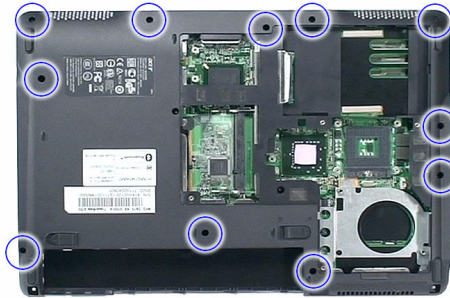
## Separating the Upper Case from the Lower Case

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. Remove the screw (A) on the top panel.



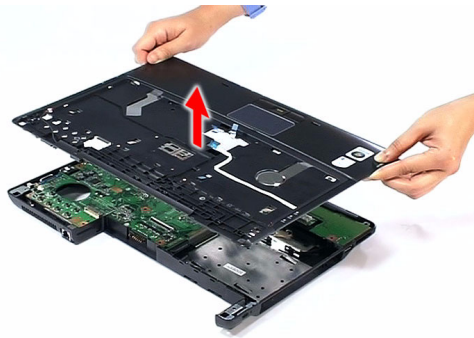
Step	Size (Quantity)	Color	Torque
1	M2 x L4 (1)	Black	1.6 kgf-cm

12. Turn the system over and remove the 11 screws (E) on the bottom panel.



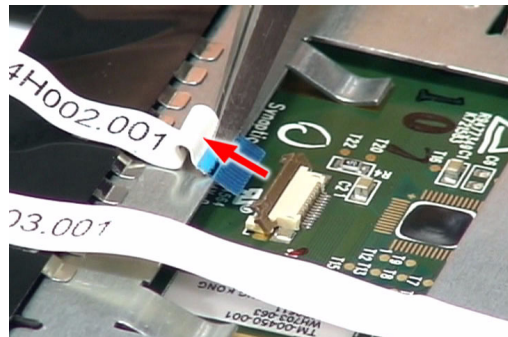
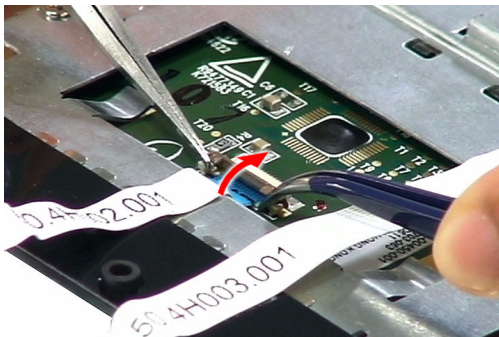
Step	Size (Quantity)	Color	Torque
1~11	M2.5 x L6 (11)	Black	3.0 kgf-cm

13. Gently detach the upper case from the lower case.

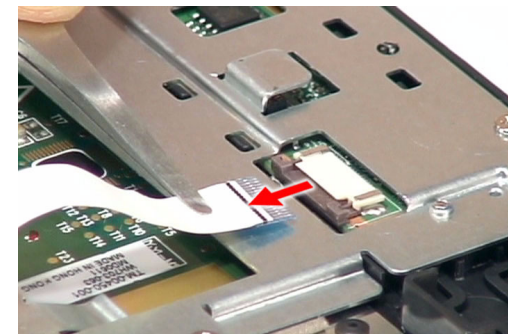
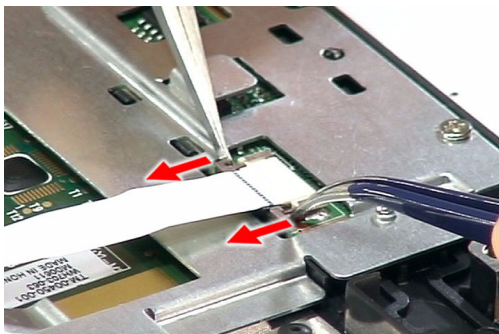


## Removing the Touchpad Board Module

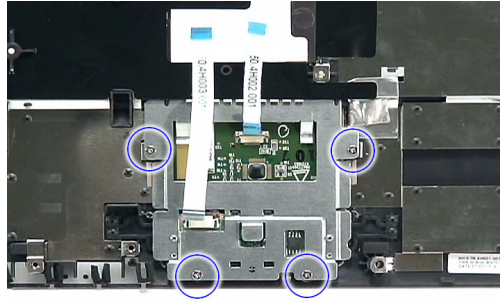
1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Separating the Upper Case from the Lower Case” on page 70.
12. Disconnect the touchpad cable from the touchpad board.



13. Disconnect the fingerprint cable from the fingerprint board.

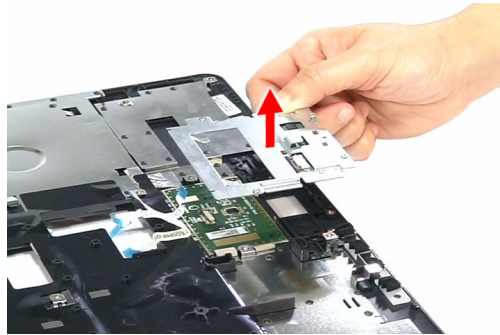


14. Remove the four screws (C) on the touchpad bracket.



Step	Size (Quantity)	Color	Torque
1~4	M2 x L3 (4)	Silver	1.6 kgf-cm

15. Detach the touchpad bracket from the upper case.



16. Carefully insert the flat screwdriver under the side of the touchpad board and gently pry up the board.

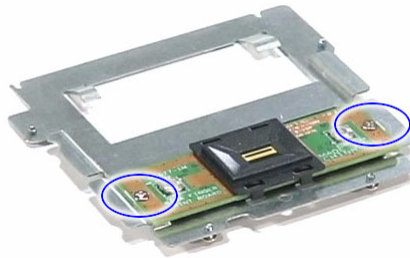


17. Continue prying the board until it releases from the upper case, then remove the board.



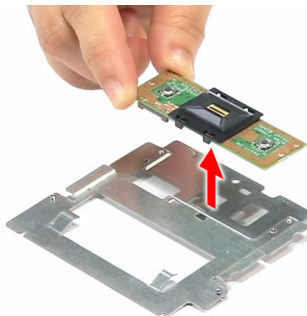
## Removing the Fingerprint Board

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Separating the Upper Case from the Lower Case” on page 70.
12. See “Removing the Touchpad Board Module” on page 71.
13. Remove the two screws (C) securing the fingerprint board to the bracket.



Step	Size (Quantity)	Color	Torque
1~2	M2 x L3 (2)	Silver	1.6 kgf-cm

14. Detach the fingerprint board.

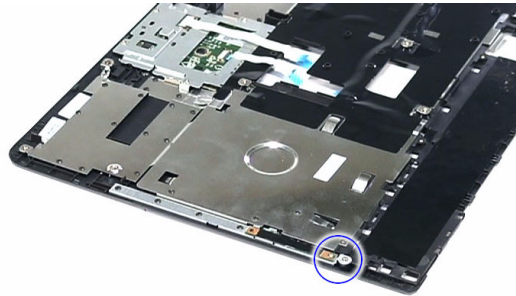


## Removing the LED Indicators Board

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.

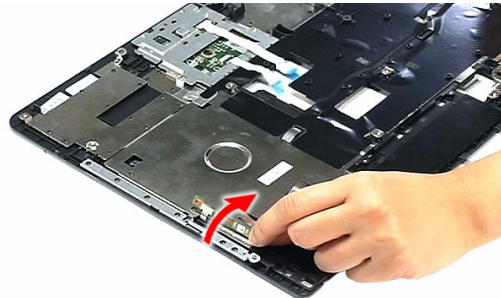


8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Separating the Upper Case from the Lower Case” on page 70.
12. Remove the screw (G) on the LED indicators board.

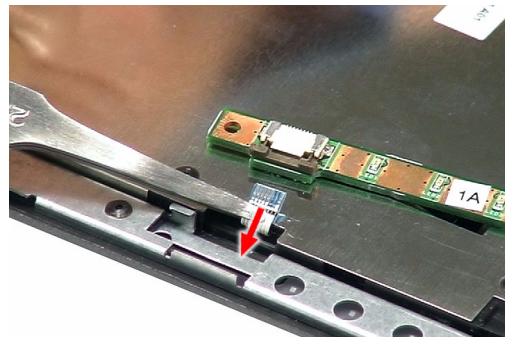
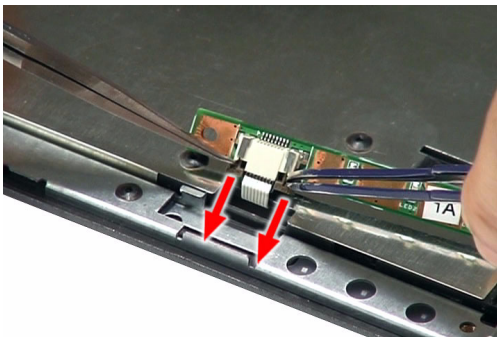


Step	Size (Quantity)	Color	Torque
1	M2 x L3 (1)	Silver	1.6 kgf-cm

13. Turn the LED board over, then detach the LED cable from the board.



14. Disconnect the LED board cable from the board, then remove the board.

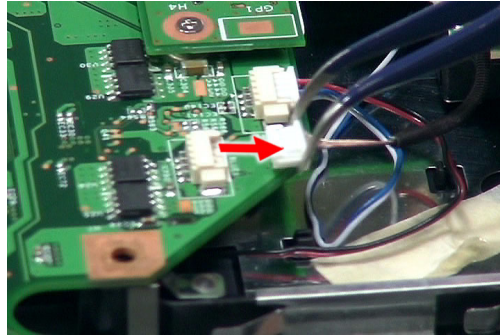


## Remove the Daughter Board

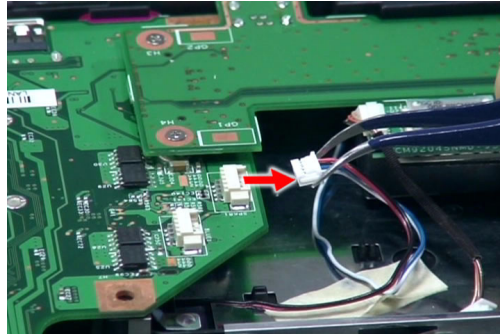
1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.



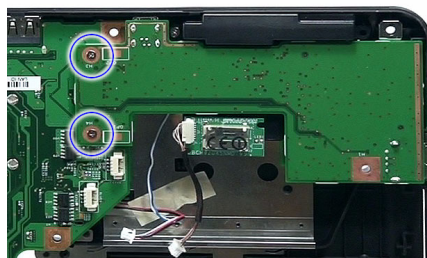
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Separating the Upper Case from the Lower Case” on page 70.
12. Disconnect the Bluetooth board cable from the mainboard.



13. Disconnect the speaker cable from the mainboard.

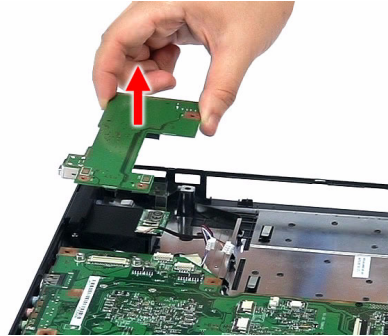


14. Remove the two screws (C) that secures the daughter board to the mainboard.



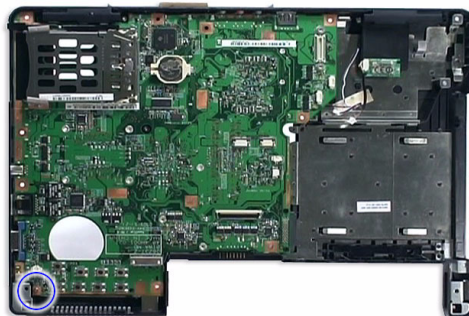
Step	Size (Quantity)	Color	Torque
1~4	M2 x L3 (2)	Silver	1.6 kgf-cm

15. Detach the daughter board.



## Removing the Mainboard

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Separating the Upper Case from the Lower Case” on page 70.
12. See “Remove the Daughter Board” on page 74.
13. Remove the screw (A) holding the mainboard.

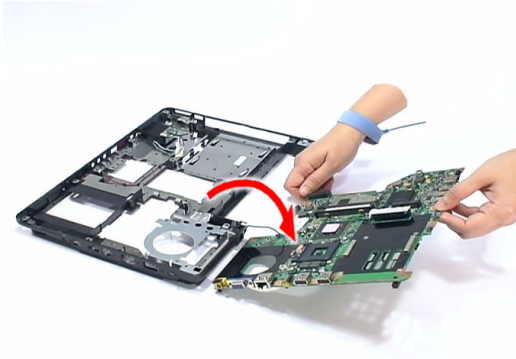


Step	Size (Quantity)	Color	Torque
1	M2 x L4 (1)	Silver	1.6 kgf-cm

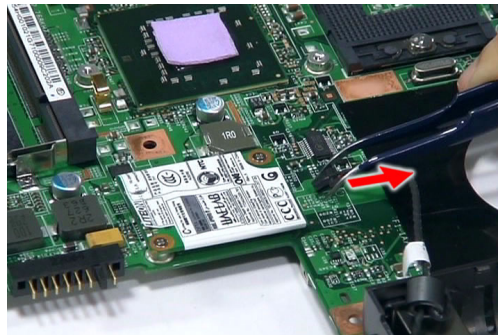
14. Carefully detach the mainboard from the lower case.



15. Turn the mainboard over then disconnect the modem cable from modem board.



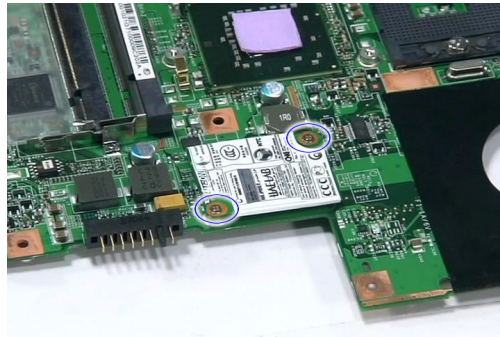
16. Disconnect the modem board cable from the mainboard.



## Removing the Modem Board

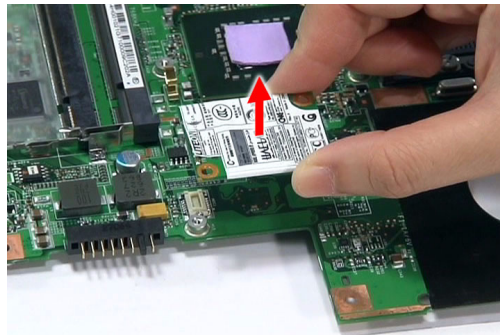
1. See "Removing the Battery Pack" on page 51.
2. See "Removing the SD Dummy Card" on page 51.
3. See "Removing the Express Dummy Card" on page 52.
4. See "Removing the Lower Cover" on page 53.
5. See "Removing the Fan Module" on page 60.
6. See "Removing the CPU Heatsink Module" on page 61.
7. See "Removing the CPU" on page 62.
8. See "Removing the Middle Cover" on page 64.
9. See "Removing the Keyboard" on page 65.
10. See "Removing the LCD Module" on page 66.
11. See "Separating the Upper Case from the Lower Case" on page 70.

12. See “Remove the Daughter Board” on page 74.
13. See “Removing the Mainboard” on page 76.
14. Remove the two screws (C) on the modem board.



Step	Size (Quantity)	Color	Torque
1~2	M2 x L3 (2)	Silver	1.6 kgf-cm

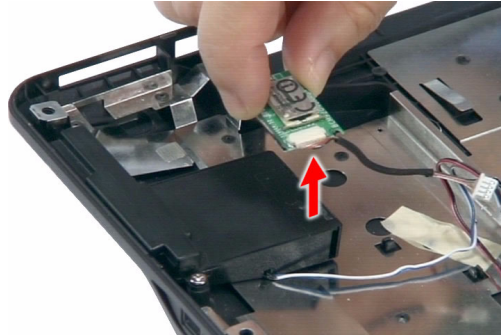
15. Detach the modem board from the mainboard.



## Removing the Bluetooth Board

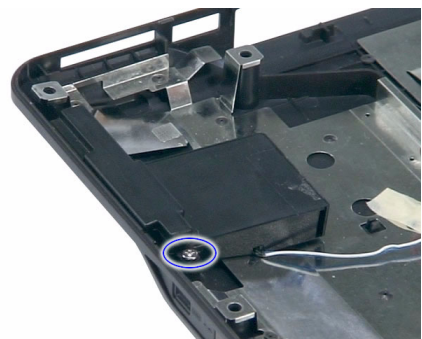
1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Separating the Upper Case from the Lower Case” on page 70.
12. See “Remove the Daughter Board” on page 74.
13. See “Removing the Mainboard” on page 76.

- Carefully detach the Bluetooth board from the right speaker module.



## Removing the Speaker Modules

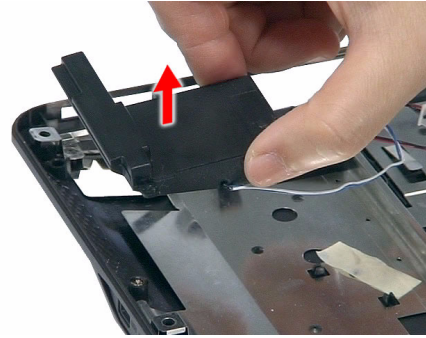
- See “Removing the Battery Pack” on page 51.
- See “Removing the SD Dummy Card” on page 51.
- See “Removing the Express Dummy Card” on page 52.
- See “Removing the Lower Cover” on page 53.
- See “Removing the Fan Module” on page 60.
- See “Removing the CPU Heatsink Module” on page 61.
- See “Removing the CPU” on page 62.
- See “Removing the Middle Cover” on page 64.
- See “Removing the Keyboard” on page 65.
- See “Removing the LCD Module” on page 66.
- See “Separating the Upper Case from the Lower Case” on page 70.
- See “Remove the Daughter Board” on page 74.
- See “Removing the Mainboard” on page 76.
- See “Removing the Bluetooth Board” on page 78.
- Remove the two screws (D) holding the left and right speaker modules to the lower case.



Step	Size (Quantity)	Color	Torque
1~2	M3xL4 (2)	Silver	3.0 kgf-cm

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16. Carefully detach the speaker modules as shown.

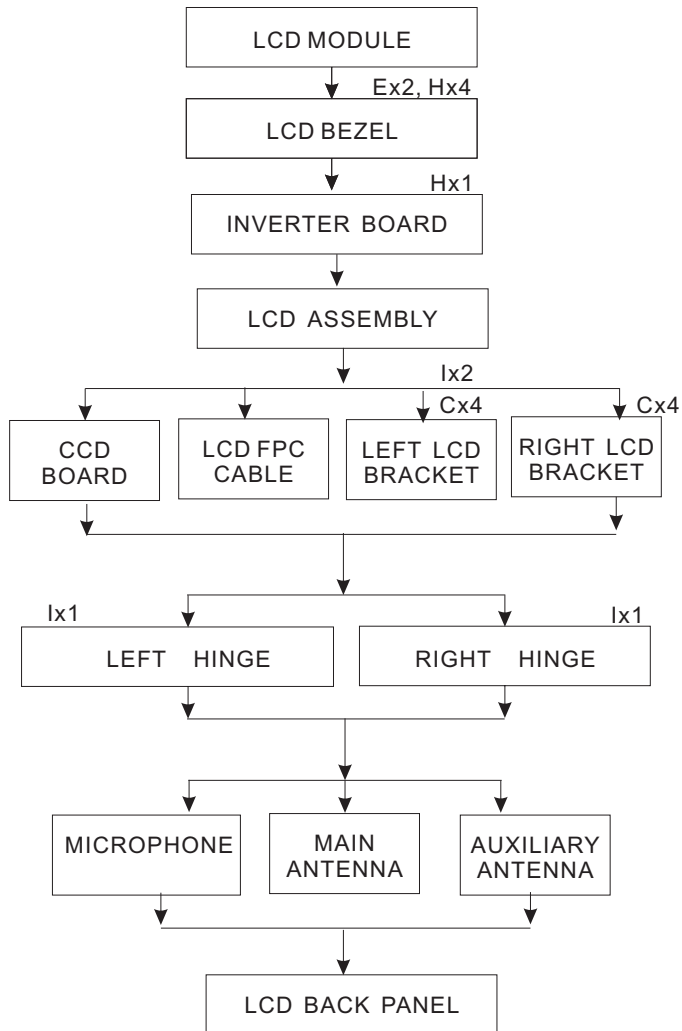




# LCD Module Disassembly Process

## LCD Module Disassembly Flowchart

### LCD MODULE DISASSEMBLY



### Main Screw List

Item	Screw	Part No.
C	M2 x L3	86.9A552.3R0
E	M2.5 x L6	86.00E33.736
H	M2.5 x L5	86.00F87.735
I	M2.5 x L5	86.00F00.735

# Removing the LCD Bezel

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. Remove the six rounded screw caps as shown.



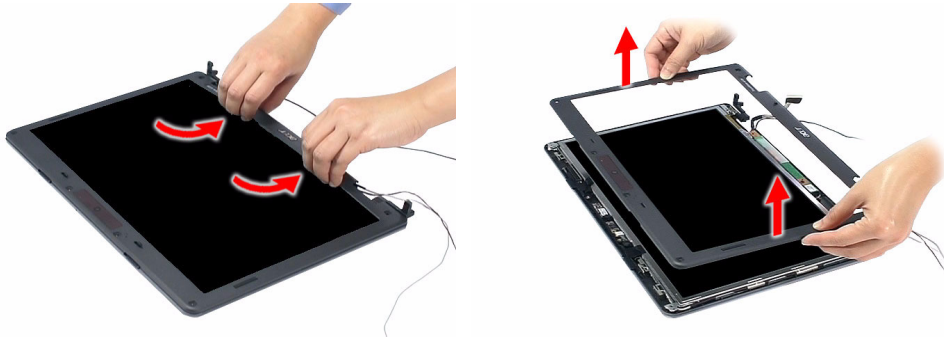
12. Remove the six screws (Ex2, Hx4) on the LCD module in the order as shown.



Step	Size (Quantity)	Color	Torque
1~4	M2.5 x L5 (4)	Black	3.0 kgf-cm
5~6	M2.5 x L6 (2)	Black	3.0 kgf-cm



13. Carefully pry open the LCD bezel and remove the bezel from the LCD module.



## Removing the Inverter Board

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Removing the LCD Bezel” on page 82.
12. Remove the screw (H) that hold the board to the panel.

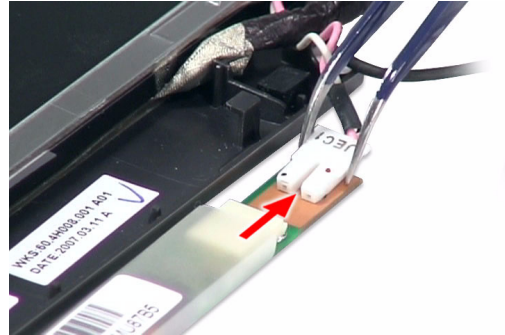
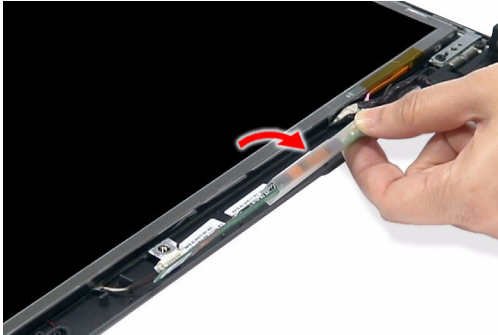


Step	Size (Quantity)	Color	Torque
1	M2.5 x L5 (1)	Black	3 kgf-cm

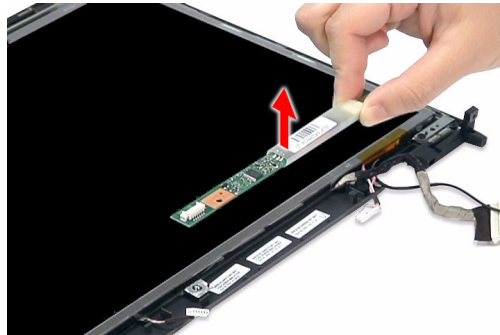
13. Turn the inverter board over.



14. Disconnect the inverter board cable from its connector, then disconnect the 2P cable on the inverter board.



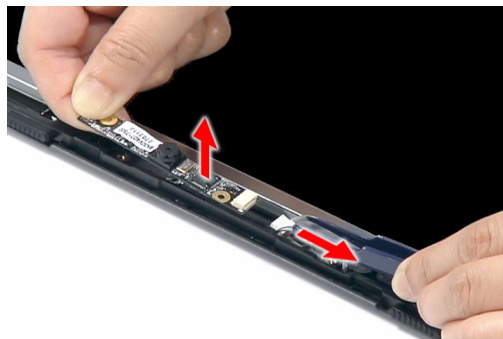
15. Remove the inverter board.



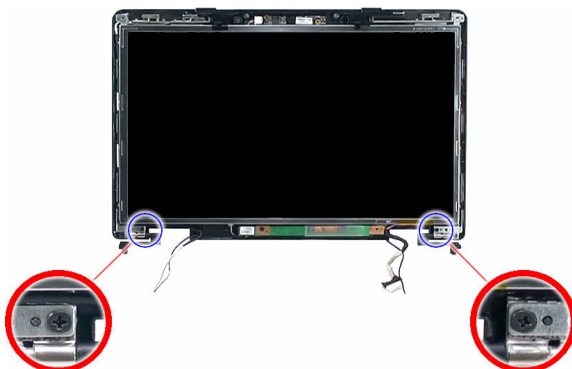
## Removing the LCD with Brackets

1. See "Removing the Battery Pack" on page 51.
2. See "Removing the SD Dummy Card" on page 51.
3. See "Removing the Express Dummy Card" on page 52.
4. See "Removing the Lower Cover" on page 53.
5. See "Removing the Fan Module" on page 60.
6. See "Removing the CPU Heatsink Module" on page 61.
7. See "Removing the CPU" on page 62.
8. See "Removing the Middle Cover" on page 64.
9. See "Removing the Keyboard" on page 65.
10. See "Removing the LCD Module" on page 66.
11. See "Removing the LCD Bezel" on page 82.

12. See “Removing the Inverter Board” on page 83.
13. Detach the CCD board cable from the CCD board, then remove the board.

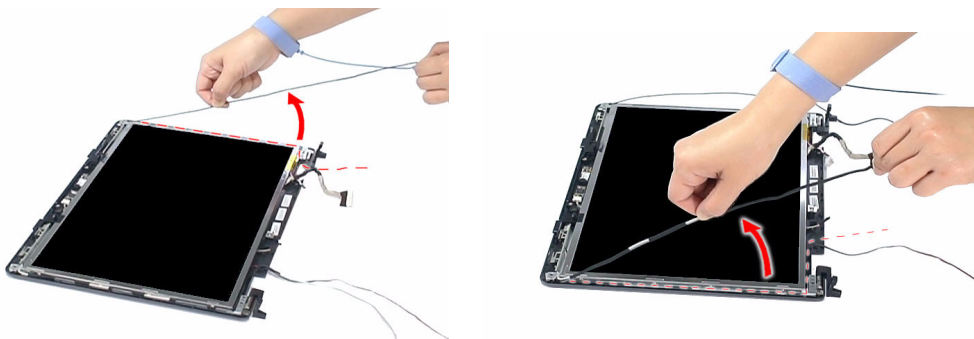


14. Remove the two screws (I) securing the left and right LCD brackets to the LCD back cover.

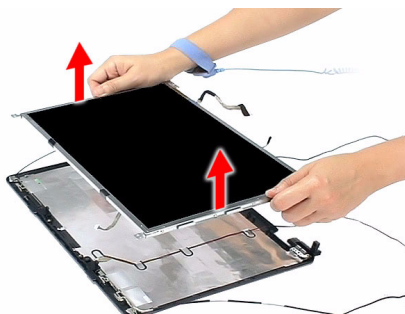


Step	Size (Quantity)	Color	Torque
1~2	M2.5 x L5 (2)	Silver	2.5 kgf-cm

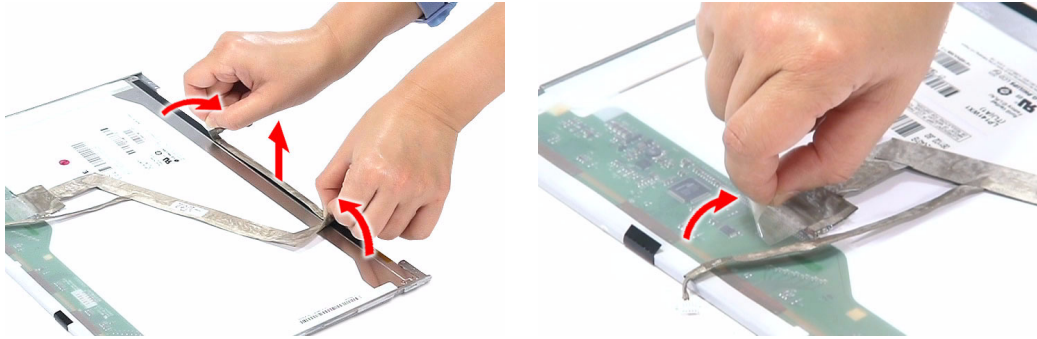
15. Carefully detach the cables from the latches on the LCD bracket as shown.



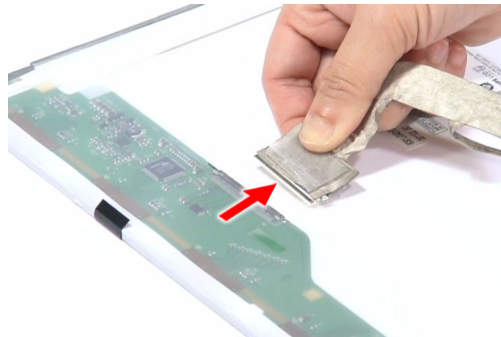
16. Detach the LCD with the brackets from the back cover.



- 
17. Turn the LCD panel over, then detach the acetic tapes holding the FPC cable to the edge of the LCD panel and detach the acetic tape securing the FPC connector.



18. Disconnect the FPC cable from the LCD panel.



## Removing the LCD Brackets

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Removing the LCD Bezel” on page 82.
12. See “Removing the Inverter Board” on page 83.
13. See “Removing the LCD with Brackets” on page 84.

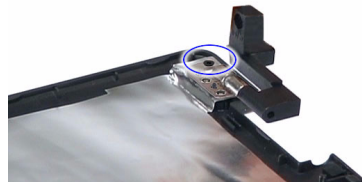
14. Remove the eight screws (C) securing the left and right LCD brackets to remove the brackets.



Step	Size (Quantity)	Color	Torque
1~8	M2 x L3 (8)	Silver	1.6 kgf-cm

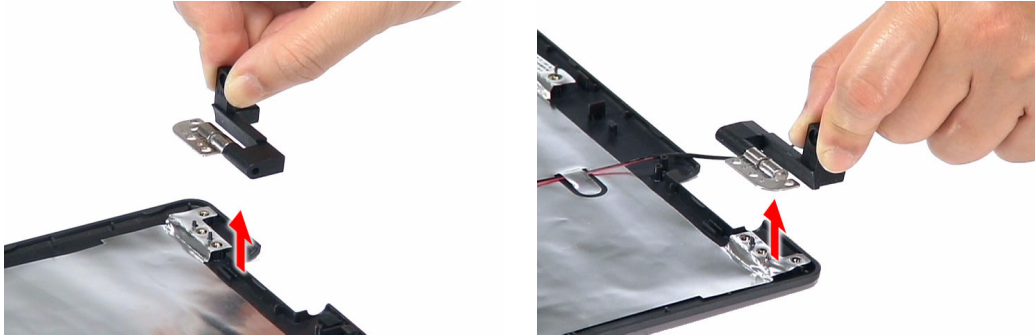
## Removing the LCD Module Hinges

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Removing the LCD Bezel” on page 82.
12. See “Removing the Inverter Board” on page 83.
13. See “Removing the LCD with Brackets” on page 84.
14. See “Removing the LCD Brackets” on page 86.
15. Remove the two screws (I) securing the left and right LCD module hinges.



Step	Size (Quantity)	Color	Torque
1~2	M2.5 x L5 (2)	Black	2.5 kgf-cm

16. Remove the left and right hinges from the LCD back cover.



## Removing the Antennas

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Removing the LCD Bezel” on page 82.
12. See “Removing the Inverter Board” on page 83.
13. See “Removing the LCD with Brackets” on page 84.
14. Detach the gasket tape holding the right antenna in place, remove the antenna bracket, then carefully remove the antenna.





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15. Detach the gasket tape holding the left antenna in place, remove the antenna bracket, then carefully remove the antenna.



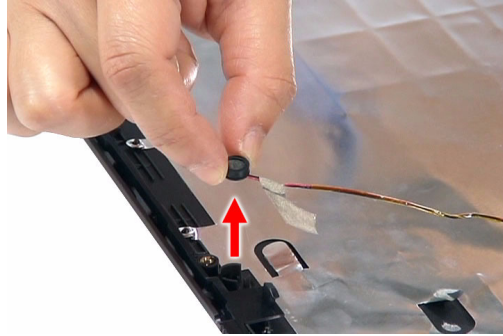
## Removing the Microphone

1. See “Removing the Battery Pack” on page 51.
2. See “Removing the SD Dummy Card” on page 51.
3. See “Removing the Express Dummy Card” on page 52.
4. See “Removing the Lower Cover” on page 53.
5. See “Removing the Fan Module” on page 60.
6. See “Removing the CPU Heatsink Module” on page 61.
7. See “Removing the CPU” on page 62.
8. See “Removing the Middle Cover” on page 64.
9. See “Removing the Keyboard” on page 65.
10. See “Removing the LCD Module” on page 66.
11. See “Removing the LCD Bezel” on page 82.
12. See “Removing the Inverter Board” on page 83.
13. See “Removing the LCD with Brackets” on page 84.
14. See “Removing the Antennas” on page 88.
15. Carefully remove the microphone cable from underneath the adhesive aluminum foil.



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16. Remove the microphone.





# Troubleshooting

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Use the following procedure 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 can give false errors and invalid system responses.

1. Obtain the failing symptoms in as much detail as possible.
2. Verify the symptoms by attempting to recreate the failure by running the diagnostic tests or repeating the same operation.
3. Do not use any power sources when performing an assembly or disassembly procedures.
4. If any problems occur, you can perform the following visual inspection before you continue.
  - Power cords are properly connected and secured.
  - There are no obvious shorts or opens.
  - There are no burned or heated components.
  - All components appear normal.

---

# System Check Procedures

## External CD/DVD-ROM Drive Check

Perform the following procedures to isolate the possible problem a controller, drive, or CD-ROM.

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

1. Boot from the diagnostic disc and start the diagnostic programs.
2. See if CD-ROM Test is passed when the program runs the CD-ROM Test.
3. Follow onscreen instructions.

If an error occurs, reconnect the drive to the connector on the mainboard. If the error persists, do the following:

1. Reconnect the CD/DVD-ROM drive.
2. Replace the CD/DVD-ROM drive.
3. Replace the mainboard.

## Keyboard or Auxiliary Input Device Check

Remove the external keyboard if the internal keyboard is to be tested.

If the internal keyboard does not work or an unexpected error occurs, make sure that the flexible cable extending from the internal keyboard is correctly connected to the mainboard. If the keyboard cable connection is correct, run the Keyboard Test.

If the tests detect a keyboard problem, 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 mainboard.

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 above procedures.

## Memory Check

**NOTE:** Make sure that the DIMM is properly installed into the connector. A loose connection can cause an error.

Do the following:

1. Boot from the diagnostic diskette and start the diagnostic program.
2. Go to the diagnostic memory in the test items.
3. Press **F2** in the test items.
4. Follow onscreen instructions.

---

## Power System Check

Do the following:

1. Remove the battery pack.
2. Connect the power adapter and check the power supply.
3. Disconnect the power adapter and install the battery pack; then check that power supply.

If you suspect a power problem, see the appropriate power supply check in the following list:

- “Check the Power Adapter” on page 93
- “Check the Battery Pack” on page 93

## Check the Power Adapter

Unplug the power adapter cable from the system and measure the output voltage at the plug of the power adapter cable.

1. If the voltage is not correct, replace the power adapter.
2. If the voltage is within range, do the following:
  - a. Replace the System board.
  - b. If the problem is not resolved, see “Undetermined Problems” on page 107.
  - c. If the voltage is not correct, go to the next step.

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

3. If the power-on indicator does not light up, check if the adapter’s power cord is properly connected to the system.
4. If the operational charge does not work, see “Check the Battery Pack” on page 93.

## Check the Battery Pack

Do the following:

Using the software to identify whether a problem occurs while the battery pack during recharge or discharge:

1. Open Power Management in the Control Panel.
2. In Power Meter, confirm if the parameters for Current Power Source and Total Battery Power Remaining are correct.
3. Repeat the steps 1 and 2 for both battery and adapter.

Using the hardware 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.
3. If the voltage is still less than 7.5 Vdc after recharging, replace the battery.

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

---

## Touchpad Check

If the touchpad doesn't work, do the following procedures in sequence to correct the problem. Do not replace a non-defective FRU:

1. After rebooting, run Tracking Pad PS2 Mode Driver. For example Syn touch driver.
2. Run utility with the PS/2 mouse function and check if the mouse is working.
3. If the PS/2 mouse does not work, then check if the main board to switch board FPC is connected properly.
4. If the main board to switch board FPC is connected correctly, then check if the FFC on the touch pad PCB is connected properly.
5. If the FFC on the touch pad PCB is connected correctly, check if LS851 JP1 Pin6 = 5V are pulses. If yes, then replace switch board. If not, then go to the next step.
6. Replace the touch pad PCB.
7. If the touch pad still does not work, then replace the FPC on Track Pad PCB.

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. No actions are necessary to be taken if the pointer movement stops in a short period of time.

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# 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 FRU/Action column, 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 display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem 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, reset the computer, enter Setup and install Setup defaults or correct the error.

# Index of Error Messages

## Error Message List

Error Messages	Check or do the following in sequence:
Stuck Key	See "Keyboard or Auxiliary Input Device Check" on page 92.
System CMOS checksum bad - Default configuration used	<input type="checkbox"/> RTC battery. <input type="checkbox"/> Run the BIOS Setup Utility to reconfigure the system time, then reboot system.
Real time clock error	<input type="checkbox"/> RTC battery <input type="checkbox"/> Run the BIOS Setup Utility to reconfigure system time, then reboot system. <input type="checkbox"/> Mainboard
Previous boot incomplete - Default configuration used	<input type="checkbox"/> Run "Load Setup Defaults" in BIOS Setup Utility. <input type="checkbox"/> RTC battery <input type="checkbox"/> Mainboard
Invalid System Configuration Data	<input type="checkbox"/> Run "Load Setup Defaults" in BIOS Setup Utility. <input type="checkbox"/> Mainboard
Operating system not found	<input type="checkbox"/> Run the BIOS Setup Utility to check if the fixed disk and drive A are properly identified. <input type="checkbox"/> CD/DVD-ROM drive <input type="checkbox"/> Hard disk drive <input type="checkbox"/> Mainboard
Power-on indicator turns off and LCD is blank.	<input type="checkbox"/> Power source (battery pack and power adapter.) See "Power System Check" on page 93. <input type="checkbox"/> Ensure every connector is connected tightly and correctly. <input type="checkbox"/> Reconnect the DIMM <input type="checkbox"/> Mainboard
Power-on indicator turns on and LCD is blank.	<input type="checkbox"/> Power source (battery pack and power adapter.) See "Power System Check" on page 93. <input type="checkbox"/> Reconnect the LCD connector <input type="checkbox"/> Hard disk drive <input type="checkbox"/> LCD cable <input type="checkbox"/> LCD inverter <input type="checkbox"/> LCD <input type="checkbox"/> Mainboard
Power-on indicator turns on and LCD is blank. But you can see POST on an external CRT.	<input type="checkbox"/> Reconnect the LCD connectors. <input type="checkbox"/> LCD cable <input type="checkbox"/> LCD inverter <input type="checkbox"/> LCD <input type="checkbox"/> Mainboard
Power-on indicator turns on and a blinking cursor shown on LCD during POST.	<input type="checkbox"/> Ensure every connector is connected tightly and correctly. <input type="checkbox"/> Mainboard
Failure Fixed Disk	<input type="checkbox"/> Reconnect the hard disk drive connector. <input type="checkbox"/> Run "Load Setup Defaults" in BIOS Setup Utility. <input type="checkbox"/> Hard disk drive <input type="checkbox"/> Mainboard

**Error Message List**

<b>Error Messages</b>	<b>Check or do the following in sequence:</b>
No beep, power-on indicator turns off and LCD is blank.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Power source (battery pack and power adapter). See “Power System Check” on page 93.</li> <li><input type="checkbox"/> Ensure every connector is connected tightly and correctly.</li> <li><input type="checkbox"/> Reconnect the DIMM.</li> <li><input type="checkbox"/> LED board</li> <li><input type="checkbox"/> Mainboard</li> </ul>
No beep, power-on indicator turns on and LCD is blank.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Power source (battery pack and power adapter). See “Power System Check” on page 93.</li> <li><input type="checkbox"/> Reconnect the LCD connector</li> <li><input type="checkbox"/> Hard disk drive</li> <li><input type="checkbox"/> LCD inverter ID</li> <li><input type="checkbox"/> LCD cable</li> <li><input type="checkbox"/> LCD Inverter</li> <li><input type="checkbox"/> LCD</li> <li><input type="checkbox"/> Mainboard</li> </ul>
No beep, power-on indicator turns on and LCD is blank. But you can see POST on an external CRT.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Reconnect the LCD connectors.</li> <li><input type="checkbox"/> LCD inverter ID</li> <li><input type="checkbox"/> LCD cable</li> <li><input type="checkbox"/> LCD inverter</li> <li><input type="checkbox"/> LCD</li> <li><input type="checkbox"/> Mainboard</li> </ul>
No beep, power-on indicator turns on and a blinking cursor shown on LCD during POST.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure every connector is connected tightly and correctly.</li> <li><input type="checkbox"/> Mainboard</li> </ul>
No beep during POST but system runs correctly.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Speaker</li> <li><input type="checkbox"/> Mainboard</li> </ul>

# Phoenix BIOS Beep Codes

Code	Beeps	POST Routine Description
02h		Verify Real Mode
03h		Disable Non-Maskable Interrupt (NMI)
04h		Get CPU type
06h		Initialize system hardware
08h		Initialize chipset with initial POST values
09h		Set IN POST flag
0Ah		Initialize CPU registers
0Bh		Enable CPU cache
0Ch		Initialize caches to initial POST values
0Eh		Initialize I/O component
0Fh		Initialize the local bus IDE
10h		Initialize Power Management
11h		Load alternate registers with initial POST values
12h		Restore CPU control word during warm boot
13h		Initialize PCI Bus Mastering devices
14h		Initialize keyboard controller
16h	1-2-2-3	BIOS ROM checksum
17h		Initialize cache before memory autosize
18h		8254 timer initialization
1Ah		8237 DMA controller initialization
1Ch		Reset Programmable Interrupt Controller
20h	1-3-1-1	Test DRAM refresh
22h	1-3-1-3	Test 8742 Keyboard Controller
24h		Set ES segment register to 4 GB
26h		Enable A20 line
28h		Autosize DRAM
29h		Initialize POST Memory Manager
2Ah		Clear 215 KB base RAM
2Ch	1-3-4-1	RAM failure on address line xxxx*
2Eh	1-3-4-3	RAM failure on data bits xxxx* of low byte of memory bus
2Fh		Enable cache before system BIOS shadow
30h	1-4-1-1	RAM failure on data bits xxxx* of high byte of memory bus
32h		Test CPU bus-clock frequency
33h		Initialize Phoenix Dispatch Manager
36h		Warm start shut down
38h		Shadow system BIOS ROM
3Ah		Autosize cache
3Ch		Advanced configuration of chipset registers
3Dh		Load alternate registers with CMOS values
42h		Initialize interrupt vectors
45h		POST device initialization



Code	Beeps	POST Routine Description
46h	2-1-2-3	Check ROM copyright notice
48h		Check video configuration against CMOS
49h		Initialize PCI bus and devices
4Ah		Initialize all video adapters in system
4Bh		QuietBoot start (optional)
4Ch		Shadow video BIOS ROM
4Eh		Display BIOS copyright notice
50h		Display CPU type and speed
51h		Initialize EISA board
52h		Test keyboard
54h		Set key click if enabled
58h	2-2-3-1	Test for unexpected interrupts
59h		Initialize POST display service
5Ah		Display prompt "Press F2 to enter SETUP"
5Bh		Disable CPU cache
5Ch		Test RAM between 512 and 640 KB
60h		Test extended memory
62h		Test extended memory address lines
64h		Jump to User Patch1
66h		Configure advanced cache registers
67h		Initialize Multi Processor APIC
68h		Enable external and CPU caches
69h		Setup System Management Mode (SMM) area
6Ah		Display external L2 cache size
6Bh		Load custom defaults (optional)
6Ch		Display shadow-area message
6Eh		Display possible high address for UMB recovery
70h		Display error messages
72h		Check for configuration errors
76h		Check for keyboard errors
7Ch		Set up hardware interrupt vectors
7Eh		Initialize coprocessor if present
80h		Disable onboard Super I/O ports and IRQs
81h		Late POST device initialization
82h		Detect and install external RS232 ports
83h		Configure non-MCD IDE controllers
84h		Detect and install external parallel ports
85h		Initialize PC-compatible PnP ISA devices
86h		Re-initialize onboard I/O ports
87h		Configure Motherboard Configurable Devices (optional)
88h		Initialize BIOS Data Area
89h		Enable Non-Maskable Interrupts (NMI)

Code	Beeps	POST Routine Description
8Ah		Initialize Extended BIOS Data Area
8Bh		Test and initialize PS/2 mouse
8Ch		Initialize floppy controller
8Fh		Determine number of ATA drives (optional)
90h		Initialize hard-disk controllers
91h		Initialize local-bus hard-disk controllers
92h		Jump to UserPatch2
93h		Build MPTABLE for multi-processor boards
95h		Install CD-ROM for boot
96h		Clear huge ES segment register
97h		Fixup Multiprocessor table
98h	1-2	Search for option ROMs. One long, two short beeps on checksum failure.
99h		Check for SMART drive (optional)
9Ah		Shadow option ROMs
9Ch		Set up Power Management
9Dh		Initialize security engine (optional)
9Eh		Enable hardware interrupts
9Fh		Determine number of ATA and SCSI drives
A0h		Set time of day
A2h		Check key lock
A4h		Initialize Typematic rate
A8h		Erase F2 prompt
AAh		Scan for F2 key stroke
ACh		Enter SETUP
A Eh		Clear Boot flag
B0h		Check for errors
B2h		POST done- prepare to boot operating system
B4h	1	One short beep before boot
B5h		Terminate QuietBoot (optional)
B6h		Check password (optional)
B9h		Prepare Boot
BAh		Initialize DMI parameters
BBh		Initialize PnP Option ROMs
BCh		Clear parity checkers
BDh		Display MultiBoot menu
BEh		Clear screen (optional)
BFh		Check virus and backup reminders
C0h		Try to boot with INT 19
C1h		Initialize POST Error Manager (PEM)
C2h		Initialize error logging
C3h		Initialize error display function

Code	Beeps	POST Routine Description
C4h		Initialize system error handler
C5h		PnPnd dual CMOS (optional)
C6h		Initialize notebook docking (optional)
C7h		Initialize notebook docking late
C8h		Force check (optional)
C9h		Extended checksum (optional)
D2h		Unknown interrupt

\* If the BIOS detects error 2C, 2E, or 30 (base 512K RAM error), it displays an additional word-bitmap (xxxx) indicating the address line or bits that failed. For example, "2C 0002" means address line 1 (bit one set) has failed. "2E 1020" means data bits 12 and 5 (bits 12 and 5 set) have failed in the lower 16 bits. Note that error 30 cannot occur on 386SX systems because they have a 16 rather than 32-bit bus. The BIOS also sends the bitmap to the port-80 LED display. It first displays the check point code, followed by a delay, the high-order byte, another delay, and then the low-order byte of the error. It repeats this sequence continuously.

## BIOS Beep Codes for Boot Block in Flash ROM

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 Multiprocessor
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	Check or do the following in sequence
LCD backlight doesn't work LCD is too dark LCD brightness cannot be adjusted LCD contrast cannot be adjusted	<input type="checkbox"/> Run "Load Setup Defaults" in BIOS Setup Utility, then reboot system. <input type="checkbox"/> Reconnect the LCD connectors. <input type="checkbox"/> Keyboard (if contrast and brightness function key doesn't work). <input type="checkbox"/> LCD inverter ID <input type="checkbox"/> LCD cable <input type="checkbox"/> LCD inverter <input type="checkbox"/> LCD <input type="checkbox"/> Mainboard
Unreadable LCD screen Missing pixels in characters Abnormal screen Wrong color displayed	<input type="checkbox"/> Reconnect the LCD connector <input type="checkbox"/> LCD inverter ID <input type="checkbox"/> LCD cable <input type="checkbox"/> LCD inverter <input type="checkbox"/> LCD <input type="checkbox"/> Mainboard
LCD has extra horizontal or vertical lines displayed.	<input type="checkbox"/> LCD inverter ID <input type="checkbox"/> LCD inverter <input type="checkbox"/> LCD cable <input type="checkbox"/> LCD <input type="checkbox"/> Mainboard

## Indicator-Related Symptoms

Symptom / Error	Check or do the following in sequence
Indicator incorrectly remains off or on, but system runs correctly	<input type="checkbox"/> Reconnect the inverter board. <input type="checkbox"/> Mainboard

## Power-Related Symptoms

Symptom / Error	Check or do the following in sequence
Power shuts down during operation	<input type="checkbox"/> Power source (battery pack and power adapter). See "Power System Check" on page 93. <input type="checkbox"/> Battery pack <input type="checkbox"/> Power adapter <input type="checkbox"/> Hard disk drive & battery connection board <input type="checkbox"/> Mainboard
The system doesn't power-on.	<input type="checkbox"/> Power source (battery pack and power adapter). See "Power System Check" on page 93. <input type="checkbox"/> Battery pack <input type="checkbox"/> Power adapter <input type="checkbox"/> Hard disk drive & battery connection board <input type="checkbox"/> Mainboard

### Power-Related Symptoms

Symptom / Error	Check or do the following in sequence
The system doesn't power-off.	<input type="checkbox"/> Power source (battery pack and power adapter). See "Power System Check" on page 93. <input type="checkbox"/> Hold and press the power switch for more than 4 seconds. <input type="checkbox"/> Mainboard
Battery can't be charged	<input type="checkbox"/> See "Check the Battery Pack" on page 93. <input type="checkbox"/> Battery pack <input type="checkbox"/> Mainboard

### PCMCIA-Related Symptoms

Symptom / Error	Check or do the following in sequence
System cannot detect the PC Card (PCMCIA)	<input type="checkbox"/> PCMCIA slot assembly <input type="checkbox"/> Mainboard
PCMCIA slot pin is damaged.	PCMCIA slot assembly

### Memory-Related Symptoms

Symptom / Error	Check or do the following in sequence
Memory count (size) appears different from actual size.	<input type="checkbox"/> Run "Load Setup Defaults" in BIOS Setup Utility, then reboot system. <input type="checkbox"/> DIMM <input type="checkbox"/> Mainboard

### Speaker-Related Symptoms

Symptom / Error	Check or do the following in sequence
In Windows, multimedia programs, no sound comes from the computer.	<input type="checkbox"/> Audio driver <input type="checkbox"/> Speaker <input type="checkbox"/> Mainboard
Internal speakers make noise or emit no sound.	<input type="checkbox"/> Speaker <input type="checkbox"/> Mainboard

### Power Management-Related Symptoms

Symptom / Error	Check or do the following in sequence
The system will not enter hibernation	<input type="checkbox"/> See "Save to Disk (S4)" on page 44. <input type="checkbox"/> Keyboard (if control is from the keyboard) <input type="checkbox"/> Hard disk drive <input type="checkbox"/> Mainboard
The system doesn't enter hibernation mode and four short beeps every minute.	<input type="checkbox"/> Press Fn+0 and see if the computer enters hibernation mode. <input type="checkbox"/> Touchpad <input type="checkbox"/> Keyboard <input type="checkbox"/> Hard disk connection board <input type="checkbox"/> Hard disk drive <input type="checkbox"/> Mainboard
The system doesn't enter standby mode after closing the LCD	<input type="checkbox"/> See "Save to Disk (S4)" on page 44. <input type="checkbox"/> LCD cover switch <input type="checkbox"/> Mainboard

### Power Management-Related Symptoms

Symptom / Error	Check or do the following in sequence
The system doesn't resume from hibernation mode.	<input type="checkbox"/> See "Save to Disk (S4)" on page 44. <input type="checkbox"/> Hard disk connection board <input type="checkbox"/> Hard disk drive <input type="checkbox"/> Mainboard
The system doesn't resume from standby mode after opening the LCD.	<input type="checkbox"/> See "Save to Disk (S4)" on page 44. <input type="checkbox"/> LCD cover switch <input type="checkbox"/> Mainboard
Battery fuel gauge in Windows doesn't go higher than 90%.	<input type="checkbox"/> Remove battery pack and let it cool for 2 hours. <input type="checkbox"/> Refresh battery (continue use battery until power off, then charge battery). <input type="checkbox"/> Battery pack <input type="checkbox"/> Mainboard
System hangs intermittently.	<input type="checkbox"/> Reconnect hard disk/CD-ROM drives. <input type="checkbox"/> Hard disk connection board <input type="checkbox"/> Mainboard

### Peripheral-Related Symptoms

Symptom / Error	Check or do the following in sequence
System configuration does not match the installed devices.	<input type="checkbox"/> Run "Load Setup Defaults" in BIOS Setup Utility, then reboot system. <input type="checkbox"/> Reconnect hard disk/CD-ROM/diskette drives.
External display does not work correctly.	<input type="checkbox"/> Press Fn+F5 to switch to LCD or CRT <input type="checkbox"/> Mainboard
USB does not work correctly	<input type="checkbox"/> Mainboard
Print problems.	<input type="checkbox"/> Run printer self-test. <input type="checkbox"/> Printer driver <input type="checkbox"/> Printer cable <input type="checkbox"/> Printer <input type="checkbox"/> Mainboard

### Keyboard/Touchpad-Related Symptoms

Symptom / Error	Check or do the following in sequence
Keyboard (one or more keys) does not work.	<input type="checkbox"/> Reconnect the keyboard cable. <input type="checkbox"/> Keyboard <input type="checkbox"/> Mainboard
Touchpad does not work.	<input type="checkbox"/> Reconnect touchpad cable. <input type="checkbox"/> Touchpad board <input type="checkbox"/> Mainboard

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### Modem-Related Symptoms

Symptom / Error	Check or do the following in sequence
Internal modem does not work correctly.	<input type="checkbox"/> Modem phone port <input type="checkbox"/> Modem combo board <input type="checkbox"/> Mainboard

**NOTE:** If you cannot find a symptom or an error in this list and the problem remains, see “Undetermined Problems” on page 107.

---

# 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 problem, do the following:

1. Run the advanced diagnostic test for the mainboard 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.



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# Undetermined Problems

The diagnostic problems does not identify which adapter or device failed, which installed devices are incorrect, whether a short circuit is suspected, or whether the system is inoperative.

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

**NOTE:** Verify that the power supply being used at the time of the failure is operating correctly. (See "Power System Check" on page 93.)

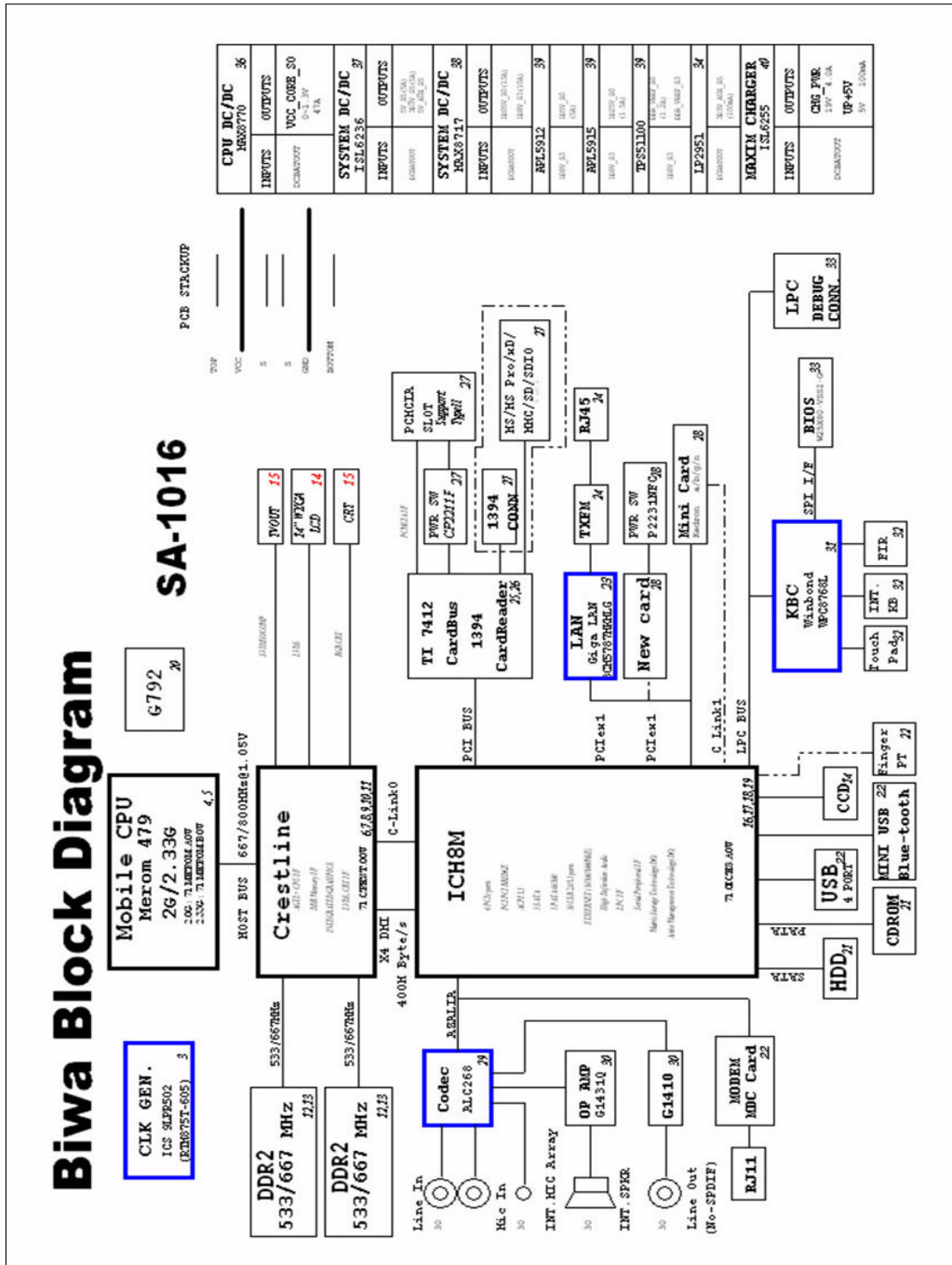
Follow procedures below to isolate the failing FRU. Do not isolate non-defective FRU.

1. Power off the computer.
2. Visually check them for damage. 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/DVD-ROM drive
  - 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 persists, replace the following FRU one at a time. Do not replace a non-defective FRU.
  - System board
  - LCD assembly



# System Block Diagram and Connector Locations

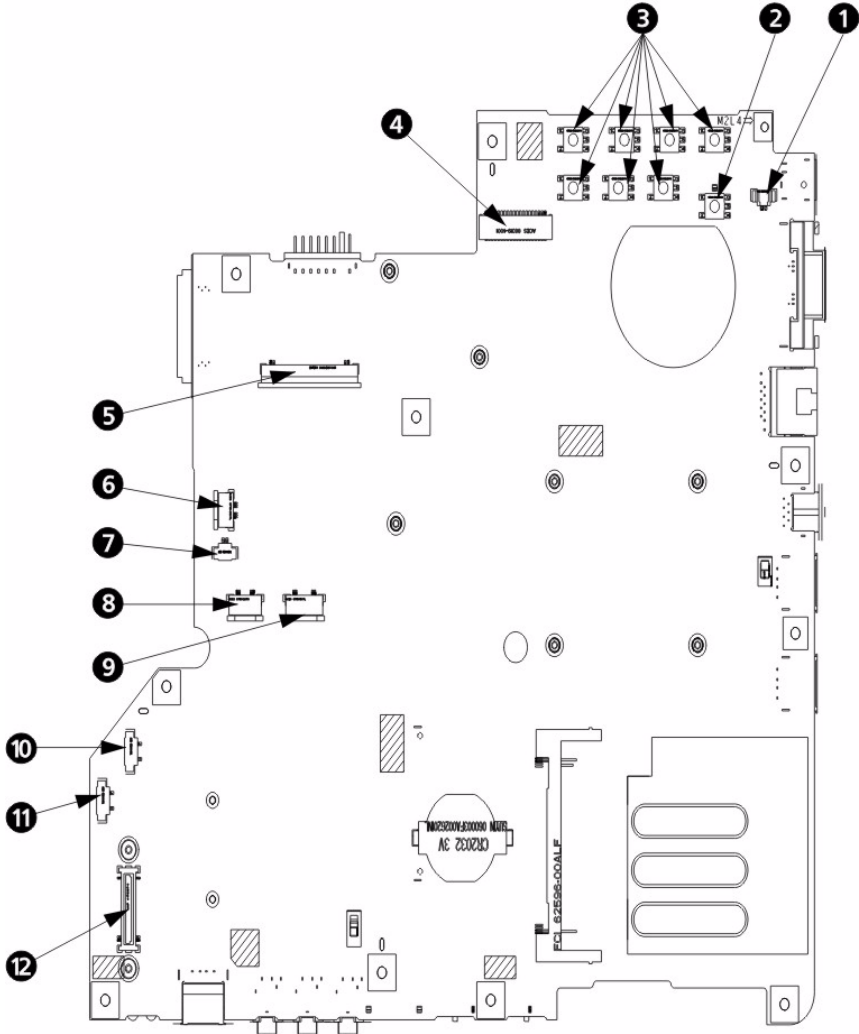
## System Block Diagram



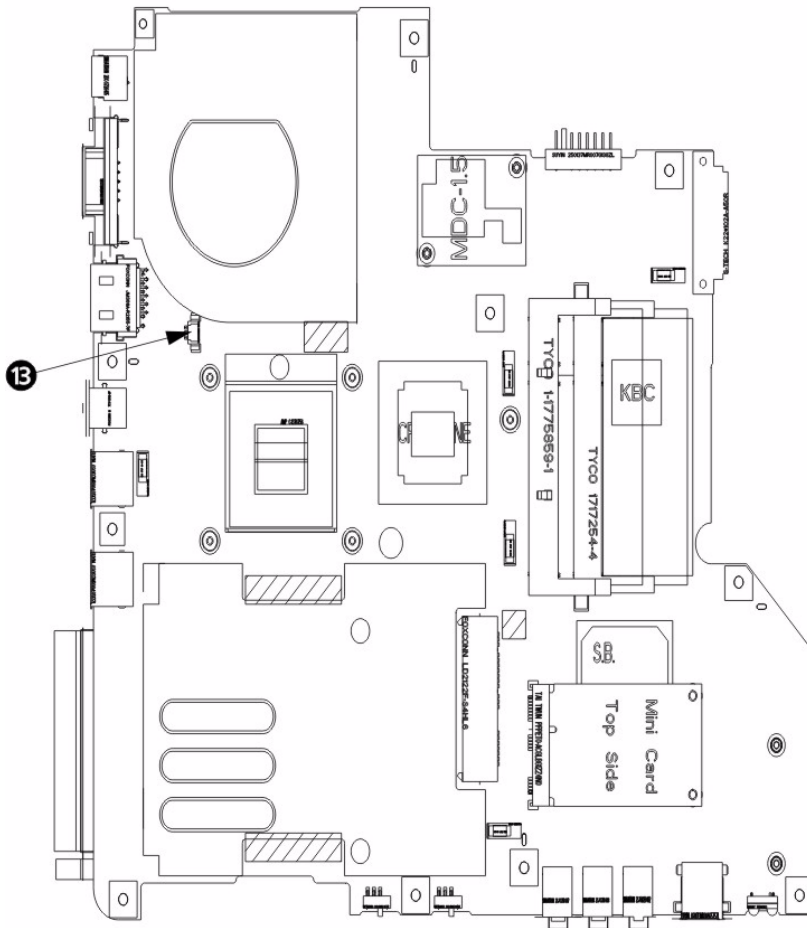
# Board Layout

## Top and Bottom View

TOP VIEW



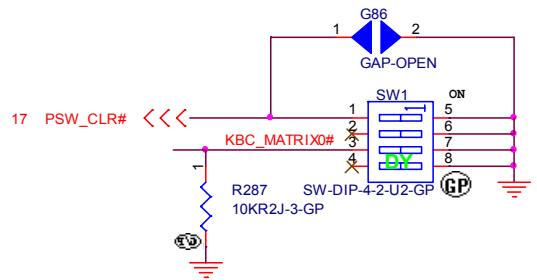
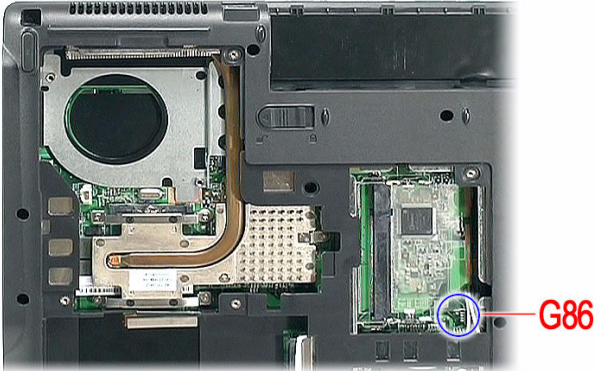
## BOTTOM VIEW



- |   |                            |    |                             |
|---|----------------------------|----|-----------------------------|
| 1 | Lid switch connector       | 8  | Fingerprint board connector |
| 2 | Power key switch           | 9  | Touchpad board connector    |
| 3 | Launch key switch          | 10 | Bluetooth cable connector   |
| 4 | LCD cable connector        | 11 | Speaker cable connector     |
| 5 | Keyboard connector         | 12 | Daughter board connector    |
| 6 | LED board connector        | 13 | System fan connector        |
| 7 | Microphone cable connector |    |                             |

# Hardware Gap Setting

The system has a hardware gap for clearing system passwords. Refer to page 113 for instructions on how to clear passwords.



Short G86 to clear password

# Standard Operation Procedures of Clearing BIOS Password and BIOS Recovery

For RD and CSD to debug easily, the system provide a hardware gap for clearing BIOS password and a hotkey to enable BIOS Recovery.

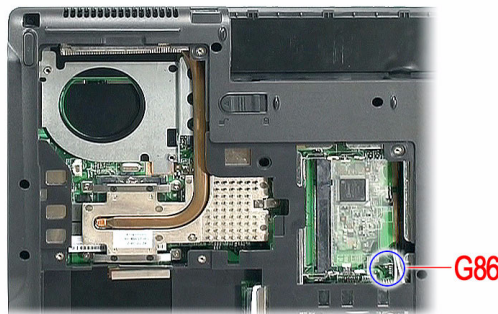
## Clearing BIOS password

If a BIOS Password (supervisor password and user password) is set for security reason, BIOS will check the password during POST or when entering the BIOS setup screen. However, if it is necessary to ignore the password check, a jumper shorting procedure must be performed on the gap.

To clear the BIOS password:

**Note:** Procedure below is used for clearing **supervisor password** and **user password** only.

1. Power off the system.
2. Unplug the power cable.
3. Remove the battery pack. See page 51.
4. Remove the lower cover. See page 53.
5. If necessary, remove the memory module. See page 53.
6. See illustration below to locate the hardware gap.



Hardware gap	Default Setting	Operation Description
G86	Open (Normal)	Short (To clear Supervisor and User password)

RD/CSD can enable or disable this function by jumper shorting the G86 gap.

7. Using a electrical conductivity tool short the two contacts on the hardware gap together. Refer to the gap setting on page 112.
8. While resting the tool on the two contacts, plug the adapter back in, then turn on the system.
9. After BIOS POST takes place, remove the tool from the switch.
10. Reinstall the memory modules and lower cover.
11. Turn on the system and press **F2** during the bootup to enter the BIOS setup screen. Repeat above procedure if the BIOS password is not cleared.

---

## Recovering BIOS

If BIOS flash fails in your system, perform a BIOS recovery procedure by using the crisis recovery diskette. During this procedure, the system will force BIOS to load and execute a special BIOS block (also called boot block) to restore the BIOS code from the crisis recovery diskette.

Note the following when restoring the BIOS settings:

- Use the **Fn+Esc** hotkey to enable BIOS recovery during BIOS POST.

**IMPORTANT:**When using the **Fn+Esc** hotkey to enable BIOS recovery, we strongly recommend the following:

- Make sure the battery pack is installed to the system.
  - Make sure the adapter is connected to the system and plugged into a wall outlet.
- A crisis recovery diskette should be prepared in Windows XP.

To restore BIOS by using a crisis disk:

1. Power off the system.
2. Connect a USB floppy drive to the system.
3. Insert the Crisis Disk to the floppy drive.
4. Press and hold **Fn+ESC** keys, then press power button.

The system initializes the BIOS recovery process. The boot block BIOS starts to restore the failed BIOS code from the crisis recovery diskette. Once the process is completed, the system will restart.

After a successful BIOS recovery procedure, RD/CSD can update the BIOS by regular BIOS flashing procedure.



## FRU (Field Replaceable Unit) List

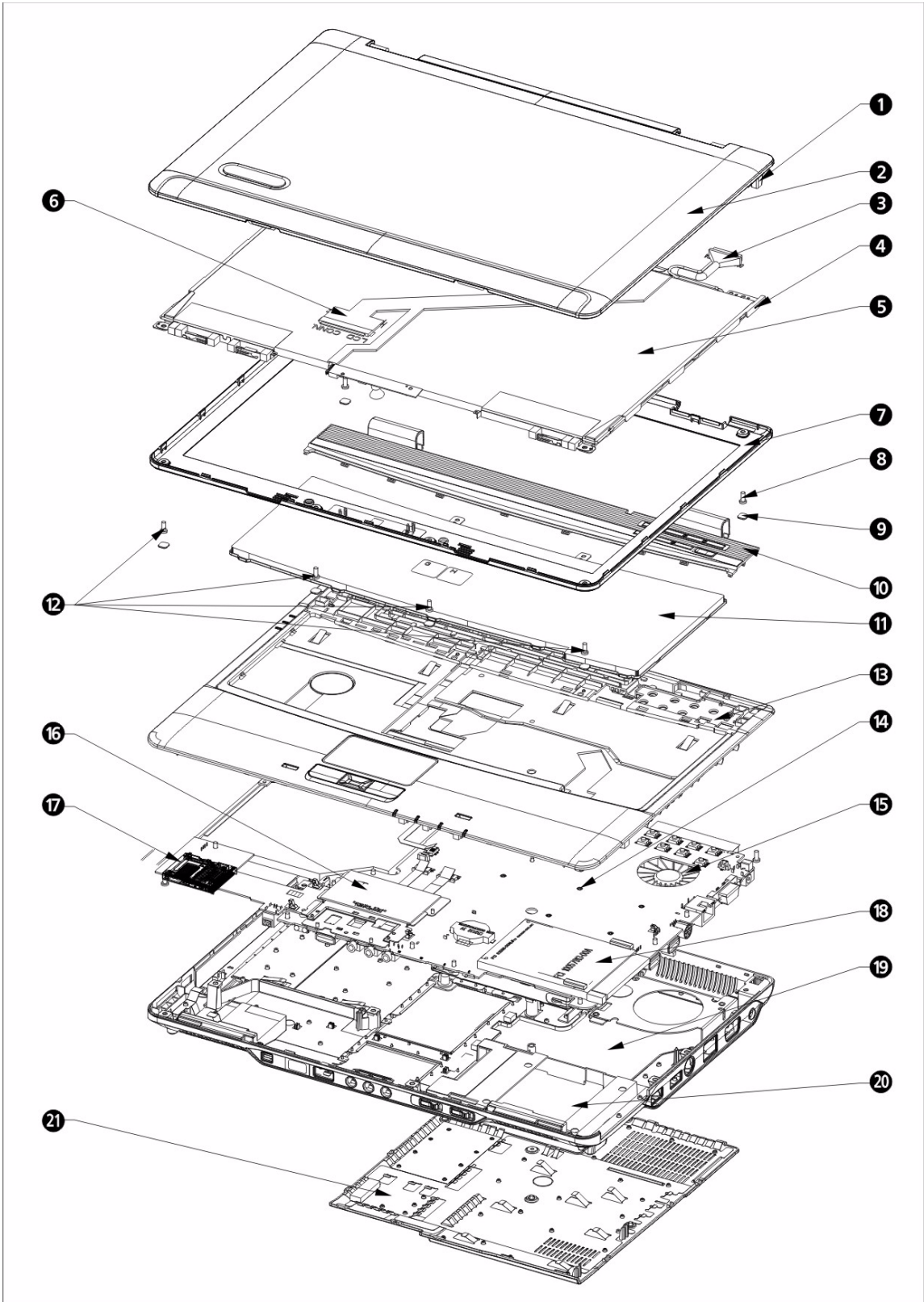
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This chapter offers the FRU (Field Replaceable Unit) list in global configuration of Travelmate 4720/4320. Refer to this chapter whenever ordering the parts to repair or for RMA (Return Merchandise Authorization).

**NOTE:** When ordering FRU parts, 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, follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

# Travelmate 4720/4320 Exploded Diagram



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1	LCD hinge	
2	LCD back cover	60.4H008.001
3	LCD cable	
4	LCD bracket	33.4H008.001, 33.4H009.001
5	LCD panel	LK.14105.019, LK.14105.018, LK.14108.006, LK.14108.007, LK.1410D.015, LK.1410D.016
6	LCD FPC cable	50.4H010.011, 50.4H010.001, 50.4H010.021
7	LCD bezel	60.4H009.001
8	M2.5 x L6 screws	86.00E33.736
9	Rounded screw caps	47.4H005.001
10	Middle cover	60.4H004.001
11	Keyboard	9J.N8882.K1D
12	M2.5 x L6 screws	86.00E33.736
13	Upper case	60.4H002.001, 60.4H001.01
14	Mainboard	MB.TK.501.001
15	System fan	23.10193.001
16	Touchpad bracket	33.4H004.001
17	5-in-1 card reader	
18	PCI card socket	
19	Lower case	60.4H005.001
20	HDD	KH.08007.021, KH.12004.006, KH.12007.010, KH.12008.018
21	Lower cover	42.40C08.001

**NOTE:** The FRU List is not for Travelmate 4720/4320. The FRU list for Travelmate 4720/4320 is not ready as the service guide released. We will update the FRU list as soon as we got the latest FRU list.

# Travelmate 4720/4320 FRU List

Category	Part Name	Description	Acer Part No.
Adapter	Adapter 65W Delta SADP-65KB DBE LF Yellow	Adapter 65W Delta SADP-65KB DBE	AP.06501.007
	Adapter 65W Delta SADP-65KB DFA LF	ADT 65W Delta SADP-65KB DFA LF Delta	AP.06501.013
	Adapter 65W Liteon PA-1650-02WR LF Yellow	ADT 65W Liteon PA-1650-02WR	AP.06503.011
	Adapter 65W Liteon PA-1650-02AC LF	ADT 65W PA-1650-02AC LF	AP.06503.016
	Adapter 65W Lishin SLS0335A 19A54LF LF Yellow	ADT 65W Lishin SLS0335A 19A54LF	AP.06506.003
Battery	Battery Pack Li+6 cell 2.0mAh Sanyo	BTY Pack Li+6C 2.0Ah Sanyo	BT.00603.039
	Battery Pack Li+6 cell 2.4mAh Sanyo	BTY Pack LI+6C 2.4Ah Sanyo	BT.00603.040
	Battery Pack Li-ion 6 cell 2.0mAh Sony	BTY Pack Li+6C 2.0Ah Sony	BT.00604.017
	Battery Pack Li-ion 6 cell 2.4 Sony	BTY Pack Li+6C 2.4Ah Sony	BT.00604.005
	Battery Pack Li-Mn 6 cell 2.0mAh Panasonic	BTY Pack Li+6C 2.0Ah PANA	BT.00605.006
	Battery Pack Li-Mn 6 cell 2.4mAh Panasonic	BTY Pack Li+6C 2.4Ah PANA	BT.00605.007
	Battery Pack Li-Mn 6 cell 2.0 Simplo	BTY Pack Li+6C 2.0Ah PANA SMP	BT.00607.003
	Battery Pack Li-ion 6 cell 2.4mAh Simplo	BTY Pack PANA Li-Mn 6C 2.4 SMP	BT.00607.009
System case/cover/bracket/assembly	Touchpad bracket	BRKT TP BD	33.TK501.001
	PCMCIA dummy card	Card-bus dummy card	42.TB1V1.003
	SD dummy card	SD dummy card	42.TKJ01.001
	Cardbus dummy card	HLDR cardbus dummy card	42.TKJ01.002
	Cardreader dummy card	HLDR cardreader dummy card	42.TKJ01.003
	Lowercase w/ speaker	ASSY L-Case	60.TK501.001
	Speaker	Speaker	23.TK501.002
	Upper case with fingerprint hole and cover switch cable	ASSY U-Case Finger-printer	60.TK501.002
	Cover switch cable	C.A.Cover-switch	50.TK501.004
	Middle cover	ASSY middle cover	60.TK501.003
	Unitload cover	ASSY unitload	60.TK501.004

Category	Part Name	Description	Acer Part No.
Memory	SDIMM 1GB DDRII533 Samsung M470T2953EZ3- CD5 LF	SODIMM DDRII 533 1GB M470T2953EZ3-CD5	KN.1GB0B.012
	SDIMM 1GB DDRII667 Samsung M470T2953EZ3-C6 LF	SODIMM DDRII667 1GB M470T2953EZ3-C6	KN.1GB0B.011
	SDIMM 512MB DDRII667 Samsung M470T6554EZ3- CE6 LF	SODIMM 512M M470T6554EZ3-CE6	KN.5120B.023
	SDIMM 1GB DDRII533 Hynix HYMP512S64CP8-C4 LF	SODIMM 1G HYMP512S64CP8-C4	KN.1GB0G.005
	SDIMM 1GB DDRII667 Hynix HYMP512S64CP8-Y5 LF	SODIMM 1G HYMP512S64CP8-Y5 AB	KN.1GB0G.006
	SDIMM 512MB DDRII667 Hynix HYMP564S64CP6-Y5 LF	SODIMM 512M HYMP564S64CP6-Y5 AB	KN.5120G.019
	SDIMM 512MB DDRII667 Nanya NT512T64UH8B0FN- 3C LF	SODIMM 512M NT512T64UH8B0FN-3C	KN.51203.032
	SDIMM 1GB DDRII667 Nanya NT1GT64U8HB0BN-3C (0.09U)	SODIMM 1G NT1GT64U8HB0BN-3C	KN.1GB03.014
	SDIMM 512MB DDRII667 Promos V916764B24QBFW- F5 LF	SODIMM 512M V916764B24QBFW-F5	KN.5120M.004
Wireless LAN board	Wireless LAN 802.11ABGN Kedron MOW1	WLAN 802.11ABGN Kedron MOW1	KI.KDN01.001
	Wireless LAN 802.11ABGN Kedron MOW2	WLAN 802.11ABGN Kedron MOW2	KI.KDN01.002
	Wireless LAN 802.11ABGN Kedron ROW	WLAN 802.11ABGN Kedron ROW	KI.KDN01.003
	Wireless LAN 802.11ABGN Kedron	WLAN 802.11ABGN Kedron	KI.KDN01.005
	Wireless LAN Board 802.11ABG Intel 3945 MW1	WLAN 802.11ABG Intel 3945 MW1	KI.GLN01.001
	Wireless LAN Board 802.11ABG Intel 3945 MW2	WLAN 802.11ABG Intel 3945 MW2	KI.GLN01.002
	Wireless LAN Board 802.11ABG Intel 3945 RW	WLAN 802.11ABG Intel 3945 RW	KI.GLN01.003
	Wireless LAN Board 802.11BG Intel 3945BG	WLAN PRO/Wireless 3945BG	KI.GLN01.005
Combo module	Assembly combo module 24X	ODD NCB24X combo	6M.TK501.001
	Optical bracket	BRKT ODD	33.TK501.002
	Combo bezel	ASSY ODD bezel combo	42.TK901.002
	Combo module 24X Panasonic UJDA-780 LF	Combo 24X PAN/UJDA-780	KO.02407.028
	Combo module 24X Sony CRX880A LF w/o bezel	Combo 24X Sony/CRX880A Myall2	KO.0240E.005

Category	Part Name	Description	Acer Part No.
DVD module	Assembly Super-multi module 8X	ODD NSM8X Super-multi drive BI	6M.TK501.002
	Optical bracket	BRKT ODD	33.TK501.002
	DVD-RW bezel	ASSY ODD bezel SMulti	42.TK501.002
	DVD-RW drive 8X Super Mult Pioneer DVR-K17RS LF w/o bezel	S-Mult 8X PIO/DVR-K17RS	KU.00805.038
	DVD-RW drive 8X Super Mult Panasonic UJ-850 w/o bezel	DVD-RW S-Mult PAN/UJ-850	KU.00807.051
	DVD-RW drive 8X Super Mult Sony AD-7530A LF w/o bezel	8X S-Mult Sony/AD-7530A	KU.0080E.002
HDD/Hard Disk Drive	HDD holder DASP	HLDR DASP HDD protection	42.TK501.004
	HDD bracket	ASSY HDD bracket	33.TK501.003
	HDD 60GB 5400RPM SATA Toshiba MK6037GSX Gemini BS LF F/W:DL330J	HDD 60GB Toshiba MK6037GSX	KH.06004.011
	HDD 60GB 5400RPM SATA HGST HTS541660J9SA00 SURUGA-B LF F/W:C70P	HDD 60GB SATA HTS541660J9SA00	KH.06007.018
	HDD 60GB 5400RPM SATA WD WD600BEVS-22RST0 ML80 LF F/W:04.01G04	HDD 60GB WD WD600BEVS-22RST0	KH.06008.007
	HDD 80GB 5400RPM SATA Toshiba MK8037GSX Gemini BS LF F/W:DL230J	HDD 80GB Toshiba MK8037GSX	KH.08004.010
	HDD 80GB 5400RPM SATA HGST HTS541680J9SA00 SURUGA-B LF F/W:C70P	HDD 80GB SATA HTS541680J9SA00	KH.08007.021
	HDD 80GB 5400RPM SATA WD WD800BEVS-22RST0 ML80 LF F/W:04.01G04	HDD 80GB WD WD800BEVS-22RST0	KH.08008.033
	HDD 120GB 5400RPM SATA Toshiba MK1237GSX Gemini BS LF F/W:DL130J	HDD 120GB Toshiba MK1237GSX	KH.12004.006
	HDD 120GB 5400RPM SATA HGST HTS541612J9SA00 SURUGA-B LF F/W:C70P	HDD 120GB SATA HTS541612J9SA00	KH.12007.010
	HDD 120GB 5400RPM SATA WD WD1200BEVS-22RST0 ML80 LF F/W:04.01G04	HDD 120GB WD WD1200BEVS-22RST0	KH.12008.018
	HDD 160GB 5400RPM SATA Toshiba MK1637GSX Gemini BS LF F/W:DL030J	HDD 160GB Toshiba MK1637GSX	KH.16004.001
	HDD 160GB 5400RPM SATA HGST HTS541616J9SA00 SURUGA-B LF F/W:C70P	HDD 160GB HGST HTS541616J9SA00	KH.16007.011
	HDD 160GB 5400RPM SATA WD WD1600BEVS-22RST0 ML80 LF F/W:04.01G04	HDD 160GB WD WD1600BEVS-22RST0	KH.16008.019
Fan	Fan	Fan 14" Fan Sunon	23.TK501.001

Category	Part Name	Description	Acer Part No.
Heatsink	CPU heatsink w/o fan	AASY CPU heatsink Foxconn	60.TK501.007
CPU/Processor	CPU Intel Merom Core 2 Dual T7100 1.8G 2M 800	IC CPU Merom T7100 1.8G PGA	KC.71001.DTP
	CPU Intel Merom Core 2 Dual T7300 1.8G 2M 800	IC CPU Merom T7300 2.0G PGA	KC.73001.DTP
	CPU Intel Merom Core 2 Dual T7500 2.28G 4M 800	IC CPU Merom T7500 2.2G PGA	KC.75001.DTP
	CPU Intel Merom Core 2 Dual T7700 2.4G 4M 800	IC CPU Merom T7700 2.4G PGA	KC.77001.DTP
Keyboard	Keyboard 14_15KB-EV2 88KS Black US International (Big Ergo)	KB Darfon NSK-AGK 1D US-INT 88K	KB.INT00.002
	Keyboard 14_15KB-EV2 88KS Black US International Hebrew (Big Ergo)	KB Darfon NSK-AGK0H Hebrew W88K	KB.INT00.003
	Keyboard 14_15KB-EV2 89KS Black UK (Big Ergo)	KB Darfon NSK-AGK0U UK 89Keys	KB.INT00.004
	Keyboard 14_15KB-EV2 89KS Black Turkish (Big Ergo)	KB Darfon NSK-AGK0T Turkish 89K	KB.INT00.005
	Keyboard 14_15KB-EV2 88KS Black Thailand (Big Ergo)	KB Darfon NSK-AGK03 Thai 88Key	KB.INT00.006
	Keyboard 14_15KB-EV2 89KS Black Swiss/G (Big Ergo)	KB Darfon NSK-AGK00 Swiss 89K	KB.INT00.007
	Keyboard 14_15KB-EV2 89KS Black Swedish (Big Ergo)	KB Darfon NSK-AGK0W Swedish 89K	KB.INT00.008
	Keyboard 14_15KB-EV2 89KS Black Spanish (Big Ergo)	KB Darfon NSK-AGK0S Spanish 89K	KB.INT00.009
	Keyboard 14_15KB-EV2 89KS Black Slovenian (Big Ergo)	KB Darfon NSK-AGK1F Sloveni 89K	KB.INT00.010
	Keyboard 14_15KB-EV2 88KS Black Russian (Big Ergo)	KB Darfon NSK-AGK0R Russian 88K	KB.INT00.013
	Keyboard 14_15KB-EV2 89KS Black Portuguese (Big Ergo)	KB Darfon NSK-AGK06 Portuga 89K	KB.INT00.014
	Keyboard 14_15KB-EV2 89KS Black Norwegian (Big Ergo)	KB Darfon NSK-AGK0N Norwegi 89K	KB.INT00.016
	Keyboard 14_15KB-EV2 88KS Black Korean (Big Ergo)	KB Darfon NSK-AGK0K Korean 88K	KB.INT00.018
	Keyboard 14_15KB-EV2 93KS Black Japanese (Big Ergo)	KB Darfon NSK-AGK0J Japanes 92K	KB.INT00.019
	Keyboard 14_15KB-EV2 89KS Black Italian (Big Ergo)	KB Darfon NSK-AGK0E Italian 89K	KB.INT00.020
	Keyboard 14_15KB-EV2 89KS Black Hungarian (Big Ergo)	KB Darfon NSK-AGK0Q Hungar 89K	KB.INT00.023
	Keyboard 14_15KB-EV2 88KS Black Greek (Big Ergo)	KB Darfon NSK-AGK0L Greek 88K	KB.INT00.024
	Keyboard 14_15KB-EV2 89KS Black German (Big Ergo)	KB Darfon NSK-AGK0G German 89K	KB.INT00.025
	Keyboard 14_15KB-EV2 89KS Black French (Big Ergo)	KB Darfon NSK-AGK0F French 89K	KB.INT00.026

Category	Part Name	Description	Acer Part No.
Keyboard (cont.)	Keyboard 14_15KB-EV2 89KS Black Danish (Big Ergo)	KB Darfon NSK-AGK0D Danish 89K	KB.INT00.029
	Keyboard 14_15KB-EV2 89KS Black Czech (Big Ergo)	KB Darfon NSK-AGK0C Czech 89K	KB.INT00.030
	Keyboard 14_15KB-EV2 88KS Black Traditional Chinese (Big Ergo)	KB Darfon NSK-AGK00 Swiss 88K	KB.INT00.031
	Keyboard 14_15KB-EV2 89KS Black Canadian French (Big Ergo)	KB Darfon NSK-AGK0M Can- Fren 89K	KB.INT00.032
	Keyboard 14_15KB-EV2 89KS Black Brazilian Portuguese (Big Ergo)	KB Darfon NSK-AGK1B Brazil 89K	KB.INT00.033
	Keyboard 14_15KB-EV2 89KS Black Belgium (Big Ergo)	KB Darfon NSK-AGK1A Belgian 89K	KB.INT00.034
	Keyboard 14_15KB-EV2 88KS Black Swiss/G (Big Ergo)	KB Darfon NSK-AGK0A Arabic 88K	KB.INT00.035
LCD module	LCD module 14.1" WXGA Non- glare w/ antenna w/o camera	LCD 14.1 WXGA MGAI	6M.TKJ01.001
	LCD module 14.1" WXGA glare w/ antenna w/ camera	LCD 14.1WXGAG ABS	6M.TKJ01.002
	Inverter board 17" Darfon VK.21189.406	Inverter 17" ROHS VK.21189.406	19.TCBV1.001
	Inverter board 17" FOXCONN T62I240.02 V.00	Inverter 17" T62I240.02 V.00	19.TK501.001
	Inverter board 17" YEC YNV- W06S	Inverter 17" YNV-W06S	19.TK501.002
	Microphone	Microphone	23.TK501.003
	Wireless antenna left	Antenna config L	25.TK501.001
	Wireless antenna right	Antenna R	25.TK501.002
	LCD bracket right	Bracket LCD R	33.TK501.004
	LCD bracket left	Bracket LCD L	33.TK501.005
	LCD cable	C.A. LCD non-CCD	50.TKJ01.001
	LCD bezel 14.1" non-CCD w/ logo	ASSY LCD non-CCD bezel	60.TKJ01.001
	LCD cover 14.1" w/ hinge and logo	ASSY MGAL LCD	60.TK501.006
	Hinge pack left right	Hinge pack left right	60.TKJ01.001
	LCD 14.1" WXGA AU B141EW04-V3 LF Non-glare 200 nits 16ms	LCD 14.1" WXGA AU B141EW04 NG	LK.14105.019
	LCD 14.1" WXGA AU B141EW04-V4 LF Glare 200 nits 16ms	LCD 14.1" WXGA AU B141EW04-V4 G	LK.14105.018
	LCD 14.1" WXGA Samsung LTN141W3-L01-0 LF non-glare 200 nits 16ms	LCD 14.1" WXGA Samsung LTN141W3	LK.14106.010



Category	Part Name	Description	Acer Part No.
LCD module (cont.)	LCD 14.1" WXGA Samsung LTN141W3-L01-G LF Glare 200 nits 16ms	LCD 14.1" WXGA Samsung LTN141W3	LK.14106.011
	LCD 14.1" WXGA LG LP141WX1-TLA1 LF Non-glare 200 nits 16ms	LCD 14.1" WXGA LG LP141EWX1-TLA1	LK.14108.006
	LCD 14.1" WXGA LG LP141WX1-TLA2 LF Glare 200 nits 16ms	LCD 14.1" WXGA LG LP141EWX1-TLA2	LK.14108.007
	LCD 14.1" WXGA CMO N141I3-L01 LF Non-glare 200 nits 16ms	LCD 14.1" WXGA CMO N141I3-L01	LK.1410D.015
	LCD 14.1" WXGA CMO N141I3-L02 LF Glare 200 nits 16ms	LCD 14.1" WXGA CMO N141I3-L02 G	LK.1410D.016
Bluetooth board	Bluetooth board Foxconn BCM2045 V01	BT Module Foxconn BCM2045 V01	54.TB2V1.001
Touchpad board	Touchpad board Synaptics TM00450-001	Touchpad Synaptics TM00450- 001	56.TK501.001
LED board	LED board	LED BD 06576-1(D)	55.TK501.001
Fingerprint board	Fingerprint board	FPR BD 06577-1M(D)	55.TK501.003
Card reader board	Card reader board	Card Reader BD 06590-1D	55.TK501.005
Mini sensor card	Mini sensor card	Mini Sensor BD 07522-2M	55.TKJ01.001
Mainboard	Mainboard TM4720 Intel GM965 ICH8M LF w/ modem and RTC battery	Biwa MB 06237-3 6L w/F w/o CPU	MB.TK501.001
Battery	RTC battery LI 3V 200mAh	BTY Coim CR2032 Mitsubishi	23.TCZV1.004
Modem board	Modem board Liteon Delphi- AM3 3.3V only B85244300G Agere	Modem MDC003 A8B B85244300G	FX.22500.011
PCMCIA slot/PC card slot	PCMCIA slot 4-pin	CONN Cardbus 4P 59330- 00LOC	22.T28V1.001
	Card bus connector	CONN Cardbus 4P SCAK5B7100	22.TJW01.001

Category	Part Name	Description	Acer Part No.
Cable	LED board cable	C.A. LED BD FFC	50.TK501.001
	Touchpad cable	C.A. Touchpad FFC	50.TK501.002
	Modem cable	C.A. RJ-11 FVC	50.TK501.003
	Bluetooth cable	C.A. B.T HL	50.TK501.006
	FP/Scroll keyboard cable	C.A. TP BD FFC	50.TKJ01.002
	Power cord 10A 125V US	Code US 10A 125V BK	27.T30V1.001
	Power cord 10 A 125V 3-pin US BK	Code 10A 125V 3P US BK	27.01518.641
	Power cord 2.5A 125V USA	Cord USA/W CNS 2.5A 125V 8121	27.01518.781
	Power cord 220V 3-pin EUR	Cord EUR 220V 3P BK	27.T30V1.004
	Power cable 16A 250V 3-pin EUR BK	Cord 16A 250V 3P EUR BK	27.01518.731
	Power cord 3A 250V 3-pin UK	Code UK 3A 250V 3P BK	27.01518.541
	Power cord 5A 250V 3-pin UK BK	Code 5A 250V 3P UK BK	27.03118.001
	Power cord 10A 3-pin BK Denmark	Code Denmark 10A 3P BK	27.01518.561
	Power cord 10A 250V 3-pin Denmark BK	Code 10A 250V 3P Denmark BK	27.01518.671
	Power cord 10A 250V 3-pin South Africa	Code South Africa 10A 250V BK	27.01518.571
	Power cord 16A 250V South Africa BK	Code 16A 250V South Africa BK	27.01518.681
	Power cord 10A 250V Swiss	Code Swiss Power 10A 250V BK	27.01518.581
	Power cord 10A 250V 3-pin Swiss BK	Code 10A 250V 3P Swiss Bk	27.01518.691
	Power cord 10A 250V 3-pin China	Cord China 10A 250V 3P	27.01518.591
	Power cord 10A 250V 3-pin China BK	Cord 10A 250V 3P China BK	27.01518.701
	Power cord 10A 250V 3-pin Italy	Cord Italy 10A 250V 3P BK	27.01518.611
	Power cord 10A 250V 3-pin Italy BK	Cord 10A 250V 3P Italy BK	27.01518.711
	Power cord 2.5A 250V Australia	Code 2.5A 250V Australia BK	27.01518.621
	Power cord ACA/ACNZ	Power cord ACA/ACNZ Annie	27.03218.021
	Power cord 2.5A 250V South Africa BK (India)	Cord 2.5A 250V South Africa Bk	27.01518.631
	Power cord 10A 250V South Africa BK (India)	Cord 10A 250V South Africa BK	27.01518.721
	Power cord 7A 125V 2-pin Japan	Power cord 7A 125V 2-pin Japan	27.01518.551
Power code 7A 125V 2-pin Japan	Power code 7A 125V Japan 2-pin	27.03518.161	

Category	Part Name	Description	Acer Part No.
Cable (cont.)	Power cord 7A 250V 2-pin Korean	Code 7A 250V 2P 1830 Korean	27.01518.531
	Power cord 250V 10A 3-pin Israel	Cord 250V 10~16A 3P Israel	27.01518.761
Miscellaneous	LCD screw rubber	Rub square LCD	47.TK501.001
	Logo plate for panel	PLT Acer logo adhesive T.M.	31.T49V1.001
	Logo plate for bezel	PLT bezel plate Acer logo	31.A46V1.001
	Name plate TM4720	LBL name plate TM4720, Biwa-Acer	40.TKJ01.001
Screws	Screw	Screw M2xL3 (white)	86.00C07.220
	Screw	Screw M2.5xL6 nylok CR3+	86.00E33.736
	Screw	Screw M2.5x4 nylok BZN	86.00F00.734
	Screw	Screw M2x2.5 nylok	86.00F22.722
	Screw 2x6 nylok	Screw 2x6 nylok	86.TK501.003
	Screw M2.5xL5 black ZN+nylok	M2.5xL5 black ZN+nylok	86.TK501.001
	Screw M2xL18 CR3 nlyok	Screw M2x18 CR3 nylok	86.TK501.002
	Screw	Screw M3x4	86.9A524.4R0
	Screw	Screw wafer nylok Ni 2ML3	86.9A552.3R0
	Screw	Screw M2x4 wafer Ni	86.9A552.4R0







# Test Compatible Components

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This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® Vista™ Business, Vista Home Premium, and Vista Home Basic environment.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the Travelmate 4720/4320 series Compatibility Test Report released by the Acer Mobile System Testing Department.

# Microsoft® Windows® Vista™ Environment Test

Item	Specification	
<b>CRT Port Test</b>		
CRT Monitor		
LCD Monitor		
Projector		
TV		
<b>Audio Jacks Port Test</b>		
Microphone		
Head Phone		
<b>USB Port Test</b>		
USB 1.1-Mouse		
USB 1.1-keyboard		
USB 1.1-Speaker		
USB 1.1-FDD		
USB 1.1-Camera / CCD		
USB 1.1-HUB		
USB 1.1-Card Reader		
USB 2.0-HDD		
USB 2.0-DVD/CD-RW		
USB 2.0-HUB		
USB 2.0-Printer		
USB 2.0-Handy Drive		
USB 2.0-Lan		
USB 2.0-Camera/CCD		
USB 2.0-Scanner		
Bluetooth Mouse		
<b>PCMCIA Test</b>		
SCSI Card		
Modem Card		
32 bit Lan Card		
1394 CardBus Card		
USB2.0 CardBus Card		
Wireless Lan Card		
Wireless Lan AP		
Keyboard		
<b>Memory Card Test (SD/MS/MMC/SM/CF/Microdrive/XD)</b>		
SD Card		
MS Card		
MMC Card		
XD Card		
SM Card		
CF Card		
Microdrive		



# Online Support Information

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This section describes online technical support services available to help you repair your Acer Systems.

If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer Branch Offices and Regional Business Units may access our website. However some information sources will require a user i.d. and password. These can be obtained directly from Acer CSD Taiwan.

Acer's Website offers you convenient and valuable support resources whenever you need them.

In the Technical Information section you can download information on all of Acer's Notebook, Desktop and Server models including:

- Service guides for all models
- User's manuals
- Training materials
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included an Acrobat File to facilitate the problem-free downloading of our technical material.

Also contained on this website are:

- Detailed information on Acer's International Traveler's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

We are always looking for ways to optimize and improve our services, so if you have any suggestions or comments, please do not hesitate to communicate these to us.

