eMachines E510 Series
Service Guide

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on Aspire Nettling service guide.

Date	Chapter	Updates

Copyright

Disclaimer

Conventions

The following conventions are used in this manual:

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

Preface

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

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

2. Please note WHEN ORDERING FRU PARTS, 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.

System Specifications

Features

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

Operating System

- Genuine Windows® VistaTM Capable
- Genuine Windows® VistaTM Home Basic / Home Premium / Ultimate / Business Edition
- Genuine Windows® XP Home / Professional Edition (Service Pack 2)
- Genuine Windows® XP Media Center / Tablet Edition
- Genuine Windows® 2000 (Service Pack 4)

NOTE: Windows® VistaTM Capable PCs come with Windows® XP installed, and can be upgraded to Windows® VistaTM. For more information on Windows® VistaTM and how to upgrade, go to: Microsoft.com/windowsvista.

Platform

- Intel® Celeron® (Santarosa) processor technology, featuring:
  - Intel® Celeron processor
  - Mobile Intel® GL960 Express Chipset
  - Intel® Wireless Atheros / Broadcom

System Memory

- Dual-Channel DDR2 SDRAM support
- Up to 1 GB of DDR2 553 MHz memory, upgradeable to 2 GB using two soDIMM modules*

Display and graphics

- 14.1" WXGA 1280 x 800
- Mobile Intel® GL960 Express Chipset

Storage subsystem

- 2.5" hard disk drive
- Optical drive options:
  - DVD-Super Multi double-layer drive
- 5-in-1 card reader

Audio

- Built-in stereo speakers
- S/PDIF (Sony/Philips Digital Interface) support for digital speakers

- Built-in microphone

Dimensions and Weight

- 366 (W) x 274 (D) x 33.6/42.6 (H) mm (14.4 x 10.78 x 1.32/1.67 inches)
- 2.8 kg (6.16 lbs.)

Communication

- Acer Video Conference, featuring:
    - Integrated Acer Crystal Eye webcam
    - Acer Video Conference Manager software
    - Acer PureZone technology
    - Optional Acer Xpress VoIP phone
- WLAN: Atheros / Broadcom
- LAN: Gigabit Ethernet; Wake-on-LAN ready

Privacy control

- BIOS user, supervisor, HDD passwords
- Kensington lock slot

Power subsystem

- ACPI 3.0
- 48.8 W 4400 mAh*
- 3-pin 65 W AC adapter*
- Energy Star 4.0

Special keys and controls

- 88-/89-/93-key keyboard
- Touch Pad pointing device
- WLAN button/Switch

I/O interface

- 3 USB 2.0 ports
- Headphone port
- Microphone-in jack
- Line-in
- Ethernet port
- DC-in jack for AC adapter
- Kensington Lock (7.5mm diameter)
-

Environment

- Temperature:

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

System Block Diagram
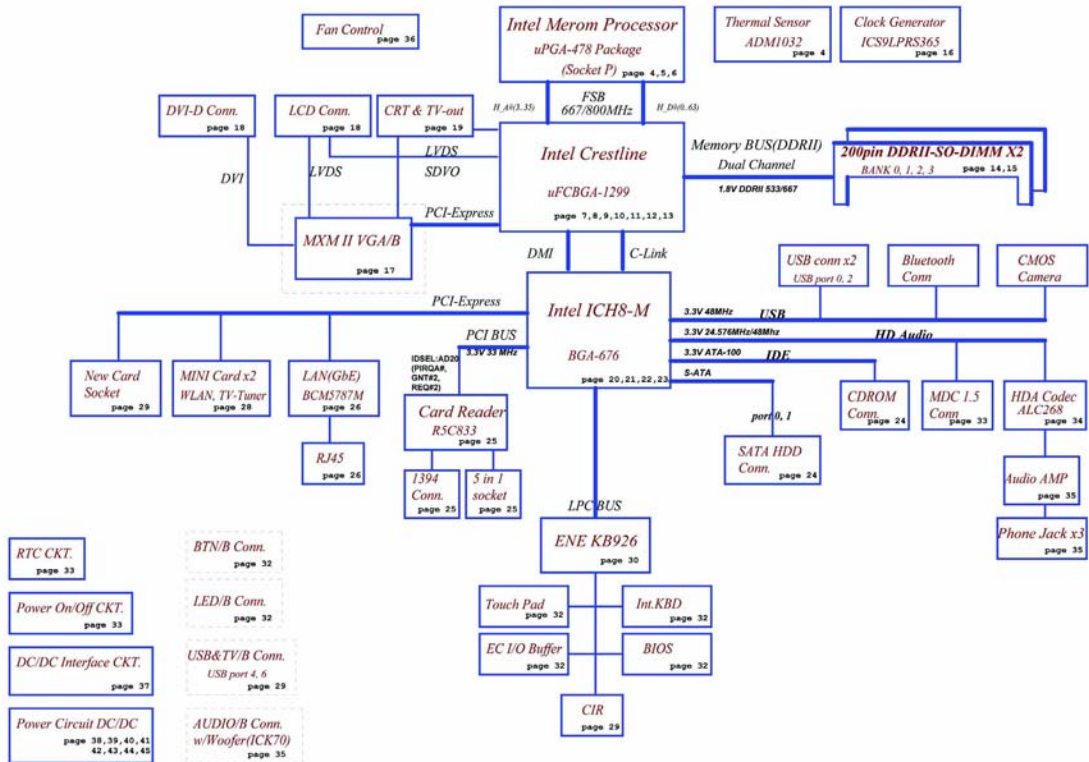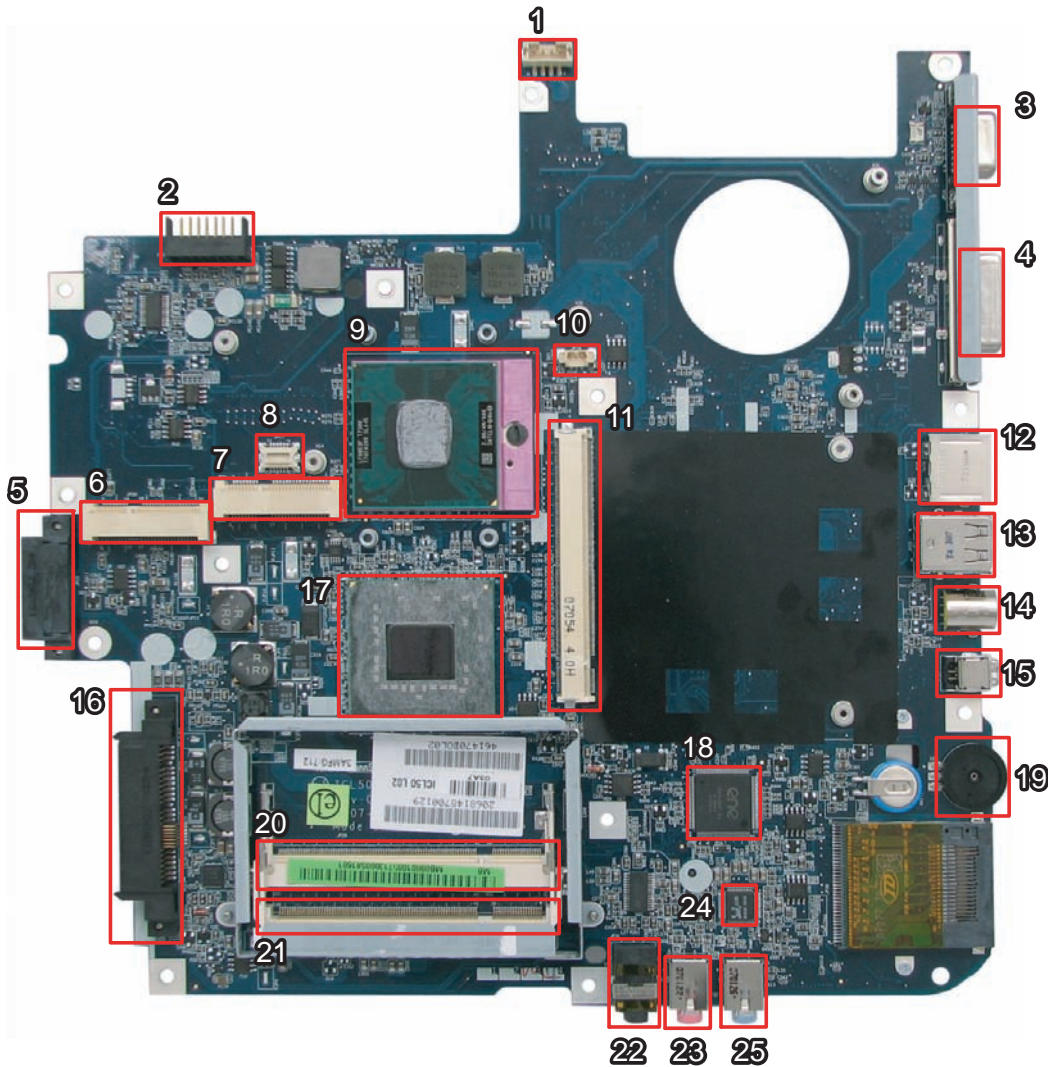
Board Layout

Top View

1	JP1	LCD Connector	9	JP36	Mainboard to LED Board Connector
2	JP3	Speaker (Left) Connector	10	U12	
3	JP34	Speaker (Right) Connector	11	JP9	PCI Express Card Socket
4	JP4	Internal MIC Connector	12	LED1	Power/Suspend LED
5	U5	South Bridge (ICH8M)	13	LED2	Battery Charge/Discharge LED
6	JP6	Internal Track-Pad Connector	14	JP13	Mainboard to Audio Board Connector
7	JP5	Internal Keyboard Connector	15	JP11	Mainboard to USB Board Connector
8	JP2	Mainboard to Button Board Connector	16	JP12	Bluetooth Module Connector

Bottom View

1	PJP1	DC-in Power Jack		14	JP24	TV-out Connector
2	PJP2	Battery Connector		15	JP26	IEEE1394 Connector
3	JP14	CRT Connector		16	JP27	SATA HDD Connector
4	JP15	DVI-D Connector		17	U23	North Bridge (965PM/965GM)
5	JP25	ODD Connector		18	U28	
6	JP20	Mini Card (WLAN) Socket		19	U29	Volume Control
7	JP19	Mini Card (TV-Tuner) Socket		20	JP28	DDRII Memory Socket
8	JP17	MDC Connector		21	JP29	DDRII Memory Socket
9	JP22	CPU Socket		22	JP31	Headphone/SPDIF Jack
10	JP16	Internal Fan Connector		23	JP32	Mic-in Jack
11	JP19	VGA Board Connector		24	U33	Audio Codec Controller
12	JP18	RJ45 (LAN) Connector		25	JP33	Line-in Jack
13	JP23	USB (Dual) Connectors				

Your Acer Notebook Tour

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

Front View
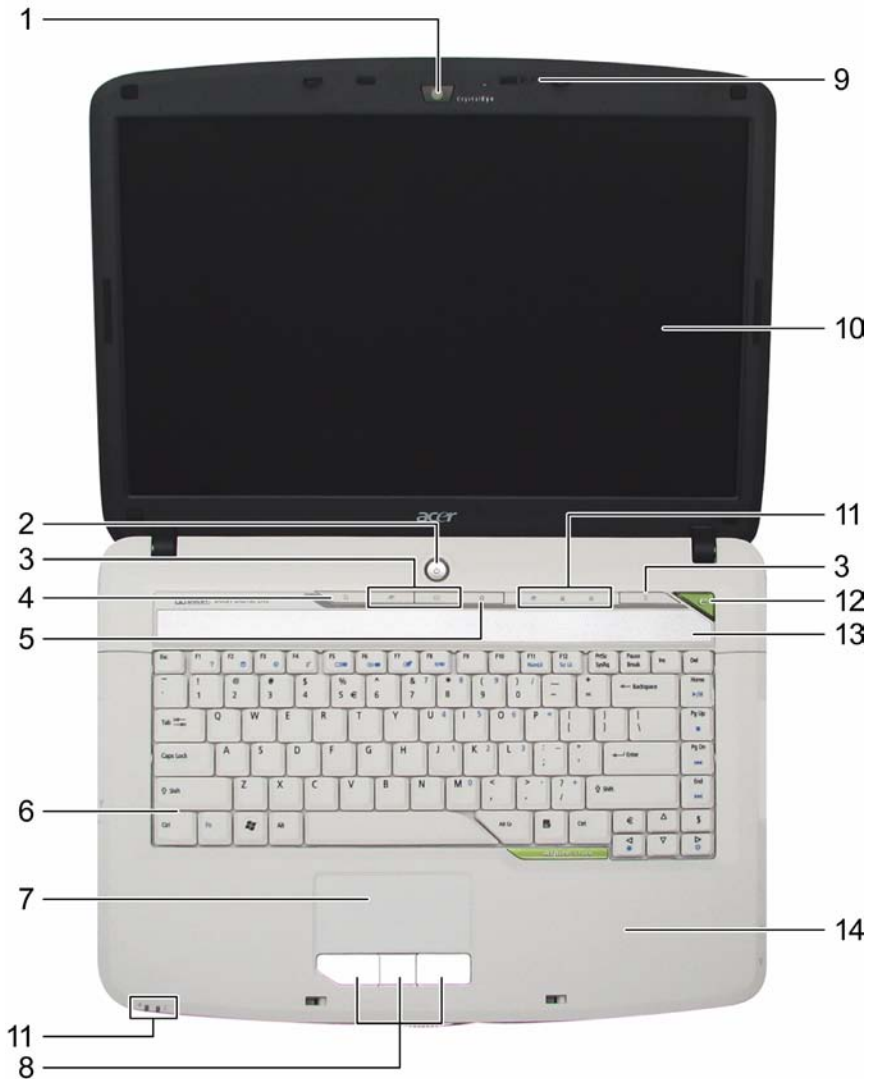
| #	Icon	Item	Description
1		Built-in camera	0.3 megapixel web camera for video communication.
2	⏻	Power button	Turns the computer on and off.
3		Easy-launch buttons	Buttons for launching frequently used programs.
4		Wireless communication button/indicator	Enables/disables the wireless function. Indicates the status of wireless LAN communication.
5		Bluetooth® communication button/ indicator	Enables/disables the Bluetooth® function. Indicates the status of Bluetooth communication.

6		Keyboard	For entering data into your 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.
9		Microphone	Internal microphone for sound recording.
10		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output.
11		Status indicators	Light-Emitting Diodes (LEDs) that light up to show the status of the computer's functions and components.
12	*e*	Empowering button	Launches the Empowering Technology toolbar.
13		Speaker	Left and right speakers deliver stereo audio output.
14		Palmrest	Comfortable support area for your hands when you use the computer.

Closed Front View

#	Icon	Item	Description
1		Power indicator	Indicates the computer's power status.
2		Battery indicator	Indicates the computer's battery status.
3		Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman).
4		Microphone-in jack	Accepts input from external microphones.
5		Headphones/speaker/ line-out jack with S/PDIF support	Connects to audio line-out devices (e.g., speakers, headphones).
6		Infrared port	Interfaces with infrared devices (e.g. infrared printer and IR-aware computer).

Left View

| #	Icon	Item	Description
1	🔒	Kensington lock slot	Connects to a Kensington-compatible computer security lock.
2	▭	External display (VGA) port	Connects to a display device (e.g., external monitor, LCD projector).
3	**DVI**	DVI-D port	Supports digital video connections.
4	品	Ethernet (RJ-45)	Connects to an Ethernet 10/100/1000-based network (for selected models).
5	⊷	2 USB 2.0 port	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
6	⑤→	S-video/TV-out (NTSC/PAL) port	Connects to a television or display device with S-video input.
7	1394	4-pin IEEE 1394 port	Connects to IEEE 1394 devices.
8		Volume control	Increases and decreases the volume.
9	M SD xD ▲ ▲ PRO	5-in-1 card reader	Accepts Secure Digital (SD), MultiMediaCard (MMC), Memory Stick (MS), Memory Stick PRO (MS PRO), xD-Picture Card (xD).
10		PCI Express Card slot	Accepts an Express Card/54 module. Note: Express Cards are third generation of PC cards, hot-swapable and maller than previous PC Cards. Designed for both desktop and mobile use, Express Cards use either USB 2.0 or a single lane PCI Express technology that provides 500 Mbytes/sec total throughput. Formerly code named "NEWCARD," Express Cards are 5mm thick like Type II PC Cards, but do not use the same 86x54mm footprint. Express Cards come in 75x54mm and 75x34mm sizes. Express Card/54 slot means this notebook accepts 75x54mm Express Cards.

Right View

#	Icon	Item	Description
1	⚡	2 USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
2		AV-in port	Accepts input signals from audio/video (AV) devices.
3		Optical drive	Internal optical drive; accepts CDs or DVDs (slot-load or tray-load depending on model).
4		Optical disk access indicator	Lights up when the optical drive is active.
5		Optical drive eject button	Ejects the optical disk from the drive.
6		Emergency eject hole	Ejects the optical drive tray when the computer is turned off.
7		Modem (RJ-11) port	Connects to a phone line.
8		RF-in port	Accepts input signals from analog/digital TV-tuner devices (for selected models).

Rear view

#	Icon	Item	Description
1		DC-in jack	Connects to an AC adapter.
2		Ventilation slots	Enable the computer to stay cool, even after prolonged use.

Base view

#	Item	Description
1	Battery bay	Houses the computer's battery pack.
2	Battery release latch	Releases the battery for removal.
3	Battery lock	Locks the battery in position.
4	Hard disk bay	Houses the computer's hard disk (secured with screws)
5	Ventilation slots and cooling fan	Enable the computer to stay cool, even after prolonged use. Note: Do not cover or obstruct the opening of the fan.

Indicators

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

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

Icon	Function	Description
☼	Power	Lights up when the computer is on.
🔋	Battery	Lights up when the battery is being charged.
○	Wireless LAN	Indicates the status of wireless LAN communication.
✳	Bluetooth	Indicates the status of Bluetooth communication.
◆	HDD	Indicates when the hard disc or optical drive is active.
🔒1	Num lock	Lights when Num Lock is activated.
🔒A	Cap lock	Lights when Cap Lock is activated

NOTE: 1. **Charging:** The light shows amber when the battery is charging. 2. **Fully charged:** The light shows green when in AC mode.

Easy-Launch Buttons

To the top of the keyboard there are four easy-launch buttons: Web browser, mail, arcade buttons and an Empowering Key " e .

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 and mail buttons, run the Launch Manager.

Launch Button	Default application
e	Acer Empowering Technology (user-programmable)
Web browser	Internet browser (user-programmable)
Mail	Email application (user-programmable)
Arcade	Windows Media Center

Touchpad Basics

The following teaches you how to use the touchpad:
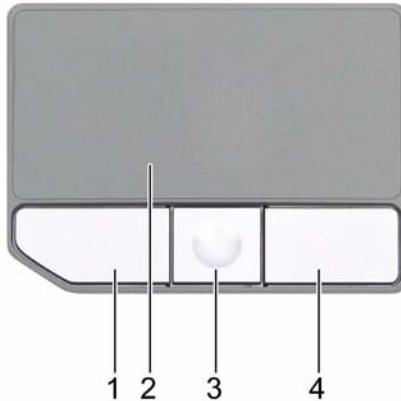
- ❑ Move your finger across the touchpad (2) to move the cursor.
- ❑ Press the left (1) and right (4) buttons located beneath the touchpad to perform selection and execution functions. These two buttons are similar to the left and right buttons on a mouse. Tapping on the touchpad is the same as clicking the left button.
- ❑ The center (3) button to 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 on the touchpad to drag the cursor.		Tap twice (at the same speed as double-clicking a mouse button); rest your finger on the touchpad on the second tap and drag the cursor.	
Access context menu		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 movements; hence, the lighter the touch, the better the response. Tapping too hard will not increase the touchpad's responsiveness.

Using the Keyboard

The keyboard has full-sized keys and an embedded keypad, separate cursor keys, one Windows key and twelve function keys.

Lock Keys and embedded numeric keypad

The keyboard has three lock keys which you can toggle on and off.
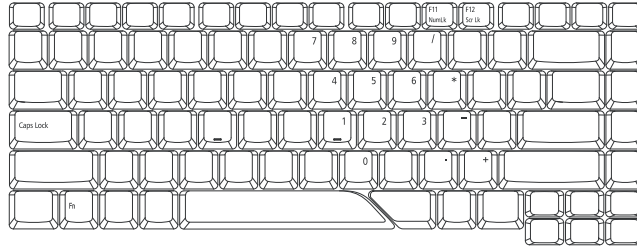
Lock Key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num lock <Fn>+<F11>	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when you need 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.	
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 one key that performs Windows-specific functions.

Key	Icon	Description
Windows key ⊞		Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu. It can also be used with other keys to provide a variety of function: ⊞ + <Tab> Activates next taskbar button. ⊞ + <E> Opens the My Computer window ⊞ + <F1> Opens Help and Support. ⊞ + <F> Opens the Search: All Files dialog box. ⊞ + <R> Opens the Run dialog box. ⊞ + <M> Minimizes all windows. <Shift>+ ⊞ + <M> Undoes the minimize all windows action.
Application key		This key has the same effect as clicking the right mouse button; it opens the application's context menu.

Hot Keys

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 hot keys, press and hold the **<Fn>** key before pressing the other key in the hotkey combination.
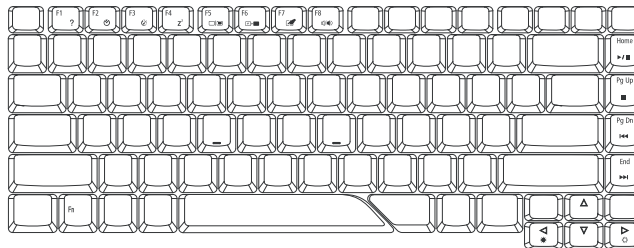

Hot Key	Icon	Function	Description
<Fn>+<F1>	?	Hot key help	Displays help on hot keys.
<Fn>+<F2>		Acer eSettings	Launches the Acer eSettings in Acer eManager.
<Fn>+<F3>		Acer ePower Management	Launches the Acer ePower Management in Acer Empowering Technology. **See "Acer Empowering Technology" on page 18**.
<Fn>+<F4>	z^z	Sleep	Puts the computer in Sleep mode.

Hot Key	Icon	Function	Description
<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>+<□>		Brightness up	Increases the screen brightness.
<Fn>+<□>		Brightness down	Decreases the screen brightness
<Fn>+<Home>	▶/⏸	Play/Pause	Plays or pauses the media.
<Fn>+<Pg Up>	■	Stop	Stops the media playing.
<Fn>+<Pg Dn>	⏮	Previous	Returns to previous media file.
<Fn>+<End>	⏭	Next	Jumps to next media file.

Special Key

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

To type:
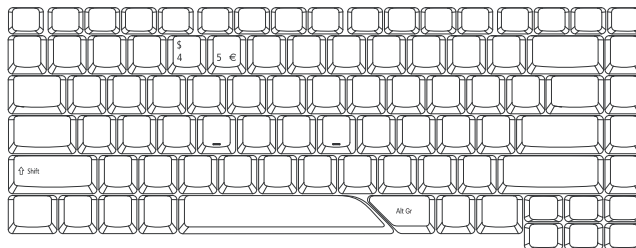
The Euro symbol

1. Open a text editor or word processor.
2. Either directly press the **< € >** symbol at the bottom-right of the keyboard, or hold **<Alt Gr>** and then press the**<5>** symbol 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 for more information.

The US dollar sign

1. Open a text editor or word processor.
2. Either directly press the **< $ >** key 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 by the operating system version.

Hardware Specifications and Configurations

Processor

Item	Specification
CPU type	Intel® Celeron (Santarosa) processor
Core logic	Intel® GL960 Express chipset
CPU package	Intel socket 1466pin FCBGA
CPU core voltage	0.944~1.3V

CPU Fan True Value Table

Test Condition: 35W@Ambient 35 degree			
CPU Temperature		Fan Speed	SPL Spec
Core 0	Core 1	(rpm)	(dBA)
45	60	2600	31
55	70	2900	34
65	80	3400	38
75	95	3600	40
85	100	3600	40

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	
BIOS ROM type	Macronix_MX25L8005/ EON_EN25F80
BIOS ROM size	1M bytes
BIOS package	SPI Flash part
Supported protocols	ACPI 1.0b/2.0/3.0, PCI 2.2, System/HDD Password Security Control, INT13h Extensions, PnP BIOS 1.0a, SMBIOS 2.4, Simple Boot Flag 1.0, Boot Block, PCI Bus Power Management Interface Specification, USB1.1/2.0, IEEE 1394 1.0, USB/1394 CD-ROM Boot Up support, PC Card 95 (PCMCIA 3.0 Compliant Device), IrDA 1.0, Intel AC97 CNR Specification, WfM 2.0, PXE (Preboot Execution Environment), BIS 1.0 (Boot Integrity Service Application Program Interface), PC99a and Mobile PC2001 Compliant, Intel Enhanced SpeedStep Technology
BIOS password control	Set by setup manual

Cache

Item	Specification
Cache controller	Built-in CPU
Cache size	2MB
1st level cache control	Always enabled
2st level cache control	Always enabled
Cache scheme control	Fixed in write-back

System Memory

Item	Specification
Memory controller	Built-in

Item	Specification
Memory size	0MB (no on-board memory)
DIMM socket number	2 sockets
Supports memory size per socket	2 GB
Supports maximum memory size	4G for 64bit OS (with two 2GB SODIMM)
Supports DIMM type	DDR 2 Synchronous DRAM
Supports DIMM Speed	667/800 MHz
Supports DIMM voltage	1.8V and 0.9V
Supports DIMM package	200-pin soDIMM
Memory module combinations	You can install memory modules in any combinations as long as they match the above specifications.

Memory Combinations

Slot 1	Slot 2	Total Memory
0MB	256MB	256MB
0MB	512MB	512MB
0MB	1024MB	1024MB
0MB	2048MB	2048MB
256MB	256MB	512MB
256MB	512MB	768MB
256MB	1024MB	1280MB
256MB	2048MB	2304MB
512MB	256MB	768MB
512MB	512MB	1024MB
512MB	1024MB	1536MB
512MB	2048MB	2560MB
1024MB	0MB	1024MB
1024MB	256MB	1280MB
1024MB	512MB	1536MB
1024MB	1024MB	2048MB
1024MB	2048MB	3072MB
2048MB	0MB	2048MB
2048MB	256MB	2304MB
2048MB	512MB	2560MB
2048MB	1024MB	3072MB
2048MB	2048MB	4096MB

NOTE: Above table lists some system memory configurations. You may combine DIMMs with various capacities to form other combinations. On above table, the configuration of slot 1 and slot 2 could be reversed.

LAN Interface

Item	Specification
Chipset	Atheros / Broadcom
Supports LAN protocol	10/100/1000 Ethernet Giga LAN
Features	PCI-E Giga LAN Support Wake-On-Lan (AC mode S5) No ASF 2.0/iAMT 4.0

Wireless Module 802.11b/g

Item	Specification
Chipset	Intel Shirley Peak and Echo Peak (for Centrino platform) Atheros WLAN XB63 and Broadcom WLAN BCM4312 (for Non-Centrino)
Data throughput	11~54 Mbps, up to 270 Mbps for Draft-N
Protocol	802.11b+g, Draft-N
Interface	PCI bus (mini PCI socket for wireless module)

Hard Disk Drive Interface

Item				
Data heads	2	3 (for Hitachi and Seagate) 4 (for Toshiba)	4 (for Hitachi) 3 (for Seagate)	
Drive Format				
Disks	1	1	1	1
Spindle speed (RPM)	5400 RPM	5400 RPM	5400 RPM	4200 RPM
Performance Specifications				
Buffer size	2048KB	8192KB	8192KB	8192KB
Interface	ATA/ATAPI-6; ATA-6	ATA/ATAPI-6; ATA-6	ATA/ATA-6; ATA-6	ATA/ATA-6; ATA-6
Max. media transfer rate (disk-buffer, Mbytes/s)	372	350	350	350
Data transfer rate (host~buffer, Mbytes/s)	100 MB/Sec. Ultra DMA mode-5	100 MB/Sec. Ultra DMA mode-5	100 MB/Sec. Ultra DMA mode-5	100 MB/Sec. Ultra DMA mode-5
DC Power Requirements				
Voltage tolerance	5V(DC) +/- 5%	5V(DC) +/- 5%	5V(DC) +/- 5%	5V(DC) +/- 5%

Combo Drive Module

Item	Specification	
Vendor & model name	HLDS COMBO 12.7mm Tray 24X GCC-T10N SONY COMBO 12.7mm Tray 24X CRX880A LF PIONEER Super-Multi Drive 12.7mm Tray DVR-K17RS PANASONIC Super-Multi Drive 12.7mm Tray DL 8X UJ-850 PHILIPS Super-Multi Drive 12.7mm Tray DL 8X DS-8A1P HLDS Super-Multi Drive 12.7mm Tray LabelFlash 8X GSA-T20N SONY Super-Multi Drive 12.7mm Tray DL 8X AD-7530A TOSHIBA HD-DVD Drive 12.7mm Tray TS-L802A	

Item	Specification	
Performance Specification	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: Max 3.6Mbytes/sec	Sustained: Max 10.8Mbytes/sec
Buffer Memory	2MB	
Interface	Enhanced IDE(ATAPI) compatible	
Applicable disc format	Support disc formats 1. Reads data in each CD-ROM, CD-ROM XA, CD-1, Video CD, CD-Extra and CD-Text 2. Reads data in Photo CD (single and Multi-session) 3. Reads standard CD-DA 4. Reads and writes CD-R discs 5. Reads and writes CD-RW discs 6. Reads and writes in each DVD+R/RW (Ver. 1.1) 7. Reads data in each DVD-ROM and DVD-R (Ver. 2.0 for Authoring) 8. Reads and writes in each DVD-R (Ver. 2.0 for general), DVD-RW and DVD+R/RW (Ver1.1)	
Loading mechanism	Load: Manual Release: (a) Electrical Release (Release Button) (b) Release by ATAPI command (c) Emergency Release	
Power Requirement		
Input Voltage	5 V +/- 5 % (Operating)	

Audio Interface

Item	Specification
Audio Controller	Realtek ALC268
Audio onboard or optional	Built-in
Mono or Stereo	Stereo
Resolution	18 bit stereo full duplex
Compatibility	HD audio Interface;
Sampling rate	1Hz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker / Quantity	Yes/2(1.5W speakers)
Supports PnP DMA channel	DMA channel 0 DMA channel 1
Supports PnP IRQ	IRQ10, IRQ11

USB Interface

Item	Specification
Chipset	ICH8M
USB Compliancy Level	2.0
OHCI	USB 1.1 and USB 2.0 Host controller
Number of USB port	3
Location	Two in stack one by single
Serial port function control	Enable/Disable by BIOS Setup

PCMCIA Port

Item	Specification
PCMCIA controller	TI PCI 7412

Item	Specification
Supports card type	Type-II
Number of slots	One type-II
Access location	Left side
Supports ZV (Zoomed Video) port	No ZV support
Supports 32 bit CardBus	Yes

System Board Major Chips

Item	Controller
Core logic	Intel® 965PM/965GM+ICH8M
LAN	Broadcom 5787
USB 2.0	Built in ICH8M
Super I/O controller	NS 87383
Wireless LAN	Foxconn Atheros XB63 minicard b/g Fox BRM 4311 Minicard BG
PCMCIA	TI PCI 7412
Audio	Realtek ALC268

Keyboard

Item	Specification
Keyboard controller	KBC1122
Total number of keypads	88-/89-key
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes

Battery

Item	Specification
Vendor & model name	BATTERY PANASONIC LI-ION 6CELLS BATTERY SANYO LI-ION 6CELLS BATTERY SIMPLO LI-ION 6CELLS BATTERY SONY LI-ION 6CELLS BATTERY PANASONIC LI-ION 8CELLS BATTERY SANYO LI-ION 8CELLS BATTERY SIMPLO LI-ION 8CELLS BATTERY SONY LI-ION 8CELLS
Battery Type	Li-ion
Pack capacity	4400 mAh
Number of battery cell	6
Package configuration	3 cells in series, 2 series in parallel
Normal voltage	11.1V (Panasonic 10.8V)
Charge voltage	12.6V

LCD 15.4"

Item	Specification			
Vendor & model name	LPL LP154WX4TL B2 (G)	CMO N154I2L05 GLARE	AUO B154EW02 V7(G)	SAMSUNG LTN154AT010 01(G)
Screen Diagonal (mm)	15.4 inches	15.4 inches	15.4 inches	15.4 inches
Active Area (mm)	304.1x228.1	304.1x228.1	304.1x228.1	
Display resolution (pixels)	1440x900 WXGA+	1440x900 WXGA+	1440x900 WXGA+	1440x900 WXGA+
Pixel Pitch	0.297x0.297	0.099x0.297	0.297x0.297	
Pixel Arrangement	R.G.B. Vertical Stripe	R.G.B. Vertical Stripe	R.G.B. Vertical Stripe	R.G.B. Vertical Stripe
Display Mode	Normally White	Normally White	Normally White	Normally White
Typical White Luminance (cd/m2) also called Brightness	300	300	300	300
Luminance Uniformity	N/A	N/A	70	70
Contrast Ratio	300	300	250	250
Response Time (Optical Rise Time/ Fall Time)msec	8	8	8	8
Nominal Input Voltage VDD	+3.3V Typ.	+3.3V	3.3V	3.3V
Typical Power Consumption (watt)	5.6/5.7	3.96	N/A	N/A
Weight	550	570	600	600
Physical Size(mm)	317.3x242.0x6. 0	317.3x242.0x5. 9	317.3x242.0x6. 5	317.3x242.0x 6. 5
Electrical Interface	1 channel LVDS	1 channel LVDS	1 channel LVDS	1 channel LVDS
Support Color	262K colors (RGB 6-bit data driver)	262,144	262,144	262,144
Viewing Angle (degree) Horizontal: Right/Left Vertical: Upper/Lower	40/40 10/30	45/45 15/35	40/40 20/40	40/40 20/40
Temperature Range(C) Operating Storage (shipping) °	0 to +50 -20 to +60	0 to +50 -25 to +60	0 to +50 -20 to +60	0 to +50 -20 to +60

Item	Specification
Vendor & model name	Darfon/V189-301GP
Brightness conditions	N/A
Input voltage (V)	9~21
Input current (mA)	2.56 (max)
Output voltage (V, rms)	780V (2000V for kick off)
Output current (mA, rms)	6.5 (max)
Output voltage frequency (k Hz)	65K Hz (max)

AC Adapter

Item	Specification
Input rating	100~240Vac/ 65Hz
Maximum input AC current	1.75A
Inrush current	220A@115VAC 220A@230VAC
Efficiency	82% min. @115VAC input full load

System Power Management

ACPI mode	Power Management
Mech. Off (G3)	All devices in the system are turned off completely.
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices such as the CPU and hard disk may be power managed in this state.
Suspend to RAM (S3)	CPU set power down VGA Suspend PCMCIA Suspend Audio Power Down Hard Disk Power Down CD-ROM Power Down Super I/O Low Power mode
Save to Disk (S4)	Also called Hibernation Mode. System saves all system states and data onto the disc prior to power off the whole system.

System Power Management

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System Utilities

BIOS Setup Utility

The BIOS Setup Utility is a hardware configuration program built into your computer's BIOS (Basic Input/ Output System).

Your computer is already properly configured and optimized, and you do not need to run this utility. However, if you encounter configuration problems, you may need to run Setup. Please also refer to Chapter 4 Troubleshooting when problem arises.

To activate the BIOS Utility, press [F2] during POST (when "Press <F2> to enter Setup" message is prompted on the bottom of screen).

Press [F2] to enter setup. The default parameter of F12 Boot Menu is set to "disabled". If you want to change boot device without entering BIOS Setup Utility, please set the parameter to "enabled".

Press <F12> during POST to enter multi-boot menu. In this menu, user can change boot device without entering BIOS SETUP Utility.

InsydeH2O Setup Utility					
Information	Main	Security	Advanced	Boot	Exit

CPU Type :   Intel (R) Core(TM)2 Duo CPU   T7300
CPU Speed :   2.00 GHz

HDD Model Name :   Hitachi HTS541616J9SA00
HDD Serial Number :   xxxxxxxxxxxxxxxxxxxxxx
ATAPI Model Name :   TOSHIBA DVDW/HD TS-L802A
ATAPI Serial Number: xxxxxxxxxxxxxxxxxxxxxx

System BIOS Version: V0.18.T04
VGA BIOS Version: ATI
Serial Number: xxxxxxxxxxxxxxxxxxxxxx
Asset Tag Number:
Product Name:
Manufacturer Name: Acer
UUID: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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

Navigating the BIOS Utility

There are six menu options: Info., Main, System Devices, Security, Boot, and Exit.

Follow these instructions:

❏ To choose a menu, use the cursor left/right keys (◁ ▷).

❏ To choose a parameter, use the cursor up/down keys (↑ ↓).

❏ To change the value of a parameter, press [F5] or [F6].

❏ A plus sign (+) indicates the item has sub-items. Press [ENTER] to expand this item.

❏ Press [ESC] while you are in any of the menu options to go to the Exit menu.

❏ In any menu, you can load default settings by pressing [F9]. You can also press [F10] to save any changes made and exit the BIOS Setup Utility.

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

Information

<table>
<tr><td colspan="6" align="center">InsydeH2O Setup Utility</td></tr>
<tr><td>Information</td><td>Main</td><td>Security</td><td>Advanced</td><td>Boot</td><td>Exit</td></tr>
</table>

CPU Type :	Intel (R) Core(TM)2 Duo CPU T7300
CPU Speed :	2.00 GHz
HDD Model Name :	Hitachi HTS541616J9SA00
HDD Serial Number :	xxxxxxxxxxxxxxxxxxxxx
ATAPI Model Name :	TOSHIBA DVDW/HD TS-L802A
ATAPI Serial Number:	xxxxxxxxxxxxxxxxxxxxx
System BIOS Version:	V0.18.T04
VGA BIOS Version:	ATI
Serial Number:	xxxxxxxxxxxxxxxxxxxxx
Asset Tag Number:	
Product Name:	
Manufacturer Name:	Acer
UUID:	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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

NOTE: The system information is subject to different models.

Parameter	Description
CPU Type / CPU Speed	This field shows the CPU type and speed of the system.
HDD Model Name	This field shows the model name of HDD installed on primary IDE master.
HDD Serial Number	This field displays the serial number of HDD installed on primary IDE master.
ATAPI Model Name	This field shows the model name of devices installed on secondary IDE master. The hard disk drive or optical drive model name is automatically detected by the system.
ATAPI Serial Number	This field displays the serial number of devices installed on secondary IDE master. The hard disk drive or optical drive model name is automatically detected by the system.
System BIOS Version	Displays system BIOS version.
VGA BIOS Version	This field displays the VGA firmware version of the system.
Serial Number	This field displays the serial number of this unit.
Asset Tag Number	This field displays the asset tag number of the system.
Product Name	This field shows product name of the system.
Manufacturer Name	This field displays the manufacturer of this system.
UUID Number	This will be visible only when an internal LAN device is presenting. UUID=32bytes

Main

The Main screen displays a summary of your computer hardware information, and also includes basic setup parameters. It allows the user to specify standard IBM PC AT system parameters.

InsydeH2O Setup Utility					
Information	Main	Security	Advanced	Boot	Exit

		Item Specific Help
System Time:	[19:03:49]	
System Date :	[04/25/2007]	This is the help for the hour field. Valid range is from 0 to 23.
System Memory :	640 KB Shows system base memory size	INCREAE/REDUCE : F5/ F6.
Total Memory :	1023 MB Shows extended memory size	
Video Memory :	[256MB]	
Quiet Boot :	[Enabled]	
Network Boot :	[Enabled]	
F12 Boot Menu :	[Disabled]	
D2D Recovery :	[Enabled]	
Wake-up on LAN :	[Disabled]	

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

NOTE: The screen above is for your reference only. Actual values may differ.

The table below describes the parameters in this screen. Settings in **boldface** are the default and suggested parameter settings.

Parameter	Description	Format/Option
System Time	Sets the system time. The hours are displayed with 24-hour format.	Format: HH:MM:SS (hour:minute:second) System Time
System Date	Sets the system date.	Format MM/DD/YYYY (month/day/year) System Date
System Memory	This field reports the memory size of the system. Memory size is fixed to 640MB	
Total Memory	This field reports the total memory size in the system.	
Video Memory	Shows the Video memory size.	
Quiet Boot	Determines if Customer Logo will be displayed or not; shows Summary Screen is disabled or enabled. Enabled: Customer Logo is displayed, and Summary Screen is disabled. Disabled: Customer Logo is not displayed, and Summary Screen is enabled.	Option: **Enabled** or Disabled
Network Boot	Enables, disables the system boot from LAN (remote server).	Option: **Enabled** or Disabled
F12 Boot Menu	Enables, disables Boot Menu during POST.	Option: **Disabled** or Enabled
D2D Recovery	Enables, disables D2D Recovery function. The function allows the user to create a hidden partition on hard disc drive to store operation system and restore the system to factory defaults.	Option: **Enabled** or Disabled
Wake-up on LAN	Enables, disables remote wakeup (power on) via LAN.	Option: **Disabled** or Enabled

NOTE: The sub-items under each device will not be shown if the device control is set to disable or auto. This is because the user is not allowed to control the settings in these cases.

Advanced

The Advanced screen displays advanced settings in BIOS.

InsydeH2O Setup Utility					
Information	Main	Security	Advanced	Boot	Exit

```
                                                        Item Specific Help

▶ Advanced CPU Control
▶ Platform Power Management                    These items control
▶ IDE Configuration                            various CPU parameters.

ACPI  S1:              [Enabled]
ACPI  S3:              [Enabled]
Auto wake on S5        [Disabled]

Crestline PM Support   [Enabled]
POPUP Support          [Enabled]
POPDOWN Support        [Enabled]
DeepC4                 [Enabled]
Hard C4E               [Enabled]
```

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

The table below describes the parameters in this screen. Settings in **boldface** are the default and suggested parameter settings.

Parameter	Description	Option
Advanced CPU Control		
Platform Power Management		
IDE Configuration		
ACPI S1	Sets the ACPI S1 sleep state.	**Enabled** or Disabled
ACPI S3	Sets the ACPI S3 sleep state.	**Enabled** or Disabled
Auto wake on S5	Enables the Auto wake on S5 by day of month or fixed time of every day, or disables this feature.	**Disabled**, By Every Day, or By Day of Month
Crestline PM Support	Enables, disables Calistoga Enhanced Power Management mode.	**Enabled** or Disabled
POPUP Support		**Enabled** or Disabled
POPDOWN Support		**Enabled** or Disabled
DeepC4		**Enabled** or Disabled
Hard C4E		**Enabled** or Disabled

Security

The Security screen contains parameters that help safeguard and protect your computer from unauthorized use.

InsydeH2O Setup Utility					
Information	Main	Security	Advanced	Boot	Exit

		Item Specific Help
Supervisor Password Is	Clear	Install or Change the password.
User Password Is	Clear	
HDD Password	Clear	
Set Supervisor Password	[Enter]	
Set User Password	[Enter]	
Set HDD Password	[Enter]	
Password on Boot :	[Enabled]	

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

The table below describes the parameters in this screen. Settings in **boldface** are the default and suggested parameter settings.

Parameter	Description	Option
Supervisor Password is	Shows the setting of the Supervisor password	**Clear** or Set
User Password is	Shows the setting of the user password.	**Clear** or Set
HDD Password	Shows the setting of the hard disk password.	**Clear** or Set
Set Supervisor Password	Press Enter to set the supervisor password. When set, this password protects the BIOS Setup Utility from unauthorized access. The user can not either enter the Setup menu nor change the value of parameters.	
Set User Password	Press Enter to set the user password. When user password is set, this password protects the BIOS Setup Utility from unauthorized access. The user can enter Setup menu only and does not have right to change the value of parameters.	
Set HDD Password	Press Enter to set the hard disk password. When set, this password protects the BIOS Setup Utility from unauthorized access. The user can not either enter the Setup menu nor change the value of parameters.	
Password on Boot	Defines whether a password is required or not while the events defined in this group happened. The following sub-options are all requires the Supervisor password for changes and should be grayed out if the user password was used to enter setup.	**Disabled** or Enabled

NOTE: When you are prompted to enter a password, you have three tries before the system halts. Don't forget your password. If you forget your password, you may have to return your notebook computer to your dealer to reset it.

Setting a Password

Follow these steps as you set the supervisor, user, or hard disk password:

1. Use the ↑ and ↓ keys to highlight the Set Supervisor Password parameter and press the ENTER key. The Set Supervisor Password box appears:

```
        Set Supervisor Password

Enter New Password       [              ]

Confirm New Password     [              ]
```

2. Type a password in the "Enter New Password" field. The password length can not exceed 8 alphanumeric characters (A-Z, a-z, 0-9, not case sensitive). Retype the password in the "Confirm New Password" field.

IMPORTANT: Be very careful when typing your password because the characters do not appear on the screen.

3. Press ENTER . After setting the password, the computer sets the Supervisor Password parameter to "Set".

4. If desired, you can opt to enable the Password on boot parameter.

5. When you are done, press F10 to save the changes and exit the BIOS Setup Utility.

Removing a Password

Follow these steps:

1. Use the ⬆ and ⬇ keys to highlight the Set Supervisor Password parameter and press the [ENTER] key. The Set Supervisor Password box appears:

```
Set Supervisor Password

Enter current password    [                    ]

Enter New Password        [                    ]

Confirm New Password      [                    ]
```

2. Type the current password in the Enter Current Password field and press [ENTER] .
3. Press [ENTER] twice **without** typing anything in the Enter New Password and Confirm New Password fields. The computer then sets the Supervisor Password parameter to "Clear".
4. When you have changed the settings, press [F10] to save the changes and exit the BIOS Setup Utility.

Changing a Password

1. Use the ⬆ and ⬇ keys to highlight the Set Supervisor Password parameter and press the [ENTER] key. The Set Supervisor Password box appears:

```
Set Supervisor Password

Enter current password    [                    ]

Enter New Password        [                    ]

Confirm New Password      [                    ]
```

2. Type the current password in the Enter Current Password field and press [ENTER] .
3. Type a password in the Enter New Password field. Retype the password in the Confirm New Password field.
4. Press [ENTER] . After setting the password, the computer sets the Supervisor Password parameter to "Set".
5. If desired, you can enable the Password on boot parameter.
6. When you are done, press [F10] to save the changes and exit the BIOS Setup Utility.

If the verification is OK, the screen will display as following.
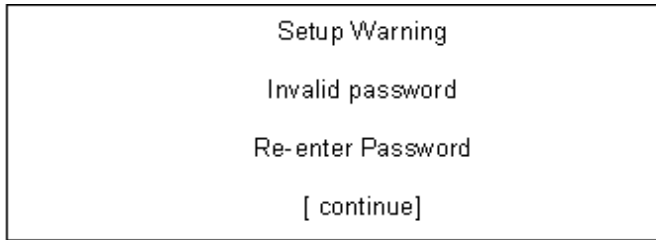
```
Setup Notice

Changes have been saved.

[ continue]
```

The password setting is complete after the user presses [F10] .
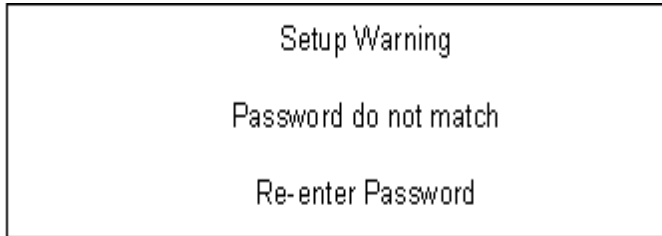
If the current password entered does not match the actual current password, the screen will show you the Setup Warning.

```
Setup Warning

Invalid password

Re-enter Password

[ continue]
```

If the new password and confirm new password strings do not match, the screen will display the following message.

```
Setup Warning

Password do not match

Re-enter Password
```

Boot

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

InsydeH2O Setup Utility					
Information	Main	Security	Advanced	Boot	Exit

Boot Priority Order:

1: IDE 0 : Hitachi HTS541616J9SA00
2: IDE 1 : TOSHIBA DVDW/HD TS-L802A
3: USB FDD :
4: Network Boot : MBA v9.4.5 Slot 0400
5: USB HDD :
6: USB KEY :
7: USB CDROM :

Item Specific Help

Use <↑> or <↓> to select a device, then press <F5> to move it up the list, or <F6> to move it down the list. Press <Esc> to escape the menu.

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

Exit

The Exit screen contains parameters that help safeguard and protect your computer from unauthorized use.

InsydeH2O Setup Utility						
Information	Main	Security	Advanced	Boot	Exit	

	Item Specific Help
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes	Exit System Setup and save your changes to CMOS.

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

The table below describes the parameters in this screen.

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

BIOS Flash Utility

The BIOS flash memory update is required for the following conditions:

❏   New versions of system programs

❏   New features or options

❏   Restore a BIOS when it becomes corrupted.

Use the Phlash utility to update the system BIOS flash ROM.

NOTE: If you do not have a crisis recovery diskette at hand, then you should create a **Crisis Recovery Diskette** before you use the Phlash utility.

NOTE: Do not install memory-related drivers (XMS, EMS, DPMI) when you use the Phlash.

NOTE: Please use the AC adapter power supply when you run the Phlash utility. If the battery pack does not contain enough power to finish BIOS flash, you may not boot the system because the BIOS is not completely loaded.

Follow the steps below to run the Phlash.

1.   Prepare a bootable diskette.

2.   Copy the flash utilities to the bootable diskette.

3.   Then boot the system from the bootable diskette. The flash utility has auto-execution function.

Machine Disassembly and Replacement

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

To disassemble the computer, you need the following tools:

❑ Wrist grounding strap and conductive mat for preventing electrostatic discharge

❑ Small Philips screw driver

❑ Philips screwdriver

❑ Plastic flat head screw driver

❑ Tweezers

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

General Information

Before You Begin

Before proceeding with the disassembly procedure, 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. Remove the battery pack.

Disassembly Procedure Flowchart

The flowchart on the succeeding page 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 system board, you must first remove the keyboard, then disassemble the inside assembly frame in that order.

```
                                    Start
                                      |
                                 Battery Pack
                                      |
            D*5                                           F*2
            F*1                       F*1
         Thermal              Mimi Cover              HDD Door
          Door                                            |
            |                                     H*4           |
   B*1                  F*1                    HDD Bracket     HDD
   D*1                                                          |
 System Fan        ODD Module        Memory                     |
     |                                      |                    |
  B*4                                       |                    |
 Thermal                             Middle Cover ←──────────────┘
 Module                                    |
     |                                 F*2 |
    CPU ──────────────────────────→  Keyboard
                                           |
                    C*2 LCD hinges to logic |
                    D*2 LCD hinges to logic
                    C*2 on bottom side
                                      LCD Module
                                           |
    C*8 upper case assembly to lower case assembly on bottom side
    C*2 upper case assembly to lower case assembly on upper side

   Lower Case                          Upper Case
   Assembly                            Assembly
       |                                   |
  F*1              (for AS models)    F*2              F*1
 Modem          Switch Board       Media Board      Touchpad
 Board          (for AS                (for AS       Bracket
     |           models)                models)          |
  F*1                                              Touchpad    Touchpad
 Main Board                                                       FFC
     |
  F*2
 Lower Case ── Speaker Set
```

```
                    ┌─────────────────────┐
                    │     LCD Module      │
                    └──────────┬──────────┘
                               │  B*4
                    ┌──────────▼──────────┐
                    │     LCD Bezel       │
                    └──────────┬──────────┘
                               │  G*1 for 15"
                               │  G*2 for 15.4"
                    ┌──────────▼──────────┐
                    │    LCD Inverter     │
                    └──────────┬──────────┘
                               │  B*2
        ┌──────────────────────┴───────────────────────┐
┌───────▼────────┐                            ┌─────────▼─────────┐
│   LCD Panel    │                            │   LCD Assembly    │
└───────┬────────┘                            └─────────┬─────────┘
        │  G*2 for 15.4"                ┌───────────────┴───────────────┐
┌───────▼────────┐                ┌─────▼─────┐    F*8 (4 on left; 4 on right)
│   Wireless     │                │ LCD Cable │            ┌────▼─────────┐
│  Antenna Set   │                └───────────┘            │ LCD Bracket  │
└────────────────┘                                         │    Sets      │
                                                           └──────┬───────┘
                                                           ┌──────▼───────┐
                                                           │     LCD      │
                                                           └──────────────┘
```

Screw List

Item	Description	Part Number
A	SCREW M2.5*3(NL)	86.TAVV5.001
B	SCREW M2.5*6(NL)	86.TAVV5.002
C	SCREW M2.5*10(NL)	86.TAVV5.003
D	SCREW M2.5*15(NL)	86.TAVV5.004
E	SCREW M2*2.2	86.TAVV5.005
F	SCREW M2*3(NL)	86.TAVV5.006
G	SCREW M2*4	86.TAVV5.007
H	SCREW M3*4(NL)	86.TAVV5.008
I	SCREW D-SUB 4#X40* 1/5-NI (NL)	86.TAVV5.009

Removing the Battery Pack

1. Unlock the battery lock (move the battery lock to the unlock position as shown).

2. Slide the battery release latch then remove the battery.

Removing the HDD Module/Memory/Wireless LAN Card/Modem Card/ TV Tuner Card/System Fan/Thermal Modules/VGA Board/CPU/ Keyboard and the LCD Module

Removing the HDD Module

1. Remove the two screws fastening the HDD cover.
2. Detach the HDD cover from the main unit.
3. Pull the tab to remove the HDD module in the direction of the arrow.

Removing the Memory

1. Remove the four screws holding the thermal cover.
2. Detach the thermal cover from the main unit.
3. Pop out the memory from the DIMM socket then remove it (If the notebook has two memory, then repeat this step).

Removing the Wireless LAN Card/Modem Card and TV Tuner Card

1. Disconnect the three antennae from the wireless LAN card.
2. Remove the two screws fastening the wireless LAN card.
3. Then take out the wireless LAN card from the main unit.

4. Remove the screw fastening the modem card and detach the modem card from the main board.
5. Disconnect the RJ-11 cable and remove the modem card.
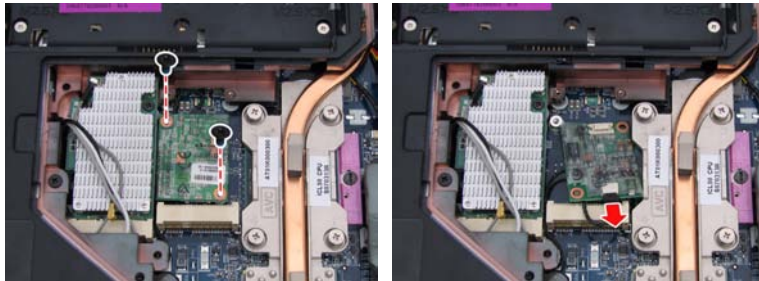
6. Disconnect the RF cable from the TV tuner card.
7. Remove the two screws fastening the TV tuner card.
8. Then take out the TV tuner card from the main unit.
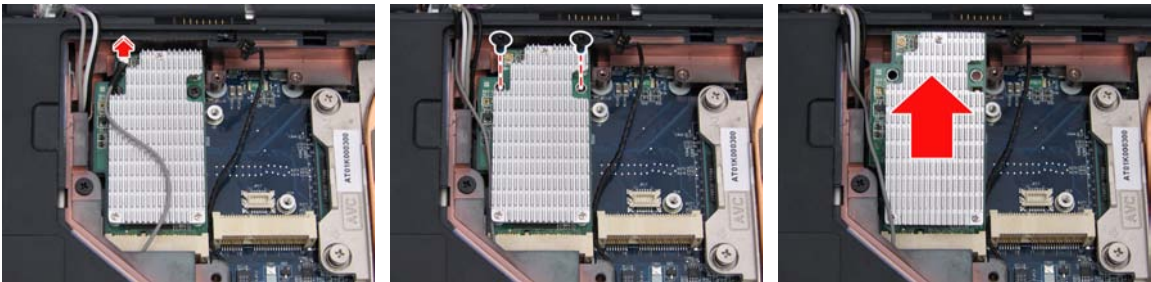
NOTE: TV tuner card on selected models only.

Removing the System Fan/Thermal Modules/VGA Board and CPU

1. Disconnect the fan cable from the main board.
2. Remove the three screws holding the system fan.
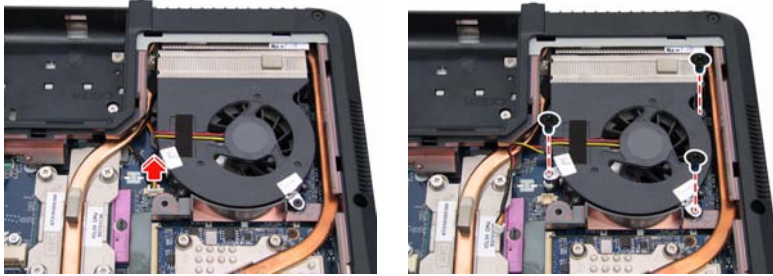
3. Remove the four spring screws holding the CPU thermal module.
4. Then detach the CPU thermal module as shown.

5. Remove the four spring screws holding the VGA thermal module.
6. Then detach the VGA thermal module as shown.
7. Remove the two screws fastening the VGA board then remove it.

8. Use a flat screwdriver to release the CPU lock (Turn counter clock-wire).
9. Remove the CPU from the CPU socket carefully.

NOTE: VGA thermal module and VGA board on selected models only.
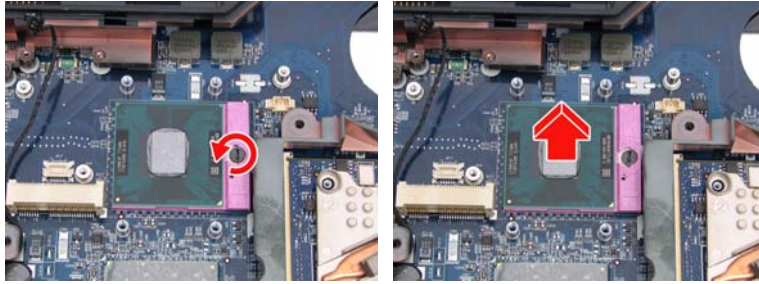
Removing the Keyboard and LCD Module

1. Turn the notebook over.

2. Remove the two screws securing the strip cover from the bottom of the notebook.

3. Detach the strip cover from the front side and remove it.

4. Gently pull up the keyboard to release it from the four snaps as shown.

5. Turn over the keyboard as the image shows. Then disconnect the keyboard cable from the main board.

6. Remove the keyboard from the main unit.

7. Disconnect the LCD cable and microphone cable from the main board.

8. Pull out the wireless LAN antennas free from the main unit as shown.

9. Remove the four screws securing the hinges.
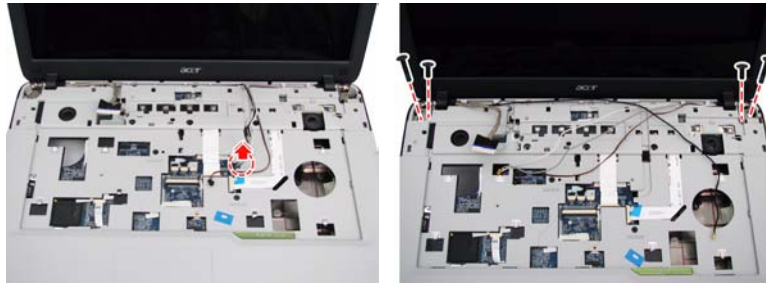
10. Detach the LCD module from the main unit.

Disassembling the Main Unit

Separate the Main Unit Into the Upper and the Lower Case Assembly

1. Remove the screw fastening the ODD from the bottom of the notebook.

2. Push the ODD module outwards and gently pull it out as shown.
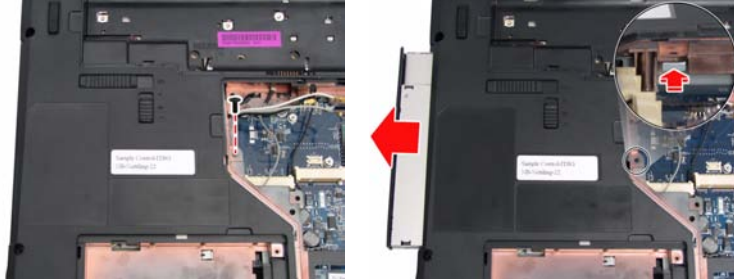
3. Press and release the PC dummy card from the PC slot as shown.

4. Then press the release the memory dummy card from the 5-in-1 card reader slot as shown.

5. Remove the ten screws fastening the upper case and the lower case assembly on the bottom.

6. Remove the eight screws fastening the upper case assembly and the lower case assembly on the front side.

7. Disconnect the touchpad FFC, left speaker cable, button board FFC, and LED board FFC from the main board.

8. Carefully detach the upper case assembly from the lower case assembly.

Disassembling the Lower Case Assembly

1. Disconnect the USB cable from the main board.

2. Remove the screw fastening the USB board and take out the board and its cable from the lower case.

3. Then detach the USB cable from the USB board.

4. Disconnect the Bluetooth cable from the main board.

5. Take out the Bluetooth module and its cable from the lower case as shown.

6. Then detach the Bluetooth cable from the Bluetooth module.

7. Disconnect the right speaker cable from the main board.

8. Remove the two screws fastening the right speaker, then lift it out from the lower case.
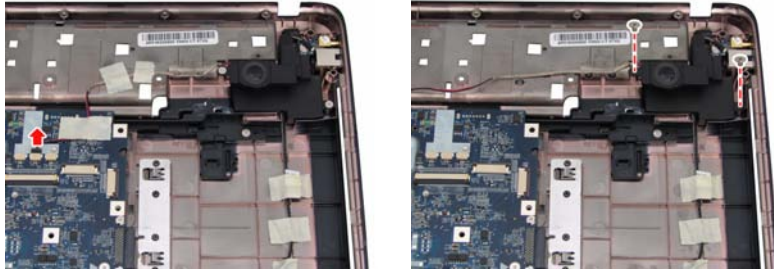
9. Pull the RF cable through the opening in the lower case as shown.

10. Remove the screw holding the RF board to the lower case.

11. Take out the RF board from the lower case, then detach the RF cable from the RF board as shown.

12. Remove the RJ-11 jack from the lower case.
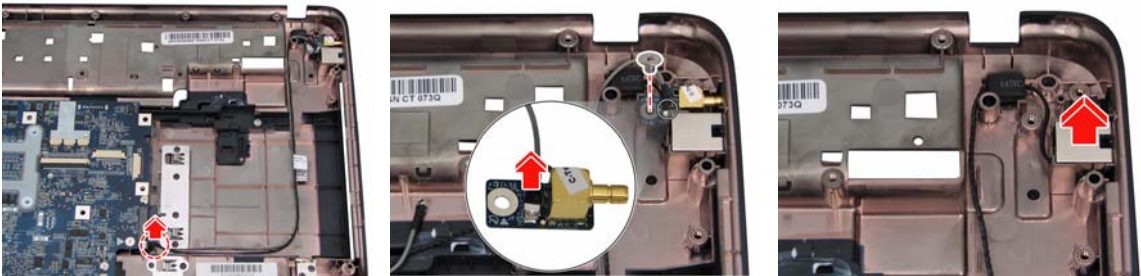
NOTE: RF board on selected models only.

13. Remove the screw fastening the main board to the lower case.

14. Detach the main board from the lower case as shown.

15. Turn the main board over, then remove the DC-in connector from the board as shown.
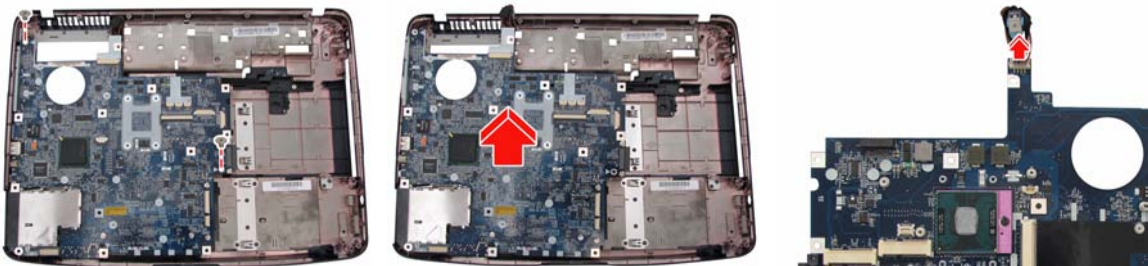
Disassembling the Upper Case Assembly

1. Turn the upper case over.

2. Remove the two screws fastening the button board.

3. Detach the button board with FFC from the upper case as shown.
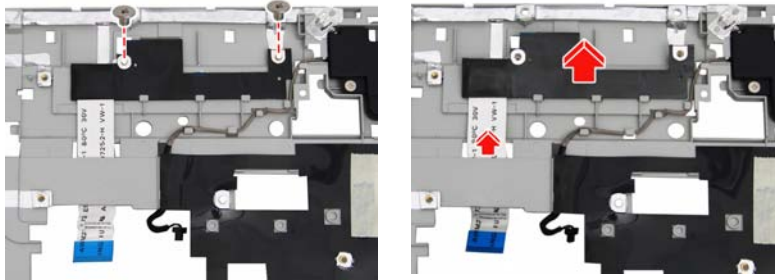
4. Remove the two screws fastening the LED board.

5. Detach the LED board with FFC from the upper case as shown.
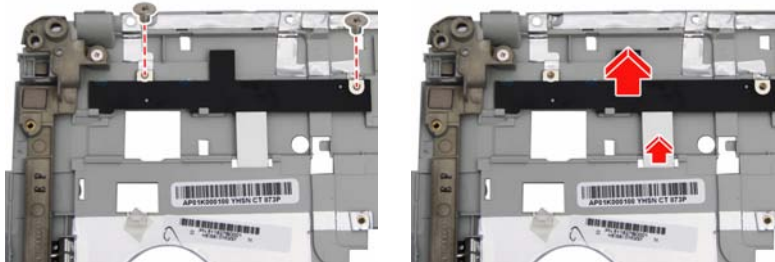
6. Remove the two screws fastening the left speaker.

7. Remove the left speaker from the upper case as shown.
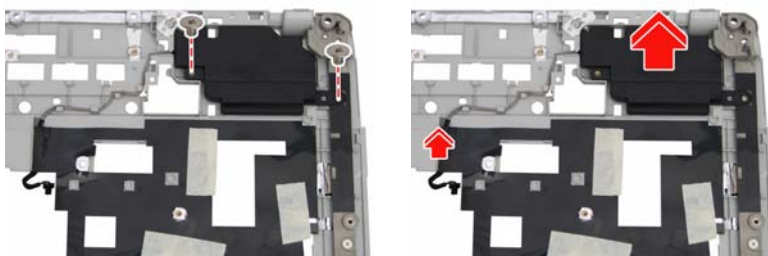
Disassembling the LCD Module

1. Remove the four screw rubbers as shown.
2. Then remove the four screws fastening the LCD bezel.
3. Detach the LCD bezel from the LCD module carefully.

4. Remove the four screws holding the LCD to the LCD panel.
5. Detach the CCD cable connector from the CCD board.
6. Take out the CCD module from the LCD panel.

7. Remove the screw fastening the CCD board to the CCD bracket.
8. Lift out the LCD from the LCD panel as shown.
9. Detach the two inverter cable connectors from the inverter board.

10. Remove the four screws fastening the left LCD bracket and detach it.
11. Remove the four screws fastening the right LCD bracket and detach it.
12. Disconnect the LCD cable from the rear side of the LCD.
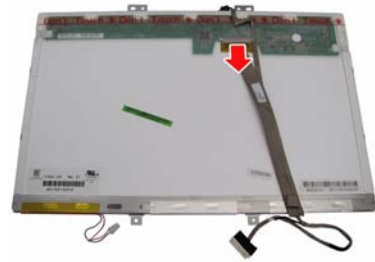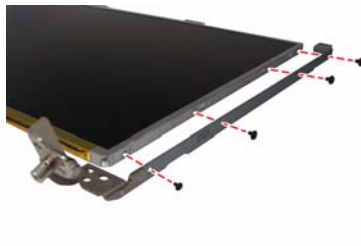
Disassembling the External Modules

Disassembling the HDD Module

1. Remove the four screws holding the HDD (hard disk drive) case; two on each side.
2. Carefully slide out the hard disk drive from the HDD case.
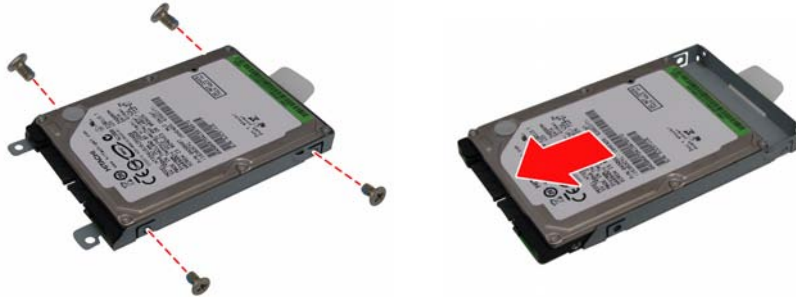
Disassembling the ODD Module

1. Remove the three screws holding the optical bracket.
2. Then remove the optical bracket from the optical disk drive.

Troubleshooting

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 re-create the failure by running the diagnostic test or by repeating the same operation.

3.   Use the following table with the verified symptom to determine which page to go to.

Symptoms (Verified)	Go To
Power failure (The power indicator does not go on or stay on).	"Power System Check" on page 73
POST does not complete. No beep or error codes are indicated.	"Power-On Self-Test (POST) Error Message" on page 76 "Undetermined Problems" on page 88
POST detects an error and displayed messages on screen.	"Error Message List" on page 77
Other symptoms (i.e. LCD display problems or others).	"Power-On Self-Test (POST) Error Message" on page 76
Symptoms cannot be re-created (intermittent problems).	Use the customer-reported symptoms and go to "Power-On Self-Test (POST) Error Message" on page 76 "Intermittent Problems" on page 87 "Undetermined Problems" on page 88

System Check Procedures

External Diskette Drive Check

Do the following to isolate the problem to a controller, driver, or diskette. A write-enabled, diagnostic diskette is required.

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

Do the following to select the test device:

1. Boot from the diagnostics diskette and start the diagnostics program.

2. See if FDD Test is passed as the program runs to FDD Test.

3. Follow the instructions in the message window.

If an error occurs with the internal diskette drive, reconnect the diskette connector on the system board.

If the error still remains:

1. Reconnect the external diskette drive/DVD-ROM module.

2. Replace the external diskette drive/CD-ROM module.

3. Replace the main board.

External CD-ROM Drive Check

Do the following to isolate the problem to a controller, drive, or CD-ROM. Make sure that the CD-ROM does not have any label attached to it. The label can cause damage to the drive or can cause the drive to fail.

Do the following to select the test device:

1. Boot from the diagnostics diskette and start the diagnostics program.

2. See if CD-ROM Test is passed when the program runs to CD-ROM Test.

3. Follow the instructions in the message window.

If an error occurs, reconnect the connector on the System board. If the error still remains:

1. Reconnect the external diskette drive/CD-ROM module.

2. Replace the external diskette drive/CD-ROM module.

3. Replace the main board.

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 character appears, make sure that the flexible cable extending from the keyboard is correctly seated in the connector on the system board.

If the keyboard cable connection is correct, run the Keyboard Test.

If the tests detect a keyboard problem, do the following one at a time to correct the problem. Do not replace a non-defective FRU:

1. Reconnect the keyboard cables.

2. Replace the keyboard.

3. Replace the main board.

The following auxiliary input devices are supported by this computer:

❏ Numeric keypad

❏ External keyboard

If any of these devices do not work, reconnect the cable connector and repeat the failing operation.

Memory check

Memory errors might stop system operations, show error messages on the screen, or hang the system.

1. Boot from the diagnostics diskette and start the doagmpstotics program (please refer to main board).
2. Go to the diagnostic memory in the test items.
3. Press F2 in the test items.
4. Follow the instructions in the message window.

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

Power System Check

To verify the symptom of the problem, power on the computer using each of the following power sources:

1. Remove the battery pack.
2. Connect the power adapter and check that power is supplied.
3. Disconnect the power adapter and install the charged battery pack; then check that power is supplied by the battery pack.

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

❏ "Check the Power Adapter" on page 74
❏ "Check the Battery Pack" on page 75

Check the Power Adapter

Unplug the power adapter cable from the computer and measure the output voltage at the plug of the power adapter cable. See the following figure:
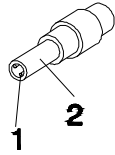
Pin 1: +19 to +20.5V
Pin 2: 0V, Ground

1. If the voltage is not correct, replace the power adapter.

2. If the voltage is within the range, do the following:

    ❑   Replace the System board.

    ❑   If the problem is not corrected, see "Undetermined Problems" on page 88.

    ❑   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 the power cord of the power adapter for correct continuity and installation.

4. If the operational charge does not work, see "Check the Battery Pack" on page 75.

Check the Battery Pack

To check the battery pack, do the following:

From Software:

1. Check out the Power Management in Control Panel

2. In Power Meter, confirm that if the parameters shown in the screen for Current Power Source and Total Battery Power Remaining are correct.

3. Repeat the steps 1 and 2, for both battery and adapter.

4. This helps you identify first the problem is on recharging or discharging.

From Hardware:

1. Power off the computer.

2. Remove the battery pack and measure the voltage between battery terminals 1(+) and 6(ground). See the following figure
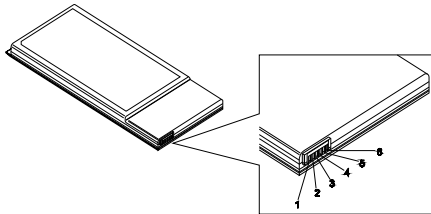
3. If the voltage is still less than 7.5 Vdc after recharging, replace the battery.

To check the battery charge operation, use a discharged battery pack or a battery pack that has less than 50% of the total power remaining when installed in the computer.

If the battery status indicator does not light up, remove the battery pack and let it return to room temperature. Re-install the battery pack.

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

Touchpad Check

If the touchpad doesn't work, do the following actions one at a time to correct the problem. Do not replace a non-defective FRU:

1. Reconnect the touchpad cables.

2. Replace the touchpad.

3. Replace the system board.

After you use the touchpad, the pointer drifts on the screen for a short time. This self-acting pointer movement can occur when a slight, steady pressure is applied to the touchpad pointer. This symptom is not a hardware problem. No service actions are necessary if the pointer movement stops in a short period of time.

Power-On Self-Test (POST) Error Message

The POST error message index lists the error message and their possible causes. The most likely cause is listed first.

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.

This index can also help you determine the next possible FRU to be replaced when servicing a computer.

If the symptom is not listed, see "Undetermined Problems" on page 88.

The following lists the error messages that the BIOS displays on the screen and the error symptoms classified by function.

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 Code List

Error Codes	Error Messages
006	Equipment Configuration Error Causes: 1. CPU BIOS Update Code Mismatch 2. IDE Primary Channel Master Drive Error (THe causes will be shown before "Equipment Configuration Error")
010	Memory Error at xxxx:xxxx:xxxxh (R:xxxxh, W:xxxxh)
070	Real Time Clock Error
071	CMOS Battery Bad
072	CMOS Checksum Error
110	System disabled. Incorrect password is specified.
<No error code>	Battery critical LOW In this situation BIOS will issue 4 short beeps then shut down system, no message will show.
<No error code>	Thermal critical High In this situation BIOS will shut down system, not show message.

Error Message List

Error Messages	FRU/Action in Sequence
Failure Fixed Disk	Reconnect hard disk drive connector. "Load Default Settings" in BIOS Setup Utility. Hard disk drive System board
Stuck Key	see "Keyboard or Auxiliary Input Device Check" on page 72.
Keyboard error	see "Keyboard or Auxiliary Input Device Check" on page 72.
Keyboard Controller Failed	see "Keyboard or Auxiliary Input Device Check" on page 72.
Keyboard locked - Unlock key switch	Unlock external keyboard
Monitor type does not match CMOS - Run Setup	Run "Load Default Settings" in BIOS Setup Utility.
Shadow RAM Failed at offset: nnnn	BIOS ROM System board
System RAM Failed at offset: nnnn	DIMM System board
Extended RAM Failed at offset: nnnn	DIMM System board
System battery is dead - Replace and run Setup	Replace RTC battery and Run BIOS Setup Utility to reconfigure system time, then reboot system.
System CMOS checksum bad - Default configuration used	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system.
System timer error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board

Error Message List

Error Messages	FRU/Action in Sequence
Real time clock error	RTC battery
	Run "BIOS Setup Utility to reconfigure system time, then reboot system.
	System board
Previous boot incomplete - Default configuration used	Run "Load Default Settings" in BIOS Setup Utility.
	RTC battery
	System board
Memory size found by POST differed from CMOS	Run "Load Default Settings" in BIOS Setup Utility.
	DIMM
	System board
Diskette drive A error	Check the drive is defined with the proper diskette type in BIOS Setup Utility
	See "External Diskette Drive Check" on page 72.
Incorrect Drive A type - run SETUP	Check the drive is defined with the proper diskette type in BIOS Setup Utility
System cache error - Cache disabled	System board
CPU ID:	System board
DMA Test Failed	DIMM
	System board
Software NMI Failed	DIMM
	System board
Fail-Safe Timer NMI Failed	DIMM
	System board
Device Address Conflict	Run "Load Default Settings" in BIOS Setup Utility.
	RTC battery
	System board
Allocation Error for device	Run "Load Default Settings" in BIOS Setup Utility.
	RTC battery
	System board
Failing Bits: nnnn	DIMM
	BIOS ROM
	System board
Fixed Disk n	None
Invalid System Configuration Data	BIOS ROM
	System board
I/O device IRQ conflict	Run "Load Default Settings" in BIOS Setup Utility.
	RTC battery
	System board
Operating system not found	Enter Setup and see if fixed disk and drive A: are properly identified.
	Diskette drive
	Hard disk drive
	System board

Error Message List

No beep Error Messages	FRU/Action in Sequence
No beep, power-on indicator turns off and LCD is blank.	Power source (battery pack and power adapter). See "Power System Check" on page 73.. Ensure every connector is connected tightly and correctly. Reconnect the DIMM. LED board. System board.
No beep, power-on indicator turns on and LCD is blank.	Power source (battery pack and power adapter). See "Power System Check" on page 73.. Reconnect the LCD connector Hard disk drive LCD inverter ID LCD cable LCD Inverter LCD System board
No beep, power-on indicator turns on and LCD is blank. But you can see POST on an external CRT.	Reconnect the LCD connectors. LCD inverter ID LCD cable LCD inverter LCD System board
No beep, power-on indicator turns on and a blinking cursor shown on LCD during POST.	Ensure every connector is connected tightly and correctly. System board
No beep during POST but system runs correctly.	Speaker System board

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 Area
89h		Enable Non-Maskable Interrupts (NMIs)
8Ah		Initialize Extended BIOS Data Area
8Bh		Test and initialize PS/2 mouse

Code	Beeps	POST Routine Description
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 Multi Processor 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
AEh		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
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)

Code	Beeps	POST Routine Description
D2h		Unknown interrupt

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

Index of Symptom-to-FRU Error Message

LCD-Related Symptoms

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

Indicator-Related Symptoms

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

Power-Related Symptoms

Symptom / Error	Action in Sequence
Power shuts down during operation	Power source (battery pack and power adapter). See "Power System Check" on page 73. Battery pack Power adapter Hard drive & battery connection board System board
The system doesn't power-on.	Power source (battery pack and power adapter). See "Power System Check" on page 73. Battery pack Power adapter Hard drive & battery connection board System board
The system doesn't power-off.	Power source (battery pack and power adapter). See "Power System Check" on page 73. Hold and press the power switch for more than 4 seconds. System board

Power-Related Symptoms

Symptom / Error	Action in Sequence
Battery can't be charged	See "Check the Battery Pack" on page 75.
	Battery pack
	System board

PCMCIA-Related Symptoms

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

Memory-Related Symptoms

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

Speaker-Related Symptoms

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

Power Management-Related Symptoms

Symptom / Error	Action in Sequence
The system will not enter hibernation	See "Save to Disk (S4)" on page 45.
	Keyboard (if control is from the keyboard)
	Hard disk drive
	System board
The system doesn't enter hibernation mode and four short beeps every minute.	Press Fn+[F4] and see if the computer enters hibernation mode.
	Touchpad
	Keyboard
	Hard disk connection board
	Hard disk drive
	System board
The system doesn't enter standby mode after closing the LCD	See "Save to Disk (S4)" on page 45.
	LCD cover switch
	System board
The system doesn't resume from hibernation mode.	See "Save to Disk (S4)" on page 45.
	Hard disk connection board
	Hard disk drive
	System board
The system doesn't resume from standby mode after opening the LCD.	See "Save to Disk (S4)" on page 45.
	LCD cover switch
	System board

Power Management-Related Symptoms

Symptom / Error	Action in Sequence
Battery fuel gauge in Windows doesn't go higher than 90%.	Remove battery pack and let it cool for 2 hours.
	Refresh battery (continue use battery until power off, then charge battery).
	Battery pack
	System board
System hangs intermittently.	Reconnect hard disk/CD-ROM drives.
	Hard disk connection board
	System board

Peripheral-Related Symptoms

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

Keyboard/Touchpad-Related Symptoms

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

Modem-Related Symptoms

Symptom / Error	Action in Sequence
Internal modem does not work correctly.	Modem phone port
	modem combo board
	System board

NOTE: If you cannot find a symptom or an error in this list and the problem remains, see "Undetermined Problems" on page 88.

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 system board in loop mode at least 10 times.

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

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

Undetermined Problems

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

Follow these procedures to isolate the failing FRU (do not isolate non-defective FRU).

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 73.):

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-ROM/Diskette drive Module

    ❏ PC Cards

4. Power-on the computer.

5. Determine if the problem has changed.

6. If the problem does not recur, reconnect the removed devices one at a time until you find the failing FRU.

7. If the problem remains, replace the following FRU one at a time. Do not replace a non-defective FRU:

    ❏ System board

    ❏ LCD assembly

Jumper and Connector Locations

Top View

1	JP1	LCD Connector	9	JP36	Mainboard to LED Board Connector
2	JP3	Speaker (Left) Connector	10	U12	
3	JP34	Speaker (Right) Connector	11	JP9	PCI Express Card Socket
4	JP4	Internal MIC Connector	12	LED1	Power/Suspend LED
5	U5	South Bridge (ICH8M)	13	LED2	Battery Charge/Discharge LED
6	JP6	Internal Track-Pad Connector	14	JP13	Mainboard to Audio Board Connector
7	JP5	Internal Keyboard Connector	15	JP11	Mainboard to USB Board Connector
8	JP2	Mainboard to Button Board Connector	16	JP12	Bluetooth Module Connector

Bottom View

1	PJP1	DC-in Power Jack		14	JP24	TV-out Connector
2	PJP2	Battery Connector		15	JP26	IEEE1394 Connector
3	JP14	CRT Connector		16	JP27	SATA HDD Connector
4	JP15	DVI-D Connector		17	U23	North Bridge (965PM/965GM)
5	JP25	ODD Connector		18	U28	
6	JP20	Mini Card (WLAN) Socket		19	U29	Volume Control
7	JP19	Mini Card (TV-Tuner) Socket		20	JP28	DDRII Memory Socket
8	JP17	MDC Connector		21	JP29	DDRII Memory Socket
9	JP22	CPU Socket		22	JP31	Headphone/SPDIF Jack
10	JP16	Internal Fan Connector		23	JP32	Mic-in Jack
11	JP19	VGA Board Connector		24	U33	Audio Codec Controller
12	JP18	RJ45 (LAN) Connector		25	JP33	Line-in Jack
13	JP23	USB (Dual) Connectors				

FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of Aspire eME510. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

Please note that WHEN ORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, 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 repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should 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.

Aspire eME510 Exploded Diagram

Aspire eME510 FRU List

Category	Description	Part Number
Adapter		
ADAPTER	ADAPTER 65W 3PIN DELTA SADP-65KB DBFF	AP.06501.009
ADAPTER	ADAPTER 65W 3PIN DELTA SADP-65KB DFA	AP.06501.013
ADAPTER	ADAPTER 65W 3PIN LITEON PA-1650-02 LR	AP.06503.012
ADAPTER	ADAPTER 65W 3PIN LITEON PA-1650-02AC	AP.06503.016
ADAPTER	ADAPTER 65W 3PIN HIPRO AC-OK065B13	AP.0650A.010
Battery		
BATTERY	BATTERY LI-ION 6CELLS 4KMAH PANASONIC PA 3S2P 4.0AH 7 01K 0FA	BT.00605.015
BATTERY	BATTERY LI-ION 6CELLS 4KMAH SANYO SA 3S2P 4AH 7 01K 0FA	BT.00603.033
BATTERY	BATTERY LI-ION 6CELLS 4KMAH SIMPLO SP PA 3S2P 4.0AH 7 01K 0FA	BT.00607.010
BATTERY	BATTERY LI-ION 6CELLS 4KMAH SONY SY 3S2P 4.0AH 7 01K 0FA	BT.00604.018
BATTERY	BATTERY LI-ION 6CELLS 4.4KMAH SANYO SA 3S2P	BT.00603.042
BATTERY	BATTERY LI-ION 6CELLS 4.4KMAH SONY SA 3S2P	BT.00604.025
BATTERY	BATTERY LI-ION 6CELLS 4.4KMAH PANASONIC SA 3S2P	BT.00605.021
Board		
BOARD	MODEM BOARD	FX.22500.022
BOARD	BLUETOOTH BOARD	54.AR102.001
BOARD	MINI WLAN/B FOXCONN 802.11BG T77H030.00 (BRCM4312)	NI.23600.029
	MINI WLAN/B FOXCONN 802.11 ATHEROS XB63 BG T60H976.00 FW:V06	NI.23600.007
BOARD	BUTTON BOARD W/O LED 15.4"	TBD

Category	Description	Part Number
BOARD	LED BOARD W/O BUTTON 15.4"	TBD
BOARD	USB BOARD FOR TV	55.ALB02.003
BOARD	USB BOARD FOR W/O TV	55.AHE02.004
BOARD	RF BOARD FOR DTV	55.AHE02.005
BOARD	VGA BOARD-M71M 128MB	VG.71M02.002
BOARD	VGA BOARD-M71M 256MB W/HDCP	VG.71M02.001
BOARD	USB BOARD W/O CIR 15.4	55.ALB02.003
BOARD	INVERTER BOARD 15.4	19.AHE02.001
Cable		
CABLE	RJ11 CABLE 15.4	50.AHE02.001
CABLE	FFC CABLE - T/P TO MB	27.TAVV5.008
CABLE	BLUE TOOTH CABLE 15.4"	50.AHE02.003
CABLE	USB CABLE 15.4"	50.AHE02.004
CABLE	RF CABLE 15.4	50.AHE02.005
CABLE	7 PIN MINI-DIN S-VIDEO TO 4 CABLE	50.ABD02.001
CABLE	PAL TO NTSC CONNECTOR	20.ABD02.001
CABLE	SMB JACK	50.ABD02.002
CABLE	DVB-T ANT	50.ABD02.003

Category	Description	Part Number
CABLE	DC-IN CABLE (65W) UMA	50.AHE02.009
CABLE	POWER CORD US 3 PIN	27.TAVV5.001
CABLE	POWER CORD EU 3 PIN	27.TAVV5.002
CABLE	POWER CORD AUS 3 PIN	27.TAVV5.003
CABLE	POWER CORD UK 3 PIN	27.TAVV5.004
CABLE	POWER CORD CHINA 3 PIN	27.TAVV5.005
CABLE	POWER CORD SWISS 3 PIN	27.TAVV5.006
CABLE	POWER CORD ITALIAN 3 PIN	27.TAVV5.007
CABLE	POWER CORD JP 3 PIN	27.TAVV5.009
CABLE	POWER CORD SOUTH AFRICA 3 PIN	27.TAVV5.010
CABLE	POWER CORD KOERA 3 PIN	27.TAVV5.011
CABLE	POWER CORD ISRAEL 3 PIN	27.TAVV5.012
CABLE	POWER CORD INDIA 3 PIN	27.TAVV5.013
CABLE	POWER CORD TWN 3 PIN	27.TAVV5.014
CABLE	FFC CABLE - T/P TO MB	50.AHE02.002
CABLE	LCD WIRESET 15.4	50.AHE02.006
CABLE	ANTENNA R 15.4	50.AHE02.007
CABLE	ANTENNA L-15.4	50.AHE02.008
CABLE	LCD WIRESET 15.4 FOR W/O CCD FUNCTION	50.AH902.001
Assembly Parts		
CASE/COVER/ BRACKET ASSEMBLY	MIDDLE COVER 15.4"	42.N0202.001
CASE/COVER/ BRACKET ASSEMBLY	UPPER CASE ASSY 15.4 W/TP TP BRACKET TP FFC - UMA	60.N0202.001
CASE/COVER/ BRACKET ASSEMBL	LOWER CASE ASSY UMA W/O TV-15.4	60.N0202.002

Category	Description	Part Number
CASE/COVER/ BRACKET ASSEMBL	THERMAL DOOR 15.4" UMA	42.AHE02.002
CASE/COVER/ BRACKET ASSEMBLY	ODD BEZEL-COMBO	42.AHE02.006
CASE/COVER/ BRACKET ASSEMBLY	ODD BEZEL-SUPER MULTI	42.AHE02.004
CASE/COVER/ BRACKET ASSEMBLY	ODD BRACKET 15.4"	33.AHE02.001
CASE/COVER/ BRACKET ASSEMBLY	HDD DOOR 15.4	42.AHE02.007
CASE/COVER/ BRACKET ASSEMBLY	HDD BRACKET 15.4	33.AHE02.002
CASE/COVER/ BRACKET ASSEMBLY	LCD COVER ASSY 15.4 IN. LOGO W/MIC W/ANTENNA	60.N0202.003
CASE/COVER/ BRACKET ASSEMBLY	LCD BEZEL ASSY 15.4 FOR CCD	60.N0202.004
CASE/COVER/ BRACKET ASSEMBLY	LCD BRACKET SET R&L 15.4	33.AHE02.003
CASE/COVER/ BRACKET ASSEMBLY	CCD BRACKET-15.4	33.AHE02.004
CASE/COVER/ BRACKET ASSEMBLY	LCD COVER ASSY 15.4 IN. LOGO W/MIC W/ANTENNA	60.N0202.003
CASE/COVER/ BRACKET ASSEMBLY	LCD BEZEL ASSY 15.4 FOR W/O CCD FUNCTION	60.N0302.001
CASE/COVER/ BRACKET ASSEMBLY	LCD BRACKET SET R&L 15.4	33.AHE02.003
CPU		
CPU/PROCESSOR	INTEL CPU MEROM SINGLE CORE CM540 1.86G LF80537NE0361M SLA2F A1 UFCPGA 478P	KC.N0001.540
CPU/PROCESSOR	INTEL CPU MEROM SINGLE CORE CM550 2G IC LF80537NE0411M SLA2E A1	KC.N0001.550

Category	Description	Part Number
CPU/PROCESSOR	INTEL CPU MEROM SINGLE CORE CM530SR 1.73G IC LF80537NE0301M SLA2G A1	KC.NSR01.530
CPU/PROCESSOR	INTEL CPU MEROM SINGLE CORE CM560 2.13G LF80537NE0461M SLA2D A1	KC.N0001.560
CPU/PROCESSOR	INTEL CPU MEROM SINGLE CORE CM570 2.26G LF80537NE0511M SLA2C A1	KC.N0001.570
CPU/PROCESSOR	INTEL CPU CELERON DUAL CORE CMT1400 1.73G LF80537NE030512 SLAQL M0	KC.14001.CMT
Combo Drive		
COMBO DRIVE	DVD/CDRW 24X COMBO MODULE	6M.AHE02.001
COMBO DRIVE	DVD/CDRW COMBP DRIVE HLDS GCC-T10N VISTA 0FA	KO.0240D.005
COMBO DRIVE	DVD/CDRW COMBP DRIVE SONY CRX880A VISTA 0FA	KO.0240E.005
COMBO DRIVE	DVD/CDRW COMBP DRIVE TSST TS-L462D AC02 0FA	KO.02401.005
DVD RW DRIVE		
DVD RW DRIVE	DVD SUPER MULTI MODULE TRAY IN	6M.AHE02.002
DVD RW DRIVE	DVD SUPER MULTI DRIVE PIONEER DVR-K17RS 0FA	KU.00805.038
DVD RW DRIVE	DVD SUPER MULTI DRIVE PIONEER DVR-KD08RS 0FA	KU.00805.043
DVD RW DRIVE	DVD SUPER MULTI DRIVE PANASONIC UJ-850UAA1-A VISTA	KU.00807.055
DVD RW DRIVE	DVD SUPER MULTI DRIVE PANASONIC UJ-870BAA-A 0FA	KU.00807.058
DVD RW DRIVE	DVD SUPER MULTI DRIVE PHILIPS DS-8A1P 0FA	KU.00809.010
DVD RW DRIVE	DVD SUPER MULTI DRIVE HLDS GSA-T20N 0FA	KU.0080D.027
DVD RW DRIVE	DVD SUPER MULTI DRIVE HLDS GSA-T40N 0FA	TBD
DVD RW DRIVE	DVD SUPER MULTI DRIVE SONY AD-7530A 0FA	KU.0080E.002
DVD RW DRIVE	DVD SUPER MULTI DRIVE SONY AD-7560A 0FA	KU.0080E.005
DVD RW DRIVE	DVD SUPER MULTI DRIVE SONY AD-7530B 0FA	KU.0080E.008
Hard Disk		
HDD/HARD DISK DRIVE	HDD SATA 80G 5400RPM HGST HTS541680J9SA00 SURUGA-B LF F/W: C70P	KH.08007.021
HDD/HARD DISK DRIVE	HDD SATA 80G 5400RPM HGST HTS542580K9SA00 0FA	KH.08007.025
HDD/HARD DISK DRIVE	HDD SATA 80G 5400RPM SEAGATE ST980811AS SATA 8MB LF 3.ALD	KH.08001.030
HDD/HARD DISK DRIVE	HDD SATA 80G 5400RPM TOSHIBA MK8037GSX Gemini BS SATA LF F/W:DL250J	KH.08004.010
HDD/HARD DISK DRIVE	HDD SATA 80G 5400RPM TOSHIBA MK8046GSX 0FA	KH.08004.011

Category	Description	Part Number
HDD/HARD DISK DRIVE	HDD SATA 80G 5400RPM WD WD800BEVS-22RST0 ML80 SATA LF F/W:04.01G04	KH.08008.033
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM HGST HTS541612J9SA00 SURUGA-B LF F/W: C70P	KH.12007.010
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM HGST HTS542512K9SA00 0FA	KH.12007.014
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM SEAGATE ST9120822AS SATA 8MB LF 3.ALD	KH.12001.031
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM SEAGATE ST9120817AS 0FA	KH.12001.032
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM TOSHIBA MK1237GSX Gemini BS SATA LF F/W:DL150J	KH.12004.006
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM TOSHIBA MK1246GSX 0FA	KH.12004.007
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM WD WD1200BEVS-22RST0 ML80 SATA LF F/W:04.01G04	KH.12008.018
HDD/HARD DISK DRIVE	HDD SATA 120G 5400RPM WD WD1200BEVS-22UST0 0FA	KH.12008.019
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM HGST HTS541616J9SA00 SURUGA-B LF F/W: C70P	KH.16007.011
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM HGST HTS542516K9SA00 0FA	KH.16007.016
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM SEAGATE ST9160821AS SATA 8MB LF 3.ALD	KH.16001.026
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM SEAGATE ST9160827AS 0FA	KH.16001.029
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM TOSHIBA MK1637GSX Gemini BS SATA LF F/W: DL050J	KH.16004.001
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM TOSHIBA MK1646GSX 0FA	KH.16004.002
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM WD WD1600BEVS-22RST0 ML80 SATA LF F/W:04.01G04	KH.16008.019
HDD/HARD DISK DRIVE	HDD SATA 160G 5400RPM WD WD1600BEVT-22ZCT0 0FA	KH.16008.022
HDD/HARD DISK DRIVE	HDD SATA 250G 5400RPM WD WD2500BEVS-22UST0; FW: 01.01A01; HW: T0	KH.25008.018
HDD/HARD DISK DRIVE	HDD SATA 250G 5400RPM HGST HDD 250G .37"H HTS542525K9SA00 0FA	KH.25007.011
HDD/HARD DISK DRIVE	HDD SATA 250G 5400RPM TOSHIBA MK2546GSX 0FA	KH.25004.001
HDD/HARD DISK DRIVE	HDD SATA 250G 5400RPM SEAGATE ST9250827AS 0FA	KH.25001.011
HDD/HARD DISK DRIVE	HDD SATA 320G 5400RPM WD WD3200BEVT-22ZCT0 0FA	KH.32008.013
HDD/HARD DISK DRIVE	HDD SATA 200G 4200RPM TOSHIBA MK2035GSS	KH.20004.001

Category	Description	Part Number
Keyboard		
KEYBOARD	KEYBOARD INTE(UI) BLACK AS	KB.INT00.442
KEYBOARD	KEYBOARD ARE BLACK AS	KB.INT00.474
KEYBOARD	KEYBOARD BE BLACK AS	KB.INT00.473
KEYBOARD	KEYBOARD BZ BLACK AS	KB.INT00.472
KEYBOARD	KEYBOARD CF BLACK AS	KB.INT00.471
KEYBOARD	KEYBOARD CH BLACK AS	KB.INT00.470
KEYBOARD	KEYBOARD CZ BLACK AS	KB.INT00.469
KEYBOARD	KEYBOARD DM BLACK AS	KB.INT00.468
KEYBOARD	KEYBOARD NL BLACK AS	KB.INT00.467
KEYBOARD	KEYBOARD FR BLACK AS	KB.INT00.465
KEYBOARD	KEYBOARD GR BLACK AS	KB.INT00.464
KEYBOARD	KEYBOARD GK BLACK AS	KB.INT00.463
KEYBOARD	KEYBOARD HG BLACK AS	KB.INT00.462
KEYBOARD	KEYBOARD IT BLACK AS	KB.INT00.459
KEYBOARD	KEYBOARD KO BLACK AS	KB.INT00.457
KEYBOARD	KEYBOARD NW BLACK AS	KB.INT00.455
KEYBOARD	KEYBOARD PO BLACK AS	KB.INT00.453
KEYBOARD	KEYBOARD RU BLACK AS	KB.INT00.452
KEYBOARD	KEYBOARD SA/CR BLACK AS	KB.INT00.451
KEYBOARD	KEYBOARD SP BLACK AS	KB.INT00.449
KEYBOARD	KEYBOARD SD/FN BLACK AS	KB.INT00.448
KEYBOARD	KEYBOARD SW BLACK AS	KB.INT00.447
KEYBOARD	KEYBOARD TI BLACK AS	KB.INT00.446
KEYBOARD	KEYBOARD TR BLACK AS	KB.INT00.445
KEYBOARD	KEYBOARD UK BLACK AS	KB.INT00.444
KEYBOARD	KEYBOARD HB BLACK AS	KB.INT00.443
KEYBOARD	KEYBOARD JP BLACK AS	KB.INT00.458
KEYBOARD	KEYBOARD ND BLACK AS	TBD
KEYBOARD	KEYBOARD AR/FR BLACK AS	KB.INT00.475
KEYBOARD	KEYBOARD CB BLACK AS	KB.INT00.477
LCD Panel		
LCD	ASSY LCD MODULE 15.4 IN. WXGA GLARE W/ANTENNA CCD	6M.AHE02.003

Category	Description	Part Number
LCD	LCD 15.4 WXGAG LPL LP154WX4-TLB2 (G) 8ms 220nits Nanking	LK.15408.025
	LCD 15.4 WXGAG LPL LP154WX4-TLB4 0FA	LK.15408.029
	LCD 15.4 WXGAG CMO N154I2-L05 Glare :220nits, 8ms 0.6mm/Asahi	LK.1540D.017
	LCD 15.4 WXGAG AUO B154EW02 V7(G) 8ms 220nits HW0A	LK.15405.021
	LCD 15.4 WXGAG AUO B154EW02 V7-HW1A 154 WX G 0FA	LK.15405.023
	LCD 15.4 WXGAG AUO B154EW08 V1	LK.15405.025
	LCD 15.4 WXGAG AUO B154EW02 V7 2A 0FA	LK.15405.028
	LCD 15.4 WXGAG AUO B154EW08 V1 3A 0FA	LK.15405.029
	LCD 15.4 WXGAG SAMSUNG LTN154AT01-001(G) 220nits 8ms	LK.15406.021
	LCD 15.4 WXGAG SAMSUNG LTN154AT01-A01 15.4" WX G 0FA	LK.15406.024
LCD	LCD WIRESET 15.4	50.AHE02.006
LCD	ASSY LCD MODULE 15.4 IN. WXGA GLARE W/ANTENNA	6M.AJS02.001
LCD	LCD BEZEL ASSY 15.4 FOR CCD	60.AHE02.008
LCD	LCD BRACKET SET R&L 15.4	33.AHE02.003
LCD	CCD MODULE 0.3M	57.AHE02.001
LCD	CCD BRACKET-15.4	33.AHE02.004
LCD	CCD MYLAR-15.4	47.AHE02.001
LCD	ASSY LCD MODULE 15.4 IN. WXGA GLARE W/ANTENNA	TBD
LCD	LCD 15.4 WXGAG LPL LP154WX4-TLB2 (G) 8ms 220nits Nanking	LK.15408.025
LCD	LCD 15.4 WXGAG CMO N154I2-L05 Glare: 220nits, 8ms 0.6mm/Asahi	LK.1540D.017
LCD	LCD 15.4 WXGAG AUO B154EW02 V7(G) 8ms 220nits HW0A	LK.15405.021
LCD	LCD 15.4 WXGAG AUO B154EW02 V7-HW1A 154 WX G 0FA	LK.15405.023
LCD	LCD 15.4 WXGAG AUO B154EW08 V1	LK.15405.025
LCD	LCD 15.4 WXGAG SAMSUNG	
LCD	LTN154AT01-001(G) 220nits 8ms	LK.15406.021
LCD	INVERTER BOARD 15.4	19.AHE02.001
LCD	LCD WIRESET 15.4	50.AHE02.006
LCD	LCD COVER ASSY 15.4 IN. LOGO W/MIC W/ANTENNA	60.AHE02.007
LCD	LCD BEZEL ASSY 15.4 FOR W/O CCD FUNCTION	60.AH902.003

Category	Description	Part Number
Mainboard		
MAINBOARD	MAINBOARD 65W GL960 UMA W/O CPU & MEMORY	TBD
MAINBOARD	MAINBOARB PM965 DISCRETE W/CARD READER_EXPRESS CARD W/O CPU MEMORY	MB.AHH02.001
Memory		
MEMORY	MEMORY 512MB DDRII 667 NANYA NT512T64UH8B0FN-3C	KN.51203.032
MEMORY	MEMORY 512MB DDRII 667 SAMSUNG M470T6554EZ3-CE6	KN.5120B.023
MEMORY	MEMORY 512MB DDRII 667 SAMSUNG M470T6464QZ3-CE6	KN.5120B.026
MEMORY	MEMORY 512MB DDRII 667 HYNIX HYMP164S64CP6-Y5	KN.5120G.024
MEMORY	MEMORY 1GB DDRII 667 NANYA NT1GT64U8HB0BN-3C	KN.1GB03.014
MEMORY	MEMORY 1GB DDRII 667 SAMSUNG M470T2953EZ3-CE6	KN.1GB0B.011
MEMORY	MEMORY 1GB DDRII 667 SAMSUNG M470T2864DZ3-CE6	KN.1GB0B.014
MEMORY	MEMORY 1GB DDRII 667 HYNIX HYMP512S64CP8-Y5	KN.1GB0G.006
MEMORY	MEMORY 1GB DDRII 667 A-D ELOPE1A0834Z	TBD
MEMORY	MEMORY 1GB DDRII 667 QIMODA HYS64T128021EDL-3S-B2	KN.1GB02.036
MEMORY	MEMORY 2GB DDRII 667 HYNIX	KN.2GB0G.004
MEMORY	MEMORY 2GB DDRII 667 MICRON	KN.2GB04.001
MEMORY	MEMORY 2GB DDRII 667 SAMSUNG M470T5663QZ3-CE6	KN.2GB0B.003
Fan		
FAN	FAN	23.AHE02.001
Heatsink		
HEATSINK	CPU THERMAL MODULE	60.AHE02.009
HEATSINK	VGA THERMAL (M71M)-DIS	60.AHE02.010
Speaker		
SPEAKER	SPEAKER R 15.4	23.AHE02.002

Category	Description	Part Number
SPEAKER	SPEAKER L 15.4	23.AHE02.003
SPEAKER	MIC SET 15.4	23.AHE02.004
Accessory		
ACCESSORY	REMOTE CONTROLLER EU	LZ.20400.004
ACCESSORY	REMOTE CONTROLLER TS	LZ.20400.005
ACCESSORY	REMOTE CONTROLLER SC	LZ.20400.006
ACCESSORY	REMOTE CONTROLLER EN	LZ.20400.007
Miscellaneous		
MISCELLANEOUS	CCD MYLAR-15.4	47.AHE02.001
MISCELLANEOUS	LCD SCREW PAD 15.4	47.AHE02.002
MISCELLANEOUS	LCD SIDE RUBBER 15.4	47.AHE02.003
MISCELLANEOUS	LCD FRONT RUBBER 15.4	47.AHE02.004
MISCELLANEOUS	LCD SCREW PAD 15.4	47.AHE02.002
MISCELLANEOUS	LCD SIDE RUBBER 15.4	47.AHE02.003
MISCELLANEOUS	LCD FRONT RUBBER 15.4	47.AHE02.004
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MISCELLANEOUS	LOWER CASE RUBBER 15.4	47.AHE02.007
MISCELLANEOUS	THERMAL PAD	47.AHE02.008
MISCELLANEOUS	NAMEPALTE e-ME510	TBD
Screw		
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SCREW	SCREW,M2.5*6 (NL)	86.AHE02.002
SCREW	SCREW,M2.5*12 (NL)	86.AHE02.003
SCREW	SCREW,M2*2.2	86.AHE02.004
SCREW	SCREW,M2*3 (NL)	86.AHE02.005
SCREW	SCREW,M2*5 (Ni-NL)	86.AHE02.006
SCREW	SCREW,M 2.5D 3.2L K 6D NI +	86.AHE02.007
SCREW	SCREW,M M 2.0D 3L K 5D NI +	86.AHE02.008
SCREW	SCREW,F 4# 5L K 4.5D ZK NL + CR3+	86.AHE02.009
SCREW	SCREW, M2.5X4 (NL)	86.AHE02.010
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SCREW	CPU THERMAL SCREW ASSY	86.AHJ02.006

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