TravelMate2460&Aspire3660
Service Guide

Revision History

Please refer to the table below for the updates made on TravelMate2460 & Aspire3660 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.

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System Specifications

Features

This computer was designed with the user in mind. Here are just a few of its many features:

Performance

❏ Intel® Pentium® M YonahProcessor dual core at 1.66~2.16 GHz

❏ Intel® Pentium® M Yonah Processor single core at 1.66~1.83 GHz

❏ Intel® Celeron® M Yonah Processosr at 1.66~1.83 GHz

Chipset

❏ North Bridge:

   ❏ ATI RC410ME

❏ South Bridge:

   ❏ SB460

Memory

❏ DDRII 533/667 SDRAM

❏ Two DDR2 SODIMM slots

❏ Upgradeable to 2GB Memory

Display

❏ 15.4" TFT WXGA

❏ 15" TFT XGA

Graphics

❏ UMA

❏ Discrete

   ❏ ATI MOBILITY™ RADEON® M52PG, X1300(M52P)

VRAM

❏ UMA

   ❏ Share 64MB, up to 256MB

❏ Discrete

   ❏ M52P:128MB, up to 512MB of HyperMemory™

Audio

❏ Realtek ALC883 Audio Codec

❏ HD(High Definition) Audio

❏ SNR > 85

❏ Internal Microphone

❏ Two speakers, at lease 1W/2.5cc for each

❑   Enable VoIP function

Storage

❑   PATA(SATA ready)

❑   9.5mm height, 2.5" HDD

❑   Easily removable

❑   60/80/100/120GB

❑   4200 or 5400 rpm

❑   PCI Bus Master Enhanced IDE

❑   Support Ultra DMA100, S.M.A.R.T

Communication

❑   56Kbps V.90/V.92 AC-Link modem card (MDC1.5)

❑   10/100Mbps Fast Ethernet on board

❑   WLAN 802.11b/g or 802.11 a/b/g dual-band tri-mode Wireless with Mini-PCI interface

❑   Mini USB bluetooth module and built-in 1 antenna

❑   Built-in 2 Antenna (which has to be placed on the top of LCD on the sides of LCD latch)

I/O Ports

❑   3 external USB 2.0 ports

❑   Ethernet (RJ-45) port

❑   Modem (RJ-11) port

❑   One External display (VGA) port(15-pin)

❑   One Microphones-in

❑   One Line-in jack

❑   One Headphones/Line-out jack with SPDIF support

❑   One DC-in jack for AC adaptor

❑   1 PCMCIA

❑   5-in-1 card reader

Battery

❑   8-cell of 18650 Li-ion battery pack, (2400mAh)

❑   4-cell of 18650 Li-Ion battery pack, (2000mAh)

❑   6-cell of 18650 Li-Ion battery pack, (2000mAh)

❑   3-pin 90W AC adaptor

Block Diagram

ZB3

X'TAL 14.31818MHz

Clock generator
ICS951413CGLFT
Page:5

Yonah/Yonah Celeron-M
INTEL Mobile_479 CPU
SOCKET_M
Page:3, 4

VGA option

+1.0V/+1.2V VGA Power
MAX1993
Page:30

VGA Memory 128MB/256MB (Channel-B)
Page:19

VGA CORE

HOST BUS 533/667MHZ

NB ATi RC410ME 533MHz/667MHz
707-Pins FCBGA Package
Page: 6, 7, 8, 9

DDR-II SODIMM1
Page: 10

DDR-II SODIMM2
Page: 10

DDR-II 533/667MHz

PCI-E 16X

VGA ATI M52-P(M54-P)
Page: 15, 16, 17, 18, 19

RGB

CRT
Page: 20

LVDS

LVDS
Page: 20

UMA(option)

2X PCIE

MINI-Card Wireless LAN
Page: 22
USB7

2X PCIE

Manufacturing Option

SATA HDD
Page: 21

PATA HDD
Page: 21

IDE-ODD
Page: 21

SATA

ATA 66/100

2X PCIE

MARVEL 88E8038
64QFN-Pins Package
Page: 23

BOTHHAND TRANSFORMER NS0013
Page: 23

RJ45
Page: 23

SB

ATi SB460
549-Pins BGA Package
Page: 11, 12, 13, 14

RTC
Page: 11

X'TAL 32.768KHz

Azalia

LPC 33MHZ

PCI BUS 33MHZ

USB 2.0

TI PCI7412 Cardbus controller
AD17
REQ3# / GNT3#
INTE#, INTH#,
INTG#(share)
Page: 24,25

PCMCIA SLOT
Page: 24

5 IN1 CARD READER
Page: 25

MIC-IN
Page: 26

LINE-IN
Page: 26

AUDIO CODEC REALTEK- ALC883
48-pins Package
Page: 26

Audio AMP MAX9755
Page: 27

SPEAKER
Page: 27

MODEM
Page: 26

RJ11
Page: 23

KBC NS PC97551
176-Pins Package
Page: 28

BIOS
Page: 28

Touchpad
Page: 26

Keyboard
Page: 29

Audio DJ
Page: 27

FAN
Page: 29

Bluetooth USB interface
Page:22
USB6

SYSTEM USB PORT*3
Page: 22
USB0,2,4

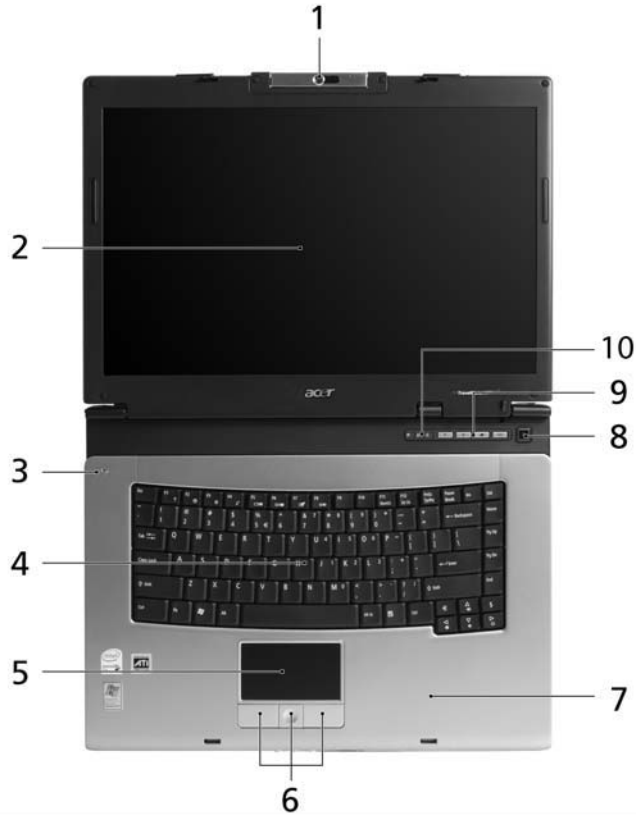**MINI-PCI Wireless LAN**
AD20
REQ2# / GNT2#
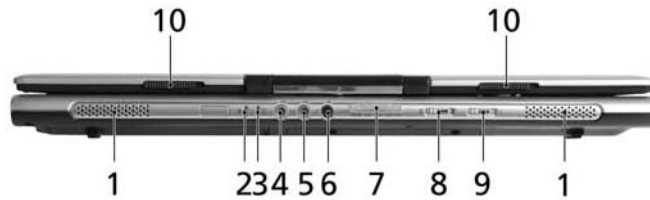INTF#,
INTG#(share)
Page: 22

TM 2460 Outlook View

A general introduction of ports allow you to connect peripheral devices, as you would with a desktop PC.

Open View

#	Item	Description
1	Built-in camera	0.31 megapixel web camera for video communication(for selected models)
2	Display screen	Also called Liquid-Crystal Display (LCD), displaying computer output.
3	Microphone	Internal microphone for sound recording.
4	Keyboard	Inputs data into your computer.
5	Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
6	Click buttons (Left, center and right)	The left and right buttons function like the left and right mouse buttons; the center button serves as a 4-way scroll button.
7	Palmrest	Comfortable support area for your hands when you use the computer.
8	Power button	Turns the computer on and off.
9	Easy-launch buttons	Buttons for launching frequently used programs.
10	Status indicators	Light-Emitting Diodes (LEDs) that turn on and off to show the status of the computer's functions and components.

Front View

#	Icon	Item	Description
1	N/A	Speakers	Left and right speakers deliver stereo audio output.
2		Power indicator	Indicates the computer's power status.
3		Battery indicator	Indicates the computer's battery status.
4		Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman).
5		Mic-in jack	Accepts inputs from external microphones.
6	SPDIF	Headphones/ speaker/line-out jack with S/PDIF support	Connects to audio line-out devices(e.g., speakers, headphones)
7		5-in-1 card reader	Accepts Memory Stick(MS), Memory Stick PRO(MS PRO), MultiMediaCard(MMC), Secure Digital (SD) and xD-Picture Card(xD) **NOTE:** Only one card can operate at any given time.
8		Bluetooth communication button/indicator	Press to enable/disable Bluetooth function. Lights to indicate the status of Bluetooth communications.
9		Wireless communications button/indicator	Press to enable/disable Wireless function. Lights to indicate the status of wireless LAN communications. (manufacturing option)
10	N/A	Latch	Locks and releases the lid.

Left View

#	Icon	Item	Description
1	N/A	Optical drive	Internal optical drive; accepts CDs or DVDs
2	N/A	Optical disk access indicator	Lights up when the optical drive is active.
3	N/A	Optical drive eject button	Ejects the optical disk from the drive.
4	N/A	Emergency eject hole	Ejects the optical drive tray when the computer is turned off.

Right View

#	Icon	Item	Description
1		PC Card slot eject button	Ejects the PC Card from the slot.
2		PC Card slot	Connects to one Type II CardBus PC Card.
3		Two USB 2.0 ports	Connect to Universal Serial Bus (USB) 2.0 devices (e.g., USB mouse, USB camera).
4		Ventilation slots	Enable the computer to stay cool, even after prolonged use.
5		External display(VGA) port	Connects to a display device(e.g., external monitor, LCD projector)

Rear View

#	Icon	Item	Description
1		DC-in Jack	Connects to an AC adapter.
2		USB2.0 ports	Connect to USB 2.0 devices(e.g., USB mouse, USB camera)
3		Ethernet(RJ-45) port	Connects to an Ethernet 10/100/1000 based network.
4		Modem(RJ-11) port	Connects to a phone line.
5		Battery	Powers the computer
6		Kensington lock slot	Connects to a Kensington-compatible computer security lock.

Bottom View

#	Item	Description
1	Battery release latch	Unlatches the battery to remove the battery pack.
2	Cooling fan	Helps keep the computer cool. **NOTE:** Do not cover or obstruct the opening of the fan.
3	Memory compartment	Houses the computer's main memory
4	Hard disk bay	Houses the computer's main memory
5	Battery lock	Locks the battery in position.
6	Battery bay	Houses the computer's battery pack.

Aspire 3660 Outlook View

Open View
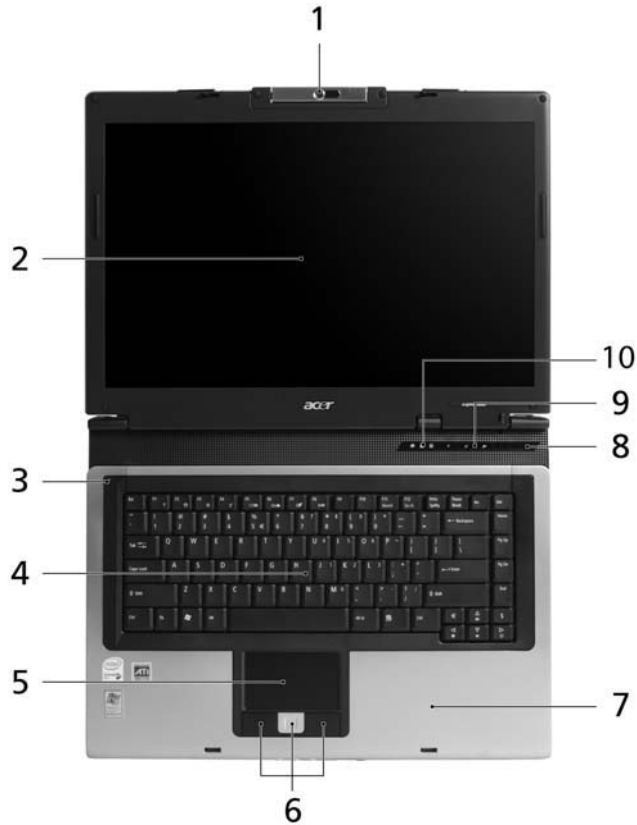
#	Item	Description
1	Built-in camera	1.3 megapixel web camera for video communication(for select models)
2	Display screen	Also called Liquid-Crystal Display (LCD), displaying computer output.
3	Microphone	Internal microphone for sound recording.
4	Keyboard	Inputs data into your computer.
5	Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
6	Click buttons (Left, center and right)	The left and right buttons function like the left and right mouse buttons; the center button serves as a 4-way scroll button.
7	Palmrest	Comfortable support area for your hands when you use the computer.
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7	PRO M SD xD	5-in-1 card reader	Accepts Memory Stick(MS), Memory Stick PRO(MS PRO), MultiMediaCard(MMC), Secure Digital (SD) and xD-Picture Card(xD) **NOTE:** Only one card can operate at any given time.
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#	Icon	Item	Description
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Right View

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3	品	Ethernet(RJ-45) port	Connects to an Ethernet 10/100/1000 based network.
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5		Battery	Powers the computer
6	🔒	Kensington lock slot	Connects to a Kensington-compatible computer security lock.

Bottom View

#	Item	Description
1	Battery release latch	Unlatches the battery to remove the battery pack.
2	Cooling fan	Helps keep the computer cool. **NOTE:** Do not cover or obstruct the opening of the fan.
3	Memory compartment	Houses the computer's main memory
4	Hard disk bay	Houses the computer's main memory(secured with screws)
5	Battery lock	Locks the battery in position.
6	Battery bay	Houses the computer's battery pack.

Indicators

Your computer provides an array of three indicators located above the keyboard, in addition to four indicators positioned at the front panel. These indicators show the status of the computer and its component.

The power, battery and wireless communication status indicators are visible even when the LCD display is closed.

Icon	Item	Description
🔒A	Caps Lock activity	Lights up when Caps Lock is activated.
🔒1	Num Lock activity	Lights upwhen Num Lock is activated.
🛢	HDD	Indicate when the hard disk drive is active.
❋	Bluetooth	Indicates the status of Bluetooth communication.
○	Wireless LAN	Indicates the status of wireless LAN communication.
☼	Power	Indicates the status of computer's power status.

Icon	Item	Description
	Battery	Indicates the computer's battery status. **NOTE:** The lights shows amber when the battery is charging. **NOTE:** The lights showns green when in AC mode.

Easy-Launch Buttons

Located at the upper-right, above the keyboard are four easy-launch buttons. They are User-Programmable Button, Mail, Web Browser, Acer Empowering Key from left to right.

Aspire 3660   **TravelMate 2460**

Item	Default Application
P	User programmable
e	Acer Empowering Technology(User-programmable)
Web Browser	Internet browser(User -programmable)
Mail	Email application(User-programmable)

Touchpad

The build-in touchpad is a pointing device that senses movement on its surface.

This means the cursor responds as you move your finger across the surface of the touchpad.

The touchpad is located in the middle of the palm rest area, providing maximum comfort and efficiency.

Touchpad Basics

Aspire 3660   **TravelMate 2460**
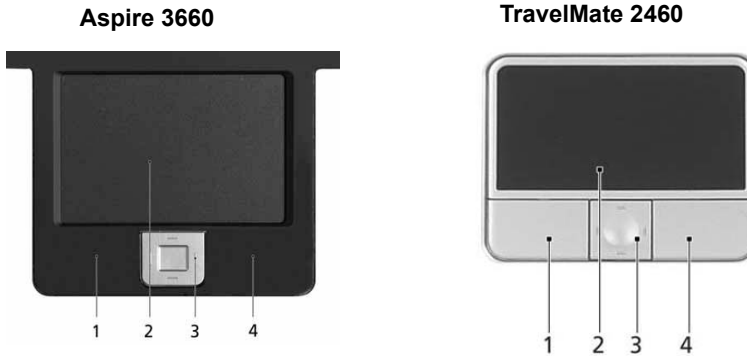
❑   Move your finger across the touchpad to move the cursor.

❑   Press the left **(1)** and right **(4)** buttons located beneath the touchpad to perform selection and execution functions. These two buttons are similar to the left and right buttons on a mouse. Tapping on the touchpad is the same as clicking the left button

❑   Use the 4-way scroll **(3)** button to scroll up or down and move left or right a page. This button mimics your cursor pressing on the right scroll bar of windows applications.

Function	Left Button(1)	Righ 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 slide your finger across the touchpad to drag the cursor over the selection.		Tap twice quickly; 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 movement; hence, the lighter the touch, the better the response. Tapping harder will not increase the touchpad's responsiveness.

Using the Keyboard

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

Lock keys and Embedded Numeric Keypad

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

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The computer features three lock keys, each with its own status indicator light.

Lock Key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters are typed in uppercase. Toggle on and off by pressing the Caps Lock key on the left side of the keyboard.
Num lock <Fn+F11>	When Num Lock is on, the embedded keyboard 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 and 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
Numer keys on embedded keypad	Type numbers in a normal manner	

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

Windows Keys

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

Windows logo 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 functions: ＋ Tab (Activates the next Taskbar button) ＋ E (Opens the My Computer window) ＋ F1 (opens Help and Support) ＋F (opens the Find: All Files dialog box) ＋ M (minimizes all windows) j ＋ Windows logo key + M (undoes the minimize all windows action) ＋ R (opens the Run dialog box)
Application key	This key has the same effect as clicking the right mouse button; it opens the application's context menu.

Hotkeys

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

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Hot Key	Icon	Item	Description
Fn+F1	?	Hot key help	This key will cause a help message to appear on the display device that describes the definition and functionality of the unit hot keys.
Fn+F2	♨	Acer eSettings	Launches the Acer eSetting in Acer Empowering Technology. See "Acer Empowering Technology"
Fn+F3	☑	Acer ePower Management	Launches the Acer ePower Management in Acer Empowering Technology. See "Acer Empowering Technology"
Fn+F4	z^z	Sleep	Puts the computer in Sleep mode
Fn+F5	☐|◼	Display toggle	Switches display output between the display screen, external monitor(if connected)and both .
Fn+F6	✳·◼	Screen blank	Turns the display screen backlight off to save power. Press any key to return

Hot Key	Icon	Item	Description
Fn+F7		Touchpad toggle	Turns the internal touchpad on and off
Fn+F8		Speaker toggle	Turns the speakers on and off
Fn+w		Volume up	Increases the sound volume
Fn+y		Volume down	Decreases the sound volume
Fn+x		Brightness up	Increases the screen brightness
Fn+z		Brightness down	Decrease the screen brightness

Special Keys

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

TravelMate 2460

Aspire 3660

The Euro Symbol

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

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

The US Dollar Sign

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

NOTE: This function varies according to the language settings.

Using the System Utilities

Acer GridVista(dual-display compatible)

To enable the dual monitor feature of your notebook, first ensure that the second monitor is connected, then, select **Start**, **Control Panel**, **Display** and click on **Settings**. Select the secondary monitor (2) icon in the display box and then click the check box Extend my Windows desktop onto this monitor. Finally, click **Apply** to confirm the new settings and click **OK** to complete the process.
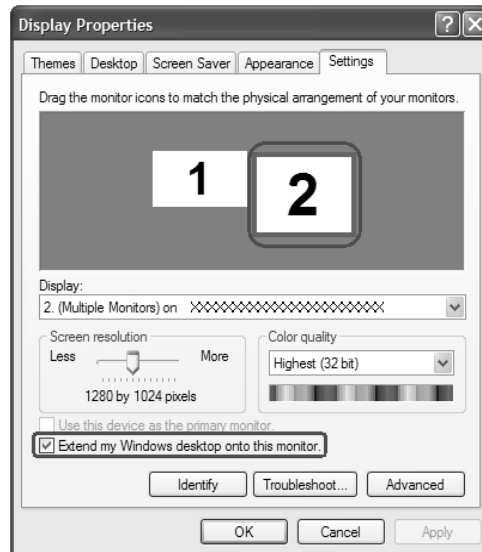
Acer GridVista is a handy utility that offers four pre-defined display settings so you can view multiple windows on the same screen. To access this function, please go to **Start, All Programs** and click on **Acer GridVista**. You may choose any one of the four display settings indicated below:
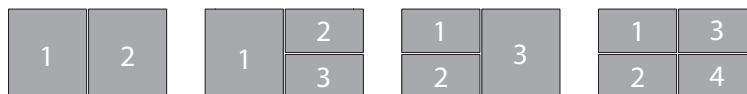
Double(vertical), Triple(primary at left), Triple(primary at right), or Quad Acer Gridvista is dual-display compatible, allowing two displays to be partitioned independently.

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

AcerGridVista is imple to set up:

1.   Run Acer GridVista and select your preferred screen configuration for each display from the task bar.
2.   Drag and drop each window into the appropriate grid.
3.   Enjoy the convenience of a well-organized desktop.
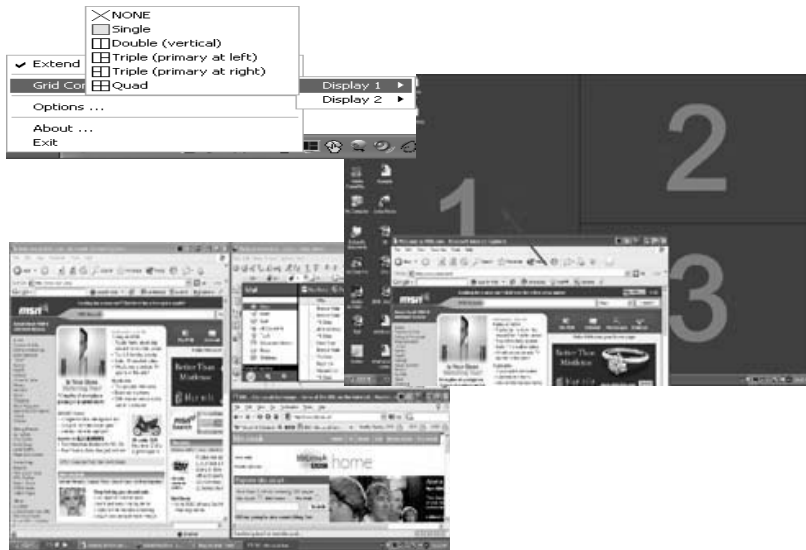
NOTE: Please ensure that the resolution setting of the second monitor is set to the manufacturer's recommended value.

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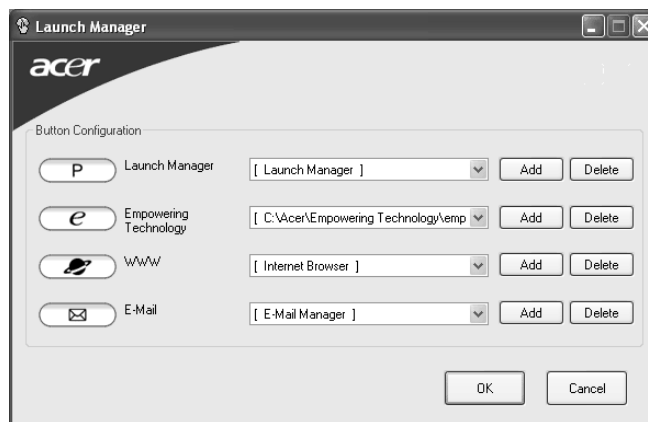
Launch Manager allows you to set the four easy-launch buttons located above rhw keyboard. You can access the Launch Manager by clicking on **Start, All Programs**, and then **Launch Manager** to start the application.

Norton AntiVirus

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

How do I check for viruses?

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

1. Start Norton AntiVirus.

Double click on the **Norton AntiVirus** icon on the desktop or click on the **Start** menu in the Windows taskbar, highlight **Programs**, and select **Norton AntiVirus**.

2.   In the Norton AntiVirus main window, click **Scan for Viruses**.
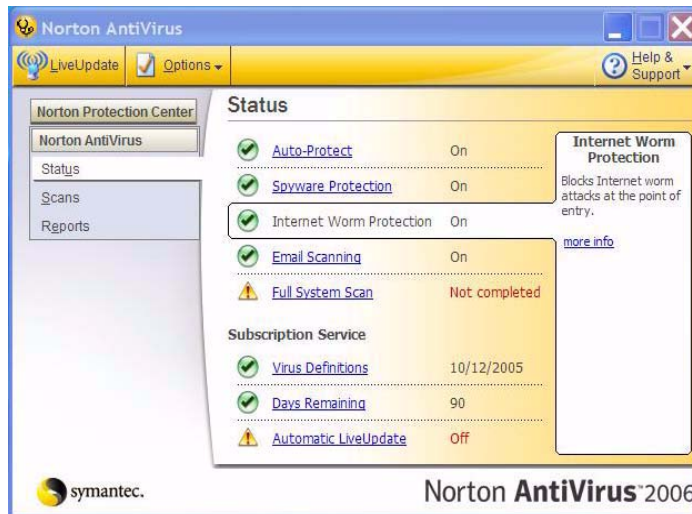
3.   In the **Scan** for **Viruses** panel, click **Scan My Computer**.
4.   Under **Actions**, click **Scan**.
5.   When the scan is complete, a scan summary appears. Click **Finished**.

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

For more information refer to the Norton Antivirus Help menu.

Acer Empowering Technology

Acer's innovative Empowering Technology makes it easy for you to access frequently used functions and manage your new Acer notebook. It features the following handy utilities:

- ❏ **Acer eNet Management** hooks up to location-based networks intelligently.
- ❏ **Acer ePower Management** extends battery power via versatile usage profiles.
- ❏ **Acer ePresentation Management** connects to a projector and adjusts display settings conveniently.
- ❏ **Acer eDataSecurity Management** protects data with passwords and advanced encryption algorithms.
- ❏ **Acer eLock Management** limits access to external storage media.
- ❏ **Acer eRecovery Management** backs up and recovers data flexibly, reliably and completely.
- ❏ **Acer eSettings Management** accesses system information and adjusts settings easily.
- ❏ **Acer ePerformance Management** improves system performance by optimizing disk space, memory and registry settings.

For more information, press the < e > key to launch the Empowering Technology menu, then click on the appropriate utility and select the Help or Tutorial function.

Empowering Technology Password

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

Acer eNet Management

Acer eNet Management helps you to quickly and easily connect to both wired and wireless networks in a variety of locations. To access this utility, either click on the "**Acer eNet Management**" icon on your netebook, or start the program from the Start menu. You also have the option to set Acer eNet Management to start automatically when you boot up your PC.

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

Acer eNet Management can save network settings for a location to a profile, and automatically switch to the appropriate profile when you move from one location to another. Settings stored include network connection settings (IP and DNS settings, wireless AP details, etc.), as well as default printer settings.

Security and safety concerns mean that Acer eNet Management does not store username and password information.
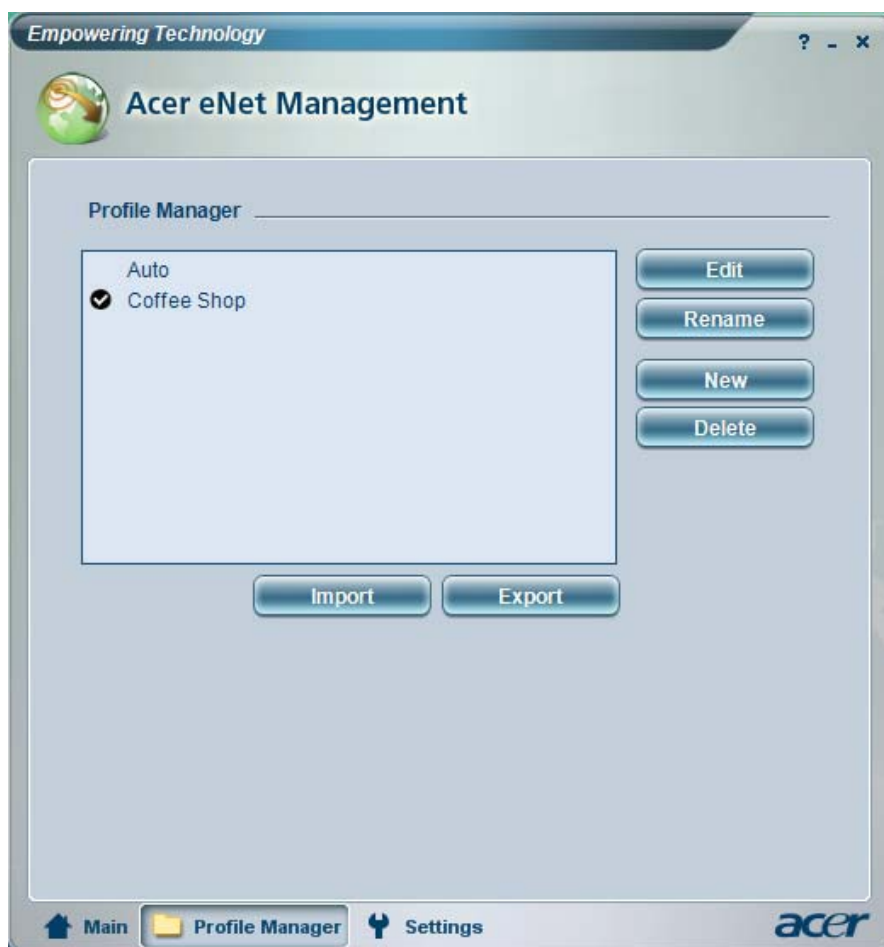
Acer ePower Management

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

AC Mode (Adapter mode)

The default setting is "Maximum Performance." You can adjust CPU speed, LCD brightness and other settings, or click on buttons to turn the following functions on/off: Wireless LAN, Bluetooth, CardBus, FireWire (1394), Wired LAN and Optical Device if supported.

DC Mode (Battery mode)

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

To create new power profile

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

5. The new profile will appear in the profile list.

Battery status

For real-time battery life estimates based on current usage, referto the panel on the lower left-hand side of the window.

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

❑ Set alarms.
❑ Re-load factory defaults.
❑ Select what actions will be taken when the cover is closed or the power button is pressed.
❑ View information about Acer ePower Management.

Acer ePresentation Management

Acer ePresentation Management lets you project your computer's display to an external device or project using the hot key: Fn + F5. If auto-detection hardware is implemented in the system, your system display will be automatically switched out when an external display is connected to the system.

Acer eDataSecurity Management

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

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

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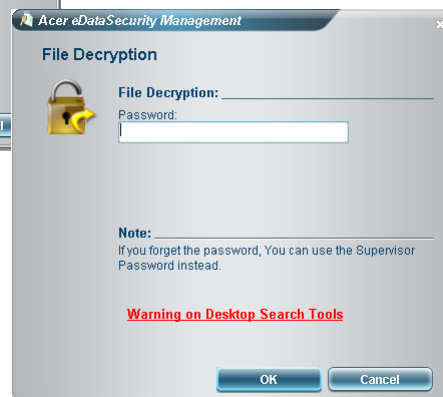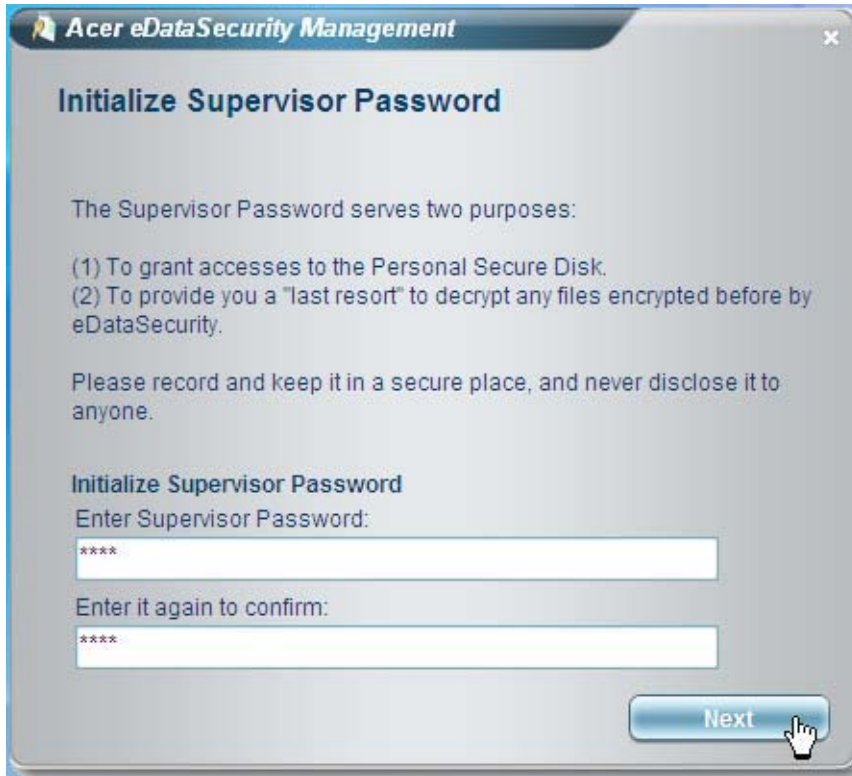
Acer eLock Management

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

❑   Removable data devices - includes USB disk drives, USB pen drives, USB flash drives, USB MP3 drives,

USB memory card readers, IEEE 1394 disk drives and any other removable disk drives that can be mounted as a file system when plugged into the system.

❑ Optical drive deivces - includes any kind of CD-ROM or DVD-ROM drives.
❑ Floppy disk drives - 3.5-inch disks only.
❑ Interfaces - includes serial ports, parallel port, infrared (IR), and Bletooth.

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

NOTE: If you lose your password, there is no method to reset it except by reformatting your notebook or taking your notebook to anAcer Customer Serivce Center. Be sure to remember or write down your password.
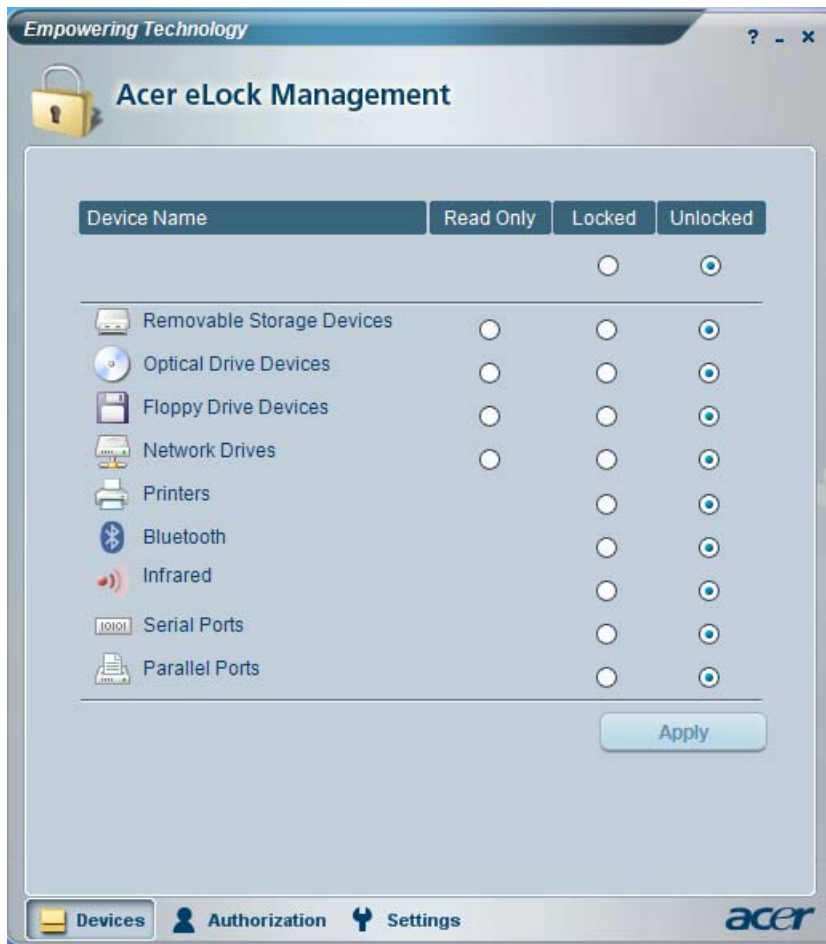
Acer eRecovery Management

Acer eRecovery Management is a powerful utility that does away with the need for recovery disks provided by the manufacturer. The Acer eRecovery Management utility occupies space in a hidden partition on your system's HDD. User-created backups are stored on D:\ drive. Acer eRecovery Management provides you with:

❑ Password protection.
❑ Recovery of applications and drivers.
❑ Image/data backup:
    ❑ Back up to HDD (set recovery point).

   ❑ Back up to CD/DVD.
 ❑ Image/data recovery tools:
   ❑ Recover from a hidden partition (factory defaults).
   ❑ Recover from the HDD (most recent user-defined recovery point).
   ❑ Recover from CD/DVD.
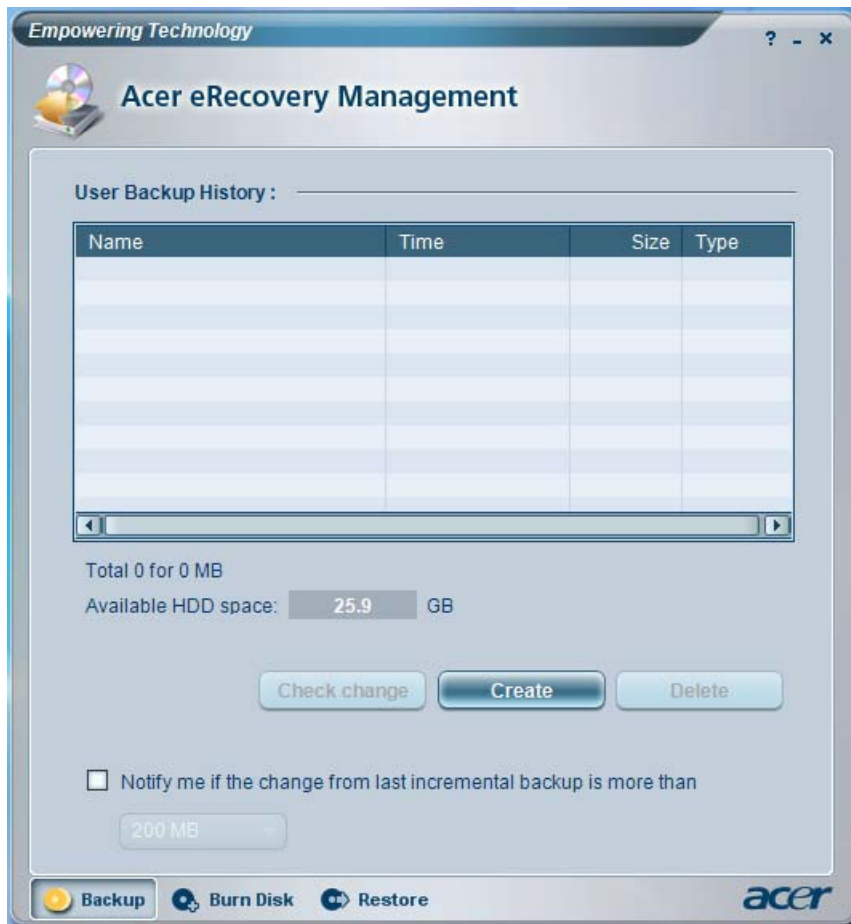
For more information, please refer to "Acer eRecovery Management"

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

Acer eSettings Management

Acer eSettings Management allows you to inspect hardware specifications and to monitor the system health status. Furthermore, Acer eSettings Management enables you to optimize your Windows operating system, so your computer runs faster, smoother and better.

Acer eSettings Management also:

❑ Provides a simple graphical user interface for navigating.
❑ Displays general system status and advanced monitoring for power users.

Acer ePerformance Management

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

❑   Memory optimization - releases unused memory and check usage.
❑   Disk optimization - removes unneeded items and files.
❑   Speed optimization - improves the usability and performance of your Windows XP system.
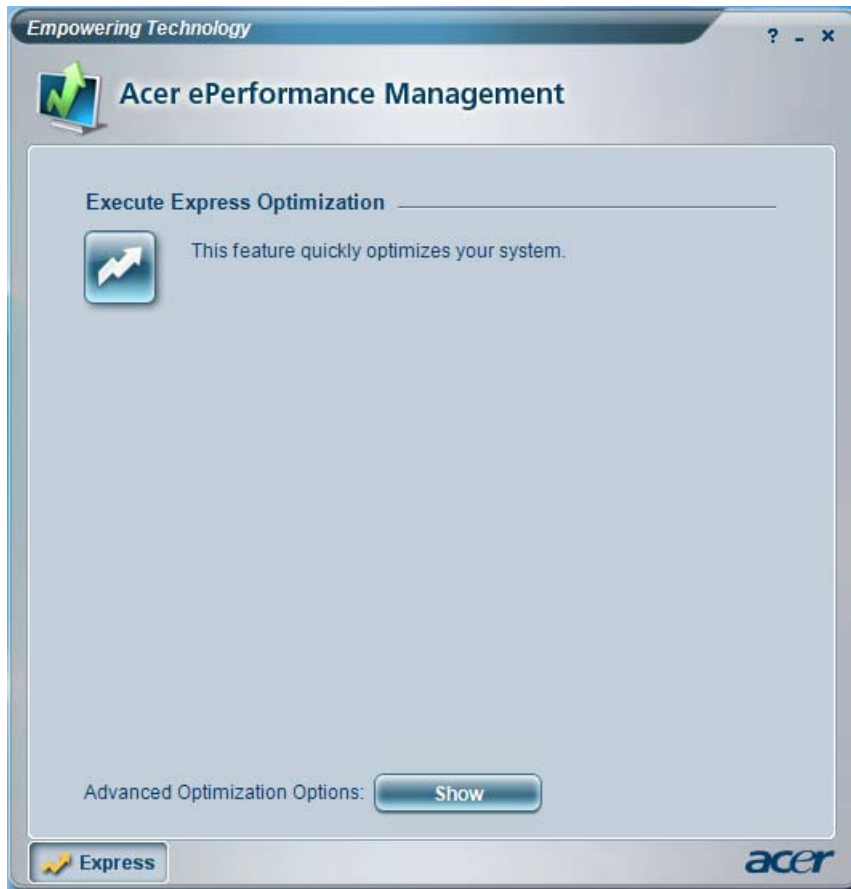
Acer OrbiCam

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

Getting to know your Acer OrbiCam
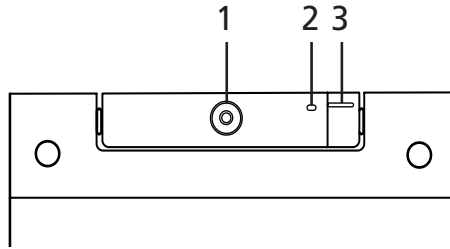
No.	Item
1	Lens
2	Power indicator
3	Rubber grip (selected models only)

Rotating the Acer OrbiCam

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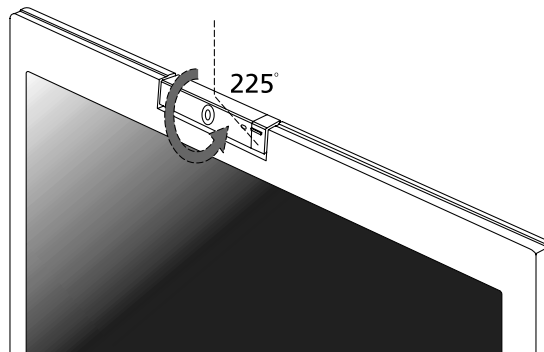
For your convenience, the camera snaps 45 degrees to match the position of your face in front or at the back of the LCD panel.

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

Launching the Acer OrbiCam

To launch the Acer OrbiCam, double click on the Acer OrbiCam icon on the screen.

OR

Click Start > All programs > Acer > Acer OrbiCam. The Acer OrbiCam capture windows window appears.
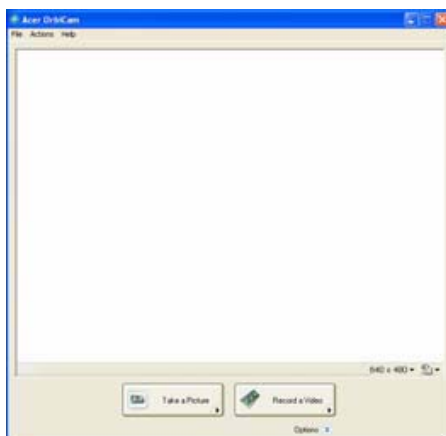
Changing the Acer OrbiCam settings

Resolution

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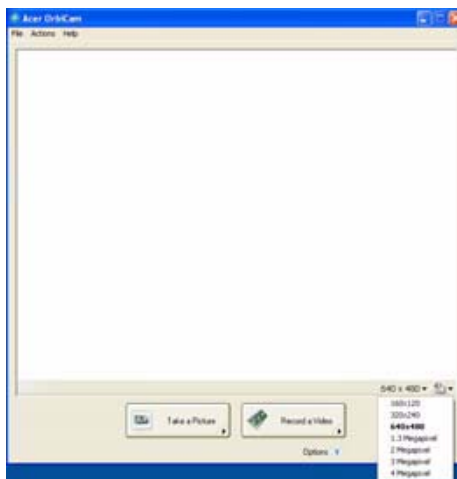
Options

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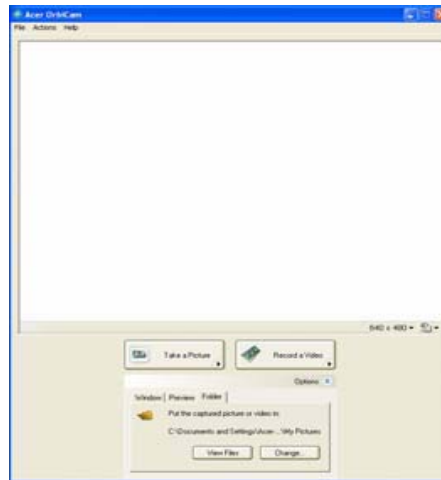
Camera Settings

❏ Basic settings: Click the Camera Settings icon on the bottom right corner of the capture display, then select Camera Settings from the pop-up menu. You can adjust the Video, Audio, and Zoom/ Face tracking options from this window.
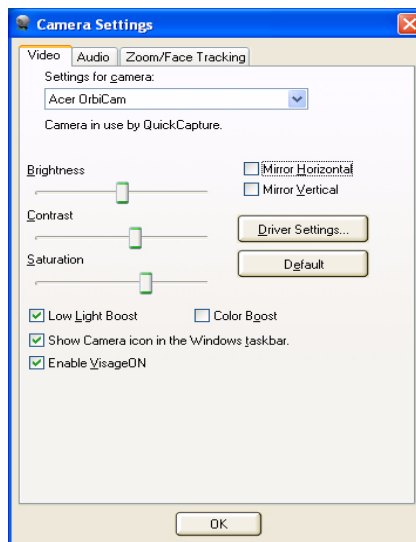
❏ Capture settings: From the Camera Settings window, click the Driver Settings button. The Properties window will appear.
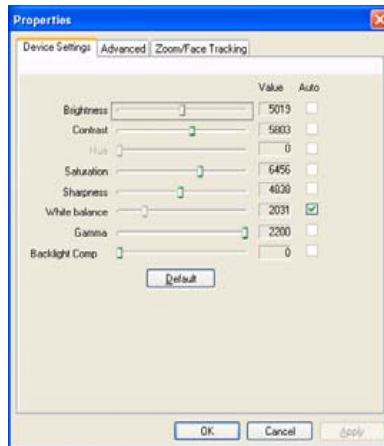
- ❑ Device Settings allows you to change the camera brightness, contrast, hue, saturation, sharpness, etc.
- ❑ Advanced Settings allows you to achieve gain control, implement image mirror, select image enhancements and anti-flicker settings, and turn on/off the camera indicator.
- ❑ Zoom/Face Track Settings allows you to adjust the zoom level and turn the face tracking feature on or off.

Capturing photos or videos

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

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

Using the Acer OrbiCam as webcam

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

Enabling the Acer VisageON

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

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

To enable the Acer VisageON:

1. Right click on this icon, then select VisageON from the pop-up menu.
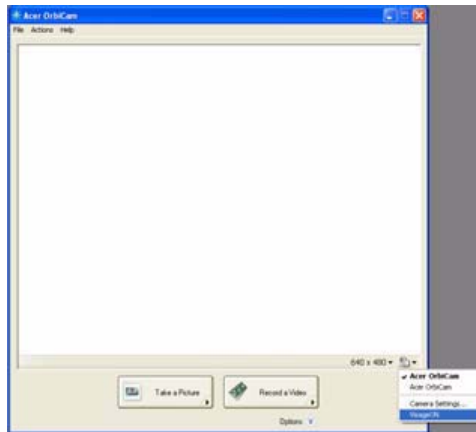
The VisageON window appears as below:

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

Using the face tracking feature

To use the face tracking feature:

1. Click the left icon down arrow button, then select Single User or Multiple Users from the pop-up menu. For multiple users, the face tracking feature automatically centers all the users' face in the capture window, otherwise the utility centers the face of the user closest to the camera.
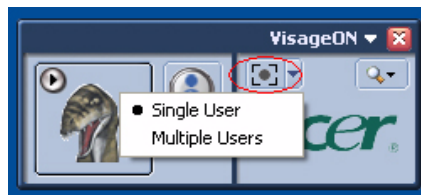
2. Click the right icon to zoom in/out or reset the current view.
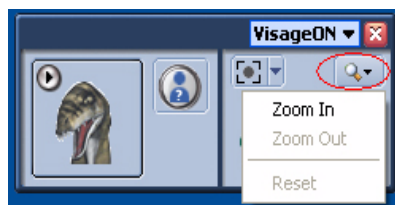
3. Click VisageON to display a menu that allows to change the configuration of the camera, face tracking and video effects settings.
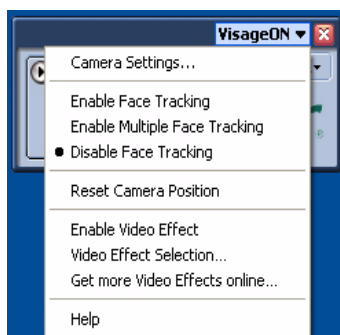
Using video effects (selected models only)

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

1. Click the encircled icon to display the available video effects. The Video Effect Selection window appears as below:

2. Click on a video effect to use. The selected effect appears in the video effects section of the VisageON window.

NOTE: When using avatars, you may have to calibrate the face points to achieve better tracking. Follow screen instructions in the VisageON to continue.

NOTE: You may use video effects when using the camera for IM chat/video sessions or call conferences.

Hardware Specifications and Configurations

Processor

Item	Specification
CPU type	Intel® Pentium® M YonahProcessor dual core at 1.66~2.16 GHz
	Intel® Pentium® M Yonah Processor single core at 1.66~1.83 GHz
	Intel® Celeron® M Yonah Processosr at 1.66~1.83 GHz
CPU package	uFCPGA
CPU core voltage	Depend on DVI
CPU I/O voltage	VCCA 1.5V
	VCCP 1.05V

System Board Major Chips

Item	Controller
System core logic	ATI RC410ME + SB460
Super I/O controller	N/A
Audio controller	Azalia Audio Controller ALC883
Video controller	ATI 52P/52PG
	UMA
Hard disk drive controller	ATI SB460
Keyboard controller	NS PC97551
IrDA controller	N/A
DVI controller	N/A
PCMCIA/ card reader / 1394 controller	TI PCI7412
DDR-soDIMM controller	ATI RC410ME

BIOS

Item	Specification
BIOS vendor	Phoenix
BIOS Version	Phoenix First BIOS
BIOS ROM type	Flash ROM(SST39VF080)
BIOS ROM size	1MB
BIOS package	40 pins TSOP
BIOS password control	Set by setup manual

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

System Memory

Item	Specification
Memory controller	ATI RC410ME
Memory size	256MB/512MB/1GB
DIMM socket number	2
Supports memory size per slot	1024 MB
Supports maximum memory size	2GB (with dual soDIMM modules)
Supports DIMM type	DDRII SDRAM Standard
Supports DIMM Speed	533/667 MHz
Supports DIMM voltage	1.8V
Memory module combinations	You can install memory modules in any combinations as long as they match the above specifications.

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LAN Interface

Item	Specification
Supports LAN protocol	10/100 Mbps Fast Ethernet connection
LAN chip	Marvel 88E8038
LAN connector type	RJ45
LAN connector location	Rear side

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Wireless LAN

Item	Specification
Card Type	Mini-card/Mini-PCI
Mode	802.11 a/b/g 802.11 b/g
Antenna	Built in 2 antenna(PIFA type)
Support	Wi-Fi, WPA2, WMM, CCX V3/V4

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Modem Interface

Item	Specification
Data modem data baud rate (bps)	56K ITU
Supports modem protocol	V.90/V.92 AC-Link modem with PTT approval Wake-on-Ring ready
Modem connector type	RJ11
Modem connector location	Rear side

VGA

Notice	Discrete	UMA
Chipset for suitable VGA type	M52P/M52PG	RC410ME
Video RAM	up to 512MB	up to 256MB

USB Port

Item	Specification
USB Controller	Integrated with SB460
USB compliancy level	2.0
OHCI	USB 2.0
Number of USB port	3
Location	Rear Side *1 Right Side *2

Audio Port

Item	Specification
Audio Controller	Azalia Audio Controller (Realtek ALC883)
Audio onboard or optional	Built-in
Mono or Stereo	Stereo
Resolution	20 bit stereo Digital to analog converter 18 bit stereo Analog to Ditial converter
Compatibility	Microsoft PC99/2100, AC97 2.3 & WHQL/WLP2.0
Mixed sound source	CD
Sampling rate	All DACs support 44.1K/48K/96K/192K sample rate All ADCs support 44.1K/48K/96K sample rate
Internal microphone	Yes
Internal speaker / Quantity	Yes / 2
Support	S/PDIF out / VoIP

PCMCIA Port

Item	Specification
PCMCIA controller	PCI7412
Supports card type	Type II
Number of slots	One
Access location	Right Side
Feature	PC Card Standard 8.1 compliant, ACPI 2.0 compliant, Support PC Card or CardBus with hot insertion and removal, Support 132MBps burst transfer

Keyboard

Item	Specification
Keyboard controller	NS PC97551
Keyboard vendor & model name	TravelMate series: New Acer Ergo Keyboard Aspire series: New Acer flat keyboard
Total number of keypads	❑ 88-89 keys Acer Fine Touch™ keyboard
Touchpad with 4-way integrated scroll button	Yes

Keyboard

Item	Specification
12 function keys	❑ two Windows keys ❑ Hotkey controls ❑ embedded numberic keypad ❑ Multi-Langue support ❑ Spill-proof
Four easy-launch buttons	❑ Internet browser ❑ email with LED ❑ Empowering key ❑ one user-programmable button
Two front access LED buttons	❑ WLAN LED button ❑ Bluetooth LED button

Battery

Item	Specification
Vendor & model name	Sony/Sanyo/Simplo
Battery Type	Li-ion
Pack capacity	65Wh
Number of battery cell	8-cell 2400mAh 6-cell 2000mAh 4-cell 2000mAh
Package configuration	
Pin 1 Pin 2	BATT+: Battery+, Battery Positive Terminal
Pin 3	ID : Identify Pin (Note 1)
Pin 4	B/I : Battery-In Pin
Pin 5	TS : Connect to Thermister
Pin 6	SMD : SMBus data interface I/O pin
Pin 7	SMC : SMBus clock interface I/O pin
Pin 8 Pin 9	GND : Battery Negative Terminal

LCD :15.4″ WXGA LCD

Item	Specification				
Vendor & model name	CMO N154I1-L0C GLARE TYPE/ N154I1-L0B NON-GLARE	LPL LP154W01-TLB5 GLARE LEAD-FREE/ LP154W01-TLA1 NON-GLARE LEAD-FREE	Samsung LTN154X3-L01-H00 glare L6-G5/ L01-100 non-glare L6-G5/ LTN154P1-L02-V LEAD-FREE	AUO B154EW01 V9 16MS LEAD-FREE GLARE TYPE	QDI QD15TL07-02 GLARE / QD15TL02-03 NON-GLARE TYPE LEAD-FREE
Mechanical Specifications					

LCD :15.4" WXGA LCD

Item	Specification				
LCD display area (diagonal, inch)	15.4"	15.4"	15.4"	15.4"	15.4"
Active Area(mm)	331.2(H)x 207.0(V)	331.2(H)x 207.0(V)	331.2(H)x 207.0(V)	331.2(H)x207.0(V)	331.2(H)x207.0(V)
Display technology	TFT	TFT	TFT	TFT	TFT
Resolution	WXGA (1280*800)	WXGA (1280*800)	WXGA (1280*800)	WXGA (1280*800)	WXGA (1280*800)
Pixel Pitch	0.2588(H)x0.2588(V)	0.2588(H)x0.2588(V)	0.2588(H)x0.2588(V)	0.2588(H)x0.2588(V)	0.2588(H)x0.2588(V)
Pixel Arrangement	RGB vertical stripe	RGB vertical stripe	RGB vertical stripe	RGB vertical stripe	RGB vertical stripe
Display Mode	Normally White	Normally White	Normally White	Normally White	Normally White
Typical White Luminance(cd/m^2) also called Brightness	200	200/170	200	180	185
Luminance Uniformity	N/A	N/A	N/A	1.25 max.	N/A
Contrast Ratio	400	550/300	300	400	400
Response Time(Optical Rise Time/Fall Time) msec	5/11	16(Tr+Tf)	25(Tr+Tf)	12/4	6/10
Power Supply Voltage	+3.3V	+3.3V	+3.0V	+3.3V	+3.3V
Typical Power Consumption(watt)	4.22	5.23	4.2	6.5	N/A
Weight	600 g	540/575 g	530 g	585 g	585 g
Physical Size(mm) (Typical)	344(H)x222 (V)x6.2(D)	344(H)x222 (V)x6.2(D)	344(H)x222 (V)x6.2(D)	344(H)x222 (V)x6.5(D)	344(H)x222 (V)x6.35(D)
Electrical Interface	LVDS with 1 pixel/clock	1 channel LVDS	3.3V LVDS	1 channel LVDS	
Support Color	262144	262144	262144	262K	262144
Viewing Angle(degree) Horizontal: Right/Left Vertial: Upper/Lower	45/45 15/35	45/45 15/35	45/45 15/35	45/45 15/35	45/45 15/35
Temperature Range(^{o}C) Operating Storage(shipping)	0~+50 -20~+60	0~+50 -20~+60	0~+50 -20~+60	0~+50 -20~+60	0~+50 -20~+60

LCD :15" WXGA LCD

Item	Specification	
Vendor & model name	15.0" XGA NB LCD LPL LP150X08-TLA2 LEAD-FREE/CHINA MADE	15.0" XGA NB LCD CMO N150X3-L09 REV. C2
Mechanical Specifications		

LCD :15″ WXGA LCD

Item	Specification	
LCD display area (diagonal, inch)	15.0"	15.0"
Active Area(mm)	304.1(H)x 228.1(V)	304.1(H)x 228.1(V)
Display technology	TFT	TFT
Resolution	XGA (1024*768)	XGA (1024*768)
Pixel Pitch(mm)	0.297(H)x 0.297(V)	0.297(H)x 0.297(V)
Pixel Arrangement	RGB Vertical stripe	RGB Vertical stripe
Display Mode	Normally White	Normally White
Typical White Luminance(cd/m^2) also called Brightness	170	200
Luminance Uniformity	N/A	N/A
Contrast Ratio	250	250
Response Time(Optical Rise Time/Fall Time) msec	10/20	5/11
Power Supply Voltage	+3.3V	+3.3V
Typical Power Consumption(watt)	4.76	3.96
Weight	530 g	550 g
Physical Size(mm) (Typical)	317(H)x241 (V)x5.9(D)	317(H)x242 (V)x5.7(D)
Electrical Interface	LVDS IS100-C30R-C15	LVDS with 1 pixel/clock
Support Color	262144	262144
Viewing Angle(degree) Horizontal: Right/Left Vertial: Upper/Lower	45/45 15/35	45/45 20/40
Temperature Range(^{o}C) Operating Storage(shipping)	0~+50 -20~+60	0~+50 -20~+60

AC Adapter

Item	Specification
Vendor & model name	DELTA - 65W, SADP-65KB DBRF YELLOW 1.7X5.5X11 LF LITEON - 65W, PA-1650-02 QY YELLOW 1.7X5.5X11 LF LSE - 65W, SLS0335A1957 LF YELLOW 1.7X5.5X11 LF
Input Requirements	

Item	Specification
Maximum input current (A, @100Vac, full load)	1.5A @100Vac input and maximum load
Nominal(Rated) frequency (Hz)	50 or 60 and single phase
Frequency variation range (Hz)	47 - 63
Nominal voltages (Vrms)	90 - 265
Efficiency	High efficiency 85% minimum, at 100~240Vac AC input, full load, warm-up condition.
Output Ratings (CV mode)	
Rated output voltage	Offers rated output voltage 19.0V
Voltage Range	18.2V to 19.8V
Noise + Ripple	300mvp-pmax (20MHz bandwidth) for resistor load
Rated Power	90Watts continuously at all specified conditions
Output current	0 A (min.)　to　4.74A (max.)
Dynamic Output Characteristics	
Start-up time	2 sec. (@115 Vac and 230Vac full load)
Hold up time	at least 10ms (@115 Vac input, full load)
Over Voltage Protection (OVP)	30V
Over Current Protection(OCP)	Output current limit is 6A(Max mode)
Short circuit protection	Output can be shorted without damage, and auto recovery
Electrostatic discharge (ESD)	15kV (at air discharge) 8kV (at contact discharge)
Dielectric Withstand Voltage	
Primary to secondary	3000 Vac for 1 second
Leakage current	less than 250uA at 240Vac, 50Hz
Regulatory Requirements	1. CISPR 22 Class B 2. VCCI Class B

Hard Disk Drive Interface

Item		Specification	
Vendor & Model Name	Segate SATAST98823AS/ HGST SATA 1.5G NCQ MORAGA+HTS5410 80G9SA00	Segate SATA ST9100824AS LF/ Toshiba MK1032GSX/ HGST NCQMORAGA+HTS 541010G9SA00	Segate SATA ST9120821AS LF/ Toshiba SATAI1.5G W/NCQ MK1234GSX
Capacity (MB)	80000	100000	120000
Bytes per sector	1024/512	512	512
Data heads	3/4	4	4
Drive Format			

Hard Disk Drive Interface

Item		Specification	
Disks	2	2	2
Spindle speed (RPM)	5400 RPM	5400 RPM	5400 RPM
Performance Specifications			
Buffer size	8192KB	8192KB	8192KB
Interface	Serial ATA	Serial ATA APA7&SATA1.0&SATAII(for Toshiba)	Serial ATA
Max. media transfer rate (disk-buffer, Mbytes/s)	57.6/61.6	57.6/57.6/61.6	57.6
Data transfer rate (host~buffer, Mbytes/s)	150 MB/Sec. SATA 1.0	150 MB/Sec.	150 MB/Sec.
DC Power Requirements			
Voltage tolerance	5V(DC) +/- 5%	5V(DC) +/- 5%	5V(DC) +/- 5%

8X Super Multi Interface

Item	Specification	
Vendor & model name	PHILIPS SDVD8821	PIONEER DVR-K16RS
Performance Specification		
Transfer rate (KB/sec)	Sustained: Max 10.9Mbytes/sec	Sustained: DVD: Max 10.8Mbytes/sec CD: 3.6Mbytes/sec
Access Time(DVD)	Random Access: 130 ms Full Stroke: 240 ms	Random Access: 150 ms Full Stroke: 300 ms
Buffer Memory	2MB	2MB
Interface	Compliant to ATA/ATAPI-5	ATAPI interface(SFF-8020, SFF-8090)
Applicable disc format	DVD(Read): DVD-ROM, DVD-Video, DVD-Audio, DVD-R, DVD-R 3.95GB, DVD-R Multi-Border, DVD-RW, DVD+R, DVD+R DL, DVD+R Multi-Session, DVD+RW, DVD-RAM CD(Read): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, CD-i, CD-i Bridge, Video-CD(MPEG-1), Karaoke CD, Photo-CD, Enhanced CD, CD Plus, CD Extra, itrax CD, CD-Text, CD-R, and CD-RW DVD(Write): DVD Data&Video CD(Write): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, CD-i, Video-CD, CD-Text	KODAK Photo CD Single and Multi-session, CD Extra(CD PLUS), Video CD, CD text data(Read/Write), CD-R discs(Read/Write), CD-RW discs(Read/Write), DVD-ROM, DVD-R ver2.00 for general(Read/Write), DVD-R DL ver3.0(Read/Write), DVD-RW ver1.0&1.1&1.2(Read/Write), DVD+R ver1.0&1.11&1.2(Read/Write), DVD+R DL ver1.0(Read/Write), DVD+RW ver1.1&1.2(Read/Write), DVD+RW high speed ver1.0(Read/Write), DVD-RAM ver2.0&2.1&2.2(Read/Write)
Loading mechanism	Load: Manual	Drawer loading mechanism
Power Requirement		
Input Voltage	5 V +/- 5 % (Operating)	5 V +/- 5 % (Operating)

DVD-Dual Interface

Item	Specification	
Vendor & model name	PHILIPS SDVD8441	PIONEER DVR-K16RA
Performance Specification		
Transfer rate (KB/sec)	Sustained: Max 10.9Mbytes/sec	Sustained: Max 10.8Mbytes/sec
Access Time(DVD)	Random Access: 130 ms Full Stroke: 240 ms	Random Access: 150 ms Full Stroke: 300 ms
Buffer Memory	2MB	2MB
Interface	Compliant to ATA/ATAPI-5	ATAPI interface
Applicable disc format	DVD(Read): DVD-ROM, DVD-Video, DVD-Audio, DVD-R, DVD-R 3.95GB, DVD-R Multi-Border, DVD-RW, DVD+R, DVD+R DL, DVD+R Multi-Session, DVD+RW CD(Read): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, CD-i, CD-i Bridge, Video-CD(MPEG-1), Karaoke CD, Photo-CD, Enhanced CD, CD Plus, CD Extra, itrax CD, CD-Text, CD-R, and CD-RW DVD(Write): DVD Data&Video CD(Write): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, CD-i, Video-CD, CD-Text	DVD(Read): DVD-5/9/10/18, DVD-R 3.95G/4.7G, DVD-R DL, DVD-RW, DVD+R, DVD+R DL, DVD+RW, DVD+RW high speed, DVD-RAM v2.0/2.1 CD(Read): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, Photo CD, Video CD, CD-DA, CD-Extra, Mixed-CD, CD-Text, CD-R, CD-RW, HS CD-RW, US CD-RW, US+ CD-RW DVD(Write): DVD-R, DVD-RW, DVD+RW CD(Write): CD-DA, CD-i, Video-CD, CD-Text, Photo CD, CD-Extra, Mixed-CD, CD-R, CD-RW, HS CD-RW, US CD-RW, US+ CD-RW
Loading mechanism	Load: Manual	Drawer loading mechanism
Power Requirement		
Input Voltage	5 V +/- 5 % (Operating)	5 V +/- 5 % (Operating)

Combo Drive Interface

Item	Specification		
Vendor & model name	QSIPHILIPS SCB5265	PANASONIC UJDA-770	HLDS GCC-4244N
Performance Specification			
Transfer rate (KB/sec)(DVD)	Sustained: Max 11.2Mbytes/sec	Sustained: Max 10.8Mbytes/sec	Sustained: Max 11.8Mbytes/sec
Access Time	DVD: Random Access: 126 ms DVD:Full Stroke: 165 ms	DVD: Typical:180 ms	Average: CD-ROM110ms DVD-ROM 120ms
Buffer Memory	2MB	2MB	2MB
Interface	Compliant to ATA/ATAPI-5	ATAPI interface	ATAPI interface

Combo Drive Interface

Item	Specification		
Applicable disc format	DVD(Read): DVD 5/9/10/18, DVD-ROM, DVD-Video, DVD-R 3.95G/4.7G, DVD-RW, DVD+R, DVD+RW, Multi-Border DVD-R/DVD-RW, Multi-Session DVD+R, DVD+RW and DVD-RAM CD(Read): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, CD-i Ready, Video-CD(MPEG-1), Karaoke CD, Super Video CD, Photo-CD, Enhanced CD, CD Plus, CD Extra, i-trax CD, CD-Text, CD-R, CD-RW CD(Write): CD-DA, CD-ROM Mode-1, CD-ROM/XA Mode-2 Form-1 and Mode-2 Form-2, CD-i, Video-CD, CD-Text	CD: CD-DA, CD-ROM, CD-R, CD-RW, CD-ROM XA, PhotoCD(MultiSession) DVD: DVD-ROM, DVD-Video, DVD-RAM(2.6GB/4.7GB), DVD-R, DVD-RW(Ver1.1), DVD+R, DVD+RW	1. Reads and writes data in each CD-ROM, CD-ROMXA, CD-I FMV, Video CD, and CD-EXTRA 2. Reads data in Photo CD(Single and Multi session) 3. Reads and writes standard CD-DA 4. Reads and writes CD-R 5. Reads and writes CD-RW 6. Reads data in DVD-ROM
Loading mechanism	Load: Manual	Load: Manual	Load: Manual
Power Requirement			
Input Voltage	5 V +/- 5 % (Operating)	5 V +/- 5 % (Operating)	5 V +/- 5 % (Operating)

Power Management

ACPI Mode	Power Management
Mech. Off (G3)	All devices in the system are turned off completely.
Soft Off (S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (S0)	Individual devices such as the CPU and hard disk may be power managed in this state.
Suspend(S3)	CPU Power Down VGA Power Down PCMCIA Suspend Audio Power Down Hard Disk Power Down Super I/O Power Down
Sleeping State (S4)	Also called Hibernate state. System saves all system states and data onto the disk prior to power off the whole system.

Dimensions and Weight

Item	Details
Model	**AS 5600/3680&TM 4220/2480**
Deminsions	364(W) x 275(D) with max. 30/35.2mm(H)
Weight	<2950 g except TV SKU for 15.4" WXGA LCD model <2940 g for 15" XGA LCD model

Environmental Requirements

Item	Specification
Temperature	
Operating	+5 ~ +35°C
Non-operating	-20 ~ +65°C (storage package)
Humidity	
Operating	20% ~ 80% without condensation
Altitude	Operating sea level 0 to 10,000ft
	Storage sea level 0 to 40,000ft

System Utilities

BIOS Setup Utility

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

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

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

The setup screen displays BIOS as follows:Navigating the BIOS Utility

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

During setup,all Fn function keys and power saving functions are disabled.

There are five menu options: Main, Advanced, Security, Boot and Exit.

Follow these instructions:

❑   To choose a menu, use the cursor left/right keys (zx).

❑   To choose a parameter, use the cursor up/down keys (wy).

❑   To change the value of a parameter, press p or q.

❑   Press ^ while you are in any of the menu options to go to the Exit menu.

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

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

Information

		PhoenixBIOS Setup Utility			
Info.	Main	Advanced	Security	Boot	Exit

```
   CPU Type:            Genuine Intel(R) CPU  T2600@2.16GHz
   CPU Speed            2130 MHz

   IDE1 Model Name:     ST9100824AS
   IDE1 Serial Number:  3PL022FK
   System BIOS Version: v0.3301

   EC BIOS Version:     0.13
   Serial Number:       LXT123ZH2000470082EF00
   Asset Tag Number:
   Product Name:        TravelMate xxxx
   Manufacturer Name:   Acer
   UUID:                E0A62208C08BD811BCFB00163631BD37
```

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

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

Main

This menu provides you the information of the system.

PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

		Item Specific Help
System Time:	[11:59:38]	
System Date:	[03/16/2006]	<Tab>, <Shift-Tab>, or
		<Enter> selects field.
System Memory:	640 KB	
Extended Memory:	1014 KB	
Video Memory	128 MB	
Quiet Boot:	[Enabled]	
Power on Display:	[Auto]	
Network boot	[Enabled]	
F12 Boot Menu:	[Disabled]	
D2D Recovery:	[Enabled]	

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

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

Parameter	Description
F12 Boot Menu	When this is selected, users can modify device boot priority by pressing F12 key during POST. When this is not selected, device boot priority will not be adjustable during POST.
D2D Recovery	Allow user to enable/disable the Disk-to-Disk recovery

Security

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

PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

		Item Specific Help
Supervisor Password Is:	Clear	
User Password Is:	Clear	
		Supervisor Password controls accesses of the setup utility.
Set Supervisor Password	[Enter]	
Set User Passord		
Set HDD Password	[Enter]	
HDD Password Is:	Clear	
Password on Boot:	[Disabled]	

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

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

Parameter	Description	Option
Supervisor Password Is	N/A	N/A
User Password Is	N/A	N/A
HDD Password Is	N/A	N/A
Set Supervisor Password Set User Password	Press Enter to set the administrator password. When set, this password protects the BIOS Setup Utility from unauthorized access. [Set]: System password is set [Clear]: System password is not set	Length -- No more than 8 characters Characters -- 0-9, A-Z (not case sensitive)

Parameter	Description	Option
Set HDD Password	When shown as [Locked], the hard drive password currently can not be changed or disabled. To change or disable it, turn off the system and enter Setup immediately after turning it back on. Press [Enter] to input change, or disable hard drive password.	**Enter**
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. Allows the user to specify whether or not a password is required to boot.	**Disabled** Enabled

Set Supervisor/User Password

If password on boot is required, the password must be set otherwise it cannot be enabled.

The formats of the password are as follows:

Length   No more than 8 characters

Characters   0-9,A-Z (not case sensitive)

While these fields are highlighted and press "Enter", a window similar to the following is shown:

```
            Set SupervisorPassword

   Enter New Password        [            ]

   Confirm New Password    [            ]
```

If there is an old password then setup will prompt with the following window instead and a current password will be required to be entered at first:

```
            Set Supervisor Password

   Enter current password    [            ]

   Enter New Password        [            ]

   Confirm New Password    [            ]
```

User can now type password in field "Enter New Password", and re-enter password in field "Confirm New Password" for verification.

If the verification is OK:

The password setting is complete after user presses enter.

Setup Notice

Changes have been saved.

[continue]

If the current password entered does not match the actual current password:

Setup Warning

Invalid password

Re-enter Password

[continue]

If the new password and confirm new password strings do not match:

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 distette drive in module bay, the onboard hard disk drive and the CD-ROM
in module bay and onboard LAN device.

PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

```
Boot priority order:                                    Item Specific Help

 1: USB KEY:                                    Keys used to view or
 2: USB FDC:                                    configure devices:
 3: USB HDD:                                    Up and Down arrows
 4: IDE 0:    ST9100824ASIDE  S                 select a device.
 6: 1394 CDROM                                  <+> and <-> moves
 7: PCI LAN:   MBA v8.2.6 Slot 0300             the device up or down.
 8:                                             <f> and <r> specifies
                                                the device fixed or
Excluded from boot order:                       removable.
   : PCI LAN:              MBA v8.2.6 Slot 0300 <x> exclude or include
   : USB HDD:                                   the device to boot.
   : USB CDROM:                                 <Shift + 1> enables or
   : USB FDC:                                   disables a device.
   : USB KEY:                                   <1- 4 > Loads default
                                                boot sequence.
```

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

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

.

Exit

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

PhoenixBIOS Setup Utility						
Info.	Main	Advanced	Security	Boot	Exit	

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

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 Default	Load default values for all SETUP items
Discard Changes	Load previous values from CMOS for all SETUP items
Save Changes	Save Setup Data to CMOS

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.

NOTE: There are several types of screws used to secure bottom case and upper case assembly. The screws vary in length. Please refer the picture below, group the same type of screws together during service disassembling. Please also remember the screw location for each screw type. If you fasten the screw to the wrong location, the screw may be too long to damage the main board.

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 main board, you must first remove the keyboard, then disassemble the inside assembly frame in that order.
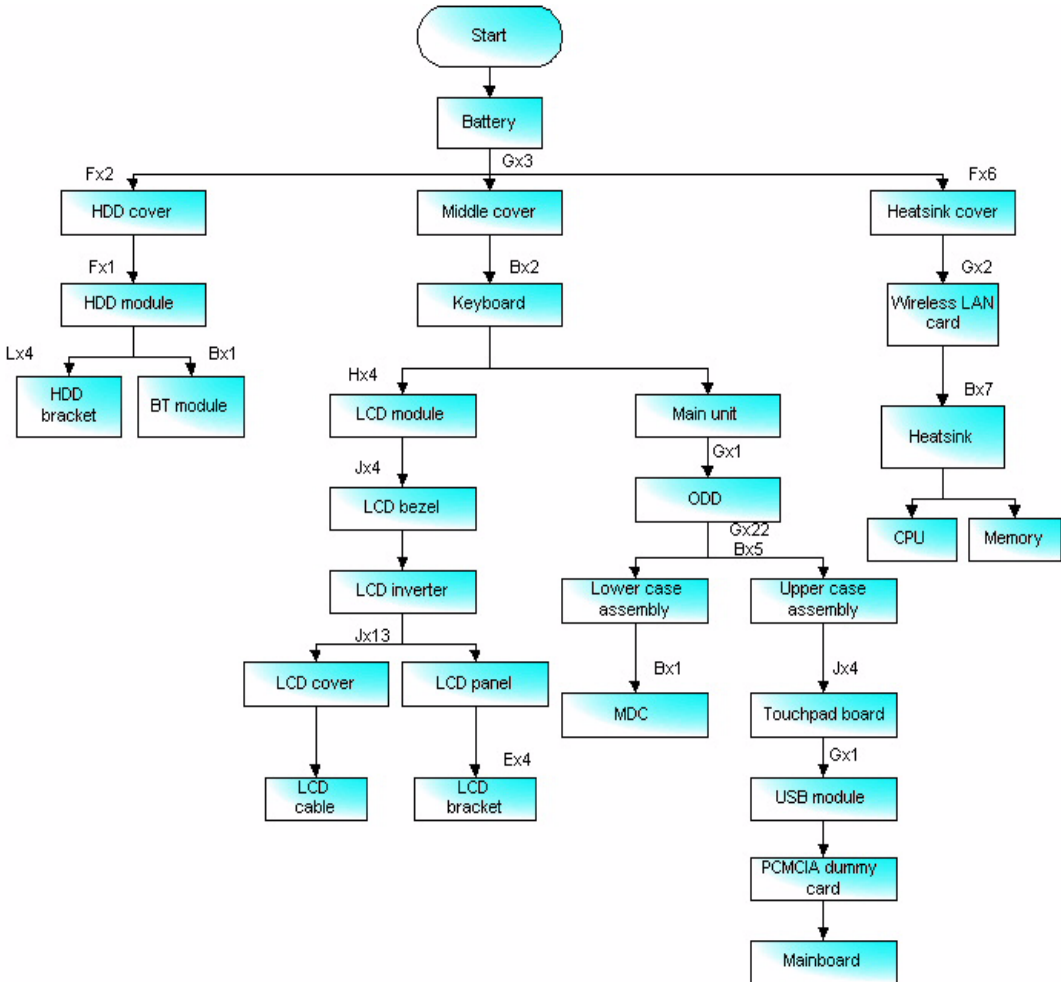
Removing the Adapter and Battery Pack

1. Unplug the adapter.
2. Release the battery lock.
3. Slide the battery latch.
4. Remove the battery pack.

Removing the Heatsink Module, CPU, and HDD Modue

Remove the Heatsink Cover

1. Release the six screws securing the heatsink cover. (The six screws are attached to the heatsink cover)
2. Lift the heatsink cover up and remove it.

Remove the Heatsink Module

1. Disconnect the main fan cable from the mainboard.
2. Remove the seven screws securing the heatsink module.
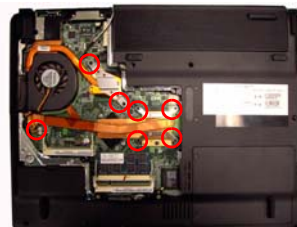
3. Remove the heatsink module from the main unit.

Removing the HDD Module

1. Release the two screws securing the HDD cover. (One screw is attached to the HDD cover)
2. Remove the HDD cover.

.
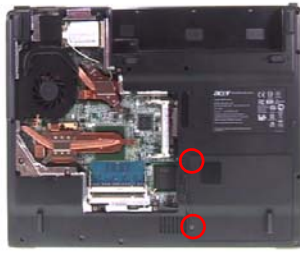
3. Remove the screw securing the HDD.

4. Holding the mylar and pull the HDD module out of the main unit.

Removing the CPU

1. Use a flat screw driver and turn the screwdriver counterclockwise to unlock the CPU.

2. Remove the CPU from the mainboard.
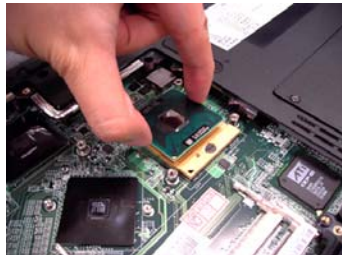
Removing the Memory and Wireless Card

Remove the Memory

1. Press the latch on left and right side to pop out the memory and remove it.
2. Remove the other memory.
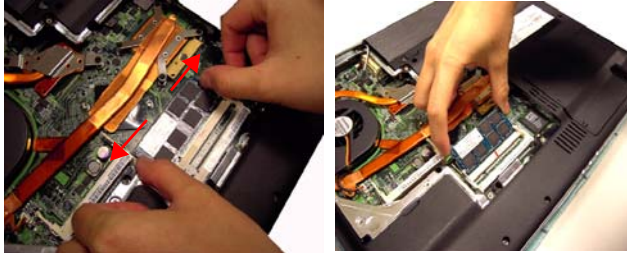
Removing the Bluetooth Module

1. Remove the screw securing the Bluetooth module.
2. Remove the Bluetooth connector from the mainboard.

3. Remove the Bluetooth cable from the Bluetooth wire groove.

4. Remove the Bluetooth module from the main unit.

5. Remove the two screws securing the Bluetooth bracket.
6. Remove the Bluetooth module from the Bluetooth bracket.
7. Disconnect the Bluetooth cable from the Bluetooth module.
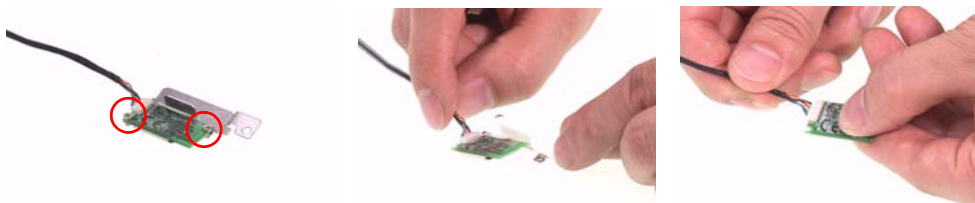
Disassembling the Main Unit into Upper Case and Lower Case

1. Disconnect the power cable from the mainboard.

1. Remove the three screws securing the middle cover on the rear panel.
2. Open the notebook.

.

3. Release the clasp of middle cover and remove the middle cover from the main unit.

4. Remove the two screws securing the keyboard.
5. Turn the keyboard over.

6. Unlatch the keyboard FFC latch and remove the keyboard from the main unit.
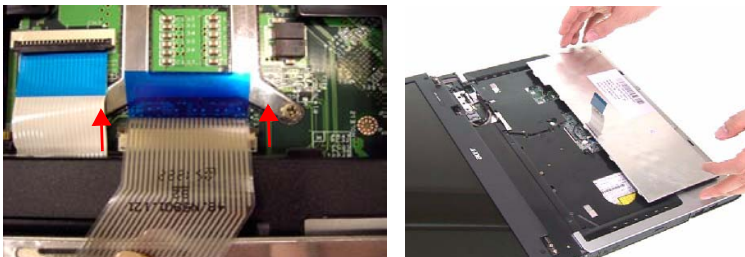
7. Disconnect the LCD cable from the mainboard as shown.

8. Remove the two screws on left and right hinges.

9. Remove the LCD module from the main unit and be careful to pull the antenna out.

10. Remove the screw securing the ODD module.

11. Push the ODD module out of the main unit.

12. Remove the five screws securing the upper case.

13. Remove the 22 screws securing the lower case.
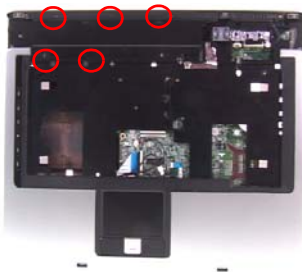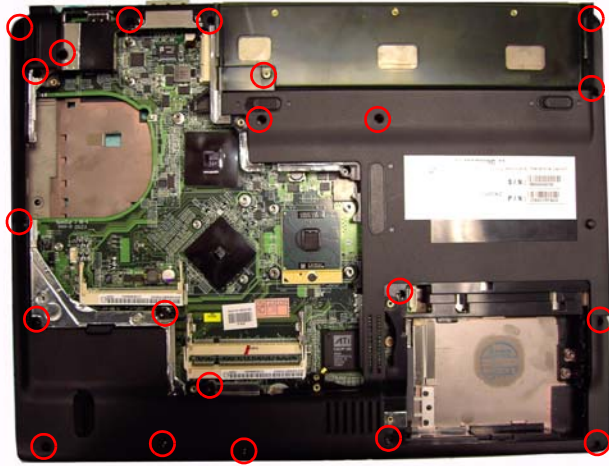
14. Disconnect the LID switch cable from the mainboard.

15. Disconnect the MIC wire cable from the mainboard.

16. Unlatch the touchpad board FFC and disconnect the touchpad board FFC from the mainboard.

17. Lift up the upper case to separate the upper and lower case.
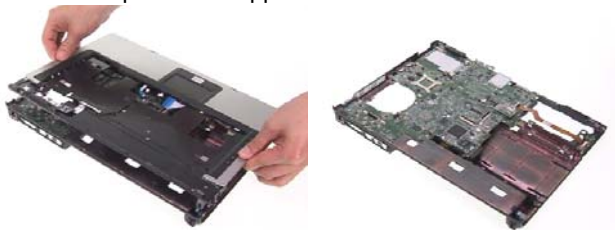
Disassembling the LCD Module

1. Remove the four screw caps from the LCD module.
2. Remove the four screw securing the LCD bezel.
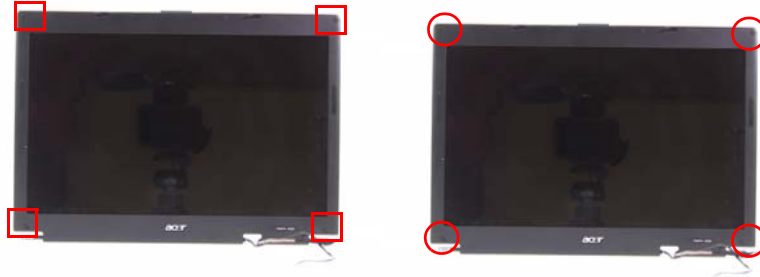
NOTE: For LCD module with CCD, please refer to following steps.

1. Remove the six screw caps for the LCD module.
2. Remove the six screws securing the LCD module.

3. Remove the LCD bezel.
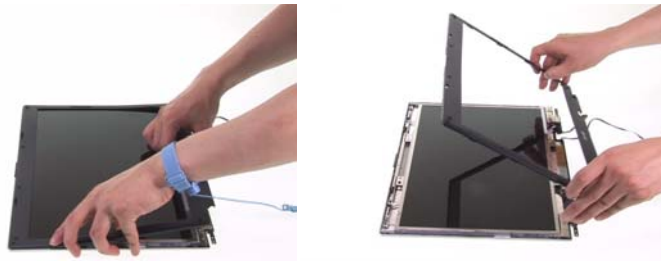
4. Remove the 13 screws securing the LCD panel.

5. For LCD with CCD, remove the 11 screws securing the LCD panel.
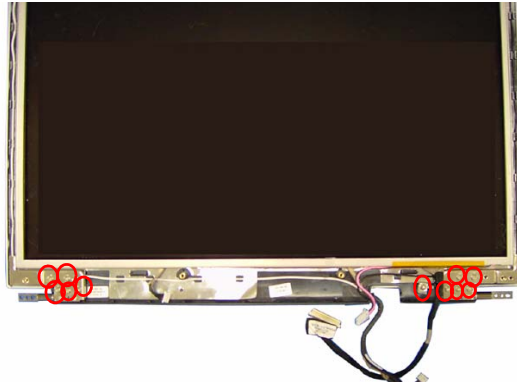
6. Lift up the inverter board.

7. DIsconnect the inverter cables from the inverter board and remove the inverter board.
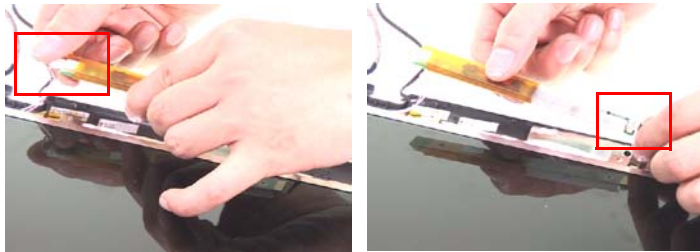
8. Remove the LCD panel from the LCD cover.
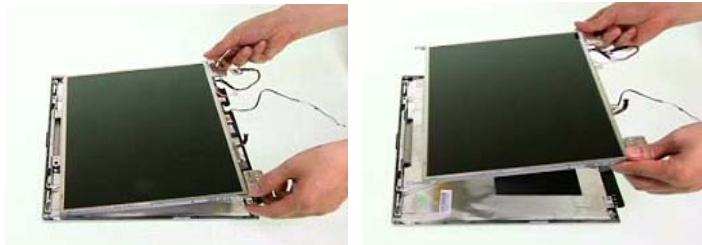
9. Remove the two screws securing the left LCD brackets.

10. Remove the left LCD bracket from the LCD panel.

11. Remove the two screws securing the right LCD bracket.

12. Remove the right LCD bracket from the LCD panel.

13. Remove the tape on the LCD cable.

14. Disconnect the LCD cable and remove the LCD cable from the LCD panel.

15. This completes the LCD module disassembly.

Remove the CCD module

1. Remove the five screws securing the CCD brackets and remove the CCD brackets

2. Lift the CCD plastic bracket up.

3. Remove the CCD module.
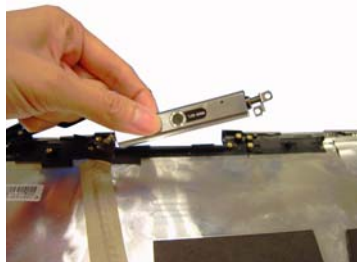
4. Be careful that the CCD cable is combined with the antenna.
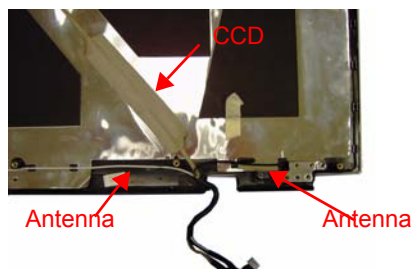
Reassembling the LCD Module

1. Connect the LCD cable to the LCD panel.
2. Place the tape on the LCD cable.
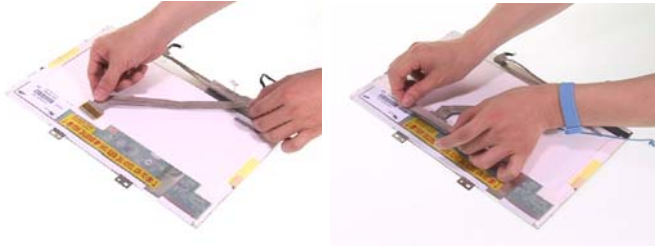
3. Place the right LCD bracket back to the LCD panel
4. Secure the right LCD bracket with the two screws.

5. Place the left LCD bracket back to the LCD panel
6. Secure the left LCD bracket with the two screws.
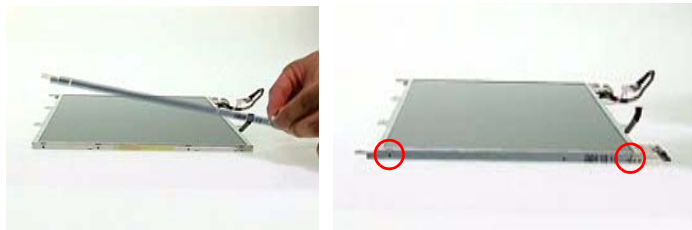
7. Place the LCD panel back to the LCD cover.
8. Place the inverter board back to the LCD module and connect the inverter cables to the inverter board.
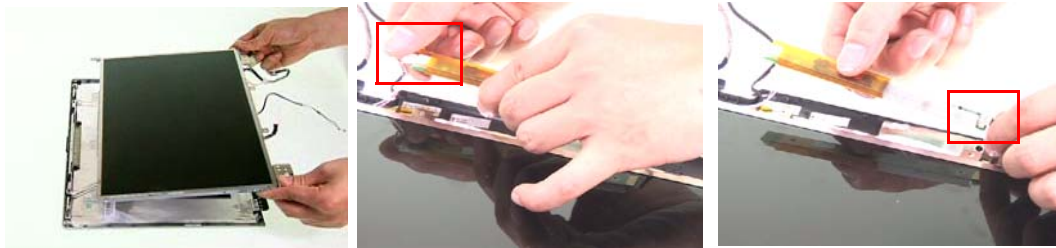
9. Secure the LCD panel with the 13 screws.

10. Place the LCD bezel back to the LCD module. Push each side of the bezel to make it clip to the LCD cover well.
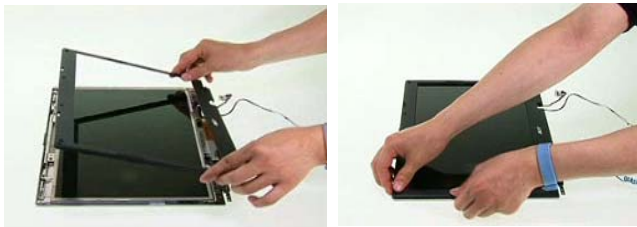
11. Secure the LCD bezel with four screws.

12. Place the four screw caps back.

13. This completes the LCD module reassembly.

HDD disassembly & Reassembly

1. Remove the four screws securing the HDD bracket.
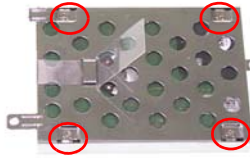
2. Remove the HDD bracket from the HDD.
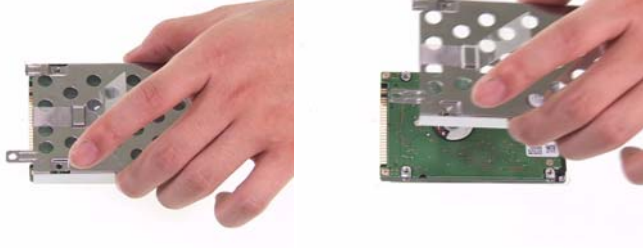
3. Place the HDD bracket back to the HDD.

4. Secure the HDD with the four screws.
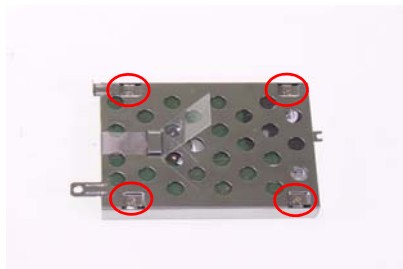
5. This completes HDD module disassembly and reassembly.

ODD disassembly & Reassembly

1. Remove the four screws securing the ODD module.

2. Remove the ODD bracket from the ODD.

3. Place the ODD bracket back to the ODD.

4. Secure the ODD with the four screw.

5. This completes ODD module disassembly and reassembly.

Troubleshooting

Use the following procedure as a guide for computer problems.

NOTE: The diagnostic tests are intended to test this model. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.

1. Duplicate symptom and obtain the failing symptoms in as much detail as possible.

2. Distinguish symptom. Verify the symptoms by attempting to re-create the failure by running the diagnostic test or by repeating the same operation.

3. Disassemble and assemble the unit without any power sources.

4. If any problem occurs, you can perform visual inspection before you fellow this chapter's instructions. You can check the following:

> power cords are properly connected and secured;
>
> there are no obvious shorts or opens;
>
> there are no obviously burned or heated components;
>
> all components appear normal.

5. 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 83.
POST does not complete. No beep or error codes are indicated.	"Power-On Self-Test (POST) Error Message" on page 85 "Undetermined Problems" on page 97
POST detects an error and displayed messages on screen.	"Error Message List" on page 86
Other symptoms (i.e. LCD display problems or others).	"Power-On Self-Test (POST) Error Message" on page 85
Symptoms cannot be re-created (intermittent problems).	Use the customer-reported symptoms and go to "Power-On Self-Test (POST) Error Message" on page 85 "Intermittent Problems" on page 96 "Undetermined Problems" on page 97

System Check Procedures

External Diskette Drive Check

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 Battery Pack" on page 84

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. After rebooting, run Tracking Pad PS2 Mode Driver. For example, run Syn touch driver.

2. Run utility with the PS/2 mouse function and check if the mouse is working.

3. If the PS/2 mouse does not work, then check if the main board to switch board FPC is connected O.K.

4. If the main board to switch board FPC is connected well, then check if the FCC on touch pad PCB connects properly.

5. If the FFC on touch pad PCB connects properly, then check if LS851 JP1 Pin6=5V are pulese. If yes, then replace switch board. If no, then go to next step.

6. Replace touch pad PCB.

7. If the touch pad still does not work, then replace FPC on Track Pad PCB.

After you use the touchpad, the pointer drifts on the screen for a short time. This self-acting pointer movement 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 97.

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 Message List

Error Messages	FRU/Action in Sequence
Struck Key	See "Keyboard or Auxiliary Input Device Check" on page 82
System CMOS checksum bad - Default configuration used	RTC battery Run BIOS Setup Utility to reconfigure system, then reboot system.
Real time clock error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. Main board
Previous boot incomplete - Default configuration used	"Load Default Settings" in BIOS Setup Utility. RTC battery Main baord
Invalid System Configuration Data	"Load Default Settings" in BIOS Setup Utility. Main board
Operating system not found	Enter Setup and see if fixed disk and drive A are properly identified. Dikette drive Hard disk drive Main board

Error Message List

No beep Error Messages	FRU/Action in Sequence
Power-on indicator turns off and LCD is blank.	Power source (battery pack and power adapter.) See "Power System Check" on page 83 Ensure every connector is connected tightly and correctly. Reconnect the DIMM. Main board.
Power-on indicator turns on and LCD is blank.	Power source (battery pack and power adapter.) See "Power System Check" on page 83 Reconnect the LCD connector Hard disk drive LCD cable LCD inverter LCD Main board
Power-on indicator turns on and LCD is blank. But you can see POST on an external CRT.	Reconnect the LCD connectors. LCD cable LCD inverter LCD Main board
Power-on indicator turns on and a blinking cursor shown on LCD during POST.	Ensure every connector is connected tightly and correctly. Main 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
07h		Disable shadow and execute code from the ROM.
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
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
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
41h		Initialize extended memory for RomPilot.
42h		Initialize interrupt vectors
45h		POST device initialization
46h	2-1-2-3	Check ROM copyright notice

Code	Beeps	POST Routine Description
47h		Initialize I20 support
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
55h		Enable USB devices
58h	2-2-3-1	Test for unexpected interrupts
59h		Initialize POST display service
5Ah		Display prompt "Press F2 to enter SETUP"
5Bh		Disable CPU cache
5Ch		Test RAM between 512 and 640 KB
60h		Test extended memory
62h		Test extended memory address lines
64h		Jump to User Patch1
66h		Configure advanced cache registers
67h		Initialize Multi Processor APIC
68h		Enable external and CPU caches
69h		Setup System Management Mode (SMM) area
6Ah		Display external L2 cache size
6Bh		Load custom defaults (optional)
6Ch		Display shadow-area message
6Eh		Display possible high address for UMB recovery
70h		Display error messages
72h		Check for configuration errors
76h		Check for keyboard errors
7Ch		Set up hardware interrupt vectors
7Eh		Initialize coprocessor if present
80h		Disable onboard Super I/O ports and IRQs
81h		Late POST device initialization
82h		Detect and install external RS232 ports
83h		Configure non-MCD IDE controllers
84h		Detect and install external parallel ports
85h		Initialize PC-compatible PnP ISA devices
86h		Re-initialize onboard I/O ports
87h		Configure Motherboard Configurable Devices (optional)
88h		Initialize BIOS Data Area
89h		Enable Non-Maskable Interrupts (NMIs)
8Ah		Initialize Extended BIOS Data Area

Code	Beeps	POST Routine Description
8Bh		Test and initialize PS/2 mouse
8Ch		Initialize floppy controller
8Fh		Determine number of ATA drives (optional)
90h		Initialize hard-disk controllers
91h		Initialize local-bus hard-disk controllers
92h		Jump to UserPatch2
93h		Build MPTABLE for multi-processor boards
95h		Install CD ROM for boot
96h		Clear huge ES segment register
97h		Fixup 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
B1h		Inform RomPilot about the end of POST.
B2h		POST done- prepare to boot operating system
B4h	1	One short beep before boot
B5h		Terminate QuietBoot (optional)
B6h		Check password (optional)
B7h		Initialize ACPI BIOS
B9h		Prepare Boot
BAh		Initialize SMBIOS
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)

Code	Beeps	POST Routine Description
C7h		Initialize notebook docking late
C8h		Force check (optional)
C9h		Extended checksum (optional)
CAh		Redirect Int 15h to enable remote keyboard
CBh		Redirect Int 13h to Memory Technologies Devices such as ROM, RAM, PCMCIA, and serial disk.
CCh		Redirect Int 10h to enable remote serial video
CDh		Re-map I/O and memory for PCMCIA
CEh		Initialize digitizer and display message.
D2h		Unknown interrupt
The following are for boot block in Flash ROM		
E0h		Initialize the chipset
E1h		Initialize the bridge
E2h		Initialize the CPU
E3h		Initialize the system timer
E4h		Initialize system I/O
E5h		Check force recovery boot
E6h		Checksum BIOS ROM
E7h		Go to BIOS
E8h		Set Huge Segment
E9h		Initialize Multi Processor
EAh		Initialize OEM special code
EBh		Initialize PIC and DMA
ECh		Initialize Memory type
EDh		Initialize Memory size
EEh		Shadow Boot Block
EFh		System memory test
F0h		Initialize interrupt vectors
F1h		Initialize Run Time Clock
F2h		Initialize video
F3h		Initialize System Management Mode
F4h	1	Output one beep
F5h		Clear Huge Segment
F6h		Boot to Mini DOS
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	First, plug a monitor to CRT port. Next, enter BIOS utility to running "Load Default Settings" then reboot the system. Reconnect the LCD connectors. Keyboard (if the brightness function key doesn't work). LCD cable LCD inverter LCD Main board
LCD is too dark LCD brightness cannot be adjusted	Enter BIOS Utility to execute "Load Setup Default Settings", then reboot system. Reconnect the LCD connectors. Keyboard (if the brightness function key doesn't work). LCD cable LCD inverter LCD Main board
Unreadable LCD screen Missing pels in characters Abnormal screen Wrong color displayed LCD has extra horizontal or vertical lines displayed.	Reconnect the LCD cable LCD cable LCD Main board

Indicator-Related Symptoms

Symptom / Error	Action in Sequence
Indicator incorrectly remains off or on, but system runs correctly	Main board
HDD/CD-ROM active indicators cannot work	HDD/CD-ROM drive Device driver Main 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 83. Battery pack AC adapter See if the thermal module is overheat (Heat sink or fan). Main board
The system cannot power-on.	Power source (battery pack and power adapter). See "Power System Check" on page 83. Battery pack Power adapter CPU Main board
The system cannot power-off.	In Windows XP operating system, hold and press the power switch for more than 4 seconds. If the system can power off, then the main board is OK. Verify OS in the HDD. Main board

Power-Related Symptoms

Symptom / Error	Action in Sequence
Battery can't be charged or discharged	See "Check the Battery Pack" on page 84. Battery pack Main board
System hang during POST	ODD/HDD/FDD/RAM module Main board

PCMCIA-Related Symptoms

Symptom / Error	Action in Sequence
System cannot detect the PC Card (PCMCIA)	PCMCIA slot assembly Main board
PCMCIA slot pin is damaged.	PCMCIA slot assembly
PC Card cannot be inserted or ejected	Check if the PCMCIA slot is blocked Main board

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. RAM module Main board Check BIOS revision
System can power on, but you hear two long beeps: "B--, B--" and the LCD is blank.	Reinsert DIMM DIMM Main board

Speaker-Related Symptoms

Symptom / Error	Action in Sequence
In Windows, multimedia programs, no sound comes from the computer.	OS volume control Audio driver Speaker Main board
Internal speakers make noise or emit no sound.	Speaker Main board
Microphone cannot work	Audio driver Volume control in Windows XP Main board

Power Management-Related Symptoms

Symptom / Error	Action in Sequence
The system will not enter hibernation mode	Power option in Windows XP Hard disk drive Main board
The system doesn't enter standby mode after closing the lid of the portable computer.	Driver of Power Option Properties Lid close switch in upper case Main board

Power Management-Related Symptoms

Symptom / Error	Action in Sequence
The system doesn't resume from hibernation/standby mode.	Connect AC adapter then check if the system resumes from Standby/Hibernation mode.
	Check if the battery is low.
	Hard disk drive
	Main board
The system doesn't resume from standby mode after opening the lid of the portable computer.	LCD cover switch
	Main board
Battery fuel gauge in Windows doesn't go higher than 90%.	Refresh battery (continue use battery until power off, then charge battery).
	Battery pack
	Main board
System hangs intermittently.	Reconnect hard disk/CD-ROM drives.
	Main board

Peripheral-Related Symptoms

Symptom / Error	Action in Sequence
System configuration does not match the installed devices.	Enter BIOS Setup Utility to execute "Load Setup defaults", then reboot system.
	Reconnect hard disk/CD-ROM drives/FDD or other peripherals.
	Main board
External display does not work correctly.	Press Fn+F5, LCD/CRT/Both display switching
	Keyboard
	Main board
USB does not work correctly	Main board
Print problems.	Enter BIOS Setup Utility to execute "Load Default Settings" then reboot the system.
	Run printer self-test.
	Printer driver
	Printer cable
	Printer
	Main board
Parallel port device problems	Enter BIOS Setup Utility to execute "Load Default Settings" then reboot the system.
	Device driver
	Device cable
	Device
	Main board

Keyboard/Touchpad-Related Symptoms

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

Modem/LAN-Related Symptoms

Symptom / Error	Action in Sequence
Internal modem does not work correctly.	Phone cable Driver Reconnect the Internal modem cable to the main board tightly. Main board
Internal LAN does not work correctly	Lan cable Driver Main board

NOTE: If you cannot find a symptom or an error in this list and the problem remains, see "Undetermined Problems" on page 97.

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 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 83):

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

    ❏ 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

RJ11/RJ45

VRAM

Charger IC

Battery Connector

LCD + PC Camera Connector

CPU Power Converter IC

Clock Gen

Touch Pad +Phone Jack Connector

Keyboard Connector

USB 2.0 X 2

Modem Connector

5V/3V Converter IC

EC Controller

Audio Codec

5-in-1

Card Bus IC

DDR Power IC

BIOS

Bottom View

Labels (clockwise from top):

- RJ11/RJ45
- USB 2.0 X1
- DC Jack
- Mini Card
- VRAM
- CRT Connector
- Battery Connector
- LAN Controller
- ODD Connector
- VGA Power IC
- VGA
- North Bridge
- NB Power IC
- CPU
- USB 2.0 X2
- Bluetooth CON.
- Mini PCI Card
- South Bridge
- HDD PATA/SATA
- PCMCIA Card
- Audio AMP
- RTC Batt
- DDR II Memory Connector
- Blue tooth SW
- Wireless SW

FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of Aspire 3660. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization). Please also note that there are some common parts for TravelMate 2460

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.

NOTE: Please visit website http://aicsl.acer.com.tw/spl/ for the up to date SPL

Exploded Diagram
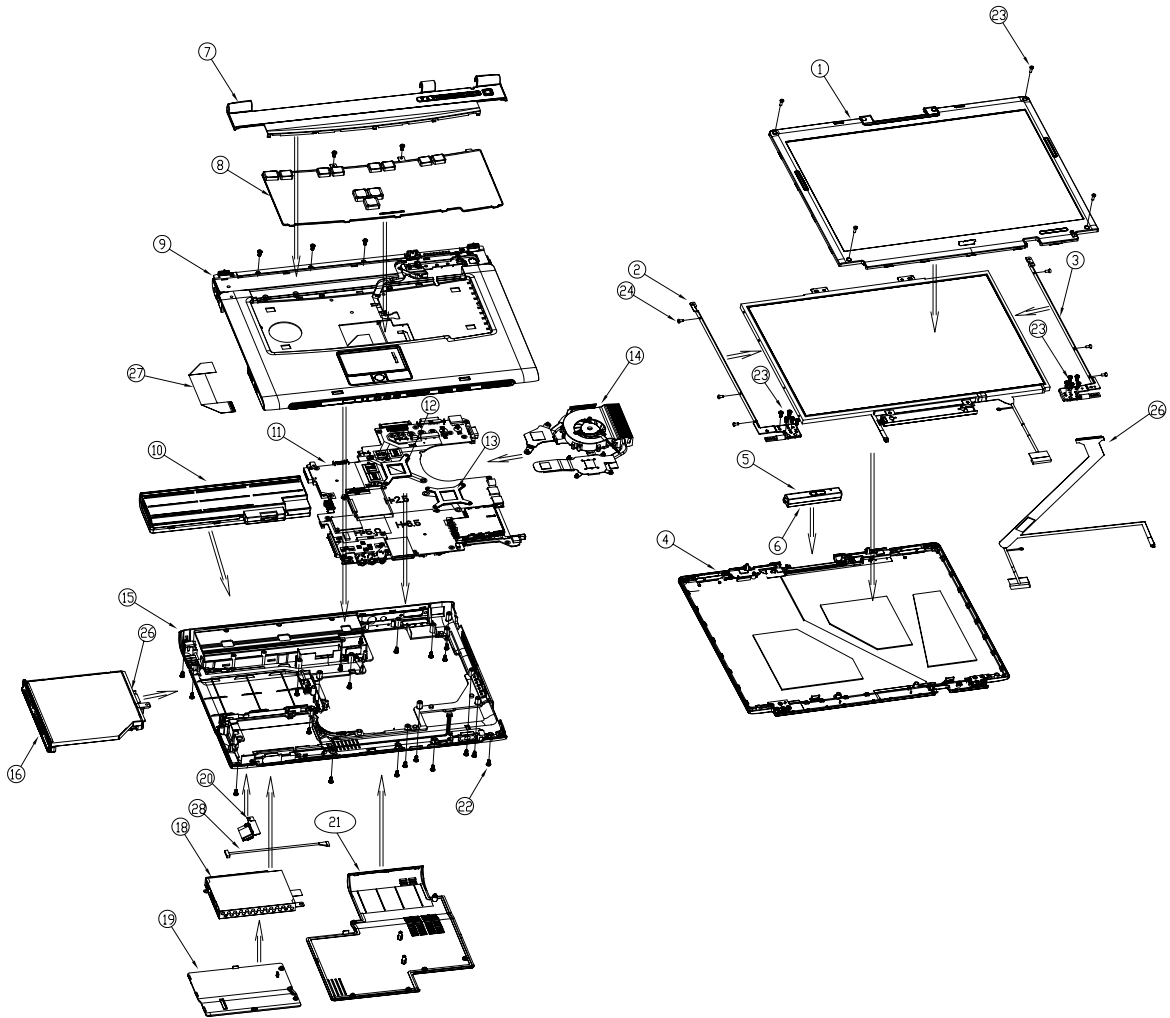
Item	Description	Item	Description
1	LCD bezel	22	Screw M2.5*6-I(BNI)(NYLOK)
2	LCD hinge-left	23	Screw M2.5*5.0-I(NI)(NYLOK)
3	LCD hinge-right	24	Screw M2.0*3.0-I-NI-NYLOK
4	LCD cover	25	ODD holder
5	CCD module(optional)	26	LCD cable
6	CCD cover(optional)	27	Touchpad board to mainboard cable
7	Middle cover	28	Bluetooth cable
8	Keyboard		
9	Upper case		
10	Battery		

Item	Description	Item	Description
11	Mainboard		
12	VGA support		
13	CPU support		
14	Heatsink module		
15	Lower case		
16	ODD module		
18	HDD module		
19	HDD cover		
20	Bluetooth bracket		
21	Heatsink cover		
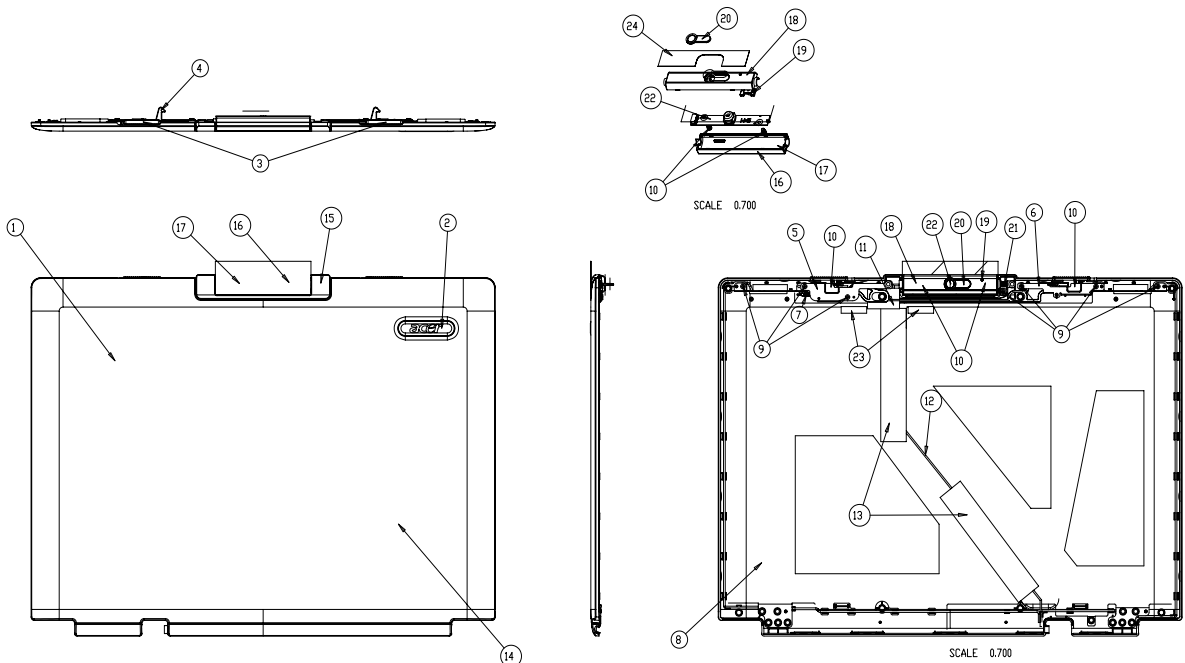
Item	Part Name	Item	Part Name
1	15.4" w/ CCD LCD cover(Aspire)	13	Conductive tape EP
2	ACER logo(Aspire)	14	LCD cover protect sheet
3	15.4" wide w/ CCD LCD knob	15	LCD CCD cover mylar
4	15.4" wide w/ CCD LCD latch	16	CCD cover protect
5	CCD latch BK-L	17	CCD cover
6	CCD latch BK-R	18	CCD bezel
7	LCD spring	19	CCD LED lens
8	15.4 w/ CCD cover shield	20	CCD name plate assy
9	screw M2.5*3.0-I(BNIXNYLOK)EP	21	CCD hinge

Item	Part Name	Item	Part Name
10	screw M2.0*3.0-I(NIXNYLOK)	22	camera V-UBDOEM1(CMOS module, 1.3M)
11	CCD cable maylar	23	LCD rubber-1
12	cable assy CCD (5P/4P/R2A) L-F	24	CCD bezel rotect

Part List

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
ADAPTER			
ADAPTER	"ADAPTER DELTA - 65W, SADP-65KB DBRF YELLOW 1.7X5.5X11 LF"	ZL6C ADP 19V DELTA S/P	AP.06501.010
ADAPTER	"ADAPTER LITEON - 65W, PA-1650-02 QY YELLOW 1.7X5.5X11 LF"	ZL6C ADP 19V LITEON S/P	AP.06503.013
ADAPTER	"ADAPTER LSE - 65W, SLS0335A1957 LF YELLOW 1.7X5.5X11 LF"	ZL6C ADP 19V LSE S/P	AP.06506.004
BATTERY			
	"LI-MN BODENSEE 4CELL2.0 (SANYO PACK 2,000MAH Y)"	ZB1 SANYO 4CELL 2.0 (W/ SONY) S/P	BT.00403.009
	BATTER SONY 4 CELL LI LIP4084QUPC SY6 4S1P 2.0A LF	ZB1 BAT(Lite-on 4 cell w/ Sony pack) S/P	BT.00404.004
	BATTERY SIMPLO PACK 4 CELL LI-MN 916C4820F 4S1P 2.0A	ZB1 BATT LI 916C4820FS/P	BT.00407.007
	BATTERY SANYO LI-MN 6 3UR18650Y-2-QC236 3S2P 11.1V 4A	ZB1 BATT LI 3UR18650Y-2-QC236 S/P	BT.00603.016
	BATTERY SONY LI-ION 6 CELL LIP6198QUPC SY6 3S2P 11.1V 4A	ZB1 BATT LI LIP6198QUPC S/P	BT.00604.007
	BATTERY SIMPLO PACK LI-MN 6 CELL 916C4890F 3S2P 10.8V 4.0A	ZB1 BATT LI 916C4890F 3S2P S/P	BT.00607.001
	"BATTERY PACK SANYO LI 8CELLI2.4 4.8Ah (4UR18650F-2-QC218,4S2P) ROHS"	ZB1 sanyo 8CELL 4.4A S/P	BT.00803.014
BOARD			
BOARD	MODEM 56K(MDC) T60M893.10	ZB3 MODEM 56K(MDC) T60M893.10 S/P	54.ACZV7.001
BOARD	BLUETOOTH MODULE FOXCONN T60H928.01	ZC1 FOX BLUETOOTH(T60H928.01) S/P	54.TAXV7.001
BOARD	MINI PCI WIRELESS BOARD ABT_ATH5413BG Atheros T60N874.05	ZL6 WIRELESS LAN S.P.	54.A50V7.002
BOARD	MINI PCI WIRELESS BOARD ABT_BRM4318BG BCM T60H906.01	ZL5 WIRELESS LAN BOARD S.P	54.A51V7.002
	TOUCHPAD BOARD W/AUDIO PORT	ZB3 TP&AUDIO BOARD ASSY S/P	55.ACZV7.001
DIGITAL LIGHT DEVICE	CCD MODULE W/CABLE	ZB2 CCD MOUDLE0.3M W/CABLE S/P	57.AB1V7.001
CABLE			
CABLE	MODEM CABLE	"ZB2 CABLE ASSY MODEM (2P/2P,1A) S/P"	50.TCFV7.001

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
	BLUETOOTH CABLE	ZB1 BLUETOOTH CABLE S/P	50.AA7V7.002
	FFC CABLE - TP TO MB	ZB3 CABLE TP FFC S/P	50.ACZV7.001
	FFC CABLE - TP TO TP BOARD	ZB1 CABLE TP/B FFC S/P	50.AA7V7.004
CABLE	POWER CORD US 3PIN ROHS	ZB1 PWR CORD US S/P	27.TAXV7.001
CABLE	POWER CORD EU 3 PIN ROHS	ZB1 PWR CORD (CEE) S/P	27.TAXV7.002
CABLE	POWER CORD PRC (3 PIN)	ET2S POWER CORD S/P-PRC	27.A03V7.003
CABLE	POWER CORD (UK)	ET2S POWER CORD SPARE PART-UK	27.A03V7.004
CABLE	POWER CORD DANISH (3 PIN)	ET2S POWER CORD S/P-DANISH	27.A03V7.006
CABLE	POWER CORD AF-S (INDIA)	ZL6A POWER CORD S/P INDIA S.P.	27.A50V7.001
CABLE	POWER CORD ISRAEL (3 PIN)	ZL6A POWER CORD S/P-ISR S.P	27.A50V7.002
CABLE	POWER CORD AU W/LABEL (3 PIN)	ZL6A POWER CORD S/P-AU S.P.	27.A50V7.003
CABLE	POWER CORD US-110V (BSMI)	ZL3E POWER CORD S/P-TWN	27.A99V7.002
CABLE	POWER CORD AF (3 PIN)	ZI5 POWER CORD S/P-AF	27.T48V7.001
CABLE	POWER CORD THAI	ZL3E POWER CORD S/P-THAI	27.A99V7.003
CABLE	POWER CORD SWISS 3 PIN	ZE1 POWER CORD 3P SWISS S.P.	27.A99V7.004
CABLE	POWER CORD ITALIAN 3PIN	EI2 POWER CORD 3P ITALY S.P.	27.A99V7.005
CABLE	POWER CORD JAPAN	ZB1 POWER CORD (JAPANESE) ROHS S/P	27.TAXV7.003
CASE/COVER/BRACKET ASSEMBLY			
	MIDDLE COVER	ZB1 AS K/B COVER ASSY S/P	42.AA7V7.001

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
CASE/COVER/BRACKET ASSEMBLY	UPPER CASE W/TP	ZB3 AS TOP ASSY S/P	60.ACZV7.001
CASE/COVER/BRACKET ASSEMBLY	LOWER CASE W/SPEAKER	ZB3 BASE ASSY S/P	60.ACZV7.002
CASE/COVER/BRACKET ASSEMBLY	HEATSINK COVER	ZB3 HS COVER ASSY S/P	60.ACZV7.003
	DUMMY-NEW CARD	ZB1 CARDBUS DUMMY CARD S/P	42.AA7V7.011
CPU/PROCESSOR			
CPU/PROCESSOR	CPU INTEL YONAH CORE DUO FSB-667 1.66G 2M SL8VR	ZC1 INTEL CPU YONAH 1.66G S/P	KC.23001.DTP
CPU/PROCESSOR	CPU INTEL YONAH CORE DUO FSB-667 1.83G 2M SL8VQ	ZC1 INTEL CPU YONAH 1.83G S/P	KC.24001.DTP
CPU/PROCESSOR	CPU INTEL YONAH CORE DUO FSB-667 2.0G 2M SL8VP	ZC1 INTEL CPU YONAH 2.0G S/P	KC.25001.DTP
CPU/PROCESSOR	CPU INTEL YONAH CORE DUO FSB-667 2.16G 2M SL8VN	ZC1 INTEL CPU YONAH 2.16G S/P	KC.26001.DTP
CPU/PROCESSOR	CPU INTEL CELERON 1M 1.66G SL8VZ	ZB3 YONAH 1.66G S/P	KC.N0001.420
CPU/PROCESSOR	CPU INTEL CELERON 1M 1.73G SL92F	ZB3 YONAH 1.73G S/P	KC.N0001.430
DVD RW DRIVE			
DVD RW DRIVE	DVD/CDRW COMBO MODULE 24X	ZB3 COMBO MODULE	6M.ACFV7.001
DVD RW DRIVE	"DVD COMBO,PHILIPS SCB5265 ,GB,LF"	ZB2 COMBO (SCB5265)FW:TX07 S/P	KO.02403.007
COMBO DRIVE	CDRW/DVD COMBO DRIVE 24X HLDS GCC-4244N LF 1.00AB	ZB1 COMBO HLDS (GCC-4244N) F/W:1.00 LF S/P	KO.0240A.005
DVD RW DRIVE	DVD/CDRW (COMBO) UJDA770AC-A STN B/S	ZL7 DVD COMBO UJDA770AC-A BS S/P	KO.02406.013
CASE/COVER/BRACKET ASSEMBLY	"ODD HOLDER FIX ZB1(EBZB1037,R3A)"	ZB1 ODD HOLDER FIX S/P	42.AA7V7.002
CASE/COVER/BRACKET ASSEMBLY	ZB1 ODD BEZEL ASSY G/B COMBO	ZB1 ODD BEZEL ASSY G/B S/P	42.AA7V7.005
DVD RW DRIVE	DVD SUPER MULTI MODULE	ZB3 SUPER MODULE MODULE	6M.ACFV7.001
DVD RW DRIVE	DVD SUPER MULTI HLDS GMA-4082N	ZB2 DVD SUPER MULTI DL GMA-4082N S/P	KU.0080D.021
DVD RW DRIVE	DVD SUPER MULTI PANASONIC UJ-850BAA-A FW1.5	ZC1 DVD SUPERMUTI PAN UJ850 S/P	KU.00807.025
DVD RW DRIVE	DVD SUPER MULTI PHILIPS SDVD-8821 F/W:EX02 LF	ZB2 DVD SUPER (SDVD8821)F/W:EX02 S/P	KU.00809.005
DVD RW DRIVE	DVD SUPER MULTI PIONEER DVR-K16RS LF	ZB2 DVD SUPERDRIVE(DL) DVR-K16RS STNS/P	KU.00805.029
DVD RW DRIVE	DVD SUPER MULTI LITE-ON SSM-8515S LF	ZB2 DVD(SUPER MULTI)SSM-8515S S/P	KU.00804.022

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
CASE/COVER/BRACKET ASSEMBLY	ODD HOLDER FIX ZB1	ZB1 ODD HOLDER FIX S/P	42.AA7V7.002
CASE/COVER/BRACKET ASSEMBLY	ZB1 ODD BEZEL ASSY G/B SUPER MULTI	ZB1 ODD BEZEL ASSY G/B SUPER MULTI S/P	42.AA7V7.007
DVD RW DRIVE	DVD SUPER MULTI PIONEER SLOT-IN ASSY	ZB3 DVD SUPER MULT PIO ASSY S/P	
DVD RW DRIVE	DVD SUPERDRIVE DVR-K06RS FW:1.01	ZB3 DVD SUPER MULTI PIONEER SLOT-IN S/P	
CASE/COVER/BRACKET ASSEMBLY	OPTICAL DEVICE HOLDER	ZB1 ODD HOLDER FIX S/P	42.AA7V7.002
CASE/COVER/BRACKET ASSEMBLY	ODD BEZEL ASSY	ZB3 SUPER MULTI BEZEL ASSY S/P.	
HDD/HARD DISK DRIVE			

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
	HDD(40G) ST9402112A 9AH417-188	ZL6C HDD 40G SEAG LF S/P	KH.04001.019
	HDD(40G)HTS421240H9AT00	ZL5 HDD 40G HTS421240H9AT00 HITACH S/P	KH.04007.013
	60G HGST 2.5 4200RPM HAKONE-A F/W :A70G	ZL6C HDD 60G HGST S/P	KH.06007.009
	HDD(60G) ST960812A 9AH432-188	ZL6C HDD 60G SEAG LF S/P	KH.06001.006
	HDD(60G) ST96812A 9W3882-188	ZB1 HDD 60G ST96812A SEAGATE S/P	KH.06001.007
	HDD(60G)HTS541060G9AT00	ZL6 HDD 60GB HGST HTS541060G9AT00 S/P	KH.06007.009
	HDD(60GB)MK6034GAX-CZK FW:AC101A	ZB2 HDD(60GB)MK6034GAX-CZK S/P	KH.06004.007
	"80G SEAGATE 2.5"" 4200RPM ST980829A LF N2.2 FW:3.06"	ZL6C HDD 80G SEAG LF S/P	KH.08001.021
	80G HGST 2.5 4200RPM HAKONE-A F/W:A70G	ZL6C HDD 80G HGST S/P	KH.08007.011
	HDD(80G)HTS541080G9AT00	ZL3 80G HDD HTS541080G9AT00 (HIT) S/P	KH.08007.013
	HDD(80GB)MP0804H FW:YS200-05	ZL6C HDD 80G SUMSUNG LF S/P	KH.0800B.004
	HDD(100G) ST9100825A 9AH439-188	ZL6C HDD 100G SEAG LF S/P	KH.10001.006
	HDD(100G) ST9100824A 9W3039-188	ZB1 HDD 100G ST9100824A SEAGATE S/P	KH.10001.007
	HDD(100GB)MK1032GAX CZK	ZF3 HDD 100G MK1032GAX CZK TOSHIBA S/P	KH.10004.002
	HDD(120G) ST9120824A 9AH434-188	ZL6C HDD 120G SEAG LF S/P	KH.12001.023
	HDD(120G)HTS421212H9AT00 0A26308	ZL6C HDD 120G HGST S/P	KH.12007.006
	HDD(120G) ST9120821A 9W3884-188	ZL6C HDD 120G SEAG 3.06 LF S/P	KH.12001.024
	HDD(120G)MK1234GAX CZK	ZB3 HDD 120G)MK1234GAX S/P	KH.12004.002
	HDD BRACKET	ZB1 HDD BRACKET S/P	33.AA7V7.002
	ZB1 HDD COVER ASSY	ZB1 HDD COVER ASSY S/P	42.AA7V7.008

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
KEYBOAED			
	AS1680/AS1410 KEYBOARD DARFON US International	ZL1C K/B NON ERGO-UI S.P.	KB.A2707.001
	AS1680/AS1410 KEYBOARD DARFON Chinese	ZL1C K/B NON ERGO-TAIWAN S.P.	KB.A2707.002
	AS1680/AS1410 KEYBOARD DARFON Spanish	ZL1C K/B NON ERGO-SPANISH S.P.	KB.A2707.003
	AS1680/AS1410 KEYBOARD DARFON Thai	ZL1C K/B NON ERGO-THAI S.P.	KB.A2707.004
	AS1680/AS1410 KEYBOARD DARFON Brazilian Protugese	ZL1C K/B NON ERGO-BRAZ PROTU S.P.	KB.A2707.005
	AS1680/AS1410 KEYBOARD DARFON Korea	ZL1C K/B NON ERGO-KOREA S.P.	KB.A2707.006
	AS1680/AS1410 KEYBOARD DARFON UK	ZL1C K/B NON ERGO-U.K S.P.	KB.A2707.007
	AS1680/AS1410 KEYBOARD DARFON German	ZL1C K/B NON ERGO-GERMAN S.P.	KB.A2707.008
	AS1680/AS1410 KEYBOARD DARFON Italian	ZL1C K/B NON ERGO-ITALIAN S.P.	KB.A2707.009
	AS1680/AS1410 KEYBOARD DARFON French	ZL1C K/B NON ERGO-FRENCH S.P.	KB.A2707.010
	AS1680/AS1410 KEYBOARD DARFON Swiss/G	ZL1C K/B NON ERGO-SWISS/G S.P.	KB.A2707.011
	AS1680/AS1410 KEYBOARD DARFON Portuguese	ZL1C K/B NON ERGO-PORTUG S.P.	KB.A2707.012
	AS1680/AS1410 KEYBOARD DARFON Arabic	ZL1C K/B NON ERGO-ARABIC S.P.	KB.A2707.013
	AS1680/AS1410 KEYBOARD DARFON Belgium	ZL1C K/B NON ERGO-BELGIUM S.P.	KB.A2707.014
	AS1680/AS1410 KEYBOARD DARFON Sweden	ZL1C K/B NON ERGO-SWEDEN S.P.	KB.A2707.015
	AS1680/AS1410 KEYBOARD DARFON Czech	ZL1C K/B NON ERGO-CZECH S.P.	KB.A2707.016
	AS1680/AS1410 KEYBOARD DARFON Hungaian	ZL1C K/B NON ERGO-HUNG S.P.	KB.A2707.017
	AS1680/AS1410 KEYBOARD DARFON Norway	ZL1C K/B NON ERGO-NORWAY S.P.	KB.A2707.018
	AS1680/AS1410 KEYBOARD DARFON Danish	ZL1C K/B NON ERGO-DANISH S.P.	KB.A2707.019
	AS1680/AS1410 KEYBOARD DARFON Turkish	ZL1C K/B NON ERGO-TURKISH S.P.	KB.A2707.020
	AS1680/AS1410 KEYBOARD DARFON Canadian French	ZL1C K/B NON ERGO-CANA FREN S.P.	KB.A2707.021
	AS1680/AS1410 KEYBOARD DARFON Japanese	ZL1C K/B NON ERGO-JAPAN S.P.	KB.A2707.022
	AS1680/AS1410 KEYBOARD DARFON Greek	ZL1C K/B NON ERGO-GREEK S.P.	KB.A2707.023
	AS1680/AS1410 KEYBOARD DARFON Hebrew	ZL1C K/B NON ERGO-HEBREW S.P.	KB.A2707.024
	AS1680/AS1410 KEYBOARD DARFON Russian	ZL1C K/B NON ERGO-RUSS S.P.	KB.A2707.025
LCD			

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
	LCD MODULE 15.4 WXGAG 16MS GLARE W/CCD-0.3M	ZB3 LCD 15.4 WXGAG AS W/CCD-0.3M GF S/P	6M.ACZV7.003
	LCD 15.4 IN. WXGAG QDI QD15TL07-02 GLARE 16MS	ZL6C LCD QDI QD15TL07-02 GLARE S/P	LK.15409.009
	LCD 15.4 IN. WXGAG CMO N154I2-L02 GLARE 16MS	"ZB2 LCD(TFT)15.4""N154I2-L02(WXGA) S/P"	LK.1540D.012
	LCD 15.4 IN. WXGAG AU B154EW02-V1 GLARE 16MS	ZB3 LCD AUO B154EW02 GF S/P	
	LCD INVERTER BOARD	ZB1 INV MODULE S/P	19.AA7V7.001
CABLE	LCD CABLE ASSY - 15.4 IN. W/CCD	ZB3 LCD CABLE ASSY W/ CCD S/P	50.ACZV7.002
CASE/COVER/BRACKET ASSEMBLY	"LCD COVER - 15.4 IN. W/ANTENNA ,CCD 0.3M"	"ZB2 AS 15.4"" LCD COVER ASSY W-CCD(0.3M) S/P"	60.AB1V7.003
CASE/COVER/BRACKET ASSEMBLY	LCD BEZEL - 15.4 IN. FOR CCD N-UV	ZB3 15.4 LCD BEZEL ASSY W-CCD N-UV S/P	60.TCFV7.005
	LCD BRACKET W/HINGE 15.4 IN. - L	"ZB1 15.4"" HINGE-L ASSY S/P"	33.AA7V7.003
	LCD BRACKET W/HINGE 15.4 IN. - R	"ZB1 15.4"" HINGE-R ASSY S/P"	33.AA7V7.004
LCD	LCD MODULE 15.4 WXGAG GLARE W/ANTENNA	ZB3 LCD LP(15.4WXGA) AS B/S GL S/P	TBD
LCD	LCD 15.4 IN. WXGA LPL LP154W01-TLA2 GLARE	ZL8 LCD 15.4 LP154W01-TLA2(WXGA)S/P	LK.15408.014
BOARD	LCD INVERTER BOARD	ZB1 INV MODULE S/P	19.AA7V7.001
CABLE	LCD CABLE - 15.4 IN.	ZB1 CABLE ASSY S/P	50.AA7V7.011
	LCD COVER - 15.4 IN. W/ANTENNA	"ZB1 AS 15.4"" LCD COVER ASSY S/P"	60.AA7V7.005

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
	"ZL1 15.4""-WIDE LCD BEZEL ASSY"	ZB1 LCD BEZEL 15.4 S/P	60.TAJV7.006
CASE/COVER/BRACKET ASSEMBLY	LCD BRACKET W/HINGE 15.4 IN. - L	"ZB1 15.4"" HINGE-L ASSY S/P"	33.AA7V7.003
CASE/COVER/BRACKET ASSEMBLY	LCD BRACKET W/HINGE 15.4 IN. - R	"ZB1 15.4"" HINGE-R ASSY S/P"	33.AA7V7.004
LCD	LCD MODULE 15.4 WXGAG NON-GLARE W/ANTENNA	ZB3 LCD QDI(15.4WXGA)L07 AS B/S S/P	TBD
LCD	LCD 15.4 IN. WXGAG QDI QD15TL07-01 NON-GLARE	ZL6C LCD QDI QD15TL07-01 S/P	LK.15409.008
BOARD	LCD INVERTER BOARD	ZB1 INV MODULE S/P	19.AA7V7.001
	LCD CABLE - 15.4 IN.	ZB1 CABLE ASSY S/P	50.AA7V7.011
CASE/COVER/BRACKET ASSEMBLY	LCD COVER - 15.4 IN. W/ANTENNA	"ZB1 AS 15.4"" LCD COVER ASSY S/P"	60.AA7V7.005
CASE/COVER/BRACKET ASSEMBLY	"ZL1 15.4""-WIDE LCD BEZEL ASSY"	ZB1 LCD BEZEL 15.4 S/P	60.TAJV7.006
CASE/COVER/BRACKET ASSEMBLY	LCD BRACKET W/HINGE 15.4 IN. - L	"ZB1 15.4"" HINGE-L ASSY S/P"	33.AA7V7.003
CASE/COVER/BRACKET ASSEMBLY	LCD BRACKET W/HINGE 15.4 IN. - R	"ZB1 15.4"" HINGE-R ASSY S/P"	33.AA7V7.004
MEMORY			
	SO-DIMM DDRII533 256MB NT256T64UH4A1FN-37B LF	ZB1 RAM DDRII5 256M NANYA S/P	KN.25603.029
	SO-DIMM DDRII533 256M HYS64T32000HDL-3.7-A 32X64 LF (0.11u)	ZB1 RAM DDRII5 256M INF S/P	KN.25602.023
	SO-DIMM DDRII533 256MB M470T3354CZ3-CD5 LF (Pb-free)	ZB1 RAM DDRII533 256MB SAMSUNG S/P	KN.2560B.017
	SO-DIMM DDRII533 256MB MT4HTF3264HY-53EB4 LF		KN.25604.030
	SO-DIMM DDRII 533 256MB HYMP532S64BP6-C4 LF		KN.2560G.012
	SO-DIMM DDRII 533 512MB HYS64T64020HDL-3.7-A LF (0.11u)	ZC1 INFINEON DDRII 533 512MB RAM S/P	KN.51202.021
	SO-DIMM DDRII533 512MB NT512T64UH8A1FN-37B LF	ZB1 RAM(512M)DDR2 NANYA S/P	KN.51203.023
	SO-DIMM DDRII 533 512MB HYMP564S64BP6-C4 LF (.09UM)		KN.5120G.013

CATEGORY	PARTNAME	DESCRIPTION	PART NO.
	SO-DIMM DDRII533 512MB GU33512AGEPN612C	ZB2 RAM(512M)DDR2 S/P	KN.51209.005
	SDIMM 512M SAMSUNG M470T6554CZ3-CD5	ZB1 RAM DDRII533 512MB SAMSUNG S/P	KN.5120B.015
	SO-DIMM DDRII 533 512MB HYMP564S64BP6-C4 LF		KN.5120G.013
	SO-DIMM DDRII533 1GB NT1GT64U8HA0BN-37B LF	ZC1 NANYA DDRII533 1GB RAM S/P	KN.1GB03.006
	SO-DIMM DDRII533 1GB GU331G0AGEPN6E2C LF	ZC1 RAM 1GB DDR2 GU331G0AGEPN6E2C S/P	KN.1GB09.004
	SO-DIMM DDRII533 1GB M470T2953CZ3-CD5 LF	ZB3 RAM DDRII5 1G SUM S/P	KN.1GB0B.004
MAINBOARD			
MAINBOARD	MAINBOARD ATI RC410 UMA PATA W/ READER W/O CPU MEMORY	ZB3 MB ASSY(UMA)??? S/P	MB.ACZ06.001
MAINBOARD	MAINBOARD ASSY(M52P/128MB)	ZB3 MB ASSY(M52P/128MB) S/P	
MAINBOARD	MAINBOARD ASSY(M52P/256MB)	ZB3 MB ASSY(M52P/256MB) S/P	
HEATSINK			
HEATSINK	THERMAL MODULE	ZB3 THERMAL MODULE ASSY S/P	60.ACZV7.004
MISCELLANEOUS			
MISCELLANEOUS	"NAMEPLATE AS3660(FCZB3002,R3A)"	ZB3 NAMEPLATE S/P	40.ACZV7.001
MISCELLANEOUS	LCD RUBBER PAD-UP	ZL1A RUBBER PAD-UP S.P.	47.AA7V7.002
MISCELLANEOUS	RUBBER FOOT - HEATSINK COVER	ZL1A RUBBER FOOT S.P.	47.T50V7.002
SPEAKER			
SPEAKER	SPEAKER SET	ZB1 SPEAKER ASSY S/P	23.AA7V7.001
SCREW			
SCREW	SCWER M2.5*3.0-I(BNI)(NYLOK)EP	ZB1 SCWER M2.5*3.0-I(BNI)(NYLOK)EP S/P	86.T25V7.012
SCREW	SCREW M2.5*6-I(BNI)(NYLOK)	ZB1 SCREW M2.5*6-I(BNI)(NYLOK)S/P	86.A08V7.004
SCREW	SCREW M2.5*6.0-P(NI)(NYLOK)	ZB1 SCREW M2.5*6.0-P(NI)(NYLOK)S/P	86.AA7V7.003
SCREW	SCREW M2.0X3.0-I-NI-NYLOK	ET2S SCREW MM2.0X3.0 SPARE PART	86.A03V7.012
SCREW	SCREW M2.5*5.0-I(NI)(NYLOK)	ZB1 SCREW M2.5*5.0-I(NI)(NYLOK) S/P	86.T23V7.010
SCREW	SCREW M2.0*5-I(NI)(NYLOK)	ZB1 SCREW M2.0*5-I(NI)(NYLOK) S/P	86.T23V7.006
SCREW	SCREW I3*3.5M-NIH(M3L3.5)	ET2S SCREW MM3.0X3.5 SPARE PART	86.A03V7.011
SCREW	SCREW I2*3M-NIHY (M2L3)	ZG1S I2*3M-NIHY (M2L3) S/P	86.T25V7.008