Ferrari 4000
Service Guide

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

Revision History

Please refer to the table below for the updates made on Ferrari 4000 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

Overview

Ferrari series is designed with AMD's top speed low power CPUs with the fantastic chassis. It adopts the 15.4" LCD with the unique carbon fiber frame and coating.

The AMD Athlon 64 processor is the world's most technically advanced processor for notebook computing and the only Windows-compatible 64-bit PC processor for notebook computing. Advanced technologies in the AMD Athlon 64 processor include:

❏ AMD64 technology doubles the number of processor registers and dramatically increases the system memory addressability

❏ Enhanced multimedia instructions support including 3DNow! Professional technology and SSE2

❏ 1600 MHz system bus using HyperTransport technology with up to 9.1 GB/sec total processor-to-system bandwidth

❏ An integrated memory controller with peak memory bandwidth of 2.7 GB/sec, supporting PC2700, PC2100, or PC1600 DDR SDRAM

❏ The industry's largest cache memory system (1 Megabyte L2 cache) to speed up memory access and eliminate processor bottlenecks

❏ Native execution of 32-bit software, allowing today's PC software to run seamlessly, simplifying the migration to 64-bit software

Here itemize those key features as below :

❏ 15.4" wide WSXGA optimized

❏ DDR 333

❏ Current Kingfisher's (TravelMate 8100) chassis with carbon fiber LCD cover

❏ Two spindle solution

❏ Acer New FineTouch ergo KBD

❏ PCI-E

❏ One Acer Empowering Button

❏ Acer ezDock support

❏ High quality speakers

❏ Acer eManager

❏ Optimized Performance and long battery life(LBL)

❏ Parallel ATA support

❏ Outstanding wireless performance (acer SignalUp)

❏ New casing material and painting

Features

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

Performance

- ❑ AMD 35W, Mobile AMD Turion^TM 64 ML30/34/37/40 processor (2.2GHz, 1MB cache)
- ❑ **Simultanceous 32 bit and 64 bit Windows® compatible support**
- ❑ Supporting **AMD PowerNow^TM** :
    - ❑ Optimizes battery life
    - ❑ Provides performance on demand when required by the application
    - ❑ Allows the processor to dissipate less heat under normal operating conditions, providing a cooler and quieter-running notebook
    - ❑ Operates automatically in the background
- ❑ Supporting **AMD Hyper Transport^TM**
    - ❑ Provide significantly more bandwidth than current technologies
    - ❑ Use low-latency responses and low pin counts
    - ❑ Maintain compatibility with legacy PC buses while being extensible to new SNA (Systems Network Architecture) buses
    - ❑ Appear transparent to operating systems and offer little impact on peripheral drivers
- ❑ **Enhanced Virus Protection**:
    - ❑ Prevent the spread of certain malicious viruses, which are transported via e-mail and instant messaging applications
    - ❑ Surf the Internet with confidence, knowing you have an extra level of protection against certain harmful web downloads
    - ❑ Help improve the integrity of your home and office network
- ❑ Supporting **3DNow^TM Professional Technology**
    - ❑ Enable stellar performance and playback quality on digital entertainment features such as games, streaming video and audio, DVDs, and music

NOTE: Foresaid are some quoted from AMD website copyright.

- ❑ Chipset : ATI RX480M,SB400

Memory

- ❑ DDR333 SDRAM memory interface design
- ❑ 0MB DDR RAM on board
- ❑ Two DDR SODIMM slots
- ❑ Maximum memory up to 2GB (with two 1GB SODIMM)

Display

- ❑ 15.4" WSXGA+ TFT LCD
- ❑ 1680x1050 pixel resolution, 16.7 million colors
- ❑ Supporting simultaneous multi-windows viewing via **Acer GridVista** (http://www.acer.co.th/product/travelmate/AcerGridVista.htm)

Graphics

- ATI MOBILITY^{TM} RADEON® X700 with 128MB of video memory
- Microsoft® DirectX® 9.0 support
- ATI POWERPLAY^{TM} 5.0 support
- PCI Express^{TM} support
- DualView^{TM} support
- External resolution/refresh rate
    - 2048x1536: 60/66/70/75/78/85 Hz
    - 1600x1200: 60/75/85/100/120 Hz
    - 1280x1024: 60/70/75/85/90/100/120/160/180 Hz
    - 1024x768: 60/70/72/75/85/90/100/120/150/160/200 Hz
    - 800x600: 60/70/75/85/90/100/120/160/200 Hz
- MPEG-2/DVD hardware-assisted capability
- S-video/TV-out (NTSC/PAL) support
- DVI-D support

Audio

- 16-bit AC'97 stereo audio
- Internal Microphone
- Two speakers high quality
- S/PDIF support

Storage

- Support PATA
- 9.5mm height, 2.5" HDD
- PCI Bus Master Enhanced IDE
- Support Ultra DMA100, S.M.A.R.T

Communication

- 56Kbps V.92 AC-Link modem card (MDC)
- Gigabit Ethernet, Wake-on-LAN already
- WLAN 802.11b/g Wi-Fi CERTIFIED^{TM} solution; supporting Acer SignalUp wireless technology
- Built-in 2 Antenna
- Mini-PCI (option)

I/O Ports

- ❏ One VGA port, 15 pins
- ❏ One Microphone
- ❏ One Headphone/SPDIF
- ❏ One S-Video port (TV-OUT)
- ❏ Four External USB 2.0 connectors
- ❏ One DC in jack at left-hand side
- ❏ One RJ-11 jack for Modem
- ❏ One RJ-45 jack for LAN
- ❏ One IEEE1394 (4pin)
- ❏ One FIR
- ❏ One SPR (rear side, Acer proprietary ezDock)
- ❏ 5-in-1 card reader (**MS** : Memory Stick

> **MS-Pro** : Memory Stick Pro.
>
> **MMC** : MultiMedia Card
>
> **SD** : Security Digital
>
> **xD** : xD-Picture Card

Battery

- ❏ 8-cell of Li-ion battery pack, (4800mAh,70W)
- ❏ 4-cell of Li-ion battery pack, (2200mAh,32W)
- ❏ 90W AC adaptor 19V 4.74A

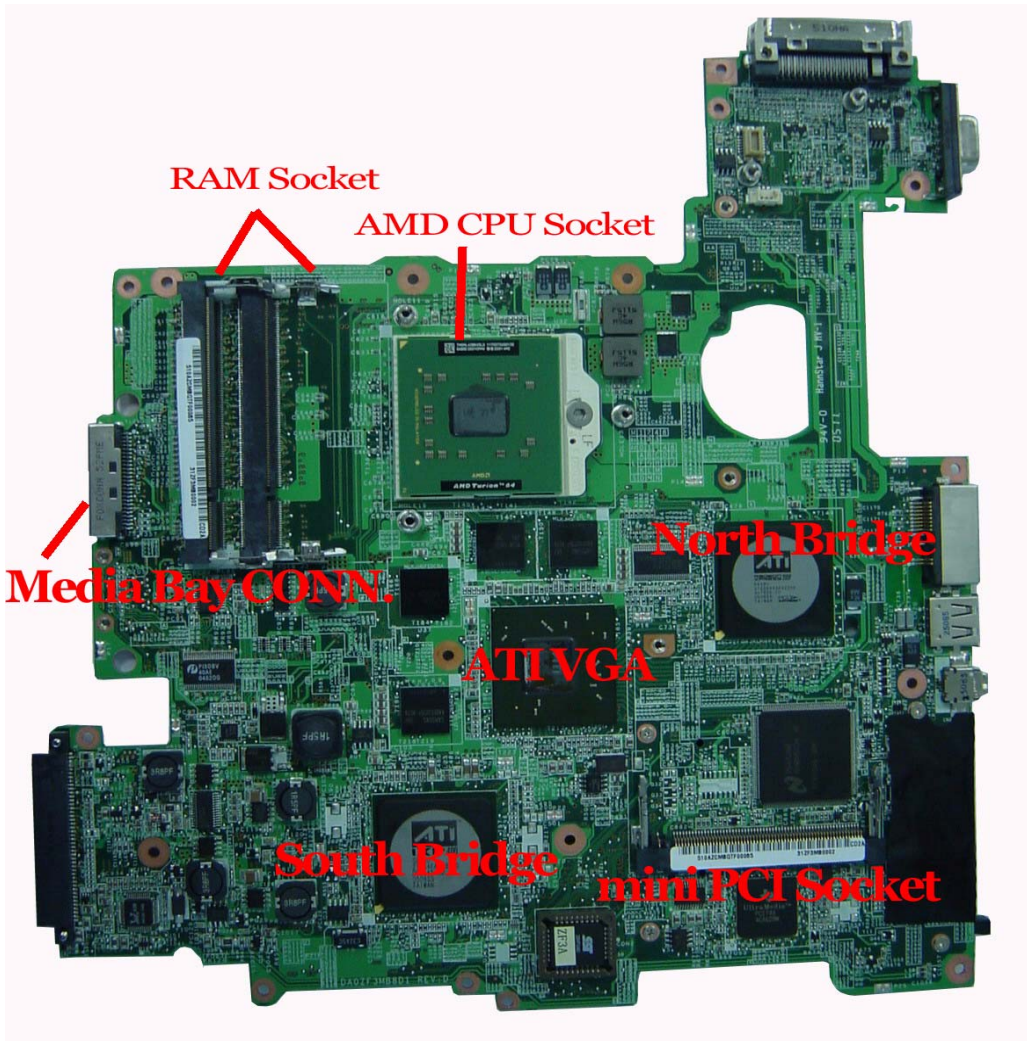## Weight (with battery)

- ❏ 6.3 lbs (2.86 kg)

Dimensions

- ❏ 363(W) x 265.7(D) x 30.5/34.3(H) mm (14.29 x 10.46 x 1.2/1.36 inches)

Mainboard Placement

Top View

Rear View

Docking CNT

Modem Board CONN.

VGA

RJ45/RJ11

USB

IEEE 1394

PCMCIA

4-in-1 card reader

HDD CONN.
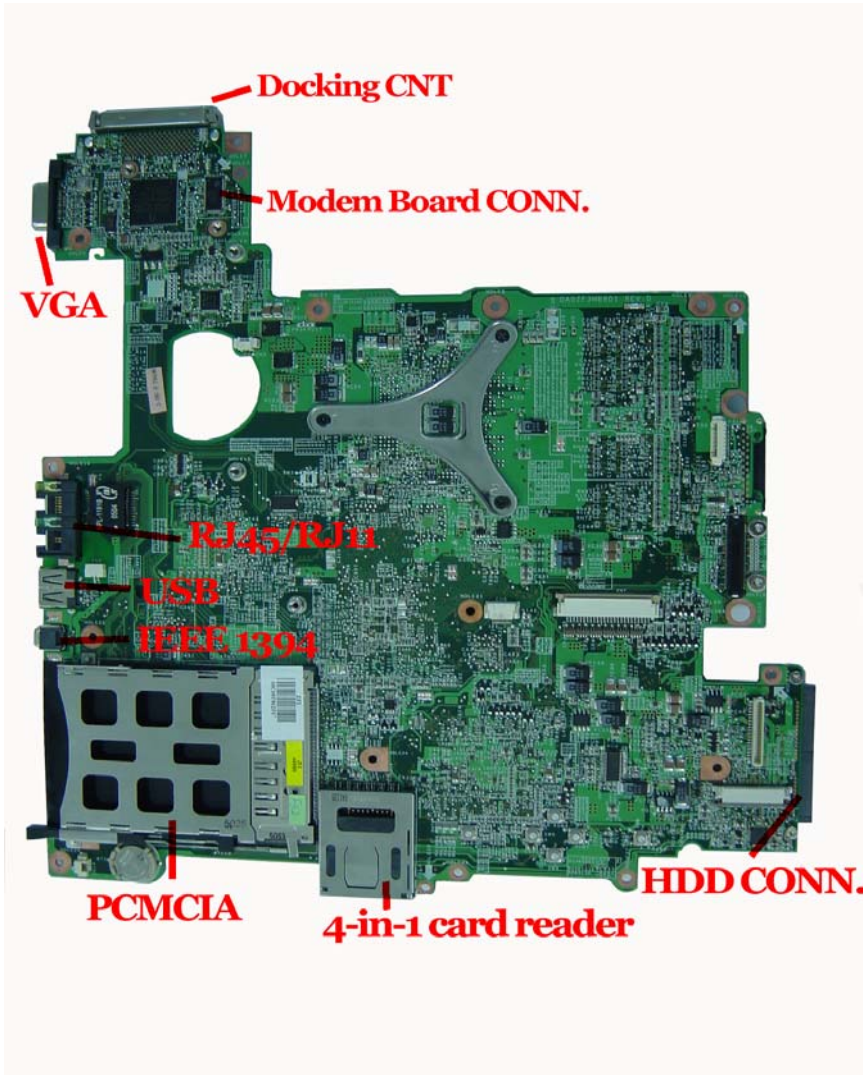
Power Board
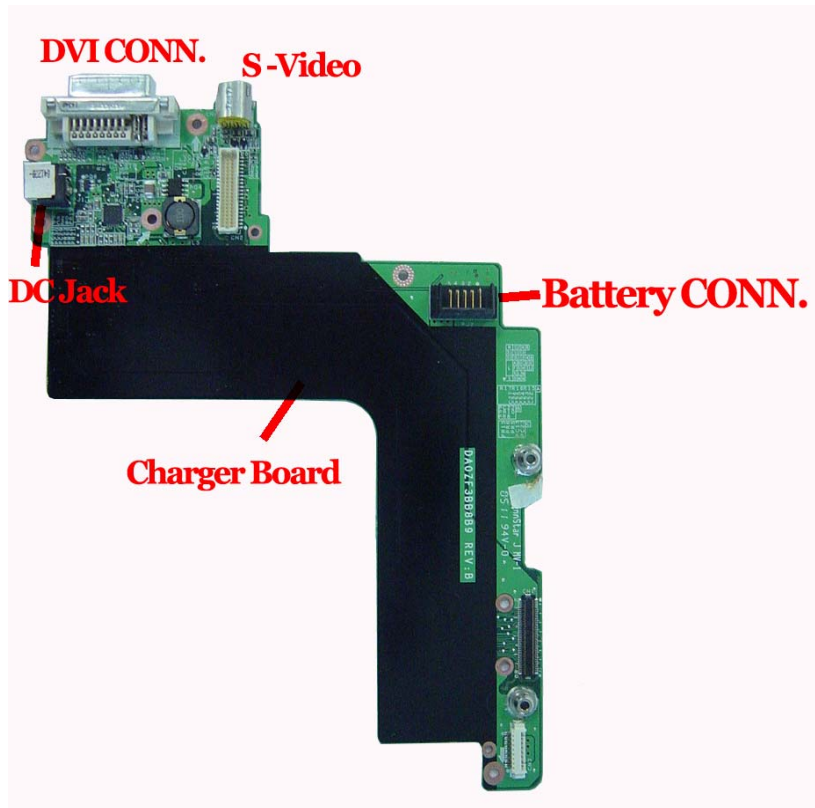
Block Diagram

ZF3 BLOCK DIAGRAM
AMD K8/RX480/SB400

REV: F2C

Box	Contents
AMD K8 Turion 64	754 Pins uPGA — Page 02,03
CPU THERMAL SENSOR	MAX6642 — Page 02
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RJ45	
NORTH BRIDGE RX480	705 BGA — Page 04,05,06,07,08
ATI M26-P (128MB)	Page 12,13,14,15
SOUTH BRIDGE SB400	564 BGA — INTEGRADED PCI-CLK FUNCTION — Page 17,18,19,20,21
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+1.8V / 1.2V / VGA_CORE	Page 37
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5 in 1 Cardreader	Page 24
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Connections / labels:
- 2X PCI-E
- 1X PCI-E
- 1X PCI-E
- DDR 333,400MHz
- HyperThansport I/O BUS LINK 16X16
- 2X PCI-E
- PCI/33MHz
- USB 2.0 * 4
- USB 2.0 * 1
- ATA 66/100 or SATA
- ATA 66/100
- LPC/33MHz
- R.G.B
- LCD
- TV-OUT
- DVI
- CPUCLK (100MHz)
- SRCCLK
- USBCLK (48MHz)
- 14.318MHz

PCI DEVICES IRQ ROUTING

DEVICE	IDSEL #	REQ/GNT #	PCI_INT
7411	AD25	REQ0#/GNT0#	INTE#,INTF#,INTH#
MINI PCI	AD18	REQ1#/GNT1#	INTE#,INTF#

Outlook View

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

Open View

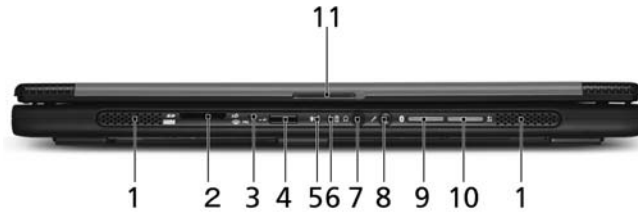| No.	Item	Description
1	Display screen	Also called Liquid-Crystal Display (LCD), displays computer output.
2	Power button	Turns the computer on and off.
3	Status indicators	Light-Emitting Diodes (LEDs) that turn on and off to show the status of the computer's functions and components.
4	Keyboard	For entering data into your computer.
5	Palmrest	Comfortable support area for your hands when you use the coumputer
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	Easy-launch buttons	Buttons for launching frequently used programs.
8	Touchpad	Touch-sensitive pointing device which functions like a computer mouse.

Closed Front View

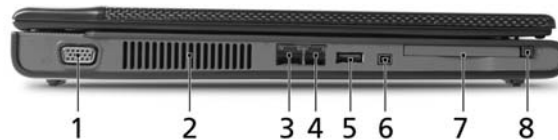| #	Icon	Item	Description
1	N/A	Speakers	Left and right speakers deliver stereo audio output.
2		5-in-1 card reader	Accepts Memory Stick, Memory Stick Pro, MultiMediaCard (MMC), Secure Digital (SD) and xD-Picture Card **Note**: Only one card can operate at any given time.
3		Microphone	Internal microphone for sound recording.
4		Infrared port	Interfaces with infrared devices (e.g., infrared printer and IR-aware computer).
5		Power indicator	Lights when the computer is on.
6		Battery indicator	Lights when the battery is being charged.
7		Headphones/ speaker/line-out jack with S/PDIF support	Connects to audio line-out devices (e.g., speakers, headphones).
8		Microphone/line-in jack	Accepts inputs from external sources.
9		Bluetooth communication button/indicator	Press to enable/disable Bluetooth function. Lights to indicate the status of Bluetooth communications.

#	Icon	Item	Description
10		Wireless communications button/indicator	Press to enable/disable Wireless function. Lights to indicate the status of wireless LAN communications. (manufacturing option)
11	N/A	Latch	Locks and releases the lid.

Left View

#	Icon	Item	Description
1		External display port	Connects to a display device (e.g., external monitor, LCD projector)
2	N/A	Ventilation slots	Enable the computer to stay cool
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		USB 2.0 port	Connect to USB 2.0 devices (e.g., USB mouse, USB camera)
6	1394	4-pin IEEE 1394 port	Connects to IEEE 1394 devices.
7		PC Card slot	Accepts one Type II PC Card.
8	N/A	PC Card slot eject button	Ejects the PC Card from the slot.

NOTE: The positions of the AcerMedia indicator, eject button and emergency eject hole may differ depending on the optical drive module installed.

Right View

#	Icon	Item	Description
1		Three USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera)
2	N/A	Slot-load optical drive eject button	Ejects the optical disk from the drive.
3	N/A	Optical disk access indicator	Lights up when the optical drive is active
4	N/A	Slot-load optical drive	Internal optical drive; accepts CDs and DVDs.
5		Power jack	Connects to an AC adapter.
6		Security keylock	Connects to a Kensington-compatible computer security lock.

Rear View

#	Icon	Item	Description
1	DVI-D	DVI-D port	Supports digital video connections
2	⟨S→⟩	S-video port	Connects to a television or display device with S-video input.
3	🖥	124-pin port replicator connector	Connects to Acer ezDock

Bottom View

#	Item	Description
1	Battery release latches	Release the battery for removal
2	Optical drive bay release latch	Releases the optical drive for removal
3	Cooling fan	Helps keep the computer cool **Note**: Do not cover or obstruct the opening of the fan.
4	Optical drive bay	Houses the computer's optical drive.
5	Wireless LAN bay	Houses the computer's wireless LAN
6	Hard disk bay	Houses the computer's hard disk (secured by a screw)
7	Battery bay	Houses the computer's battery pack
8	Memory compartment	Houses the computer's main memory

Using the Keyboard

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

Lock keys

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

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 numeric keyboard can be used. Toggle on and off by pressing the Fn+🔲 keys simultaneously.
Scroll lock **\<Fn+F12\>**	When Scroll Lock is on, the screen toggles up or down one line at a time when the up and down cursor control keys are pressed.

NOTE: Scroll Lock doesn't work in all applications. Toggle on and off by pressing the Fn+F12 keys

simultaneously.

Embedded Numeric Keypad

The embedded numeric keypad functions like a desktop numeric keypad. It is indicated by small characters located on the right-hand side of the keycaps.

Desired action	Num Lock on	Num Lock off
Number keys on embedded keypad	Type numbers in a normal manner	N/A
Cursor-control keys on embedded keypad	Hold **Shift** while using cursor-control keys.	Hold Fn while using cursor-control keys.
Main keyboard keys	Hold **Fn** while typing letters on embedded keypad.	Type the letters in a normal manner.

Windows keys

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

Key	Icon	Description
⊞	Windows key	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) ⊞ + SHIFT + 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.

Hot Key	Icon	Function	Description
Fn-F1	?	Hot key help	Displays help on hot keys.
Fn-F2		Acer eSetting	Launches the Acer eSetting in the Acer eManager set by the Acer Empowering Key.
Fn-F3		Acer ePowerManagement	Launches the Acer ePowerManagement in the Acer eManager set by the Acer Empowering Key.
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 the display screen and external monitor.
Fn-F6		Screen blank	Turns the display screen backlight off to save power. Press any key to return.
Fn-F7		Touchpad toggle	Turns the internal touchpad on and off.
Fn-F8		Speaker toggle	Turns the speakers on and off.

Hot Key	Icon	Function	Description
Fn+↑	🔊	Volume up	Increases the sound volume.
Fn+↓	🔉	Volume down	Decreases the sound volume.
Fn+→	☼	Brightness up	Increases the screen brightness.
Fn+←	☀	Brightness down	Decreases the screen brightness.

Special keys

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

The Euro Symbol

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

Indicators

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

e three indicators located above the keyboard provide the following status information:

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

NOTE: The keypad lock must be turned on to use the embedded numeric keypad.

Easy-lauch Buttons

Located at the upper-right, above the keyboard are four buttons. These buttons are called easy-launch

buttons. They are: mail, Web browser, Acer Empowering Key " e " and one user-programmable button.

Press " e " to run the Acer eManager. Please see "Acer eManager" on page 24.The mail and Web buttons are pre-set to email and Internet programs, but can be reset by users. To set the Web browser, mail and programmable keys, run the Acer Launch Manager. See "Launch Manager" on page

.

Easy-launch button	Default application
Mail	Email application (user-programmable)
Web browser	Internet browser (user-programmable)
e	Acer eManager (user-programmable)
P	User-programmable

Using the Bluetooth Wireless Optical Mouse

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

Installation

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

Usage

Use the Bluetooth mouse as you would a traditional mouse. For optimal performance, use a mouse pad. Using the Bluetooth mouse on a transparent or reflective surface will inhibit the ability of the optical sensor to track the cursor. The Bluetooth mouse can be used with rechargeable batteries, traditional batteries, or without batteries and just the USB charging cable.

Recharging the Bluetooth Mouse

Your Bluetooth mouse comes with 2 rechargeable AA batteries and a USB charging cable. To recharge the mouse, plug one end of the charging cable into your notebook computer's USB port and the other end into the Bluetooth mouse. Under normal circumstances, it takes approximately 5 hours to fully charge the Bluetooth mouse.

Using System Utilities

Acer eManager

Innovative Acer eManagement software is designed for easy access to frequently used functions. At the press of Acer Empowering Key, the Acer eManager user interface appears, featuring four main settings -- Acer eSetting, Acer ePresentation, Acer ePowerManagement and Acer eRecovery.

Icon	Item	Description
	Acer ePresentation	It takes the hassle out of making presentations.
	Acer eRecovery	It backs up your files preventing data loss in the event of a system crash.
	Acer eSetting	It is an easy way to manage the settings and security of your PC.

For more information, open Acer eManager, click on the appropriate application and select the Help function.

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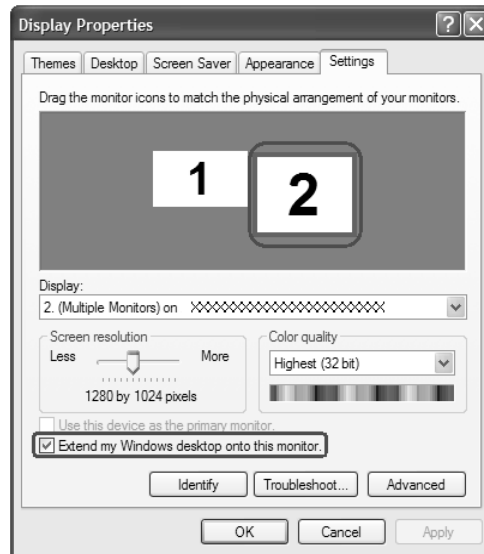
Acer GridVista is a handy utility that offers four pre-defined display settings so you can view multiple windows on the same screen. To access this function, please go to **Start**, **All Programs** and click on **Acer GridVista**. You may choose any one of the four display settings indicated below:

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 simple to set up:

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

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

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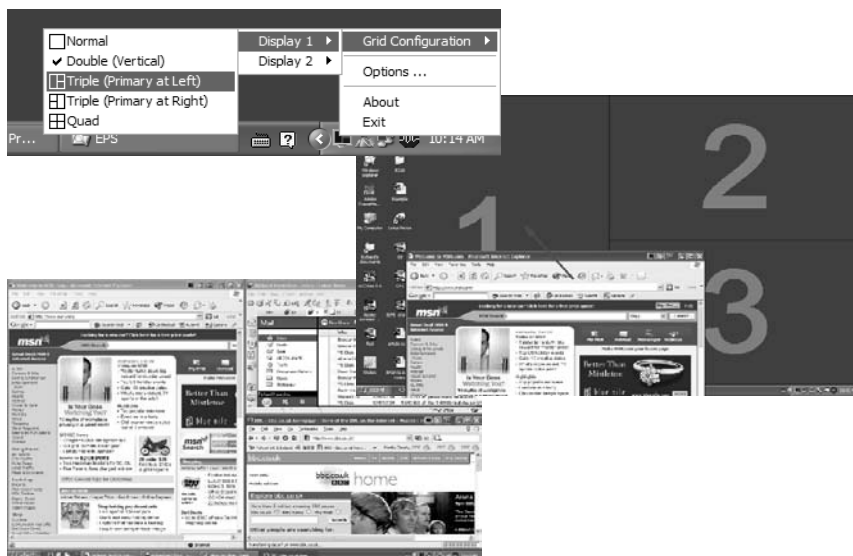
NOTE: Please ensure that the resolution setting of your second monitor is set to the manufacturer's recommended value.

Launch Manager
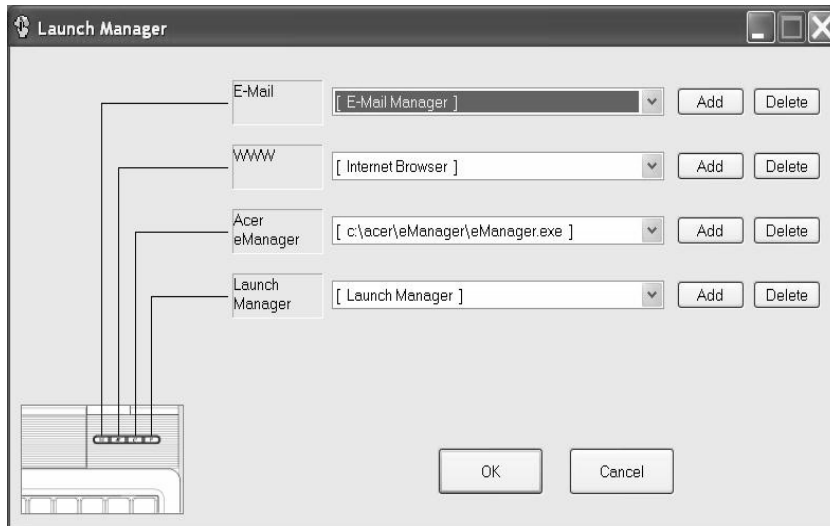
Launch Manager allows you to set the four easy-launch buttons located above the keyboard. **"Easy-launch buttons" on page 21** for the location of the easy-launch buttons.

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

Audio

The computer comes with 16-bit high-fidelity AC'97 stereo audio, and dual stereo speakers.

Adjusting the Volume

Adjusting the volume on the computer is as easy as pressing some buttons. See "**Hotkeys**" **on page 17** for more information on adjusting the speaker volume.

Touchpad

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

Touchpad Basics

Use the touchpad as follows:

❑ Move your finger across the touchpad **(2)** to move the cursor.

❑ Press the left **(1)** and right **(4)** buttons located on the edge of the touchpad to do 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)	Right button (4)	Main touchpad (2)	Center button (3)
Execute	Quickly click twice.		Tap twice (at the same speed as double-clicking a mouse button).	
Select	Click once		Tap once	

Function	Left button (1)	Right button (4)	Main touchpad (2)	Center button (3)
Drag	Click and hold. Then slide your finger across the touchpad to drag the cursor over the selection.		Tap twice (at the same speed as double-clicking a mouse button); rest your finger on the touchpad on the second tap and drag the cursor.	
Access context menu		Click once		
Scroll				Click and hold to move up/down/left/right.

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

Eject ing the optical (CD or DVD) drive tray

To eject the optical drive tray when the computer is turned on, press the drive eject button.

When the power is off, you can eject the drive tray using the emergency eject hole.

Using a Computer Security Lock

A security keylock notch, located on the chassis of the computer, lets you connect a Kensington-compatible computer security lock.

Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.

Hardware Specifications and Configurations

Processor

Item	Specification
CPU type	AMD Turion^{TM} 64 processor
CPU package	754 Pins μPGA ZIF socket
CPU core voltage	Depend on DVI
CPU I/O voltage	1.2V
Bus Speed	300,400 MHz
Stepping	2
L1	Data Cache 64KB, Code Cache 64KB
L2	Advanced Transfer Cache 1024 KB

System Board Major Chips

Item		Controller
System core logic		RX480 SB400
Super I/O	controller	PC87383
Docking Port	controller	RX480
Audio -Microphone	controller	ALC250
Video -DVI -S-VIDEO -LCD CONN -CRT Port	controller	ATI M26-P
Hard disk drive USB Ports Bluetooth RTC Battery RJ11	controller	SB400
Keyboard BIOS Touchpad Switch LED FAN	controller	PC87541
FIR	controller	PC87383
CardBus Slot IEEE 1394 CardReader	controller	TI PCI7411
Headphone S/PDIF	controller	ALC250
DDR-soDIMM	controller	AMD Turion64
RJ45	controller	BCM5789M

BIOS

Item	Specification
BIOS vendor	Phoenix
BIOS Version	Phoenix First BIOS
BIOS ROM type	Flash ROM
BIOS ROM size	512KB
BIOS package	32 lead of TSSOP
BIOS password control	Set by setup manual

Second Level Cache

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	AMD Turion64
Memory size	256MB/512MB/1GB
DIMM slot number	2
Supports memory size **per slot** (**max.**)	1024MB
Supports **total max**imum memory size	2GB
Supports Slot type	DDR SDRAM standard
Supports Slot Speed	333 MHz
Supports Slot voltage/pin	2.5V/184 pins
Memory module combinations	You can install memory modules in any combinations as long as they match the above specifications.

Memory Combinations

Slot 1	Slot 2	Total Memory
0MB	256MB	256MB
0MB	512MB	512MB
0MB	1024MB	1024MB
256MB	256MB	512MB
256MB	512MB	768MB
256MB	1024MB	1280MB
512MB	256MB	768MB
512MB	512MB	1024MB

Slot 1	Slot 2	Total Memory
512MB	1024MB	1536MB
1024MB	0MB	1024MB
1024MB	256MB	1280MB
1024MB	512MB	1536MB
1024MB	1024MB	2048MB

LAN Interface

Item	Specification
Supports LAN protocol	Gigabit Fast Ethernet connection
LAN connector type	RJ45
Wireless LAN	InviLink. 802.11b/g Wi-Fi CERTIFIED^{TM} Wireless
LAN connector location	Left side

Modem Interface

Item	Specification
Chipset	SB400
Fax modem data baud rate (bps)	14.1K
Data modem data baud rate (bps)	56K
Supports modem/bluetooth protocol	V.92 AC-Link modem with PTT approval Wake-on-Ring ready
Modem connector type	RJ11
Modem connector location	Left side

Wireless Module 802.11b/g

Item	Specification
Chipset	SB400
Type	**PIFA** (Planar Inverted F Antenna) > Cover three WLAN Bands of IEEE 802.11a/b/g >Very low profile and small size for Embedded Applications >Optimized for Remote Cable Mounting in Laptop Applications
Data throughput	11M~54M bps
Protocol	802.11 b+g
Interface	Mini-PCI type II

Hard Disk Drive Interface

Item	HITACHI
Model Name	**HTS541010G9AT00**
Capacity (GB)	100
Bytes per sector	512
Logical heads	16
Logical sectors	63
Configuration	
Interface	ATA-6
Capacity (GB)	100 / 80 / 60 / 40
Sector size (Bytes)	512
Recording zones	16
Data heads (physical)	4 / 4 / 3 / 2
Data disks	2 / 2 / 2 / 1
Max. areal density (Gbits/sq. inch)	86 / 70 / 70 / 70
Performance	
Data buffer (MB)	8
Rotational speed (RPM)	5400
Latency average (ms)	5.5
Media transfer rate (Mbits/sec, max)	493
Interface transfer rate (MB/sec, max)	100 Ultra DMA mode-5 16.6 PIO mode-4
Seek time (read, typical)Average (ms)	12
Reliability	
Load/Unload cycle	600,000
Power	
Requirement	+5VDC (+-5%)
Dissipation (Typical) Startup (peak, max.)	5.0W
Read (avg.)	2.0W
Write (avg.)	2.0W
Active idle (avg.)	0.85W
Low power idle (avg.)	0.60W
Standby (avg.)	0.2W
Sleep	0.1W
Environmental	
Operating	
Ambient temperature	5° to 55° C
Shock (half sine wave)	300 G / 2ms, 160G / 1ms
Non-operating	
Ambient temperature	-40^oC to 65° C
Shock (half sine wave)	1000 G / 1 ms

Item	Seagate
Model Name	**ST9100822A**
Capacity (GB)	100
Guaranteed sectors	195,371,568
Bytes per sector	512P
Physical read/write heads	4
Discs	2
Caches(Mbytes)	8
Recording density, BPI (bits/Inch typical)	703,000
Track density. TPI (track/Inch typical)	115,000
Areal density (Gbits/Inch max)	86
Rotational speed (RPM)	4200
Internal data transfer rate OD (Mbytes/sec max.)	48.25
I/O data-transfer rate (Mbytes/sec max.)	100
ATA data-transfer modes supported	PIO modes 0-4 Multiword DMA mode:0-2 Ultra DMA mode:0-5
Track-to-track seek time (msec typical)	1.0 (read) 1.5 (write)
Average seek time (msec typical)	12.5
Seek Power	2.3W
Read/Write Power	2.05W/2.1W
Idle mode	0.99W
Standby mode	0.2W
Sleep mode	0.2W
Voltage tolerance (including noise)	$5V \pm 5$ %
Ambient temperature	**Operating**: 5^oC to 55^oC **nonoperating**: -40^oC to 70^oC
Temperature gradient (^oC per hour max, noncondensing)	20^oC (operating) 30^oC (nonoperating)
Relative Humidity gradient	30% per hour max

Item	Seagate		
Models	**ST9100823A**	**ST9100824A**	**ST9120821A**
Capacity and Interface			
Formatted Gbytes (512 bytes/sector) Interface	60 Ultra ATA/100	100 SATA 1.5Gb/s Ultra ATA/100	120 SATA 1.5Gb/s Ultra ATA/100
Performance			
Internal Transfer Rate (Mbits/sec)	386	461	461
Max. External Transfer Rate (Mbytes/sec)	100	150 100	150 100
Avg. Sustained Transfer Rate (Mbytes/sec)	>	>	>
Average Seek (msec)	12.5	12.5	12.5
Average Latency (msec)	5.56	5.56	5.56
Multisegmented Cache	8192	8192	8192
Spindle Speed (RPM)	5400	5400	5400
Configuration/Organization			
Discs/Heads	2/4	2/4	2/4
Bytes per Sector	512	512	512
Logical CHS	16383/16/63	16383/16/63	16383/16/63
Recording Method	RLL 0,11	RLL 0,11	RLL 0,11
Reliability/Data Integrity			
S.M.A.R.T. capable	Yes	Yes	Yes
Nonrecoverable Read Errors per Bits Read	1 per 10^{14}	1 per 10^{14}	1 per 10^{14}
Service Life/Limited Warranty (years)	5/5	5/5	5/5
Power Requirements			
+5 VDC +/-5% (amps typ operating)	1	1	1
Power Management (watts) -Seek -Read/Write -Idle -Standby	-2.3 -2 -0.92 -0.18	-2.2 -1.9 -0.8 -0.28	-2.2 -1.9 -0.8 -0.28
Environmental			
Operating Temperature (^{o}C)	5 to 55	5 to 55	5 to 55
Nonoperating Temperature (^{o}C)	70 to -40	70 to -40	70 to -40
Operating Shock (Gs) @ 2 msec	250	250	250
Non Operating Shock (Gs) @ 1 msec	900	900	900
Acoustics,Idle (Bels-typ sound power)	2.4	2.4	2.4

Item	TOSHIBA
Model	**MK8026GAX**
Data Storage Physical	
Per drive, formatted	80GB
Data Heads	4
Number of Disks	2
Rotational Speed	5,400rpm
Average Latency	5.55ms
Interface	ATA-2/3/4/5/6
Buffer	16MB
Logical Configuration	
Heads	16
Cylinders	16,383
User Sectors/Track at zone 0	63
Logical Blocks (LBA)	156,301,488
Data Transfer Rate	
Max transfer rate to host	100MB/sec
Seek Time	
Track-to-track	2ms
Average	12ms
Maximum	22ms
Nominal Power Requirements	
Logic	+5V(5%)
Start	5.0watts (max)
Seeking	2.9watts (typ)
Reading/Writing	2.5watts (typ)
Idle	1.05watts (typ)
Standby	0.25watts (typ)
Sleep	0.1watts (typ)
Ambient Temperature	
Operating	41 - 131F (5 to 55C)
Non-Operating	-4 - 140F (-20 to 60C)
Shipping	-40 - 158F (-40 to 70C)

DVD Multi Drive

Item	Specification
Vendor & model name	UJ-845-CQB
Performance Specification> Read	
CD	CD-Audio CD-ROM (mode 1 and mode 2) CD-ROM (mode 2, form 1 and form 2) CD-I (mode 2, form 1 and form 2) CD-I Ready CD-I Bridge CD-R CD-RW Photo CD Video CD Enhanced Music CD CD-TEXT
DVD	DVD-5 DVD-9 DVD-10 DVD-18 DVD-R DVD-RW DVD-RAM +R +RW
Performance Specification> Write	
DVD	DVD-RAM : Random Write DVD-R 4.7GB for General: Disc at Once, International DVD-RW: Disc at Once, International & Restricted Overwrite +R : Sequential Recording Multi-Session +RW : Random Write
CD	CD-R, CD-RW -Disc at Once -Session at Once -Track at Once -Fixed / Variable packet writing -Multi-session

USB Port

Item	Specification
USB compliancy level	2.0
OHCI	USB 2.0
Number of USB port	4
Location	Right Side *3 Front Side *1

Audio Port

Item	Specification
Audio Controller	AC' 97 Codec
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	48 KHz
Internal microphone	Yes
Internal speaker / Quantity	Yes / 2

Video Interface

Item	Specification
Vendor & Model Name	ATI M26-P
Video memory size	up to 128M
Supports ZV (Zoomed Video) port	
Graph interface	
Maximum resolution (LCD)	2048 x 1536 (32bit colors)
Maximum resolution (CRT)	N/A

PCMCIA Port

Item	Specification
PCMCIA controller	PCI7411
Supports card type	Type II
Number of slots	One type-II
Access location	Left Side
Supports ZV (Zoomed Video) port	No
Supports 32 bit CardBus	Yes
Supports Express Card	Yes

Keyboard

Item	Specification
Keyboard controller	PC87541
Keyboard vendor & model name	Standard keyboard w launch button embeded
Total number of keypads	❏ 88-89 keys Acer Fine Touch^{TM} keyboard ❏ 88-key for US ❏ 89-key for EU ❏ 92-key for JP ❏ with 5-degree curve
Touchpad with 4-way integrated scroll button	Yes
12 function keys	❏ four cursor keys ❏ two Windows keys ❏ Hotkey controls ❏ embedded numberic keypad ❏ international language support
Four easy-launch buttons	❏ Internet browser ❏ email with LED ❏ Acer Empowering key ❏ one user-programmable button
Two front access LED buttons	❏ WLAN LED button ❏ Bluetooth LED button

Battery

Item	Specification
Vendor & model name	Panasonic/Sanyo
Battery Type	Li-ion
Pack capacity	65Wh
Cell voltage	3.7V/cell/2000mAh High discharge rate
Number of battery cell	8-cell(65W)
Battery life	❏ 3-hour battery life ❏ 2.5-hour rapid charge ❏ 3.5-hour charge-in-use

LCD

Item	Specification	
Vendor & model name	**SAMSUNG / LTN154P**	LG / LP154W02-B1K1
Size	15.4"	15.4"
Resolution	Wide SXGA+	Wide SXGA+
Number Of Pixels	1,680 x 1,050	1,680 x 1,050
Active Area(mm^2)	331.4 x 207.1	N/A
Pixel Pitch(mm)	0.197	0.19725(H) x 0.19725 (V)
Number Of Colors	262K	262K
Color Gamut(%)	45	45
Contrast Ratio	500:1	300:1
Brightness(cd/m^2)	185	185
Response Time(ms at 25°C)	25	25
Viewing Angle(U/D/L/R)	50/50/65/65	50/50/65/65
Interface	LVDS(2ch)	LVDS(2ch)
Outline Dimension(mm)	344.0 x 222.0 x 6.2	344.0 x 222.0 x 6.5
Weight(g)	590	590
Average Luminance of White (5 Points)	185	185

AC Adapter

Item	Specification	
Vendor & model name	**LiteOn PA_1900_05QA**	LSE0202C1900
Input Voltage		
Low Range	90min/137max	90min/264max
Output Requirements		
DC output voltage	19.0	19.0
Noise + Ripple	350mV	380mV
Peak Load	18.5V-19.71V	18V-20V
Dynamic Output Characteristics		
Turn-on delay time	5 sec (@ 115Vac)	5 sec (@ 115Vac)
Hold up time	5ms (@115Vac, Full load)	5ms (@115Vac, Full load)
Pin Number	3 pin	3 pin

Power Management

ACPI Mode	Power Management
Mech. Off (G3)	All devices in the system are turned off completely.
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices such as the CPU and hard disk may be power managed in this state.

Power Management

ACPI Mode	Power Management
Sleeping State (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
Deminsions	363 (W) x 265.7(D) x 30.5/34.3 (H)mm
Weight	6.3lbs (2.86 kg)

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 ⌨F2 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.

Buttons

Application Launch Buttons

Launch Keys	Description
Launch Button P	<Launch manager>
Launch Button e	<Launch eManager>
Specific Keys	
Wireless Button	Wireless enable/disable
E-mail Button	Launch Outlook Express
Bluetooth Button	Enable/disable bluetooth
Internet Button	Launch Internet Explorer

NOTE: Detail description and definition of application Launch Buttons, please reference the External spec.

Power Button

The activity of the power button is as follows:

❑ If power button is pressed for less than 1 second then nothing happens.

❑ If power button is pressed for more than 1 second but less than 4 seconds then system would execute User Requested OFF before the system entered into OS.

❑ If power button is pressed for more than 4 seconds then the notebook will be powered off by power button over-ride feature.

❑ If OS is running in ACPI mode, the power button acts as the sleep button, and let OS controls the policy of power button which is defined in Power Option under the OS.

Power Button Over-ride

Holding down the Power Button for 4 seconds will cause an unconditional transfer to the Off state without notifying the operating system.

If press power button for less than 4 seconds, the system will enter suspend to RAM or OFF state according to OS power option setting.

Lid Switch

This section describes the expected behavior of the system when the lid is opened or closed by the user.

If the system is running under legacy mode:

❑ Closing the lid will turn off LCD backlight.

If the system is running under ACPI mode:

❑ The operating system will determine what action to take when the lid is closed. (Windows does not define Lid Open action in Power Option control panel)

❑ The function of lid close will follow the OS setting in power management (Nothing, standby, Hibernate or Power off). However, if the setting is nothing, the backlight must still be turned off when the lid is closed.

❑ Lid Open action does not resume the system from S3, S4, and S5.

Hard Disk Password Function/ Password on boot function

This feature allows the user to set the password to prevent any unauthorized access to the internal hard disk.

❑ If the original HDD come from other machine with password protected, the system just show " Enter HDD password [   ]"

User is required to enter HDD password when system boot up.

    ❑ If user enter the wrong password, it will pop out message "Setup Warning, Invalid Passwrod".....

    ❑ If the password is correct, system will continue to boot up into OS.

❑ "Password on boot"

    ❑ Password on boot is "Disabled", the system will NOT POP any password prompt windows during POST.

    ❑ If Password on boot is set to "Enabled" , the system will POP "Enter password" prompt windows during POST. No matter the user key in "Supervisor Password" or "User Password", the system will be unlocked.

Valid Password Characters

Valid Password Characters:

Symbol Character	Symbol Name
A-Z	Alphabets A through Z (Not Case Sensitive)
0-9	Numerical Characters
-	Dash
=	Equal Sign
[	Left Bracket
]	Right Bracket
.	Period
,	Comma
;	Semi-Colon
/	Slash
\	Back-slash

Information

PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

```
   CPU Type:            AMD Turion(tm) 64 Mobile Technology ML-40
   CPU Speed            2200 MHz

   HDD Model Name:      TOSHIBA MK8026GAX
   HDD Serial Number:   Y4NQ8146T
   ATAPI Device:        MATSHITADVD-RAM UJ-825S
   System BIOS Ver:     S3A11
   VGA BIOS Ver:        ATi 009.010.001.000
   KBC Version:         1A19
   Serial Number        xxxxxxxxxxxxxxxxxxxxx
   Asset Tag Number:
   Product              Ferrari 4000
   Manufacturer Name:   Acer
   UUID:                xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

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

Parameter	Description
CPU Type	Display the CPU Type
CPU Speed	Display the CPU Speed
HDD 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 the field.
HDD 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
ATAPI Model Name	This field shows the ATAPI Model Name for you
System BIOS Version	This field reports the BIOS version of system
VGA BIOS Version	This field reports the VGA BIOS version of the system
KBC Version	Display the keyboard code version
Serial Number	This item will show the Serial number of system
Asset Tag	This item will show the Asset Tag number of the system
Product Name	This field will show the product name
Manufacture 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: [02:19:31] System Date: [05/06/2005] System Memory: 640 KB Extended Memory: 510 MB Video Memory 128 MB Quiet Boot: [Enabled] Power on Display: [Auto] Network Boot: [Enabled] F12 Boot Menu [Disabled] D2D Recovery: [Enabled] LCD Auto Dim: [Enabled] C State Configuration [C2 and C3]	<Tab>, <Shift-Tab>, or <Enter> selects field.

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

Parameter	Description	Option
System Time	The hours are displayed with 24 hours format. The values set in these two fields take effect immediately.	
System Date		
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 : Discrete = 64 or 128MB (depends on actual VRAM size) TurboCache = 32MB (actual TurboCache VRAM size) Intel 915 DVMT: selectable between the following: 64MB (8MB pre-allocated + 56MB DVMT) 128MB (8MB pre-allocated + 128DVMT). This is the default value. - Max DVMT (160MB on 256MB system memory, 224MB on 512MB and above system memory).	
Quiet Boot	Display the diagnostic screen during boot	**Enabled** Disabled
Power On Display	Select display device	**Auto** Both

Parameter	Description	Option
Network Boot	When this is selected, Boot from LAN feature is enabled. When this is not selected, Boot from LAN feature is then disabled	Disabled **Enabled**
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	**Disabled** Enabled
D2D Recovery	Allow user to enable/disable the Disk-to-Disk recovery **Help note**: Enable Acer disc-to-disc system recovery via Alt+F10 key during POST. Options: Enable or Disable	**Enabled**: Enable D2D Recovery/ eRecovery Disabled: Disable D2D Recovery/ eRecovery
LCD Auto DIM	Reduce LCD for brightness when on battery power	**Enabled**: LCD brightness will automatically lower to save more power when AC is not present. Disabled: LCD brightness will NOT automatically lower to save more power when AC is not present.
C State Configuration	Enable or Disable C2/C3 CPU power states in ACPIFACP table	Disabled C2 only C3 only **C2 and C3**

Advanced

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

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

                                                     Item Specific Help
  Serial port A:              [Auto]

  Infraredl Port:             [Auto]              Configure seroal port A
                                                  using options:
  Parallel port:              [Auto]             [Disable]
       Mode:                  [ECP]                  No configuration

                                                  [Enabled]
                                                      User configuration

                                                  [Auto]
                                                      BIOS or OS chooses
                                                      configuration

                                                  (OS Controlled)
                                                      Displayed when
                                                      controlled by OS



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

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

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

Parameter	Description	Option
Parallel Port	Configure serial port B using options: [Disabled]: No configuration [Enabled]: User configuration [Auto]: BIOS or OS chooses configuration (OS Controlled) Displayedd when controlled by OS	Disabled Enabled **Auto**
Mode	Set the mode for the parallel port using options: Output only Bi-directional EPP ECP	Qutput only Bi-directional EPP **ECP**

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	
HDD Password Is:	Clear	Supervisor Password
HDD Master ID:	15722749	controls access to the setup utility.
Set Supervisor Password	[Enter]	
Set User Passord	[Enter]	
Set HDD Password	[Enter]	
Password on Boot	[Disabled]	

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

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   10 characters
❑ Characters   Alphanumeric keys only. The shift status i.e. Ctrl, Shift, Alt and Capital are ignored.

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

Parameter	Description
Supervisor Password Is	Clear
User Password Is	Clear
HDD Password Is	This feature is available to user when Supervisor password is set. Password can be written on HDD only when Supervisor password or user password is set and password on HDD is set to enabled. Supervisor Password is written to HDD only when Supervisor password is being set. User password is written to HDD when both passwords are set. When both Supervisor and user password are present, both passwords can unlock the HDD.
HDD Master Is	N/A

Parameter	Description	
Set Supervisor Password	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.	
Set User Password	When you set Supervisor password already and then you reboot and into BIOS setup manual by User password, the set Supervisor password, Boot device and Lock Hard Drive will be disable.	
	Allows the user to specify whether or not a password is required to boot.	
Set HDD Password	When shown as [Locked], the hard drive passowrd currently can not be changed or disabled.	
	To change or disable it, turn off the system and enter Setup immediately after turning it back on.	
	Press [Enter] to input, change or disable hard drive password.	
Password on boot	Defines whether a password is required or not while the events defined in this group happened. The following sub-options are all requires the Supervisor password for changes and should be grayed out if the user password was used to enter setup.	**Disabled**

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.
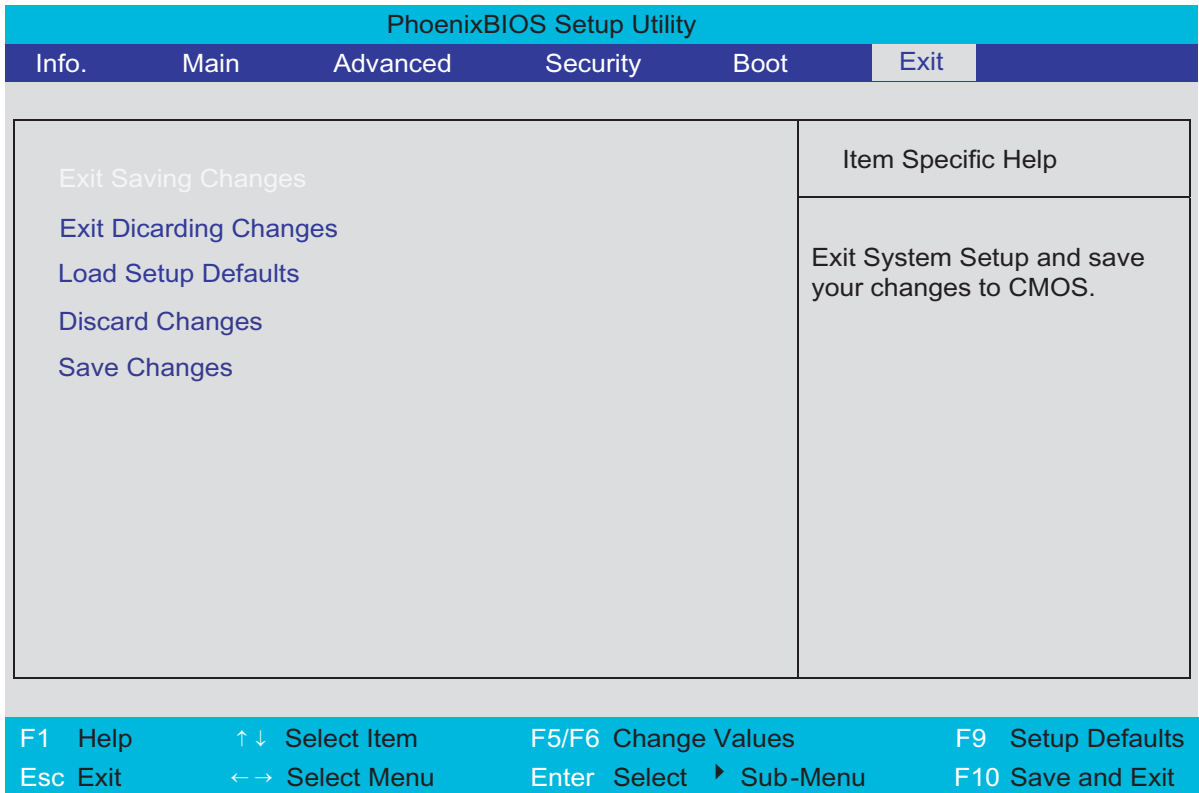
PhoenixBIOS Setup Utility					
Info.	Main	Advanced	Security	Boot	Exit

	Item Specific Help
+Hard Drive Floppy Devices CD-ROM/DVD Drive Network Boot	+ and - indicate device categories. Use <Enter> to expand/collapses. Boot order is top-down using only the top device in each category. Use <F6> and <F5> to move highlighted item up and down.

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

Default boot sequence should be the following:

1. Hard Drive
2. Floppy Devices
3. CD-ROM/DVD Drive
4. Network Boot (since only 3 items are availble, if above 3 items are invalid, a boot menu should be shown when boot.)

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 Dicarding Changes	Exit System Setup and save your changes to CMOS.
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	

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: TravelMate 3200 series product uses mylar or tape to fasten the FFC/FPC/connectors/cable, you may need to tear the tape or mylar before you disconnect different FFC/FPC/connectors.

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.
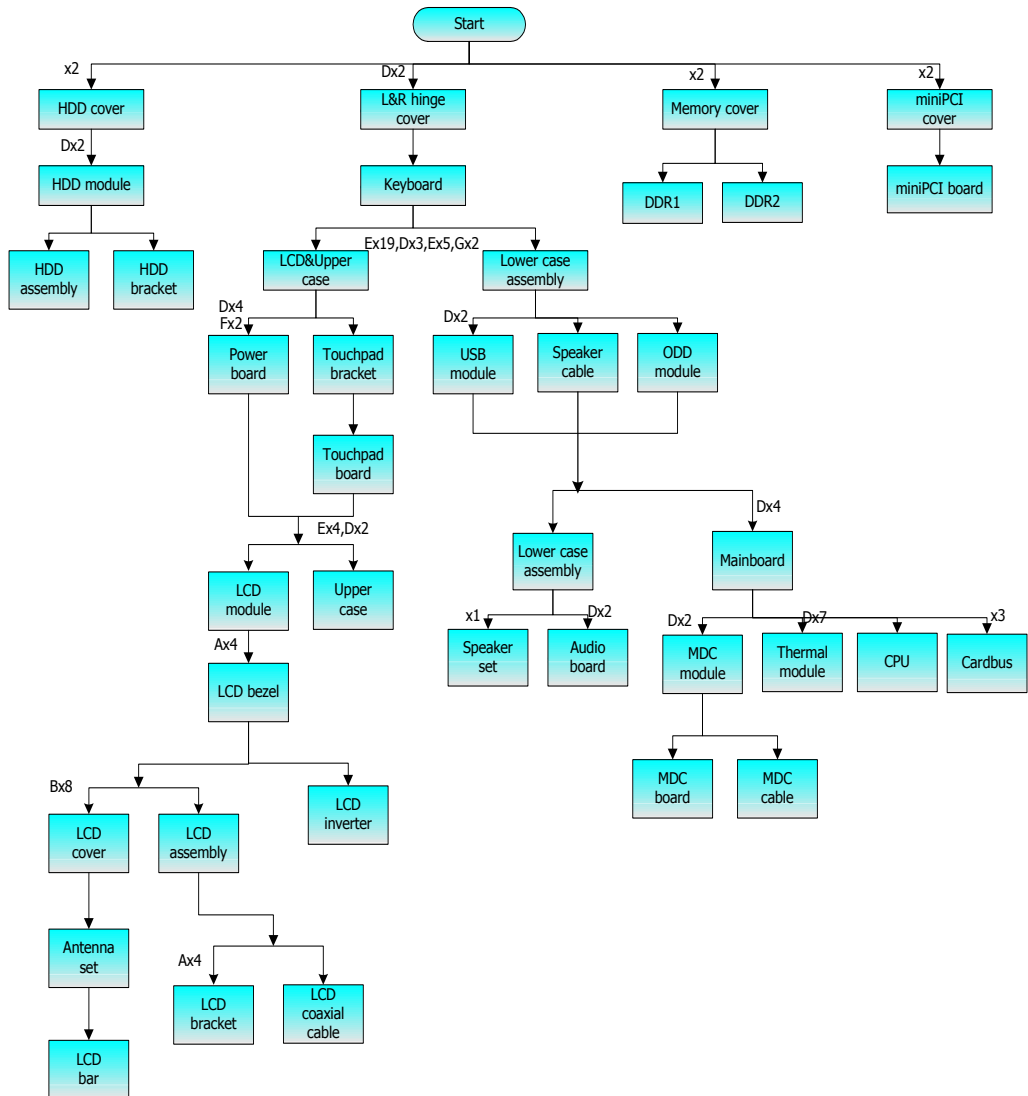
Screw List

Item	Description	Acer part No.
A	SCREW M2.0*2.5-I(NI)(NYLOK)	86.A03V7.012
B	SCREW I2.5*4M-BKAGHY(M2.5L4)	86.T25V7.013
C	SCREW M2.5*6-I(BNI)(NYLOK)	86.T25V7.012
D	SCREW M2.5*3-I BIN(NYLOK)	86.T23V7.010
E	SCREW M2.5*7-I BIN(NYLOK)	86.T25V7.008
F	SCREW NUT IO EA1(MBEA1001,REV3 B)	86.T23V7.001
G	SCREW M2.0*4-I(BNI)(NYLOK)	86.A03V7.007

Removing the Battery Pack

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

Removing the HDD Module and the miniPCI

Removing the HDD Module

1.   Remove two screws that secure the HDD cover.

2.   Remove the HDD cover.

3.   Remove the two screws that secure the HDD.

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

.
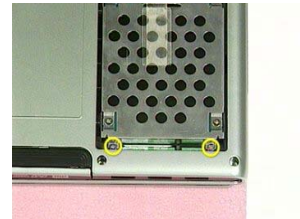
Removing the Memory

1.   Remove the two screws that secure the memory cover.

2.   Remove the memory cover.

3.   Press the latch on left and right side to pop out the memory and remove it.

4.   Remove the other memory.

Removing the miniPCI

1. Remove the two screws that secure the miniPCI cover.

2. Remove the miniPCI cover.

3. Release the wireless antenna.

4. Press the latch on left and right side to pop out the miniPCI and remove it.
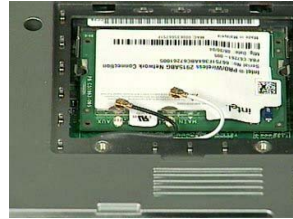
Disassembling the Main Unit into Upper Case and Lower Case

1. Remove the two screws that secure the left and right hinge cover.

2. Remove the left and right hinge cover.Detach the right and the left hinge cover form the main unit.

.

3. Remove the three screws on the rear of the main unit.

4. Remove the nineteen screws that secure the lower case..

5. Release the keyboard latch with tweezers

6. Release another keyboard latch with tweezers.

7. Pull the keyboard out.

8. Unlatch the keyboard FFC latch and remove the keyboard from the main unit.

9. Remove the seven screws that secure the upper case.

10. Disconnect the power board cable.

11. Disconnect the thermal lid switch cable.

12. Disconnect the touchpad FFC from the mainboard.

13. Pull the wireless antenna from the hole.

14. Close the LCD and remove the upper case from the main unit.
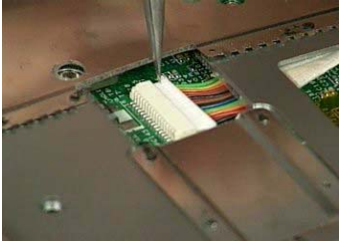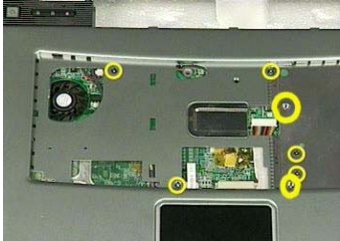
Disassembling the Lower Case

1. Remove the ODD from the lower case.

2. Disconnect the right speaker cable from USB cable and disconnect the USB cable from the mainboard.
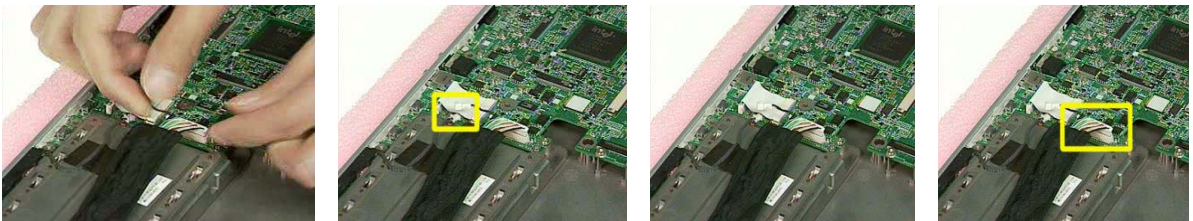
3. Remove the two screws that secure the USB module.
4. Remove the USB module from the lower case.
5. Disconnect the USB module from the USB module.
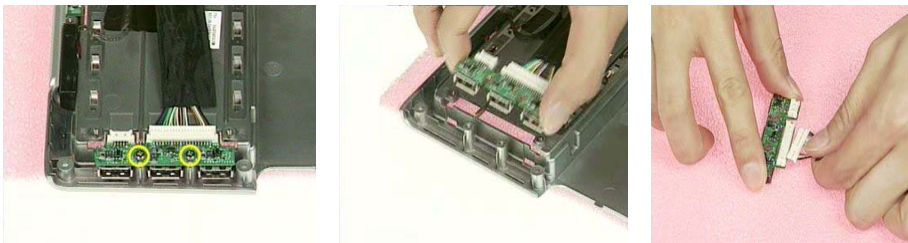
6. Disconnect the left speaker cable from the mainboard.
7. Disconnect the Audio cable from the mainboard and remove the audio cable from the audio board.

8. Remove the four screws that secure the mainboard.
9. Detach the mainboard from the lower case assembly.
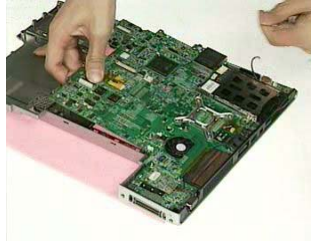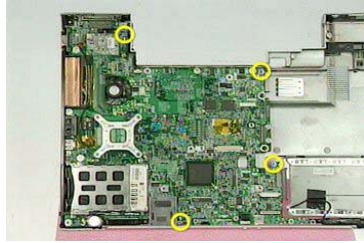
10. Tear off the mylar on the MDC cable.

11. Disconnect the MDC cable from the mainboard.

12. Remove the two screws that secure the MDC module.

13. Remove the MDC module from the mainboard.

14. Disconnect the cable from MDC board.
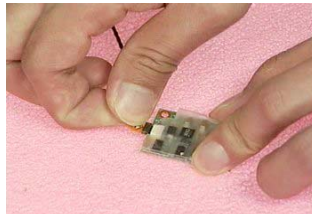
15. Disconnect the fan cable from the mainboard.

16. Remove the seven screws that secure the thermal module.

17. Remove the serew that securew the CPU

18. Turn the screw that secures the CPU.

19. Remove the CPU from the mainboard.
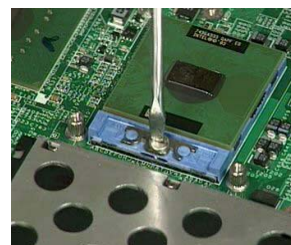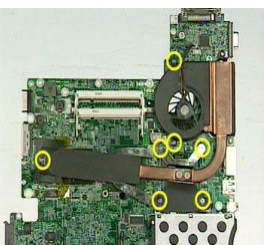
20. Tear off the mylar on the right speaker cable.

21. Remove the right speaker from the lower case.

22. Remove the screw that secure the left speaker.

23. Remove the left speaker from the lower case.

24. Remove the two screws thatsecure the audio board.

25. Remove the audio board from the lower case.
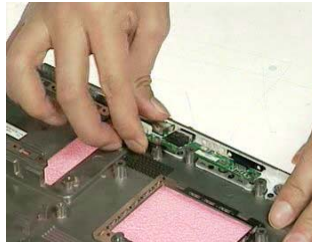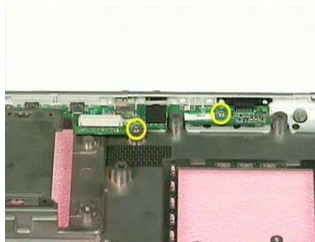
Disassembling the LCD Module and Upper Case

1. Disconnect the LCD cable from the power board.
2. Remove the two screws that secure the power board.
3. Remove another four screws that secure the power board.
4. Remove the power board from the upper case.
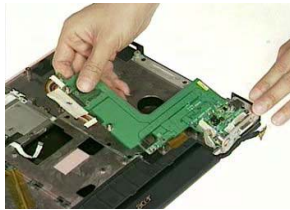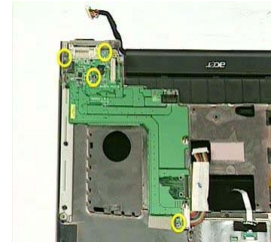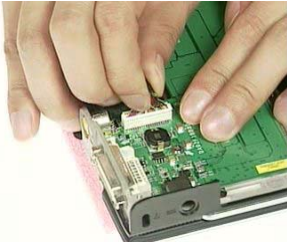
5. Tear off the mylar on the touchpad FFC.
6. Disconnect the touchpad FFC from the touchpad board.
7. Remove the three screws that secure the touchpad bracket.
8. Remove the touchpad bracket from the upper case.
9. Remove the touchpad board from the upper case.
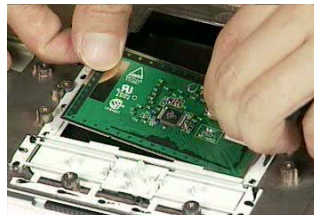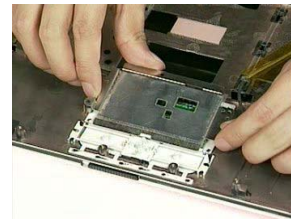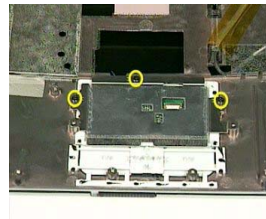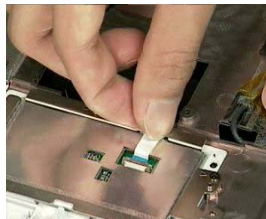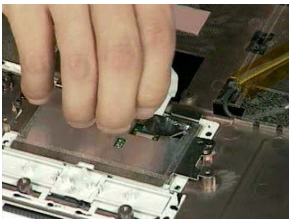
10. Tear off the mylar on the wireless antenna.
11. Remove the wireless antenna from the wire groove.
12. Remove the three screws that secure the LCD hinge on both sides.

13. Detach the LCD panel from the upper case assembly.
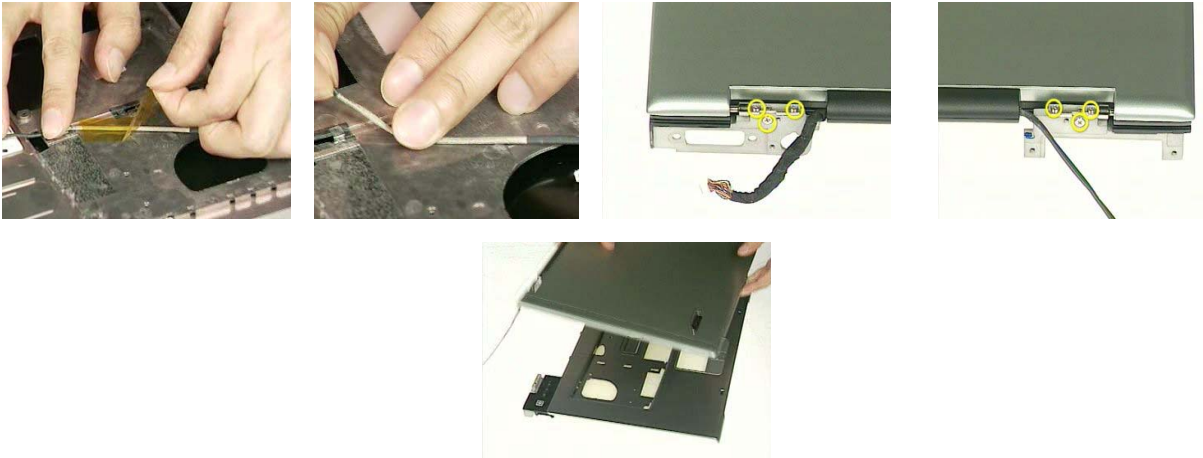
14. Remove the four screw caps of the LCD bezel.

15. Remove the four screws that secure the LCD bezel.

16. Remove the LCD bezel from the LCD module.

17. Disconnect the inverter power cable and the LVDS cable from the inverter board.

18. Remove the eight screws that secure the LCD.

19. Remove the LCD from the LCD cover.

20. Tear off the tapes on the antenna cable.

21. Tear off the tapes on the antenna brackets.

22. Remove the two screws that secure the left and right antenna bracket.

23. Remove the left and right antenna brackets and antenna cable from the LCD cover.
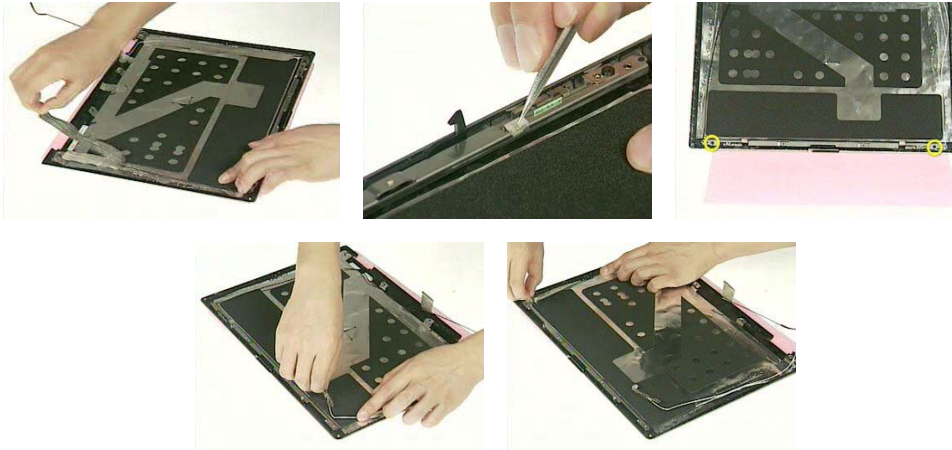
24. Remove the two screws that secure the LCD bar.

25. Remove the LCD bar from the LCD cover.
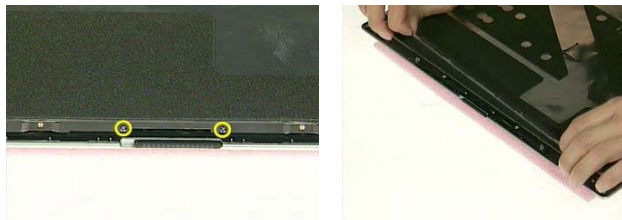
26. Remove the four screws that secure the right LCD bracket.

27. Remove the right LCD bracket.

28. Remove the four screws that secure the left LCD bracket.

29. Remove the left LCD bracket.
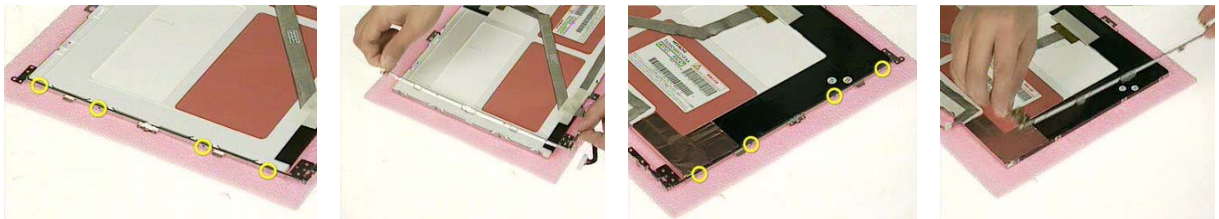
30. Tear off the tape on the LCD cable.

31. Disconnect the LCD cable from the LCD.

32. This completes the LCD module and upper case disassembly.
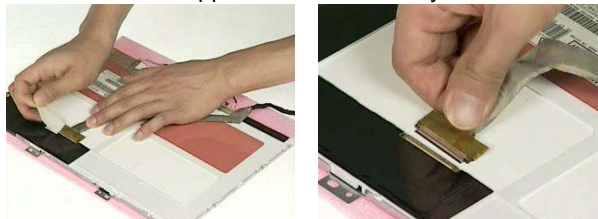
Disassembling the LCD Module

1. Remove the four screw caps as shown.

2. Then remove the four screws tightening the LCD bezel.
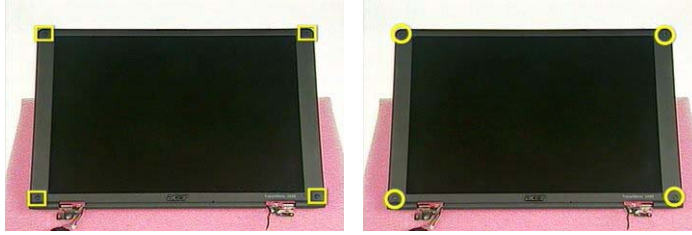
3. Detach the LCD bezel from the LCD module.

4. Then turn the LCD bezel over and remove the microphone.

5. Tear off the type fastening the inverter cable then disconnect the inverter cable then remove the inverter.

6. Remove the six screws holding the LCD to the LCD cover.

7. Then remove the LCD from the LCD cover.

.
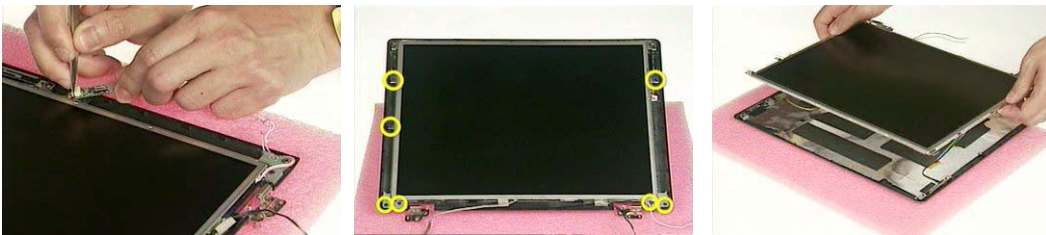
8. Remove the two screws holding the right bracket then remove the bracket.

9. Remove the two screws holding the left bracket then remove the bracket.

10. Tear off the tape that fastens the LCD cable.
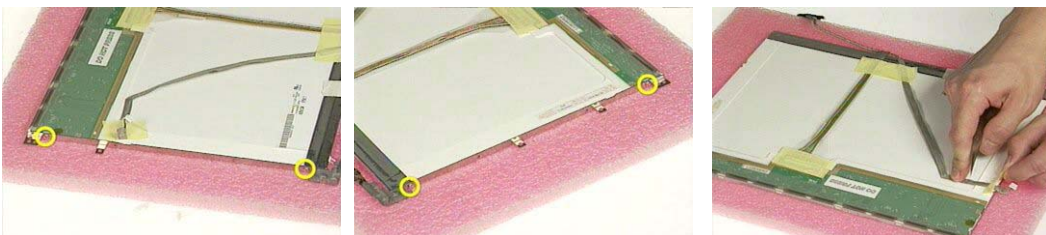
11. Disconnect the LCD cable from the LCD.

12. Tear off the tape fastening the antennae set.

13. Then detach the antennae set from the LCD cover.
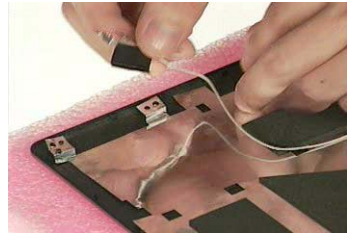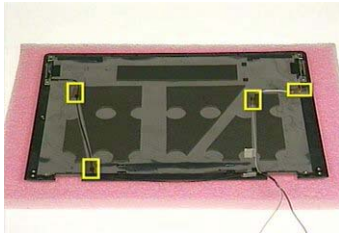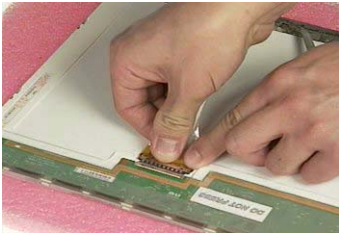
Disassembling the External Modules

Disassembling the ODD Module

1. Remove the two screws holding the ODD bracket on one side.
2. Remove the two screws holding the ODD bracket on the other side.
3. Remove another two screws on the rear side.
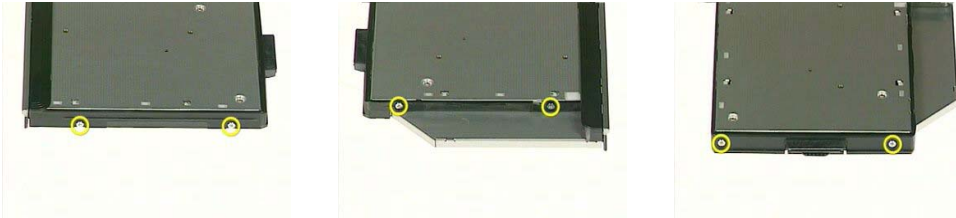
4. Slide the ODD bracket out of the ODD module.
5. Remove the ODD connector from the ODD module.
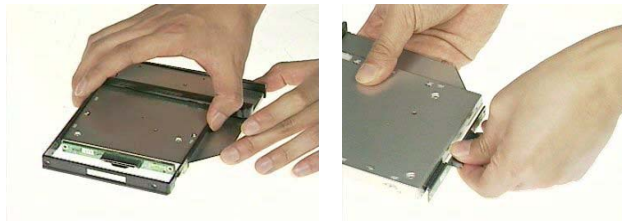
Disassembling the Optical Drive Module

1. Remove the four screws that secure the HDD holder.
2. Remove the HDD holder from the HDD module.
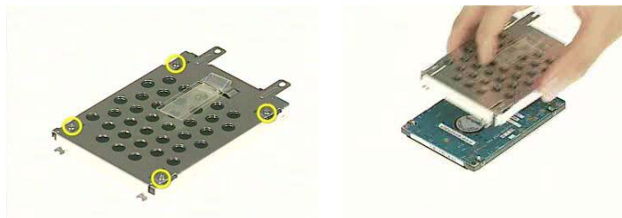
Troubleshooting

Use the following procedure as a guide for computer problems.

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

1. Obtain the failing symptoms in as much detail as possible.

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

System Check Procedures

External Diskette Drive Check

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

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

Do the following to select the test device.

1. Boot from the diagnostics diskette and start the diagnostics program.
2. See if FDD Test is passed as the program runs to FDD Test.
3. Follow the instructions in the message window.

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

If the error still remains:

1. Reconnect the external diskette drive/DVD-ROM module.
2. Replace the external diskette drive/CD-ROM module.
3. Replace the main board.

External CD-ROM Drive Check

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

Do the following to select the test device:

1. Boot from the diagnostics diskette and start the diagnostics program.
2. See if CD-ROM Test is passed when the program runs to CD-ROM Test.
3. Follow the instructions in the message window.

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

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

Keyboard or Auxiliary Input Device Check

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

If the internal keyboard does not work or an unexpected character appears, make sure that the flexible cable extending from the keyboard is correctly seated in the connector on the system board.

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

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

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

The following auxiliary input devices are supported by this computer:

- ❑ Numeric keypad
- ❑ External keyboard

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

Memory check

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

1. Boot from the diagnostics diskette and start the doagmpstotics program (please refer to main board.

2. Go to the diagnostic memory in the test items.

3. Press F2 in the test items.

4. Follow the instructions in the message window.

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

Power System Check

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

1. Remove the battery pack.

2. Connect the power adapter and check that power is supplied.

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

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

❑   "Check the Power Adapter" on page 77

❑   "Check the Battery Pack" on page 78

Check the Power Adapter

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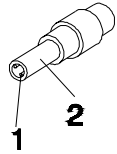
Pin 1: +19 to +20.5V
Pin 2: 0V, Ground

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

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

    ❑   Replace the System board.

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

    ❑   If the voltage is not correct, go to the next step.

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

3.   If the power-on indicator does not light up, check the power cord of the power adapter for correct continuity and installation.

4.   If the operational charge does not work, see "Check the Battery Pack" on page 78.

Check the Battery Pack

To check the battery pack, do the following:

From Software:

1. Check out the Power Management in control Panel

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

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

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

From Hardware:

1. Power off the computer.

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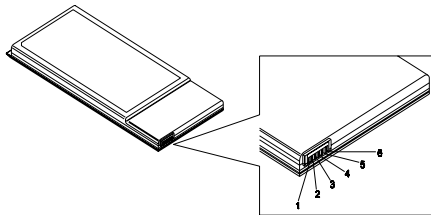
3. If the voltage is still less than 7.5 Vdc after recharging, replace the battery.

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

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

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

Touchpad Check

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

1. Reconnect the touchpad cables.

2. Replace the touchpad.

3. Replace the system board.

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

Power-On Self-Test (POST) Error Message

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

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

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

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

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

NOTE: Most of the error messages occur during POST. Some of them display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured.

NOTE: If the system fails after you make changes in the BIOS Setup Utility menus, reset the computer, enter Setup and install Setup defaults or correct the error.

Index of Error Messages

Error Code List

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

Error Message List

Error Messages	FRU/Action in Sequence
Failure Fixed Disk	Reconnect hard disk drive connector. "Load Default Settings" in BIOS Setup Utility. Hard disk drive System board
Stuck Key	see "Keyboard or Auxiliary Input Device Check" on page 75.
Keyboard error	see "Keyboard or Auxiliary Input Device Check" on page 75.
Keyboard Controller Failed	see "Keyboard or Auxiliary Input Device Check" on page 75.
Keyboard locked - Unlock key switch	Unlock external keyboard
Monitor type does not match CMOS - Run Setup	Run "Load Default Settings" in BIOS Setup Utility.
Shadow RAM Failed at offset: nnnn	BIOS ROM System board
System RAM Failed at offset: nnnn	DIMM System board
Extended RAM Failed at offset: nnnn	DIMM System board
System battery is dead - Replace and run Setup	Replace RTC battery and Run BIOS Setup Utility to reconfigure system time, then reboot system.
System CMOS checksum bad - Default configuration used	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system.
System timer error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board

Error Message List

Error Messages	FRU/Action in Sequence
Real time clock error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board
Previous boot incomplete - Default configuration used	Run "Load Default Settings" in BIOS Setup Utility. RTC battery System board
Memory size found by POST differed from CMOS	Run "Load Default Settings" in BIOS Setup Utility. DIMM System board
Diskette drive A error	Check the drive is defined with the proper diskette type in BIOS Setup Utility See "External Diskette Drive Check" on page 75.
Incorrect Drive A type - run SETUP	Check the drive is defined with the proper diskette type in BIOS Setup Utility
System cache error - Cache disabled	System board
CPU ID:	System board
DMA Test Failed	DIMM System board
Software NMI Failed	DIMM System board
Fail-Safe Timer NMI Failed	DIMM System board
Device Address Conflict	Run "Load Default Settings" in BIOS Setup Utility. RTC battery System board
Allocation Error for device	Run "Load Default Settings" in BIOS Setup Utility. RTC battery System board
Failing Bits: nnnn	DIMM BIOS ROM System board
Fixed Disk n	None
Invalid System Configuration Data	BIOS ROM System board
I/O device IRQ conflict	Run "Load Default Settings" in BIOS Setup Utility. RTC battery System board
Operating system not found	Enter Setup and see if fixed disk and drive A: are properly identified. Diskette drive Hard disk drive System board

Error Message List

No beep Error Messages	FRU/Action in Sequence
No beep, power-on indicator turns off and LCD is blank.	Power source (battery pack and power adapter). See "Power System Check" on page 76. Ensure every connector is connected tightly and correctly. Reconnect the DIMM. LED board. System board.
No beep, power-on indicator turns on and LCD is blank.	Power source (battery pack and power adapter). See "Power System Check" on page 76. Reconnect the LCD connector Hard disk drive LCD inverter ID LCD cable LCD Inverter LCD System board
No beep, power-on indicator turns on and LCD is blank. But you can see POST on an external CRT.	Reconnect the LCD connectors LCD inverter ID LCD cable LCD inverter LCD System board
No beep, power-on indicator turns on and a blinking cursor shown on LCD during POST.	Ensure every connector is connected tightly and correctly System board
No beep during POST but system runs correctly.	Speaker System board

POST Code

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

Index of Symptom-to-FRU Error Message

LCD-Related Symptoms

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

Indicator-Related Symptoms

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

Power-Related Symptoms

Symptom / Error	Action in Sequence
Power shuts down during operation	Power source (battery pack and power adapter). See "Power System Check" on page 76. Battery pack Power adapter Hard drive & battery connection board System board
The system doesn't power-on.	Power source (battery pack and power adapter). See "Power System Check" on page 76. Battery pack Power adapter Hard drive & battery connection board System board
The system doesn't power-off.	Power source (battery pack and power adapter). See "Power System Check" on page 76. Hold and press the power switch for more than 4 seconds. System board
Battery can't be charged	See "Check the Battery Pack" on page 78. Battery pack System board

PCMCIA-Related Symptoms

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

Memory-Related Symptoms

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

Speaker-Related Symptoms

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

Power Management-Related Symptoms

Symptom / Error	Action in Sequence
The system will not enter hibernation	Keyboard (if control is from the keyboard)
	Hard disk drive
	System board
The system doesn't enter hibernation mode and four short beeps every minute.	See "Hibernation Mode" on page 34.
	Press Fn+F4 and see if the computer enters hibernation mode.
	Touchpad
	Keyboard
	Hard disk connection board
	Hard disk drive
	System board
The system doesn't enter standby mode after closing the LCD	See "Hibernation Mode" on page 34.
	LCD cover switch
	System board
The system doesn't resume from hibernation mode.	See "Hibernation Mode" on page 34.
	Hard disk connection board
	Hard disk drive
	System board
The system doesn't resume from standby mode after opening the LCD.	See "Hibernation Mode" on page 34.
	LCD cover switch
	System board
Battery fuel gauge in Windows doesn't go higher than 90%.	Remove battery pack and let it cool for 2 hours
	Refresh battery (continue use battery until power off, then charge battery)
	Battery pack
	System board

Power Management-Related Symptoms

Symptom / Error	Action in Sequence
System hangs intermittently.	Reconnect hard disk/CD-ROM drives. Hard disk connection board System board

Peripheral-Related Symptoms

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

Keyboard/Touchpad-Related Symptoms

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

Modem-Related Symptoms

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

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

Intermittent Problems

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

When analyzing an intermittent problem, do the following:

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

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

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

Undetermined Problems

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

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

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

NOTE: Verify that the power supply being used at the time of the failure is operating correctly. (See "Power System Check" on page 76):

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

Use NAPP CD to Build Master Hard Disc Drive

CD to Disk Recovery

1. Prepare NAPP CD, Recovery CD and System CD.

2. Put NAPP CD into the optical drive. Then boot up the system.

3. The system will ask you if you want to build NAPP Master HDD. Please press any key to continue.

```
===============================================
           The HDD Must bigger then 20GB.

===============================================
Do you want to build NAPP Master HDD?
press any key to continue or Crtl-C to exit
_
```

4. NAPP CD will start to preload the system, please click [Y].

```
    Acer NAPP Preload Selector for Acer System Version 1.4.0.1
                    Copyright 2003 Acer Inc.

      ===========================================

This will preload your system. Are you sure?[Y,N]?
```
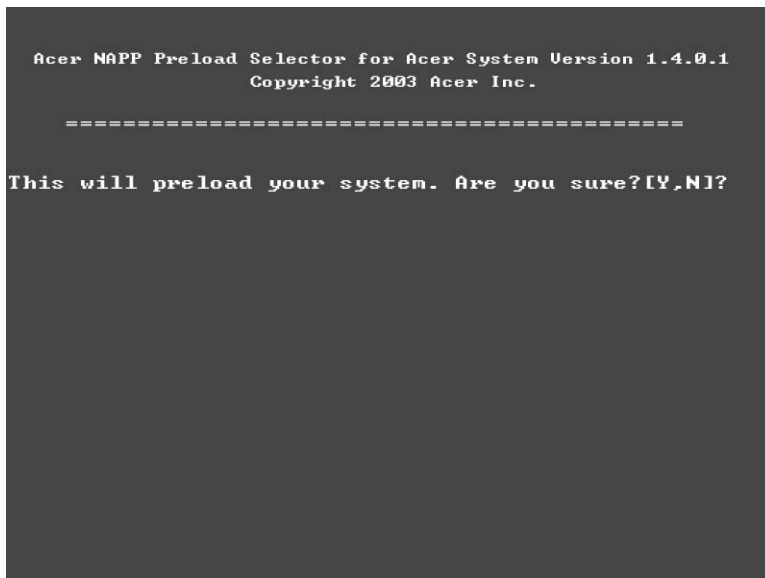
5. Select CD to Disk Revocery.

```
                    Method Selector
        ============================
        1. Disk To Disk Recovery
        2. CD to Disk Recovery
        X. Quit

Please select your Choose...[1,2,x]?
```

6. Put the Recovery CD to the optical drive. This step is to create image files to the system, you do not have to put the Recovery CD to the optical drive in order. Place one Recovery CD to the drive at one time till you finish all Recovery CDs.

```
Please Insert Any Recovery CD

Please Press Any Key to Continue.
Press any key to continue...
_
```

After you place the Recovery CD to the optical drive, you will see the display below.

```
Please Wait for COPYING .........
X:\images \70E40I01.HDD
```

7. Then insert the System CD to the optical drive.

```
Please Insert the System CD

Please Press Any Key to Continue.
Press any key to continue...
_
```

8. You will see the screen displaying "PASS" when the system has buit NAPP Master hard disc drive.

```
PPPPPPPPP        A          SSSSSSSSS      SSSSSSSSS
PP      PP      A A         SS             SS
PP      PP     A   A        SS             SS
PP      PP    AA   AA       SS             SS
PPPPPPPPP    AA     AA      SSSSSSSSS      SSSSSSSSS
PP          AA       AA            SS             SS
PP          AAAAAAAAAAAA           SS             SS
PP         AA         AA           SS             SS
PP        AA           AA   SSSSSSSSS      SSSSSSSSS
PP

        ****  PLEASE REMOVE YOUR CD!!!!!  ****

press any key to exit!!
_
```

Disk to Disk Recovery

1. Prepare NAPP CD, Recovery CD and System CD.

2. Put NAPP CD into the optical drive. Then boot up the system.

3. The system will ask you if you want to build NAPP Master HDD. Please press any key to continue.

```
        =========================================
                The HDD Must bigger then 20GB.

        =========================================
Do you want to build NAPP Master HDD?
press any key to continue or Crtl-C to exit
_
```

4. NAPP CD will start to preload the system, please click [Y].

```
      Acer NAPP Preload Selector for Acer System Version 1.4.0.1
                      Copyright 2003 Acer Inc.

           =============================================

This will preload your system. Are you sure?[Y,N]?
```

5. Select Disk to Disk Recovery. Then choose Single Language or Multi-Languages Recovery.
NOTE: For Multi-Languages Recovery, not more than five languages could be loaded to the system.

```
                        Method Selector
            =============================
          1. Single Language Recovery
          2. Multi-Languages Recovery
          X. Quit

Please select your Choose...[1,2,x]?
```

6. Put the Recovery CD to the optical drive. This step is to create image files to the system, you do not have to put the Recovery CD to the optical drive in order. Place one Recovery CD to the drive at one time till you finish all Recovery CDs.

```
Please Insert Any Recovery CD


Please Press Any Key to Continue.
Press any key to continue...
_
```

After you place the Recovery CD to the optical drive, you will see the display below.

```
Please Wait for COPYING .........
X:\images \70E40I01.HDD
```

7. Then insert the System CD to the optical drive.

```
Please Insert the System CD

Please Press Any Key to Continue.
Press any key to continue...
_
```

8. You will see the screen displaying "PASS" when the system has buit NAPP Master hard disc drive.

```
PPPPPPPPP        A              SSSSSSSSSS    SSSSSSSSSS
PP       PP      A A            SS            SS
PP       PP     A   A           SS            SS
PP       PP    AA   AA          SS            SS
PPPPPPPPP     AA     AA         SSSSSSSSSS    SSSSSSSSSS
PP          AA       AA                  SS            SS
PP        AAAAAAAAAAAAA                  SS            SS
PP        AA           AA                SS            SS
PP       AA             AA               SS            SS
PP                         SSSSSSSSSS    SSSSSSSSSS


        ****   PLEASE REMOUE YOUR CD!!!!!   ****

press any key to exit!!
_
```

Jumper and Connector Locations

Top View
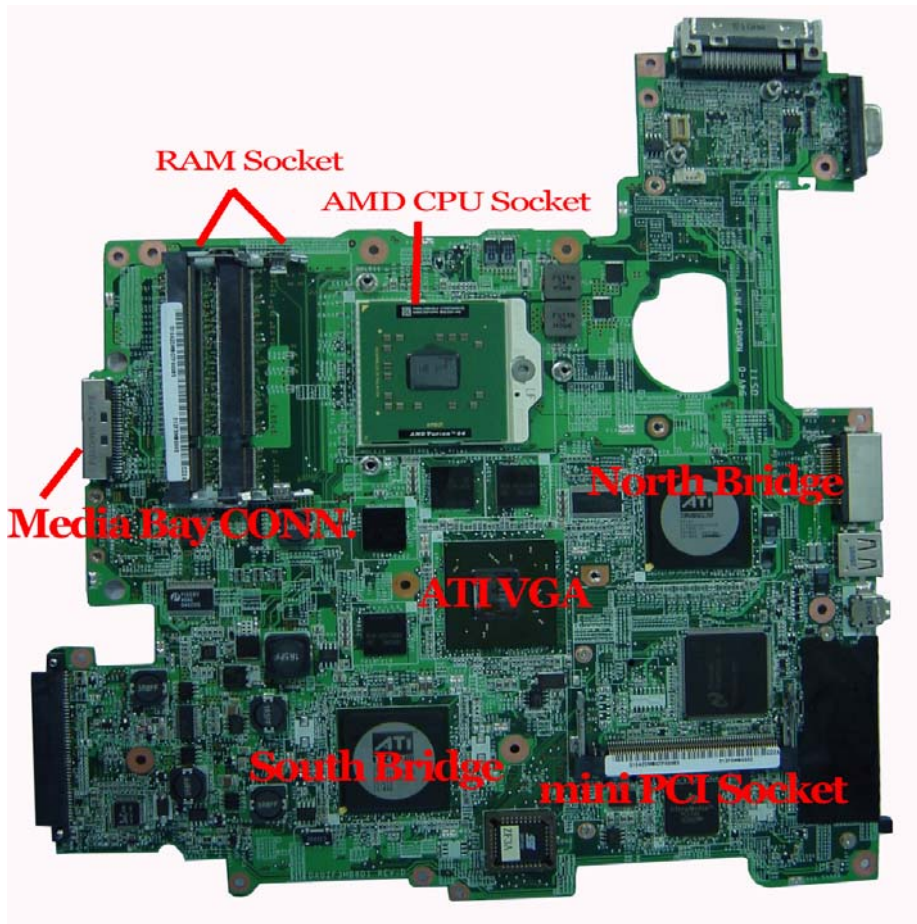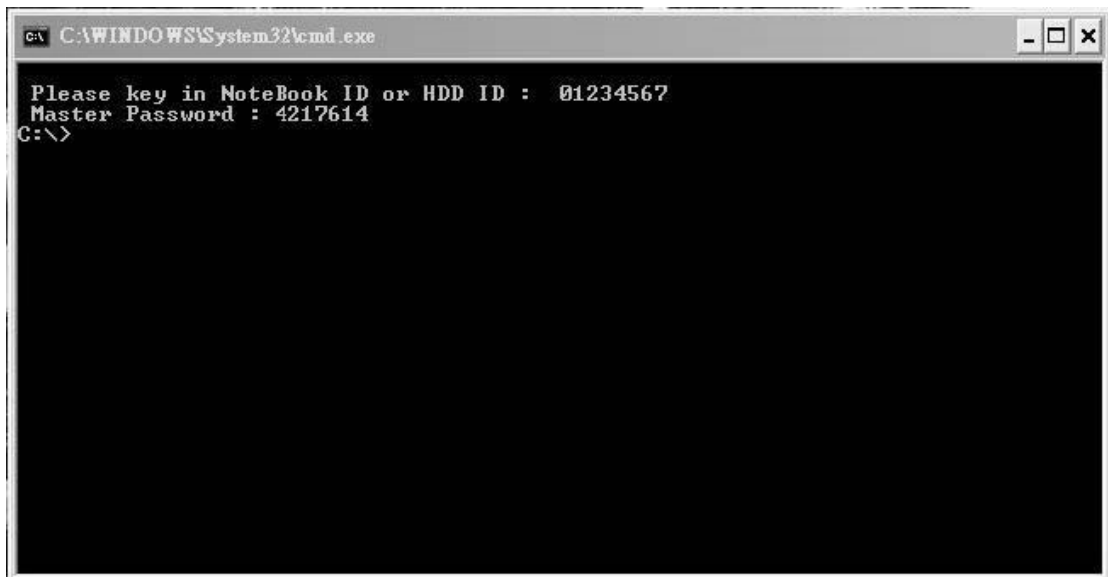
Rear View
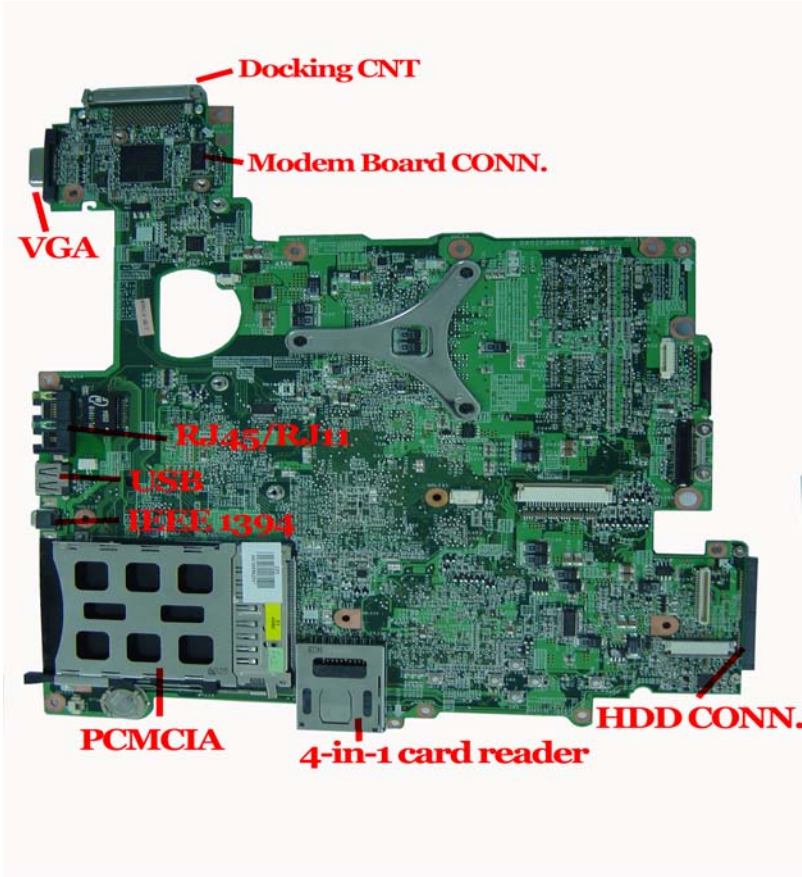
Remove BIOS Password

1. Copy MastID program to C

2. Click Start > Program > Accessories > Command Prompt

3. Go to C:directory

4. Run mastid.exe

5. Key in "01234567" as following picture

6. Get master password


```
Please key in NoteBook ID or HDD ID :   01234567
Master Password : 4217614
C:\>
```

Remove HDD Password

1. To get HDD mater ID:
   a. Power on system
   b. Press "**F2**" to enter CMOS
   c. Use right arrow button to move to "**Security**" (refer to illustration 1)
   d. Check HDD Master ID number
2. To get master password:
   a. Copy MastID program to C
   b. Click Start -> Program -> Accessories -> Command Prompt
   c. Go to C: directory
   d. Run mastid.exe
   e. Key in HDD Master ID as following picture (refer to illustration 2)
   f. Get master password

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

		Item specific Help
Supervisor Password Is:	Clear	
User Password Is:	Clear	
Primary Password Is:	Clear	
HDD Master ID:	53206418	
Set Supervisor Password	[Enter]	
Set User Password	[Enter]	
Set HDD Password	[Enter]	
Password on Boot:	[Disabled]	

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

illustration 1

```
C:\WINDOWS\System32\cmd.exe                                          _ □ ×

 Please key in NoteBook ID or HDD ID :   53206418
 Master Password : 5116500
C:\>_
```

illustration 2

FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of Ferrari 4000 series products. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

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

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded Diagram

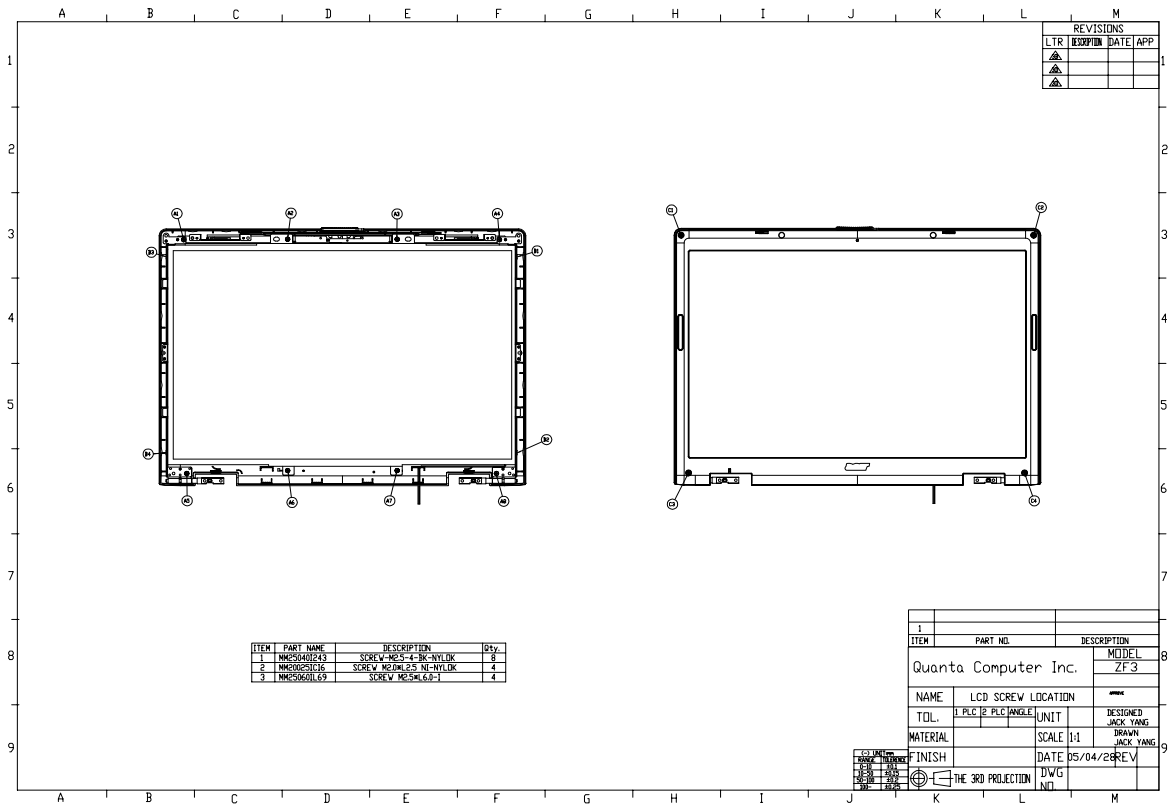| ITEM	PART NAME	DESCRIPTION	Qty.
1	AS023170198	INV MODULE ZF1(8-20*,V=700,REV=A1A)	1
2	EBZF1014029	HINGE COVER-L	2
3	3CZF3LCTN01	ZF3 LCD COVER ASSY	1
4	AA154W02119	LCD 15.4" LP154W02-B1K1(WSXGA+) STN B/S	1
5	FBZF1012018	HINGE-L	1
6	FBZF1013014	HINGE-R	1
7	3DZF3LBTN07	ZF3 LCD BEZEL ASSY	1
8	GAZF1001015	LCD-RUBBER-UP	4
9	AEZF1TNU015	K/B MODULE(USA) ZF1(AEZF1TNU,REV3A)	1
10	37ZF3TCTN07	ZF3 TOP COVER ASSY	1
11	32ZF3CB0003	ZF1 CHARGER/B ASSY	1
12	31ZF3MB0002	ZF3 M/B ASSY	1
13	33ZF3UB0001	ZF3 USB/B ASSY	1
14	34ZF3AB0006	ZF3 AUDIO/B ASSY	1
15	AHA84212208	BATT LI 916-4310 ZF3 4S2P 2.4A	1
16	24ZF3CDTN11	ZF3 SUPER MULTI ASSY(PANASONIC) STN B/S	1
17	36ZF3BATN03	ZF3 BASE ASSY	1
18	39ZF3PDTN06	ZF3 MINI-PCI DOOR ASSY	1
19	22ZF3HDTN02	ZF3 P-HDD ASSY(SEAGATE,120G/5400)STN B/S	1
20	3AZF3HDTN02	ZF3 HDD DOOR ASSY	1
21	29ZF3CATN51	ZF3 CPU ASSY (AMD TURION ML34) STN B/S	1
22	ATR3Q64MWG1	RAM 256MB HYMD232M646D6-J	1
23	AD60H918001	WIRELESS LAN 802.11ABG(T60H918.00)	1
24	25ZF1MDTN14	ZF1 BLUETOOTH MODULE 91.BU513.002 ASSY	1
25	2DZF3MDTN02	ZF3 MODEM MODULE ASSY	1
26	MM20025ICI6	SCREW M2.0*L2.5 NI-NYLOK	4
27	MM25040I243	SCREW-M2.5-4-BK-NYLOK	8
28	MM25060IL69	SCREW M2.5*L6.0-I	4
29	MM25030IL65	SCWER M2.5*3.0-I(BNI)(NYLOK)	29
30	MM25070IL63	SCREW M2.5 * 7 BNI (NYLOK)	28
31	MBEA1001012	NUT IO	2
32	MS20040IUK5	SCREW M2.0*4 (BNI)(NYLOK)	2

1	1ZF3U7UTN02	
ITEM	PART NO.	DESCRIPTION

Quanta Computer Inc.

		MODEL
		ZF3

NAME		NB,ZF3 C3			APPROVE	
TOL.	1 PLC	2 PLC	ANGLE	UNIT	DESIGNED JACK YANG	
MATERIAL				SCALE 1:1	DRAWN JACK YANG	
FINISH				DATE 05/04/28	REV	3A
(-) UNIT:mm	THE 3RD PROJECTION			DWG NO.	1ZF3U7UTN02	1/1
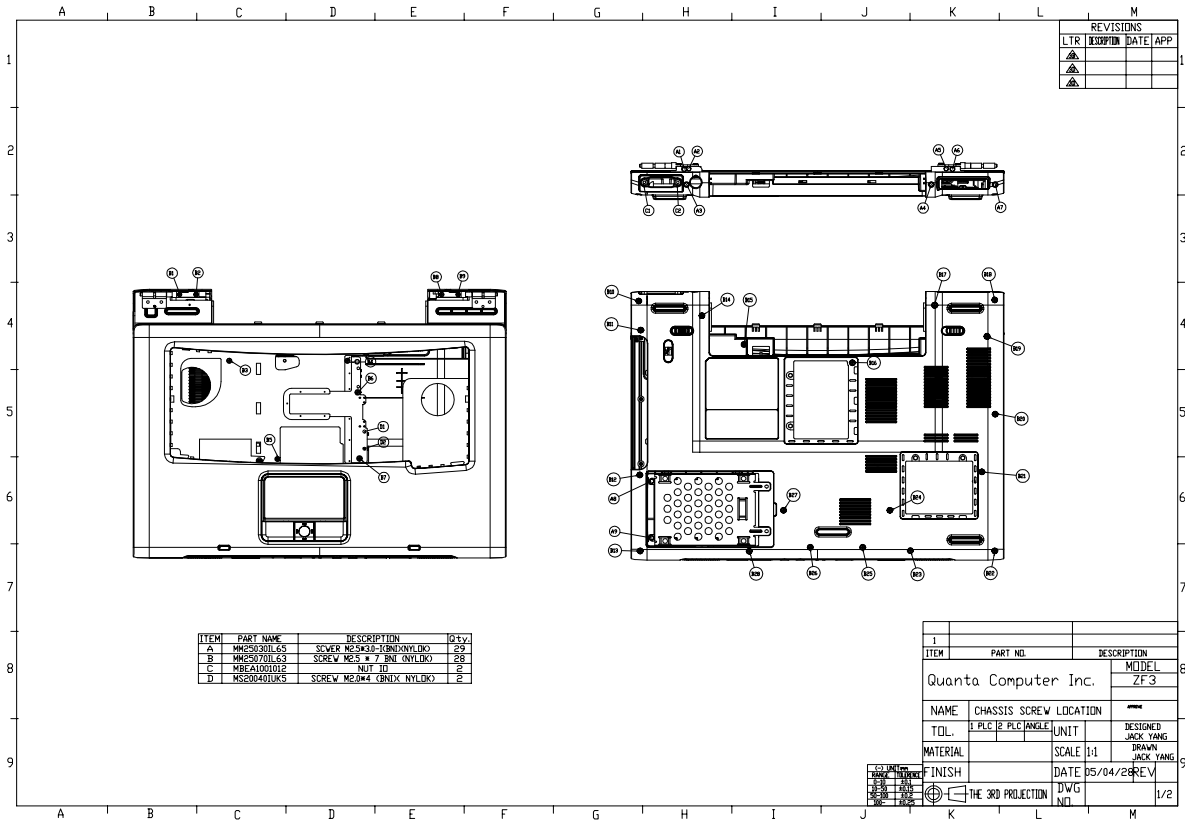
REVISIONS
LTR | DESCRIPTION | DATE | APP

Screew Location

ITEM	PART NAME	DESCRIPTION	Qty.
1	MM25040I243	SCREW-M2.5-4-BK-NYLOK	8
2	MM20025IC16	SCREW M2.0WL2.5 NI-NYLOK	4
3	MM25060IL69	SCREW M2.5WL6.0-I	4

1			
ITEM	PART NO.		DESCRIPTION

Quanta Computer Inc.

MODEL ZF3

NAME	LCD SCREW LOCATION	
TOL.	1 PLC 2 PLC ANGLE	UNIT
MATERIAL		SCALE 1:1
FINISH		DATE 05/04/28

DESIGNED JACK YANG
DRAWN JACK YANG
REV

THE 3RD PROJECTION

DWG NO.

ITEM	PART NAME	DESCRIPTION	Q'ty.
A	MM250301L65	SCVER M2.5*3.0-IGBNIXNYLOK)	29
B	MM250701L63	SCREW M2.5 * 7 BNI (NYLOK)	28
C	MBEA1001012	NUT ID	2
D	MS20040IUK5	SCREW M2.0*4 (BNIX NYLOK)	2

Quanta Computer Inc.

NAME	CHASSIS SCREW LOCATION	
TOL.	1 PLC 2 PLC ANGLE	UNIT
MATERIAL		SCALE 1:1
FINISH		DATE 05/04/28

MODEL ZF3

DESIGNED JACK YANG
DRAWN JACK YANG
REV
DWG NO 1/2

THE 3RD PROJECTION

Parts

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
ADAPTER			
	ADAPTER LITE- ON PA-1900-05QA 3PIN W/LED 90W	ZP1 ADAPTER S/P-LITE-ON S/P	AP.A1003.001
	ADAPTER LSE 0202C1990 3PIN W/ LED 90W	ZP1 ADAPTER S/P-LSE S/P	AP.06503.006
BATTERY			
	BATTERY SANYO LI-ION 4S2P 4800MAH	ZF3 BATTERY Sanyo S/P	BT.00803.012
	BATTERY SIMPLO LI-ION 4S2P 4800MAH	ZF3 BATTERY Simpo S/P	BT.00807.004
BOARDS			
	MODEM BOARD	ZF3 MODEM BOARD ASSY S/P	54.FR4V7.001
	BLUETOOTH MINI-USB MODULE W/ ANTENNA	ZA1 BLUETOOTH MODULE S/P	54.T48V7.001
N/A	WIRELESS LAN CARD ABT_BRM4318BG	ZF3 WL CARD 802.11BG S/P	54.FR4V7.002
	POWER BOARD	ZF3 CHARGER/B ASSY S.P.	55.FR4V7.001
	USB BOARD	ZF3 USB/B ASSY S.P.	55.FR4V7.002
	AUDIO BOARD	ZF3 AUDIO/B ASSY S.P.	55.FR4V7.003
	OPTICAL CONNECTOR BOARD	ZF3 CD-ROM BOARD ASSY S.P.	55.FR4V7.004

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
	LCD INVERTER BOARD	ZF1 INV (8-20V,V=700,REV=A1A) S.P.	19.T72V7.001
CABLES			
	FFC CABLE - TP/B TO MB	ZF1 CABLE TP/ B(FFC,12P,70MM,REV2A) S.P.	50.T72V7.001
	MODEM CABLE - MODEM TO MB	ZF3 CABLE MODEM(2P/ 2P,REV1A)L-F S.P.	50.FR4V7.001
	POWER CABLE -POWER TO MB	ZF3 CABLE POWER(8P/8P,REV1A)L-F S.P.	50.FR4V7.002
	FFC CABLE - AUDIO BOARD	ZF1 CABLE AUD FFC(30MM,35P,REV1A)L- S.P.	50.T72V7.004
	USB CABLE - USB BOARD TO MB	ZF3 CABLE USB(20P/19P,REV1A)L-F S/P	50.FR4V7.003
	LCD CABLE - 15.4 IN. WXGA	ZF1 CABLE (40/30P,R1A)L-F S.P.	50.T72V7.007

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
N/A	POWER CORD US (3 pin)	ET2S POWER CORD S/P-US	27.A03V7.001
	POWER CORD PRC (3 Pin)	ET2S POWER CORD S/P-PRC	27.A03V7.003
	POWER CORD KOERA (Pin)	ZI1S POWER CORD SPARE PART-KOERA	27.T23V7.006
	POWER CORD EU (3 PIN)	ET2S POWER CORD S/P-EU	27.A03V7.002
	POWER CORD UK (3 PIN)	ET2S POWER CORD S/P-UK	27.A03V7.004
	POWER CORD ITALIAN (3 PIN)	ET2S POWER CORD S/P-ITALIAN	27.A03V7.005
	POWER CORD- SWISS	ET2S POWER CORD SPARE PART-SWISS	27.A03V7.007
	POWER CORD DANISH (3 PIN)	ET2S POWER CORD S/P-DANISH	27.A03V7.006
	POWER CORD AF (3 PIN)	ZI5 POWER CORD S/P-AF	27.T48V7.001
	POWER CORD AF-S (INDIA)	ZL6A POWER CORD S/P INDIA	27.A50V7.001
	POWER CORD ISRAEL (3 PIN)	ZL6A POWER CORD S/P-ISR	27.A50V7.002
	POWER CORD AU W/LABEL (3 PIN)	ZL6A POWER CORD S/P-AU	27.A50V7.003
CASE/COVER/BRACKET ASSEMBLY			
	UPPER CASE W/LIP SWITCH CABLE,T/P,T/P CABLE AND BRACKET	ZF3 TOP COVER ASSY S.P.	60.FR4V7.001
	LOWER CASE W/SPEAKER,MIC	ZF3 BASE ASSY S.P.	60.FR4V7.002
	RAM DOOR W/SCREW	ZF3 RAM DOOR ASSY S.P.	42.FR4V7.001
	MINIPCI DOOR W/SCREW	ZF3 MINI-PCI DOOR ASSY S.P.	42.FR4V7.002
N/A	PCMIAC DUMMY CARD - RED	P-DUMMY CARD ZF3 FER4 S.P.	42.FR4V7.003
	HINGE COVER	HINGE COVER-L ZF3(EBZF1014,REV3B) S.P.	42.FR4V7.004

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
	HDD COVER W/RUBBER	ZF3 HDD DOOR ASSY S/P	42.FR4V7.007
	HDD BRACKET W/MYLAR	ZF1 HDD BKT-2 S/P	33.T72V7.003
	OPTICAL DEVICE HOLDER-FIX	ZF3 DVD HOLDER FIX (EBZF1027,REV3B)FER S.P.	42.FR4V7.005
	DVD SUPER MULTI BEZEL SLOT IN (RED)	ZF3 SLOT BEZEL ASSY (PAN. UJ845) S.P.	42.FR4V7.006
	LCD PANEL W/LOGO ANTENNA 15.4 IN.	ZF3 15.4 LCD COVER ASSY S.P.	60.FR4V7.003
N/A	LCD BEZEL W/RUBBER PAD 15.4 IN. (FERRARI)	ZF3 15.4 LCD BEZEL ASSY S.P.	60.FR4V7.004
	LCD BRACKET W/HINGE 15.4 IN. - L	ZF1 HINGE-L (SZS) S.P.	33.T72V7.004
	LCD BRACKET W/HINGE 15.4 IN. - R	ZF1 HINGE-R (SZS) S.P.	33.T72V7.005
N/A	PCMCIA SLOT	PCMCIA EJECTOR ZF3 S.P.	22.FR4V7.001

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
CPU/PROCESSOR			
N/A	AMD Mobile Turion 64 ML40,35W,L2 cache:1MB	MOBILE TURION 64 ML40	KC.TML02.400
N/A	AMD Mobile Turion 64 ML37,35W,L2 cache:1MB	MOBILE TURION 64 ML37	KC.TML02.370
N/A	AMD Mobile Turion 64 ML34,35W,L2 cache:1MB	MOBILE TURION 64 ML34	KC.TML02.340
DVD RW DRIVE			
	DVD SUPER MULTI MODULE 8X PANASONIC UJ-845 SLOT IN	ZF3 SUPER MULTI ASSY(PANASONIC) S.P.	6M.FR4V7.001
	DVD SUPER MULTI DRIVE PANASONIC UJ-845 SLOT IN	ZF3 DVD SUPER-MULTI(UJ-845-CQB) S/P	KU.00807.016
HDD/HARD DISK DRIVE			
	HGST 2.5IN. 100GB 5400RPM MORAGA+ HTS541010G9AT00 ROHS F/W:A60A	100G HGST 2.5" 5400RPM MORAGA+ HTS541010G9AT00 ROHS F/W:A60A	KH.10007.004
	SEAGATE 100GB 2.5IN. 5400RPM MERCURY 2 ST9100824A F/W:3.01	100G SEAGATE 2.5" 5400RPM MERCURY 2 ST9100824A F/W:3.01	KH.10001.004
	SEAGATE 100GB 5400RPM MERCURY ST9100823A	SEAGATE MERCURY 100GB 5400RPM, ST9100823A	KH.10001.002
KEYBOARD			
	TM8100 KEYBOARD DARFON US INTERNATIONAL	ZF1 K/B U/I ASSY S.P.	KB.T7207.001
	TM8100 KEYBOARD DARFON CHINESE	ZF1 K/B CHINA ASSY S.P.	KB.T7207.002
	TM8100 KEYBOARD DARFON SPANISH	ZF1 K/B SPANISH ASSY S.P.	KB.T7207.003
	TM8100 KEYBOARD DARFON THAI	ZF1 K/B THAI ASSY S.P.	KB.T7207.004
	TM8100 KEYBOARD DARFON BRAZILIAN PROTUGESE	ZF1 K/B BRAZIL ASSY S.P.	KB.T7207.005
	TM8100 KEYBOARD DARFON KOREA	ZF1 K/B KOREAN ASSY S.P.	KB.T7207.006
	TM8100 KEYBOARD DARFON UK	ZF1 K/B UK ASSY S.P.	KB.T7207.007
	TM8100 KEYBOARD DARFON GERMAN	ZF1 K/B GERMAN ASSY S.P.	KB.T7207.008
	TM8100 KEYBOARD DARFON ITALIAN	ZF1 K/B ITALIAN ASSY S.P.	KB.T7207.009
	TM8100 KEYBOARD DARFON FRENCH	ZF1 K/B FRENCH ASSY S.P.	KB.T7207.010
	TM8100 KEYBOARD DARFON SWISS/G	ZF1 K/B SWISS ASSY S.P.	KB.T7207.011
	TM8100 KEYBOARD DARFON PORTUGUESE	ZF1 K/B PORTUGUESE ASSY S.P.	KB.T7207.012

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
	TM8100 KEYBOARD DARFON ARABIC	ZF1 K/B ARAB-EN ASSY S.P.	KB.T7207.013
	TM8100 KEYBOARD DARFON BELGIUM	ZF1 K/B BELGIUM ASSY S.P.	KB.T7207.014
	TM8100 KEYBOARD DARFON SWEDEN	ZF1 K/B SWEDISH ASSY S.P.	KB.T7207.015
	TM8100 KEYBOARD DARFON CZECH	ZF1 K/B CZECH ASSY S.P.	KB.T7207.016
	TM8100 KEYBOARD DARFON HUNGAIAN	ZF1 K/B HUNGARIAN ASSY S.P.	KB.T7207.017
	TM8100 KEYBOARD DARFON NORWAY	ZF1 K/B NORWEGIAN ASSY S.P.	KB.T7207.018
	TM8100 KEYBOARD DARFON DANISH	ZF1 K/B DANISH ASSY S.P.	KB.T7207.019
	TM8100 KEYBOARD DARFON TURKISH	ZF1 K/B TURKISH ASSY S.P.	KB.T7207.020
	TM8100 KEYBOARD DARFON CANADIAN FRENCH	ZF1 K/B FRA-CAN ASSY S.P.	KB.T7207.021
	TM8100 KEYBOARD DARFON JAPANESE	ZF1 K/B JAPAN ASSY S.P.	KB.T7207.022
	TM8100 KEYBOARD DARFON GREEK	ZF1 K/B GREEK ASSY S.P.	KB.T7207.023
	TM8100 KEYBOARD DARFON HEBREW	ZF1 K/B HEBREW ASSY S.P.	KB.T7207.024
	TM8100 KEYBOARD DARFON RUSSIAN	ZF1 K/B RUSSIAN ASSY S.P.	KB.T7207.025
LCD			
	LCD MODULE 15.4 IN. WSXGA+ SAMSUNG LTN154P1-L02 185NITS	ZF3 15.4 SAM WSXGA LTN154P1-L02 MOD S/P	6M.FR4V7.002
	LCD 15.4 IN. WSXGA+ SAMSUNG LTN154P1-L02 185NITS	ZF3 15.4" WSXGA LTN154P1-L02 S.P.	LK.15406.002
	LCD MODULE 15.4 IN. WSXGA+ LG LP154W02-B1K1 185NITS	ZF3 15.4 LG WSXGA MOD S/P	6M.FR4V7.003
	LCD 15.4 IN. WSXGA+ LG LP154W02-B1K1 185NITS	ZF3 LCD 15.4 WSXGA+ LG LP S/P	LK.15408.003

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
MAINBOARD			
	MAINBOARD M26-128MB W/PCMCIA SLOT, 5 IN 1 W/O CPU MEMORY	ZF3 M/B ASSY S.P.	LB.FR406.001
RTC BATTERY			
N/A	RTC BATTERY ML1220	BATTERY LI 3V 14MAH(ML1220)L-F S.P.	TBD
MEMORY			
	SO-DIMM DDR333 512MB HYS64D64020HBDL-6-C 64MX64 (0.11U/GREEN	SO-DIMM DDR333 512MB HYS64D64020HBDL-6-C 64MX64 (0.11U/GREEN	KN.51202.025
	SO-DIMM DDR333 512MB M470L6524CU0-CB3 (512MB)	SO-DIMM DDR333 512MB M470L6524CU0-CB3 (512MB)	KN.5120B.013
	SO-DIMM 512MB HYMD564M646B6-J	SO-DIMM 512MB HYMD564M646B6-J	KN.5120G.006
MISCELLANEOUS			
N/A	FERRARI 4000 MOUSE	GENIUS FERRARI MOUSE S/P	MS.FR407.001
	LCD BEZEL SCREW PAD	LCD_RUBBER_UP ZF1(GAZF1001,REV3A)	47.T72V7.001
N/A	RUBBER FOOT - HIGHER	ZF1 RUB FOOT S.P.	47.T72V7.003
N/A	RUBBER FOOT - LOWER	RUBBER FOOT-2 ZF3(GAZF3005,REV3A) S.P.	47.FR4V7.001
SPEAKER			
	SPEAKER R	ZF1 SPEAKER PB2510KMG04CX-8LB(R) S.P.	23.T72V7.001
	SPEAKER L	ZF1 SPEAKER PB2510KMG04CX-7LB(L) S.P.	23.T72V7.002

PICTURE	PARTNAME	DESCRIPTION	ACER P/N
HEATSINK			
	THERMAL MODULE	ZF3 THERMAL MODULE ASSY S.P.	60.FR4V7.005
SCREWS			
N/A	SCERW M3*0.5+3.5I	SCERW M3*0.5+3.5I	86.A03V7.011
	SCERW M2.0*2.5-I(NI)(NYLOK)	SCERW M2.0*2.5-I(NI)(NYLOK)	86.A03V7.007
	SCERW M2.0*4.0-NI(NYLOK)	SCERW M2.0*4.0-NI(NYLOK)	86.FR4V7.001
	SCERW M1.6*3.0-NI	SCERW M1.6*3.0-NI	86.A10V7.002
	SCERW M2.5*2.5-I(NI)(NYLOK)	SCERW M2.5*2.5-I(NI)(NYLOK)	86.T25V7.010
	SCERW M2.5*4.0-I(BKAG)(NYLOK)	SCERW M2.5*4.0-I(BKAG)(NYLOK)	86.T25V7.013
	SCERW M2.5*6-I(BNI)(NYLOK)	SCERW M2.5*6-I(BNI)(NYLOK)	86.A03V7.019
	SCERW M2.5*3.0-I(BNI)(NYLOK)	SCERW M2.5*3.0-I(BNI)(NYLOK)	86.T25V7.012
	SCERW M2.5*7 BNI(NYLOK)	SCERW M2.5*7 BNI(NYLOK)	86.A10V7.006
	SCERW M2.0*4-I(BNI)(NYLOK)	SCERW M2.0*4-I(BNI)(NYLOK)	86.FR4V7.002
	SCERW M2.5*3-I-NI(NYLOK)	SCERW M2.5*3-I-NI(NYLOK)	86.A10V7.008

Model Definition and Configuration

Ferrari 4000 series

Model Number	CPU	LCD	Memory	HDD (GB)	ODD	Card Reader	Wireless LAN
4000	AMD Turion^TM 64 processor	15.4" WSXGA	SODIMM DDR333	100GB	8X DVD RW Drive	5-in-1	802.11 b+g

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® XP Home environment.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests.

Regarding configuration, combination and test procedures, please refer to the Ferrari 4000

Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft® Windows® XP Pro Environment Test

Item	Specifications
CPU	AMD Mobile Turion 64 ML30,35W,L2 cache:1MB
	AMD Mobile Turion 64 ML34,35W,L2 cache:1MB
	AMD Mobile Turion 64 ML37,35W,L2 cache:1MB
	AMD Mobile Turion 64 ML40,35W,L2 cache:1MB
LCD	LG, LP154W02-B1K1, 185 nits
	SAMSUNG, LTN154P1-L02, 185nits
Memory 256MB/DDR333	Hynix256MB/ 333MHz, HYMD232M646D6-J
	Nanya 256MB /333MHz, NT256D64SH8C0GM-6K (.11u)
	Infineon 256MB /333MHz, HYS64D32020HDL-6-C (.11u)
Memory 512MB/DDR333	Samsung 512MB/ 333MHz, M470L6524CU0-CB3
	Infineon 512MB /333MHz, HYS64D64020HBDL-6-C (.11u)
	Hynix 512MB /333MHz, HYMD564M646B6-J
Memory 1GB/DDR333	Elpida EBD11UD8ADDA-6B(1GB)
HDD 80GB/5400RPM	Toshiba Proteus 80GB 5400rpm, MK8026GAX (RohS),FW:PA001G
HDD 100GB/4200RPM	Seagate Mercury 100GB 4200rpm, ST9100822A (RohS) F/W:3.01
HDD 100GB/5400RPM	Seagate Mercury 100GB 5400rpm, ST9100823A (RohS),F/W:3.01
	Seagate Mercury 100GB 5400rpm, ST9100824A (RohS)
	HGST, Moraga+, 100GB 5400rpm, HTS541010G9AT00 (RohS)
HDD 120GB/5400RPM	Seagate Mercury2 120GB 5400rpm, ST9120821A(RohS
Optical Drive	Panasonic UJ-845-CQB [slot type Super Multi]
5-In-1 Module (SD/MMS/MS/MS-Pro/xD)	Integrated in TI 7411
MODEM	Ambit S/W MODEM V.92 Scorpio ,T60M893.03
Bluetooth	WNC Bluetooth module with antenna(Mini USB),MINI USB,Broadcom 2035 NMD
	Foxconn Bluetooth module with antenna
MiniPCI Card Type 3B	WirelessLAN b/g ---> (Foxconn)/Broadcom chip, T60H906.01
	WirelessLAN a/b/g ---> (Foxconn)/Atheros chip ,T60H918.00
Battery	Sanyo LiIon
	Simplo Panasonic LiIon
Inverter	SUMIDA TWS-449-210
	PI FL9020
AC Adapter	90W Lite_On PA-1900-05QA(PFC),3pins
	90W Li_Shin LSE0202C1990(PFC),3pins
Keyboard	New creation (derive from ZL1) - USA (Darfon)
Touchpad	Synaptic TM42PUF1372
Bluetooth Mouse	Ferrari Bluetooth Mouse

Item	Specifications
Keyboard	TM8100 Keyboard DARFON US International
	TM8100 Keyboard DARFON Chinese
	TM8100 Keyboard DARFON Spanish
	TM8100 Keyboard DARFON Thai
	TM8100 Keyboard DARFON Brazilian Protugese
	TM8100 Keyboard DARFON Korea
	TM8100 Keyboard DARFON UK
	TM8100 Keyboard DARFON German
	TM8100 Keyboard DARFON Italian
	TM8100 Keyboard DARFON French
	TM8100 Keyboard DARFON Swiss/G
	TM8100 Keyboard DARFON Portuguese
	TM8100 Keyboard DARFON Arabic
	TM8100 Keyboard DARFON Belgium
	TM8100 Keyboard DARFON Sweden
	TM8100 Keyboard DARFON Czech
	TM8100 Keyboard DARFON Hungaian
	TM8100 Keyboard DARFON Norway
	TM8100 Keyboard DARFON Danish
	TM8100 Keyboard DARFON Turkish
	TM8100 Keyboard DARFON Canadian French
	TM8100 Keyboard DARFON Japanese
	TM8100 Keyboard DARFON Greek
	TM8100 Keyboard DARFON Hebrew
	TM8100 Keyboard DARFON Russian
	TM8100 Keyboard DARFON Slovenia (SLO)
	TM8100 Keyboard DARFON Croatia (CR)

Online Support Information

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

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

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

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

❑   Service guides for all models

❑   User's manuals

❑   Training materials

❑   Bios updates

❑   Software utilities

❑   Spare parts lists

❑   TABs (Technical Announcement Bulletin)

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

 Also contained on this website are:

❑   Detailed information on Acer's International Traveler's Warranty (ITW)

❑   Returned material authorization procedures

❑   An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

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