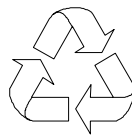


Travel Mate 330

Service Guide

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



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Conventions

The following conventions are used in this manual:

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

Preface

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

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

v

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System Introductions

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

Performance

- ☐ Intel Pentium® II Dixon 300/333/366 processor
- ☐ 64-bit main memory and L2 cache memory
- ☐ Large and vibrant Thin-Film-Transistor (TFT) SVGA Liquid Crystal Display (LCD)
- ☐ 64-bit PCI/AGP graphics acceleration with 2.5MB graphics memory
- ☐ High-capacity, Enhanced-IDE removable hard disk
- ☐ External EasyLink™ Drive (floppy drive + CD-ROM or DVD-ROM drive “combo”)
- ☐ Lithium-Ion battery pack
- ☐ Power management system with APM (Advanced Power Management) or ACPI (Advanced Configuration and Power Interface) support

Multimedia

- ☐ 16-bit high-fidelity PCI stereo audio with 3-D sound and wavetable synthesizer
- ☐ Built-in speaker
- ☐ EasyLink™ Combo Drive (CD-ROM or DVD-ROM)
- ☐ Dual display capability
- ☐ DVD playback capability (with DVD-equipped EasyLink™ DVD Combo Drive)

Connectivity

- ☐ High-speed fax/data PCI modem
- ☐ Fast infrared (FIR) wireless communication
- ☐ Universal Serial Bus (USB) port

Human-centric Design and Ergonomics

- ☐ Ultra-slim, sleek, smooth and stylish design
- ☐ Full-sized keyboard
- ☐ Wide and curved palm rest
- ☐ Ergonomically-centered touchpad pointing device with scroll function

Expansion

- ☐ CardBus PC Card (formerly PCMCIA) slot (one type II) with Zoomed Video (ZV) support
- ☐ Upgradeable memory and hard disk

Display

The large graphics display offers excellent viewing, display quality and desktop performance graphics. The computer supports a Thin-Film Transistor (TFT) liquid crystal display (LCD) displaying 32-bit true-color at 800x600 Super Video Graphics Array (SVGA) resolution.

Video Performance

PCI local bus video with 64-bit graphics acceleration and 2.5MB high-speed Synchronous Graphics Random Access Memory (SGRAM) boost video performance. The video also includes 3D capabilities such as Goraud shading, and Z-buffering, as well as DVD playback support.

Simultaneous Display

The computer's large display and multimedia capabilities are great for giving presentations. If you prefer, you can also connect an external monitor when giving presentations. This computer supports simultaneous LCD and CRT display. Simultaneous display allows you to control the presentation from your computer and at the same time face your audience. You can also connect other output display devices such as LCD projection panels for large-audience presentations.

Power Management

The power management system incorporates an "automatic LCD dim" feature that automatically decides the best settings for your display and at the same time conserves power. See "Power Management" on page 38 for more information on power management features.

Dual Display

The computer's video chip takes advantage of Windows 98's multi-display capability, allowing you to extend your desktop to an external display device, such as an external monitor or projector. With this feature enabled, you can move program windows to and from the computer LCD and external display device.

Opening and Closing the Display

To open the display, slide the display cover latch to the left and lift up the cover. Then tilt it to a comfortable viewing position. The computer employs a microswitch that turns off the display (and enters Standby mode) to conserve power when you close the display cover, and turns it back on when you open the display cover.

Note: If an external monitor is connected, the computer turns off the display (but does not enter standby mode) when you close the display cover.

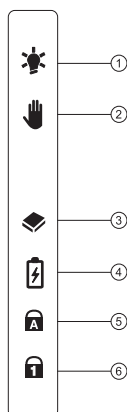
To close the display cover, fold it down gently until the display cover latch clicks into place.

Warning: To avoid damaging the display, do not slam it when you close it. Also, do not place any object on top of the computer when the display is closed.







Basic Operation

Indicators

The computer has six easy-to-read status icons on the right of the display screen.



The Power and Standby status icons are visible even when you close the display cover so you can see the status of the computer while the cover is closed.

#	Icon	Function	Description
1		Power	Lights when the computer is on.
2		Standby	Lights when the computer enters Standby mode.
3		Media Activity	Lights when the floppy drive, hard disk or EasyLink™ Combo Drive is active.
4		Battery Charge	Lights when the battery is being charged.
5		Caps Lock	Lights when Caps Lock is activated.
6		Num Lock	Lights when Num Lock is activated.

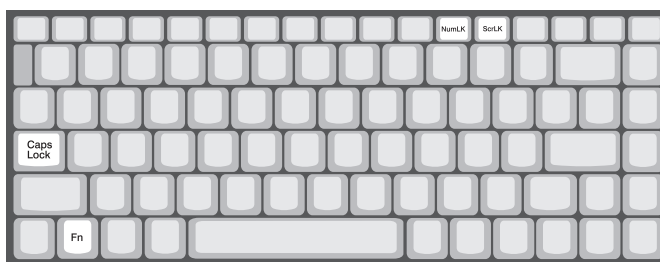
Keyboard

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

Special Keys

Lock Keys

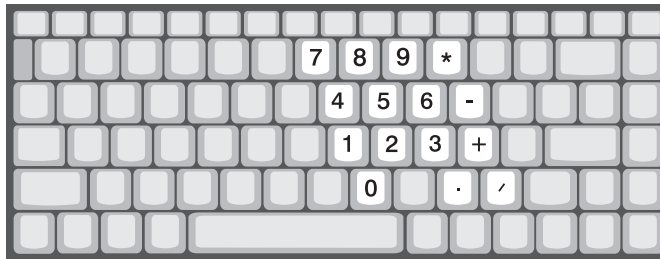
The keyboard has three lock keys which you can toggle on and off.



Lock Key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num Lock (Fn-F11)	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when you need to do a lot of numeric data entry. A better solution would be to connect an external keypad.
Scroll Lock (Fn-F12)	When Scroll Lock is on, the screen moves one line up or down when you press the up or down arrow keys respectively. Scroll Lock does not work with some applications.

Embedded Numeric Keypad

The embedded numeric keypad functions like a desktop numeric keypad. It is indicated by small characters located on the upper right corner of the keycaps. To simplify the keyboard legend, cursor-control key symbols are not printed on the keys



Desired Access	Num Lock On	Num Lock Off
Number keys on embedded keypad	Type numbers in a normal manner.	
Cursor-control keys on embedded keypad	Hold Shift while using cursor-control keys.	Hold Fn while using cursor-control keys.
Main keyboard keys	Hold Fn while typing letters on embedded keypad.	Type the letters in a normal manner.

Note: If an external keyboard or keypad is connected to the computer, the numlock feature automatically shifts from the internal keyboard to the external keyboard or keypad.

Windows Keys

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





Key	Description
Windows logo key	Start button. Combinations with this key perform shortcut functions. Below are a few examples: ⊞ + Tab (Activates next taskbar button) ⊞ + E (Explores My Computer) ⊞ + F (Finds Document) ⊞ + M (Minimizes All) Shift + ⊞ + M (Undoes Minimize All) ⊞ + R (Displays the Run... dialog box)
Application key	Opens a context menu (same as a right-click).










Hot Keys

The computer employs hot keys or key combinations to access most of the computer's controls like screen contrast and brightness, volume output and the BIOS Utility.

To activate hot keys, press and hold the **Fn** key before pressing the other key in the hot key combination.

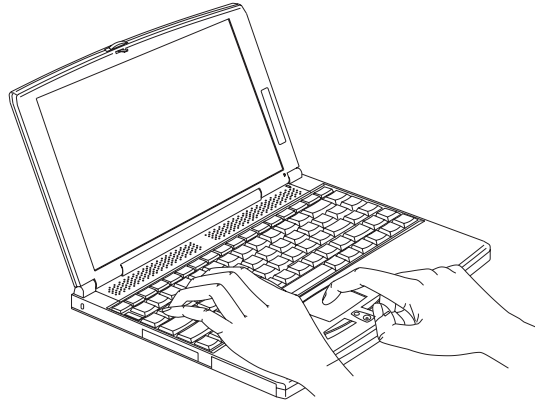


Hot Key	Icon	Function	Description
Fn-F1	?	Hot Key Help	Displays help on hot keys.
Fn-F2		Setup	Accesses the computer's configuration utility.
Fn-F3		Standby	Puts the computer in Standby mode. Press any key to resume. See "Standby Mode" on page 39.

Hot Key	Icon	Function	Description
Fn-F4		Hibernation or Sleep	<p>Puts the computer in Hibernation Mode (if Sleep Manager is installed, valid and enabled). Press the power switch to resume. Otherwise, the computer enters Standby mode.</p> <p>See “Hibernation Mode” on page 39.</p> <p>Note: If ACPI support is enabled, pressing this key puts the computer in Sleep mode. See “Sleep Mode (ACPI)” on page 40 for more about ACPI Sleep mode.</p>
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.
Fn-left arrow		Brightness Down	Decreases the screen brightness.
Fn-right arrow		Brightness Up	Increases the screen brightness.
Fn-up arrow		Volume Up	Increases the volume.
Fn-down arrow		Volume Down	Decreases the volume.

Keyboard Ergonomics

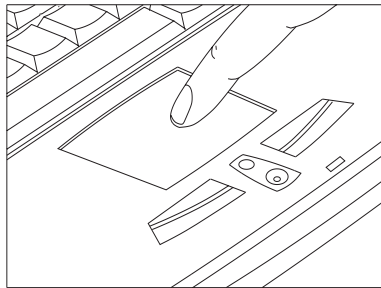
Located below the keyboard, the wide and curved palm rest is ergonomically designed to provide you with a very comfortable place to rest your hands while you type.



Touchpad

The built-in touchpad is a PS/2-compatible pointing device that senses movement on its surface. This means the cursor responds as you move your finger on the surface of the touchpad. The central location on the palm rest provides optimum comfort and support.

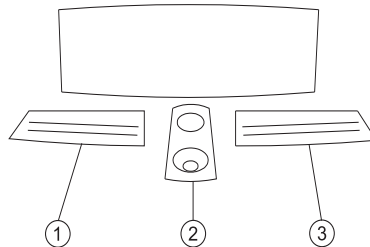
Note: When using an external mouse, you can press Fn-F7 to disable the internal touchpad. If you want to use an external PS/2 mouse, first enable the touchpad, connect the external PS/2 mouse, then disable the touchpad if necessary.



The touchpad also has scroll functions with the center button(s).

Touchpad Basics

The following items teach you how to use the touchpad:



- ☐ Move your finger across the touchpad to move the cursor.
- ☐ Press the left (1) and right (3) 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 produces similar results.

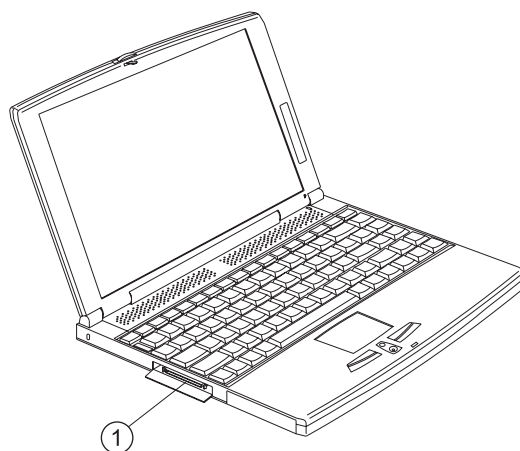
-
- ☐ Use the center (2) buttons (top and bottom) to scroll up or down a page. This button mimics your cursor pressing on the right scroll bar of Windows applications.

Function	Left Button	Right Button	Center Button	Tap
Execute	Click twice quickly			Tap twice (at the same speed as double-clicking a mouse button)
Select	Click once			Tap once
Drag	Click and hold, then use finger to drag the cursor on the touchpad			Tap twice (at the same speed as double-click a mouse button) then hold finger to the touchpad on the second tap and drag the cursor
Access context menu		Click once		
Scroll			Click (and hold) the up/down buttons	

Note: Keep your fingers dry and clean when using the touchpad. Also keep the touchpad dry and clean. The touchpad is sensitive to finger movements. Hence, the lighter the touch, the better the response. Tapping too hard will not increase the touchpad's responsiveness.

I/O Ports

Left Ports



#	Port	Connects to...
1	EasyLink™ Combo Drive connector	EasyLink™ Combo Drive.

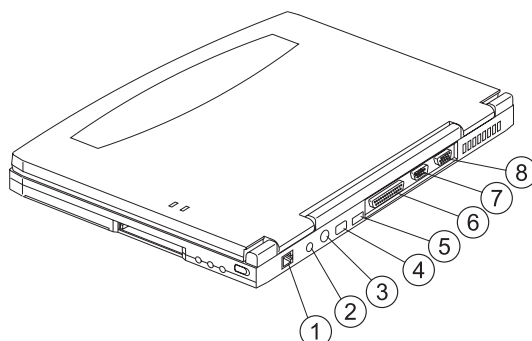
EasyLink™ Combo Drive









The EasyLink™ Combo Drive is a two-in-one floppy/CD-ROM or floppy / DVD-ROM “combo” drive that connects externally to the computer.

The floppy drive reads and writes standard 3.5-inch diskettes. The CD-ROM or DVD-ROM drive provides the latest in multimedia in a mobile world.

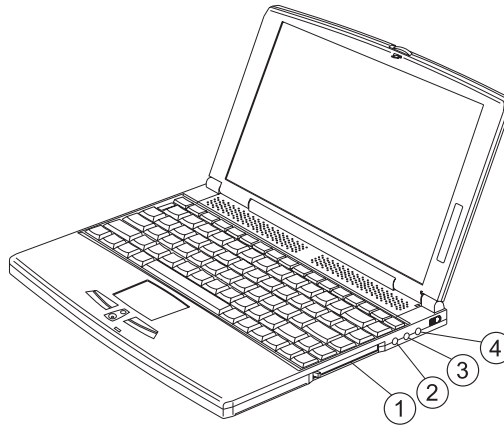
Note: When you connect the EasyLink™ Combo Drive into the connector please insure the connection is correct and complete.

Rear Ports



#	Icon	Port	Connects to...
1		Modem jack	Phone line
2		Power jack	AC adapter and power outlet
3		PS/2 port	PS/2-compatible device (e.g., PS/2 keyboard/mouse/keypad)
4		Infrared port	Infrared device (e.g., infrared printer, IR-aware computers)
5		USB jack	Universal Serial Bus device (e.g., USB mouse, USB camera)
6		Parallel port	Parallel device (e.g., parallel printer)
7		Serial port	Serial device (e.g., serial mouse)
8		External display port	Display device (e.g., external monitor, LCD projector) up to 1280x1024 resolution at 64K-colors

Right Ports



#	Icon	Port	Connects to...
1		PC Card slot	One 16-bit PC Card or 32-bit CardBus PC Card (Zoomed Video supported)
2		Microphone-in jack	Mono condenser microphone
3		Line-in jack	Audio line-in device (e.g., audio CD player, stereo walkman)
4		Line-out jack	Audio line-out device (e.g., speakers, headphones)

Hardware Configuration and Specification

Memory Address Map

Memory Address	Size	Function
00000000-0009FFFF	640 KB	Base memory
000A0000-000BFFFF	128 KB	Video memory
000C0000-000C9FFF	40 KB	Video BIOS
000CA000-000CBFFF	8 KB	I/O ROM
000E0000-000FFFFF	128 KB	System BIOS
00100000-top limited	--	Extended (DIMM) memory
04301000-04301FFF	4 KB	PCMCIA controller (slot 1)
04302000-04302FFF	4 KB	PCMCIA controller (slot 2)
04300000-04300FFF	64 KB	USB controller
FFFF0000-FFFFFFFF	64 KB	System board extension for PnP BIOS

Interrupt Channel Assignment

Interrupt Channel	Function
NMI	System errors
IRQ0	System timer
IRQ1	Keyboard
IRQ2	Cascade
IRQ3	R2 Card
IRQ4	COM1
IRQ5	Audio or LPT1 (optional)
IRQ6	Floppy
IRQ7	LPT1 or Audio (optional)
IRQ8	Real time clock
IRQ9	Card bus / ACPI / Modem
IRQ10	USB
IRQ11	FIR
IRQ12	PS2 pointing device
IRQ13	Numeric data processor
IRQ14	1st EIDE device (hard disk)
IRQ15	2nd EIDE device (CD-ROM drive)

DMA Channel Assignment

DMA Channel	Function
DRQ0	Audio or FIR(optional)
DRQ1	ECP or Audio or FIR(optional)
DRQ2	Floppy
DRQ3	ECP or FIR(optional)
DRQ4	Not Used
DRQ5	Not used
DRQ6	Not used
DRQ7	Not used

I/O Address Map

I/O Address	Function
000-00F	DMA controller-1
020-021	Interrupt controller-1
040-043	Timer 1
060, 064	Keyboard controller 8742 chip select
061	System speaker out
040B	DMA controller-1
061	System speaker
070-071	Real-time clock and NMI mask
080-08F	DMA page register
0A0-0A1	Interrupt controller-2
0C0-0DF	DMA controller-2
0F0-0FF	Numeric data processor
120-13F 180-18F	Power management controller
170-177	2nd EIDE device (CD-ROM) select
1F0-1F7	1st EIDE device (hard drive) select
220-22F	Audio
240-24F	Audio(optional)
278-27F	Parallel port 3
2E8-2EF	COM4
2F8-2FF	COM2 or FIR(optional)
378, 37A	Parallel port 2

I/O Address Map

I/O Address	Function
3BC-3BE	parallel port 1
3B0-3BB 3C0-3DF	Video Controller
3F0h-3F7	Standard Floppy Disk Controller
3E8-3EF	COM3 or LT Win modem(optional)
3F0-3F7	Floppy disk controller
3F8-3FF	COM1
480-48F, 4D6	DMA controller-1
4D0-4D1 CF8-CFF	PCI configuration register

Processor

Item	Specification
CPU type	Intel Pentium II Dixon 300/333/366 MHz processor with 256KB L2 on-die Cache
CPU package	BGA package
CPU core voltage	Pentium II 300/333 MHz with core voltage 1.60V Pentium II 366 with core voltage 1.70V
CPU I/O voltage	Pentium II 300/333 with I/O voltage 1.60V Pentium II 366 with I/O voltage 1.70V

BIOS

Item	Specification
BIOS vendor	Acer
BIOS Version	V 3.0
BIOS ROM type	Flash ROM
BIOS ROM size	256KB
BIOS package	32-pin PLCC
Supports protocol	ACPI 1.0a, APM 1.2, PCCard 95, SM BIOS 2.1, ECP/IEEE 1284, IrDA, PCI 2.1, PnP 1.0a, PS/2 keyboard and mouse, USB, VESA VGA BIOS, DDC-2B, CD-ROM bootable, Windows keyboard Microsoft Simple Boot Flag
BIOS password control	Set by switch, see SW2(switch 6) settings

System Memory

Item	Specification
Memory controller	ALi M1621
Onboard memory size	0MB
DIMM socket number	2 sockets (2 banks)
Supports memory size per socket	32/64/128 MB
Supports maximum memory size	256MB (128MB x 2)
Supports DIMM type	Synchronous DRAM
Supports DIMM Speed	66MHz
Supports DIMM voltage	3.3V
Supports DIMM package	144-pin DIMM
Memory module combinations	You can install memory modules in any combinations as long as they match the above specifications.

DIMM Combinations

Slot 1 (Inside)	Slot 2 (Outside)	Total Memory
32MB	0	32MB
32MB	32MB	64MB
32MB	64MB	96MB
32MB	128MB	160MB
64MB	0	64MB
64MB	32MB	96MB
64MB	64MB	128MB
64MB	128MB	192MB
128MB	0	128MB
128MB	32MB	160MB
128MB	64MB	192MB
128MB	128MB	256MB

Above table lists some system memory configurations. You may combine DIMMs with various capacities to form other combinations.

Note: The shipping specification for DIMM combination is 32 MB in slot 1.

Video Memory

Item	Specification
Fixed or upgradeable	Fixed, built-in video controller
Video memory size	2.5MB

Video

Item	Specification
Chip vendor	Trident
Chip name	CY9525DVD
Chip voltage	3.3 Volts
Supports ZV (Zoomed Video) port	Yes
Graph interface	AGP (Accelerated Graphics Port) bus
Maximum resolution (LCD)	1024x768 (16 bits colors)
Maximum resolution (CRT)	1600x1280 (256 colors)

Video Resolutions Modes

Resolution	Refresh Rate	
	CRT Only	LCD/CRT Simultaneous
640x480x256	85	60
640x480x64K	85	60
640x480x16M	85	60
800x600x256	85	60
800X600X64K	85	60
1024x768x256	60, 75	60

Parallel Port

Item	Specification
Parallel port controller	NS PC97338VJG
Number of parallel ports	1
Location	Rear side
Connector type	25-pin D-type connector, in female type.
Parallel port function control	Enable/Diable by BIOS Setup
Supports ECP	Yes (set by BIOS setup)
Optional ECP DMA channel (in BIOS Setup)	DMA channel 1 and 3
Optional parallel port I/O address (in BIOS Setup)	3BCh, 378h, 278h
Optional parallel port IRQ (in BIOS Setup)	IRQ5, IRQ7

Serial Port

Item	Specification
Serial port controller	NS PC97338VJG
Number of serial ports	1
Supports 16550 UART	Yes
Connector type	9-pin D-type connector, in male type
Location	Rear side
Serial port function control	Enable/disable by BIOS Setup
Optional serial port (in BIOS Setup)	3F8h, 3E8h, 2E8h
Optional serial port IRQ (in BIOS Setup)	IRQ4, IRQ11

IrDA FIR Port

IrDA FIR port controller	NS PC97338VJG
Number of IrDA FIR ports	1
Location	Rear side
IrDA FIR port function control	Enable/disable by BIOS Setup
Optional IrDA FIR port (in BIOS Setup)	2F8h, 3F8h, 3E8h, 2E8h
Optional IrDA FIR port IRQ (in BIOS Setup)	IRQ3, IRQ4, IRQ10, IRQ11
Optional IrDA FIR port DRQ (in BIOS Setup)	DRQ3, DRQ1, DRQ0

Audio

Item	Specification
Audio Controller	ESS ES1946 Solo-1E
Audio onboard or optional	Built-in
Mono or Stereo	Stereo
Resolution	16-bit
Compatibility	SB-Pro, Windows Sound System (WSS), MPU-401, OPL3, OPL3-SA3 Microsoft PC97/PC98/PC99, WHQL audio requirement
Mixed sound source	Voice, Synthesizer, Line-in, Microphone, CD
Voice channel	8-/16-bit, mono/stereo
Sampling rate	44.1 KHz
Internal microphone	No
Internal speaker / Quantity	Yes / 1 piece
Supports PnP DMA channel	DMA channel 0 DMA channel 1
Supports PnP IRQ	IRQ3, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11

PCMCIA

Item	Specification
PCMCIA controller	O2 OZ6812
Supports card type	Type-II
Number of slots	One type-II
Access location	Right side
Supports ZV (Zoomed Video) port	Yes
Supports 32 bit CardBus	Yes (IRQ9)

Modem

Item	Specification
Chipset	Ambit J07.107.C.00
Fax modem data baud rate (bps)	14.4K
Data modem data baud rate (bps)	56K
Supports modem protocol	V.90 data modem 56K, V.90 fax modem 14.4K and digital line protection operation
Modem connector type	RJ11
Modem connector location	Rear side

Keyboard

Item	Specification
Keyboard controller	Mitsubishi M38867
Keyboard vendor & model name	JME K9811
Total number of keypads	85-/89-key
Windows 95 keys	Yes
Internal & external keyboard work simultaneously	Yes

Hard Disk Drive

Item	Specification	
Vendor & Model Name	IBM DBCA 206480	IBM DBCA 204860
Drive Format		
Capacity (MB)	6490	4860
Bytes per sector	512	512
Logical heads	15	15
Logical sectors	63	63
Drive Format		
Logical cylinders	13424	10068
Physical read/write heads	4	3
Disks	2	2
Spindle speed (RPM)	4200	4200
Performance Specifications		
Buffer size	512KB	512KB
Interface	IDE(ATA-4)	IDE(ATA-4)
Data transfer rete (disk-buffer, Mbytes/s)	8.6~14.75	8.6~14.7
Data transfer, rate (host~buffer, Mbytes/s)	16.6 (PIO mode 4) 33.3 (Ultra DMA mode 2)	
DC Power Requirements		
Voltage tolerance	5+-5%	5+-5%

Diskette Drive

Item	Specification		
Vendor & model name	TEAC FD-05HG		
Floppy Disk Specifications			
Media recognition	2DD (720KB)	2HD (1.2MB, 3-mode)	2HD (1.44MB)
Sectors / track	9	15	18
Tracks	80	80	80
Data transfer rate (Kbit/s)	250	500	500
Rotational speed (RPM)	300	360	300
Read/write heads	2		

Diskette Drive

Item	Specification
Encoding method	MFM
Power Requirement	
Input Voltage (V)	+5V +-10%

CD-ROM

Item	Specification
Vendor & Model Name	TEAC CD-224E-A25
Performance Specification	
Transfer rate (KB/sec)	1,545KB/sec ~ 3,600KB/sec. (FULL - CAV)
Access time (typ.)	130 mS
Rotation speed	5136 rpm (typ.)
Buffer memory	128 KB
Interface	ATAPI
Applicable disc format	CD-DA, CD-ROM (Mode-1, Mode-2), CD-ROM XA MODE-2 (FORM-1, FORM-2), Multi-Session Photo CD, CD-I, Video CD, Enhanced CD & CD PLUS Compatible, CD-R/W
Loading mechanism	Drawer with soft eject and emergency eject hole
Power Requirement	
Input Voltage	5 V

Battery Pack

Item	Specification
Vendor & model name	Panasonic CGP345010
Battery Type	Li-ion
Pack capacity	2800 mAH
Cell voltage	3.6V/cell
Number of battery call	6
Package configuration	3 in serial, 2 serials in parallel
Package voltage	10.8 V

LCD Inverter

Item	Specification				
Vendor & model name	Ambit T62.123.C.00				
Input voltage (V)	7.3 (min.)	-			22 (max.)
Input current (mA)	-	-			900 (max.)
Output voltage (Vrms, no load)	-	565 (typ.)			-
Output voltage frequency (kHz)	40 (min.)	-			65 (max.)
Output Current/ Lamp	Iout(Min)	0.7mA	1.0mA	1.3mA	Vadj=0V
	Iout(Max)	5.4mA	6.0mA	606mA	Vadj=3.2V

Note: DC-AC inverter is used to generate very high AC voltage, then support to LCD CCFT backlight user, and is also responsible for the control of LCD brightness. Avoid touching the DC-AC inverter area while the system unit is turned on.

Note: There is an EEPROM in the inverter, which stores it's supported LCD type and ID code. If you replace a new inverter or replace the LCD with one of a different brand, use Inverter ID utility to update the ID information.

LCD

Item	Specifications	
Vendor & model name	12.1" Sharp LQ121S1DH01	Torisan TM121SV-02L04
Mechanical Specifications		
LCD display area (diagonal, inch)	12.1	12.1
Display technology	TFT	TFT
Resolution	SVGA (800x600)	SVGA (800x600)
Supports colors	262,144 colors	262,144 colors
Optical Specification		
Brightness control	keyboard hotkey	keyboard hotkey
Contrast control	keyboard hotkey	keyboard hotkey
Electrical Specification		
Supply voltage for LCD display (V)	3.3 (typ.)	3.3 (typ.)
Supply voltage for LCD backlight (Vrms)	650 (typ.)	630(typ.)

Power Adapter

Item		Specification
Vendor & model name	Lite-On PA-1460-19AC Rev. 03.	Delta ADP-45GB Rev. E5
Input Requirements		
Maximum input current (A, @90Vac, full load)	1.5A@90Vac 0.75A@180Vac	1.5 A
Nominal frequency (Hz)	47 - 63	47 - 63
Frequency variation range (Hz)	47 - 63	47 - 63
Nominal voltages (Vrms)	90 - 264	90 - 264
Inrush current	The maximum inrush current will be less than 50A and 100A when the adapter is connected to 115Vac(60Hz) and 230Vac(50Hz) respectively.	The maximum inrush current will be less than 50A and 100A when the adapter is connected to 115Vac(60Hz) and 230Vac(50Hz) respectively.
Efficiency	It should provide an efficiency of 83% minimum, when measured at maximum load under 115V(60Hz).	It should provide an efficiency of 83% minimum, when measured at maximum load under 115V(60Hz).
Output Ratings (CV mode)		
DC output voltage	+19.0V~20.5V	+19.0V~20.5V
Noise + Ripple	300mvp-pmax (20Mhz bandwidth)	300mvp-pmax (20Mhz bandwidth)
Load	0 A (min.) 2.4 A (max.)	0 A (min.) 2.4 A (max.)
Output Ratings (CC mode)		
DC output voltage	+12V ~ +19V	+12V ~ +19V
Constant output	2.75 ± 0.2 A	2.75 ± 0.2 A
Dynamic Output Characteristics		
Turn-on delay time	2 sec. (@115Vac)	2 sec. (@115Vac)
Hold up time	4 ms min. (@115 Vac input, full load)	4 ms min. (@115 Vac input, full load)
Over Voltage Protection (OVP)	26 V	26 V
Short circuit protection	Output can be shorted without damage	Output can be shorted without damage

Power Adapter

Item		Specification
Electrostatic discharge (ESD)	15kV (at air discharge) 8kV (at contact discharge)	15kV (at air discharge) 8kV (at contact discharge)
Dielectric Withstand Voltage		
Primary to secondary	3000 Vac (or 4242 Vdc), 10 mA for 1 second	3000 Vac (or 4242 Vdc), 10 mA for 1 second
Leakage current	0.25 mA max. (@ 254 Vac, 60Hz)	0.25 mA max. (@ 254 Vac, 60Hz)
Regulatory Requirements	Internal filter meets: 1. FCC class B requirements. (USA) 2. VDE 243/1991 class B requirements. (German) 3. CISPR 22 Class B requirements. (Scandinavia) 4. VCCI class II requirements. (Japan)	Internal filter meets: 1. FCC class B requirements. (USA) 2. VDE 243/1991 class B requirements. (German) 3. CISPR 22 Class B requirements. (Scandinavia) 4. VCCI class II requirements. (Japan)

Power Management

This computer has a built-in power management unit that monitors system activity. System activity refers to any activity involving one or more of the following devices: keyboard, mouse, floppy drive, hard disk, peripherals connected to the serial and parallel ports, and video memory. If no activity is detected for a period of time (called an inactivity time-out), the computer stops some or all of these devices in order to conserve energy.

This computer employs a power management scheme that supports APM (Advanced Power Management) or ACPI (Advanced Configuration and Power Interface) which allows for maximum power conservation and maximum performance at the same time.

If your computer is set for APM, you can set time-out values for your computer's devices before power-saving methods are applied to these devices. If your computer is set for ACPI, Windows handles all power-saving chores for your computer.

Note: Power management (APM or ACPI) greatly prolongs your battery life. See "Advanced Power Management" on page 41 and "Advanced Configuration and Power Interface" on page 41 for more information.

Power Management Modes

Display Standby Mode

Screen activity is determined by the keyboard, the built-in touchpad, and an external PS/2 pointing device. If these devices are idle for the period specified by the Turn Off Display value, the display shuts off until you press a key or move the touchpad or external mouse.

"Automatic Dim" Feature

The computer has a unique "automatic dim" power-saving feature. When the computer is using AC power and you disconnect the AC adapter from the computer, it automatically dims the LCD backlight to save power. If you reconnect AC power to the computer, it automatically adjusts the LCD backlight to a brighter level.

Hard Disk Standby Mode

The hard disk enters standby mode when there are no disk read/write operations within the period of time specified by the Turn Off Hard Disk value. In this state, the power supplied to the hard disk is reduced to a minimum. The hard disk returns to normal once the computer accesses it.

Standby Mode

The computer consumes very low power in Standby mode. Data remains intact in the system memory until the battery is drained.

There are six ways to enter Standby mode:

- ☐ Pressing the Standby hot key **Fn-F3**
- ☐ If the waiting time specified by the System Standby value or the operating system elapses without any system activity
- ☐ Closing the display cover
- ☐ When the computer is about to enter Hibernation mode (e.g., during a battery-low condition), but the Hibernation file is invalid or not present
- ☐ When the advanced power button function(s) in the Notebook Manager program is/are set to Standby mode
- ☐ Invoked by the operating system power-saving modes

Note: If the computer beeps but does not enter Standby mode after pressing the Standby hot key, it means the operating system will not allow the computer to enter the power-saving mode.

The following signals indicate that the computer is in Standby mode:

- ☐ The buzzer beeps
- ☐ The Standby indicator lights

Warning: Unstored data is lost when you turn off the computer power in Standby mode or when the battery is drained.

To leave Standby mode and return to normal mode:

- ☐ Press any key
- ☐ Move the active pointing device (internal or external PS/2)
- ☐ Have the resume timer set and let it be matched
- ☐ Open the display cover
- ☐ Experience an incoming PC card modem event

Hibernation Mode

In Hibernation mode, all power shuts off (the computer does not consume any power). The computer saves all system information onto the hard disk before it enters Hibernation mode. Once you turn on the power, the computer restores this information and resumes where you left off upon leaving Hibernation mode.

There is one necessary conditions for the computer to enter Hibernation mode:

- ☐ The Hibernation file created by Sleep Manager must be present and valid.

In this situation, there are five ways to enter Hibernation mode:

- ☐ Pressing the Hibernation hot key **Fn-F4**
- ☐ If the waiting time specified by the System Hibernation value elapses without any system activity
- ☐ If a battery low condition occurs and the Sleep Upon Battery-low parameter in the BIOS Utility is enabled
- ☐ When the advanced power button function(s) in the Notebook Manager program is/are set to Hibernation mode
- ☐ Invoked by the operating system power-saving modes

Note: If the computer beeps but does not enter Hibernation mode after pressing the Hibernation hot key, it means the operating system will not allow the computer to enter the power-saving mode.

To exit Hibernation mode, press the power switch. The computer also resumes from Hibernation mode if the resume timer is set and matched.

Warning: Do not change any devices (such as add memory or swap hard disks) when the computer is in Hibernation mode.

Sleep Mode (ACPI)

If ACPI is installed, all power management functions are handled by the Windows operating system. In this set-up, you do not need to set timeout values for devices before they enter a power saving mode. For more information on ACPI, see “Advanced Configuration and Power Interface” on page 41.

Sleep mode may be one of three computer power saving modes: standby, hibernation or power off. Windows automatically determines which of these modes to enter in.

To enter Sleep mode under ACPI:

- ☐ Press the Sleep hot key **Fn-F4**.
- ☐ Idle times for devices and the computer determined by Windows 98 elapses

Exiting sleep mode depends on which power saving mode the computer is currently in.

Advanced Power Management

This computer supports the APM standard designed to further reduce power consumption. APM is a power-management approach defined jointly by Microsoft and Intel. An increasing number of software packages support APM to take advantage of its power-saving features and allow greater system availability without degrading performance.

For more information about APM under Windows, refer to your Windows user's manual.

Advanced Configuration and Power Interface

Advanced Configuration and Power Interface (ACPI) is a power management specification jointly developed by Intel, Microsoft, and Toshiba. ACPI enables Windows 98 to control the amount of power given to each device attached to the computer. With ACPI, Windows 98 can turn off peripheral devices when they are not in use, thereby saving power.

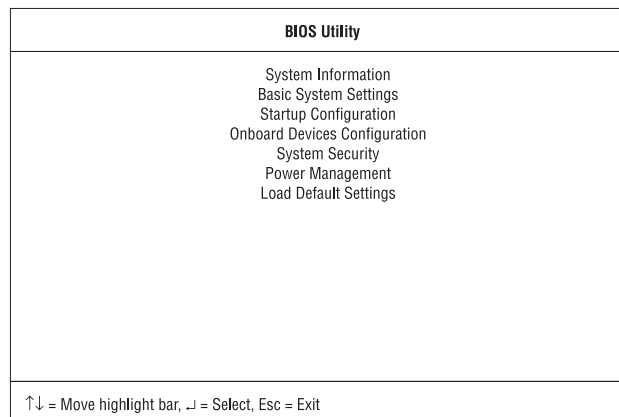
System Utilities

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 a problem arises.

To activate the BIOS Utility, press **F2** during POST (while the TravelMate logo is being displayed).



There are seven menu options: System Information, Basic System Settings, Startup Configuration, Onboard Devices Configuration, System Security, Power Management and Load Default Settings.

To enter a menu, highlight the item using the \updownarrow keys; then press **Enter**.

Within a menu, navigate through the BIOS Utility by following these instructions:

- ☐ Press the cursor up/down keys \updownarrow to move between parameters.
- ☐ Press the cursor left/right keys $\leftarrow \rightarrow$ to change the value of a parameter.

-
- ❑ Press **Esc** while you are in any of the menu options to return to the main menu.

Note: You can change the value of a parameter if it is enclosed in square brackets.

Note: Navigation keys for a particular menu are shown on the bottom of the screen.

At the main menu, press **Esc** to exit the BIOS Utility. If you make any changes, the following dialog box displays:

Settings have been changed.
Do you want to save CMOS settings?

[Yes] [No]

If you would like to keep the changes you made, use the **cursor left/right** keys to select **Yes**; then press **Enter**. Choose **No** if you want to discard the changes you made.

System Information

The System Information sub-menu displays basic and important information about your computer.

System Information		Page 1/1
CPU Type & Speed -----	Pentium II 300 Mhz	
Floppy Disk Drive -----	1.44MB 3.5-inch	
Hard Disk Drive -----	4126 MB	
HDD Serial Number -----	YD2YDLA5782	
System with -----	CD-ROM	
System BIOS Version -----	V3.0 R01-A1a	
VGA BIOS Version -----	V0B.15.3D5C	
Serial Number -----		
Asset Tag Number -----		
Product Name -----		
Manufacturer Name -----		
UUID -----		
PgUp PgDn = Move screen, Esc = Exit		

The following table describes the information in this sub-menu.

Note: “x” may refer to a series of numbers and/or characters or a

combination of both.

Parameter	Description	Format
CPU Type & Speed	Shows the type and speed in Megahertz (MHz) of the Central Processing Unit (CPU)	
Floppy Disk Drive	Shows the floppy disk drive type	
Hard Disk Drive	Shows the size or capacity of the hard disk	
HDD Serial Number	Shows the serial number of the hard disk	
System with	Shows the AcerMedia Drive type, CD-ROM or DVD-ROM	
System BIOS Version	Shows the version number of the BIOS.	Vx Rx (version and release numbers)
VGA BIOS Version	Shows the version number of the VGA display BIOS.	Vx Rx (version and release numbers)
Serial Number	Shows the serial number of the computer.	
Asset Tag Number	Shows the asset number of the computer.	
Product Name	Shows the product name of the computer.	
Manufacturer Name	Shows the manufacturer of the computer.	
UUID	Shows the universally unique identifier of your computer.	

The items in this sub-menu are important and vital information about your computer. If you experience computer problems and need to contact technical support, this data helps our service personnel know more about your computer.

Basic System Settings

The Basic System Settings sub-menu allows you to set the system date and time.

Basic System Settings		Page 1/1
Date -----	[Wed Dec 16, 1998]	
Time -----	[12:46:57]	
<p>↑↓ = Move highlight bar, ←→ = Change setting, F1 = Help</p>		

The following table describes the parameters in this sub-menu.

Parameter	Description	Format
Date	Sets the system date.	DDD MM DD, YYYY (day-of-the-week month day, year)
Time	Sets the system time.	HH:MM:SS (hour:minute:second)

Startup Configuration

The Startup Configuration sub-menu contains parameter values that define how your computer behaves on system startup.

Startup Configuration		Page 1/1
Boot Display -----	[Auto]	
USB Function Support -----	[Disabled]	
Hotkey Beep -----	[Enabled]	
ACPI OS Fast Post -----	[Disabled]	
Quiet Boot -----	[Enabled]	
PnP OS -----	[Enabled]	
Boot Drive Sequence:		
1st. -----	[Floppy Disk]	
2nd. -----	[Hard Disk]	
3rd. -----	[CD-ROM]	
↑↓ = Move highlight bar, ←→ = Change setting, F1 = Help		

The following table describes the parameters in this sub-menu. Settings in **boldface** are the default and suggested parameter settings.

Parameter	Description	Options
Boot Display	Sets the display on boot-up. When set to Auto , the computer automatically determines the display device when the computer starts up. If an external display device (e.g., monitor) is connected, it becomes the boot display; otherwise, the computer LCD is the boot display. When set to Both , the computer outputs to both the computer LCD and an external display device if one is connected.	Auto or Both
USB Function Support	Enables or disables the Universal Serial Bus (USB) port.	Disabled or Enabled
Hotkey Beep	Enables or disables a system beep when a hotkey or key combination is pressed.	Enabled or Disabled
ACPI OS Fast Post	ACPI OS Fast Post allows your computer to boot up and resume from Standby/Hibernation/Sleep mode faster. When enabled, allows the operating system (with ACPI) and BIOS to communicate information about Plug-and-Play resources and previous boot-ups.	Disabled or Enabled

Parameter	Description	Options
Quiet Boot	Hides the POST messages and displays the TravelMate logo startup screen.	Enabled or Disabled
PnP OS	With Simple Boot FLAG disabled, enables or disables Plug-and-Play operating system settings.	Enabled or Disabled
Boot Drive Sequence	Specifies the order in which the computer starts up from. See the section below.	1st: Floppy Disk, 2nd: Hard Disk, 3rd: CD-ROM

Setting the Boot Drive Sequence

The Boot Drive Sequence section lists boot priorities (1st, 2nd and 3rd) for bootable drives in your computer.

For example, the default value (1st:Floppy Disk, 2nd:Hard Disk, and 3rd:CD-ROM) tells the computer to first search for a bootable floppy disk in the floppy drive. If it finds one present, it boots up from that floppy disk. If not, the computer continues by booting up from the hard disk. If it cannot boot up from the hard disk, it continues to search for a bootable CD-ROM in the CD-ROM drive.

To set the boot drive sequence, use the **cursor up/down** keys to select a priority level (1st, 2nd, or 3rd); then use the **cursor left/right** keys to select the device for that priority level.

Onboard Devices Configuration

The parameters in this screen are for advanced users only. You do not need to change the values in this screen because these values are already optimized.

The Onboard Devices Configuration sub-menu assigns resources to basic computer communication hardware.

Onboard Devices Configuration		Page 1/1
Serial Port -----	[Enabled]	
Base Address -----	[3F8h]	
IRQ -----	[4]	
IrDA FIR -----	[Enabled]	
Base Address -----	[2F8h]	
IRQ -----	[3]	
DMA -----	[3]	
Parallel Port -----	[Enabled]	
Base Address -----	[378h]	
IRQ -----	[7]	
Operation Mode -----	[ECP]	
ECP DMA Channel -----	[1]	

↑↓ = Move highlight bar, ←→ = Change setting, F1 = Help

The following table describes the parameters in this sub-menu. Settings in **boldface** are the default and suggested parameter settings.

Parameter	Description	Options
Serial Port	Enables or disables the serial port. When enabled, you can set the base I/O address and interrupt request (IRQ) of the serial port.	Enabled or Disabled 3F8h , 3E8h, 2F8h or 2E8h 4 or 11
IrDA Port	Enables or disables the infrared port. When enabled, you can set the base I/O address, interrupt request (IRQ) and direct memory access (DMA) channel of the infrared port.	Enabled or Disabled 2F8h , 3E8h, 3F8h, or 2E8h 3 or 10

Parameter	Description	Options
Parallel Port	Enables or disables the parallel port. When enabled, you can set the base I/O address, interrupt request (IRQ) and operation mode of the parallel port. If operation mode is set to ECP, the direct memory access (DMA) channel of the parallel port is set to 1.	Enabled or Disabled 378h , 278h, or 3BCh 7 or 5 ECP , Standard, or Bi-directional

System Security

The System Security sub-menu allows you to safeguard your computer and data with passwords and other security measures.

System Security		Page 1/1
Setup Password -----	[None]	
Power-on Password -----	[None]	
Hard Disk Password -----	[None]	
Disk Drive Control		
Floppy Drive Lockout -----	[Disabled]	
↑↓ = Move highlight bar, ←→ = Change setting, F1 = Help		

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

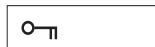
Parameter	Description	Options
Setup Password	When set, this password protects the computer and this BIOS Utility from unauthorized entry. See the following section for instructions on how to set a password.	Disabled or Enabled

Parameter	Description	Options
Power-on Password	When set, this password protects the computer from unauthorized entry. See the following section for instructions on how to set a password. When Password Check on Boot and/or Password Check During Resume is enabled, you need to enter this password to continue operation.	Disabled or Enabled
Hard Disk Password	When set, this password protects the hard disk from unauthorized access. See the following section for instructions on how to set a password.	Disabled or Enabled
Disk Drive Control	When Floppy Drive Lockout is enabled, the floppy drive connection is stopped and disabled.	Disabled or Enabled

Setting a Password

Follow these steps:

- ☐ Use the cursor up/down keys to highlight a Password parameter (Setup or Power-on) and press the **Enter** key. The password box appears:
- ☐ Type a password. The password may consist of up to seven characters (A-Z, a-z, 0-9).



Important: Be very careful when typing your password because the characters do not appear on the screen.¹

- ☐ Press **Enter**. Retype the password to verify your first entry and press **Enter**.

After setting the password, the computer automatically sets the chosen password parameter to Present.

Removing a Password

Should you decide to remove a password, do the following:

- ☐ Use the **cursor up/down** keys to highlight a Password parameter (Setup or Power-on).
- ☐ Use the **cursor left** or **cursor right** key to remove the password.

Changing a Password

To change a password, follow these steps:

- ☐ Remove the current password. See “Removing a Password” on page 51.
- ☐ Set a new password. See “Setting a Password” on page 51.

Power Management

The Power Management screen contains parameters that are related to power-saving and power management.

Power Management		Page 1/1
Advanced Power Management Mode -----	[Enabled]	
Turn Off Display -----	[2] Minute(s)	
Turn Off Hard Disk -----	[3] Minute(s)	
System Standby -----	[5] Minute(s)	
System Hibernation -----	[5] Minute(s)	
System Resume Timer Mode -----	[Disabled]	
System Resume Date -----	[----:--]	
System Resume Time -----	[--:--:--]	
Battery-low Warning Beep -----	[Enabled]	
Sleep Upon Battery-low -----	[Enabled]	
↑↓ = Move highlight bar, ←→ = Change setting, F1 = Help		

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

Note: If your system has ACPI, all power management functions are taken care of by Windows.

Parameter	Description	Options or Format
Advanced Power Management Mode	Enables or disables Advanced Power Management (APM) mode	Disabled , Enabled or time values
Turn Off Display	Sets the time-out value before the display enters power saving mode.	Disabled or time values
Turn Off Hard Disk	Sets the time-out value before the hard disk enters power saving mode.	Disabled or time values
System Standby	Sets the time-out value before the computer enters Standby mode.	Disabled or time values
System Hibernation After Standby	Sets the time-out value before the computer enters Hibernation mode.	Disabled or time values
System Resume Timer Mode	When enabled and the system resume date and time are valid, the computer resumes (wakes up) at the set time and date.	Disabled or Enabled DD/MM/YYYY (day/month/year) HH:MM:SS (hour:minute:second)
Battery-low Warning Beep	Enables or disables warning beeps during a battery-low condition	Enabled or Disabled
Sleep Upon Battery-low	Enables or disables the hibernation function during a battery-low condition When the computer is very low on battery power, the computer will enter hibernation mode if Sleep Manager is installed, active and the hibernation file is valid.	Enabled or Disabled

Load Default Settings

If you want to restore all parameter settings to their default values, select this menu item and press **Enter**. The following dialog box displays.

Do you want to load default settings?	
[Yes]	[No]

If you would like to load default settings for all parameters, use the **cursor left/right** keys to select **Yes**; then press **Enter**. Choose **No** if otherwise.

AFlash Utility

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

- ☐ New versions of system programs
- ☐ New features or options

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

Note: Do not install memory-related drivers (XMS, EMS, DPML) when you use AFlash.

The AFlash functions support all the operations required for system Flash ROM. The functions are divided into four steps as follows.

1. **Load BIOS file to buffer** reads a specified file from a diskette to memory for future program use or for check only. It supports the 64-KB, 128-KB, 192-KB, or 256-KB files.
2. **Save BIOS to disk file** reads BIOS from the current BIOS area and writes to the file specified by the user.
3. **Edit OEM string** reads specified file from a diskette to memory, edits OEM string and writes to a file.
4. **Program flash memory** programs Flash memory according to the data loaded in step 1. This function also shows the BIOS checksum and BIOS type to make sure that the operation is correct.

Executing AFlash

Follow these steps to execute AFlash:

1. Copy the MSG.DAT and AFLASH.EXE files from the system utilities diskette into the subdirectory of your choice.
2. From that subdirectory, type:
aflash **Enter**
3. A help message appears. Press any key to continue.
4. The main menu appears. Use the ; or Ø key to highlight the options. Press **Enter** to select.
5. If you want to save a copy of the current BIOS into a file, select **Save BIOS to Disk File**.
6. Select **Load BIOS File** to load the BIOS file into memory.
7. Select **Program Flash Memory** to erase the current BIOS, and program Flash ROM.

Note: Never turn off the system power while Flash BIOS is programming. This will destroy the BIOS.

8. Reboot the system.

Quick Way to Execute AFlash

When you have already copied the AFlash files into your hard disk, you can simply type the following on the DOS prompt (subdirectory where the files are located) to quickly execute the program.

aflash (file name) **Enter**

The program automatically performs the loading and programming functions, then reboots the system.

If the program cannot find the BIOS file, it returns to the main menu and flashes the following message:

Can't Read This File!!! Press any key to continue.....

In this case, follow the procedures for loading and programming the BIOS file using the main menu.

System Utility Diskette

This utility diskette is for the Acer TravelMate 330 notebook machine. It provides the following functions:

1. Read/write LCD panel ID
2. Set thermal sensor threshold
3. Verify thermal sensor threshold (by testing fan function)
4. Modem Dialing test

To use this diskette, first boot from this diskette, then a "Microsoft Windows 98 Startup Menu" prompt you to choose the testing item. Follow the instructions on screen to proceed.

Important: If this diskette is not bootable, do the following actions before you use it:

1. Do system transfers.
2. Copy HIMEM.SYS to A:\.
3. Copy CHOICE.COM to A:\.
4. Copy EMM386.EXE to A:\.

Set LCD Panel ID

There is an EEPROM in the inverter which stores its supported LCD type ID code. If you replace an LCD with one of a different brand or use a new inverter, the ID information in the inverter EEPROM should be updated.

Follow the steps below to see the LCD Panel ID:

1. Follow the instruction on screen to read current or to set new LCD Panel ID code.

Note: When you set a new LCD Panel ID and the new LCD is not yet enabled (to function), so connect an external CRT to see the program execution process.

Note: Make sure the new ID code you choose corresponds with the LCD brand and type. If you write a wrong ID into inverter, just reboot and re-execute the program and input the correct ID code.

2. Restart computer - the new LCD should work normally.

Note: If LCD cannot display after change ID code, make sure you write the correct ID code, or try reconnecting the LCD FPC cable connectors.

Set Thermal Sensor Threshold

The system is equipped with sensors to protect against system overheating. By setting System and processor thermal thresholds, the system can turn on the cooling fan or shut down automatically when temperatures reach the defined threshold parameters.

Modem Dialing Test

The system is equipped with a 56K Modem. By testing the modem dialing to ensure the modem function.

Note: A phone line is required when executing the Modem Dialing Test, or this test fails.

System Diagnostic Diskette

This diagnostic diskette is for the Acer TravelMate 330 notebook machine. It provides the following functions:

1. PQA System Diagnostics
2. Audio Resource and Speaker Out Test
3. Scroll Button Test
4. Infrared Ray Test

Note: The Infrared Ray setting in BIOS Setup must be set to enable when executing the Infrared Ray Test.

5. USB Register and Connect/Disconnect Test

Note: The USB setting in BIOS Setup must be set to enable and a USB device is required when executing USB Connection/Disconnection Test, or this test fails.

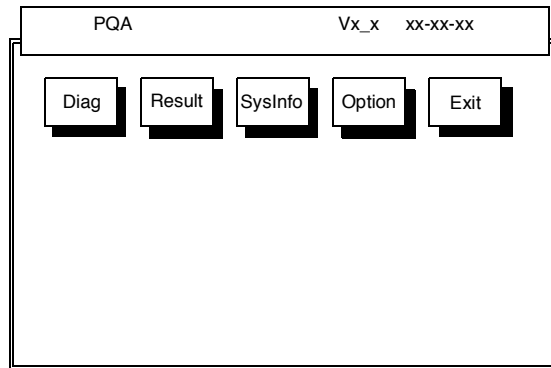
To use this diskette, first boot from this diskette, then a "Microsoft Windows 98 Startup Menu" prompts you to choose the testing item. Follow the instructions on screen to proceed.

Important: If this diskette is not bootable, do the following actions before you use it:

1. Do system transfers.
2. Copy the following files to A:\
HIMEM.SYS
EMM386.EXE
MSCDEX.EXE
CHOICE.COM
RAMDRIVE.SYS

Note: When executing a parallel or serial port test in System Test item, a loopback tool is needed. This loopback is Acer proprietary design. You may reach the computerhwdocor@acer.com.tw for ordering information.

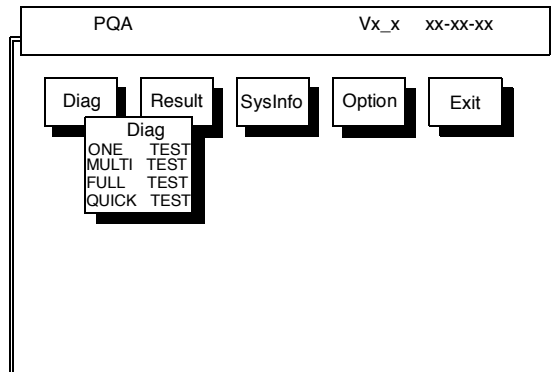
Running PQA Diagnostics Program.



Press \uparrow to move around the main menu. Press Enter to enable the selected option. The main options are Diag, Result, SysInfo, Option and Exit.

The Diag option lets you select testing items and times.

The following screen appears when you select Diag from the main menu.



One Test performs a single test and Manual checks the selected test items in sequence.

Multi Test performs multiple tests of the selected items and check the select test items in sequence.

Full Test performs all test items detail for your system.

Quick Test performs all test items quickly for your system.

Note: PCMCIA Diagnostic Supports Manual test only. Do not select PCMCIA Diagnostic in Auto Test.

The screen below appears if you select Multi Test.

PQA Vx_x xx-xx-xx

Diag Result SysInfo Option Exit

Diag
ONE TEST
MULTI TEST
FULL TEST
QUICK TEST

TEST COUNT VALUE (1...9999) 1

Specify the desired number of tests and press **Enter**.

After you specify the number of tests to perform, the screen shows a list of test items (see below).

PQA Vx_x xx-xx-xx

Diag Result SysInfo Option Exit

Diag
Test Items
[] System Board
[] Memory
[] Keyboard
[] Video
[] Parallel Port
[] Serial Port
[] Diskette Drive
[] Hard Disk
[] CD-ROM
[] Coprocessor
[] Pointing Dev.
[] Cache

SPACE: mark/unmark selecting item
ESC : return to upper menu
F2 : test the marked item(s)
ENTER: open subitem's menu
Test Times = 1

Move the highlight bar from one item to another. Press Space to enable or disable the item. Press **Enter** to view the available options of each selected item. Press **Esc** to close the submenu.

The right corner screen information gives you the available function keys and the specified test number.

- ☐ Space: Enables/disables the item
- ☐ ESC: Exits the program
- ☐ F1: Help
- ☐ F2: Tests the selected item(s)

-
- ☐ Enter: Opens the available options
 - ☐ Test Times: Indicates the number of tests to perform.
- Note:** The F1 and F2 keys function only after you finish configuring the Test option.

Diagnostic Program Error Code and Messages

Error Code	Message	FRU/Action in Sequence
16XXX	Backup battery error	Backup battery
01XXX	CPU or main board error	Reload BIOS default setting. System board
02XXX	Memory error	DIMM System board
03XXX	Keyboard error	Reset Keyboard Keyboard System board
04XXX	Video error	System board
05XXX	Parallel Port error	System board
06XXX	Serial port or main board error	System board
07XXX	Diskette drive error	Diskette drive System board
08XXX	Hard disk error	Reload BIOS default setting Hard disk System board
09XXX	CD-ROM error	Reset CD-ROM cable CD-ROM drive System board
10XXX	Coprocessor error	System board
11XXX	Pointing device error	Reset Keyboard Keyboard System board
12XXX	Cache test error	System board

Removal 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
- ☐ Flat-bladed screwdriver
- ☐ Phillips screwdriver
- ☐ Tweezers
- ☐ Flat-bladed screwdriver or plastic stick

Note: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

General Information

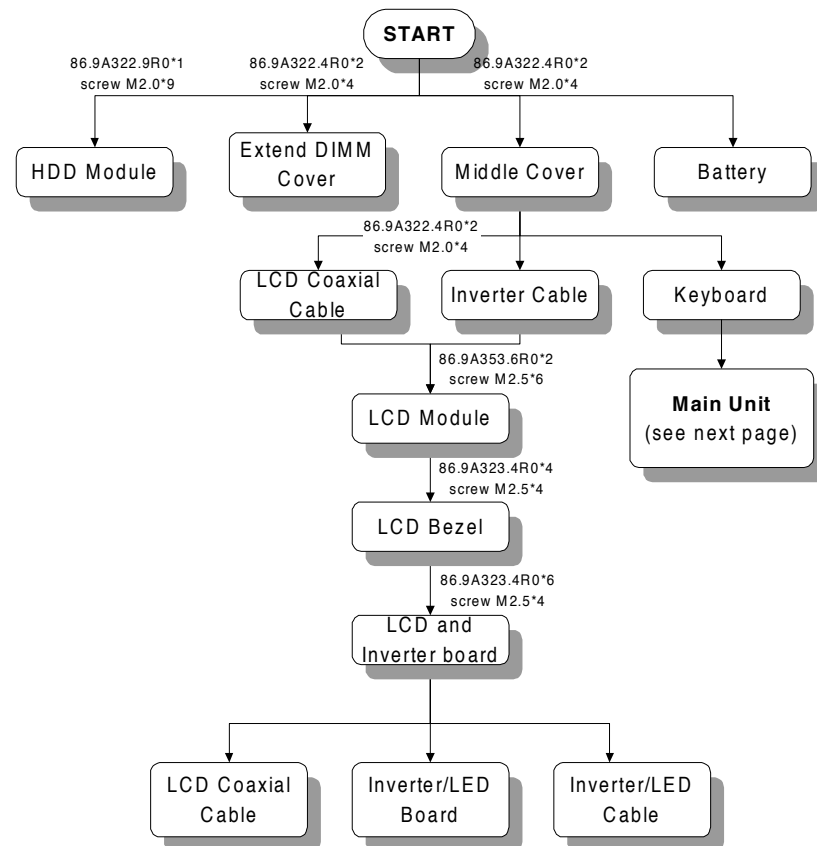
Before You Begin

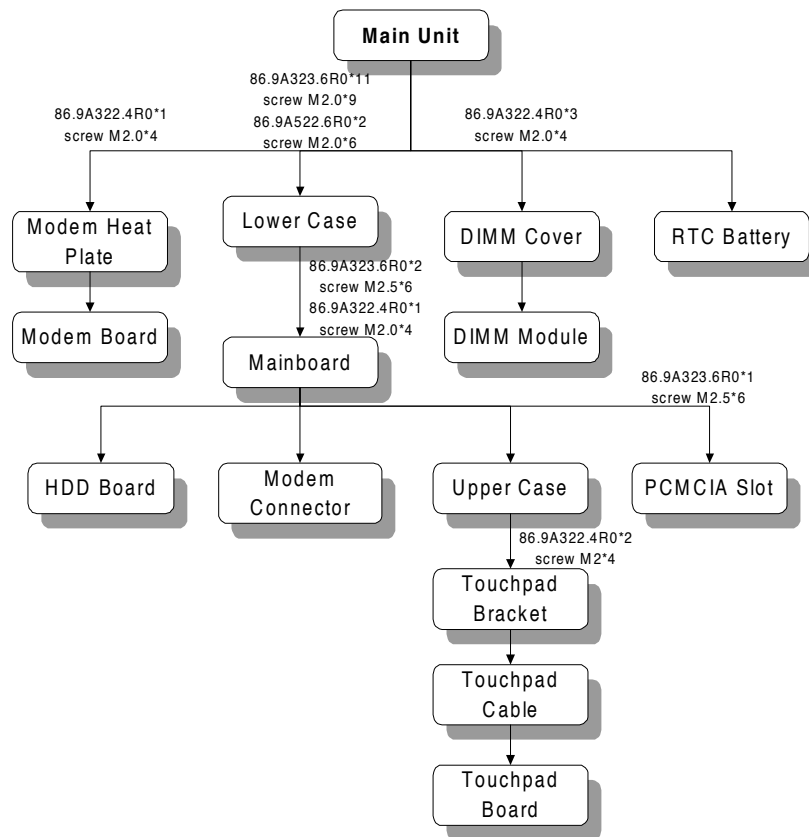
Before proceeding with the disassembly procedure, make sure that you do the following:

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

Disassembly Procedure Flowchart

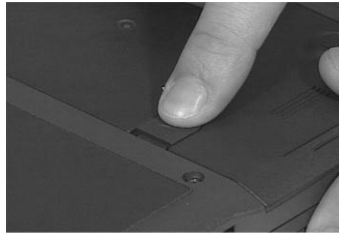
The flowchart on the succeeding page gives you a graphic representation on the entire disassembly sequence and instructs you on the components that need to be removed during servicing. For example, if you want to remove the system board, you must first remove the keyboard, then disassemble the inside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



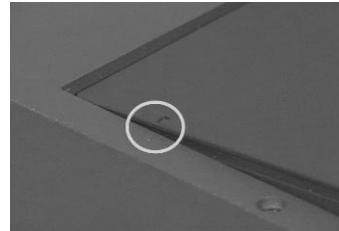


Removing the Battery Pack

1. Push the battery release button inward.
2. Slide the battery pack out from the main unit.



3. To replace the battery pack into the main unit, be sure that the triangular point in the battery pack matches with the point in the lower case.



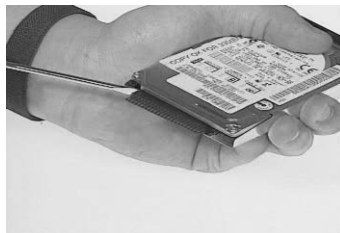
Removing the Hard Disk Drive

1. Remove the screw of the hard disk module.
2. Slide the hard disk module out from its bay.



Disassembling the Hard Disk Drive

1. Gently, detach the connector from the hard disk module.



2. Remove the two screws on both sides of the hard disk module.
3. Remove the hard disk plate from the hard disk module.



-
4. Slide the hard disk out from the hard disk drive bezel.
 5. This completes the disassembly procedure of the hard disk drive.



Disassembling the Middle Cover

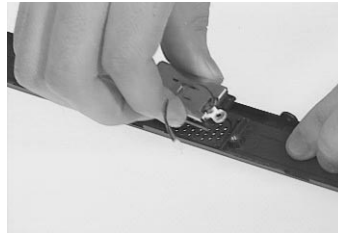
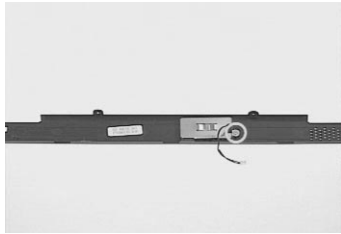
1. To remove the middle cover, first remove the two screws at the back of the main unit.
2. Use a flatbladed screwdriver to lift up the middle cover from the lower case.



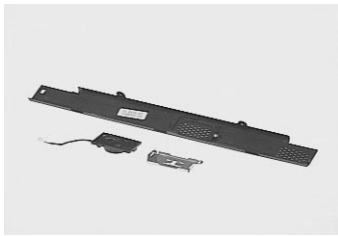
3. Disconnect the speaker cable from the system board.
4. Lift the middle cover away.



-
5. Remove the screw of the speaker from the middle cover.
 6. Remove the speaker plate with speaker from the middle cover.

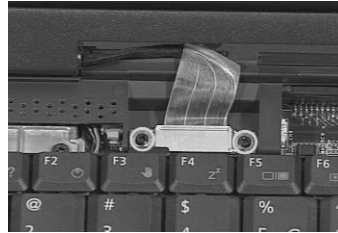


7. Separate the speaker plate from the speaker.



Removing the LCD Module

1. Disconnect the inverter/LED board cable from the system board.
2. Remove the two screws from the LCD coaxial cable.



3. Remove the LCD coaxial cable.
4. Remove the two screws on the base of the unit.

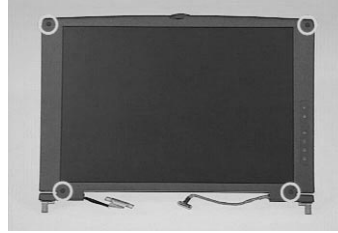
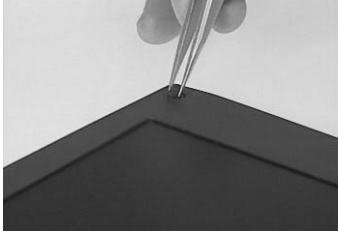


5. Gently, detach the LCD module from the main unit.



Disassembling the LCD Module

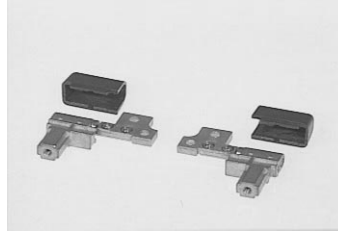
1. Remove the four cushions from the corners of the LCD bezel.
2. Remove the four screws from the LCD bezel.



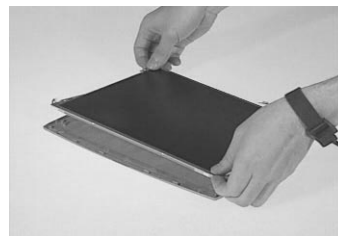
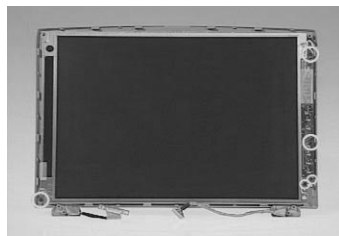
3. Snap off the LCD bezel.
4. Remove the two screws from the hinges, then remove the hinges from the LCD bezel.



-
5. Detach the hinge caps from the hinge.



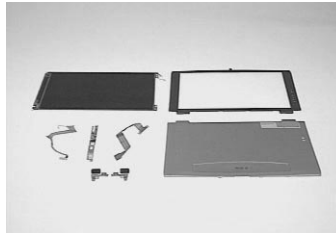
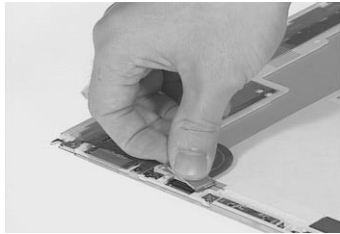
6. Remove the five screws from the LCD and the inverter/LED board.
7. Remove the LCD and inverter/LED board from the LCD panel.



8. Disconnect the LCD power cable from the inverter/LED board.
9. Disconnect the inverter/LED cable from the inverter/LED board.



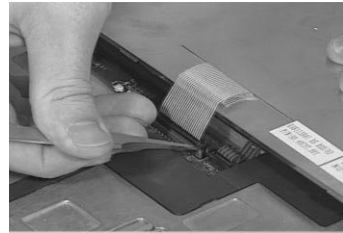
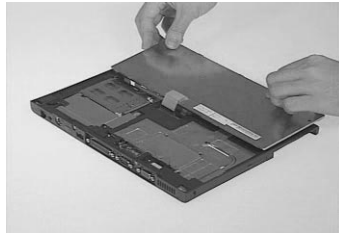
-
10. Disconnect the LCD coaxial cable from the LCD.
 11. This completes the disassembly procedure of the LCD module.



Disassembling the Main Unit

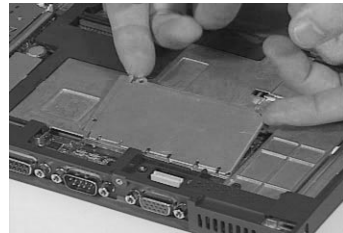
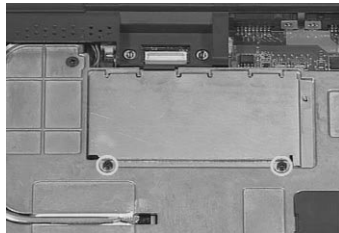
Removing the Keyboard

1. Lift the keyboard up, turn it over to expose the keyboard connector.
2. Disconnect the keyboard connector carefully.

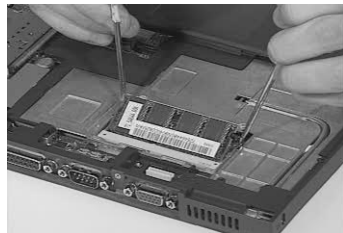
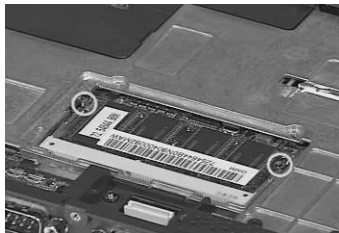


Removing the DIMM

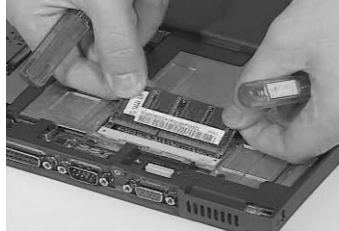
1. Remove the two screws of the DIMM cover.
2. Remove the DIMM cover from the main unit.



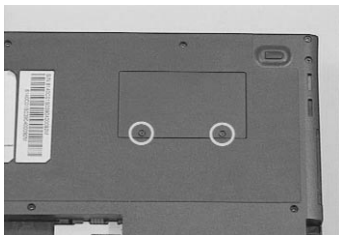
3. Use a flatbladed screw driver to push out the latches on both sides of the DIMM socket.



-
4. Gently, remove the DIMM module.



5. To add extended memory to the main unit, first remove the two screws from the DIMM cover.
6. Lift the DIMM cover out.

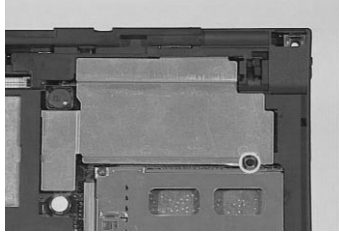


7. Insert the DIMM module into the socket.

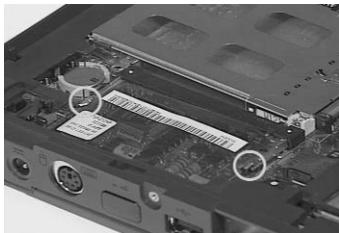


Removing the MODEM Board

1. Remove the screw from the modem heat plate.
2. Remove the modem heat plate from the main unit.



3. Use two flat bladed screwdrivers to push out the latches on both sides of the modem socket.
4. Gently, remove the modem module.

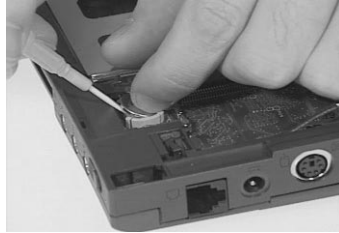


5. Disconnect the modem connector cable from the modem board.

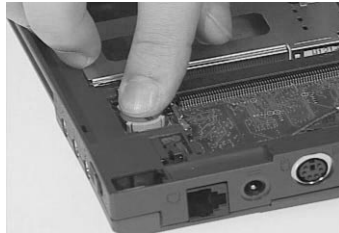


Removing the RTC Battery

1. Use a flat bladed screw driver to remove the RTC battery from its socket.

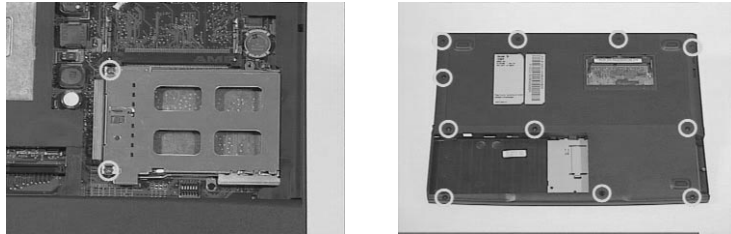


Note: To replace the RTC battery, press the RTC battery into the socket.



Removing the Lower Case

1. To remove the lower case, remove the thirteen screws as shown here.

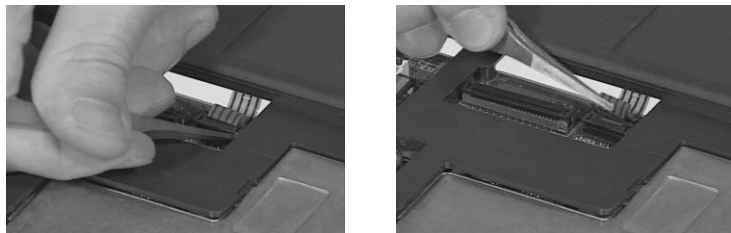


2. Remove the lower case from the main unit.

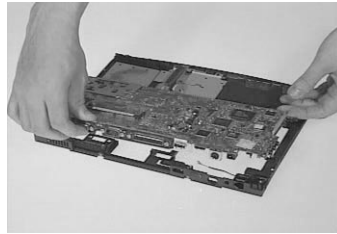
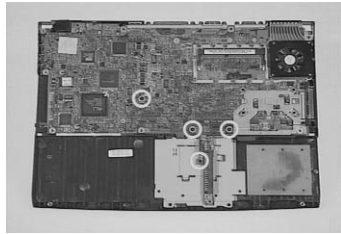


Removing the System Board

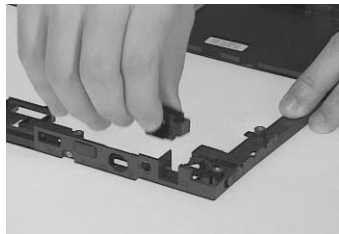
1. Disconnect the touchpad cable from the system board.
2. Gently, remove the touchpad cable.



-
3. Remove the four screws of the system board.
 4. Remove the system board from the uppercase.

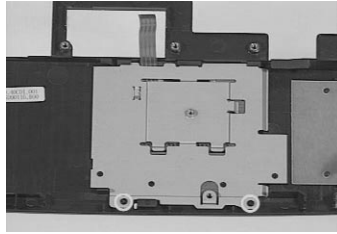


5. Remove the modem connector from the upper case.

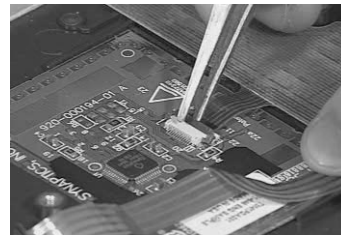
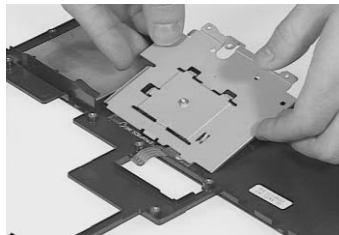


Removing the Touchpad

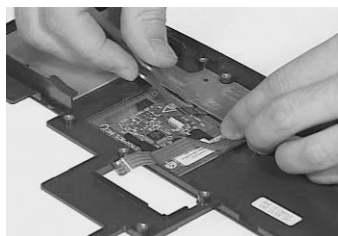
1. Remove the two screws from the touchpad bracket.



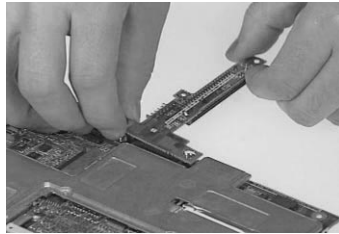
2. Remove the touchpad bracket from the uppercase.
3. Disconnect the touchpad cable from the touchpad board.



4. Remove the touchpad cable from the uppercase.
5. Remove the touchpad board from the uppercase.

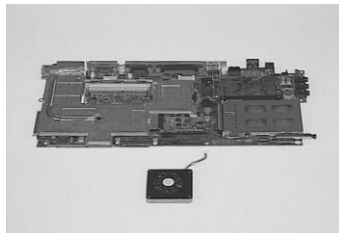
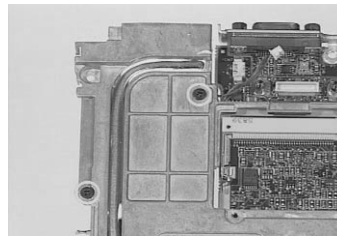
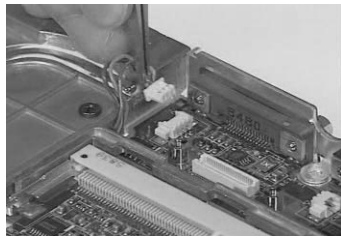


-
6. Disconnect the hard drive/battery connection board from the system board.



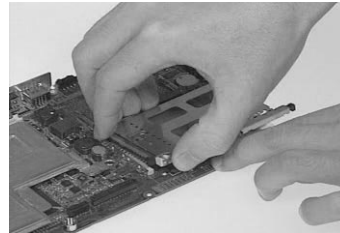
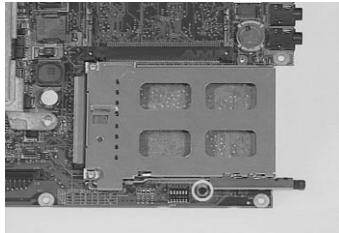
Removing the Fan

1. Disconnect the fan cable from the system board.
2. Remove the two screws, then remove the fan from the system board.

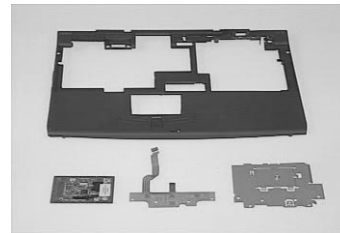
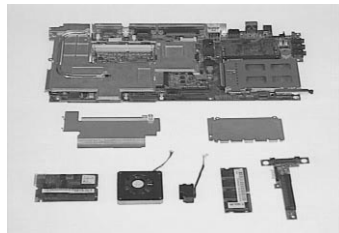


Removing the PCMCIA Slot

1. Remove the screw of the PCMCIA slot.
2. Remove the PCMCIA slot from the system board.



3. This completes the disassembly procedure of the main unit.



Troubleshooting

Use the following procedure as a guide for computer problems.

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

1. Obtain the failing symptoms in as much detail as possible.
2. Verify the symptoms by attempting to re-create the failure by running the diagnostic test or by repeating the same operation.
3. Use the following table with the verified symptom to determine which page to go to.

Symptoms (Verified)	Go To
Power failure. (The power indicator does not go on or stay on.)	"Power System Check" on page 88.
POST does not complete. No beep or error codes are indicated.	"Error Symptom-to-FRU Index" on page 48. "Undetermined Problems" on page 56
POST detects an error and displayed messages on screen.	"Error Messages List" on page 90
The diagnostic test detected an error and displayed a FRU code.	"Running PQA Diagnostics Program." on page 60
Other symptoms (i.e. LCD display problems or others).	"Error Symptom-to-FRU Index" on page 48
Symptoms cannot be re-created (intermittent problems).	Use the customer-reported symptoms and go to "Error Symptom-to-FRU Index" on page 48 "Intermittent Problems" on page 56 "Undetermined Problems" on page 56

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. See "Running PQA Diagnostics Program." on page 60 for details.

1. Boot from the diagnostics diskette and start the PQA program (see "Running PQA Diagnostics Program." on page 60).
2. Go to the diagnostic Diskette Drive in the test items.
3. Press F2 in the test items.
4. 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/CD-ROM module.
2. Replace the external diskette drive/CD-ROM module.
3. Replace the system 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 PQA program (refer to "Running PQA Diagnostics Program").
2. Go to the diagnostic CD-ROM in the test items.
3. Press F2 in the test items.
4. 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 system 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. See “Running PQA Diagnostics Program.” on page 60 for details.

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 system 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 PQA program (please refer to “Running PQA Diagnostics Program”).
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:

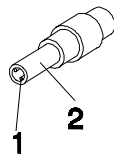
1. Remove the battery pack.
2. Connect the power adapter and check that power is supplied.
3. Disconnect the power adapter and install the charged battery pack; then check that power is supplied by the battery pack.

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

- ☐ “Check the Power Adapter” on page 88
- ☐ “Check the Battery Pack” on page 88

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

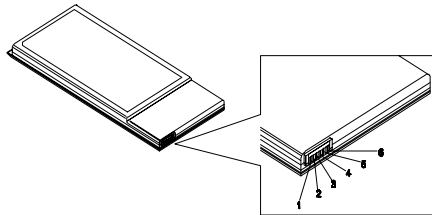
1. If the voltage is not correct, replace the power adapter.
 2. If the voltage is within the range, do the following:
 - ☐ Replace the System board.
 - ☐ If the problem is not corrected, see “Undetermined Problems” on page 56.
 - ☐ If the voltage is not correct, go to the next step.
- Note:** An audible 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 88.

Check the Battery Pack

To check the battery pack, do the following:

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 7.2 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.

Error Symptom-to-FRU Index

The symptom-to-FRU index lists the symptoms and errors 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 56.

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

Error Messages List

Error Messages	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 45 .
Keyboard error	See “Keyboard or Auxiliary Input Device Check” on page 45.
Keyboard Controller Failed	See “Keyboard or Auxiliary Input Device Check” on page 45.
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

Error Messages List

Error Messages	Action in Sequence
Extended RAM Failed at offset: nnnn	DIMM System board
System battery is dead - Replace and run Setup	Replace RTC battery and Run BIOS Setup Utility to reconfigure system time, then reboot system.
System CMOS checksum bad - Default configuration used	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system.
System timer error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board
Real time clock error	RTC battery Run BIOS Setup Utility to reconfigure system time, then reboot system. System board
Previous boot incomplete - Default configuration used	Run "Load Default Settings" in BIOS Setup Utility. RTC battery System board
Memory size found by POST differed from CMOS	Run "Load Default Settings" in BIOS Setup Utility. DIMM System board
Diskette drive A error	Check the drive is defined with the proper diskette type in BIOS Setup Utility See "External Diskette Drive Check" on page 86.
Incorrect Drive A type - run SETUP	Check the drive is defined with the proper diskette type in BIOS Setup Utility See "External Diskette Drive Check" on page 86.
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

Error Messages List

Error Messages	Action in Sequence
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

No-Beep Symptoms

Symptom / Error	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 88. 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 88. Reconnect the LCD connector Hard disk drive LCD inverter ID LCD cable LCD Inverter LCD System board

No-Beep Symptoms

Symptom / Error	Action in Sequence
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

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 88. 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 88. 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 88. 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 88. 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 39. 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 "Standby Mode" on page 39. LCD cover switch System board
The system doesn't resume from hibernation mode.	See "Hibernation Mode" on page 39. Hard disk connection board Hard disk drive System board
The system doesn't resume from standby mode after opening the LCD.	See "Standby Mode" on page 39. 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
System hangs intermittently.	See "Set Thermal Sensor Threshold" on page 58. 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 See "Running PQA Diagnostics Program." on page 60. System board
USB does not work correctly	See "System Diagnostic Diskette" on page 59 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.	See "System Diagnostic Diskette" on page 59. Modem phone jack Modem 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 56.

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 88):

1. Power-off the computer.
2. Visually check them for damage. If any problems are found, replace the FRU.

3. Remove or disconnect all of the following devices:

- ☐ Non-Acer devices
- ☐ Printer, mouse, and other external devices
- ☐ Battery pack
- ☐ Hard disk drive
- ☐ DIMM
- ☐ CD-ROM/Diskette drive Module
- ☐ PC Cards

4. Power-on the computer.

5. Determine if the problem has changed.

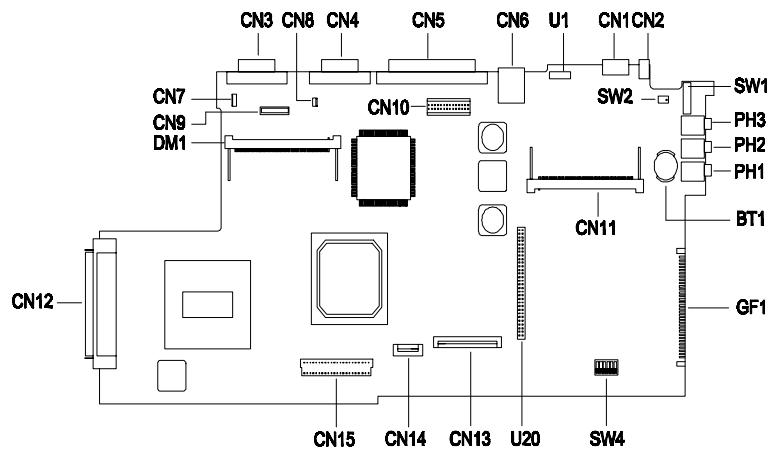
6. If the problem does not recur, reconnect the removed devices one at a time until you find the failing FRU.

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

- ☐ System board
- ☐ LCD assembly

Jumper and Connector Information

Top View

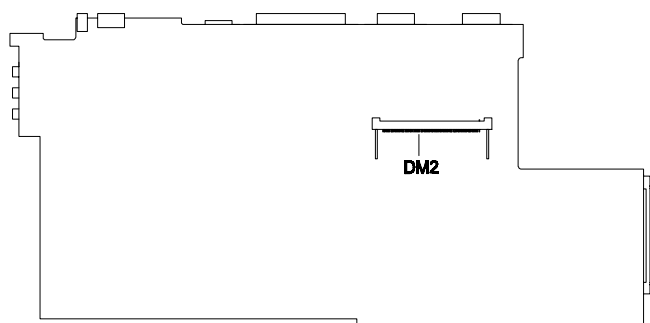


CN1	PS/2 Port	CN14	Touchpad Connector
CN2	AC Adapter Connector	CN15	HDD Board Connector
CN3	Video Port	SW1	Power Switch
CN4	Serial Port	SW2	LCD Cover Switch Connector
CN5	Parallel Port	SW4	See Next Page
CN6	USB Port	PH1	Microphone-in Jack
CN7	FAN Connector	PH2	Line-in Jack
CN8	Speaker	PH3	Line-out Jack
CN9	LCD Connector	DM1	DIMM Socket 1
CN10	LED/Inverter Board Connector	U1	FIR Port
CN11	Modem Card Connector	U20	PCMCIA Socket
CN12	External FDD, CD/DVD-ROM Module Connector	GF1	Golden Finger for Debug Board
CN13	Keyboard Connector	BT1	RTC Battery

SW4 Settings

SW2	Setting
Switch 1, Switch 2, Switch 3	OFF, OFF, OFF: US keyboard OFF, ON, OFF: European keyboard ON, OFF, OFF: Japanese keyboard OFF, OFF, ON: French Keyboard
Switch 4, Switch 5	ON, OFF: OEM BIOS OFF, OFF: Acer BIOS
Switch 6	ON: Bypass password OFF: Check password

Bottom View



DM2

DIMM Socket 2







FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of TravelMate 330. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).



Please note WHEN ORDERING FRU PARTS, that 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 to 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.







FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
LCD				
	NS	LCD ASSEMBLY MODULE (12.1 TFT) SHARP	ASSY LCD MODULE 12.1"TFT TM330	6M.40C01.001
	NS	LCD12.1" TFT SHARP	LCD 12.1"TFT SHARP/ LQ121S1DH01	56.0740C.001
	NS	INVERTER	INVERTER T62.123.C.00 TFT 370P	19.21030.701
	NS	INVERTER CABLE	C.A INV 20/ 15P 175MM TM330	50.40C02.001
	NS	LCD COAXIAL CABLE 12.1" TFT SHARP	C.A LCD COAXIAL TM330	50.40C01.001
			C.A LCD COAXIAL GRN TM330	50.40C05.001
	NS	HINGE PACK	ASSY HINGE PACK TM330	6K.40C01.001
	NS	LCD PANEL ASSEMBLY 12.1" TFT	ASSY LCD PNL 330	60.40C04.001





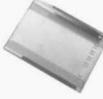
FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
	NS	LCD BAZEL ASSEMBLY 12.1" TFT	ASSY LCE BZL 330	60.40C05.001
	DIMM			
	NS	DIMM 32MB SDRAM (MICRON)	SDIMM 32M MT4LSD T464HG-662B	72.04464.00N
	NS	DIMM 32MB SDRAM (MITSUBISHI)	SDIMM 32M M5M4V64S0T P-8L	72.54644.B0N
	NS	DIMM 32MB SDRAM (SAMSUNG)	DIMM KMM466S424 CT-F10 32M V.C	72.46424.B0E
	NS	DIMM 32MB SDRAM (LG)	SDIMM 32MB GMM2645228 CTG-10K	72.26458.00N
	NS	DIMM 32MB SDRAM (NEC)	SO-DIMM 253409-10 32MB(NEC) NEW	72.25349.B0N
	NS	DIMM 64MB SDRAM (MICRON)	SDIMM 64M MT8LSDT864H G-662B3	72.08864.C0N
	NS	DIMM 64MB SDRAM (MITSUBISHI)	SDIMM M5M4V64S40 BTP-8L	72.54644.C0N






FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
DIMM				
	NS	DIMM 64MB SDRAM (SAMSUNG)	SDIMM 64M KMM466S824 CT2F10 V.C	72.46824.A0N
	NS	DIMM 64MB SDRAM (LG)	SDIMM 64MB GMM2649228 CTG-10K	72.26498.00N
	NS	DIMM 64MB SDRAM (NEC)	SDIMM 64M 4564163G5-A10B-9JF B	72.25359.B0N
	NS	DIMM 128MB SDRAM (SAMSUNG)	SO-DIMM 128M KMM466S1723 T2-F0	72.46172.00N
Storage Device				
	NS	HDD ASSEMBLY 4.3G IBM	ASSY HDD MODULE 4.3G TM330	6M.40C02.001
	NS	HDD 4.3G IBM	HDD 4.3G IBM/ DKLA24320	56.02834.102
	NS	HDD PLATE	ASSY HDD PLT TM330	60.40C15.001
	NS	HDD BAZEL	BZL HDD PC 050 330	41.40C01.001
	NS	HDD ASSEMBLY 4.8G IBM	ASSY HDD MODULE 4.8G TM330	6M.40C02.003






FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
	NS	HDD 4.8G IBM	HDD 4870MB IBM/DBCA- 204860	56.02834.121
	NS	HDD PLATE	ASSY HDD PLT TM330	60.40C15.001
	NS	HDD BAZEL	BZL HDD PC 050 330	41.40C01.001
	NS	HDD ASSEMBLY 6.4G IBM	ASSY HDD MODULE 6.4G TM330	6M.40C02.002
	NS	HDD 6.4G IBM	HDD 6490MB IBM/DBCA- 206480	56.02A02.031
	NS	HDD PLATE	ASSY HDD PLT TM330	60.40C15.001
	NS	HDD BAZEL	BZL HDD PC 050 330	41.40C01.001







FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
PCB				
	8	PCI MODEM BOARD (AMBIT)	MODEM 56K AMBIT/ J07.017.C.00	54.09011.211
	10	HDD BATTERY BOARD	330 HDD BOARD	55.40C03.001
	11	TOUCH PAD BOARD	TOUCHPAD MULTI-SWITCH SYNAPTIC	56.1740C.001
	9	TM 330 MAINBOARD D-333	330 MAIN BOARD D-333	55.40C01.001
	NS	TM 330 MAINBOARD D-366	330 MAIN BOARD D-366	55.40C01.011
	NS	TM 330 MAINBOARD D-300	330 MAIN BOARD D-300	55.40C01.021
Keyboard				
	23	KEYBOARD (US VERSION)	KB (US) JME/ K9811 TM330	90.40C07.001




FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
Power				
	NS	ADAPTER 45W (DELTA)	ADT 90-270V ADP-45GB UE5 370P	25.10046.151
	NS	ADAPTER 45W (LITE-ON)	ADT 45W PA- 1460-19AC TM330	25.10068.021
	14	BATTERY PACK LI-ON PANASONIC	ASSY BTY PACK CGP-E/ 618AE 330	60.40C07.001
	NS	POWER CORD	CORDSPT2#1 8*2C7A125V 1830MM	27.01618.001
External Module				
	NS	CD- ROM&FDD MODULE	CD ROM/FDD MODUL TEAC/ DF240500	90.40C28.001
	NS	DVD- ROM&FDD MODULE	DVD/FDD MODUL TEAC /DF220500	90.40C28.002
Mechanical Parts				
	13	UPPER CASE	ASSY U CASE 330	60.40C01.001

FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
	12	LOWER CASE	ASSY L CASE 330	60.40C02.001
	1	UPPER DIMM COVER	CVR DIMM U AL 330	34.40C02.001
	NS	LOWER DIMM COVER	CVR DIMM L PL 050330	42.40C05.001
	15	MIDDLE COVER & SPEAKER ASSEMBLY	ASSY MIDDLE CVR TM330	60.40C08.001
	NS	CPU HEATSINK WITH FAN	ASSY CPU HSINK 330	60.40C03.001
	3	MODEM HEAT PLATE	PLT HEAT AL TM330	34.40C11.001

FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
	2	TOUCH PAD BRACKET	HLD TOUCH-PAD METAL TM330	34.40C07.001
Others				
	6	TOUCH PAD FPC CABLE	C.A FPC TOUCH PAD TM330	50.40C03.001
	4	330 LOGO	PLT LOGO (TOOLING) PMMA TM330	40.40C01.001
	NS	HINGE CAP PACK	ASSY HINGE CAP PACK TM330	6K.40C01.002
Screws				
	NS	SCREWS (BLACK)	SCRW WHMS+CBZ M2.5+L4 BLACK	86.9A323.4R0
	18	SCREWS	SCRW WCH FLT M2*L4 B-ZN	86.9A322.4R0
	19	SCREWS (BLACK)	SCRW KAM MS+SBZ M2*L9 BLACK	86.9A322.9R0
	NS	SCREWS (BLACK)	SCRW WH MS+CBZ M2.5+L4 BLACK	86.9A323.4R0

FRU (Field Replaceable Unit) List (P/N: 91.40CXX.XXX)

Picture	No.	Partname	Description	Part No.
	21	SCREWS	SCRW WAFER NYLO M2.5*6L NI	86.9A353.6R0
	22	SCREWS	SCRW KAH MS+CN M2*L6 NI	86.9A522.6R0
	NS	SCREWS	SCRW MACH FL M3*4L NI	86.5A524.4R0
	NS	SCREWS	SCRW MACH PAN M2*4L C- ZN	86.9A522.4R0
	NS	SCREWS	SCRW MACH PAN M2*4L C-ZN	86.9A552.4R0
Miscellaneous				
	5	330 NAME PLATE	PLT NAME (C-NOTE) PC TM330	40.42B01.101
	NS	LCD CUSHION	CSN LCD RUBBER 330	47.40C01.001
	NS	FOOT RUBBER	FOOT RUBBER BUBBER BT	42.43B29.001
	NS	LCD LATCH	LATCH LCD NYLON 050 330	42.40C06.001
	NS	LCD LATCH SPRING	SPRING CATCH STEEL TM330	34.40C13.001
	NS	RTC Battery	IC RTC BQ3285LD SSOP 24P	71.03285.B01

Appendix A

Model Number and Configurations

This appendix provides the BASIC model number and the configuration to TravelMate 330 decided for Acer's "global" product offering. Contact your regional offices or the responsible personnel/channel to provide you with further extension model numbers and configurations.

- ☐ Trade Mark: Acer
- ☐ Brand Name: Acer
- ☐ Product Name: TravelMate 330
- ☐ Description: Notebook Personal Computer

Model Number Definitions

Model No.	LCD	CPU	Memory	HDD	Ext. Module	BTY
330T	12.1" TFT	Pentium II Dixon 300 (BGA on board)	32MB(for U.S. and Taiwan) 64 MB (for other locations)	4.8GB	FDD/24X CD-ROM	Li-Ion
331T	12.1" TFT	Pentium II Dixon 333 (BGA on board)	32MB(for U.S. and Taiwan) 64 MB (for other locations)	4.8GB	FDD/24X CD-ROM	Li-Ion
332T	12.1" TFT	Pentium II Dixon 366 (BGA on board)	64MB	6.4GB	FDD/24X CD-ROM	Li-Ion

Appendix B

Test Compatible Components List

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows 95, Windows 98 and Windows NT 4.0 environments.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the TravelMate 330 Compatibility Test Report released by the Acer Mobile System Testing Department.

Test Compatible PCMCIA, LAN Card

Vendor	Adapter Name	Win 98	Win 95	Win NT
LAN				
3COM	10/100 16bits Fast EtherLink	pass	pass	pass w/ fix
TDK	Ethernet PC card LAN Adapter	pass	pass	pass w/ fix
Xircom	Credit card Ethernet Adpater 10/100	pass	pass	pass w/ fix
3COM	TokenLink III 16/4	pass w/ fix	pass	pass w/ fix
IBM	EtherJet PC Card	pass	pass	pass w/ fix
IBM	Turbo 16/4 TokenRing PC Card	pass w/ fix	pass	pass w/ fix
Multifunction Card				
3COM	10/100 Fast EtherLink LAN+56k	pass	pass	pass w/ fix
DLink	Winconnect 33.6 LAN/ Fax modem Combo	pass w/ fix	pass w/ fix	None
Megahertz	PC Card 33.6 Ethernet-Modem with XJACK	None	pass w/ fix	None
Xircom	Credit Card Ethernet+Modem 33.6	pass w/ fix	pass	pass w/ fix

Vendor	Adapter Name	Win 98	Win 95	Win NT
CardBus				
3COM	Fast EtherLink XL cardbus	pass	pass	pass w/ fix
Intel	EtherExpress PRO/ 100 Mobile Adapter	pass	pass	pass w/ fix
Toshiba	CardBus LAN Card 100BASE-TX	pass	None	None
Xircom	Cardbus Ethernet 10/ 100	pass	pass with fix	pass w/ fix
Other				
Xircom	Pocket Ethernet III	pass w/ fix	pass	pass

Test Compatible PCMCIA, Modem Card

Vendor	Adapter Name	Win 98	Win 95	Win NT
Modem (up to 28.8K)				
LASAT	Credit 288 DK, 144/ 288 FAX-Modem	pass	pass	pass
Modem (up to 33.6K)				
DLink	Winconnect 33.6K Fax modem	pass	pass	pass
IBM	PCMCIA Data/Fax Modem International 33.6/14.4	pass	pass	pass
Modem (up to 56K)				
Pretec	Modem 56K	pass	pass	pass
TDK	K56Kflex Data/Fax modem	pass	pass	None
USR	Megahertz 56K modem	pass	pass	pass
IBM	56K Double Jack modem	pass	pass	pass
ISDN				
IBM	ISDN Internet PC Card	pass	pass	pass

Test Compatible I/O Peripheral Test

Vendor	Adapter Name	Win 98	Win 95	Win NT
Display				
IBM	G72	pass	pass	pass
IBM	9514-B04 TFT monitor	pass	pass	pass
Acer	AcerView 76i	pass	pass	pass
Compaq	color Monitor V70	pass	pass	pass
NEC	20" Color Monitor	pass	pass	pass
Keyboard				
IBM	US English KBD (PS/AT Style)	pass	pass	pass
Acer	101 keyboard	pass	pass	pass
Microsoft	Natural Keyboard	pass	pass	pass
Mouse				
IBM	PS/2 Mini Mouse II	pass	pass	pass
Logitech	PS Style mouse	pass	pass	pass
Microsoft	Serial Mouse	pass	pass	pass
Microsoft	IntelliMouse	pass	pass	pass
Projector				
Acer	Scope7763	None	None	pass
Parallel (Printer)				
IBM	Network Printer 17	pass	pass	pass
HP	LaserJet 6MP	pass	pass	pass

Test Compatible I/O, Storage Adapter

Vendor	Adapter Name	Win 98	Win 95	Win NT
PCMCIA-CD-ROM				
IBM	Portable 20X Speed CD-ROM Drive w/ Sound (JP)	pass	pass w/ fix	pass w/ fix
Panasonic	20X Portable CD-ROM Player	pass	pass w/ fix	pass w/ fix
PCMCIA-SCSI				
Adaptec	SlimSCSI APA-1460AB	pass w/ fix	pass w/ fix	pass w/ fix

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
- ☐ Main manuals
- ☐ Bios updates
- ☐ Software utilities
- ☐ Schematics
- ☐ Spare parts lists
- ☐ Chips
- ☐ TABs (Technical Advisory Bulletin)

The service repair section provides you with downloadable information on:

- ☐ Troubleshooting guides
- ☐ Tooling box information
- ☐ Repair instructions for specific models
- ☐ Basic repair guidelines
- ☐ Debug cards for Acer's latest models

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

Also contained on this website is

- ☐ 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.

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