maintenance & service guide

Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Before You Begin	Product Description	Specifications
Pin Assignments	Battery & Power Management	Troubleshooting
Removal Sequence	Parts Catalog	MSG Index

Welcome to the Maintenance & Service Guide (MSG)

Welcome to the *Maintenance and Service Guide* (MSG) for Compaq Presario 1400 Series Portable Notebooks. This online guide is designed to serve the needs of technicians whose job is to repair Compaq products.

For copyright and trademark information, refer to the *Notice* section of this MSG. To locate the unit's serial number, to see symbol conventions, or to view technician's notes, see the *Preface*. This MSG is updated online as needed.

For comments or questions about the contents of this MSG, contact Compaq. The term Notebook as referred to throughout this MSG is synonymous with the term Computer.

To report a technical problem, contact the Regional Support Center or IM Help Center.

For help with navigating through this guide, refer to Using this Guide.

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Using this Guide

To effectively navigate through this guide, refer to the list of bookmarks at the left of the screen. These bookmarks quickly and easily provide a thorough index of the entire document. These bookmarks remain in full view throughout the *Maintenance and Service Guide* (MSG).

Viewing a Chapter

Click one of the bookmarks or one of the color-coded bubbles on the Welcome page to view a chapter in this MSG.

Expanding & Hiding Topics

Click the **+** to expand or show the contents of a section, or click the **–** to hide the contents.

Opening another Chapter

Return to the Welcome page by clicking the bookmark, **1400 Series Maintenance and Service Guide**, and then select another bookmark or color-coded bubble for a different chapter.

Printing the MSG

For portable (paper) copies of this MSG, print single pages, multiple pages, or the entire guide. In Acrobat Reader for printing options, click **File**, then **Print.**

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Before You Begin

Notice

The information in this guide is subject to change without notice.

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Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies.

Maintenance and Service Guide

Compaq Presario 1400 Series Portable Notebook

First Edition (May 2000)

Compaq Computer Corporation

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Preface

The Maintenance and Service Guide is a troubleshooting guide that can be used as a reference when servicing the Compaq Presario 1400 Series Portable Notebooks.

Compaq Computer Corporation reserves the right to make changes to Compaq Presario 1400 Series Portable Notebooks without notice.

Symbols

The following words and symbols alert you to special messages throughout this guide.

⚠ **WARNING:** Text set off in this manner indicates that failure to follow the directions in the Warning could result in bodily harm or loss of life.

⚠ **CAUTION:** Text set off in this manner indicates that failure to follow the directions in the Caution could result in damage to equipment or loss of data.

Important: Text set off in this manner presents clarifying information or extra or specific instructions.

Note: Text set off in this manner presents commentary or interesting points of information.

Technician Notes

⚠ **WARNING:** Only authorized technicians trained by Compaq should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, the user should not attempt to make repairs at the component level or modifications to any printed circuit board. Improper repairs can create a safety hazard. Any indications of component replacement or printed circuit board modifications may void any otherwise valid warranty.

Serial Number

When requesting information or ordering spare parts, Compaq will need the Notebook's serial number. The Serial Number is located on the underside of the Notebook.

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Locating Additional Information

The following documentation is available to support this product:

- Compaq Presario 1400 Series Portable Notebook documentation set

- *Introducing Windows 98 Guide*

- *Introducing Windows 2000 Guide*

- Servicing Training Guides

- Compaq Service Advisories and Bulletins

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Product Description

Models and Features

XL240-246

Compaq Presario 1400 Series Portable Notebook Models		
	XL240	**XL241**	**XL242**
Display	13.0-inch HPA	13.0-inch HPA	13.0-inch HPA
Processor	Celeron 600 (128) FCPGA	Celeron 600 (128) FCPGA	Celeron 566 (128) FCPGA
Hard Drive	6.0 GB	6.0 GB	6.0 GB
CD or DVD Drive	24X CD	24X CD	24X CD
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB
Modem	56K Mini PCI/NIC combo d/f 1*	56K Mini PCI d/f 1*	56K Mini PCI d/f 2*
Battery	3.2 Li-ion	3.2 Li-ion	3.2 Li-ion
System Memory	64 MB PC100	64 MB PC100	64 MB PC100
TV-Out	Yes	Yes	Yes
	XL244	**XL245**	**XL246**
Display	13.0-inch HPA	13.3-inch TFT	12.1-inch TFT
Processor	Celeron 566 (128) FCPGA	Celeron 566 (128) FCPGA	Celeron 566 (128) FCPGA
Hard Drive	6.0 GB	6.0 GB	5.0 GB
CD or DVD Drive	24X CD	DVD	DVD
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB
Modem	56K Mini PCI/NIC combo d/f 1*	56K Mini PCI/NIC combo d/f 1*	56K Mini PCI d/f 2*
Battery	4.5 NiMH	3.2 Li-ion	3.2 Li-ion
System Memory	64 MB PC100	64 MB PC100	64 MB PC100
TV-Out	No	Yes	Yes

*Modem Legend
 Continued

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XL247-250

Compaq Presario 1400 Series Portable Notebook Models			
	XL247	**XL250**	
Display	13.3-inch TFT	13.3-inch TFT	
Processor	Celeron 600 (128) FCPGA	Celeron 600 (128) FCPGA	
Hard Drive	6.0 GB	6.0 GB	
CD or DVD Drive	CD-RW	DVD	
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	
Modem	56K Mini PCI d/f 2*	56K Mini PCI d/f 2*	
Battery	3.2 Li-ion	3.2 Li-ion	
System Memory	64 MB PC100	64 MB PC100	
TV-Out	Yes	Yes	

* **Modem Legend**
1) 56K Mini PCI d/f 1 = Bear/Grizzly Modem/NIC Combo = NA, CKK, LA
2) 56K Mini PCI d/f 2 = Seminole = EMEA/APD

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XL340-345

Compaq Presario 1400 Series Portable Notebook Models			
	XL340	**XL341**	**XL342**
Display	12.1-inch TFT	13.0-inch HPA	13.3-inch TFT
Processor	Celeron 600 (128) FCPGA	Celeron 633 (128) FCPGA	Celeron 700 (256) FCPGA
Hard Drive	6.0 GB	6.0 GB	10.0 GB
CD or DVD Drive	8X DVD	24X CD	24X CD
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB
Modem	56K Mini PCI d/f 4* iNIC	56K Mini PCI d/f 4* iNIC	56K Mini PCI d/f 5* iNIC
Battery	3.2 Li-ion	3.2 Li-ion	3.2 Li-ion
System Memory	64 MB PC100	64 MB PC100	64 MB PC100
TV-Out	No	No	No
	XL343	**XL344**	**XL345**
Display	13.3-inch TFT	13.3-inch TFT	13.3-inch TFT
Processor	Celeron 600 (128) FCPGA	Celeron 600 (128) FCPGA	Celeron 650 (256) FCPGA
Hard Drive	10.0 GB	10.0 GB	6.0 GB
CD or DVD Drive	24X CD	8X DVD	8X DVD
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB
Modem	56K Mini PCI d/f 1*	56K Mini PCI d/f 1*	56K Mini PCI d/f 4* iNIC
Battery	3.2 Li-ion	3.2 Li-ion	3.2 Li-ion
System Memory	64 MB PC100	64 MB PC100	64 MB PC100
TV-Out	No	No	No

*Modem Legend
 Continued

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XL346-356

Compaq Presario 1400 Series Portable Notebook Models			
	XL346	**XL350**	**XL352**
Display	13.3-inch TFT	13.3-inch TFT	12.1-inch TFT
Processor	Celeron 600 (128) FCPGA	Celeron 700 (256) FCPGA	Celeron 600 (128) FCPGA
Hard Drive	10.0 GB	15.0 GB	6.0 GB
CD or DVD Drive	8X DVD	24X CD	8X DVD
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB
Modem	56K Mini PCI d/f 1*	56K Mini PCI d/f 5* iNIC	56K Mini PCI d/f 2*
Battery	3.2 Li-ion	3.2 Li-ion	3.2 Li-ion
System Memory	64 MB PC100	128 MB PC100	64 MB PC100
TV-Out	No	No	No
	XL355	**XL356**	
Display	13.3-inch TFT	13.3-inch TFT	
Processor	Celeron 667 (128) FCPGA	Celeron 667 (128) FCPGA	
Hard Drive	6.0 GB	6.0 GB	
CD or DVD Drive	8X DVD	CD-RW	
Diskette Drive	3.5-inch Floppy Drive USB	3.5-inch Floppy Drive USB	
Modem	56K Mini PCI d/f 2*	56K Mini PCI d/f 2*	
Battery	3.2 Li-ion	3.2 Li-ion	
System Memory	64 MB PC100	64 MB PC100	
TV-Out	No	No	

* Modem and NIC Card Legend
1. Mini PCI v.90 d/f- 1 = Bear = US, CA, CKK, APD, LA
2. Mini PCI v.90 d/f- 2 = Seminole 1 = CTR21, EMEA
3. Mini PCI v.90 d/f- 3 = Seminole 2 = AUS/NZ
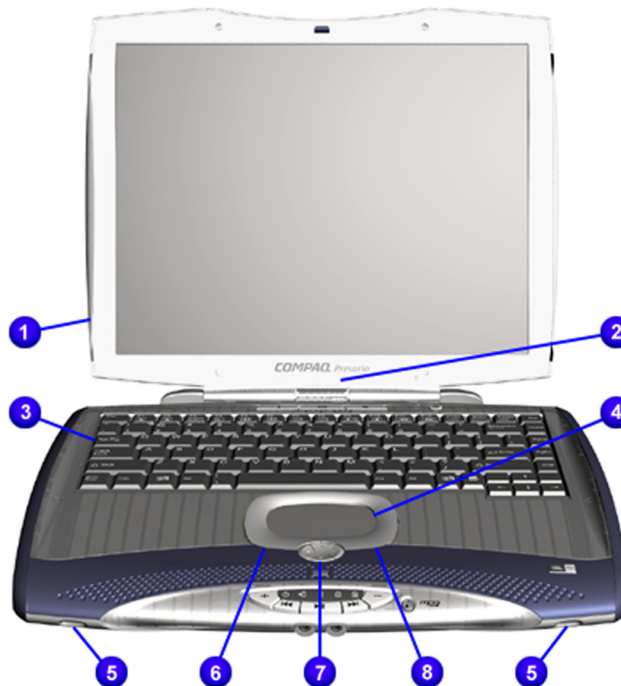**Modem/NIC Combo**
4. Mini PCI v.90 d/f- 1 = Grizzly = US, CA, CKK, LA
5. Mini PCI v.90 d/f- 1 = Yogi = CTR21, EMEA, APD

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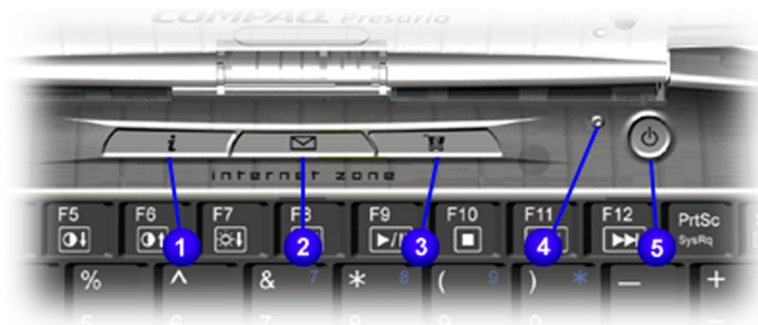
Front of Unit

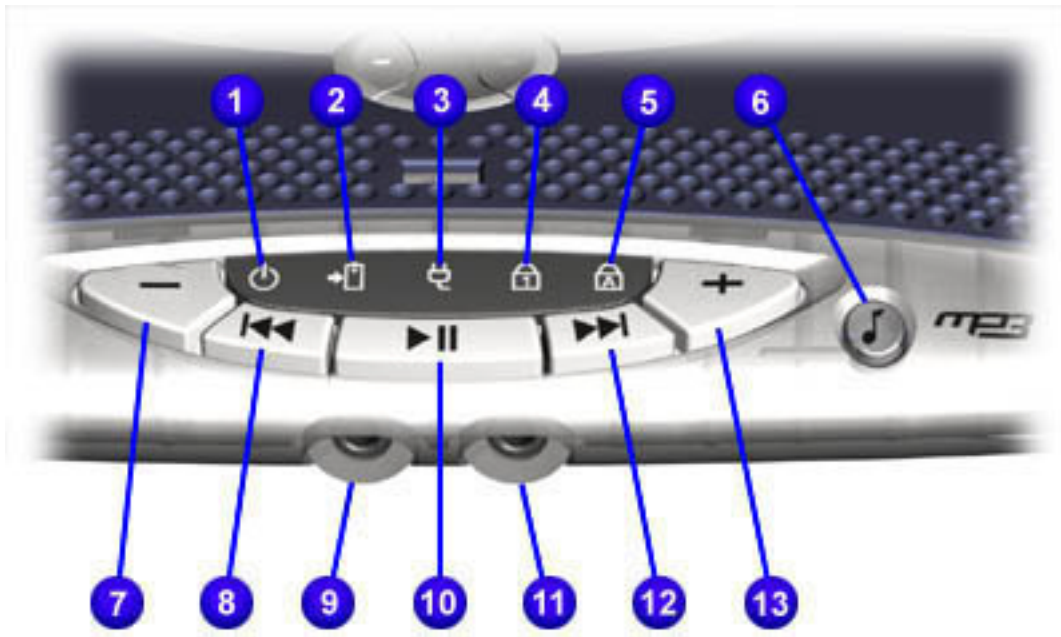| No.	Description
❶	Display
❷	Series Number
❸	Keyboard
❹	TouchPad
❺	Speaker Ports
❻	Left TouchPad Button
❼	Four-Way Internet Scroll Buttons
❽	Right TouchPad Button

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Internet Zone Buttons and Lights

No.	Description
❶	Instant Internet Access Button
❷	Instant E-mail
❸	Retail Central
❹	Lid Switch
❺	Power Button

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Front Bezel Components

No.	Description	No.	Description
❶	Power Light/Sleep Mode Light	❽	Previous Track Button
❷	Battery Charge Light/Low Battery Light	❾	Microphone Connector
❸	AC Adapter Light	❿	Play/Pause Button
❹	Num Lock Light	⓫	Headphone Connector
❺	Caps Lock Light	⓬	Next Track Button
❻	MP3 Digital Audio Button	⓭	Volume Up Button
❼	Volume Down Button		

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Right Side Components
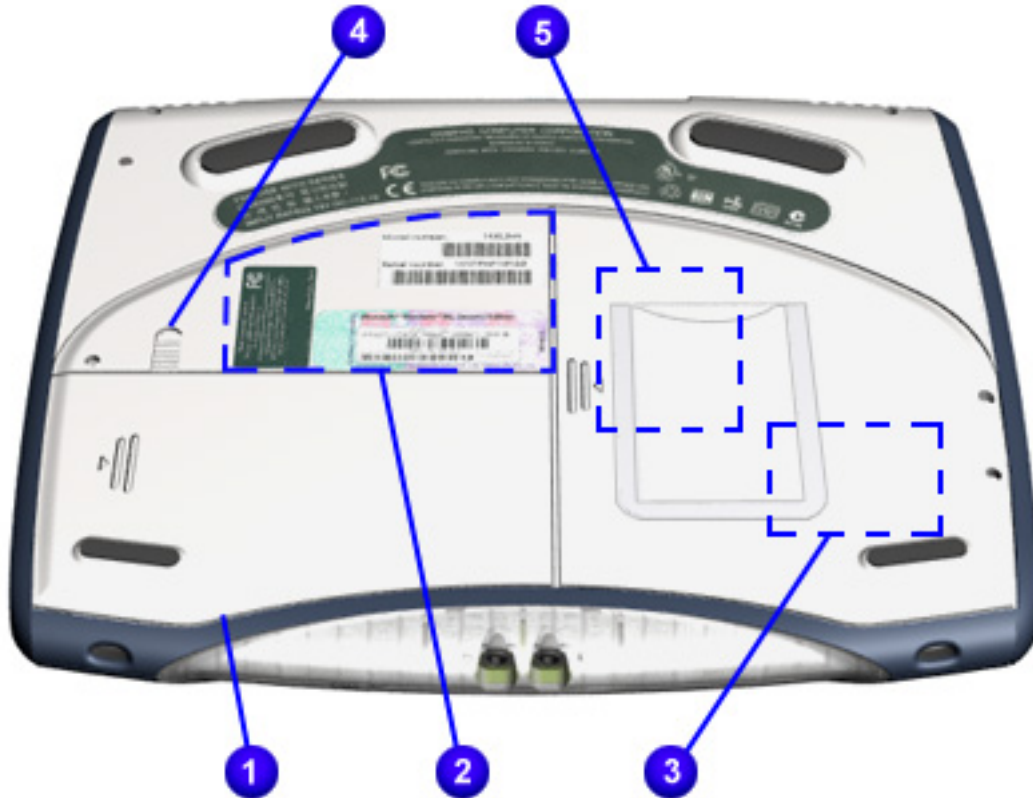

No.	Description
❶	CD or DVD Drive
❷	CD or DVD Eject Button
❸	CD or DVD Manual Eject Hole

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Left Side Components
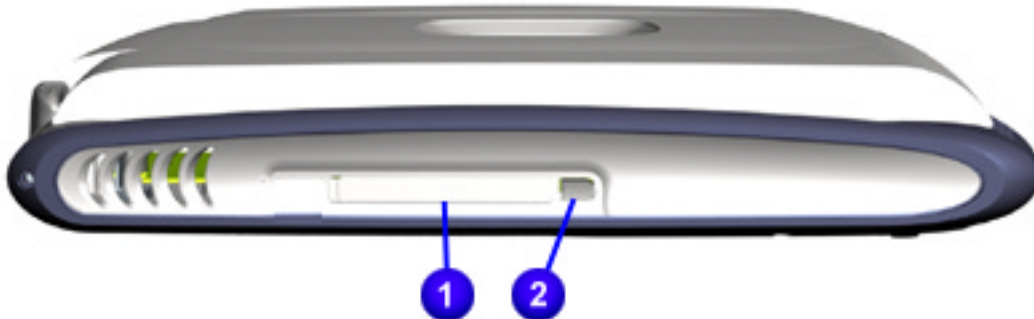
No.	Description
❶	PC Card Slot (Type I or II)
❷	PC Card Eject Button

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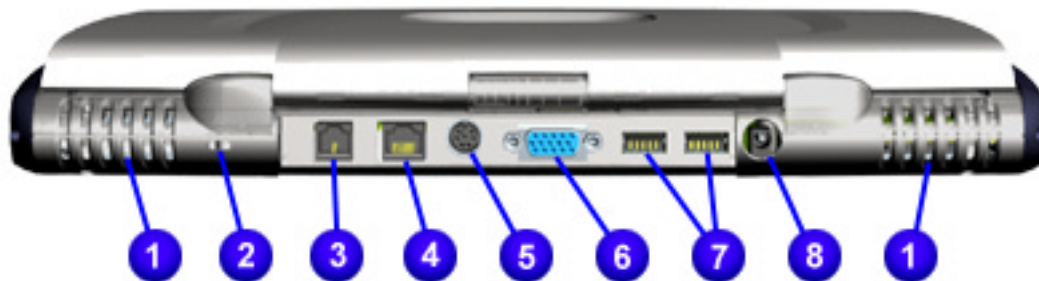
Underneath the Unit

No.	Description
❶	Battery Cover
❷	Serial Number
❸	Modem Compartment
❹	Battery Release Switch
❺	Memory Compartment

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Rear Connectors

No.	Description
❶	Fan Vent
❷	Security Slot
❸	Modem Connector
❹	Ethernet Port
❺	S-Video Out
❻	External Monitor (VGA) Port
❼	USB Ports
❽	AC Adapter Connector

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Specifications

Physical and Environmental

This section covers the following specifications of Compaq Presario 1400 Series Portable Notebooks.

Notebook Specifications		
	U.S.	**Metric**
Dimensions		
Height	1.67 in	42.40 cm
Depth	13.11 in	33.30 cm
Width	11.02 in	27.99 cm
Weight		
with 13.0 inch Display	6.40 lb	2.90 kg
with 13.3 inch Display	6.22 lb	2.82 kg
Stand-Alone (Battery Pack)		
Li-Ion Pack		
Power Requirements	W @ 14.8 V	
Nominal Operating	W @ 14.8 V	
Maximum Average	W @ 14.8 V	
NiMH Pack		
Power Requirements	W @ 9.6 V	
Nominal Operating	W @ 9.6 V	
Maximum Average	W @ 9.6 V	
AC Power Requirements (Input)	100-240 V	
Operating Voltage	60 W	
Operating Current	50/60 Hz ~1.5A	
Operating Frequency	Meets IEC801-4 & IEC801-5	
Maximum Transient	1 kV for 50 ns	
Output	19 V, 3.16 A	
Temperature		
Operating	50° to 95° F	10° to 35° C
Non Operating	-4° to 140° F	-20° to 60° C

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Notebook Specifications		
	U.S.	**Metric**
Relative Humidity (non-condensing) Operating Non Operating (tw = 38.7 degree C max)	10% to 90% 5% to 95%	
Altitude Operating Non-Operating	0 to 10,000 ft 0 to 30,000 ft	
Shock Operating Non-Operating	10 G, 11 ms, half sine 240 G, 2 ms, half sine	
Vibration Operating Non-Operating	0.5 G 1.5 G	
Note: Applicable product safety standards specify thermal limits for plastic surfaces. Compaq Presario 1400 Series Portable Notebooks operate well within this range of temperatures.		

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System Interrupts

System Interrupts			
Hardware IRQ	**System Function**	**Hardware IRQ**	**System Function**
IRQ0	System Timer	IRQ10	SCI IRQ used by ACPI Bus
IRQ1	Standard 101/102-key or Microsoft Natural Keyboard	IRQ11	ACPI IRQ Holder for PCI IRQ Steering
IRQ2	Programmable Interrupt Controller	IRQ11	VIA Tech 3038 PCI to USB Universal Host Controller
IRQ4	Communications Port (COM1)	IRQ11	ACPI IRQ Holder for PCI IRQ Steering
IRQ6	Standard Floppy Disk Controller	IRQ11	Compaq PCI Modem Enumerator
IRQ7	Printer Port (LPT1)	IRQ12	Synaptics PS/2 TouchPad
IRQ8	System CMOS/Real Time Clock	IRQ13	Numeric Data Processor
IRQ9	VIA PCI Audio Controller	IRQ14	VIA Bus Master PCI IDE Controller
IRQ9	Texas Instruments PCI-1211 CardBus Controller	IRQ14	Primary IDE Controller (Dual FIFO)
IRQ9	Trident CyberBlade i1 AGP (51)	IRQ15	VIA Bus Master PCI IDE Controller
		IRQ15	Secondary IDE Controller (Dual FIFO)

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System DMA

System DMA	
Hardware DMA	**System Function**
DMA 2	Standard Floppy Disk Controller
DMA 4	Direct Memory Access Controller

System I/O Addresses

System I/O Addresses	
I/O Address (Hex)	**System Function (Shipping Configuration)**
0000h-000Fh	Direct Memory Access Controller
0020h-0021h	Programmable Interrupt Controller
0040h-0043h	System Timer
0060h-0060h	Standard 101/102-Key or Microsoft Natural Keyboard
0061h-0061h	System Speaker
0062h-0062h	ACPI Embedded Controller
0064h-0064h	Standard 101/102-Key or Microsoft Natural Keyboard
0066h-0066h	ACPI Embedded Controller
0070h-0075h	System CMOS/Real Time Clock
0081h-008Fh	Direct Memory Access Controller
00A0h-00A1h	Programmable Interrupt Controller
00C0h-00DFh	Direct Memory Access Controller
00F0h-00FFh	Numeric Data Processor
0170h-0177h	VIA Bus Master PCI IDE Controller
0170h-0177h	Secondary IDE Controller (dual FIFO)
01F0h-01F7h	VIA Bus Master PCI IDE Controller
01F0h-01F7h	Primary IDE Controller (dual FIFO)
0200h-0207h	Gameport Joystick
02F8h-02FFh	Compaq 56K V.90 HSF Mini PCI Modem
0376h-0376h	Secondary IDE Controller (dual FIFO)
0376h-0376h	VIA Bus Master PCI IDE Controller

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System I/O Addresses	
I/O Address (Hex)	**System Function (Shipping Configuration)**
0378h-037Fh	Printer Port (LPT1)
03B0h-03BBh	Trident CyberBlade i1 AGP (51)
03C0h-03DFh	Trident CyberBlade i1 AGP (51)
03E8h-03EFh	Symphony Port (COM3)
03F0h-03F5h	Standard Floppy Disk Controller
03F6h-03F6h	VIA Bus Master PCI IDE Controller
03F6h-03F6h	Primary IDE Controller (dual FIFO)
03F7h-03F7h	Standard Floppy Disk Controller
03F8h-03FFh	Communications Port (COM1)
0CF8h-0CFFh	PCI Bus
1000h-10FFh	VIA PCI Audio Controller (WDM)
1400h-141Fh	VIA Tech 3038 PCI to USB Universal Host Controller
1420h-1427h	Primary IDE Controller (dual FIFO)
1420h-142Fh	VIA Bus Master PCI IDE Controller
1428h-142Fh	Secondary IDE Controller (dual FIFO)
1430h-1433h	VIA PCI Audio Controller (WDM)
1434h-1437h	VIA PCI Audio Controller (WDM)
1438h-143Fh	Compaq PCI Modem Enumerator

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System Memory Catalog

System Memory Catalog	
Memory Address	**System Function**
00000000h-0009FFFFh	System Board Extension for ACPI BIOS
000A0000h-000AFFFFh	Trident CyberBlade i1 AGP (51)
000B0000h-000BFFFFh	Trident CyberBlade i1 AGP (51)
000C0000h-000CBFFFh	Trident CyberBlade i1 AGP (51)
000DC000h-000DFFFFh	System Board Extension for ACPI BIOS
000E0000h-000FFFFFh	System Board Extension for ACPI BIOS
03800000h-03800FFFh	Texas Instruments PCI-1211 CardBus Controller
F4000000h-F400FFFFh	Compaq PCI Modem Enumerator
F4100000h-F411FFFFh	Trident CyberBlade i1 AGP (51)
F4100000h-F57FFFFFh	PCI Standard PCI-to-PCI Bridge
F4120000h-F412FFFFh	Trident CyberBlade i1 AGP (51)
F4800000h-F4FFFFFFh	Trident CyberBlade i1 AGP (51)
F5000000h-F57FFFFFh	Trident CyberBlade i1 AGP (51)
F8000000h-FBFFFFFFh	PCI Standard Host CPU Bridge
FFFE0000h-FFFFFFFFh	System Board Extension for ACPI BIOS

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HPA Display

12.1-in and 13-in HPA Display			
	12.1-in		**13.0-in**
Active Area Height Width	9.56 in (245 mm) 7.17 in (183.8 mm)		10.39 in (263.98 mm) 7.79 in (197.98 mm)
Display Dimensions Height Width Depth	7.9 in (202.5 mm) 10.7 in (275.0 mm) .31 in (8.0 mm)		11.6 in (295.0 mm) 8.58 in (218.0 mm) .31 in (8.0 mm)
Contrast Ratio**	40:1	40:1	50:1
Brightness**	70nits*2	100nits*10	100nits*4
Response Time**	150ms	150ms	150ms*3
Refresh Rate**	100-150Hz	60-150Hz	60-150Hz

*Display Legend

1) Measured at 3.5mArms lamp current

2) Measured at 4.5mArms lamp current

3) 150ms typical, 180ms maximum

4) 100nits typical, 80 minimum

5) 60ms typical, 100ms maximum

6) 50ms typical, 100ms maximum

7) Measured at 6mArms lamp current

8) Measured at 6mArms lamp current

9) 60ms typical, 100ms maximum

10) Minimum 80nits

**Display specifications—contrast ratio, brightness, response time, refresh rate—may vary depending on model.

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TFT Display

12.1-in and 13.3-in TFT Display				
	12.1-in			**13.3-in**
DimensionsWidth	Information Not Available			Information Not Available
Display Dimensions Height Width Depth	Information Not Available			Information Not Available
Contrast Ratio**	250:1	200:1	200:1	200:1
Brightness**	100nits*1	130nits*7	145nits*8	130nits
Response Time**	50ms	50ms*6	60ms*9	60ms*5
Refresh Rate**	60 Hz	60 Hz	60 Hz	60 Hz

*Display Legend
1) Measured at 3.5mArms lamp current
2) Measured at 4.5mArms lamp current
3) 150ms typical, 180ms maximum
4) 100nits typical, 80 minimum
5) 60ms typical, 100ms maximum
6) 50ms typical, 100ms maximum
7) Measured at 6mArms lamp current
8) Measured at 6mArms lamp current
9) 60ms typical, 100ms maximum
10) Minimum 80nits
**Display specifications—contrast ratio, brightness, response time, refresh rate—may vary depending on model.

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Memory Expansion

Memory Expansion		
System Memory	**Expansion Board Memory**	**Total Memory**
64 MB	none	64 MB
64 MB	32 MB	96 MB
64 MB	64 MB	128 MB
64 MB	128 MB	192 MB
64 MB	256 MB	320 MB

Diskette Drive

Diskette Drive	
Capacity per Diskette (High/Low)	1.44 MB/720 KB
Diskette Size	3.5 in
Number of LED Indicators (Read/Write)	0
Number of Drives Supported	1
Drive Rotation (rpm)	300
Transfer Rate (Kbps)	500
Bytes per Sector	512
Sectors per Track (High/Low)	18/9
Tracks per Side (High/Low)	80
Access Times Track-to-Track (ms) Average (ms) Setting Time (ms) Latency Average (ms)	3 94 15 100
Cylinders (High/Low)	80
Number of Read/Write Heads	2

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Hard Drive

| Hard Drive			
Drive Type	**6.0 GB**	**12.0 GB**	**18.0 GB**
Capacity Per Drive	6.0 GB	12.0 GB	18.0 GB
Logical Configuration Cylinders Heads Sectors per track Bytes per sector	8647 4 190/330 512	11968 6 190/330 512	11968 6 190/330 512
Seek Times (Typical, including settling in ms) Single track Average Full stroke	4 14 24	4 14 24	4 14 24
Transfer Rate At Interface	33.3 MB/s	33.3 MB/s	33.3 MB/s

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CD/DVD Drive

| CD/DVD Drive		
	24x CD-ROM	**DVD**
Dimensions	128 x 129 x 12.7 mm	128 x 129 x 12.7 mm
Weight	0.175 kg	0.28 kg
Rotational Speed	4225 rpm	3450 rpm
Typical Transfer Rate Sustained Data Transfer Rate	3600 KB/s	8100 KB/s
Access Time Average Random Access Time	120 ms	140 ms
Spin Up Time	2.7 s	<15 s
Data Buffer Capacity	128 KB	512 KB

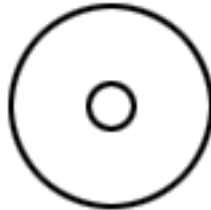# COMPAQ

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Battery Pack

Battery Packs		
Type	**Lithium Ion (Li-ion)**	**Nickel Metal Hydride (NiMH)**
Dimensions		
Height	0.8 inch (20.3 mm)	0.8 inch (20.3 mm)
Length	5.7 inch (145 mm)	5.7 inch (145 mm)
Width	3.1 inch (78.7 mm)	3.1 inch (78.7 mm)
Weight	0.90 pounds (408.2 g)	1.01 lbs (458.1 g)
Operating Lifetime	2 hr 30 min*	2 hr 30 min*
Energy		
Nominal Open	14.4 V	9.6 V
Circuit Voltage	14.4 V	9.6 V
Capacity	3000 mAH	4500 mAH
Power	43.2 WH	43.2 WH
Temperature Requirements		
Operating	32° F to 113° F (0° to 50° C)	32° F to 113° F (0° to 50° C)
Non-operating	-4° F to 140° F (-20° C -60° C)	-4° F to 140° F (-20° C -60° C)
Charging	40° F to 113° F (5° C -45° C)	40° F to 113° F (5° C -45° C)

*The battery operating lifetime changes depending on the use of power management settings, system components, options, and applications.

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Pin Assignments

This section provides connector pin assignment tables for Compaq Presario 1400 Series Portable Notebook. For additional information on connectors, refer to the sections on Rear Connectors.

Modem
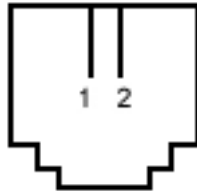
Modem	
1	Ring
2	Tip

Universal Serial Bus

Universal Serial Bus			
1	Power	4	Ground
2	Data -	5	Ground
3	Data +	6	Ground

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External Monitor
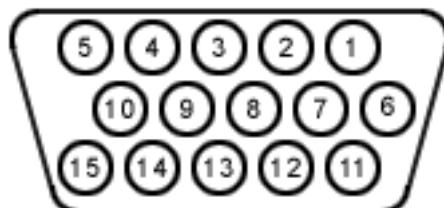
External Monitor	
1	Red
2	Green
3	Blue
4	N/C
5	Ground
6	Ground
7	Ground
8	Ground
9	Power
10	Ground
11	N/C
12	SDA
13	Hsync
14	Vsync
15	SCL

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RJ-45 (NIC)

RJ-45 (NIC)	
1	8PMJ-1
2	8PMJ-2
3	8PMJ-3
4	8PMJ-4
5	8PMJ-5
6	8PMJ-6
7	8PMJ-7
8	8PMJ-8

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S-Video

S-Video	
1	Y/R
2	C/G
3	Ground
4	Ground

AC Adapter

AC Adapter	
Center Pin	Power
Outside Pin	Ground

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Battery and Power Management

This chapter describes power management and proper battery operating practices for Presario 1400 Series Notebooks. These practices include conservation of AC power and effective control of energy to extend the operating life of the battery. The following Power Mode sections also outline the correct methods of starting and shutting down the Notebook in various situations.

Power Modes

Presario 1400 Series Notebooks have three levels of low power: *Hibernation, Standby,* and *Full Off*.

Hibernation

Hibernation mode helps conserve battery life and protect data. The Notebook automatically enters Hibernation when the battery has little power left, or when the Notebook (operating on battery power) is in Standby mode for more than one hour. As the Notebook enters Hibernation, it automatically stores the contents of its memory to the hard drive before shutdown. When the Notebook wakes from Hibernation, it returns to its former state.

> **Note:** When the Notebook enters or wakes from Hibernation mode, a Progress window is displayed.

To activate Hibernation mode, press the **Power** ⏻ button once.

To resume from Hibernation mode, press the **Power** ⏻ button once.

Standby

Standby is a low-power mode, also referred to as *Sleep* mode. The Notebook maintains system information and open files while in Standby mode. Selecting Standby instead of turning off the Notebook when your have finished working has two advantages: 1. It allows the Notebook to wake up faster than it would if it had been turned off; 2. It saves more power than the Active-On mode.

> △ **CAUTION:** Unsaved information is lost if the Notebook is turned off prior to system wake-up, or if a power loss occurs while using the AC adapter.

To activate Standby/Sleep mode, press **Fn+F4** or click **Start**. Select the **Shut Down** option, and then **Standby**.

To resume from Stand/Sleep mode, press any key.

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Full Off

Full Off mode consumes no power. The battery charges continuously if the battery is installed while the Notebook is in *Full Off* mode and if the Notebook remains plugged into external AC power.

> **Note:** Unsaved information is lost if the Notebook is turned off without first saving the data.

To activate *Full Off* mode, complete the following steps:

1. Click the **Start** button on the Windows taskbar.
2. Click **Shut Down**, then select **Shut Down** from the options.

To resume from *Full Off* mode, press the **Power** button once.

> ⚠ **CAUTION:** The Notebook must be turned off (Full Off mode) when installing or replacing components. Follow the instructions for putting the Notebook into Full Off mode. Be sure to unplug the Notebook from the outlet, and remove the battery pack (refer to the removal procedures section: Battery Pack) before servicing any parts.

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Summary of Power Modes

The following table outlines the procedures for entering and exiting the various power modes, and the external indicators for each mode.

	Standby Mode	**Hibernation Mode**	**Off Mode**
Automatic Activation	15 minutes if using battery power* (preset default)	When battery is low or after 1 hour of Standby*	Standard Shutdown*: click **Start** on the Windows taskbar, click **Shut Down**, and then **Shut Down** from menu options.
Manual Activation	Press **Fn+F4** key combination or click **Start** on the Windows taskbar, **Shut Down**, and then **Standby**.	Press the **Power** ⏻ button once.	Manual Shutdown**: Press and hold down the **Power** ⏻ button for four seconds. OR **Fn+Power** (press and hold the **Fn** key then press the **Power** button).
Resume/ Exit	Press any key.	Press the **Power** ⏻ button once.	Press the **Power** ⏻ button once.
Indicators	Power light flashes and Moon ☾ icon appears on status display.	Power light is off, screen is blank, and Power ⏻ icon does not appear on status display.	Power light is off, screen is blank, and Power ⏻ icon does not appear on status display.

*   *The Notebook will not automatically enter Standby or Hibernation mode if using AC power.*
** ***Important:** The Manual Shutdown procedure is not recommended unless the Standard Shutdown is unsuccessful.*

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Power Settings

Power management modes can be initiated based on the amount of time passed since the last system activity. System activity includes keyboard strokes, mouse movement, CD/DVD playback, and modem usage.

Power Schemes

Different patterns of Notebook use determine the level of power management needed. The Power management settings can be selected using several predefined *Power Schemes*. To access these options, select **Power Management** on the Control Panel, then click the **Power Schemes** tab. The default Power Schemes are *Home/Office Desk*, *Portable/Laptop*, and *Always On*. Power Schemes can also be customized by changing the following options:

- **System Standby:** the length of inactivity before the Notebook goes into Standby mode

- **Turn Off Monitor:** the length of inactivity before the screen times out and goes blank

- **Turn Off Hard Disks:** the length of inactivity before the hard drive goes into low-power mode

   Important: The setting for the Hard Disk must be less than or equal to the setting for the System. If the Notebook is on a network, Compaq recommends that System Standby be set to *Never*.

The following table shows the default settings for each Power Scheme.

Power Scheme	AC Power	Battery Power
Always On System Standby Turn OFF Monitor Turn OFF Hard Disks Hibernate	Never 20 minutes Never Never	Never 15 minutes 30 minutes Never
Portable/Laptop System Standby Turn OFF Monitor Turn OFF Hard Disks Hibernate	Never 3 hours 15 minutes Never	15 minutes Never 10 minutes 1 hour
Home/Office Desk System Standby Turn OFF Monitor Turn OFF Hard Disks Hibernate	Never 20 minutes Never Never	5 minutes 5 minutes 10 minutes 20 minutes

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Alarms

The Notebook can be set to Alarm when the battery power level is reduced or when it reaches a critically low level. The Notebook can also be set to enter a low-power mode when the battery reaches a specific power level.

⚠ **CAUTION:** The settings on the Alarms tab are preset for the Notebook to run at optimum efficiency. Changing any of these settings may cause the Notebook to function improperly. It is recommended that these settings be left at their default values.

Default Alarm Settings		
Setting	Low Battery	Critical Battery
Alarm power level	10%	0%
Notification	Sound	No Action
Power Mode	No Action	Hibernation
Active	Enabled	Enabled

Rebooting After a Lockup

To reboot the Notebook when the keyboard is frozen, or when the screen is locked, press and hold down the **Power** ⏻ button for at least four seconds to perform a Manual Shutdown. Then restart the Notebook with a single press of the **Power** ⏻ button.

If the Notebook still does not recover, shut it down by pressing the **Power** ⏻ button and holding it down for four seconds. Then remove the battery and unplug the AC power for at least 30 seconds. Reinsert the battery or reconnect AC power, and press the **Power** ⏻ button once to reboot.

Recovering From a Loss of Electrical Power

Loss of electrical power causes the Notebook to turn off automatically. This may cause loss of data because the Microsoft Windows operating system is not able to close all the files and programs properly.

Loss of power may be caused by one of the following:

- Interruption of electrical power service
- Accidental disconnection of the power cord

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If power surges or sags, the display and status lights may flicker, and the Notebook may automatically restart. If an improper shutdown occurs, the Microsoft Windows utility program, ScanDisk, runs automatically once power is restored. ScanDisk determines whether the improper shutdown has caused any errors on the hard disk. These errors may occur if the Microsoft Windows operating system is not able to close all files correctly before the shutdown. If no errors are found, the restart process continues. If ScanDisk does detect errors, follow the instructions on the screen to continue the restart process. Work or information that was not saved before the loss of power or shutdown may be lost.

If a power failure occurs, or if the power cord disconnects while the Notebook is turned on, turn it off until normal service is restored. The next time the Notebook is turned on, ScanDisk may run to check the hard disk for errors caused by improper shutdown.

Increasing Battery Pack Operating Time

Battery pack operating life is affected by several variables. To avoid unnecessary replacement, consider the following when determining how long a charged battery pack should last:

- Power conservation settings
- Hardware configuration
- Software applications
- Installed options
- Display brightness\\Server\projects\Compaq_Port\Portable TimesheetHard drive usage
- Changes in operating temperatures
- Type and number of installed PC cards

  Note: Power consumption requirements for PC cards vary widely. Some cards drain the battery pack very rapidly.

Battery pack operating life can be increased by as much as 50 percent by controlling the energy required by the Notebook and the energy stored in the battery pack.

Minimizing the Energy Required

To minimize the energy required by the Notebook, follow these guidelines:

- Set the power conservation levels in the Power Management utility to **Maximum**.
- Customize the time-out value to work more efficiently with the applications. The length of battery life depends on the values selected.

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Maximizing the Energy Stored

To maximize the energy stored in the battery pack, follow these guidelines:

- *Condition a Battery Pack* at least every 30 days to improve overall battery performance.

- Keep a battery pack in the Notebook when using it with AC power to supply the battery pack with a constant trickle charge.

- Store the battery pack in a cool, dry place when not in use.

Conditioning a Battery Pack

⚠ **CAUTION:** To avoid loss of data, make sure that all information is saved before completely discharging a battery pack.

To condition a battery pack, complete the following steps:

1. Plug in the AC adapter and allow the battery to charge until the fast charge arrow on the status display disappears. The battery gauge may read 100% for a period of time before the arrow disappears.

   Note: Do not unplug the AC adapter until the arrow disappears.

2. Unplug the AC adapter and allow the battery to drain until the Notebook enters Hibernation mode. The Notebook can be used normally during this process.

   Note: If the AC adapter is connected while the battery is draining, the process must be repeated, beginning with Step 1.

The battery is now reconditioned. Plug in the AC adapter and begin using the Notebook.

The table below shows typical battery charging times for each model.

Battery Charge Time	
Li-ion Battery Pack	**Battery Power**
Computer On Line	4.75 hours
Computer Off Line	3.00 hours

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Disposing of a Used Battery Pack

In the interests of safeguarding our environment, Compaq Computer Corporation recommends that nickel metal hydride (NiMH) and lithium-ion (Li-ion) battery packs be recycled. Battery packs should be handled in accordance with country, state, province, or local regulations.

⚠ **WARNING:** Battery pack contains harmful components when exposed. Do not open, crush, puncture, or incinerate the battery pack. It contains no field-serviceable parts. Dispose of battery packs properly. Failure to dispose of battery packs properly may cause harm to humans, animals, and the environment.

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Troubleshooting

This section provides information for troubleshooting Compaq Presario 1400 Series Portable Notebooks. To isolate problems while troubleshooting the Notebook, refer to the following procedures:

1. Preliminary Steps.

2. Power-On Self-Test (POST).

3. Test the recommended actions described in the diagnostic tables if POST is unavailable or if POST displays an error message.

When following the recommended actions in the Sections about the Power-On Self-Test (POST) and Diagnostic Error Codes, perform the steps in the order listed. Rerun POST after each recommended action until the problem is solved or no error messages occur. Once the problem is solved, do not continue with any remaining recommended actions.

> **Note:** If the problem is intermittent, check the Notebook several times to verify that the problem is solved.

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Preliminary Steps

Before running the Power-On Self-Test (POST), complete the following steps:

1. If a Power-on password has been established, type the password and press the **Enter** key. If the password is unknown, clear the password (See Clearing the Power-On Password).

2. Run the Computer Checkup (TEST).

3. Turn off the Notebook and all external devices.

4. Disconnect any external device that does not need testing. Do not disconnect the printer if it needs testing or if it is required to log error messages.

    Important: If the problem only occurs when an external device is connected to the Notebook, the problem may be related to the external device or its cable. Check this by running POST both with and without the external device connected.

5. Install loopback plugs in the serial and parallel connectors if these ports need testing.

6. Ensure that the hard drive is installed in the Notebook.

7. Ensure that the battery pack is inserted into the Notebook, and that it is connected to an external AC power source.

When these preliminary steps are completed, run the Power-on Self-Test (POST).

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Clearing the Power-On Password

⚠ **CAUTION:** Clearing the Power-on password also removes all of the Notebook's setup attributes that are programmed in the CMOS.

If the password is unknown, clear the password by following these steps:

1. Turn off the Notebook.

2. Disconnect the power cord.

3. Perform the following steps from the Removal Procedures Section:

   Battery Pack
   Keyboard
   Palmrest Cover with TouchPad (Upper CPU)
   Heatspreader with Fan Assembly

4. Lift, with the flat end of a screwdriver ❶, and remove the RTC battery ❷ for 30 seconds, then replace.
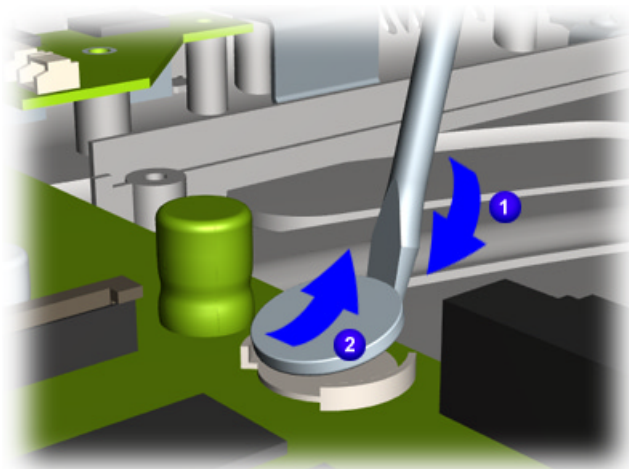
5. Reassemble the Notebook.

6. Turn on the Notebook to verify that the Power-on password has been cleared. If it has not been cleared, repeat steps 1 through 9.

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Power-On Self-Test (POST)

To run POST, complete the following action:

Turn off the Notebook, then turn it on again. As soon as the Compaq logo appears, press **ESC** to clear the logo and display the POST messages as they occur.

If the Notebook does not beep, POST has successfully completed its test and detected no errors. POST then re-boots from the hard drive, or from a bootable diskette if one is installed in the diskette drive.

However, if POST detects errors, these errors are indicated by either displayed or audible messages or both. Listed below are probable causes of and recommended actions to resolve the problems of each POST error codes.

The following tables list error codes, a description of the error condition, and the action required to resolve the error condition.

> **Note:** If the system is not functioning well enough to run POST, or if the display is not functioning well enough to show POST error messages, refer to the Troubleshooting tables ().

Power-On Self-Test Messages	
102—System Board Failure	
Probable Cause	**Recommended Action**
DMA, timers, etc.	Replace the system board.
162—System Options Not Set	
Probable Cause	**Recommended Action**
Incorrect configuration.	Run Computer Setup.
CMOS reflects an invalid configuration setting.	Run Computer Setup.
RAM failure.	1. Replace the memory modules. 2. Replace the system board.
XX000YZZ RAM failure.	Replace the system board.

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XX000YZZ 201—Memory Error	
Probable Cause	**Recommended Action**
Keyboard failure.	1. Ensure that no keys are pressed during POST. 2. Reconnect the keyboard with the Notebook off. 3. Replace the keyboard.

304—Keyboard or System Unit Error	
Probable Cause	**Recommended Action**
Keyboard or system board error.	1. Replace the keyboard. 2. Replace the TouchPad or mouse. 3. Replace the system board.

601—Diskette Controller Error	
Probable Cause	**Recommended Action**
Mismatch in drive type or failure in the diskette controller.	1. Run Computer Checkup (TEST). 2. Check or replace cables. 3. Replace the system board.

605—Diskette Drive Error	
Probable Cause	**Recommended Action**
Mismatch in drive type.	Run Computer Setup.

1780—Primary Hard Drive 0 Failure	
Probable Cause	**Recommended Action**
Disk 0 failed to respond.	1. Run Computer Checkup (TEST). 2. Replace the hard drive.
Hard drive format error.	1. Run Computer Checkup (TEST). 2. Replace the hard drive.

1782—Hard Drive Controller	
Probable Cause	**Recommended Action**
Hard drive controller failure.	1. Run Computer Setup. 2. Replace the hard drive.

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Compaq Diagnostics

Compaq Diagnostics are installed on the hard drive of the Notebook. Run the Diagnostic utilities when viewing or testing system information or if devices have been installed or connected. If Compaq Diagnostics are performed from a diskette, ensure that the diagnostic program is version 10.11 or later.

Perform the following utilities from the Diagnostics menu:

- Run Computer Checkup (TEST).

- View System Information (INSPECT).

- Prepare Notebook for a Compaq Service Call (RemotePaq)

If a problem is unsolvable, run the following Diagnostics utilities before calling for support:

1. Run Computer Checkup.

2. Save the device list.

3. Save the log of errors to file and print.

4. Run the View System Information (INSPECT) utility.

5. Save and print the information generated by the utility.

6. Have the files and the printed information ready when calling for support.

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Computer Checkup (TEST)

Computer Checkup (TEST) determines whether the various Notebook components and devices are recognized by the system and functioning properly. Information generated by Computer Checkup can be displayed, printed, or saved.

Follow this procedure to run Computer Checkup:

1. Plug the Notebook into an external power source. (A low-battery condition could interrupt the program.)

2. Turn on the external devices that need testing. Connect the printer if a log of error messages needs printing.

3. Insert the Compaq Diagnostics diskette in drive A.

4. Turn on or restart the Notebook. The Notebook starts from drive A, and the Diagnostics Welcome screen is displayed.

5. Press **Enter** to continue. The Diagnostics menu is displayed on screen.

6. Select **Computer Checkup** from the Diagnostics menu. A Test Option menu is displayed.

7. Select **View the Device List** from the Test Option menu. A list of the installed Compaq devices is displayed.

8. If the list of installed devices is correct, select **OK**. The Test Option menu is displayed.

   Note: If the list is incorrect, check new devices for proper installation.

   Select one of the following from the Test Option menu:

   • **Quick Check Diagnostics**. This check runs a quick, general test on each device with a minimal number of prompts. If errors occur, they are displayed when the testing is complete. Error messages cannot be printed or saved.
   • **Automatic Diagnostics**. This diagnostic runs unattended, performs maximum testing of each device with minimal prompts, and allows the operator to choose how many times to run the tests, to stop on errors or to print and save a log of errors.
   • **Prompted Diagnostics**. This test allows maximum control over testing the devices. It permits the operator to choose attended or unattended testing, whether or not to stop on errors, or to choose to print or save a log of errors.

9. Follow the instructions on the screen as the devices are tested. When testing is complete, the Test Option menu is displayed.

10. Exit the Test Option menu.

11. Exit the Diagnostics menu.

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View System Information (INSPECT)

The View System Information (INSPECT) utility provides information about the Notebook and devices installed or connected to it. Display, print, or save the information.

Follow these steps to run View System Information (INSPECT) from the Compaq Diagnostics diskette:

1. Turn on the external devices that need testing. Connect the printer to print the information.

2. Insert the Compaq Diagnostics diskette in drive A.

3. Turn on or restart the Notebook. The Notebook starts from drive A, and the Diagnostics Welcome screen is displayed.

4. Press **Enter** to continue. The Diagnostics menu is displayed.

5. Select **View System Information** (INSPECT) from the Diagnostics menu.

6. Select an item from the following list to view diagnostic codes:

System	Memory
ROM	Audio
Keyboard	Operating system
System ports	System files
System storage	Windows files
Graphics	

7. Follow the instructions on the screen to cycle through the screens, to return to the list and choose another item, or to print the information.

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Diagnostic Error Codes

Diagnostic error codes are displayed if the system recognizes a problem while running the Compaq Diagnostic program. These error codes help to identify possibly defective subassemblies.

The following tables list error codes, a description of the error condition, and the action required to resolve the error condition.

> **Important:** Retest the system after completing each step. If the problem has not been resolved, do not proceed with the remaining steps.

For the removal and replacement of a particular subassembly, see Procedures.

Select error codes by number or type:

101 through 114 (pg 10)	Processor Test
200 through 215 (pg 10)	Memory Test
300 through 304 (pg 10)	Keyboard Test
401 through 403 (pg 10)	Parallel Printer Test
501 through 516 (pg 13)	Video Test
600 through 699 (pg 11)	Diskette Drive Test
1101 (pg 11)	Serial Test
1701 through 1736 (pg 12)	Hard Drive Test
2402 through 2456 (pg 14)	Video Test
2419 through 2456 (pg 15)	Video Test
2458 through 2480 (pg 15)	Video Test
3206 (pg 16)	Audio Test
3301 through 6623 (pg 16)	DVD or CD Test
8601 through 8602 (pg 16)	TouchPad Pointing Device Test

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Memory, Keyboard, and Parallel Printer Test Error Codes

Memory Test Error Codes		
Error Code	**Description**	**Recommended Action**
200-xx	Memory machine ID test failed.	1. Flash the system ROM and retest.
202-xx	Memory system ROM checksum failed.	2. Replace the system board and retest.
203-xx	Read-write test failed.	1. Remove the memory module and retest.
204-xx	Address test failed.	2. Install a new memory module and retest.
211-xx	Random pattern test failed.	
214-xx	Noise test failed.	
215-xx	Random address test failed.	

Keyboard Test Error Codes		
Error Code	**Description**	**Recommended Action**
300-xx	ID test failed.	1. Check the keyboard connection. If disconnected, turn off the Notebook and reconnect the keyboard.
301-xx	Self/interface test failed.	2. Replace the keyboard and retest.
302-xx	Individual key test failed.	3. Replace the system board and retest.
304-xx	Keyboard repeat test failed.	

Parallel Printer Test Error Codes		
Error Code	**Description**	**Recommended Action**
401-xx	Printer failed or not connected.	1. Connect the printer.
402-xx	Port test failed.	2. Check power to the printer.
403-xx	Printer pattern test failed.	3. Install the loop-back connector and retest.
		4. Check port and IRQ configuration.
		5. Replace the system board and retest.

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Diskette Drive and Serial Test Error Codes

Diskette Drive Test Error Codes		
Error Code	**Description**	**Recommended Action**
600-xx	Diskette ID drive types test failed.	1. Replace the diskette media and retest.
601-xx	Diskette format failed.	2. Check and/or replace the diskette power and signal cables and retest.
602-xx	Diskette read test failed.	3. Replace the diskette and retest.
603-xx	Diskette read-write, compare test failed.	4. Replace the system board and retest.
604-xx	Diskette random read test failed.	
605-xx	Diskette ID media failed.	
606-xx	Diskette speed test failed.	
609-xx	Diskette reset controller test failed.	
610-xx	Diskette change line test failed.	
697-xx	Diskette type error.	
698-xx	Diskette drive speed not within limits.	
699-xx	Diskette drive/media ID error.	1. Replace media. 2. Run the Configuration and Diagnostics Utilities.

Serial Test Error Codes		
Error Code	**Description**	**Recommended Action**
1101-xx	Serial port test failed.	1. Check port configuration. 2. Replace the system board and retest.

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Hard Drive Test Error Codes

Hard Drive Test Error Codes		
Error Code	**Description**	**Recommended Action**
1701-xx	Hard drive format test failed.	1. Run the Configuration and Diagnostics Utilities and verify drive type.
1702-xx	Hard drive read test failed.	
1703-xx	Hard drive read-write, compare test failed.	2. Ensure that all secondary drives have secondary drive capability.
1704-xx	Hard drive random seek test failed.	
1705-xx	Hard drive controller test failed.	3. Replace the hard drive and retest.
1706-xx	Hard drive ready test failed.	4. Replace the system board and retest.
1707-xx	Hard drive recalibration test failed.	
1708-xx	Hard drive format bad track test failed.	
1709-xx	Hard drive reset controller test failed.	
1710-xx	Hard drive park head test failed.	
1715-xx	Hard drive head select test failed.	
1716-xx	Hard drive conditional format test failed.	
1717-xx	Hard drive ECC* test failed.	
1719-xx	Hard drive power mode test failed.	
1724-xx	Network preparation test failed.	
1736-xx	Drive monitoring test failed.	

ECC = Error Correction Code

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Video Test Error Codes

Video Test Error Codes		
Error Code	**Description**	**Recommended Action**
501-xx	Video controller test failed.	The following steps apply to error codes 501-xx through 516-xx:
502-xx	Video memory test failed.	1. Disconnect external monitor and test with internal LCD display.
503-xx	Video attribute test failed.	
504-xx	Video character set test failed.	
505-xx	Video 80 x 25 mode 9 x 14 character cell test failed.	2. Replace the display assembly and retest.
506-xx	Video 80 x 25 mode 8 x 8 character cell test failed.	3. Replace the system board and retest.
507-xx	Video 40 x 25 mode test failed.	
508-xx	Video 40 x 25 mode test failed.	
509-xx	Video 320 x 200 mode color set 0 test failed.	
510-xx	Video 640 x 200 mode color set 1 test failed.	
511-xx	Video screen memory page test failed.	
512-xx	Video gray scale test failed.	
514-xx	Video white screen test failed.	
516-xx	Video noise pattern test failed.	

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Video Test Error Codes		
Error Code	**Description**	**Recommended Action**
2402-xx	Video memory test failed.	The following steps apply to error codes 2402-xx through 2418-xx:
2403-xx	Video attribute test failed.	1. Run the Configuration and Diagnostics Utilities.
2404-xx	Video character set test failed.	2. Replace the display assembly and retest.
2405-xx	Video 80 x 25 mode 9 x 14 character cell test failed.	1. Replace the system board and retest.
2406-xx	Video 80 x 25 mode 8 x 8 character cell test failed.	
2408-xx	Video 320 x 200 mode color set 0 test failed.	
2409-xx	Video 320 x 200 mode color set 1 test failed.	
2410-xx	Video 640 x 200 mode color test failed.	
2411-xx	Video screen memory page test failed.	
2411-xx	Video screen memory page test failed.	
2412-xx	Video gray scale test failed.	
2414-xx	Video white screen test failed.	
2416-xx	Video noise pattern test failed.	
2418-xx	ECG/VGC memory test failed.	

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Video Test Error Codes *(Continued)*		
Error Code	**Description**	**Recommended Action**
2419-xx	ECG/VGC ROM checksum test failed.	The following steps apply to error codes 2419-xx through 2456-xx:
2421-xx	ECG/VGC 640 x 200 graphics mode test failed.	1. Run the Configuration and Diagnostics Utilities.
2422-xx	ECG/VGC 640 x 350 16 color set test failed.	2. Disconnect external monitor and test with internal LCD display.
2423-xx	ECG/VGC 640 x 350 64 color set test failed.	3. Replace the display assembly and retest.
2424-xx	ECG/VGC monochrome graphics mode test failed.	4. Replace the system board and retest.
2425-xx	ECG/VGC monochrome graphics mode test failed.	
2431-xx	640 x 480 graphics test failed.	
2432-xx	320 x 200 graphics (256 color mode) test failed.	
2448-xx	Advanced VGA Controller test failed.	
2451-xx	132-column Advanced VGA test failed.	
2456-xx	Advanced VGA 256 Color test failed.	

Video Test Error Codes *(Continued)*		
Error Code	**Description**	**Recommended Action**
2458-xx	Advanced VGA BitBLT tes.t	The following action applies to error codes 2458-xx through 2480-xx:
2468-xx	Advanced VGA DAC test.	
2477-xx	Advanced VGA data path test.	
2478-xx	Advanced VGA BitBLT test.	Replace the system board and retest.
2480-xx	Advanced VGA LineDraw test.	

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Audio, DVD or CD, and TouchPad/Pointing Device Test Error Codes

Audio Test Error Codes		
Error Code	**Description**	**Recommended Action**
3206-xx	Audio System Internal Error.	Replace the system board and retest.

TouchPad/Pointing Device Interface Test Error Codes		
Error Code	**Description**	**Recommended Action**
8601-xx	Mouse test failed.	1. Replace the TouchPad and retest.
8602-xx	Interface test failed.	2. Replace the system board and retest.

DVD or CD Drive Test Error Codes		
Error Code	**Description**	**Recommended Action**
3301-xx	DVD or CD drive read test failed.	1. Replace the DVD or CD and retest.
3305-xx	DVD or CD drive seek test failed.	2. Verify that the speakers are connected.
6600-xx	ID test failed.	3. Verify that drivers are loaded and properly installed.
6605-xx	Read test failed.	4. Replace the DVD or CD drive and retest.
6608-xx	Controller test failed.	5. Replace the system board and retest.
6623-xx	Random read test failed.	

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Troubleshooting without Diagnostics

This section provides information about how to identify and correct some common hardware, memory, and software problems. It also explains several types of common messages that may be displayed on the screen. The following pages contain troubleshooting information for the topics in the list below:

Since symptoms of different problems can appear to be similar, carefully match the symptoms of the Notebook malfunction against the problem description in the Troubleshooting tables to avoid a misdiagnosis.

> ⚠ **WARNING:** To avoid a potential shock hazard during troubleshooting procedures, disconnect all power sources before removing the keyboard cover or the display bezel.

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Before Replacing Parts

1. Verify that cables are connected properly to the parts suspected to be defective.

2. Run Computer Setup after connecting external devices.

3. Verify that all required device drivers are installed.

4. Verify that all required changes have been made to the CONFIG.SYS file.

5. Verify that all required changes have been made to the AUTOEXEC.BAT file.

6. Verify that all printer drivers have been installed for each application.

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Solving Minor Problems

Some minor problems and possible solutions are outlined in the following tables. If the problem appears related to a software application, check the documentation provided with the software.

Solving Audio Problems

Some common audio problems and solutions are listed in the following table:

Solving Audio Problems		
Problem	**Probable Cause**	**Solution**
Notebook does not beep after the Power-On Self-Test (POST).	This action is typical; it indicates successful completion of the Power-On Self-Test (POST).	No action is required.

Solving Battery Pack and Battery Gauge Problems

Some causes and solutions for common battery pack problems are listed in the table below. The "Solving Power Problems" section in this chapter may also be applicable.

Solving Battery Pack and Battery Gauge Problems		
Problem	**Probable Cause**	**Solution**
Notebook won't turn on when battery pack is inserted and power cord is unplugged.	Battery pack is discharged.	• Connect the Notebook to an external power source and charge the battery pack; **OR** • Replace the battery pack with a fully charged battery pack. Check the battery connectors on the system board to ensure that they are evenly spaced and not bent or broken.

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Solving Battery Pack/Gauge Problems		
Problem	**Probable Cause**	**Solution**
Notebook is beeping and battery icon is blinking.	Battery charge is low.	Immediately save any open file(s). Then try either pf the following solutions: • Connect the Notebook to an external power source to charge the battery pack. • Turn off the Notebook or initiate Hibernation until you can find another power source or charge the battery pack.
Notebook battery icon on the front of the unit blinks to indicate low-battery condition, but the Notebook does not beep.	Volume is turned down too low.	Adjust the volume.
Battery icon does not light, and battery pack will not fast charge.	Battery pack is already charged.	No action is necessary.
Battery pack was exposed to extreme temperatures.		Allow the battery pack time to return to room temperature.
Battery pack is at the end of its life.		Replace the battery pack.
You have to set the date and time every time you turn on the Notebook.	RTC battery is dead.	Replace the RTC battery. See Removing the RTC Battery section in this guide.
Battery charge does not last as long as expected.	Battery is being exposed to high or extremely cold temperatures.	Keep the battery pack within the recommended temperature range for operation or storage. • Operating Range: 50° F to 104° F (10° C to 40° C) • Storage Range: -4° F to 86° F (-20 degrees C to 30° C) Recharge the battery pack.

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Solving Battery Pack/Gauge Problems (Continued)		
Problem	**Probable Cause**	**Solution**
	Battery has partially self-discharged.	Recharge the battery. Discharge the battery completely, and then recharge it.
	Power management is disabled.	Set a power management level in Computer Setup.
	An external device or PC card is draining the battery.	Turn off or disconnect external devices when not in use.
Battery is warm to the touch after charging.	Normal warming has occurred due to charging.	No action is required.
Battery pack operating time is far less than the documented average operating time.	Power management is turned off or disabled.	Enable power management in Computer Setup and in Windows Power Properties.
	An external device or PC card is draining the battery.	Turn off or disconnect external devices when not in use.

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Solving Battery Pack/Gauge Problems (Continued)		
Problem	**Probable Cause**	**Solution**
	Battery pack has partially self-discharged.	Condition the battery pack by fully charging, fully discharging, then fully recharging again. To maintain the charge, leave battery packs in the Notebook when it is connected to external power. If the Notebook is disconnected from external power for more than two weeks, remove battery packs from the Notebook to reduce the discharge rate.
	Battery pack is being exposed to high temperatures or extremely cold temperatures.	Keep the battery pack within the recommended temperature range for operation or storage. • Operating Range: 50° F to 104° F (10° C to 40° C) • Storage Range: -4° F to 86° F (-20° d C to 30° C) Recharge the battery pack.

Solving DVD or CD Drive Problems

Some causes and solutions for common DVD or CD drive problems are listed in the following table.

Solving DVD or CD Drive Problems		
Problem	**Probable Cause**	**Solution**
DVD or CD drive cannot read a compact disc.	Disc is upside down or improperly inserted in the DVD or CD drive.	Open the loading tray, place the compact disc in tray (label side up), then close tray.
	CD is CD Plus or Pregap/Track 0 type.	Cannot read these types of CDs in 24X. Remove the CD.

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Solving Diskette Drive Problems

Some causes and solutions for common diskette drive problems are listed in the table below:

Solving Diskette Drive Problems		
Problem	**Probable Cause**	**Solution**
Diskette drive cannot write to a diskette.	Diskette is write-protected.	Disable the diskette's write-protect feature or use a diskette that is not write-protected.
	Notebook is writing to the wrong drive.	Check the drive letter in the path statement.
	Not enough space is left on the diskette.	Use another diskette.
	Drive error has occurred.	Run Computer Checkup from the Compaq Diagnostics diskette.
	Diskette is not formatted.	Format the diskette. At the system prompt, enter **FORMAT A:**
Cannot boot from diskette.	Bootable diskette is not in drive A.	Put the bootable diskette in drive A.
	Diskette boot has incorrect setting in Computer Setup.	Run Computer Setup and set diskette as first to boot.

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Solving Display Problems

This section lists some causes and solutions for common Notebook display and external monitor problems.

You can perform a monitor self-test on an external VGA color or monochrome monitor by disconnecting the monitor from the Notebook. To do so, complete the following steps:

1. Turn off the monitor.

2. Turn off the Notebook.

3. Disconnect the monitor signal cable from the Notebook.

4. Turn on the monitor and allow it to warm up for one minute.

The display should appear white. On the left and right sides of the screen, a narrow black border may also be present. If the display screen indicates either of these patterns, the monitor is working properly.

Solving Display Problems		
Problem	**Probable Cause**	**Solution**
Screen is dim.	Brightness control is set too low.	Adjust the Brightness of the display by using **Fn+F7** or **Fn+F8**.
	Notebook screen is in direct light.	Tilt display or move Notebook.
Screen is blank.	Screen save was initiated by Power Management due to lack of user activity.	Press any key or touch the TouchPad.
	Display has overheated.	If the Notebook is in direct sunlight, move it to shaded area and allow it to cool off.
Display is blank and the Suspend icon is flashing.	System is in Suspend mode.	Press any key or touch the TouchPad.
Internal display is blank, but the screen on an external monitor displays information.	Display function was switched to the external monitor.	Use **Fn+F3** to switch between LCD or CRT.
Internal display flashes or has garbled characters when the Notebook is connected to an external monitor.	Used 1024 x 768 or higher resolution on external monitor and toggled back to internal display, which supports up to 800 x 600.	Restart the Notebook.

Continued

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Solving Display Problems		
Problem	**Probable Cause**	**Solution**
The light tubes on the edge of the display panel do not light up, and the Power-On Self-Test (POST) completes when the unit is powered up.**	Improper backlight or display cable connections	Replace the display assembly.
	Defective inverter board	Replace the display assembly.
	Defective display cable	Replace the display assembly.
	Defective display panel	Replace the display assembly.
	Defective system board	Replace the system board.
The light tubes on the edge of the display panel do not light up, and the Power-On Self-Test (POST) does not complete when the unit is powered up.**	Defective system board	Replace the system board.
Backlight (brightness) cannot be adjusted with Fn+F7 or Fn+F8.	Improper display cable connections	1. Reseat the display cable to the system board. 2. Replace the display assembly.
	Defective inverter board	Replace the display assembly.
	Defective display cable	Replace the display assembly.
	Defective system board	Replace the system board.

*__**This problem indicates that the backlight or its power circuitry has failed. Since you cannot observe the POST results on the display panel when the backlight is not functioning, connect the unit to an external monitor before powering it up. If an external monitor is not available, confirm that POST completes by opening and closing the display, listening for the single or double beep and watching for the icons to turn on at the front of the Notebook.__*

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Solving Display Problems (*Continued*)		
Problem	**Probable Cause**	**Solution**
The display panel has a continuous pattern across it (for example, "jailbars" pattern), has a single color on it, or has garbled graphics across the entire panel. This failure occurs across the entire panel, not just in one section.	Improper display cable connections	Reseat the display cable to the system board and the display assembly until the problem is solved.
	Defective display cable	Replace the display assembly.
	Defective inverter board	Replace the display assembly.
	Defective system board	Replace the system board.
A single line, small group of lines, or block appears on the display panel. This failure occurs in only one section of the display panel.	Defective display panel	Replace the display assembly.
Note: To perform a "self-test" on an external VGA color or monochrome monitor, verify the following: The screen should appear white. On the left and right sides of the screen, a narrow black border may also be present. If the display screen indicates either of these patterns, the monitor is working properly.		

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Solving Hard Drive Problems

Some causes and solutions for common hard drive problems are listed in the table below.

⚠ **CAUTION:** To prevent loss of information, always maintain an up-to-date backup file on the hard drive at all times, in case of errors or failures.

Solving Hard Drive Problems		
Problem	**Probable Cause**	**Solution**
Reading the hard drive takes an usually long time after restarting the Notebook.	System entered Hibernation due to low-battery condition and is now exiting from it.	Give the system time to restore the previously saved data to its exact state before Hibernation.
Hard drive error occurs.	Hard drive has bad sectors or has failed.	Run Computer Checkup.
Hard drive does not work.	Hard drive is not seated properly.	Turn off the Notebook, disconnect it from the electric outlet, and remove the battery pack. Remove and reinstall the hard drive.

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Solving Hardware Installation Problems

Some causes and solutions for common hardware installation problems are listed in following table.

Solving Hardware Installation Problems		
Problem	**Probable Cause**	**Solution**
A new device is not recognized as part of the Notebook system.	Cable(s) of the new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected.
	Power switch of new external device is not turned on.	Turn off the Notebook, turn on the external device, then turn on the Notebook to integrate the device with the Notebook system.
	Device is not seated properly.	Turn off the Notebook and reinsert the device.

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Solving Keyboard and Numeric Keypad Problems

Some causes and solutions for common keyboard and numeric keypad problems are listed in the following table.

Solving Keyboard/Numeric Keypad Problems		
Problem	**Probable Cause**	**Solution**
Embedded numeric keypad on Notebook keyboard is disabled.	Num Lock function is not enabled.	Press the **Shift + NumLk** keys to enable the Num Lock function and embedded numeric keypad. The Num Lock icon on the status panel turns on.
Embedded numeric keypad is disabled and Num Lock function is on.	External numeric keypad is connected to the Notebook.	Disconnect the external numeric keypad from the Notebook.

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Solving Memory Problems

Some causes and solutions for common memory problems are listed in the table below.

Solving Memory Problems		
Problem	**Probable Cause**	**Solution**
Memory count during Power-On Self-Test (POST) is incorrect.	Optional memory expansion card is installed incorrectly, is incompatible with the Notebook, or is defective.	Ensure that the optional memory expansion card is installed correctly.
"Out of Memory" message is displayed on the screen, or insufficient memory error occurs during operation.	System ran out of memory for the application.	Check the application documentation for memory requirements. Install additional memory.
	Too many TSR (terminate-and-stay-resident) applications are running.	Remove from memory any TSR applications you do not need.

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Solving PC Card Problems

The following table lists some causes and solutions for common PC Card problems.

Solving PC Card Problems		
Problem	**Probable Cause**	**Solution**
When the Notebook is turned on and a PC card is inserted, the Notebook does not beep.	Card is not inserted properly.	Ensure that the card is inserted in the correct orientation.
	PC card beeps are disabled.	Double-click the PC card icon in the Control Panel, then click the **Global Settings** tab, enabling the PC Card sound effects.
	Speaker is turned off or volume is turned down.	Press volume buttons to turn the speaker on, then increase the volume.
	PC card drivers are not installed.	Double-click the **Add New Hardware** icon in the Control Panel for installation instructions. If the PC card or drivers are not compatible with Windows, install drivers and use the PC Card in MS-DOS mode.
	Card or card driver is not supported.	Contact Compaq's authorized service provider for a list of PC cards tested successfully in Compaq PC card platforms.
PC card modem, fax, or network card does not work.	Card is not fully inserted into the slot or is not inserted properly.	Ensure that the card is inserted in the correct orientation.
	Telephone cord is not plugged in all the way.	Check and secure telephone connection.
	Necessary drivers are not installed (turned on).	Install drivers.
PC card modem or fax card does not work.	You are trying to access the card using the wrong COM port.	See Specifications to verify COM port.
	The card conflicts with a serial device.	See Specifications to verify address.
	The card is not supported.	Use supported cards only.

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Presario 1400 Series
Models: XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
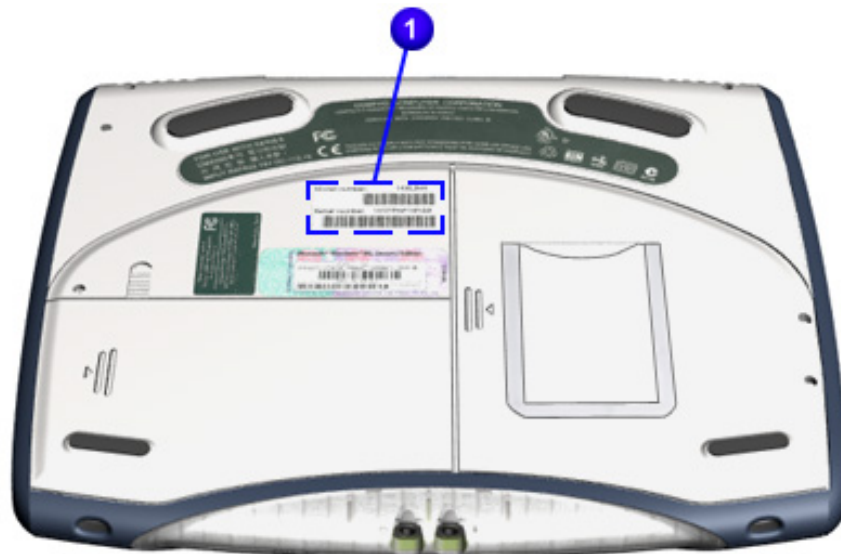**XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356**

Solving Power Problems

See also "Solving Battery Pack and Battery Gauge Problems" in this section.

Solving Power Problems		
Problem	**Probable Cause**	**Solution**
Notebook will not turn on and battery pack is not inserted.	Notebook is not connected to a power source.	Insert battery or connect an external power source.
	Power cords to the external power source are unplugged.	Ensure that power cords connecting the Notebook and the external power source are plugged in properly.
	Power adapter is defective.	Replace AC adapter, and restart Notebook.
Notebook turned off while it was left unattended and the Power icon is off.	System board is defective.	Replace the system board.
	System intiated Hibernation due to a critical low-battery condition.	Replace the battery pack with a fully charged battery pack, or connect the Notebook to an external power source. Then turn on the Notebook.
	System initiated Hibernation after a preset timeout.	Turn on the Notebook.

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Presario 1400 Series
Models: XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Solving Printer Problems

If you experience problems printing, run a printer self-test. Refer to the documentation provided with the printer for instructions. If the self-test fails, it is a printer-specific problem. Refer also to the printing section of the application documentation.

Solving Printer Problems		
Problem	**Probable Cause**	**Solution**
Printer will not turn on.	The signal cable may not be connected properly, or the printer is unplugged.	Ensure that the signal cable is properly connected and that the power cord is connected to the electrical outlet.
Printer will not print.	Printer is not turned on or is offline.	Turn the printer on and set it to online.
	The device drivers for the application are not installed.	Refer to the printer documentation to install the correct printer driver.
	A Printer is set up for a network, but is not connected to that network.	Connect the printer to the network.
	Printer cable is too long, unshielded, or defective.	Replace the cable.
	Paper tray is empty.	Fill the paper tray with paper and set the printer to online.
Printer prints garbled information.	Correct printer drivers are not installed.	Refer to the printer documentation to install the correct printer driver.
	Cable is not connected properly.	Ensure that the printer signal cable is properly connected to the Notebook.

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Presario 1400 Series
Models: XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Solving TouchPad/Pointing Device Problems

The following table lists some causes and solutions for common TouchPad/Pointing Device problems.

Solving TouchPad/Pointing Device Problems		
Problem	**Probable Cause**	**Solution**
TouchPad or mouse does not work.	No device driver is installed, or an incorrect driver is installed.	Install the device driver and add it to the AUTOEXEC.BAT file or CONFIG.SYS file.
	The device driver is not installed in Windows.	Install the TouchPad/mouse driver in Windows.
External mouse does not work.	Mouse is not securely connected or is connected to an incorrect external connector.	Ensure that the mouse is securely connected to the appropriate external connector.
TouchPad or mouse does not work even though the device is enabled in Windows.	Mouse is not enabled.	Enter **MOUSE** at the system prompt to activate the mouse device driver.
	Cable is not properly seated in TouchPad board.	Reseat the cable.
	The TouchPad board is defective.	Replace the TouchPad board.
	The system board is defective.	Replace the system board.
	Device driver is not correctly installed in Windows.	Install the appropriate device driver in Windows.
Cursor skips or moves abnormally when using the TouchPad.	The TouchPad needs to be cleaned.	Clean the TouchPad with a cloth dampened with alcohol or an ammonia-based glass cleaner. Wipe liquid with a dry cloth.

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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Removal Sequence

This section describes the removal and replacement process for the Presario 1400 Series Notebook. The procedures are divided into two subsections: The Customer Removable Parts and The Service Removable Parts. The first subsection explains which parts may be removed by the customer/owner, and the second subsection explains which parts should be serviced by the technician.

The Customer Removable Parts

Serial Number

Report your Notebook's serial number ❶ to Compaq when requesting information or ordering spare parts. The serial number is located on the underside of the Notebook as shown below.

⚠ **WARNING:** Prior to servicing your Notebook, disconnect AC power cords and external devices, and remove the battery pack and any PC Cards. Failure to disconnect electrical devices may cause damage to the Notebook and loss of human life.

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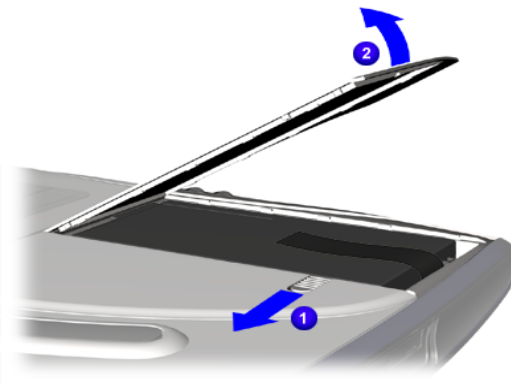# COMPAQ

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Electrostatic Discharge

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device that has been exposed to electrostatic discharge (ESD) may not seem to be affected and work perfectly throughout a normal cycle. Although the Notebook may function normally for a period of time, it may have been degraded in the internal layers, reducing the its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases the discharge contains enough power to alter device parameters or melt silicon junctions.

Generating Static

The table below shows activities that generate static electricity and the associated level of electrostatic voltage.

| Typical Electrostatic Voltages			
Event	Relative Humidity		
	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tubes	2,000 V	700 V	400 V
Removing DIPS from vinyl trays	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCBs	26,000 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V
Note: 700 volts can degrade a product.			

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Presario 1400 Series
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Service Considerations

During the disassembly and assembly of your Notebook, please keep in mind the considerations listed below.

Tool and Software Requirements

Customer serviceable parts only require the following items during disassembly:

- Small standard screwdriver
- Small Phillips screwdriver
- Diagnostics software

Screws

The screws used on the customer removable parts are Phillips. These screws are not interchangeable. If an incorrect screw is applied during the reassembly process, it can damage the unit. Compaq strongly recommends that you keep all screws with their respective parts as they are removed during disassembly. Then replace the screws in their proper locations.

> **Important:** As each subassembly is removed from the Notebook, place it away from the work area to prevent damage.

> **Note:** Screws inside the Compaq Presario 1400 Series Portable Notebooks vary in size and are **not** interchangeable. During reassembly care must be taken to return the correct screws to their original location. Keep all screws with their respective subassembly during removal.

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Presario 1400 Series
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Notebook Disassembly

Before beginning The Removal and Replacement Procedures, complete the following steps:

1. Disconnect AC power and any external devices.

2. Remove any PC cards.

3. Remove the battery pack ().

⚠ **WARNING:** Battery pack contains harmful components when exposed. Do not open, crush, puncture, or incinerate the battery pack. It contains no field-serviceable parts. Dispose of battery packs properly. Failure to dispose of battery packs properly may cause harm to humans, animals, and their environment.

⚠ **CAUTION:** Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Presario 1400 Series Portable Notebooks into the battery compartment. Do not force the battery pack into the bay if insertion does not occur easily. Do not open a battery pack; opening causes damage to the pack, making it unuseable and exposing harmful battery components.

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Battery Pack

To remove the battery pack, complete the following steps:

1. Slide the battery compartment door switch ❶ up to release the door.

2. Simultaneously slide door ❷ right.

3. Lift door to remove.

> **Important:** The battery pack should be removed before performing any internal maintenance on the Notebook.

⚠️ **WARNING:** Battery pack contains harmful components when exposed. Do not open, crush, puncture, or incinerate the battery pack. It contains no field-serviceable parts. Dispose of battery packs properly. Failure to dispose of battery packs properly may cause harm to humans, animals, and their environment.

△ **CAUTION:** Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Presario 1400 Series Portable Notebooks into the battery compartment. Do not force the battery pack into the bay if insertion does not occur easily. Do not open a battery pack; opening causes damage to the pack, making it unuseable and exposing harmful battery components.
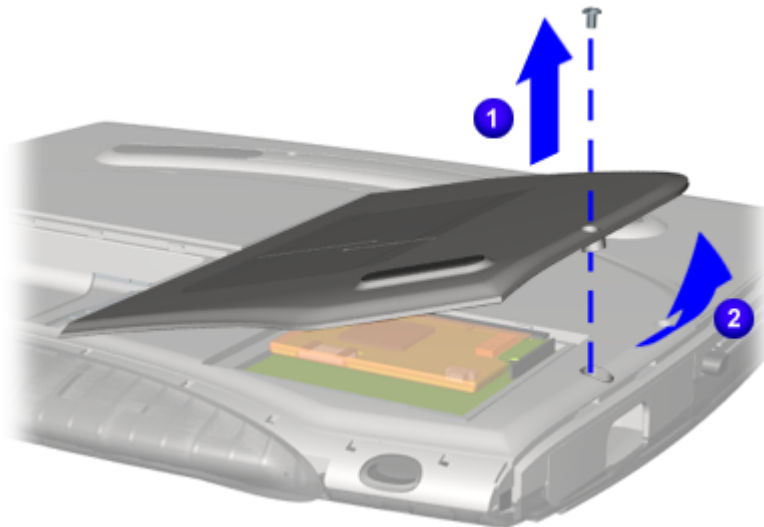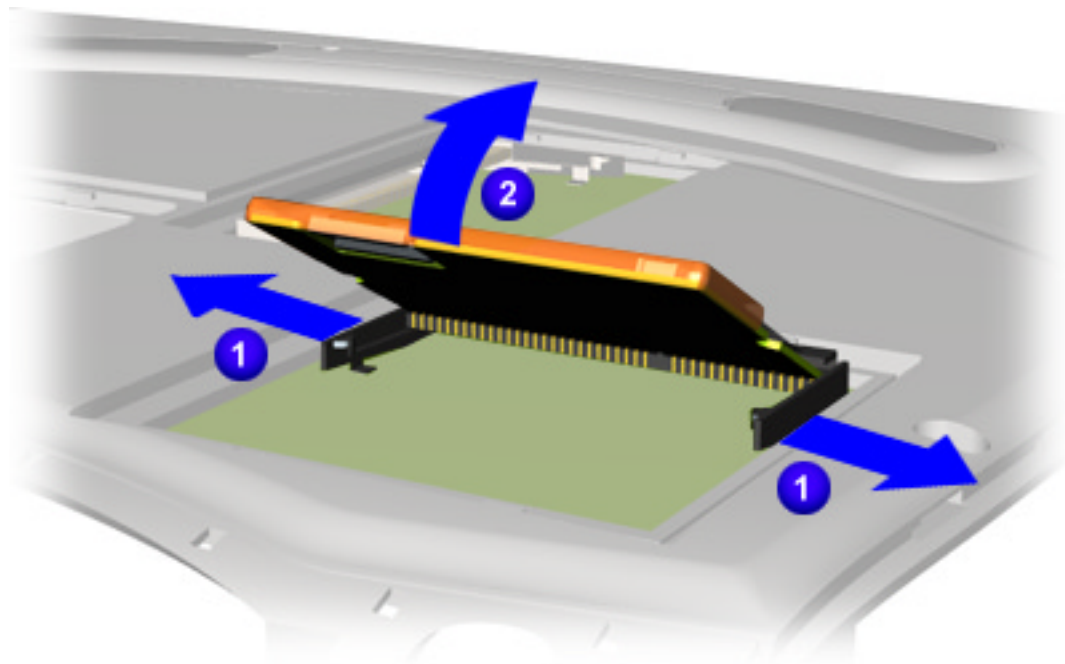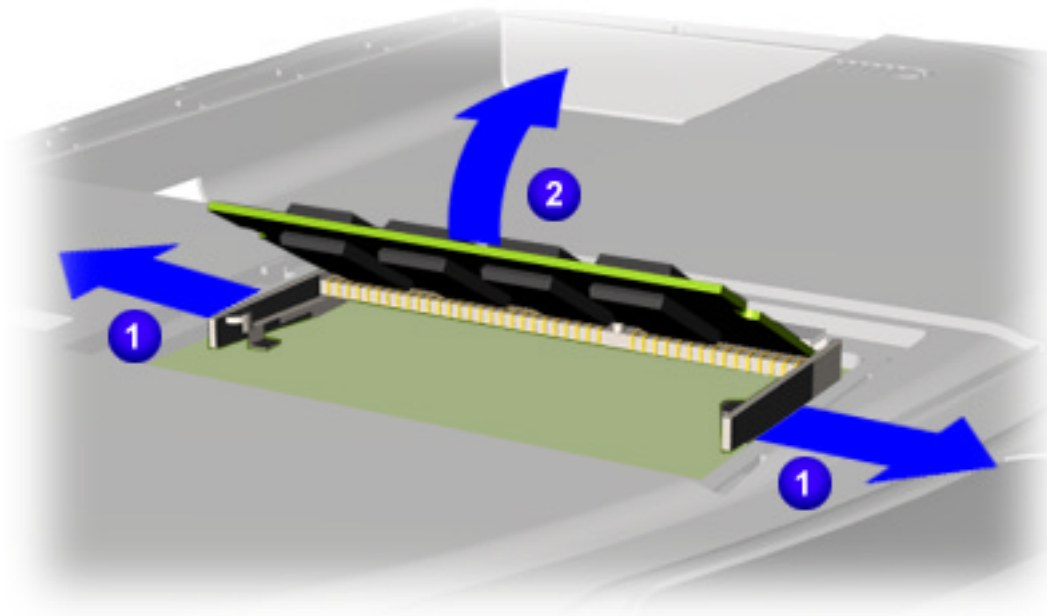
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Presario 1400 Series
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4. Pull up on battery pack ribbon.

5. Disconnect battery pack from connectors.

6. Lift battery pack from compartment.
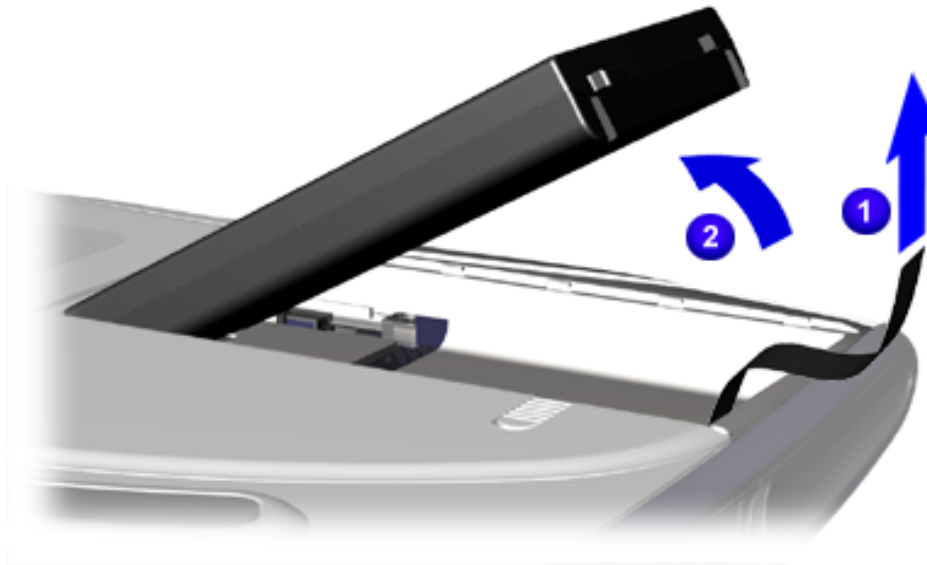
To replace the battery pack, reverse these procedures.

⚠ **WARNING:** Battery pack contains harmful components when exposed. Do not open, crush, puncture, or incinerate the battery pack. It contains no field-serviceable parts. Dispose of battery packs properly. Failure to dispose of battery packs properly may cause harm to humans, animals, and their environment.

⚠ **CAUTION:** Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Presario 1400 Series Portable Notebooks into the battery compartment. Do not force the battery pack into the bay if insertion does not occur easily. Do not open a battery pack; opening causes damage to the pack, making it unuseable and exposing harmful battery components.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
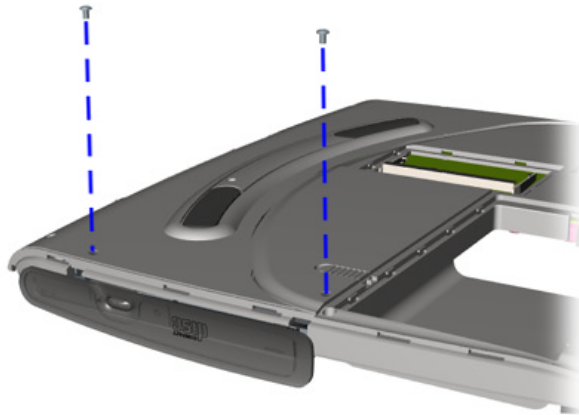**XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356**

Cosmetic Side Covers

To remove the Cosmetic Side Covers, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove one screw located on the side near the back of the unit with a Phillips screwdriver from the cosmetic side cover, left or right.

3. Slide or shift the cosmetic side cover backward to remove it from the Notebook.

4. Repeat this procedure for the other cosmetic side cover.

   Note: To determine left and right sides of the Notebook, as referenced in this guide, face the front of the unit toward you. As referenced in this guide, your left will be the same as the Notebook's left side, and your right will be the same as the Notebook's right side.

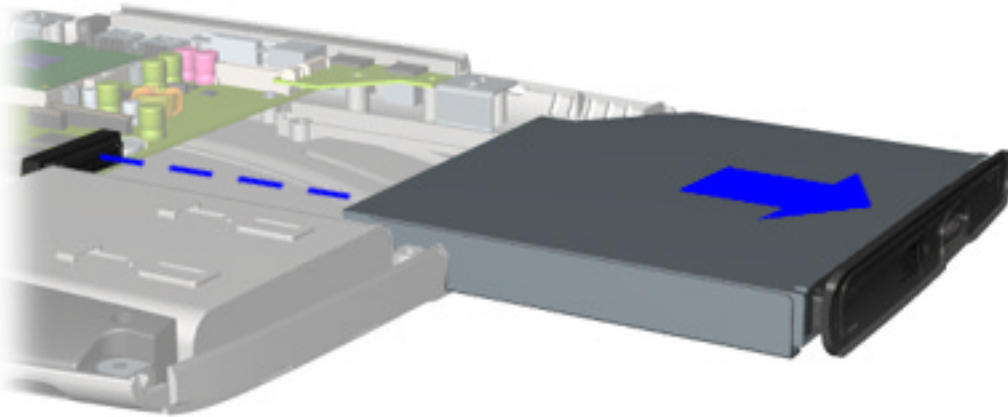To replace the Cosmetic Side Covers, reverse the procedure.

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Presario 1400 Series
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Speaker Port Covers

To remove the Speaker Port Covers, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the upper and lower Speaker Port Covers from chassis.

To replace the Speaker Port Covers, reverse these procedures.

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Presario 1400 Series
**Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356**

Modem/Memory Access Door

To remove the Modem/Memory Access Door, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Turn the Notebook upside down.

3. Remove the one screw ❶ with Phillips screwdriver from the Modem/
   Memory Access Door ❷.

4. Lift up and remove the Modem/Memory Access Door from the unit.

> **Note:** The illustration may show extra components removed that are
> not necessary for this step. Complete only the written steps that are
> provided.

To replace the Modem/Memory Access Door, reverse these procedures.

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Presario 1400 Series
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Modem or Network/Modem Combo Card

To remove the Modem, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Turn the Notebook over.

3. Remove the Modem/Memory Access door from the unit (pg 9).

4. Pull the tab ❶ on each side of the Modem or Network/Modem Card.

5. Lift and remove the card ❷ from the chassis.

To replace the Modem, reverse these procedures.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
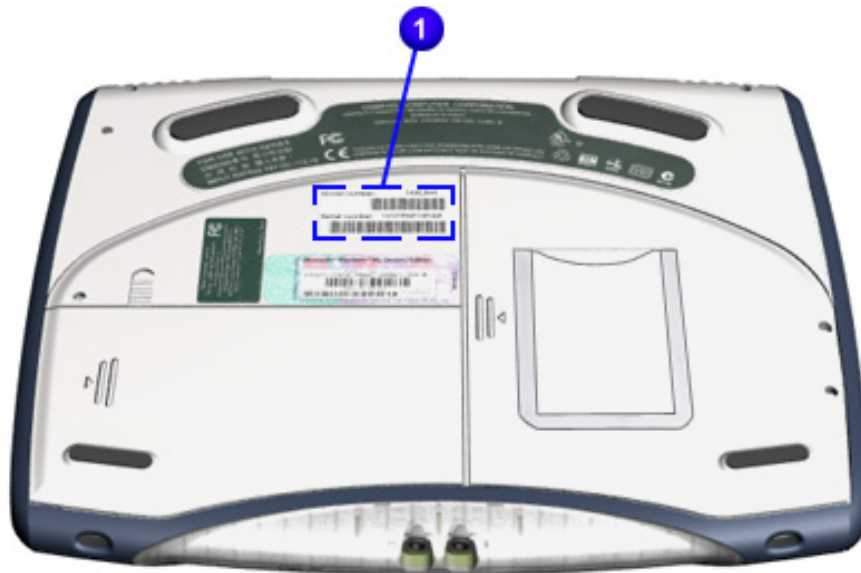**XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356**

Extended Memory Card

To remove the Extended Memory Card, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).
2. Turn the Notebook upside down.
3. Remove the Modem/Memory Access door (pg 9).
4. Pull the tab ❶ on each side of the Extended Memory Card.
5. Lift and remove the Extended Memory Card ❷ from the connectors.

To replace the Extended Memory Card, reverse these procedures.

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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

DVD, CD-Rom, or CD-RW Drive

To remove the DVD, CD-Rom, or CD-RW Drive, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the right cosmetic side cover (pg 7).

   Note: It is not necessary to remove the left cosmetic side cover to remove the DVD, CD-Rom, or CD-RW Drive.

3. Turn the Notebook upside down.

4. Remove two screws from underneath the unit on the left side.

   Note: The illustration may show extra components removed that are not necessary for this step. Complete only the written steps that are provided.

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5. Turn the Notebook over.

6. Slide the DVD, CD-Rom, or CD-RW Drive out to remove.

   Note: The illustration may show extra components removed that are not necessary for this step. Complete only the written steps that are provided.

To replace the DVD, CD-Rom, or CD-RW Drive, reverse these procedures.

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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Hard Drive

To remove the Hard Drive, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the left cosmetic side cover (pg 7).

   Note: It is not necessary to remove the right cosmetic side cover to remove the Hard Drive.

3. Turn the Notebook upside down.

4. Remove one screw from underneath the unit.
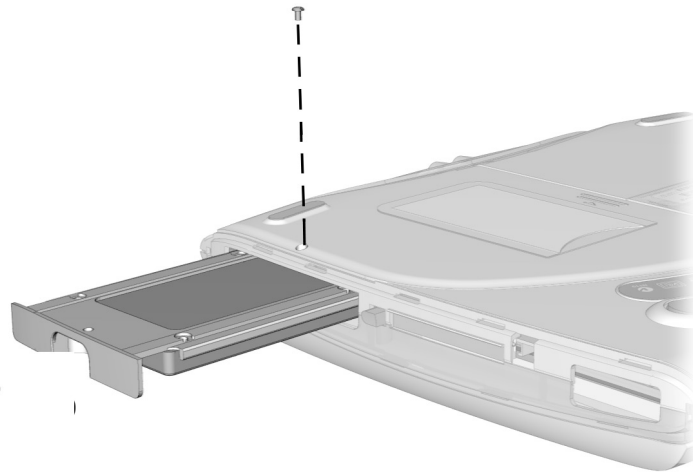
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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

5. Turn the unit over.

6. Slide the Hard Drive out and remove.
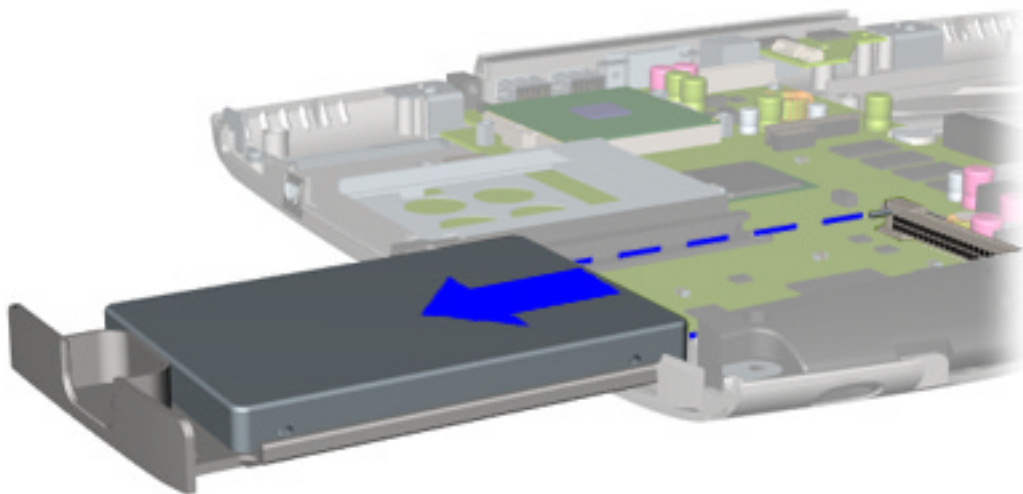
To replace the Hard Drive, reverse the procedure.

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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

The Service Removable Parts

Serial Number

When customers request information or order spare parts, be sure to ask them for their Notebook's serial number ❶. It is located on the underside of the unit.

Before servicing the unit, refer to Preparing the Notebook for Disassembly ().

⚠ **WARNING:** Before servicing the Notebook, disconnect AC power cords and external devices, and remove the battery pack and any PC Cards. Failure to disconnect electrical devices may cause damage to the Notebook and loss of human life.

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Presario 1400 Series
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Electrostatic Discharge

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device that has been exposed to electrostatic discharge (ESD) may not seem to be affected and work perfectly throughout a normal cycle. Although it may function normally for a period of time, it may have been degraded in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases the discharge contains enough power to alter device parameters or melt silicon junctions.

Generating Static

The table below shows activities that generate static electricity and their associated level of electrostatic voltage.

Typical Electrostatic Voltages			
Event	Relative Humidity		
	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tubes	2,000 V	700 V	400 V
Removing DIPS from vinyl trays	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCBs	26,000 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V
Note: 700 volts can degrade a product.			

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Service Considerations

During the disassembly and assembly of the Notebook, please keep in mind the considerations listed below.

Tool and Software Requirements

To service the Notebook, the following items are required:

- Torx T-8 or T-9 screwdriver
- 5mm nut drivers (for screwlocks and standoffs)
- Small standard screwdriver
- Small Phillips screwdriver
- Diagnostics software

Screws

The screws are not interchangeable. If an incorrect screw is applied during the reassembly process, it can damage the unit. Compaq strongly recommends that you keep all screws with their respective parts as they are removed during disassembly. Then replace the screws in their proper locations.

As each subassembly is removed from the Notebook, place it away from the work area to prevent damage.
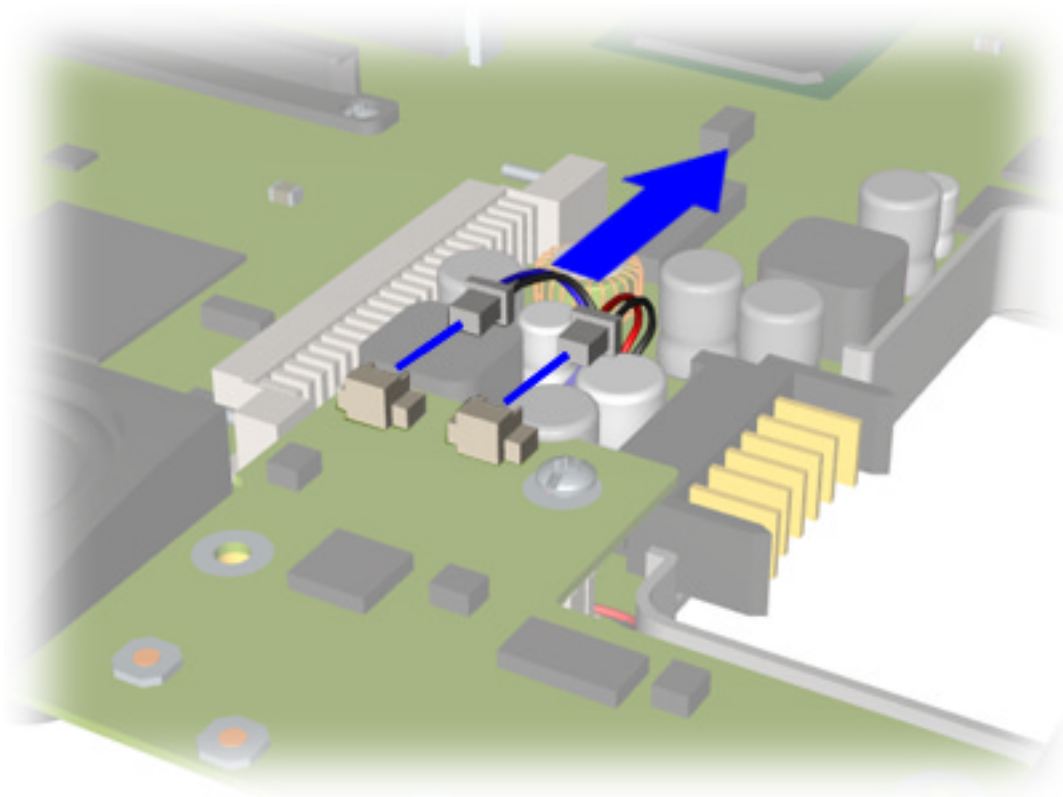
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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Cables and Connectors

Most of the cables inside the Notebook are ribbon cables. Handle cables with extreme care to avoid damage. During insertion or removal from the connector, apply only the amount of pressure required to seat or unseat the cable, handling it by the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables. Route cables in such a way that they cannot be caught or snagged by parts being removed or replaced.

Cables

To avoid damage to the cable or the Notebook, the following precautions should be taken when handling cables:

- Always handle cables by their connectors.

- Avoid bending, twisting, or pulling on the cables.

- Apply minimum required force when seating or unseating the cables from their connectors.

- Place the cables in such a manner that they cannot be caught or snagged by parts being removed or replaced.

- Handle flex cables with extreme care; they can tear easily.

> ⚠ **CAUTION:** When servicing Notebooks, place cables in their proper location during the reassembly process. Improper cable placement can cause severe damage to the Notebook.

Cable Illustrations

The following illustrations show the proper placement for each cable:

- Zif Cable

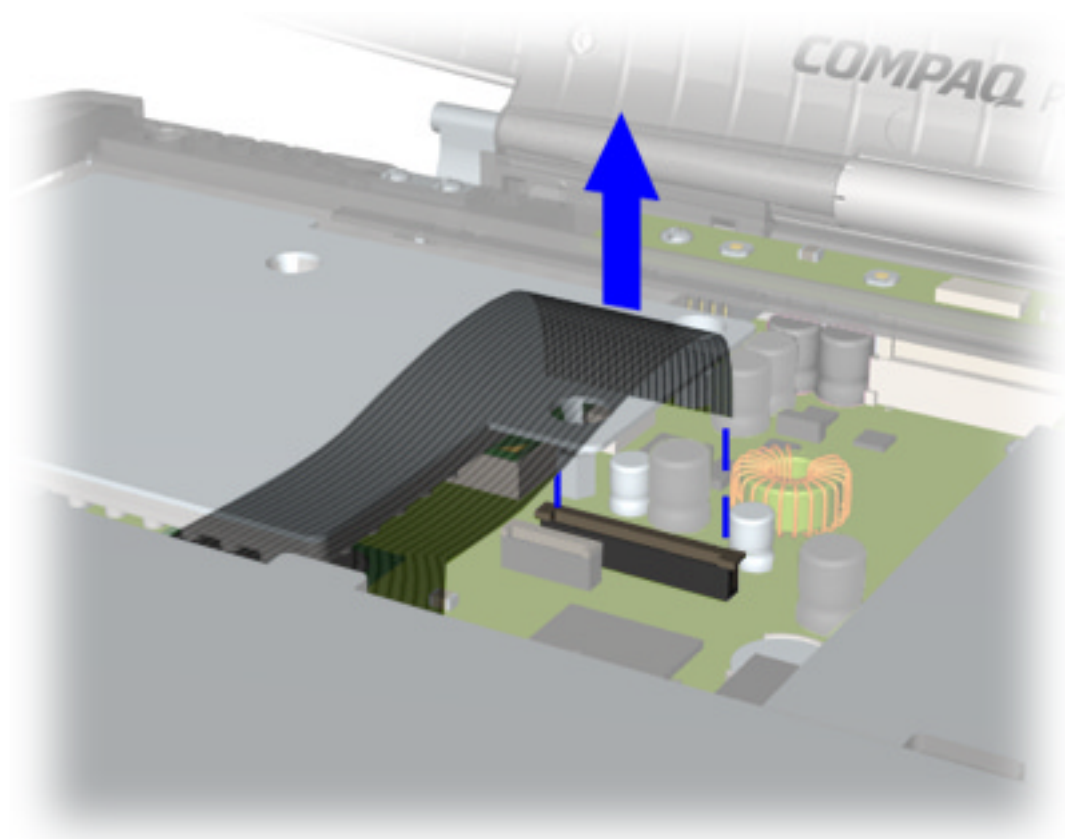- Speaker Assembly Cable

- Keyboard Ribbon Cable

- NIC Cable

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Connectors and Plastic Parts

Plastic parts can be damaged by the use of excessive force during disassembly and reassembly. Handle with care when disassembling and assembling plastic parts. As recommended in the maintenance instructions, apply pressure only at the designated points.

ZIF Connectors

The Notebook uses zero insertion force (ZIF) connectors on the system board.

⚠ **CAUTION:** A ZIF connector and its attached cable can be easily damaged. Handle only the connector slide when removing or replacing a cable. Never pull or twist on a cable while it is connected.

To remove a cable from a ZIF connector, lift both corners of the ZIF connector and slide simultaneously with constant light pressure.
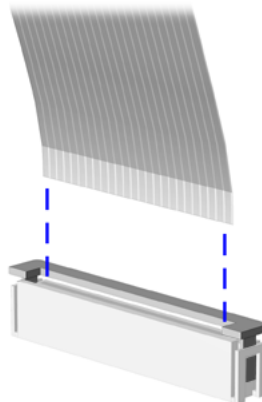
⚠ **CAUTION:** When servicing a Notebook, place cables in their proper location during the reassembly process. Improper cable placement can cause severe damage to the Notebook.
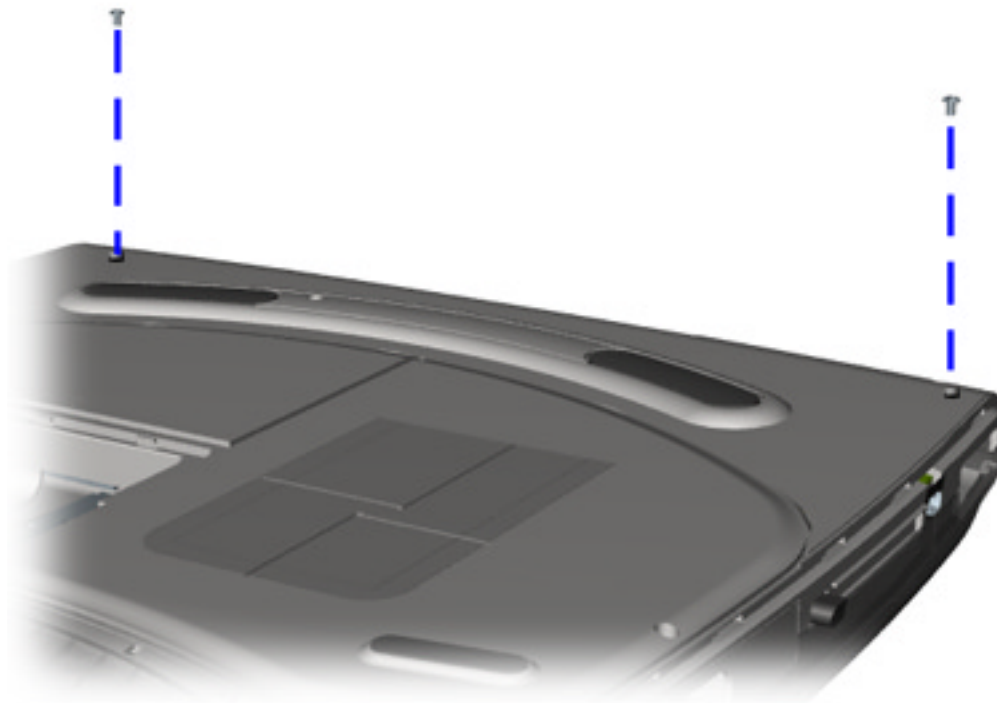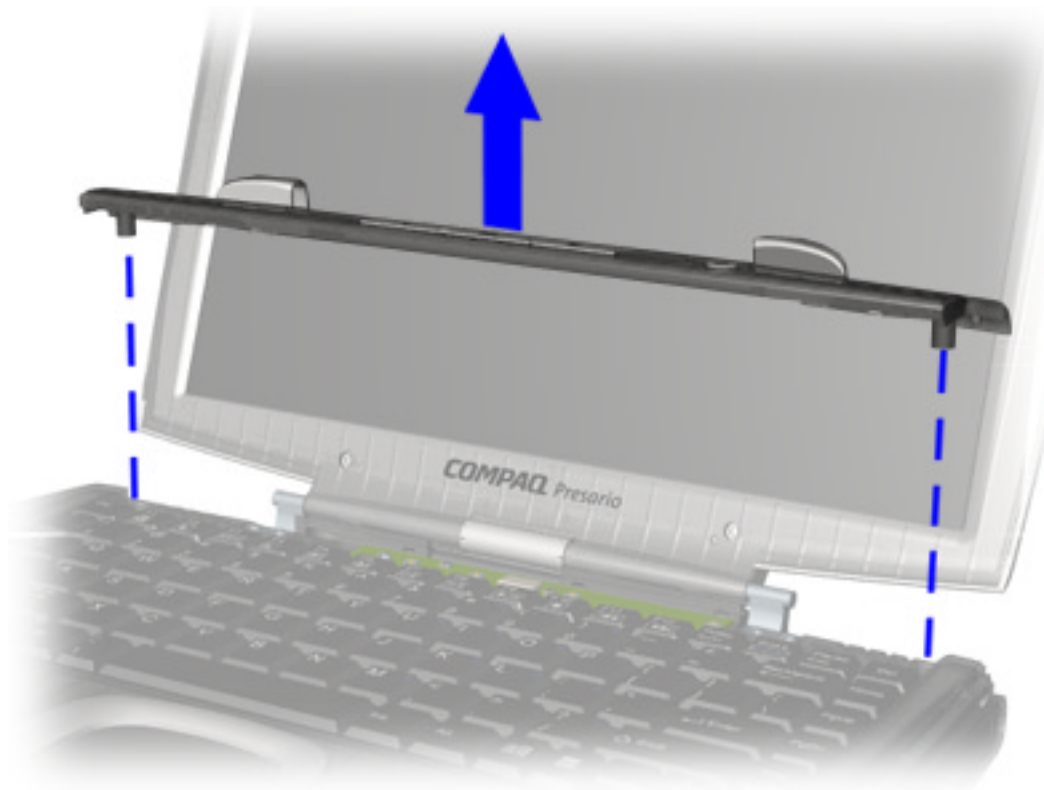
To view other cables, click Cable Illustrations.

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Speaker Assembly Cable

The ribbon cable position for the speaker assembly is shown below.

⚠ **CAUTION:** When servicing a Notebook, place cables in their proper location during the reassembly process. Improper cable placement can cause severe damage to the Notebook.

To view other cables, click Cable Illustrations.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Keyboard Ribbon Cable

The ribbon cable position for the keyboard is shown below.

⚠ **CAUTION:** When servicing a Notebook, place cables in their proper location during the reassembly process. Improper cable placement can cause severe damage to the Notebook.

To view other cables, click Cable Illustrations.

Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Internet Button Board Cover

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Turn the Notebook upside down.

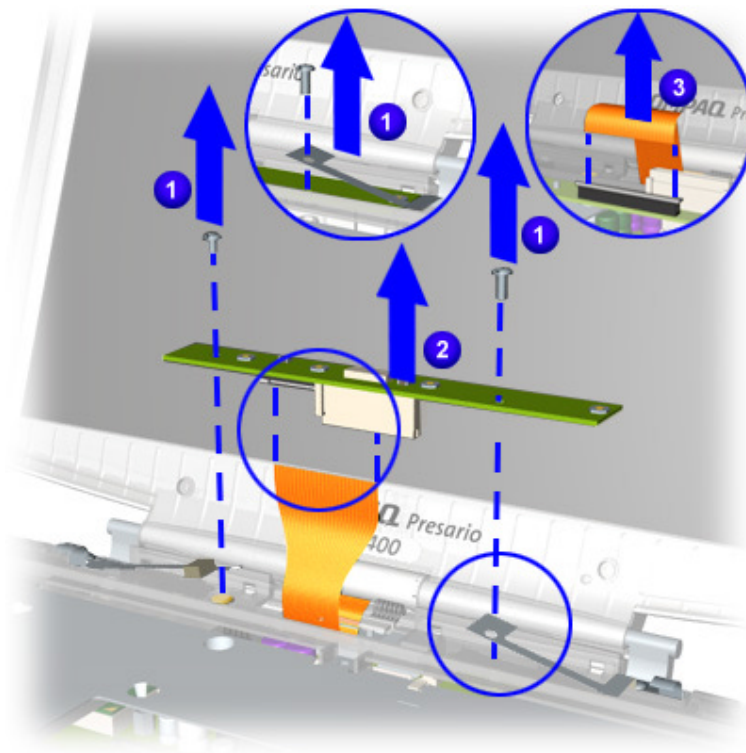4. Remove the two screws from underneath the unit toward the rear.

maintenance & service guide

Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

5. Carefully pry with the flat end of a screwdriver to lift the Internet Button Board Cover.

6. Disconnect the backlight and flex cables.

7. Remove the Internet Button Board Cover from the Notebook.

> **Note:** The hinge covers and backlight switch are located on the Internet Button Board Cover.

To replace the Internet Button Board Cover, reverse the procedure.

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maintenance & service guide

Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Keyboard

To remove the keyboard, complete the following steps:

1. Prepare the Notebook for disassembly (<u>pg 4</u>).

2. Remove the cosmetic side covers (<u>pg 7</u>).

3. Remove the Internet Button Board Cover (<u>pg 23</u>).

4. Lift the back of the keyboard and disconnect the flex cable from the ZIF Connector on the system board.

5. Remove the keyboard from the unit.

Note: When replacing the keyboard, the Keyboard Ribbon Cable should fold behind the ZIF Connectors rather than underneath the keyboard.

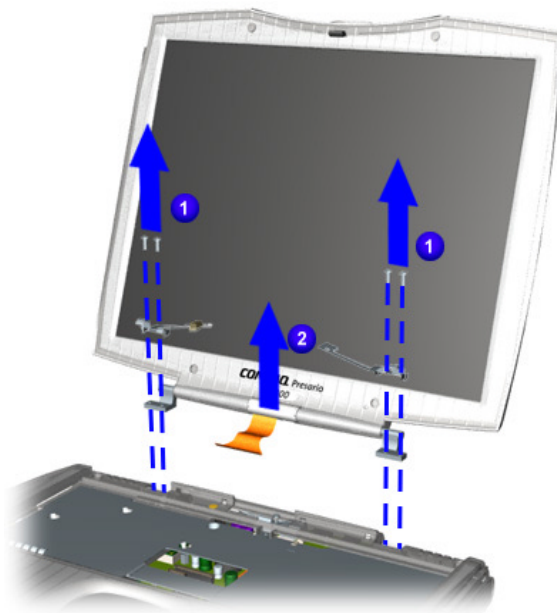# maintenance & service guide

Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

PCA Button Board

To remove the PCA Button Board, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the Internet Button Board Cover (pg 23).

4. Remove the keyboard (pg 25).

5. Disconnect the backlight cable from the system board.

Note: Do not use excessive force when removing cables or boards.
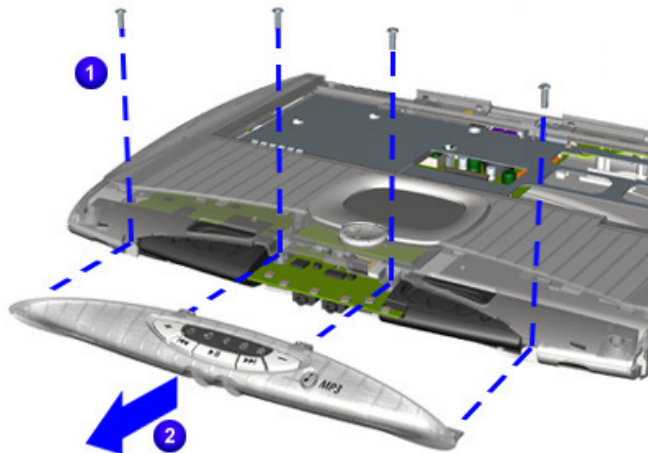
maintenance & service guide

Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

6. Remove two screws ❶ on the PCA Button Board.

7. Pry with the flat end of a screwdriver and lift the PCA Button Board. The data cable that is attached to the PCA Button Board is still connected to the system board.

8. Disconnect the data cable ❸ on the bottom side of the PCA Button Board.

9. Remove the PCA Button Board ❷ from the chassis.

   Note: The EMI Shields are lightweight pieces of metal. Be sure not to lose these shields when removing the PCA Button Board or Display Panel Assembly.

To replace the PCA Button Board, reverse these procedures.
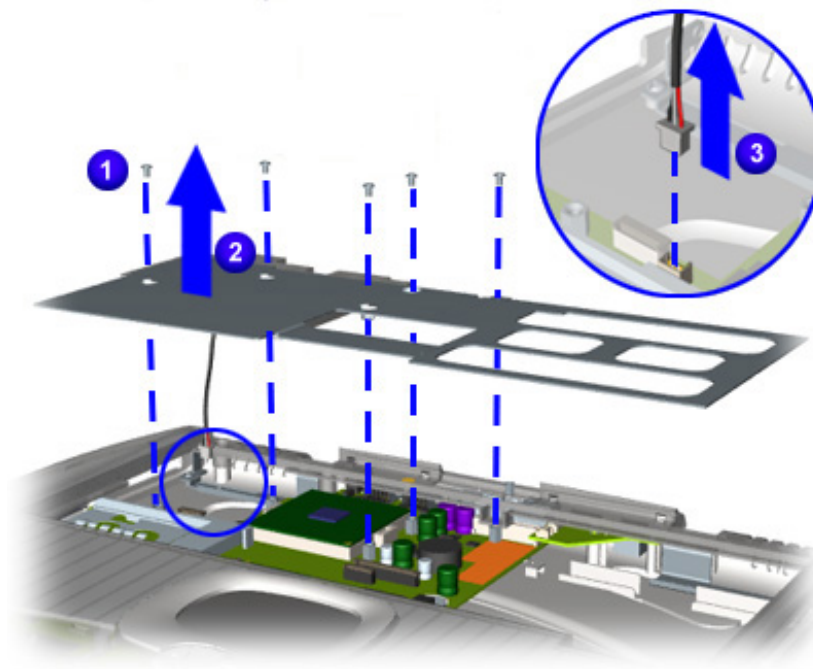
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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Display Panel Assembly

To remove the display panel assembly, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the Internet Button Board cover (pg 23).

4. Remove the keyboard (pg 25).

5. Remove the PCA Button Board (pg 26).

6. Remove the four screws ❶ from the hinges securing the Display Panel Assembly. Be sure to keep the EMI shields with the Display Panel Assembly.

7. Lift and remove the Display Panel ❷ Assembly from the chassis.

Note: The EMI Shields are lightweight pieces of metal. Be sure not to lose the shields when removing the PCA Button Board or Display Panel Assembly.

To replace the Display Panel Assembly, reverse these procedures.

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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

MP3 Zone Cover

To Remove the MP3 Zone Cover, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the speaker port covers (pg 8).

4. Remove the four screws ❶ from the MP3 Zone Cover.

5. Pull the MP3 Zone Cover ❷ forward and remove it from the chassis.

To replace the MP3 Zone Cover, reverse these procedures.
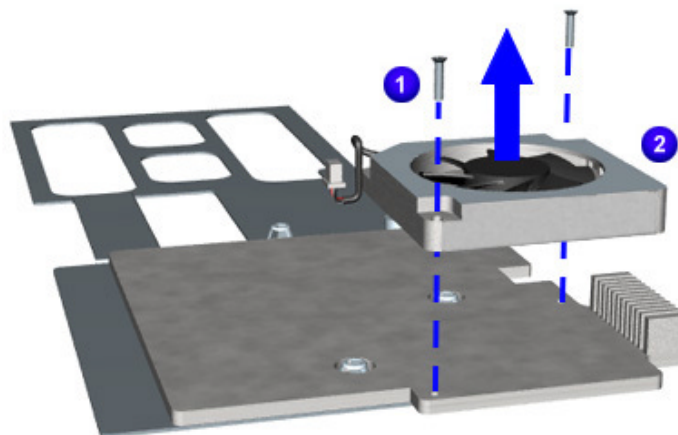
maintenance & service guide

Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Heatspreader with Fan Assembly

To remove the Heatspreader with Fan Assembly, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the Internet Button Board cover (pg 23).

4. Remove the keyboard (pg 25).

5. Remove five screws ❶ with a T-9 Torx driver.

6. Remove the heatspreader ❷ with fan assembly.

7. Disconnect the fan cable ❸ from the system board.

To replace the heatspreader, reverse these procedures.

> **Note:** When replacing the Heatspreader, be sure that the Heatspreader is lying on top of the CPU Upper Cover with Palmrest and Touch Pad. The CD/DVD will not operate if the Heatspreader is installed incorrectly.

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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Fan Assembly

To remove the Fan Assembly, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the Internet Button Board cover (pg 23).

4. Remove the keyboard (pg 25).

5. Remove the Heatspreader with Fan Assembly (pg 30).

6. Remove two screws ❶ with a Phillips screwdriver.

7. Lift and remove the Fan Assembly ❷ from the Heatspreader.
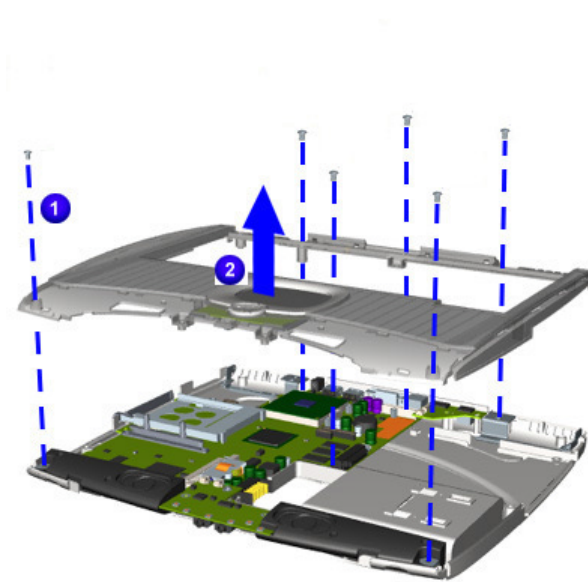
To replace the Fan Assembly, reverse the procedure.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Palmrest Cover with TouchPad (Upper CPU)

To remove the Palmrest Cover with TouchPad (Upper CPU), complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).
2. Remove the cosmetic side covers (pg 7).
3. Remove the speaker port covers (pg 8).
4. Remove the Power-on and Internet Button Board Cover (pg 23).
5. Remove the keyboard (pg 25).
6. Remove the PCA Button Board (pg 26).
7. Remove the display panel assembly (pg 28).
8. Remove the Modem/Memory Access Door (pg 9).
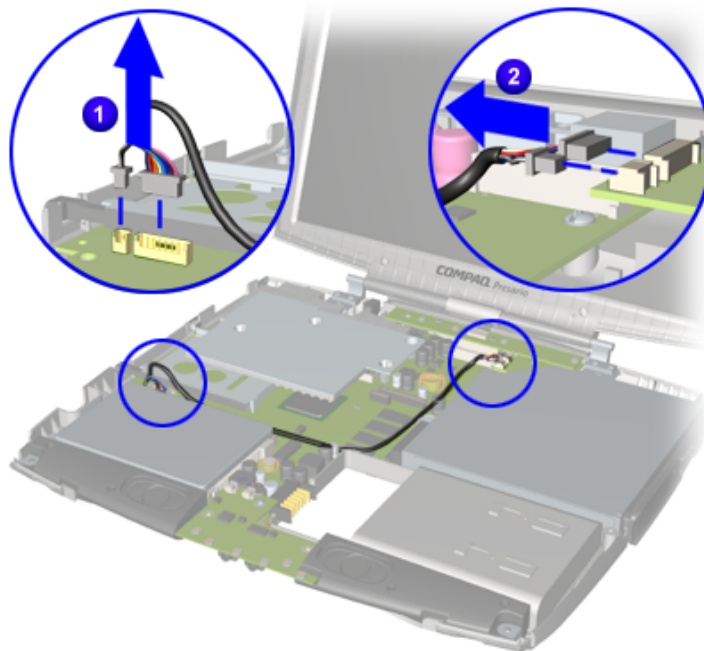9. Remove the MP3 Zone Cover (pg 29).
10. Remove the Heatspreader (pg 30).

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Presario 1400 Series
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11. Remove seven screws ❶ and one standoff from the Upper CPU Cover with Palmrest and TouchPad.

12. Remove the TouchPad data cable with a flat-blade screwdriver.

13. Lift the Upper CPU Cover with Palmrest and TouchPad ❷ upward and remove it from the chassis.

Note: Illustrations may show a fewer number of screws removed. It is necessary to remove only the parts listed in the written procedure.

To replace the Upper CPU Cover with Palmrest and TouchPad, reverse these procedures.

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Modem/Modem-NIC Combo Cable

To remove the NIC (Network Interface Card) cable, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the speaker port covers (pg 8).

4. Remove the Modem/Memory Access Door (pg 9).

5. Remove the Internet Button Board cover (pg 23).

6. Remove the keyboard (pg 25).

7. Remove the PCA Button Board (pg 26).

8. Remove the display panel assembly (pg 28).

9. Remove the MP3 zone cover (pg 29).

10. Remove the heatspreader (pg 30).

11. Remove the Palmrest Cover with TouchPad, Upper CPU, (pg 32).

![Compaq logo]

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12. Disconnect and lift off the large end ❶ of the Modem/NIC cable connector located near the hard drive.

13. Disconnect and lift off the small end ❷ of the Modem/NIC cable connector located near the rear of the unit.

14. Remove one standoff with a 5mm nut driver.

15. Remove NIC cable from chassis.

To replace the NIC Cable, reverse the procedure.

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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

MP3 Audio Board

To remove the MP3 Audio Board, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the speaker port covers (pg 8).

4. Remove the Modem/Memory Access Door (pg 9).

5. Remove the Internet Button Board Cover (pg 23).

6. Remove the keyboard (pg 25).

7. Remove the PCA Button Board (pg 26).

8. Remove the display panel assembly (pg 28).

9. Remove the MP3 Zone Cover (pg 29).

10. Remove the Heatspreader (pg 30).

11. Remove the Palmrest Cover with TouchPad, Upper CPU, (pg 32).

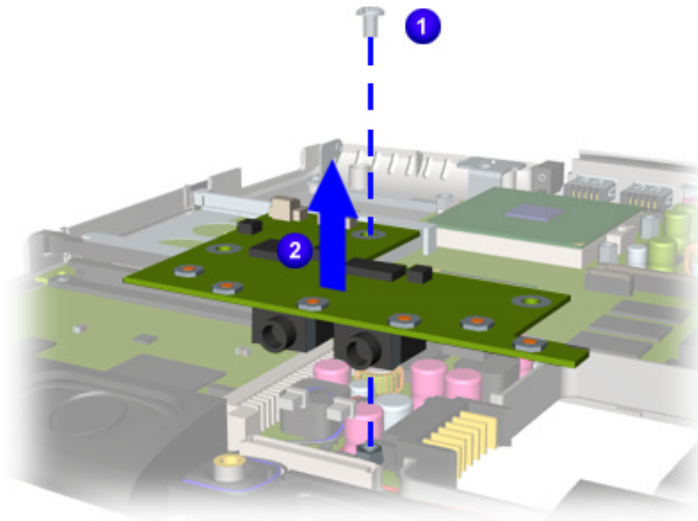**Presario 1400 Series**
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

12. Remove one screw ❶ from the system board.

13. Lift and remove the MP3 Audio Board ❷ from the system board.

14. Disconnect the speaker cable from the system board.

To replace the MP3 Audio Board, reverse the procedure.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Speaker Assembly

To remove the Speaker Assembly, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the speaker port covers (pg 8).

4. Remove the Modem/Memory Access Door (pg 9).

5. Remove the Internet Button Board cover (pg 23).

6. Remove the keyboard (pg 25).

7. Remove the PCA Button Board (pg 26).

8. Remove the display panel assembly (pg 28).

9. Remove the MP3 Zone Cover (pg 29).

10. Remove the Heatspreader (pg 30).

11. Remove the Palmrest Cover with TouchPad, Upper CPU, (pg 32).
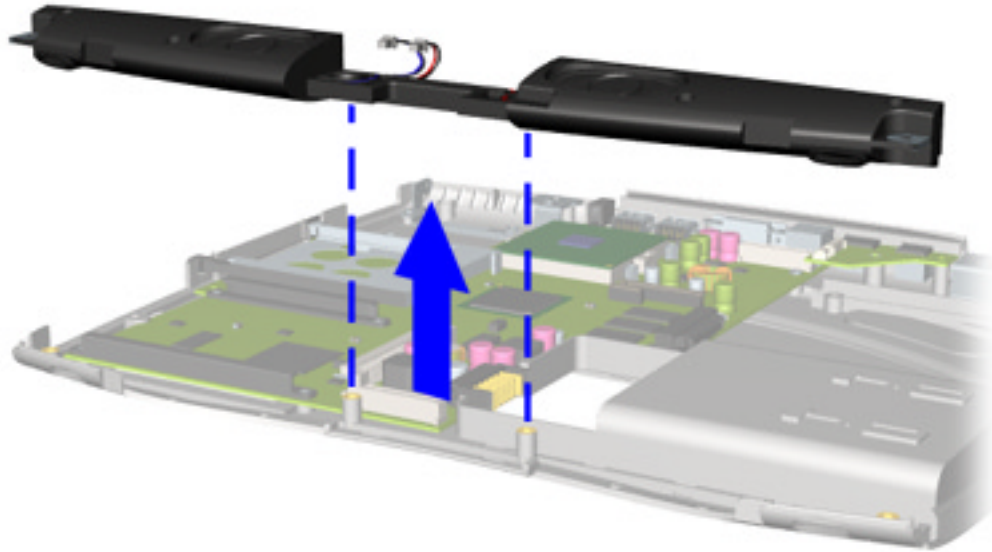
12. Remove the MP3 audio board (pg 36).

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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

13. Lift and remove the Speaker Assembly from the chassis.

To replace the Speaker Assembly, reverse the procedure.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

System Board

To remove the system board, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the speaker port covers (pg 8).

4. Remove the modem/memory access door (pg 9).

5. Remove the CD drive (pg 12).

6. Remove the hard drive (pg 14).

7. Remove the Internet Button Board cover (pg 23).

8. Remove the keyboard (pg 25).

9. Remove the PCA Button Board (pg 26).

10. Remove the display panel assembly (pg 28).

11. Remove the MP3 Zone Cover (pg 29).

12. Remove the heatspreader (pg 30).

13. Remove the Palmrest Cover with TouchPad, Upper CPU, (pg 32).

14. Remove the NIC cable (pg 34).

15. Remove the MP3 audio board (pg 36).

16. Remove the Speaker Assembly (pg 38).

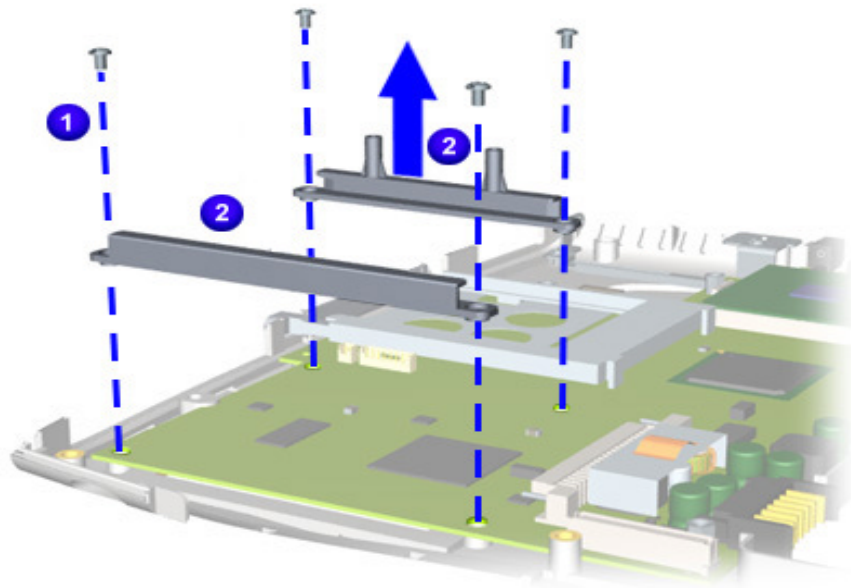PRESARIO NOTEBOOK MAINTENANCE AND SERVICE GUIDE 1400 SERIES

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

17. Remove four screws ❶ from two Hard Drive Rails.

18. Remove both Hard Drive Rails ❷ from the system board.
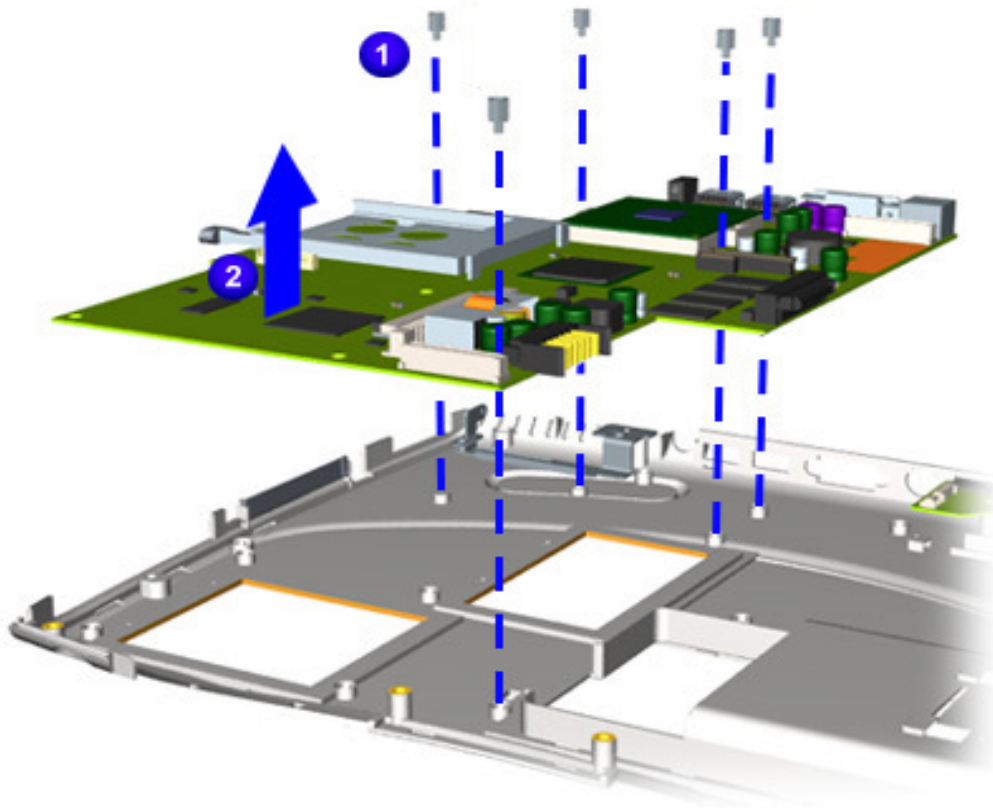
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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

19. Remove six 5mm standoffs ❶ from system board.

20. Lift system board ❷ from chassis.

Note: Illustrations may show a fewer number of standoffs removed. It is necessary to remove only the parts listed in the written procedure.

To replace the system board, reverse the procedure.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Processor

To remove the processor, complete the following steps:

1. Prepare the Notebook for disassembly (pg 4).

2. Remove the cosmetic side covers (pg 7).

3. Remove the Internet Button Board cover (pg 23).

4. Remove the PCA Button Board (pg 26).

5. Remove the keyboard (pg 25).

6. Remove MP3 Zone Cover (pg 29).

7. Remove the heatspreader (pg 30).

8. Remove the Palmrest Cover with TouchPad, Upper CPU, (pg 32).

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9. Shift with the flat end of screwdriver to the side in the slot ❶ that reads "OPEN" to unlock the processor.

10. Lift the processor ❷ from the chassis.

    Note: The bottom of the processor contains socket pins that can be easily damaged if not properly removed or installed.

    ⚠️ **WARNING:** The processor may become very hot after the unit has been operating. Allow the processor time to cool before handling it.

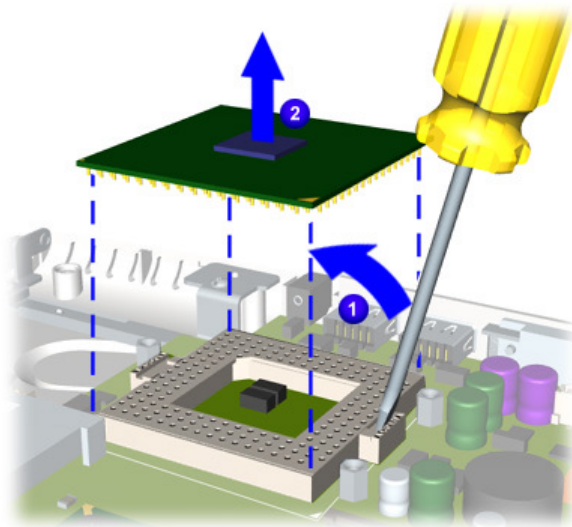To replace the processor, refer to Replacing the Processor.

Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Replacing the Processor

To replace the processor, complete the following procedure:

1. Place the processor ❷ on the connectors correctly aligning the gold triangle with the silver triangle ❸.

2. Shift with the flat end of a screwdriver, to the side in the slot ❶ that reads "CLOSED" to lock the processor.

   Note: The bottom of the processor contains socket pins that can be easily damaged if not properly removed or installed.

   ⚠ **WARNING:** The processor may become very hot after the unit has been operating. Allow the processor time to cool before handling it.

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340,
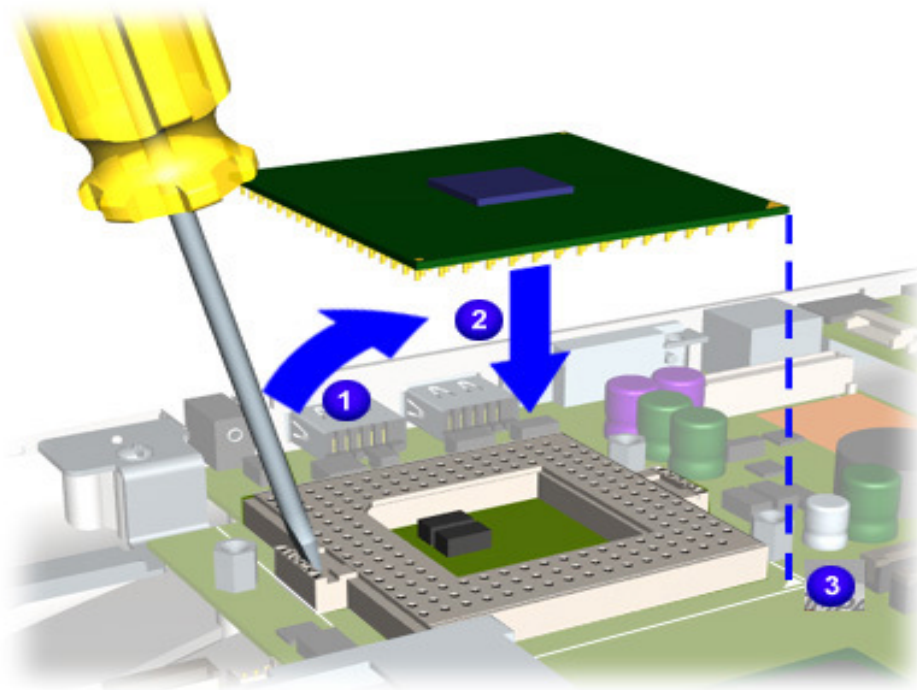**XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356**

Parts Catalog

This section provides illustrations of the spare for the Compaq Presario 1400 Series Notebook Computer and identifies the spare part ordering number and availability of each item.

Illustrated Parts

The Notebook serial number should be provided to Compaq whenever requesting information or ordering spare parts. To order parts, refer to Part Numbers & Availability section shown later in this chapter. The serial number ❶ is located underneath the unit.

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Presario 1400 Series
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System Unit

No.	Description
❶	Keyboard
❷	Palmrest Cover with TouchPad and Button Board
❸	Speakers with Conductive
❹	Battery Packs
❺	Enclosure Base

To order parts, refer to Part Numbers & Availability shown later in this chapter.

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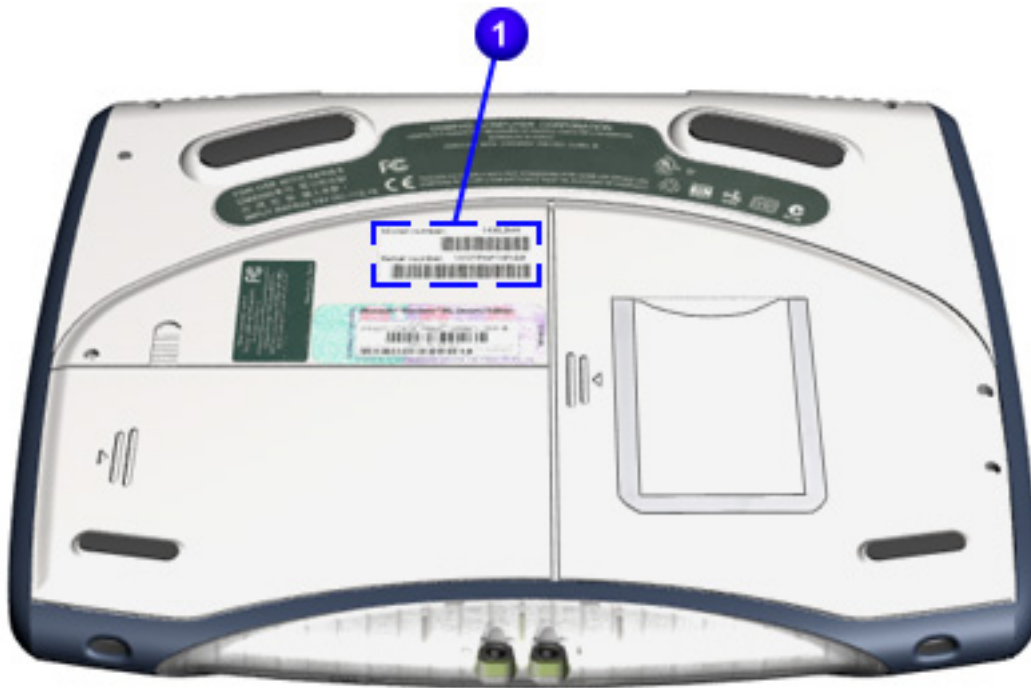
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Presario 1400 Series
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XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Boards
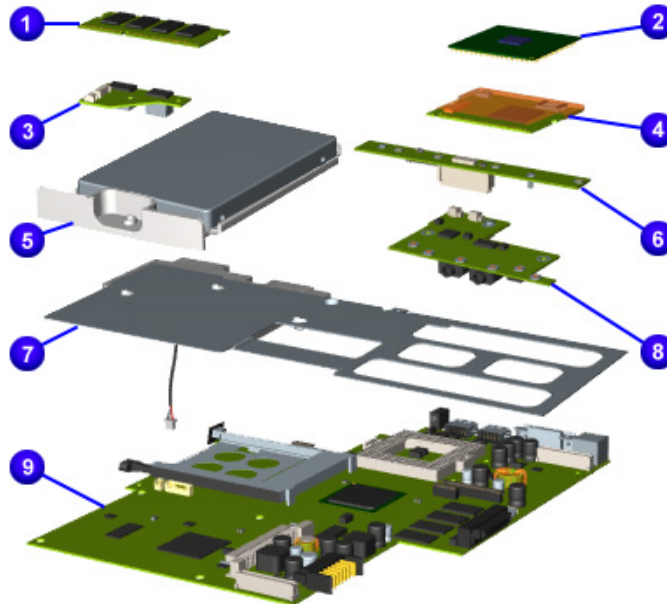
No.	Description
❶	Memory
❷	Processor
❸	RJ11 Connector Board
❹	Modems K-56K Mini
❺	Hard Drive
❻	Internet Board
❼	Heatspreader with Fan Assembly
❽	Audio Board
❾	System Board

To order parts, refer to Part Numbers & Availability shown later in this chapter.
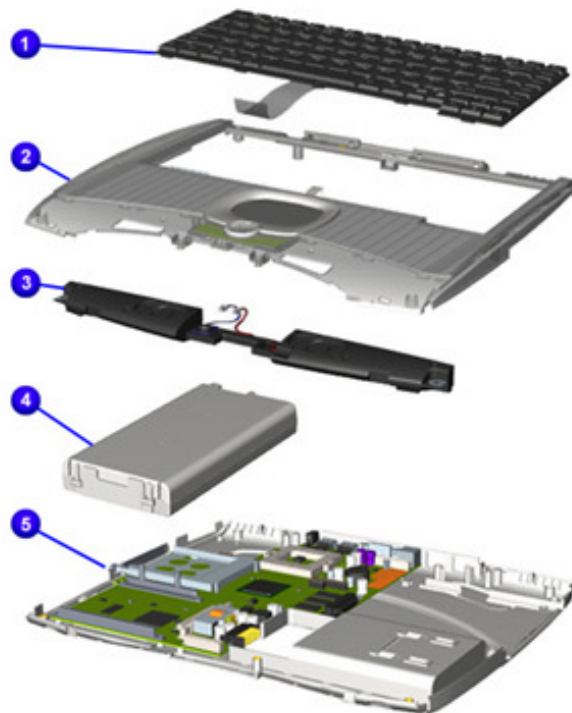
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Presario 1400 Series
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Display Assembly

Description
Display Panel Assembly

To order parts, refer to Part Numbers & Availability shown later in this chapter.

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Presario 1400 Series
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Mass Storage Devices

| Spare Part Items	
No.	**Description**
❶	1.44MB Diskette Drive
❷	Hard Drive
❸	DVD-ROM Drive
❹	24X CD-ROM Drive

To order parts, refer to Part Numbers & Availability shown later in this chapter.

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Miscellaneous Hardware Kit

Spare Part Items	
Description	
Miscellaneous Hardware Kit	
❶	Left Hard Drive Rail
❷	Right Hard Drive Rail

To order parts, refer to <u>Part Numbers & Availability</u> shown later in this chapter.

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maintenance & service guide

Presario 1400 Series
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Miscellaneous Parts

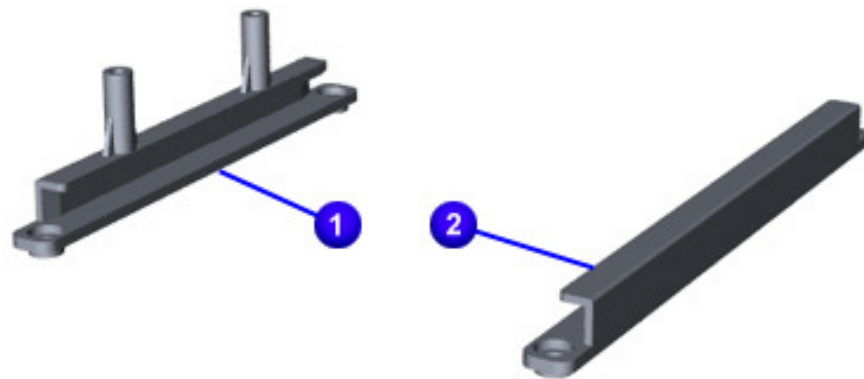| Spare Part Items |
| --- |
| **Description** |
| AC Adapter |

To order parts, refer to Part Numbers & Availability shown later in this chapter.

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Presario 1400 Series
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Part Numbers & Availability

This section is a comprehensive list of the parts associated with the 1400 Series Notebooks. It provides the part number, applicable model(s), and the availability of each item.

Build-to-Order Models

1400 Build-to-Order Models			
Description	**Part Number**	**Description**	**Part Number**
Processor: Celeron 600 FC-PGA Pentium III 600	201566-001 159485-001	**CD, DVD, CD-RW:** 24X CD-ROM 8X DVD CD-RW	201791-001 201792-001 212785-001
Display: 12.1-in TFT 13.3-in TFT	TBD 201563-001	**Hard Drive:** 6.0 GB 10.0 GB	170087-001 200349-001
Batteries: Li-ion 3.2	197595-001	**Miscellaneous:** Custom Plastics, Amethyst Purple Custom Plastics, Ruby Red Custom Plastics, Emerald Green Custom Plastics, Onyx Black Custom Plastics, Sapphire Blue Custom Plastics, Eddie Bauer Logo Badge Packaging CTO	206851-001 206852-001 206853-001 206854-001 206855-001 TBD 201561-001 TBD
Memory: 100MHz 128SD (64up +64down) 100MHz 192SD (64down +128up) 100MHz 64SD (down) 100MHz 96SD (64down + 32up)	TBD TBD 122700-001 TBD	**Software:** FHC CD Pro Office 2000 CD SBE Office 2000 CD	TBD TBD TBD
Diskette Drive: USB Floppy	197598-001	**Additional Items:** AC Adapter with Power Cord Battery Li-ion 3.2 Mouse, CPQ USB	TBD 197595-001 TBD
Base Unit: No Floppy, EddieBauer, WinME No Floppy, Trident, WinME	TBD TBD		

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Presario 1400 Series
Model XL240, XL241, XL242, XL244, XL245, XL246, XL247, XL250, XL340, XL341, XL342, XL343, XL344, XL345, XL346, XL350, XL352, XL355, and XL356

Alphabetical Spares Listing

In this section, the following spare parts pertaining to the 1400 Series Notebooks are listed alphabetically. To find a part number, choose the letter that your spare part starts with from the alphabet index below (Example: choose "P" for Processor).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Spare Part Description	Part Number	Applicable Models	Availability
AC Adapter (60W Slim 3 Wire)	180675-001	242, 246, 247, 250, 352, CTO	
AC Adapter (60W Slim 2 Wire)	180676-001	240, 244, 245, CTO	
AC Adapter	298239-001	241, CTO	
AC Power Cord (Intl 3 Wire)	170513-002	242, 246, 247, 250	
AC Power Cord (UK 3 Wire)	170513-031	242, 250	
AC Power Cord (IT 3 Wire)	170513-061	242, 250, 352	
AC Power Cord (SWI 3 Wire)	170513-115	250, 352	
AC Power Cord NA	293831-001	240, 241, 244, 245, CTO	
Audio Board	201782-001	All, CTO	
Battery Pack (3.2 Ahr, Li-ion Enhanced)	197595-001	240, 241, 242, 245, 246, 247, 250, 340, 341, 342, 343, 344, 345, 346, 350, 352, 355, 356, CTO	
Battery Pack (3.6 Ahr, Li-ion Enhanced)	199938-001	CTO	
Battery Pack (4.5 Ahr, Li-ion Enhanced)	197596-001	244, CTO	
Button Board Cover w/Internet Buttons	201790-001	240, 241, 242, 244, 245, 246, 247, 250, CTO	
Button Board Cover w/Internet Buttons	TBD		
Connector Board (RJ11)	201785-001	All, CTO	
CD Play Cover	201788-001	All, CTO	
CD-ROM Drive 24X	201791-001	240, 241, 242, 244, 341, 342, 343, 350, CTO	
CD-RW Drive 2200	212785-001		
CPU Cover	201789-001	All, CTO	
Diskette Drive (1.44 MB)	197598-001	All, CTO	
Display Panel (12.1-in TFT)	212782-001	246, CTO	

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Spare Part Description	Part Number	Applicable Models	Availability
Display Panel (12.1-in DSTN)	212783-001	CTO	
Display Panel (13.0-in STN)	201562-001	240, 241, 242, 244, CTO	
Display Panel (13.3-in TFT)	201563-001	245, 247, 250, CTO	
Display Panel (12.1-in TFT B0031)	221668-001	340, 352	
Display Panel (13.0-in STN B0031)	221670-001	341	
Display Panel (13.3-in TFT B0031)	221669-001	342, 343, 344, 345, 346, 350, 355, 356	
DVD Drive (6X)	212784-001	CTO	
DVD Drive (8X)	201792-001	245, 246, 250, 340, 344, 345, 346, 352, 355, CTO	
Enclosure Base	201793-001	All, CTO	
Hard Drive (5.0 GB)	169609-001	246, CTO	
Hard Drive (6.0 GB)	170087-001	240, 241, 242, 244, 245, 247, 250, 340, 341, 345, 352, 355, 356, CTO	
Hard Drive (10.0 GB)	200349-001	342, 343, 344, 346	
Hard Drive (12.0 GB)	170086-001	CTO	Not Available
Hard Drive (15.0 GB)	216173-001	350, CTO	
Heat Spreader 2200	201794-001	240, 241, 242, 244, 245, 246, 247, 250, CTO	
Heat Spreader with Points	221330-001	340, 341, 342, 343, 344, 345, 346, 350, 352, 355, 356, CTO	
Internet Board Cover (B0031)	221671-001	340, 341, 342, 343, 344, 345, 346, 350, 352, 355, 356, CTO	
Internet Board	201783-001	245, 246, 247, 250, 340, 341, 345, 352, 355, 356, CTO	
Internet Board for DRGB	201784-001	240, 241, 242, 244, 341, 352, CTO	
Keyboard (US)	201795-001	240, 244, 245, 340, 342, 345, 355, CTO	
Keyboard (UK)	201795-031	242, 250, 355	
Keyboard (GR)	201795-041	250, 355	

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Spare Part Description	Part Number	Applicable Models	Availability
Keyboard (FR)	201795-051	242, 250, 355	
Keyboard (IT)	201795-061	242, 250, 352, 355	
Keyboard (DK)	201795-081	250, 355	
Keyboard (NO)	201795-091	242, 250, 355	
Keyboard (SE)	201795-101	242, 250, 355	
Keyboard (LA)	201795-161	241, 341, 355	
Keyboard (BEL)	201795-181	242	
Keyboard (JP)	201795-291	343, 344, 346	
Keyboard (SG)	201795-311	250, 352	
Keyboard (NL)	201795-331	246, 247, 356	
Logo Kit	201561-001	All, CTO	
Memory (S.O. DIMM 64 MB PC100)	122700-001	350	
Miscellaneous Cable Kit	201787-001	All, CTO	
Miscellaneous Plastic/Hardware Kit	201781-001	CTO	
Miscellaneous Screw Kit	330959-001	All, CTO	
Modem (K-56K Mini) US	159502-001	241, CTO	
Modem (K-56K Mini) Intl	159502-002	242, 246, 247, 250	
Modem/NIC Combo (56K Mini) US	212786-001	240, 244, 245, 340, 341, 345	
Modem/NIC Combo (56K Mini) Intl	221329-002	342, 350	
Plastics Kit, Amethyst Purple	206851-001	CTO	
Plastics Kit, Emerald Green	206853-001	CTO	
Plastics Kit, Onyx Black	206854-001	240, 241, 242, 244, 245, 246, 247, 250, CTO	
Plastics Kit, Ruby Red	206852-001	CTO	
Plastics Kit, Sapphire Blue	206855-001	CTO	
Processors, Celeron 566MHz 1.5 V FC-PGA	201565-001	242, 244, 245, 246, CTO	
Processors, Celeron 600 MHz 2V FC-PGA	201566-001	240, 241, 247, 250, 340, 343, 344, 346, 352, CTO	
Processors, Celeron 633 MHz 1.6V FC-PGA	217844-001	341	Not Available
Processors, Celeron 677 MHz 1.6V FC-PGA	221667-001	341, 355, 356	Not Available

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Spare Part Description	Part Number	Applicable Models	Availability
Processors, PIII 600 MHz 256K Cache	159485-001	240, 241, 247, 250, CTO	
Processors, PIII 650 MHz 256K Cache	175308-001	345, CTO	Not Available
Processors, PIII 700 MHz 256K Cache	221415-001	342, 350	
Return Kit	293799-001	All, CTO	
Speakers with Conductive	197597-001	All, CTO	
System Board (I/O w/64 MB SDRAM)	201786-001	240, 241, 242, 244, 245, 246, 247, 250, CTO	
System Board (I/O w/64 MB SDRAM P3 1.65V)	216172-001	CTO	
System Board (I/O w/64 MB SDRAM 1.5V & 1.65V PWM)	218497-001	CTO	
System Board (I/O w/64 MB SDRAM PWM SB)	221328-001	340, 341, 342, 343, 344, 345, 346, 350, 352, 355, 356, CTO	