EasyNote DT85

SERVICE GUIDE

Revision History

Please refer to the table below for the updates made on the Easynote DT85 service guide.

Date	Chapter	Updates

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

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CHAPTER 1
System specifications

- Preface
- Features
- System block diagram
- Hardware specifications
- Notebook product tour
- Keyboard
- Touchpad
- Webcam

Preface

Conventions

The following conventions are used in this manual:

Warning
Indicates a potential for personal injury.

Caution
Indicates a potential loss of data or damage to equipment.

Important
Indicates information that is important to know for the proper completion of a procedure, choice of an option, or completing a task.

General information

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

- This service guide provides you with all technical information relating to the basic configuration decided for Acer's global product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (such as add-on cards, modems, or extra memory capabilities). These localized features are not covered in this generic service guide. In such cases, contact your regional offices or the responsible personnel/channel to provide you with further technical details.
- When ordering FRU parts: Check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it may not be noted in this printed service guide.
- Acer-authorized Service Providers: Your Acer office may have a different part number code to those given in the FRU list of this printed service guide. You must use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Features

Platform

- Intel®
  - Processor: Intel Core™2 Duo processor (2.0–2.4 GHz or above) with 1066/800 MHz FSB
  - Core logic: Intel GM45 (north bridge) + Intel ICH9M (south bridge)
- Wireless: Intel WiFi Link 5100 a/b/g/n, Lite-On Atheris b/g/n

System memory

- Two DIMM slots supporting DDR3 1066 MHz DDR3 (PC3-8500) SO-DIMM
- Maximum memory of 4 GB using two 2 GB SO-DIMM for 32-bit OS
- Dual channel SDRAM support

Display and graphics

- 18.4" WUXGA (Full HD, 1080p) or WXGA+ (HD+, 720p) TFT LCD panel
- Supported resolutions
  - WUXGA : 1920x1080, 1366×768, 1360×768, 1280×768, 1280×720, 1024×768, and 800×600
  - WXGA+: 1680x945, 1366×768, 1280×768, 1280×720, 1024×768, and 800×600
- VGA memory: shared, 512 MB or 1024 MB
- VGA controller
  - N10PGS DDRIII 1024MB 800MHz
  - N10MGS DDRIII 512MB 800MHz
- Dual independent display support
- 16.7 million colors
- MPEG-2/DVD hardware-assisted capability (acceleration)
- MPEG-2/DVD decoding (for selected models)
- WMV9 (VC-1) support (acceleration)
- WMV9 (VC-1) and H.264 (AVC) decoding (for selected models)
- HDMI™ (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

Media storage

- Industry standard 2.5” 120–500 GB or above SATA hard disk drive
- Optical drive options:
  - Blu-ray Disc™/DVD-Super Multi double-layer drive
  - DVD-Super Multi double-layer drive
- 6-in-1 card reader, supporting MultiMediaCard (MMC), MMC+, Secure Digital™ (SD), xD-Picture Card™ (xD), Memory Stick® (MS), Memory Stick PRO™ (MS PRO)

Input devices

- 99-,100-, or 103-key keyboard, 2.5 mm (minimum) key travel
- Function keys, system keys, navigation keys, Fn key, Windows key, Application key, arrow keys, and a separate numeric keypad
- Touchpad pointing device
- Capacitive hotkeys

Audio

- 2.1 stereo speakers
- Dolby Home Theater
- Subwoofer
- Built-in microphone
- High-definition audio support
- MS-Sound compatible

Communication

- WLAN: Intel® WiFi Link 5100 a/b/g/n, Foxconn Atheros HB93 or Liteon Atheris HB93
- WPAN: Bluetooth® 2.0+EDR (Enhanced Data Rate)
- LAN: 10/100/1000 Ethernet
- Built-in V.92 56Kbps MDC 1.5 modem
- Integrated webcam (optional)

I/O ports

- Ethernet (RJ45)
- External display (VGA)
- HDMI™ port with HDCP support
- USB (four)
- MIR
- Line-in
- Microphone in
- Headphone jack with S/PDIF support
- 6-in-1 memory card reader (SD™, MMC, MS, MS PRO, xD)
- DC in jack for AC adapter
- Modem
- PCI-Express card
- TV Tuner (optional)

Security

- Kensington lock
- BIOS-based user, supervisor, and HDD passwords

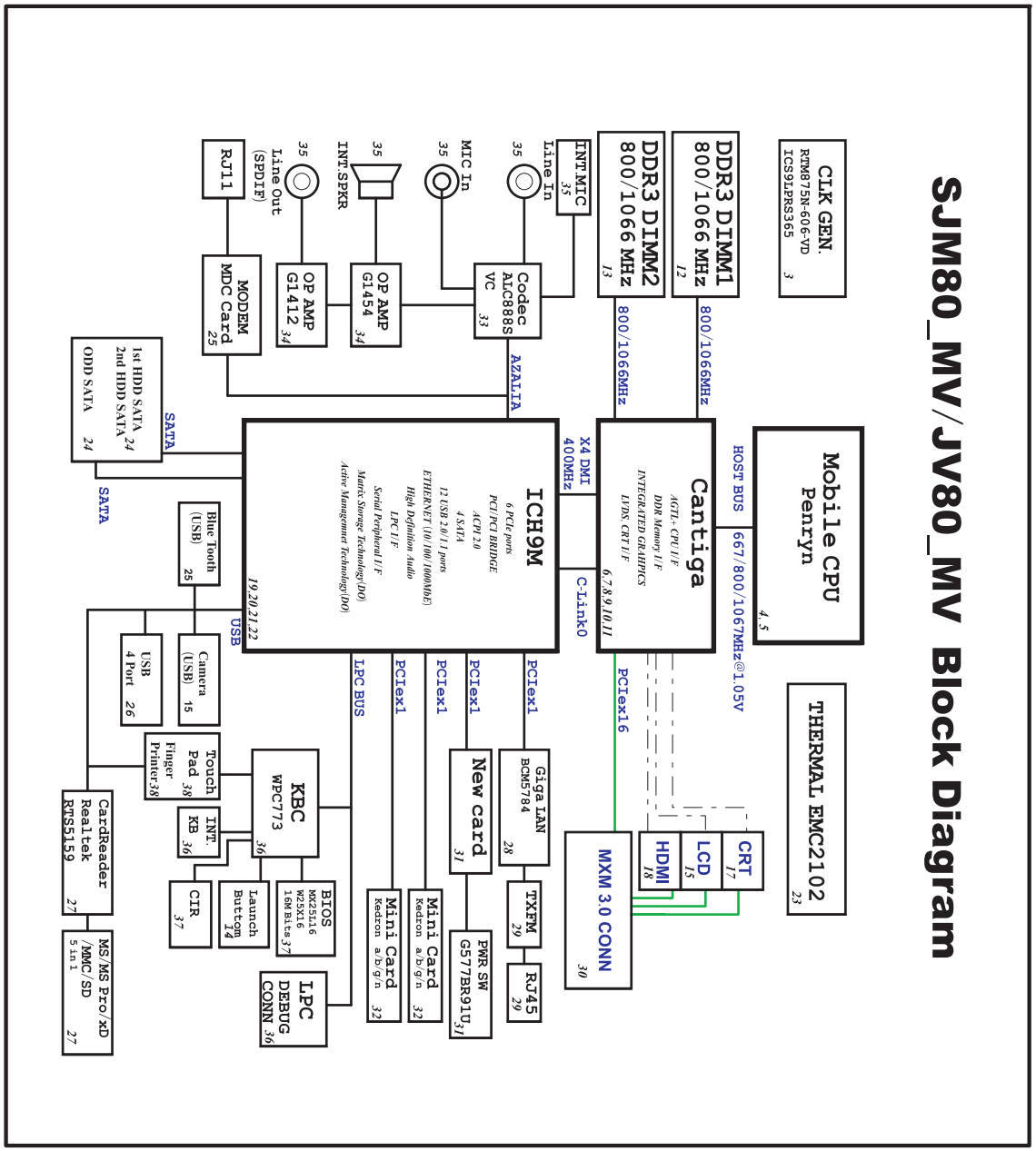
Physical specifications

- Dimensions: 441.1 × 300 × 40.2/44.2 mm (17.37 × 11.81 × 1.58/1.74 in)
- Weight: 4.1 Kg. (9.04 lbs.)

Environment

- Temperature
  - Operating: 32 to 90 °F (0 to 35 °C)
  - Non-operating: -4 to 140 °F (-20 to 60 °C)
- Humidity (non-condensing)
  - Operating: 10% to 90%
  - Non-operating: 5% to 95%

System block diagram



Hardware specifications

Processor

Item	Specification
Type	Intel Core 2 Duo, Pentium Dual-Core, Celeron mobile processor
Processor package	Socket-P, µFCPGA
Processor core voltage	1.0375V to 1.3V
Core logic	Intel GM45 + ICH9M

Controllers

Item	Intel platform
Core logic	Intel GM45 + ICH9M
VGA	• N10PGS 1024MB • N10MGS 512MB
Ethernet	Broadcom BCM5784
USB 2.0	Intel ICH9M
Bluetooth	Foxconn Bluetooth BRM 2046 BT2.1
Wireless 802.11	• Intel WiFi Link 5100 • Foxconn Atheros HB93 • Liteon Atheris HB93
Memory card reader	Realtek RTS5159
Audio codec	Realtek ALC888S

BIOS

Item	Specification
BIOS vendor	Phoenix
BIOS version	V1.01
BIOS ROM type	3V
BIOS ROM size	16 Mb
BIOS package	8-SOP
Supported protocols	ACPI 1.0b/2.0/3.0 compliance, PCI 2.2, System/HDD Password Security Control, INT 13H Extenstions, PnP BIOS 1.0a SMBIOS 2.4, BIOS Boot Specification, Simple Boot Flag 1.0, Boot Block, PCI Bus Power Management Interface Specification, USB Specification 1.1/2.0, IEEE 1394 1.0, USB/1394 CD-ROM Boot Up support, PC Card Standard 1995 (PCMCIA 3.0 Compliant Device), IrDA 1.0, Intel AC97 CNR Specification, WfM 2.0, PXE 2.1, Boot Integrity Service Application Program Interface (BIS) 1.0, PC99a and Mobile PC2001 Compliant
BIOS password control	Manually set supervisor, user, and HDD passwords

Memory

Item	Specification
Memory controller	Built-in
Memory size	0 MB (no on-board memory)
Number of slots	2
Maximum memory size per slot	2 GB
Maximum system memory	4 GB
Supported SO-DIMM type	• DDR 3 SDRAM
Supported SO-DIMM speed	• 1066 MHz (PC3-8500)
Supported SO-DIMM voltage	• 1.8V and 0.9V • 1.5V
Supported SO-DIMM package	200-pin SO-DIMM
Memory module combinations	You can install memory modules in any combination as long as they match the above specifications.

Hard Drive

Item	Specification			
Model	Seagate ST9160310AS Toshiba MK1655GSX Hitachi HTS543216L9A300 Western Digital WD1600BEVT-22ZCT0	Seagate ST9250315AS and ST9250320AS Toshiba MK2555GSX Hitachi HTS545025B9A300 Western Digital WD2500BEVT-22ZCT0	Seagate ST9320320AS Toshiba MK3255GSX Hitachi HTS545032B9A300 Western Digital WD3200BEVT-22ZCT0	Seagate ST9500325AS Toshiba MK5055GSX Hitachi HTS545050B9A300 Western Digital WD5000BEVT-22ZAT0
Capacity (MB)	160000	250000	320000	500000
Bytes per sector	512	512	512	512
Data heads	3/4	4	4	4
Drive format				
Disks	2	2	2	2
Spindle speed (RPM)	5400 RPM	5400 RPM	5400 RPM	5400 RPM
Performance specifications				
Buffer size	8MB	8MB	8MB	8MB
Interface	SATA	SATA	SATA	SATA
Max. media transfer rate (disk-buffer, Mbytes/s)	540	540	850	3.0 GB/s (Max.) Buffer to Host
DC power requirement				
Voltage tolerance	5 V DC ± 5%	5 V DC ± 5%	5 V DC ± 5%	5 V DC ± 5%

Optical drive

Item	Specification	
Model	Toshiba Super Multi Drive DL 8X TS-L633B LF HLDS Super Multi Drive DL 8X GT20N LF Sony Super Multi Drive DL 8X AD-7580S LF PLDS Super Multi Drive DL 8X DS-8A3S LF	Sony BD COMBO 12.7mm DL 2X BC-5500S LF PLDS BD COMBO 12.7mm DL 2X DS-4E1S HLDS BD COMBO 12.7mm DL 2X CT-10
Performance specification		

Item	Specification	
Transfer rate	Sustained: • with CD: Max 3.6 Mbytes/sec • with DVD: Max 10.08 Mbytes/sec	Sustained: • with CD: Max 3.6 Mbytes/sec • with DVD: Max 10.8 Mbytes/sec • with BD: Max 11 Mbytes/sec
Buffer memory	2 MB	• for CD/DVD: 2 MB • for BD: 4.5 MB
Interface	SATA	
Applicable disc formats	CD: • CD-DA (Red Book) - Standard Audio CD & CD-TEXT • CD-ROM (Yellow Book Mode1 & 2) - Standard Data • CD-ROM XA (Mode2 Form1 & 2) - Photo CD, Multi-Session • CD-I (Green Book, Mode2 Form1 & 2, Ready, Bridge) • CD-Extra/ CD-Plus (Blue Book) - Audio & Text/Video • Photo CD (multi-session) • Video-CD (White Book) - MPEG1 Video • CD-Extra (CD+) • CD-text • CD-R (Orange Book Part) • CD-RW & HSRW (Orange Book Part Volume1 & Volume 2) • Super Audio CD (SACD) Hybrid type • US & US+ RW DVD: • DVD-VIDEO • DVD-RAM • DVD-ROM (Book 1.02), DVD-Dual • DVD-Video (Book 1.1) • DVD-R (Book 1.0, 3.9G, 4.7 GB) • DVD-R (Book 2.0, 4.7G) - General & Authoring • DVD+R (Version 1.0) • DVD+RW • DVD-RW (Non CPRM & CPRM) • DVD-R Dual	
		Blu-Ray: BD-R, BD-R DL, BD-RE, BD-RE DL
Loading mechanism	Load: Tray (manual) Release: (a) Electrical (release button), (b) ATAPI command, (c) Emergency	
Power requirement		
Input voltage	5 V ± 5% (operating)	5 V ± 5% (operating)

LCD

Item	Specification
Brand	CMO / Samsung
Display area/Screen size	408.24mm (H) x 229.635 mm (V)/18.4 inches (diagonal)
Display resolution (pixels)	1920 x 1080 WUXGA / 1680 x 945 WXGA+
Pixel pitch	0.204 x 0.204
Pixel arrangement	RGB vertical stripe

Item	Specification
Display mode	Normally white
Brightness (nits)	250 / 220
Luminance uniformity	1.25 max.
Contrast ratio	400–500 typical
Response time (ms)	8
Nominal input voltage	+3.3 V
Viewing angle Horizontal: Right/Left Vertical: Upper/Lower	 45/45 15/35
Temperature (°C) Operating Storage (shipping)	 0 to +50 -40 to +60

Audio

Item	Specification
Controller	Realtek ALC888S
Mono or stereo	Stereo
Resolution	24-bit DAC and ADC
Compatibility	HD Audio / Dolby Sound room
Sampling rate	192 kHz maximum sample rate
Internal microphone	Yes
Internal speakers	Yes
Internal subwoofer	Yes

Video

Item	Specification		
Chipset	Intel GM45 (4500MHD)	N10MGS	N10PGS
Memory size	Shared (up to 384 MB)	512 MB	1024MB

Item	Specification
Features	• Intel Gen 5.0 integrated graphics engine with ten, fully-programmable cores • Supports HDMI/DVI, DP, TV-Out, LVDS, CRT and SDVO • Intel® Dynamic Video Memory Technology (Intel® DVMT 5.0) • Video Capture via x1 concurrent PCI Express port • PAVP (Protected Audio-Video Path) support for Protected Intel® HD Audio (Video and Audio) Playback • High performance MPEG-2 decoding • WMV9 (VC-1) and H.264 (AVC) support • Hardware acceleration for MPEG2 VLD/iDCT • Microsoft DirectX*10 support • Blu-ray* support @ 40 Mb/s • Hardware motion compensation • Intermediate Z in classic rendering •
Core voltage	533 MHz core render clock @ 1.05 V core voltage

Keyboard

Item	Specification
Controller	Winbond WPC773
Type	99- ,100 or 103-key, 2.5 mm (minimum) key travel
Key types	Function keys, system keys, navigation keys, Fn key, Windows key, Application key, arrow keys, and separate numeric keypad
Capacitive hotkeys	Caps lock, Num lock, PowerSave, My Backup, Wi-Fi control, touchpad lock, and volume controls
Support for simultaneous use of Internal and external keyboard (USB)	Yes

Pointing device

Item	Specification
Type	• Synaptics TM00540-001 Touchpad • ALPS KGDFF0031A Touchpad
Click buttons	Left/Right

Memory card reader

Item	Specification
Controller	Realtek RTS5159
Cards supported	MMC, MMC+, SD, xD, MS, and MS PRO
Compliancy	• Complies to SDIO Host Interface Specification Rev 1.0 • SDIO Version 1.10 compliant with High-Speed Mode • SD Host Interface Specification v1.0 • SD Host Interface Specification v2.0 • SD HC (High Capacity SD memory card) • Supports SD memory card, with CPRM security • Complies to MultiMediaCard™ Version 4.0 • Supports Memory Stick™ and MS PRO media cards • Supports xD-Picture™ card and SmartMedia™ cards

Wired LAN

Item	Specification
Chipset	Broadcom BCM5784
Data throughput	10/100/1000 Mbps
LAN connector type	RJ45
LAN connector location	Left side
Features	• Integrated 10/10/1000 BASE-T transceiver • PCI v2.2 compliant • Wake on LAN support meeting ACPI requirements

Wireless LAN

Item	Specification
Chipset	• Intel WiFi Link 5100 • Foxconn Atheros HB93 • Liteon Atheris HB93
Data throughput	11–54 Mbps, up to 270 Mbps for Draft-N
Protocol	• IEEE 802.11a • IEEE 802.11b • IEEE 802.11g • IEEE 802.11 Draft-N • IEEE 802.16e
Interface	PCI bus (mini PCI socket for wireless module)

Bluetooth

Item	Specification
Chipset	Broadcom BCM2046
Data throughput	2.1 Mbps
Protocol	Bluetooth 2.0
Interface	USB (board level)
Connector type	Wireless via Bluetooth protocol

USB

Item	Specification
Chipset	• Intel ICH9M
USB compliancy level	2.0
OHCI	USB 1.1 and USB 2.0 host controller
Number of USB ports	4
Location	• Two on the left side • Two on the right side

Buttons/Indicators/Ports

Item	Specification
Buttons	• Power button • Capacitive hotkeys
Indicators	• Power • Battery charge • Media activity • Num lock • Caps lock • Bluetooth
Ports	• USB (four) • External display (VGA) port • Ethernet (RJ45) • Headphone with S/PDIFsupport • Microphone in • DC in jack for AC adapter • 6-in-1 card reader (SD, MMC, MMC+, MS, MS PRO, xD) • HDMI port with HDCP support • Modem (optional)

Webcam

Item	Specification
Model	• Suyin Camera 1.0M DV Tulip
Interface	USB 2.0
Resolution	1.0 M pixels (1280 x 960)
Signal to noise ratio	42 dB
Sensor	CMOS 1/4
Power	5 V
Built-in microphone	Yes
LED	No

Cooling fan

Processor temperature (°C)	Fan speed (rpm)	Acoustic level (dBA)
45-50	0-3000	29
55-66	0-3300	33
68-74	3300-3800	38
78-83	3800-4100	40
86-91	4100-4800	40
Note: Throttling 50%: % is controlled by operating system. Temperature point is 95 °C. OS shut down at 100 °C; Hardware shut down at 105 °C		

Battery

Item	Specification
Brand	Sony / Simplo / Samsung
Type	Li-ion
Pack capacity	4400–4800 mAH
Number of battery cell	6-8
Package configuration	3 cells in series, 2 series in parallel / 4 cells in series, 2 series in parallel
Normal voltage	11.1 V
Charge voltage (max)	12.6 V

AC adapter

Item	Specification
Brand	Delta / Hipro
Watt	65 / 90
Maximum input AC current	1.7 A
Output rating	19 V DC

Power management

ACPI mode	Description
G3	Mechanical Off - All devices in the system are turned off completely. No electrical current is running through the system. Except for the real-time clock, power consumption is zero. The machine can be worked on without damaging the hardware or endangering service personnel.
G2 (S5)	Soft Off - The computer consumes a minimal amount of power. No user mode or system mode code is run. It is not safe to disassemble the machine in this state.
G1	The computer consumes a small amount of power, user mode threads are not being executed, and the system “appears” to be off (from the end user’s perspective, the display is off, and so on). It is not safe to disassemble the machine in this state.
G0 (S0)	Working - The system dispatches user mode (application) threads and they execute. In this state, peripheral devices are having their power state changed dynamically. The user can select, through some UI, various performance/power characteristics of the system to have the software optimize for performance or battery life. The system responds to external events in real time. It is not safe to disassemble the machine in this state.
G3	Mechanical Off - All devices in the system are turned off completely. No electrical current is running through the system. Except for the real-time clock, power consumption is zero. The machine can be worked on without damaging the hardware or endangering service personnel.

Notebook product tour

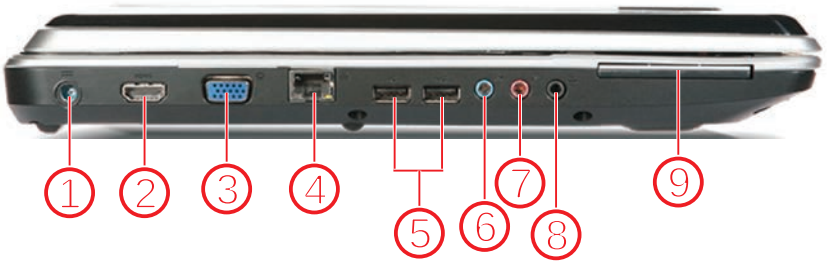
Important
Case color may vary from that shown in the pictures.

Front View

#	Icon	Item	Description
1		5-in-1 card reader	Accepts Secure Digital (SD), MultiMediaCard (MMC), Memory Stick (MS), Memory Stick Pro (MS PRO), and xD-Picture Card. **Note:** Push to remove/install the card. Only one card can operate at any given time.
2		Battery[1]	Indicates the computer's battery status. **1. Charging:** The light shows amber when the battery is charging. **2. Fully charged:** The light shows green when in AC mode.
3		Power[1]	Indicates the computer's power status.

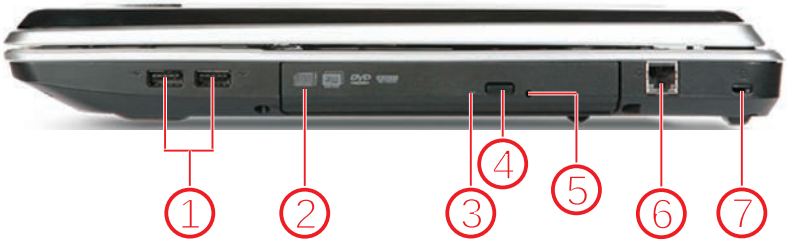
Note:
1. Charging: The light shows amber when the battery is charging. 2. Fully charged: The light shows green when in AC mode.

Left View



#	Icon	Item	Description
1		DC-in jack	Connects to an AC adapter.
2	HDMI out jack (optional)	HDMI	Plug an HDMI device, such as a high definition television, into this optional jack.
3		External display (VGA) port	Connects to a display device (e.g., external monitor, LCD projector).
4		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000-based network.
5		USB 2.0 ports	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
6		Line-in jack	Accepts inputs from external sound source.
7		Microphone jack	Accepts inputs from external microphones.
8		Headphones/speaker/line-out jack.	Connects to audio line-out devices (e.g., speakers, headphones).
9		ExpressCard/54 slot	Accepts one ExpressCard/54 module. **Note:** Push to remove/install the card.

Right View



#	Icon	Item	Description
1		USB 2.0 ports	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
2		Optical drive	Internal optical drive; accepts CDs or DVDs.
3		Optical disk access indicator	Lights up when the optical drive is active.
4		Optical drive eject button	Ejects the optical disk from the drive.
5		Emergency eject hole	Ejects the optical drive tray when the computer is turned off. **Note:** Insert a paper clip to the emergency eject hole to eject the optical drive tray when the computer is off.
6		Modem jack	Plug a dial-up modem cable into this optional jack.
7		Kensington lock slot	Connects to a Kensington-compatible computer security lock.

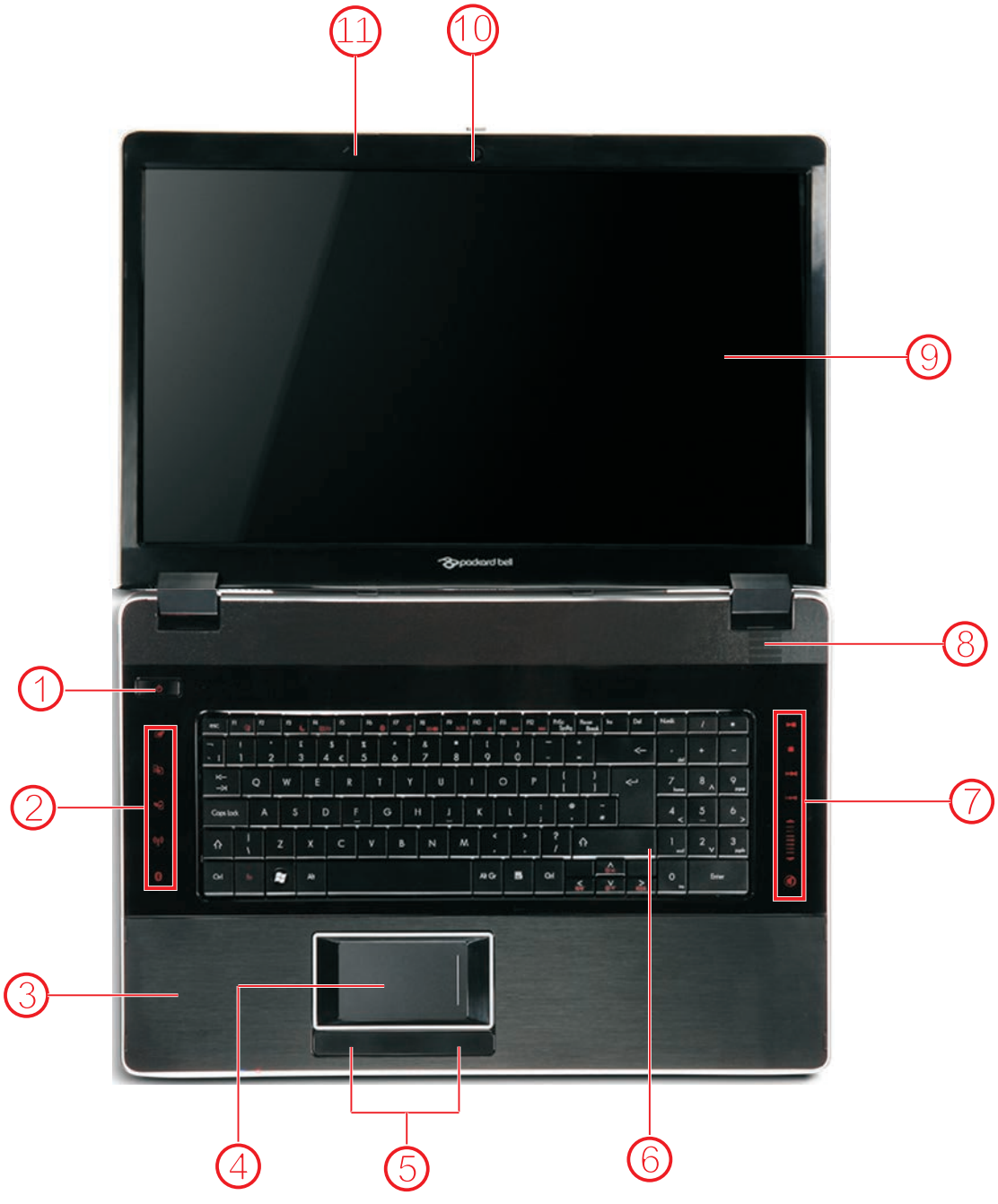
Rear View

#	Item	Description
1	Ventilation slots	Enable the computer to stay cool, even after prolonged use.

Top View

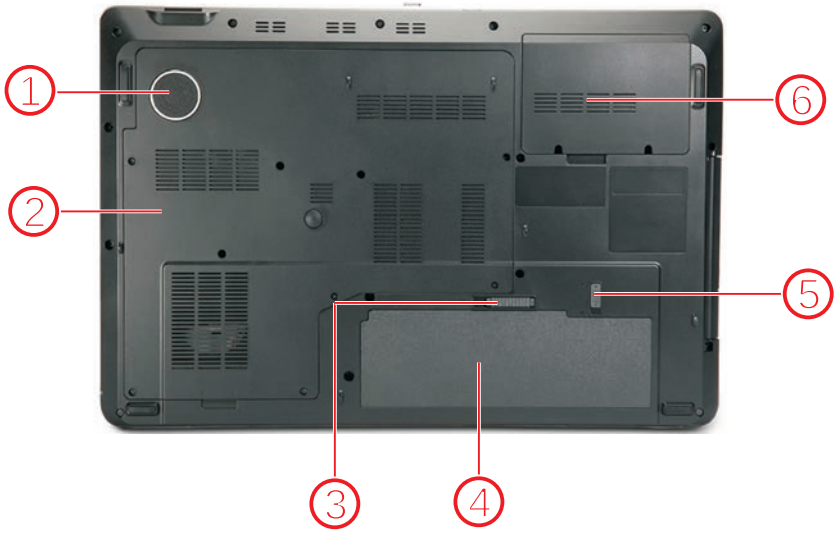
Note:

The LCD and the keyboard are separate pictures and were joined together for better clarification.



#	Icon	Item	Description
1		Power button / indicator	Turns the computer on and off. / Indicates the computer's power status.
2		Touchpad toggle	Turns the internal touchpad on and off.
		Backup key	Launches Acer Backup Management for three-step data backup.
		Acer PowerSmart key	Puts your computer into power-saving mode.
		Communication key	Enables / disables the WLAN / 3G functions.
		Bluetooth toggle	Turns the Bluetooth function on and off.
3		Palmrest	Comfortable support area for your hands when you use the computer.
4		Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
5		Click buttons (left and right)	The left and right buttons function like the left and right mouse buttons.
6		Keyboard	For entering data into your computer.
7		Multimedia panel	Use to control playback of CDs and DVDs. The panel includes a capacitive (touch) volume control.
8		Speakers	Left and right speakers deliver stereo audio output.
9		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output (Configuration may vary by models).
10		Webcam	Web camera for video communication.
11		Microphone	Internal microphone for sound recording.

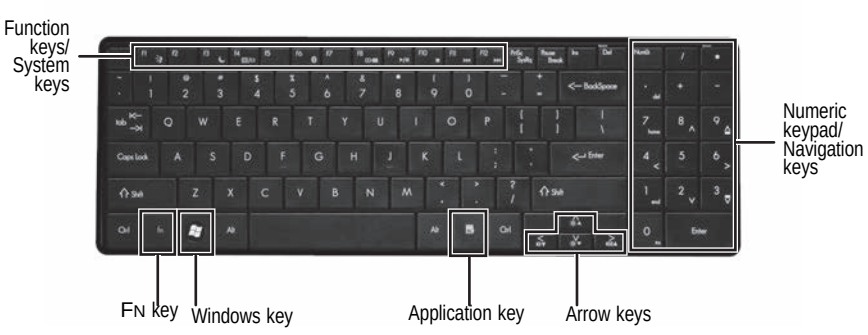
Bottom View



#	Icon	Item	Description
1		Subwoofer	Emits low frequency sound output.
2		Bottom cover	Houses the memory, hard drive, cpu, and wlan card.
3		Battery release latch	Releases the batter for removal.
4		Battery bay	Houses the computer's battery pack.
5		Battery lock	Locks the battery in position.
6		Hard disk cover	Houses the computer's secondary hard drive (optional).

Keyboard

Your notebook features a full-size keyboard that functions the same as a desktop computer keyboard. Many of the keys have been assigned alternate functions, including shortcut keys for Windows and function keys for specific system operations.



Key types

The keyboard has several different types of keys. Some keys perform specific actions when pressed alone and other actions when pressed in combination with another key.

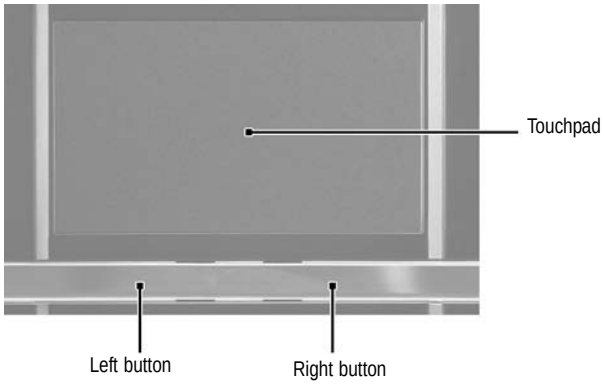
Key type	Icon	Description
Function keys		Press these keys labeled F1 to F12 to perform actions in programs. For example, pressing F1 may open help. Each program uses different function keys for different purposes. See the program documentation to find out more about the function key actions.
System keys		Press these colored keys in combination with the FN key to perform specific actions. For more information, see "System key combinations" on page 25.
Navigation keys		Press these keys to move the cursor to the beginning of a line, to the end of a line, up the page, down the page, to the beginning of a document, or to the end of a document.
Fn key		Press the FN key in combination with a colored system key to perform a specific action.
Windows key		Press this key to open the Windows Start menu. This key can also be used in combination with other keys to open Windows utilities like F (Search utility), R (Run utility), and E (Computer window).
Application key		Press this key for quick access to shortcut menus and help assistants in Windows.
Arrow keys		Press these keys to move the cursor up, down, right, or left.

System key combinations

When you press the FN key and a system key at the same time, your notebook performs the action identified by the text or icon on the key.

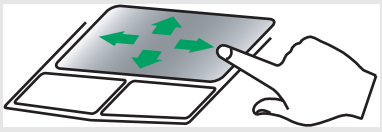
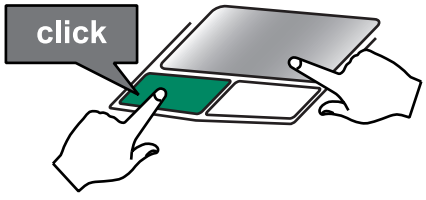
Press and hold FN, then press this system key...	To...
F1	Turn the capacitive touch key LEDs on or off.
F3	Enter Sleep mode or Hybrid Sleep mode. Press the power button to leave Sleep mode.
F4	Toggle the notebook display in the following order: • The LCD • An external monitor or projector (a monitor or projector must be plugged into the monitor port or HDMI port on your notebook) • Both displays at the same time
F6	Turn the optional Bluetooth function on or off. **Warning:** Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane. Bluetooth communication devices are examples of devices that provide wireless communication.
F7	Mute the sound. Press the key combination again to restore the sound.
F8	Turn the display screen backlight off to save power. Press any key to turn it back on.
F9	Play or pause the multimedia playback.
F10	Stop playing the CD or DVD.
F11	Skip back one CD track or DVD chapter.
F12	Skip ahead one CD track or DVD chapter.

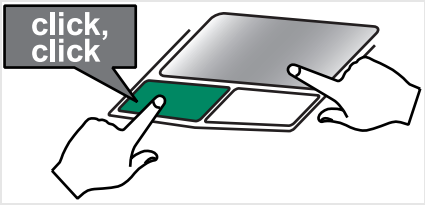
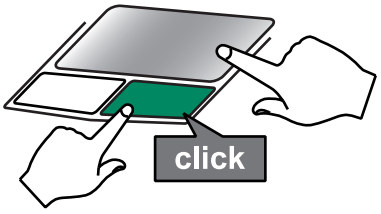
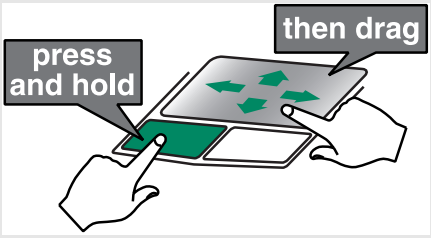
Touchpad



When you move your finger on the touchpad, the *pointer* (arrow) on the screen moves in the same direction. You can use the scroll zone to scroll through documents. Use of the scroll zone may vary from program to program.

You can use the left and right buttons below the touchpad to select objects.

To...	Do this...	
Move the pointer on the screen.		Move your finger around on the touchpad. If you run out of space and need to move the pointer farther, lift your finger, move it to the middle of the touchpad, then continue moving your finger.
Select an object on the screen.		Position the pointer over the object. Quickly press and release the left button once. This action is called *clicking*.

To...	Do this...	
Start a program or open a file or folder.		Position the pointer over the object. Press the left button twice in rapid succession. This action is called *double-clicking*.
Access a shortcut menu or find more information about an object on the screen.		Position the pointer over the object. Quickly press and release the right button once. This action is called *right-clicking*.
Move an object on the screen.		Position the pointer over the object. Press the left button and hold it down, then use the touchpad to move (drag) the object to the appropriate part of the screen. Release the button to drop the object where you want it.

Webcam

You can use the optional webcam with many of the available Internet chat programs to add video and audio to your chat session. In addition, by using the software included with the webcam, you can take pictures or create video clips.

CHAPTER 2
System utilities

- BIOS setup utility
- BIOS recovery
- Clearing a BIOS password
- Unlocking the hard drive

BIOS setup utility

The BIOS setup utility is a hardware configuration program built into the notebook's BIOS (Basic Input/Output System). The notebook was shipped already properly configured and optimized. However, if the user encounters configuration problems, you may need to run Setup.

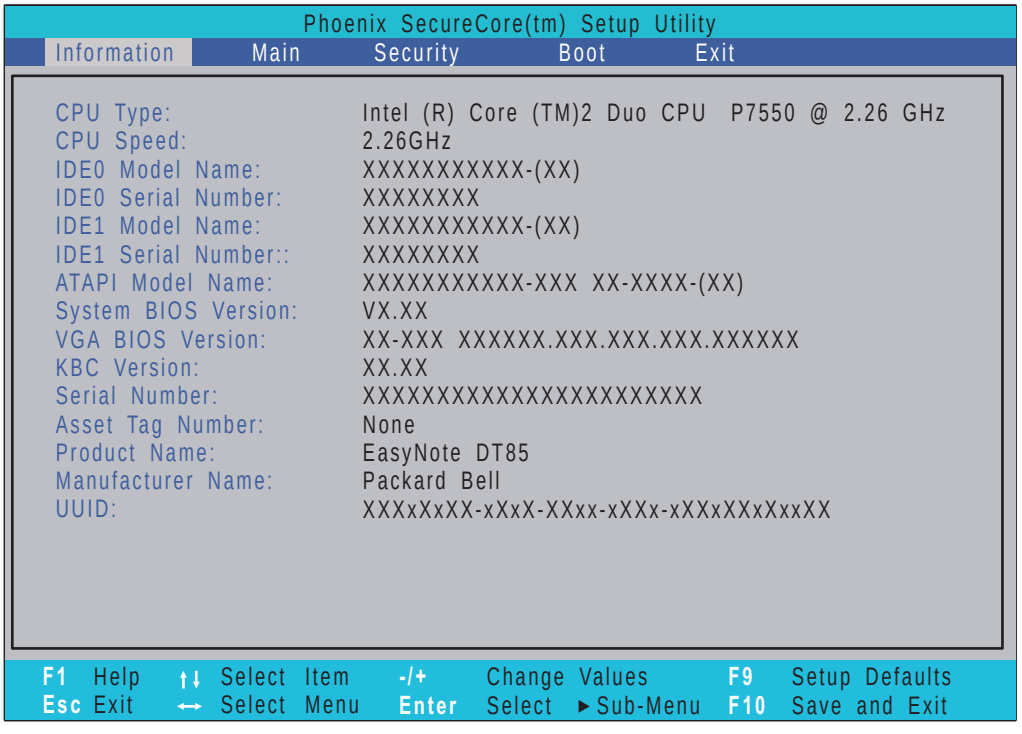
▶ To run the BIOS Setup Utility:

1. Turn on the notebook.

   If the computer is already turned on, save your data and close all open applications, then restart the computer.

2. Press F2 when the **Press <F2> to enter Setup** prompt appears on the bottom of the screen.

   Use the left and right arrow keys to move between selections on the menu bar.



Navigating the BIOS setup utility

Use the keys listed in the legend bar on the bottom of the Setup screen to work your way through the various menu and submenu screens.

▶ To use the BIOS setup utility:

- To choose a menu, use the left ← and right → arrow keys.
- To choose an item, use the up ↑ and down ↓ arrow keys.
- To change the value of a parameter, press F5 or F6.
- A plus sign (+) indicates the item has sub-items. Press ENTER to expand this item.
- To load default settings, press F9.
- To save changes made and close the utility, press F10.

1 Press ESC while you are in any of the menu screen to display the Exit menu.

Important

- You can change the value of a parameter if it is enclosed in square brackets.
- Navigation keys for a particular menu are shown on the bottom of the screen. Help for parameters are found in the Item Specific Help part of the screen. Read this information carefully when making changes to parameter values.
- The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your computer.

■

BIOS setup utility menus

The Setup utility has five menus for configuring the various system functions. These include: Information, Main, Security, Boot, and Exit.

Important

- The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your computer. Actual screen information varies by model, installed features, and location.
- In the descriptive table following each of the screenshot, settings in **boldface** are the default settings.

Information

The Information menu displays a summary of your computer hardware information. These information are necessary for troubleshooting and may be required when asking for technical support.

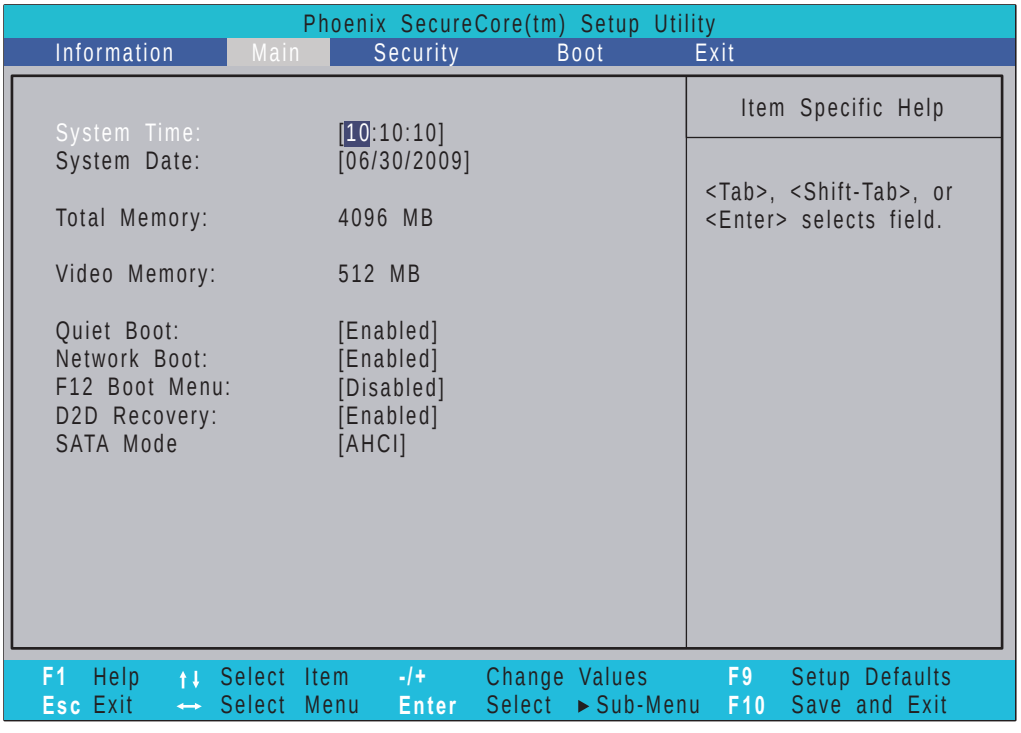
```
Phoenix SecureCore(tm) Setup Utility
Information   Main   Security   Boot   Exit

CPU Type:                Intel (R) Core (TM)2 Duo CPU  P7550 @ 2.26 GHz
CPU Speed:               2.26GHz
IDE0 Model Name:         XXXXXXXXXXX-(XX)
IDE0 Serial Number:      XXXXXXXX
IDE1 Model Name:         XXXXXXXXXXX-(XX)
IDE1 Serial Number::     XXXXXXXX
ATAPI Model Name:        XXXXXXXXXXX-XXX XX-XXXX-(XX)
System BIOS Version:     VX.XX
VGA BIOS Version:        XX-XXX XXXXXX.XXX.XXX.XXX.XXXXXX
KBC Version:             XX.XX
Serial Number:           XXXXXXXXXXXXXXXXXXXXXXX
Asset Tag Number:        None
Product Name:            EasyNote DT85
Manufacturer Name:       Packard Bell
UUID:                    XXXxXxXX-xXxX-XXxx-xXXx-xXXxXXxXxxXX

F1  Help   ↑↓ Select Item   -/+     Change Values        F9  Setup Defaults
Esc Exit   ↔  Select Menu   Enter   Select ▶Sub-Menu     F10 Save and Exit
```

Parameter	Description
CPU Type	Displays the processor model and speed.
CPU Speed	Displays the processor speed.
IDE0 Model Name	Displays the model name of the hard drive installed on the primary IDE master.
IDE0 Serial Number	Displays the serial number of the hard drive installed on the primary IDE master.
ATAPI Model Name	Displays the model name of the installed optical drive.
System BIOS Version	Displays system BIOS version.
VGA BIOS Version	Displays the VGA firmware version.
KBC Version	Displays the keyboard controller version.
Serial Number	Displays the system serial number.
Asset Tag Number	Displays the system asset tag number
Product Name	Displays the official model name of the computer.

Parameter	Description
Manufacturer Name	Displays the name of the computer manufacturer.
UUID Number	Displays the computer's UUID (universally unique identifier). UUID is an identifier standard used in software construction, standardized by the Open Software Foundation (OSF) as part of the Distributed Computing Environment (DCE).

Main

Use the Main menu to set the system time and date, and other basic options.

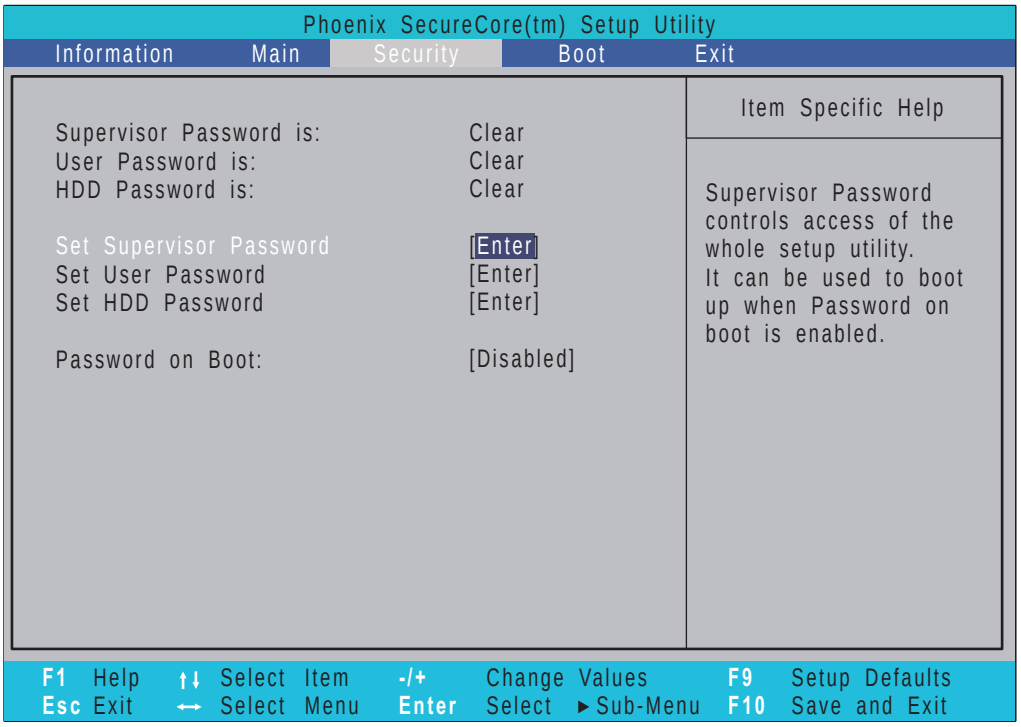


Parameter	Description	Format/Options
System Time	Displays the system time. The time is expressed in a 24-hour format.	HH:MM:SS (hour:minute:second)
System Date	Displays the system date.	MM/DD/YYYY (month/day/year)
Total Memory	Displays the total size of the system memory.	
Video Memory	Displays the size of video memory detected during boot-up.	

Parameter	Description	Format/Options
Quiet Boot	Enables or disables the Quiet Boot function. When enabled, BIOS setup is in graphical mode and displays only the computer brand logo during POST and while booting. When disabled, BIOS setup is in conventional text mode and displays the system Summary Screen.	Disabled **Enabled**
Network Boot	When enabled, a remote host with appropriate boot image can boot this computer. (only works with an Ethernet device.)	Disabled **Enabled**
F12 Boot Menu	Enables or disables the Boot menu during POST.	**Disabled** Enabled
D2D Recovery	Enables or disables the D2D Recovery function. This function allows the user to create a hidden partition on the hard drive to store the operation system. User can then use this partition to restore the system to factory defaults by pressing the Alt+F10 keys during system boot-up.	Disabled **Enabled**
SATA Mode	Select the SATA controller operating mode. When set to AHCI (Advanced Host Controller Interface), the SATA controller enables its AHCI and RAID features when the computer boots up. When set to IDE, the SATA controller disables its AHCI and RAID functions when the computer boots up. **Note:** If you do not intend to use the AHCI or RAID features set this parameter to IDE to speed up the boot-up time.	AHCI IDE

Security

Use the Security menu option to set system passwords to protect your computer from unauthorized use.



Parameter	Description	Option
Supervisor Password Is	Displays the supervisor password status.	Clear Set
User Password Is	Displays the user password status.	Clear Set
HDD Password Is	Displays the hard drive password status.	Clear Set
Set Supervisor Password	Press Enter to set a supervisor password. When set, this password will allow the user to access and change all settings in the Setup Utility.	
Set User Password	Press Enter to set a user password. When set, this password will restrict a user's access to the Setup menus. Only the following menus will be accessible: • System Time and System Date • All Exit menu options excluding Load Setup Defaults **Note:** A supervisor password must first be set before creating a user password. If Password on Boot is enabled, the user must enter the user password each time the notebook is turned on or wakes from Sleep.	

Parameter	Description	Option
Set HDD Password	Press Enter to set password for accessing the hard disk drive (HDD) password. It will be required during boot-up or when waking from hibernation mode.	
Password on Boot	Referred to as the power-on password. When enabled, the user or supervisor password will be required to boot up the system. **Note:** A supervisor password must first be set before creating a user password.	**Disabled** Enabled

Caution

When you are prompted to enter a password, you have three tries before the system halts. Don't forget your password.

Setting a password

Note the following reminders before you define a system password:

- The maximum length of password contains 8 alphanumeric characters.
- System passwords are case-insensitive.
- When typing the password, only shaded blocks representing each typed character are visible.

▶ To set a supervisor password:

1 Press ↑ or ↓ to highlight Set Supervisor Password, then press Enter.

The *Set Supervisor Password* box opens.

2 Type a password, then press Enter.

3 Retype the password to verify the first entry, then press Enter.

You will be prompted to save the new password.

4 Press Enter.

5 Press F10 to save the password and close the Setup Utility or you can proceed to setting a user password.

■

▶ To set a user password:

1 Press ↑ or ↓ to highlight Set User Password, then press Enter.

The *Set User Password* box opens.

2 Type a password, then press Enter.

3 Retype the password to verify the first entry, then press Enter.

You will be prompted to save the new password.

4 Press Enter.

5 Press F10 to save the password and close the Setup Utility.

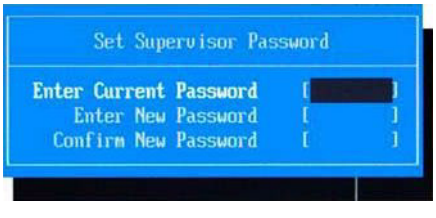
■

Changing a password

▶ To change a password:

1 Press ↑ or ↓ to highlight the Set Supervisor Password or Set User Password field, then press Enter.

The *Set Supervisor Password* or *Set User Password* box opens.



2 Type the current password, then press Enter.

3 Type a new password, then press Enter.

4 Retype the new password to verify the first entry, then press Enter.

You will be prompted to save the new password.

5 Press Enter. A dialog box will appear confirming that changes have been made.

6 Press F10 to save the password and close the Setup Utility or you can proceed to setting a user password.

■

Removing a password

▶ To remove a password:

1 Press ↑ or ↓ to highlight the Set Supervisor Password or Set User Password field, then press Enter.

The *Set Supervisor Password* or *Set User Password* box opens.

2 Type the current password, then press Enter.

3 Press Enter twice without entering anything in the new and confirm password fields.

You will be prompted to confirm the password removal.

4 Press Enter.

5 Press F10 to save the password and close the Setup Utility or you can proceed to setting a user password.

■

Resetting a password

If you have forgotten the user password, the computer will continue to function normally but you will have limited access to the Setup utility.

If you have enabled the Password on Boot field and you forget the supervisor password, you will not be able to boot up the computer. The same thing applies if you forget the HDD password.

To clear a lost BIOS password (user or supervisor password) you need to short the clear password hardware gap located on the system board. Go to page 43 for instructions.

To regain access to your computer if you lose the HDD password, you need to generate a master password and unlock your hard drive. Go to page 45 for instructions.

Boot

Use the Boot menu to set the preferred drive sequence in which the Setup utility attempts to boot the operating system.

```
Phoenix SecureCore(tm) Setup Utility
Information   Main   Security   Boot   Exit

Boot priority order:                    Item Specific Help

  1: IDE0: XXXXXXXXXXX-(XX)
  2: IDE1: XXXXXXXXXXX-XXX XX-XXXX-XX   Use <↑> or <↓> to
  3: CD/DVD: Optiarc BD ROM BC-XXXXX-(X select a device, then
  4: Network Boot: XXXvXX.X.X XXXX XXXX press <F6> to move it
  5: USB HDD:                           up the list, or <F5>
  6: USB FDD:                           to move it down the
  7: USB Key:                           list. Press <Esc> to
  8: USB CD/DVD ROM:                    escape the menu.

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

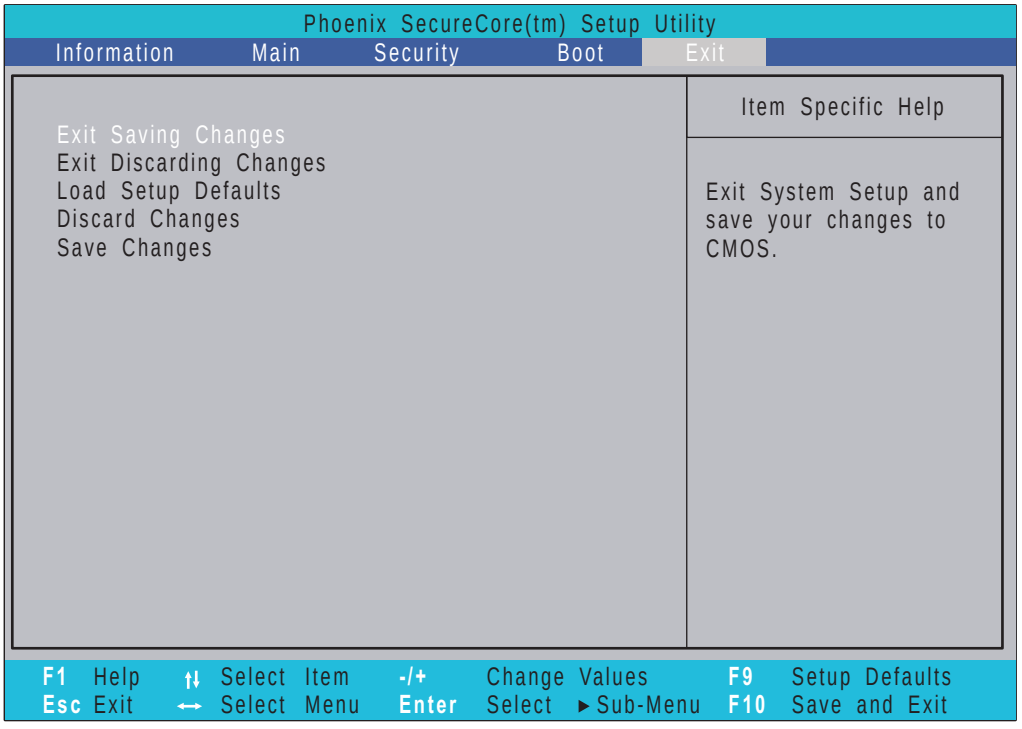
▶ To set boot drive sequence:

1. Press ↑ or ↓ to highlight a bootable device.
2. Press F5 or F6 to move the selected device up or down the boot sequence.
3. Press F10 to save the changes you made and close the Setup utility.

■

Exit

The Exit menu screen lists options for quitting from the Setup Utility.



Option	Description
Exit Saving Changes	Saves changes made and closes the Setup utility. Keyboard shortcut: F10
Exit Discarding Changes	Discards changes made and closes the Setup utility.
Load Setup Default	Loads the factory-default settings for all Setup parameters. Keyboard shortcut: F9
Discard Changes	Discards all changes made to the Setup utility and loads previous configuration settings.
Save Changes	Saves all changes made to the Setup utility.

BIOS recovery

An interruption during a BIOS flash procedure (e.g. a power outage) can corrupt the BIOS code, which will cause the system to go into an unbootable state. You need to access and execute the boot block program to reboot the computer and recover the regular BIOS code.

Caution

Observe the following when performing a BIOS recovery:

- Make sure the battery pack is installed to the system and that the computer is connected to a UPS unit during the BIOS recovery and BIOS flash procedures.
- The BIOS crisis recovery disk should be prepared in a computer running the Windows XP or Windows Vista OS.

Creating the Crisis Recovery disk

▶ To create the Crisis Recovery disk:

1. Prepare a removable USB storage device with a capacity size greater than 10 MB.

   Note that all data on the USB storage device will be cleared during the creation of the crisis disk.
2. Set up a computer running the Windows XP or Windows Vista OS and plug in the USB storage device into an available USB port.
3. Decompress the Crisis Package Source.
4. Select WINCRIS.exe and then select Run as administrator.
5. Keep the default settings and then click Start button.
6. When the pop-up warning dialog box appears, click OK to create the crisis disk.
7. Click No if you do not want to create another crisis disk.
8. Eject and reconnect the USB removable storage device, and make sure it contains the BIOS.wph, MINIDOS.sys, and PHLASH16.exe files.

■

Performing a BIOS recovery

▶ To perform a BIOS recovery:

1. Shut down the BIOS failed-computer.
2. Connect the USB storage device containing the Crisis Recovery disk files to the failed computer.
3. Press and hold the Fn+Esc keys (this is the BIOS recovery hotkey), then press the power button.

   The BIOS recovery process begins. When the process is complete the computer will automatically reboot.
4. Disconnect the USB storage device from the computer.
5. Perform a BIOS flash procedure to update the BIOS firmware.

■

Running the Flash utility:

▶ To run the Flash utility:

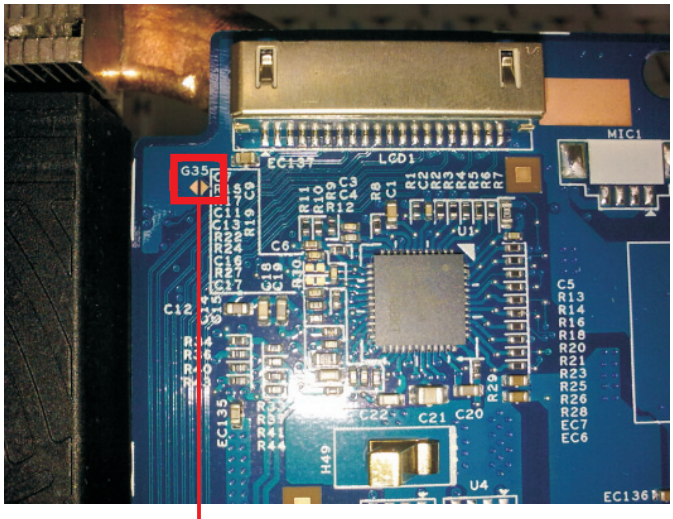
1. Rename the BIOS file as “XXXXXXX.FD”.
2. Copy the “XXXXXXX.FD” file to a bootable USB device containing the Crisis Recovery disk files.
3. Turn off the computer.
4. Insert the USB device containing the renamed BIOS file and the Crisis Recovery disk files to any USB port.
5. Press and hold the Fn+Esc keys (this is the BIOS recovery hotkey), then press the power button.
6. Release the Fn+Esc keys after POST.

■

Clearing a BIOS password

To clear a lost BIOS password (user or supervisor password) you need to short the clear password hardware gap G35 located near the LCD connector on the system board.

HW	Default setting	Function
Gap	Open (normal)	Short to clear the user and supervisor passwords.



G35

▶ To clear a BIOS password:

1. Turn off the notebook and unplug all the peripherals connected to it.
2. Complete the steps in "Removing the battery" on page 54.
3. Complete the steps in "Removing the bay cover" on page 55.
4.
5. Use an electrical conductivity tool to short the two contacts on the hardware gap together.
6. While resting the tool on the two contacts, plug one end of the AC adapter into the DC power jack and plug one end to an electrical outlet.
7. Press the power button to turn on the system.
8. After the POST, remove the tool from the hardware gap.
9. Reinstall the hard drive/memory module, battery pack, and the bay cover.
10. Turn on the notebook and press F2 during bootup to access the Setup utility.
11. Press F9 to load the system defaults.
12. Press F10 to save the changes you made and close the setup Utility.

■

Unlocking the hard drive

To regain access to your computer if you lose the HDD password, you need to generate a master password and unlock the hard drive.

▶ To unlock a hard drive:

1. Open the computer in a DOS environment.
2. Type the following command:

   A\> unlock6 XXXXX 00
3. Press Enter to display the command options.
4. Select option 2 (upper case ASCII code), then press Enter.
5. Write down the generated master password.
6. Reboot the computer.
7. In the HDD password prompt, type the master password generated in step 5, then press Enter.

■

CHAPTER 3
Replacing notebook components

- Preventing static electricity discharge
- Preparing the work space
- Required tools
- Preparing the notebook
- Removing the battery
- Removing the bay cover
- Adding or replacing memory modules
- Replacing the wireless card
- Replacing the hard drive 1
- Replacing the hard drive 2
- Replacing the optical drive
- Replacing the thermal module
- Replacing the CPU
- Replacing the VGA board (for discrete models)
- Replacing the keyboard
- Replacing the keyboard cover
- Replacing the power button board
- Replacing the LCD panel assembly
- Replacing the palm rest
- Replacing the touchpad board
- Replacing the touchpad button board
- Replacing the USB board
- Replacing the Bluetooth module
- Replacing the modem board
- Replacing the coin-cell battery
- Replacing the dc-in cable
- Replacing the system board
- Replacing the left and right speakers
- Replacing the subwoofer
- Replacing the LCD front panel
- Replacing the inverter board
- Replacing the LCD
- Replacing the LCD panel hinge brackets
- Replacing the microphone
- Replacing the webcam
- Replacing the antennas
- Replacing the LCD assembly lid

Preventing static electricity discharge

Warning

To avoid exposure to dangerous electrical voltages and moving parts, turn off your notebook, remove the battery, and unplug the power cord and network cable before opening the case.

Warning

To prevent risk of electric shock, do not insert any object into the vent holes of the notebook.

Important

Before performing maintenance on the notebook, you should read and understand the information in this section.

The components inside your notebook are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Before performing maintenance on the notebook, follow these guidelines:

- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold components by their edges. Avoid touching the edge connectors. Never slide components over any surface.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of your workbench or other grounded connection.
- Touch a bare metal surface on your workbench or other grounded object.

Tape

Some of the procedures in this guide involve removing tape that secures cables or components. Two types of tape are used in this notebook:

- Mylar, non-conductive tape is typically transparent, with a red or brown tint.
- Conductive tape is typically grey or silver in color.

If the existing tape cannot be reused, replace it with the same type. Make sure the replacement tape is of the non-ESD generating kind. Do not use cellophane tape.

Preparing the work space

Before performing maintenance on the notebook, make sure that your work space and the notebook are correctly prepared.

- Wear a grounding (ESD) wrist strap, and use a grounded or dissipative work mat.
- Use a sturdy table. Make sure that the table top is wide enough to hold each component as you remove it.
- Ensure that clear lighting condition is available to make part identification easier.
- Keep your work surface free from clutter and debris that may damage components.
- Use a magnetized screwdriver for removing screws.
- When removing components that are attached to the notebook by a cable, unplug the cable before removing the screws, when possible, to avoid damaging the cable.
- As you remove components and screws, lay them toward the rear of your work surface (behind the notebook) or far enough to the side that your arms will not accidentally brush them onto the floor.
- To help keep track of screws, try the following:
  - Place each component's screws in their own section of a parts sorter.
  - Place each component's screws next to the component on your work surface.
  - Print the first page of each task, then place the page toward the rear of your work surface. As you remove screws, place the screws in their respective section on the page.
  - After loosening screws that are deeply recessed in a hole (for example, on the bottom of the base assembly), you can leave the screws in the holes if you place small pieces of masking tape over the hole openings. When reassembling the component, just remove the tape and tighten the screws.
  - When you place flat-headed screws on the work surface, stand them on their heads to prevent the screws from rolling off the table.

Required tools

To disassemble the notebook, you need the following tools:

- Wrist grounding strap (for ESD prevention)

- Conductive mat (for ESD prevention)
- Flat screwdriver

- Phillips screwdriver

- Non-marring plastic scribe

Preparing the notebook

To prepare the notebook for maintenance:

1. Make sure that the optical disc drive is empty.
2. Turn off the notebook.
3. Close the LCD panel.
4. Disconnect the AC adapter.

5. Disconnect the network cable and all peripheral devices connected to the notebook.
6. Make sure there is no express card on the express card slot. To remove an express card:
   a. Push against the express card, as if you were pushing it further into the slot letting the card spring out

b Pull the express card out of its slot.

7 Make sure there is no memory card on the card reader slot. To remove a memory card:

a Push against the card, as if you were pushing it further into the slot, letting the card spring out

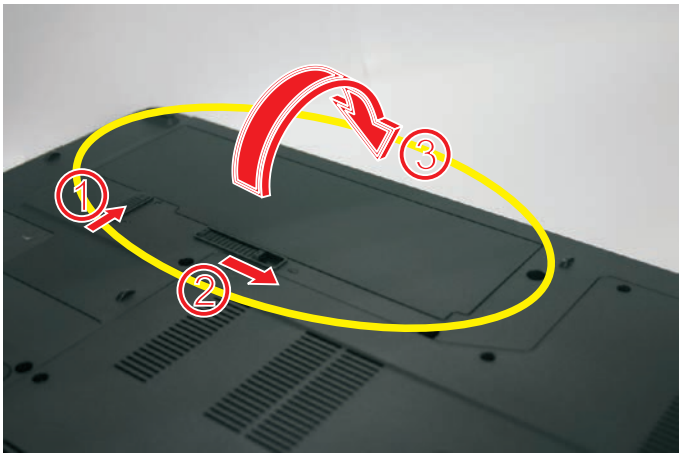
b Pull the memory card out of its slot.

■

Removing the battery

▶ To remove the battery:

1. Turn the notebook over so the base is facing up.
2. Slide the battery lock to the unlocked position (1); slide the battery latch (2), then remove the battery out of the notebook (3).



Note

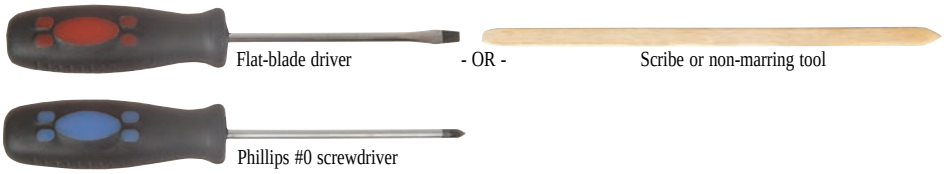
The battery has been highlighted with a yellow circle in the above image. Detach the battery and follow local regulations for disposing it.

■

Removing the bay cover

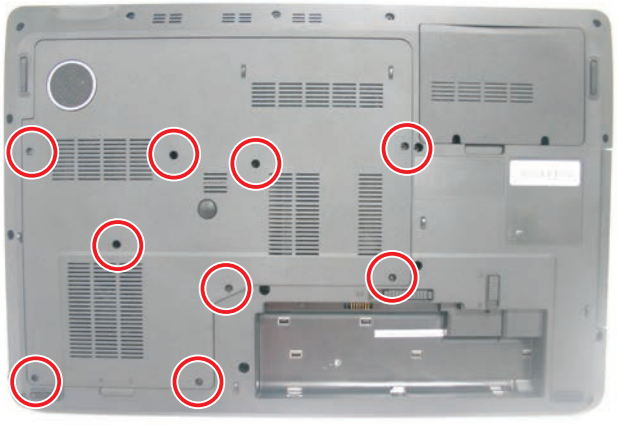
To remove or replace components located on the lower bay, you need to remove the bay cover first.

Tools you need to complete this task:

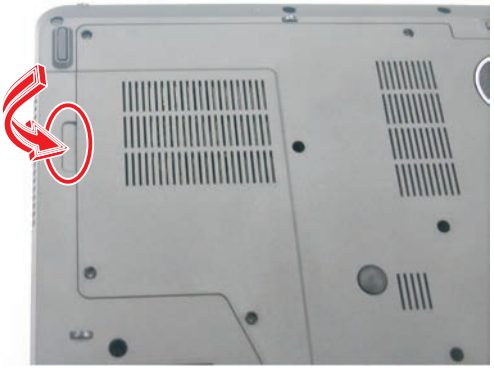


▶ To remove the bay cover:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Turn the notebook over so the base is facing up.
3. Loosen the bay cover captive screws (these screws cannot be removed).



4 Insert a non-marring plastic scribe on the cover's notch to release the cover from the computer, and then remove the cover.

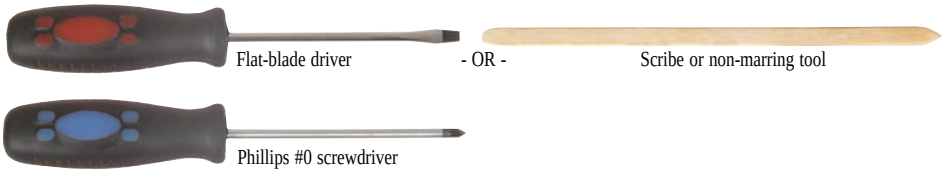


■

Adding or replacing memory modules

Important
Use only memory modules designed for this Packard Bell notebook.

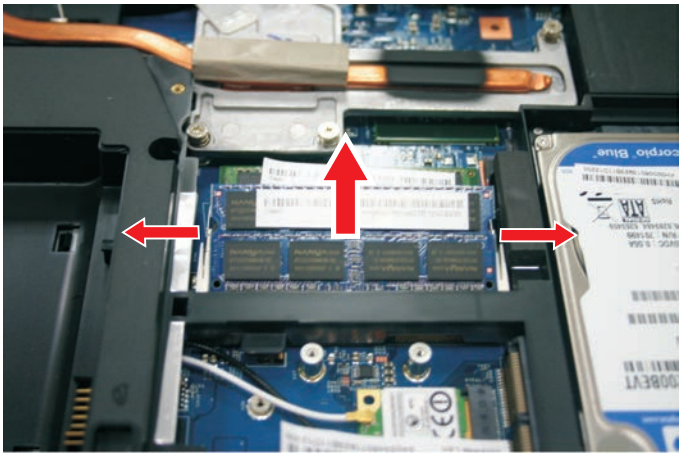
Tools you need to complete this task:



To add or replace memory modules:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the bay cover" on page 55.
3. If you are replacing a memory module, go to step 4.

   If you installing an additional memory module, go to step 5.
4. Use a non-marring plastic scribe to push out the latches on both sides of the memory slot until the module tilts upward. Then remove from the memory slot.



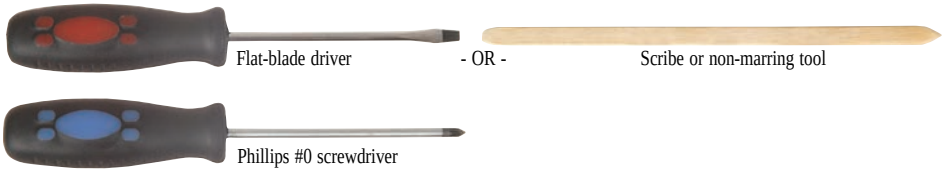
5. Insert the new memory module at a 30° angle into an empty memory slot, and then press it down until it clicks into place.

   The module is keyed so it can only be inserted in one direction. If the module does not fit, make sure that the notch in the module lines up with the tab in the memory slot.
6. Replace the bay cover, then tighten the cover screws.

■

Replacing the wireless card

Tools you need to complete this task:



Screws removed during this task:

- 1 chrome M2×4 (wireless card)

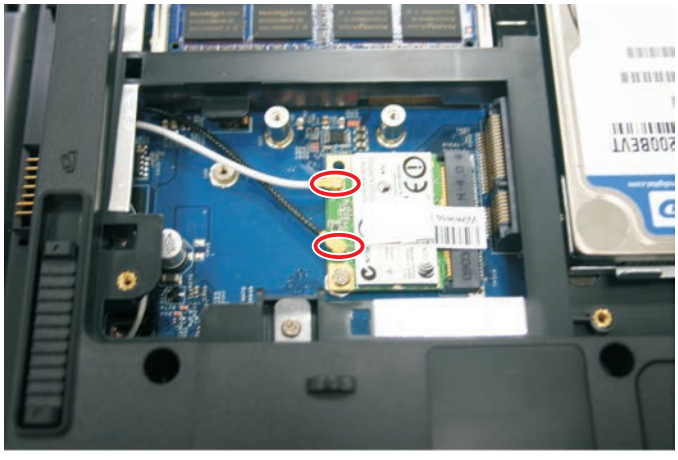
▶ To replace the wireless card:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the bay cover" on page 55.
3. Detach the bar code sticker covering the antenna cables.

4 Unplug the antenna cables. Note which color cable corresponds to each of the connectors.

Important

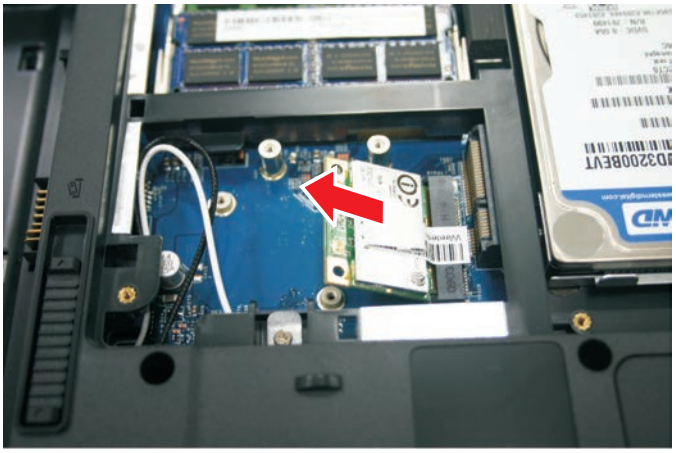
The number of antenna cables varies depending on the type of wireless card installed on the notebook. IEEE 802.11n cards typically have two antenna cables. Other types of wireless cards usually have only three antenna cables.



5 Move the antenna cables away from the wireless card screw.

6 Remove the screw securing the wireless card.

7 Pull the card out of the slot.



8 Insert the new wireless card at a 30° angle into the empty Mini Card slot.

The card is keyed so it can only be inserted in one direction. If the card does not fit, make sure that the notch in the card lines up with the tab in the card slot.

9 Secure the new wireless card with the screw removed in step 6.

10 Reconnect the antenna cables to the connectors.

11 Replace the bay cover, then tighten the cover screws.

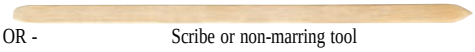
■

Replacing the hard drive 1

Tools you need to complete this task:

Flat-blade driver

- OR -



Scribe or non-marring tool

Phillips #0 screwdriver

Screws removed during this task:

- 1 chrome M2×4 (hard drive 1)
- 4 chrome M3×3 (hard drive bracket)

▶ To replace the hard drive:

1. Complete the steps in “Preparing the notebook” on page 51.
2. Complete the steps in “Removing the bay cover” on page 55.
3. Remove the hard drive screw.

4 Grasp the black mylar tab and use it to disengage the hard drive from its connector, and then remove the drive from its bay.

5 If your new hard drive already includes the hard drive bracket, go to step 9.
If you need to use the bracket from the old hard drive, go to step 6.

6 Remove the screws that secure the hard drive to the hard drive bracket.

7 Remove the hard drive from the bracket.

8 Place the bracket on the new drive and secure it with the screws removed in step 6.

9 Slide the new hard drive into the hard drive bay and make sure it's properly engaged to the connector.

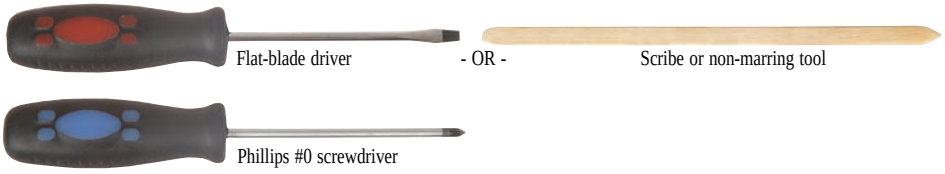
10 Secure the new drive to the system board with the screw removed in step 3.

11 Replace the bay cover, then tighten the cover screws.

■

Replacing the hard drive 2

Tools you need to complete this task:



Screws removed during this task:

- 1 chrome M2×4 (hard drive 2)
- 4 chrome M3×3 (hard drive bracket)

▶ To replace the hard drive 2:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Remove the hard drive cover screws.

3 Remove the hard drive screw.

4 Grasp the black mylar tab and use it to disengage the hard drive from its connector, and then remove the drive from its bay.

5 If your new hard drive already includes the hard drive bracket, go to step 9.

If you need to use the bracket from the old hard drive, go to step 6.

6 Remove the screws that secure the hard drive bracket.

7 Remove the hard drive from the bracket.

8 Place the bracket on the new drive and secure it with the screws removed in step 6.

9 Slide the new hard drive into the hard drive bay and make sure it's properly engaged to the connector.

10 Secure the new drive to the system board with the screw removed in step 3.

11 Replace the hard drive cover, then tighten the cover screws.

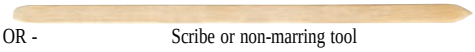
■

Replacing the optical drive

Tools you need to complete this task:

Flat-blade driver

- OR -



Scribe or non-marring tool

Phillips #0 screwdriver

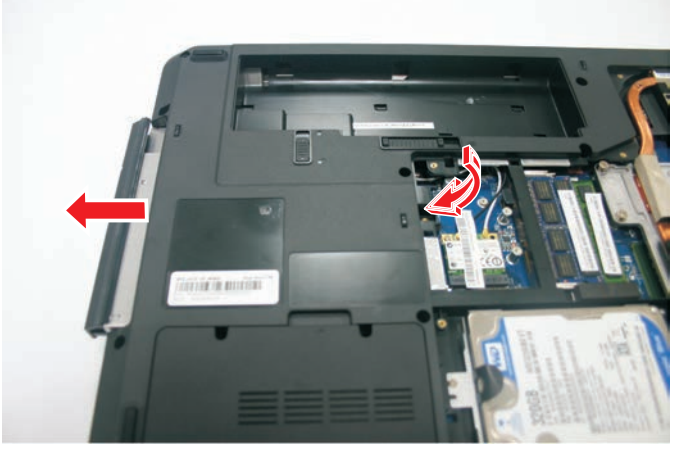
Screws removed during this task:

- 1 chrome M2×4 (optical drive)
- 1 chrome M2×4 (optical drive bracket)

▶ To replace the optical drive:

1. Complete the steps in “Preparing the notebook” on page 51.
2. Complete the steps in “Removing the bay cover” on page 55.
3. Remove the optical drive screw.

4 Use the non-marring plastic scribe to carefully push the optical drive out of the drive bay, and then slide the drive out.

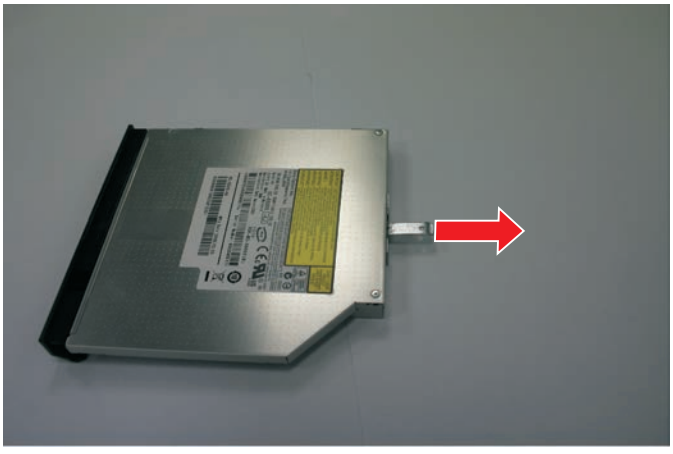


5 If your new optical drive already has it's own bracket and bezel, go to step 10.

If you need to use the bracket and bezel from the old optical drive, perform steps 6–9 as necessary.

6 Remove the screw that secures the optical drive bracket.

7 Detach the bracket from the drive.



8 Attach the bezel to the new optical drive.

9 Attach the bracket to the new optical drive and secure it with the screw removed in step 6.

10 Slide the new optical drive into the drive bay and make sure it's properly engaged to the ODD1 connector.

11 Secure the new drive to the system board with the screw removed in step 3.

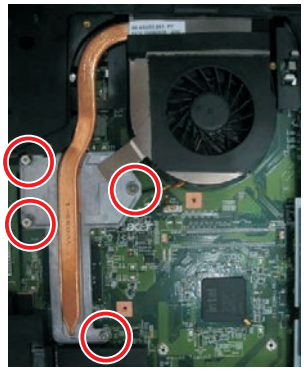
12 Replace the bay cover, then tighten the cover screws.

■

Replacing the thermal module

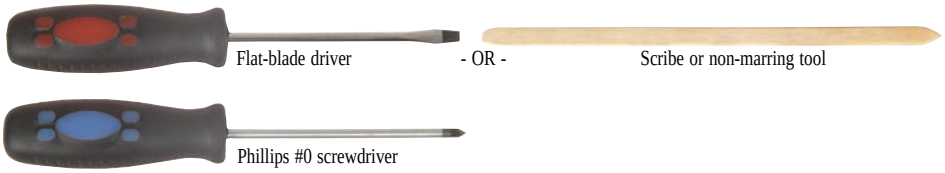
Note:

The thermal module in this sample is for the discrete model. For the UMA model, the thermal module have four captive screws.



UMA Thermal Module

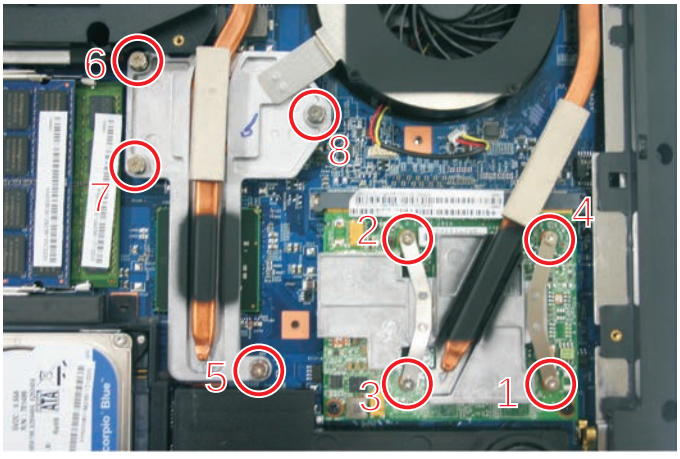
Tools you need to complete this task:



▶ To replace the thermal module:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the bay cover" on page 55.
3. Disconnect the cooling fan cable from its system board connector.

4 Loosen the spring-loaded captive screws securing thermal module. Follow the screw sequence indicated on the below images.



5 Remove the thermal module from the system board.

6 Lay the thermal module down in an upright position to avoid tainting your work space with thermal grease.

7 Remove the barcode sticker on top of the processor.

8 Moisten a soft cloth with isopropyl alcohol and clean the processor die to remove any thermal grease residue. Wipe the die surface several times to make sure that no particles or dust contaminants are evident. Allow the alcohol to evaporate before continuing.

Caution

Do not touch the contact surface of the new thermal module nor the processor die as this may leave dead skin cells or oils from your finger that can result in poor thermal grease performance.

9 Apply just enough thermal grease to evenly coat the surface of the processor die.

10 Place the new thermal module on the system board and tighten its captive screws to secure it in place. Follow the sequence of the number beside each screw when securing the thermal module.

11 Reconnect the cooling fan cable to its system board connector.

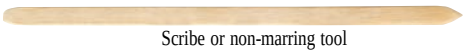
12 Replace the bay cover, then tighten the cover screws.

■

Replacing the CPU

Tools you need to complete this task:

Flat-blade driver

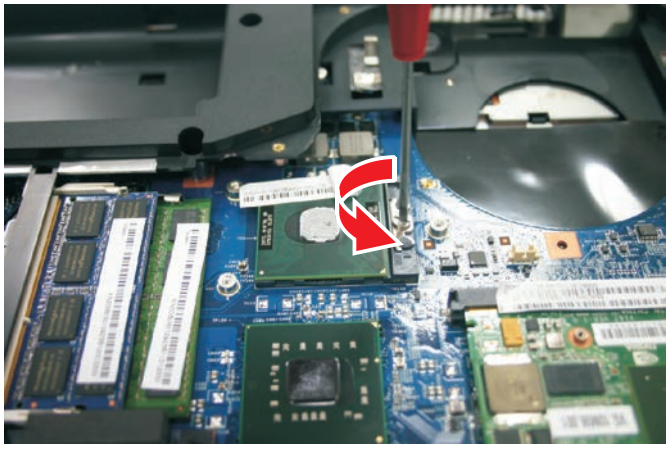

Scribe or non-marring tool

Phillips #0 screwdriver

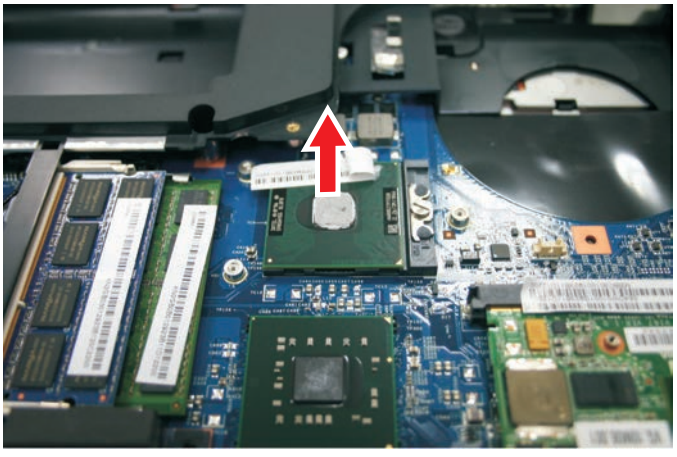
▶ To replace the CPU:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the bay cover" on page 55.
3. Remove the thermal module by following the instructions in "Replacing the thermal module" on page 70.
4. Remove the barcode sticker on top of the processor.

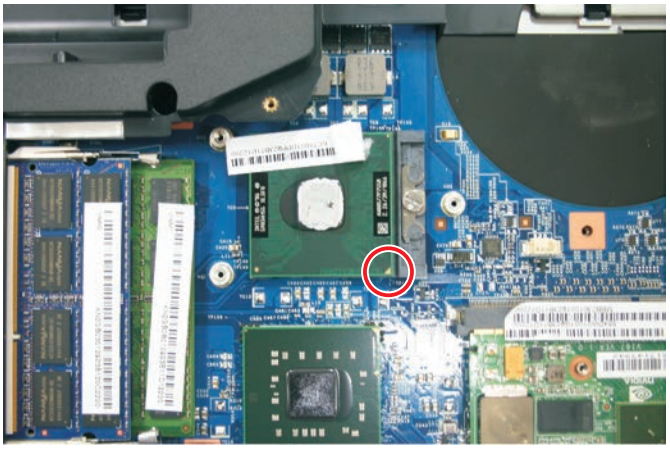
5. Use a flat-blade screw driver to turn the processor lock screw 1/4-turn counter-clockwise.



6 Remove the old processor from the system board.



7 Install the new processor onto the system board making sure that Pin 1 on the processor (indicated by the silk-screened arrow on the corner of the processor) aligns with Pin 1 on the processor socket (indicated by the absence of a pin hole in the processor socket), then use a flat-blade screwdriver to turn the processor lock screw 1/4-turn clockwise.



8 Remove any thermal grease residue from the cooling assembly using a soft cloth and isopropyl alcohol.

9 Place new thermal grease on the processor. Use only enough to cover the CPU die.

10 Optional: For discrete models, place new thermal grease on the VGA chip on the VGA board. Use only enough to cover the VGA die.

11 Make sure a thermal pad is placed between the cooling assembly and other components.

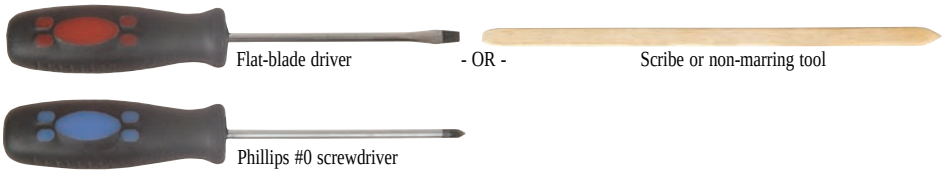
12 Replace the cooling assembly by following the instructions in "Replacing the thermal module" on page 70.

13 Replace the bay cover, then tighten the cover screws.

■

Replacing the VGA board (for discrete models)

Tools you need to complete this task:

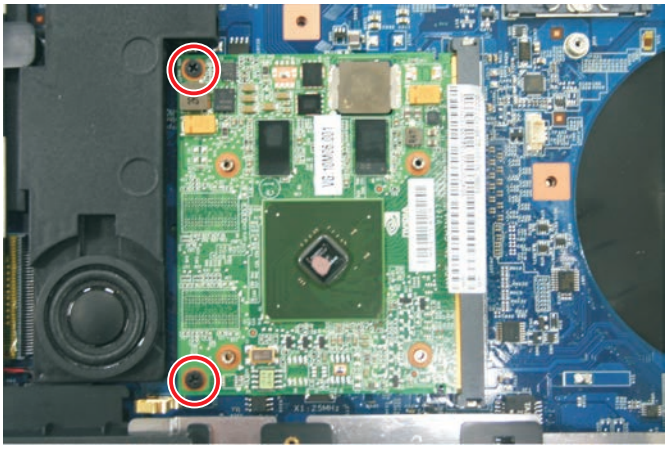


Screws removed during this task:

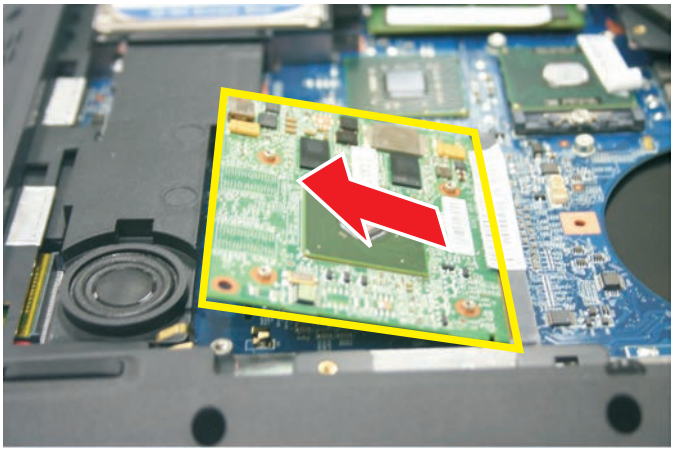
- 2 black M2×4 (VGA board)

▶ To replace the VGA board (for discrete models):

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the bay cover" on page 55.
3. Remove the thermal module by following the instructions in "Replacing the thermal module" on page 70.
4. Remove the VGA board screws.



5 Remove the VGA board.



Note

Circuit boards >10 cm^2 has been highlighted with a yellow rectangle as above image shows. Please detach the board and follow local regulations for disposal.

6 Install the VGA board, then replace the screws removed in step 4.

7 Remove any thermal grease residue from the cooling assembly using a soft cloth and isopropyl alcohol.

8 Place new thermal grease on the VGA chip on the VGA board. Use only enough to cover the VGA die.

9 Place new thermal grease on the processor. Use only enough to cover the CPU die.

10 Make sure a thermal pad is placed between the cooling assembly and other components.

11 Replace the cooling assembly by following the instructions in "Replacing the thermal module" on page 70.

12 Replace the bay cover, then tighten the cover screws.

■

Replacing the keyboard

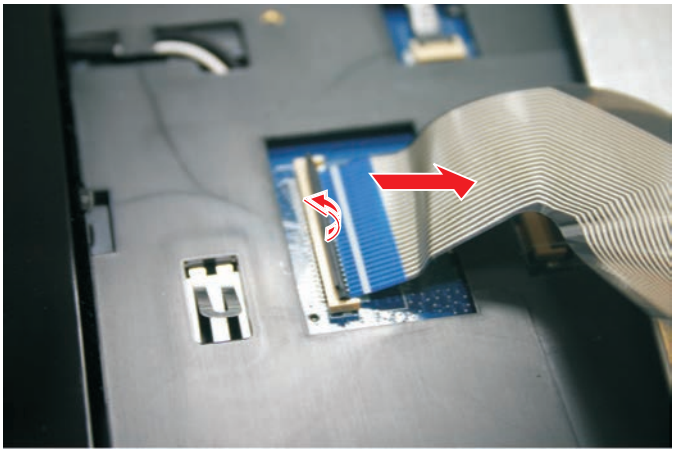
Tools you need to complete this task:

▶ To replace the keyboard:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the battery" on page 54.
3. Turn the notebook over and open the LCD panel to its fully extended position.
4. Use the plastic scribe to release the latches securing the keyboard. The keyboard will pop up when all the latches are properly released.

5. Carefully lift up and turn over the keyboard and place it on top of the palm rest.

6 Disconnect the keyboard cable and remove the old keyboard.



7 Connect the cable from the new keyboard into the connector.

8 Insert the tabs on the front edge of the keyboard into the slots under the palm rest. You may need to press down on the keyboard keys along the front and side edges of the keyboard to seat the retaining tabs into their corresponding slots.

9 Gently press down on the top and side of the keyboard until it is properly secured by the latches.

10 Reinstall the battery.

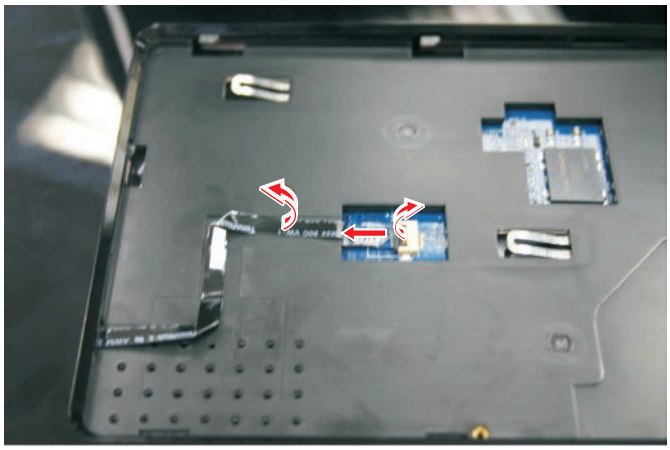
■

Replacing the keyboard cover

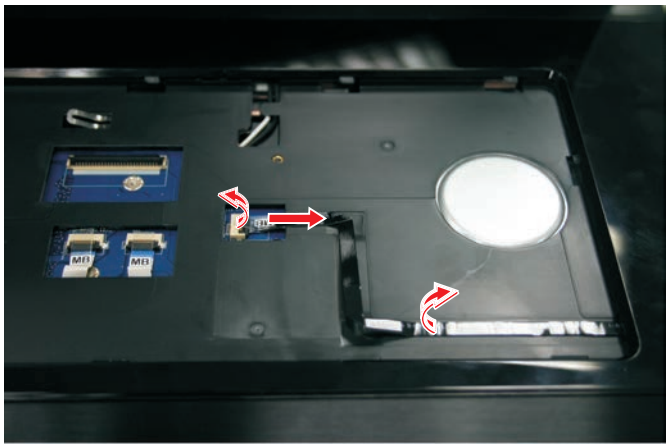
Tools you need to complete this task:

▶ To replace the keyboard cover:

1. Complete the steps in "Preparing the notebook" on page 51.
2. Complete the steps in "Removing the battery" on page 54.
3. Remove the keyboard by following the steps in "Replacing the keyboard" on page 77.
4. Disconnect the left media board cable from the connector and carefully peel off the cable from the system.



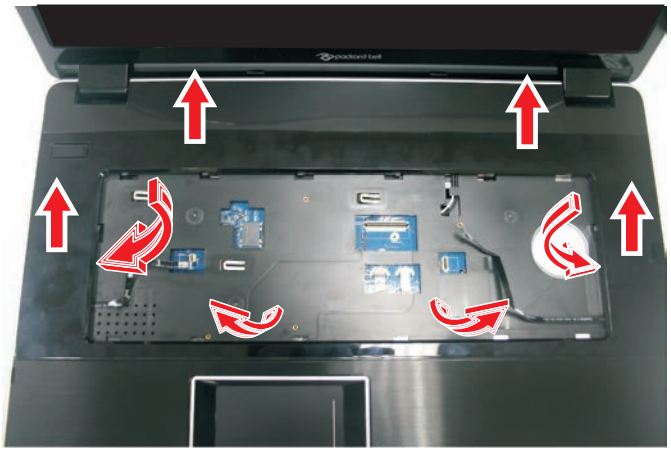
5. Disconnect the right media board cable from the connector and carefully peel off the cable from the system.



Note:

The left and right media boards are glued to the keyboard cover.

6 Use the plastic scribe to carefully pry loose the middle cover from the latches securing it. Then remove it from the system.



7 Replace the new keyboard cover and carefully push down on all the side until the latches clicks and secure it in place.

8 Connects the left and right media board cables that was disconnected on step 4 and step 5.

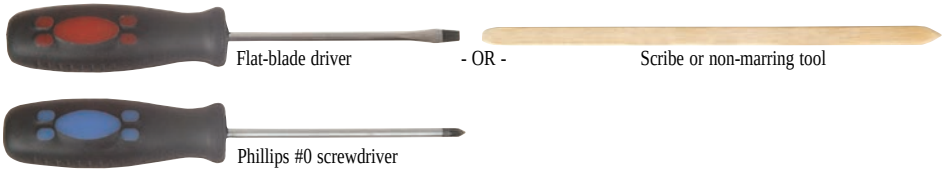
9 Reinstall the keyboard by instructions in “Replacing the keyboard” on page 77.

10 Reinstall the battery.

■

Replacing the power button board

Tools you need to complete this task:



Screws removed during this task:

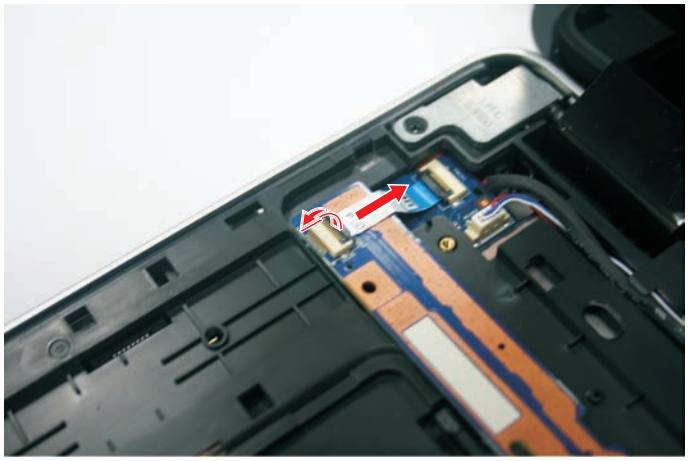
- 1 chrome M2×4 (power button board)

▶ To replace the power button board:

1. Complete the steps in “Preparing the notebook” on page 51.
2. Complete the steps in “Removing the battery” on page 54.
3. Remove the keyboard by following the steps in “Replacing the keyboard” on page 77.
4. Remove the keyboard cover by following the steps in “Replacing the keyboard cover” on page 79.
5. Remove the screw securing the power button board.

6 Carefully remove the power button board and turn in over to access the cable.

7 Disconnect the cable from the power button board and remove it from the system.



8 Reconnect the cable to the new power button board and replace it back to the system.

9 Replace the screw that was remove in step 5.

10 Reinstall the keyboard cover by performing steps 7–8 of the "Replacing the keyboard cover" procedure on page 79.

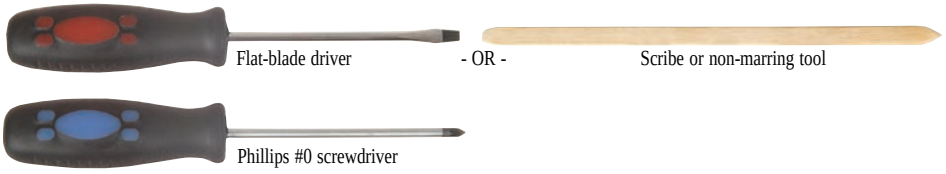
11 Reinstall the keyboard by performing steps 7–9 in "Replacing the keyboard" on page 77.

12 Reinstall the battery.

■

Replacing the LCD panel assembly

Tools you need to complete this task:



Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)

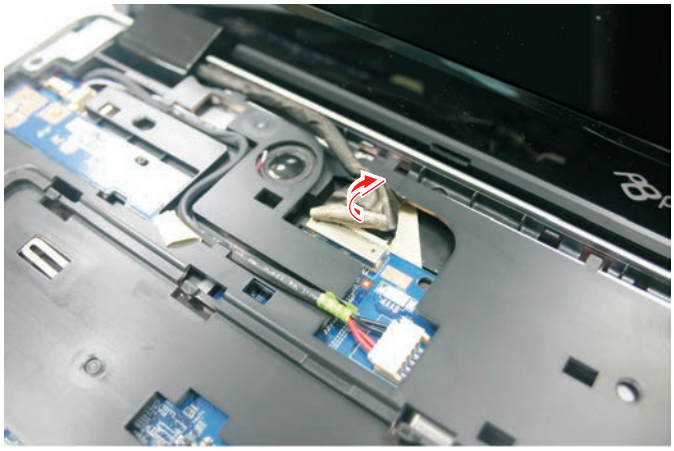
▶ To replace the LCD panel assembly:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.

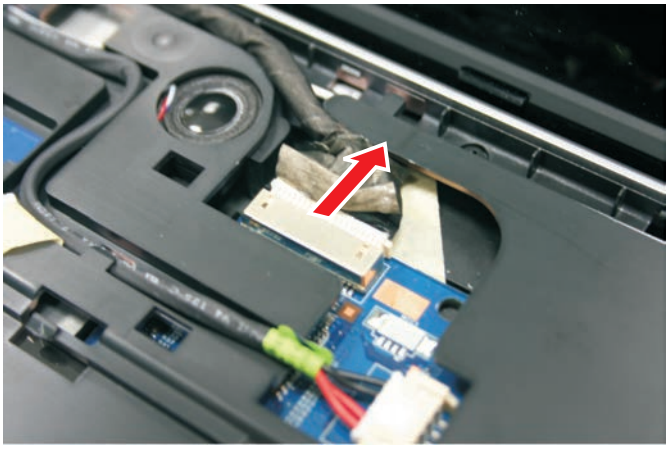
   If there's no wireless card installed, proceed to step 6.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instruction in "Replacing the keyboard cover" on page 79.
5. Turn the notebook over so the base is facing up.
6. Remove the base screws that secure the LCD panel hinges.

7. Turn the notebook over again so the palm rest is facing up.

8 Remove the tape securing the LCD and microphone cables.



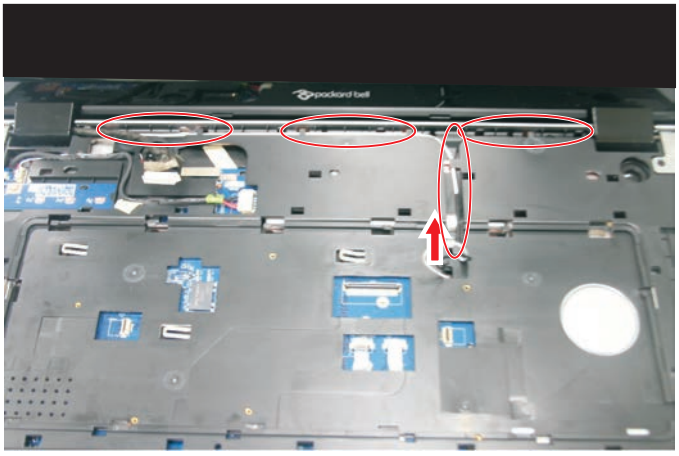
9 Disconnect the LCD and microphone cables from their system board connectors.



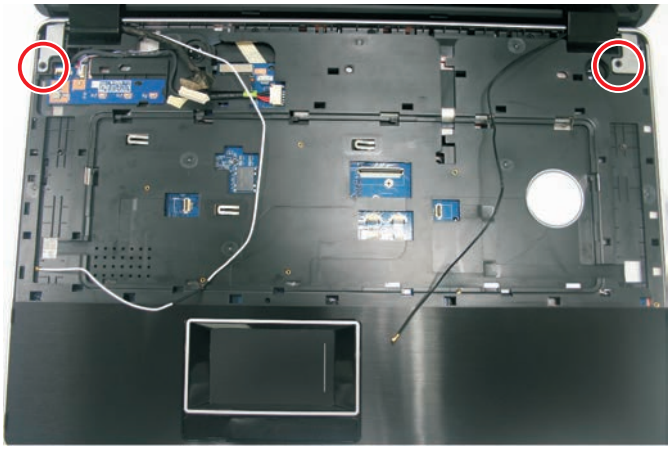
10 If the notebook has a wireless card installed, note the antenna cable routing for later reference and then release the antenna cables from the palm rest.

If there's no wireless card installed, proceed to step 12.

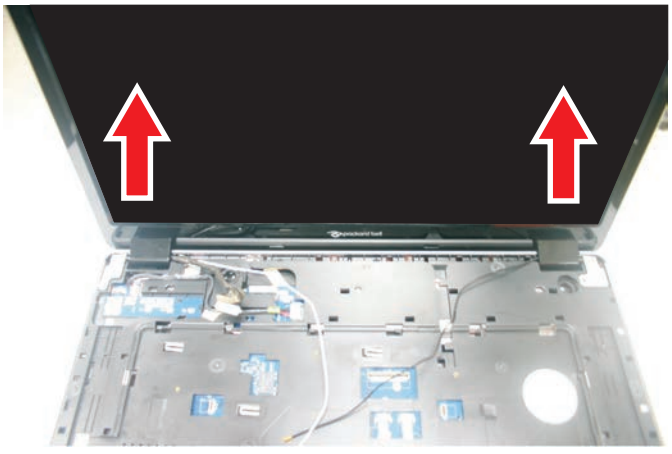
11 Pull the antenna cables from underneath the computer and release them from the latches.



12 Remove the top hinge screws securing the LCD assembly.



13 Lift the LCD panel assembly up and away from the notebook.



14 Position the new LCD panel assembly on the notebook, and then secure it with the hinge screws removed in step 12.

15 If the notebook has a wireless card installed, proceed to step 17 to arrange the antenna cables.

16 If there's no wireless card installed, proceed to step 18 .

17 Refer to the antenna cable routing note made on step 10 and secure the antenna cables to the palm rest before pulling the ends downward to the notebook base.

18 Arrange the LCD and microphone cables on the palm rest and reconnect them to their system board connectors.

19 Close the LCD panel and turn the notebook over so the base is facing up.

20 If the notebook has a wireless card installed, reconnect the antenna cables and then reinstall the bay cover.

21 Return the base hinge screws removed in step 6.

22 Turn the notebook over so the palm rest is facing up.

23 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

24 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

25 Reinstall the battery.

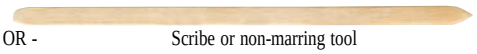
■

Replacing the palm rest

Tools you need to complete this task:

Flat-blade driver

- OR -


Scribe or non-marring tool

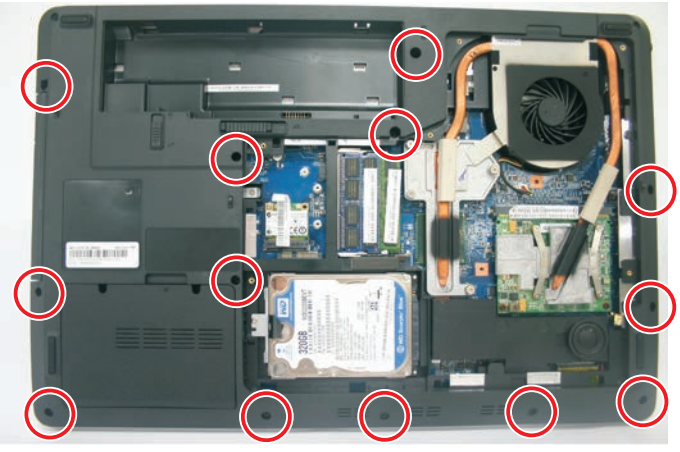
Phillips #0 screwdriver

Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

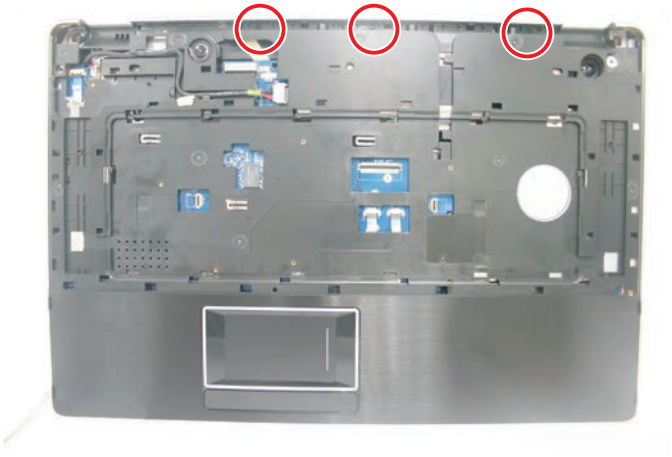
▶ To replace the palm rest:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Turn the system over so that the base side is facing up.
7. Remove the 13 screws securing the base side to the palm rest.

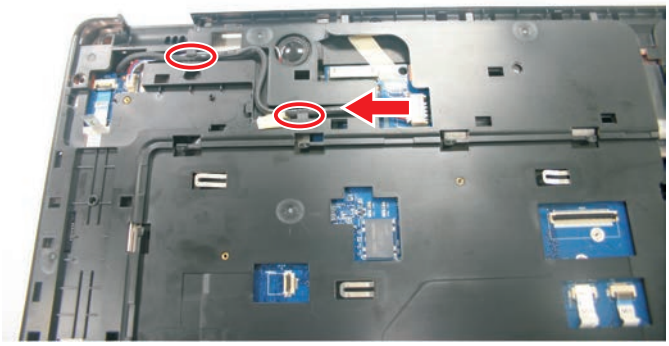


8. Turn the system over so that the top side is facing up.

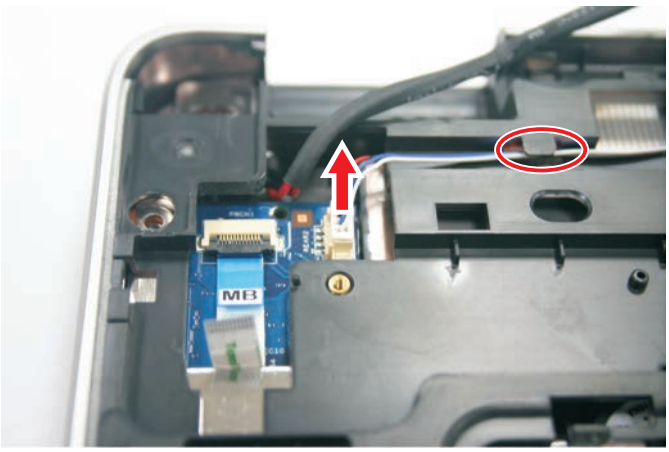
9 Remove the 3 screws securing the palm rest to the base side.



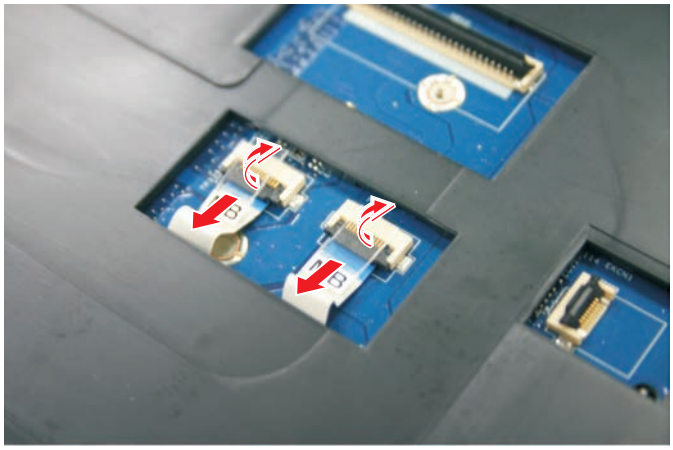
10 Disconnect the DC-in cable from the system and release the cable from the latches.



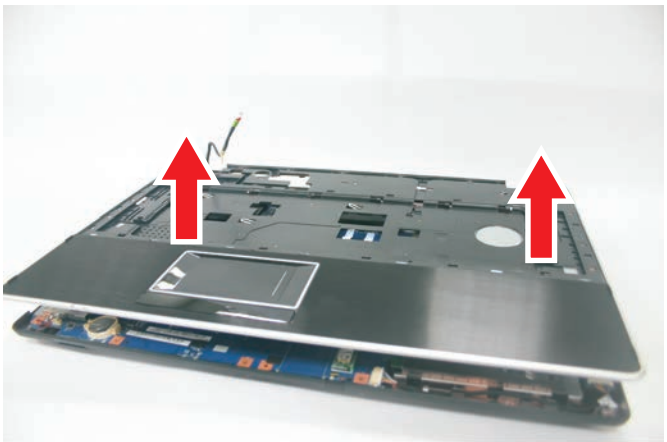
11 Disconnect the left speaker cable from REAR2 connector and release it from the latch.



12 Disconnect the touchpad board and touchpad button board cables from TP335 and FP2 connectors.



13 Carefully pry loose the palm rest from the system and lift the palm rest from the system.



14 Place the new palm rest assembly on top of the base enclosure and press it down on all sides until it snaps into place.

15 Reconnect the speaker cable, touchpad board cable, touchpad button board cable, and DC-in cable to their respective system board connectors.

16 Secure the palm rest assembly with the screws removed in steps 7 and 9.

17 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

18 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

19 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

20 If you have disconnected any wireless antennas, reconnect them now.

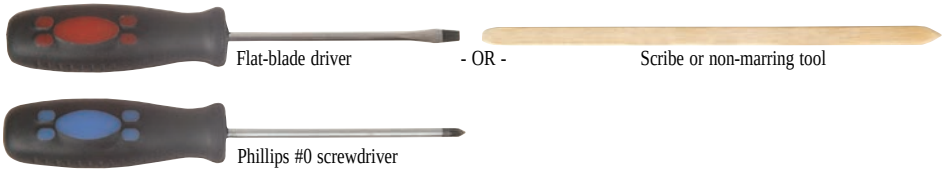
21 Replace the bay cover, then tighten the cover screws.

22 Reinstall the battery.

■

Replacing the touchpad board

Tools you need to complete this task:

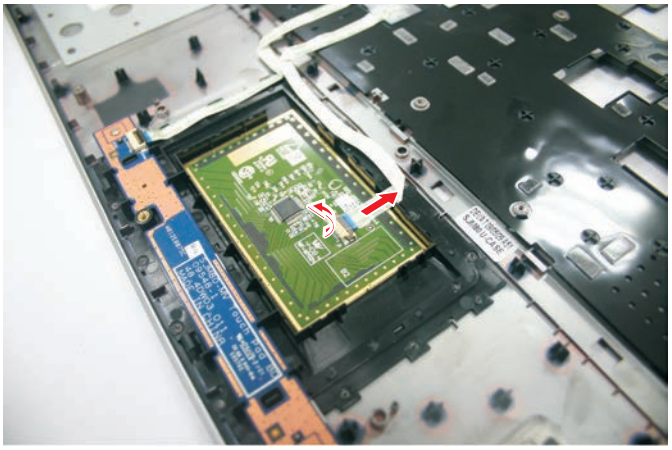


Screws removed during this task:

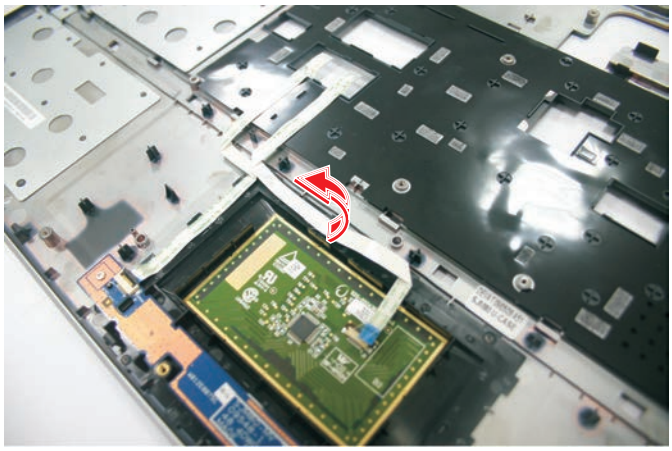
- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the touchpad board:

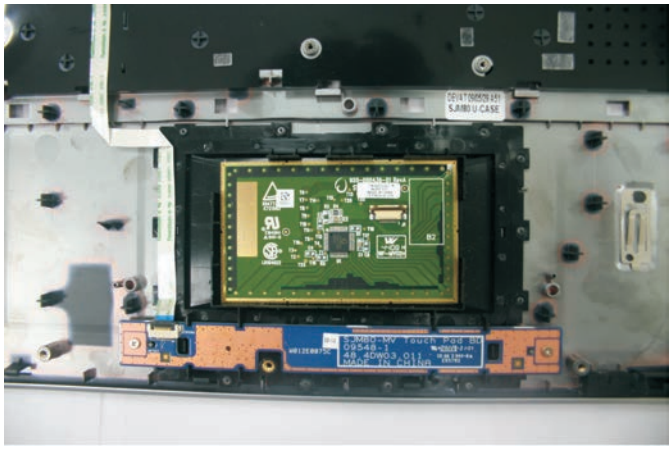
1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the palm rest by following the instructions in "Replacing the palm rest" on page 87.
7. Turn the palm rest over so that its underside is facing up.
8. Disconnect the touchpad board cable.



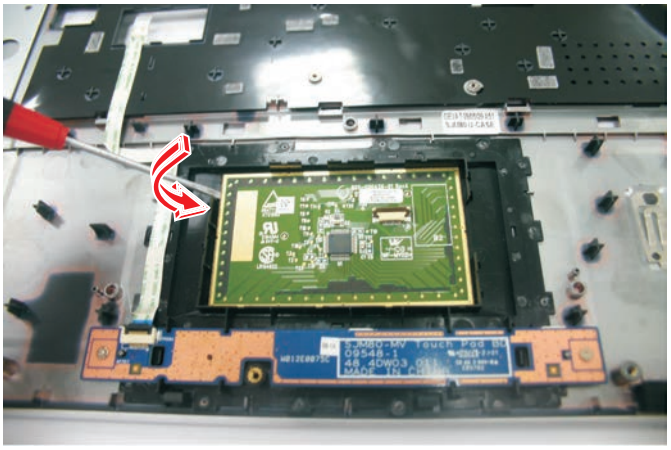
9 Remove the touchpad board cable from the palm rest.



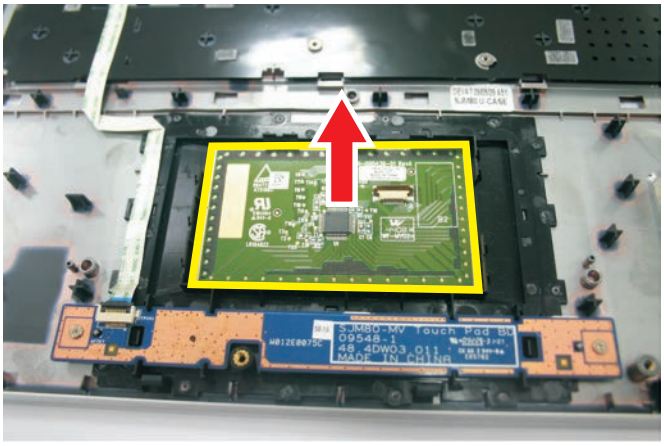
10 Note the orientation of the touchpad board for later reference in installing the new touchpad board.



11 Insert a small flat-blade screwdriver or non-marring scribe between the touchpad board and the palm rest's underside, and carefully pry the board loose.



12 Remove the touchpad board from the palm rest.



Note

A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow the local regulations for disposing this type of circuit board.

13 Observing the same orientation as the old touchpad board, secure the new board on the palm rest.

14 Insert the touchpad cable to the touchpad board cable connector, and then close the clip to lock the cable in place.

15 Reinstall the palm rest by following the instructions in "Replacing the palm rest" on page 87.

16 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

17 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

18 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

19 If you have disconnected any wireless antennas, reconnect them now.

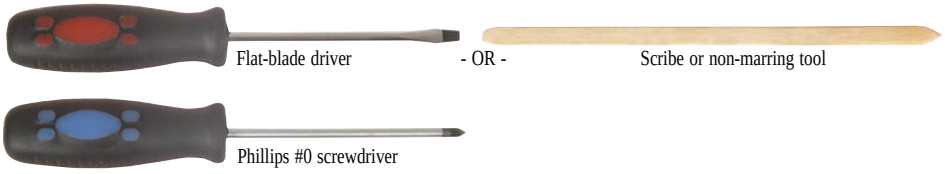
20 Replace the bay cover, then tighten the cover screws.

21 Reinstall the battery.

■

Replacing the touchpad button board

Tools you need to complete this task:

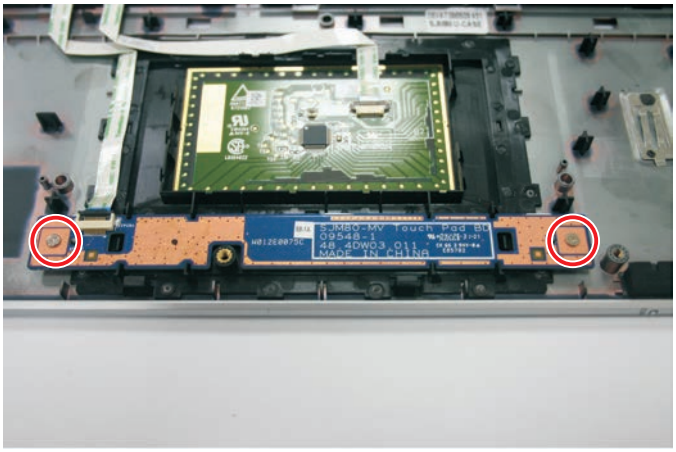


Screws removed during this task:

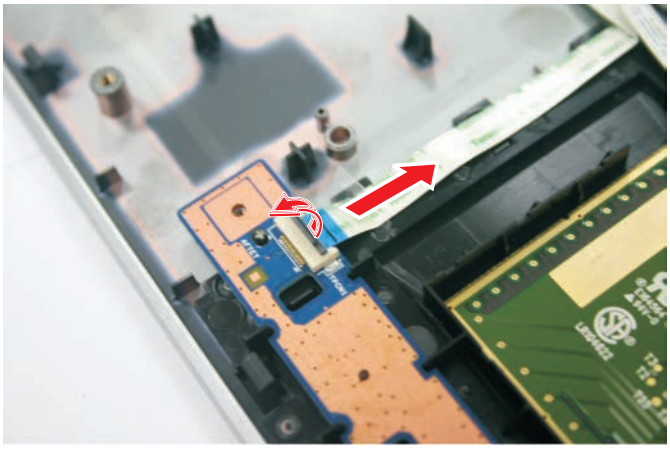
- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 2 chrome M2×4 (touchpad button board)

▶ To replace the touchpad button board:

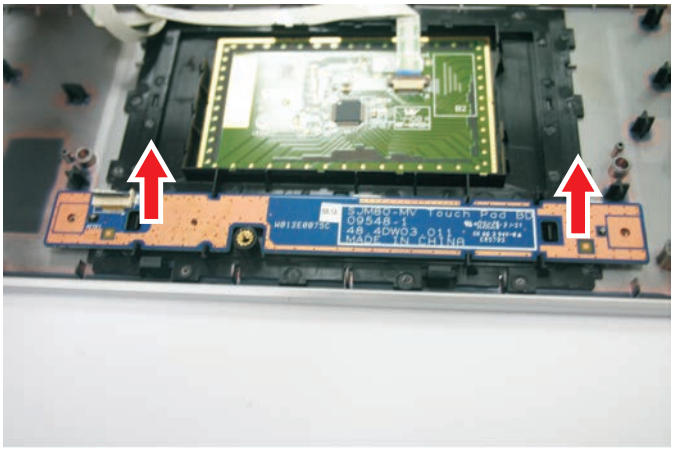
1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the palm rest by following the instructions in "Replacing the palm rest" on page 87.
7. Remove the 2 screws securing the touchpad button board.



8 Disconnect the cable from the touchpad button board connector.



9 Remove the touchpad button board from the palm rest.



10 Replace the new touchpad button board on the palm rest.

11 Connect the cable to the touchpad button board connector.

12 Replace the screws that was remove in step 7.

13 Reinstall the palm rest by following the instructions in “Replacing the palm rest” on page 87.

14 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

15 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

16 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

17 If you have disconnected any wireless antennas, reconnect them now.

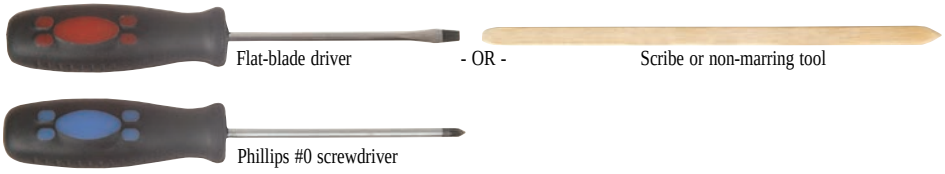
18 Replace the bay cover, then tighten the cover screws.

19 Reinstall the battery.

■

Replacing the USB board

Tools you need to complete this task:



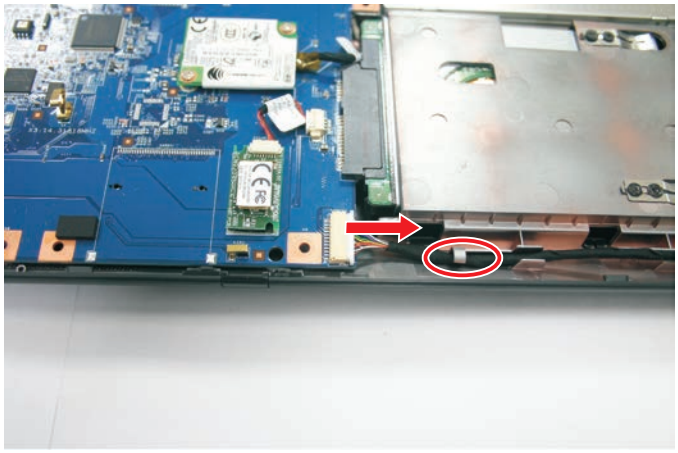
Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 1 chrome M2×4 (USB board)

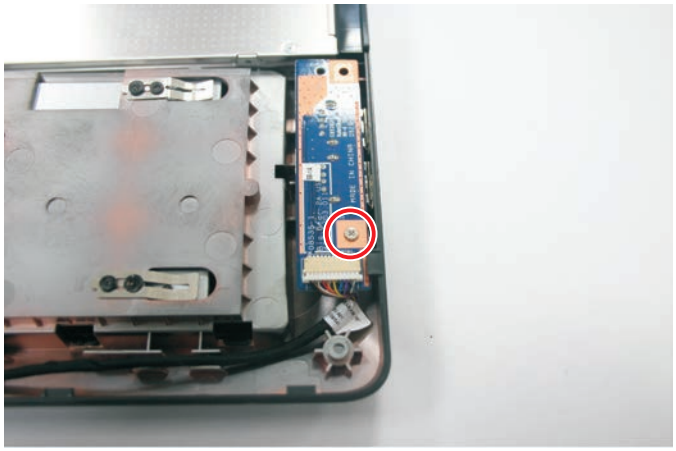
▶ To replace the USB board:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the palm rest by following the instructions in “Replacing the palm rest” on page 87.

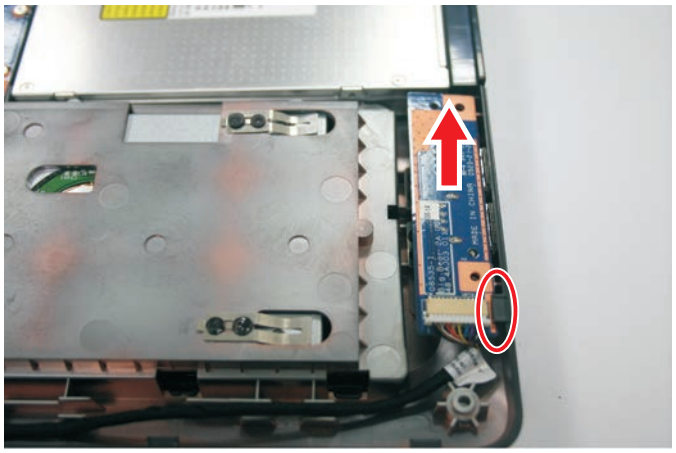
7 Disconnect the USB board cable from the USBCN1 on the system board and release the cable from the latch.



8 Remove the USB board screw.



9 Release from latch and remove the USB board from the base enclosure.



10 Place the new USB board in the base enclosure; fix it to the latch and secure it with the screw removed in step 8.

11 Connect the USB board cable to the new USBCN1 on the system board.

12 Reinstall the palm rest by following the instructions in “Replacing the palm rest” on page 87.

13 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

14 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

15 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

16 If you have disconnected any wireless antennas, reconnect them now.

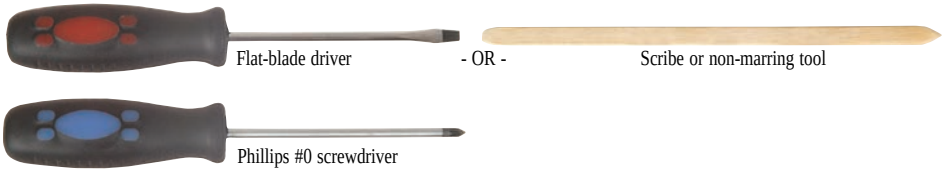
17 Replace the bay cover, then tighten the cover screws.

18 Reinstall the battery.

■

Replacing the Bluetooth module

Tools you need to complete this task:

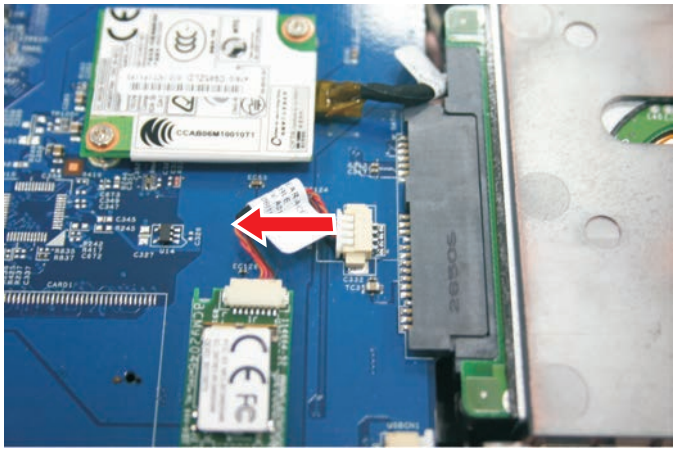


Screws removed during this task:

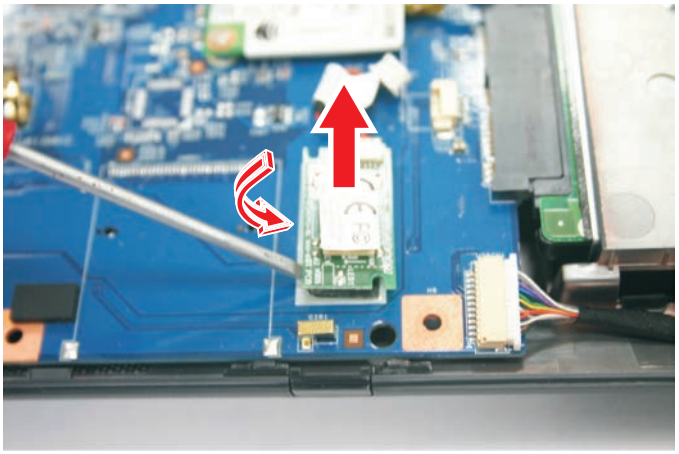
- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the Bluetooth module:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the palm rest by following the instructions in "Replacing the palm rest" on page 87.
7. Disconnect the Bluetooth cable from the Bluetooth module.



8 The Bluetooth module is glued to the system board. Carefully pry loose the Bluetooth module from the system board using a flat blade screw driver or a plastic scribe.



9 Secure the new Bluetooth module on the system board and connect the Bluetooth cable to it.

10 Reinstall the palm rest by following the instructions in "Replacing the palm rest" on page 87.

11 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

12 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

13 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

14 If you have disconnected any wireless antennas, reconnect them now.

15 Replace the bay cover, then tighten the cover screws.

16 Reinstall the battery.

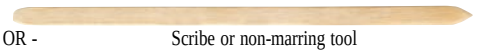
■

Replacing the modem board

Tools you need to complete this task:

Flat-blade driver

- OR -


Scribe or non-marring tool

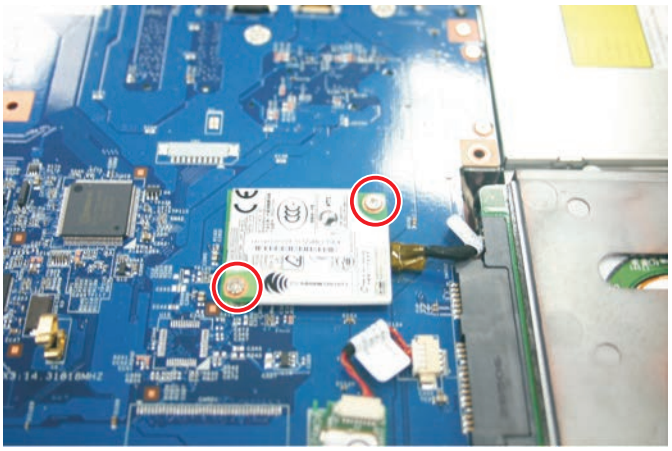
Phillips #0 screwdriver

Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 2 chrome M2×4 (modem board)

▶ To replace the modem board:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the palm rest by following the instructions in "Replacing the palm rest" on page 87.
7. Remove the 2 screws securing the modem board to the system board.



8 Carefully lift up the modem board to remove it from the port on the system board; then turn it over to access the cable.

9 Disconnect the cable from the modem board.

10 Connect the cable to the new modem board and connect it to the port on the system board.

11 Secure the new modem board with the screws that was removed on step 7.

12 Reinstall the palm rest by following the instructions in “Replacing the palm rest” on page 87.

13 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

14 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

15 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

16 If you have disconnected any wireless antennas, reconnect them now.

17 Replace the bay cover, then tighten the cover screws.

18 Reinstall the battery.

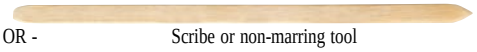
■

Replacing the coin-cell battery

Tools you need to complete this task:

Flat-blade driver

- OR -


Scribe or non-marring tool

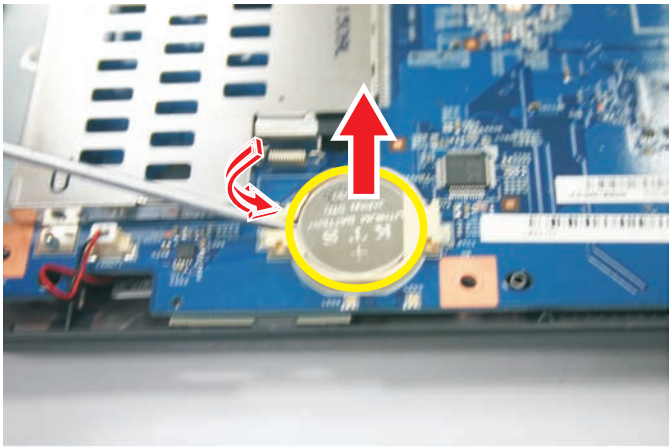
Phillips #0 screwdriver

Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the coin-cell battery:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the palm rest by following the instructions in “Replacing the palm rest” on page 87.
7. Use a flat blade screw driver or plastic scribe to push and release the coin-cell battery from the system board.



Note

The battery has been highlighted with a yellow circle in the above image. Detach the battery and follow local regulations for disposing it.

8 Gently push down the new coin-cell battery to latch it into the system board.

9 Reinstall the palm rest by following the instructions in "Replacing the palm rest" on page 87.

10 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

11 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

12 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

13 If you have disconnected any wireless antennas, reconnect them now.

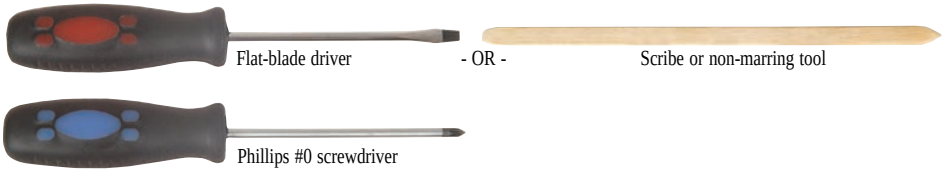
14 Replace the bay cover, then tighten the cover screws.

15 Reinstall the battery.

■

Replacing the dc-in cable

Tools you need to complete this task:

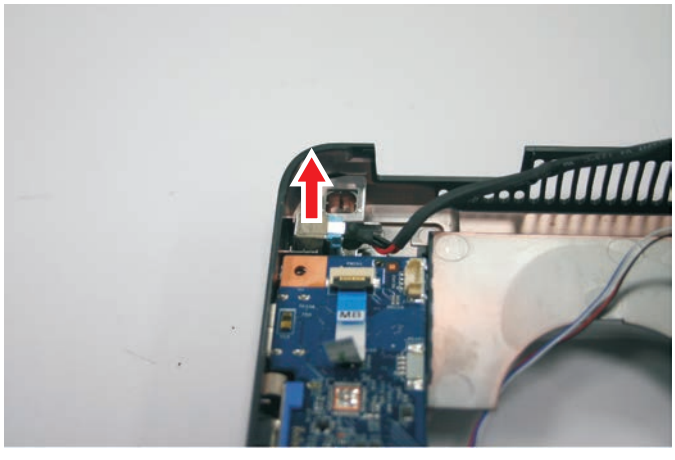


Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the dc-in cable:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the palm rest by following the instructions in “Replacing the palm rest” on page 87.
7. Carefully lift up the dc-in cable from the base panel as shown.



8. Replace the new dc-in cable into the base panel.

9 Reinstall the palm rest by following the instructions in “Replacing the palm rest” on page 87.

10 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

11 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

12 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

13 If you have disconnected any wireless antennas, reconnect them now.

14 Replace the bay cover, then tighten the cover screws.

15 Reinstall the battery.

■

Replacing the system board

Tools you need to complete this task:

Phillips #0 screwdriver

Flat screwdriver or

Non-marring plastic scribe

Screws removed during this task:

- 1 chrome M2×4 (wireless card)
- 1 chrome M2×4 (hard drive 1)
- 1 chrome M2×4 (hard drive 2)
- 1 chrome M2×4 (optical drive)
- 2 black M2x4 (optional VGA card)
- 1 chrome M2x4 (power button board)
- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 2 chrome M2x4 (modem board)
- 1 chrome M2×4 (system board)

▶ To replace the system board:

1. Complete the steps in “Preparing the notebook” on page 51.
2. Complete the steps in “Removing the battery” on page 54.
3. Remove the memory from the old system board by following the instructions in the “Adding or replacing memory modules” on page 57.
4. If the system has a wireless card installed, remove the card from the old system board by following the instructions in the “Replacing the wireless card” on page 58.
5. Remove the hard drive 1 by following the instructions in “Replacing the hard drive 1” on page 61.
6. If the system comes with a hard drive 2, remove the hard drive 2 by following the instructions in “Replacing the hard drive 2” on page 64.
7. Remove the optical drive by following the instructions in “Replacing the optical drive” on page 67.
8. Remove the thermal module by following the instructions in “Replacing the thermal module” on page 70.

9 Remove the CPU by following the instructions in “Replacing the CPU” on page 73.

10 If the system comes with a VGA board, remove the VGA board by following the instructions in “Replacing the VGA board (for discrete models)” on page 75.

11 Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77.

12 Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.

13 Disconnect the power button board cable by following the instructions in “Replacing the power button board” on page 81.

14 Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

15 Remove the palm rest by following the instructions in “Replacing the palm rest” on page 87.

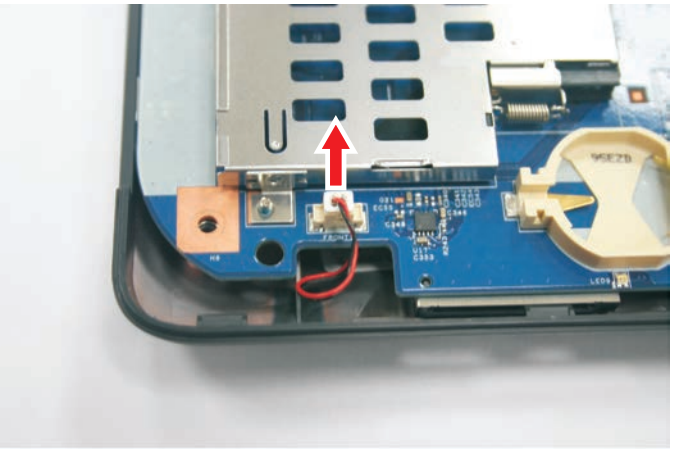
16 Disconnect the USB board cable by following the instructions in “Replacing the USB board” on page 96.

17 Remove the Bluetooth module by following the instructions in “Replacing the Bluetooth module” on page 99.

18 Remove the modem board by following the instructions in “Replacing the modem board” on page 101.

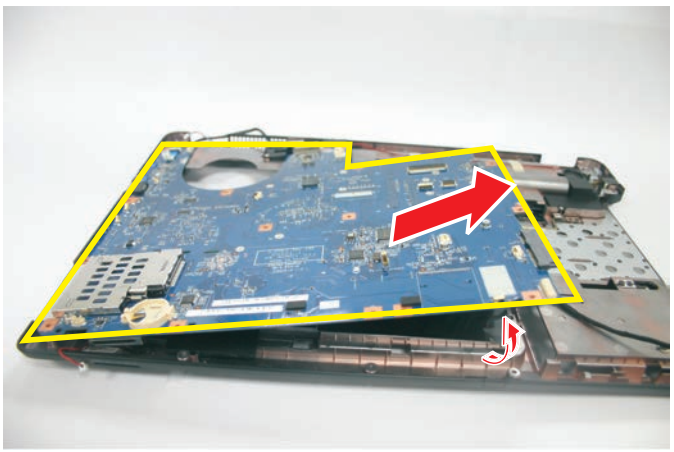
19 Remove the coin-cell battery by following the instructions in “Replacing the coin-cell battery” on page 103.

20 Disconnect the subwoofer cable from FRONT1 connector on the system board.



21 Remove the one screw securing the system board to the base panel.

22 Carefully lift the right side of the system board and slide it out of the base panel.



Note

A circuit board that is >10 cm^2 has been highlighted with a yellow rectangle as shown in the above image. Follow the local regulations for disposing this type of circuit board.

23 Replace the new system board into the base panel.

24 Secure the new system board with the screws that was remove in step 21.

25 Reconnect the subwoofer cable to the FRONT1 connector on the system board.

26 Replace the coin-cell battery by following the instructions in “Replacing the coin-cell battery” on page 103.

27 Replace the modem board by following the instructions in “Replacing the modem board” on page 101.

28 Replace the Bluetooth module by following the instructions in “Replacing the Bluetooth module” on page 99.

29 Reconnect the USB board cable by following the instructions in “Replacing the USB board” on page 96.

30 Replace the palm rest by following the instructions in “Replacing the palm rest” on page 87.

31 Replace the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

32 Reconnect the power button board by following the instructions in “Replacing the power button board” on page 81.

33 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

34 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

35 Close the LCD panel and turn the notebook over so the base is facing up.

36 If the system comes with a VGA board, replace the VGA board by following the instructions in “Replacing the VGA board (for discrete models)” on page 75.

37 Replace the CPU by following the instructions in “Replacing the CPU” on page 73.

38 Replace the thermal module by following the instructions in “Replacing the thermal module” on page 70.

39 Reinstall the optical drive by following the instructions in “Replacing the optical drive” on page 67.

40 If the system comes with a hard drive 2, reinstall the hard drive 2 by following the instruction in “Replacing the hard drive 2” on page 64.

41 Reinstall the hard drive by following the instructions in “Replacing the hard drive 1” on page 61.

42 Reinstall the wireless card by following the instructions in “Replacing the wireless card” on page 58.

43 Reconnect the wireless antenna cables to the wireless card.

44 Reinstall the memory module by following the instructions in “Adding or replacing memory modules” on page 57.

45 Replace the bay cover, then tighten the cover screws.

46 Reinstall the battery.

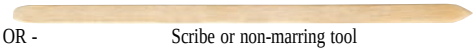
■

Replacing the left and right speakers

Tools you need to complete this task:

Flat-blade driver

- OR -


Scribe or non-marring tool

Phillips #0 screwdriver

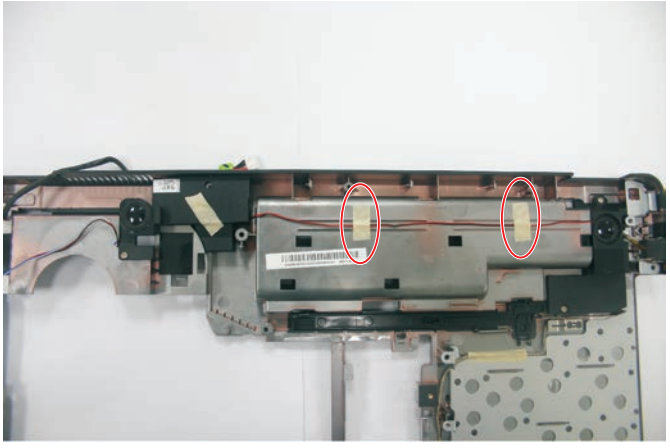
Screws removed during this task:

- 1 chrome M2×4 (wireless card)
- 1 chrome M2×4 (hard drive 1)
- 1 chrome M2×4 (hard drive 2)
- 1 chrome M2×4 (optical drive)
- 2 black M2x4 (optional VGA card)
- 1 chrome M2x4 (power button board)
- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 2 chrome M2x4 (modem board)
- 3 chrome M2x4 (left and right speakers)

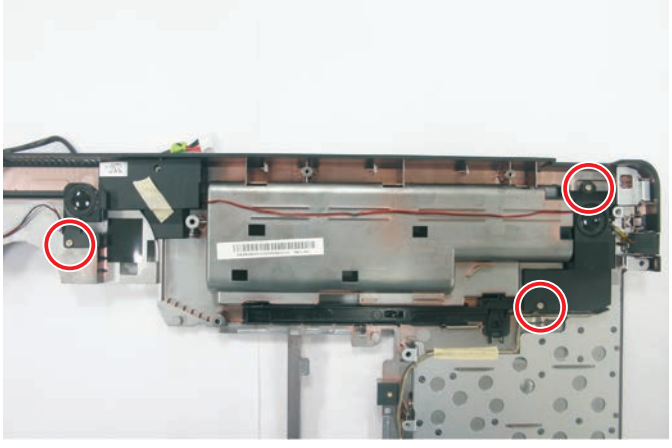
▶ To replace the left and right speakers:

1. Complete the steps in “Preparing the notebook” on page 51.
2. Complete the steps in “Removing the bay cover” on page 55.
3. Remove the system board by following steps 3 to 22 in “Replacing the system board” on page 107.

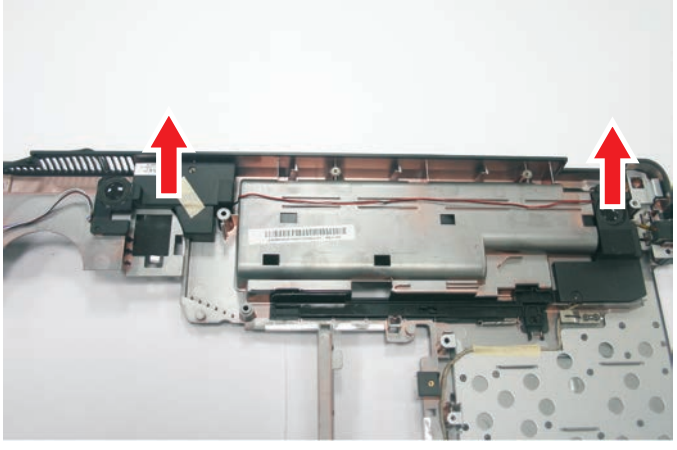
4 Remove the any adhesive tapes securing the speaker cables.



5 Remove the 3 screws securing the left and right speaker to the base panel.



6 Replace the new left and right speakers to the base panel.



7 Secure the left and right speaker with the 3 screws that was remove in step 5.

8 Replace the system board by following steps 23 to 44 in “Replacing the system board” on page 107.

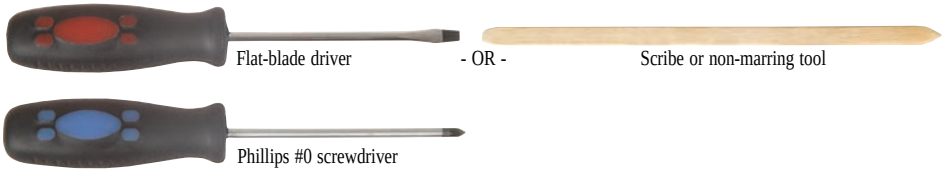
9 Replace the bay cover, then tighten the cover screws.

10 Reinstall the battery.

■

Replacing the subwoofer

Tools you need to complete this task:



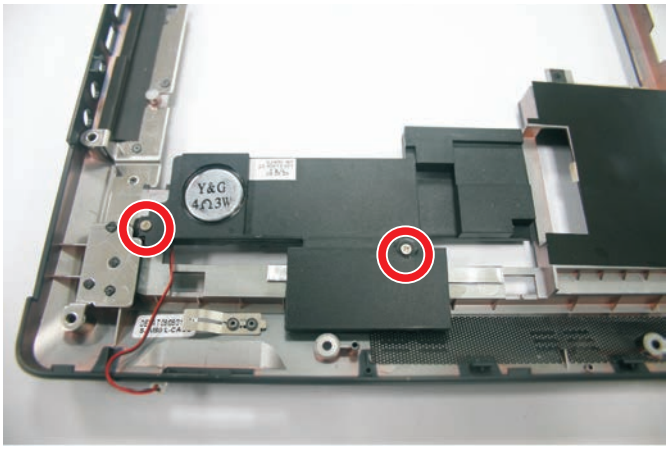
Screws removed during this task:

- 1 chrome M2×4 (wireless card)
- 1 chrome M2×4 (hard drive 1)
- 1 chrome M2×4 (hard drive 2)
- 1 chrome M2×4 (optical drive)
- 2 black M2x4 (optional VGA card)
- 1 chrome M2x4 (power button board)
- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 2 chrome M2x4 (modem board)
- 2 chrome M2x4 (subwoofer)

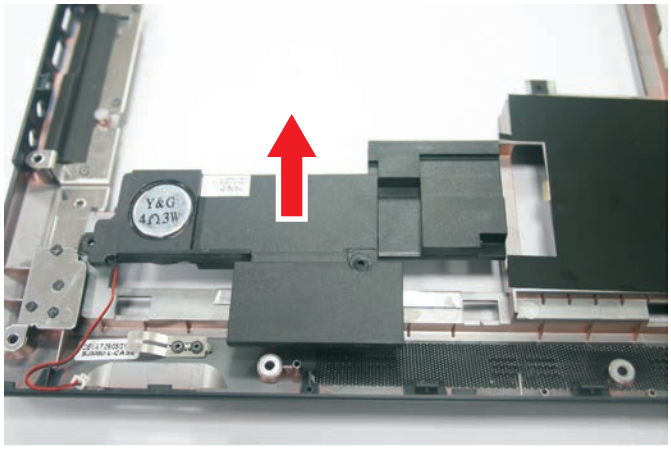
▶ To replace the subwoofer:

1. Complete the steps in “Preparing the notebook” on page 51.
2. Complete the steps in “Removing the bay cover” on page 55.
3. Remove the system board by following steps 3 to 22 in “Replacing the system board” on page 107.

4 Remove the 2 screws securing the subwoofer to the base panel.



5 Lift to remove the subwoofer from the base panel.



6 Replace the new subwoofer on the base panel.

7 Secure the new subwoofer with the 2 screws that was remove on step 4.

8 Replace the system board by following steps 23 to 44 in “Replacing the system board” on page 107.

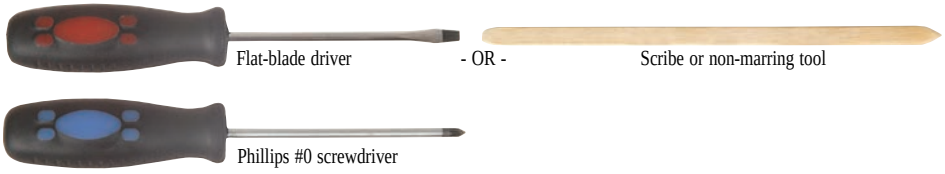
9 Replace the bay cover, then tighten the cover screws.

10 Reinstall the battery.

■

Replacing the LCD front panel

Tools you need to complete this task:

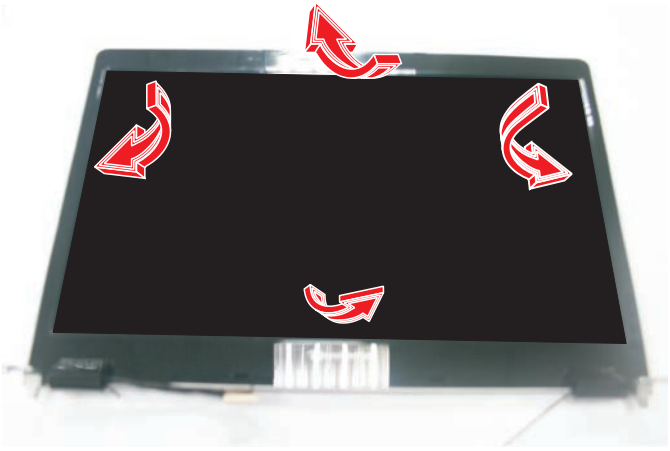


Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 black M2.5×8 (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the LCD front panel:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Carefully pry loose the front panel from the LCD assembly lid.



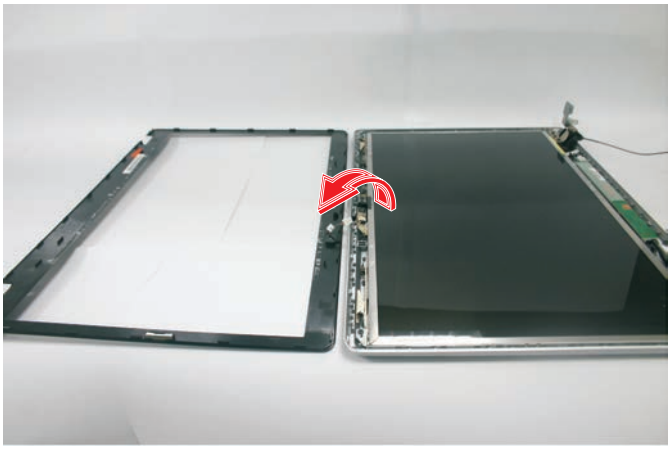
Warning

Be careful while lifting up the front panel as the microphone cable is attached to the front panel

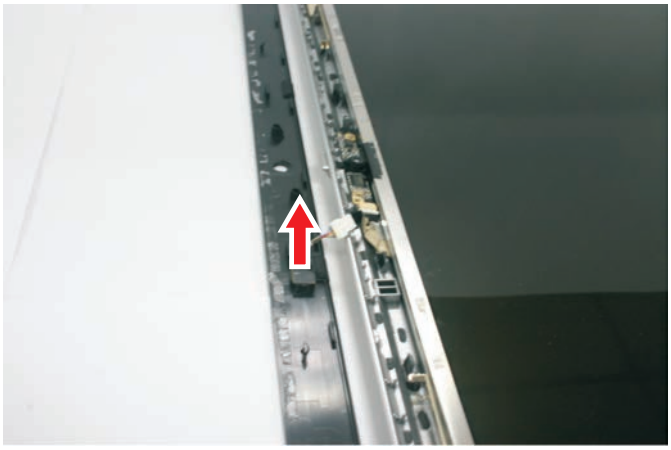
Note:

The LCD front panel is glued to the LCD panel by a double-sided adhesive tape. When replacing back the LCD front panel, don't forget to replace the double-sided adhesive tape that might be destroyed while removing the it.

7 Turn over the LCD front panel as shown.



8 Remove the microphone from the LCD front panel.



9 Replace the microphone and place the new front panel on top of the LCD assembly lid.

10 Press the front panel on all sides until it snaps into place.

Make sure that there is no gap the between the front panel and the LCD assembly lid.

11 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

12 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

13 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

14 If you have disconnected any wireless antennas, reconnect them now.

15 Replace the bay cover, then tighten the cover screws.

16 Reinstall the battery.

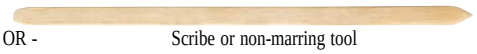
■

Replacing the inverter board

Tools you need to complete this task:

Flat-blade driver

- OR -


Scribe or non-marring tool

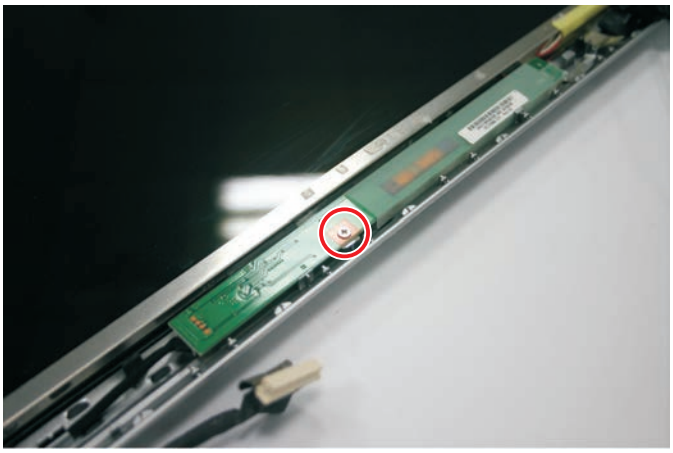
Phillips #0 screwdriver

Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 1 chrome M2×3 (inverter board)

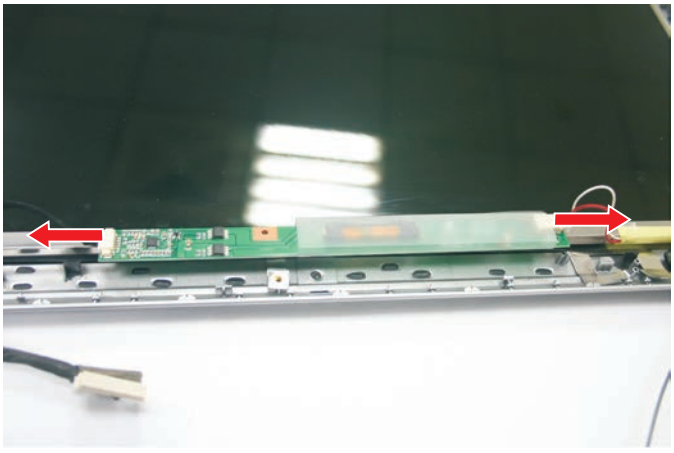
▶ To replace the inverter board:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.
7. Remove the 1 screw securing the inverter board.



8 Turn over the inverter board to access the cables.

9 Disconnect the cables from the inverter board.



10 Connect the cables that was remove in step 9 to the new inverter board.

11 Turn over the inverter board and secure it to the LCD panel lid with the screw that was remove in step 7.

12 Replace the LCD front panel by following the instructions in "Replacing the LCD front panel" on page 116.

13 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

14 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

15 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

16 If you have disconnected any wireless antennas, reconnect them now.

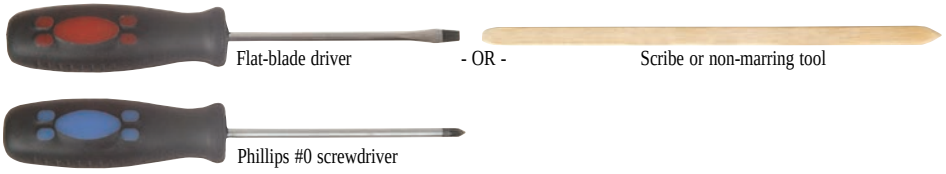
17 Replace the bay cover, then tighten the cover screws.

18 Reinstall the battery.

■

Replacing the LCD

Tools you need to complete this task:



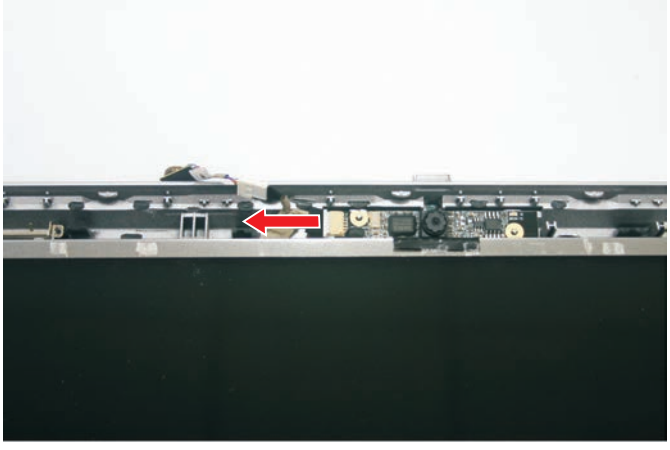
Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 1 chrome M2×3 (inverter board)
- 4 black M2.5x6 (left hinge)
- 4 black M2.5x6 (right hinge)
- 3 chrome M2x3 (left LCD bracket)
- 3 chrome M2x3 (right LCD bracket)

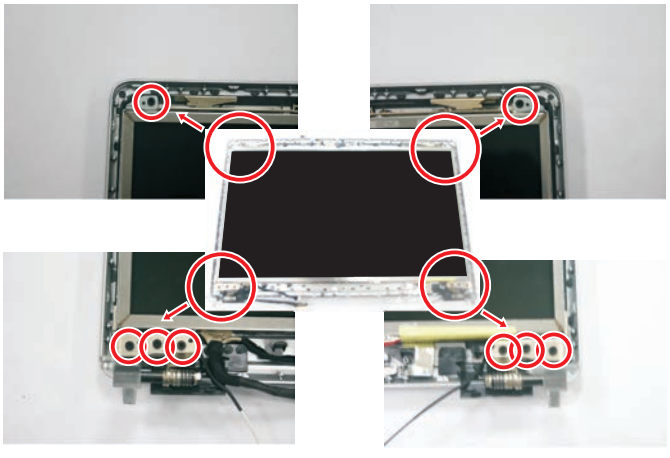
▶ To replace the LCD:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.
7. Remove the inverter board by following the instructions in “Replacing the inverter board” on page 119.

8 Disconnect the cable from the webcam.

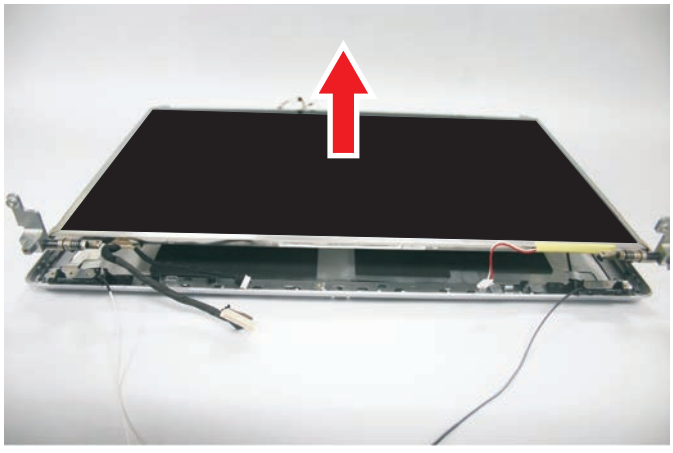


9 Remove the 8 screws from the left and right hinges on the LCD.

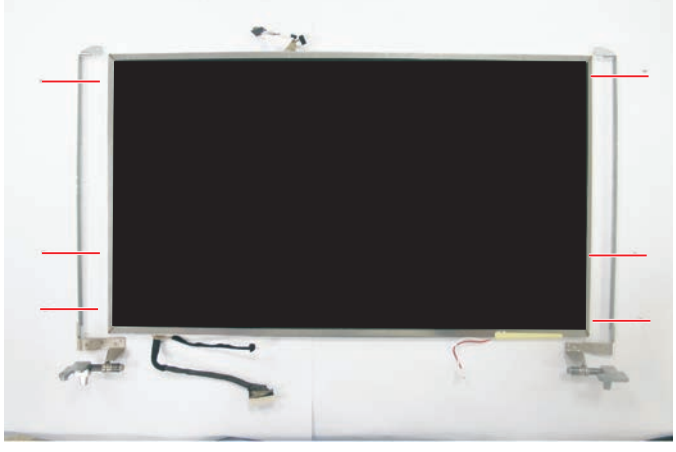


10 Remove the adhesive tape near the webcam area.

11 Remove the LCD from the LCD assembly lid.

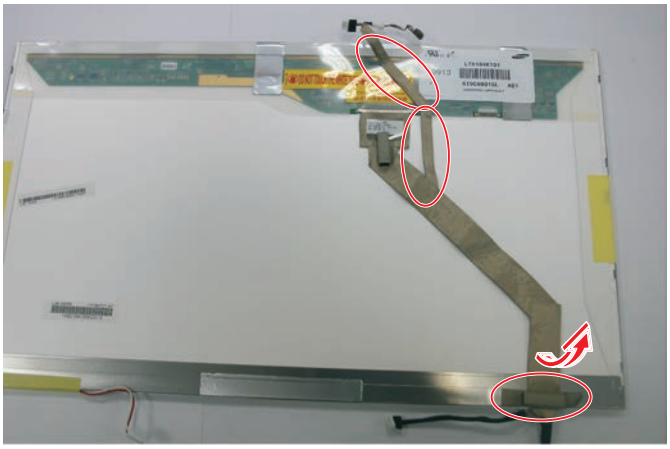


12 Remove the 6 screws from the left and right LCD panel hinge brackets to remove it.



13 Lay the LCD on its front to access the LCD cable.

14 Detach the portion of the LCD cable that is glued to the LCD panel.



15 Detach the adhesive tape near the LCD cable connector.

16 Disconnect the LCD cable from the connector.

17 Connect the LCD cable to the connector on the new LCD panel and replace the tapes that might be destroyed when removing the LCD cable.

18 Turn the LCD on its back and secure the left and right LCD bracket with that screws that were removed in step 12.

19 Place the new LCD on the LCD assembly lid and replace the tape remove in step 10.

20 Secure the LCD on the LCD assembly lid by replacing the screws that were remove in step 9.

21 Reconnect the webcam cable.

22 Replace the inverter board by following the instructions in “Replacing the inverter board” on page 119.

23 Replace the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.

24 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

25 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

26 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

27 If you have disconnected any wireless antennas, reconnect them now.

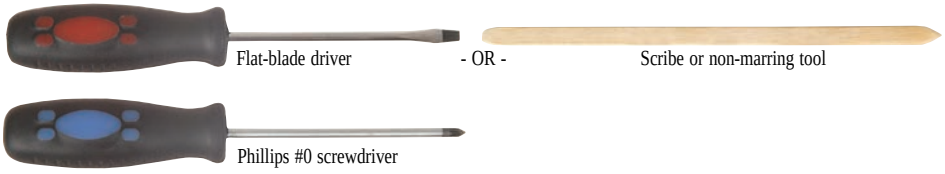
28 Replace the bay cover, then tighten the cover screws.

29 Reinstall the battery.

■

Replacing the LCD panel hinge brackets

Tools you need to complete this task:



Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 1 chrome M2×3 (inverter board)
- 4 black M2.5x6 (left hinge)
- 4 black M2.5x6 (right hinge)
- 3 chrome M2x3 (left LCD bracket)
- 3 chrome M2x3 (right LCD bracket)

▶ To replace the LCD panel hinge brackets:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.
7. Remove the inverter board by following the instructions in “Replacing the inverter board” on page 119.
8. Remove the LCD panel hinge brackets by following step 8 to step 12 in “Replacing the LCD” on page 121.
9. Attach the new LCD panel hinge brackets to the LCD and secure it with the screws that were remove in step 9 in “Replacing the LCD” on page 121.
10. Replace the LCD by following the instructions in “Replacing the LCD” on page 121.

11 Replace the inverter board by following the instructions in “Replacing the inverter board” on page 119.

12 Replace the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.

13 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

14 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

15 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

16 If you have disconnected any wireless antennas, reconnect them now.

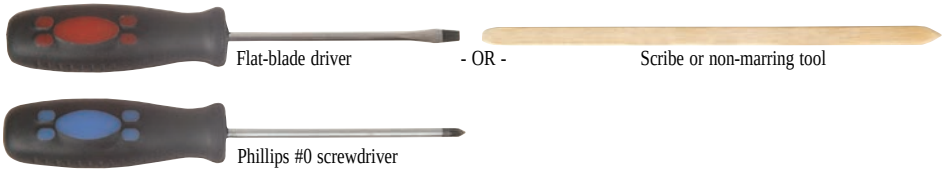
17 Replace the bay cover, then tighten the cover screws.

18 Reinstall the battery.

■

Replacing the microphone

Tools you need to complete this task:

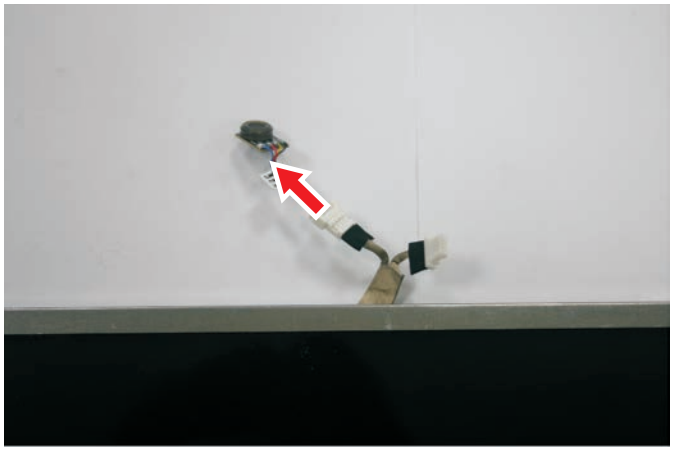


Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the microphone:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the LCD front panel by following step 6 to step 8 in "Replacing the LCD front panel" on page 116.
7. Disconnect the old microphone from the connector.



8. Connect the new microphone to the connector.

9 Replace the new microphone into the LCD front panel.

10 Replace the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.

11 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

12 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

13 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

14 If you have disconnected any wireless antennas, reconnect them now.

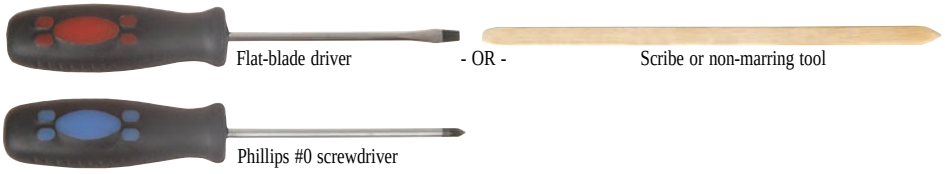
15 Replace the bay cover, then tighten the cover screws.

16 Reinstall the battery.

■

Replacing the webcam

Tools you need to complete this task:

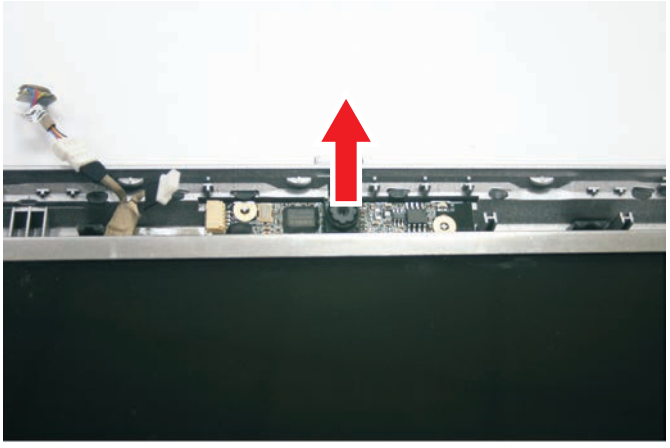


Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)

▶ To replace the webcam:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the LCD front panel by following step 6 to step 8 in "Replacing the LCD front panel" on page 116.
7. Carefully pry loose the webcam from the LCD panel assembly lid.



8. Tape the new webcam to the LCD panel assembly lid by using a double-sided adhesive tape.

9 Reconnect the cable to the webcam.

10 Replace the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.

11 Reinstall the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.

12 Reinstall the keyboard cover by following the instructions in “Replacing the keyboard cover” procedure on page 79.

13 Reinstall the keyboard by following the instructions in “Replacing the keyboard” on page 77.

14 If you have disconnected any wireless antennas, reconnect them now.

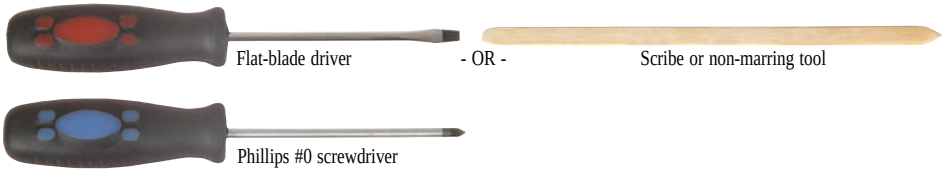
15 Replace the bay cover, then tighten the cover screws.

16 Reinstall the battery.

■

Replacing the antennas

Tools you need to complete this task:



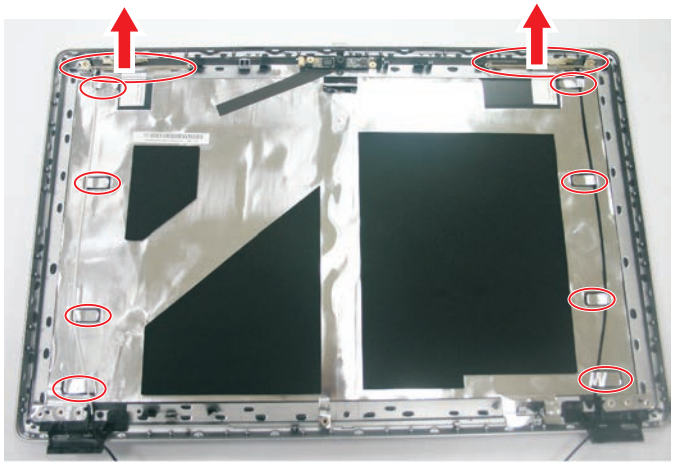
Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 1 chrome M2×3 (inverter board)
- 4 black M2.5x6 (left hinge)
- 4 black M2.5x6 (right hinge)
- 3 chrome M2x3 (left LCD bracket)
- 3 chrome M2x3 (right LCD bracket)

▶ To replace the antennas:

1. Complete the steps in “Preparing the notebook” on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in “Replacing the wireless card” on page 58.
3. Remove the keyboard by following the instructions in “Replacing the keyboard” on page 77 .
4. Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 79.
5. Remove the LCD panel assembly by following the instructions in “Replacing the LCD panel assembly” on page 83.
6. Remove the LCD front panel by following the instructions in “Replacing the LCD front panel” on page 116.
7. Remove the inverter board by following the instructions in “Replacing the inverter board” on page 119.
8. Remove the LCD by following the instructions in step 8 to step 12 in “Replacing the LCD” on page 121.

9 Release the antenna cables from the aluminium adhesive tapes securing them and then carefully pry loose the left and right antennas.



10 Secure the new antenna on the LCD assembly lid and route their cables underneath the adhesive tabs.

11 Replace the LCD front panel by following the instructions in "Replacing the LCD front panel" on page 116.

12 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

13 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

14 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

15 If you have disconnected any wireless antennas, reconnect them now.

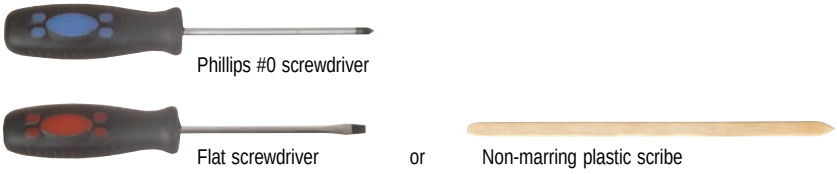
16 Replace the bay cover, then tighten the cover screws.

17 Reinstall the battery.

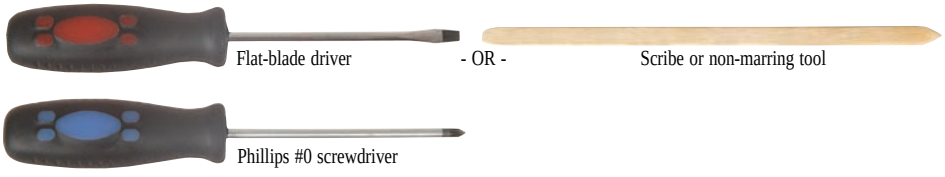
■

Replacing the LCD assembly lid

Tools you need to complete this task:



Tools you need to complete this task:



Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges - bottom)
- 2 black M2.5×8 (LCD panel hinges - top)
- 13 M2.5×8 black (palm rest - base side)
- 3 black M2.5×8 (palm rest - top side)
- 1 chrome M2×3 (inverter board)
- 4 black M2.5x6 (left hinge)
- 4 black M2.5x6 (right hinge)
- 3 chrome M2x3 (left LCD bracket)
- 3 chrome M2x3 (right LCD bracket)

▶ To replace the LCD assembly lid:

1. Complete the steps in "Preparing the notebook" on page 51.
2. If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
3. Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77 .
4. Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
5. Remove the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
6. Remove the LCD front panel by following the instructions in "Replacing the LCD front panel" on page 116.
7. Remove the inverter board by following the instructions in "Replacing the inverter board" on page 119.

8 Remove the LCD by following the instructions in step 8 to step 12 in "Replacing the LCD" on page 121.

9 Place the LCD on the new LCD assembly lid and follow the instruction in "Replacing the LCD" on page 121 to secure the LCD.

10 Replace the LCD front panel by following the instructions in "Replacing the LCD front panel" on page 116.

11 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.

12 Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.

13 Reinstall the keyboard by following the instructions in "Replacing the keyboard" on page 77.

14 If you have disconnected any wireless antennas, reconnect them now.

15 Replace the bay cover, then tighten the cover screws.

16 Reinstall the battery.

■

CHAPTER 4
Troubleshooting

- Diagnosing problems
- System test procedures
- Power-On Self-Test (POST) error message
- Index of error messages
- Phoenix BIOS beep codes
- Symptom-to-FRU error messages
- Intermittent problems
- Undetermined problems

Diagnosing problems

Use the following procedure as a guide for diagnosing notebook problems.

Important

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

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

Symptoms (Verified)	Go To
Power failure. (The power indicator does not go on or stay on.)	"Testing the power system" on page 140
POST does not complete. No beep or error codes are indicated.	• "Power-On Self-Test (POST) error message" on page 143 • "Undetermined problems" on page 157
POST detects an error and displayed messages on screen.	"Index of error messages" on page 144
Other symptoms (LCD display problems or others).	"Power-On Self-Test (POST) error message" on page 143
Symptoms cannot be re-created (intermittent problems).	• Use the customer-reported symptoms and go to "Power-On Self-Test (POST) error message" on page 143 • "Intermittent problems" on page 156 • "Undetermined problems" on page 157

System test procedures

Testing the optical drive

Use the following procedure to isolate a problem in an optical drive controller, driver, or drive.

Important
Make sure that the CD-ROM does not have any label attached to it. The label can cause damage to the drive or can cause the drive to fail.

▶ To test the optical drive:

1. Boot from the diagnostics diskette and start the diagnostics program.
2. Run the CD-ROM Test and see if the test completes successfully.
3. Follow the instructions in the message window.

   If an error occurs, reconnect the connector on the system board.

   If the error still remains:
4. Reconnect the external optical drive to a USB jack.
5. Replace the external optical drive.
6. Replace the system board.

■

Testing the keyboard or auxiliary input device

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

Important
Disconnect any external keyboards before testing the built-in keyboard.

If the tests detect a keyboard problem, do the following one at a time.

▶ To correct the problem:

1. Reconnect the keyboard cable to the system board.
2. Replace the keyboard.
3. Replace the system board.

■

Important
Do not replace a non-defective FRU.

The following auxiliary input devices are supported by this notebook:

- Numeric keypad
- External keyboard

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

Testing the memory

Memory errors can stop your programs, show error messages on the screen, or hang the system.

▶ To test the memory:

1. Boot from the diagnostics diskette and start the diagnostics program.
2. Run the Memory Test and see if the test completes successfully.
3. Press F2 in the test items.
4. Follow the instructions in the message window.

> **Important**
> Make sure that each memory card is fully installed into the connector. A loose connection can cause an error.

■

Testing the power system

▶ To test for a power problem:

- Turn on the notebook using each of the following power sources:
  - Remove the battery pack, connect the power adapter, then make sure that the notebook turns on using AC power.
  - Disconnect the power adapter, install a charged battery pack, then make sure that power is supplied by the battery pack.

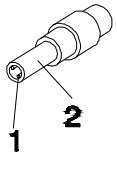
■

If you suspect a power problem, complete the appropriate power supply check:

- “Check the power adapter” on page 140
- “Check the battery pack” on page 141

Check the power adapter

Unplug the power adapter cable from the notebook and measure the output voltage at the power adapter cable plug. See the following figure.



Pin 1: +19 to +20.5V
Pin 2: 0V, Ground

- If the voltage is not correct, replace the power adapter.
- If the voltage is within the range, do the following:
  - Replace the system board.
  - If the problem is not corrected, see "Undetermined problems" on page 157.
  - If the power-on indicator does not light up, check the power adapter's power cord for correct continuity and installation.
  - If the operational charge does not work, see "Check the battery pack" on page 141.

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

Check the battery pack

▶ To check the battery pack using software:

1. Open Power Management in the Windows Control Panel.
2. In Power Meter, make sure that the parameters shown for Current Power Source and Total Battery Power Remaining are correct.
3. Repeat the steps 1 and 2, for both battery and adapter. This helps you identify first the problem is on recharging or discharging.

■

▶ To check the battery pack using hardware:

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

■

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

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

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

Testing the touchpad

If the touchpad doesn't work, do the following actions one at a time to correct the problem.

▶ To test the touchpad:

1. Reconnect the touchpad cables.
2. Replace the touchpad.
3. Replace the system board.

■

Important
Do not replace a non-defective FRU.

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

Power-On Self-Test (POST) error message

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

Important

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

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

If the symptom is not listed, see “Undetermined problems” on page 157.

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

Important

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

Important

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

Index of error messages

Error codes

Error Codes	Error Messages
006	Equipment Configuration Error Causes: 1. CPU BIOS Update Code Mismatch 2. IDE Primary Channel Master Drive Error (The causes are shown before “Equipment Configuration Error”)
010	Memory Error at xxxx:xxxx:xxxxh (R:xxxxh, W:xxxxh)
070	Real Time Clock Error
071	CMOS Battery Bad
072	CMOS Checksum Error
110	System is disabled. An incorrect password was entered.
<No error code>	Battery is critically low. In this situation BIOS issues four short beeps, then shuts the system down. No message is displayed.
<No error code>	Temperature is critically high. In this situation BIOS shuts the system down. No message is displayed.

Error messages

Error Messages	FRU/Action Sequence
Failure Fixed Disk	• Reconnect the hard disk drive connector. • Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the hard disk drive. • Test or replace the system board.
Stuck Key	See “Testing the keyboard or auxiliary input device” on page 139.
Keyboard error	See “Testing the keyboard or auxiliary input device” on page 139.
Keyboard Controller Failed	See “Testing the keyboard or auxiliary input device” on page 139.
Keyboard locked - Unlock key switch	Unlock the external keyboard.
Monitor type does not match CMOS - Run Setup	Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook.
Shadow RAM Failed at offset: nnnn	• Test or replace the BIOS ROM. • Test or replace the system board.
System RAM Failed at offset: nnnn	• Test or replace the SO-DIMM. • Test or replace the system board.
Extended RAM Failed at offset: nnnn	• Test or replace the SO-DIMM. • Test or replace the system board.

Error Messages	FRU/Action Sequence
System battery is dead - Replace and run Setup	Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.
System CMOS checksum bad - Default configuration used	Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.
System timer error	• Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. • Test or replace the system board.
Real time clock error	• Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. • Test or replace the system board.
Previous boot incomplete - Default configuration used	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. • Test or replace the system board.
Memory size found by POST differed from CMOS	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the SO-DIMM. • Test or replace the system board.
Diskette drive A error	• Make sure that the drive is defined with the proper diskette type in the BIOS Setup Utility.
Incorrect Drive A type - run SETUP	Make sure that the drive is defined with the proper diskette type in the BIOS Setup Utility
System cache error - Cache disabled	Test or replace the system board.
CPU ID:	Test or replace the system board.
DMA Test Failed	• Test or replace the SO-DIMM. • Test or replace the system board.
Software NMI Failed	• Test or replace the SO-DIMM. • Test or replace the system board.
Fail-Safe Timer NMI Failed	• Test or replace the SO-DIMM. • Test or replace the system board.
Device Address Conflict	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. • Test or replace the system board.
Allocation Error for device	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. • Test or replace the system board.
Failing Bits: nnnn	• Test or replace the SO-DIMM. • Test or replace the BIOS ROM. • Test or replace the system board.
Fixed Disk n	None

Error Messages	FRU/Action Sequence
Invalid System Configuration Data	• Test or replace the BIOS ROM. • Test or replace the system board.
I/O device IRQ conflict	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. • Test or replace the system board.
Operating system not found	• Run the BIOS Setup Utility and see if fixed disk and drive A: are properly identified. • Test or replace the diskette drive • Test or replace the hard disk drive • Test or replace the system board

No-beep error messages

No-beep Error Messages	FRU/Action in Sequence
No beep, power-on indicator turns off and LCD is blank.	• Test the power source (battery pack and power adapter). See “Testing the power system” on page 140. • Make sure that every connector is connected tightly and correctly. • Reconnect the SO-DIMM. • Test or replace the LED board. • Test or replace the system board.
No beep, power-on indicator turns on and LCD is blank.	• Test the power source (battery pack and power adapter). See “Testing the power system” on page 140. • Reconnect the LCD connector • Check the hard disk drive. • Check the LCD inverter ID. • Check the LCD cable. • Test or replace the LCD inverter. • Test or replace the LCD. • Test or replace the system board.
No beep, power-on indicator turns on and LCD is blank. But you can see POST on an external CRT.	• Reconnect the LCD connectors. • Check the LCD inverter ID. • Check the LCD cable. • Test or replace the LCD inverter. • Test or replace the LCD. • Test or replace the system board.
No beep, power-on indicator turns on and a blinking cursor shown on LCD during POST.	• Make sure that every connector is connected tightly and correctly. • Test or replace the system board.
No beep during POST but system runs correctly.	• Test or replace the speaker. • Test or replace the system board.

Phoenix BIOS beep codes

Code	Beeps	POST Routine Description
02h		Verify Real Mode
03h		Disable Non-Maskable Interrupt (NMI)
04h		Get CPU type
06h		Initialize system hardware
08h		Initialize chipset with initial POST values
09h		Set IN POST flag
0Ah		Initialize CPU registers
0Bh		Enable CPU cache
0Ch		Initialize caches to initial POST values
0Eh		Initialize I/O component
0Fh		Initialize the local bus IDE
10h		Initialize Power Management
11h		Load alternate registers with initial POST values
12h		Restore CPU control word during warm boot
13h		Initialize PCI Bus Mastering devices
14h		Initialize keyboard controller
16h	1-2-2-3	BIOS ROM checksum
17h		Initialize cache before memory autosize
18h		8254 timer initialization
1Ah		8237 DMA controller initialization
1Ch		Reset Programmable Interrupt Controller
20h	1-3-1-1	Test DRAM refresh
22h	1-3-1-3	Test 8742 Keyboard Controller
24h		Set ES segment register to 4 GB
26h		Enable A20 line
28h		Autosize DRAM
29h		Initialize POST Memory Manager
2Ah		Clear 215 KB base RAM
2Ch	1-3-4-1	RAM failure on address line xxxx

Code	Beeps	POST Routine Description
2Eh	1-3-4-3	RAM failure on data bits xxxx of low byte of memory bus
2Fh		Enable cache before system BIOS shadow
30h	1-4-1-1	RAM failure on data bits xxxx of high byte of memory bus
32h		Test CPU bus-clock frequency
33h		Initialize Phoenix Dispatch Manager
36h		Warm start shut down
38h		Shadow system BIOS ROM
3Ah		Autosize cache
3Ch		Advanced configuration of chipset registers
3Dh		Load alternate registers with CMOS values
42h		Initialize interrupt vectors
45h		POST device initialization
46h	2-1-2-3	Check ROM copyright notice
48h		Check video configuration against CMOS
49h		Initialize PCI bus and devices
4Ah		Initialize all video adapters in system
4Bh		QuietBoot start (optional)
4Ch		Shadow video BIOS ROM
4Eh		Display BIOS copyright notice
50h		Display CPU type and speed
51h		Initialize EISA board
52h		Test keyboard
54h		Set key click if enabled
58h	2-2-3-1	Test for unexpected interrupts
59h		Initialize POST display service
5Ah		Display prompt “Press F2 to enter SETUP”
5Bh		Disable CPU cache
5Ch		Test RAM between 512 and 640 KB
60h		Test extended memory
62h		Test extended memory address lines
64h		Jump to User Patch1

Code	Beeps	POST Routine Description
66h		Configure advanced cache registers
67h		Initialize Multi Processor APIC
68h		Enable external and CPU caches
69h		Setup System Management Mode (SMM) area
6Ah		Display external L2 cache size
6Bh		Load custom defaults (optional)
6Ch		Display shadow-area message
6Eh		Display possible high address for UMB recovery
70h		Display error messages
72h		Check for configuration errors
76h		Check for keyboard errors
7Ch		Set up hardware interrupt vectors
7Eh		Initialize coprocessor if present
80h		Disable onboard Super I/O ports and IRQs
81h		Late POST device initialization
82h		Detect and install external RS232 ports
83h		Configure non-MCD IDE controllers
84h		Detect and install external parallel ports
85h		Initialize PC-compatible PnP ISA devices
86h		Re-initialize onboard I/O ports
87h		Configure Motherboard Configurable Devices (optional)
88h		Initialize BIOS Area
89h		Enable Non-Maskable Interrupts (NMIs)
8Ah		Initialize Extended BIOS Data Area
8Bh		Test and initialize PS/2 mouse
8Ch		Initialize floppy controller
8Fh		Determine number of ATA drives (optional)
90h		Initialize hard-disk controllers
91h		Initialize local-bus hard-disk controllers
92h		Jump to UserPatch2
93h		Build MPTABLE for multi-processor boards

Code	Beeps	POST Routine Description
95h		Install CD ROM for boot
96h		Clear huge ES segment register
97h		Fixup Multi Processor table
98h	1-2	Search for option ROMs. One long, two short beeps on checksum failure.
99h		Check for SMART drive (optional)
9Ah		Shadow option ROMs
9Ch		Set up Power Management
9Dh		Initialize security engine (optional)
9Eh		Enable hardware interrupts
9Fh		Determine number of ATA and SCSI drives
A0h		Set time of day
A2h		Check key lock
A4h		Initialize Typematic rate
A8h		Erase F2 prompt
AAh		Scan for F2 key stroke
ACh		Enter SETUP
AEh		Clear Boot flag
B0h		Check for errors
B2h		POST done- prepare to boot operating system
B4h	1	One short beep before boot
B5h		Terminate QuietBoot (optional)
B6h		Check password (optional)
B9h		Prepare Boot
BAh		Initialize DMI parameters
BBh		Initialize PnP Option ROMs
BCh		Clear parity checkers
BDh		Display MultiBoot menu
BEh		Clear screen (optional)
BFh		Check virus and backup reminders
C0h		Try to boot with INT 19
C1h		Initialize POST Error Manager (PEM)

Code	Beeps	POST Routine Description
C2h		Initialize error logging
C3h		Initialize error display function
C4h		Initialize system error handler
C5h		PnPnd dual CMOS (optional)
C6h		Initialize notebook docking (optional)
C7h		Initialize notebook docking late
C8h		Force check (optional)
C9h		Extended checksum (optional)
D2h		Unknown interrupt
E0h		Initialize the chipset
E1h		Initialize the bridge
E2h		Initialize the CPU
E3h		Initialize the system timer
E4h		Initialize system I/O
E5h		Check force recovery boot
E6h		Checksum BIOS ROM
E7h		Go to BIOS
E8h		Set Huge Segment
E9h		Initialize Multi Processor
EAh		Initialize OEM special code
EBh		Initialize PIC and DMA
ECh		Initialize Memory type
EDh		Initialize Memory size
EEh		Shadow Boot Block
EFh		System memory test
F0h		Initialize interrupt vectors
F1h		Initialize Run Time Clock
F2h		Initialize video
F3h		Initialize System Management Mode
F4h	1	Output one beep before boot
F5h		Boot to Mini DOS

Code	Beeps	POST Routine Description
F6h		Clear Huge Segment
F7h		Boot to Full DOS

Symptom-to-FRU error messages

LCD

Symptom / Error	Action in Sequence
• The LCD backlight doesn't work. • The LCD is too dark. • The LCD brightness cannot be adjusted. • The LCD contrast cannot be adjusted.	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Reconnect the LCD connectors. • Test or replace the keyboard (if contrast and brightness function key doesn't work). • Check the LCD inverter ID. • Test or replace the LCD cable. • Test or replace the LCD inverter. • Test or replace the LCD. • Test or replace the system board.
• The LCD screen is unreadable. • Missing pels in characters. • The screen appears abnormal. • The wrong color is displayed.	• Reconnect the LCD connector. • Check the LCD inverter ID. • Test or replace the LCD cable. • Test or replace the LCD inverter. • Test or replace the LCD. • Test or replace the system board.
The LCD is displaying extra horizontal or vertical lines.	• Check the LCD inverter ID. • Test or replace the LCD cable. • Test or replace the LCD inverter. • Test or replace the LCD. • Test or replace the system board.

Power

Symptom / Error	Action in Sequence
The notebook shuts down during operation.	• Test the power source (battery pack and power adapter). See “Testing the power system” on page 140. • Test or replace the battery pack. • Test or replace the power adapter. • Test or replace the system board.
The notebook doesn’t turn on.	• Test the power source (battery pack and power adapter). See “Testing the power system” on page 140. • Test or replace the battery pack. • Test or replace the power adapter. • Test or replace the system board.
The notebook doesn’t turn off.	• Test the power source (battery pack and power adapter). See “Testing the power system” on page 140. • Press and hold the power button for more than four seconds. • Test or replace the system board.
The battery can’t be charged.	• Test the battery pack. See “Check the battery pack” on page 141. • Test or replace the battery pack. • Test or replace the system board.

Memory Card

Symptom / Error	Action in Sequence
The notebook cannot detect the memory card.	• Test or replace the system board.
Memory card reader slot pin is damaged.	• Test or replace the system board.

Memory

Symptom / Error	Action in Sequence
Memory count (size) appears different from actual size.	• Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. • Test or replace the SO-DIMM. • Test or replace the system board.

Sound

Symptom / Error	Action in Sequence
No sound comes from the notebook when running Windows multimedia programs.	• Reinstall the audio driver. • Test or replace the speakers. • Test or replace the system board.
The internal speakers make noise or emit no sound.	• Test or replace the speakers. • Test or replace the system board.

Power management

Symptom / Error	Action in Sequence
The notebook will not hibernate.	• Test or replace the keyboard (if control is from the keyboard). • Test or replace the hard disk drive. • Test or replace the system board.
The system doesn't hibernate and emits four short beeps every minute.	• Press Fn+**O** and see if the notebook enters hibernation mode. • Test or replace the touchpad. • Test or replace the keyboard. • Check the hard disk connection to the system board. • Test or replace the hard disk drive. • Test or replace the system board.
The notebook doesn’t enter standby mode after closing the LCD.	• Make sure that the magnet is in the magnet holder. For more information, see “Replacing the LCD” on page 121. • Test or replace the system board.
The system doesn't resume from hibernation mode.	• Check the hard disk connection to the system board. • Test or replace the hard disk drive. • Test or replace the system board.
The system doesn't resume from standby mode after opening the LCD.	• Make sure that the magnet is in the magnet holder. For more information, see “Replacing the LCD” on page 121. • Test or replace the system board.

Symptom / Error	Action in Sequence
The battery fuel gauge in Windows doesn't go higher than 90%.	• Remove the battery pack and let it cool for two hours. • Refresh the battery (use only battery power until the notebook turns off, then charge the battery). • Test or replace the battery pack. • Test or replace the system board.
The system hangs intermittently.	• Reconnect the hard disk drive and optical drive. • Check the hard disk connection to the system board. • Test or replace the system board.

Devices

Symptom / Error	Action in Sequence
System configuration does not match the installed devices.	• Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. • Reconnect the hard disk drive and optical drive.
The external display does not work correctly.	• Press Fn+F4 repeatedly to switch between LCD, external display, and both displays. • Test or replace the system board.
USB does not work correctly.	• Test or replace the USB board. • Test or replace the system board.
Printer problems.	• Run the printer self-test. • Reinstall the printer driver. • Test or replace the printer cable. • Test or replace the printer. • Test or replace the system board.

Keyboard and touchpad

Symptom / Error	Action in Sequence
The keyboard (one or more keys) does not work.	• Reconnect the keyboard cable. • Test or replace the keyboard. • Test or replace the system board.
The touchpad does not work.	• Reconnect the touchpad cable. • Test or replace the touchpad board. • Test or replace the system board.

Important

If you cannot find a symptom or an error in this list and the problem remains, see "Undetermined problems" on page 157.

Intermittent problems

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

▶ To analyze an intermittent problem:

1. Run the advanced diagnostic test for the system board in loop mode at least ten times.
   - If any error is detected, replace the FRU.
   - If no error is detected, do not replace any FRU.
2. Rerun the test to verify that there are no more errors.

■

Undetermined problems

If the diagnostic test may not identify which adapter or device failed, which installed devices are incorrect, whether a short circuit is suspected, or whether the system is inoperative. Use these procedures to isolate the failing FRU (do not isolate a non-defective FRU).

Important
Verify that all attached devices are supported by the notebook.

Important
Verify that the power supply being used at the time of the failure is operating correctly. (See “Testing the power system” on page 140.)

▶ To isolate a failing FRU:

1. Turn off the notebook.
2. Visually check FRU parts for damage. If you identify any damage, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Battery pack
   - Hard disk drive(s)
   - SO-DIMM
   - Optical drive
   - Memory cards
4. Turn on the notebook.
5. Determine if the problem has changed.
   - If the problem does not recur, reconnect the removed devices one at a time until you find the failing FRU.
   - If the problem does recur, replace the following FRUs one at a time:
     - System board
     - LCD assembly

■

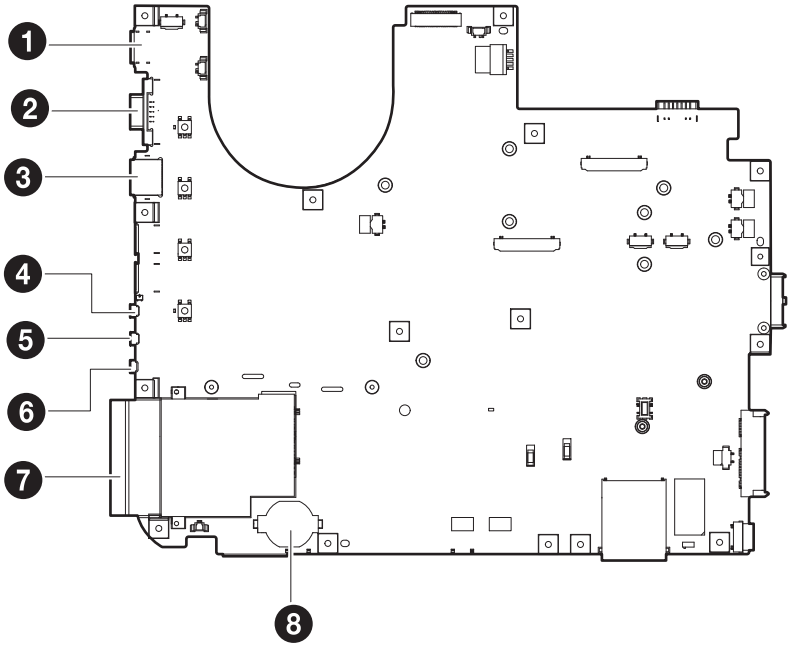
Important
Do not replace a non-defective FRU.

CHAPTER 5
System board layout

- EasyNote DT85 system board

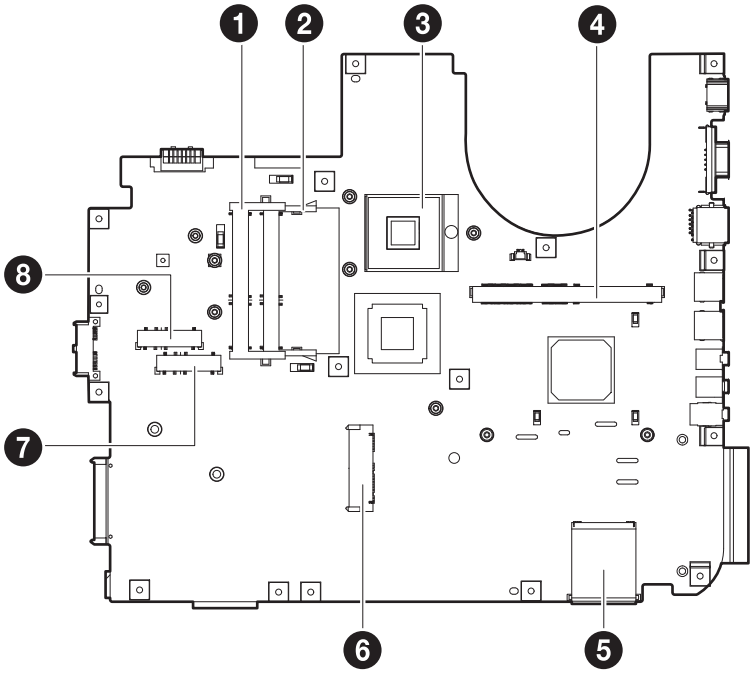
EasyNote DT85 system board

Top view



Number	Descriptions
1	HDMI port
2	VGA port
3	Ethernet LAN port
4	Line-in jack
5	Mic-in jack
6	Headphone-in jack
7	ExpressCard slot
8	Coin-cell battery

Bottom view



Number	Descriptions
1	DIMM slot 1
2	DIMM slot 2
3	CPU socket
4	VGA daughter board slot
5	5-in-1 card reader slot
6	HDD 1 connector
7	Mini-card slot
8	Wireless LAN card slot

CHAPTER 6
FRU (Field-Replaceable Unit) list

- Introduction
- Exploded diagram
- FRU list

Introduction

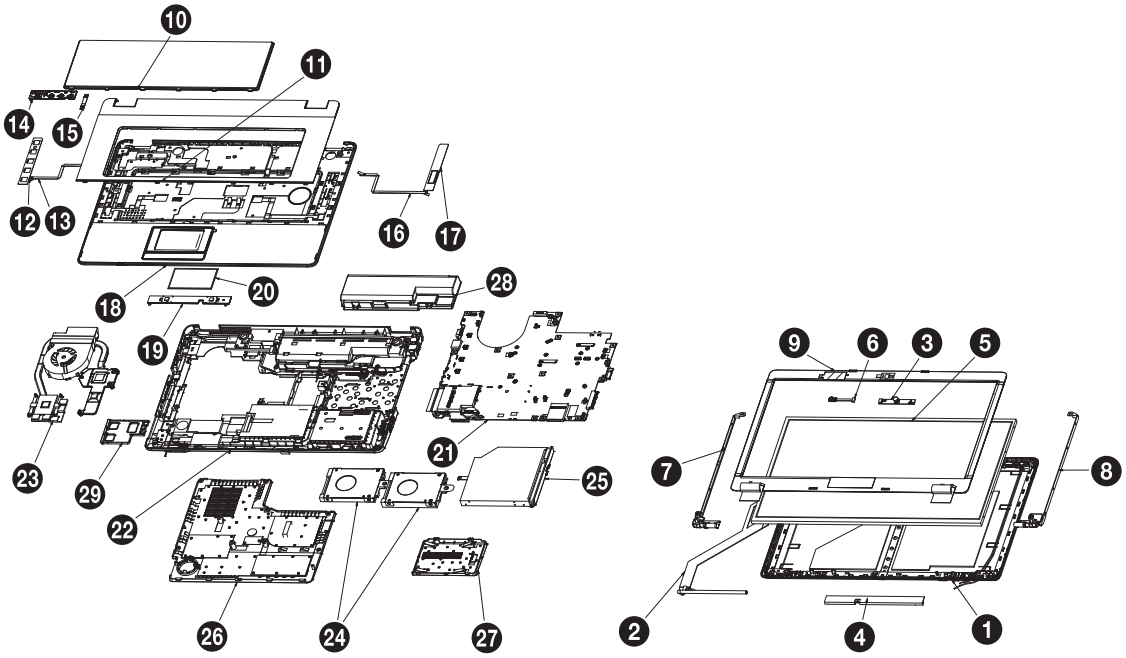
This chapter gives you the FRU (field-replaceable-unit) listing in global configurations of this model. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

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

Important

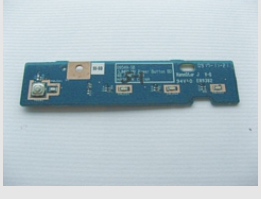
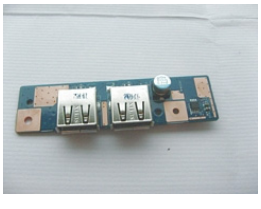
To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded diagram

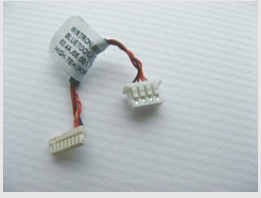


NO.	Part NO.	Description	Q'ty	REV.	Remark
1	60.4DW08.001	ASSY LCD PANEL IMR 1X1 SJM80	1	A01	
2	50.4DW08.001	SJM80 LCD Cable SINGLE HT	1	A01	
3		Camera module	1		
4		Inverter module	1		
5		LCD module	1		
6	23.42274.001	MICROPHONE SJM80 XINGMENG	1		
7	33.4DW08.001	Hinge L SJM80 LH	1	A01	
8	33.4DW06.001	Hinge R SJM80 LH	1	A01	
9	60.4DW10.001	ASSY LCD BEZEL PB SJM80	1	A01	
10		Keyboard	1		
11	60.4DW07.001	ASSY KB COVER SJM80	1	A01	
12	56.41010.251	SJM80 MMB left	1	A01	
13	50.4DW03.001	C.A. MMB L FFC SJM80 TR	1	A01	
14		SJM80 power board	1		
15	50.4DW11.001	C.A. POWER BD FFC SJM80 JH	1	A01	
16	50.4DW02.001	C.A. MMB R FFC SJM80 TR	1	A01	
17	56.41010.241	SJM80 MMB Right	1	A01	
18	60.4DW06.001	ASSY UCASE W/O FP SJM80	1	A01	
19		SJM80 T/P Button Board	1		
20		SJM80 T/P board	1		
21		SJM80 M/B	1		
22-A	60.4DW01.001	ASSY L-CASE SJM80	1	A01	With TV config
22-B	60.4DW15.001	ASSY LCASE W/O TV SJM80	1	A01	With out TV config
23-A	60.4DW18.001	THERMAL FORCECON SJM80 (DIS)	1	A01	DIS config
23-B	60.4DW16.001	THERMAL FORCECON SJM80 (UMA)	1	A01	UMA config
24	65.4DW12.001	ASSY 65 HDD SJM80	2		
25-A	65.4DW10.001	ASSY 65 ODD S-MULTI SJM80	1		S-MULTI config
25-B	65.4DW11.001	ASSY 65 ODD BLUE-RAY SJM80	1		Blue-Ray config
26	60.4DW02.001	ASSY BIG DOOR SJM80	1	A01	
27	60.4DW03.001	ASSY HDD DOOR SJM80	1	A01	
28		Battery Module	1		
29	42.4DW06.001	New card dummy card	1	A01	

FRU list

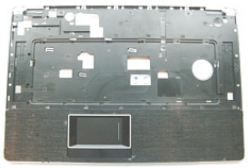
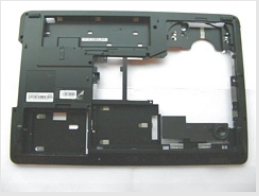
Category	Part Name	Description	Part No.
ADAPTER			
	ADAPTER 90W DELTA ADP-90SB BBGE BLUE LV4 LED LF	ADP 90W 19V 3P ADP-90SB BBGE	AP.09001.024
	ADPAPTER 90W 19V 3PIN HIPRO HP-A0904A3 B1LF LV5 LED LF BLUE	ADP 90W 19V 3P HP-A0904A3 B1LF	AP.0900A.005
BATTERY			
	BATTERY SANYO AS-2007B LI-ION 4S2P SANYO 8 CELL 4800MAH MAIN COMMON	BTY PACK LI+ 8C 2.4AH SANYO	BT.00803.024
	BATTERY SONY AS-2007B LI-ION 4S2P SONY 8 CELL 4800MAH MAIN COMMON	BTY PACK LI+ 8C 2.4AH SONY	BT.00804.020
	BATTERY SIMPLO AS-2007B LI-ION 4S2P PANASONIC 8 CELL 4800MAH MAIN COMMON PSS	BTY PACK PANA LI+ 8C 2.4AH SMP	BT.00807.015
	BATTERY SANYO AS-2007B LI-ION 3S2P SANYO 6 CELL 4400MAH MAIN COMMON NORMAL TYPE	BTY PACK LI+ 6C 2.2AH SANYO	BT.00603.042
BOARDS			
	POWER BUTTON BOARD	SJM80-MV POWERBT BD 09549-1 D	55.BCR01.001
	USB BOARD	SJM80-MV USB BD 08535-1 D	55.BCR01.004
	TOUCH PAD BUTTON BOARD	SJM80-MV 09548-1 W/OFP T/P D	55.BCR01.005

	TOUCHPAD SYNAPTICS TM00372-027	TOUCHPAD SYNAPTICS TM00372-027	56.AYP01.001
	MULTI-MEDIA BOARD RIGHT	CAPACITIVE BUTTON NS-SJM80-R V	55.BCR01.002
	MULTI-MEDIA BOARD LEFT	CAPACITIVE BUTTON NS-SJM80-L V	55.BCR01.003
	WIRELESS LAN BOARD 512AN_MMWG SHIRLEY PEAK 5100 MM#895361	WLAN 802.11ABGN SHIRLEYPEAK1*2	KI.SPM01.003
	WIRELESS LAN BOARD 512AG_MMWG SHIRLEY PEAK 5100 MM#897004	WLAN 802.11ABG SHIRLEYPEAK1*2	KI.SPM01.005
	VGA CARD MSI NVIDIA N10PGS DDRIII 1024M 800MHZ 64*16 MXM 3.0 TYPE A W/ HYNIX H5TQ1G63BFR-12C	VGA CARD NV N10PGS/1024 DDR3	VG.10P06.005
	BLUETOOTH BOARD FOXCONN BRM 2046 BT2.1 T60H928.33 F/W:861	BT MODULE FOXCONN BCM2046 V2.1	BH.21100.004
CABLES			
	USB BOARD CABLE	C.A. USB BB2 HT	50.AYP01.002
	USB BOARD CABLE	C.A. USB BB2 HL	50.AYP01.002

	INVERTER BOARD 18" DARFON VK.22256.101 REV.B	INVERTER DL VK.22256.101 Rev.B	19.AYP01.002
	MULTI-MEDIA BOARD CABLE RIGHT	C.A. MMB R FFC SJM80 TR	50.BCR01.002
	MULTI-MEDIA BOARD CABLE RIGHT	C.A. MMB R FFC SJM80 JH	50.BCR01.002
	MULTI-MEDIA BOARD CABLE LEFT	C.A. MMB L FFC SJM80 TR	50.BCR01.003
	MULTI-MEDIA BOARD CABLE LEFT	C.A. MMB L FFC SJM80 JH	50.BCR01.003
	POWER BUTTON BOARD CABLE	C.A. POWER BD FFC SJM80 JH	50.BCR01.001
	POWER BUTTON BOARD CABLE	C.A. POWER BD FFC SJM80 TR	50.BCR01.001
	BLUETOOTH BOARD CABLE	C.A BT BB2 HT	50.AYP01.003
	BLUETOOTH BOARD CABLE	C.A BT BB2 HL	50.AYP01.003
	POWER CORD 250V 3PIN EUR BK	CORD EUR 250V 3P BK	27.T30V1.004
	POWER CABLE 16A 250V 3PIN EUR BK	CORD 16A 250V 3P EUR BK	27.01518.731
	POWER CORD 10A 250V SWISS	CODE SWISS 2.5A 250V 3P BK	27.01518.581
	POWER CORD 10A 250V 3PIN SWISS BK	CODE 10A 250V 3P SWISS BK	27.01518.691
	POWER CORD 10A 250V ARGENTINE	CORD ARGENTINE,10A 250V3G,1.8M	27.01518.0U1
	POWER CORD 10A 125V US	CODE US 7A 125V BK	27.T30V1.001
	POWER CORD 10A 125V 3PIN US BK	CODE 10A 125V 3P US BK	27.01518.641
	POWER CORD 7A 250V 2PIN KOREAN	CORD 7A250V 2P 1830 KOREAN	27.01518.531

	POWER CORD 3A 250V 3PIN UK	CODE UK 2.5A 250V 3P BK	27.01518.541
	POWER CORD 5A 250V 3PIN UK BK	CODE 5A 250V 3P UK BK	27.03118.001
	POWER CORD 7A 125V 2PIN JAPAN	CODE JAPAN 7A 125V 2P BK	27.01518.551
	POWER CORD 10A 3PIN BK DENMARK	CODE DENMARK 2.5A 250V 3P BK	27.01518.561
	POWER CORD 10A 250V 3PIN DENMARK BK	CODE 10A 250V 3P DENMARK BK	27.01518.671
	POWER CORD 10A 250V 3PIN BK SOUTH AFRICA	CODE SOUTH AFRICA 16A 250V BK	27.01518.571
	POWER CORD 16A 250V SOUTH AFRICA BK	CODE 16A 250V SOUTH AFRICA BK	27.01518.681
	POWER CORD 10A 250V 3PIN CHINA	CORD CHINA 10A 250V 3P	27.01518.591
	POWER CORD 10A 250V 3PIN CHINA BK	CORD 10A 250V 3P CHINA BK	27.01518.701
	POWER CORD 10A 250V 3PIN ITALY	CORD ITALY 10A 250V 3P BK	27.01518.611
	POWER CORD 10A 250V 3PIN ITALY BK	CORD 10A 250V 3P ITALY BK	27.01518.711
	POWER CORD 2.5A 250V AUSTRALIA	CORD 2.5A 250V AUSTRALIA BK	27.01518.621
	POWER CORD 2.5A 250V SOUTH AFRICA BK (INDIA)	CORD 2.5A 250V SOUTH AFRICA BK	27.01518.631
	POWER CORD 10A 250V SOUTH AFRICA BK (INDIA)	CORD 6A 250V SOUTH AFRICA BK	27.01518.721
	POWER CORD 7A 125V 2PIN JAPAN BK	CODE 7A 125V 2P JAPAN BK	27.01518.661
	POWER CORD 250V 10A 3PIN ISRAEL	CORD 250V 10~16A 3P ISRAEL	27.01518.761
	POWER CORD 2.5A 125V USA	CORD USA/W CNS 2.5A 125V 8121-	27.01518.781
	POWER CORD 2.5A 125V 1.8M BLACK TAIWANESE	POWER CORD TAIWANESE BLACK,1.8	27.01518.A11
	POWER CORD 10A 250V 1.8M BRAZIL BLK	POWER CORD BRAZIL,BLK,1.8 M	27.01518.A41

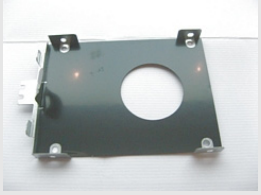
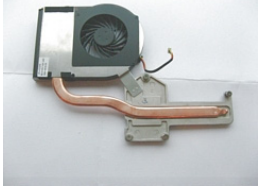
	POWER CORD ACA / ACNZ	POWER CODE ACA / ACNZ ANNIE	27.03218.021
	POWER CORD 7.5A 250V 3P AUSTRALIA BK	CODE 7.5A 250V 3P AUSTRALIA BK	27.03218.051
	POWER CODE 7A 125V 2PIN JAPAN	CODE 7A 125V JAPAN 2PIN BK	27.03518.161
CASE/COVER/BRACKET ASSEMBLY			
	NEW CARD DUMMY CARD	CVR NEW CARD DUMMY CARD SJM80	42.BCR01.004
	CARD READER DUMMY CARD	CARD READER DUMMY CARD HOMA	42.TQ901.003
	UNITLOAD COVER	ASSY BIG DOOR SJM80	42.BCR01.002
	HDD COVER	ASSY HDD DOOR SJM80	42.BCR01.003
	MIDDLE COVER	ASSY KB COVER SJM80	42.BCR01.001
	VGA CARD BRACKET	MXM ASSY	33.PCC01.002

	UPPER CASE BLACK W/TOUCHPAD CABLE & TOUCH PAD BUTTON BOARD CABLE W/O FINGER PRINT HOLE	ASSY UCASE W/O FP SJM80	60.BCR01.002
	LOWER CASE W/DC-IN CABLE & MODEM CABLE & SPEAKER W/O TV HOLE	ASSY LCASE W/O TV SJM80	60.BCR01.001
SPEAKER			
	SPEAKER PACK RIGHT & LEFT	SPEAKER R&L SJM80 FG	23.BCR01.001
	SPEAKER PACK RIGHT & LEFT	SPEAKER YG SJM80	23.BCR01.001
	SPEAKER SUBWOOFER	SPEAKER SUBWOOFER SJM80 FG	23.BCR01.002
	SPEAKER SUBWOOFER	WOOFER YG SJM80	23.BCR01.002
ODD/CASE/COVER/BRACKET ASSEMBLY			
	BLU-RAY COMBO MODULE 4X SATA	ODD NBDCB4XS BLU-RAY DISC	6M.BCR01.002
	ODD PLDS BD COMBO 12.7MM TRAY DL 4X DS-4E1S LF W/O BEZEL SATA	BD COMBO SATA PLDS DS-4E1S	KO.0040F.001
	ODD PIONEER BD COMBO 12.7 SATA DL 4X BDC-TD01RS LF W/O BEZEL SATA	BD COMBO SATPIONEER BDC-TD01RS	KO.00405.002
	ODD SONY BD COMBO 12.7MM TRAY DL 4X BC-5500S LF W/O BEZEL SATA	BD COMBO SATA SONY BC-5500S	KO.0040E.001

	DVD-RW SUPER-MULTI MODULE 8X SATA	ODD NSM8XS SUPER-MULTI DRIVE	6M.BCR01.001
	ODD TOSHIBA SUPER-MULTI DRIVE 12.7MM TRAY DL 8X SATA TS-L633B LF W/O BEZEL	ODD SM SATA 12.7 TL TS-L633B	KU.00801.030
	ODD HLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X GT20N LF W/O BEZEL SATA	ODD SM SATA 12.7 TL HLDS GT20N	KU.0080D.040
	ODD SONY SUPER-MULTI DRIVE 12.7MM TRAY DL 8X AD-7580S LF W/O BEZEL SATA	S-MULTI SATA SONY AD-7580S	KU.0080E.017
	ODD PLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X SATA DS-8A3S LF W/O BEZEL	ODD SM SATA 12.7 TL DS-8A3S	KU.0080F.004
	OPTICAL BRACKET	BRKT ODD BRACKET BB2	33.AYP01.001
	BLUE-RAY COMBO BEZEL	ASSY ODD BEZEL BLUE-RAY SJM80	42.BCR01.006
	DVD-RW SUPER-MULTI BEZEL	ASSY ODD BEZEL S-MULTI SJM80	42.BCR01.005
CPU/PROCESSOR			
	CPU INTEL CORE2DUAL T6500 PGA 2.1G 2M 800 R-0	IC CPU PENRYN T6500 2.1G PGA	KC.65001.DTP
	CPU INTEL CORE2DUAL P7350 PGA 2.0G 3M 1066 25W	IC CPU PENRYN P7350 2.0G PGA	KC.73501.DPP

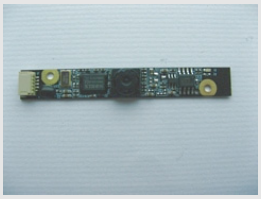
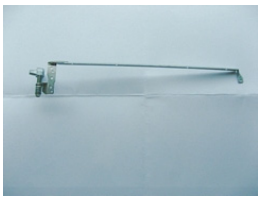
	CPU INTEL CORE2DUAL P7450 2.13G 3M 1066 TJ NOVT	IC CPU PENRYN P7450 2.13G PGA	KC.74501.DPP
	CPU INTEL CORE2DUAL P7550 PGA 2.26G 3M 1066 R-0	IC CPU PENRYN P7550 2.26G PGA	KC.75501.DPP
	CPU INTEL CORE2DUAL P8600 2.4G 3M 1066 25W R-0	IC CPU PENRYN P8600 2.4G PGA	KC.86R01.DPP
	CPU INTEL CORE2DUAL P8600 PGA 2.4G 1066 25W 3M	IC CPU PENRYN P8600 2.4G PGA	KC.86001.DPP
	CPU INTEL CORE2DUAL P8700 2.53G 3M 1066 25W R-0	IC CPU PENRYN P8700 2.53G PGA	KC.87R01.DPP
	CPU INTEL CORE2DUAL P8800 PGA 2.66G 3M 1066 25W R-0	IC CPU PENRYN P8800 2.66G PGA	KC.88R01.DPP
	CPU INTEL CORE2DUAL T6400 2.0G 3M 800 35W R-0	IC CPU PENRYN T6400 2.0G PGA	KC.64001.DTP
	CPU INTEL CORE2DUAL T6600 2.2G 2M 800 35W R-0	IC CPU PENRYN T6600 2.2G PGA	KC.66001.DTP
	CPU INTEL CORE2DUAL PENRYN T9550 2.66G 6M 1066 35W E-0	IC CPU PENRYN T9550 2.66G PGA	KC.95501.DTP
HDD/HARD DISK DRIVE/CASE/COVER/BRACKET ASSEMBLY			
	HDD 160GB 5400RPM SATA SEAGATE ST9160310AS F/W:2010	HDD 160GB SEAGATE ST9160310AS	KH.16001.034
	HDD 160GB 5400RPM SATA TOSHIBA LIBRA-BS MK1655GSX F/W:FG0101J 5.4	HDD 160GB TOSHIBA MK1655GSX	KH.16004.006
	HDD 160GB 5400RPM 2.5" SATA HGST HTS543216L9A300 F/W:C30C	HDD 160GB HGST HTS543216L9A300	KH.16007.019
	HDD 160GB 5400RPM SATA HGST PANTHER-B PANTHER-B HTS545016B9A300 F/W:C60F	HDD 160GB HGST HTS545016B9A300	KH.16007.024

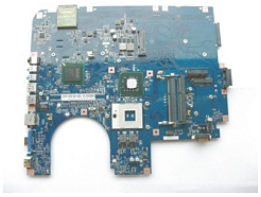
	HDD 160GB 5400RPM 2.5" SATA WD WD1600BEVT-22ZCT0 FW:11.01A11	HDD 160GB WD WD1600BEVT-22 ZCT0	KH.16008.022
	HDD 2.5" 5400RPM 250GB SEAGATE ST9250315AS WYATT SATA LF F/W:0001SDM1	HDD 250GB SEAGATE ST9250315AS	KH.25001.016
	HDD 250GB 5400RPM SATA TOSHIBA LIBRA-BS MK2555GSX F/W:FG000J 5.4K	HDD 250GB TOSHIBA MK2555GSX	KH.25004.003
	HDD 250GB 5400RPM SATA HGST HTS545025B9A300 PANTHER-B LF	HDD 250GB HGST HTS545025B9A3 00	KH.25007.015
	HDD 250GB 5400RPM SATA WD WD2500BEVT-22ZCT0 F/W:11.01A11	HDD 250GB WD WD2500BEVT-22 ZCT0	KH.25008.021
	HDD 320GB 5400RPM SATA SEAGATE ST9320320AS F/W:2010	HDD 320GB SEAGATE ST9320320AS	KH.32001.008
	HDD 320GB 5400RPM SATA SEAGATE WYATT ST9320325AS FW:0001SDM1	HDD 320GB SEAGATE ST9320325AS	KH.32001.017
	HDD 320GB 5400RPM SATA HGST HTS545032B9A300 PANTHER B LF	HDD 320GB WD WD3200BEVT-22 ZCT0	KH.32007.007
	HDD 320GB 5400RPM SATA WD WD3200BEVT-22ZCT0 ML125 F/W:01.01A01	HDD 320GB WD WD3200BEVT-22 ZCT0	KH.32008.013
	HDD 500GB 5400RPM SEAGATE ST9500325AS SATA LF F/W:0001SDM1	HDD 500GB SGT ST9500325AS 5.4K	KH.50001.011
	HDD 2.5" 5400RPM 500GB TOSHIBA MK5055GSX LIBRA SATA LF F/W:FG001J	HDD 500GB TOSHIBA MK5055GSX	KH.50004.001
	HDD 500GB 5400RPM HGST SATA HTS545050B9A300 PANTHER B LF	HDD 500GB HGST HTS545050B9A3 00	KH.50007.009
	HDD 500GB 5400RPM WD SATA WD5000BEVT-22ZAT0 F/W:01.01A01	HDD 500GB WD5000BEVT-22 ZAT0	KH.50008.013
	HDD 320GB 7200RPM SATA HGST HTS723232L9SA00 F/W:C30F	HDD 320GB HGST HTS723232L9SA 00	KH.32007.005

	HDD BRACKET	ASSY 60 HDD BRK BB2	33.AYP01.002
HEATSINK			
	CPU HEATSINK DISCRETE W/FAN	ASSY THERMAL FOXCONN PX SJM80	60.BCR01.003
	CPU HEATSINK UMA W/FAN	ASSY THERMAL FOXCONN SJM80	60.BC801.001
KEYBOARD			
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK FRENCH	KB MP-07F36F0-442 4H FR 100GP7T	KB.I170G.094
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK US INTERNATIONAL	KB MP-07F33U4-442 4H USI 99GP7T	KB.I170G.111
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK ARABIC	KB MP-07F33A0-442 4H AR 99 GP7T	KB.I170G.087
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK SWISS/G	KB MP-07F36CH-44 24H SW 100GP7T	KB.I170G.107
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK CHINESE	KB MP-07F33RC-44 24H CH 99 GP7T	KB.I170G.091
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK THAILAND	KB MP-07F33T0-442 4H TH 99 GP7T	KB.I170G.108

	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK PORTUGUESE	KB MP-07F36P0-442 4H PT 100GP7T	KB.I170G.102
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK DANISH	KB MP-07F36DK-442 4H DK 100GP7T	KB.I170G.092
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK ITALIAN	KB MP-07F36I0-4424 H IT 100GP7T	KB.I170G.098
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK GERMAN	KB MP-07F36D0-442 4H GR 100GP7T	KB.I170G.095
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK US INTERNATIONAL W/ HEBREW	KB MP-07F33HB-442 4H HE 99 GP7T	KB.I170G.112
	KEYBOARD 103KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK JAPANESE	KB MP-07F30J04424 JAP 104 GP7T	KB.I170G.099
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK GREEK	KB MP-07F33GR-44 24H GK 99 GP7T	KB.I170G.096
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK NORWEGIAN	KB MP-07F36N0-442 4H NO 100GP7T	KB.I170G.101
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK HUNGARIAN	KB MP-07F36HU-44 24H HU 100GP7T	KB.I170G.097
	KEYBOARD 99KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK RUSSIAN	KB MP-07F33SU-442 4H RU 99 GP7T	KB.I170G.103
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK SPANISH	KB MP-07F36E0-442 4H SP 100GP7T	KB.I170G.105
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK TURKISH	KB MP-07F36TQ-442 4H TR 100GP7T	KB.I170G.109
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK UK	KB MP-07F36GB-44 24H UK 100GP7T	KB.I170G.110
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK SWEDEN	KB MP-07F36S0-442 4H SE 100GP7T	KB.I170G.106

	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK CZECH/SLOVAK	KB MP-07F36CS-442 4H CZK100GP7T	KB.I170G.090
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK BELGIUM	KB MP-07F36B0-442 4H BE 100GP7T	KB.I170G.088
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK BRAZILIAN PORTUGUESE	KB MP-07F36PA-442 4H BR 100GP7T	KB.I170G.089
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK SLO/CRO	KB MP-07F36SA-442 4H SL 100GP7T	KB.I170G.104
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK NORDIC	KB MP-07F36DN-44 24H NR 100GP7T	KB.I170G.100
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK ARABIC FRENCH	KB MP-07F36AF-442 4H FRA100GP7T	KB.I170G.093
	KEYBOARD 100KEYS GP7T SJV70/SJV50 INTERNAL17 STANDARD BLACK US W/ CANADIAN FRENCH	KB MP-07F36CU-44 24H FCE100GP7T	KB.I170G.113
LCD/CABLES/CASE/COVER/BRACKET ASSEMBLY			
	LCD MODULE 18.4" WUXGAG28L GLARE IMR BLACK W/1.0M CAMERA&ANTENNA*2 FOR DUAL LAMP & PACKARD BELL	LCD N18.4WUXGAG2 8L CAM1.0IMR2D	6M.BCR01.004
	LCD 18.4" WUXGA28L GLARE CMO N184H4-L04 LF 220NIT 8MS 500:1	LCD 18.4"WUXGA CMO N184H4-L04	LK.1840D.001
	LCD MODULE 18.4" WXGA+G8 GLARE IMR BLACK W/1.0M CAMERA&ANTENNA*2 FOR SINGLE LAMP & PACKARD BELL	LCD N18.4WXGA+G8 CAM1.0IMR2S	6M.BCR01.003
	LCD SAMSUNG 18.4" WXGA+ GLARE LTN184KT01-A01 LF 220NIT 8MS 800:1	LCD 18.4"WXGA+ LTN184KT01-A01	LK.18406.002
	LCD/CAMERA CABLE FOR DUAL LAMP	C.A. LCD DUAL LAMP SJM80 HT	50.BCR01.005

	CAMERA 1.0M SUYIN CN1014-S36B-OV01-1	CAMERA 1M CN1014-S36B-OV01-1	57.PCC01.002
	LCD BRACKET RIGHT W/HINGE	HINGE R SJM80 LH	33.BCR01.001
	LCD BRACKET RIGHT W/HINGE	HINGE R SJM80 SZS	33.BCR01.001
	LCD BRACKET LEFT W/HINGE	HINGE L SJM80 LH	33.BCR01.002
	LCD BRACKET LEFT W/HINGE	HINGE L SJM80 SZS	33.BCR01.002
	LCD COVER 18.4" IMR BLACK W/ANTENNA*2 & PACKARD BELL LOGO PLATE	ASSY LCD PNL IMR 1X2 SJM80 PB	60.BCR01.005
	LCD BEZEL W/PACKARD BELL LOGO & CAMERA HOLE	ASSY LCD BEZEL PB SJM80	60.BCR01.004

	MICROPHONE	MICROPHONE SJM80 XINGMENG	23.BCR01.003
	MICROPHONE	MICROPHONE SJM80 GOERTEK	23.BCR01.003
	INVERTER BOARD 18" DARFON VK.21189.A01	INVERTER 18" VK.21189.A01	19.AYP01.001
	LCD/CAMERA CABLE FOR SINGLE LAMP	C.A. LCD SINGLE LAMP SJM80 HT	50.BCR01.004
	LCD/CAMERA CABLE FOR SINGLE LAMP	C.A. LCD SINGLE LAMP SJM80 HL	50.BCR01.004
MAINBOARD/BOARDS			
	MAINBOARD SJM80MV INTEL GM45 ICH9M LF DISCRETE PLATFORM W/RTC BATTERY & MODEM BOARD	SJM80-MV MB 09221-1 W/O C D1	MB.BC301.001
	MODEM BOARD LITEON CONEXANT -UNIZION 1.5_3.3V AUS B85247600G	MODEM MDC LITE_CNXT RD02-D330	FX.22500.021
MEMORY			
	SODIMM 1G DDRIII 1066MHZ NANYA NT1GC64BH8A1PS-BE LF 64*16 0.07UM	SODIMM 1G NT1GC64BH8A1 PS-BE	KN.1GB03.031

	SODIMM 1GB DDRIII 1066MHZ MICRON MT8JSF12864HY-1G1D1	SODIMM 1G MT8JSF12864HY -1G1D1	KN.1GB04.003
	SODIMM 1GB DDRIII 1066MHZ ELPIDA EBJ11UE6BAU0-AE-E LF 64*16 0.07UM	SODIMM 1G EBJ11UE6BAU0-AE-E	KN.1GB09.009
	SODIMM 1GB DDRLLL 1066MHZ ELPIDA EBJ11UE6BBS0-AE-F	SODIMM 1G EBJ11UE6BBS0-AE-F	KN.1GB09.011
	SODIMM 1GB DDRIII 1066MHZ SAMSUNG M471B2874DZ1-CF8	SODIMM 1G M471B2874DZ1-CF8	KN.1GB0B.019
	SODIMM 1GB DDRIII 1066MHZ SAMSUNG M471B2873EH1-CF8	SODIMM 1G M471B2873EH1-CF8	KN.1GB0B.028
	SODIMM 1GB DDRIII 1066MHZ HYNIX HMT112S6AFP6C-G7N0	SODIMM 1G HMT112S6AFP6 C-G7N0	KN.1GB0G.019
	SODIMM 1GB DDRIII 1066MHZ HYNIX HMT112S6BFR6C-G7N0 N0 LF 64*16 0.055UM	SODIMM 1G HMT112S6BFR6 C-G7N0	KN.1GB0G.025
	SODIMM 2GB DDRIII 1066MHZ NANYA NT2GC64B8HA1NS-BE LF 128*8 0.07UM	SODIMM 2G NT2GC64B8HA1 NS-BE	KN.2GB03.012
	SODIMM 2GB DDRIII 1066MHZ MICRON MT16JSF25664HY-1G1D1	SODIMM 2G MT16JSF25664H Y-1G1D1	KN.2GB04.004
	SODIMM 2GB DDRIII 1066MHZ ELPIDA EBJ21UE8BBS0-AE-F	SODIMM 2G EBJ21UE8BBS0-AE-F	KN.2GB09.004
	SODIMM 2GB DDRIII 1066MHZ SAMSUNG M471B5673EH1-CF8	SODIMM 2G M471B5673EH1-CF8	KN.2GB0B.012
	SODIMM 2GB DDRIII 1066MHZ HYNIX HMT125S6BFR8C-G7 N0 LF 128*8 0.055UM	SODIMM 2G HMT125S6BFR8 C-G7N0	KN.2GB0G.014
SCREWS			
	SCREW M2*L3 WHITE	SCREW M2*L3 (WHITE)	86.00C07.220
	SCREW M2.5*L6 NYLOK CR3+	SCREW M2.5*L6 NYLOK CR3+	86.00E33.736
	SCREW M2.5*L8 NYLOK CR3+	SCREW M2.5*L8 NYLOK CR3+	86.00E34.738
	SCREW M3 X 3 #1 NI NYLON	SCRW M3 X 3 #1 NI NYLON	86.00E78.643

	SCREW M2.5X4L NI NYLOK	SCRW M2.5X4L NI NYLOK	86.00H36.534
	SCREW M2*4 WAFER NI	SCRW M2*4 WAFER NI	86.9A552.4R0
	SCREW M2.5*3 WAFER NI	SCRW M2.5*3 WAFER NI	86.9A553.3R0

APPENDIX A
Model definition and configuration

EasyNote DT85

Common to all model configurations are:

- Camera: 0.3M DV
- Card reader: 5-in-1 built-in
- Adapter: 65W
- LCD: 15.6 WXGA LED-backlit

Model	RO	Country	Acer Part No	Description	CPU	VGA Chip	VRAM 1	Memory 1	Memory 2	HDD 1(GB)	ODD	Wireless LAN	Bluetooth	Battery
ENTJ65-424G32Mn	EMEA	Portugal	LX.B750Y.001	ENTJ65-424G32Mn VHB32BTPT1 N10MGE1512Cck4 2*2G/320/6L/5R/CB_bgn_0.3D_GEc_PT41 EasyNote_TJ65-CU-200 PT	PMDT4200	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N320GB5.4K S	NSM8XS	3rd WiFi 1x2 BGN	N	6CELL2.2
ENTJ65-643G25Mn	EMEA	Turkey	LX.B610Y.001	ENTJ65-643G25Mn EM VHB32BTTR1 N10MGE1512Cck8 2G+1G/250/BT/6L/5R/CB_n2_0.3D_GEc_TR31 EasyNote_TJ65-DT-002 TK	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO1G BII6	N250GB5.4K S	NSM8XS	SP1x2M MW	BT 2.1	6CELL2.2
ENTJ65-643G32Mn	EMEA	Portugal	LX.B610X.006	ENTJ65-643G32Mn VHP32BTPT1 N10MGE1512Cck8 2G+1G/320/6L/5R/CB_n2_0.3D_GEc_PT44 EasyNote_TJ65-DT-206 PT	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO1G BII6	N320GB5.4K S	NSM8XS	SP1x2M MW	N	6CELL2.2
ENTJ65-644G25Mn	EMEA	France	LX.B610X.005	ENTJ65-644G25Mn VHP32BTFR1 N10MGE1512Cck8 2*2G/250/6L/5R/CB_n2_0.3D_GEc_FR64 EasyNote_TJ65-DT-042 FR	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N250GB5.4K S	NSM8XS	SP1x2M MW	N	6CELL2.2
ENTJ65-644G32Bn	EMEA	Spain	LX.B610X.004	ENTJ65-644G32Bn VHP32BTES1 N10MGE1512Cck8 2*2G/320/6L/5R/CB_n2_0.3D_GEc_ES54 EasyNote_TJ65-DT-204 SP	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N320GB5.4K S	NBDCB4XS	SP1x2M MW	N	6CELL2.2
ENTJ65-644G50Mn	EMEA	Portugal	LX.B610X.003	ENTJ65-644G50Mn VHP32BTPT1 N10MGE1512Cck8 2*2G/500_L/BT/6L/5R/CB_n2_0.3D_GEc_PT44 EasyNote_TJ65-DT-201 PT	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N500GB5.4K S	NSM8XS	SP1x2M MW	BT 2.0	6CELL2.2

Model	RO	Country	Acer Part No	Description	CPU	VGA Chip	VRAM 1	Memory 1	Memory 2	HDD 1(GB)	ODD	Wireless LAN	Bluetooth	Battery
ENTJ65-744G50Bn	WW	WW	S2.B610Y.003	ENTJ65-744G50Bn VHB32BWW1 N10MGE1512Cck8 2*2G/500_L/BT/6L2.8/5R/CB_n2_0.3D_GEc_EN11	C2DP7450	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N500GB5.4KS	NBDCB4XS	SP1x2MMW	BT 2.0	6CELL2.8
ENTJ65-744G50Mn	WW	WW	S2.B610Y.002	ENTJ65-744G50Mn VHB32BWW1 N10MGE1512Cck8 2*2G/500_L/BT/6L2.8/5R/CB_n2_0.3D_GEc_EN11	C2DP7450	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N500GB5.4KS	NSM8XS	SP1x2MMW	BT 2.0	6CELL2.8
ENTJ65-644G32Mn	EMEA	Spain	LX.B610X.002	ENTJ65-644G32Mn VHP32BTES1 N10MGE1512Cck8 2*2G/320/6L/5R/CB_n2_0.3D_GEc_ES54 EasyNote_TJ65-DT-202SP	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N320GB5.4KS	NSM8XS	SP1x2MMW	N	6CELL2.2
ENTJ65-643G25Mn	EMEA	France	LX.B610X.001	ENTJ65-643G25Mn VHP32BTFR1 N10MGE1512Cck8 2G+1G/250/6L/5R/CB_n2_0.3D_GEc_FR64 EasyNote_TJ65-DT041FR	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO1G BII6	N250GB5.4KS	NSM8XS	SP1x2MMW	N	6CELL2.2
ENTJ65-744G50Mn	WW	WW	S2.B610Y.001	ENTJ65-744G50Mn VHB64BWW2 N10MGE1512Cbnh 2*2G/500_L/BT/6L/5R/CB_n3_0.3D_GEc_EN11	C2DP7450	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N500GB5.4KS	NSM8XS	SP3x3MMW	BT 2.0	6CELL2.2
ENTJ65-423G25Mn	EMEA	France	LX.B860Y.001	ENTJ65-423G25Mn VHB32BTFR1 UMACck4 1G+2G/250/6L/5R/CB_bgn_0.3D_GEc_FR61 EasyNote_TJ65-AU026FR	PMDT4200	UMA	N	SO1G BII6	SO2G BII6	N250GB5.4KS	NSM8XS	3rd WiFi 1x2 BGN	N	6CELL2.2
ENTJ65-422G25Mi	EMEA	Russia	LX.B860X.002	ENTJ65-422G25Mi VHP32BTRU2 UMACck4 2*1G/250/BT/6L/5R/CB_bg_0.3D_GEc_RU41 EasyNote_TJ65-AU-001RU	PMDT4200	UMA	N	SO1G BII6	SO1G BII6	N250GB5.4KS	NSM8XS	3rd WiFi 1x2 BGN	BT 2.0	6CELL2.2
ENTJ65-422G25Mn	EMEA	Middle East	LX.B860X.001	ENTJ65-422G25Mn EM VHP32BTMEA UMACck4 2*1G/250/BT/6L/5R/CB_bgn_0.3D_GEc_AR65 EasyNote_TJ65-AU-001UEA	PMDT4200	UMA	N	SO1G BII6	SO1G BII6	N250GB5.4KS	NSM8XS	3rd WiFi 1x2 BGN	BT 2.0	6CELL2.2
ENTJ65-901G16Mn	WW	WW	S2.B860X.001	ENTJ65-901G16Mn VHP32BWW2 UMACck4 1*1G/160/6L/5R/CB_bgn_0.3D_GEc_EN11	CM900	UMA	N	SO1G BII6	N	N160GB5.4KS	NSM8XS	3rd WiFi 1x2 BGN	N	6CELL2.2

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Model	RO	Country	Acer Part No	Description	CPU	VGA Chip	VRAM 1	Memory 1	Memory 2	HDD 1(GB)	ODD	Wireless LAN	Bluetooth	Battery
ENTJ65-643G32Mn	EMEA	Portugal	LX.B760X.001	ENTJ65-643G32Mn VHP32BTPT1 UMACck8 2G+1G/320/6L/5R/CB_n2_0.3D_GEc_PT44 EasyNote_TJ65-BT-206 PT	C2DT6400	UMA	N	SO2G BII6	SO1G BII6	N320GB5.4K S	NSM8XS	SP1x2M MW	N	6CELL2.2
ENTJ65-644G32Mn	EMEA	Portugal	LX.B760X.002	ENTJ65-644G32Mn VHP32BTPT1 UMACck8 2*2G/320/6L/5R/CB_n2_0.3D_GEc_PT44 EasyNote_TJ65-BT-202 PT	C2DT6400	UMA	N	SO2G BII6	SO2G BII6	N320GB5.4K S	NSM8XS	SP1x2M MW	N	6CELL2.2
ENTJ66-644G25Mn	EMEA	France	LX.B870X.003	ENTJ66-644G25Mn VHP32BTFR1 N10MGE1512Ccw8 2*2G/250/6L/5R/CB_n2_0.3D_GEc_FR64 EasyNote_TJ66-DT-043 FR	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N250GB5.4K S	NSM8XS	SP1x2M MW	N	6CELL2.2
ENTJ66-644G32Bn	EMEA	Portugal	LX.B870X.002	ENTJ66-644G32Bn VHP32BTPT1 N10MGE1512Ccw8 2*2G/320/BT/6L/5R/CB_n2_0.3D_GEc_PT44 EasyNote_TJ66-DT-203 PT	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N320GB5.4K S	NBDCB4XS	SP1x2M MW	BT 2.0	6CELL2.2
ENTJ66-644G32Bn	EMEA	Spain	LX.B870X.001	ENTJ66-644G32Bn VHP32BTES1 N10MGE1512Ccw8 2*2G/320/6L/5R/CB_n2_0.3D_GEc_ES54 EasyNote_TJ65-DT-204 SP//	C2DT6400	N10MGE1	512M-DDR2 (64*16*4)	SO2G BII6	SO2G BII6	N320GB5.4K S	NBDCB4XS	SP1x2M MW	N	6CELL2.2
ENTJ66-424G32Bn	EMEA	Spain	LX.B780X.001	ENTJ66-424G32Bn VHP32BTES1 UMACcw4 2*2G/320/6L/5R/CB_bgn_0.3D_GEc_ES54 EasyNote_TJ65-AU-203 SP	PMDT4200	UMA	N	SO2G BII6	SO2G BII6	N320GB5.4K S	NBDCB4XS	3rd WiFi 1x2 BGN	N	6CELL2.2

APPENDIX A:

APPENDIX B
Test compatible components

- Introduction
- Microsoft® Windows Vista® Environment Test

Introduction

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

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

Microsoft® Windows Vista® Environment Test

Item	Specification
CRT Port Test	
CRT monitor	ViewSonic 19" CRT VCDTS23283-2G Monitor ViewSonic Professional Series G220 21" Monitor Philips 109P 19” Monitor MAG 810FT II 19” Monitor
LCD monitor	ViewSonic 19" LCD VA1912W Monitor ViewSonic 20" LCD VA2012W Monitor Samsung 22" LCD 225DW Monitor Philips 15' 150B5 Monitor ASUS 22” LCD MW221u monitor EIZO 17" LCD FlexScan L586 monitor
HDMI Port Test	
LCD TV	BenQ VH3243 32” HDMI LCD TV Panasonic TC-37MPK 37" HDMI LCD TV BenQ VL3735 LCD TV
USB Port Test	
USB mouse	Logitech USB 2.0 Mouse Logitech Optical Mouse Microsoft Optical Mouse Microsoft TrackBall Optical Logitech Marble Mouse Logitech Performance Optical Mouse Logitech Cordless Optical Mouse
USB keyboard	Microsoft Natural Keyboard Pro Microsoft Digital Media Keyboard Pro Logitech Elite keyboard Logitech Cordless Desktop LX300 Keyboard IBM USB Numeric Keypad 33L3225 COMPAQ USB EAB Keyboard MICROSOFT Wireless Optical Desktop 3000
USB Printer	Samsung ML 1450 Laser Printer Epson Photo830 Printer HP Photosmart 7960 Printer Canon PIXMA IP2000 Printer Lexmark Z52 Printer HP DeskJet 840C Printer
USB speaker	JS USB Digital Speaker J-6502 JS USB speaker USBJ268 Comodow USB 3D sound (Adapter) YAMAHA USB Speaker MS35D
USB scanner	Epson EXPRESSION 1600 Scanner Canon Canonscan CS3200F Epson USB Scanner 1660
USB hub	D-link DU-H4 USB HUB ATEN UH-204 USB 2.0 HUB

Item	Specification
USB game pad / joystick	ALPS USB Game Pad Microsoft SideWinder Plug & Play GamePad Logitech Freedom 2.4GHz cordless Logitech WingMan USB Extreme Digital 3D Joystick Microsoft USB Side Winder Game pad Saitek P2500 Rumble Force Pad Logitech WingMan Formula (warrior) Joystick Logitech Freedom cordless joystick
USB Ethernet/wireless LAN adapter	Afast Ethernet Adapter USB2.0 D-Link Wireless LAN adapter,802.11a/b or b only D-Link AirPlus DWL-120+ 2.4GHz Wireless USB Adapter
USB storage	Zynet 2.5' External Enclosure SATA/ Usb2.0 Box Sony 2.5" ExtERNAL BOX Slim Kit USB 2.0 Mass Storage 2.5" HDD combo case IO DATA 250GB eSATA HDD SanDisk Cruzer USB Flash Drive- Micro 1.0GB HP DL702 USB 128MB Digital Drive Transcend USB 512MB Flash Drive Sandisk USB 2.0 512MB Flash Drive Pioneer DVD+-R/RW Writer
USB modem	US Robotics Courier 56K Modem
USB bridge cable	Z-TEK USB 2.0 Data Bridge Cable
USB floppy drive	NEC FDD IBM USB FDD Sony USB Floppy Disk Driver
Headphone/Microphone Port Test	
Headphone/microphone	Logitech Premium Stereo Headset Headphone+Mic Sennheiser HD202 PHILIPS headphone Logitech Labtec Verse-524 MIC Panasonic Earbud Headphone with Volume Control
Express Card Test	
Gigabit Ethernet LAN card	AboCom ExpressCard/34 Gigabit Ethernet PLANEX Expresscard 1000 BASE-T Gigabit LAN
Wireless LAN card	BELKIN N1 Wireless
Card reader adapter	Hagiwara sys-com Compact Flash/Microdrive Adapter Express Card AboCom ExpressCard/34 5in1 Card Reader
IEEE1394 card	AboCom ExpressCard/54 1394B-800Mbps AboCom ExpressCard/54 1394A-400Mbps
Bluetooth Device Test	
Bluetooth mobile phone headset	Sony Ericsson Bluetooth Headset Motorola HT820 Bluetooth Stereo Headphone

Item	Specification
Multimedia Card Test	
SD/Mini SD/Micro SD card	SanDisk Secure Digital Card 256MB A-DATA Secure Digital Card 4GB 150X Kingston SDHC 8GB Class6 Transcend SD 512MB Transcend 150X Ultra Speed SD 4GB Transcend SD HC 4GB A-DATA 150X Turbo SD 4GB A-DATA miniSD 512MB KINGMAX mini SD Adapter+512MB Mini SD Toshiba SDHC 4GB Class4 SanDisk Micro SD 6GB TOSHIBA Micro SD 2GB
MMC/MMC Plus/MMC Pro/ RS-MMC/RS-MMC Mobile	A-DATA MultiMedia Card 256MB A-DATA MultiMedia Card plus 1GB 200X A-DATA RS-MMC 256MB Transcend MMC Plus 4GB Transcend RS-MMC 512MB Ridata Multimedia Card PRO 256MB Silicon Power RS-MMC Mobile 1GB
MS/MS PRO/MS PRO Duo	Sony Memory Stick Card 128MB Sony Memory Stick Card Pro 256MB SanDisk Memory Stick Pro Duo 256MB SanDisk Memory Stick Pro 256MB Sony Memory Stick PRO Duo Card 4GB+MS Adapter Sony Memory Stick Pro MSX -2GS 2GB SanDisk Memory Stick Pro SDMSV-512 512MB

APPENDIX C
Online support information

Online Support Information

This appendix describes online technical support services available to help you repair your Packard Bell products.

If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer branch offices and regional business units can access our website. However some information sources will require a user ID and password. These can be obtained directly from Acer CSD Taiwan.

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

In the Technical Information section you can download information on all Acer notebook, desktop and server models including:

- Service guides for all models
- User's manuals
- Training materials
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included a PDF file to facilitate the problem-free downloading of our technical material.

Also available on this website are:

- Detailed information on Acer's International Traveler's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

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

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