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<sup>®</sup>
  - Processor: Intel Core<sup>™</sup>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, 1366x768, 1360x768, 1280x768, 1280x720, 1024x768, and 800x600
  - WXGA+: 1680x945, 1366x768, 1280x768, 1280x720, 1024x768, and 800x600
- 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<sup>™</sup> (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<sup>™</sup>/DVD-Super Multi double-layer drive
  - DVD-Super Multi double-layer drive
- 6-in-1 card reader, supporting MultiMediaCard (MMC), MMC+, Secure Digital<sup>™</sup> (SD), xD-Picture Card<sup>™</sup> (xD), Memory Stick<sup>®</sup> (MS), Memory Stick PRO<sup>™</sup> (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<sup>®</sup> WiFi Link 5100 a/b/g/n, Foxconn Atheros HB93 or Liteon Atheris HB93
- WPAN: Bluetooth<sup>®</sup> 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<sup>™</sup> 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

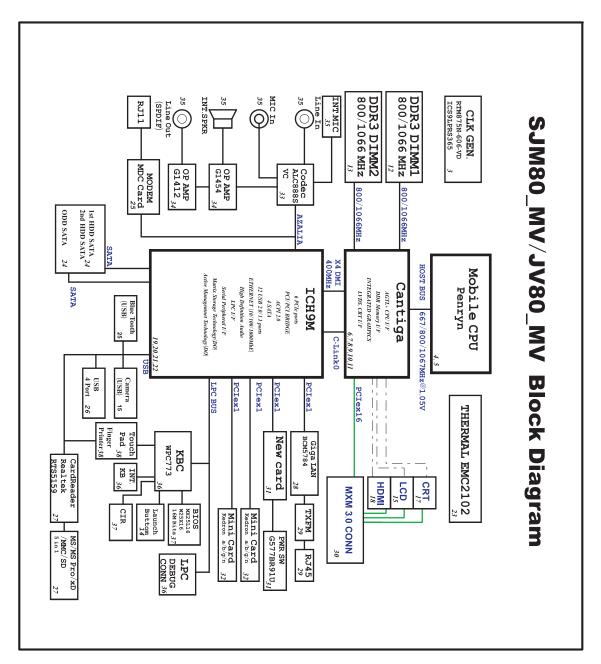
### Physical specifications

- 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                                                 |
|------------------------|---------------------------------------------------------------|
| Туре                   | 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                | <ul><li>N10PGS 1024MB</li><li>N10MGS 512MB</li></ul>                                            |
| Ethernet           | Broadcom BCM5784                                                                                |
| USB 2.0            | Intel ICH9M                                                                                     |
| Bluetooth          | Foxconn Bluetooth BRM 2046 BT2.1                                                                |
| Wireless 802.11    | <ul><li>Intel WiFi Link 5100</li><li>Foxconn Atheros HB93</li><li>Liteon Atheris HB93</li></ul> |
| 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    | <ul><li>1.8V and 0.9V</li><li>1.5V</li></ul>                                                      |  |
| 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<br>ST9160310AS<br>Toshiba<br>MK1655GSX<br>Hitachi<br>HTS543216L9A30<br>0<br>Western Digital<br>WD1600BEVT-22Z<br>CT0 | Seagate<br>ST9250315AS and<br>ST9250320AS<br>Toshiba MK2555GSX<br>Hitachi<br>HTS545025B9A300<br>Western Digital<br>WD2500BEVT-22ZCT<br>0 | Seagate<br>ST9320320AS<br>Toshiba<br>MK3255GSX<br>Hitachi<br>HTS545032B9A30<br>0<br>Western Digital<br>WD3200BEVT-22<br>ZCT0 | Seagate<br>ST9500325AS  Toshiba<br>MK5055GSX  Hitachi<br>HTS545050B9A30<br>0  Western Digital<br>WD5000BEVT-22Z<br>AT0 |
| 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 speci                                         | fications                                                                                                                    |                                                                                                                                          |                                                                                                                              |                                                                                                                        |
| Buffer size                                               | 8MB                                                                                                                          | 8MB                                                                                                                                      | 8MB                                                                                                                          | 8MB                                                                                                                    |
| Interface                                                 | SATA                                                                                                                         | SATA                                                                                                                                     | SATA                                                                                                                         | SATA                                                                                                                   |
| Max. media<br>transfer rate<br>(disk-buffer,<br>Mbytes/s) | 540                                                                                                                          | 540                                                                                                                                      | 850                                                                                                                          | 3.0 GB/s (Max.)<br>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<br>LF<br>PLDS BD COMBO 12.7mm DL 2X DS-4E1S<br>HLDS BD COMBO 12.7mm DL 2X CT-10 |
| Performance sp | pecification                                                                                                                                                       |                                                                                                                     |

| Transfer rate  Sustained:  with CD: Max 3.6 Mbytes/sec  with DVD: Max 10.08 Mbytes/sec  with DVD: AMB  for BD: 4.5 MB  for BD: 4.5 MB   CD:  CD-ROM AX (Mode2 Form1 & 2) - Photo CD, Multi-Session  cD-ROM AX (Mode2 Form1 & 2) - Photo CD, Multi-Session  cD-Extra (CD-Phus (Blue Book) - Audio & Text/Video  cD-Extra (CD-Phus (Blue Book) - Audio & Text/Video  cD-Extra (CD+)  cD-Extra (C | ltom              | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| with CD: Max 3.6 Mbytes/sec     with DVD: Max 10.08 Mbytes/sec     with DVD: Max 10.8 Mbytes/sec     with DVD: Mbytes/sec     with DVD: AVB     for CD/DVD: 2 MB     for BD: 4.5 MB  CD:     CD-CD:     CD-      | Item              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                        |
| Interface SATA  Applicable disc formats  CD: CD-DA (Red Book) - Standard Audio CD & CD-TEXT 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-P) CD-Extra (CD-P) CD-RW & HSRW (Orange Book Part Volume1 & Volume 2) Super Audio CD (SACD) Hybrid type US & US & US + RW DVD: DVD-ROM (Book 1.02), DVD-Dual DVD-ROM (Book 1.02), DVD-Dual DVD-ROM (Book 1.0) 3.9G, 4.7 GB) DVD-R (Book 2.0, 4.7G) - General & Authoring DVD-R (Book 2.0, 4.7G) - General & Authoring DVD-ROM (Version 1.0) DVD+RW DVD-R (Book 2.0) A.7G BD-RD DL 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Transfer rate     | with CD: Max 3.6 Mbytes/sec                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul> <li>with CD: Max 3.6 Mbytes/sec</li> <li>with DVD: Max 10.8 Mbytes/sec</li> </ul> |
| 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-ROM XA (Mode2 Form1 & 2, Ready, Bridge) CD-Extra (CD-I) (Green Book, Mode2 Form1 & 2, Ready, Bridge) CD-Extra (CD-Umlti-session) Video-CD (White 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-ROM DVD-ROM DVD-ROM (Book 1.02), DVD-Dual DVD-ROM (Book 1.0), 3.9G, 4.7 GB) DVD-R (Book 2.0, 4.7G) - General & Authoring DVD+RW DVD-RW (Version 1.0) DVD+RW DVD-RW (Non CPRM & CPRM) 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Buffer memory     | 2 MB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                        |
| disc formats  - 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-ROM (Book 1.0), 3.9G, 4.7 GB) - DVD-R (Book 2.0, 4.7G) - General & Authoring - DVD-R (Porsion 1.0) - DVD-R (Version 1.0) - DVD-R (Version 1.0) - DVD-R Dual  - BIU-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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Interface         | SATA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                        |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   | <ul> <li>CD-DA (Red Book) - Standard Audio CD &amp;</li> <li>CD-ROM (Yellow Book Mode1 &amp; 2) - Stand</li> <li>CD-ROM XA (Mode2 Form1 &amp; 2) - Photo O</li> <li>CD-I (Green Book, Mode2 Form1 &amp; 2, Rea</li> <li>CD-Extra/CD-Plus (Blue Book) - Audio &amp; O</li> <li>Photo CD (multi-session)</li> <li>Video-CD (White Book) - MPEG1 Video</li> <li>CD-Extra (CD+)</li> <li>CD-text</li> <li>CD-R (Orange Book Part)</li> <li>CD-RW &amp; HSRW (Orange Book Part Volunt</li> <li>Super Audio CD (SACD) Hybrid type</li> <li>US &amp; US+ RW</li> <li>DVD:</li> <li>DVD-VIDEO</li> <li>DVD-RAM</li> <li>DVD-ROM (Book 1.02), DVD-Dual</li> <li>DVD-R (Book 1.0, 3.9G, 4.7 GB)</li> <li>DVD-R (Book 2.0, 4.7G) - General &amp; Author</li> <li>DVD-R (Version 1.0)</li> <li>DVD-RW (Non CPRM &amp; CPRM)</li> </ul> | dard Data CD, Multi-Session ady, Bridge) Text/Video  me1 & Volume 2)  pring            |
| mechanism Release: (a) Electrical (release button), (b) ATAPI command, (c) Emergency  Power requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | •                                                                                      |
| · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                        |
| Input voltage 5 V $\pm$ 5% (operating) 5 V $\pm$ 5% (operating)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 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<br>Horizontal: Right/Left<br>Vertical: Upper/Lower | 45/45<br>15/35         |
| Temperature (°C) Operating Storage (shipping)                    | 0 to +50<br>-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<br>size | Shared (up to 384 MB) | 512 MB | 1024MB |

### CHAPTER 1: System specifications

| Item            | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Features        | Intel Gen 5.0 integrated graphics engine with ten, fully-programmable cores Supports HDMI/DVI, DP, TV-Qut, 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<br>voltage | 533 MHz core render clock @ 1.05 V core voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

# Keyboard

| Item                                                                 | Specification                                                                                                              |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Controller                                                           | Winbond WPC773                                                                                                             |
| Туре                                                                 | 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                                                                     |
|---------------|-----------------------------------------------------------------------------------|
| Туре          | <ul><li>Synaptics TM00540-001 Touchpad</li><li>ALPS KGDFF0031A Touchpad</li></ul> |
| Click buttons | Left/Right                                                                        |

# Memory card reader

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

### Wired LAN

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

### Wireless LAN

| Item            | Specification                                                                                                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------|
| Chipset         | <ul><li>Intel WiFi Link 5100</li><li>Foxconn Atheros HB93</li><li>Liteon Atheris HB93</li></ul>                                 |
| Data throughput | 11-54 Mbps, up to 270 Mbps for Draft-N                                                                                          |
| Protocol        | <ul> <li>IEEE 802.11a</li> <li>IEEE 802.11b</li> <li>IEEE 802.11g</li> <li>IEEE 802.11 Draft-N</li> <li>IEEE 802.16e</li> </ul> |
|                 |                                                                                                                                 |

### Bluetooth

| Item                  | Specification                   |
|-----------------------|---------------------------------|
| Chipset               | Broadcom BCM2046                |
| Data throughput       | 2.1 Mbps                        |
|                       |                                 |
| Protocol              | Bluetooth 2.0                   |
| Protocol<br>Interface | Bluetooth 2.0 USB (board level) |

### 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             | <ul><li>Two on the left side</li><li>Two on the right side</li></ul> |

### Buttons/Indicators/Ports

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

### 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                                                           |  |
| Туре                   | 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

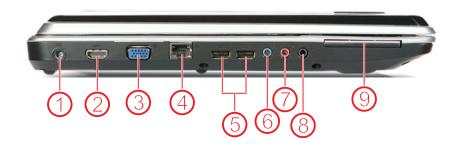


| # | Icon              | Item                 | Description                                                                                                                                                                                                |
|---|-------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | PRO MACHINEDICATE | 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 | <u> </u>          | Battery <sup>1</sup> | 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 | <b>*</b>          | Power <sup>1</sup>   | 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 | <del>8</del>             | Ethernet (RJ-45)<br>port           | Connects to an Ethernet 10/100/1000-based network.                                  |
| 5 | <b>●</b> ←               | USB 2.0 ports                      | Connects to USB 2.0 devices (e.g., USB mouse, USB camera).                          |
| 6 | ( <del>+)</del>          | Line-in jack                       | Accepts inputs from external sound source.                                          |
| 7 | 181)                     | Microphone jack                    | Accepts inputs from external microphones.                                           |
| 8 | ಣ                        | Headphones/spe aker/line-out jack. | Connects to audio line-out devices (e.g., speakers, headphones).                    |
| 9 |                          | ExpressCard/54<br>slot             | Accepts one ExpressCard/54 module.  Note: Push to remove/install the card.          |

# Right View



| # | Icon           | Item                          | Description                                                                                                                                                                           |
|---|----------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | • <del>~</del> | 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. <b>Note:</b> 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 | ĸ              | Kensington lock slot          | Connects to a Kensington-compatible computer security lock.                                                                                                                           |

# Rear View

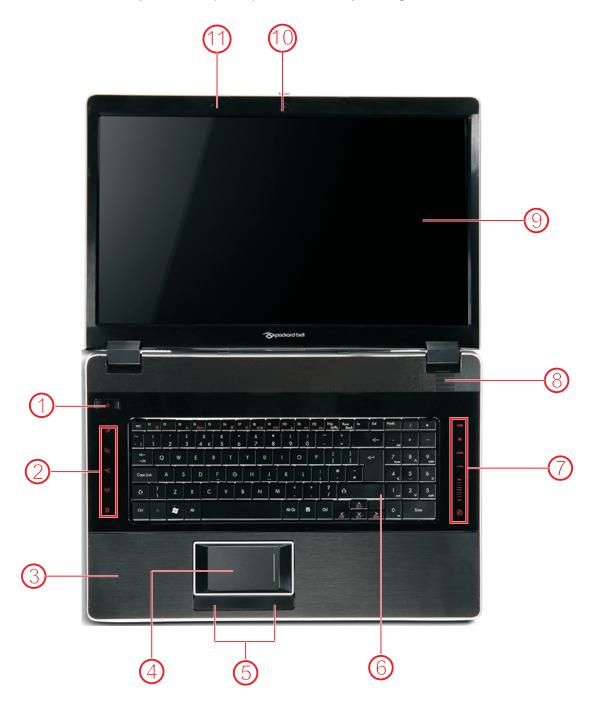


| # | Item              | Description                                                 |
|---|-------------------|-------------------------------------------------------------|
| 1 | Ventilation slots | Enable the computer to stay cool, even after prolonged use. |

# Top View

#### Note:

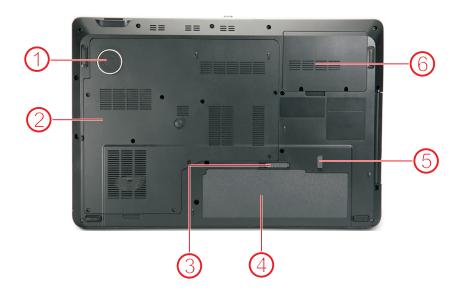
The LCD and the keyboard are separate pictures and were joined together for better clarification.



#### CHAPTER 1: System specifications

| #  | Icon     | Item                           | Description                                                                                            |
|----|----------|--------------------------------|--------------------------------------------------------------------------------------------------------|
| 1  | Ů        | 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.                                            |
|    | <b>√</b> | Acer PowerSmart<br>key         | Puts your computer into power-saving mode.                                                             |
|    | ((t+1))  | 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 | 0    | Battery lock          | Locks the battery in position.                         |
|   | 0    |                       |                                                        |
| 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.

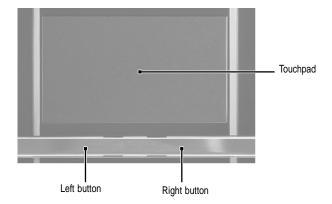
| Key type        | Icon                | Description                                                                                                                                                                                                                                                 |
|-----------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 ${\rm FN}$ 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 | $\overline{\Sigma}$ | 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                                            | <ul> <li>Toggle the notebook display in the following order:</li> <li>The LCD</li> <li>An external monitor or projector (a monitor or projector must be plugged into the monitor port or HDMI port on your notebook)</li> <li>Both displays at the same time</li> </ul>                                                                                   |
| 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<br>•/II                                    | Play or pause the multimedia playback.                                                                                                                                                                                                                                                                                                                    |
| F10                                           | Stop playing the CD or DVD.                                                                                                                                                                                                                                                                                                                               |
| F11                                           | Skip back one CD track or DVD chapter.                                                                                                                                                                                                                                                                                                                    |
| F12<br>▶                                      | Skip ahead one CD track or DVD chapter.                                                                                                                                                                                                                                                                                                                   |

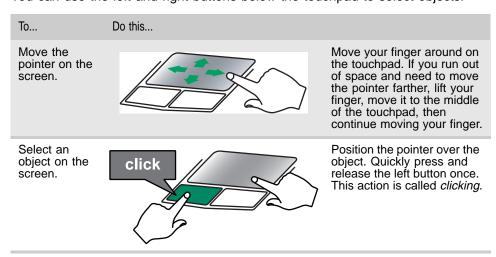
# Touchpad

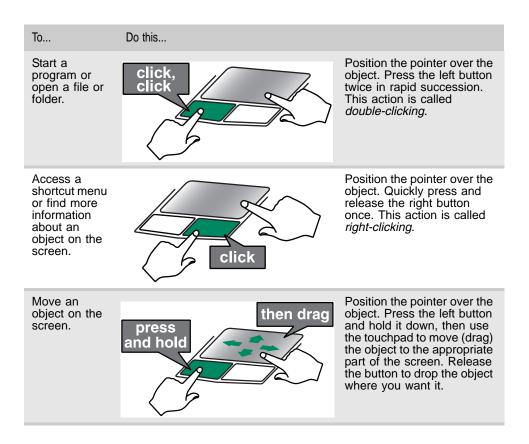


When you move your finger on the touchpad, the *pointer* (arrow) on the screen moves in the same direction. You can use the scroll zone to scroll through documents. Use of the scroll zone may vary from program to program.



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





### 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 1: System specifications

# CHAPTER 2 System utilities

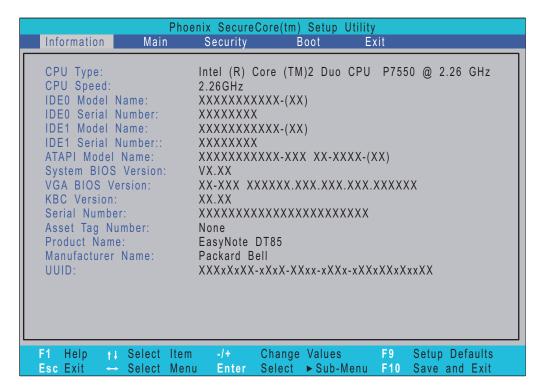
- BIOS setup utility
- BIOS recovery
- Clearing a BIOS password
- Unlocking the hard drive

# 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.

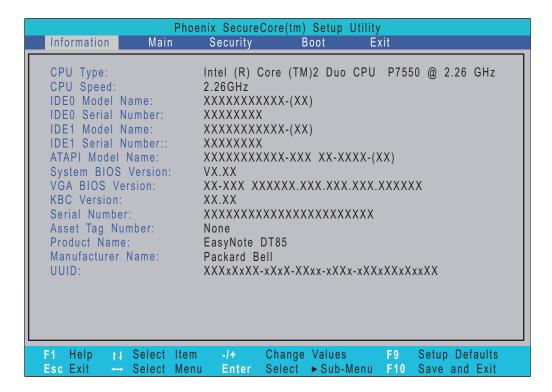


### Important

- 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.



| 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<br>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.

| Information                                                      | Phoenix Secure Main Security                                | Core(tm) Setup Uti<br>Boot       | lity<br>Exit                             |
|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------|------------------------------------------|
| System Time:                                                     | [10:10:10]                                                  |                                  | Item Specific Help                       |
| System Date:                                                     | [06/30/2009]                                                |                                  | <tab>, <shift-tab>, or</shift-tab></tab> |
| Total Memory:  Video Memory:                                     | 4096 MB<br>512 MB                                           |                                  | <enter> selects field.</enter>           |
| Quiet Boot: Network Boot: F12 Boot Menu: D2D Recovery: SATA Mode | [Enabled]<br>[Enabled]<br>[Disabled]<br>[Enabled]<br>[AHCI] |                                  |                                          |
|                                                                  | elect Item -/+                                              | Change Values<br>Select ►Sub-Men | F9 Setup Defaults                        |

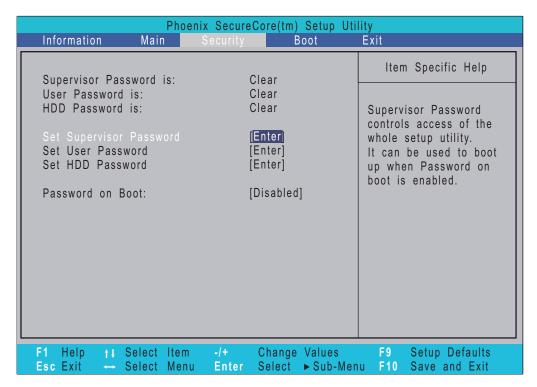
| Parameter    | Description                                                          | Format/Options                   |
|--------------|----------------------------------------------------------------------|----------------------------------|
| System Time  | Displays the system time. The time is expressed in a 24-hour format. | HH:MM:SS<br>(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.           |                                  |

## CHAPTER 2: System utilities

| 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<br><b>Enabled</b> |
| Network Boot  | When enabled, a remote host with appropriate boot image can boot this computer. (only works with an Ethernet device.)                                                                                                                                                                                                                                                                                            | Disabled<br><b>Enabled</b> |
| F12 Boot Menu | Enables or disables the Boot menu during POST.                                                                                                                                                                                                                                                                                                                                                                   | <b>Disabled</b><br>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<br>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<br>IDE                |

## Security

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



| Parameter                  | Description                                                                                                                                                                                                                                                                                                                                                                             | Option                                                |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Supervisor<br>Password Is  | Displays the supervisor password status.                                                                                                                                                                                                                                                                                                                                                | Clear<br>Set                                          |
| User Password Is           | Displays the user password status.                                                                                                                                                                                                                                                                                                                                                      | Clear<br>Set                                          |
| HDD Password Is            | Displays the hard drive password status.                                                                                                                                                                                                                                                                                                                                                | Clear<br>Set                                          |
| Set Supervisor<br>Password | Press Enter to set a supervisor password. When set will allow the user to access and change all setting Utility.                                                                                                                                                                                                                                                                        |                                                       |
| Set User Password          | Press Enter to set a user password. When set, this restrict a user's access to the Setup menus. Only menus will be accessible:  • System Time and System Date  • All Exit menu options excluding Load Setup De Note: A supervisor password must first be set befuser password.  If Password on Boot is enabled, the user must en password each time the notebook is turned on or Sleep. | r the following efaults fore creating a oter the user |

### CHAPTER 2: System utilities

| Parameter           | Description                                                                                                                                                                                                 | Option                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Set HDD<br>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. | <b>Disabled</b><br>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:

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

  The Set User Password box opens.
- 2 Type a password, then press Enter.
- 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.

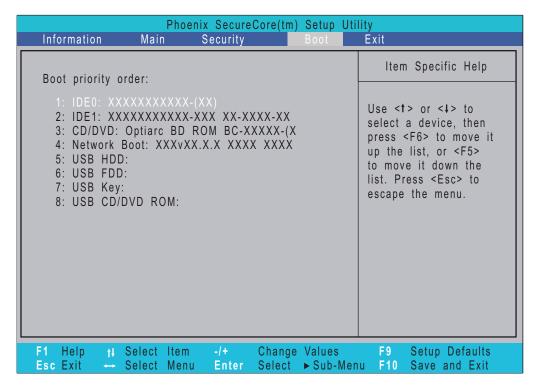
If you have enabled the Password on Boot field and you forget the supervisor password, you will not be able to boot up the computer. The same thing applies if you forget the HDD password.

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**

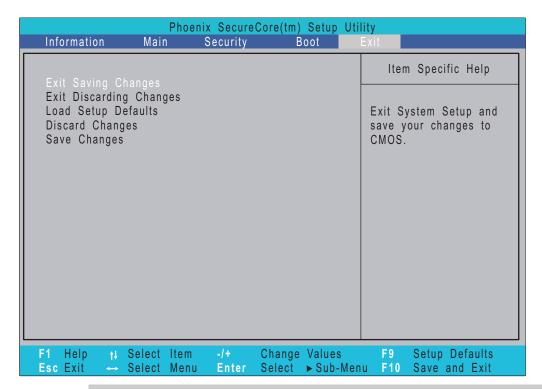
Use the Boot menu to set the preferred drive sequence in which the Setup utility attempts to boot the operating system.



- ▶ To set boot drive sequence:
  - 1 Press  $\uparrow$  or  $\downarrow$  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.

## /i\

#### 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.

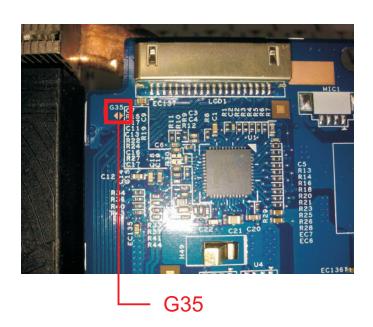
## Running the Flash utility:

- ▶ To run the Flash utility:
  - 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. |



## ▶ 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.
- 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

## **①**

### 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.



- 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



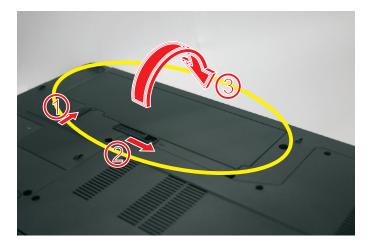
b Pull the memory card out of its slot.



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## 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

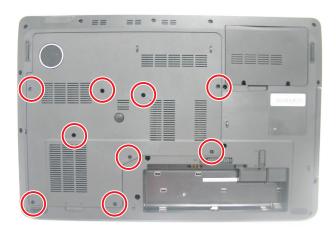
To remove or replace components located on the lower bay, you need to remove the bay cover first.

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.



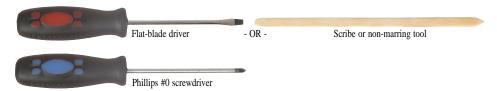
## Adding or replacing memory modules

## 1

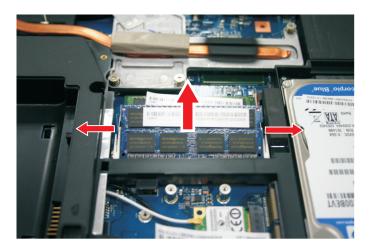
### **Important**

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.



- 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:



## Screws removed during this task:

- 1 1 chrome M2×4 (hard drive 1)
- # # 4 chrome M3x3 (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.



- 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

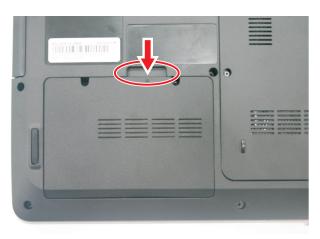
Tools you need to complete this task:



## Screws removed during this task:

- # # # 4 chrome M3x3 (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:



### 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.



- 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.
- 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

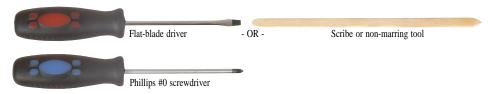
#### Note:

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** 

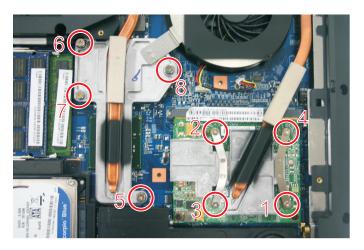
Tools you need to complete this task:



- ▶ To replace the thermal module:
  - 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:



#### ▶ 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.



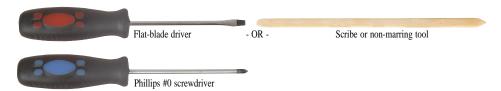
Install the new processor onto the system board making sure that Pin 1 on the processor (indicated by the silk-screened arrow on the corner of the processor) aligns with Pin 1 on the processor socket (indicated by the absence of a pin hole in the processor socket), then use a flat-blade screwdriver to 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<sup>2</sup> 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:

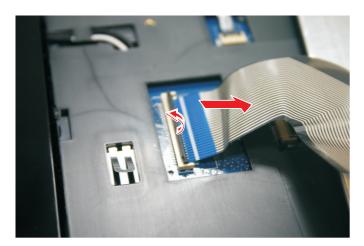
- 1 Complete the steps in "Preparing the notebook" on page 51.
- 2 Complete the steps in "Removing the battery" on page 54.
- 3 Turn the notebook over and open the LCD panel to its fully extended position.
- 4 Use the plastic scribe to release the latches securing the keyboard. The keyboard will pop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



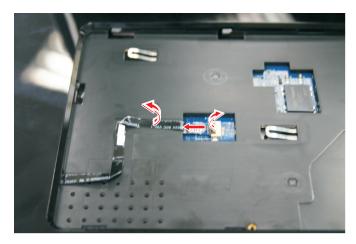
- 7 Connect the cable from the new keyboard into the connector.
- 8 Insert the tabs on the front edge of the keyboard into the slots under the palm rest. You may need to press down on the keyboard keys along the front and side edges of the keyboard to seat the retaining tabs into their corresponding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

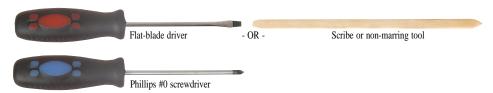
6 Use the plastic scribe to carefully pry loose the middle cover from the latches securing it. Then remove it from the system.



- 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:

- \$\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\mathbb{\ma
- ▶ 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.
- Reinstall the keyboard cover by performing steps 7–8 of the "Replacing the keyboard cover" procedure on page 79.
- 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:

- \$\black \black \text{ LCD panel hinges bottom}\$
- 4 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.
  - 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.
  - 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.

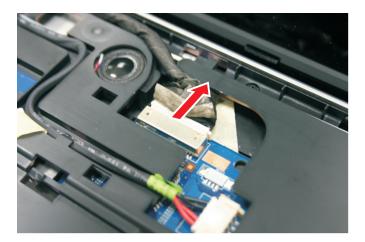


7 Turn the notebook over again so the palm rest is facing up.

8 Remove the tape securing the LCD and microphone cables.

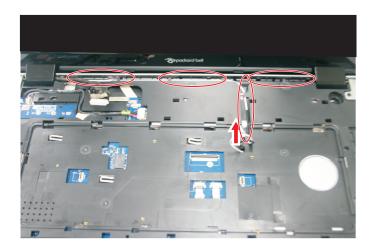


9 Disconnect the LCD and microphone cables from their system board connectors.



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.

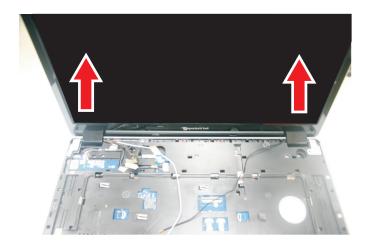
 $11\,\,$  Pull the antenna cables from underneath the computer and release them from the latches.



12 Remove the top hinge screws securing the LCD assembly.



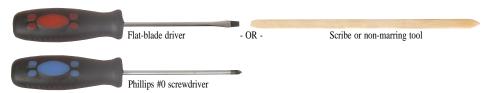
13 Lift the LCD panel assembly up and away from the notebook.



- 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.
- 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:



#### Screws removed during this task:

- 4 2 black M2.5×8 (LCD panel hinges bottom)
- L 2 black M2.5×8 (LCD panel hinges top)
- Jack M2.5x8 (palm rest base side)
- I I 3 black M2.5×8 (palm rest top side)

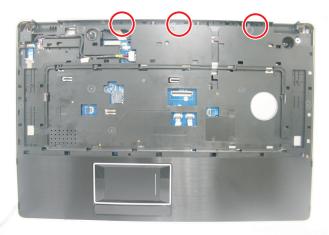
### ▶ To replace the palm rest:

- 1 Complete the steps in "Preparing the notebook" on page 51.
- 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.

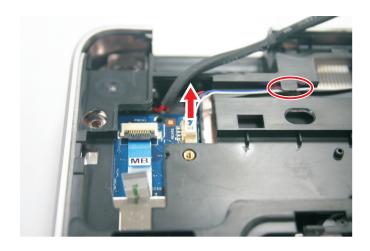
9 Remove the 3 screws securing the palm rest to the base side.



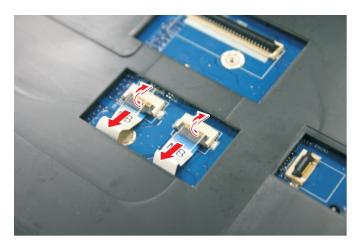
 $10\,\,$  Disconnect the DC-in cable from the system and release the cable from the latches.



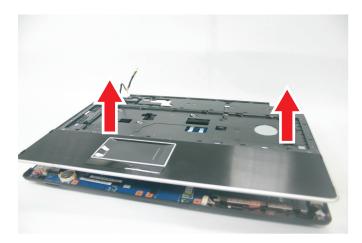
11 Disconnect the left speaker cable from REAR2 connector and release it from the latch.



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.
- 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.
- 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:

- \$\black M2.5x8 (LCD panel hinges bottom)
- \$\black M2.5x8 (LCD panel hinges top)
- Jack M2.5×8 (palm rest base side)
- I I 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.
- 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<sup>2</sup> has been highlighted with a yellow rectangle as shown in the above image. Follow the local regulations for disposing this type of circuit board.

- 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.
- 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.

- 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:

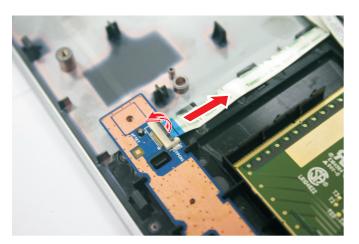
- 4 2 black M2.5×8 (LCD panel hinges bottom)
- 2 black M2.5x8 (LCD panel hinges top)
- Jack M2.5x8 (palm rest base side)
- James Barbara Bar
- # # 2 chrome M2×4 (touchpad button board)

### ▶ To replace the touchpad button board:

- 1 Complete the steps in "Preparing the notebook" on page 51.
- 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.
- 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.
- Reinstall the palm rest by following the instructions in "Replacing the palm rest" on page 87.
- 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.
- 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 M2.5x8 (LCD panel hinges top)
- 🎩 🎩 3 black M2.5×8 (palm rest top side)
- 1 chrome M2x4 (USB board)

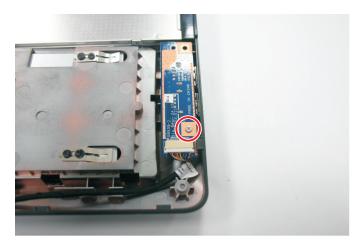
### ▶ To replace the USB board:

- Complete the steps in "Preparing the notebook" on page 51.
- 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.



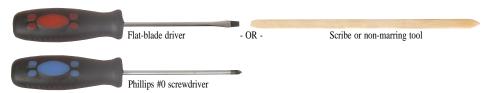
9 Release from latch and remove the USB board from the base enclosure.



- 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.
- 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:

- 4 2 black M2.5×8 (LCD panel hinges bottom)
- \$\black \textbf{M}\$ 2 black M2.5×8 (LCD panel hinges top)
- Jack M2.5×8 (palm rest base side)
- I I 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.
- 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:

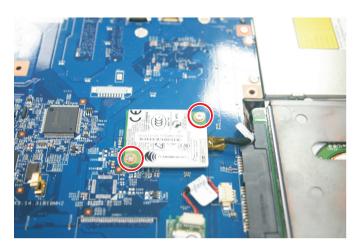


### Screws removed during this task:

- 4 2 black M2.5×8 (LCD panel hinges bottom)
- \$\black \textbf{M}\$ 2 black M2.5×8 (LCD panel hinges top)
- Jablack M2.5x8 (palm rest base side)
- I I 3 black M2.5×8 (palm rest top side)
- # 2 chrome M2×4 (modem board)

### ▶ To replace the modem board:

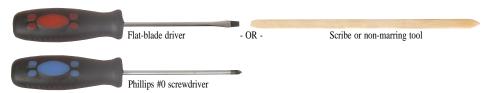
- 1 Complete the steps in "Preparing the notebook" on page 51.
- 2 If the notebook has a wireless card installed, follow step 1 to step 4 in "Replacing the wireless card" on page 58.
- 3 Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77.
- 4 Remove the keyboard 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.
- 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.
- 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:

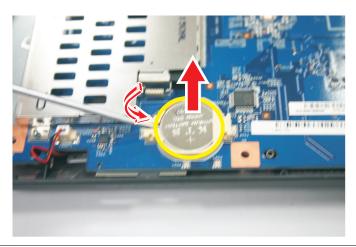


#### Screws removed during this task:

- 4 2 black M2.5×8 (LCD panel hinges bottom)
- \$\black \textbf{M}\$ 2 black M2.5x8 (LCD panel hinges top)
- Jack M2.5x8 (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.
- 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.



## 1

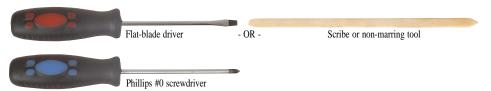
#### Note

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.
- 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:

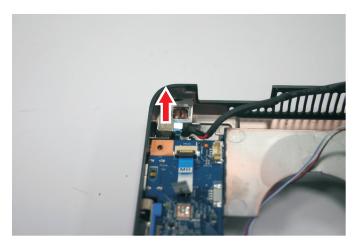


#### Screws removed during this task:

- \$\black \black \text{ LCD panel hinges bottom}\$
- L 2 black M2.5x8 (LCD panel hinges top)
- Jack M2.5×8 (palm rest base side)
- I I 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.

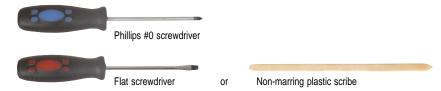


8 Replace the new dc-in cable into the base panel.

- 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:



## Screws removed during this task:

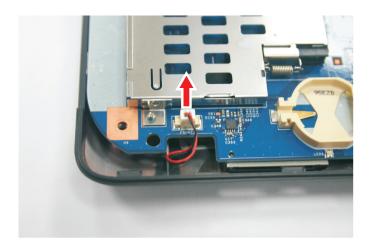
- 1 chrome M2×4 (wireless card)

- # 1 chrome M2×4 (optical drive)
- 1 chrome M2x4 (power button board)
- \$\black \quad \left\ 2 \text{ black M2.5x8 (LCD panel hinges bottom)}
- å å 2 black M2.5×8 (LCD panel hinges top)
- Jablack M2.5x8 (palm rest base side)
- I I I 3 black M2.5x8 (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.
- 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.

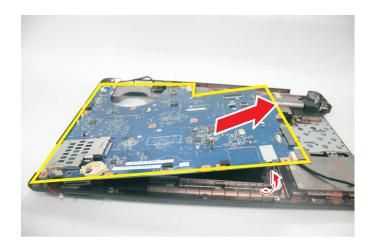
- 9 Remove the CPU by following the instructions in "Replacing the CPU" on page 73.
- 10 If the system comes with a VGA board, remove the VGA board by following the instructions in "Replacing the VGA board (for discrete models)" on page 75.
- 11 Remove the keyboard by following the instructions in "Replacing the keyboard" on page 77.
- 12 Remove the keyboard cover by following the instructions in "Replacing the keyboard cover" on page 79.
- 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.



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<sup>2</sup> 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.
- 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:



## Screws removed during this task:

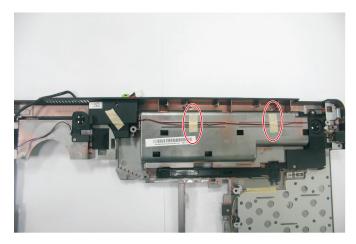
- # 1 chrome M2×4 (wireless card)

- \$\black \textbf{\textit{L}}\$ 2 black M2x4 (optional VGA card)
- # 1 chrome M2x4 (power button board)
- 2 black M2.5x8 (LCD panel hinges bottom)
- å å 2 black M2.5×8 (LCD panel hinges top)
- I I 3 black M2.5×8 (palm rest top side)
- # 2 chrome M2x4 (modem board)
- # # 3 chrome M2x4 (left and right speakers)

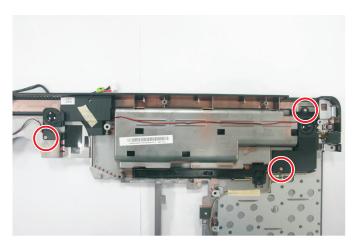
#### ▶ To replace the left and right speakers:

- 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.

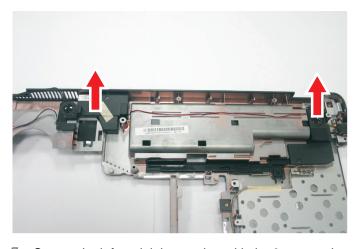
4 Remove the any adhesive tapes securing the speaker cables.



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:

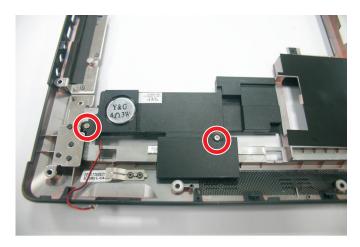
- # 1 chrome M2×4 (wireless card)

- å å 2 black M2x4 (optional VGA card)
- 1 chrome M2x4 (power button board)
- 2 black M2.5×8 (LCD panel hinges bottom)
- L 2 black M2.5×8 (LCD panel hinges top)
- 13 black M2.5×8 (palm rest base side)
- 4 3 black M2.5×8 (palm rest top side)
- # 2 chrome M2x4 (modem board)
- **!** 2 chrome M2x4 (subwoofer)

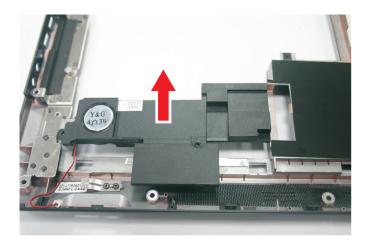
#### ▶ To replace the subwoofer:

- 1 Complete the steps in "Preparing the notebook" on page 51.
- 2 Complete the steps in "Removing the bay cover" on page 55.
- 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:

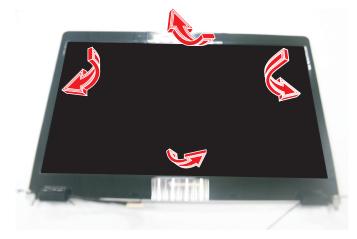


#### Screws removed during this task:

- 2 black M2.5x8 (LCD panel hinges bottom)
- 2 black M2.5×8 (LCD panel hinges top)
- Jack M2.5x8 (palm rest base side)
- I I 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.
- 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.



Remove the microphone from the LCD front panel.

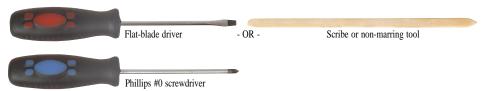


- 9 Replace the microphone and place the new front panel on top of the LCD assembly lid.
- 10 Press the front panel on all sides until it snaps into place.
  Make sure that there is no gap the between the front panel and the LCD assembly lid.
- Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
- Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.
- 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:

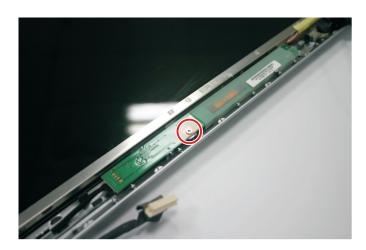


#### Screws removed during this task:

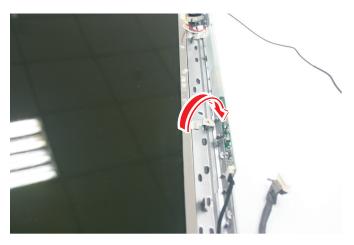
- 4 2 black M2.5x8 (LCD panel hinges bottom)
- L 2 black M2.5×8 (LCD panel hinges top)
- James side) 13 M2.5×8 black (palm rest
- I I 3 black M2.5×8 (palm rest top side)
- 1 chrome M2x3 (inverter board)

#### ▶ To replace the inverter board:

- Complete the steps in "Preparing the notebook" on page 51.
- 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.
- 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.



3 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.
- 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:

- \$\black M2.5x8 (LCD panel hinges bottom)
- 4 2 black M2.5x8 (LCD panel hinges top)
- James Barbara
   James Ba
- 🎩 🎩 3 black M2.5×8 (palm rest top side)
- 4 black M2.5x6 (left hinge)
- 4 black M2.5x6 (right hinge)
- 4 4 3 chrome M2x3 (left LCD bracket)
- 🎩 🦺 🐧 3 chrome M2x3 (right LCD bracket)

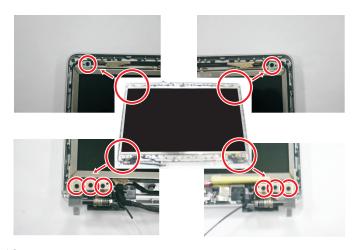
#### ▶ To replace the LCD:

- 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.



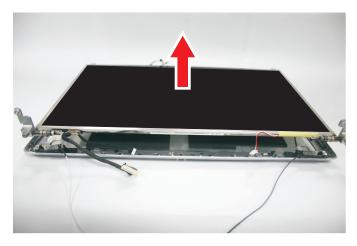
9 Remove the 8 screws from the left and right hinges on the LCD.



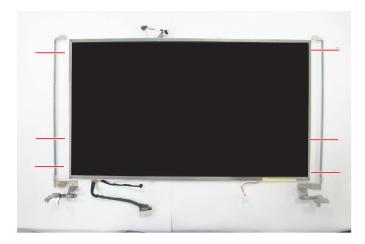
10 Remove the adhesive tape near the webcam area.



11 Remove the LCD from the LCD assembly lid.

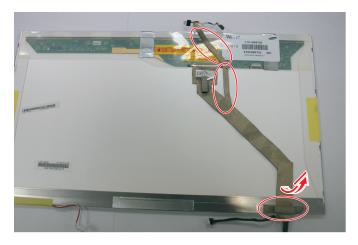


Remove the 6 screws from the left and right LCD panel hinge brackets to remove it.



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.
- 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.
- 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 M2.5x8 (LCD panel hinges bottom)
- 2 black M2.5×8 (LCD panel hinges top)
- James Black (palm rest base side)
- I I I 3 black M2.5x8 (palm rest top side)
- 1 chrome M2x3 (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.
- 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.
- 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.
- 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.
- 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:

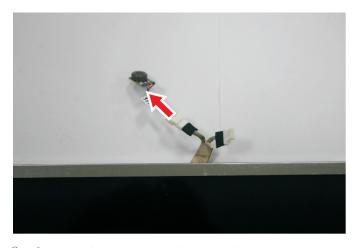


## Screws removed during this task:

- 2 black M2.5×8 (LCD panel hinges bottom)
- 2 black M2.5x8 (LCD panel hinges top)
- James 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.
- 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.
- Replace the LCD front panel by following the instructions in "Replacing the LCD front panel" on page 116.
- 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.
- 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.

т

# Replacing the webcam

Tools you need to complete this task:

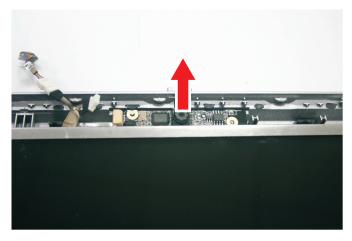


## Screws removed during this task:

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

## ▶ To replace the webcam:

- 1 Complete the steps in "Preparing the notebook" on page 51.
- 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.
- Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
- Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.
- 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:



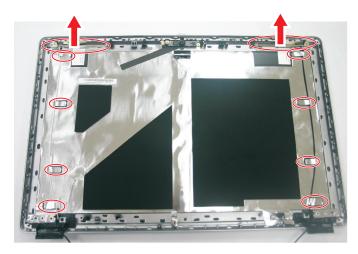
## Screws removed during this task:

- 4 2 black M2.5x8 (LCD panel hinges bottom)
- \$\black M2.5x8 (LCD panel hinges top)
- James Black (palm rest base side)
- I I I 3 black M2.5x8 (palm rest top side)
- 1 chrome M2x3 (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.
- 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.

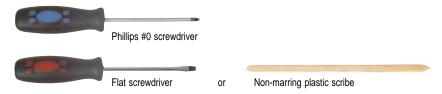
9 Release the antenna cables from the aluminium adhesive tapes securing them and then carefully pry loose the left and right antennas.



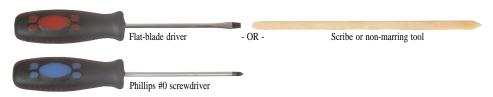
- Secure the new antenna on the LCD assembly lid and route their cables underneath the adhesive tabs.
- 11 Replace the LCD front panel by following the instructions in "Replacing the LCD front panel" on page 116.
- 12 Reinstall the LCD panel assembly by following the instructions in "Replacing the LCD panel assembly" on page 83.
- Reinstall the keyboard cover by following the instructions in "Replacing the keyboard cover" procedure on page 79.
- 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:

- \$\black \black \text{ LCD panel hinges bottom}\$
- L 2 black M2.5x8 (LCD panel hinges top)
- James Black (palm rest base side)
- 1 chrome M2x3 (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.
- 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.
- 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.
- 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.
- 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.
- 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.   | <ul> <li>"Power-On Self-Test (POST) error<br/>message" on page 143</li> <li>"Undetermined problems" on page<br/>157</li> </ul>                                                                                   |
| 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<br>message" on page 143                                                                                                                                                         |
| Symptoms cannot be re-created (intermittent problems).          | <ul> <li>Use the customer-reported symptoms and go to "Power-On Self-Test (POST) error message" on page 143</li> <li>"Intermittent problems" on page 156</li> <li>"Undetermined problems" on page 157</li> </ul> |

## 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.
- 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:

- 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.
  - 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.
  - 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:xxxxx (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 code="" error=""></no> | Battery is critically low. In this situation BIOS issues four short beeps, then shuts the system down. No message is displayed.                                                |
| <no code="" error=""></no> | 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                           | <ul> <li>Reconnect the hard disk drive connector.</li> <li>Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook.</li> <li>Test or replace the hard disk drive.</li> <li>Test or replace the system board.</li> </ul> |
| 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            | <ul><li>Test or replace the BIOS ROM.</li><li>Test or replace the system board.</li></ul>                                                                                                                                                        |
| System RAM Failed at offset: nnnn            | <ul> <li>Test or replace the SO-DIMM.</li> <li>Test or replace the system board.</li> </ul>                                                                                                                                                      |
| Extended RAM Failed at offset: nnnn          | <ul><li>Test or replace the SO-DIMM.</li><li>Test or replace the system board.</li></ul>                                                                                                                                                         |

| Error Monagan                                         | EDIT/Action Coguence                                                                                                                                                                                                                                                       |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                    | <ul> <li>Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.</li> <li>Test or replace the system board.</li> </ul>                                                                                            |
| Real time clock error                                 | <ul> <li>Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.</li> <li>Test or replace the system board.</li> </ul>                                                                                            |
| Previous boot incomplete - Default configuration used | <ul> <li>Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook.</li> <li>Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.</li> <li>Test or replace the system board.</li> </ul> |
| Memory size found by POST differed from CMOS          | <ul> <li>Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook.</li> <li>Test or replace the SO-DIMM.</li> <li>Test or replace the system board.</li> </ul>                                                                                     |
| Diskette drive A error                                | Make sure that the drive is defined with the proper diskette type<br>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                                       | <ul> <li>Test or replace the SO-DIMM.</li> <li>Test or replace the system board.</li> </ul>                                                                                                                                                                                |
| Software NMI Failed                                   | <ul><li>Test or replace the SO-DIMM.</li><li>Test or replace the system board.</li></ul>                                                                                                                                                                                   |
| Fail-Safe Timer NMI Failed                            | <ul><li>Test or replace the SO-DIMM.</li><li>Test or replace the system board.</li></ul>                                                                                                                                                                                   |
| Device Address Conflict                               | <ul> <li>Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook.</li> <li>Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.</li> <li>Test or replace the system board.</li> </ul> |
| Allocation Error for device                           | <ul> <li>Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook.</li> <li>Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system.</li> <li>Test or replace the system board.</li> </ul> |
| Failing Bits: nnnn                                    | <ul> <li>Test or replace the SO-DIMM.</li> <li>Test or replace the BIOS ROM.</li> <li>Test or replace the system board.</li> </ul>                                                                                                                                         |
| Fixed Disk n                                          | None                                                                                                                                                                                                                                                                       |
|                                                       |                                                                                                                                                                                                                                                                            |

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

## No-beep error messages

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

# 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                  |
|      |         |                                                   |

### CHAPTER 4: Troubleshooting

| 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              |
|      |       |                                                       |

### CHAPTER 4: Troubleshooting

| 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 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                      |
| 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                                                                                                                       |
| 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                                                                                                                                                                                                       |
| 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                                                                                                                                                                                                                                             |
| 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                                                                                                                                                                                                                                                                     |
| 9Dh Initialize security engine (optional)  9Eh Enable hardware interrupts  9Fh Determine number of ATA and SCSI drives  A0h Set time of day                                                                                                                                                                                                                                                                                                  |
| 9Eh Enable hardware interrupts  9Fh Determine number of ATA and SCSI drives  A0h Set time of day                                                                                                                                                                                                                                                                                                                                             |
| 9Fh Determine number of ATA and SCSI drives  A0h Set time of day                                                                                                                                                                                                                                                                                                                                                                             |
| 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 Run Time Clock  Initialize video         |
|      |       | Initialize Video  Initialize System Management Mode |
| F3h  | 1     |                                                     |
| F4h  | 1     | Output one beep before boot                         |
| F5h  |       | Boot to Mini DOS                                    |

### CHAPTER 4: Troubleshooting

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

## Power

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

## 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. | <ul> <li>Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook.</li> <li>Test or replace the SO-DIMM.</li> <li>Test or replace the system board.</li> </ul> |  |  |

## Sound

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

## Power management

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

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

## **Devices**

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

## Keyboard and touchpad

| Symptom / Error                                | Action in Sequence                                                                                                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| The keyboard (one or more keys) does not work. | <ul> <li>Reconnect the keyboard cable.</li> <li>Test or replace the keyboard.</li> <li>Test or replace the system board.</li> </ul>       |
| The touchpad does not work.                    | <ul> <li>Reconnect the touchpad cable.</li> <li>Test or replace the touchpad board.</li> <li>Test or replace the system board.</li> </ul> |



#### 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.
- 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

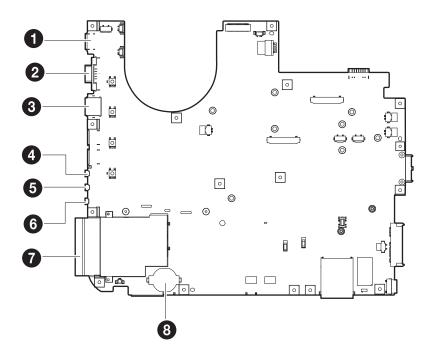
Do not replace a non-defective FRU.

# CHAPTER 5 System board layout

• EasyNote DT85 system board

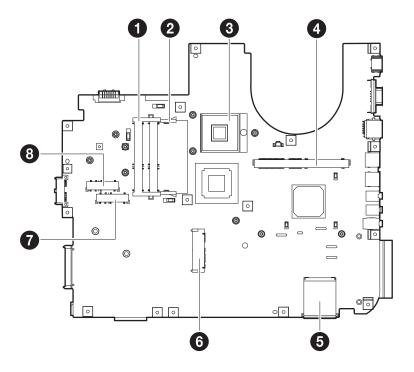
## EasyNote DT85 system board

## 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).

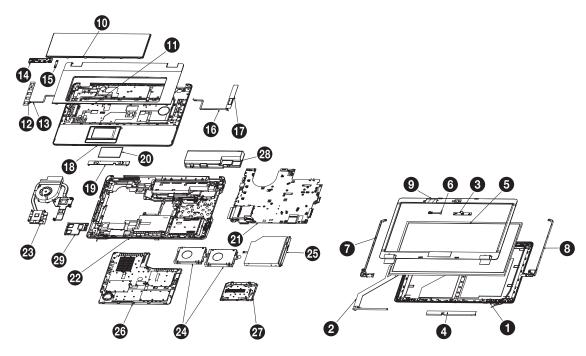
Please note that WHEN ORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have 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

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



## TOUCHPAD SYNAPTICS TM00372-027

TOUCHPAD SYNAPTICS TM00372-027

56.AYP01.001

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MULTI-MEDIA BOARD<br>RIGHT                                                                               | CAPACITIVE<br>BUTTON<br>NS-SJM80-R V     | 55.BCR01.002 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------|--------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MULTI-MEDIA BOARD LEFT                                                                                   | CAPACITIVE<br>BUTTON<br>NS-SJM80-L V     | 55.BCR01.003 |
| FORCE IN THE STATE OF THE STATE | WIRELESS LAN BOARD<br>512AN_MMWG SHIRLEY<br>PEAK 5100 MM#895361                                          | WLAN<br>802.11ABGN<br>SHIRLEYPEAK1*<br>2 | KI.SPM01.003 |
| Washing Care True game and the Care Care Care Care Care Care Care Car                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | WIRELESS LAN BOARD<br>512AG_MMWG SHIRLEY<br>PEAK 5100 MM#897004                                          | WLAN<br>802.11ABG<br>SHIRLEYPEAK1*<br>2  | KI.SPM01.005 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | VGA CARD MSI NVIDIA<br>N10PGS DDRIII 1024M<br>800MHZ 64*16 MXM 3.0<br>TYPE A W/ HYNIX<br>H5TQ1G63BFR-12C | VGA CARD NV<br>N10PGS/1024<br>DDR3       | VG.10P06.005 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | BLUETOOTH BOARD<br>FOXCONN BRM 2046 BT2.1<br>T60H928.33 F/W:861                                          | BT MODULE<br>FOXCONN<br>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<br>CABLE RIGHT     | C.A. MMB R FFC<br>SJM80 TR           | 50.BCR01.002 |
|--------------------------------------|--------------------------------------|--------------|
| MULTI-MEDIA BOARD<br>CABLE RIGHT     | C.A. MMB R FFC<br>SJM80 JH           | 50.BCR01.002 |
| MULTI-MEDIA BOARD<br>CABLE LEFT      | C.A. MMB L FFC<br>SJM80 TR           | 50.BCR01.003 |
| MULTI-MEDIA BOARD<br>CABLE LEFT      | C.A. MMB L FFC<br>SJM80 JH           | 50.BCR01.003 |
| POWER BUTTON BOARD<br>CABLE          | C.A. POWER BD<br>FFC SJM80 JH        | 50.BCR01.001 |
| POWER BUTTON BOARD<br>CABLE          | C.A. POWER BD<br>FFC SJM80 TR        | 50.BCR01.001 |
| BLUETOOTH BOARD<br>CABLE             | C.A BT BB2 HT                        | 50.AYP01.003 |
| BLUETOOTH BOARD<br>CABLE             | C.A BT BB2 HL                        | 50.AYP01.003 |
| POWER CORD 250V 3PIN<br>EUR BK       | CORD EUR 250V<br>3P BK               | 27.T30V1.004 |
| POWER CABLE 16A 250V<br>3PIN EUR BK  | CORD 16A 250V<br>3P EUR BK           | 27.01518.731 |
| POWER CORD 10A 250V<br>SWISS         | CODE SWISS<br>2.5A 250V 3P BK        | 27.01518.581 |
| POWER CORD 10A 250V<br>3PIN SWISS BK | CODE 10A 250V<br>3P SWISS BK         | 27.01518.691 |
| POWER CORD 10A 250V<br>ARGENTINE     | CORD<br>ARGENTINE,10A<br>250V3G,1.8M | 27.01518.0U1 |
| POWER CORD 10A 125V US               | CODE US 7A<br>125V BK                | 27.T30V1.001 |
| POWER CORD 10A 125V<br>3PIN US BK    | CODE 10A 125V<br>3P US BK            | 27.01518.641 |
| POWER CORD 7A 250V<br>2PIN KOREAN    | CORD 7A250V<br>2P 1830 KOREAN        | 27.01518.531 |
|                                      |                                      |              |

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

|                       | POWER CORD ACA / ACNZ                   | POWER CODE<br>ACA / ACNZ<br>ANNIE    | 27.03218.021 |
|-----------------------|-----------------------------------------|--------------------------------------|--------------|
|                       | POWER CORD 7.5A 250V 3P<br>AUSTRALIA BK | CODE 7.5A 250V<br>3P AUSTRALIA<br>BK | 27.03218.051 |
|                       | POWER CODE 7A 125V<br>2PIN JAPAN        | CODE 7A 125V<br>JAPAN 2PIN BK        | 27.03518.161 |
| CASE/COVER/BRACKET AS | SEMBLY                                  |                                      |              |
| E                     | NEW CARD DUMMY CARD                     | CVR NEW CARD<br>DUMMY CARD<br>SJM80  | 42.BCR01.004 |
|                       | CARD READER DUMMY<br>CARD               | CARD READER<br>DUMMY CARD<br>HOMA    | 42.TQ901.003 |
|                       | UNITLOAD COVER                          | ASSY BIG DOOR<br>SJM80               | 42.BCR01.002 |
|                       | HDD COVER                               | ASSY HDD<br>DOOR SJM80               | 42.BCR01.003 |
|                       | MIDDLE COVER                            | ASSY KB COVER<br>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**

| <u> </u> |                              |                                  |              |
|----------|------------------------------|----------------------------------|--------------|
|          | SPEAKER PACK RIGHT & LEFT    | SPEAKER R&L<br>SJM80 FG          | 23.BCR01.001 |
|          | SPEAKER PACK RIGHT &<br>LEFT | SPEAKER YG<br>SJM80              | 23.BCR01.001 |
|          | SPEAKER SUBWOOFER            | SPEAKER<br>SUBWOOFER<br>SJM80 FG | 23.BCR01.002 |
|          | SPEAKER SUBWOOFER            | WOOFER YG<br>SJM80               | 23.BCR01.002 |
|          | T ACCEMBLY                   |                                  |              |

#### ODD/CASE/COVER/BRACKET ASSEMBLY



BLU-RAY COMBO MODULE 4X SATA

ODD NBDCB4XS BLU-RAY DISC 6M.BCR01.002

| ODD PLDS BD COMBO<br>12.7MM TRAY DL 4X<br>DS-4E1S LF W/O BEZEL<br>SATA     | BD COMBO SATA<br>PLDS DS-4E1S        | KO.0040F.001 |
|----------------------------------------------------------------------------|--------------------------------------|--------------|
| ODD PIONEER BD COMBO<br>12.7 SATA DL 4X<br>BDC-TD01RS LF W/O BEZEL<br>SATA | BD COMBO<br>SATPIONEER<br>BDC-TD01RS | KO.00405.002 |
| ODD SONY BD COMBO<br>12.7MM TRAY DL 4X<br>BC-5500S LF W/O BEZEL<br>SATA    | BD COMBO SATA<br>SONY BC-5500S       | KO.0040E.001 |

|                            | DVD-RW SUPER-MULTI<br>MODULE 8X SATA                                                | ODD NSM8XS<br>SUPER-MULTI<br>DRIVE     | 6M.BCR01.001 |
|----------------------------|-------------------------------------------------------------------------------------|----------------------------------------|--------------|
|                            | ODD TOSHIBA<br>SUPER-MULTI DRIVE<br>12.7MM TRAY DL 8X SATA<br>TS-L633B LF W/O BEZEL | ODD SM SATA<br>12.7 TL TS-L633B        | KU.00801.030 |
|                            | ODD HLDS SUPER-MULTI<br>DRIVE 12.7MM TRAY DL 8X<br>GT20N LF W/O BEZEL SATA          | ODD SM SATA<br>12.7 TL HLDS<br>GT20N   | KU.0080D.040 |
|                            | ODD SONY SUPER-MULTI<br>DRIVE 12.7MM TRAY DL 8X<br>AD-7580S LF W/O BEZEL<br>SATA    | S-MULTI SATA<br>SONY AD-7580S          | KU.0080E.017 |
|                            | ODD PLDS SUPER-MULTI<br>DRIVE 12.7MM TRAY DL 8X<br>SATA DS-8A3S LF W/O<br>BEZEL     | ODD SM SATA<br>12.7 TL DS-8A3S         | KU.0080F.004 |
| -                          | OPTICAL BRACKET                                                                     | BRKT ODD<br>BRACKET BB2                | 33.AYP01.001 |
|                            | BLUE-RAY COMBO BEZEL                                                                | ASSY ODD<br>BEZEL<br>BLUE-RAY<br>SJM80 | 42.BCR01.006 |
|                            | DVD-RW SUPER-MULTI<br>BEZEL                                                         | ASSY ODD<br>BEZEL S-MULTI<br>SJM80     | 42.BCR01.005 |
| CPU/PROCESSOR              |                                                                                     |                                        |              |
| CPU KC87R01DPP919DF6D32200 | CPU INTEL CORE2DUAL<br>T6500 PGA 2.1G 2M 800 R-0                                    | IC CPU PENRYN<br>T6500 2.1G PGA        | KC.65001.DTP |
|                            | CPU INTEL CORE2DUAL<br>P7350 PGA 2.0G 3M 1066<br>25W                                | IC CPU PENRYN<br>P7350 2.0G PGA        | KC.73501.DPP |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>P7450 2.13G 3M 1066 TJ<br>NOVT                      | IC CPU PENRYN<br>P7450 2.13G<br>PGA      | KC.74501.DPP |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------|--------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>P7550 PGA 2.26G 3M 1066<br>R-0                      | IC CPU PENRYN<br>P7550 2.26G<br>PGA      | KC.75501.DPP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>P8600 2.4G 3M 1066 25W<br>R-0                       | IC CPU PENRYN<br>P8600 2.4G PGA          | KC.86R01.DPP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>P8600 PGA 2.4G 1066 25W<br>3M                       | IC CPU PENRYN<br>P8600 2.4G PGA          | KC.86001.DPP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>P8700 2.53G 3M 1066 25W<br>R-0                      | IC CPU PENRYN<br>P8700 2.53G<br>PGA      | KC.87R01.DPP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>P8800 PGA 2.66G 3M 1066<br>25W R-0                  | IC CPU PENRYN<br>P8800 2.66G<br>PGA      | KC.88R01.DPP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>T6400 2.0G 3M 800 35W R-0                           | IC CPU PENRYN<br>T6400 2.0G PGA          | KC.64001.DTP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>T6600 2.2G 2M 800 35W R-0                           | IC CPU PENRYN<br>T6600 2.2G PGA          | KC.66001.DTP |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CPU INTEL CORE2DUAL<br>PENRYN T9550 2.66G 6M<br>1066 35W E-0               | IC CPU PENRYN<br>T9550 2.66G PGA         | KC.95501.DTP |
| HDD/HARD DISK DRIVE/CAS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SE/COVER/BRACKET ASSEMBL                                                   | .Y                                       |              |
| The state of the s | HDD 160GB 5400RPM SATA<br>SEAGATE ST9160310AS<br>F/W:2010                  | HDD 160GB<br>SEAGATE<br>ST9160310AS      | KH.16001.034 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | HDD 160GB 5400RPM SATA<br>TOSHIBA LIBRA-BS<br>MK1655GSX F/W:FG0101J<br>5.4 | HDD 160GB<br>TOSHIBA<br>MK1655GSX        | KH.16004.006 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | HDD 160GB 5400RPM 2.5"<br>SATA HGST<br>HTS543216L9A300<br>F/W:C30C         | HDD 160GB<br>HGST<br>HTS543216L9A3<br>00 | KH.16007.019 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | HDD 160GB 5400RPM SATA<br>HGST PANTHER-B<br>PANTHER-B<br>HTS545016B9A300   | HDD 160GB<br>HGST<br>HTS545016B9A3<br>00 | KH.16007.024 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | F/W:C60F                                                                   |                                          |              |

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

| 3 6      | HDD BRACKET                                                                          | ASSY 60 HDD<br>BRK BB2                   | 33.AYP01.002 |
|----------|--------------------------------------------------------------------------------------|------------------------------------------|--------------|
| HEATSINK |                                                                                      |                                          |              |
|          | CPU HEATSINK DISCRETE<br>W/FAN                                                       | ASSY THERMAL<br>FOXCONN PX<br>SJM80      | 60.BCR01.003 |
|          | CPU HEATSINK UMA W/FAN                                                               | ASSY THERMAL<br>FOXCONN<br>SJM80         | 60.BC801.001 |
| KEYBOARD |                                                                                      |                                          |              |
|          | KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>FRENCH          | KB<br>MP-07F36F0-442<br>4H FR 100GP7T    | KB.I170G.094 |
|          | KEYBOARD 99KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK US<br>INTERNATIONAL | KB<br>MP-07F33U4-442<br>4H USI 99GP7T    | KB.I170G.111 |
|          | KEYBOARD 99KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK ARABIC              | KB<br>MP-07F33A0-442<br>4H AR 99 GP7T    | KB.I170G.087 |
|          | KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>SWISS/G         | KB<br>MP-07F36CH-44<br>24H SW<br>100GP7T | KB.I170G.107 |
|          | KEYBOARD 99KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>CHINESE          | KB<br>MP-07F33RC-44<br>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<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>PORTUGUESE                   | KB<br>MP-07F36P0-442<br>4H PT 100GP7T | KB.I170G.102 |
|---------------------------------------------------------------------------------------------------|---------------------------------------|--------------|
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK DANISH                          | KB<br>MP-07F36DK-442<br>4H DK 100GP7T | KB.I170G.092 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK ITALIAN                         | KB<br>MP-07F36I0-4424<br>H IT 100GP7T | KB.I170G.098 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>GERMAN                       | KB<br>MP-07F36D0-442<br>4H GR 100GP7T | KB.I170G.095 |
| KEYBOARD 99KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK US<br>INTERNATIONAL W/<br>HEBREW | KB<br>MP-07F33HB-442<br>4H HE 99 GP7T | KB.I170G.112 |
| KEYBOARD 103KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>JAPANESE                     | KB<br>MP-07F30J04424<br>JAP 104 GP7T  | KB.I170G.099 |
| KEYBOARD 99KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK GREEK                            | KB<br>MP-07F33GR-44<br>24H GK 99 GP7T | KB.I170G.096 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>NORWEGIAN                    | KB<br>MP-07F36N0-442<br>4H NO 100GP7T | KB.I170G.101 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>HUNGARIAN                    | KB<br>MP-07F36HU-44<br>24H HU 100GP7T | KB.I170G.097 |
| KEYBOARD 99KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>RUSSIAN                       | KB<br>MP-07F33SU-442<br>4H RU 99 GP7T | KB.I170G.103 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>SPANISH                      | KB<br>MP-07F36E0-442<br>4H SP 100GP7T | KB.I170G.105 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>TURKISH                      | KB<br>MP-07F36TQ-442<br>4H TR 100GP7T | KB.I170G.109 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK UK                              | KB<br>MP-07F36GB-44<br>24H UK 100GP7T | KB.I170G.110 |
| KEYBOARD 100KEYS GP7T<br>SJV70/SJV50 INTERNAL17<br>STANDARD BLACK<br>SWEDEN                       | KB<br>MP-07F36S0-442<br>4H SE 100GP7T | KB.I170G.106 |

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

### CHAPTER 6: FRU (Field-Replaceable Unit) list

| CAMERA 1.0M SUYIN<br>CN1014-S36B-OV01-1                                  | CAMERA 1M<br>CN1014-S36B-O<br>V01-1 | 57.PCC01.002 |
|--------------------------------------------------------------------------|-------------------------------------|--------------|
| LCD BRACKET RIGHT<br>W/HINGE                                             | HINGE R SJM80<br>LH                 | 33.BCR01.001 |
| LCD BRACKET RIGHT<br>W/HINGE                                             | HINGE R SJM80<br>SZS                | 33.BCR01.001 |
| LCD BRACKET LEFT<br>W/HINGE                                              | HINGE L SJM80<br>LH                 | 33.BCR01.002 |
| LCD BRACKET LEFT<br>W/HINGE                                              | HINGE L SJM80<br>SZS                | 33.BCR01.002 |
| LCD COVER 18.4" IMR<br>BLACK W/ANTENNA*2 &<br>PACKARD BELL LOGO<br>PLATE | ASSY LCD PNL<br>IMR 1X2 SJM80<br>PB | 60.BCR01.005 |
| LCD BEZEL W/PACKARD<br>BELL LOGO & CAMERA<br>HOLE                        | ASSY LCD<br>BEZEL PB SJM80          | 60.BCR01.004 |

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

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

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| SCREW M2.5X4L NI NYLOK | SCRW M2.5X4L<br>NI NYLOK | 86.00H36.534 |
|------------------------|--------------------------|--------------|
| SCREW M2*4 WAFER NI    | SCRW M2*4<br>WAFER NI    | 86.9A552.4R0 |
| SCREW M2.5*3 WAFER NI  | SCRW M2.5*3<br>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<br>1  | Memory<br>2  | HDD 1(GB)       | ODD          | Wireless<br>LAN        | Bluetooth | Battery  |
|---------------------|------|--------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|----------|-------------|--------------------------------|--------------|--------------|-----------------|--------------|------------------------|-----------|----------|
| ENTJ65-424G32M<br>n | EMEA | Portug<br>al | LX.B750Y.00<br>1 | ENTJ65-424G32Mn<br>VHB32BTPT1<br>N10MGE1512Cck4<br>2"2G/320/6L/5R/CB_bgn<br>_0.3D_GEc_PT41<br>EasyNote_TJ65-CU-200<br>PT       | PMDT4200 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NSM8XS       | 3rd WiFi<br>1x2<br>BGN | N         | 6CELL2.2 |
| ENTJ65-643G25M<br>n | EMEA | Turkey       | LX.B610Y.00<br>1 | ENTJ65-643G25Mn EM<br>VHB32BTTR1<br>N10MGE1512Cck8<br>2G+1G/250/BT/6L/5R/C<br>B_n2_0.3D_GEc_TR31<br>EasyNote_TJ65-DT-002<br>TK | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO1G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | BT 2.1    | 6CELL2.2 |
| ENTJ65-643G32M<br>n | EMEA | Portug<br>al | LX.B610X.00<br>6 | ENTJ65-643G32Mn<br>VHP32BTPT1<br>N10MGE1512Cck8<br>2G+1G/320/6L/5R/CB_n<br>2_0.3D_GEc_PT44<br>EasyNote_TJ65-DT-206<br>PT       | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO1G<br>BII6 | N320GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ65-644G25M<br>n | EMEA | France       | LX.B610X.00<br>5 | ENTJ65-644G25Mn<br>VHP32BTFR1<br>N10MGE1512Cck8<br>2*2G/250/6L/5R/CB_n2_<br>0.3D_GEc_FR64<br>EasyNote_TJ65-DT-042<br>FR        | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ65-644G32B<br>n | EMEA | Spain        | LX.B610X.00<br>4 | ENTJ65-644G32Bn<br>VHP32BTES1<br>N10MGE1512Cck8<br>2*2G/320/6L/5R/CB_n2_<br>0.3D_GEC_ES54<br>EasyNote_TJ65-DT-204<br>SP        | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NBDCB4<br>XS | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ65-644G50M<br>n | EMEA | Portug<br>al | LX.B610X.00<br>3 | ENTJ65-644G50Mn<br>VHP32BTPT1<br>N10MGE1512Cck8<br>2*2G/500_L/BT/6L/5R/C<br>B n2_0.3D_GEc_PT44<br>EasyNote_TJ65-DT-201<br>PT   | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N500GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | BT 2.0    | 6CELL2.2 |

| Model               | RO   | Country        | Acer Part No      | Description                                                                                                              | CPU      | VGA Chip    | VRAM 1                         | Memory<br>1  | Memory<br>2  | HDD 1(GB)       | ODD          | Wireless<br>LAN        | Bluetooth | Battery  |
|---------------------|------|----------------|-------------------|--------------------------------------------------------------------------------------------------------------------------|----------|-------------|--------------------------------|--------------|--------------|-----------------|--------------|------------------------|-----------|----------|
| ENTJ65-744G50B<br>n | WW   | WW             | \$2.B610Y.00<br>3 | ENTJ65-744G50Bn<br>VHB32BWW1<br>N10MGE1512Cck8<br>2*2G/500 L/BT/6L2.8/5R<br>/CB_n2_0.3D_GEc_EN1<br>1                     | C2DP7450 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N500GB5.4K<br>S | NBDCB4<br>XS | SP1x2M<br>MW           | BT 2.0    | 6CELL2.8 |
| ENTJ65-744G50M<br>n | ww   | ww             | S2.B610Y.00<br>2  | ENTJ65-744G50Mn<br>VHB32BWW1<br>N10MGE1512Cck8<br>2*2G/500_L/BT/6L2.8/5R<br>/CB_n2_0.3D_GEc_EN1<br>1                     | C2DP7450 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N500GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | BT 2.0    | 6CELL2.8 |
| ENTJ65-644G32M<br>n | EMEA | Spain          | LX.B610X.00<br>2  | ENTJ65-644G32Mn<br>VHP32BTES1<br>N10MGE1512Cck8<br>2*2G/320/6L/5R/CB_n2_<br>0.3D_GEc_ES54<br>EasyNote_TJ65-DT-202<br>SP  | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ65-643G25M<br>n | EMEA | France         | LX.B610X.00<br>1  | ENTJ65-643G25Mn<br>VHP92BTFR1<br>N10MGE1512Cck8<br>2G+1G/250/6L/5R/CB_n<br>2_0.3D_GEc_FR64<br>EasyNote_TJ65-DT041F<br>R  | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO1G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ65-744G50M<br>n | WW   | ww             | S2.B610Y.00<br>1  | ENTJ65-744G50Mn<br>VHB64BWW2<br>N10MGE1512Cbnh<br>2*2G/500_L/BT/6L/5R/C<br>B_n3_0.3D_GEc_EN11                            | C2DP7450 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N500GB5.4K<br>S | NSM8XS       | SP3x3M<br>MW           | BT 2.0    | 6CELL2.2 |
| ENTJ65-423G25M<br>n | EMEA | France         | LX.B860Y.00<br>1  | ENTJ65-423G25Mn<br>VHB32BTFR1 UMACck4<br>1G+2G/250/6L/5R/CB_b<br>gn_0.3D_GEc_FR61<br>EasyNote_TJ65-AU026F<br>R           | PMDT4200 | UMA         | N                              | SO1G<br>BII6 | SO2G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | 3rd WiFi<br>1x2<br>BGN | N         | 6CELL2.2 |
| ENTJ65-422G25M<br>i | EMEA | Russia         | LX.B860X.00<br>2  | ENTJ65-422G25Mi<br>VHP32BTRU2 UMACck4<br>2*1G/250/BT/6L/5R/CB_<br>bg_0.3D_GEc_RU41<br>EasyNote_TJ65-AU-001<br>RU         | PMDT4200 | UMA         | N                              | SO1G<br>BII6 | SO1G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | 3rd WiFi<br>1x2<br>BGN | BT 2.0    | 6CELL2.2 |
| ENTJ65-422G25M<br>n | EMEA | Middle<br>East | LX.B860X.00<br>1  | ENTJ65-422G25Mn EM<br>VHP32BTMEA<br>UMACck4<br>2*1G/250/BT/6L/5R/CB_<br>bgn_0.3D_GEc_AR65<br>EasyNote_TJ65-AU-001<br>UEA | PMDT4200 | UMA         | N                              | SO1G<br>BII6 | SO1G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | 3rd WiFi<br>1x2<br>BGN | BT 2.0    | 6CELL2.2 |
| ENTJ65-901G16M<br>n | WW   | WW             | S2.B860X.00<br>1  | ENTJ65-901G16Mn<br>VHP32BWW2 UMACck4<br>1*1G/160/6L/5R/CB_bgn<br>_0.3D_GEc_EN11                                          | CM900    | UMA         | N                              | SO1G<br>BII6 | N            | N160GB5.4K<br>S | NSM8XS       | 3rd WiFi<br>1x2<br>BGN | N         | 6CELL2.2 |

| Model               | RO   | Country      | Acer Part No     | Description                                                                                                                | CPU      | VGA Chip    | VRAM 1                         | Memory<br>1  | Memory<br>2  | HDD 1(GB)       | ODD          | Wireless<br>LAN        | Bluetooth | Battery  |
|---------------------|------|--------------|------------------|----------------------------------------------------------------------------------------------------------------------------|----------|-------------|--------------------------------|--------------|--------------|-----------------|--------------|------------------------|-----------|----------|
| ENTJ65-643G32M<br>n | EMEA | Portug<br>al | LX.B760X.00<br>1 | ENTJ65-643G32Mn<br>VHP32BTPT1 UMACck8<br>2G+1G/320/6L/5R/CB_n<br>2_0.3D_GEc_PT44<br>EasyNote_TJ65-BT-206<br>PT             | C2DT6400 | UMA         | N                              | SO2G<br>BII6 | SO1G<br>BII6 | N320GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ65-644G32M<br>n | EMEA | Portug<br>al | LX.B760X.00<br>2 | ENTJ65-644G32Mn<br>VHP32BTPT1 UMACck8<br>2*2G/320/6L/5R/CB_n2_<br>0.3D_GEc_PT44<br>EasyNote_TJ65-BT-202<br>PT              | C2DT6400 | UMA         | N                              | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ66-644G25M<br>n | EMEA | France       | LX.B870X.00<br>3 | ENTJ66-644G25Mn<br>VHP32BTFR1<br>N10MCE1512Ccw8<br>2*2G/250/6L/5R/CB_n2_<br>0.3D_GEc_FR64<br>EasyNote_TJ66-DT-043<br>FR    | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N250GB5.4K<br>S | NSM8XS       | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ66-644G32B<br>n | EMEA | Portug<br>al | LX.B870X.00<br>2 | ENTJ66-644G32Bn<br>VHP32BTPT1<br>N10MGE1512Ccw8<br>2*2G/320/BT/6L/5R/CB_<br>n2_0.3D_GEc_PT44<br>EasyNote_TJ66-DT-203<br>PT | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NBDCB4<br>XS | SP1x2M<br>MW           | BT 2.0    | 6CELL2.2 |
| ENTJ66-644G32B<br>n | EMEA | Spain        | LX.B870X.00<br>1 | ENTJ66-644G32Bn<br>VHP32BTES1<br>N10MGE1512Ccw8<br>2*2G/320/6L/5R/CB_n2_<br>0.3D_GEC_ES54<br>EasyNote_TJ65-DT-204<br>SP//  | C2DT6400 | N10MGE<br>1 | 512M-<br>DDR2<br>(64*16<br>*4) | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NBDCB4<br>XS | SP1x2M<br>MW           | N         | 6CELL2.2 |
| ENTJ66-424G32B<br>n | EMEA | Spain        | LX.B780X.00<br>1 | ENTJ66-424G32Bn<br>VHP32BTES1UMACcw4<br>2*2G/320/6L/5R/CB_bgn<br>_0.3D_GEC_ES54<br>EasyNote_TJ65-AU-203<br>SP              | PMDT4200 | UMA         | N                              | SO2G<br>BII6 | SO2G<br>BII6 | N320GB5.4K<br>S | NBDCB4<br>XS | 3rd WiFi<br>1x2<br>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<sup>®</sup>, Windows<sup>®</sup> XP Home, Windows<sup>®</sup> 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<br>ViewSonic Professional Series G220 21" Monitor<br>Philips 109P 19" Monitor<br>MAG 810FT II 19" Monitor                                                                                   |
| LCD monitor    | ViewSonic 19" LCD VA1912W Monitor<br>ViewSonic 20" LCD VA2012W Monitor<br>Samsung 22" LCD 225DW Monitor<br>Philips 15' 150B5 Monitor<br>ASUS 22" LCD MW221u monitor<br>EIZO 17" LCD FlexScan L586 monitor                           |
| HDMI Port Test |                                                                                                                                                                                                                                     |
| LCD TV         | BenQ VH3243 32" HDMI LCD TV<br>Panasonic TC-37MPK 37" HDMI LCD TV<br>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<br>JS USB speaker USBJ268<br>Comodow USB 3D sound (Adapter)<br>YAMAHA USB Speaker MS35D                                                                                                               |
| USB scanner    | Epson EXPRESSION 1600 Scanner<br>Canon Canonscan CS3200F<br>Epson USB Scanner 1660                                                                                                                                                  |
| USB hub        | D-link DU-H4 USB HUB<br>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<br>D-Link Wireless LAN adapter,802.11a/b or b only<br>D-Link AirPlus DWL-120+ 2.4GHz Wireless USB Adapter                                                                                                                                                                                                         |
| USB storage                       | Zynet 2.5' External Enclosure SATA/ Usb2.0 Box<br>Sony 2.5" ExtERNAL BOX<br>Slim Kit USB 2.0 Mass Storage 2.5" HDD combo case<br>IO DATA 250GB eSATA HDD<br>SanDisk Cruzer USB Flash Drive- Micro 1.0GB<br>HP DL702 USB 128MB Digital Drive<br>Transcend USB 512MB Flash Drive<br>Sandisk USB 2.0 512MB Flash Drive<br>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<br>IBM USB FDD<br>Sony USB Floppy Disk Driver                                                                                                                                                                                                                                                                                           |
| Headphone/Microphone Port Test    |                                                                                                                                                                                                                                                                                                                                                 |
| Headphone/microphone              | Logitech Premium Stereo Headset Headphone+Mic<br>Sennheiser HD202<br>PHILIPS headphone<br>Logitech Labtec Verse-524 MIC<br>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<br>AboCom ExpressCard/54 1394A-400Mbps                                                                                                                                                                                                                                                                      |
| Bluetooth Device Test             |                                                                                                                                                                                                                                                                                                                                                 |
| Bluetooth mobile phone headset    | Sony Ericsson Bluetooth Headset<br>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/<br>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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