Packard Bell EasyNote
TS11HR/TS13HR/TS44HR

SERVICEGUIDE

Revision History

Refer to the table below for the updates made to this service guide.

Date	Chapter	Updates

Service guide files and updates are available on the Acer/CSD Website. For more information, go to http://csd.acer.com.tw. The information in this guide is subject to change without notice.

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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.

The following typographical conventions are used in this document:

- Book titles, directory names, file names, path names, and program/process names are shown in *italics*.

  Example:

  the *DRS5 User's Guide*

  /usr/local/bin/fd

  the */TPH15spool_M* program

- Computer output (text that represents information displayed on a computer screen, such as menus, prompts, responses to input, and error messages) are shown in constant width.

  Example:

  ```
  [01] The server has been stopped
  ```

- User input (text that represents information entered by a computer user, such as command names, option letters, and words) are shown in constant width bold.

  Variables contained within user input are shown in angle brackets (< >).

  Example:

  At the prompt, type run **`<file name> -m`**

- Keyboard keys are shown in ***bold italics***.

  Example:

  After entering data, press ***Enter***.

General information

This service guide provides all technical information relating to the basic configuration for **Packard Bell** 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 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 than those given in the FRU list in this service guide. The list provided by your regional Acer office must be used to order FRU parts for repair and service of customer machines.

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Hardware Specifications

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Jumper and Connector Locations

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Model Definition and Configuration

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CHAPTER 1

Hardware Specifications

Hardware Specifications and Configurations

Features

The following is a summary of the computer's many features:

Operating System

- Windows 7
- Window XP driver ready

Platform

- Intel Huron River Quad (45W) and Dual Cores Processors w/ Turbo Boost
- Intel PCH: HM65 (4MB SPI ROM)

System Memory

- DDR3 1066/1333 SDRAM memory interface design
- 0 MB DDR3 RAM on board
- Two DDR3 SODIMM slots
- Maximum memory: 4GB per slot. 8GB total.

Display

- 15.6" TFT WXGA (1366X768, HD 720P), Glare
- LED backlight ONLY

Storage Subsystem

Hard Disk Drive

- SATA Interface
- 9.5/7.0mm height, 2.5" HDD
- 250/320/500/640/750 GB and above
- 5400 RPM

Multi-in-One Card Reader

- 5-in-1 Card Reader (MS,MS Pro, MMC,SD and xD)
- Push-push type, No logo on dummy card
- Broadcom 57785

Audio Subsystem

- HD Audio
- Single Analogue MIC-In
- 2.0 Watt speaker/5cc chamber/speaker size 18 phi, x2
- Audio Codec, Realtek ALC271X-VB3
- Combo Audio Jack: Headphone-out w/o SPDIF-out and Mic-In

Graphics

- UMA
- Discrete: On board GPU design, 29mmx 29mm die, TDP 25W/15W with gDDR3 * 8 pcs (64M*16) and gDDR3 * 8pcs (128M*16)
- Discrete: nVIDIA NV N12P-GS 1GB gDDR3 (64M*16*8) and 2GB gDDR3 (128M*16*8) VRAM
- Discrete: nVIDIA NV N12P-GV 1GB gDDR3 (128M*16*4) and 512MB gDDR3 (64M*16*4)
- Support Optimus sku
- All above support DX11 (UMA supports DX 10.1)

Privacy Control

- HDD password
- Kensington Lock: Follow Kensington spec: internal phy = 7.5mm

Optical Media Drive

- 12.7mm Fixed Type
- SATA Interface
- Super-multi/BD Combo Tray Type
- G-base

Communication

Webcam

- HD Camera
- 1.3M Pixels, 3.8mm thickness (NEW one, but different from the current production on PEW series.)
- Fixed type

WLAN

- 3rd party 802.11 a/b/g/n 2X2 WLAN WiFi, WiMAX modules
- Built-in antenna * 2
- 1 * half size mini-card connector
- 1 * full size mini-card connector (either 3G or GPS)

WPAN

- Mini USB module and built-in 1 antenna
- Bluetooth 2.1/3.0
- Broadcom 2070, Atheros BU12
- Optional

LAN

- PCI-E 1Gb LAN
- Support Wake-On-Lan (AC mode S5)
- Broadcom 57785 with Card Reader
- No ASF 2.0/iAMT

Dimension and Weight

Dimension

- 381.6(W) x 253(D) x 25.2(H) ~ 33.2 mm, PB/GTW ID

Weight

- < 2.6 Kg

Power Adapter and Battery

Power Adapter

- 3-pin 65W for Dual-Core UMA; 90W for Dual-Core, 15W/25W GPU
- Quad-Core UMA; 120W for Quad-Core, 25W GPU

Battery

- AS10D 48.8W 6-cell of 18650 Li-Ion 2200mAh standard battery pack
- AS10D 41.4W 4-cell of 18650 Li-Ion 2800mAh battery pack

I/O Ports

- Color-coded connectors
- DC in
- 1 VGA port, 15 pins
- 1 HDMI
- 1 RJ-45 jack for LAN
- 3 USB jacks (inc. one USB 3.0 on small board at the right side of system). USB 3.0 will be bundled with Quad-core and Dual-core Processors ONLY.
- 1 combo audio jack: headphone out/Line out/Microphone-in
- 1 Microphone-in
- 1 2-in-1 (MS, MS Pro, MMC,SD and xD) card reader (push-push type, NO logo on dummy card)
- 1 Kensington Lock (7.5mm)

Special Keys and Controls

Keyboard

- GF7T Type
- Support Windows keys and Application keys
- Standard pitch, 2.5 mm travel length
- Multi-Language support

Touchpad

- Multi-Touch Touchpad

Control keys

- Power button (support software off, 4 sec)

Optional Items

- HD Camera

Software

- Suspend to RAM, Suspend to Disk
- Various hot-keys for system control
- Password protection for system
- HDD password

Notebook Tour

Top View

Figure 1-1. Top View

Table 1-1. Top View

#	Icon	Item	Description
1		Integrated webcam	Web camera for video communication (only for certain models).
2		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output (Configuration may vary by models).

Table 1-1. Top View (Continued)

#	Icon	Item	Description
3		Power button / indicator	Turns the computer on and off. Indicates the computer's power status.
4		Keyboard	For entering data into your computer.
5		Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
6		HDD indicator	Indicates when the hard disk drive is active.
		Communication indicator	Indicates the computer’s wireless connectivity device status.
		Power indicator	Indicates the computer's power status.
		Battery indicator	Indicates the computer's battery status. • Charging: The light shows amber when the battery is charging. • Fully charged: The light shows blue when in AC mode.
7		Click buttons (left and right)	The left and right buttons function like the left and right mouse buttons.
8		Microphone	Internal microphone for sound recording.

Closed Front View

Figure 1-2. Closed Front View

Table 1-2. Closed Front View

#	Icon	Item	Description
1		Multi-in-1 card reader	Accepts Secure Digital (SD), MultiMediaCard (MMC), Memory Stick PRO (MS PRO), xD-Picture Card (xD). **NOTE:** Push to remove/install the card. Only one card can operate at any given time.
2		HDD indicator	Indicates when the hard disk drive is active.
		Communication indicator	Indicates the computer's wireless connectivity device status.
		Power indicator	Indicates the computer's power status.
		Battery indicator	Indicates the computer's battery status. • **Charging**: The light shows amber when the battery is charging. • **Fully charged**: The light shows blue when in AC mode.
NOTE: The front panel indicators are visible even when the computer cover is closed.			

Left View

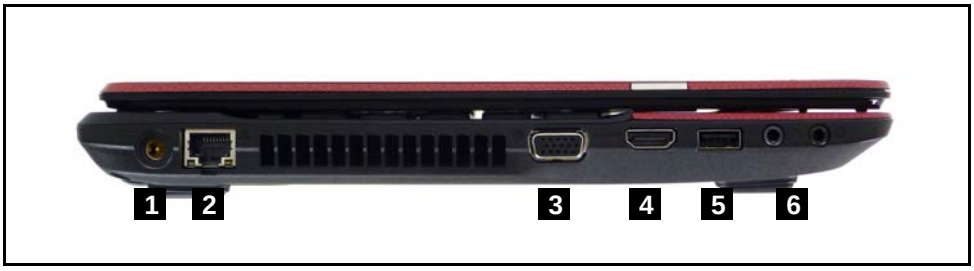


Figure 1-3. Left View

Table 1-3. Left View

#	Icon	Item	Description
1		DC-in jack	Connects to an AC adapter.
2		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000-based network.
3		External display (VGA) port	Connects to a display device (e.g., external monitor, LCD projector).
4		HDMI port	Supports high-definition digital video connections.
5		USB 2.0 port	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
6		Microphone jack	Accepts inputs from external microphones.
		Headphones/speaker jack	Connects to audio devices (e.g., speakers, headphones). **NOTE:** Supports compatible 3.5 mm headsets with built-in microphone (e.g. Acer smart handheld headsets).

Right View

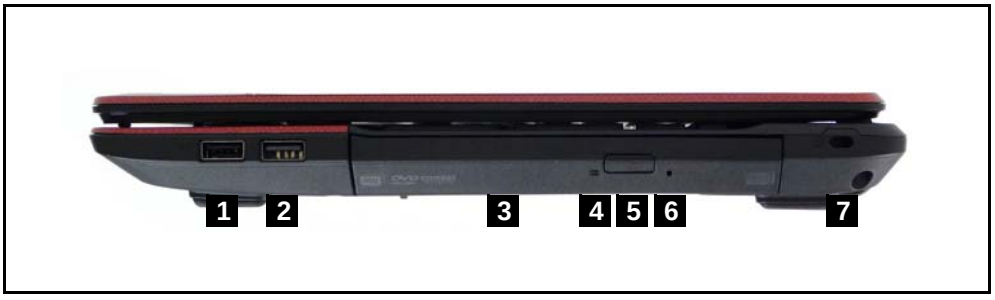
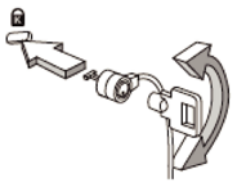


Figure 1-4. Right View

Table 1-4. Right View

#	Icon	Item	Description
1		USB 2.0 ports	Connect to USB 2.0 devices (e.g., USB mouse, USB camera).
2		USB2.0/3.0* port	Connects to USB devices. * A USB 3.0 port can be distinguished by its blue connector (for certain models only). * Supports the USB 3.0 (SuperSpeed USB) specification; Devices without USB 3.0 certification may not be compatible.
3		Optical drive	Internal optical drive; accepts CDs or DVDs.
4		Optical drive access indicator	Lights up when the optical drive is active.
5		Optical drive eject button	Ejects the optical disc from the drive.
6		Emergency eject hole	Ejects the optical drive tray when the computer is turned off. **NOTE:** Insert a paper clip to the emergency eject hole to eject the optical drive tray when the computer is off.
7		Kensington lock slot 	Connects to a Kensington-compatible computer security lock. **NOTE:** Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.

Base View

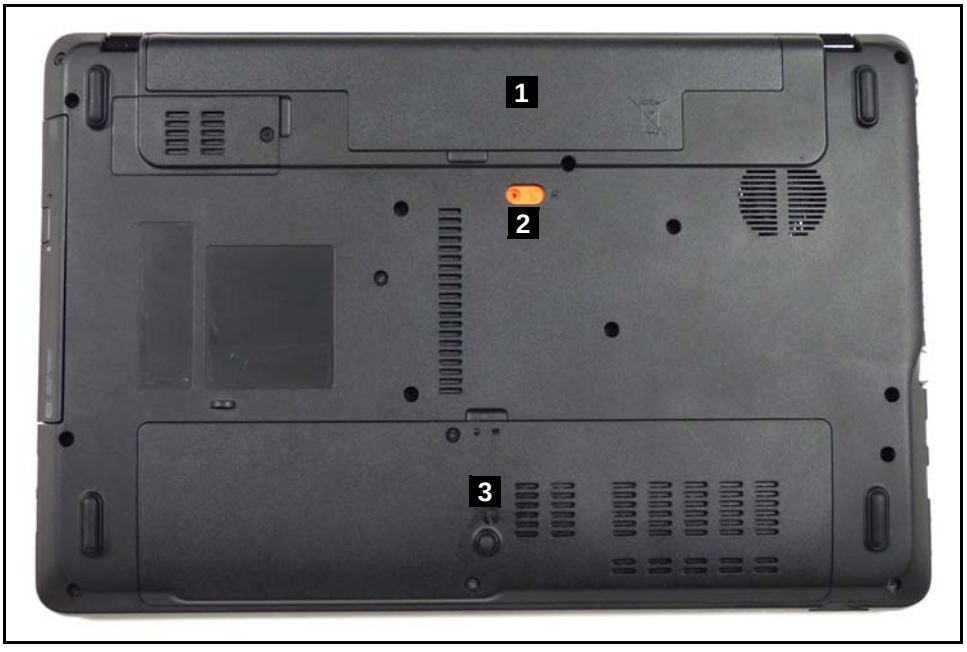


Figure 1-5. Base View

Table 1-5. Base View

#	Icon	Item	Description
1		Battery bay	Houses the computer's battery pack.
2		Battery release latch/ lock	Releases the battery for removal. Insert a suitable tool into the latch and slide to release.
3		Memory compartment	Houses the computer's main memory.
		Hard disk bay	Houses the computer's hard disk (secured with screws).

Touchpad Basics

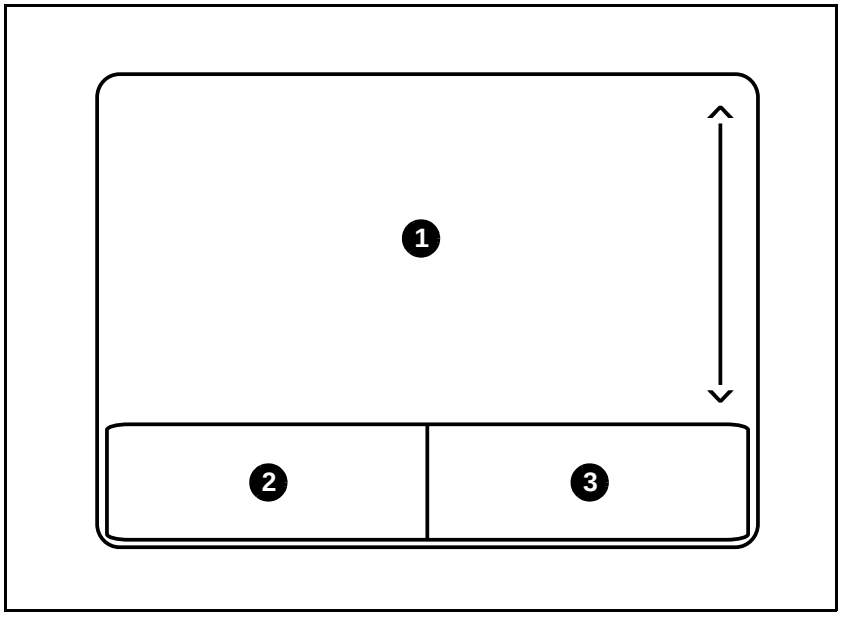


Figure 1-6. Touchpad

- Move finger across the Touchpad (1) to move the cursor.
- Press the left (2) and right (3) buttons located beneath the Touchpad to perform selection and execution functions. These two buttons are the equivalent of the left and right buttons on a mouse. Tapping on the Touchpad is the same as clicking the left button.

Table 1-6. Touchpad

Function	Main TouchPad (1)	Left Button (2)	Right Button (3)
Execute	Tap twice (at the same speed as double-clicking a mouse button).	Quickly click twice.	
Select	Tap once.	Click once.	
Drag	Tap twice (at the same speed as double-clicking a mouse button); rest your finger on the TouchPad on the second tap and drag the cursor.	Click and hold, then use finger on the Touchpad to drag the cursor.	
Access context menu			Click once.

NOTE:
When using the TouchPad, keep it - and fingers - dry and clean. The TouchPad is sensitive to finger movement; hence, the lighter the touch, the better the response. Tapping too hard will not increase the TouchPad's responsiveness.

Figure 1-7. Keyboard Lock Keys

The keyboard has three lock keys which can be toggled on and off. (Table 1-7)

Table 1-7. Keyboard Lock Keys

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

The embedded numeric keypad functions like a desktop numeric keypad. It is indicated by small characters located on the upper right corner of the key caps. To simplify the keyboard legend, cursor-control key symbols are not printed on the keys. (Table 1-8)

Table 1-8. Embedded Numeric Keypad

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

Windows Keys

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

- Windows Logo key
-  Application key

Table 1-9. Windows Keys

Key	Description
Windows Logo key	Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu. It can also be used with other keys to provide a variety of functions. **Functions supported by Windows XP, Windows Vista, and Windows 7:** <(⊞)>: Open or close the Start menu <(⊞)> + <R>: Open the Run dialog box <(⊞)> + <M>: Minimizes all windows <SHIFT> + <(⊞)> + M: Undo minimize all windows <(⊞)> + <F1>: Show the help window <(⊞)> + <E>: Open Windows Explorer <(⊞)> + <F>: Search for a file or folder <(⊞)> + <D>: Show the desktop <CTRL> + <(⊞)> + <F>: Search for computers (if you are on a network) <(⊞)> + <L>: Lock your computer (if you are connected to a network domain), or switch users (if you're not connected to a network domain) <CTRL> + <(⊞)> + <TAB>: Moves focus from Start menu, to the Quick Launch toolbar, to the system tray (use RIGHT ARROW or LEFT ARROW to move focus to items on the Quick Launch toolbar and the system tray) <(⊞)> + <TAB>: Cycle through programs on the taskbar <(⊞)> + <BREAK>: Display the System Properties dialog box **Functions supported by Windows XP:** <(⊞)> + <BREAK>: Show the System Properties dialog box <(⊞)> + <U>: Open Ease of Access Center
Application key	This key has the same effect as clicking the right mouse button; it opens the application's context menu.

Hot Keys

Hot keys or key combinations can be used to access most of the computer's controls like screen brightness and volume output.

Figure 1-8. Keyboard Hot Keys

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

Table 1-10. Keyboard Hot Keys

Hot key	Icon	Function	Description
<Fn> + <F1>		Packard Bell MyBackup	Starts Packard Bell MyBackup.
<Fn> + <F2>		Communication switch	Enables/disables the computer's communication devices. (Communication devices may vary by configuration.)
<Fn> + <F3>		Sleep	Puts the computer in Sleep mode.
<Fn> + <F4>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<Fn> + <F5>		Screen blank	Turns the display screen backlight off to save power. Press any key to return.
<Fn> + <F6>		Touchpad toggle	Turns the touchpad on and off.
<Fn> + <F7>		Play/Pause	Plays or pauses media files

Table 1-10. Keyboard Hot Keys (Continued)

Hot key	Icon	Function	Description
<Fn> + <F8>		Stop	Stops media file
<Fn> + <F9>		Previous	Plays the previous media file in the play sequence
<Fn> + <F10>		Next	Plays the next media file in the play sequence
<Fn> + <F11>		Brightness up	Increases the screen brightness.
<Fn> + <F12>		Brightness down	Decreases the screen brightness.
<Fn> + <∧>	PgUp	Page up	
<Fn> + <∨>	PgDn	Page down	
<Fn> + <>	End	End	
<Fn> + <<>	Home	Home	
		Speaker toggle	Turns the speakers on and off.
		Volume up	Increases audio volume.
		Volume down	Decreases audio volume.
		Social networking	Opens the Social Networks application

System Block Diagram

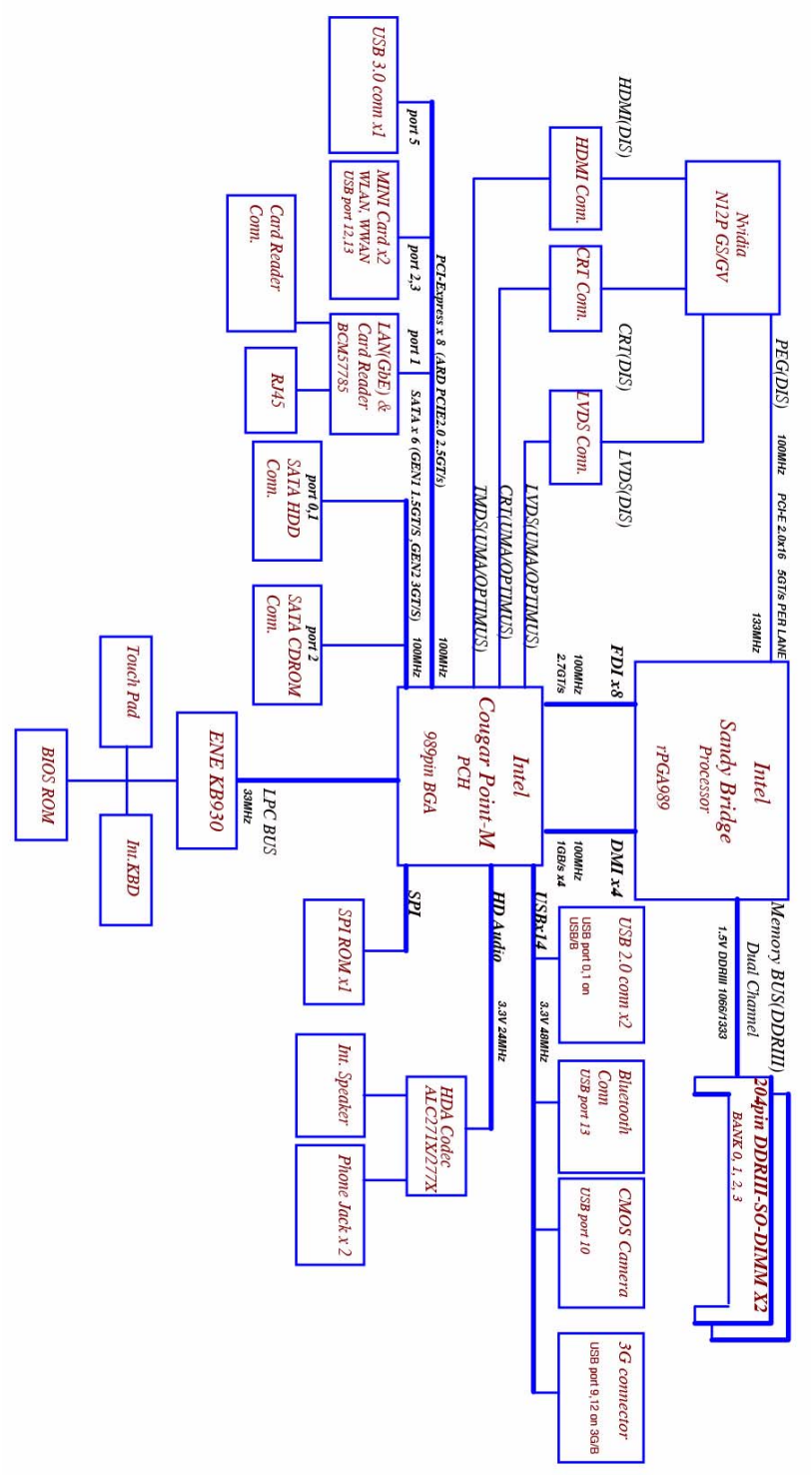


Figure 1-9. System Block Diagram

Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	381.6 mm	15.03”
Width	253 mm	9.96”
Height (front to rear)	33.2 mm	1.3”
Weight (equipped with optical drive, flash drive, and battery)	< 2.6 kg	< 5.72 lb
Input power		
Operating voltage	18.55V~19.95V	
Operating current	• 65W 3.42A(Max) • 90W 4.74A(Max)	
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C ~ 60°C	-4°F to 140°F
Relative humidity		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	
Nonoperating	200 g, 2 ms, half-sine	
Random vibration		
Operating	0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	
Nonoperating	1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.		

System Board Major Chips

Item	Specification
Core logic	Intel Huron Platform
VGA	Intel NVIDIA N12P-GS/N12P-GV
LAN	Broadcom BCM57785 GbE Controller
USB 2.0	3 Port USB2.0 (1 port is USB3.0 for option)
Super I/O controller	N/A
Bluetooth	BT3.0 Braodcom BCM2070, Atheros BU12
Wireless	Atheros HB95/HB97, Liteon HB97
PCMCIA	N/A
Audio codec	Realtek ALC271X-GR
Card reader	Broadcom BCM57785X Card Reader

Processor

Item	Specification
CPU type	Intel Sandy Bridge Qual Core/Dual Core Processor
CPU package	rPGA988B
Core Logic	Intel Huron River Platform
Chipset	Intel HM65 Express Chipset

Processor Specifications

Item	CPU Speed (GHz)	Cores	Bus Speed (FSB/ DMI/ QBI)	Mfg Tech (nm)	Cache Size	Package	Voltage
I7-2820QM	2.3	4	5GT/s	32nm	8MB	rPGA988B	0.75-1.3V
I7-2720QM	2.2	4	5GT/s	32nm	6MB	rPGA988B	0.75-1.3V
I7-2630QM	2.0	4	5GT/s	32nm	6MB	rPGA988B	0.75-1.3V
I7-2620M	2.7	2	5GT/s	32nm	4MB	rPGA988B	0.75-1.3V
I5-2540M	2.6	2	5GT/s	32nm	3MB	rPGA988B	0.75-1.3V
I5-2520M	2.5	2	5GT/s	32nm	3MB	rPGA988B	0.75-1.3V
I5-2410M	2.3	2	5GT/s	32nm	3MB	rPGA988B	0.75-1.3V
I3-2310M	2.1	2	5GT/s	32nm	3MB	rPGA988B	0.75-1.3V

CPU Fan True Value Table

CPU Temperature	Fan Speed (RPM)	SPL Spec (dBA)
60	2500	28
70	2900	31
80	3200	34
90	3600	37
100	4000	40
Throttling 50%: On= 95 °C; OFF=80 °C OS shut down at 100 °C; H/W shut down at 90 °C		

CPU Fan True Value Table

CPU Temp	Fan Speed (RPM)	SPL Spec (dBA)
57	2500	28
64	2900	31
70	3200	34
78	3600	37
85	4000	40
Throttling 50%: On= 85 °C; OFF=72 °C OS shut down at 104 °C; H/W shut down at 92°C		

System Memory

Item	Specification
Memory controller	Intel Sandy Bridge Processor
Memory size	No on board Memory
DIMM socket number	2
Supports memory size per socket	1GB/2GB/4GB
Supports maximum memory size	Total 8GB
Supports DIMM type	SODIMM
Supports DIMM Speed	DDR3 1066/1333
Support DIMM voltage	1.5V
Supports DIMM package	DDR3 SODIMM 204 Pin

Memory Combinations

Slot 1 (MB)	Slot 2 (MB)	Total Memory (MB)
0	1024	1024
0	2048	2048
0	4096	4096
1024	0	1024
1024	1024	2048
1024	2048	3072
1024	4096	5120
2048	0	2048
2048	1024	3072
2048	2048	4096
2048	4096	6144
4096	0	4096
4096	1024	5120
4096	2048	6144
4096	4096	8192

Video Interface

Item	Specification
Chipset	NVIDIA GeForce GT540M/GT520M
Package	973FCBGA(GB2-128)
Interface	Internal PCIE x16
Compatibility	8 bpp (bit per pixel)
Sampling rate	128bits/64bits

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	1.00
BIOS ROM type	SPI
BIOS ROM size	4MB
Features	● Insyde code base ● Flash ROM 4 MB ● Support Acer UI ● Support multi-boot ● Suspend to RAM (S3)/Disk (S4) ● Various hot-keys for system control ● Support SMBIOS 2.3 ,PCI2.2. ● DMI utility for BIOS serial number configurable/asset tag ● Support PXE ● Support WinFlash ● Wake on LAN from S3 ● Wake on LAN from S5 in AC mode ● System information ● Refer to Acer BIOS specification.

LAN Interface

Item	Specification
LAN Chipset	Broadcom BCM57785
LAN connector type	RJ45
LAN connector location	JRJ45 at the left side
Features	Supports 10/100/1000

Keyboard

Item	Specification
Type	New Acer GP7T flat keyboard
Total number of keypads	103-US/104-UK /107-JP keys
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	● Phantom key auto detect ● Overlay numeric keypad ● Support independent pgdn/pgup/pgup/home/end keys ● Support reverse T cursor keys ● Factory configurable different languages by OEM customer

Hard Disk Drive (AVL components)

Item	Specification			
Vendor & Model Name	WD7500BPVT-22HXZT1 MK7559GSXP HTS547575A9E384	HTS545032B9A300 MK3265GSX ST9320310AS	HTS545050B9A300 MK5065GSX ST9500325AS	MK6465GSX
Capacity (GB)	250GB	320GB	500GB	640GB
Bytes per sector	512 BYTE	512 BYTE	512 BYTE	512 BYTE
Data heads	2 2 2	3 2 2	4 4 4	4
Drive Format				
Disks	1 1 1	2 1 1	2 2 2	2
Spindle speed (RPM)	5400RPM			
Performance Specifications				
Buffer size	8MB			
Interface	SATA			
Fast data transfer rate (Mbits / sec, max)	3.0Gbits/s	3.0Gbits/s	3.0Gbits/s	3.0Gbits/s
Media data transfer rate (Mbytes/sec max)	106Mbytes/s 845Mbits/s 1031.7Mbit/s 1175Mbits/s	106Mbytes/s 845Mbits/s 1273.3Mbits/s 1175Mbits/s	106Mbytes/s 845Mbits/s 1031.7Mbit/s 1175Mbits/s	1273.3Mbits/s
DC Power Requirements				
Voltage tolerance	5V			
Item	**Specification**			
Vendor & Model Name	WD7500BPVT-22HXZT1 MK7559GSXP HTS547575A9E384	ST9750423AS	WD2500BPVT-22ZEST0	WD3200BPVT-22ZEST0
Capacity (GB)	750GB	750GB	250GB	320GB
Bytes per sector	4096	4096	4096	4096

Item	Specification			
Hard Disk Drive (continued)				
Data heads	4 4 4	4	1	2
Drive Format				
Disks	2 2 2	2	1	1
Spindle speed (RPM)	5400RPM			
Performance Specifications				
Buffer size	8MB	16MB	8MB	8MB
Interface	SATA			
Fast data transfer rate (Mbits / sec, max)	3.0Gbits/s	3.0Gbits/s	3.0Gbits/s	3.0Gbits/s
Media data transfer rate (Mbytes/sec max)	97Mbytes/s 1363.1Mbits/s 996Mbits/s	1130Mbits/s	108Mbytes/s	108Mbytes/s
DC Power Requirements				
Voltage tolerance	5V			
Item	**Specification**			
Vendor & Model Name	WD5000BPVT-22HXZT1	WD6400BPVT-22HXZT1		
Capacity (GB)	500GB	640GB		
Bytes per sector	4096	4096		
Data heads	3	4		
Drive Format				
Disks	2	2		
Spindle speed (RPM)	5400RPM			
Performance Specifications				
Buffer size	8MB			
Interface	SATA			
Fast data transfer rate (Mbits / sec, max)	3.0Gbits/s	3.0Gbits/s		

Item	Specification			
Hard Disk Drive (continued)				
Media data transfer rate (Mbytes/sec max)	97Mbytes/s	97Mbytes/s		
DC Power Requirements				
Voltage tolerance	5V			

Super-Multi Drive

Item	Specification	
Vendor & Model name	HLDS Super-Multi Drive DL 8X GT32N LF / SONY Super-Multi Drive DL 8X AD-7585H LF / Panasonic Super-Multi Drive DL 8X UJ890 / PLDS Super-Multi Drive DL 8X DS-8A5SH / HLDS Super-Multi Drive DL 8X GT34N LF / Panasonic Super-Multi Drive DL 8X UJ8A0 LF / TSST Super-Multi Drive DL 8X TS-L633F LF / Pioneer Super-Multi Drive DL 8X DVR-TD10RS LF	
Performance Specification	With CD Diskette	With CD Diskette
Transfer rate (KB/sec)	Sustained: Max 3.6Mbytes/sec	Sustained: Max 3.6Mbytes/sec
Buffer Memory	2MB	
Interface	SATA	
Applicable disc format	Applicable disc format CD: CD-DA, CD-ROM, CD-ROM XA, Photo CD (multi-session), Video CD, Cd-Extra (CD+), CD-text DVD: DVD-VIDEO, DVD-ROM, DVD-R (3.9GB, 4.7GB) DVD-R DL, DVD-RW, DVD-RAM, DVD+R, DVD+R DL, DVD+RW CD: CD-DA (Red Book) - Standard Audio CD & CD-TEXT CD-ROM (Yellow Book Mode1 & 2) - Standard Data CD-ROM XA (Mode2 Form1 & 2) - Photo CD, Multi-Session CD-I (Green Book, Mode2 Form1 & 2, Ready, Bridge) CD-Extra/ CD-Plus (Blue Book) - Audio & Text/Video Video-CD (White Book) - MPEG1 Video 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 (Book 1.02), DVD-Dual DVD-Video (Book 1.1) DVD-R (Book 1.0, 3.9G) DVD-R (Book 2.0, 4.7G) - General & Authoring DVD+R (Version 1.0) DVD+RW DVD-RW (Non CPRM & CPRM) DVD°"R Dual	
Loading mechanism	Load: Manual Release: (a) Electrical Release (Release Button) (b) Release by ATAPI command (c) Emergency Release	
Power Requirement		
Input Voltage	5 V +/- 5% (Operating)	

BD Drive

Items	Specifications		
Vendor & Model name	PLDS BD COMBO DRIVE TRAY DL DS-6E2SH LF / HLDS BD COMBO 12.7mm Tray DL CT21N / Pioneer BD COMBO DRIVE TRAY DL BDC-TD03RS / Panasonic BD COMBO DRIVE TRAY DL UJ141ALAA-A / HLDS BD COMBO DRIVE TRAY DL CT30N / Panasonic BD COMBO DRIVE TRAY DL UJ240ABAA-A / Panasonic BD COMBO DRIVE TRAY DL UJ240AFAA-B		
Performance Specification	With CD Disc	With CD Disc	With CD Disc
Transfer rate (KB/sec)	Sustained: Max 3.6Mbytes/sec	Sustained: Max 3.6Mbytes/sec	Sustained: Max 3.6Mbytes/sec
Buffer Memory	2MB		2MB
Interface	SATA		
Applicable disc format	Applicable disc format CD: CD-DA, CD-ROM, CD-ROM XA, Photo CD (multi-session), Video CD, Cd-Extra (CD+), CD-text DVD: DVD-VIDEO, DVD-ROM, DVD-R (3.9GB, 4.7GB) DVD-R DL, DVD-RW, DVD-RAM, DVD+R, DVD+R DL, DVD+RW CD: CD-DA (Red Book) - Standard Audio CD & CD-TEXT CD-ROM (Yellow Book Mode1 & 2) - Standard Data CD-ROM XA (Mode2 Form1 & 2) - Photo CD, Multi-Session CD-I (Green Book, Mode2 Form1 & 2, Ready, Bridge) CD-Extra/ CD-Plus (Blue Book) - Audio & Text/Video Video-CD (White Book) - MPEG1 Video 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 (Book 1.02), DVD-Dual DVD-Video (Book 1.1) DVD-R (Book 1.0, 3.9G) DVD-R (Book 2.0, 4.7G) - General & Authoring DVD+R (Version 1.0) DVD+RW DVD-RW (Non CPRM & CPRM) DVD+/-R Dual Blu-Ray: BD-R, BD-R DL, BD-RE, BD-RE DL (important must check information from datasheet)		
Loading mechanism	Load: Manual Release: (a) Electrical Release (Release Button) (b) Release by ATAPI command (c) Emergency Release		
Power Requirement			
Input Voltage	5 V +/- 5% (Operating)		

LED 15.6”

Item	Specification
Vendor/Model name	AUO/B156XW02 V6 (HW:0A) AUO/B156XW02 V2 (HW:4A) Samsung/LTN156AT02-A11 LG/LP156WH2-TLEA CMO/N156B6-L0B CPT/ CLAA156WB11A
Screen Diagonal (mm)	394.91 mm
Active Area (mm)	344.23 mm x 193.54 mm
Display resolution (pixels)	1366 x 3(RGB) x 768
Pixel Pitch (mm)	0.252mm × 0.252 mm
Typical White Luminance (cd/m^2) also called Brightness	200 cd/m2
Contrast Ratio	400 min / 500 type
Response Time (Optical Rise Time/Fall Time) msec	8 ms / 16 ms
Typical Power Consumption (watt)	5.15 W
Weight (without inverter)	460 max
Physical Size (mm)	360 mm x 210mm x 5.5 max
Electrical Interface	1 channel LVDS
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	40 (Right) / 40 (Left) / 10 (Upper) / 30 (Lower) min.

LCD Inverter (not available with this model)

Item	Specification
Vendor & Model name	
Brightness conditions	
Input voltage (v)	
Input current (mA)	
Output voltage (V, RMS)	
Output current (mA, RMS)	
Output voltage frequency (KHz)	

Display Supported Resolution (LCD Supported Resolution)

Resolution	16 bits	32 bits	Intel	NVIDIA	ATI
800x600p/60Hz 16:9	V	V	V	V	V
1024x768p/60Hz 16:9	V	V	V	V	V
1280x600/60Hz 16:9	V	V	V	X	X
1280x720/60Hz 16:9	V	V	V	V	V
1280x768/60Hz 16:9	V	V	V	V	V
1360x768/60Hz 16:9	V	V	V	V	V
1366x768/60Hz 16:9	V	V	V	V	V

Graphics Controller

Item	Specification
VGA Chip	NVIDIA N12P-GS/N12P-GV
Supports	● Support for Window7 DirectX compute ● Direct X11 and Shader Model5.0 ● OpenGL3.2 ● NVIDIA PhysX technology ● NVIDIA CUDA technology ● NVIDIA Optimus technology

Display Supported Resolution (GPU Supported Resolution)

Resolution	16 bits	32 bits	Intel	NVIDIA	ATI
800x600p/60Hz 16:9	V	V	V	V	V
1024x768p/60Hz 16:9	V	V	V	V	V
1280x600/60Hz 16:9	V	V	V	X	X
1280x720/60Hz 16:9	V	V	V	V	V
1280x768/60Hz 16:9	V	V	V	V	V
1360x768/60Hz 16:9	V	V	V	V	V
1366x768/60Hz 16:9	V	V	V	V	V

Bluetooth Interface

Item	Specification
Chipset	Atheros AR3011/ Broadcom BCM2070
Data throughput	TX 1.2Mbits/sec RX 1.2Mbits/sec
Protocol	3.0+HS
Interface	USB 2.0

Item	Specification
Bluetooth Interface (continued)	
Connector type	JST SM06B-XSRK-ETB
Supported protocol	A2DP / AVCTP / AVRCP / BIP / BPP / DUN / Fax / FTP / GAVDP / HCRP / Headset / Hands Free / HID / OPP / PAN / SDAP / Serial / SYNC

Bluetooth Module

Item	Specification
Controller	AR3011 / BCM2070
Features	• Mini USB module with built-in antenna • Bluetooth 3.0

Camera

Item	Specification
Vendor and Model	Chicony CNF9157 Lite-on 09P2SF119 Suyin HF1315-S32B-OV01
Type	1.3M

Mini Card

Item	Specification
Number supported	1
Features	1 mini card slot (for WLAN or WLAN/WiMax)

3G Card (not available with this model)

Item	Specification
Features	

Audio Codec and Amplifier

Item	Specification
Audio Controller	Audio codec: Realtek ALC271X-GR
Features	● Two stereo DAC support 16/20/24-bit PCM for two independent playback (multiple streaming) ● Two stereo ADC supports 16/20/24-bit PCM format for two independent recording ● All DACs support independent 44.1k/48k/96k/192kHz sample rate ● All ADCs support independent 44.1k/48k/96k/192kHz sample rate ● Two independent SPDIF outputs support 16/20/24-bit format and 44.1k/48k/88.2k/96k/192kHz rate ● Supports line level mono output ● Supports analog PCBEEP input, and features an integrated digital BEEP generator ● Support two stereo digital microphone input for microphone array AEC/BF application ● Supports legacy analog mixer architecture ● Supports two GPIO (General Purpose Input/Output) pins (pin sharing with digital microphone interface) ● Supports EAPD (External Amplifier Power Down) control for external amplifier ● Supports anti-pop mode when analog power AVDD is on and digital power is off ● Supports 1.5V~3.3V scalable I/O for HD Audio link ● 48-pin LQFP 'Green' package
Amplifier	N/A
Features	N/A

Audio Interface

Item	Specification
Audio Controller	Realtek ALC271X-GR
Audio onboard or optional	On board
Mono or Stereo	Stereo
Resolution	Support 16/24bit PCM
Compatibility	HD audio Interface;
Sampling rate	Sample rate up to 192Khz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker/quantity	Yes/(2W speakers x2)

Wireless Module 802.11b/g/n

Item	Specification			
Chipset	Atheros HB95/HB97	BCM943225	Intel 6250/6205/6150	RTL8192SE
Data throughput	11~54 Mbps, up to 270 Mbps for Draft-N			
Protocol	802.11 b+g, Draft-N 802.11 a+b+g, Draft-N (Intel only)			
Interface	PCI bus (mini PCI socket for wireless module)			

Battery

Item	Specification	
Vendor & Model name	SANYO AS2010D31	SIMPLO AS10D71/75
Battery Type	Li-ion	Li-ion
Pack capacity	2200 mAh	2200 mAh
Number of battery cell	6	6
Package configuration	3S2P	3S2P
Item	**Specification**	
Vendor & Model name	SONY AS2010D41	SAMSUNG AS2010D61
Battery Type	Li-ion	Li-ion
Pack capacity	2200 mAh	2200 mAh
Number of battery cell	6	6
Package configuration	3S2P	3S2P
Item	**Specification**	
Vendor & Model name	PANASONIC AS10D51	PANASONIC AS10D56
Battery Type	Li-ion	Li-ion
Pack capacity	2200 mAh	2900mAh
Number of battery cell	6	4
Package configuration	3S2P	4S1P

VRAM

Item	Specification
Chipset	Samsung, Hynix
Memory size	1G, 2G
Interface	DDRIII

USB Port

Item	Specification
USB compliance level	USB2.0/ USB3.0
Protocol	EHCI
Number of USB port(s)	3 (1 USB 3.0 port is optional) **NOTE:** Port configuration is 3 USB 2.0 ports or 1 USB 3.0 port and 2 USB ports
Location	One on the left side and two on the right.
Output Current	• 1.5A (for the USB port at left side) • 2.0A (for USB port at right side)

HDMI Port

Item	Specification
Compliance level	HDMI 1.4
Data thoroughput	Up to 16.7 million colors
Number of HDMI port(s)	1
Location	JHDMI1 at the left side

AC Adapter

Item	Specification
Input rating	90w & 65w
Maximum input AC current	90w:1.5A at 100V 65w:1.7A at 100V
Inrush current	I2t at 264V , adapter no damage
Efficiency	Refer to EPA 2.0

System Power Management

Item	Specification
Mech. Off (G3)	Al devices in the system are turned off completely.
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices such as the CPU and hard disc may be power managed in this state.
Suspend to RAM (S3)	● CPU set power down ● VGA Suspend ● PCMCIA Suspend ● Audio Power Down ● Hard Disk Power Down ● CD-ROM Power Down ● Super I/O Low Power mode
Save to Disk (S4)	Also called Hibernation Mode. System saves all system states and data onto the disc prior to power off the whole system.

Card Reader

Item	Specification
Chipset	Broadcom BCM57785X
Package	QFN68pin
Maximum supported size	● SD: 16G ● MMC: 16G ● miniSD: 16G ● MS/MS-PRO: 16G ● XD Picture: 2G
Features	● 5 in 1 card reader, supporting: ● Secure Digital™ (SD) Card, MultiMediaCard™ (MMC) ● Storage cards with adapter: miniSD™ ● Memory Stick, Memory Stick PRO ● xD Picture

System LED Indicator

Item	Specification
Lock	N/A
System state	● Blue color solid on: System on ● Blue color and amber color off: System off ● Amber color blinking: S3 state
HDD access state	Reflects the activities of the HDD or Card reader access
Wireless state	● Amber color if a wireless device is active ● Blue color if 3G device is active ● Blue color if both 3G and wireless devices are active at the same time
Power button backlight	● Blue color solid on: System on ● Blue color off: System off
Battery state	**Charging** ● Amber solid on - Battery charging with AC ● Blue color solid on - Battery full ● Amber blinking - Battery abnormal stop charge or batter in low power state **Discharging** ● Amber and blinking - Battery in critical low state ● Amber color off - Discharging state

System DMA Specification

Legacy Mode	Power Management
DMA0	Not applicable
DMA1	Not applicable
DMA2	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller
DMA5	Not Assigned
DMA6	Not Assigned
DMA7	Not Assigned
*ExpressCard controller can use DMA 1, 2, or 5.	

System Interrupt Specification

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Standard PS/2 Keyboard
IRQ8	System CMOS/real-time clock
IRQ9	Broadcom xD Picture Card Host Controller
IRQ10	Intel 6 Series/C200 Series Chipset Family SMBus controller -1C22
IRQ12	Synaptics PS/2 TouchPad
IRQ13	Numeric data processor
IRQ16	2nd generation intel core processor family PCI Express Controller-0101
	Intel 6 Series/C200 Series Chipset Family USB Enhanced controller -1C2D
	Intel 6 Series/C200 Series Chipset Family PCI Express Root Port 2 controller -1C12
	Intel Management Engine Interface
IRQ17	Broadcom Memory Stick
	Broadcom SD Host Controller
	Broadcom xD Picture Bus Driver
	Intel 6 Series/C200 Series Chipset Family PCI Express Root Port 1 controller -1C10
IRQ19	Intel Mobile Express Chipset SATA AHCI Controller
IRQ22	High Definition Audio Controller
IRQ23	Intel 6 Series/C200 Series Chipset Family USB Enhanced controller -1C26

System IO Address Map

I/O address (hex)	System Function (shipping configuration)
000 - 01F	Direct Memory Access controller
020 - 02D	Programmable interrupt controller
02E - 02F	Motherboard resources
030 - 03D	Programmable interrupt controller
040 - 043	System timer
04E - 04F	Motherboard resources
050 - 053	System timer
060	Standard PS/2 Keyboard
061	Motherboard resources
062	Microsoft ACPI-Compliant Embedded Controller
063	Motherboard resources
064	Standard PS/2 Keyboard
065	Motherboard resources
066	Microsoft ACPI-Compliant Embedded Controller
067 - 06C	Motherboard resources
070 - 077	System CMOS/real time clock
081 - 091	Direct Memory Access controller
093 - 09F	Direct Memory Access controller
0A0 - 0B1	Programmable interrupt controller
0B2 - 0B3	Motherboard resources
0B4 - 0BD	Programmable interrupt controller
0C0 - 0DF	Direct Memory Access controller
0F0	Numeric data processor
3B0 - 3BB	Intel HD Graphics Family
3C0 - 3DF	Intel HD Graphics Family
400 - 457	Motherboard resources
4D0 - 4D1	Programmable interrupt controller
500 - 69F	Motherboard resources
CF8 - CFC	PCI configuration index register

System I/O Address Specifications

I/O address (hex)	System Function (shipping configuration)
220 - 22F	
230 - 26D	
26E - 26	
278 - 27F	
280 - 2AB	
2A0 - 2A7	
2A8 - 2E7	
2E8 - 2EF	
2F0 - 2F7	
2F8 - 2FF	
300 - 31F	
320 - 36F	
370 - 377	
378 - 37F	
380 - 387	
388 - 38B	
38C - 3AF	
3B0 - 3BB	
3BC - 3BF	
3C0 - 3DF	
3E0 - 3E1	
3E2 - 3E3	
3E8 - 3EF	
3F0 - 3F7	
3F8 - 3FF	
CF8 - CFB	
(PCIDIVO-1)	
(PCIDIVO-1)	

CHAPTER 2

System Utilities

System Utilities

BIOS Setup Utility

The *BIOS Setup Utility* is a hardware configuration program built into a computer's BIOS (Basic Input/Output System).

The utility is pre-configured and optimized so most users do not need to run it. If configuration problems occur, the setup utility may need to be run. Refer to *Chapter 4, Troubleshooting* when a problem arises.

To activate the utility, press ***F2*** during POST (power-on self-test) when prompted at the bottom of screen.

The default parameter of `F12 Boot Menu` is set to `Disabled`. To change the boot device without entering *BIOS Setup Utility*, set the parameter to `Enabled`.

To change the boot device without entering the BIOS SETUP, press ***F12*** during POST to enter the multi-boot menu.

Navigating the BIOS Utility

Six menu options are:

- Information
- Main
- Security
- Boot
- Exit

To navigate through the following:

- Menu - use the left and right arrow keys
- Item - use the up and down arrow keys
- Change parameter value - press ***F5*** or ***F6***.
- Exit - Press ***Esc***
- Load default settings - press ***F9***. Press ***F10*** to save changes and exit BIOS Setup Utility

NOTE:

Parameter values can be changed if enclosed in square brackets [ ]. Navigation keys appear at the bottom of the screen. Read parameter help carefully when making changes to parameter values. Parameter help is found in the Item Specific Help area of the screen.

NOTE:

System information is subject to specific models.

BIOS

The following is a description of the tabs found on the InsydeH20 *BIOS Setup Utility* screen:

NOTE:
The screens provided are for reference only. Actual values may differ by model.

Information

The Information tab shows a summary of computer hardware information.

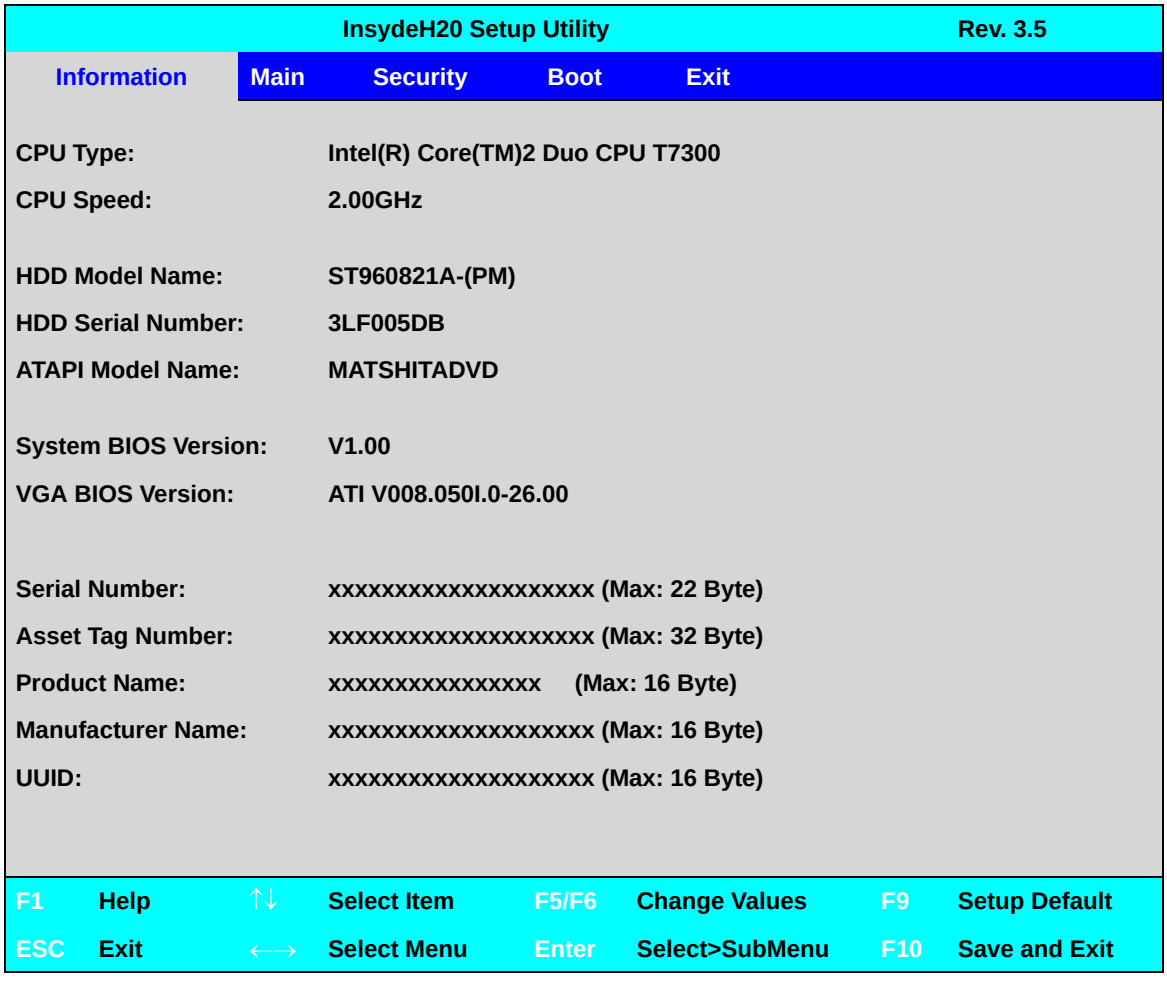


Figure 2-1. BIOS Information

Table 2-1 describes the parameters shown in Figure 2-1.

Table 2-1. BIOS Information

Parameter	Description
CPU Type	CPU (central processing unit) type and speed of system
CPU Speed	Speed of the CPU
HDD Model Name	Model name of HDD (hard disk drive) installed on primary IDE master
HDD Serial Number	Serial number of HDD installed on primary IDE master
ATAPI Model Name	Model name of Optical device installed in system
System BIOS Version	System BIOS version
VGA BIOS Version	VGA (video graphics array) firmware version of system
Serial Number	Serial number of unit
Asset Tag Number	Asset tag number of system
Product Name	Product name of the system
Manufacturer Name	Manufacturer of system
UUID	Universally Unique Identifier

Main

The Main tab allows the user to set system time and date, enable or disable boot option and enable or disable recovery.

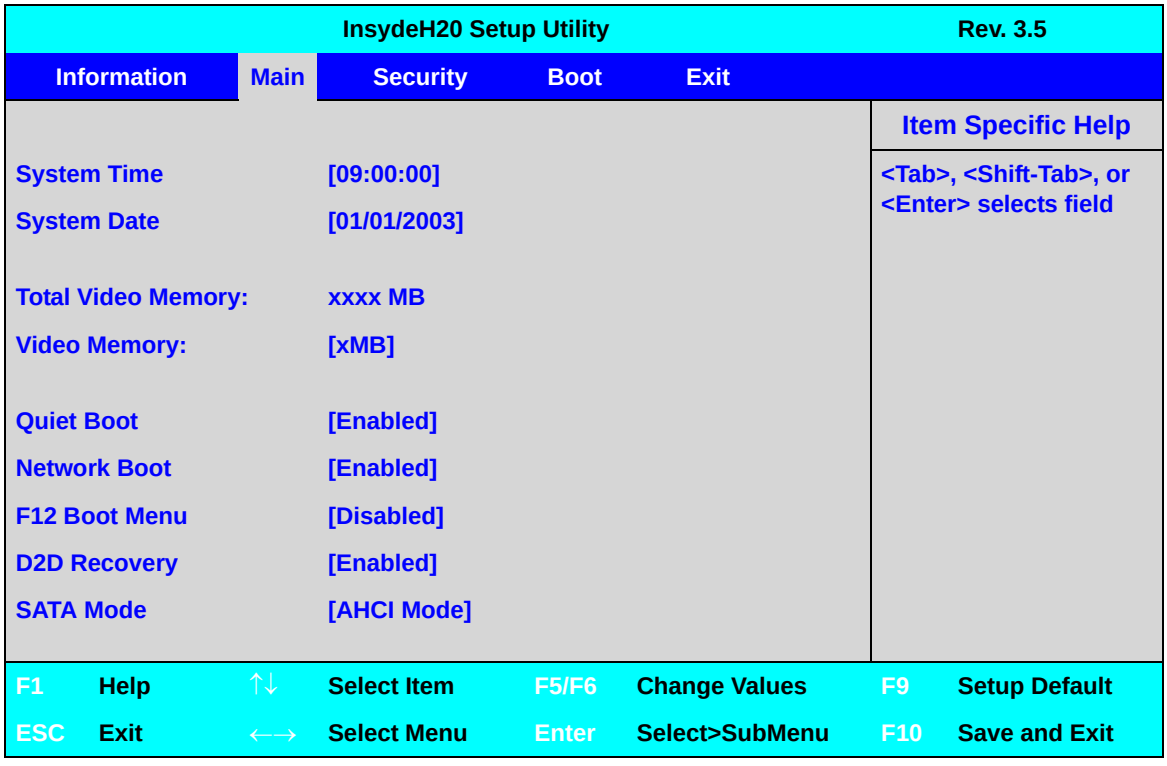


Figure 2-2. BIOS Main

Table 2-2 describes the parameters shown in Figure 2-2.

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Table 2-2. BIOS Main

Parameter	Description	Format/Option
System Time	BIOS system time in 24-hour format	Format: HH:MM:SS (hour:minute:second)
System Date	BIOS system date	Format MM/DD/YYYY (month/day/year)
Total Memory	Total memory available	N/A
Video Memory	Available memory for video	N/A

Table 2-2. BIOS Main (Continued)

Parameter	Description	Format/Option
Quiet Boot	Shows OEM (original equipment manufacturer) screen during system boot instead of traditional POST screen	Option: Enabled or Disabled
Network Boot	Option to boot system from LAN (local area network)	Option: Enabled or Disabled
F12 Boot Menu	Option to use boot menu during POST	Option: Enabled or Disabled
D2D Recovery	Option to use D2D Recovery function	Option: Enabled or Disabled
SATA Mode	Option to set SATA controller mode	Option: AHCI or IDE

Security

The Security tab shows parameters that safeguard and protect the computer from unauthorized use.

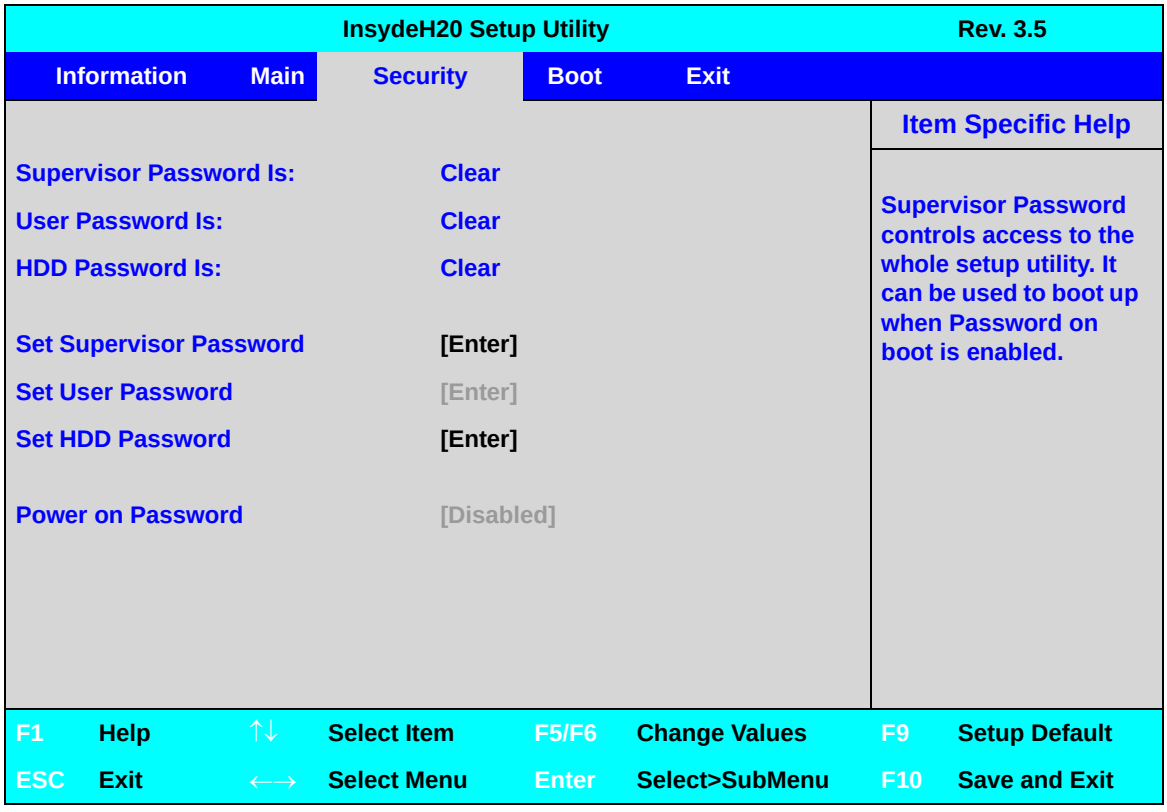


Figure 2-3. BIOS Security

Table 2-3 describes the parameters shown in Figure 2-3.

Table 2-3. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Supervisor password setting	Clear or Set
User Password Is	User password setting	Clear or Set
HDD Password Is	HDD password setting	Clear or Set
Set Supervisor Password	Option to set supervisor password	N/A
Set User Password	Option to set user password	N/A
Set HDD Password	Option to set HDD password	N/A
Password on Boot	Shows if password is required during system boot	Disabled or Enabled

NOTE:

When prompted to enter password, three attempts are allowed before system halts. Resetting BIOS password may require computer be returned to dealer.

Setting a Password

Perform the following to set supervisor password:

1. Use the ↑ and ↓ keys to highlight the `Set Supervisor Password` parameter and press ***Enter***. The `Set Supervisor Password` dialog box appears.

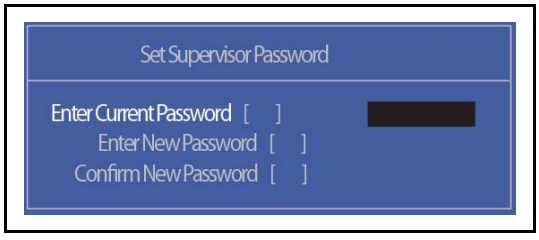


Figure 2-4. Set Supervisor Password

2. Type a new password in the `Enter New Password` field. Passwords are not case sensitive and the length must not exceed 12 characters. Retype the password in the `Confirm New Password` field.

⇛ NOTE:

The following characters may be used in a password:

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

+ IMPORTANT:

Use care when typing a password. Characters do not appear on the screen.

3. Press ***Enter***. After setting the password, the computer sets the `User Password` parameter to `Set`.

⇛ NOTE:

`Password on Boot` must be set to `Enabled` to activate password feature.

4. Press ***F10*** to save changes and exit *BIOS Setup Utility*.

Removing a Password

Perform the following:

1. Use the ↑ and ↓ keys to highlight `Set Supervisor Password` and press ***Enter***. The `Set Supervisor Password` dialog box appears:

Figure 2-5. Set Supervisor Password

2. Type current password in `Enter Current Password` field and press ***Enter***.
3. Press ***Enter*** twice without typing anything in `Enter New Password` and `Confirm New Password` fields. Computer will set `Supervisor Password` parameter to `Clear`.
4. Press ***F10*** to save changes and exit the *BIOS Setup Utility*.

Changing a Password

1. Use the ↑ and ↓ keys to highlight `Set Supervisor Password` and press ***Enter***. The `Set Supervisor Password` dialog box appears.

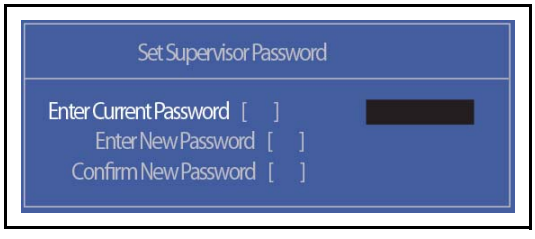


Figure 2-6. Set Supervisor Password

2. Type current password in `Enter Current Password` field and press ***Enter***.
3. Type new password in `Enter New Password` field. Retype new password in `Confirm New Password` field.
4. Press ***Enter***. Computer sets `Supervisor Password` parameter to `Set`.

⇒ NOTE:

`Password on Boot` must be set to `Enabled` to activate the password feature.

5. Press ***F10*** to save changes and exit *BIOS Setup Utility*.

If the verification is OK, the screen shows as follows.

Figure 2-7. Setup Notice

The password setting is complete after the user presses ***Enter***.

If the password entered does not match the current password, the screen shows the `Setup Warning` dialog. (Figure 2-8)

Figure 2-8. Setup Warning: Invalid Password

If new password and confirm new password strings do not match, the `Setup Warning` dialog appears. (Figure 2-9)

Figure 2-9. Setup Warning: Passwords Do Not Match

Boot

The Boot tab allows changes to the order of boot devices used to load the operating system. Bootable devices include the:

- USB diskette drives
- Onboard hard disk drive
- DVD drive in the module bay

Use ↑ and ↓ keys to select a device and press ***F5*** or ***F6*** to change the value.

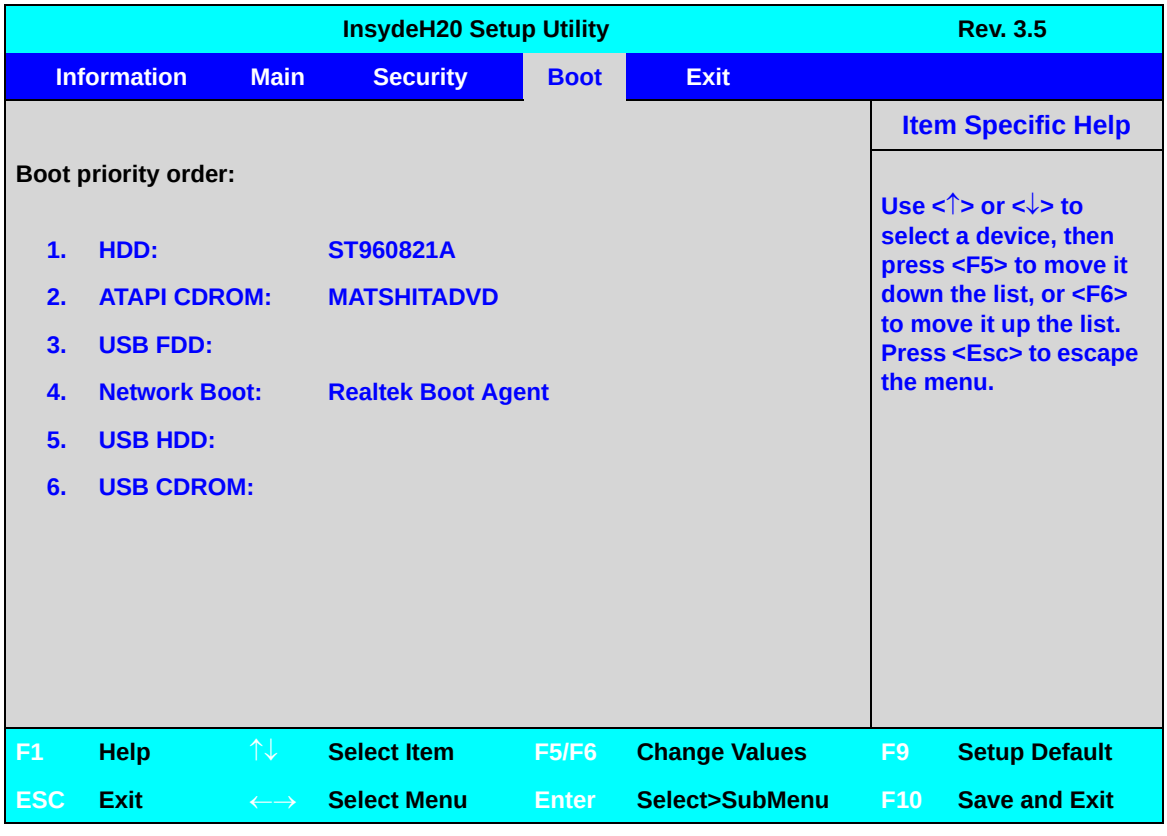


Figure 2-10. BIOS Boot

Exit

The Exit tab allows users to save or discard changes and quit the *BIOS Setup Utility*.

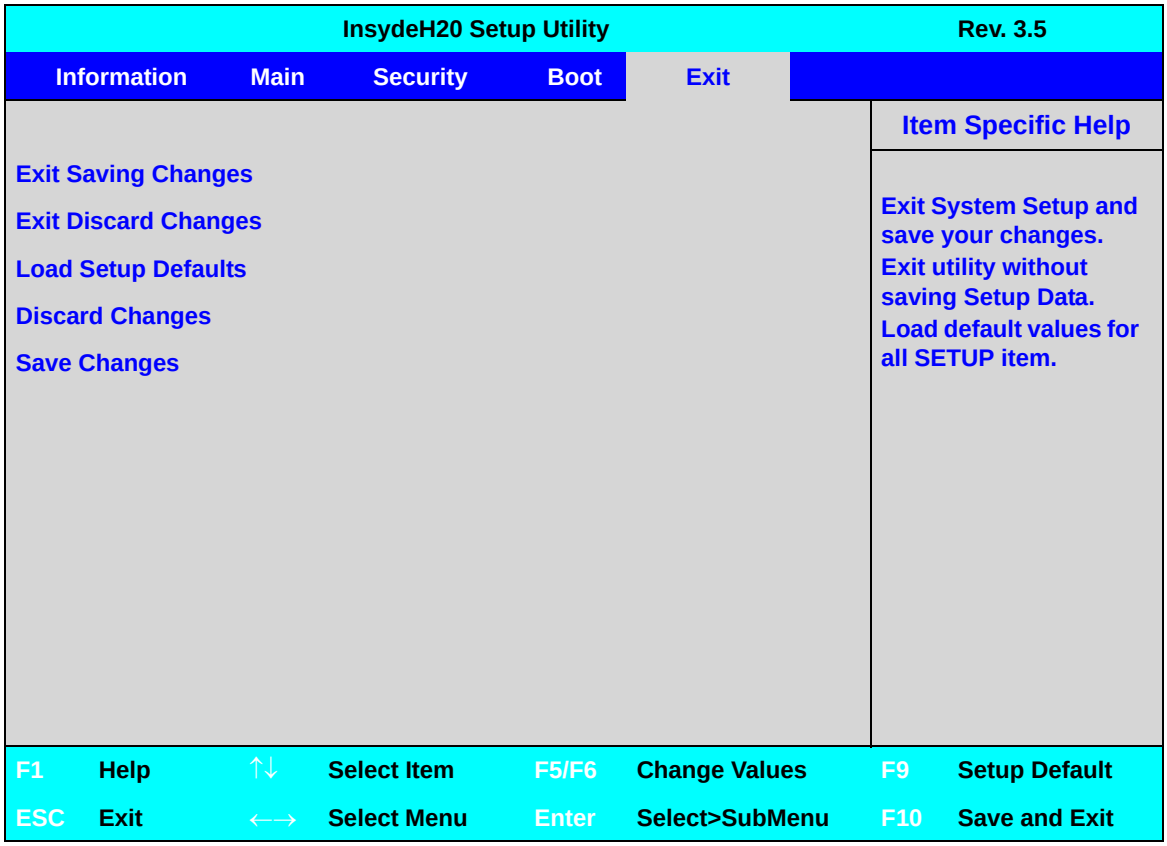


Figure 2-11. BIOS Exit

Table 2-4 describes the parameters in Figure 2-11.

Table 2-4. Exit Parameters

Parameter	Description
Exit Saving Changes	Exit BIOS utility and save setup item changes to system.
Exit Discarding Changes	Exit BIOS utility without saving setup item changes to system.
Load Setup Default	Load default values for all setup items.
Discard Changes	Load previous values of all setup items.
Save Changes	Save setup item changes to system.

BIOS Flash Utilities

BIOS Flash memory updates are required for the following conditions:

- New versions of system programs
- New features or options
- Restore a BIOS when it becomes corrupted.

Use the Flash utility to update the system BIOS Flash ROM.

NOTE:
If a Crisis Recovery Disc is not available, create one before BIOS Flash utility is used. Refer to *Chapter 5, BIOS Recovery by Crisis Disk*.

NOTE:
Do not install memory related drivers (XMS, EMS, DPMI) when BIOS Flash is used.

NOTE:
Use AC adaptor power supply when running BIOS Flash utility. If battery pack does not contain power to finish loading BIOS Flash, do not boot system.

Perform the following to run a BIOS Flash update:

1. Prepare a bootable USB HDD.
2. Copy Flash utilities to bootable USB HDD.
3. Boot system from bootable USB HDD.

NOTE:
Flash utility has auto execution function.

DOS Flash Utility

Perform the following to use the DOS Flash Utility:

1. Press ***F2*** during boot to enter `Setup Menu`.
2. Select `Boot Menu` to modify boot priority order.
3. Move USB HDD to position 1. (Refer to Boot menu)

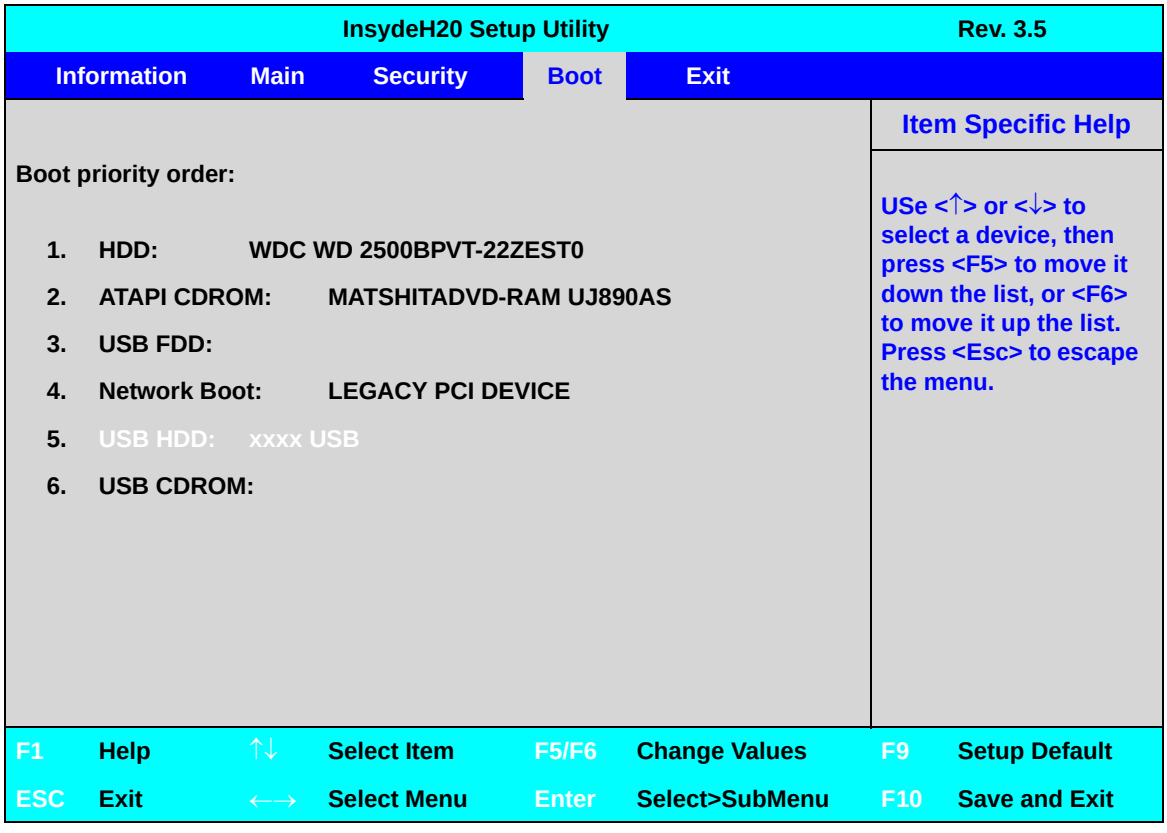


Figure 2-12. Changing BIOS Boot Priority Order

4. Copy **FLASH.BAT** to USB HDD.
5. Insert USB HDD and reboot computer.
6. Execute **FLASH.BAT** to update BIOS. Flash process begins as shown in Figure 2-14.

Figure 2-13. Executing FLASH.BAT

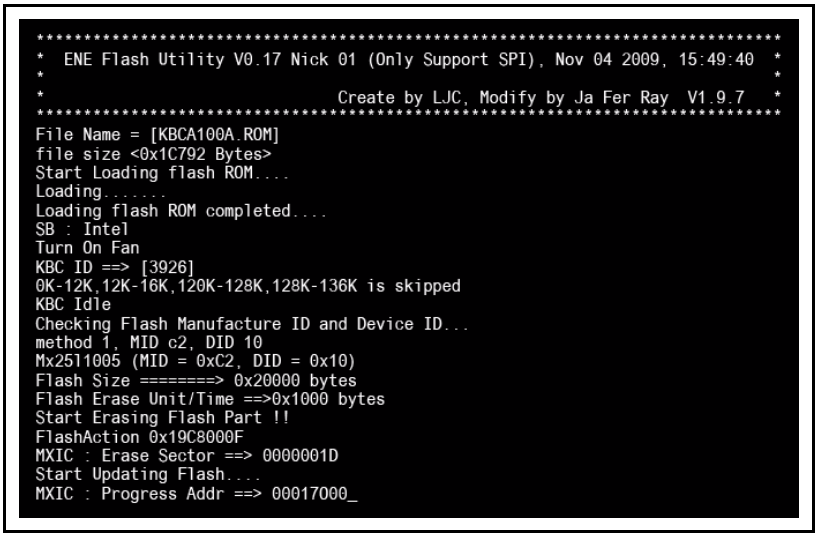


Figure 2-14. Erasing FLASH ROM

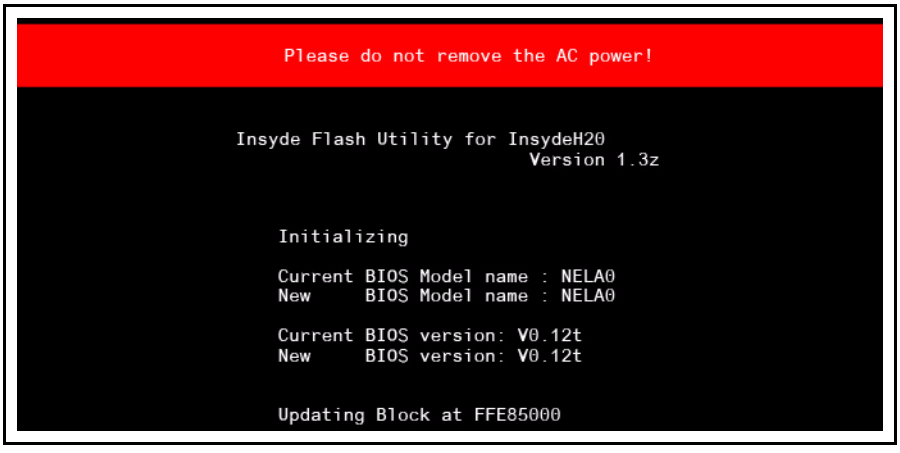


Figure 2-15. Updating Flash ROM Blocks

7. Flash is complete when the message, `Flash Programming Complete` is shown. System will restart automatically when finished.

NOTE:

If AC power is not connected, the following message is shown (Figure 2-16). Plug in the AC power to continue.

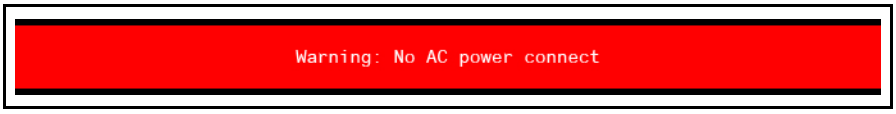


Figure 2-16. AC Power Warning

WinFlash Utility

Perform the following to use the WinFlash Utility:

1. Double-click the WinFlash executable.
2. Click ***OK*** to begin the update. A progress screen is shown. (Figure 2-17)

Figure 2-17. InsydeFlash

Remove HDD/BIOS Password Utilities

This section provides details about removing HDD/BIOS passwords.

Remove HDD Password as follows:

NOTE:

If the HDD password is incorrectly entered three times, the `Password Error Status` dialog shown. (Figure 2-18)

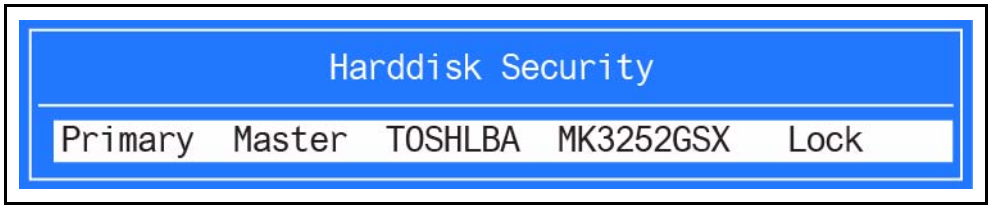


Figure 2-18. Password Error Status

To reset the HDD password, perform the following:

1. Press ***Enter*** to continue. The `Select Item` dialog is shown. (Figure 2-19)

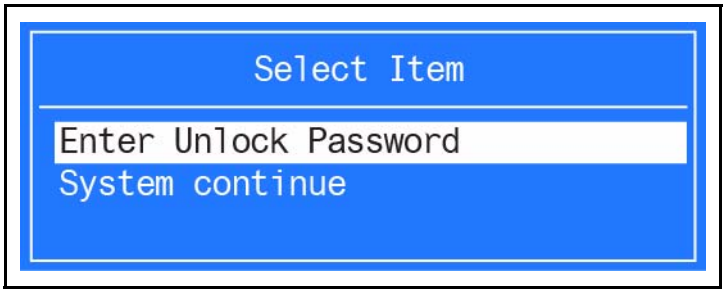


Figure 2-19. Select Item

2. Use the ↑ and ↓ keys to highlight `Enter Unlock Password` and press ***Enter***. The `Enter Unlock Password` dialog box appears. (Figure 2-20)

Figure 2-20. Enter Unlock Password

NOTE:

A key code is generated for use with unlocking utility. Make note of this code.

3. On separate, compatible device, boot to DOS.
4. Execute *UnlockHD.exe* (Figure 2-21) to create a password unlock code. Use the format <*`UnlockHD [key code]`*> with the code noted in the Figure 2-20.

Example: **UnlockHD 54591747**

The command generates a password which can be used for unlocking the HDD.

```
Password: 41499389
```

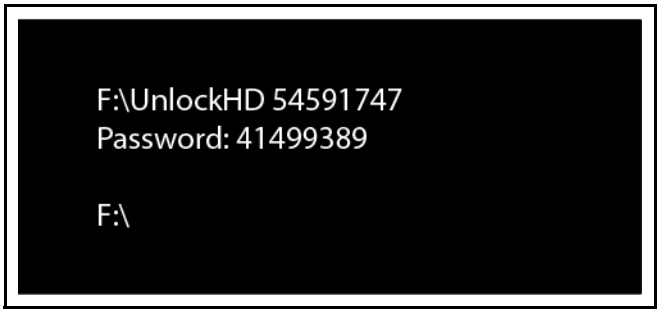


Figure 2-21. Unlock Password

5. On original device, enter password (Figure 2-21) in `Enter Unlock Password` dialog (Figure 2-20).

Removing BIOS Passwords

The User and Supervisor passwords can be cleared by shorting the RTC_RST point with a metal instrument. (Figure 2-22)

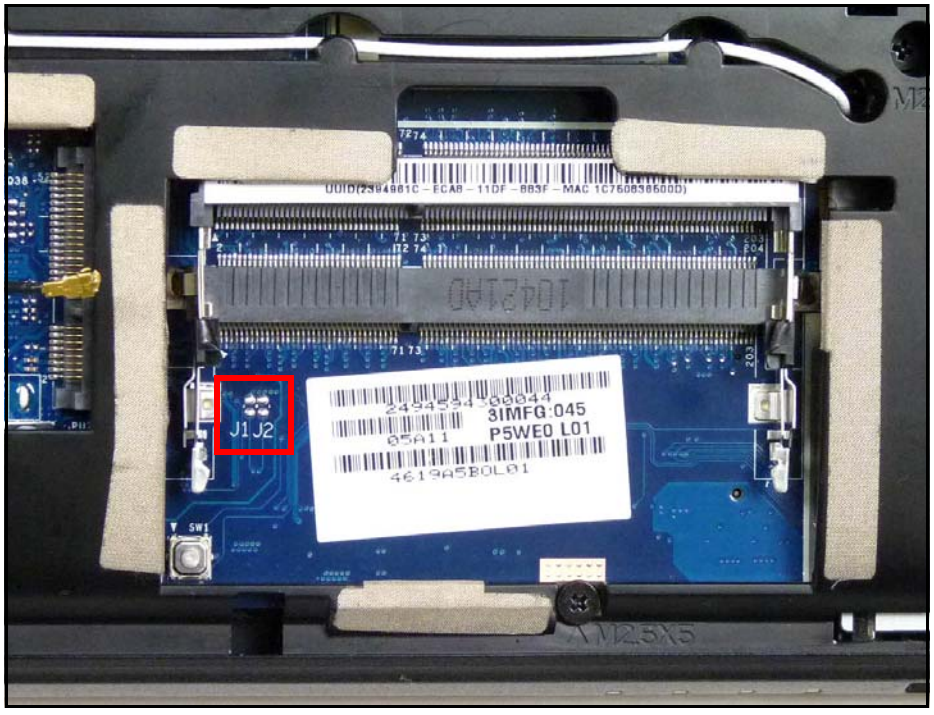


Figure 2-22. CMOS Jumper

Cleaning BIOS Passwords

To clean the User or Supervisor passwords, perform the following steps:

1. At the DOS prompt, enter **clnpwd.exe.**
2. Press **1** or **2** to clean the desired password shown on the screen.

```
d:\Clnpwd>clnpwd
ACER Clean Password Utility V1.00
Press 1 or 2 to clean any password shown as below
            1.User Password
            2.Supervisor password

Clean User Password Successfully!
```

Figure 2-23. Clean BIOS Password

3. The on screen message shows function success or failure.

Using *Boot Manager*

The *Boot Manager* allows the boot device to be changed without accessing the BIOS.

NOTE:

The *F12 Boot Menu* option must be set to **Enabled** in the *BIOS Setup Utility*'s *Main* screen. (refer to *Main*)

To use the *Boot Manager*, perform the following steps:

1. Start the computer.
2. When prompted, press ***F12*** during POST procedure. The *Boot Manager* dialog is shown. (Figure 2-24)

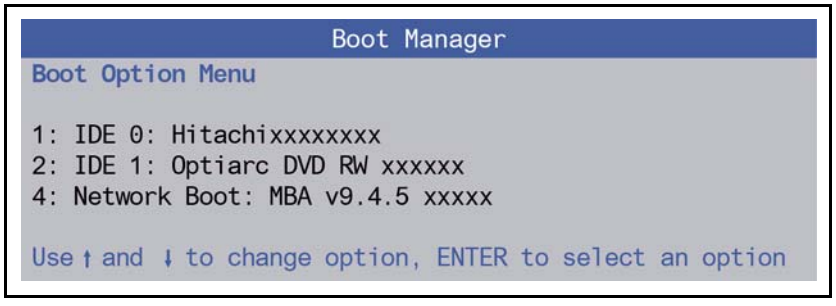


Figure 2-24. Boot Manager Dialog

3. Use the ↑ and ↓ keys to highlight the boot device.
4. Press ***Enter*** to select an option an continue the boot procedure.

Using DMITools

The DMI (Desktop Management Interface) Tool copies BIOS information to EEPROM. Used in the DMI pool for hardware management.

When the BIOS shows `Verifying DMI pool data,` it is checking that the table correlates with the hardware before sending it to the operating system (Windows, etc.).

To update the DMI Pool, perform the following:

1. Boot to DOS.
2. At the prompt, enter **`dmitools`** with one of the following arguments:
   - /r ==> Read dmi information from memory
   - /wm ==> Write Manufacturer Name to EEPROM (max. 16 characters)
   - /wp ==> Write Product Name to EEPROM (max. 16 characters)
   - /ws ==> Write Serial Number to EEPROM (max. 22 characters)
   - /wu ==> Write UUID to EEPROM (ignore string)
   - /wa ==> Write Asset Tag to EEPROM (max. 32 characters)

The following examples show the commands and the corresponding output information:

Read DMI Information from Memory

Input:

dmitools /r

Output:

Manufacturer (Type1, Offset04h): Packard Bell

Product Name (Type1, Offset05h): xxxxx

Serial Number (Type1, Offset07h): 01234567890123456789

UUID String (Type1, Offset08h): xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx

Asset Tag (Type3, Offset04h): Acet Asstag

Write Product Name to EEPROM

Input:

dmitools /wp Acer

Write Serial Number to EEPROM

Input:

dmitools /ws 01234567890123456789

Write UUID to EEPROM (Create UUID from *Intel WFM20.pdf*)

Input:

dmitools /wu

Write Asset Tag to EEPROM

Input:

dmitools /wa Acer Asstag

NOTE:

For examples two (2) through five (5), restart the system to write any changes in the data to the EEPROM.

Using the LAN MAC EEPROM Utility

1. Extract and copy the contents of *LAN MAC Tools.zip* to a bootable USB HDD device.
2. Use a text editor to edit *MACADDR.TXT* with the correct MAC address.
3. Insert USB HDD and boot device.
4. Enter *LAN MAC Tools* folder.
5. At DOS prompt, enter **JE50.BAT** to write MAC values to eeprom.
6. Reboot computer when process has completed.

CHAPTER 3

Machine Maintenance Procedures

Machine Maintenance Procedures

Introduction

This chapter contains general information about the notebook, a list of tools needed to perform the required maintenance and step by step procedures on how to remove and install components from the notebook computer.

General Information

The product previews seen in the following procedures may not represent the final product color or configuration. Cable paths and positioning may also differ from the actual model. During the removal and installation of components, make sure all available cable channels and clips are used and that the cables are installed in the same position.

All prerequisites must be performed prior to performing maintenance.

Recommended Equipment

The following tools are required to perform maintenance on the notebook:

- Wrist grounding strap and conductive mat
- Flat screwdriver
- Philips screwdriver

Table 3-1. Main Screw List

Screw Name	Quantity
M2.5x8.0	19
M2.0x3.0	21
M3.0x3.0 Ni	4
M2.5x4.0 Ni	2
M2.0 3Dx2.0L	4
M2.5x4.0	11
M2.5x5.0	2
M1.6x2.0 Ni	4
M1.6x3.0	5

Maintenance Flowchart

The flowchart in Figure 3-1 provides a graphic representation of the module removal and installation sequences. It provides information on what components need to be removed and installed during servicing.

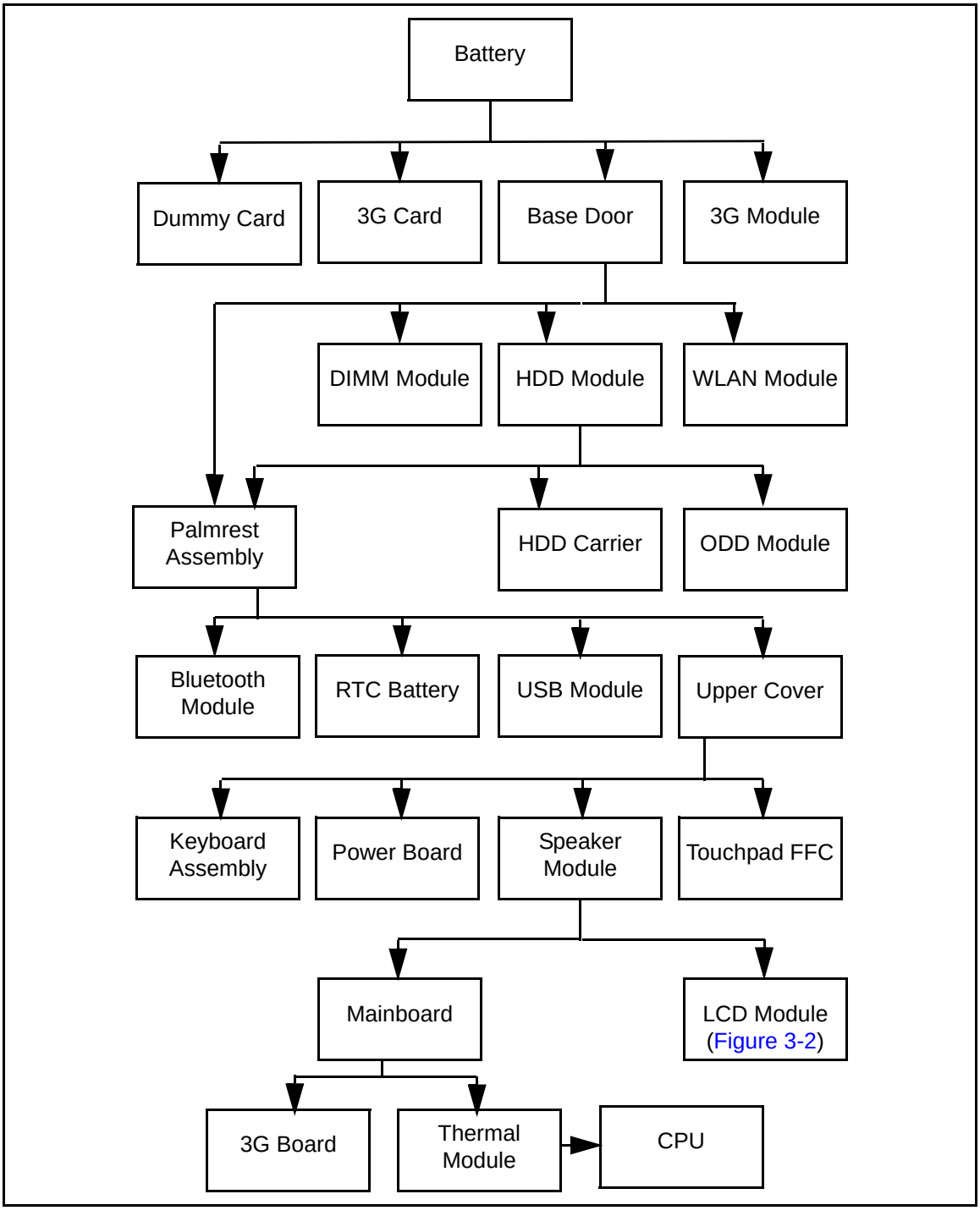


Figure 3-1. Maintenance Flow

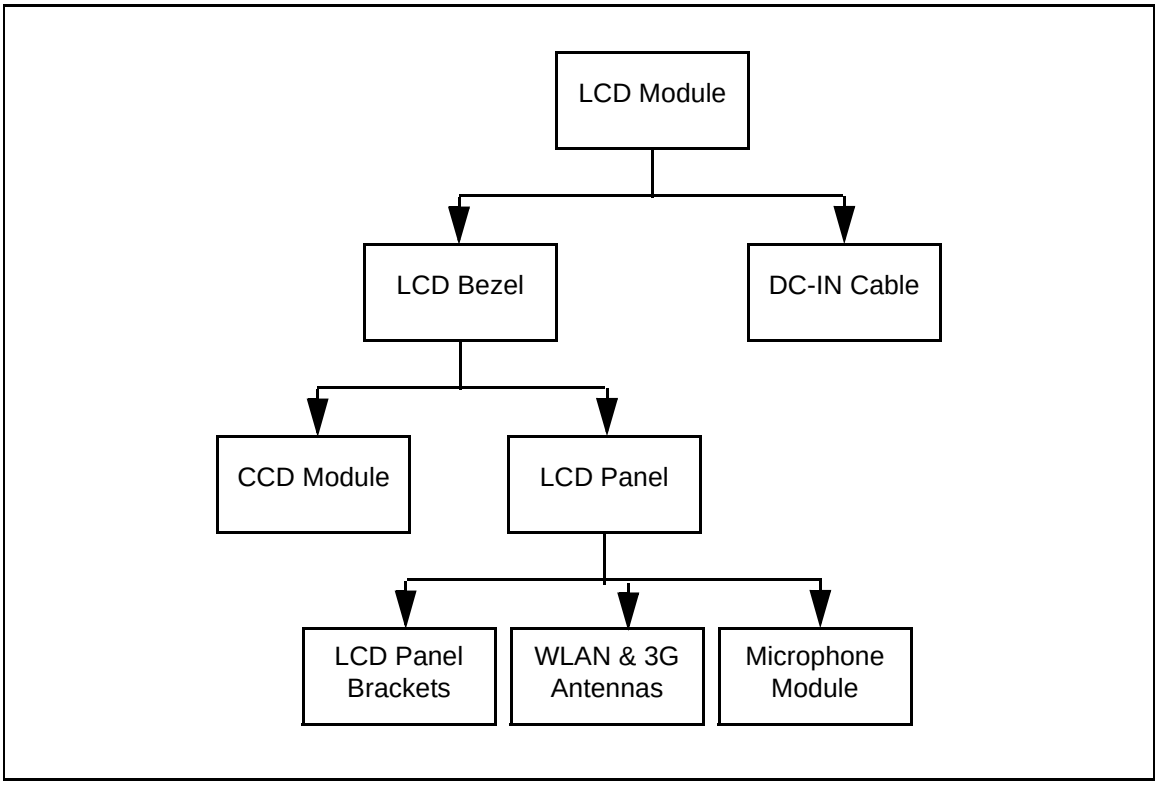


Figure 3-2. LCD Module Maintenance Flow

Getting Started

The flowchart in Figure 3-1 identifies sections illustrating the entire removal and install sequence. Observe the order of the sequence to avoid damage to any of the hardware components.

Perform the following prior to performing any maintenance procedures:

1. Remove power (A) from the system and peripherals.
2. Remove all cables from system.

Figure 3-3. AC Adapter

3. Place system on a stable work surface.

Battery Pack Removal

1. Place computer on flat surface, battery side up.
2. Push battery lock/unlock latch (B) to unlock position.
3. Remove battery pack (A) from lower cover.

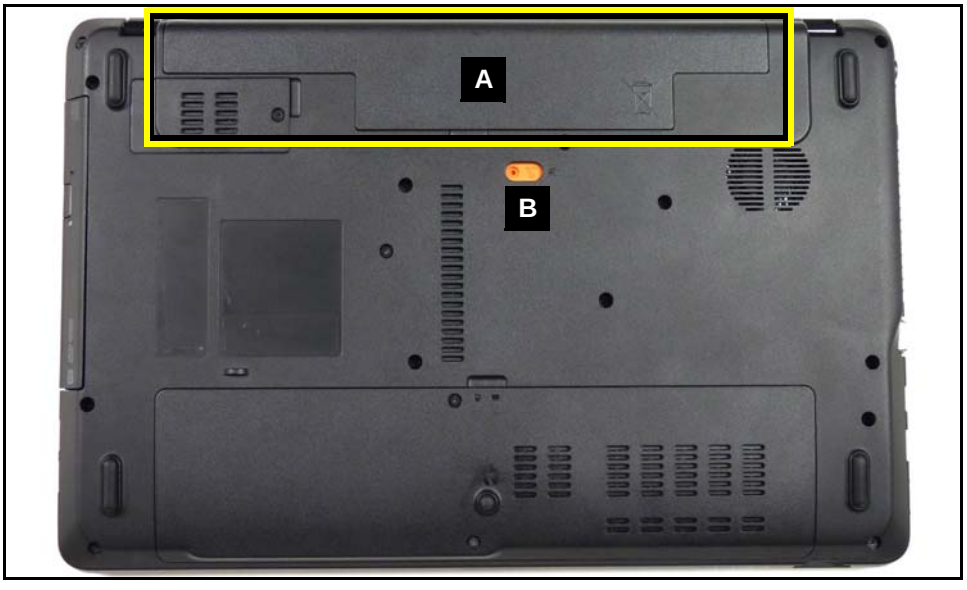


Figure 3-4. Battery

+ **IMPORTANT:**
  Follow local regulations for battery (A, Figure 3-4) disposal.

Battery Pack Installation

1. Move lock/unlock latch (B) into unlock position (Figure 3-4).
2. Install battery (A).
3. Move lock/unlock latch (B) into lock position.

Dummy Card Removal

1. Push dummy card (A) in to release it from spring latch.
2. Remove dummy card (A).

Figure 3-5. Dummy Card

Dummy Card Installation

1. Insert dummy card (A) (Figure 3-5).
2. Push card until spring latch locks.

3G Card Removal

Prerequisite:

Battery Pack Removal

1. Locate 3G card slot (A) in battery bay (Figure 3-6).

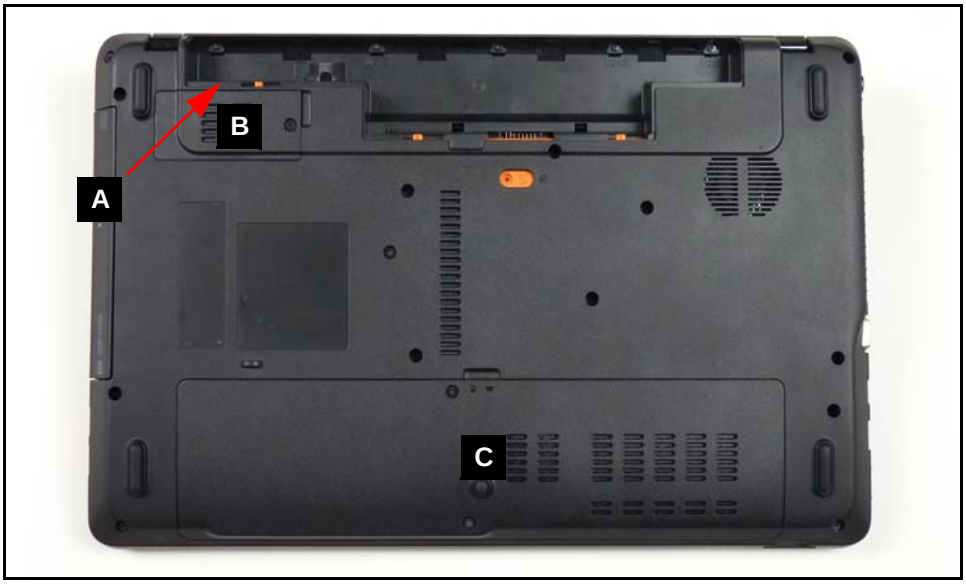


Figure 3-6. Lower Cover Overview with Base Door

2. Push 3G card (B) in to release it from spring latch (Figure 3-7).

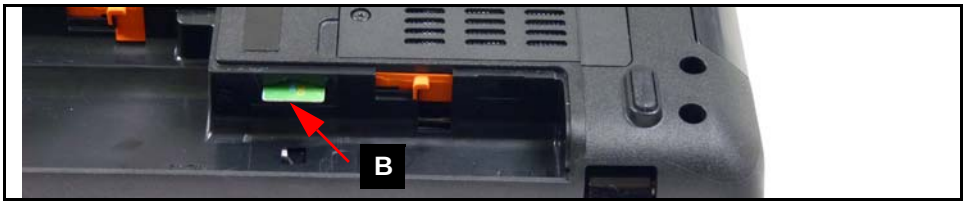


Figure 3-7. 3G Card

3. Remove 3G card (B).

3G Card Installation

1. Insert 3G card (A) into 3G card slot (Figure 3-7).
2. Push card until spring latch locks.
3. Install battery pack.

3G Module Removal

Prerequisite:

Battery Pack Removal

1. Locate module door (B) on lower cover. Refer to Figure 3-6.
2. Loosen captive screw (A) (Figure 3-8).

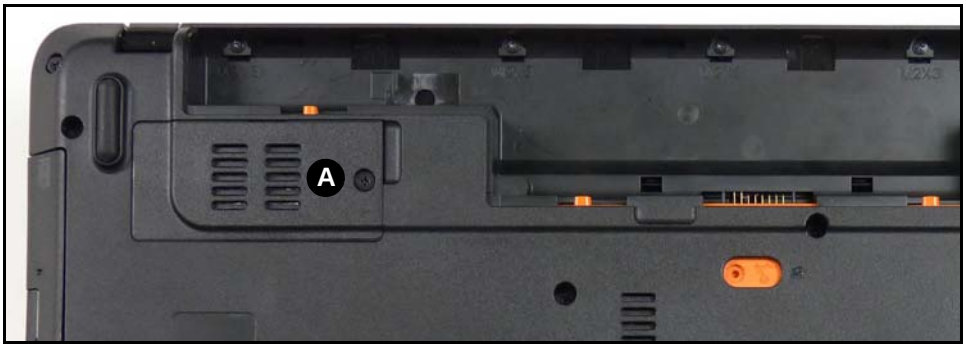


Figure 3-8. 3G Module Cover Door

3. Remove door from lower cover.
4. Disconnect main (B) and auxiliary (C) antenna cables from module (Figure 3-9).

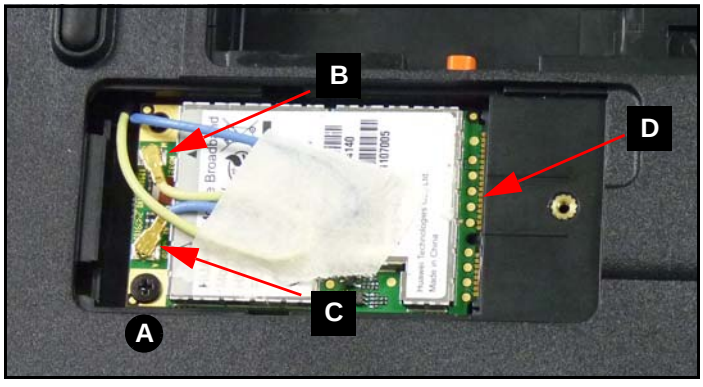


Figure 3-9. 3G Module with Antenna Cables

NOTE:

Main (yellow) antenna connector is close to battery bay. Auxiliary (blue) antenna connector is close to ODD module.

5. Remove screw (A) from mainboard.
6. Remove module from mainboard connector (D).

3G Module Installation

1. Insert module into mainboard connector (D). Refer to Figure 3-9.
2. Install and secure screw (A) to mainboard.
3. Install main (B) and auxiliary (C) antenna cables on 3G module.
4. Install 3G module door (B). Refer to Figure 3-6.
5. Secure captive screw (A). Refer to Figure 3-8.
6. Install battery pack.

Size	Quantity	Screw Type
M2.0x3.0	1	

Base Door Removal

Prerequisite:

Battery Pack Removal

1. Locate base door (C) on lower cover. Refer to Figure 3-6.
2. Remove two (2) screws (A) as shown in Figure 3-10

.

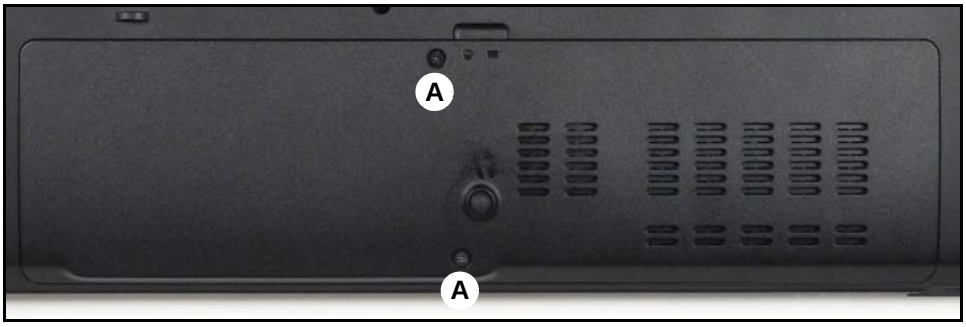


Figure 3-10. Lower Cover Door Screws

3. Remove door from lower cover.

Base Door Installation

1. Insert door flanges (A, Figure 3-11) into slots on lower cover.

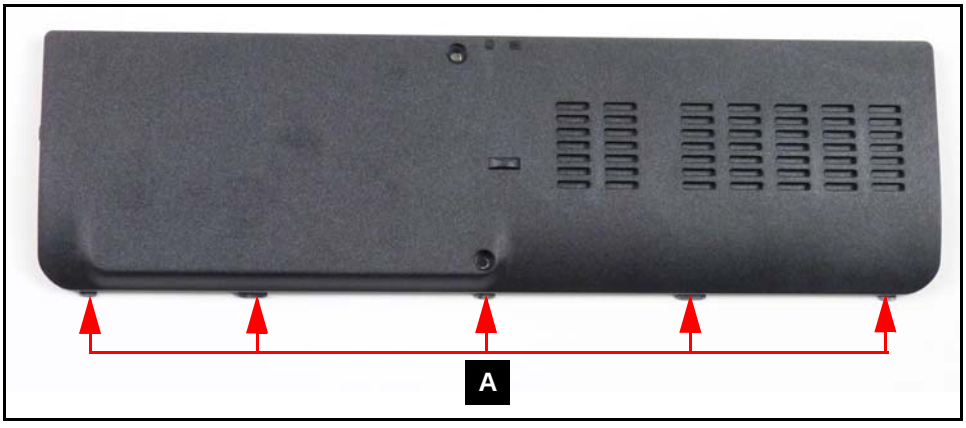


Figure 3-11. Base Door Flanges

2. Secure door to lower cover with two (2) screws (A) (Figure 3-10).
3. Install battery pack.

Size	Quantity	Screw Type
M2.5x8.0	2	

HDD (Hard Disk Drive) Module Removal

Prerequisite:

Base Door Removal

1. Locate HDD module (A) on lower cover (Figure 3-12).

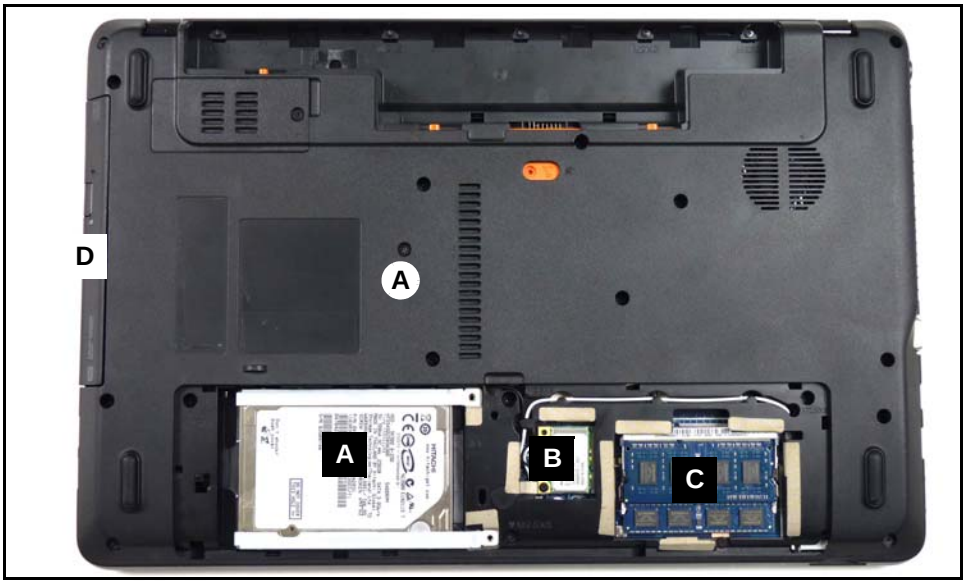


Figure 3-12. Lower Cover Overview with Base Door Removed

2. Slide module away from mainboard connector (A) (Figure 3-13).

Figure 3-13. HDD Module

3. Remove module from bay on lower cover.

HDD Module Installation

1. Place module into bay on lower cover. Refer to Figure 3-12.
2. Connect module to mainboard connector (A). Refer to Figure 3-13.
3. Install base door.

HDD Carrier Removal

Prerequisite:

HDD (Hard Disk Drive) Module Removal

1. Remove four (4) screws (A) from the brackets (Figure 3-14).

Figure 3-14. HDD Module Brackets

2. Remove brackets (B) and (C) and mylar (D) from HDD.
3. Remove mylar from brackets.

HDD Carrier Installation

1. Install mylar (D) to brackets (C) and (D) (Figure 3-14).
2. Install and secure brackets and mylar to HDD module with four (4) screws (A). (Figure 3-14)
3. Install HDD module.

Size	Quantity	Screw Type
M3.0x3.0Ni	4	

ODD Module Removal

Prerequisite:

HDD (Hard Disk Drive) Module Removal

1. Locate ODD module (D) on lower cover. Refer to Figure 3-12.
2. Remove screw (A) from lower cover.
3. To remove module, push from HDD bay (A) (Figure 3-15).

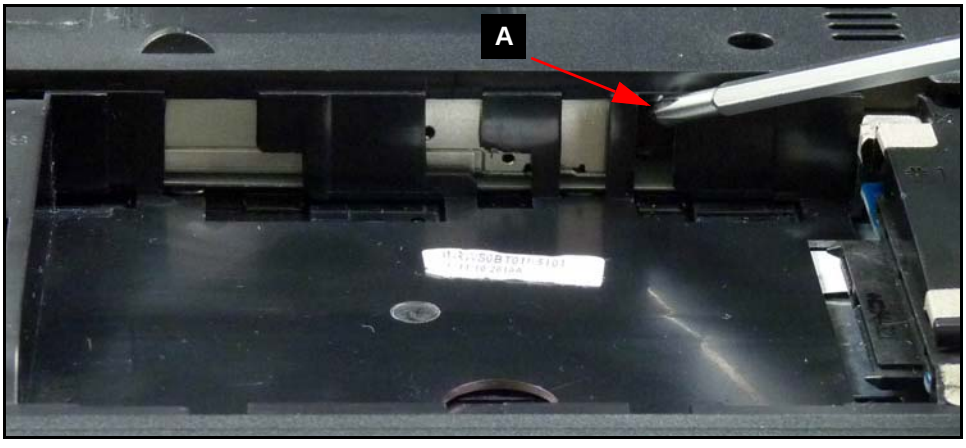


Figure 3-15. ODD Module in Lower Cover

4. Remove two (2) screws (A) from ODD module and bracket (B) (Figure 3-16).

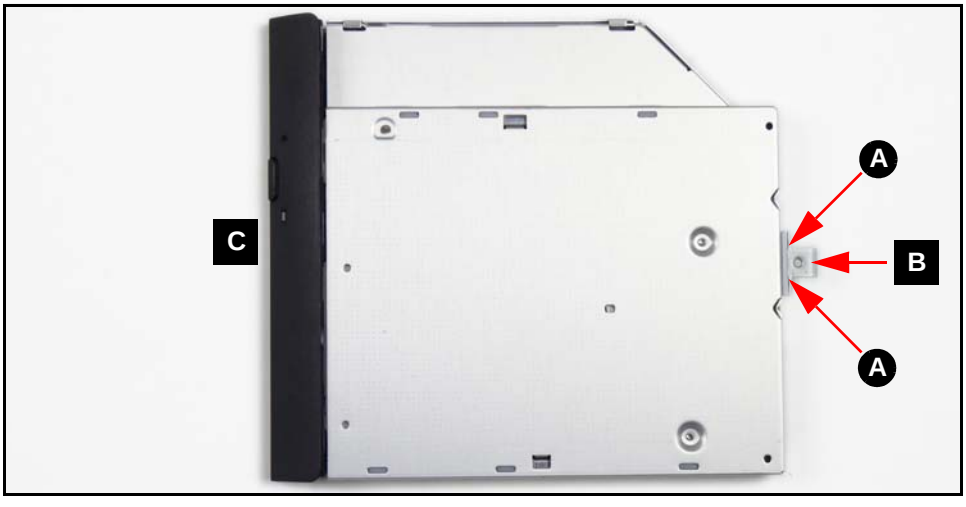


Figure 3-16. ODD Module

5. Remove bracket (B) from module.
6. Remove bezel (C) from module.

ODD Module Installation

1. Install bezel (C) to module. Refer to Figure 3-16.
2. Install bracket (B) to module.
3. Install and secure two (2) screws (A).
4. Install module (D) in lower cover. Refer to Figure 3-12.
5. Install and secure screw (A) to lower cover.
6. Install HDD module.

Size	Quantity	Screw Type
M2.5x8.0	1	
M2.0x3.0	2	

WLAN (Wireless Local Area Network) Module Removal

Prerequisite:

Base Door Removal

1. Locate module (B) on lower cover. Refer to Figure 3-12.
2. Disconnect main (B) and auxiliary (C) antenna cables from module (Figure 3-17).

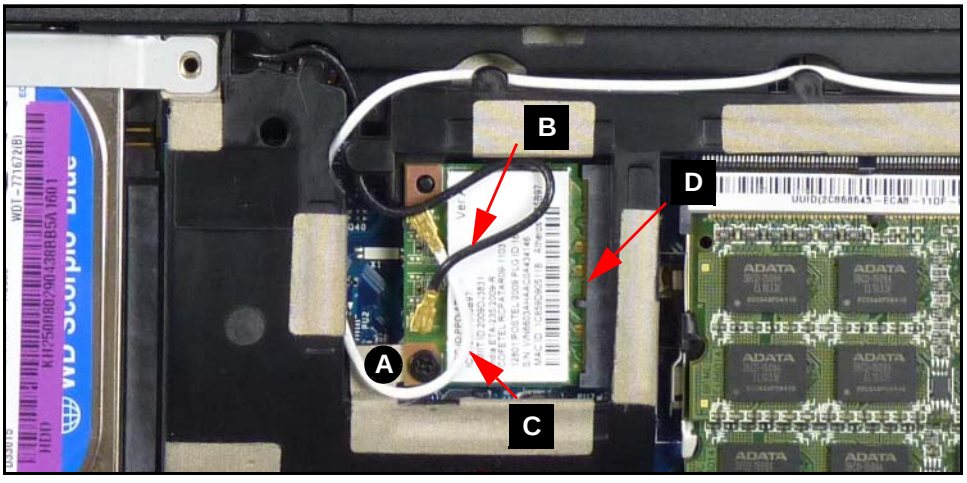


Figure 3-17. WLAN Module

NOTE:

Main (black) antenna connector is close to front of computer. Auxiliary (white) antenna connector is close to ODD module.

3. Remove screw (A) from mainboard.
4. Remove module from mainboard connector (D).

WLAN Module Installation

1. Connect module to mainboard connector (D) (Figure 3-17).
2. Install and secure screw (A) to mainboard.
3. Install main (B) and auxiliary (C) antenna cables on WLAN module connectors.
4. Install base door.

Size	Quantity	Screw Type
M2.0x3.0	1	

DIMM (Dual In-line Memory Module) Module Removal

Prerequisite:

Base Door Removal

1. Locate module (C) on lower cover. Refer to Figure 3-12.
2. Push module clips (A) outwards. (Figure 3-18)

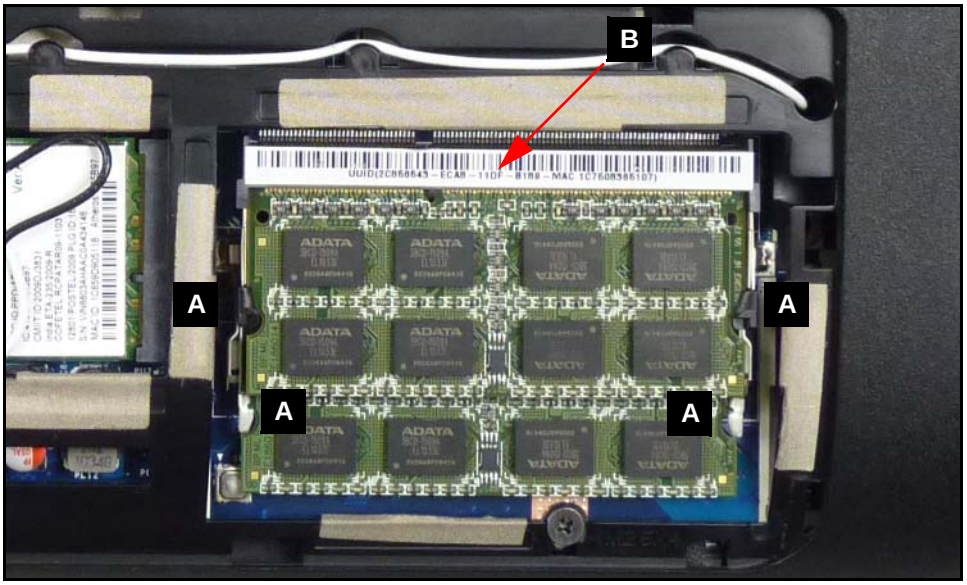


Figure 3-18. DIMM Module(s)

3. Disconnect module from mainboard connector (B).
4. Repeat steps 2 and 3 for remaining modules.

DIMM Module Installation

1. Connect module to mainboard connector (B) (Figure 3-18).
2. Push down on module until clips (A) lock in place.
3. Repeat steps 2 and 3 for remaining modules.
4. Install base door.

Palmrest Assembly Removal

Prerequisite:

Base Door Removal

HDD (Hard Disk Drive) Module Removal

1. Locate palmrest (A). (Figure 3-19)

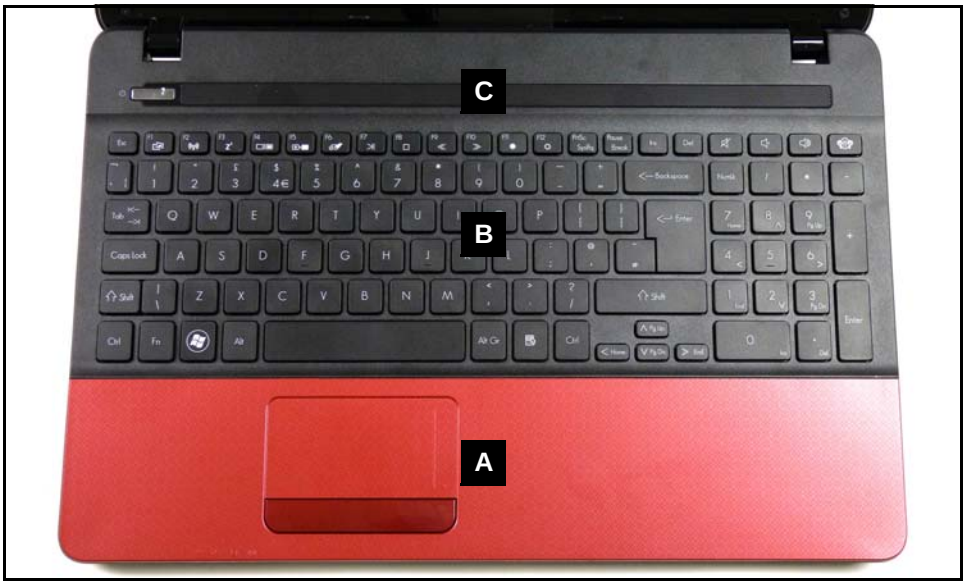


Figure 3-19. Upper Cover & Palmrest Overview

2. Remove eight (8) screws (D) from lower cover. (Figure 3-20)

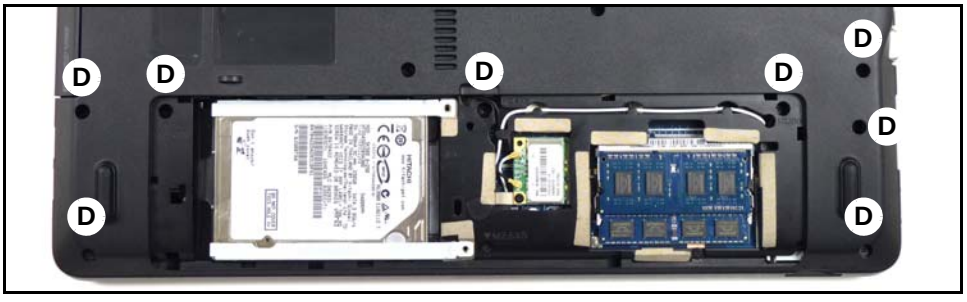


Figure 3-20. Lower Cover Screws for Palmrest

3. Remove two (2) screws (E) from lower cover. (Figure 3-21)

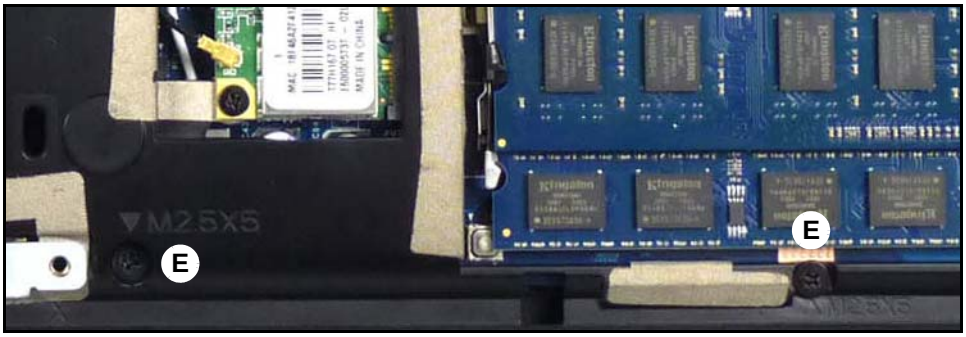


Figure 3-21. Base Door Screws for Palmrest

4. Push upper cover away from lower cover through HDD bay opening. (Figure 3-22)

Figure 3-22. Separating Upper Cover from Lower Cover

5. Flip palmrest over. (Figure 3-23)

Figure 3-23. Palmrest Removal from Lower Cover

NOTE:

Touchpad FFC is connected from the touchpad board on palmrest to mainboard. Do not lift palmrest away from lower cover.

6. Remove touchpad FFC (G) from touchpad board connector (F). (Figure 3-24)

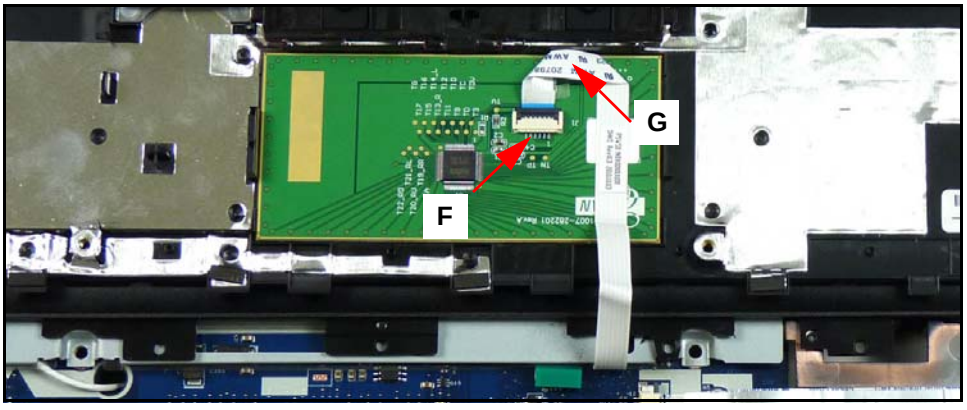


Figure 3-24. Touchpad FFC Removal from Touchpad Board

7. Remove palmrest from lower cover.

Palmrest Assembly Installation

1. Place palmrest assembly (H) on keyboard assembly (I). (Figure 3-25)

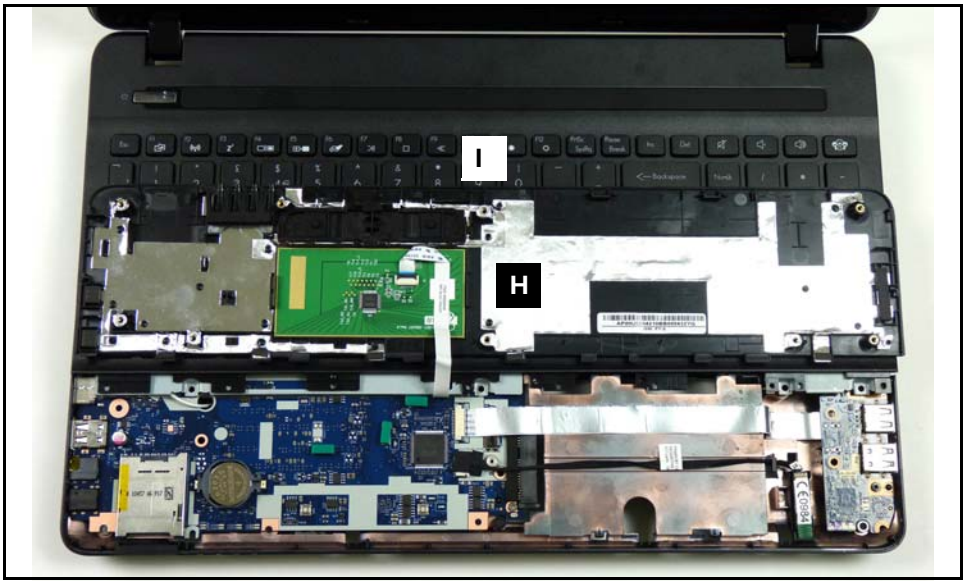


Figure 3-25. Touchpad FFC Removal from Touchpad Board

2. Install touchpad FFC (G) to touchpad board connector (F). (Figure 3-24)
3. Flip palmrest over onto lower cover. (Figure 3-23)
4. Install and secure two (2) screws (E) lower cover. (Figure 3-21)
5. Install and secure eight (8) screws (D) to lower cover. (Figure 3-20)
6. Install HDD module.
7. Install base door.

Size	Quantity	Screw Type
M2.5x8.0	8	
M2.5x5	2	

USB Module Removal

Prerequisite:

Upper Cover Removal

1. Locate USB module (C) on lower cover (Figure 3-26).

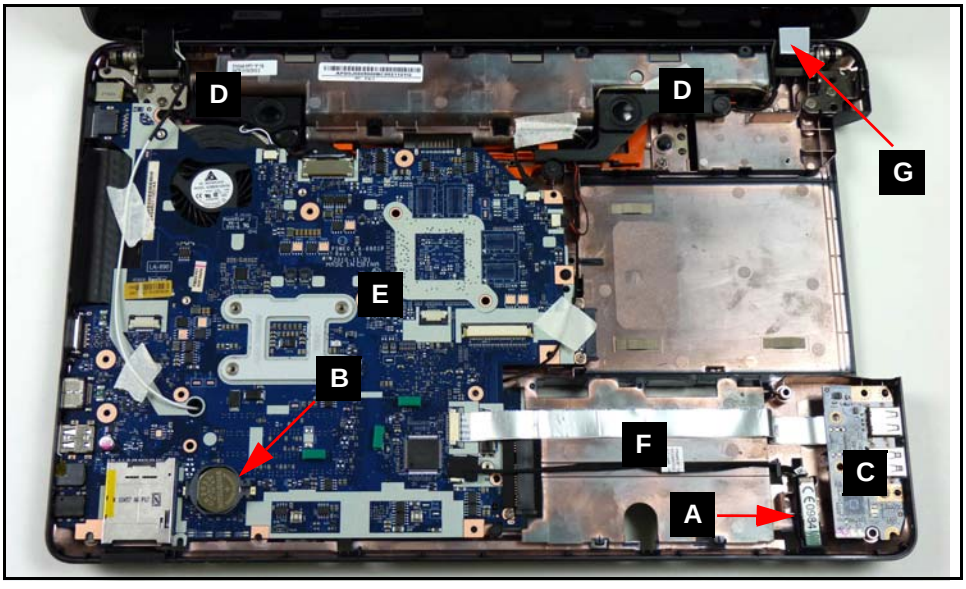


Figure 3-26. Mainboard Overview

2. Remove screw (D) from lower cover (Figure 3-27).

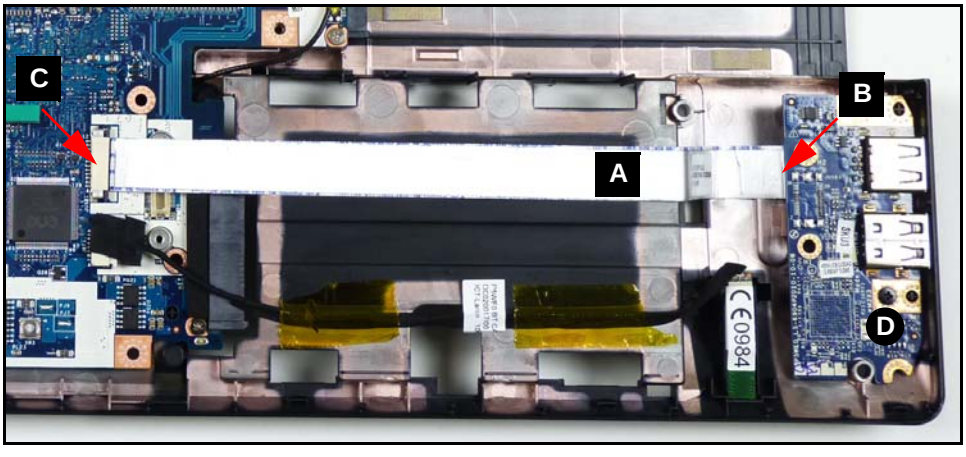


Figure 3-27. USB 2.0 Module

3. Disconnect module FFC (FPC, Figure 3-28) (A) from module connector (B).

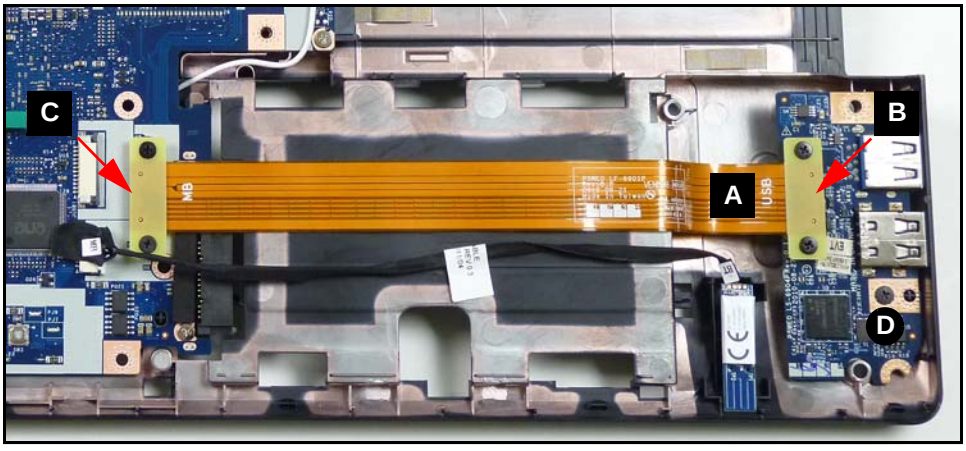


Figure 3-28. USB 3.0 Module

NOTE:

USB 3.0 is an optional feature and may not represent the final product.

4. Disconnect module FFC (FPC, Figure 3-28) (A) from mainboard connector (C).
5. Remove module from lower cover.

USB Module Installation

1. Install module (C) on lower cover. (Figure 3-26)
2. Install module FFC (FPC, Figure 3-28) (A) to mainboard connector (C). (Figure 3-27)
3. Install module FFC (FPC, Figure 3-28) (A) to module connector (B).
4. Install and secure screw (D) to lower cover.
5. Install upper cover.

Bluetooth Module Removal

Prerequisite:

Upper Cover Removal

1. Locate Bluetooth module (B) on upper cover. Refer to Figure 3-26.
2. Remove module (A) from adhesive strip on upper cover (Figure 3-29).

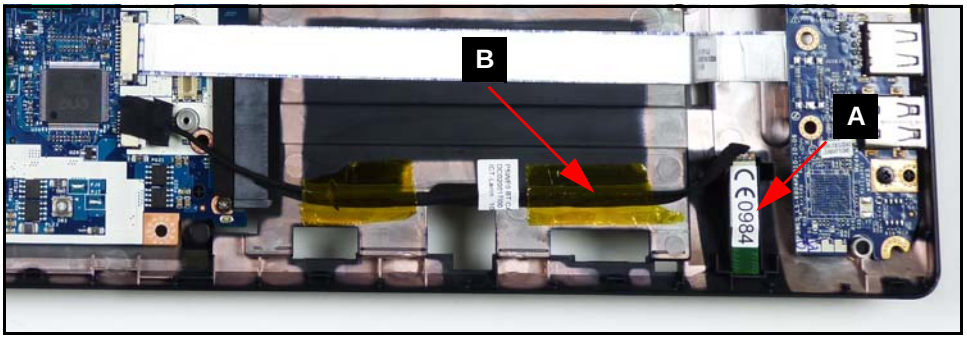


Figure 3-29. Bluetooth Module

3. Disconnect module cable (B) from module (A).

Bluetooth Module Installation

1. Connect module cable (B) to module (A) (Figure 3-29).
2. Install and secure module (A) to adhesive strip on upper cover.
3. Install upper cover.

RTC Battery Removal

Prerequisite:

Upper Cover Removal

1. Locate RTC battery (B) on mainboard. Refer to Figure 3-26.
2. Remove battery (B) from mainboard connector (A) (Figure 3-30).

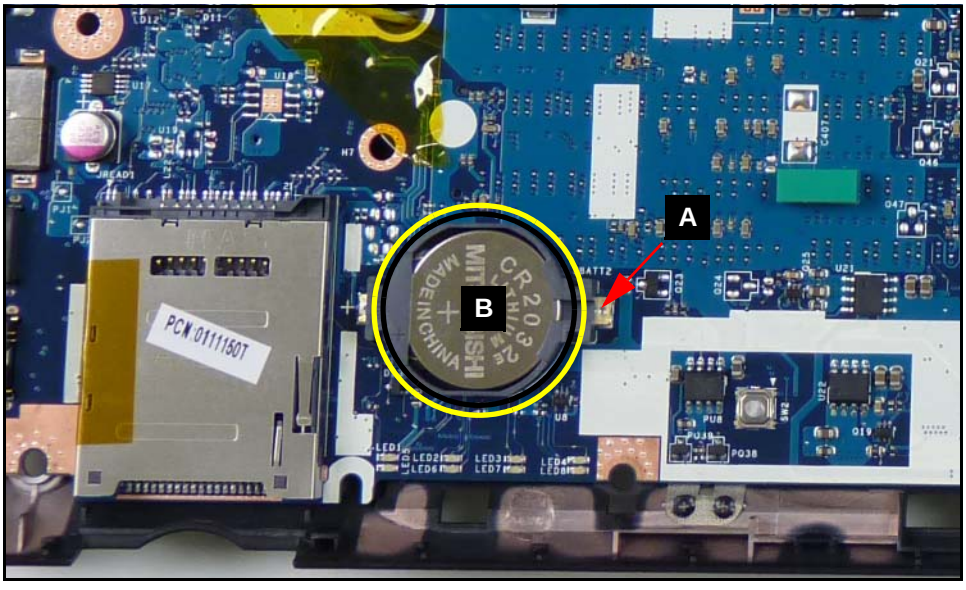


Figure 3-30. RTC Battery Removal

+ **IMPORTANT:**

Follow local regulations for battery (Figure 3-30) disposal.

RTC Battery Installation

1. Install battery (B) to mainboard connector (Figure 3-30).
2. Install upper cover.

Upper Cover Removal

Prerequisite:

Palmrest Assembly Removal

1. Remove eight (8) screws (A) from upper cover (Figure 3-31).

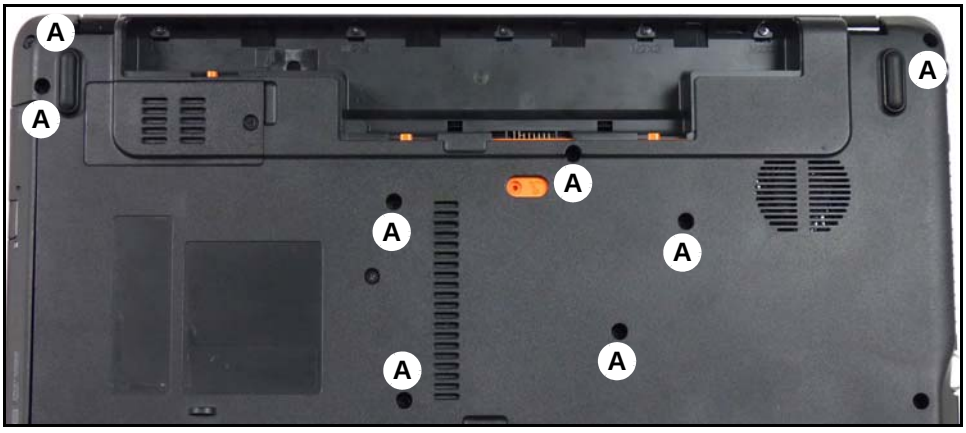


Figure 3-31. Upper Cover Screws

2. Remove five (5) screws (B) from lower cover battery bay. (Figure 3-32)

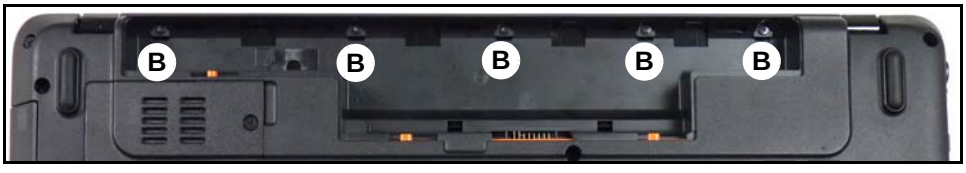


Figure 3-32. Battery Bay Screws

3. Lift upper cover enough to release latches from lower cover. (Figure 3-33)

Figure 3-33. Upper Cover without Palmrest

4. Move upper cover until keyboard FPC is visible. (Figure 3-34)

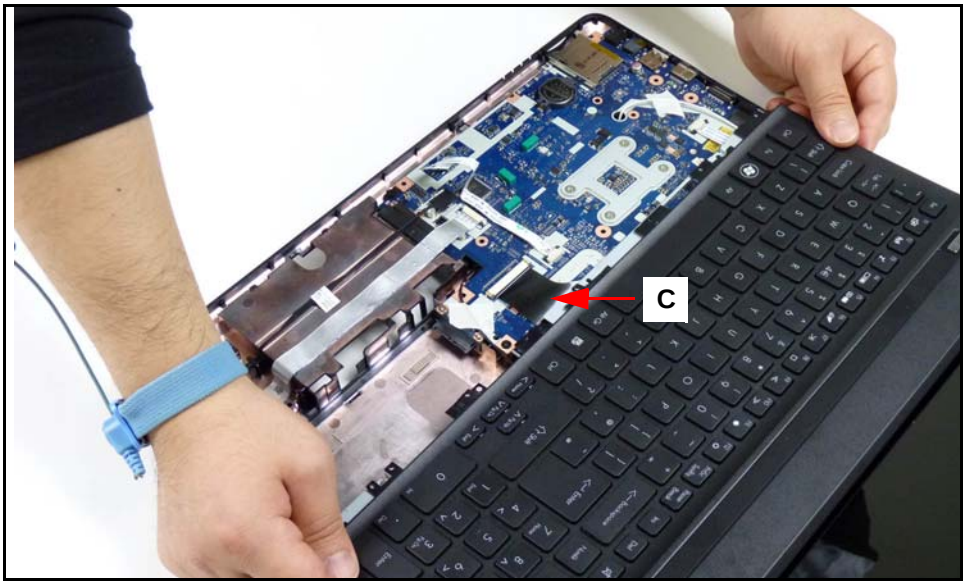


Figure 3-34. Exposing Keyboard FPC

5. Disconnect keyboard FPC (D) from mainboard connector (E). (Figure 3-35)

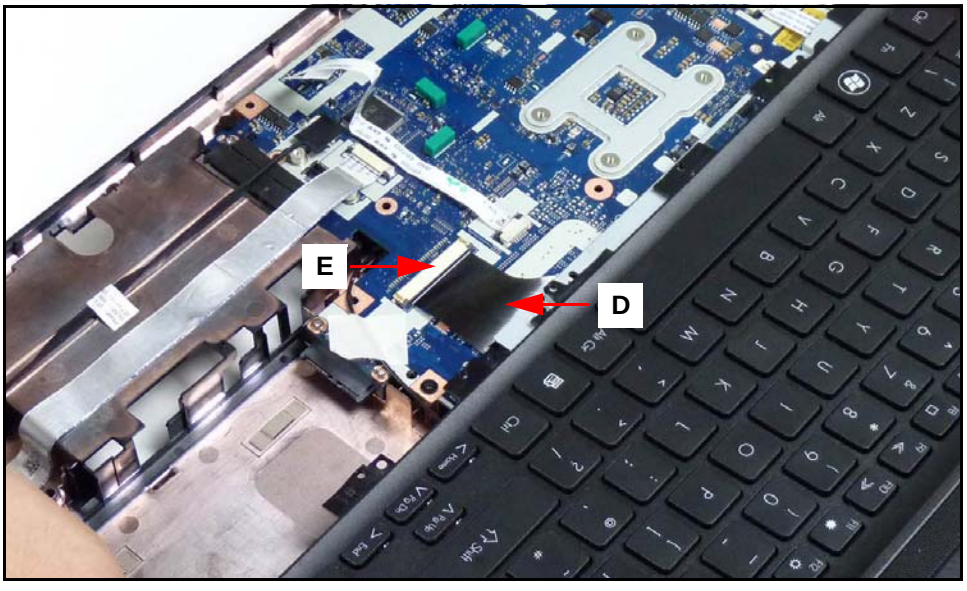


Figure 3-35. Disconnecting Keyboard FPC

6. Remove upper cover from lower cover.

Upper Cover Installation

1. Place upper cover on lower cover. Make sure keyboard FPC (F) is visible. (Figure 3-36)

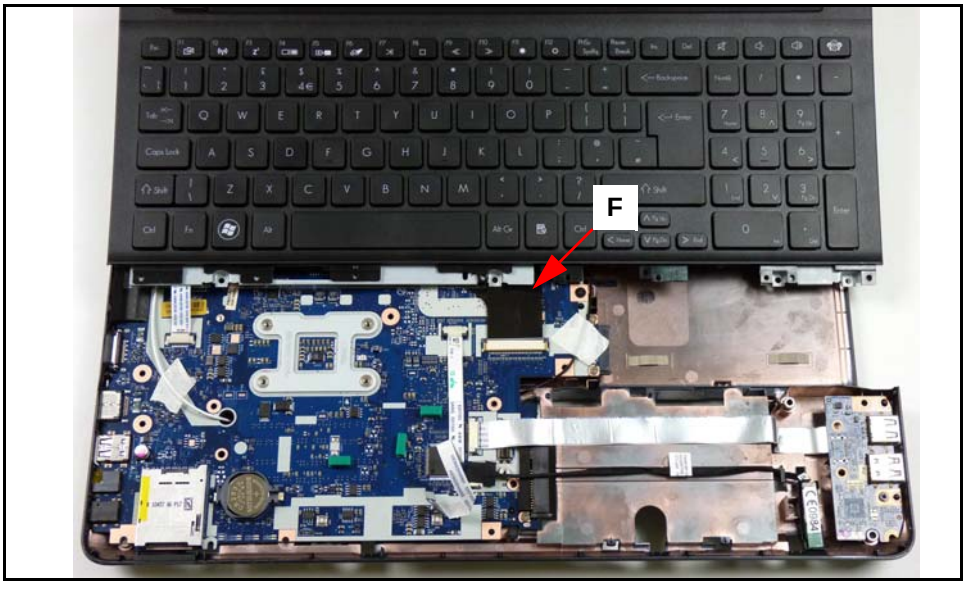


Figure 3-36. Upper Cover Installation

2. Connect keyboard FPC (C) to mainboard connector (D). (Figure 3-35)
3. Move upper cover to until aligned with lower cover latches and keyboard FPC is not visible. (Figure 3-34)
4. Secure lower cover latches to upper cover. (Figure 3-33)
5. Install and secure five (5) screws (B) to lower cover battery bay. (Figure 3-32)
6. Install and secure eight (8) screws (A) to upper cover (Figure 3-31).
7. Install palmrest assembly.

Size	Quantity	Screw Type
M2.0x3.0	5	
M2.5x8.0	8	

Power Board Removal

Prerequisite:

Upper Cover Removal

1. Locate power board (A) on upper cover. (Figure 3-37)

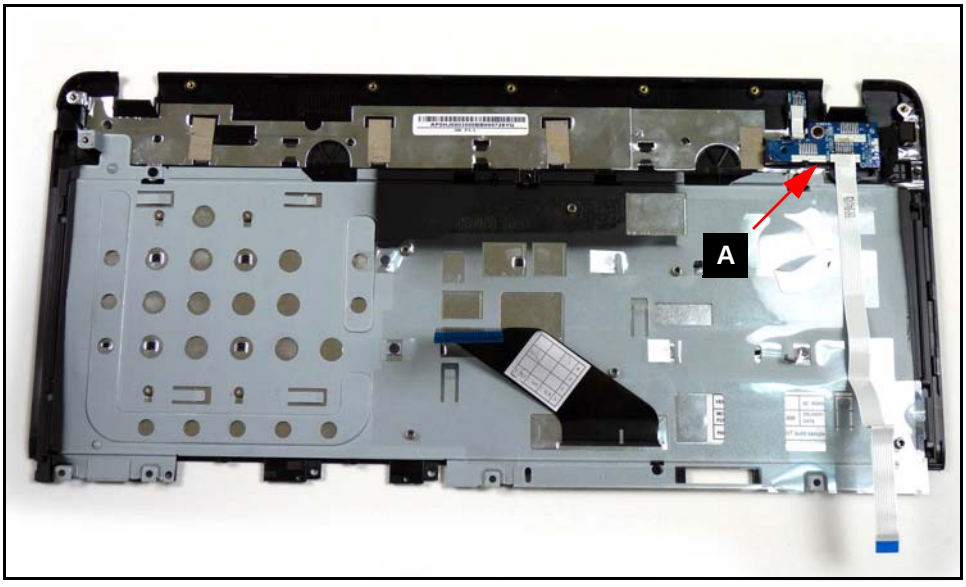


Figure 3-37. Upper Cover Overview with Power Board

2. Remove screw (A) from upper cover. (Figure 3-38)

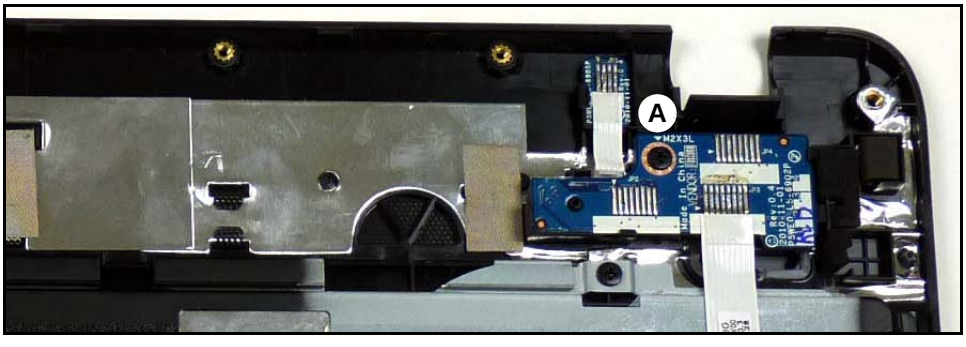


Figure 3-38. Power Board Overview

3. Remove power board from upper cover.

Power Board Installation

1. Install power board (A) on upper cover. (Figure 3-37)
2. Install and secure screw (A) to upper cover. (Figure 3-38)
3. Install upper cover.

Size	Quantity	Screw Type
M2.0x3.0	1	

Keyboard Assembly Removal

Prerequisite:

Upper Cover Removal

1. Remove three (3) screws (A), four (4) screws (B), and five (5) screws (C) from keyboard. (Figure 3-39)

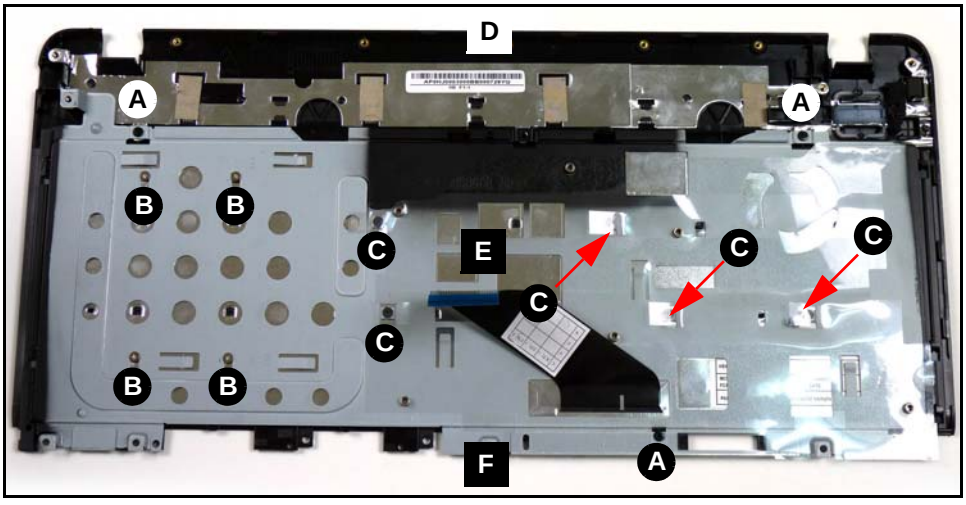


Figure 3-39. Keyboard Assembly Screws

2. Slide keyboard support plate toward top edge (D) of upper cover.
3. Remove keyboard support plate (E) from upper cover.
4. Remove keyboard (G) from upper cover. (Figure 3-40)

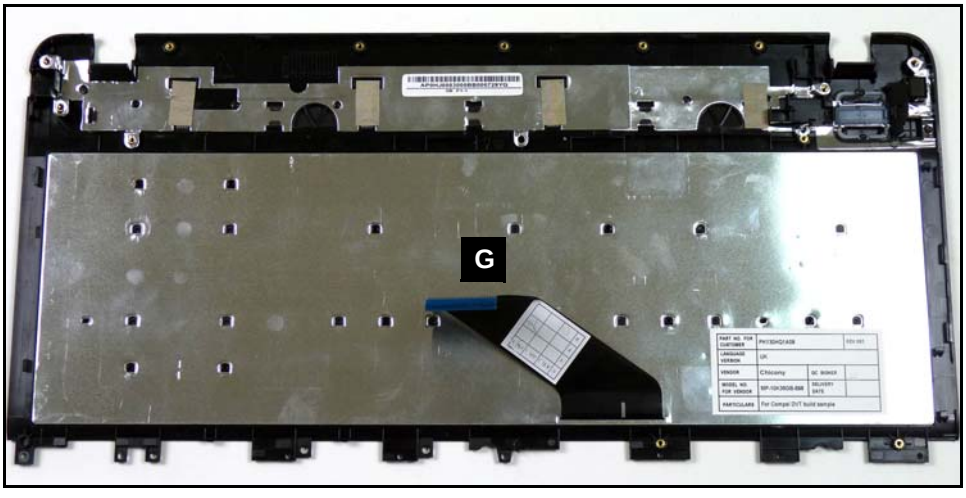


Figure 3-40. Upper Cover without Keyboard Support Plate.

Keyboard Assembly Installation

1. Install keyboard (G) on upper cover. (Figure 3-40).
2. Install keyboard support plate (E) on keyboard. (Figure 3-39)
3. Slide keyboard support plate toward bottom edge (F) of upper cover.

NOTE:

Align support plate slots with upper cover guides before securing screws. Support plate must be secured under latch guide (H). (Figure 3-41)

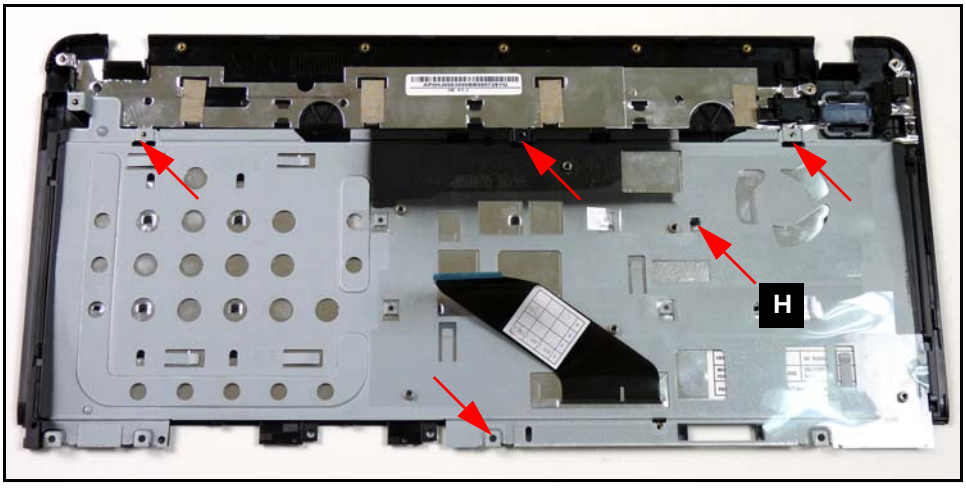


Figure 3-41. Keyboard Support Plate Guides

4. Install and secure three (3) screws (A), four (4) screws (B), and five (5) screws (C) to keyboard. (Figure 3-39)
5. Install upper cover.

Size	Quantity	Screw Type
M2.0x3.0	3	
M1.6x2.0 Ni	4	
M1.6x3.0	5	

Touchpad Board FFC Removal

Prerequisite:

Upper Cover Removal

1. Locate touchpad board (A) on mainboard (Figure 3-42).

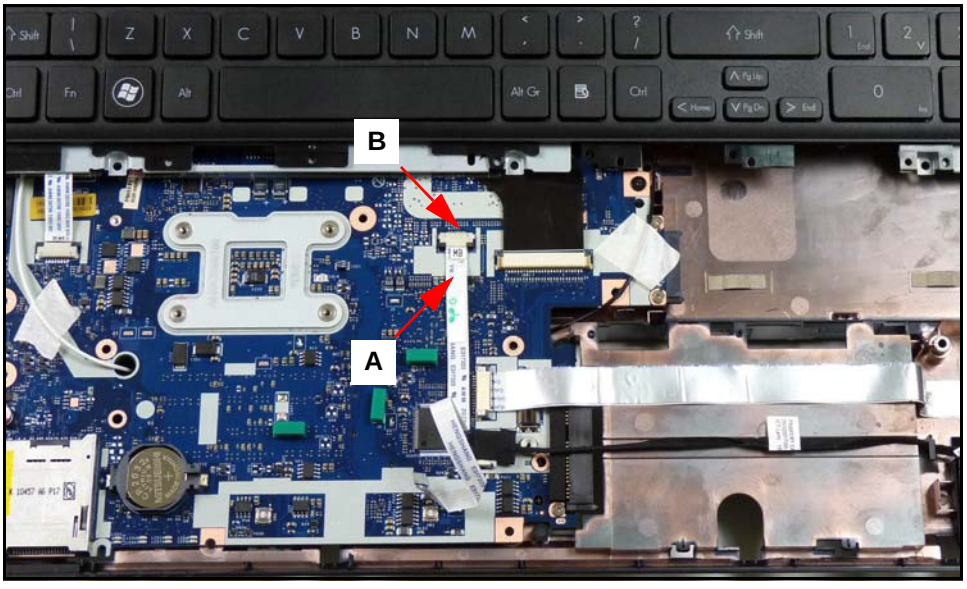


Figure 3-42. Upper Cover Overview

2. Disconnect touchpad FFC (A) from mainboard connector (B).
3. Remove touchpad FFC (A) from mainboard.

Touchpad Board FFC Installation

1. Install and connect touchpad FFC (A) to mainboard connector (B). (Figure 3-42)
2. Install upper cover.

Speaker Module Removal

Prerequisite:

Upper Cover Removal

1. Locate speaker modules (D) on upper cover. Refer to Figure 3-26.
2. Remove two (2) screws (A) (Figure 3-43).

Figure 3-43. Speakers

3. Remove speaker cable (C) from mainboard connector (B).
4. Remove speaker modules.

Speaker Module Installation

1. Install speaker modules on lower cover. (Figure 3-43).
2. Install speaker cable (C) to mainboard connector (B).
3. Install and secure two (2) screws to lower cover.
4. Install upper cover.

Mainboard Removal

Prerequisite:

Speaker Module Removal

1. Locate mainboard (E) on lower cover. Refer to Figure 3-26.
2. Remove two (2) screws (A) from lower cover (Figure 3-44).

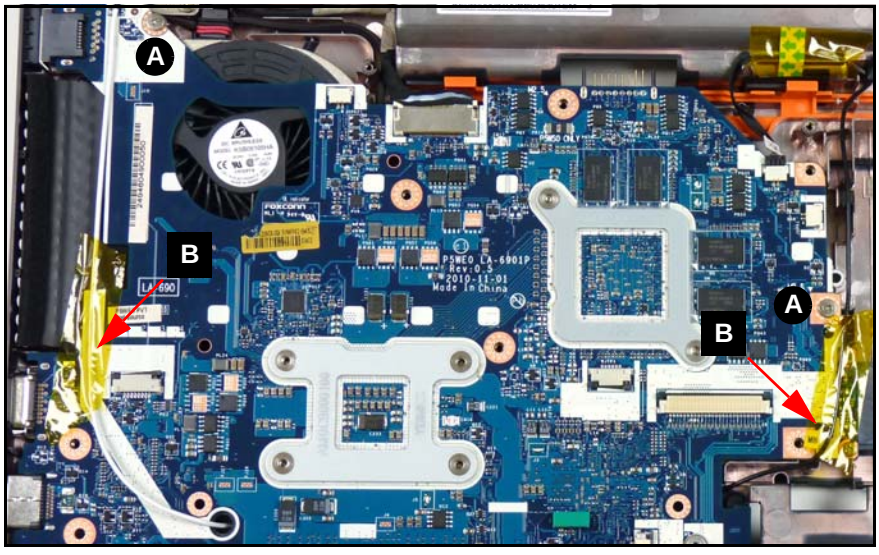


Figure 3-44. Mainboard Screws & WLAN Antennas

3. Remove adhesive tape (B) securing WLAN antennas to mainboard.
4. Remove WLAN antennas from mainboard.
5. Lift right side (B) of mainboard until edge is a few cm above lower cover as shown in Figure 3-45.

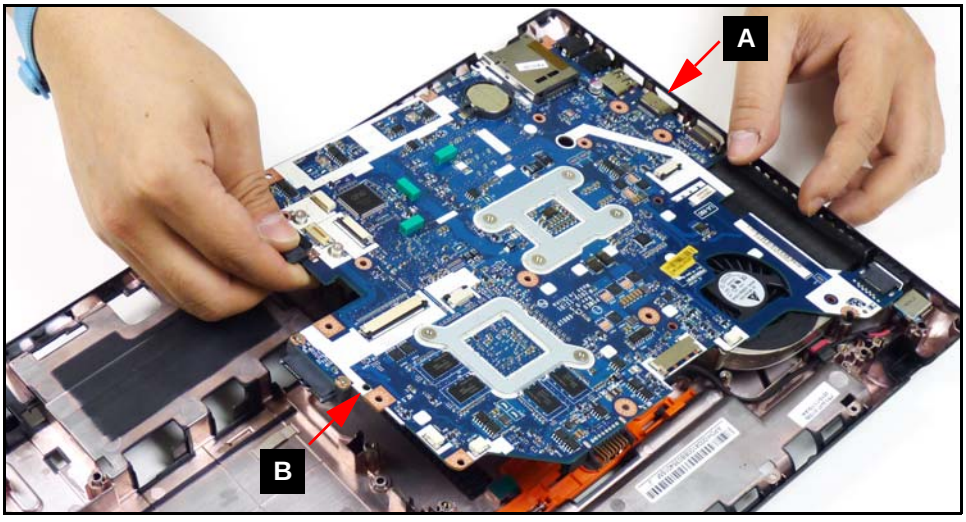


Figure 3-45. Freeing Mainboard Connectors

NOTE:

Connectors on left side of mainboard (i.e. USB 3.0, HDMI, etc.) are set in lower cover slots. Do not force mainboard when removing.

6. Remove mainboard from lower cover by pulling away from left side (A).
7. Flip mainboard over to show DC-IN connector on mainboard (Figure 3-46).

CAUTION:

DC-IN cable is connected to the mainboard. Do not pull mainboard away from lower cover.

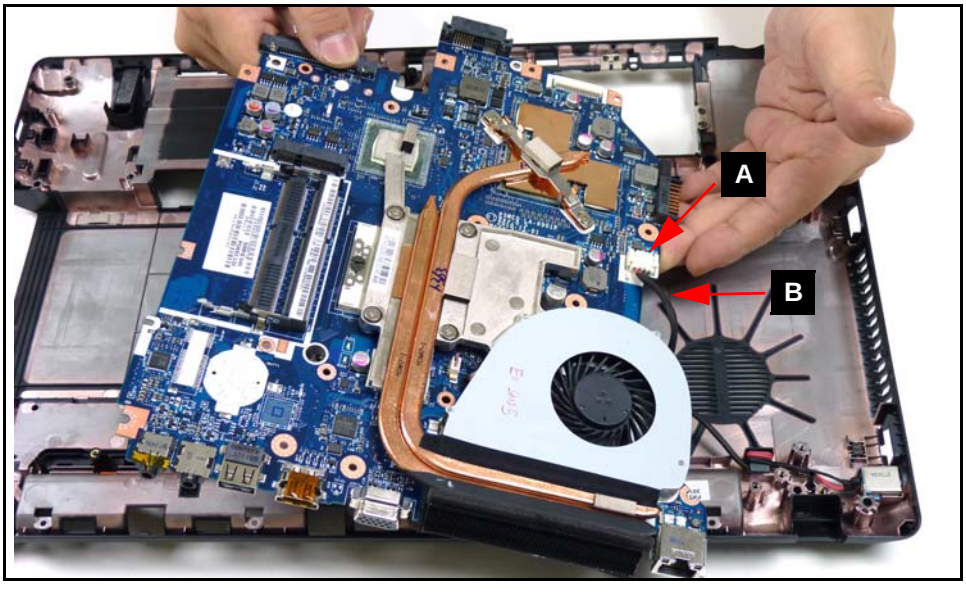


Figure 3-46. Mainboard DC-IN Connector

8. Disconnect DC-IN cable (B) from mainboard connector (A).

9. Remove mainboard from lower cover.

Mainboard Installation

1. Connect DC-IN (B) cable to mainboard connector (A). Refer to Figure 3-46.
2. Flip mainboard over and align mainboard connectors to left side of lower cover. Refer to Figure 3-45.
3. Install mainboard by sliding left side (A) at a slight angle into slots on left side of lower cover.

NOTE:

Connectors on left side of mainboard (i.e. USB 3.0, HDMI, etc.) are set in lower cover slots. Do not force mainboard when trying to install it.

4. Lower right side (B) of mainboard until edge is flush with lower cover.
5. Install and secure WLAN cables (B) to mainboard with adhesive tape. Refer to Figure 3-44.
6. Install and secure two (2) screws (A) to lower cover.
7. Install speaker modules.
8. Install WLAN module.
9. Install HDD module.

Thermal Module Removal

Prerequisite:

Mainboard Removal

1. Locate thermal module (A) on mainboard (Figure 3-47).

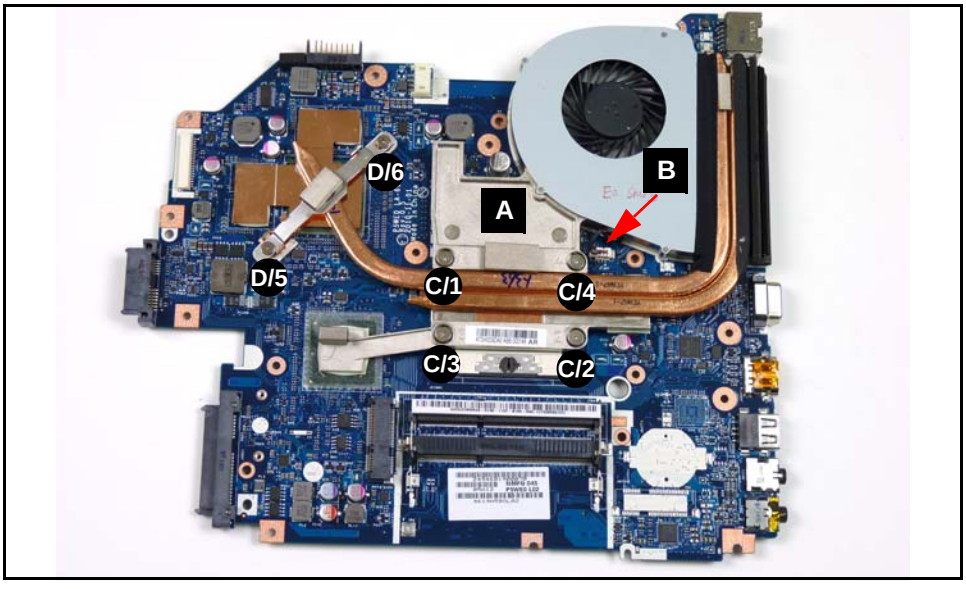


Figure 3-47. Thermal Module Removal

2. Remove module cable (B) from mainboard connector.
3. Remove four (4) screws (C/1 - C/4) and two (2) screws (D/5 - D/6) from mainboard.
4. Remove thermal module (A) from mainboard.

+ IMPORTANT:

Apply suitable thermal grease and make sure all heat pads are in place before replacing module.

⚠ CAUTION:

Thermal grease can damage mainboard. Use caution when applying.

The following thermal grease types are approved for use:

- N302

1. Remove all traces of thermal grease from CPU using a lint-free cloth or cotton swab and Isopropyl Alcohol, Acetone, or other approved cleaning agent.
2. Apply small amount of thermal grease to center of CPU (A) (Figure 3-48).

⇛ NOTE:

Force used during installation of thermal module is sufficient to spread grease over CPU top.

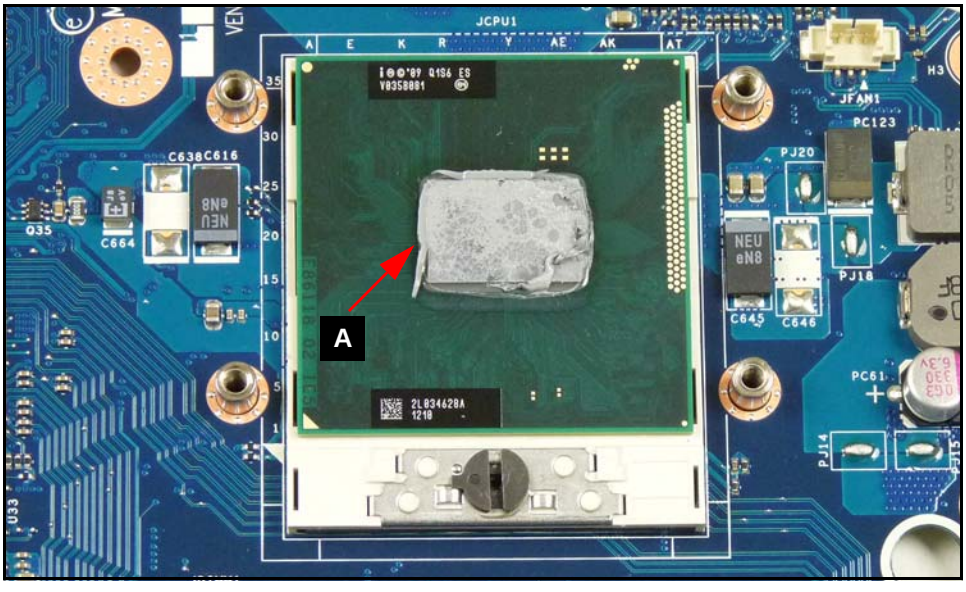


Figure 3-48. Applying Grease to CPU

3. Align module and heatsink to mainboard screw holes (Figure 3-49).

⇛ NOTE:

Keep module level to spread grease evenly.

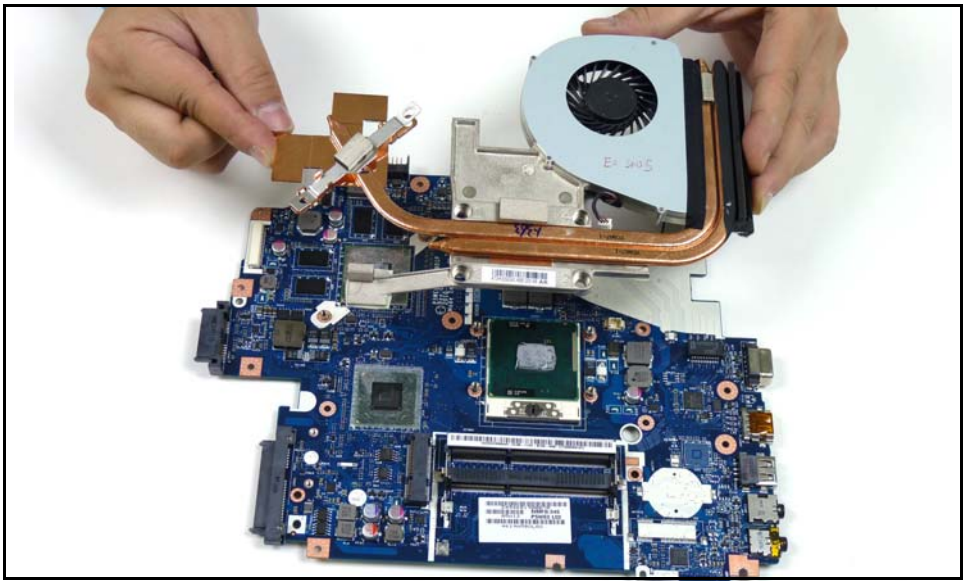


Figure 3-49. Thermal Module Installation

4. Install and secure four (4) screws (C/1 - C/4) and two (2) screws (D/5 - D/6), in numerical order from one (1) to six (6), to mainboard. Refer to Figure 3-47.
5. Install module cable (B) to mainboard connector.
6. Install mainboard.

Size	Quantity	Screw Type
M2.3x3.2 Ni	4	
M2.5x4.0 Ni	2	

CPU Removal

Prerequisite:

Thermal Module Removal

1. Locate module (A) on mainboard (Figure 3-50).

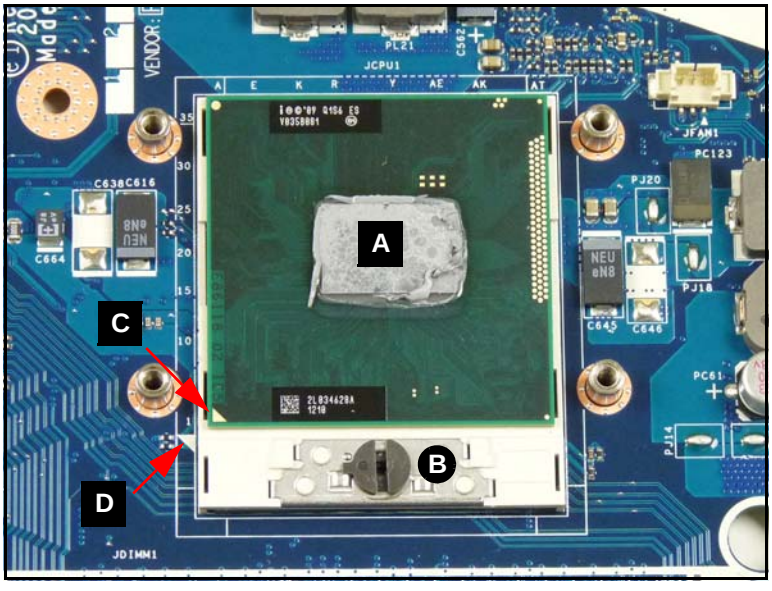


Figure 3-50. CPU in Socket

2. Turn captive screw (B) left 180º to release module.
3. Remove module from socket.

CPU Installation

1. Align CPU marker (C) with socket marker (D) and install CPU in socket (Figure 3-50).
2. Turn screw (B) right 180º to secure module.
3. Install thermal module.

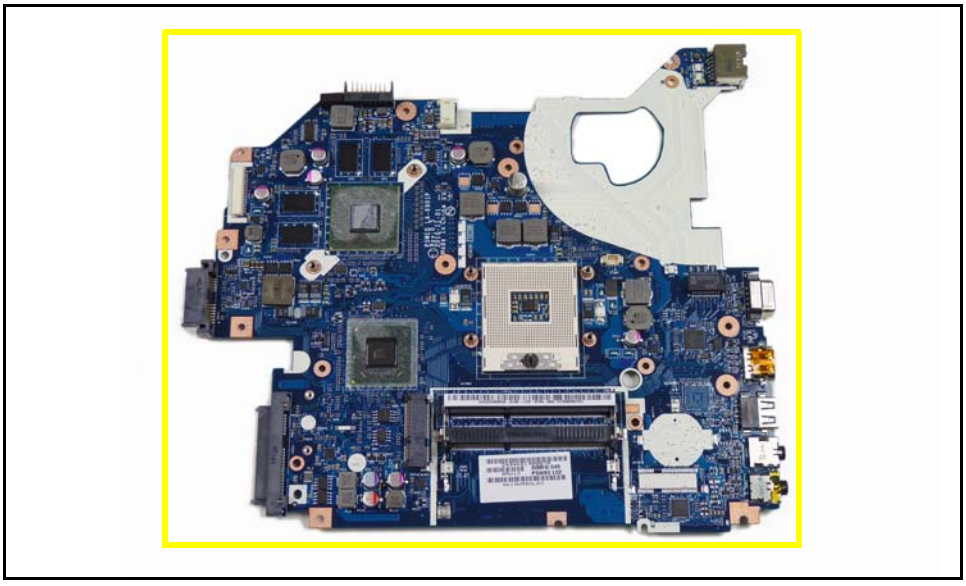


Figure 3-51. Mainboard Recycling

+ **IMPORTANT:**

  Circuit boards >10 cm² must be recycled. Follow local regulations for disposal.

3G Board Removal

Prerequisite:

Mainboard Removal

1. Remove two (2) screws (A) from lower cover as shown in Figure 3-52.

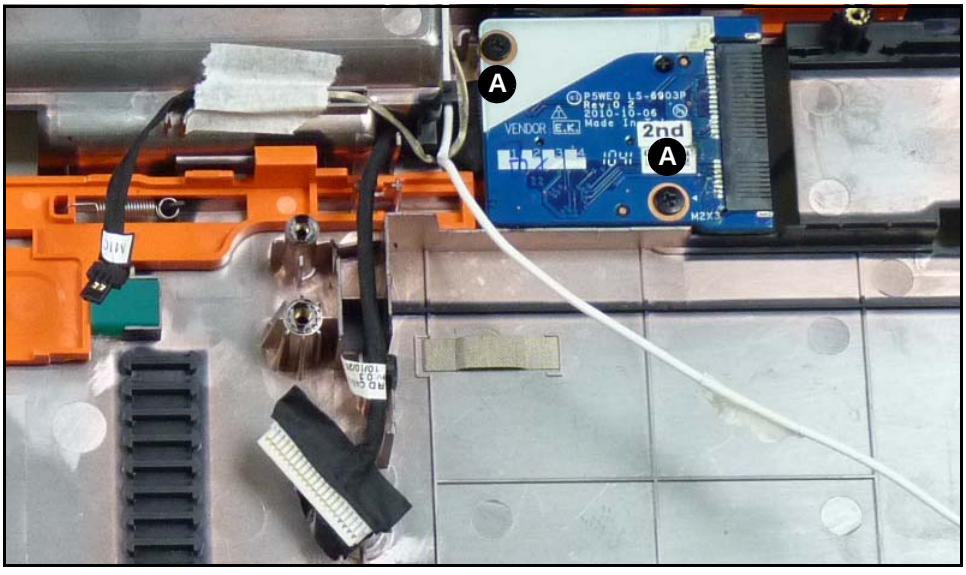


Figure 3-52. 3G Board Removal

2. Remove 3G board from lower cover.

3G Board Installation

1. Install 3G board on lower cover. (Figure 3-52)
2. Secure two (2) screws (A) to lower cover.
3. Install mainboard.

Size	Quantity	Screw Type
M2.0x3.0	2	

LCD (Liquid Crystal Display) Module Removal

Prerequisite:

Speaker Module Removal

1. Flip computer over to show lower cover. Refer to Figure 3-12.
2. Remove WLAN antenna cables (A) from WLAN module connectors (Figure 3-53).

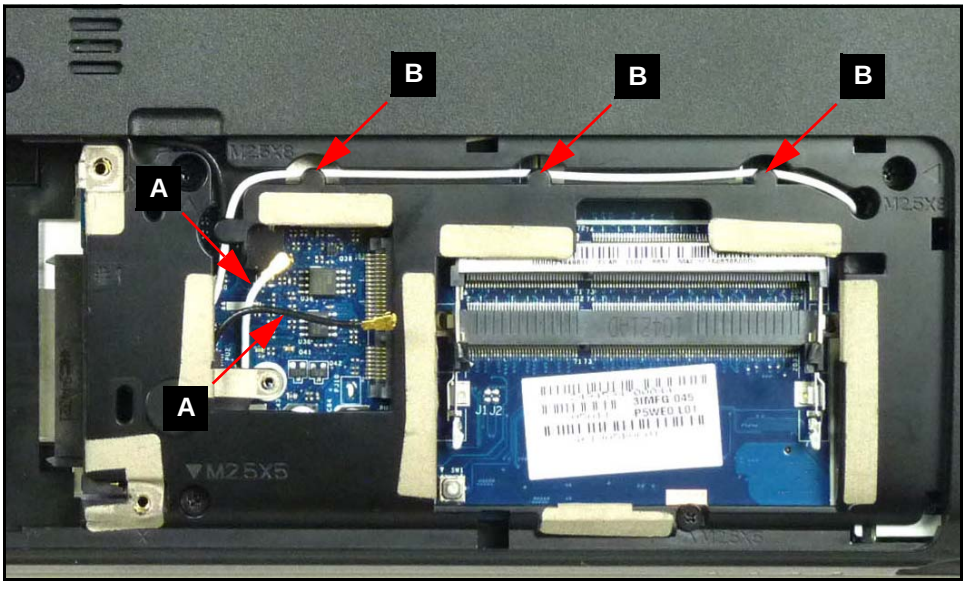


Figure 3-53. WLAN Module Cables

3. Remove WLAN antenna cables (A) from guides (B) on lower cover.
4. Remove 3G antenna cables (A) from 3G module connectors (Figure 3-54).

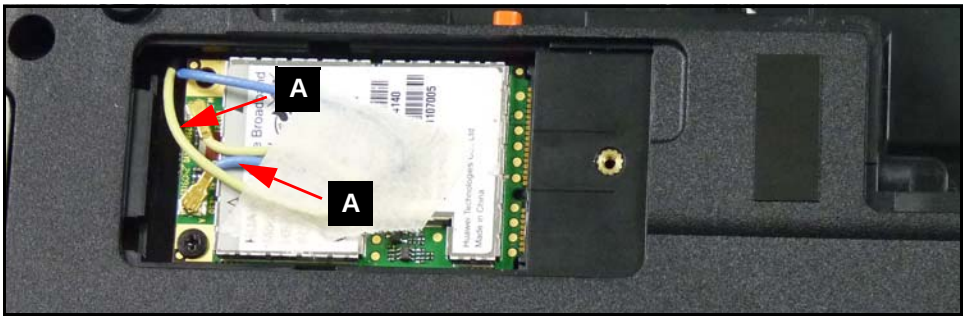


Figure 3-54. 3G Module Cables

5. Flip computer over to show mainboard. (Figure 3-44)
6. Remove adhesive tape securing WLAN cable (B) to mainboard and lower cover.
7. Pull WLAN and 3G antenna cables up through upper cover.
8. Remove five (5) screws from LCD module hinges (Figure 3-55).

Figure 3-55. LCD Module Hinge Screws

9. Remove LCD module from lower cover. (Figure 3-56)

Figure 3-56. Removing LCD Module

LCD Module Installation

1. Install LCD module on lower cover (Figure 3-56).
2. Install and secure four (4) screws (A) to lower cover. Refer to Figure 3-55.
3. Put WLAN antenna cables down through mainboard and lower cover. Refer to Figure 3-44.
4. Install and secure WLAN cables (B) to mainboard and lower cover with adhesive tape.
5. Put 3G antenna cables (G) through lower cover. Refer to Figure 3-26.
6. Flip computer over to see lower cover.
7. Connect 3G antenna cables (A) to 3G module connectors. Refer to Figure 3-54.
8. Install WLAN antenna cables (A) to guides (B) on lower cover. Refer to Figure 3-53.

9. Install speaker modules.

Size	Quantity	Screw Type
M2.5x4.0	5	

DC-IN Cable Removal

Prerequisite:

LCD (Liquid Crystal Display) Module Removal

1. Locate DC-IN cable (A) on mainboard (Figure 3-57).

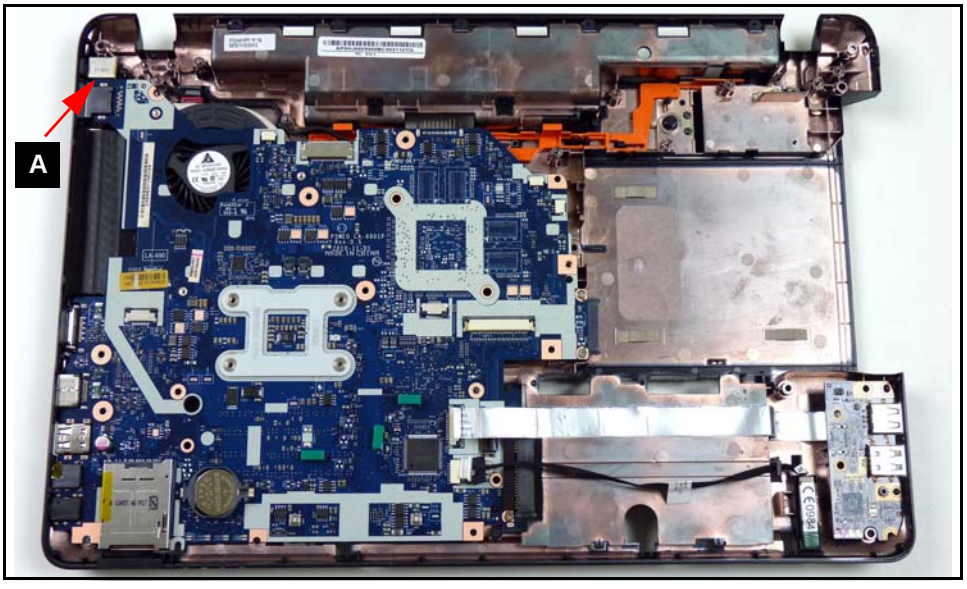


Figure 3-57. DC-IN Cable Removal

2. Remove cable from guides on lower cover.
3. Remove cable connector from lower cover.

DC-IN Cable Installation

1. Install cable connector to lower cover (Figure 3-57).
2. Install cable in cable guides on lower cover.
3. Install LCD module.

LCD Bezel Removal

Prerequisite:

LCD (Liquid Crystal Display) Module Removal

1. Locate the LCD Bezel (A) on the LCD module (Figure 3-58)

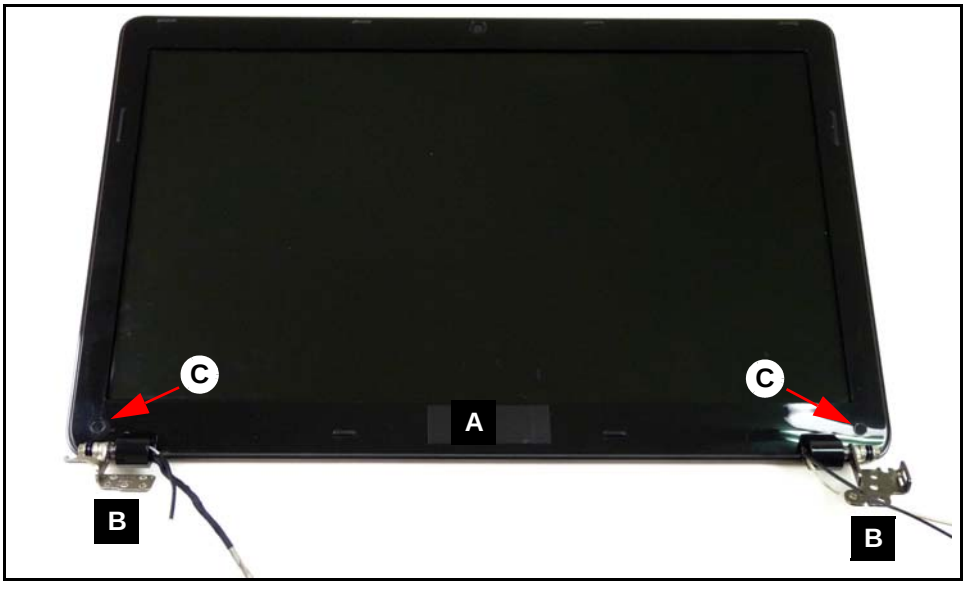


Figure 3-58. LCD Module Overview with Bezel

2. Remove the two (2) mylar covers and two (2) screws (C) from module.
3. Starting from the bottom-center of the bezel (Figure 3-59), pry the bezel upwards and away from the panel. Move along the edge until the bezel is completely removed.

Figure 3-59. LCD Bezel Removal

LCD Bezel Installation

1. Locate the bezel hinges (B) on LCD cover (Figure 3-59).
2. Press down until there are no gaps between the bezel and the LCD module cover hinge wells.

NOTE:

Make sure that the LCD cables pass through the hinge wells and are not trapped by the bezel.

3. Press the entire perimeter of the bezel until there are no gaps between the bezel and the LCD module.
4. Install the two (2) screws (B) and mylar covers to secure the LCD bezel. (Figure 3-58)
5. Install LCD Module.

Size	Quantity	Screw Type
M2.5x4.0	2	

CCD (Charge-Coupled Device) Module Removal

Prerequisite:

LCD Bezel Removal

1. Locate CCD module (A) on LCD module cover (Figure 3-60).

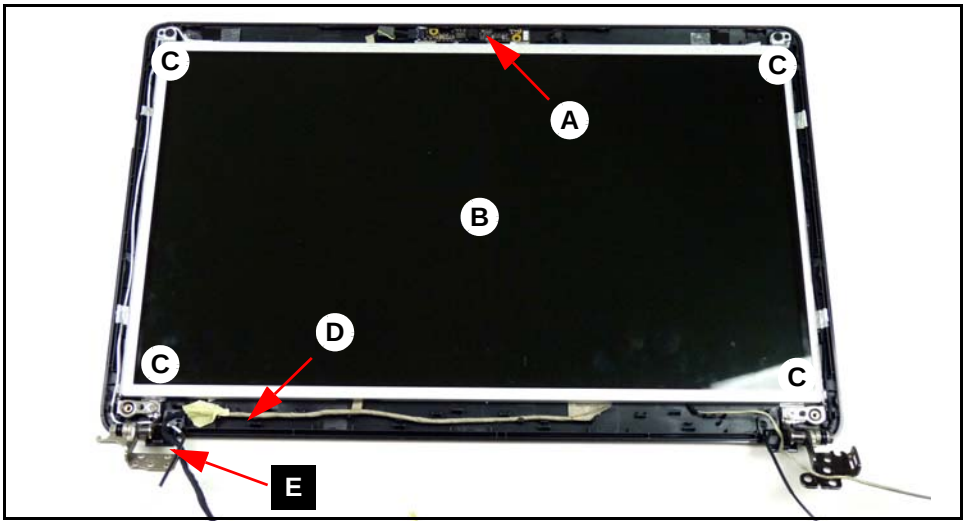


Figure 3-60. LCD Module Overview without Bezel

2. Remove module cable (G) from module connector (F) as shown in Figure 3-61.

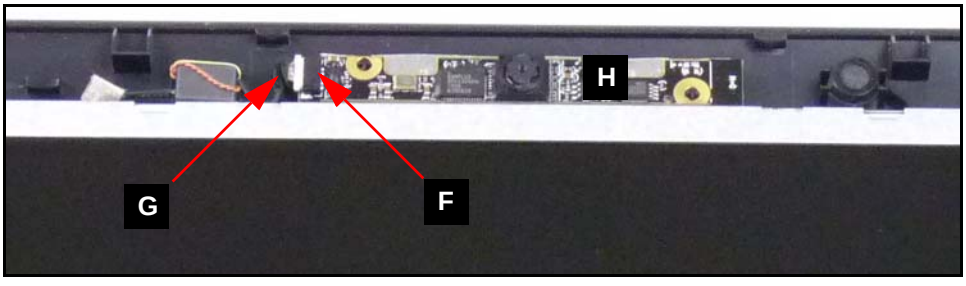


Figure 3-61. CCD Module Removal

3. Remove module (H) from adhesive strip on LCD cover.

CCD Module Installation

1. Install and secure module (H) to LCD module cover (Figure 3-61).
2. Install module cable (G) to module connector (F).
3. Install LCD Bezel.

LCD Panel Removal

Prerequisite:

LCD Bezel Removal

1. Locate LCD panel (B) on module cover. (Figure 3-60)
2. Remove four (4) screws (C) from module cover.
3. Lift adhesive foil tabs (D) covering LVDS cable (E).
4. Remove panel from module cover.
5. Turn panel over and place face down on a clean surface (Figure 3-62).

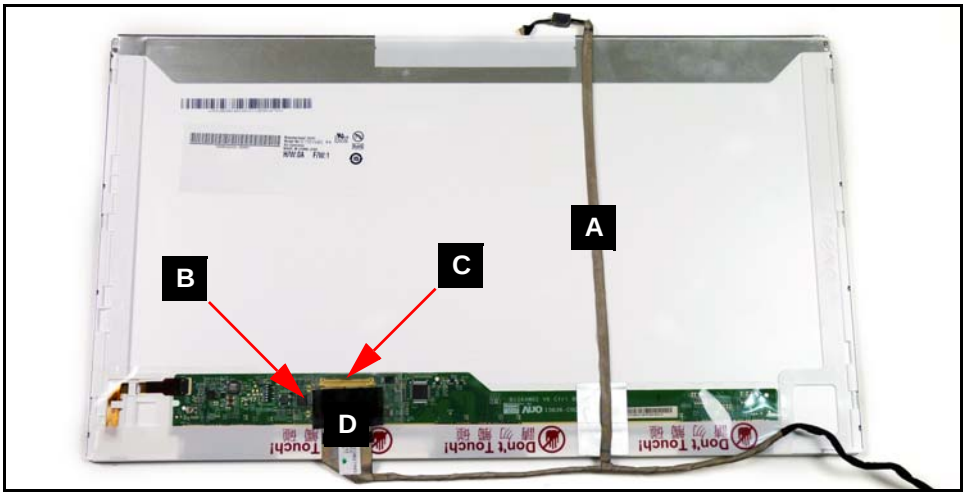


Figure 3-62. LCD Panel

6. Remove CCD module cable (A) from panel.
7. Pull back transparent adhesive protector (B) securing LVDS cable (D) to panel.
8. Remove LVDS cable (D) from panel connector (C).

LCD Panel Installation

1. Install LVDS cable (D) to panel connector (C) (Figure 3-62).
2. Secure transparent adhesive protector (B) to LVDS cable (D) and panel.
3. Install and secure CCD module cable (A) to panel.
4. Place LCD panel onto module cover. (Figure 3-60)
5. Secure adhesive foil tabs (D) covering LVDS cable (E) to module cover.
6. Install and secure four (4) screws (C) to module cover.
7. Install CCD module.

Size	Quantity	Screw Type
M2.5x4.0	4	

LCD Brackets Removal

Prerequisite:

LCD Panel Removal

1. Remove six (6) screws (A) from panel. (Figure 3-63)

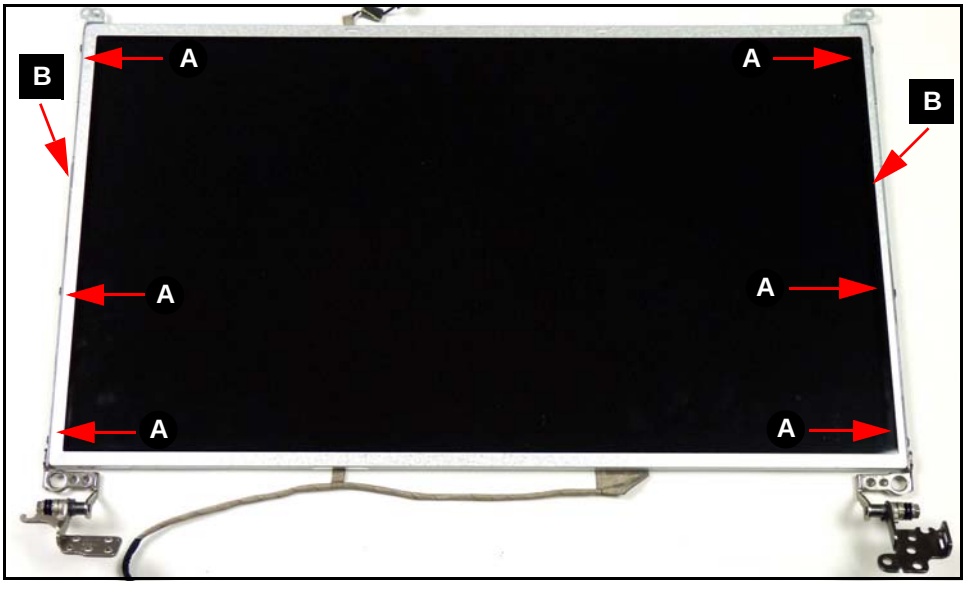


Figure 3-63. LCD Brackets Module

2. Remove brackets (B) from panel.

LCD Brackets Installation

1. Install brackets (B) on panel (Figure 3-63).
2. Install and secure six (6) screws (A) to panel.
3. Install LCD panel.

Size	Quantity	Type
M2x3	6	

WLAN and 3G Antenna Removal

Prerequisite:

LCD Panel Removal

1. Lift foil tabs (A) covering left WLAN and 3G antennas (B). (Figure 3-64)

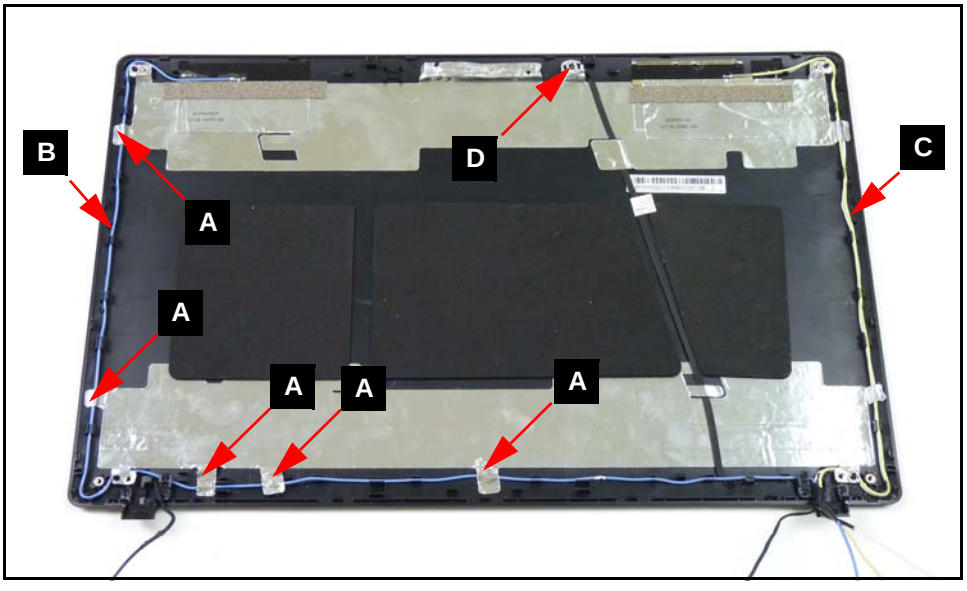


Figure 3-64. LCD Module Cover without Panel

NOTE:

WLAN antenna cables not shown in image.

2. Remove left WLAN and 3G antennas (B) from cable guides.

3. Remove EMI (Electromagnetic interference) foam (E) and aluminium foil (F) covering left WLAN and 3G antennas from LCD module cover. (Figure 3-65)

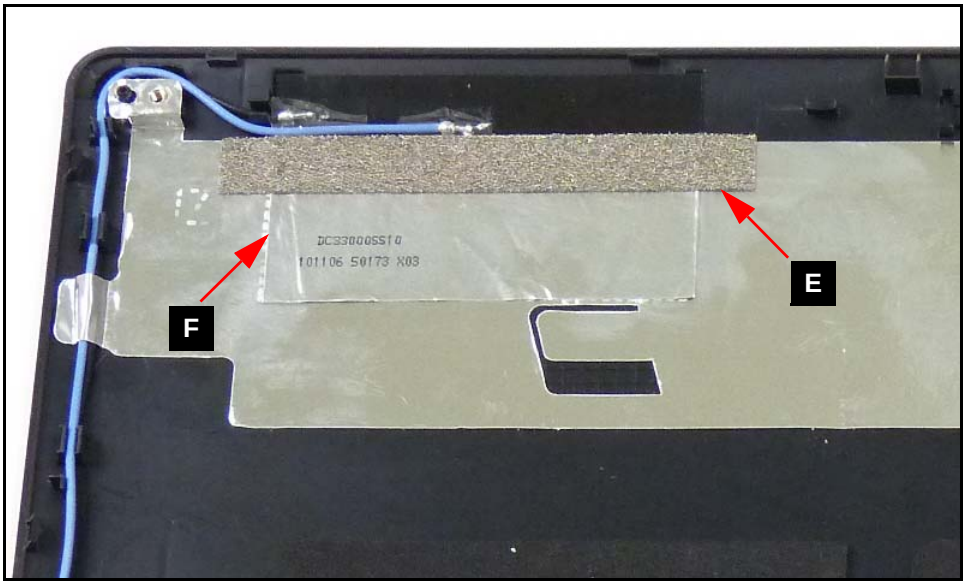


Figure 3-65. 3G and WLAN EMI Foam and Aluminium Foil

4. Remove left WLAN and 3G antennas (B) from LCD module cover. (Figure 3-64)
5. Repeat steps 1 to 4 for right WLAN and 3G antennas (C).

WLAN and 3G Antenna Installation

1. Install left WLAN and 3G antennas (B) on LCD module cover. (Figure 3-64)
2. Secure EMI foam (E) and aluminium foil (F) covering left WLAN and 3G antennas to LCD module cover. (Figure 3-65)
3. Install left WLAN and 3G antennas (B) in cable guides. (Figure 3-64)
4. Secure foil tabs (A) covering left WLAN and 3G antennas (B) to LCD module cover.
5. Repeat steps 1 to 4 for the right WLAN and 3G antennas (C).
6. Install LCD panel.

Microphone Module Removal

Prerequisite:

LCD Panel Removal

1. Locate module (D) on LCD module cover. (Figure 3-64)
2. Lift foil tabs (A) covering module cable (B).

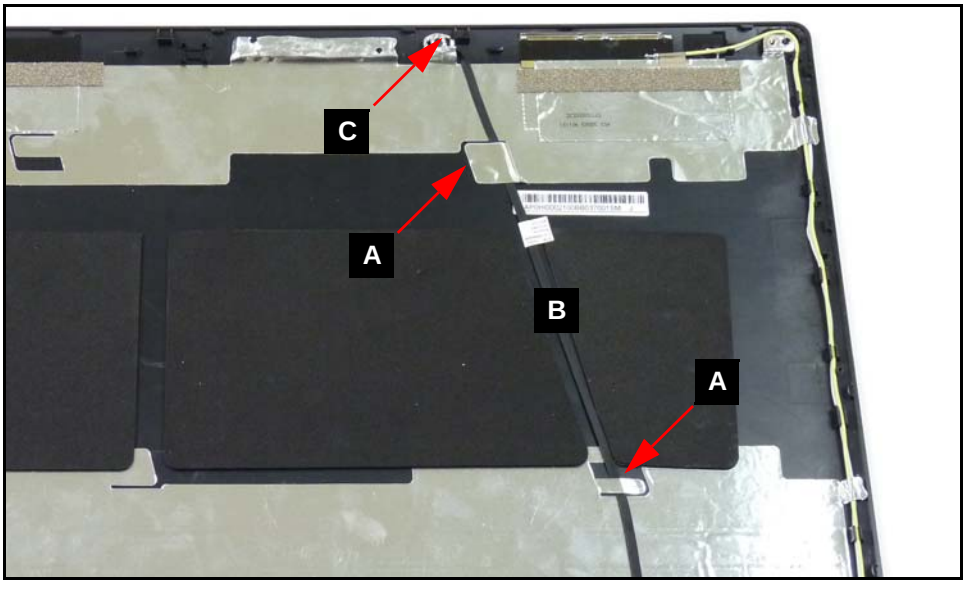


Figure 3-66. Microphone Module and Cable

3. Lift foil tab covering module.
4. Remove module (C) and cable (B) from LCD module cover.

Microphone Module Installation

1. Install module (C) and module cable (B) on LCD module cover. (Figure 3-66)
2. Secure foil tab covering module (C) to LCD module cover.
3. Secure foil tabs (A) covering module cable (B) to LCD module cover.
4. Install LCD panel.

CHAPTER 4

Troubleshooting

Troubleshooting

Introduction

This chapter contains information about troubleshooting common notebook problems.

General Information

The following procedures are a guide for troubleshooting computer problems. The step by step procedures are designed to be performed as described.

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

NOTE:
Do not replace a non-defective FRU.

1. Obtain as much detailed information as possible about the problem.
2. If possible, verify the symptoms by re-creating the failure through diagnostic tests or repeating the operation that led to the problem.
3. Use Table 4-1 with the verified symptom to determine the solution.

Table 4-1. Common problems

Symptoms (Verified)
Power On Issues
No Display Issues
LCD Failure
Internal Speaker Failure
Touchpad Failure
Internal Speaker Failure
Microphone Failure
USB Failure
Wireless Function Failure
Bluetooth Failure
Card Reader Failure
Thermal Unit Failure
Other Functions Failure
Intermittent Problems
Undetermined Problems

4. If the Issue is still not resolved, refer to *Online Support Information*.

Power On Issues

If the system does not power on, perform the following:

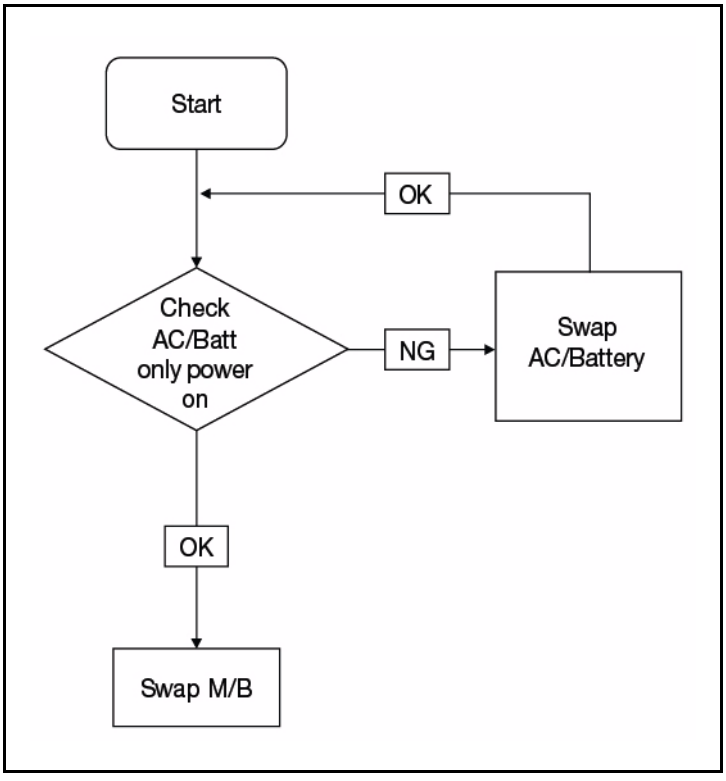


Figure 4-1. Power On Issue

Computer Shuts Down Intermittently

If the system powers off at intervals, perform the following.

1. Makes sure the power cable is properly connected to the computer and the electrical outlet.
2. Remove all extension cables between the computer and the outlet.
3. Remove all surge protectors between the computer and the electrical outlet. Plug the computer directly into a known serviceable electrical outlet.
4. Disconnect the power and open the casing to check the Thermal Unit (refer to *Thermal Unit Failure*) and fan airways are free of obstructions.
5. Remove all external and non-essential hardware connected to the computer that are not necessary to boot the computer to the failure point.
6. Remove any recently installed software.
7. If the Issue is still not resolved, see *Online Support Information*.

No Display Issues

If the Display does not work, perform the following:

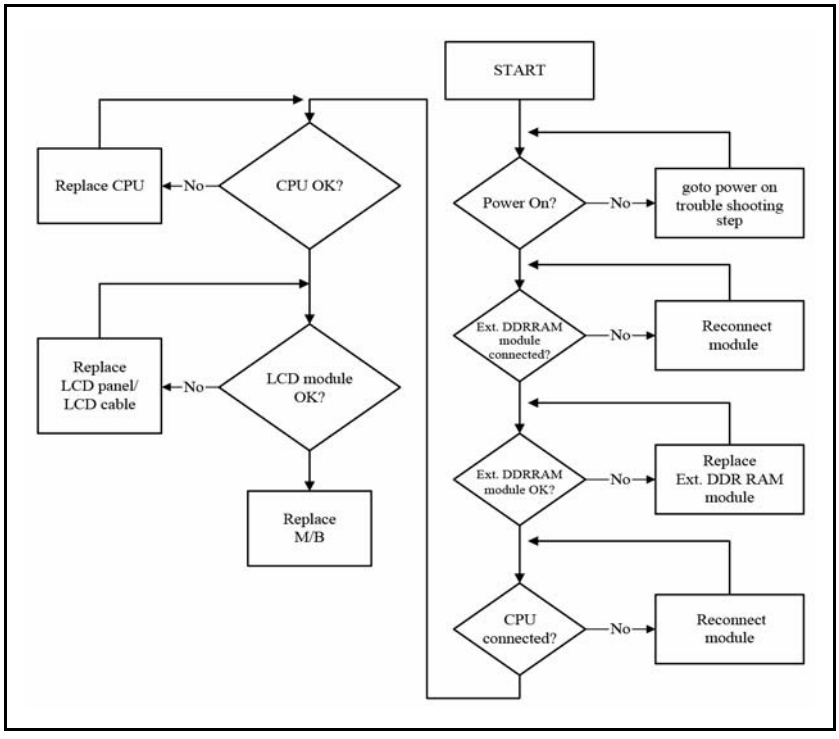


Figure 4-2. No Display Issue

No POST or Video

If the POST or video does not appear, perform the following:

1. Make sure that internal display is selected. Switching between internal and external by pressing ***Fn+F5***. Reference Product pages for specific model procedures.
2. Make sure the computer has power by checking for one of the following:
   - Fans start up
   - Status LEDs illuminate

If no power, refer to *Power On Issues*.

3. Drain stored power by removing the power cable and battery. Hold the power button for 10 seconds.
4. Connect the power and reboot the computer.
5. Connect an external monitor to the computer and switch between the internal display and the external display is by pressing ***Fn+F5***.
6. If the POST or video appears on the external display only, refer to *LCD Failure*.
7. Disconnect power and all external devices including port replicators or docking stations. Remove any memory cards and CD/DVD discs.
8. Start the computer. If the computer boots correctly, add the devices one by one until the

failure point is discovered.

9. Reseat the memory modules.
10. Remove the drives. (refer to *Maintenance Flowchart*)
11. If the Issue is still not resolved, refer to *Online Support Information*.

Abnormal Video

If the video appears abnormal, perform the following:

1. Boot the computer.
   - If permanent vertical/horizontal lines or dark spots appear in the same location, the LCD is faulty and should be replaced. (refer to *Maintenance Flowchart*)
   - If extensive pixel damage is present (different colored spots in the same locations on the screen), the LCD is faulty and should be replaced. (refer to *Maintenance Flowchart*)

NOTE:

Make sure that the computer is not running on battery alone as this may reduce display brightness.

2. Adjust the brightness to its highest level. Refer to the User Manual for instructions on adjusting the settings. If the display is too dim at the highest brightness setting, the LCD is faulty and should be replaced. (refer to *Maintenance Flowchart*)
3. Check the display resolution is correctly configured:
   - Minimize or close all Windows.
   - If display size is only abnormal in an application, check the view settings and control/mouse wheel zoom feature in the application.
   - If desktop display resolution is not normal, right-click on the desktop and select `Personalize Display Settings`.
   - Click and drag the Resolution slider to the desired resolution.
   - Click ***Apply*** and check the display. Readjust if necessary.
4. Roll back the video driver to the previous version if updated.
5. Remove and reinstall the video driver.
6. Check the Device Manager to determine that:
   - The device is properly installed. There are no red Xs or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under `Other Devices`
7. If the Issue is still not resolved, refer to *Online Support Information*.
8. Run the *Windows Memory Diagnostic* from the operating system DVD and follow the on-screen prompts.
9. If the Issue is still not resolved, refer to *Online Support Information*.

LCD Failure

If the LCD fails, perform the following:

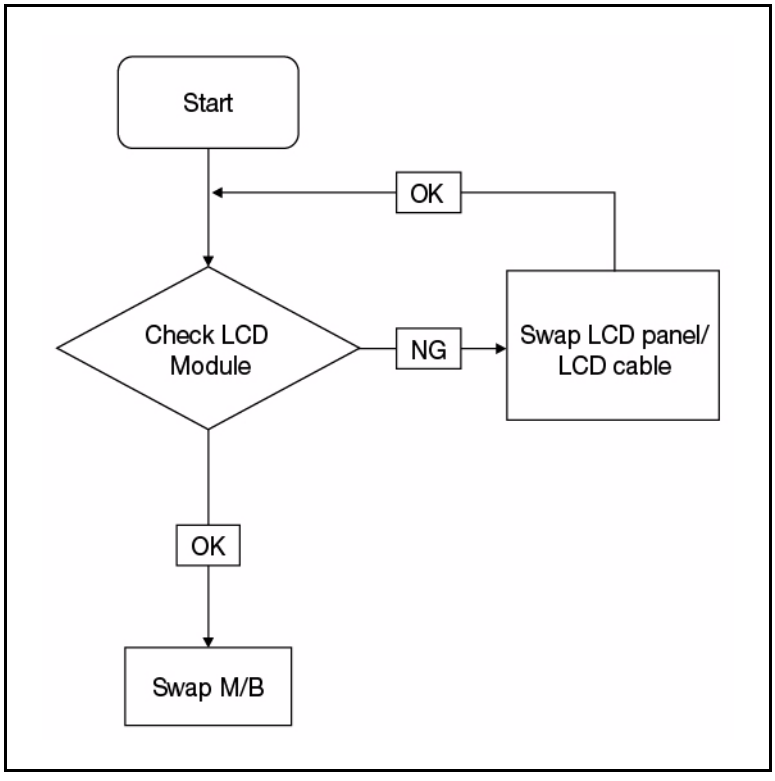


Figure 4-3. LCD Failure

Keyboard Failure

If the Keyboard fails, perform the following:

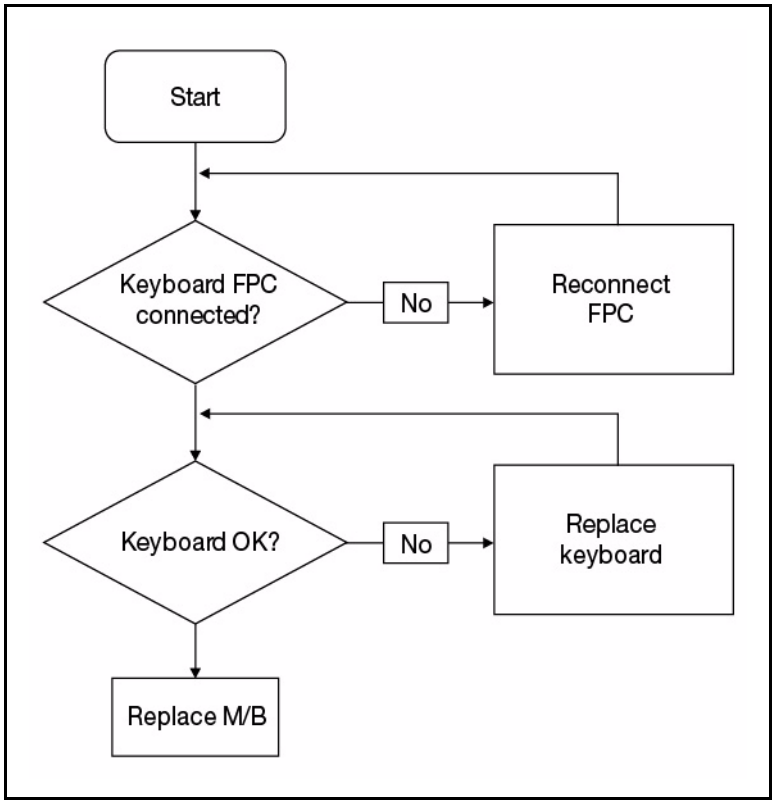


Figure 4-4. Keyboard Failure

Touchpad Failure

If the Touchpad fails, perform the following:

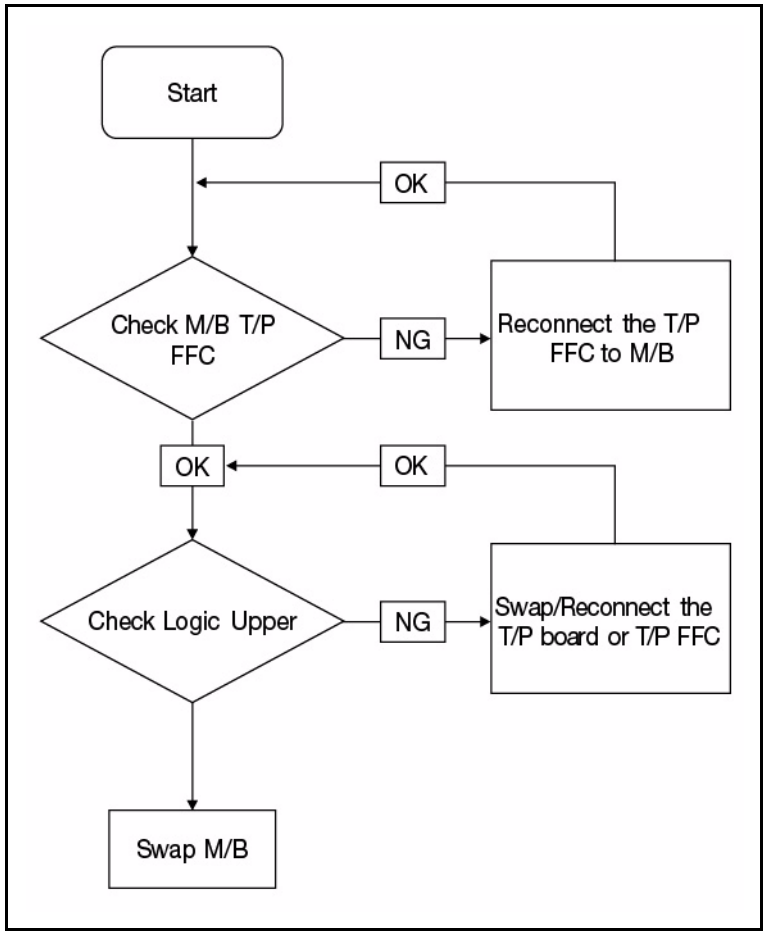


Figure 4-5. Touchpad Failure

Internal Speaker Failure

If internal Speakers fail, perform the following:

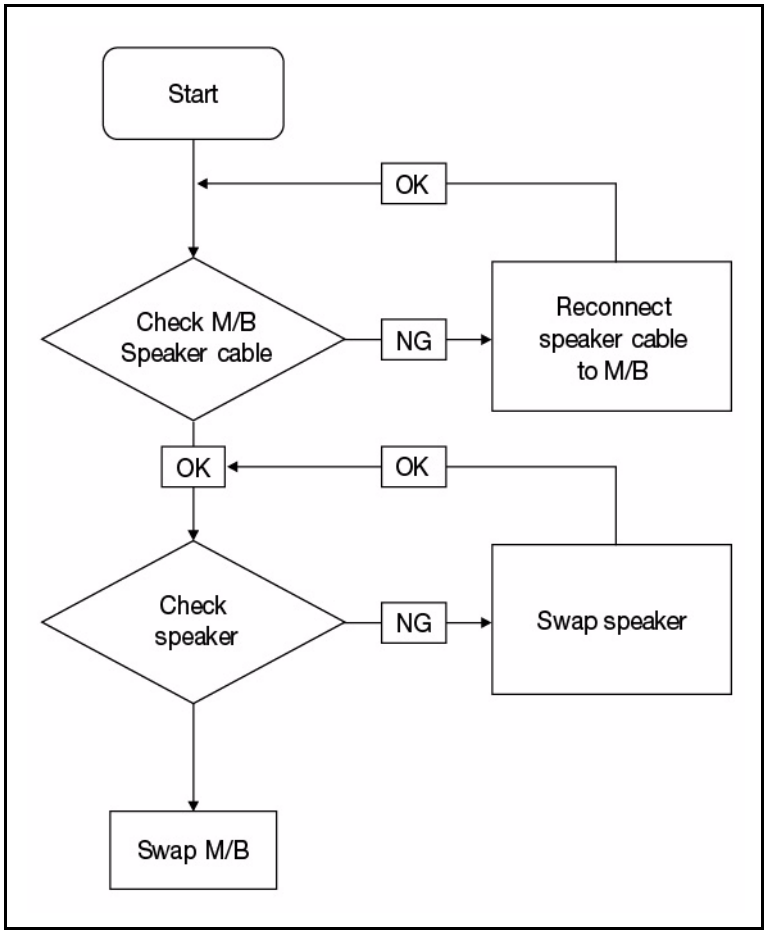


Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following:

1. Boot the computer.
2. Navigate to ***Start*** → ***Control Panel*** → ***System and Maintenance*** → ***System*** → ***Device Manager***. Check the Device Manager to determine that:
   - The device is properly installed
   - There are no red Xs or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under Other Devices
3. If updated recently, roll back the audio driver to the previous version.
4. Remove and reinstall the audio driver.
5. Make sure that all volume controls are set mid range:

- Click the volume icon on the taskbar
- Drag the slider to 50. Confirm that the volume is not muted.
- Click Mixer to verify that other audio applications are set to 50 and not muted.

6. Navigate to ***Start*** → ***Control Panel*** → ***Hardware and Sound*** → ***Sound***. Confirm that Speakers are selected as the default audio device (green check mark).

NOTE:

If Speakers does not show, right-click on the `Playback` tab and select **Show `Disabled Devices`** (clear by default).

7. Select Speakers and click ***Configure*** to start `Speaker Setup`. Follow the on-screen prompts to configure the speakers.
8. Remove any recently installed hardware or software.
9. Restore system and file settings from a known good date using `System Restore`.
10. If the issue is remains, repeat step 9, selecting an earlier time and date.
11. Reinstall the Operating System.
12. If the Issue is still not resolved, refer to *Online Support Information*.

Microphone Failure

If internal or external Microphones fail, perform the following:

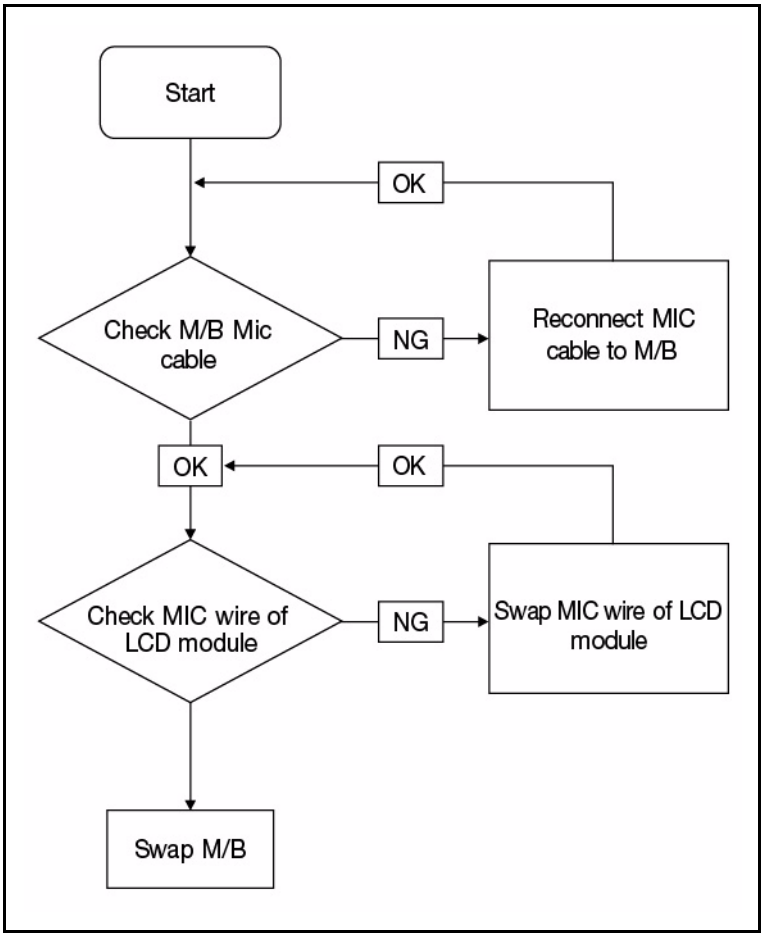


Figure 4-7. Microphone Failure

1. Check that the microphone is enabled. Navigate to ***Start*** → ***Control Panel*** → ***Hardware and Sound*** → ***Sound*** and select the `Recording` tab.
2. Right click on the `Recording` tab and select `Show Disabled Devices` (clear by default). The microphone appears on the `Recording` tab.
3. Right click on the microphone and select ***Enable***.
4. Select the microphone then click ***Properties***. Select the ***Levels*** tab.
5. Increase the volume to the maximum setting and click ***OK***.
6. Test the microphone hardware:
   - Select the microphone and click ***Configure***.
   - Select ***Set up microphone***.
   - Select the microphone type from the list and click ***Next***.
   - Follow the on-screen prompts to complete the test.

7. If the Issue is still not resolved, refer to *Online Support Information*.

USB Failure

If the USB fails, perform the following:

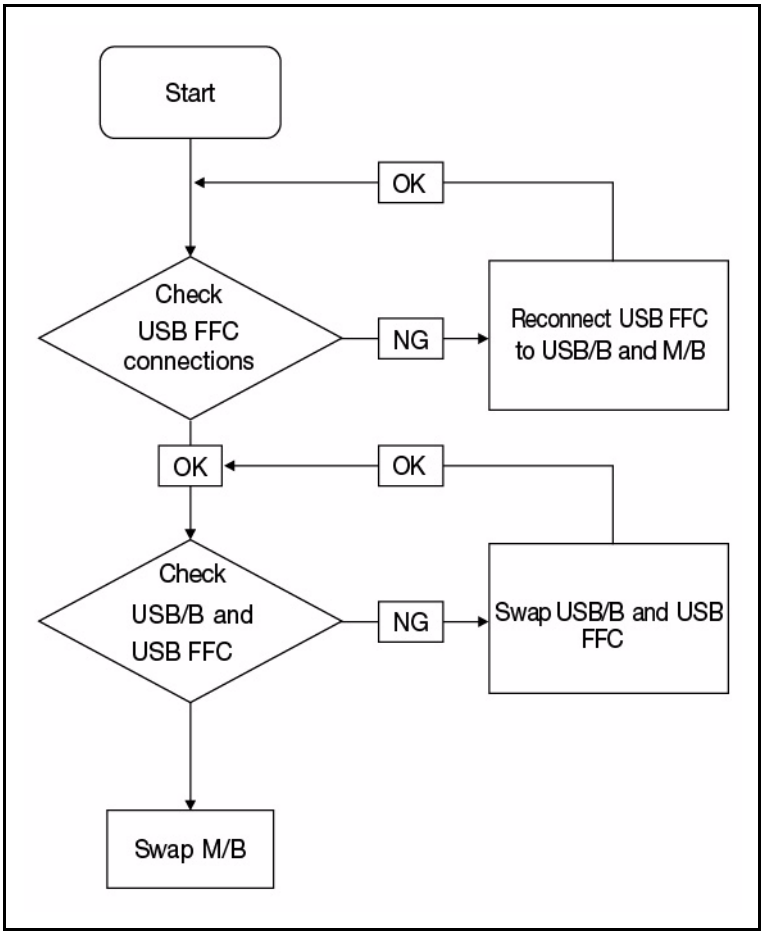


Figure 4-8. USB Failure

Wireless Function Failure

If the WLAN fails, perform the following:

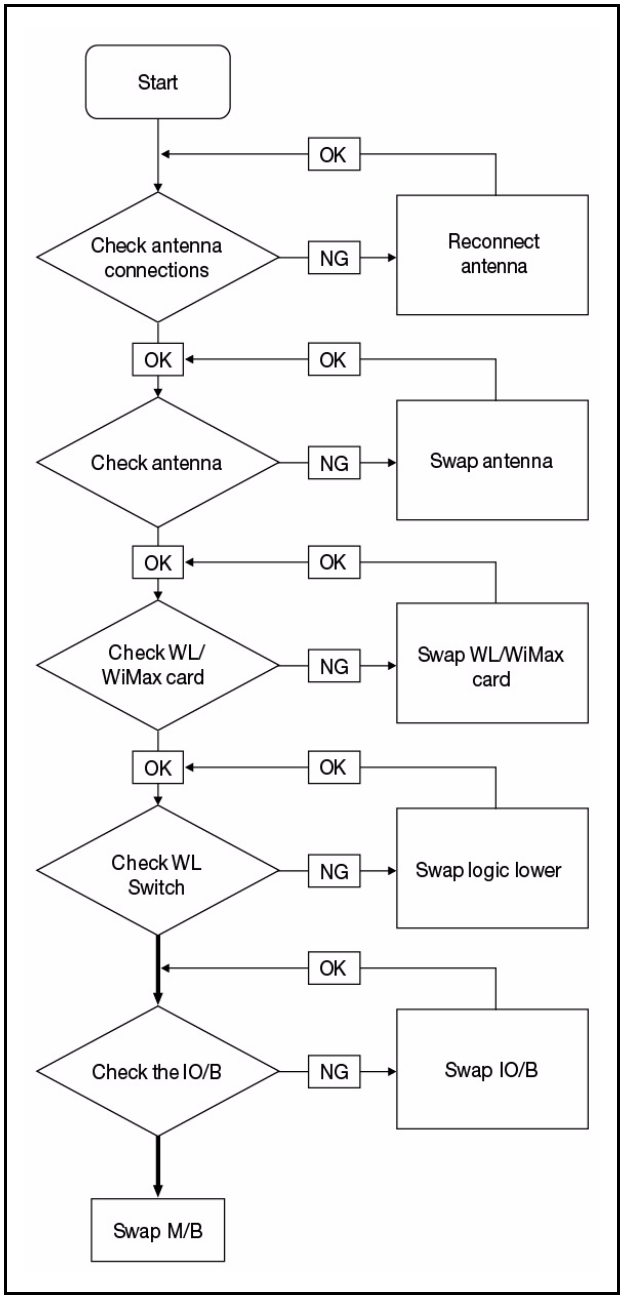


Figure 4-9. Wireless Function Failure

Bluetooth Failure

If the Bluetooth fails, perform the following:

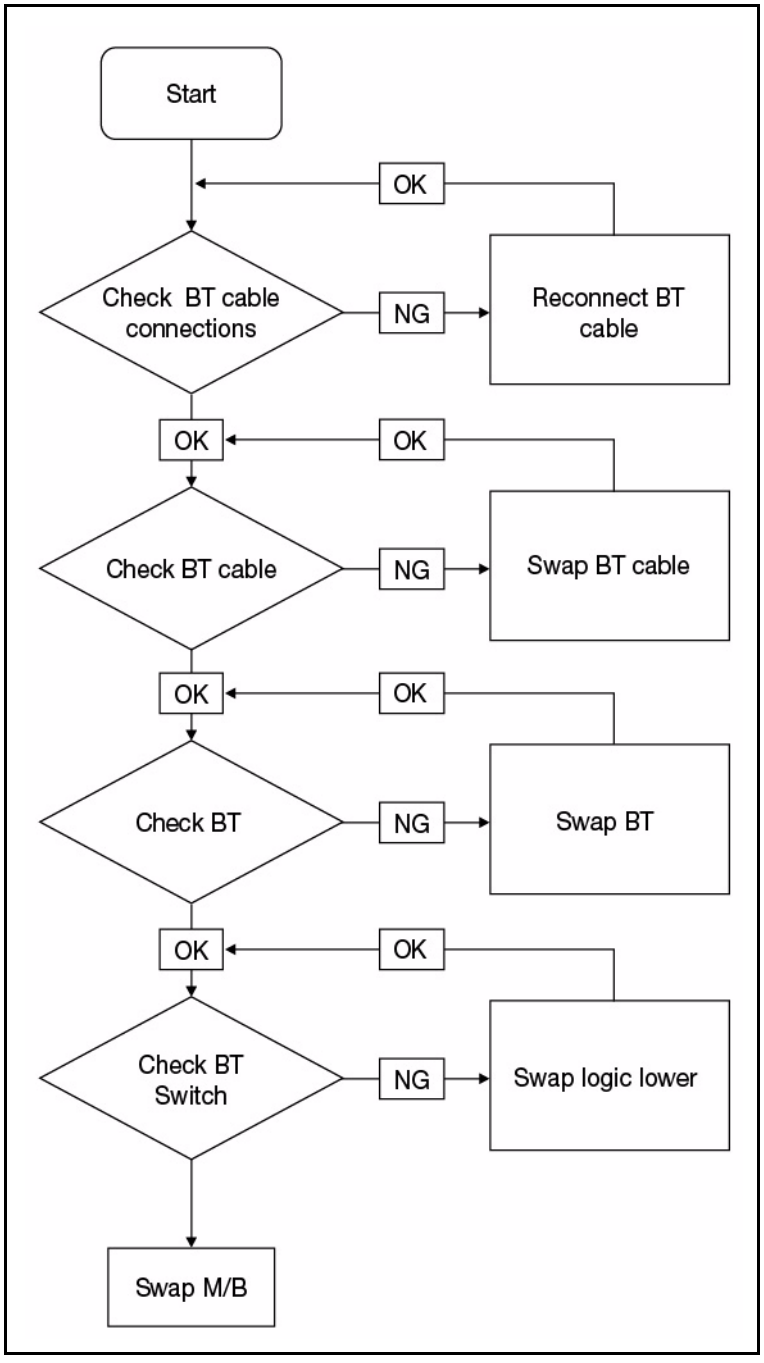


Figure 4-10. Bluetooth Failure

Card Reader Failure

If the Card Reader fails, perform the following:

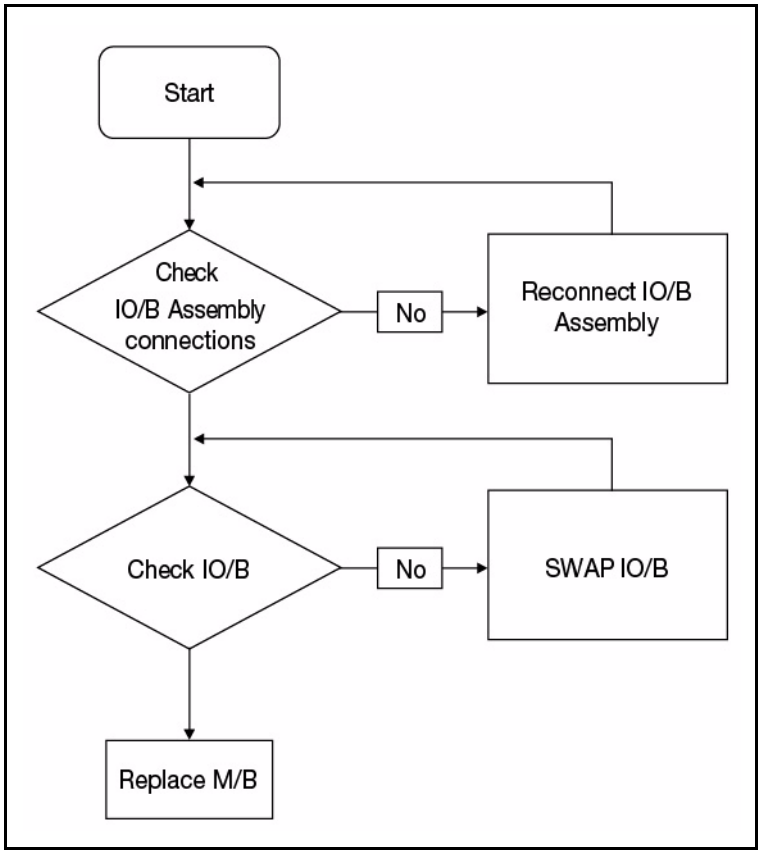


Figure 4-11. Card Reader Failure

Thermal Unit Failure

If the Thermal Unit fails, perform the following:

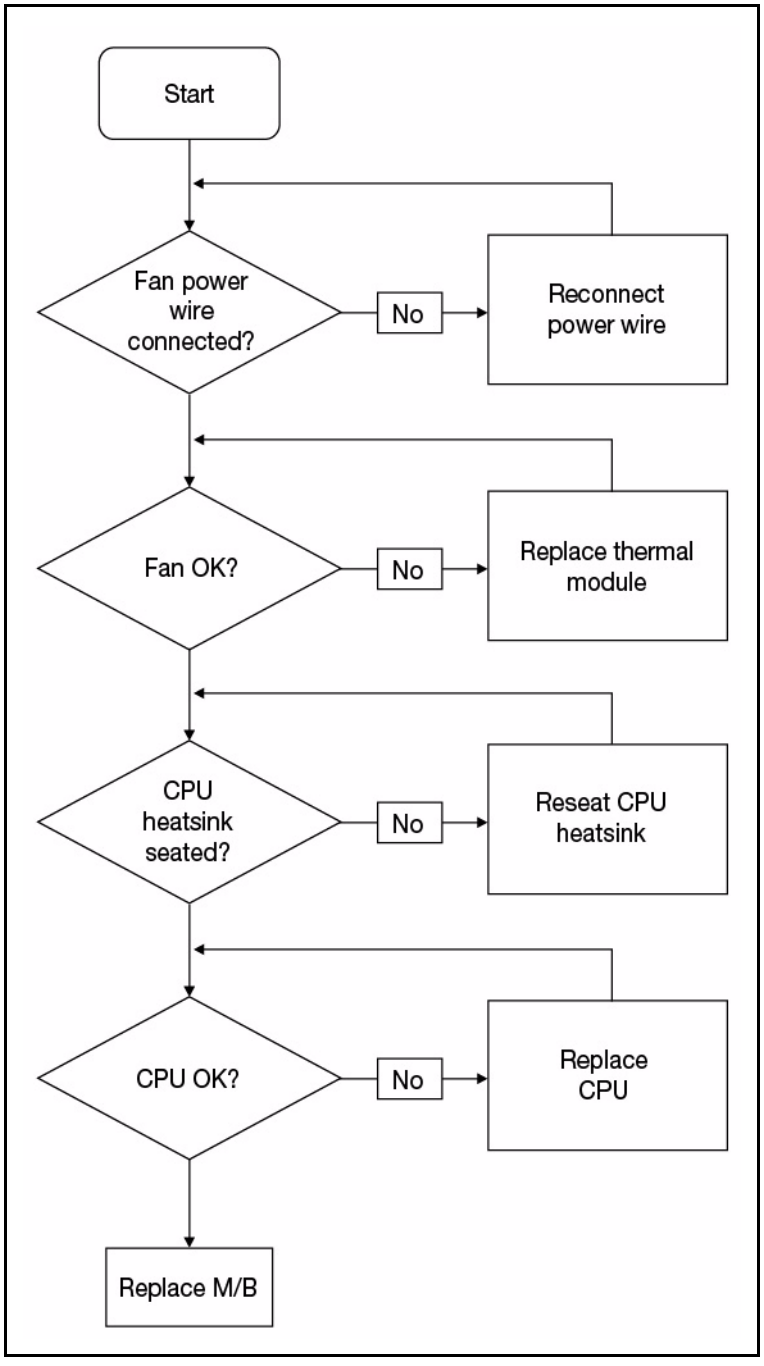


Figure 4-12. Thermal Failure

HDD Not Operating Correctly

If the **HDD** fails to operate correctly, perform the following:

1. Disconnect all external devices.
2. Run a complete virus scan using up-to-date software to confirm the computer is virus free.
3. Run the *Windows Vista Startup Repair Utility*:
    a. Insert the Windows Vista Operating System DVD in the ODD and restart the computer.
    b. When prompted, press any key to start to the operating system DVD.
    c. When the `Install Windows` screen appears, click ***Next***.
    d. Select ***Repair your computer***.
    e. When the **`System Recovery Options`** screen appears, click ***Next***.
    f. Select the appropriate operating system, and click ***Next***.

NOTE:
Click ***Load Drivers*** if controller drives are required.

    g. Select ***Startup Repair***.

NOTE:
Startup Repair attempts to locate and resolve issues with the computer.

    h. When complete, click ***Finish***.

If an issue is discovered, follow the on-screen information to resolve the problem.

1. Run the *Windows Memory Diagnostic Tool*. For more information see *Windows Help and Support*.
2. Restart the computer and press F2 to enter the BIOS Utility. Check the BIOS settings are correct and that CD/DVD drive is set as the first boot device on the Boot menu.
3. Confirm all cables and jumpers on the HDD and ODD are set correctly.
4. Remove any recently added hardware and associated software.
5. Run the *Windows Disk Defragmenter*. For more information see *Windows Help and Support*.
6. Run *Windows Check Disk* by entering **chkdsk /r** from a command prompt. For more information see *Windows Help and Support*.
7. Restore system and file settings from a known good date using **System Restore**.
8. If the issue is not fixed, repeat the preceding steps and select an earlier time and date.
9. Replace the HDD. (refer to *Maintenance Flowchart*)

ODD Failure

If the **ODD** fails, perform the following:

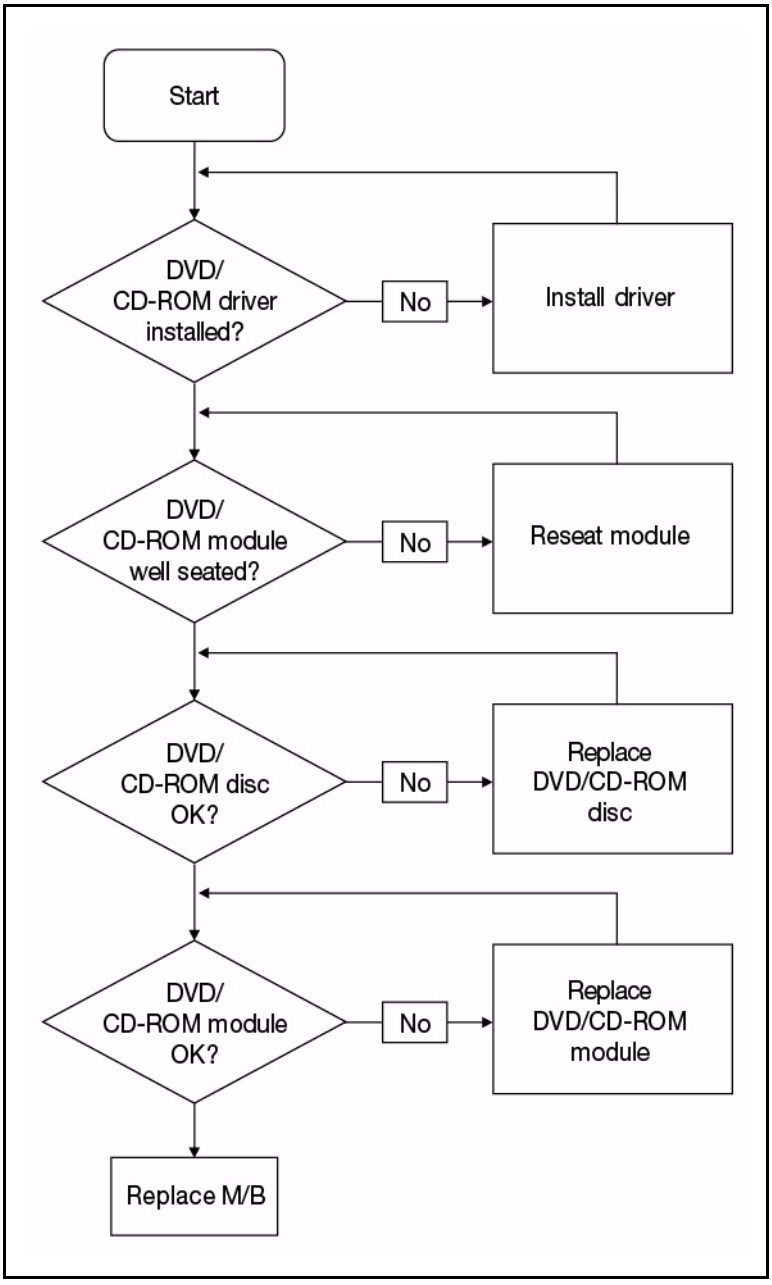


Figure 4-13. ODD Failure

ODD Not Operating Correctly

If the **ODD** exhibits any of the following symptoms it may be faulty:

- Audio CDs do not play when loaded

- DVDs do not play when loaded
- Blank discs do not burn correctly
- DVD or CD play breaks up or jumps
- Optical drive not found or not active:
  - Not shown in `My Computer` or the BIOS setup
  - LED does not flash when the computer starts up
  - The tray does not eject
- Access failure screen is shown
- The ODD is noisy

Perform the following:

1. Boot the computer and retry the operation.
2. Use an different disc.
3. Navigate to ***Start*** → ***Computer***. Check that the ODD device is shown in the `Devices with Removable Storage` panel.
4. Navigate to ***Start*** → ***Control Panel*** → ***System and Maintenance*** → ***System*** → ***Device Manager***.
5. Double click ***IDE ATA/ATAPI controllers***. If a device shows a down arrow, right click on the device and click ***Enable***.
6. Double-click ***DVD/CD-ROM drives***. If the device shows a down arrow, right click on the device and click ***Enable***.
7. Make sure that there are no yellow exclamation marks against the items in `lDE ATA/ATAPI controllers`. If a device has an exclamation mark, uninstall and reinstall the driver.
8. Check that there are no yellow exclamation marks against the items in `DVD/CD-ROM drives`. If a device has an exclamation mark, uninstall and reinstall the driver.
9. If the exclamation marker is not removed from the item in the lists, remove any recently installed software and retrying the operation.

Discs Do Not Play

If discs do not play when inserted into the drive, perform the following:

1. Check that the disc is correctly seated in the drive tray and that the label on the disc is visible.
2. Check that the media is clean and scratch free.
3. Try an alternate disc in the drive.
4. Confirm that `AutoPlay` is enabled:
   - Navigate to ***Start*** → ***Control Panel*** → ***Hardware and Sound*** → ***AutoPlay***.
   - Select ***Use AutoPlay for all media and devices***.
   - In the Audio CD and DVD Movie fields, select the desired player from the drop down menu.
5. Check that the Regional Code is correct for the selected media:

+ IMPORTANT:

Region can only be changed a limited number of times. After Changes remaining reaches zero, the region cannot be changed even when Windows is reinstalled or the drive is moved to another computer.

- Navigate to ***Start*** → ***Control Panel*** → ***System and Maintenance*** → ***System*** → ***Device Manager***.
- Double click ***DVD/CD-ROM drives***.
- Right click ***DVD drive*** and click ***Properties***, then click the ***DVD Region*** tab.
- Select the region suitable for the media inserted in the drive.

Discs Do Not Burn Properly

If discs can not be burned, perform the following:

6. Confirm that the default drive is record enabled:
   - Navigate to ***Start*** → ***Computer*** and right-click the writable ODD icon. Click **Properties**.
   - Select the ***Recording*** tab. In the *Desktop disc recording* panel, select the writable ODD from the drop down list.
   - Click ***OK***.
7. Confirm that the software used for burning discs is the factory default. If using different software, refer to the software's user manual.

Playback is Choppy

If playback is choppy or jumps, perform the following:

1. Check that system resources are not running low:
   - Close some applications.
   - Reboot and try the operation again.
2. Check that the ODD controller transfer mode is set to ***DMA.***
3. Navigate to ***Start*** → ***Control Panel*** → ***System and Maintenance*** → ***System*** → ***Device Manager***.
4. Double click ***IDE ATA/ATAPI controllers***, then right click ***ATA Device 0***.
5. Click ***Properties*** and select the ***Advanced Settings*** tab. Make sure the ***Enable DMA*** box is checked and click ***OK***.
6. Repeat for each ATA Device shown if applicable.

Drive Not Detected

If *Windows*®cannot detect the drive, perform the following:

1. Start the computer and press ***F2*** to enter the `BIOS Utility`.
2. Verify that the drive is detected in the **`ATAPI Model Name`** field on the Information page.

NOTE:

Verify that the entry is identical to one of the ODDs specified in *Specification Tables*.

- Remove power and remove the cover to inspect the connections to the ODD. (refer to *Maintenance Flowchart*)
- Check for broken connectors on the drive, motherboard, and cables.
- Check for bent or broken pins on the drive, motherboard, and cable connections.
- Try an alternate cable, if available. If the drive works with the new cable, the original cable should be replaced.

3. Reseat the drive, making sure and all cables are connected correctly.
4. Replace the ODD. (refer to *Maintenance Flowchart*)

Drive Read Failure

If discs cannot be read when inserted in the drive, perform the following:

1. Remove and clean the failed disc.
2. Retry reading the CD or DVD.
   - Test the drive using other discs.
   - Play a DVD movie
   - Listen to a music CD

If the ODD works properly with alternate discs, the original disc is probably defective and should be replaced.

3. Remove the power and remove the cover to inspect the connections to the ODD. Refer to *Online Support Information*.
   - Check for broken connectors on the drive, motherboard, and cables.
   - Check for bent or broken pins on the drive, motherboard, and cable connections.

- Try a different cable. If the drive works with the new cable, the original cable should be replaced.

4. Replace the ODD. (refer to *Maintenance Flowchart*)

Random Loss of BIOS Settings

If the computer is experiencing intermittent loss of BIOS information, perform the following:

1. If the computer is more than one year old, replace the CMOS battery.
2. Run a complete virus scan using up to date software to confirm the computer is virus free.
3. If the computer is experiencing HDD or ODD BIOS information loss, disconnect and reconnect the power and data cables between devices.
4. If the BIOS settings are still lost, replace the cables.
5. If HDD information is missing from the BIOS, the drive may be defective and should be replaced.
6. Replace the Motherboard.
7. If the Issue is still not resolved, refer to *Online Support Information*.

External Mouse Failure

If an external Mouse fails, perform the following:

1. Use a different mouse.
2. If the mouse uses a wireless connection, insert new batteries and confirm there is a good connection. Refer to the mouse user manual.
3. If the mouse uses a USB connection, use a different USB port.
4. Use a different program to verify mouse operation. Reinstall the program experiencing mouse failure.
5. Restart the computer.
6. Remove recently added hardware and associated software.
7. Remove recently added software and reboot the computer.
8. Restore system and file settings from a known good date using ***System Restore***.
9. If the issue is resolved, repeat Step 8 and select an earlier time and date.
10. Run the `Event Viewer` to check the events log for errors. For more information refer to `Windows Help and Support`.
11. Roll back the mouse driver to the previous version if updated recently.
12. Remove and reinstall the mouse driver.
13. Check the Device Manager to determine that:
    - The device is properly installed. There are no red Xs or yellow exclamation marks
    - There are no device conflicts
    - No hardware is listed under Other Devices
14. If the Issue is still not resolved, refer to *Online Support Information*.

Intermittent Problems

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

When analyzing an intermittent problem, perform the following:

1. Run the advanced diagnostic test for the system board in loop mode at least 10 times.
2. If no error is detected, do not replace any FRU.
3. If an error is detected, replace the FRU. Rerun the test to verify that there are no more errors.

Undetermined Problems

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

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

NOTE:
Verify that the power supply being used at the time of the failure is operating correctly. (refer to *Power On Issues*).

Perform the following procedures to isolate the failing FRU:

1. Remove power from the computer.
2. Visually check FRUs for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Battery pack
   - Hard disk drive
   - DIMM
   - CD-ROM/Diskette drive Module
   - PC Cards
4. Apply power to the computer.
5. Determine if the problem has changed.
6. If the problem does not recur, connect the removed devices until failing FRU is found.
7. If the problem remains, replace the following:
   - System board
   - LCD assembly

Post Codes

The following tables describe the POST codes and descriptions during the POST.

Table 4-2. NO_EVICTION_MODE_DEBUG EQU 1 (CommonPlatform\sec\Ia32\SecCore.inc)

Phase	POST Code Range
0xC2	MTRR setup
0xC3	Enable cache
0xC4	Establish cache tags nf
0xC5	Enter NEM, Place the BSP in No Fill mode, set CR0.CD = 1, CR0.NW = 0.
0xCF	Cache Init Finished

Table 4-3. DEBUG_BIOS equ 1

(Chipset\Alviso\MemoryInitAsm\IA32\IMEMORY.INC)

Phase	POST Code Range
0xA0	First memory check point
0x01	Enable MCHBAR o
0x02	Check for DRAM initialization interrupt and reset fail
0x03	Verify all DIMMs are DDR or DDR2 and unbuffered
0x04	Detect an improper warm reset and handle eS
0x05	Detect if ECC SO-DIMMs are present in the system
0x06	Verify all DIMMs are single or double sided and not asymmetric
0x07	Verify all DIMMs are x8 or x16 width
0x08	Find a common CAS latency between the DIMMS and the MCH
0x09	Determine the memory frequency and CAS latency to program
0x22	Program the DRAM Bank Architecture register
0x23	Program the DRAM Timing & and DRAM Control registers
0x24	Program ODT
0x25	Perform steps required before memory init oft
0x26	Program the receive enable reference timing control register Program the DLL Timing Control Registers, RCOMP settings Se
0x27	Enable DRAM Channel I/O Buffers
0x28	Enable all clocks on populated rows
0x29	Perform JEDEC memory initialization for all memory rows
0x30	Perform steps required after memory init

Table 4-3. DEBUG_BIOS equ 1

(Chipset\Alviso\MemoryInitAsm\IA32\IMEMORY.INC) (Continued)

Phase	POST Code Range
0x31	Program DRAM throttling and throttling event registers
0x32	Setup DRAM control register for normal operation and enable
0x33	Enable RCOMP
0x34	Clear DRAM initialization bit in the SB
0x35	Initialization Sequence Completed, program graphic clocks
0x43	Program Thermal Throttling

Table 4-4. BDS & Specific action:

Phase	POST Code Range
0x00	Report the legacy boot is happening
0x12	Wake up the Aps
0x13	Initialize SMM Private Data and relocate BSP SMBASE
0x21	PC init begin at the stage1 re
0x27	Report every memory range do the hard ware ECC init
0x28	Report status code of every memory range
0x50	Get the root bridge handle twa
0x51	Notify pci bus driver starts to program the resource
0x58	Reset the host controller Sof
0x5A e	IdeBus begin initialization
0x79	Report that the remote terminal is being disabled
0x7A	Report that the remote terminal is being enabled
0x90	Keyboard reset
0x91	USB Keyboard disable
0x92	Keyboard detection
0x93	Report that the usb keyboard is being enabled
0x94	Clear the keyboard buffer
0x95	Init Keyboard
0x98	Mouse reset
0x99	Mouse disable
0x9A	Detect PS2 mouse
0x9B	Report that the mouse is being enabled
0xB8	Peripheral removable media reset(ex:IsaFloppy, USB device)

Table 4-4. BDS & Specific action: (Continued)

Phase	POST Code Range
0xB9	Peripheral removable media disable Con
0xBB	Peripheral removable media enable
0xE4	Report Status Code here for DXE_ENTRY_POINT once it is available
0xF8	Report that ExitBootServices() has been called re
0xF9	Runtime driver set virtual address map

Table 4-5. Each PEIM entry point used in 80_PORT

Phase	POST Code Range
0x01	PEI_EVENT_LOG
0xA1	PEI_OEM_SERVICE
0xA2	PEI_SIO_INIT
0xA3	PEI_MONO_STATUS_CODE
0xA4	PEI_CPU_IO_PCI_CFG
0x06	PEI_CPU_IO
0x07	PEI_PCI_CFG
0xA5	PEI_CPU_PEIM
0xA6	PEI_PLATFORM_STAGE1
0xA7	PEI_VARIABLE
0xA8	PEI_SB_INIT
0x0C	PEI_CAPSULE
0xAA	PEI_PLATFORM_STAGE2
0xAC	PEI_SB_SMBUS_ARP_DISABLED
0x0F	PEI_HOST_TO_SYSTEM
0x40	PEI_MEMORY_INIT
0x41	PEI_S3_RESUME
0xAD	PEI_CLOCK_GEN w
0xAB	PEI_OP_PRESENCE
0xAE	PEI_FIND_FV
0x16	PEI_H2O_DEBUG_IO Soft
0x17	PEI_H2O_DEBUG_COMM
0x16~0x1FE	PEI_RESERVED
0x20~0x2E	PEI_OEM_DEFINED

Table 4-5. Each PEIM entry point used in 80_PORT (Continued)

Phase	POST Code Range
0xAF	PEI_DXE_IPL

Table 4-6. Each Driver entry point used in 80_PORT

Phase	POST Code Range
0x30	RESERVED
0xB6	DXE_CRC32_SECTION_EXTRACT
0xB8	SCRIPT_SAVE
0xB9	ACPI_S3_SAVE
0xBA	SMART_TIMER
0xBB	JPEG_DECODER
0xBC	PCX_DECODER
0xBE	HT_CPU / MP_CPU
0xBF	LEGACY_METRONOME
0xC0	FTWLITE
0xC1	RUN_RIME
0xC2	MONOTONIC_COUNTER
0xC3	WATCH_DOG_TIMER
0xC4	SECURITY_STUB tw
0xC5	DXE_CPU_IO
0xC6	CF9_RESET Sof
0xC7 e	PC_RTC
0xC8	STATUS_CODE
0xC9	VARIABLE EMU_VARIABLE
0xD9	DXE_CHIPSET_INIT
0x45	DXE_ALERT_FORMAT
0xD6	PCI_HOST_BRIDGE
0xD7	PCI_EXPRESS
0xD5	DXE_SB_INIT
0xDA	IDE_CONTROLLER
0xDB	SATA_CONTROLLER
0xDD	SB_SM_BUS
0xE7	ISA_ACPI_DRIVER

Table 4-6. Each Driver entry point used in 80_PORT (Continued)

Phase	POST Code Range
0xE8	ISA_BUS
0xE9	ISA_SERIAL
0xED	BUS_PCI_UNDI
0xEC	PCI_BUS
0xF6	BOOT_PRIORITY
0xF7	FVB_SERVICE
0xF8	ACPI_PLATFORM
0xFB	PCI_HOT_PLUG
0xFC	DXE_PLATFORM Soft
0xFD	PLATFORM_IDE
0x97 e	SMBIOS
0x98	MEMORY_SUB_CLASS
0x99	MISC_SUB_CLASS
0x82	CON_PLATFORM
0x83	SAVE_MEMORY_CONFIG
0x84	ACPI_SUPPORT
0x85	CON_SPLITTER_UGA_VGA / CON_SPLITTER
0x88	VGA_CLASS
0x89	DATA_HUB
0x60	DISK_IO
0x8B	MEMORY_TEST
0x62	CRISIS_RECOVERY
0x8D	LEGACY_8259
0x8E	LEGACY_REGION
0x8F	LEGACY_INTERRUPT
0x70	BIOS_KEYBOARD
0x71	BIOS_VEDIO
0x72	MONITER_KEY
0x73	LEGACY_BIOS ware
0x75	LEGACY_BIOS_PLATFORM
0x76	PCI_PLATFORM
0x6C	ISA_FLOOPY Soft
0x6D	PS2_MOUSE

Table 4-6. Each Driver entry point used in 80_PORT (Continued)

Phase	POST Code Range
0x6E e	USB_BOT
0x6F	USB_CBI0
0x74	USB_MOUSE
0xFA	SETUP_UTILITY
0x90	FW_BLOCK_SERVICE
0x78	SMM_USB_LEGACY
0x86	GRAPHICS_CONSOLE
0x87	TERMINAL
0x8A	DATA_HUB_STD_ERR
0x7C	FAT
0x7D	PARTITION
0x7E	ENGLISH
0x7F	FRENCH
0x9E	HII_DATABASE
0x9F	OEM_SETUP_BROWSER
0x8C	OEM_BADGING_SUPPORT
0xF9	SETUP_MOUSE
0x72	MONITOR_KEY re
0xBD	PLATFORM_BDS
0x8D	RESERVED twa
0x8E	RESERVED f
0x8F	RESERVED So
0xA0 e	DXE_H2O_DEBUG_IO
0xB3	DXE_TPM_TCG
0xB4	DXE_TPM_PHYSICAL_PRESENCE
0xB7	DXE_OEM_SERVICE
0x9B	DXE_ SECURITY_HDD_PASSWORD_SERVICE
0xA9	DXE_LAN_IDER_CONTROLLER
0x9C	DXE_ SECURITY_SYSTEM_PASSWORD_SERVICE
0x9D	DXE_ SECURITY_ PASSWORD_CONSOLE
0xCB	DXE_ DATA_HUB_RECORD_POLICY
0xB5	DXE_TPM_DRIVER
0x11	CHINESE

Table 4-6. Each Driver entry point used in 80_PORT (Continued)

Phase	POST Code Range
0xB0	JAPANESE
0xB1	DXE_UNICODE_COLLACTION

Table 4-7. Each SmmDriver entry point used in 80_PORT

0xD4	SMM_ACCESS
0xDE	SMM_CONTROL
0xCC	SMM_BASE
0xD2	SMM_RUNTIME
0xDF	SB_SMM_DISPATCH
0xD0	SMM_THUNK
0xCA	SMM_ACPI_SW_CHILD Soft
0xFE	SMM_PLATFORM
0xD8 e	SMM_GMCH_MBI
0x90	SMM_FW_BLOCK_SERVICE
0x91	SMM_VARIABLE
0x92	SMM_IHISI
0x93	SMM_INT15_MICROCODE
0x94	SMM_PNP
0x95	SMM_INIT_PPM
0xD3	SMM_OEM_SERVICE

CHAPTER 5

Jumper and Connector Locations

Jumper and Connector Locations

Mainboard

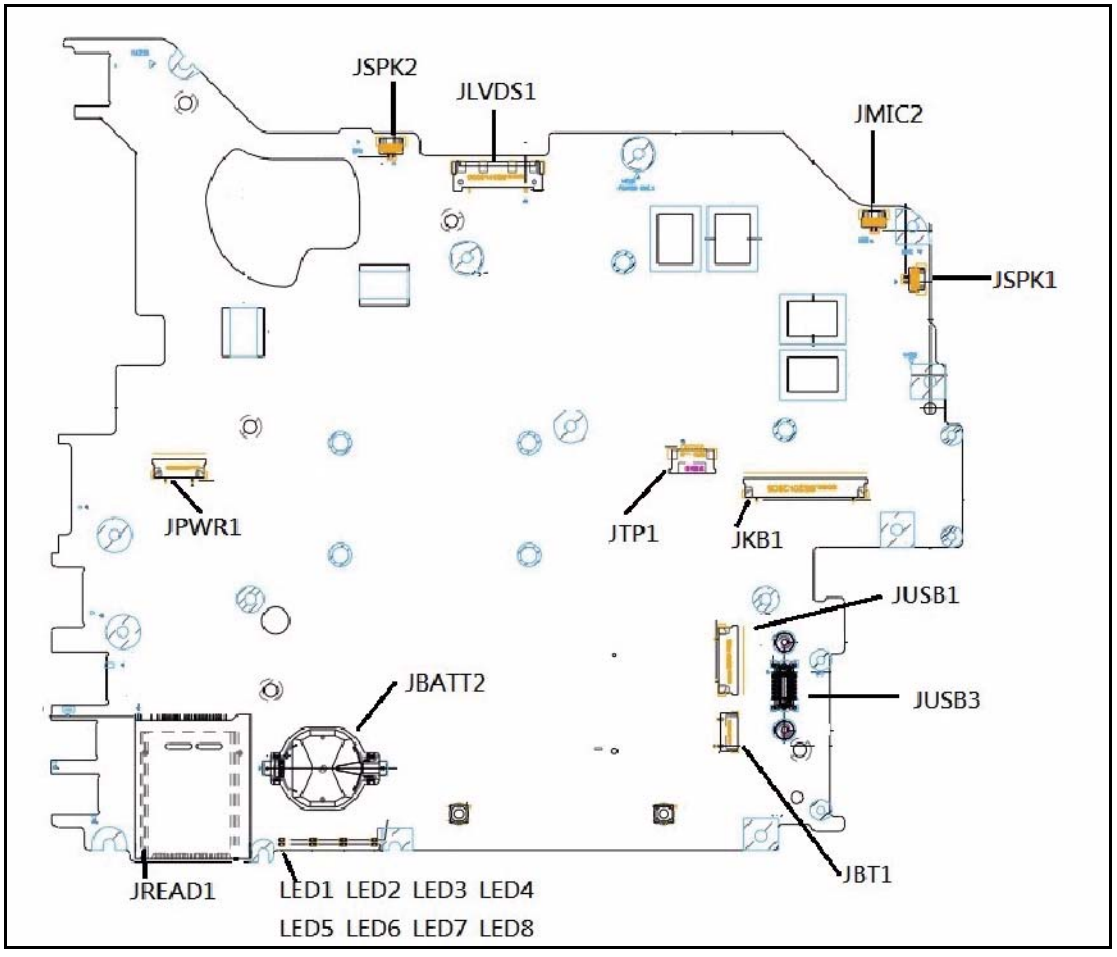


Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Description	Item	Description
JLVDS1	LVDS Connector	JBT1	Bluetooth Connector
JMIC2	Internal MIC Connector	JBATT2	RTC battery Connector
JSPK1	Speaker Connector	JREAD1	Card Reader Connector
JSPK2	Speaker Connector	JPWR1	Power Board Connector
JTP1	Touch Pad Broad Connector	LED1.LED5	Power LED/S3 mode LED
JKB1	Keyboard Connector	LED2.LED6	Battery LED

Table 5-1. Mainboard Top (Continued)

Item	Description	Item	Description
JUSB1	USB2.0 Broad Connector	LED3.LED7	Media LED
JUSB3	USB3.0 Broad Connector	LED4.LED8	WWLAN LED

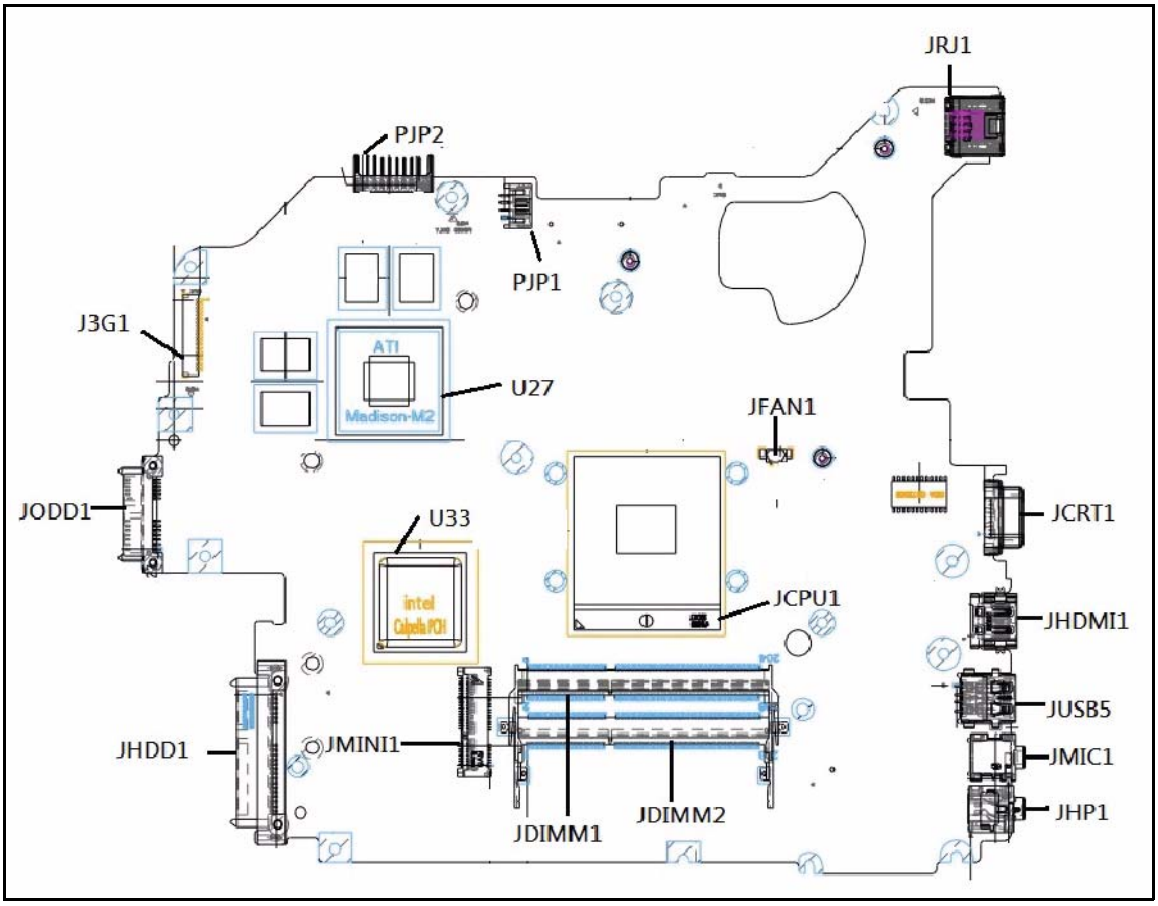


Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

Item	Description	Item	Description
PJP1	DC-IN Connector	JCPU1	CPU Connector
PJP2	Battery Connector	JDIMM1/J DIMM2	DDR III Connector
JRJ1	LAN Connector	JMINI1	MINI Card Connector
JCRT1	D-SUB Connector	JHDD1	HDD Connector
JHDMI1	HDMI Connector	JODD1	ODD Connector
JUSB5	USB Connector	J3G1	3G Board Connector

Table 5-2. Mainboard Bottom (Continued)

Item	Description	Item	Description
JMIC1	Audio JACK(MIC)	U27	VGA Chip
JHP1	Audio Combo Jack	U33	PCH Chip
JFAN1	FAN Connector		

USB Board

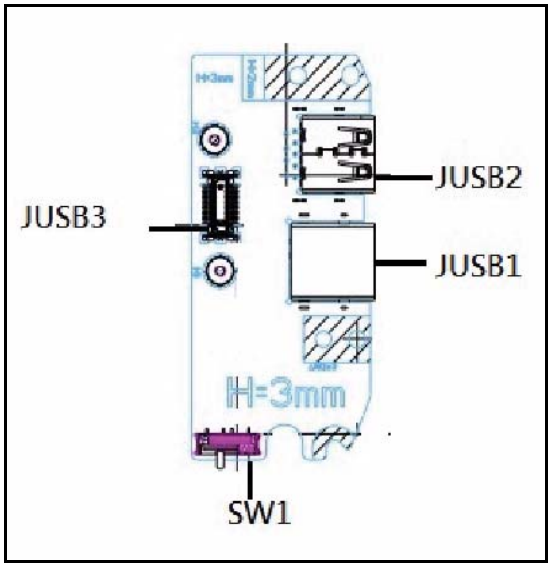


Figure 5-3. USB Board Top

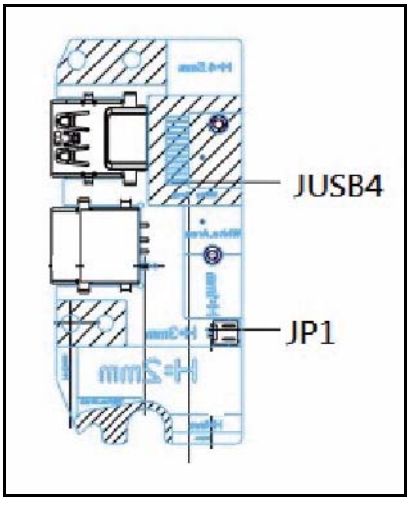


Figure 5-4. USB Board Bottom

Table 5-3. USB Board

Item	Description
JUSB1	USB2.0 Connector
JUSB2	USB3.0 Connector
JUSB3	USB3.0 Broad Connector
JUSB4	USB2.0 Broad Connector
JP1	WLAN EN Connector
SW1	WLAN EN Switch

Power Board

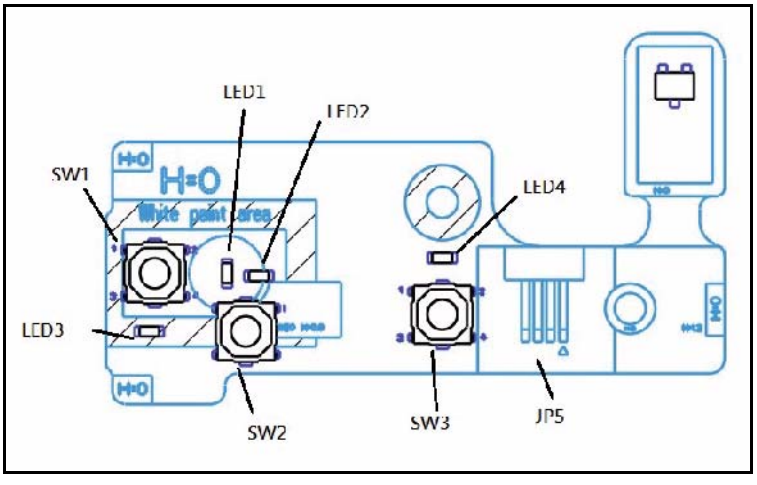


Figure 5-5. Power Board Top

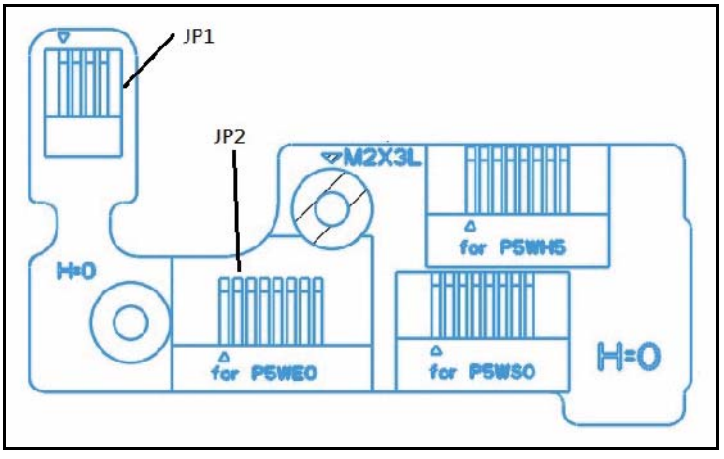


Figure 5-6. Power Board Bottom

Table 5-4. Power Board

Item	Description
SW1	Switch Button for E0 project
SW2	Switch Button for S0 project
SW3	Switch Button for D0 project
SW4	Speaker Connector
JP1	To PWR/B FFC
JP2	To M/B FFC
JP5	To LID/B FFC

Card Reader

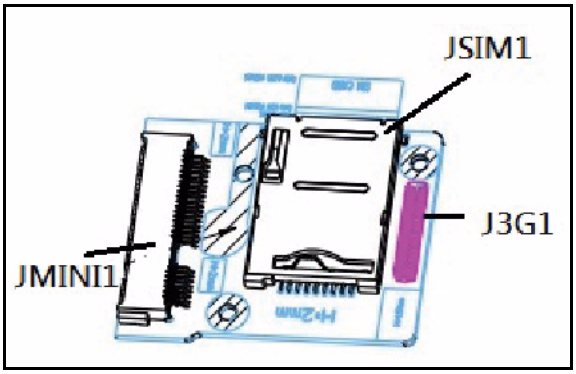


Figure 5-7. Card Reader Top

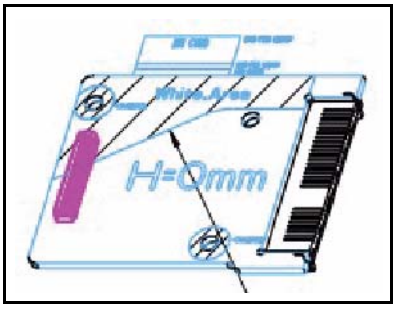


Figure 5-8. Card Reader Bottom

Table 5-5. Power Board

Item	Description
JSIM1	SIM Card Connector
JMINI1	MINI Card Connector
J3G1	3G Board Connector

Clearing Password Check and BIOS Recovery

This section provides users with the SOP (standard operating procedure) for clearing the BIOS password check and recovering the BIOS for the Packard Bell EasyNote TS11HR/TS13HR/TS44HR.

Clearing Password Check

NOTE:

The following procedure is only for clearing BIOS Password (Supervisor Password and User Password).

Steps for Clearing BIOS Password Check

If a BIOS password (Supervisor Password and/or User Password) is set, the BIOS will prompt for the password at system POST or upon entering the BIOS setup menu. Clear the password check with the following procedure:

1. Remove HDD, AC adapter and Battery.
2. Remove power from system.
3. Disconnect RTC Battery.
4. Locate the RTC_RST point.
5. Use an electric conductivity tool to bridge the two points of the jumpers. (Figure 5-9)

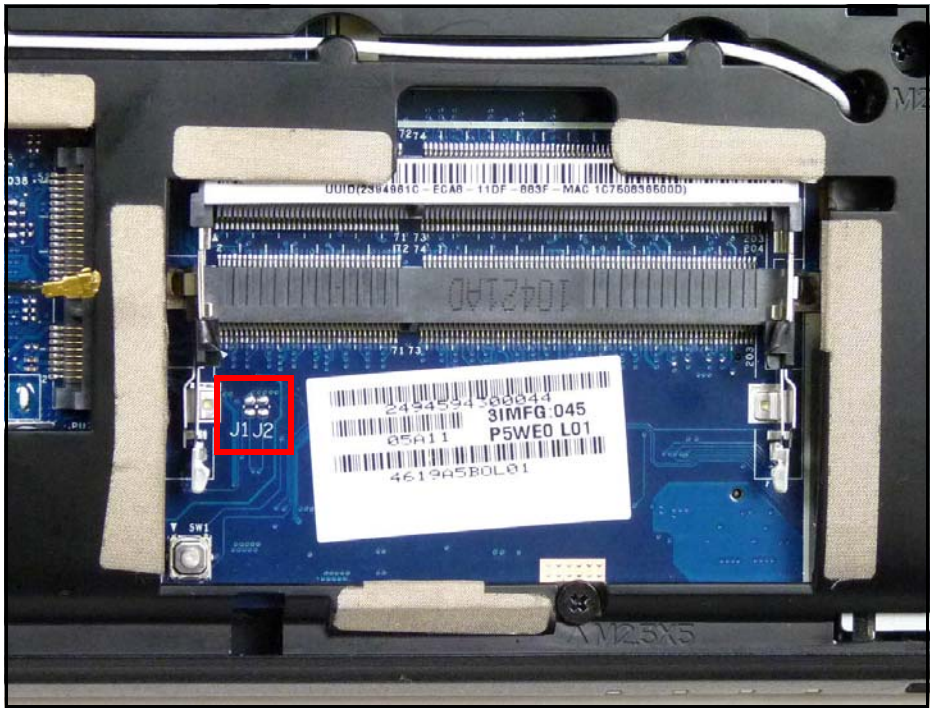


Figure 5-9. CMOS Jumper

Table 5-6. CMOS Jumper

Item	Description
J1	Clear CMOS Jumper (RTC_RESET)
J2	Clear CMOS Jumper (SRTC_RESET)

6. Plug in AC adapter.
7. Press ***Power*** button until BIOS POST is finished
8. Remove conductivity tool from RCT_RST point.
9. Restart the system and press ***F2*** to enter *BIOS Utility Setup* menu.
10. If no password prompt is shown, BIOS password is cleared.
11. If password prompt is shown, repeat steps 1 through 9.

BIOS Recovery by Crisis Disk

BIOS Recovery Boot Block

The BIOS Recovery Boot Block is a special block of BIOS. It is used to boot up the system with minimum BIOS initialization. Users can enable this feature to restore the BIOS firmware if a previous BIOS flashing process has failed.

BIOS Recovery Hotkey

To enable the BIOS Recovery process, use the function hotkey, <**Fn+Esc>**, during BIOS POST. The AC adapter and battery are required to be installed during this process.

Steps for BIOS Recovery Using USB HDD

NOTE:

Prior to performing the recovery, prepare a Crisis USB key. The Crisis USB key is created by executing the Crisis Disk program in another system with Windows® 7 OS.

To Create a Crisis USB key, perform the following:

1. Format USB HDD using the *Quick Format* option.

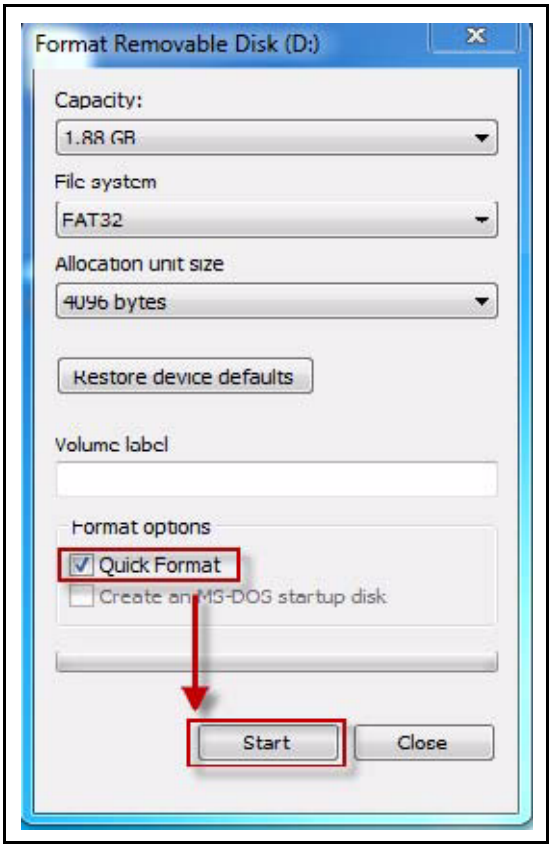


Figure 5-10. Format HDD

2. Copy ROM (read-only memory) file, *P5WEOX64.fd,* to root directory of USB HDD. Make sure that there is no other BIOS file is saved in the same directory.
3. Insert USB HDD into USB port.
4. Press <**Fn + ESC>** button and hold while plugging in AC power adapter.
5. The ***Power*** button flashes once.
6. Press ***Power*** button to initiate system CRISIS mode.
7. When CRISIS is complete, the system auto restarts with a workable BIOS.
8. Update the latest BIOS version for this machine by the regular BIOS flashing process.

CHAPTER 6

FRU (Field Replaceable Unit) List

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the Packard Bell EasyNote TS11HR/TS13HR/TS44HR. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE:

WHEN ORDERING FRU PARTS, check the most up-to-date information available on the regional web or channel. Part number changes will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, the Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. Users MUST use the local FRU list provided by the regional Acer office to order FRU parts for repair and service of customer machines.

NOTE:

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

Exploded Diagrams

Main Assembly

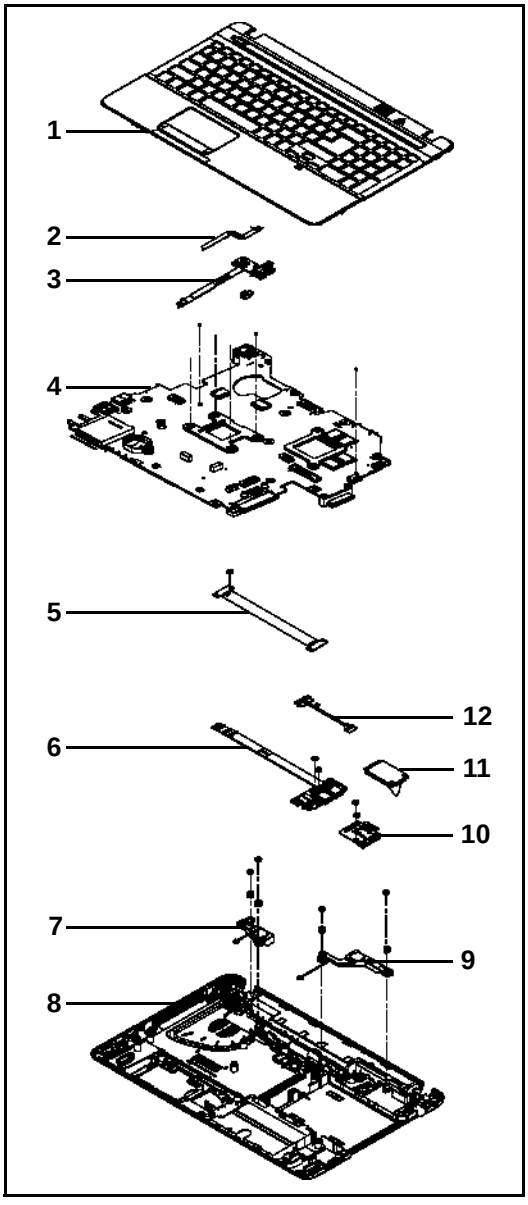


Figure 6-1. Main Assembly Exploded Diagram

Table 6-1. Main Assembly Exploded Diagram

No.	Description	Acer Part No.
1	UPPER CASE-BLACK	60.BRG02.001

Table 6-1. Main Assembly Exploded Diagram (Continued)

No.	Description	Acer Part No.
2	TP FFC	50.BRG02.001
3	POWER BOARD	55.BRG02.001
4	Mainboard AS5750 Intel HM65 LF Intel UMA graphics	MB.R9702.001
5	FPC BOARD FOR USB 3.0	55.RFD02.004
6	USB BOARD 2.0 MOUNT W/ FFC CABLE	55.RFD02.003
7	SPEAKER L	23.R9702.003
8	LOWER CASE FOR W/3G	60.BRG02.003
9	SPEAKER R	23.R9702.004
10	3G BOARD	55.RFD02.005
11	3G CARD Qualcomm Gobi3000	LC.21300.059
12	3G CABLE	50.RFD02.002

LCD Assembly

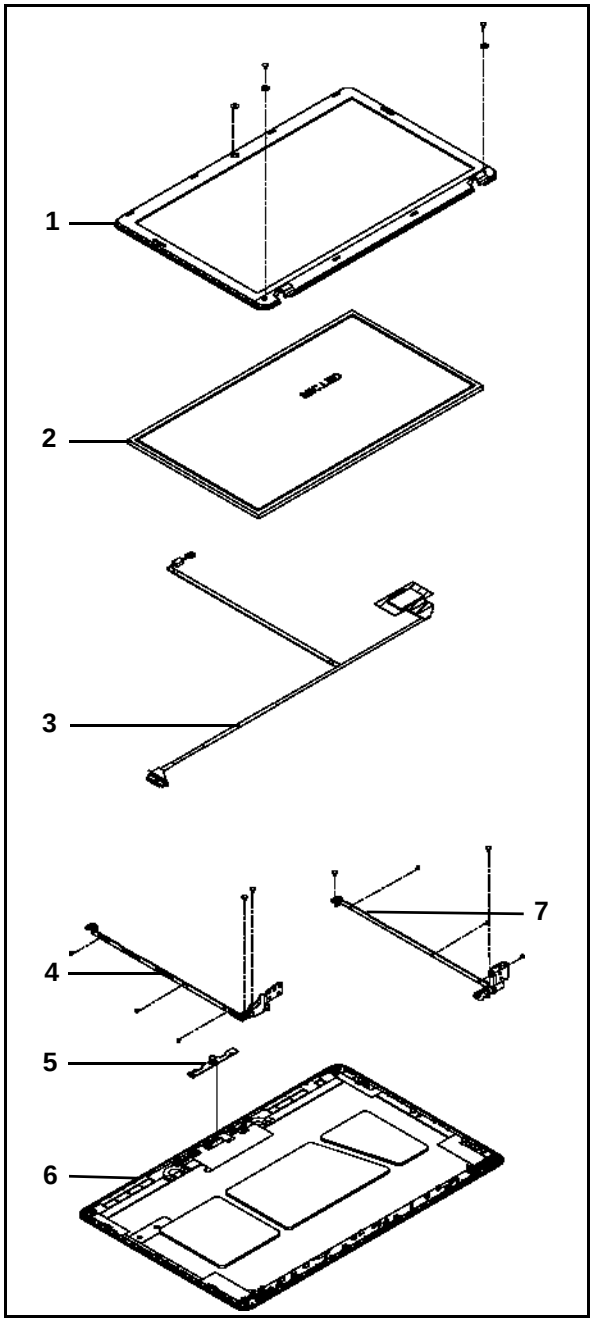


Figure 6-2. LCD Assembly Exploded Diagram

Table 6-2. LCD Assembly Exploded Diagram

No.	Description	Acer Part No.
1	LCD BEZEL-PB BLACK	60.BRG02.007
2	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
3	LCD CABLE	50.R9702.003
4	LCD BRACKET R&L	33.BRG02.002
5	CAMERA 1.3M	57.R9702.001
6	LCD COVER IMR PB-BLACK	60.BRG02.006

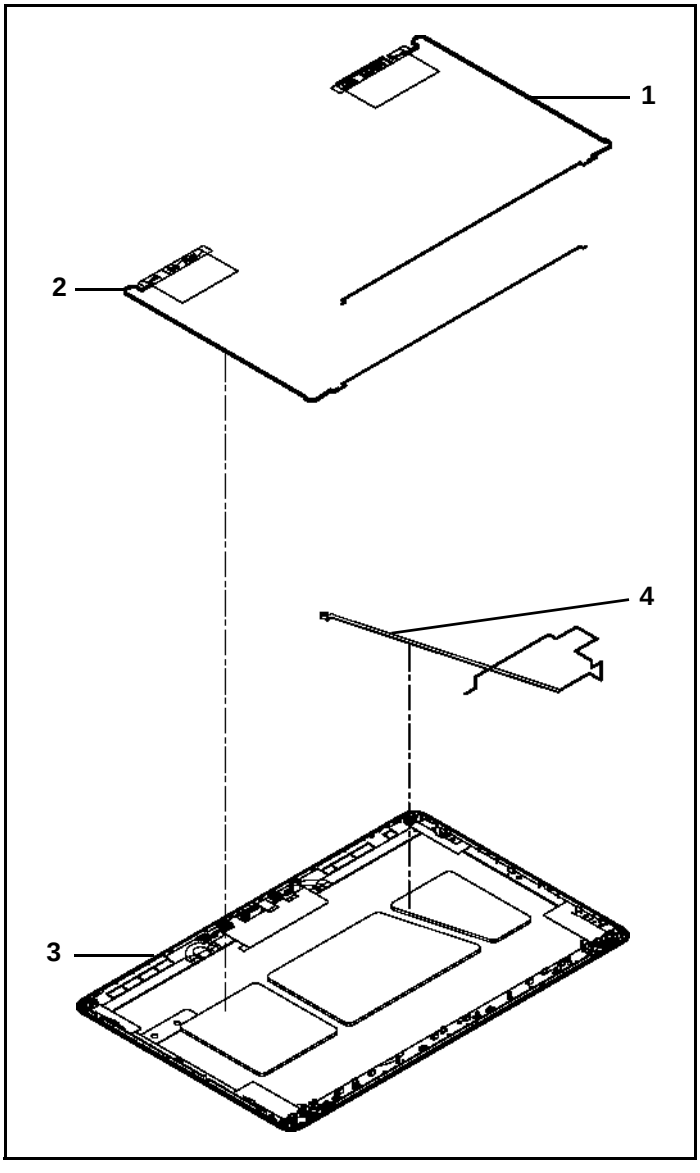


Figure 6-3. LCD Cover Exploded Diagram

Table 6-3. LCD Cover Exploded Diagram

No.	Description	Acer Part No.
1	ANTENNA WLAN-MAIN	50.BRG02.002
2	ANTENNA WLAN-AUX	50.BRG02.003
3	LCD COVER IMR PB-BLACK	60.BRG02.006
4	MIC SET	23.R9702.002

Upper Cover

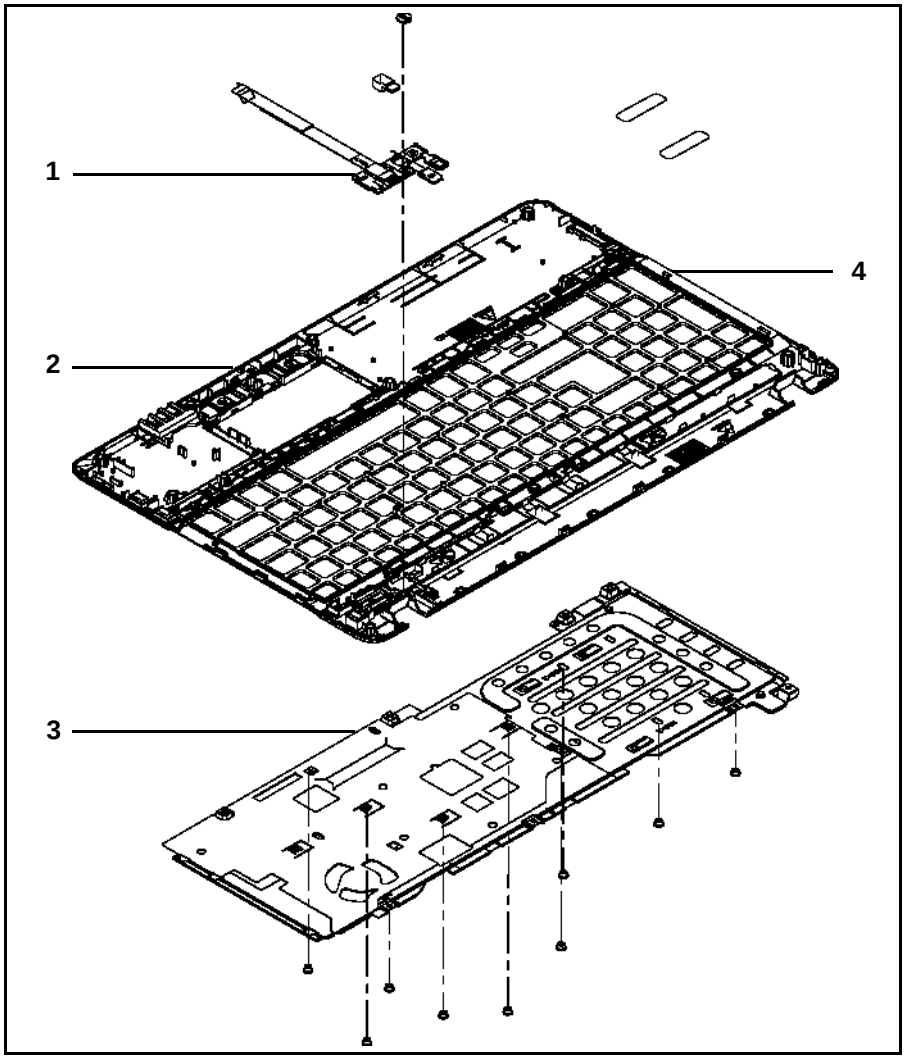


Figure 6-4. Upper Cover Exploded Diagram

Table 6-4. Upper Cover Exploded Diagram

No.	Description	Acer Part No.
1	POWER BOARD	55.BRG02.001
2	PALMREST ASSY IMR-BLACK	60.BRG02.002
3	KB SUPPORT PLATE	33.BRG02.001
4	UPPER CASE-BLACK	60.BRG02.001

Lower Cover

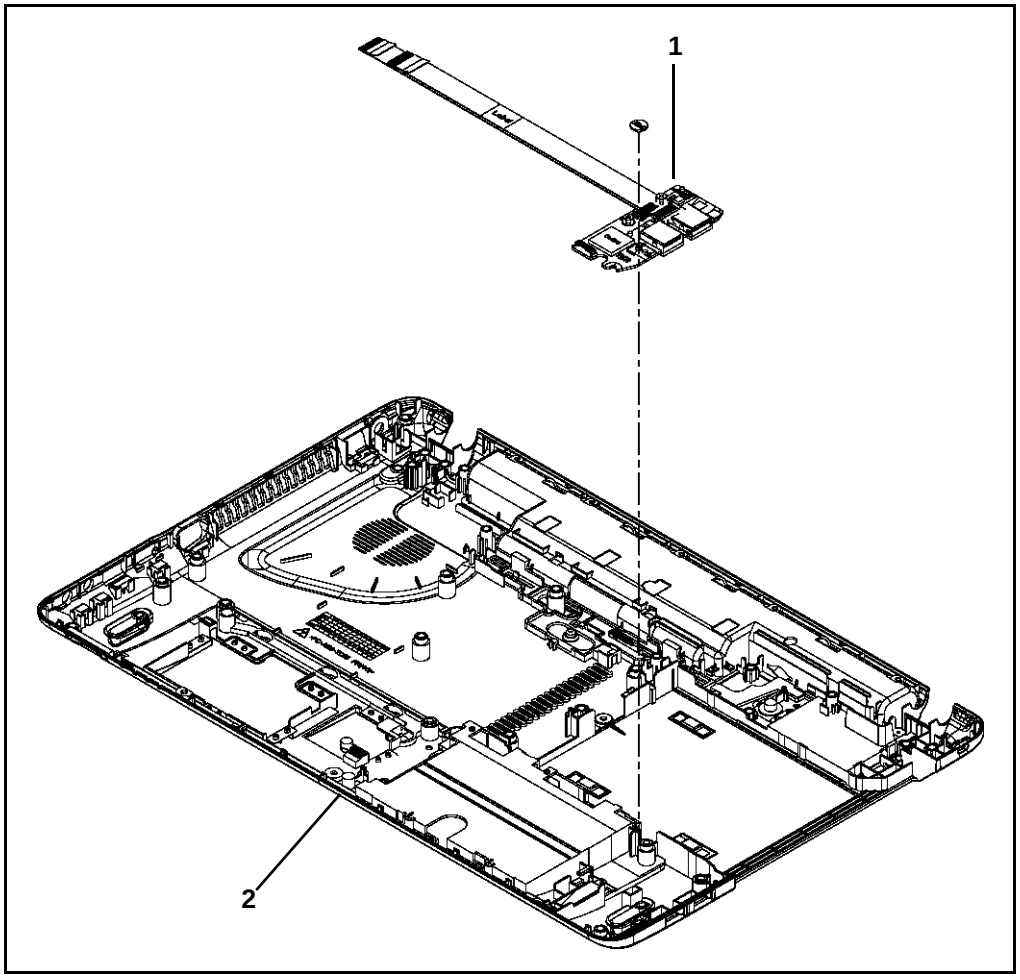


Figure 6-5. Lower Cover Exploded Diagram

Table 6-5. Lower Cover Exploded Diagram

No.	Description	Acer Part No.
1	USB BOARD 2.0 MOUNT W/ FFC CABLE	55.RFD02.003
2	LOWER CASE FOR W/3G	60.BRG02.003

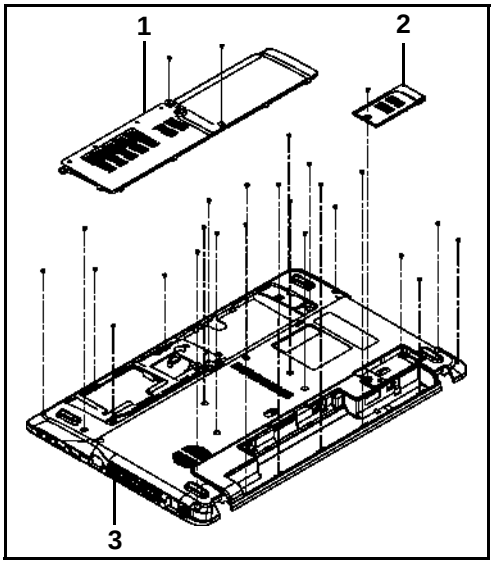


Figure 6-6. Lower Cover with Uniload Door Exploded Diagram

Table 6-6. Lower Cover with Uniload Door Exploded Diagram

No.	Description	Acer Part No.
1	UNI-LOAD DOOR	60.BRG02.005
2	3G CARD DOOR FOR W/ 3G	42.BRG02.001
3	LOWER CASE FOR W/3G	60.BRG02.003

FRU List

Table 6-7. FRU List

Category	Description	P/N
ADAPTER		
	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-22AC LV5 LED LF	AP.06503.024
	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65VH BA, LV5, Low profile LED LF	AP.06501.033
	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-69AW, LV5, Low profile LED LF	AP.06503.029
	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017
	Adapter DELTA 90W 19V 1.7x5.5x11 Blue ADP-90CD DBH, LV5 LED LF	AP.09001.031
	Adapter LITE-ON 90W 19V 1.7x5.5x11 Blue PA-1900-34AR, LV5 LED LF	AP.09003.021
	Adapter HIPRO 90W 19V 1.7x5.5x11 Blue HP-A0904A3 B1LF, LV5 LED LF	AP.0900A.005
BATTERY		
	Battery SONY AS10D Li-Ion 3S2P SONY 6 cell 4400mAh Main COMMON ID:AS10D41	BT.00604.049
	Battery PANASONIC AS10D Li-Ion 3S2P PANASONIC 6 cell 4400mAh Main COMMON ID:AS10D51	BT.00605.062
	Battery SIMPLO AS10D Li-Ion 3S2P PANASONIC 6 cell 4400mAh Main COMMON ID:AS10D71	BT.00607.125
	Battery SIMPLO AS10D Li-Ion 3S2P LGC 6 cell 4400mAh Main COMMON ID:AS10D73	BT.00607.126
	Battery SIMPLO AS10D Li-Ion 3S2P SAMSUNG 6 cell 4400mAh Main COMMON ID:AS10D	BT.00607.127
BOARD		
	Foxconn Bluetooth BRM 2070 (T77H114.01) BT 3.0	BH.21100.010
	Foxconn Bluetooth ATH BU12	BH.21100.011
	POWER BOARD	55.BRG02.001

Table 6-7. FRU List (Continued)

Category	Description	P/N
	USB BOARD 3.0	55.RFD02.002
	USB BOARD 2.0 MOUNT W/ FFC CABLE	55.RFD02.003
	FPC BOARD FOR USB 3.0	55.RFD02.004
	3G BOARD	55.RFD02.005
	Foxconn Wirelss LAN Atheros HB95BG (HM) T77H121.10	NI.23600.077
	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072
	Liteon Wireless LAN Atheris HB97 2x2 BGN (HM) WN6603AH	NI.23600.073
	Foxconn Wireless LAN Broadcomm 43225 2x2 BGN (HM) T77H103.00	NI.23600.066
	Liteon Wireless LAN Broadcom 43225 2x2 BGN	NI.23600.081
	Liteon Wireless LAN Realtek 8192SE BGN WN6603LH(2x2 BGN)	NI.23600.065
	3G CARD Qualcomm Gobi3000	LC.21300.059
CABLE		
	BLUE TOOTH CABLE-6PIN	50.RFD02.001
	3G CABLE	50.RFD02.002

Table 6-7. FRU List (Continued)

Category	Description	P/N
	TP FFC	50.BRG02.001
	POWER CORD US 3 PIN	27.TAVV5.001
	POWER CORD EU 3 PIN	27.TAVV5.002
	POWER CORD AUS 3 PIN	27.TAVV5.003
	POWER CORD UK 3 PIN	27.TAVV5.004
	POWER CORD CHINA 3 PIN	27.TAVV5.005
	POWER CORD SWISS 3 PIN	27.TAVV5.006
	POWER CORD ITALIAN 3 PIN	27.TAVV5.007
	POWER CORD DENMARK 3 PIN	27.TAVV5.008
	POWER CORD JP 3 PIN	27.TAVV5.009
	POWER CORD SOUTH AFRICA 3 PIN	27.TAVV5.010
	POWER CORD KOREA 3 PIN	27.TAVV5.011
	POWER CORD ISRAEL 3 PIN	27.TAVV5.012
	POWER CORD INDIA 3 PIN	27.TAVV5.013
	POWER CORD TWN 3 PIN	27.TAVV5.014
	POWER CORD ARGENTINA 3 PIN	27.APV02.001
CASE/COVER/BRACKET ASSEMBLY		
	UPPER CASE-BLACK	60.BRG02.001
	UPPER CASE-WHITE	60.BSZ02.001
	PALMREST ASSY IMR-BLACK	60.BRG02.002
	PALMREST ASSY IMR-RED	60.BSY02.001
	PALMREST ASSY IMR-WHITE	60.BSZ02.002
	LOWER CASE FOR W/3G	60.BRG02.003
	LOWER CASE FOR W/O 3G	60.BRG02.004
	UNI-LOAD DOOR	60.BRG02.005

Table 6-7. FRU List (Continued)

Category	Description	P/N
	3G CARD DOOR FOR W/ 3G	42.BRG02.001
	3G CARD DOOR FOR W/O 3G	42.BRG02.002
	KB SUPPORT PLATE	33.BRG02.001
	HDD BRACKET H9.5	33.R9702.001
	HDD BRACKET H7	33.R9702.002
ODD MODULE		
	ODD SUPER-MULTI DRIVE MODULE	6M.BRG02.001
	ODD BRACKET	33.R9702.003
	ODD BEZEL-SM	42.BRG02.003
	ODD SONY Super-Multi DRIVE 12.7mm Tray DL 8X AD-7585H LF W/O bezel SATA (HF + Windows 7)	KU.0080E.027
	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ890A LF W/O bezel SATA (HF + Windows 7)	KU.00807.070
	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT34N LF W/O bezel SATA Zero Power Supported, PCC LD (HF + Windows 7)	KU.0080D.057
	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT32N (R5-2) LF W/O bezel SATA with Renesas solution + PCC LD (HF + Windows 7)	KU.0080D.055
	ODD PLDS Super-Multi DRIVE 12.7mm Tray DL 8X DS-8A5SH LF+HF W/O bezel SATA With TI + Rohm Solution (HF + Windows 7)	KU.0080F.014
	ODD PIONEER Super-Multi DRIVE 12.7mm Tray DL 8X DVR-TD10RS LF W/O bezel 1.00 SATA	KU.00805.049

Table 6-7. FRU List (Continued)

Category	Description	P/N
	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ8A0 LF W/O bezel SATA (HF + Windows 7) Foxconn Yentai Facotry	KU.00807.075
ODD MODULE		
	ODD BD COMBO MODULE	6M.BRG02.002
	ODD BRACKET	33.R9702.003
	ODD BEZEL-BD	42.BRG02.004
	ODD PIONEER BD COMBO 12.7mm Tray DL 4X BDC-TD03RS LF W/O bezel 1.01 SATA (Windows 7)	KO.00405.006
	ODD PANASONIC BD COMBO 12.7mm Tray DL 4X UJ141AL LF W/O bezel SATA Windows 7	KO.00407.004
	ODD HLDS BD COMBO 12.7mm Tray DL 4X CT30N LF W/O bezel 1.00 SATA (HF + Windows 7 + 3D)	KO.0040D.005
ODD MODULE		
	ODD BD RW MODULE	6M.BRG02.003
	ODD BRACKET	33.R9702.003
	ODD BEZEL-BD	42.BRG02.004

Table 6-7. FRU List (Continued)

Category	Description	P/N
	ODD PANASONIC BD RW 12.7mm Tray DL 4X UJ240A LF W/O bezel SATA (HF+Windows 7)	KU.00407.015
HDD/HARD DISK DRIVE		
	HDD HGST 2.5" 5400rpm 250GB HTS545025B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.25007.016
	HDD TOSHIBA 2.5" 5400rpm 250GB MK2565GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.25004.005
	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J11523, Eagle B7, 320G/P SATA LF+HF F/W:A60W	KH.32007.013
	HDD WD 2.5" 5400rpm 320GB WD3200BPVT-22ZEST0, ML320S, 4K drive SATA 8MB LF F/W: 01.01A01	KH.32008.022
	HDD HGST 2.5" 5400rpm 500GB HTS545050B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.50007.010
	HDD SEAGATE 2.5" 5400rpm 500GB ST9500325AS,9HH134-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.50001.017
	HDD WD 2.5" 5400rpm 500GB WD5000BPVT-22HXZT1,ML375_AF, 4K drive SATA 8MB LF+HF F/W:01.01A01	KH.50008.021
	HDD TOSHIBA 2.5" 5400rpm 640GB MK6465GSX,Capricorn BS,320G/P SATA 8MB LF F/W:GJ002J	KH.64004.001
	HDD WD 2.5" 5400rpm 640GB WD6400BPVT-22HXZT1, ML375M SATA 8MB LF F/W: 01.01A01	KH.64008.005
KEYBOARD		
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black US International Texture	KB.I170G.318
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black Greek Texture	KB.I170G.302
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black Arabic Texture	KB.I170G.293
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black Chinese Texture	KB.I170G.297

Table 6-7. FRU List (Continued)

Category	Description	P/N
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black Russian Texture	KB.I170G.310
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black US International w/ Hebrew Texture	KB.I170G.319
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black Thailand Texture	KB.I170G.315
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 103KS Black Korean Texture	KB.I170G.306
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black UK Texture	KB.I170G.317
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black German Texture	KB.I170G.301
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Swiss/G Texture	KB.I170G.314
	TBD	TBD
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Danish Texture	KB.I170G.298
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Italian Texture	KB.I170G.304
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black French Texture	KB.I170G.300
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Hungarian Texture	KB.I170G.303
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Norwegian Texture	KB.I170G.308
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Portuguese Texture	KB.I170G.309
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Spanish Texture	KB.I170G.312
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black US w/ Canadian French Texture	KB.I170G.320
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Turkish Texture	KB.I170G.316
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Sweden Texture	KB.I170G.313
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black FR/Arabic Texture	KB.I170G.299

Table 6-7. FRU List (Continued)

Category	Description	P/N
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Nordic Texture	KB.I170G.307
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black SLO/CRO Texture	KB.I170G.311
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black CZ/SK Texture	KB.I170G.296
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Bulgaria Texture	KB.I170G.294
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 104KS Black Brazilian Portuguese Texture	KB.I170G.295
	Keyboard GATEWAY GF7T_G11B GF7T Internal 17 Standard 107KS Black Japanese Texture	KB.I170G.305
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White US International Texture	KB.I170G.346
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White Greek Texture	KB.I170G.330
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White Arabic Texture	KB.I170G.321
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White Chinese Texture	KB.I170G.325
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White Russian Texture	KB.I170G.338
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White US International w/ Hebrew Texture	KB.I170G.347
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White Thailand Texture	KB.I170G.343
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 103KS White Korean Texture	KB.I170G.334
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White UK Texture	KB.I170G.345
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White German Texture	KB.I170G.329
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Swiss/G Texture	KB.I170G.342
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Belgium Texture	KB.I170G.350
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Danish Texture	KB.I170G.326

Table 6-7. FRU List (Continued)

Category	Description	P/N
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Italian Texture	KB.I170G.332
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White French Texture	KB.I170G.328
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Hungarian Texture	KB.I170G.331
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Norwegian Texture	KB.I170G.336
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Portuguese Texture	KB.I170G.337
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Spanish Texture	KB.I170G.340
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White US w/ Canadian French Texture	KB.I170G.348
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Turkish Texture	KB.I170G.344
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Sweden Texture	KB.I170G.341
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White FR/Arabic Texture	KB.I170G.327
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Nordic Texture	KB.I170G.335
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White SLO/CRO Texture	KB.I170G.339
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White CZ/SK Texture	KB.I170G.324
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Bulgaria Texture	KB.I170G.322
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 104KS White Brazilian Portuguese Te xture	KB.I170G.323
	Keyboard GATEWAY GF7T_G11W GF7T Internal 17 Standard 107KS White Japanese Texture	KB.I170G.333
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, PB BLACK	6M.BRG02.004

Table 6-7. FRU List (Continued)

Category	Description	P/N
	ANTENNA WLAN-MAIN	50.BRG02.002
	ANTENNA WLAN-AUX	50.BRG02.003
	LCD CABLE	50.R9702.003
	LCD COVER IMR PB-BLACK	60.BRG02.006
	LCD BEZEL-PB BLACK	60.BRG02.007
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019

Table 6-7. FRU List (Continued)

Category	Description	P/N
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, 3G, PB BLACK	6M.BRG02.005
	ANTENNA 3G-MAIN	50.BRG02.004
	ANTENNA 3G-AUX	50.BRG02.005
	LCD CABLE	50.R9702.003
	LCD COVER IMR PB-BLACK	60.BRG02.006
	LCD BEZEL-PB BLACK	60.BRG02.007
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001

Table 6-7. FRU List (Continued)

Category	Description	P/N
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, PB RED	6M.BSY02.001
	ANTENNA WLAN-MAIN	50.BRG02.002
	ANTENNA WLAN-AUX	50.BRG02.003
	LCD CABLE	50.R9702.003
	LCD COVER IMR PB-RED	60.BSY02.002
	LCD BEZEL-PB BLACK	60.BRG02.007

Table 6-7. FRU List (Continued)

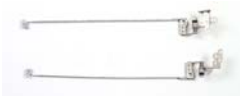
Category	Description	P/N
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, 3G, PB RED	6M.BSY02.002
	ANTENNA 3G-MAIN	50.BRG02.004
	ANTENNA 3G-AUX	50.BRG02.005
	LCD CABLE	50.R9702.003
	LCD COVER IMR PB-RED	60.BSY02.002

Table 6-7. FRU List (Continued)

Category	Description	P/N
	LCD BEZEL-PB BLACK	60.BRG02.007
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, PB WHITE	6M.BSZ02.001
	ANTENNA WLAN-MAIN	50.BRG02.002
	ANTENNA WLAN-AUX	50.BRG02.003
	LCD CABLE	50.R9702.003

Table 6-7. FRU List (Continued)

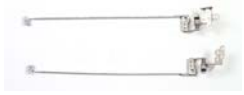
Category	Description	P/N
	LCD COVER IMR PB-WHITE	60.BSZ02.003
	LCD BEZEL-PB WHITE	60.BSZ02.005
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, 3G, PB WHITE	6M.BSZ02.002
	ANTENNA 3G-MAIN	50.BRG02.004
	ANTENNA 3G-AUX	50.BRG02.005

Table 6-7. FRU List (Continued)

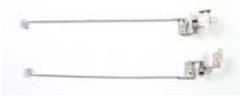
Category	Description	P/N
	LCD CABLE	50.R9702.003
	LCD COVER IMR PB-WHITE	60.BSZ02.003
	LCD BEZEL-PB WHITE	60.BSZ02.005
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, GW BLACK	6M.WV902.001
	ANTENNA WLAN-MAIN	50.BRG02.002

Table 6-7. FRU List (Continued)

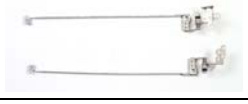
Category	Description	P/N
	ANTENNA WLAN-AUX	50.BRG02.003
	LCD CABLE	50.R9702.003
	LCD COVER IMR GW-BLACK	60.WV902.001
	LCD BEZEL-GW BLACK	60.WV902.002
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, 3G, GW BLACK	6M.WV902.002

Table 6-7. FRU List (Continued)

Category	Description	P/N
	ANTENNA 3G-MAIN	50.BRG02.004
	ANTENNA 3G-AUX	50.BRG02.005
	LCD CABLE	50.R9702.003
	LCD COVER IMR GW-BLACK	60.WV902.001
	LCD BEZEL-GW BLACK	60.WV902.002
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019

Table 6-7. FRU List (Continued)

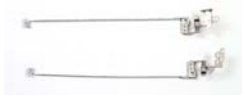
Category	Description	P/N
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, GW RED	6M.WWN02.001
	ANTENNA WLAN-MAIN	50.BRG02.002
	ANTENNA WLAN-AUX	50.BRG02.003
	LCD CABLE	50.R9702.003
	LCD COVER IMR GW-RED	60.WWN02.001
	LCD BEZEL-GW BLACK	60.WV902.002
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001

Table 6-7. FRU List (Continued)

Category	Description	P/N
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, 3G, GW RED	6M.WWN02.002
	ANTENNA 3G-MAIN	50.BRG02.004
	ANTENNA 3G-AUX	50.BRG02.005
	LCD CABLE	50.R9702.003
	LCD COVER IMR GW-RED	60.WWN02.001
	LCD BEZEL-GW BLACK	60.WV902.002

Table 6-7. FRU List (Continued)

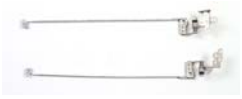
Category	Description	P/N
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, GW WHITE	6M.WWM02.001
	ANTENNA WLAN-MAIN	50.BRG02.002
	ANTENNA WLAN-AUX	50.BRG02.003
	LCD CABLE	50.R9702.003
	LCD COVER IMR GW-WHITE	60.BSZ02.004

Table 6-7. FRU List (Continued)

Category	Description	P/N
	LCD BEZEL-GW WHITE	60.WWM02.001
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, 3G, GW WHITE	6M.WWM02.002
	ANTENNA 3G-MAIN	50.BRG02.004
	ANTENNA 3G-AUX	50.BRG02.005
	LCD CABLE	50.R9702.003

Table 6-7. FRU List (Continued)

Category	Description	P/N
	LCD COVER IMR GW-WHITE	60.BSZ02.004
	LCD BEZEL-GW WHITE	60.WWM02.001
	LCD BRACKET R&L	33.BRG02.002
	CAMERA 1.3M	57.R9702.001
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V2 LF 200nit 8ms 500:1 (power saving)	LK.15605.010
	LED LCD CMO 15.6"W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
MAINBOARD		
	Mainboard AS5750 Intel HM65 LF Intel UMA graphics	MB.R9702.001
	Mainboard AS5750 Intel HM65 LF Intel UMA graphics, for Quad-Core	MB.RGK02.001
	Mainboard AS5750G Intel HM65 LF N12PGV+512MB VRAM	MB.RCS02.001
	Mainboard AS5750G Intel HM65 LF N12PGS+1GB VRAM	MB.RAZ02.001
	Mainboard AS5750G Intel HM65 LF N12PGS+2GB VRAM	MB.RCG02.001
	Mainboard AS5750G Intel HM65 LF N12PGS+1GB VRAM, for Quad-core	MB.RCF02.001
	Mainboard AS5750G Intel HM65 LF N12PGS+2GB VRAM, for Quad-core	MB.RCG02.002

Table 6-7. FRU List (Continued)

Category	Description	P/N
CPU/PROCESSOR		
	CPU Intel Core i3 i3-2310M PGA 2.1G 35W 2/4	KC.23101.DMP
	CPU Intel Core i5 i5-2540M PGA 2.6G 35W 2/4	KC.25401.DMP
	CPU Intel Core i7 i7-2630QM PGA 2.0G 45W 4/8	KC.26301.QMP
	CPU Intel Core i7 i7-2720QM PGA 2.2G 45W 4/8	KC.27201.QMP
	CPU Intel Core i7 i7-2820QM PGA 2.3G 45W 4/8	KC.28201.QMP
MEMORY		
	Memory SAMSUNG SO-DIMM DDRIII 1333 1GB M471B2873FHS-CH9 LF 128*8 46nm	KN.1GB0B.035
	Memory KINGSTON SO-DIMM DDRIII 1333 1GB ACR128X64D3S1333C9 LF 128*8 0.065um	KN.1GB07.004
	Memory A-DATA SO-DIMM DDRIII 1333 1GB AD73I1A0873EU LF 128*8 0.065um	KN.1GB0C.009
	Memory UNIFOSA SO-DIMM DDRIII 1333 1GB GU672203EP0200 LF 128*8 0.065um	KN.1GB0H.017
	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5773CHS-CH9 LF 256*8 46nm	KN.2GB0B.026
	Memory KINGSTON SO-DIMM DDRIII 1333 2GB ACR256X64D3S1333C9 LF 128*8 0.065um	KN.2GB07.004
	Memory A-DATA SO-DIMM DDRIII 1333 2GB AD73I1B1674EU LF 128*8 0.065um	KN.2GB0C.006
	Memory ELPIDA SO-DIMM DDRIII 1333 4GB EBJ41UF8BAS0-DJ-F LF 256*8 0.055um	KN.4GB09.001
	Memory SAMSUNG SO-DIMM DDRIII 1333 4GB M471B5273CH0-CH9 LF 256*8 46nm	KN.4GB0B.010
	Memory SAMSUNG SO-DIMM DDRIII 1066 4GB M471B5273BH1-CF8 LF 256*8 0.055um	KN.4GB0B.007
HEATSINK		
	FAN-UMA DUAL	23.R9702.001
	THERMAL MODULE UMA DUAL W/O FAN	60.R9702.006

Table 6-7. FRU List (Continued)

Category	Description	P/N
	THERMAL MODULE OPT GS DUAL W/FAN	60.RAZ02.001
	THERMAL MODULE OPT GV DUAL W/FAN	60.RAZ02.002
	THERMAL MODULE OPT GS/GV QUAD W/FAN	60.RCF02.001
	THERMAL MODULE UMA QUAD W/FAN	60.RFE02.003
SPEAKER		
	MIC SET	23.R9702.002
	SPEAKER L	23.R9702.003
	SPEAKER R	23.R9702.004
MISCELLANEOUS		
	LCD SCREW MYLAR-BLACK	47.BRG02.001
	LCD SCREW MYLAR-WHITE	47.BSZ02.001

Screw List

Table 6-8. FRU Screw List

Category	Description	P/N
SCREW		
	SCREW 2.5D 4L K 5.5D NI NL	86.R9702.001
	SCREW 2.45D 8.0L K 5.5D 0.8T ZK NL	86.R9702.002
	SCREW 1.98D 3.0L K 4.6D 0.8T ZK NL	86.R9702.003
	SCREW 2D 5L K 4.6D NI NL	86.R9702.004
	SCREW 3.0D 3.0L K 4.9D NI	86.R9702.005
	SCREW 2D 3L K 8D ZK NL	86.R9702.006
	SCREW 2.5D 3.2L K 6D NI	86.R9702.007
	SCREW 2.5D 5.0L K 5.5D NI NL	86.BRG02.001
	SCREW 2.0D 2.5L K 4.6D ZK NL CR3	86.BRG02.002
	SCREW T TPP 2 1.6D 3L K 4.5D ZK	86.BRG02.003
	SCREW T TPP 2 1.6D 2L K 4.5D NI	86.BRG02.004

CHAPTER 7

Model Definition and Configuration

Model Definition and Configuration

TS11HR

Table 7-1. RO & Description

Model	Country	Acer Part No	RO	Description
ENTS11HR-2312G50Mnkk	ME	LX.BRE01.001	EMEA	ENTS11HR-2312G50Mnkk EM W7HB64EMBSMEA N12PGS2GBCkk_3V3U 1*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_GEk_AR91 EASYNOTE_TS11HR-233AC
ENTS11HR-2312G50Mnkk	ME	LX.BRF01.001	EMEA	ENTS11HR-2312G50Mnkk EM W7HB64EMBSMEA N12PGV512Ckk_3V3U 1*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_GEk_AR91 EASYNOTE_TS11HR-231AC
ENTS11HR-2312G50Mnkk	ME	LX.BRG01.001	EMEA	ENTS11HR-2312G50Mnkk EM W7HB64EMBSMEA N12PGS1GBCkk_3V3U 1*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_GEk_AR91 EASYNOTE_TS11HR-232AC
ENTS11HR-2312G50Mnkk	ME	LX.BSW01.001	EMEA	ENTS11HR-2312G50Mnkk EM W7HB64EMBSMEA UMACkk_3U 1*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_GEk_AR91 EASYNOTE_TS11HR-230AC
ENTS11HR-2313G32Mnkk	RU	LX.BSW01.002	EMEA	ENTS11HR-2313G32Mnkk W7HB64RUBSRU2 UMACkk_3U 2G+1G/320/BT/6L2.2/5R/CB_GN_1.3C_GEk_RU41 EASYNOTE_TS11-HR-030RU
ENTS11HR-2313G50Mnkk	HU	LX.BRG02.003	EMEA	ENTS11HR-2313G50Mnkk W7HP64BSHU1 N12PGS1GBCkk_3V3U 2G+1G/500_L/6L2.2/5R/CB_GN_1.3C_GEk_PL23 EASYNOTE_TS11-HR-411HG
ENTS11HR-2313G50Mnkk	HU	LX.BSW02.003	EMEA	ENTS11HR-2313G50Mnkk W7HP64BSHU1 UMACkk_3U 2G+1G/500_L/6L2.2/5R/CB_GN_1.3C_GEk_PL23 EASYNOTE_TS11-HR-311HG
ENTS11HR-2314G50Mnkk	RU	LX.BRG02.001	EMEA	ENTS11HR-2314G50Mnkk W7HP64RUBSRU2 N12PGS1GBCkk_3V3U 2*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_GEk_RU41 EASYNOTE_TS11-HR-031RU

Table 7-1. RO & Description (Continued)

Model	Country	Acer Part No	RO	Description
ENTS11HR-23 14G64Mnkk	FR	LX.BSW02.002	EMEA	ENTS11HR-2314G64Mnkk W7HP64BSFR1 UMACkk_3U 1*4G/640/6L2.2/5R/CB_GN_1.3C_GEk_ FR51 EASYNOTE_TS11HR-002FR
ENTS11HR-23 16G50Mnkk	RU	LX.BRE02.002	EMEA	ENTS11HR-2316G50Mnkk W7HP64RUBSRU2 N12PGS2GBCkk_3V3U 4G+2G/500_L/BT/6L2.2/5R/CB_GN_1.3 C_GEk_RU41 EASYNOTE_TS11-HR-032RU
ENTS11HR-24 14G50Mnkk	DE	LX.BRE02.001	EMEA	ENTS11HR-2414G50Mnkk W7HP64BSDE1 N12PGS2GBCkk_3V3U 2*2G/500_L/6L2.2/5R/CB_GN_1.3C_GEk _DE41 EASYNOTE TS11HR-030GE
ENTS11HR-24 14G50Mnkk	FR	LX.BRF02.001	EMEA	ENTS11HR-2414G50Mnkk W7HP64BSFR1 N12PGV512Ckk_3V3U 1*4G/500_L/6L2.2/5R/CB_GN_1.3C_GEk _FR51 EASYNOTE_TS11HR-003FR
ENTS11HR-24 14G50Mnkk	HU	LX.BRG02.004	EMEA	ENTS11HR-2414G50Mnkk W7HP64BSHU1 N12PGS1GBCkk_3V3U 2*2G/500_L/6L2.2/5R/CB_GN_1.3C_GEk _PL23 EASYNOTE_TS11-HR-612HG
ENTS11HR-24 14G50Mnkk	RU	LX.BRG02.002	EMEA	ENTS11HR-2414G50Mnkk W7HP64RUBSRU2 N12PGS1GBCkk_3V3U 2*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_ GEk_RU41 EASYNOTE_TS11-HR-051RU
ENTS11HR-24 14G64Mnkk	NE	LX.BSW02.001	EMEA	ENTS11HR-2414G64Mnkk W7HP64BSNL1 UMACkk_3U 2*2G/640/6L2.2/5R/CB_GN_1.3C_GEk_ NL31 EASYNOTE_TS11HR-010NL
ENTS11HR-24 16G50Mnkk	RU	LX.BRE02.003	EMEA	ENTS11HR-2416G50Mnkk W7HP64RUBSRU2 N12PGS2GBCkk_3V3U 4G+2G/500_L/BT/6L2.2/5R/CB_GN_1.3 C_GEk_RU41 EASYNOTE_TS11-HR-052RU
ENTS11HR-26 32G50Mnkk	ME	LX.BRH01.001	EMEA	ENTS11HR-2632G50Mnkk EM W7HB64EMBSMEA N12PGS1GBCkkQ_3V3U 1*2G/500_L/BT/6L2.2/5R/CB_GN_1.3C_ GEk_AR91 EASYNOTE_TS11HR-260AC

Table 7-1. RO & Description (Continued)

Model	Country	Acer Part No	RO	Description
ENTS11HR-2635G50Mnkk	RU	LX.BRH02.001	EMEA	ENTS11HR-2635G50Mnkk W7HP64RUBSRU2 N12PGS1GBCkkQ_3V3U 4G+1G/500_L/BT/6L2.2/5R/CB_GN_1.3C_GEk_RU41 EASYNOTE_TS11-HR-810RU
ENTS11HR-2636G64Mnkk	RU	LX.BTA02.001	EMEA	ENTS11HR-2636G64Mnkk W7HP64RUBSRU2 N12PGS2GBCkkQ_3V3U 4G+2G/640/BT/6L2.2/5R/CB_GN_1.3C_GEk_RU41 EASYNOTE_TS11-HR-820RU
ENTS11HR-2638G75Mnkk	RU	LX.BRH02.002	EMEA	ENTS11HR-2638G75Mnkk W7HP64RUBSRU2 N12PGS1GBCkkQ_3V3U 2*4G/750/BT/6L2.2/5R/CB_GN_1.3C_GEk_RU41 EASYNOTE_TS11-HR-811RU
ENTS11HR-2638G75Wikk	RU	LX.BTA02.002	EMEA	ENTS11HR-2638G75Wikk W7HP64RUBSRU2 N12PGS2GBCkkQ_3V3U 2*4G/750/BT/6L2.2/5R/CB_bg_1.3C_PD9_GEk_RU41 EASYNOTE_TS11HR-821RU

Table 7-2. BOM Name & CPU

Model	Acer Part No	Country	BOM Name	CPU
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	ENTS11HR_N12PGS2GBCkk_3V3U	Ci32310M
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	ENTS11HR_N12PGV512Ckk_3V3U	Ci32310M
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	ENTS11HR_N12PGS1GBCkk_3V3U	Ci32310M
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	ENTS11HR_UMACkk_3U	Ci32310M
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	ENTS11HR_UMACkk_3U	Ci32310M
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	ENTS11HR_N12PGS1GBCkk_3V3U	Ci32310M
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	ENTS11HR_UMACkk_3U	Ci32310M
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	ENTS11HR_N12PGS1GBCkk_3V3U	Ci32310M

Table 7-2. BOM Name & CPU (Continued)

Model	Acer Part No	Country	BOM Name	CPU
ENTS11HR-23 14G64Mnkk	LX.BSW02.002	FR	ENTS11HR_UMACkk_3U	Ci32310M
ENTS11HR-23 16G50Mnkk	LX.BRE02.002	RU	ENTS11HR_N12PGS2GBCkk_3V 3U	Ci32310M
ENTS11HR-24 14G50Mnkk	LX.BRE02.001	DE	ENTS11HR_N12PGS2GBCkk_3V 3U	Ci52410M
ENTS11HR-24 14G50Mnkk	LX.BRF02.001	FR	ENTS11HR_N12PGV512Ckk_3V3 U	Ci52410M
ENTS11HR-24 14G50Mnkk	LX.BRG02.004	HU	ENTS11HR_N12PGS1GBCkk_3V 3U	Ci52410M
ENTS11HR-24 14G50Mnkk	LX.BRG02.002	RU	ENTS11HR_N12PGS1GBCkk_3V 3U	Ci52410M
ENTS11HR-24 14G64Mnkk	LX.BSW02.001	NE	ENTS11HR_UMACkk_3U	Ci52410M
ENTS11HR-24 16G50Mnkk	LX.BRE02.003	RU	ENTS11HR_N12PGS2GBCkk_3V 3U	Ci52410M
ENTS11HR-26 32G50Mnkk	LX.BRH01.001	ME	ENTS11HR_N12PGS1GBCkkQ_3 V3U	Ci72630QM
ENTS11HR-26 35G50Mnkk	LX.BRH02.001	RU	ENTS11HR_N12PGS1GBCkkQ_3 V3U	Ci72630QM
ENTS11HR-26 36G64Mnkk	LX.BTA02.001	RU	ENTS11HR_N12PGS2GBCkkQ_3 V3U	Ci72630QM
ENTS11HR-26 38G75Mnkk	LX.BRH02.002	RU	ENTS11HR_N12PGS1GBCkkQ_3 V3U	Ci72630QM
ENTS11HR-26 38G75Wikk	LX.BTA02.002	RU	ENTS11HR_N12PGS2GBCkkQ_3 V3U	Ci72630QM

Table 7-3. LCD & VGA Chip

Model	Acer Part No	Country	LCD	VGA Chip
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	NLED15.6WXGAG	N12PGS
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	NLED15.6WXGAG	N12PGV
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	NLED15.6WXGAG	N12PGS
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	NLED15.6WXGAG	UMA
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	NLED15.6WXGAG	UMA
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	NLED15.6WXGAG	N12PGS
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	NLED15.6WXGAG	UMA
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	NLED15.6WXGAG	N12PGS

Table 7-3. LCD & VGA Chip (Continued)

Model	Acer Part No	Country	LCD	VGA Chip
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	NLED15.6WXGAG	UMA
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	NLED15.6WXGAG	N12PGS
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	NLED15.6WXGAG	N12PGS
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	NLED15.6WXGAG	N12PGV
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	NLED15.6WXGAG	N12PGS
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	NLED15.6WXGAG	N12PGS
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	NLED15.6WXGAG	UMA
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	NLED15.6WXGAG	N12PGS
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	NLED15.6WXGAG	N12PGS
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	NLED15.6WXGAG	N12PGS
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	NLED15.6WXGAG	N12PGS
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	NLED15.6WXGAG	N12PGS
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	NLED15.6WXGAG	N12PGS

Table 7-4. VRAM 1 & Memory 1

Model	Acer Part No	Country	VRAM 1	Memory 1
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	2G-DDR3 (128*16*8)	SO2GBIII10
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	512M-DDR3 (64*16*4)	SO2GBIII10
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	1G-DDR3 (64*16*8)	SO2GBIII10
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	N	SO2GBIII10
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	N	SO2GBIII10
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	1G-DDR3 (64*16*8)	SO2GBIII10
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	N	SO2GBIII10
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	1G-DDR3 (64*16*8)	SO2GBIII10
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	N	SO4GBIII10
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	2G-DDR3 (128*16*8)	SO4GBIII10
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	2G-DDR3 (128*16*8)	SO2GBIII10
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	512M-DDR3 (64*16*4)	SO4GBIII10
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	1G-DDR3 (64*16*8)	SO2GBIII10
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	1G-DDR3 (64*16*8)	SO2GBIII10
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	N	SO2GBIII10
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	2G-DDR3 (128*16*8)	SO4GBIII10
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	1G-DDR3 (64*16*8)	SO2GBIII10

Table 7-4. VRAM 1 & Memory 1 (Continued)

Model	Acer Part No	Country	VRAM 1	Memory 1
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	1G-DDR3 (64*16*8)	SO4GBIII10
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	2G-DDR3 (128*16*8)	SO4GBIII10
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	1G-DDR3 (64*16*8)	SO4GBIII10
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	2G-DDR3 (128*16*8)	SO4GBIII10

Table 7-5. Memory 2 & HDD 1

Model	Acer Part No	Country	Memory 2	HDD 1(GB)
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	N	N500GB5.4KS
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	N	N500GB5.4KS
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	N	N500GB5.4KS
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	N	N500GB5.4KS
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	SO1GBIII10	N320GB5.4KS_4K
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	SO1GBIII10	N500GB5.4KS
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	SO1GBIII10	N500GB5.4KS
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	SO2GBIII10	N500GB5.4KS
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	N	N640GB5.4KS
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	SO2GBIII10	N500GB5.4KS
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	SO2GBIII10	N500GB5.4KS
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	N	N500GB5.4KS
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	SO2GBIII10	N500GB5.4KS
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	SO2GBIII10	N500GB5.4KS
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	SO2GBIII10	N640GB5.4KS
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	SO2GBIII10	N500GB5.4KS
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	N	N500GB5.4KS
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	SO1GBIII10	N500GB5.4KS
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	SO2GBIII10	N640GB5.4KS
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	SO4GBIII10	N750GB5.4KS
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	SO4GBIII10	N750GB5.4KS

Table 7-6. ODD & Card Reader

Model	Acer Part No	Country	ODD	Card Reader
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	NSM8XS	5 in 1-Build in
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	NSM8XS	5 in 1-Build in

Table 7-6. ODD & Card Reader (Continued)

Model	Acer Part No	Country	ODD	Card Reader
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	NSM8XS	5 in 1-Build in
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	NSM8XS	5 in 1-Build in
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	NSM8XS	5 in 1-Build in
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	NSM8XS	5 in 1-Build in
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	NSM8XS	5 in 1-Build in
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	NSM8XS	5 in 1-Build in
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	NSM8XS	5 in 1-Build in
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	NSM8XS	5 in 1-Build in
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	NSM8XS	5 in 1-Build in
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	NSM8XS	5 in 1-Build in
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	NSM8XS	5 in 1-Build in
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	NBDRW4XS	5 in 1-Build in

Table 7-7. Wireless LAN 1 & Bluetooth

Model	Acer Part No	Country	Wireless LAN1	Bluetooth
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	3rd WiFi 2x2 BGN	N
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	3rd WiFi 2x2 BGN	N
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	3rd WiFi 2x2 BGN	N
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	3rd WiFi 2x2 BGN	N

Table 7-7. Wireless LAN 1 & Bluetooth (Continued)

Model	Acer Part No	Country	Wireless LAN1	Bluetooth
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	3rd WiFi 2x2 BGN	N
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	3rd WiFi 2x2 BGN	N
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	3rd WiFi 2x2 BGN	N
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	3rd WiFi 2x2 BGN	BT 3.0
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	3rd WiFi BG	BT 3.0

Table 7-8. NB Chipset & Battery

Model	Acer Part No	Country	NB Chipset	Battery
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	HM65	6CELL2.2
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	HM65	6CELL2.2
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	HM65	6CELL2.2
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	HM65	6CELL2.2
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	HM65	6CELL2.2
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	HM65	6CELL2.2
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	HM65	6CELL2.2
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	HM65	6CELL2.2
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	HM65	6CELL2.2
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	HM65	6CELL2.2
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	HM65	6CELL2.2
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	HM65	6CELL2.2
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	HM65	6CELL2.2
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	HM65	6CELL2.2
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	HM65	6CELL2.2
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	HM65	6CELL2.2
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	HM65	6CELL2.2
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	HM65	6CELL2.2
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	HM65	6CELL2.2
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	HM65	6CELL2.2
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	HM65	6CELL2.2

Table 7-9. Adapter & Camera

Model	Acer Part No	Country	Adapter	Camera
ENTS11HR-2312G50Mnkk	LX.BRE01.001	ME	90W	1.3M
ENTS11HR-2312G50Mnkk	LX.BRF01.001	ME	90W	1.3M
ENTS11HR-2312G50Mnkk	LX.BRG01.001	ME	90W	1.3M
ENTS11HR-2312G50Mnkk	LX.BSW01.001	ME	65W	1.3M
ENTS11HR-2313G32Mnkk	LX.BSW01.002	RU	65W	1.3M
ENTS11HR-2313G50Mnkk	LX.BRG02.003	HU	90W	1.3M
ENTS11HR-2313G50Mnkk	LX.BSW02.003	HU	65W	1.3M
ENTS11HR-2314G50Mnkk	LX.BRG02.001	RU	90W	1.3M
ENTS11HR-2314G64Mnkk	LX.BSW02.002	FR	65W	1.3M
ENTS11HR-2316G50Mnkk	LX.BRE02.002	RU	90W	1.3M
ENTS11HR-2414G50Mnkk	LX.BRE02.001	DE	90W	1.3M
ENTS11HR-2414G50Mnkk	LX.BRF02.001	FR	90W	1.3M
ENTS11HR-2414G50Mnkk	LX.BRG02.004	HU	90W	1.3M
ENTS11HR-2414G50Mnkk	LX.BRG02.002	RU	90W	1.3M
ENTS11HR-2414G64Mnkk	LX.BSW02.001	NE	65W	1.3M
ENTS11HR-2416G50Mnkk	LX.BRE02.003	RU	90W	1.3M
ENTS11HR-2632G50Mnkk	LX.BRH01.001	ME	90W	1.3M
ENTS11HR-2635G50Mnkk	LX.BRH02.001	RU	90W	1.3M
ENTS11HR-2636G64Mnkk	LX.BTA02.001	RU	90W	1.3M
ENTS11HR-2638G75Mnkk	LX.BRH02.002	RU	90W	1.3M
ENTS11HR-2638G75Wikk	LX.BTA02.002	RU	90W	1.3M

Table 7-10. RO & Description

Model	Country	Acer Part No	RO	Description
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	EMEA	ENTS13HR-2314G64Mnrk W7HP64BSFR1 UMACrk_3U 2*2G/640/6L2.2/5R/CB_GN_1.3C_GEr_FR51 EASYNOTE_TS13HR-004FR

Table 7-11. BOM Name & CPU

Model	Country	Acer Part No	BOM Name	CPU
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	ENTS13HR_UMACrk_3U	Ci32310M

Table 7-12. LCD & VGA Chip

Model	Country	Acer Part No	LCD	VGA Chip
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	NLED15.6WXGAG	UMA

Table 7-13. VRAM 1 & Memory 1

Model	Country	Acer Part No	VRAM 1	Memory 1
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	N	SO2GBIII10

Table 7-14. Memory 2 & HDD 1

Model	Country	Acer Part No	Memory 2	HDD 1(GB)
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	SO2GBIII10	N640GB5.4KS

Table 7-15. ODD & Card Reader

Model	Country	Acer Part No	ODD	Card Reader
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	NSM8XS	5 in 1-Build in

Table 7-16. Wireless LAN 1 & NB Chipset

Model	Country	Acer Part No	Wireless LAN1	NB Chipset
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	3rd WiFi 2x2 BGN	HM65

Table 7-17. Battery, Adapter, & Camera

Model	Country	Acer Part No	Battery	Adapter	Camera
ENTS13HR-2314G64Mnrk	FR	LX.BU202.001	6CELL2.2	65W	1.3M

CHAPTER 8

Test Compatible Components

Test Compatible Components

This computer's compatibility is tested and verified by Packard Bell's internal testing department. All of its system functions are tested under Windows® 7 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 Packard Bell EasyNote TS11HR/TS13HR/TS44HR. Compatibility Test Report released by the Packard Bell Mobile System Testing Department.

Microsoft® Windows® 7 Environment Test

TS11HR/TS13HR/TS44HR

Table 8-1. TS11HR/TS13HR/TS44HR

Vendor	Type	Description	P/N
3G			
60016072 QUALCOMM	Gobi3000	Qualcomm Gobi3000	LC.21300.059
60016072 QUALCOMM	Gobi3000	Qualcomm Gobi3000	LC.21300.059
Adapter			
10001023 LITE-ON	120W-DE	Adapter LITE-ON 120W-DE 19V 1.7x5.5x11 Green PA-1121-04AC, LV5+OBL LED LF	AP.12003.003
10001023 LITE-ON	65W	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-22AC LV5 LED LF	AP.06503.024
10001023 LITE-ON	65W	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-69AW, LV5, Low profile LED LF	AP.06503.029
10001023 LITE-ON	90W	Adapter LITE-ON 90W 19V 1.7x5.5x11 Blue PA-1900-34AR, LV5 LED LF	AP.09003.021
10001081 DELTA	120W-DE	Adapter DELTA 120W-DE 19V 1.7x5.5x11 Green ADP-120ZB BBGB, LV5+OBL LED LF	AP.12001.009
10001081 DELTA	90W	Adapter DELTA 90W 19V 1.7x5.5x11 Blue ADP-90CD DBH, LV5 LED LF	AP.09001.031
60002015 HIPRO	65W	Adapter HIPRO 65W 19V 1.7x5.5x11 Yellow HP-A0652R3B 1LF, LV5 LED LF	AP.0650A.012
60002015 HIPRO	90W	Adapter HIPRO 90W 19V 1.7x5.5x11 Blue HP-A0904A3 B1LF, LV5 LED LF	AP.0900A.005
60016453 CHICONY POWER	65W	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
Audio Codec			
10004786 REALTEK	ALC271X_VB3	Realtek ALC271X_VB3	LZ.21000.085
Battery			
10001063 SONY	6CELL2.2	Battery SONY AS10D Li-Ion 3S2P SONY 6 cell 4400mAh Main COMMON ID:AS10D41	BT.00604.049
60001535 PANASONIC	6CELL2.2	Battery PANASONIC AS10D Li-Ion 3S2P PANASONIC 6 cell 4400mAh Main COMMON ID:AS10D51	BT.00605.062
60001921 SANYO	6CELL2.2	Battery SANYO AS10D Li-Ion 3S2P SANYO 6 cell 4400mAh Main COMMON new IC BQ8055	BT.00603.124
60002162 SIMPLO	6CELL2.2	Battery SIMPLO AS10D Li-Ion 3S2P LGC 6 cell 4400mAh Main COMMON ID:AS10D73	BT.00607.126
60002162 SIMPLO	6CELL2.2	Battery SIMPLO AS10D Li-Ion 3S2P SAMSUNG 6 cell 4400mAh Main COMMON ID:AS10D	BT.00607.127
60002162 SIMPLO	6CELL2.2	Battery SIMPLO AS10D Li-Ion 3S2P PANASONIC 6 cell 4400mAh Main COMMON ID:AS10D71	BT.00607.125
60013145 SAMSUNG SDI	6CELL2.2	Battery SAMSUNG AS10D Li-Ion 3S2P SAMSUNG 6 cell 4400mAh Main COMMON ID:AS10D61	BT.00606.008
Bluetooth			
10001018 HON HAI	BT 3.0	Foxconn Bluetooth BRM 2070 (T77H114.01) BT 3.0	BH.21100.010
10001018 HON HAI	BT 3.0	Foxconn Bluetooth ATH BU12	BH.21100.011
10001018 HON HAI	BT 3.0	Foxconn Bluetooth BRM 2046 BT3.0 (T60H928.33) f/w:861	BH.21100.008
10001018 HON HAI	BT 3.0	Foxconn Bluetooth ATH AR3011 (BT3.0)	BH.21100.009
23707801 FOXCONN TW	BT 2.1	Foxconn Bluetooth BRM 2070 (T77H114.01)	BH.21100.007
23707801 FOXCONN TW	BT 2.1	Foxconn Bluetooth ATH AR3011	BH.21100.005

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
Camera			
10001023 LITE-ON	1.3M	Liteon 1.3M LT9665AL (09P2SF119)	AM.21400.069
10001023 LITE-ON	1.3M	Liteon 1.3M LT6AASP(09P2BF127)	AM.21400.070
10001023 LITE-ON	1.3M	Liteon 1.3M LT_6A1_SP	AM.21400.081
10001023 LITE-ON	1.3M HD	Liteon 1.3M LT_6A1(TSV)_SP	AM.21400.089
10001044 CHICONY	1.3M	Chicony 1.3M CH9665SN (CNF9157)	AM.21400.067
10001044 CHICONY	1.3M	Chicony 1.3M CH_6A1_SP	AM.21400.082
10001044 CHICONY	1.3M HD	Chicony 1.3M CH_6A1(TSV)_SP	AM.21400.090
PLM00012 Suyin	1.3M	Suyin 1.3M SY9665SN	AM.21400.068
PLM00012 Suyin	1.3M	Suyin 1.3M SY_6A1_SP	AM.21400.083
PLM00012 Suyin	1.3M HD	Suyin 1.3M HD SY_6A1(TSV)_SP	AM.21400.091
Card Reader			
PLM00014 ODM	5 in 1-Build in	5 in 1-Build in MS, MS Pro, SD, SC, XD	CR.21500.013
CPU			
10001067 INTEL	Ci52520M	CPU Intel Core i5 i5-2520M PGA 2.5G 35W 2/4	KC.25201.DMP
10001067 INTEL	Ci72630QM	CPU Intel Core i7 i7-2630QM PGA 2.0G 45W 4/8	KC.26301.QMP
10001067 INTEL	DummySNB	CPU Intel Core i7 DummySNB Dummy Sandy Bridge	KC.SNB01.001
10001067 INTEL	DummySNB	CPU Intel Core i7 DummySNB Dummy Sandy Bridge	KC.SNB01.001
HDD			
60001922 TOSHIBA DIGI	N160GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 160GB MK1665GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.16004.008
60001922 TOSHIBA DIGI	N160GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 160GB MK1665GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.16004.008
60001922 TOSHIBA DIGI	N250GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 250GB MK2565GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.25004.005

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
60001922 TOSHIBA DIGI	N320GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 320GB Capricorn BS ,MK3265GSX SATA 8MB LF F/W:GJ002J	KH.32004.004
60001922 TOSHIBA DIGI	N500GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 500GB MK5065GSX,Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.50004.002
60001922 TOSHIBA DIGI	N640GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 640GB MK6465GSX,Capricorn BS,320G/P SATA 8MB LF F/W:GJ002J	KH.64004.001
60001922 TOSHIBA DIGI	N750GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 750GB MK7559GSXP, 375G/P, Capricorn BS, 4K drive SATA 8MB LF+HF F/W:GN003J	KH.75004.001
60001994 WD	N160GB5.4KS	HDD WD 2.5" 5400rpm 160GB WD1600BEVT-22A23T0 , WD, ML320S SATA 8MB LF F/W:01.01A01	KH.16008.027
60001994 WD	N250GB5.4KS	HDD WD 2.5" 5400rpm 250GB WD2500BEVT-22A23T0, WD, ML320S SATA 8MB LF F/W:01.01A01.	KH.25008.025
60001994 WD	N320GB5.4KS	HDD WD 2.5" 5400rpm 320GB WD3200BEVT-22A23T0,ML320S, WD SATA 8MB LF F/W:01.01A01	KH.32008.019
60001994 WD	N500GB5.4KS	HDD WD 2.5" 5400rpm 500GB WD5000BEVT-22A0RT0, ML320M,WD SATA 8MB LF F/W:01.01A01	KH.50008.017
60001994 WD	N640GB5.4KS	HDD WD 2.5" 5400rpm 640GB WD6400BPVT-22HXZT1, ML375M SATA 8MB LF F/W: 01.01A01	KH.64008.005
60002005 HGST SG	N160GB5.4KS	HDD HGST 2.5" 5400rpm 160GB HTS545016B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.16007.026
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS545032B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.32007.008

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
60002005 HGST SG	N750GB5.4KS	HDD HGST 2.5" 5400rpm 750GB HTS547575A9E384, 0J15083, Jet B, 375G/P SATA 8MB LF F/W:DA3872	KH.75007.004
60002036 SEAGATE	N250GB5.4KS	HDD SEAGATE 2.5" 5400rpm 250GB ST9250315AS, 9HH132-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.25001.019
60002036 SEAGATE	N750GB5.4KS	HDD SEAGATE 2.5" 5400rpm 750GB ST9750423AS,9ZW14G-188, Desaru5, 375G/P. SATA 8MB LF+HF F/W:0001SDM1	KH.75001.011
LAN			
60001948 BROADCOM	BCM57785X	Broadcom BCM57785X	NI.22400.052
LCD			
60002215 SAMSUNG	NLED15.6WX GAG	LED LCD SAMSUNG 15.6"W WXGA Glare LTN156AT02-A11 LF 220nit 8ms 500:1	LK.15606.012
60003316 AUO	NLED15.6WX GAG	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
MEM			
60001993 NANYA	SO1GBIII13	Memory NANYA SO-DIMM DDRIII 1333 1GB NT1GC64BH4B0PS-CG LF 128*16 0.055um	KN.1GB03.034
60002041 QIMONDA	SO1GBIII10	Memory NONE REG-ECC DDRIII 1066 1GB phantom p/n LF	KN.1GB00.003
60002050 MICRON SG	SO2GBIII13	Memory MICRON SO-DIMM DDRIII 1333 2GB MT8JSF25664HZ-1G4D1 LF 256*8 0.055um	KN.2GB04.017
60002215 SAMSUNG	SO1GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 1GB M471B2873FHS-CH9 LF 128*8 46nm	KN.1GB0B.035
60002215 SAMSUNG	SO4GBIII10	Memory SAMSUNG SO-DIMM DDRIII 1066 4GB M471B5273BH1-CF8 LF 256*8 0.055um	KN.4GB0B.007

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
60002215 SAMSUNG	SO4GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 4GB M471B5273CH0-CH9 LF 256*8 46nm	KN.4GB0B.010
60004668 ELPIDA	SO2GBIII13	Memory ELPIDA SO-DIMM DDRIII 1333 2GB EBJ21UE8BFU0-DJ-F LF 128*8 0.065um	KN.2GB09.009
60004668 ELPIDA	SO4GBIII10	Memory NONE SO-DIMM DDRIII 1066 4GB dummy P/N LF	KN.4GB00.001
60004668 ELPIDA	SO4GBIII13	Memory ELPIDA SO-DIMM DDRIII 1333 4GB EBJ41UF8BAS0-DJ-F LF 256*8 0.055um	KN.4GB09.001
60024207 KINGSTON	SO1GBIII13	Memory KINGSTON SO-DIMM DDRIII 1333 1GB ACR128X64D3S1333C9 LF 128*8 0.065um	KN.1GB07.004
NB Chipset			
10001067 INTEL	HM65	NB Chipset Intel CS BD82HM65 Huron River	KI.G6501.001
ODD			
60001535 PANASONIC	NBDCB4XS	ODD PANASONIC BD COMBO 12.7mm Tray DL 4X UJ141AL LF W/O bezel SATA Windows 7	KO.00407.004
60001535 PANASONIC	NBDRW4XS	ODD PANASONIC BD RW 12.7mm Tray DL 4X UJ240AF LF W/O bezel SATA Zero Power (HF+Windows 7)	KU.00407.016
60001535 PANASONIC	NSM8XS	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ890A LF W/O bezel SATA (HF + Windows 7)	KU.00807.070
60001922 TOSHIBA DIGI	NSM8XS	ODD TOSHIBA Super-Multi DRIVE 12.7mm Tray DL 8X TS-L633F LF W/O bezel SATA (HF + Windows 7)	KU.00801.040
60003901 HITACHI EAST	NBDCB4XS	ODD HLDS BD COMBO 12.7mm Tray DL 4X CT30N LF W/O bezel 1.00 SATA (HF + Windows 7 + 3D)	KO.0040D.005

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
60003901 HITACHI EAST	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT34N LF W/O bezel SATA Zero Power Supported, PCC LD (HF + Windows 7)	KU.0080D.057
USB Controller			
10000981 MISC	USB 3.0	USB Controller USB 3.0	LC.24500.001
VGA Chip			
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038
60001915 NVIDIA	N12PGS	VGA Chip nVidia N12PGS A1 40nm 29mm*29mm GB2-128 package	KG.PGS0V.001
VRAM			
10000981 MISC	2G-DDR3 (128*16*8)	2G-DDR3 128*16*8	KI.23300.028
10000981 MISC	512M-DDR3 (64*16*4)	512M-DDR3 64*16*4	KI.23300.019
60002045 HYNIX	VR1GbIII8	VRAM HYNIX Graphic DDRIII 800 1Gb H5TQ1G63BFR-12C LF	VR.1GB0G.004
60002045 HYNIX	VR1GbIII9	VRAM HYNIX Graphic DDRIII 900 1Gb H5TQ1G63DFR-11C LF 64*16 46nm	VR.1GB0G.006
60002045 HYNIX	VR2GbIII8	VRAM HYNIX Graphic DDRIII 800 2Gb H5TQ2G63BFR-12C LF+HF	VR.2GB0G.001
60002045 HYNIX	VR2GBIII9	VRAM HYNIX Graphic DDRIII 900 2Gb H5TQ2G63BFR-11C LF 128*16 46nm	VR.2GB0G.002
60002215 SAMSUNG	VR1GbIII9	VRAM SAMSUNG Graphic DDRIII 900 1Gb K4W1G1646G-BC11 LF 64*16 35nm	VR.1GB0B.008
9999995 ONE TIME VENDER	N	N no VRAM	KI.23300.014
WiFi Antenna			
10000105 WNC	PIFA	PIFA	LZ.23500.006
Wireless LAN			
10001023 LITE-ON	3rd WiFi 2x2 BGN	Liteon Wireless LAN Atheris HB97 2x2 BGN (HM) WN6603AH	NI.23600.073
10001023 LITE-ON	3rd WiFi 2x2 BGN	Liteon Wireless LAN Broadcom 43225 2x2 BGN	NI.23600.081

Table 8-1. TS11HR/TS13HR/TS44HR (Continued)

Vendor	Type	Description	P/N
10001067 INTEL	INT6150H	WiMax Intel WLAN 612BNXHMWG Kelsey Peak 1x2 BGN +16e	KI.KSH01.001
10001067 INTEL	INT6205H	Lan Intel WLAN TBD Taylor Peak 2x2 AGN	KI.TPH01.001
10001067 INTEL	INT6250H	WiMax Intel WLAN 622ANXHMWG Kilmer Peak 2x2 AGN	KI.KPH01.001
23707801 FOXCONN TW	3rd WiFi 2x2 BGN	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072

CHAPTER 9

Online Support Information

Online Support Information

Introduction

This section describes online technical support services available to help users repair their Acer Systems.

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

Acer's Website offers convenient and valuable support resources.

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

- Service guides for all models
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

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

Also contained on this website are:

- Detailed information on Acer's International Traveller'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 technical queries.

We are always looking for ways to optimize and improve our services, so do not hesitate to direct any suggestions or comments to us.