ASPIRE xxxx

S E R V I C E   G U I D E

acer

Table of Contents

Chapter 4. Troubleshooting

Chapter 5. Jumper and Connector Locations

Chapter 6. FRU (Field Replaceable Unit) List

Chapter 7. Test Compatible Components

Chapter 8. Online Support Information

Revision History

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

Date	Chapter	Updates

Service guide files and updates are available on the Acer/CSD website. The information in this guide is subject to change without notice.

Copyright

Disclaimer

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.

⟹ NOTE:

Gives bits and pieces of additional information related to the current topic.

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 square brackets ([ ]).

   Example:

   At the prompt, type run **[file name] -m**

- Keyboard keys are shown in bold italics.

   Example:

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

- Screen output (text that represents information displayed on the system, such as menus, prompts, responses to input, and error messages) are shown in bold.

   Example:

   On the main menu, select **OK**.

v

General Information

This Service Guide provides all technical information relating to the basic configuration for Acer's global product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capabilities). These localized features are not covered in this generic service guide. In such cases, contact your regional offices or the responsible personnel/channel to provide you with further technical details.

When ordering FRU parts:

Check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it may not be noted in this printed service guide.

For Acer-authorized service providers:

Your Acer office may have a different part number code than those given in the FRU list of this printed service guide. The list provided by your regional Acer office must be used to order FRU parts for repair and service of customer machines.

Hardware Specifications and Configurations

Hardware Specifications and Configurations

Features

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

Operating System

- Genuine Windows® 7 Home Premium (64-bit)
- Genuine Windows® 7 Home Basic (64-bit)
- Support to Genuine Windows® 8

Platform

- Intel® Core™ i7 Quad Core processor (6 or 8 MB L3 cache, Turbo Boost Technology 2.0, DDR3 1333 MHz, 35 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Intel® Core™ i5, i3 Dual Core processor (3 or 4 MB L3 cache, Turbo Boost Technology 2.0, DDR3 1333 MHz, 35 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Mobile Intel® HM77/HM70 Express Chipset

System Memory

- DDR3 Dual Channel Support / 2 SO-DIMM slot
- Maximum: 8 GB (4 GB + 4GB)

Display

- 15.6" HD 1366 x 768 resolution
- LED-backlit TFT LCD
- Mercury-free, environment-friendly
- 16:9 aspect ratio

Graphics

- 16.7 million colors
- External resolution / refresh rates:
  - VGA port up to 2048 x 1536: 75 Hz
  - HDMI® port up to 1920 x 1080: 60 Hz
- MPEG-2/DVD decoding
- WMV9 (VC-1) and H.264 (AVC) decoding
- DIVX
- HDMI® (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

UMA

- Intel® HD Graphics 3000/4000 with 128 MB of dedicated system memory, supporting Microsoft® DirectX® 10.1

Discrete

- NVIDIA® GT620M with 1024 MB of dedicated DDR3 VRAM, supporting Shader Model 5.0, Microsoft® DirectX® 11.0, OpenGL® 4.1 or later, PhysX™, CUDA™, PCI Express 2.0/3.0, HDMI 1.4a (supporting standard stereo modes for 720p and 1080p), and PureVideo® HD with support for 3D BluRay.

Privacy Control

- BIOS user, supervisor, HDD passwords
- Kensington lock slot

Hard Drive

- 2.5" Hard Disk Drive
  - SATA interface support
  - 250/320/500/640/750 GB or larger

Audio Subsystem

- High-definition audio support
- Two built-in stereo speakers
- MS-Sound compatible
- Built-in microphone

Camera

- 1.3 M high-definition Camera

Connectivity

WLAN

- IEEE 802.11 b/g/n

LAN

- Gigabit Ethernet, Wake-on-LAN ready

I/O Ports

- Multi-in-1 card reader, supporting:
  - Secure Digital™ (SD) Card, MultiMedia Card™ (MMC), Memory Stick PRO™ (MS PRO), xD-Picture Card
- Three USB 2.0 ports
- HDMI® port with HDCP support

- External display (VGA) port

- 3.5 mm headset/speaker jack

- Microphone-in jack

- Ethernet (RJ-45) port

- DC-in jack for AC adapter

Special Keys and Controls

Keyboard

- 103/104/107-key Fine Tip keyboard

- International language support

- Independent standard numeric keypad, pgdn/pgup/home/end keys

Touchpad

- Multi-gesture touchpad, supporting two-finger scroll, pinch, rotate, flip

Dimensions and Weight

Dimension

- 381.6 (W) x 253 (D) x 33.2 (D) mm (15 x 9.96 x 1.30 inches)

Weight

- 2.6 kg (5.74 lbs.) with 6-cell battery pack

Power Adapter and Battery

Battery

- 48W 4400mAh 6-cell Li-ion standard battery pack

- Battery life: 5.2 hours

- ENERGY STAR$^{®}$

Power Adapter

- 65 W / 90 W AC adapter

- Voltage range/frequency: 100 ~ 240V AC, 50/60 Hz

Environment

Temperature

- Operating: 5º C to 35º C

- Non-operating: -20ºC to 65ºC

Humidity (non-condensing)

- Operating: 10% to 90%

- Non-operating: 5% to 95%

Optional Accessories

- 65 W / 90 W AC adapter
- 8-cell Li-ion battery pack
- HDD pack
- CD-ROM Module

Notebook Tour

Top View

Figure 1:1. Top View

#	Icon	Item	Description
1	⏻	Power Button	Press to turn the computer on or off. The indicator lights blue when the power is on.
2		Touchpad	Touch-sensitive pointing device that functions like a computer mouse.
3		Keyboard	Use to enter data into the computer.
4		Speaker	Emits audio sound.
4		Display Screen	Also called Liquid-Crystal Display (LCD) screen, displays computer output.
5		Microphone	Receives audio input for sound recording or voice chatting.
6		Webcam	Web camera used for video communications.

Front View

Figure 1:2. Closed Front View

#	Icon	Item	Description
1	SD MULTIMEDIACARD PRO xD	Multi-in-1 Card Reader	Insert a memory card such as Secure Digital (SD), MultiMedia Card (MMC), Memory Stick PRO (MS PRO), and xD-Picture Card (xD) for external storage. ⇒ **NOTE:** Only one card can be inserted at a time.
2	💡	Power Indicator	Indicates the computer power status: • **Off**: System is off. • **Blue**: System is on. • **Amber (flashing)**: S3 state
	🔋	Battery Indicator	Indicates the computer battery status: • **Amber (flashing)**: Battery low. • **Amber**: Battery is charging. • **Blue**: Battery is fully charged.
	💿	HDD Indicator	Indicates hard disk drive or card reader access.
	((•))	Wireless Connectivity Indicator	Indicates the computer wireless connectivity status: • **Off**: Not connected to any wireless device. • **Amber**: A wireless device is active.

Left View
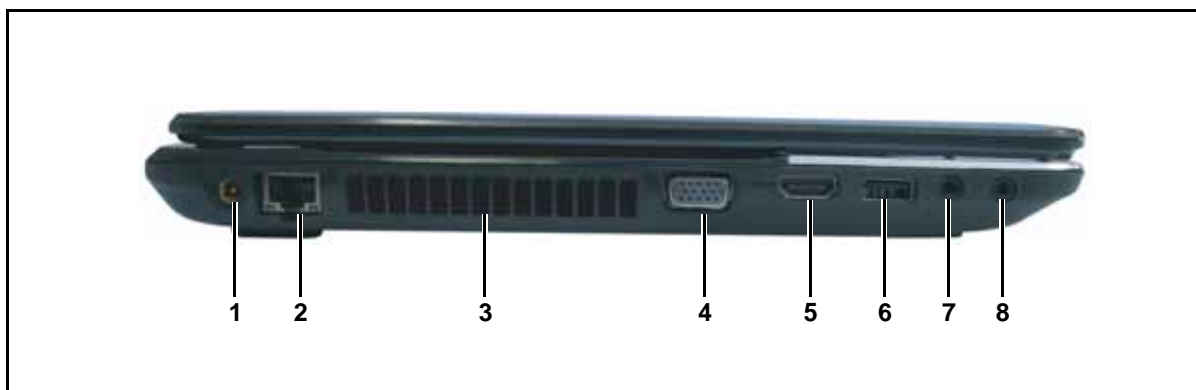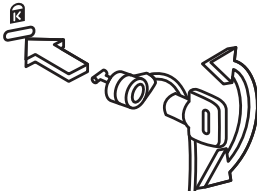
Figure 1:3. Left View

#	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		Air Vents	Use for air flow. ⚠️ **CAUTION:** Do not cover the air vents.
4		VGA Port	Connects to a VGA cable for external video output.
5	HDMI	HDMI Port	Supports high-definition digital video connections.
6		USB 2.0 Port	Connects to USB 2.0 devices.
7		Microphone Jack	Connects to a microphone.
8		Headset Jack	Connects to a headset.

Right View

Figure 1:4. Right View

#	Icon	Item	Description
1	↤	USB Ports	Connects to USB 2.0 devices.
2		Optical Drive	Reads and writes CD and DVD discs.
3	🄺	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

#	Icon	Item	Description
1		Battery Bay	Houses the computer battery pack.
2		Battery Release Latch	Insert a suitable tool into the latch and slide to release the battery.
3		HDD and Memory Compartment Cover	Houses the computer HDD and main memory.

Touchpad Basics
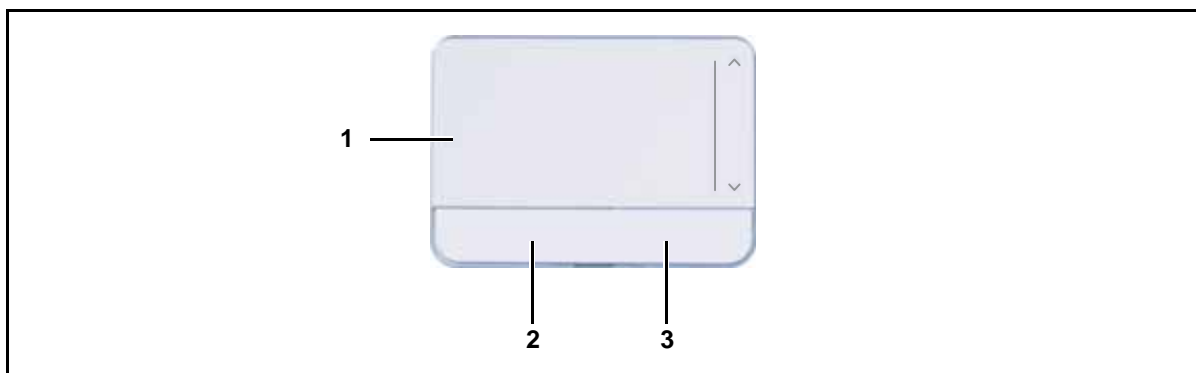
Figure 1:6. Touchpad

#	Item	Description
1	Touchpad	Move your finger across the touchpad to move the cursor. Tapping on the touchpad is the same as clicking the left mouse button.
2	Left Button	Press the left button to perform selection and execution functions. This button is equivalent to the left button on a mouse.
3	Right Button	Press the right button to perform selection and execution functions. This button is equivalent to the right button on a mouse.

Using the Touchpad

⟹ **NOTE:**
- The touchpad is sensitive to finger movements; hence, the lighter the touch, the better the response. Tapping too hard will not increase the touchpad sensitiveness.
- When using the touchpad, keep the touchpad and your fingers dry and clean.

Below is a description of basic touchpad operations:

Table 1:1. Touchpad Operations

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

1-11   Hardware Specifications and Configurations

Keyboard Basics

Figure 1:7. Keyboard

#		Item	Description
1		Caps Lock Key	When Caps Lock is on, all alphabetic characters are typed in uppercase.
2	Fn	Function Key	Use with other key combinations to perform special functions.
3	(Windows icon)	Windows Key	• Press to launch the Start menu. • When used with other keys, provides a variety of functions. See **Windows Key** on page **1-13**.
4	(Application icon)	Application Key	Press to open the context menu of the current application. This key has the same effect as clicking the right mouse button.
5		Num Lock Key	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.

Windows Key

The table below shows the different functions that Windows key combinations can do:

Table 1:2. Windows Key Combinations

Key Combination	Description
⊞	Opens or closes the Start menu.
⊞ + <R>	Opens the Run dialog box.
⊞ + <M>	Minimizes all windows.
<Shift> + ⊞ + <M>	Undo immunize all windows.
⊞ + <F1>	Shows the help window.
⊞ + <E>	Opens Windows Explorer.
⊞ + <F>	Searches for a file or folder.
⊞ + <D>	Shows the desktop.
⊞ + <L>	Locks the computer (if you are connected to a network domain), or switch users (if you are not connected to a network domain).
<CTRL> + ⊞ + <F>	Searches for computers (if you are on a network).
<CTRL> + ⊞ + <TAB>	Moves focus from the Start menu to the Quick Launch toolbar and to the system tray. Use the right and left arrow keys to move focus to items on the Quick Launch toolbar and the system tray.
⊞ + <TAB>	Cycles through programs on the toolbar.
⊞ + <Pause Break>	Displays the system properties dialog box.
⊞ + <U>	Opens Ease of Access Center (for Windows XP only).

Hotkeys

Hotkeys or function key combinations can be used to access computer control functions such as screen brightness, volume, and multimedia playback controls.

Table 1:3. Hotkey Combinations

Function	Key Combination	Icon	Description
Communication Switch	<F3>		Enables/disables wireless connectivity of your computer.
Display Toggle	<F4>		Switches the display output between the display screen, external monitor (if connected), and both.
Screen Blank	<F5>		Turns the display screen backlight off to save power. Press any key to return.
Touchpad Toggle	<F6>		Turns the touchpad on and off.
Brightness Up	<F12>		Increases screen brightness.
Brightness Down	<F11>		Decreases screen brightness.
Play/Pause	<F7>		Plays or pauses media file.
Stop	<F8>		Stops media file.
Previous	<F9>		Plays the previous media file in the play sequence.
Next	<F10>		Plays the next media file in the play sequence.
D2D Recovery	<Alt> + <F10>		Enter D2D recovery during POST

Hardware Specifications and Configurations

System Block Diagram
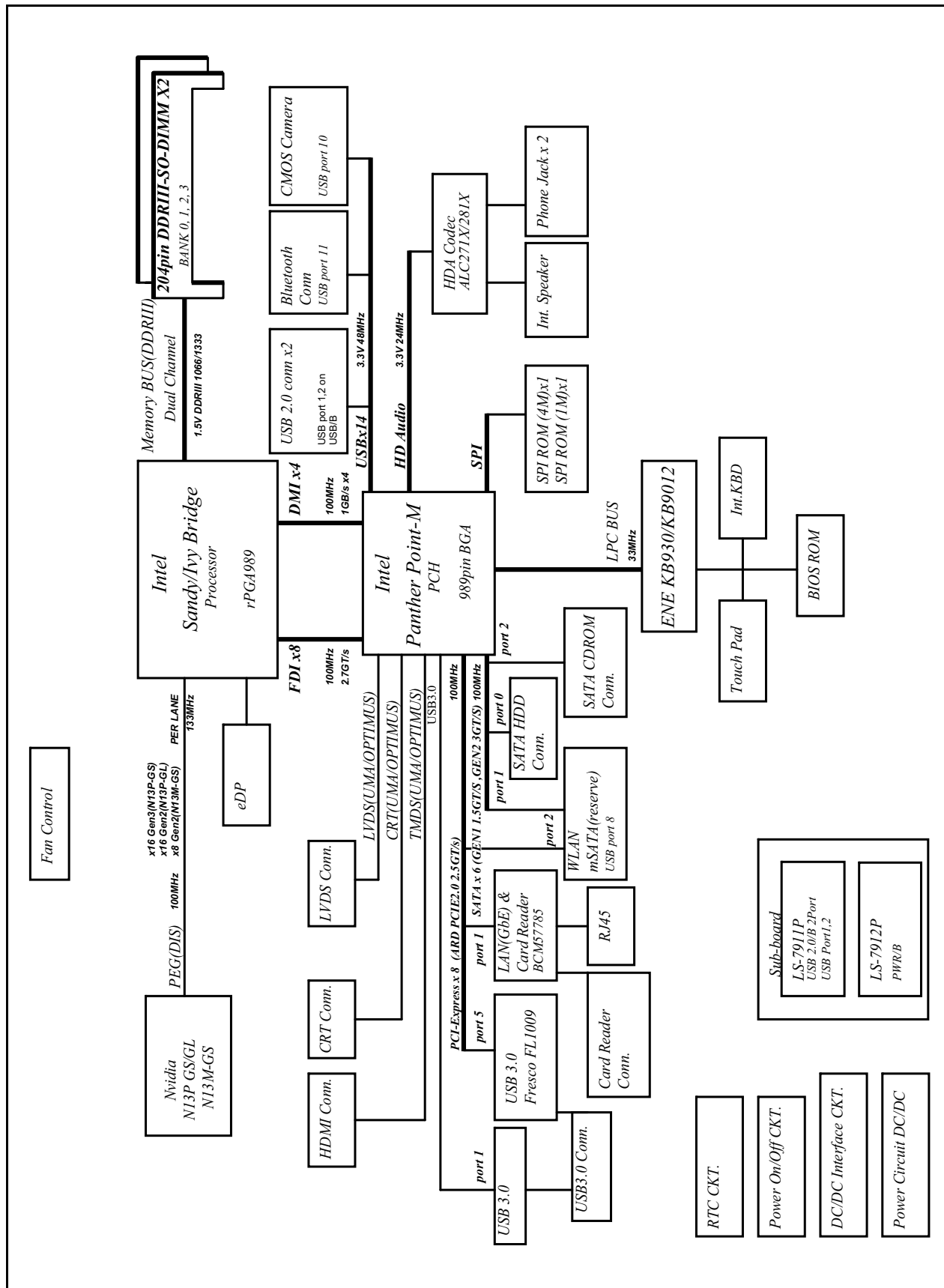
Figure 1:8. System Block Diagram

Hardware Specifications and Configurations

Specifications Table

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	381.6 mm	15 in
Width	253 mm	9.96 in
Height (front to rear)	33.2 mm	1.3 in
Weight (equipped with optical drive, flash drive, and battery)	2.6 kg	5.74 lbs
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)	0ºC ~ 35ºC	32ºF ~ 95ºF
Operating (writing to optical disc)	5ºC ~ 35ºC	41ºF ~ 95ºF
Non-operating	-20ºC ~ 65ºC	-4º ~ 149ºF
Relative humidity		
Operating	10% ~ 90%	
Non-operating	5% ~ 95%	
Maximum altitude (unpressurized)		
Operating	-15 m ~ 3,048 m	-50 ft ~ 10,000 ft
Non-operating	-15 m ~ 12,192 m	-50 ft ~ 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	
Non-operating	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	
Non-operating	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 Panther Point PCH
VGA	Intel NVIDIA N13M-GS 1G (GT620M)
LAN	Broadcom BCM57785 GbE Controller
USB 2.0	Intel HM77/HM70 Series Chipset (Panther Point)
Super I/O controller	N/A
Bluetooth	N/A
Wireless	Qualcomm / Broadcomm / Realtek
PCMCIA	N/A
Audio codec	Realtek ALC271X-GR-VB6
Card reader	Broadcom BCM57785X Card Reader

Processor

Item	Specification
CPU	Intel Sandy/Ivy Bridge Dual Core Processor
CPU package	rPGA989
Core logic	• Four or two execution cores • A 32-KB instruction and 32-KB data first-level cache (L1) for each core • A 256-KB shared instruction/data second-level cache (L2) for each core • Up to 8-MB shared instruction/data third-level cache (L3), shared among all cores
Chipset	Intel HM77/HM70 Express Chipset

Processor Specifications

Item	CPU Speed	Cores	Bus Speed (FSB/ DMI/QBI)	Mfg Tech	Cache Size	Package	Core Voltage
B815	1.6G	2	5GT/s	32nm	2MB	rPGA988B	0.75-1.3V
B960	2.2G	2	5GT/s	32nm	2MB	rPGA988B	0.75-1.3V
B970	2.3G	2	5GT/s	32nm	2MB	rPGA988B	0.75-1.3V
I3-2350M	2.3G	2	5GT/s	32nm	3MB	rPGA988B	0.75-1.3V
I3-2370M	2.4G	2	5GT/s	32nm	3MB	rPGA988B	0.75-1.3V

CPU Fan True Value Table (Tj=100)

CPU Temp	Fan Speed (RPM)	SPL Spec (dBA)
46	55	28
51	60	31
56	65	34
61	85	37
80	95	40
Throttling 50%: On= 95 °C; OFF=85 °C		
OS shut down at 100 °C; H/W shut down at 92 °C		

System Memory

Item	Specification
Memory controller	Built-in at CPU
Memory size	1GB, 2GB, 4GB DDR3 RAM
DIMM socket number	x 2 Sockets: Channel A DIMM 0 (TOP) Channel B DIMM 0 (Bottom)
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 GT620M (Optimus)
Package	908 FCBGA
Interface	Internal PCIE x 16
Compatibility	8 bpp (bit per pixel)
Sampling rate	128bits/64bits

Hardware Specifications and Configurations

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	1.00
BIOS ROM type	SPI
BIOS ROM size	4MB + 1MB
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	RJ45 at the left side
Features	Supports 10/100/1000

Keyboard

Item	Specification
Type	TM7T-A10B (wo/AL-FOIL)
Total number of keypads	103-US/104-UK /107-JA
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 (Listed items from AVL list)

Item	Specification			
Vendor & Model Name	HTS545025B9A 300 MK2565GSX ST9250315AS	HTS545032B9A 300 MK3265GSX ST9320310AS	HTS545050B9A 300 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			

Hard Disk Drive Interface (continued)

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
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			

Hard Disk Drive Interface (continued)

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		
Media data transfer rate (Mbytes/sec max)	97Mbytes/s	97Mbytes/s		
DC Power Requirements				
Voltage tolerance	5V			

Hardware Specifications and Configurations

Super-Multi Drive

Item	Specification	
Vendor & Model name	HLDS Super-Multi Drive DL 8X GT51N LF / Panasonic Super-Multi Drive DL 8X UJ8B0AW / PLDS Super-Multi Drive DL 8X DS-8A8SH / Panasonic Super-Multi Drive DL 8X UJ8C0ADAA1-B LF / Pioneer Super-Multi Drive DL 8X DVR-TD11RS 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)	

Hardware Specifications and Configurations

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 x 0.252 mm
Typical White Luminance (cd/m^2) also called Brightness	200 cd/m^2
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 / e-DP (option)
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	40 (Right) / 40 (Left) / 10 (Upper) / 30 (Lower) min.

Graphics Controller and VRAM

Item	Specification
Graphics Controller Chip	NVIDIA N13M-GS (GT620M)
Supports	• Support for Window7 DirectX compute • Direct X11 and Shader Model5.0 • OpenGL3.2 • NVIDIA PhysX technology • NVIDIA CUDA technology • NVIDIA Optimus technology
VRAM Chipset	Hynix
Memory Size	1G
Interface	DDRIII

Supported Resolution

Resolution	16 bits	32 bits	36 bits	48 bits	Others
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
NOTE: Legend: V = Supported; X = Not supported					

Bluetooth Interface (N/A)

Item	Specification	
Chipset		
Data throughput		
Protocol		
Interface		
Connector type		
Supported protocol (List only supported protocols from Acer specs)		

Bluetooth Module (N/A)

Item	Specification
Controller	
Features	

Camera

Item	Specification
Vendor and Model	• Liteon, 10P2SF205 • Suyin, HF2015-A821-OV01 • Chicony, CKFB15321004970LH • Liteon, 11P2BF136 • Suyin, HF1318-P88B-SN04
Type	1.3M

Mini Card

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

3G Card (N/A)

Item	Specification
Features	

Hardware Specifications and Configurations

Audio Codec and Amplifier

Item	Specification
Audio Controller	Audio codec: Realtek ALC271X-GR

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	Qualcomm	Broadcom	Realtek
Data throughput	11~54 Mbps, up to 270 Mbps for Draft-N		
Protocol	802.11 b+g+n		
Interface	PCI bus (mini PCI socket for wireless module)		

Battery

Item	Specification	
Vendor & Model name	SANYO AS10D	SIMPLO AS10D71/73
Battery Type	Li-ion	Li-ion
Pack capacity	4400 mAh	4400 mAh
Number of battery cell	6	6
Package configuration	3S2P	3S2P

Battery (continued)

Item	Specification	
Vendor & Model name	SONY AS10D41	SAMSUNG AS10D61
Battery Type	Li-ion	Li-ion
Pack capacity	4400 mAh	4400 mAh
Number of battery cell	6	6
Package configuration	3S2P	3S2P

Item	Specification	
Vendor & Model name	PANASONIC AS10D51	
Battery Type	Li-ion	
Pack capacity	4400 mAh	
Number of battery cell	6	
Package configuration	3S2P	

USB Port

Item	Specification
USB compliance level	USB2.0
Protocol	EHCI / XHCI
Number of USB port(s)	3
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	HDMI1 at the left side

Hardware Specifications and Configurations

AC Adapter

Item	Specification
Input rating	65 W & 90 W
Maximum input AC current	65 W: 1.5A at 100V 90 W: 1.7A at 100V
Inrush current	12t at 264V, no damage to adapter
Efficiency	Refer to EPA 2.0

System Power Management

Item	Specification
Mech. Off (G3)	AI 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	• SDHC: 32G (8G tested) • MMC: 16G (4G tested) • miniSD: 16G • MS/MS-PRO: 16G (8G tested) • 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
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 color blinking - Battery abnormal stop charging or battery in low power state
	Discharging
	  • Amber color blinking - Battery in critical low state
	  • Amber color off - Discharging state

System DMA Specification (N/A)

Hardware DMA	System Function
DMA0	
DMA1	
DMA2	
DMA3	
DMA4	
DMA5	
DMA6	
DMA7	
⇒ **NOTE:** ExpressCard controller can use DMA 1, 2, or 5.	

System Interrupt Specification (N/A)

Hardware IRQ	System Function
IRQ0	
IRQ1	
IRQ2	
IRQ3	
IRQ5*	
IRQ6	
IRQ7*	
IRQ8	
IRQ9*	
IRQ10*	
IRQ11	
IRQ12	
IRQ13	
IRQ14	
IRQ15	

> **NOTE:**
> Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.

> **NOTE:**
> ExpressCards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

System IO Address Map (N/A)

I/O Address (hex)	System Function (Shipping Configuration)
000 - 00F	
010 - 01F	
020 - 021	
022 - 024	
025 - 03F	
02E - 02F	
040 - 05F	

I/O Address (hex)	System Function (Shipping Configuration)
044 - 05F	
060	
061	
062 - 063	
064	
065 - 06F	
070 - 071	
072 - 07F	
080 - 08F	
090 - 091	
092	
093 - 09F	
0A0 - 0A1	
I/O Address (hex)	
0A2 - 0BF	
0C0 - 0DF	
0E0 - 0EF	
0F0 - 0F1	
0F2 - 0FF	
100 - 16F	
170 - 177	
178 - 1EF	
1F0 - 1F7	
1F8 - 200	
201	
202 - 21F	

System IO Address Specification (N/A)

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

Diagnostic 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 BIOS utility is pre-configured and optimized so most users do not need to run this utility. However, if configuration problems occur, you may need to run the BIOS utility.

To activate the BIOS Utility, press *F2* during POST (power-on-self-test) when the "`Press <F2> to enter Setup.`" message is prompted on the bottom of screen.

To change the boot device without entering the BIOS utility, press *F12* during POST to enter the multi-boot menu. In this menu, users can change the boot device without entering *BIOS Setup Utility*.

Navigating the Bios Setup Utility

The BIOS utility has seven menu options: **Information**, **Main**, **Advanced**, **Security**, **Power**, **Boot**, and **Exit**.

To navigate through the menus options, perform the following:

- To choose a menu, use the left and right arrow keys.
- To choose an item, use the up and down arrow keys.
- To change the value of a parameter, press *F5* or *F6*.
- A plus sign (+) indicates the item has sub-items.
- Press *Enter* to expand this item.
- Press *Esc* while you are in any of the menu options to go to the Exit menu.
- In any menu, you can load default settings by pressing *F9*. You can also press *F10* to save any changes made and exit the *BIOS Setup Utility*.

⇒ **NOTE:**
- Parameter values can be changed if enclosed in square brackets [ ]. Navigation keys for a particular menu are shown on the bottom of the screen. Help for parameters are found in the Item Specific Help part of the screen. Read this carefully when making changes to parameter values.
- System information is subject to specific models.

BIOS

The following is a description of the menu 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 displays a summary of the computer hardware information.

```
                           InsydeH20 Setup Utility                            Rev. 3.7
   Information      Main        Security      Boot        Exit

   CPU Type:              Intel (R) Pentium (R) CPU B970 @ 2.30GHz
   CPU Speed:             2.30GHz

   HDD Model Name:        Hitachi HTS545032B9A300
   HDD Serial Number:     091023PBH306Q6DBBJDV
   ATAPI Model Name:      MATSHITADVD-RAM UJ870BJ

   System BIOS Version:   V0.22F1
   KBC BIOS Version:      V0.21
   VGA BIOS Version:      Intel V2126

   Serial Number:         123456789
   Asset Tag Number:
   Product Name:          Aspire E1
   Manufacturer Name:     Acer
   UUID:                  F0CC9FDD27BF11E187CADC0EA129FAC0




   F1    Help           ↑↓  Select Item    F5/F6  Change Values      F9    Setup Defaults
   Esc   Exit           ←→  Select Menu    Enter  Select  ► Sub-Menu F10   Save and Exit
```

Figure 2:1.   BIOS Information

Parameter	Description
CPU Type	Displays the CPU (Central Processing Unit) type.
CPU Speed	Displays the speed of the system.
HDD Model Name	Displays the model name of the HDD (hard disk drive) installed on primary SATA master.
HDD Serial Number	Displays the serial number of the HDD installed on primary SATA master.
ATAPI Model Name	Displays the ODD (optical disc drive) model name installed in the system.
System BIOS Version	Displays the system BIOS version.
KBC BIOS Version	Displays the KBC BIOS version.
VGA BIOS Version	Displays the VGA (video graphics array) firmware version.

Parameter	Description
Serial Number	Displays the serial number of the unit.
Asset Tag Number	Displays the tag number of the system.
Product Name	Displays the product name of the system.
Manufacturer Name	Displays the system manufacturer.
UUID	Displays the UUID (Universally Unique Identifier).

Main

The Main tab allows the user to set the system time and date, enable or disable boot option, and enable or disable recovery.
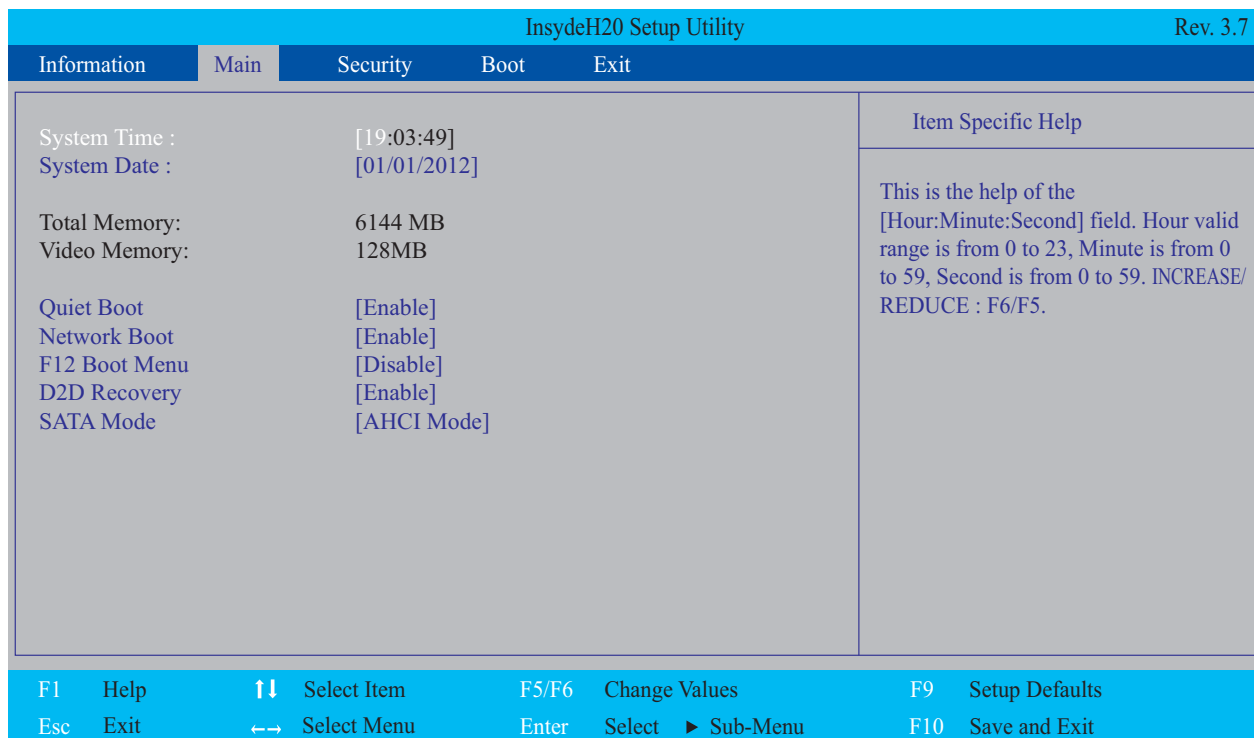
```
                              InsydeH20 Setup Utility                    Rev. 3.7
   Information      Main      Security      Boot      Exit

                                                       ┌─────────────────────────┐
                                                       │   Item Specific Help    │
   System Time :          [19:03:49]                   ├─────────────────────────┤
   System Date :          [01/01/2012]                 │                         │
                                                       │ This is the help of the │
   Total Memory:          6144 MB                      │ [Hour:Minute:Second] field. Hour valid │
   Video Memory:          128MB                        │ range is from 0 to 23, Minute is from 0 │
                                                       │ to 59, Second is from 0 to 59. INCREASE/ │
   Quiet Boot             [Enable]                     │ REDUCE : F6/F5.         │
   Network Boot           [Enable]                     │                         │
   F12 Boot Menu          [Disable]                    │                         │
   D2D Recovery           [Enable]                     │                         │
   SATA Mode              [AHCI Mode]                  │                         │
                                                       │                         │
                                                       └─────────────────────────┘

   F1    Help        ↑↓  Select Item    F5/F6   Change Values       F9    Setup Defaults
   Esc   Exit        ←→  Select Menu     Enter   Select  ► Sub-Menu  F10   Save and Exit
```

Figure 2:2.   BIOS Main

Parameter	Description
System Time	Sets the system time in 24-hour format.
System Date	Sets the system date.
Total Memory	Displays the total memory installed.
Video Memory	Displays the video memory installed.
Quiet Boot	When enabled, displays the OEM (original equipment manufacturer) screen during system boot instead of the traditional POST screen.
Network Boot	Enable or disable system boot from LAN (local area network).
F12 Boot Menu	Enable or disable the use of boot menu during POST.
D2D Recovery	Enable or disable disc-to-disc recovery by pressing *Alt+F10* key during POST.
SATA Mode	Select the SATA controller mode: AHCI or IDE.
Function Key Behavior	Select "Special Keys" to use the function keys to perform special functions by pressing and holding the *Fn* key followed by one of the *F1* to *F12* keys. This feature is only active in Windows.

Security

The Security tab allows the user to configure and protect the computer from unauthorized use.
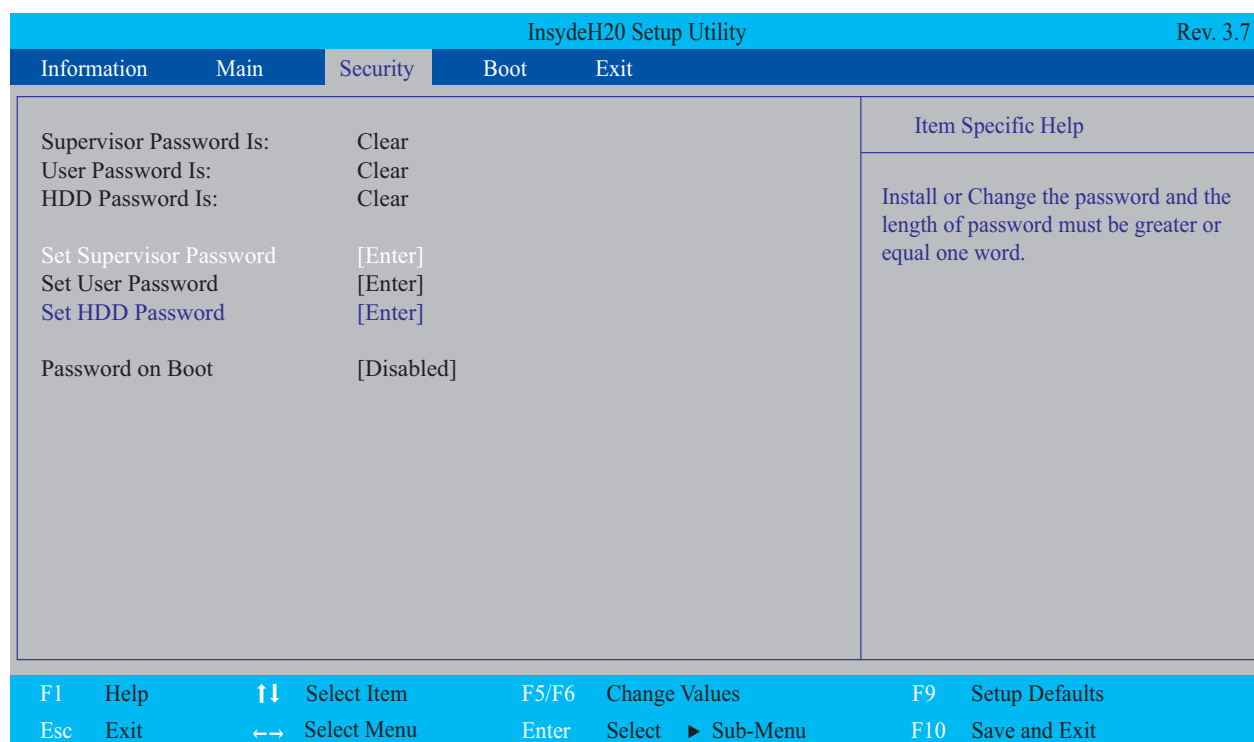
InsydeH20 Setup Utility	Rev. 3.7

Information	Main	Security	Boot	Exit

		Item Specific Help
Supervisor Password Is:	Clear	
User Password Is:	Clear	Install or Change the password and the
HDD Password Is:	Clear	length of password must be greater or equal one word.
Set Supervisor Password	[Enter]	
Set User Password	[Enter]	
Set HDD Password	[Enter]	
Password on Boot	[Disabled]	

F1	Help	↑↓	Select Item	F5/F6	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit

Figure 2:3.   BIOS Security

Parameter	Description
Supervisor Password Is	Displays "Set" if the supervisor password is set and "Clear" if the supervisor password is not set.
User Password Is	Displays "Set" if the user password is set and "Clear" if the user password is not set.
HDD Password Is	Displays "Set" if the HDD password is set and "Clear" if the HDD password is not set.
Set Supervisor Password	Option to set the supervisor password.
Set User Password	Option to set the user password. Enabled only when the supervisor password is set.
Set HDD Password	Option to set the HDD password.
Password on Boot	Enable or disable the computer to prompt for the password on system boot. When disabled, the password is only prompted when entering the *BIOS Setup Utility*.

⟹ **NOTE:**

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

Setting a Password

Perform the following to set the supervisor password:

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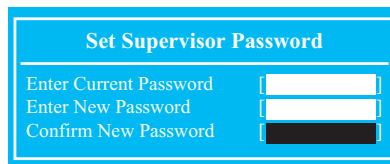

Figure 2:4.   Set Supervisor Password

2. Type the password in the `Enter New Password` field.

⇒ NOTE:

Passwords are not case sensitive and the length must not exceed 12 characters. 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. Retype the password in the `Confirm New Password` field.
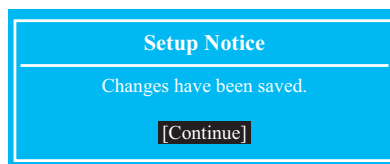
4. Press *Enter*. The `Setup Notice` dialog box appears.

Figure 2:5.   Setup Notice

5. Press *Enter* to complete the password setting. After setting the supervisor password, the computer sets the `Supervisor Password Is` parameter to `Set`.

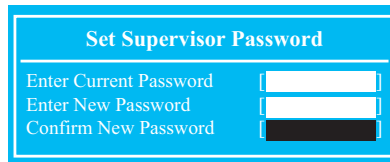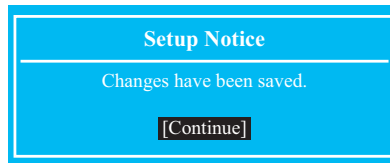6. Press *F10* to save changes and exit *BIOS Setup Utility*.

NOTE:

The same procedures apply in setting the user password and HDD password.

When the supervisor password is set, the `Set User Password` and `Password on Boot` parameters are enabled for users to configure.

Changing a Password

Perform the following to change a password:

NOTE:

Below are the procedures for changing the supervisor password. The same procedures apply in changing the user and HDD passwords.

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

```
            Set Supervisor Password

    Enter Current Password        [            ]
    Enter New Password            [            ]
    Confirm New Password          [            ]
```

Figure 2:6.   Set Supervisor Password

2. Type the current password in the `Enter Current Password` field and press **Enter**.

3. Type the new password in the `Enter New Password` field and press **Enter**.

4. Retype the new password in the `Confirm New Password` field.

5. Press **Enter**. If the passwords match, the `Setup Notice` dialog box appears.

```
            Setup Notice

        Changes have been saved.

            [Continue]
```

Figure 2:7.   Setup Notice

6. Press **Enter** to complete the password setting. The computer sets the `Supervisor Password Is` parameter to `Set`.

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

Removing a Password

Perform the following to remove a password:

⇒ NOTE:

Below are the procedures for removing the supervisor password. The same procedures apply in removing the user and HDD passwords.

When the supervisor password is removed, the user password is automatically removed.

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

```
         Set Supervisor Password

Enter Current Password        [         ]
Enter New Password            [         ]
Confirm New Password          [         ]
```

Figure 2:8.   Set Supervisor Password

2. Type the current password in the `Enter Current Password` field and press ***Enter***.

3. Press ***Enter*** twice without typing anything in the `Enter New Password` and `Confirm New Password` fields. The `Setup Notice` dialog box appears.

```
          Setup Notice

      Changes have been saved.

            [Continue]
```

Figure 2:9.   Setup Notice

4. Press ***Enter*** to complete the password setting. The computer sets the `Supervisor Password Is` parameter to `Clear`.

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

Boot

The Boot tab allows the user to configure the order of boot devices used to load the operating system.

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

InsydeH20 Setup Utility					Rev. 3.7
Information	Main	Security	Boot	Exit	

Boot priority order:

    1. HDD0 : Hitachi HTS545032B9A300
    2. ATAPI CDROM : MATSHITADVD-RAM UJ870BJ
    3. USB FDD :
    4. Network Boot : BRCM MBA Slot 0200 v15.0.11
    5. USB HDD :
    6. USB CDROM :

Item Specific Help

Use < ↑ > or < ↓ > to select a device, then press <F5> to move it down the list, or <F6> to move it up the list. Press <Esc> to escape the menu

F1	Help	↑↓	Select Item	F5/F6	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit

Figure 2:10.   BIOS Boot

Exit

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

InsydeH20 Setup Utility					Rev. 3.7
Information	Main	Security	Boot	Exit	

Exit Saving Changes
Exit Discarding Changes
Load Setup Defaults
Discard Changes
Save Changes

Item Specific Help

Exit System Setup and save your changes.

F1	Help	↑↓	Select Item	F5/F6	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit
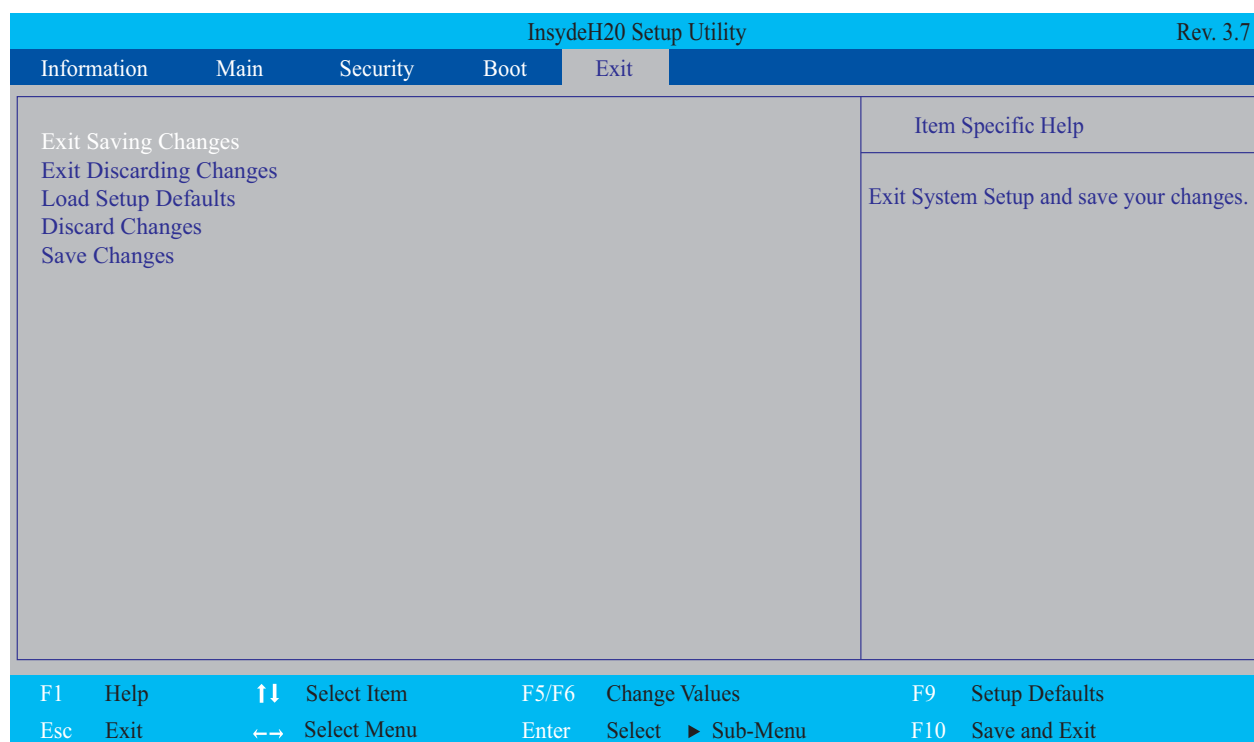
Figure 2:11.   BIOS Exit

Parameter	Description
Exit Saving Changes	Save the changes and exit the BIOS utility.
Exit Discarding Changes	Exit the BIOS utility without saving the changes to the system.
Load Setup Defaults	Load the default values of all setup items.
Discard Changes	Load the previous values of all setup items.
Save Changes	Save all changes to the system.

Boot Manager

The *Boot Manager* allows users to select the boot device without accessing the BIOS utility.

⇒ **NOTE:**

Boot Manager is available only if the `F12 Boot Menu` parameter in `Main` menu is set to `Enabled` (refer to **Main** on page **2-5**).

Perform the following to use the F12 Boot menu:

1. Start the computer.

2. When prompted, press the *F12* key during POST. The `Boot Manager` screen appears.

Boot Manager

Boot Option Menu

1. Network Boot : BRCM MBA Slot 0200 v15.0.11
2. HDD : XXXXXX
3. ATAPI CDROM : XXXXXX

↑ and ↓ to change option, ENTER to select an option
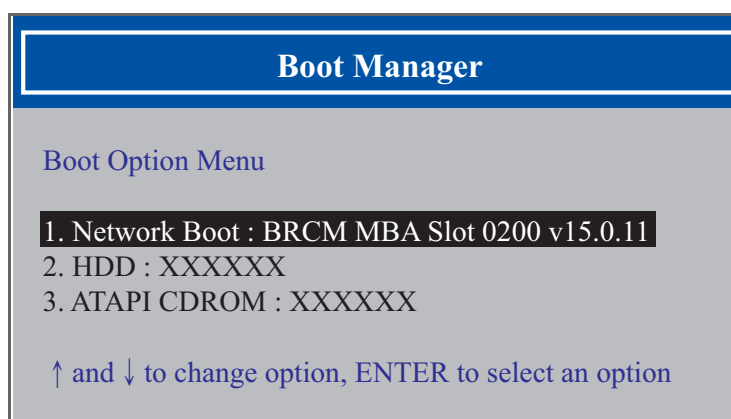
Figure 2:12.   Boot Manager Screen

3. Use the ↑ and ↓ keys to highlight a boot device.

4. Press *Enter* to select and continue with the boot procedure.

Boot Sequence SOP

The *Boot Sequence SOP* allows users to select the sequence of boot device from the command prompt.

1. Boot the computer to display the command prompt.

2. Type **BS** to execute the BS.exe. The `Boot Sequence Selection` screen appears.

```
*** Boot Sequence Selecter by SMI ***
Created by Miles Chen 2011/12/28. Version 1.0

Usage:
        BS [ 1 : 2 : 3 : 4 ]
BS 1: [Floppy] => [HardDisk] => [CD-ROM] => [LAN]
BS 2: [HardDisk] => [CD-ROM] => [LAN] => [Floppy]
BS 3: [CD-ROM] => [HardDisk] => [LAN] => [Floppy]
BS 4: [LAN] => [Floppy] => [HardDisk] => [CD-ROM]
```

Figure 2:13.   Execute BS.exe

3. Select desired boot sequence in the following format: BS [selection 1to 4].
   For example, to select set 1, type **BS 1**, then press ***Enter***.

4. A "Set successful" message appears if the setting is successful.

```
C:\>BS 1
Set successfully.
```

Figure 2:14.   Select Boot Sequence Status

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.

Perform the following to run a BIOS Flash update:

1. Prepare a bootable USB HDD/FDD.

2. Download and copy the Flash utilities to the bootable USB HDD/FDD.

BIOS Flash may be performed by one of the following:

- DOS Flash Utility
- WinFlash Utility

⟹ NOTE:

- If a Crisis Recovery Disc is not available, create one before BIOS Flash utility is used. See **Creating a USB Flash Crisis Disk** on page **2-25**.

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

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

- Flash utility has auto execution function.

DOS Flash Utility

⇒ **NOTE:**

Plug the AC power adaptor to a power source before performing the DOS Flash Utility.

Perform the following to use the DOS Flash Utility:

1. Copy *Flash.BAT* to the USB HDD.

2. Press **F2** during boot to enter the *BIOS Setup Utility*.

3. Select `Boot` menu to modify the boot priority order.

4. Move the USB HDD to position 1 (refer to **Boot** on page **2-10**).

InsydeH20 Setup Utility					Rev. 3.7
Information	Main	Security	Boot	Exit	

Boot priority order:

1. HDD0 : Hitachi HTS545032B9A300
2. ATAPI CDROM : MATSHITADVD-RAM UJ870BJ
3. USB FDD :
4. Network Boot : BRCM MBA Slot 0200 v15.0.11
5. USB HDD :
6. USB CDROM :

Item Specific Help

Use < ↑ > or < ↓ > to select a device, then press <F5> to move it down the list, or <F6> to move it up the list. Press <Esc> to escape the menu

F1	Help	↑↓	Select Item	F5/F6	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ► Sub-Menu	F10	Save and Exit

Figure 2:15.   Changing the BIOS Boot Priority Order

5. Insert the USB HDD and reboot the computer.

6. Enter the BIOS folder.

7. At the command prompt, type **BIOS.bat** and press **Enter** to update BIOS.

C:\>BIOS.bat_

Figure 2:16.   Executing BIOS.BAT

📑 **IMPORTANT:**

- Ensure the AC power adaptor is connected to the power source.

- Do not disconnect the AC power adapter.

Flash process begins as shown in **Figure 2:17**.

```
         Please do not remove the AC power!

Insyde Flash Utility for InsydeH20
                                Version 1.5O
      Initializing

      File loading 100%

      Current  BIOS Model name: Q5WV1
      New      BIOS Model name: Q5WV1

      Current  BIOS version: V0.17
      New      BIOS version: V0.18

      Updating Block at FFD60000
```

Figure 2:17.   Updating Flash ROM Blocks

Flash is complete when the message Flash complete! is shown.

```
         Please do not remove the AC power!

Insyde Flash Utility for InsydeH20
                                Version 1.5O
      Initializing

      File loading 100%

      Current  BIOS Model name: Q5WV1
      New      BIOS Model name: Q5WV1

      Current  BIOS version: V0.17
      New      BIOS version: V0.18

      Updating Block at FFFFF000
      Flash complete!
      Start EC Update
```

Figure 2:18.   Flash Complete

The system restarts automatically when finished.

WinFlash Utility

Perform the following to use the WinFlash Utility:

1. Boot from the OS and search for WinFlash Utility file.

2. Double-click on the utility file. The utility screen appears.

Figure 2:19.   InsydeFlash Screen

CAUTION:
- Do not turn off the computer during the Flash process.
- Do not put the system into standby or hibernation mode.
- Do not launch other applications.
- Do not press the Power button, open/close the lid, dock/undock the system, insert or remove USB, 1394, or PC card.

3. When the warning message appears, click OK to continue.
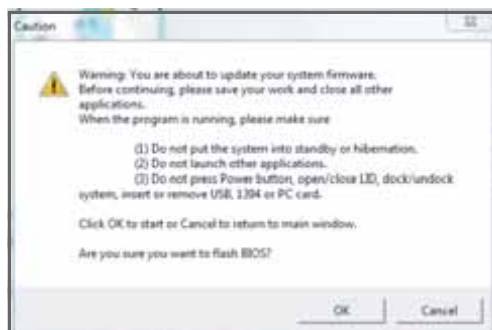
Figure 2:20.   Warning Message

Flash process begins.

Figure 2:21.   Updating Flash ROM

The system restarts automatically when update is finished.

Winflash Error and Warning Messages

- If the AC adapter is not plugged in before Winflash starts, the following message is shown:

- After executing Winflash, if the AC adapter is not plugged and the battery power is low, the following message is shown:

- Check the BIOS ROM file size. If the BIOS ROM file size is different from the ROM part size, the following message is shown:
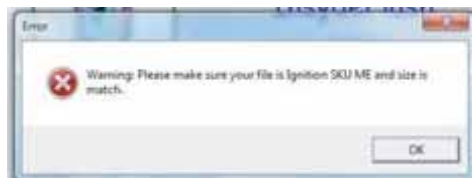
Miscellaneous Tools

Using DMITools

The *DMI (Desktop Management Interface) Tool* copies BIOS information to EEPROM and 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 from DOS.

2. At the command prompt, execute **dmitools [argument] [string]** 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:

1. Read DMI Information from Memory:

Input:

    dmitools /r

Output:

```
Manufacturer (Type1, Offset04h): Acer
Product Name (Type1, Offset05h): Easynote xxxxx
Serial Number (Type1, Offset07h): 01234567890123456789
UUID String (Type1, Offset08h): xxxxxxxx-xxxx-xxxx-xxxx-
                                 xxxxxxxxxxxx
Asset Tag (Type3, Offset04h): Acet Asstag
```

2. Write Manufacturer Name to EEPROM

Input:

    dmitools /wm Acer

3. Write Product Name to EEPROM

Input:

    dmitools /wp AspireXXXX

4. Write Serial Number to EEPROM

Input:

    dmitools /ws 01234567890123456789

---

4. Write UUID to EEPROM (Create UUID from _Intel WFM20.pdf_)

Input:

dmitools /wu

5. Write Asset Tag to EEPROM

Input:

dmitools /wa Acet Asstag

⇒ **NOTE:**

When running examples 2 ~ 5, restart the system to make the new DMI data effective.

Using the LAN MAC EEPROM Utility

1. Copy the LAN MAC Tools files to a bootable USB HDD device:

    - Filename: MAC.BAT

    - MAC Value: MAC.CFG

2. Use a text editor to open and edit MAC.CFG with the following contents:
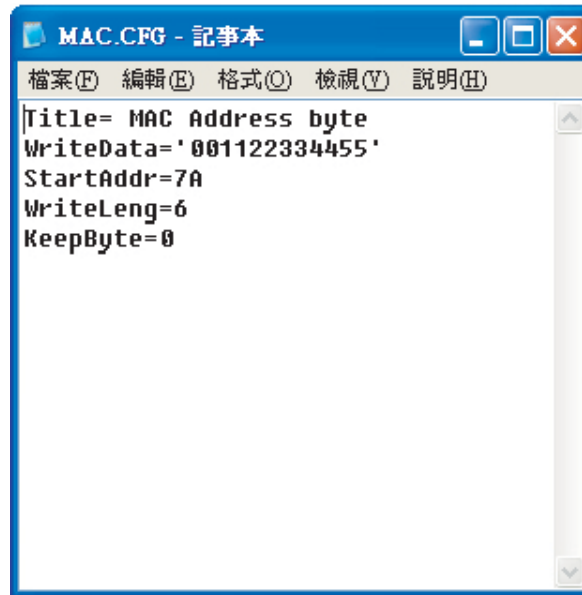
Figure 2:22.   LAN MAC Values

- WriteData='001122334455' (This is the MAC value)

- StartAddr=7A (This is the MAC address)

- WriteLeng=6 (This is the MAC value length)

- KeeyByte=0 (Leave this value as it is)

---

3. At the command prompt, run **MAC.BAT** to write MAC values to EEPROM.

```
C:\MAC>mac.bat

C:\MAC>eeprom w MAC.cfg

Progress --> ¦

Write Data to EEPROM OK!!
```

Figure 2:23.   Write MAC Values to EEPROM

4. Reboot computer when process has completed.

System Utilities

HDD/BIOS Password

This section provides details about unlocking HDD password and removing the BIOS passwords.

Unlocking the HDD

➾ **NOTE:**

If the HDD password is incorrectly entered three times, the HDD is locked and the `Harddisk Security` dialog box appears.

Harddisk Security		
SATA Port0	ST9160314AS	Lock

Figure 2:24. Password Error Status

Perform the following to unlock the HDD:

1. On the `Harddisk Security` dialog (**Figure 2:24**), press **Enter** to continue. The `Select Item` dialog box appears.

Select Item
Enter Unlock Passowrd
System continue
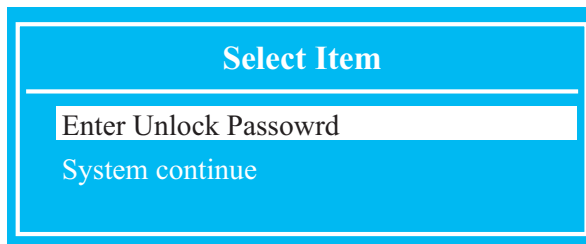
Figure 2:25. Select Item

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

Enter Unlock Password (Key: 54986933)

Figure 2:26. Enter Unlock Password

3. Take note of the generated key code. In **Figure 2:26** example, the key code is `76943488`.

➾ **NOTE:**

A separate computer is required to generate the unlock password.

4. On the separate computer, boot to DOS.

System Utilities

5. Execute *UnlockHD.exe* to generate an unlock password.
   Use the following command: **UnlockHD [key code]** with the code noted in step 3, **Figure 2:26**.

```
C:\UnlockHD 54986933
Password: 41684315

C:\
```

Figure 2:27.   Execute UnlockHD.exe

6. Take note of the generated unlock password.

7. On the original device, enter the unlock password in the Enter Unlock Password dialog box.

Enter Unlock Password (Key: 54986933)

****

Figure 2:28.   Enter Unlock Password

Clearing the Password Check and BIOS Password

Clearing the Password Check

The password check can be removed by shorting the "RTC_RST" point with a metal instrument.

1. Remove the lower cover door and the memory module (refer to **System Utilities** on page **2-2**).

2. Remove the battery (refer to **System Utilities** on page **2-2**).

3. Under the memory module slots, locate the JCMOS1 jumper.

4. Use an electronic conductivity tool to bridge the two points of the jumper.

Figure 2:29.   CMOS Jumper

Clearing BIOS Passwords

To clear the User or Supervisor password, perform the following:

1. At the command prompt, type **CP.exe**. The Clean Password Utility is shown.

```
ACER Clean Password Utility V 1.1
Press 1~2 to clean any password shown as below
1.User Password
2.Supervisor Password
```

Figure 2:30.   Clean BIOS Password

2. Press *1* or *2* to clear the desired password shown on the screen.

3. The screen displays function success or failure.

Crisis Utility SOP

<u>Creating a USB Flash Crisis Disk</u>

To create a Crisis USB flash disk, perform the following:

1. Plug in the USB flash disk.

2. Format the USB flash disk: select *Quick Format*, then click `Start` and then `OK`.

Figure 2:31.   Format USB Flash Disk (1 of 2)

3. Complete the format operation: click `OK` and then `Close`.
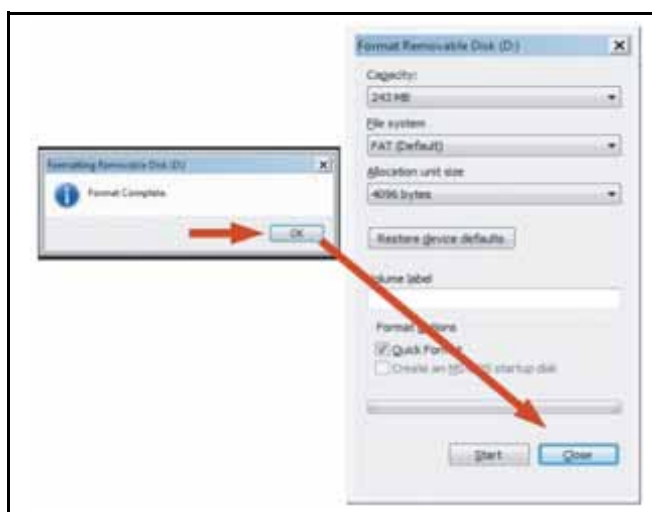
Figure 2:32.   Format USB Flash Disk (2 of 2)

System Utilities

4. At the command prompt, copy and combine KBC (*.ROM) and BIOS (*.BIN) into one ROM file (*.FD), using the format below:

```
Copy /b filenam.ROM + filename.BIN filename.FD
```

```
C:\Crisis>copy /b K6DC018A. rom+CR_HM77.bin Q5WV1X64.fd
K6DC018A.rom
CR_HM77.bin
          1 file(s) copied.

C:\Crisis>
```

Figure 2:33.   Copy ROM File

5. In *Windows*, copy the ROM (*.FD) file to the USB flash disk root directory.

⇒ **NOTE:**

    Do not save another ROM (*.FD) file in the USB flash disk root directory.

6. Rename the ROM file to "**Q5WV1X64.FD**".
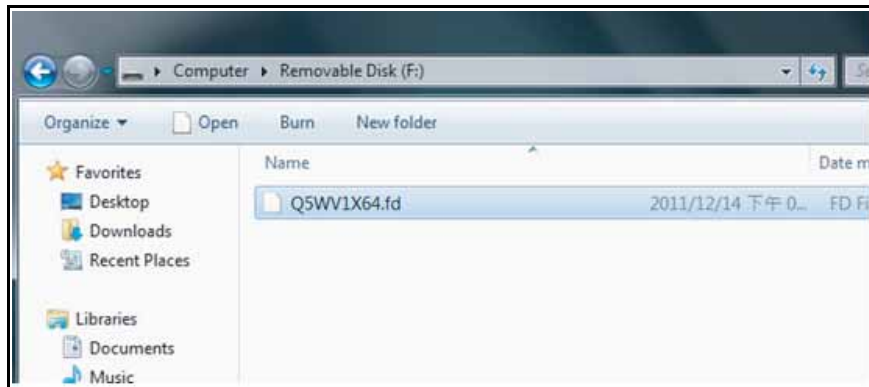
Figure 2:34.   Copy and Rename ROM File

Using the Crisis Utility Disk

1. Unplug the AC adapter.

Figure 2:35.   Unplug the AC Adapter

---

2. Remove the battery.
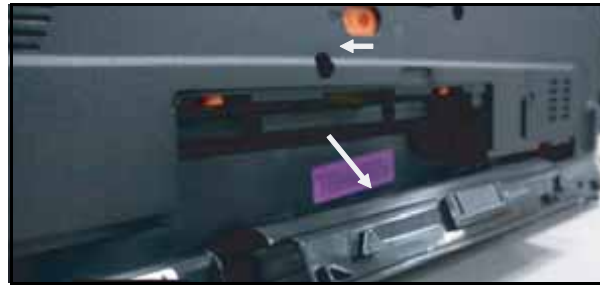
Figure 2:36.   Remove the Battery

3. Plug the USB flash disk.

Figure 2:37.   Plug the USB Flash Disk

4. Press and hold *<Fn>* and *<Esc>*, and then plug the AC adapter.
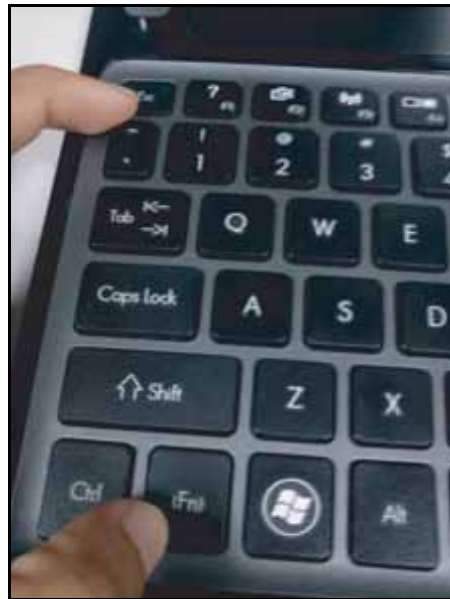
Figure 2:38.   Hold Down <Fn> + <Esc>

5. Press the *Power* button to start the *Crisis Utility*.

Service and Maintenance

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.

Recommended Equipment

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

- Wrist grounding strap and conductive mat
- Flat screwdriver
- Philips screwdrivers
- Pointed plastic pry or similar object

Screw Name	Screw Type	Quantity
M 2.5 x 4.0		6
M 2.45 x 8.0		19
M 2.5 x 5.0		9
M 2.0 x 2.5		3
M 2.0 x 3.0		11
M 2.0 x 5.0		3
M 3.0 x 3.0		4
M 2.0 x 3.0		4
M 2.5 x 3.2		4

Maintenance Flowchart

The flowchart in Figure3-1 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
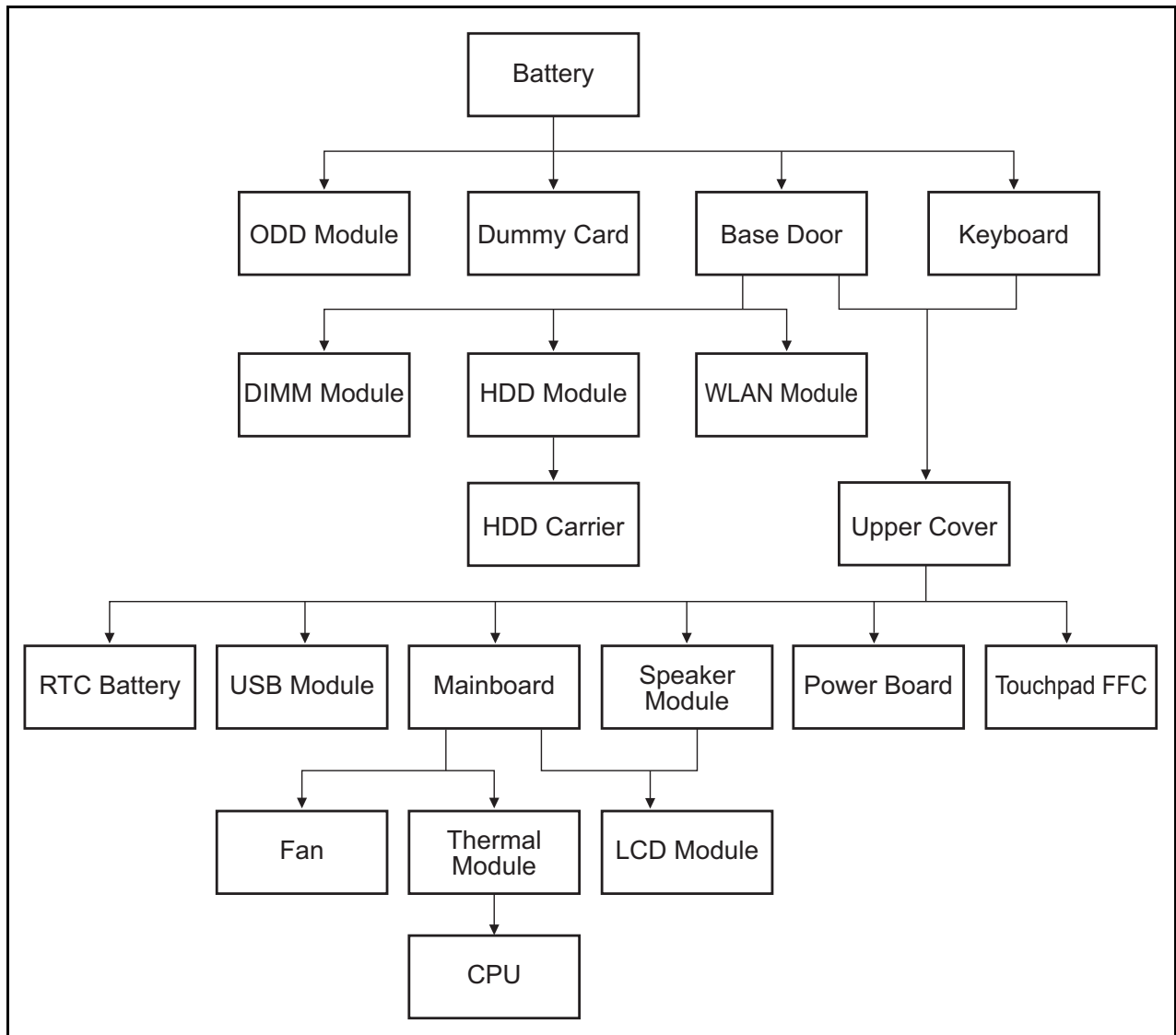
Figure 3:1.   Maintenance Flow
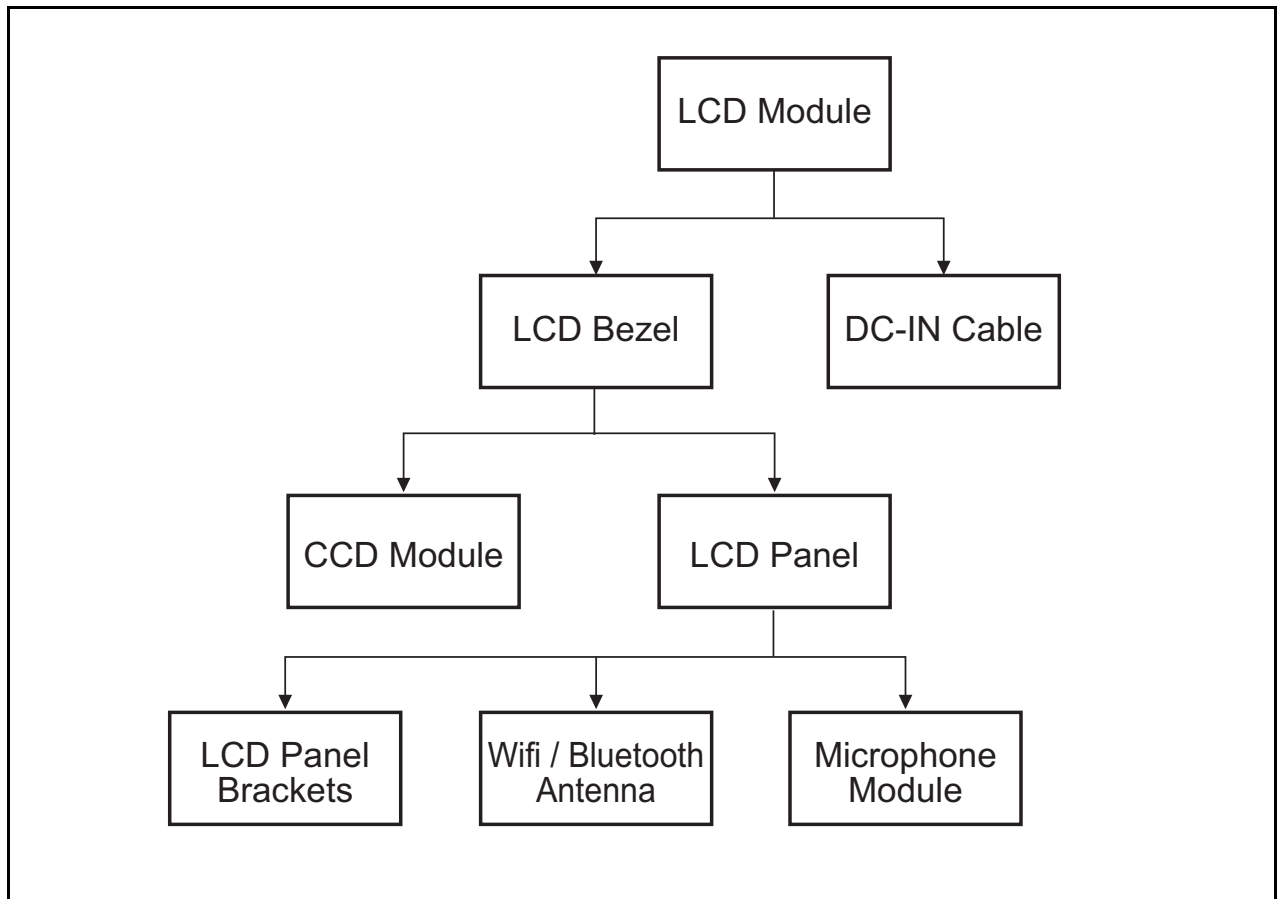
Figure 3:2.   LCD Module Maintenance Flow

Getting Started

The flowchart (**Figure 3:1**, page **3-4**) identifies sections illustrating the entire removal and installation 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. Place the system on a flat work surface.

2. Make sure the system is completely powered down.

    a. If the device is in powered up mode, shut down the system normally.

    b. If the device is in sleep mode, wait for the Home Screen to clear. Then, shut down normally.

3. Disconnect the AC Adapter and remove all cables from the system and its peripherals.

Figure 3:3.   Disconnecting the Power Adapter

Battery Pack Removal

1. Place the computer on a flat surface with the battery side up.

2. Insert the plastic pry into the battery latch and slide to release the lock.

3. Lift to remove the battery pack.
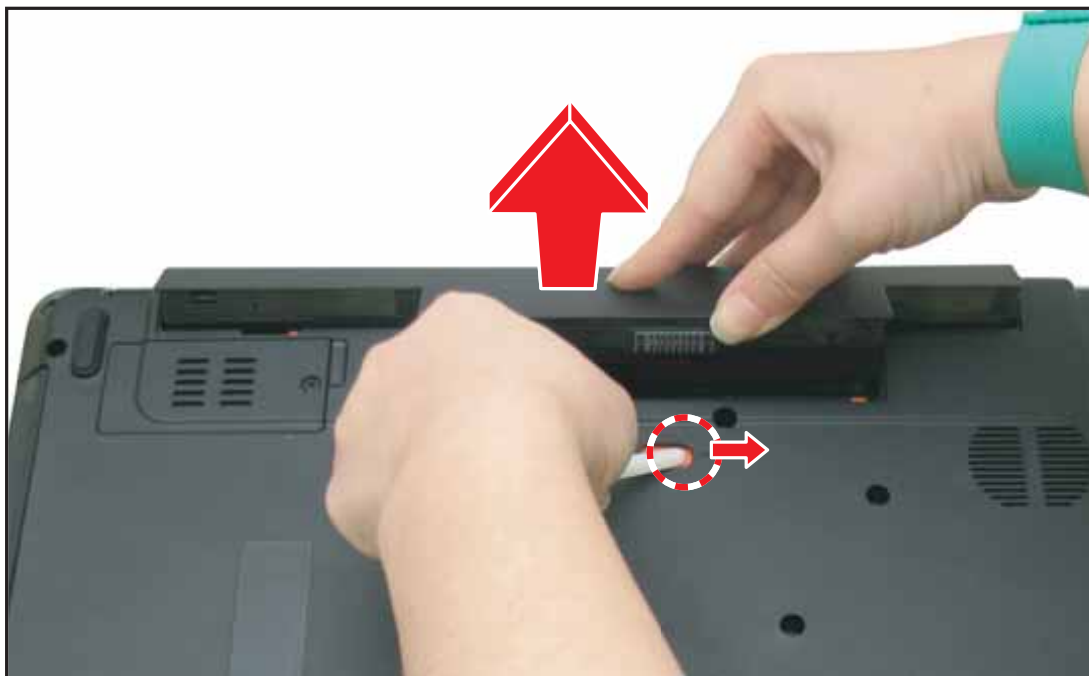
Figure 3:4.   Removing the Battery Pack

Battery Pack Installation

1. Place the battery pack in the battery compartment.

2. Push to lock the battery pack in place.

Figure 3:5.   Installing the Battery Pack

Dummy Card Removal

1. Push the dummy card to eject the card from the slot.

2. Remove the card.

Figure 3:6. Removing the Dummy Card

Dummy Card Installation

Push the dummy card into the slot until it clicks into place.

Figure 3:7.   Installing the SD Card

3-10   Service and Maintenance

Base Door Removal

Prerequisite:

❋ **Battery Pack Removal** on page **3-7**

1. Remove the screws.

Figure 3:8.   Removing the Screws

2. Insert your finger into the tab and lift to remove the base door.

Figure 3:9.   Removing the Base Door

Service and Maintenance

The following modules are housed under the base door:

- HDD (Hard Disk Drive) module (A), see **HDD Module Removal** on page **3-23**
- WLAN Module (B), see **WLAN Module Removal** on page **3-26**
- DIMM (Dual-In Memory Module (C), see **DIMM Module Removal** on page **3-21**
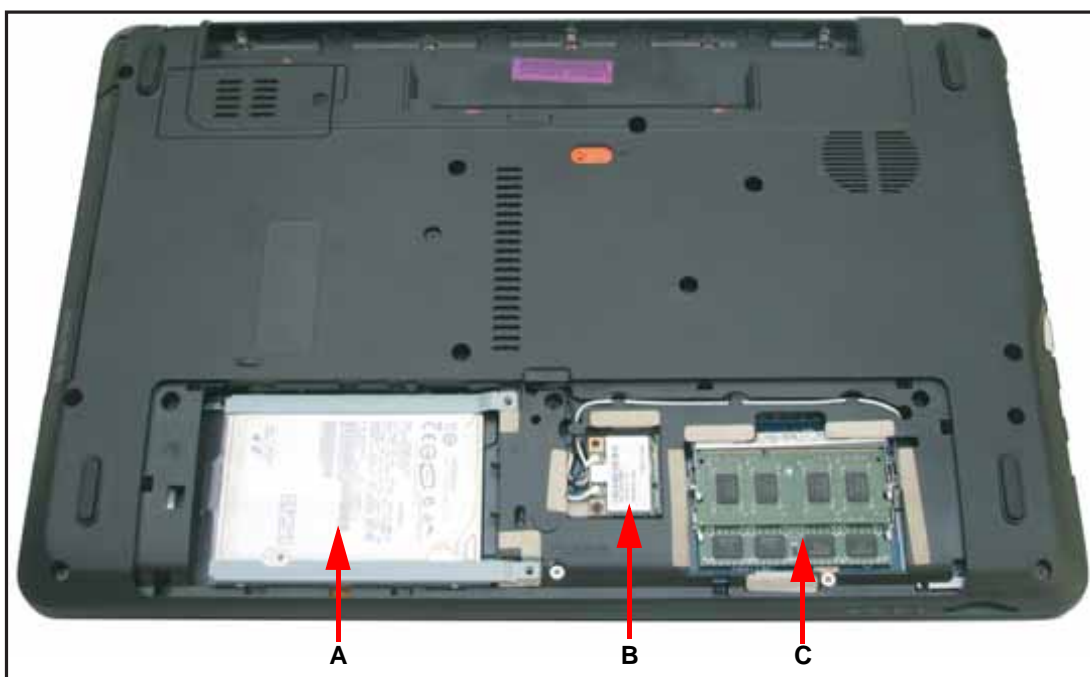
Figure 3:10.   HDD, WLAN, DIMM Modules Location

Service and Maintenance

Base Door Installation

1. Align the base door tabs into the lower case latches, then push to secure the base door.

Figure 3:11.   Installing the Base Door

2. Secure the screws.

Figure 3:12.   Securing the Screws

3. Install the battery pack (see **Battery Pack Installation** on page **3-8**).

Table 3:4. Base Door Screws

Screw Name	Screw Type	Quantity
M 2.5 x 8.0		2

ODD Module Removal

Prerequisite:

※ **Battery Pack Removal** on page **3-7**

1. Remove the screw securing the ODD module to the lower case.

Figure 3:13.   Removing the ODD Module Screw

2. Pull to remove the ODD module out from the slot.

Figure 3:14.   Removing the ODD Module

---

3. Insert a pointed object, such as a paper clip, into the emergency eject slot to eject the tray.

Figure 3:15.   Ejecting the Tray

4. On the underside of the tray, use the plastic pry to detach the right side latch of the ODD bezel.
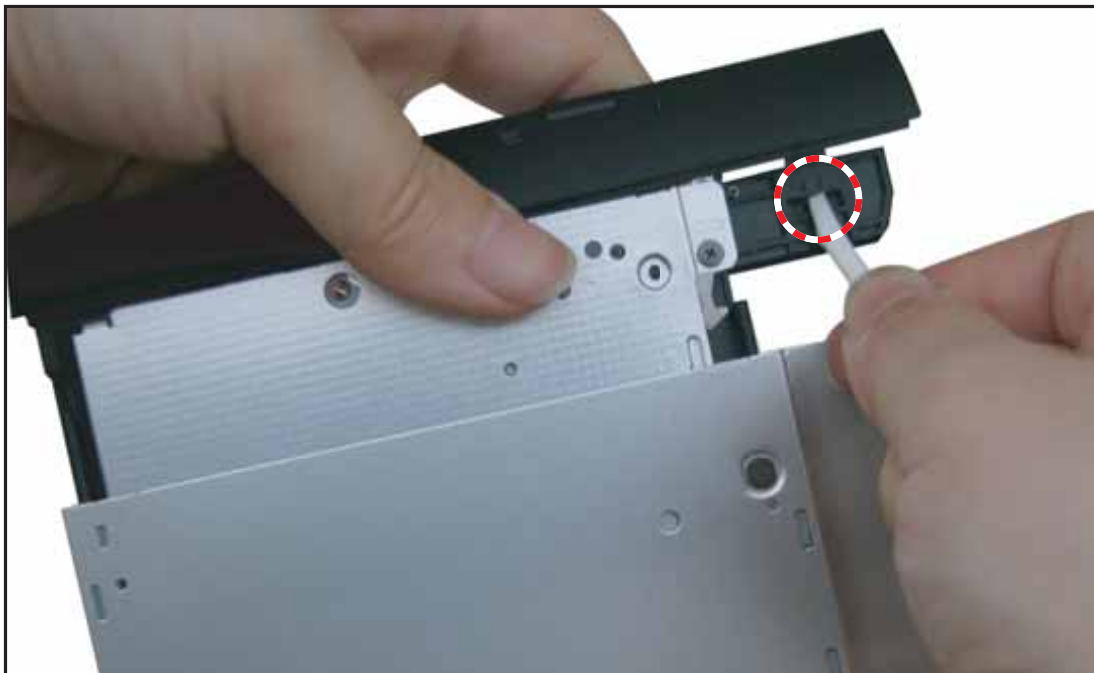
Figure 3:16.   Removing the ODD bezel (1 of 2)

5. Pull to detach the left side latch of the ODD bezel.
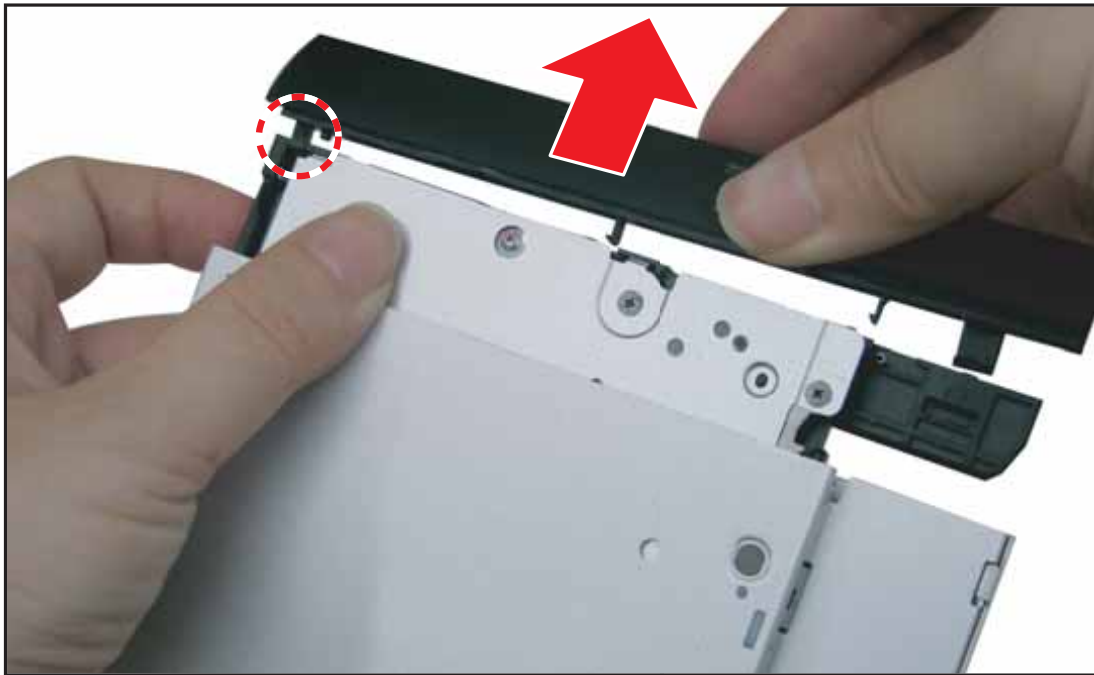
Figure 3:17. Removing the ODD bezel (2 of 2)

6. Remove the screws to remove the ODD bracket.

Figure 3:18. Removing the ODD Bracket

ODD Module Installation

1. Attach the screws to secure the ODD bracket.

Figure 3:19.   Attaching the ODD Bracket

2. On the underside of the ODD module, attach the left side latch first, and then push the ODD bezel to secure it to the tray.
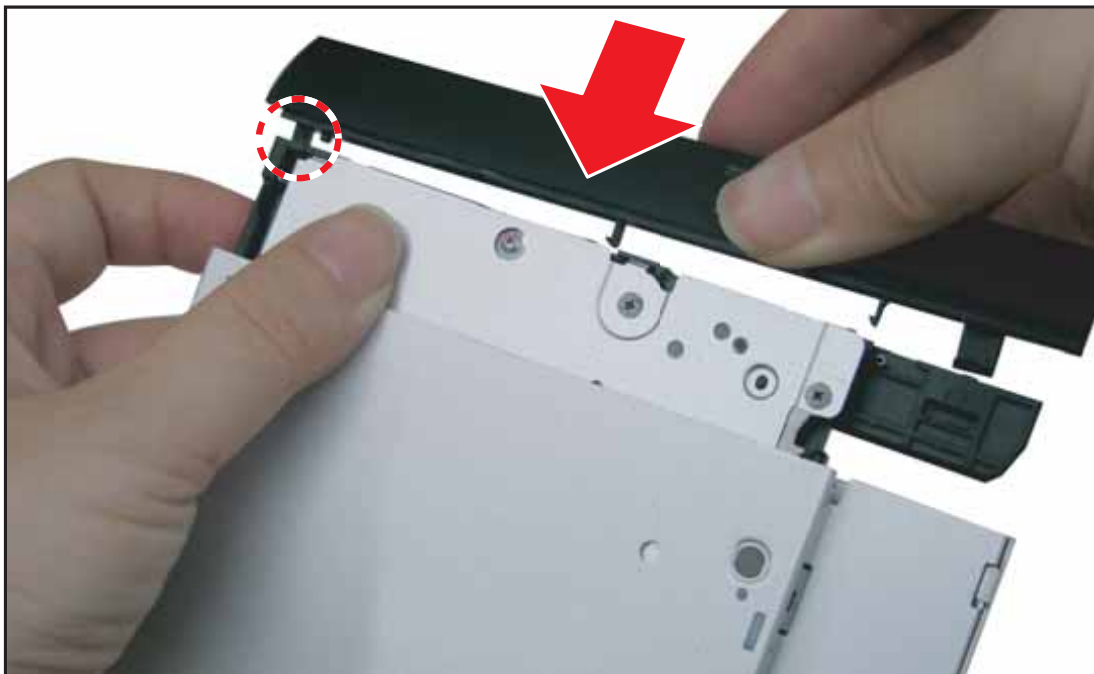
Figure 3:20.   Attaching the ODD bezel

---

3. Slide the ODD module into the slot.

Figure 3:21. Installing the ODD Module

4. Attach the screw to secure the ODD module.

Figure 3:22. Attaching the ODD Module Screw

5. Install the battery pack (see **Battery Pack Installation** on page **3-8**).

Table 3:5. ODD Module Screws

Screw Name	Screw Type	Quantity
M 2.5 x 8		1
M 2.0 x 3.0		2

DIMM Module Removal

Prerequisite:

＊ **Base Door Removal** on page **3-11**

1. Locate the DIMM module (see **Figure 3:10**, page **3-12**).

2. Push the module clips outwards.
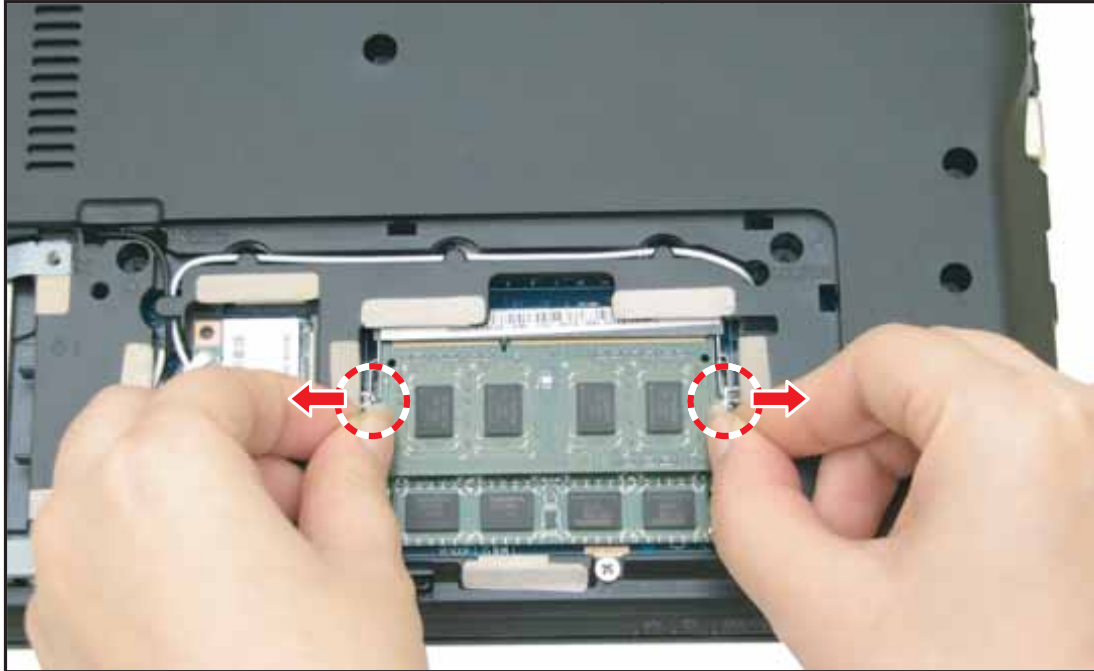
Figure 3:23.   Unclipping the Module Clips

3. Pull to remove the memory module out from the slot.

Figure 3:24.   Removing the DIMM Module

4. Repeat steps 1 and 2 for the remaining module.

DIMM Module Installation

1. Insert the memory module into the slot.

Figure 3:25. Installing the DIMM Module (1 of 2)

2. Push down the memory module until the clips lock in place.
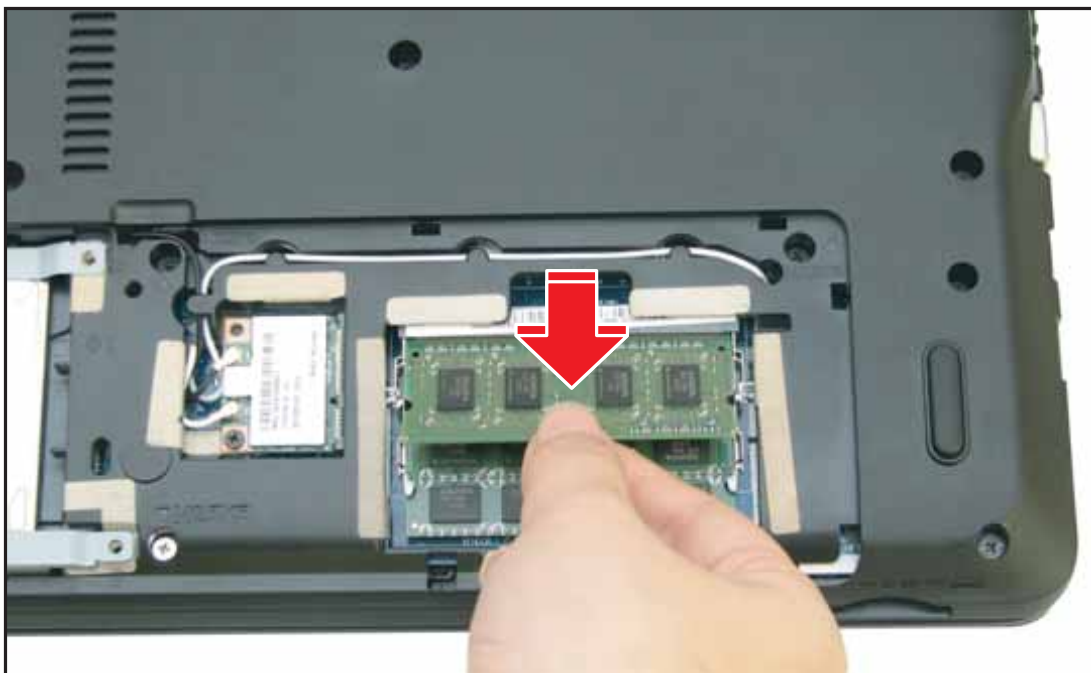
Figure 3:26. Installing the DIMM Module (2 of 2)

3. Repeat steps 1 and 2 for the remaining module.

4. Install the base door (see **Base Door Installation** on page **3-13**).

HDD Module Removal

Prerequisite:

❈ **Base Door Removal** on page **3-11**

1. Locate the HDD Module (see **Figure 3:10**, page **3-12**).

2. Slide the HDD module to disconnect the HDD from the mainboard connector.

Figure 3:27.   Removing the HDD Module (1 of 2)

3. Pull by the plastic tab to lift the HDD module.

Figure 3:28.   Removing the HDD Module (2 of 2)

HDD Module Installation

1.   Place the HDD module into the bay.

Figure 3:29.   Installing the HDD Module (1 of 2)

2.   Push to connect the HDD connector to the mainboard connector.
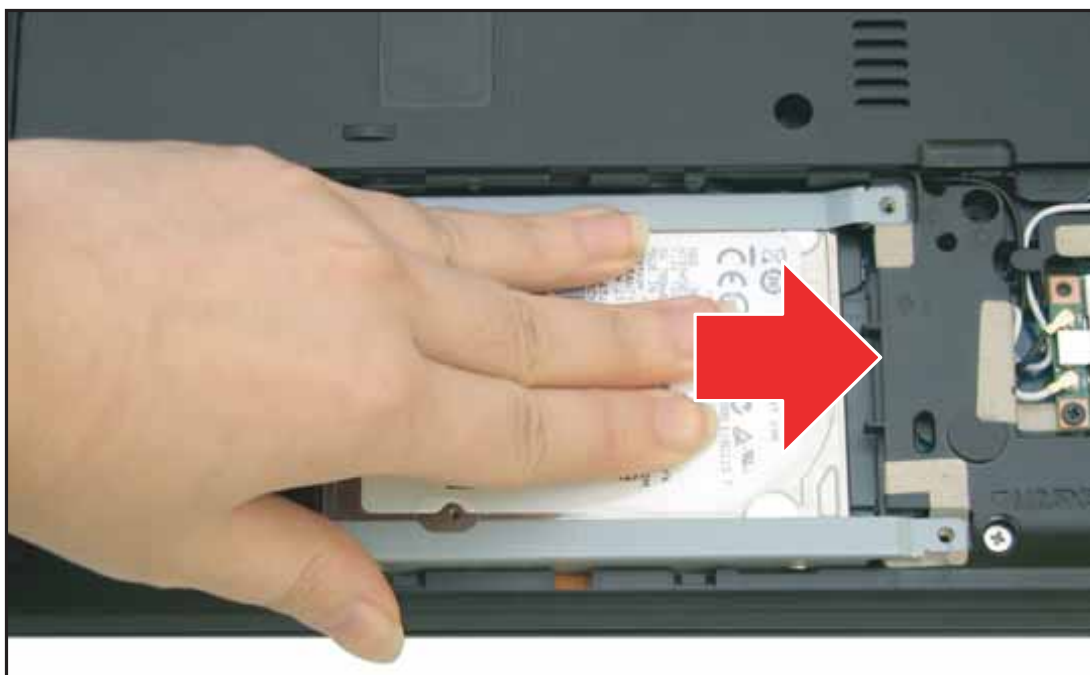
Figure 3:30.   Installing the HDD Module (2 of 2)

HDD Carrier Removal

Prerequisite:

❋ **HDD Module Removal** on page **3-23**

Remove the screws securing the HDD brackets to the HDD.

Figure 3:31.   Removing the HDD Brackets

HDD Carrier Installation

1.   Attach the screws to secure the HDD brackets to the HDD.

2.   Install the HDD module (see **HDD Module Installation** on page **3-24**).

Table 3:6. HDD Carrier Screws

Screw Name	Screw Type	Quantity
M 3.0 x 3.0		4

WLAN Module Removal

Prerequisite:

❄ **Base Door Removal** on page **3-11**

1. Locate the WLAN Module (see **Figure 3:10**, page **3-12**).

2. Disconnect the main (A, black) and auxiliary (B, white) antenna cables from the WLAN module connectors.
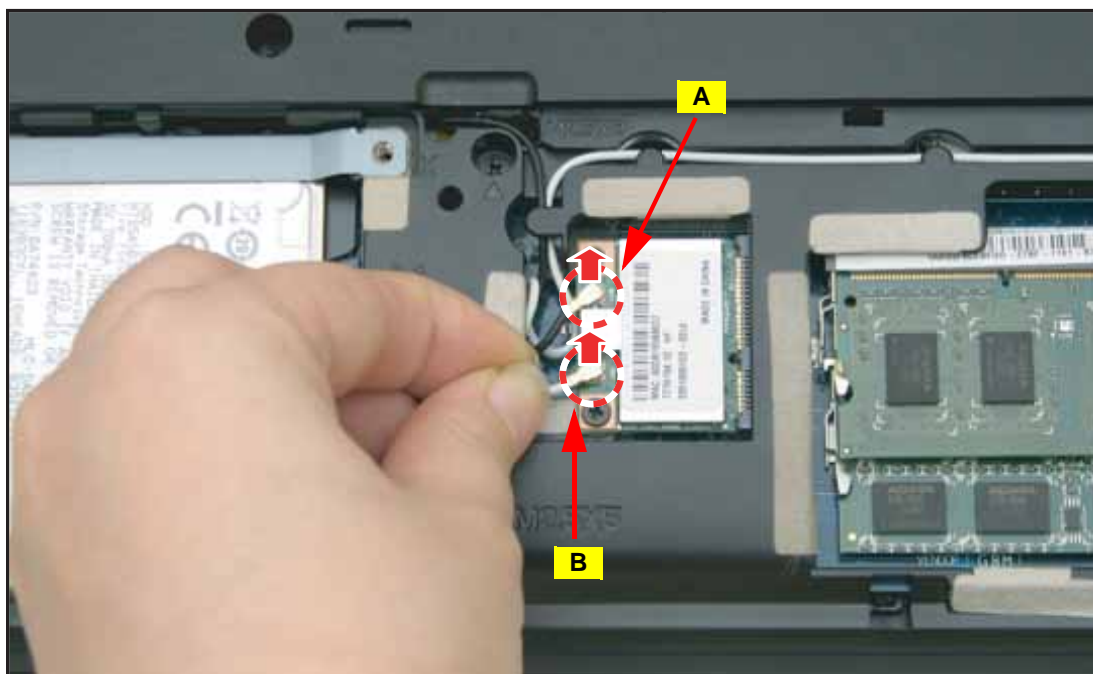
Figure 3:32.   Disconnecting the Antenna Cables

3. Remove the screw from the WLAN module.

Figure 3:33.   Removing the WLAN Module Screw

4. Disconnect the WLAN module from the mainboard connector.

Figure 3:34.   Removing the WLAN Module

Service and Maintenance

3-27

WLAN Module Installation

1. Connect the WLAN module to the mainboard connector.

Figure 3:35. Connecting the WLAN Module Connector

2. Attach the screw to secure the WLAN module.

Figure 3:36. Securing the WLAN Module Screw

3. Connect the antenna cables to the WLAN module connectors:
    - Main (A - black) antenna cable to the upper connector.
    - Auxiliary (B - white) antenna cable to the lower connector.
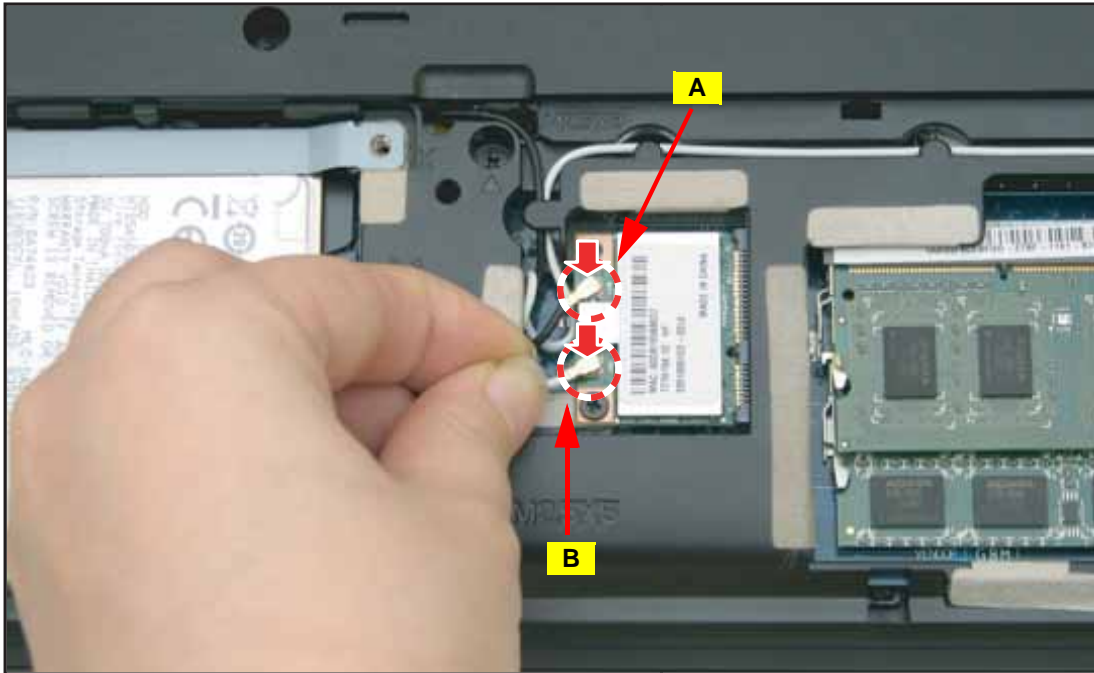
Figure 3:37.   Connecting the Antenna Cables

4. Install the base door (see **Base Door Installation** on page **3-13**).

Table 3:7. WLAN Module Screws

Screw Name	Screw Type	Quantity
M 2.0 x 3.0		1

Keyboard Removal

Prerequisite:

❂ **Battery Pack Removal** on page **3-7**

1. Using a plastic pry, push the six (6) latches circled below to slightly release the keyboard from the upper case.

Figure 3:38.   Releasing the Keyboard Latches

2. From the top side of the keyboard, pull the keyboard to detach it from the upper case.

Figure 3:39.   Removing the Keyboard

⚠ **CAUTION:**

A cable is connected underneath the keyboard. Do not completely lift the keyboard.

---

3. Under the bottom side of the keyboard, push the connector locks upwards to remove the keyboard cable connector from the mainboard connector.
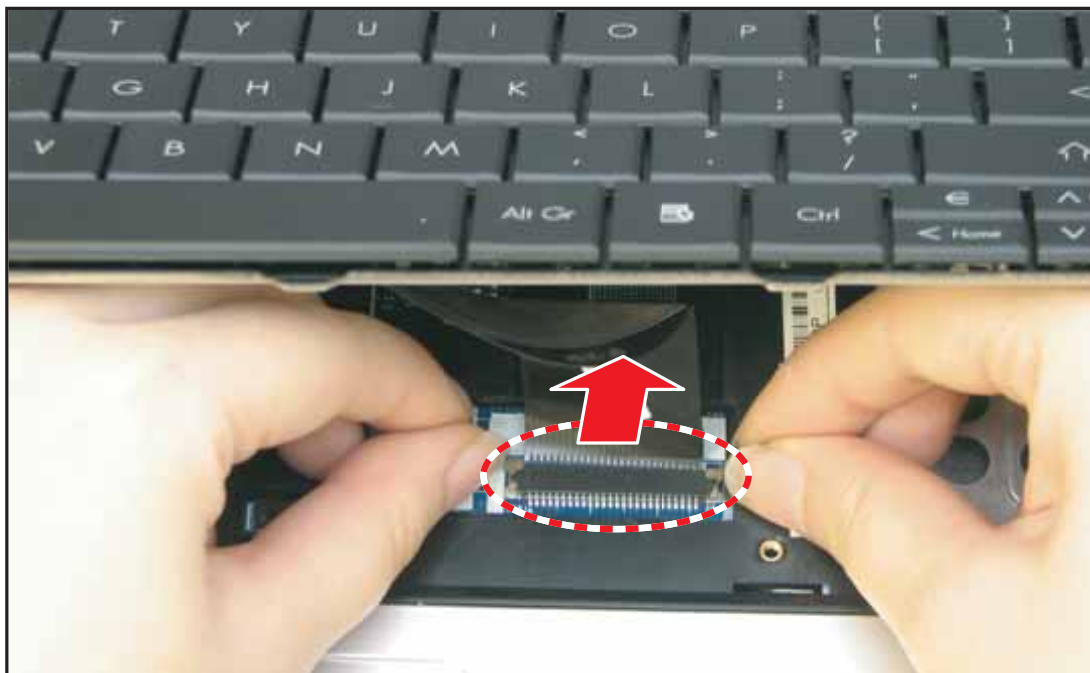
Figure 3:40.   Disconnecting the Keyboard Cable

Keyboard Installation

1. Push the clips of the mainboard connector up and then connect the keyboard cable connector to the mainboard connector with the coloured side down. Push the connector clips down to secure the cable.
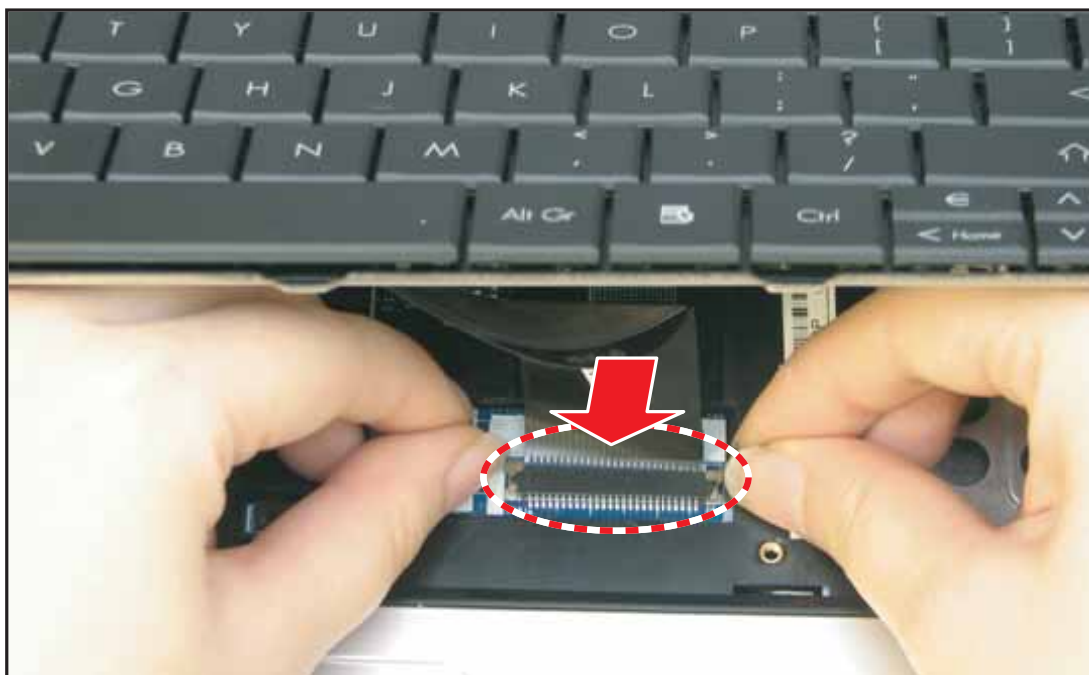
Figure 3:41.   Connecting the Keyboard Cable

2. Align the bottom edge of the keyboard to the upper case.

Figure 3:42.   Installing the Keyboard (1 of 2)

3. Push to secure the keyboard to the latches of the upper case.

Figure 3:43.   Installing the Keyboard (2 of 2)

4. Install the battery (see **Battery Pack Installation** on page **3-8**).

Upper Case Removal

Prerequisite:

* ❉ **Base Door Removal** on page **3-11**
* ❉ **Keyboard Removal** on page **3-30**

1. Remove the 21 screws securing the upper and lower case.
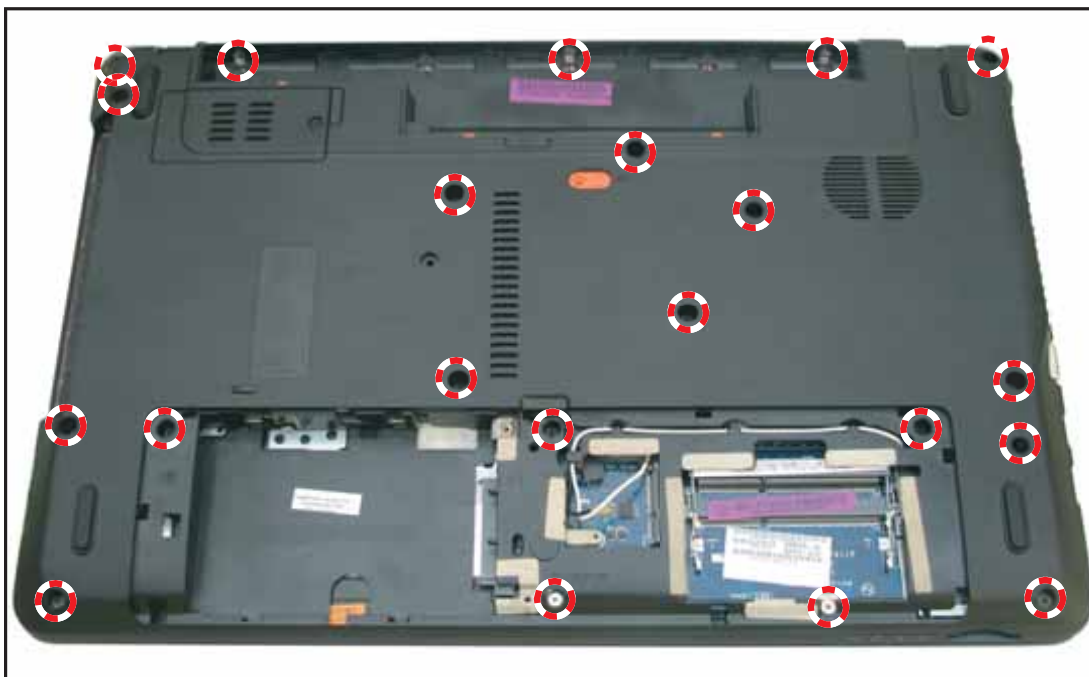
Figure 3:44.   Removing the Lower Case Screws

2. Push the clips of the mainboard connector to disconnect the powerboard cable connector.

Figure 3:45.   Disconnecting the Powerboard Cable

3. Pull the clips of the mainboard connector down to disconnect the touchpad cable.

Figure 3:46.   Disconnecting the Touchpad Cable

4. From the right side, pry to release the upper case latches.

Figure 3:47.   Removing the Upper Case (1 of 3)

5. Release the top side latches.
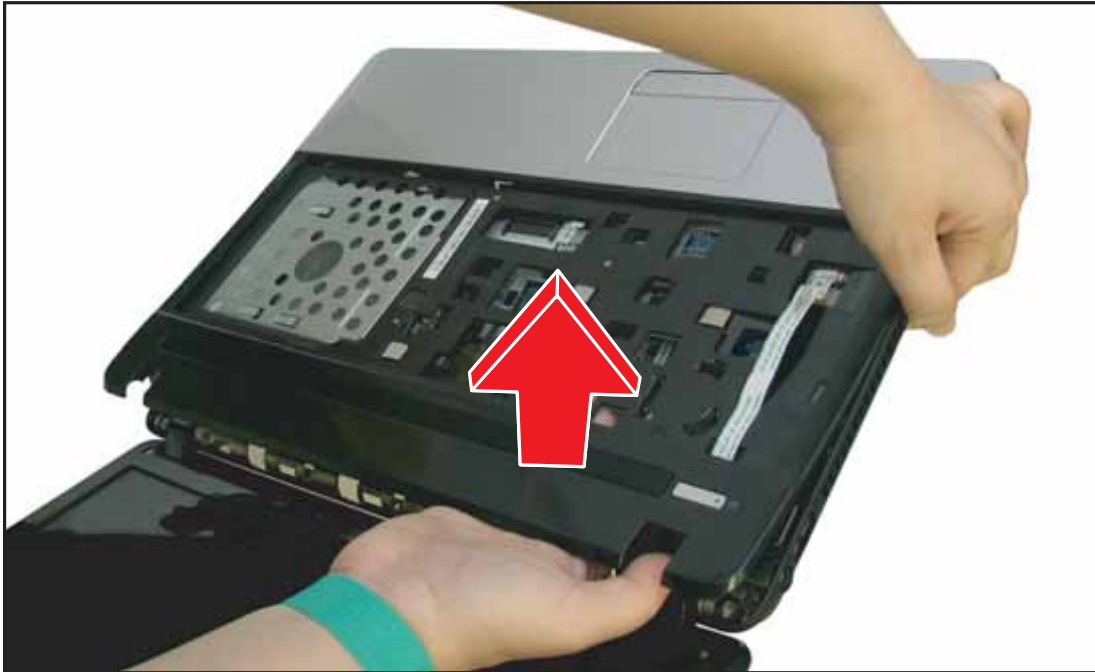
Figure 3:48.   Removing the Upper Case (2 of 3)

6. Release the bottom side latches.

Figure 3:49.   Removing the Upper Case (2 of 3)

7. Lift the upper case to find the following modules:

- DC-In Module (A), see **DC-In Cable Removal** on page **3-82**
- Speakers (B), see **Speaker Removal** on page **3-59**
- LVDS Cable (C)
- Microphone Module (D), see **Microphone Module Removal** on page **3-105**
- RTC Battery (E), see**RTC Battery Removal** on page **3-41**
- USB Module (F), see **USB Module Removal** on page **3-65**
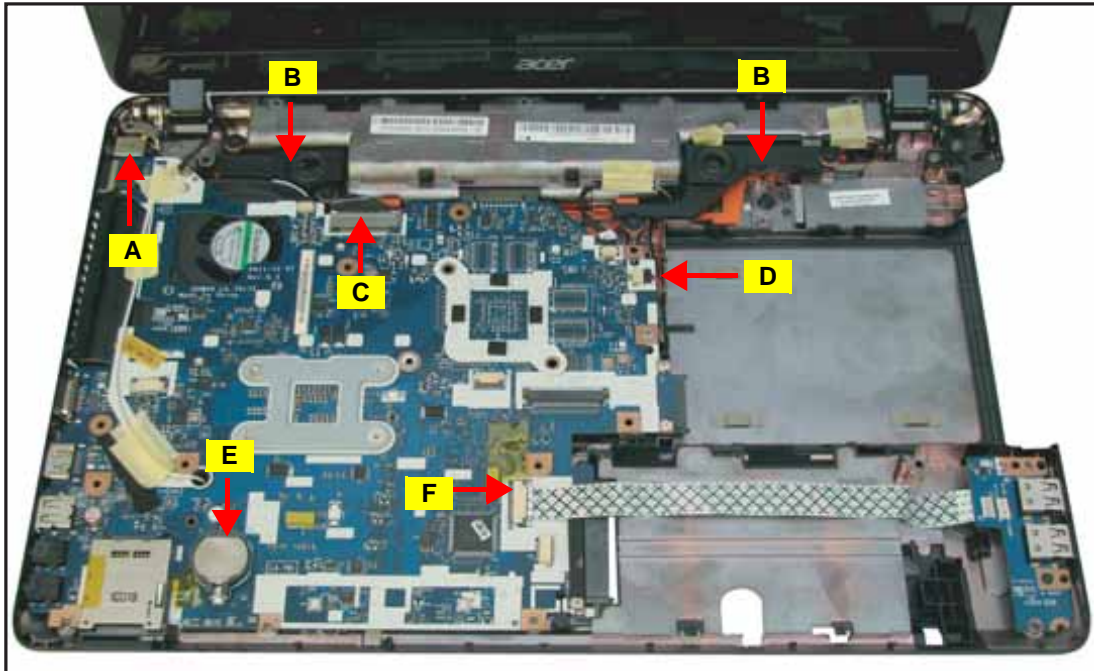
Figure 3:50. Mainboard Overview

Upper Case Installation

1. Align the top side of the upper case to the lower case.

Figure 3:51.   Installing the Upper Case (1 of 2)

2. Push to secure the upper case latches.
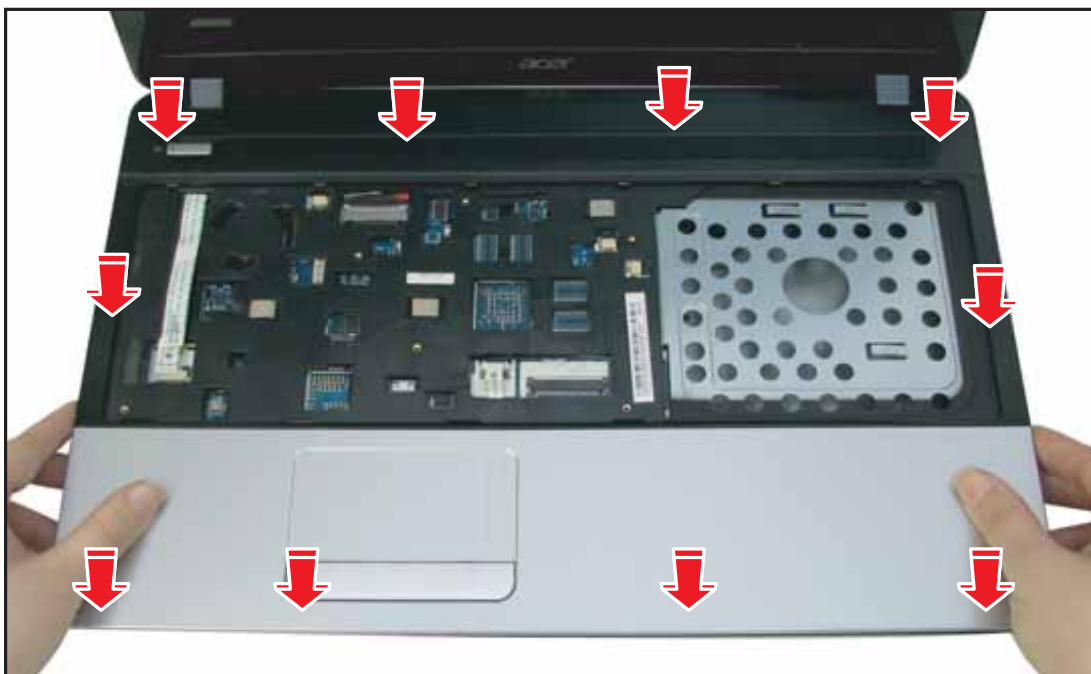
Figure 3:52.   Installing the Upper Case (2 of 2)

3. Connect the touchpad cable connector to the mainboard connector.

TIP: Push the connector clips down, then connect the touchpad cable connector with the "**MB**" label side up, then push the connector clips up to lock.

Figure 3:53. Connecting the Touchpad Cable

4. Connect the powerboard cable connector to the mainboard connector.

TIP: Push the connector clips up, then connect the powerboard cable connector with the "**MB**" label side up, then push the connector clips down to lock.

Figure 3:54. Installing the Upper Case

Service and Maintenance

5. Attach the 21 screws to secure the upper case and the lower case.
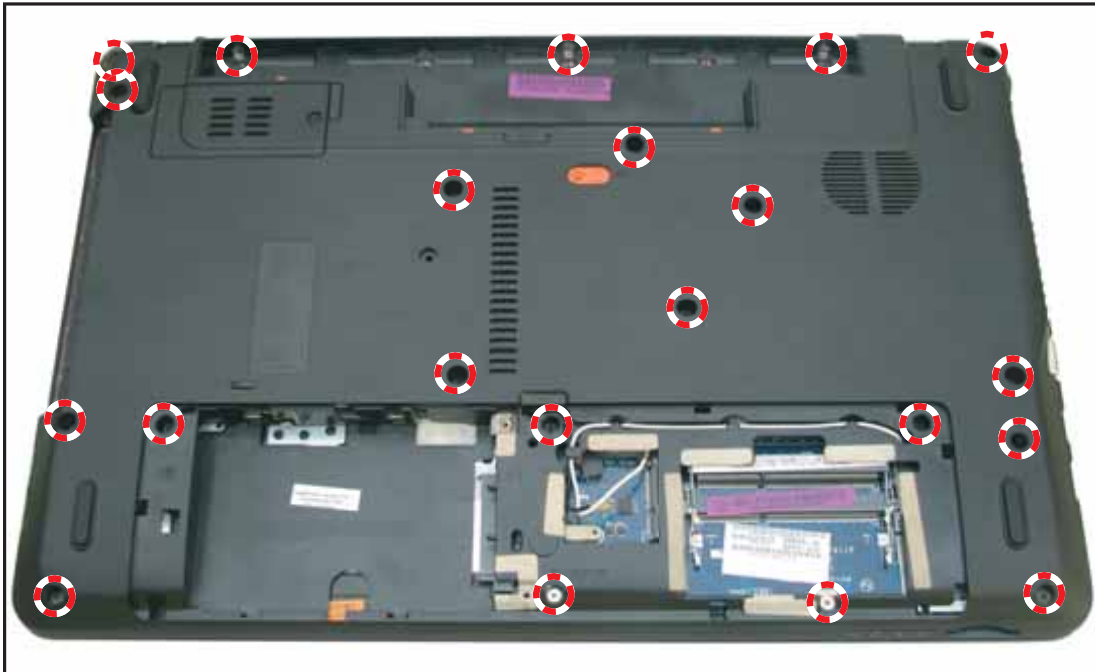
Figure 3:55.   Attaching the Upper and Lower Case Screws

6. Install the keyboard (see **Keyboard Installation** on page **3-32**).

7. Install the base door (see **Base Door Installation** on page **3-13**).

Table 3:8. Upper and Lower Case Screws

Screw Name	Screw Type	Quantity
M 2.0 x 2.5		3
M 2.5 x 5.0		2
M 2.5 x 8.0		16

Service and Maintenance

RTC Battery Removal

Prerequisite:

✱ **Upper Case Removal** on page **3-34**

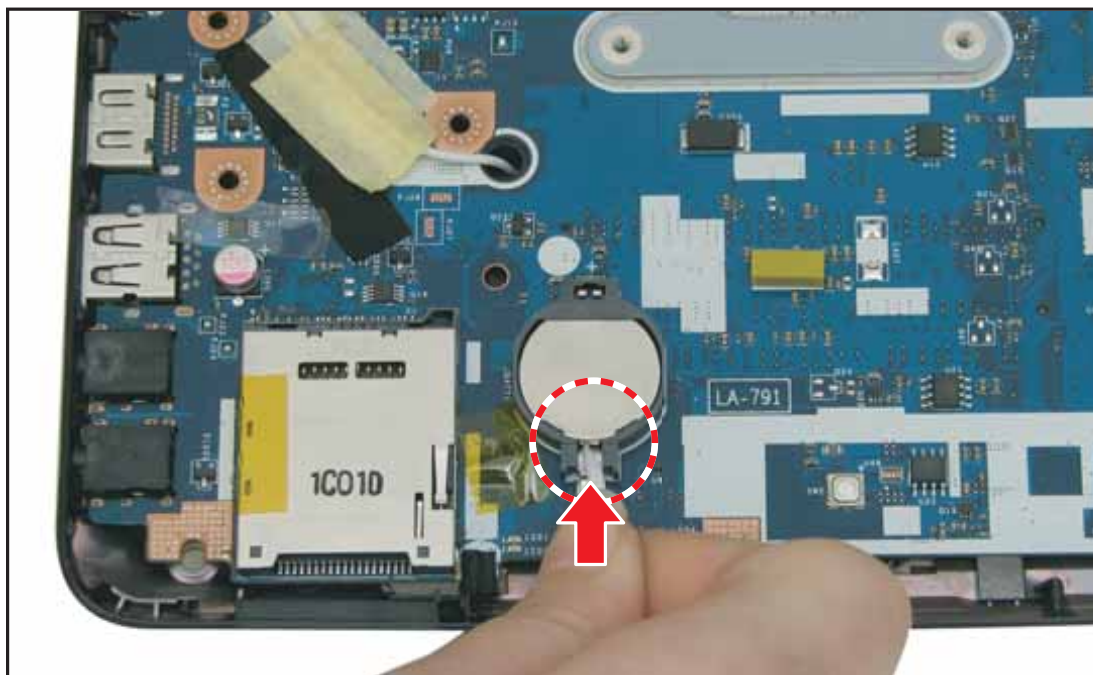**1.** Using the plastic pry, push to release the RTC battery from its slot.

Figure 3:56.   Removing the RTC Battery (1 of 2)
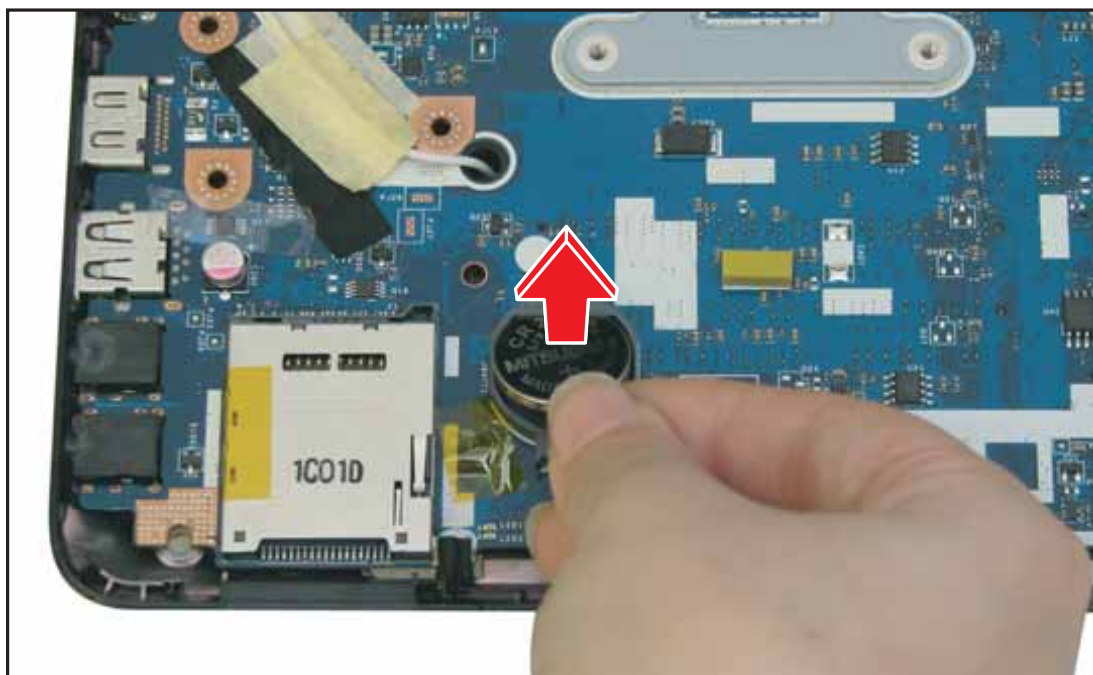
2. Remove the RTC battery.

Figure 3:57.   Removing the RTC Battery (2 of 2)

Service and Maintenance

RTC Battery Installation

1. Insert the RTC battery to its slot and push to lock the battery in place.
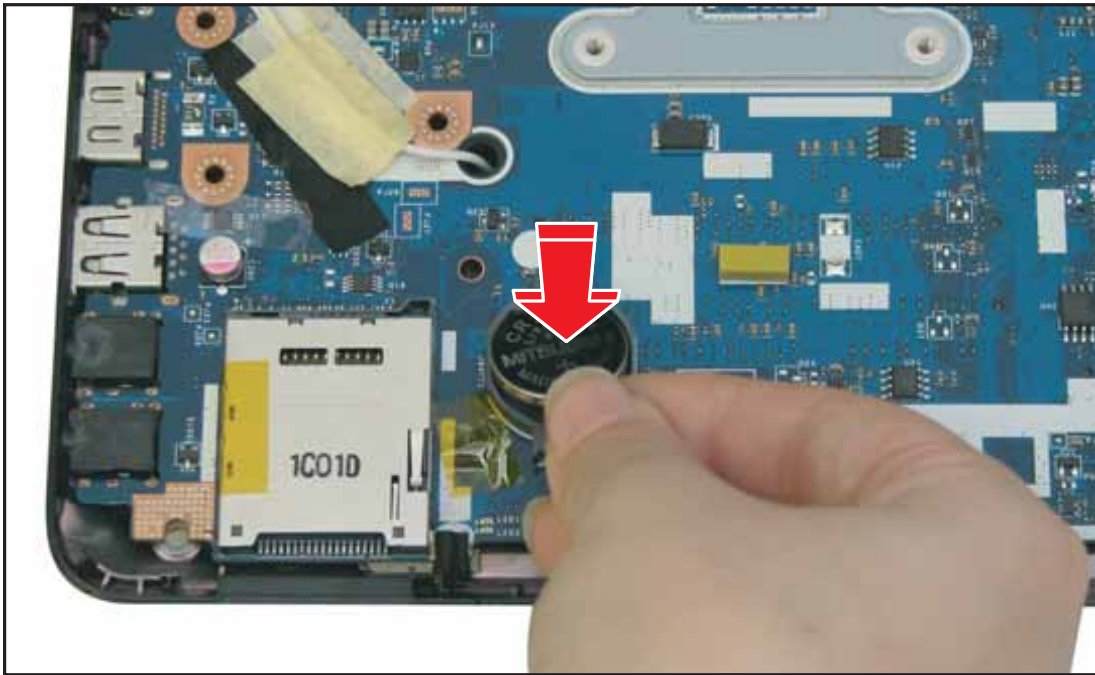

Figure 3:58.   Installing the RTC Battery

2. Install the upper case (see **Upper Case Installation** on page **3-38**).

Mainboard Removal

Prerequisite

❋ **Upper Case Removal** on page **3-34**

1. Locate the WLAN antenna cables (see **Figure 3:10**, page **3-12**).

2. Disconnect the main (black) and the auxiliary (white) antenna cable connectors and remove from the guides of the lower case.

Figure 3:59.   Removing the Antenna Cables (1 of 2)

3. Pull the auxiliary (A) antenna cable to pass through the mainboard hole, detach the adhesive tapes, and then set the antenna cable aside.
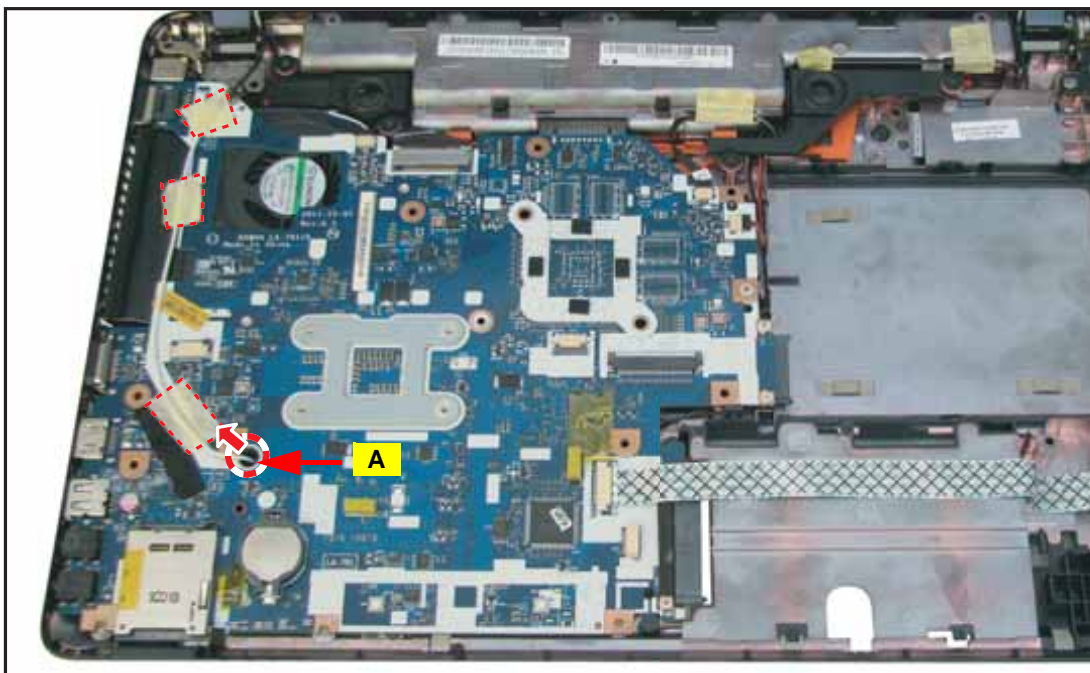

Figure 3:60.   Removing the Antenna Cables (2 of 2)

Service and Maintenance

4. Disconnect the following from the mainboard connectors:

- Left speaker cable connector (A)
- LVDS cable connector (B)
- Microphone cable connector (C)
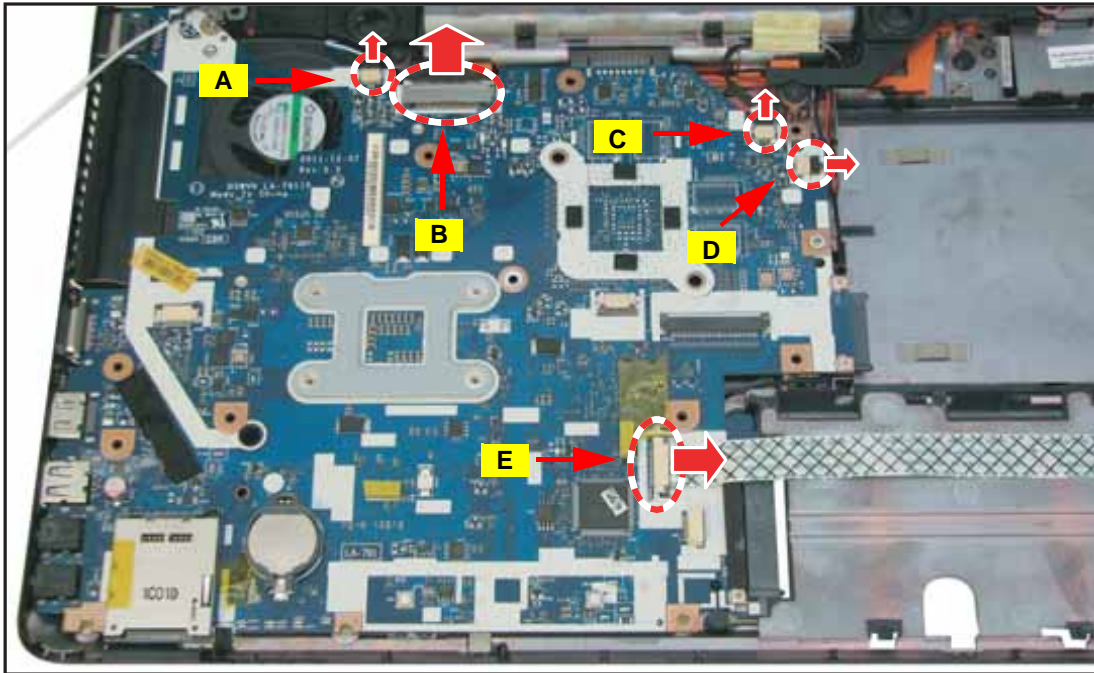- Right speaker cable connector (D)
- USB module cable connector (E)

Figure 3:61.   Disconnecting the Cable Connectors

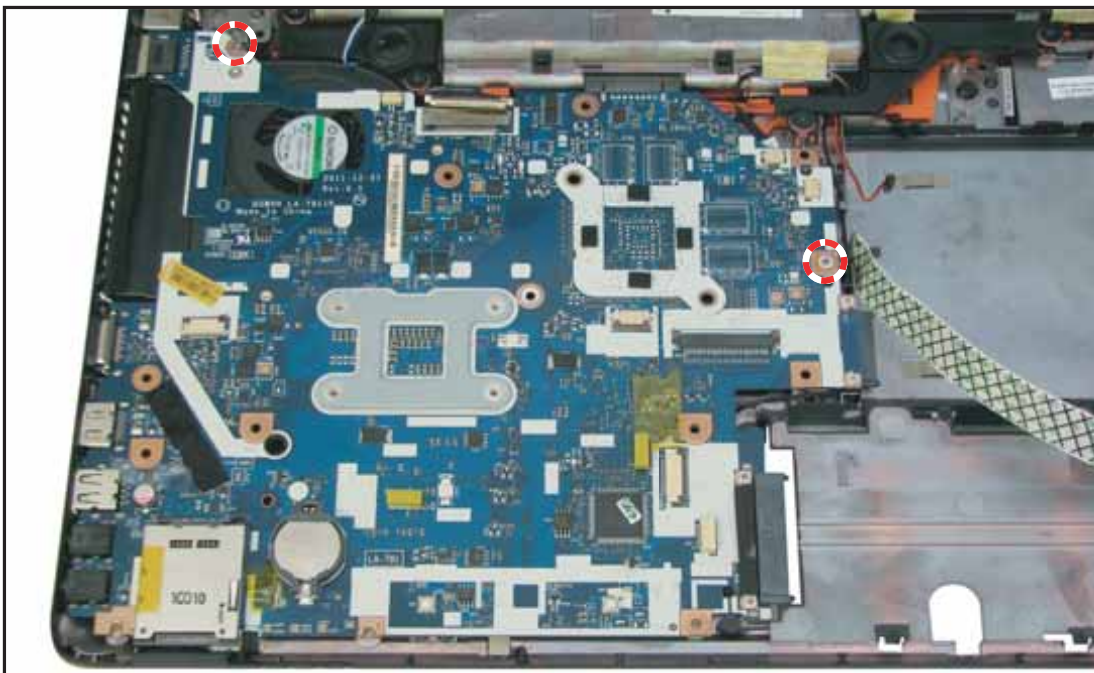**5.** Remove the two (2) screws securing the mainboard to the lower case.

Figure 3:62.   Removing the Mainboard Screws

6. Pull the mainboard by the right side to release the connectors from the slots on the lower case.

Figure 3:63.   Removing the Mainboard

7. On the underside of the mainboard, disconnect the DC-in cable connector from the mainboard connector.
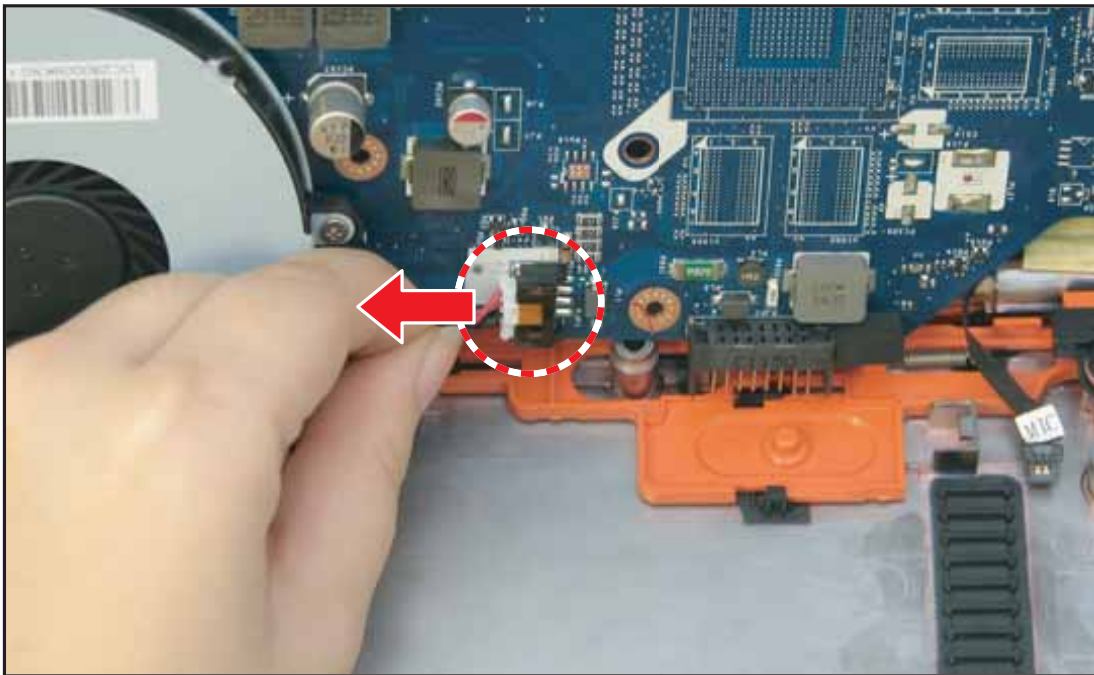

Figure 3:64.   Disconnecting the DC-In Cable

Mainboard Installation

1. Connect the DC-in cable connector to the mainboard connector.
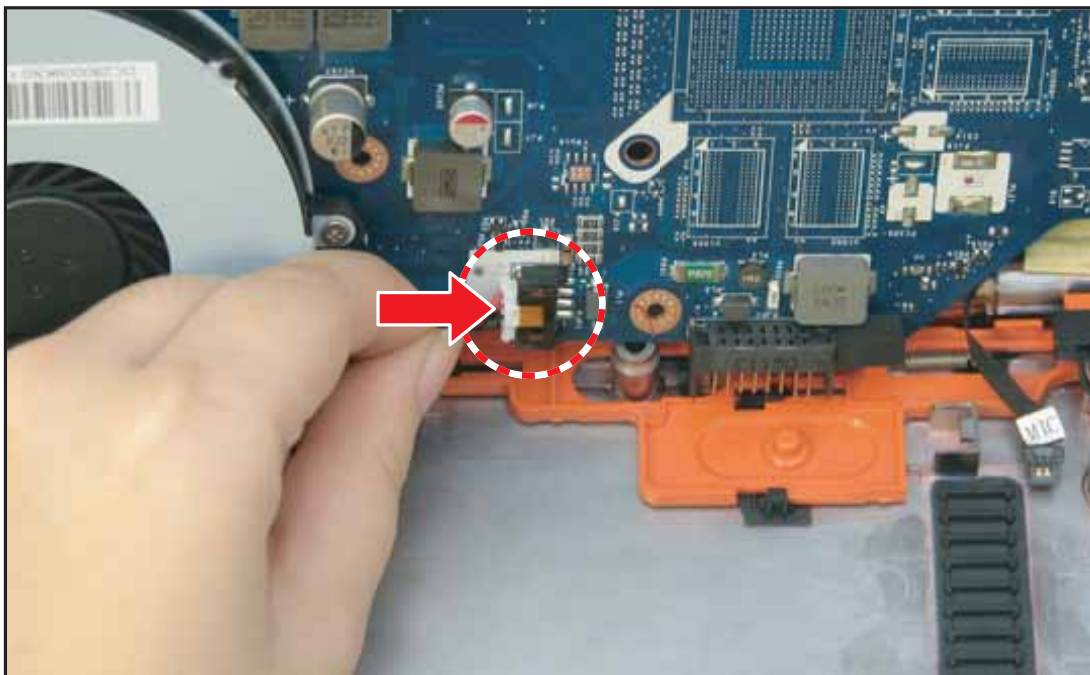

Figure 3:65.   Connecting the DC-In Cable

2. Align the left side connectors of the mainboard to the slots on the lower case, and then push to install the mainboard.
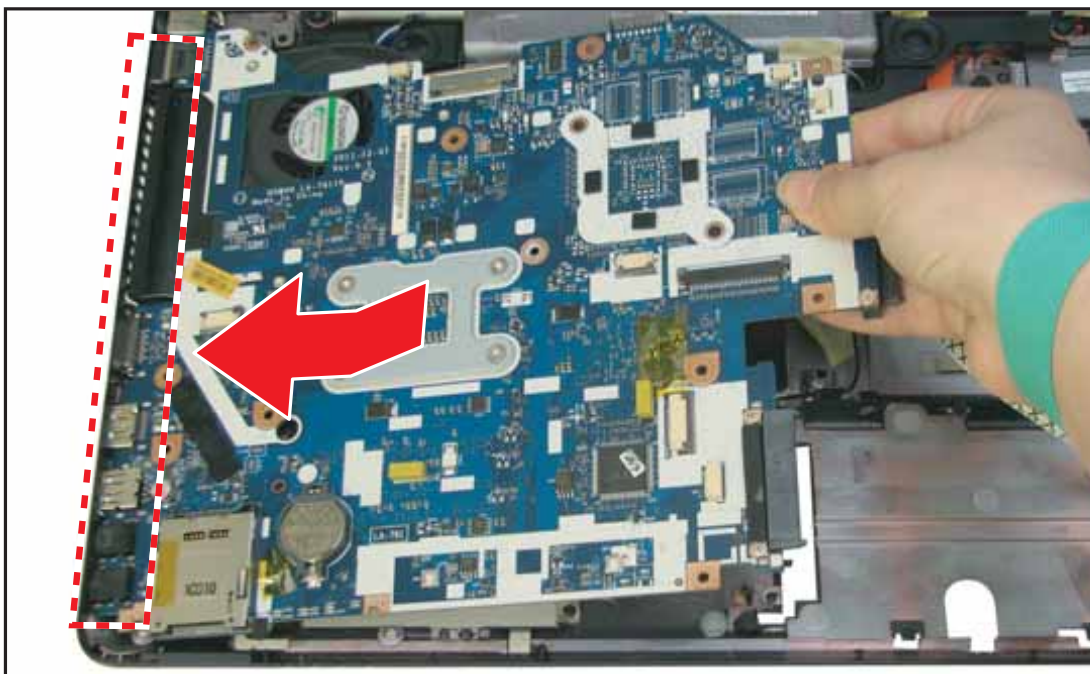

Figure 3:66.   Installing the Mainboard

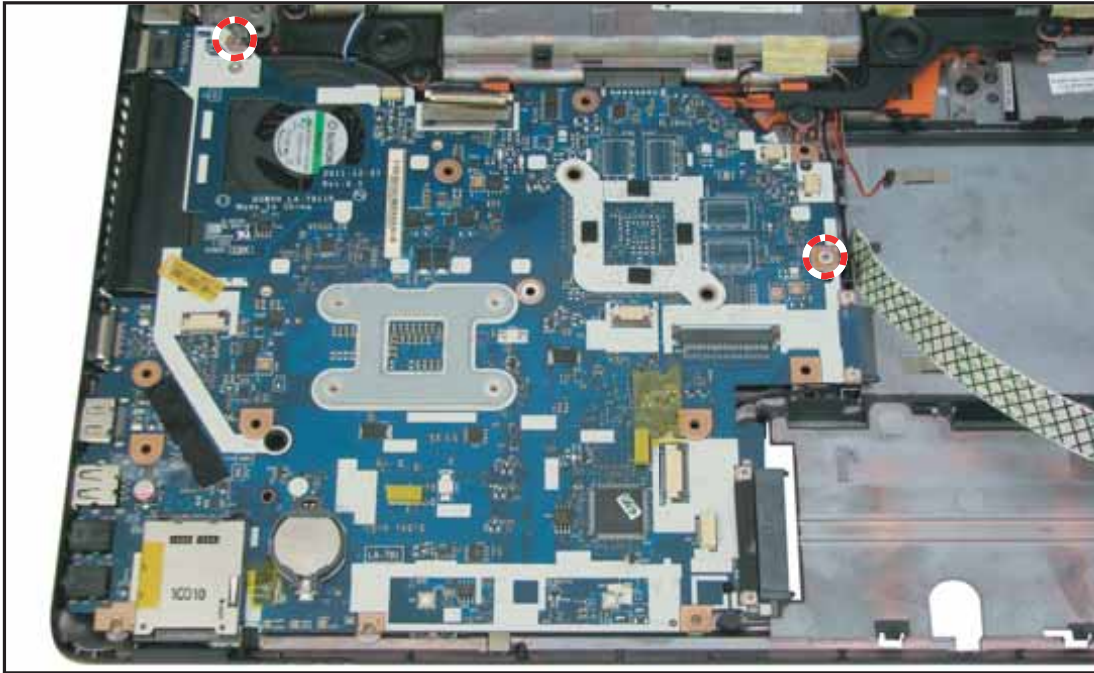**3.** Secure the two (2) screws to the mainboard and the lower case.

Figure 3:67.   Securing the Mainboard Screws

4. Connect the following to the mainboard connectors:

- Left speaker cable connector (A)
- LVDS cable connector (B)
- Microphone cable connector (C)
- Right speaker cable connector (D)
- USB module cable connector (E)
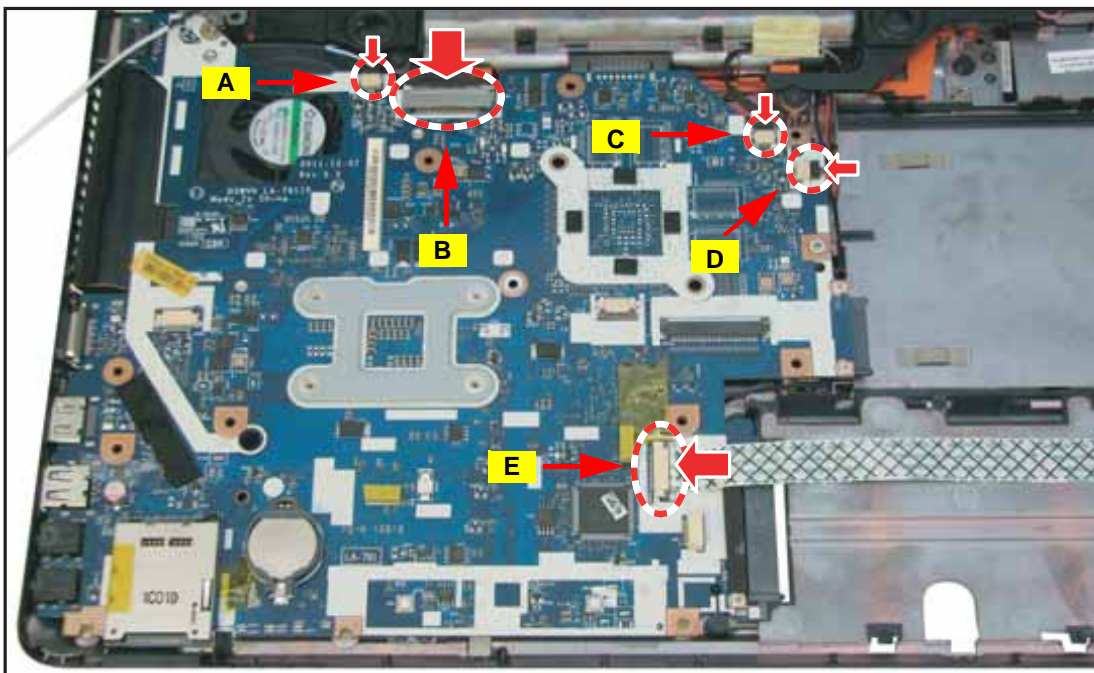
Figure 3:68.   Connecting the Cable Connectors

5. Perform the following:
   a. Route the auxiliary antenna cable (A, white) by the white line on the left side of the mainboard until it passes through the mainboard hole (B).
   b. Attach the adhesive tapes to fix the antenna cable along the white line.
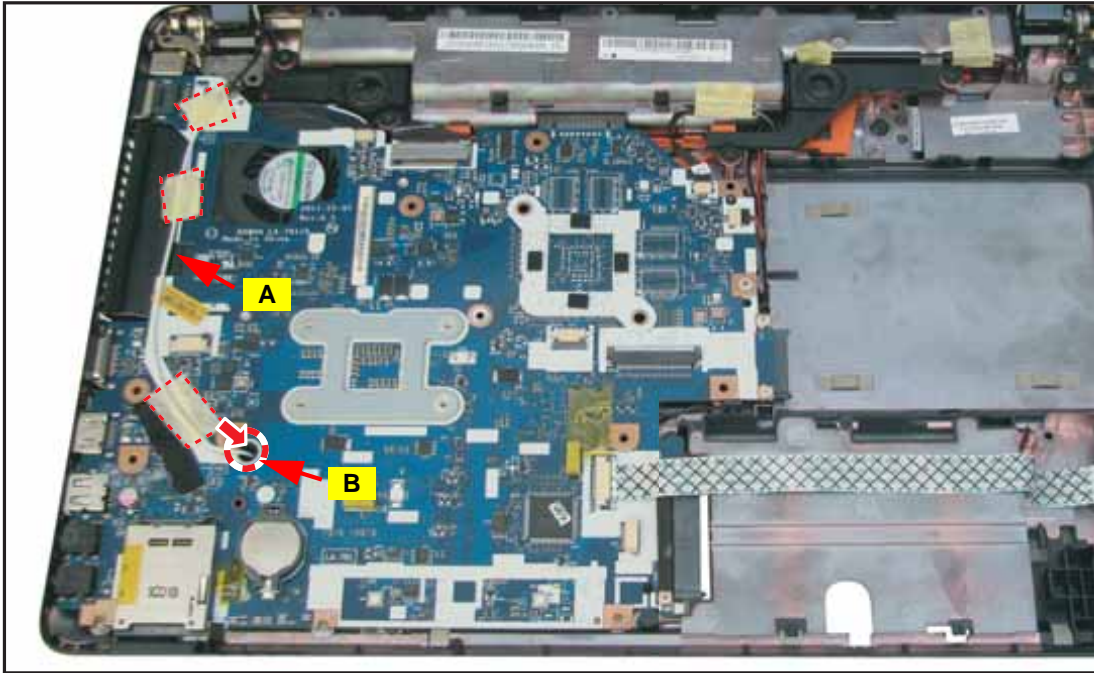
Figure 3:69.   Routing the Antenna Cable

6. Route the main (black) and the auxiliary (white) antenna cables on the guides on the lower case.

Figure 3:70.   Routing the Antenna Cables (2 of 2)

7. Perform step 3 of the **WLAN Module Installation** on page **3-28**.

Table 3:9. Mainboard Screws

Screw Name	Screw Type	Quantity
M 2.5 x 5.0		2

Fan Removal

Prerequisite:

❊ **Mainboard Removal** on page **3-43**

1. Disconnect the fan cable connector from the mainboard connector.
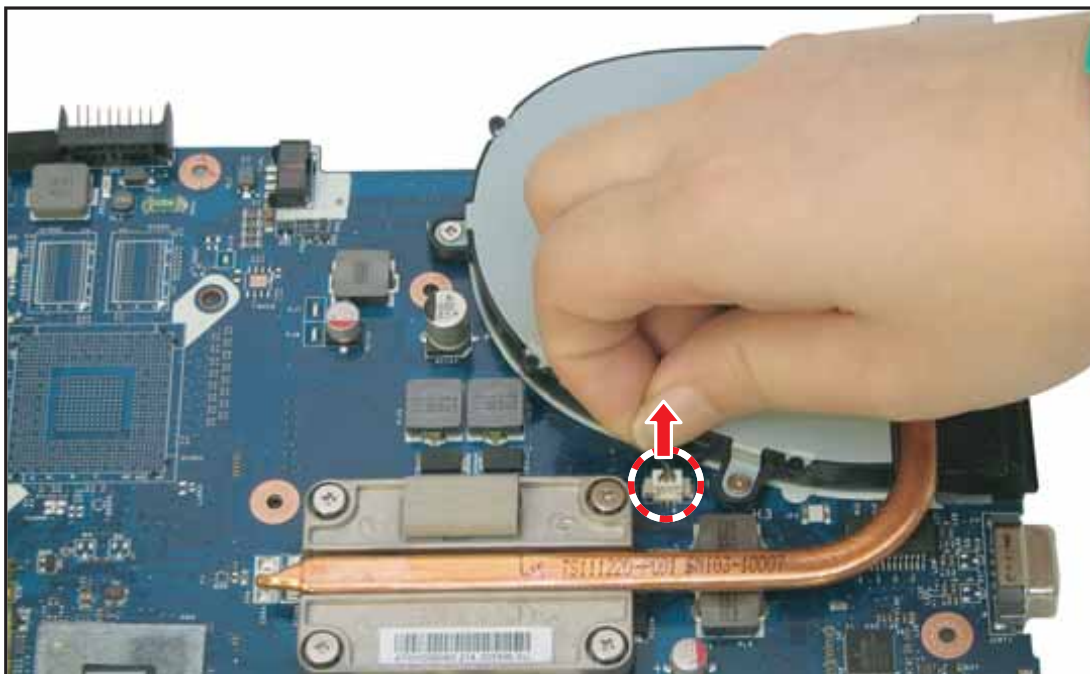
Figure 3:71.   Disconnecting the Fan Cable

2. Remove the three (3) screws securing the fan to the thermal module.
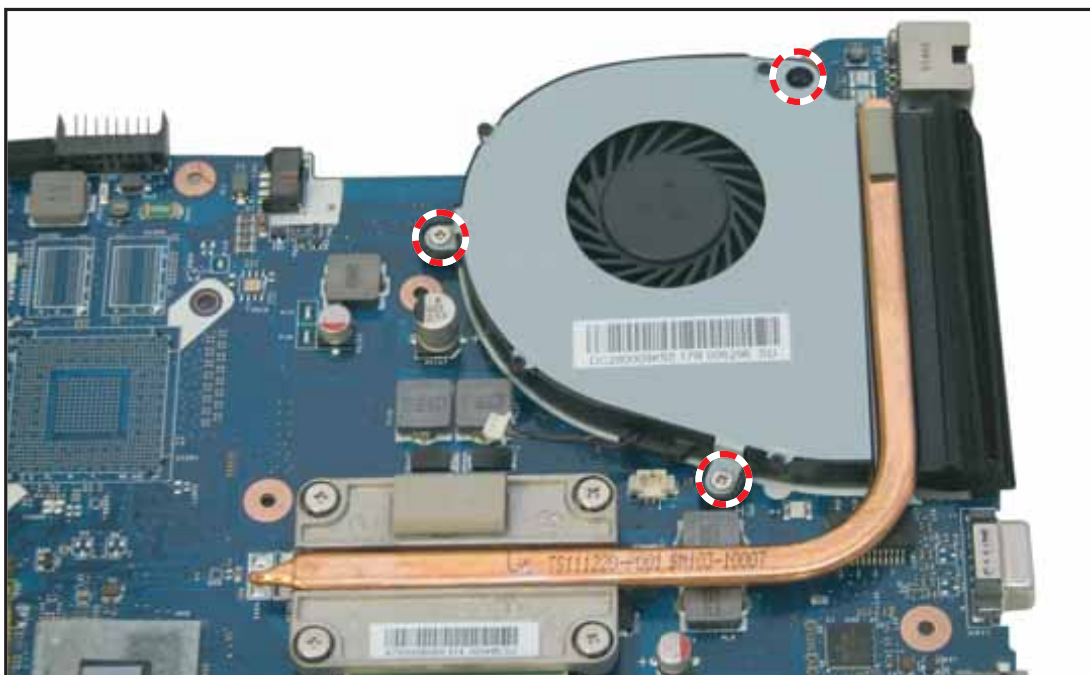
Figure 3:72.   Removing the Fan Screws

3. Lift to remove the fan.
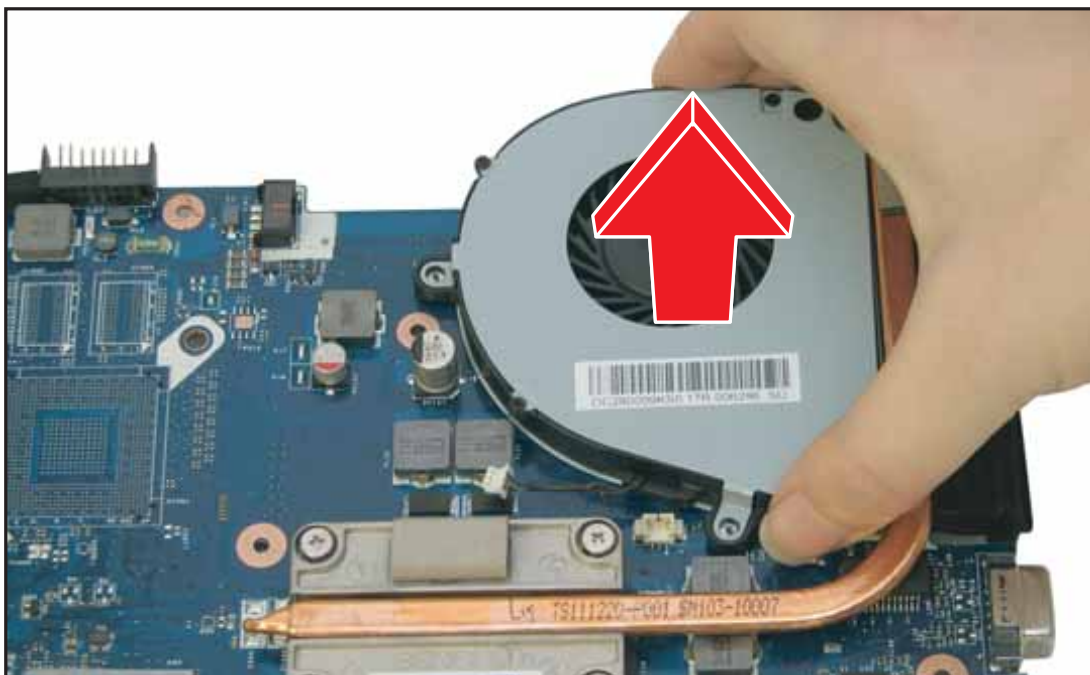
Figure 3:73. Removing the Fan

Fan Installation

1. Align the fan to its slot on the mainboard.
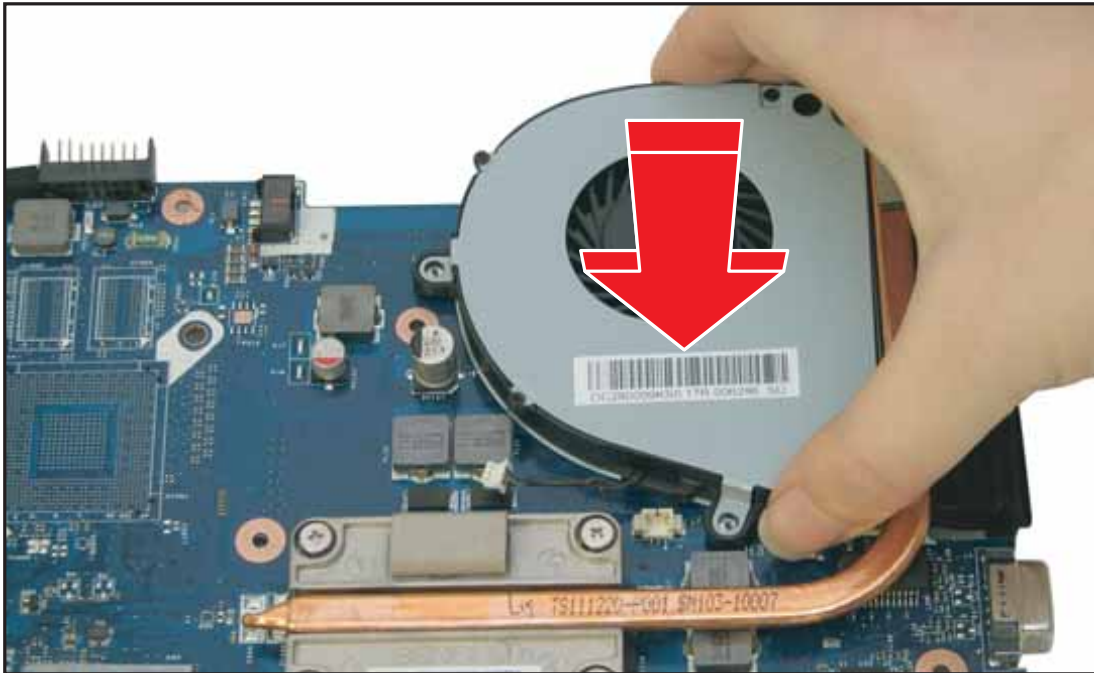
Figure 3:74.   Installing the Fan

2. Attach the three (3) screws to secure the fan.
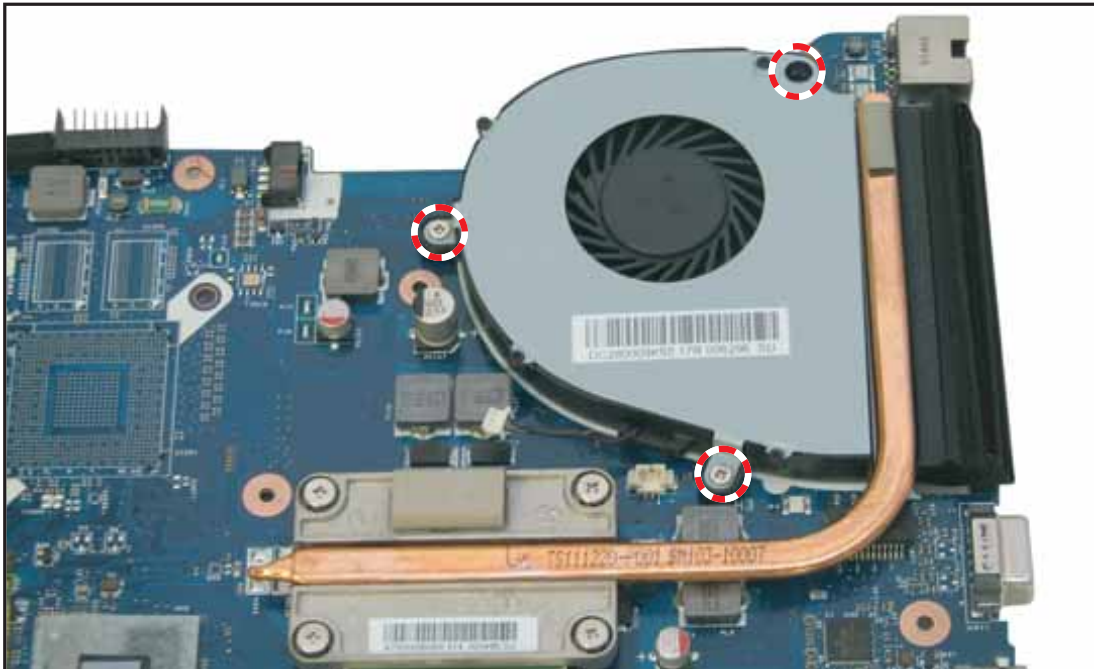
Figure 3:75.   Securing the Fan Screws

3. Connect the fan cable connector to the mainboard connector.
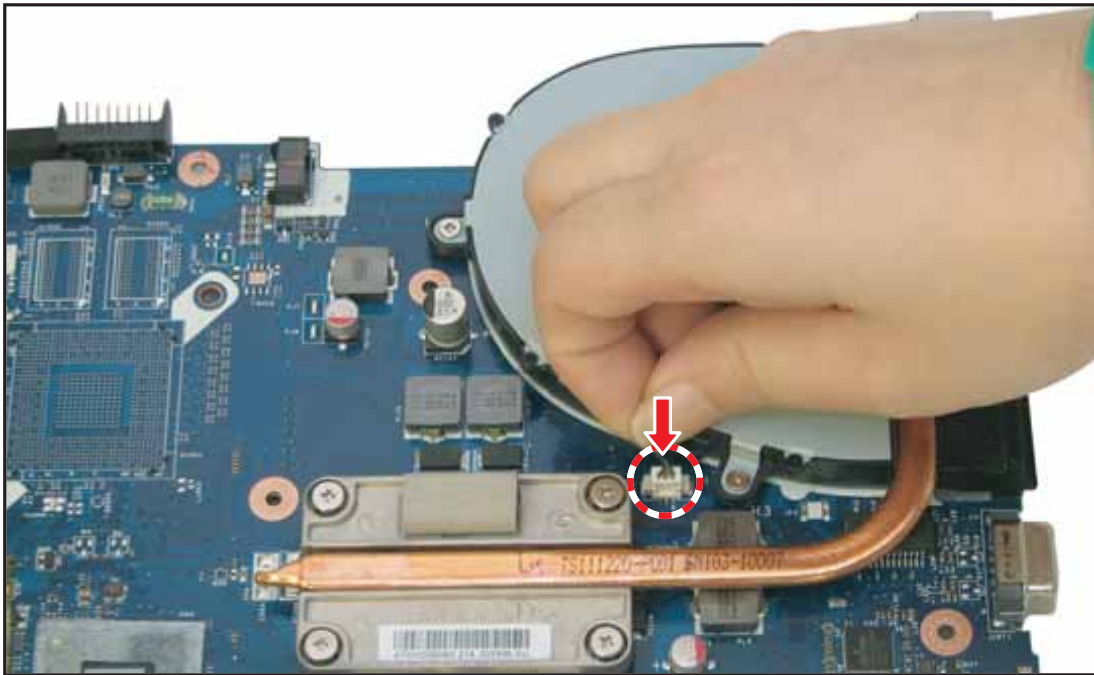
Figure 3:76. Connecting the Fan Cable

Table 3:10. Fan Screws

Screw Name	Screw Type	Quantity
M 2.0 x 5.0		3

Thermal Module Removal

Prerequisite:

❄ **Mainboard Removal** on page **3-43**

1. Remove the four (4) screws securing the thermal module to the mainboard.
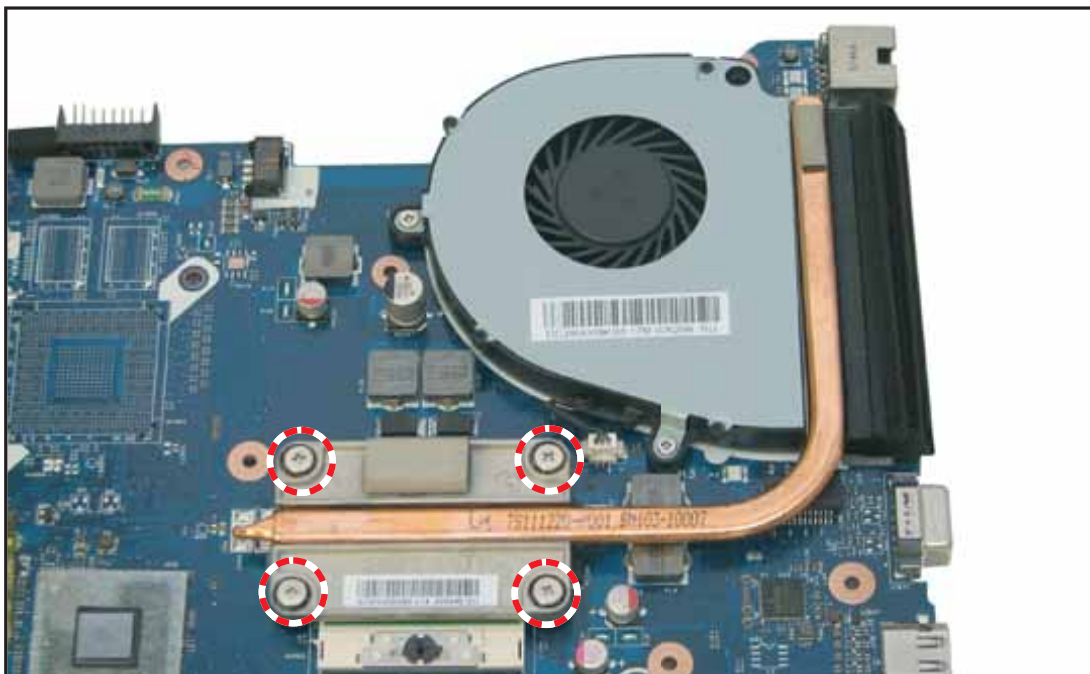
Figure 3:77.   Removing the Thermal Module Screws

2. Lift to remove the thermal module.
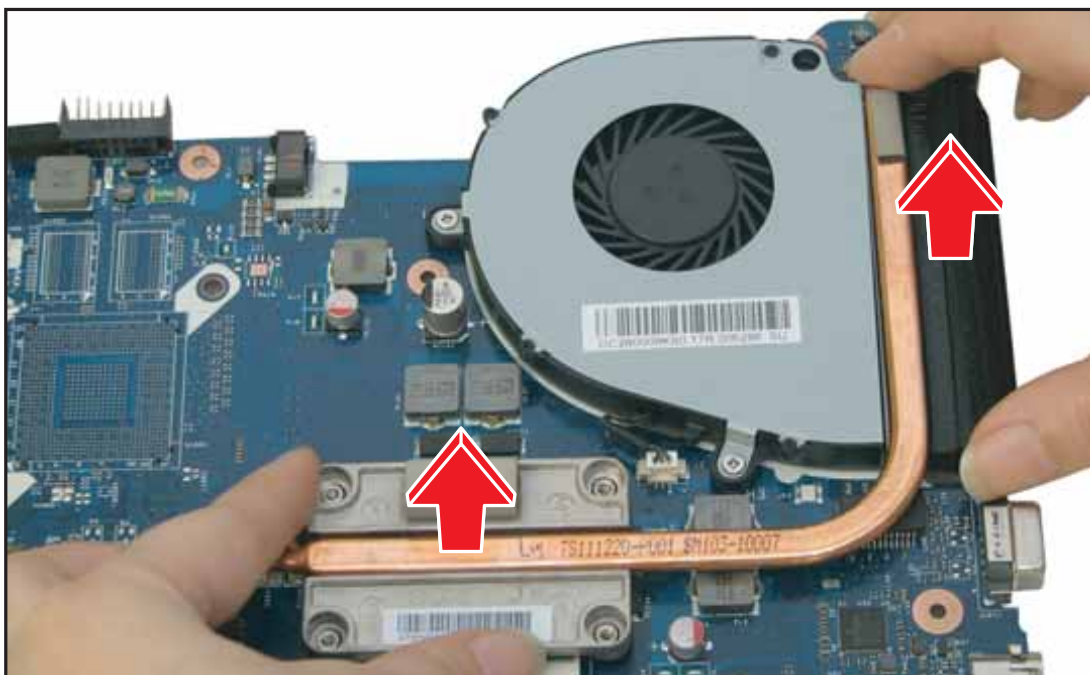
Figure 3:78.   Removing the Thermal Module

Service and Maintenance

Thermal Module Installation

1. Align the thermal module to the mainboard.
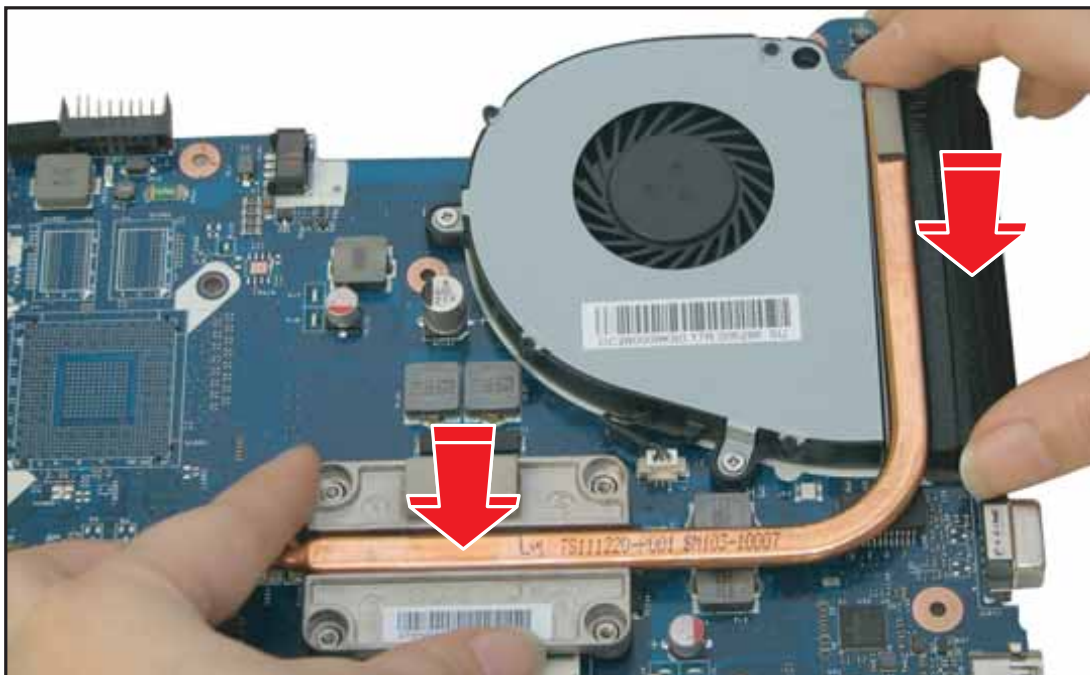
Figure 3:79.   Installing the Thermal Module

2. Attach the four (4) screws to secure the thermal module to the mainboard.
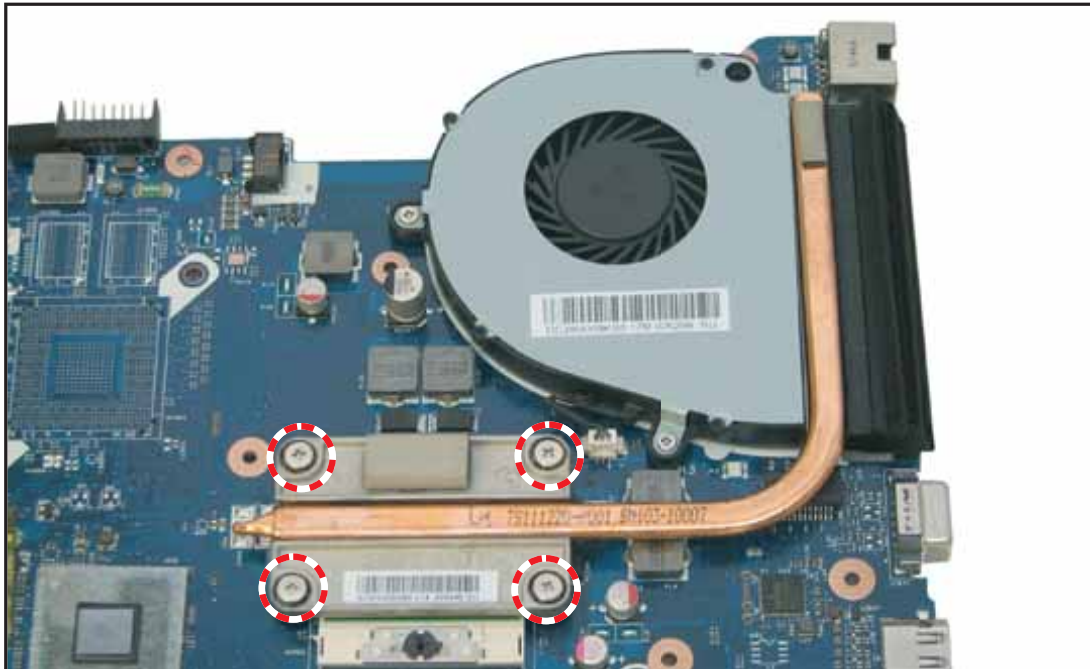
Figure 3:80.   Securing the Thermal Module Screws

3. Install the mainboard (see **Mainboard Installation** on page **3-46**).

Table 3:11. Thermal Module Screws

Screw Name	Screw Type	Quantity
M 2.3 x 3.2		4

CPU Removal

Prerequisite:

  ❋ **Thermal Module Removal** on page **3-54**

1. Using a flat screwdriver, turn the captive screw 180⁰ counter-clockwise to release the CPU.
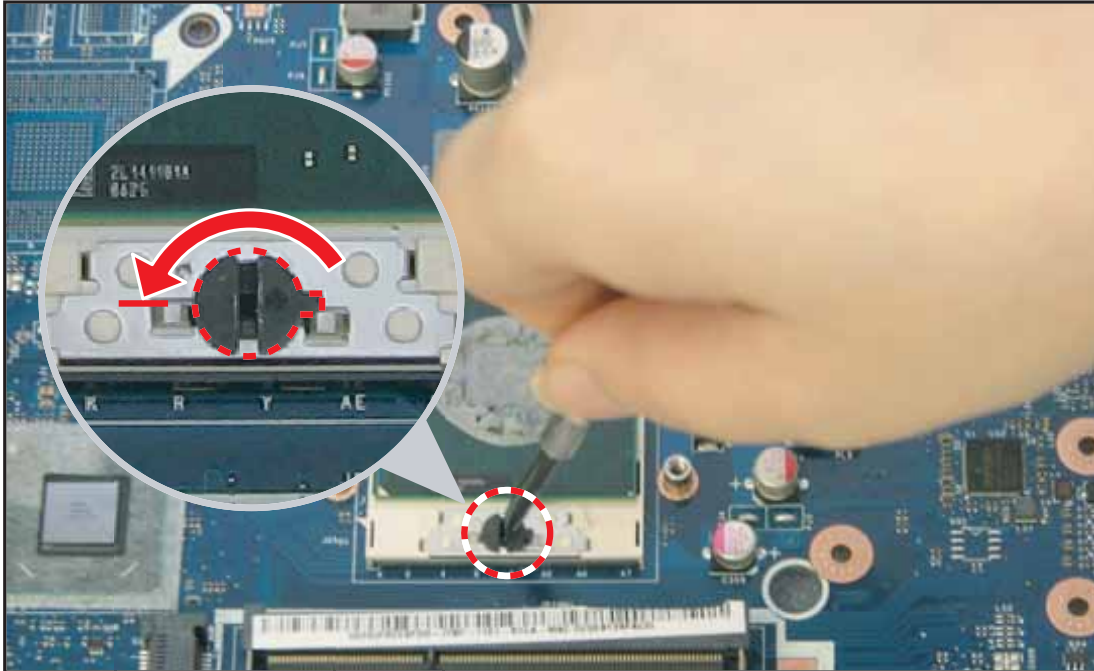
Figure 3:81.   Removing the CPU (1 of 2)

2. Lift to remove the CPU from the mainboard socket.
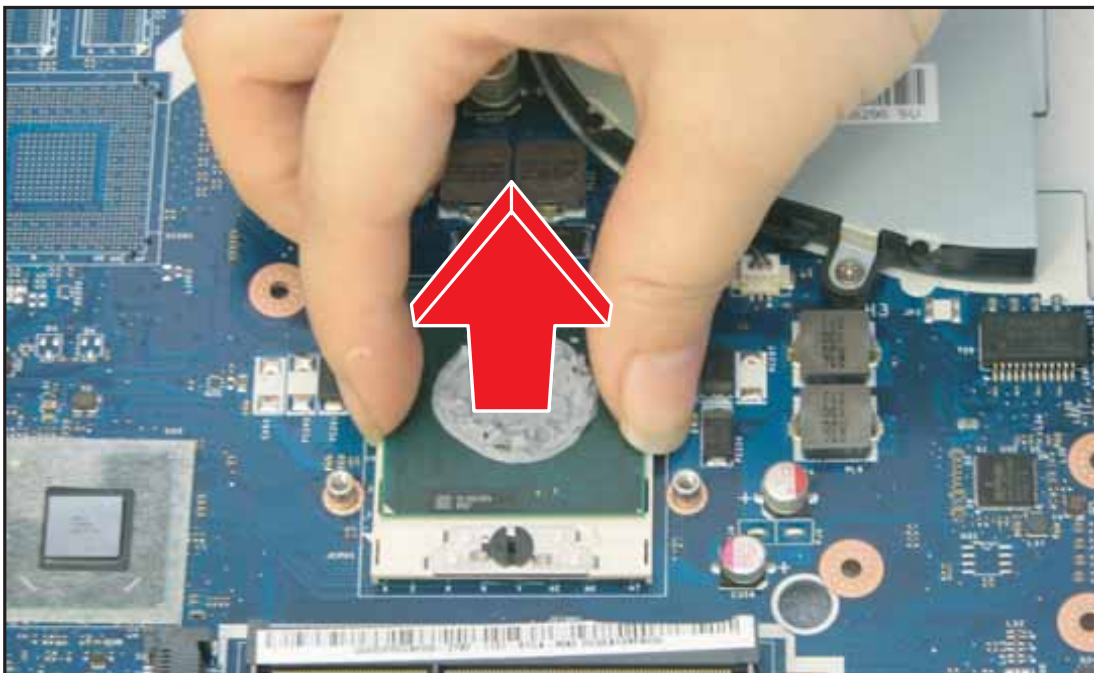
Figure 3:82.   Removing the CPU (2 of 2)

Service and Maintenance

CPU Installation

1. Align and place the CPU on the socket observing the markings on the socket.
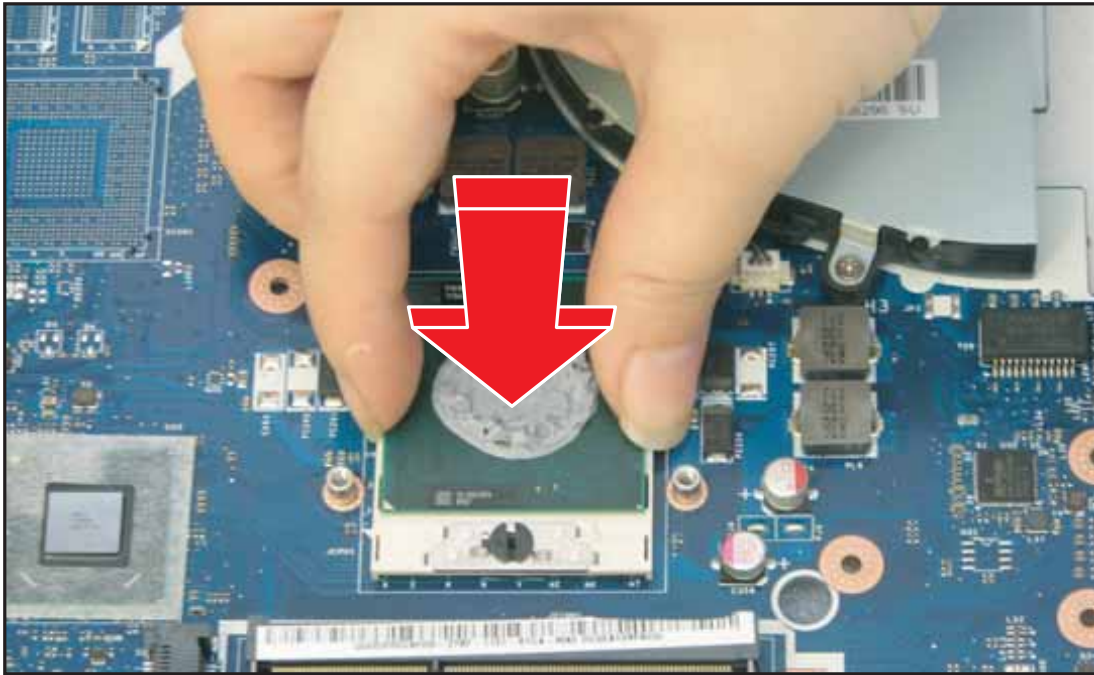
Figure 3:83.   Installing the CPU (1 of 2)

2. Using a flat screwdriver, turn the captive screw 180º clockwise to lock the CPU to the socket.
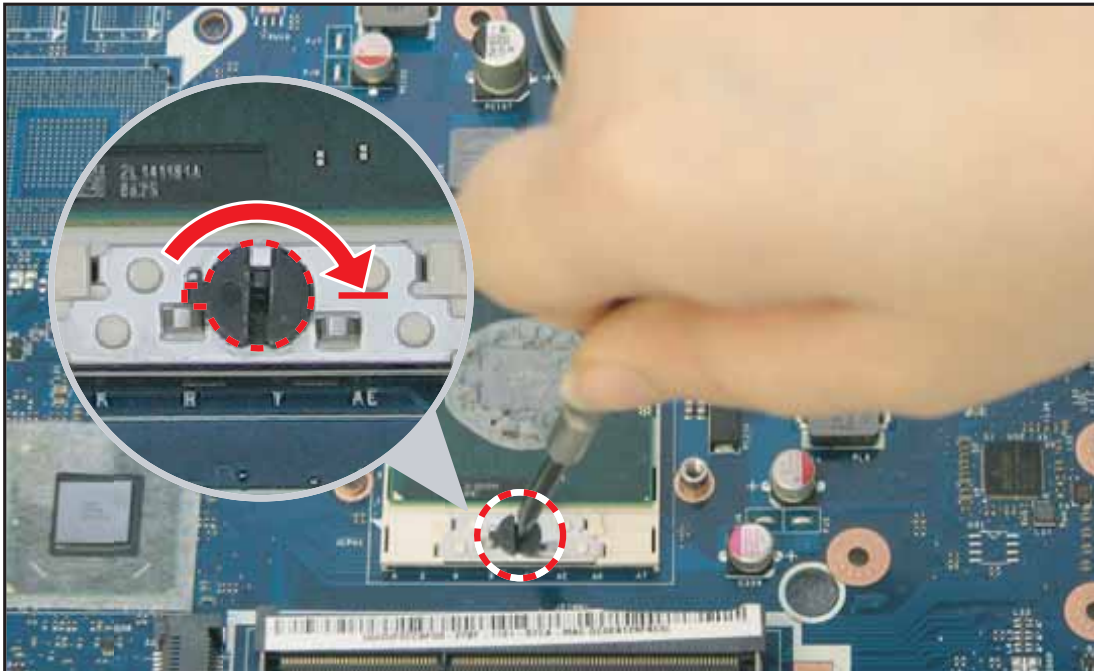
Figure 3:84.   Installing the CPU (2 of 2)

3. Install the thermal module (see **Thermal Module Installation** on page **3-55**).

Speaker Removal

Prerequisite:

❋ **Upper Case Removal** on page **3-34**

1. Disconnect the left speaker cable connector from the mainboard connector.
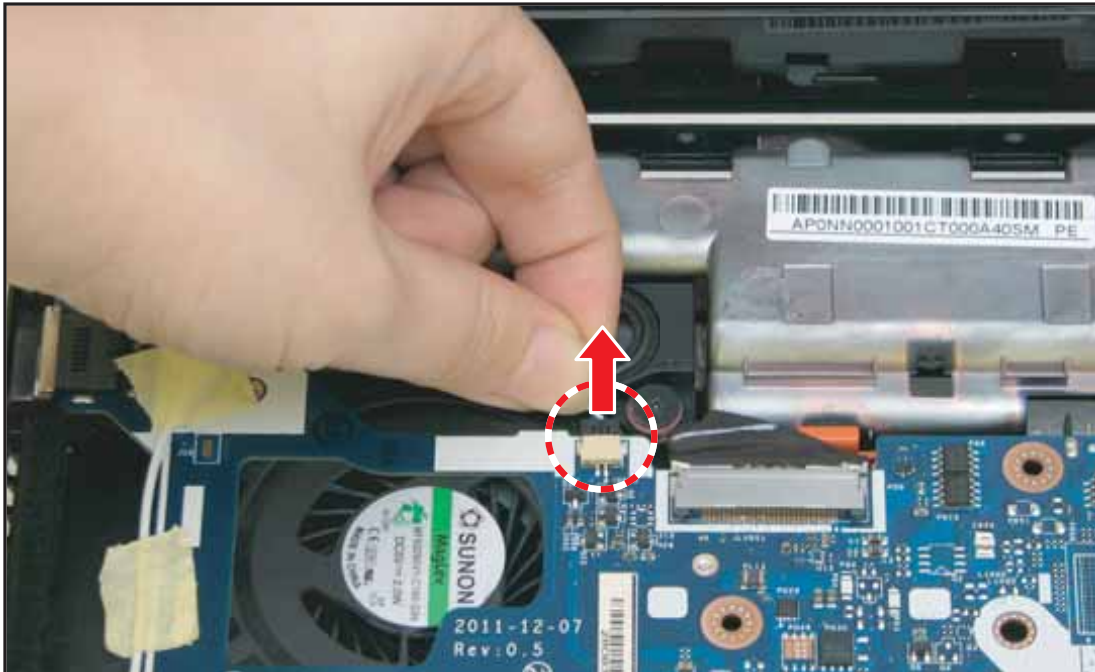
Figure 3:85. Removing the Left Speaker Cable

2. Remove the two (2) screws securing the left speaker.
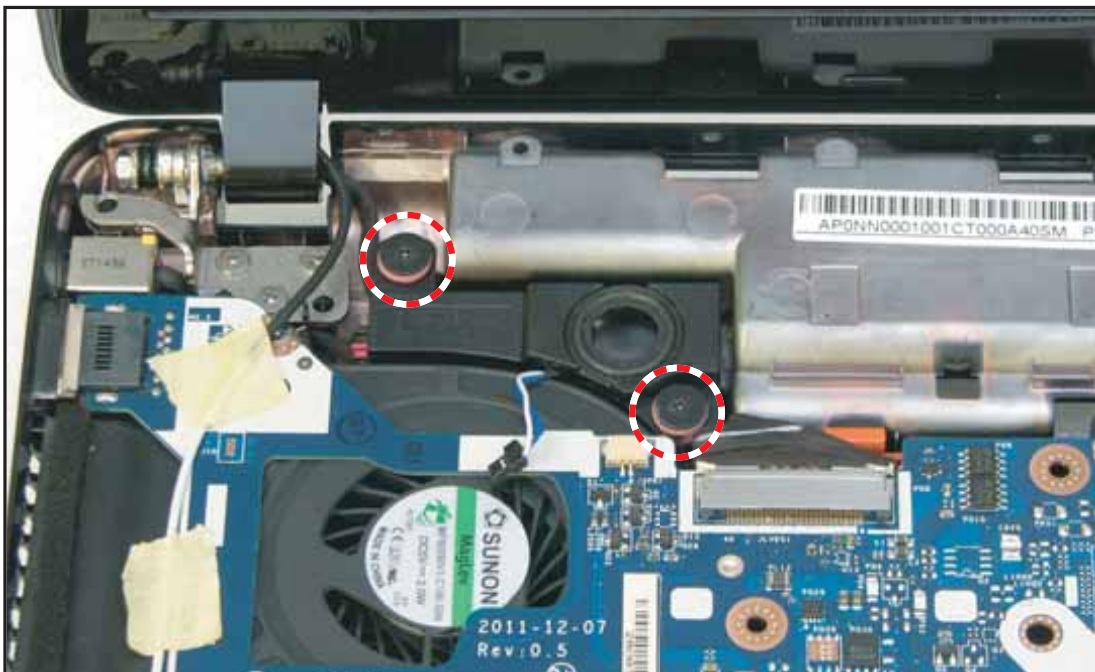
Figure 3:86. Removing the Left Speaker Screws

Service and Maintenance

3. Lift to remove the left speaker.

Figure 3:87.   Removing the Left Speaker

4. Disconnect the right speaker cable connector from the mainboard connector.

Figure 3:88.   Removing the Right Speaker Cable

5. Remove the two (2) screws securing the right speaker.

Figure 3:89.   Removing the Right Speaker Screws

6. Lift to remove the right speaker.
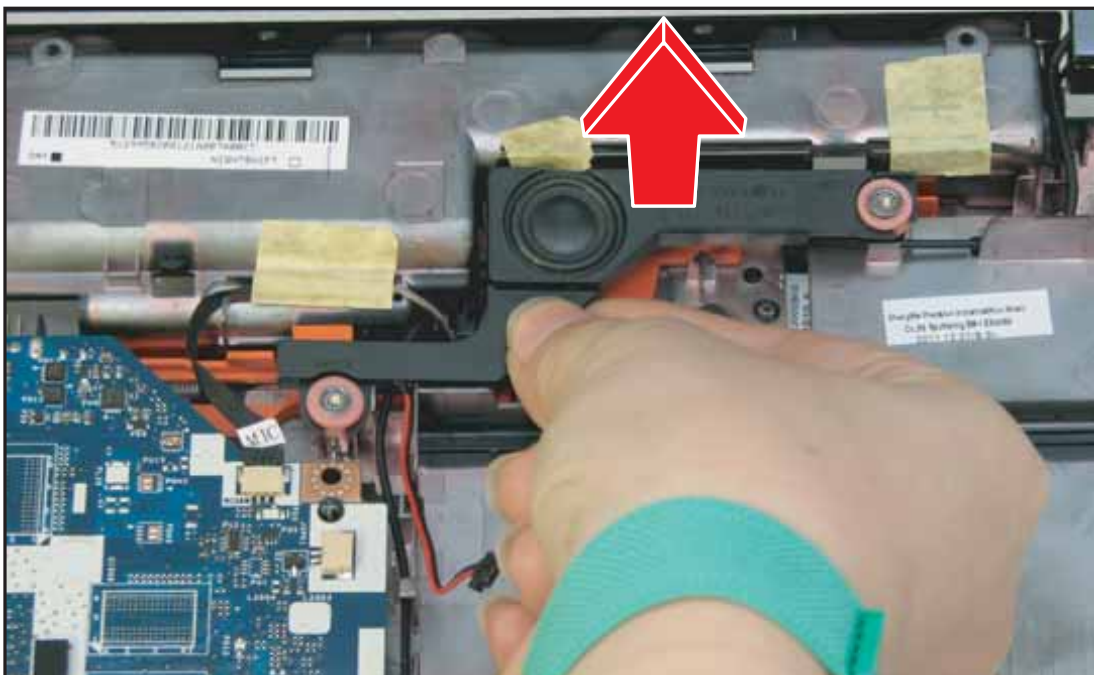
Figure 3:90.   Removing the Right Speaker

Service and Maintenance

Speaker Installation

1. Align and place the right speaker on its slot on the lower case.
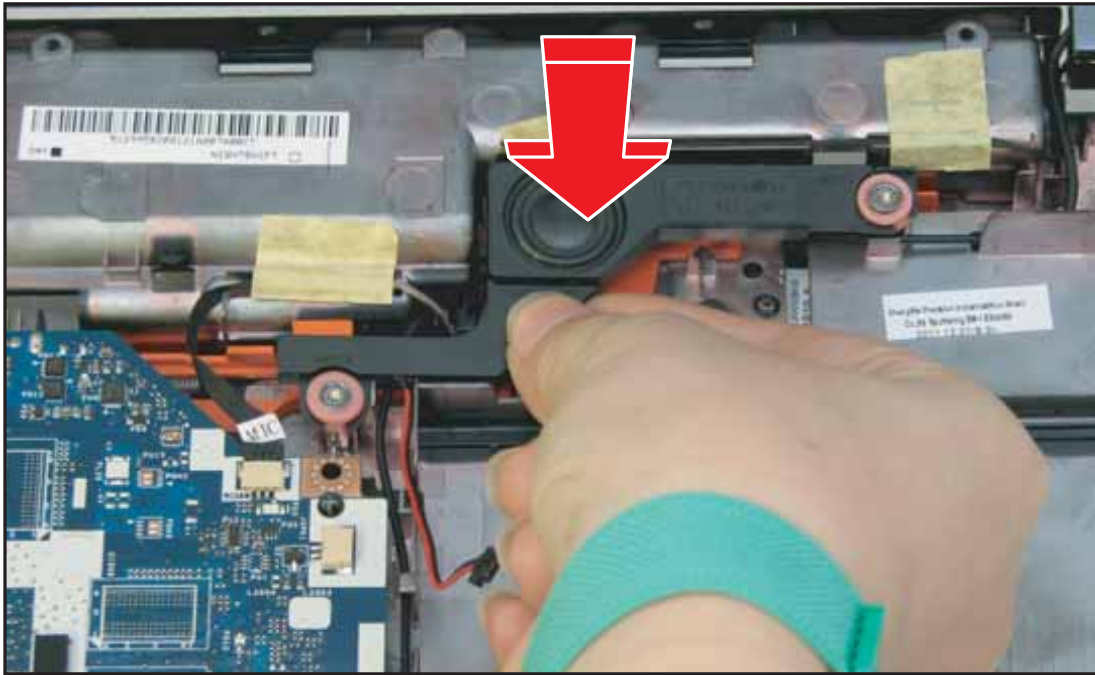
Figure 3:91.   Installing the Right Speaker

2. Attach the two (2) screws to secure the right speaker.

Figure 3:92.   Securing the Right Speaker Screws

3-62

3. Connect the right speaker cable connector to the mainboard connector and hook the cable in place.
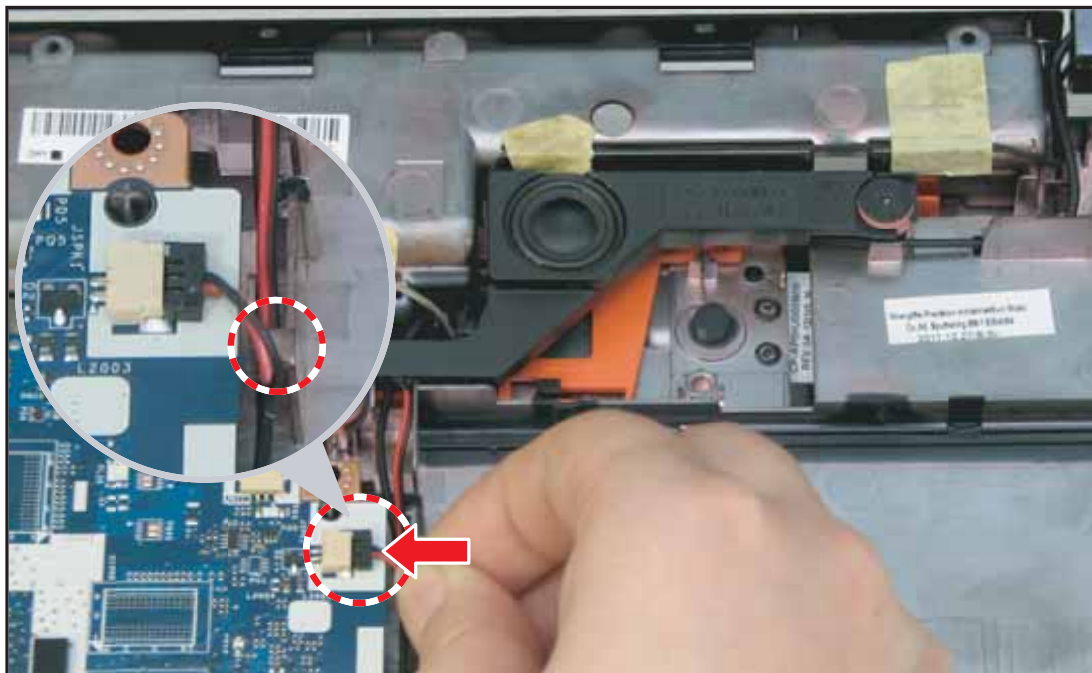
Figure 3:93. Connecting the Right Speaker Cable

4. Align and place the left speaker on its slot on the lower case.
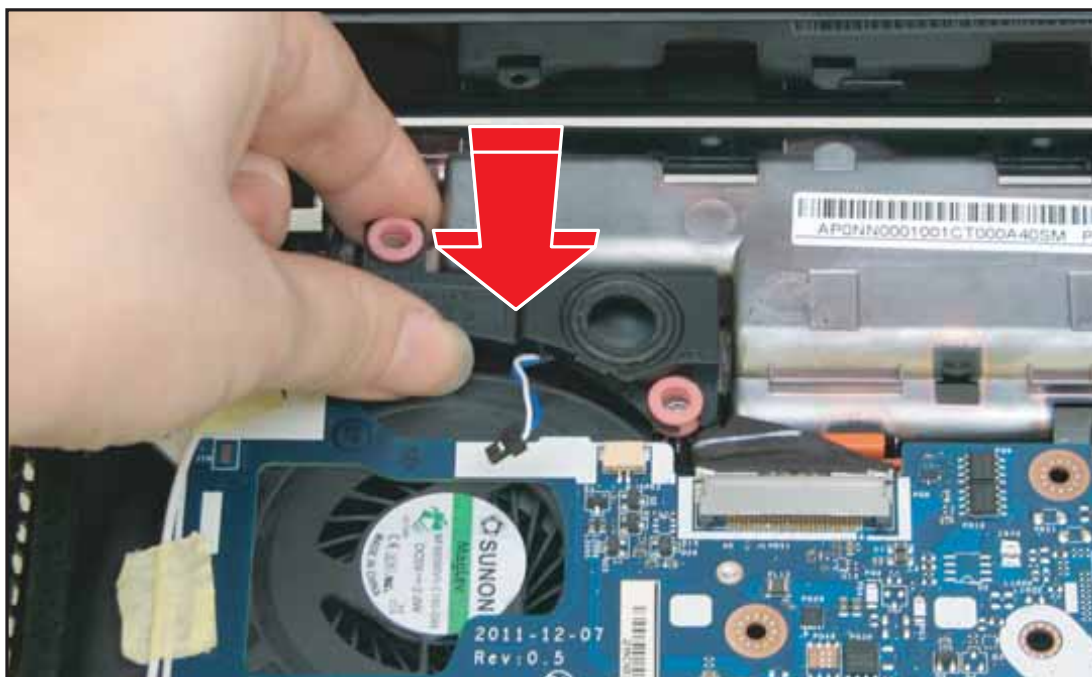
Figure 3:94. Installing the Left Speaker

5. Attach the two (2) screws to secure the left speaker.
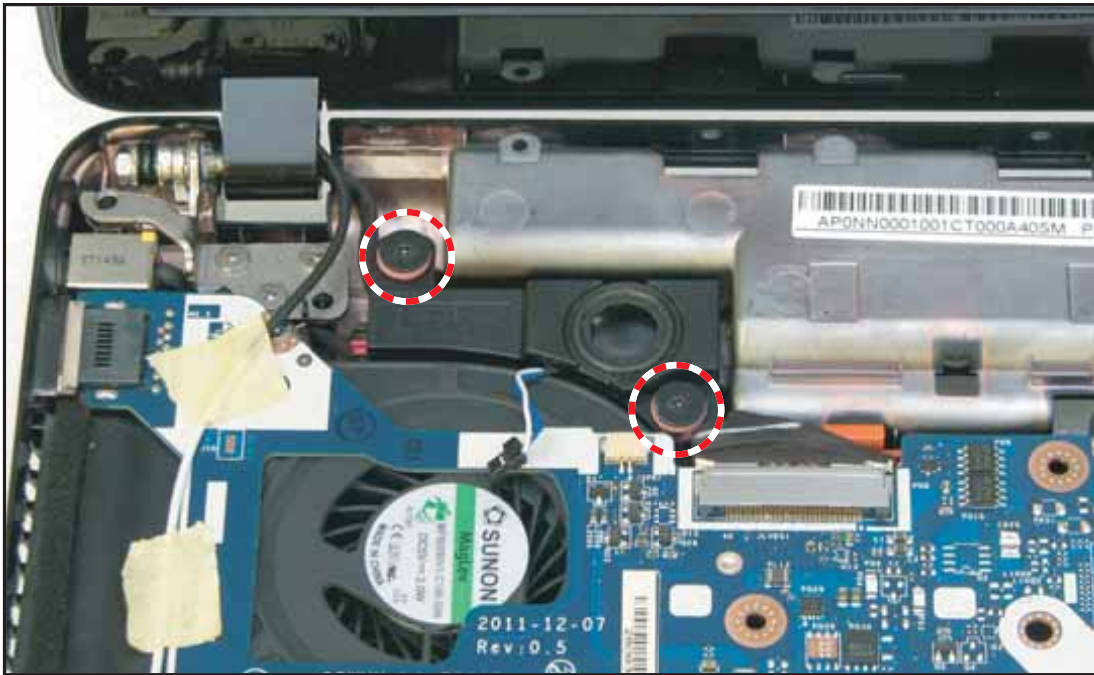
Figure 3:95.   Installing the Left Speaker Screws

6. Connect the left speaker cable connector to the mainboard connector.
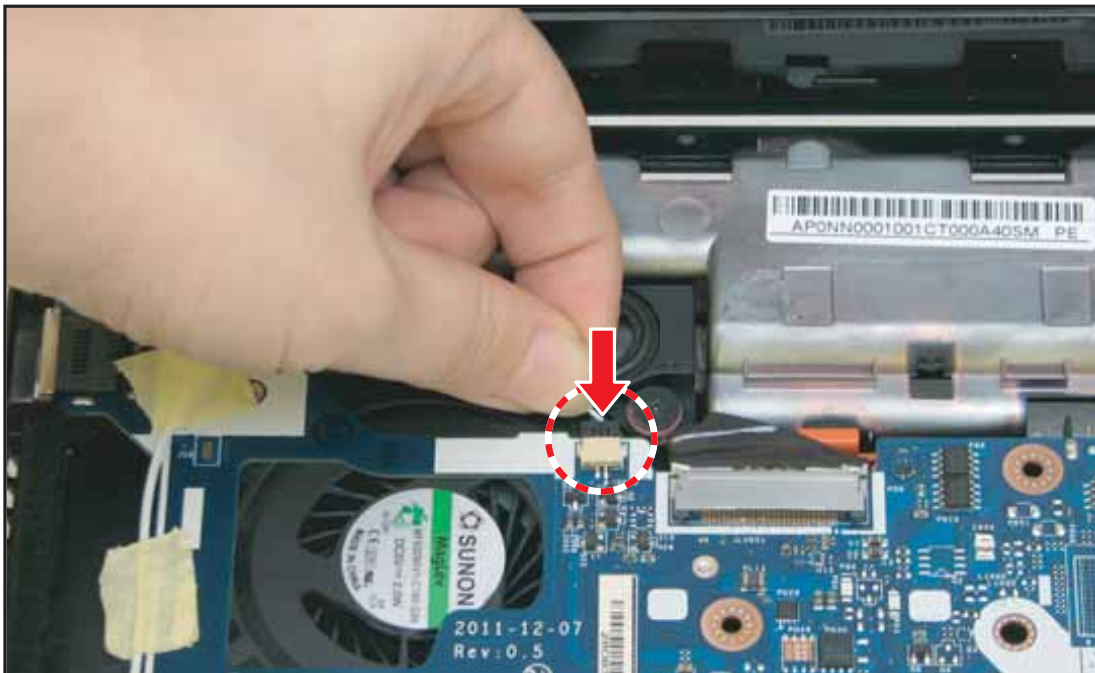
Figure 3:96.   Connecting the Left Speaker Cable

Table 3:12. Speakers Screws

Screw Name	Screw Type	Quantity
M 2.0 x 3.0		4

3-64   Service and Maintenance

USB Module Removal

Prerequisite

❊ **Upper Case Removal** on page **3-34**

1. Locate the USB module (see **Figure 3:50**, page **3-37**).

2. Push the connector clips outwards to release the USB module cable connector.
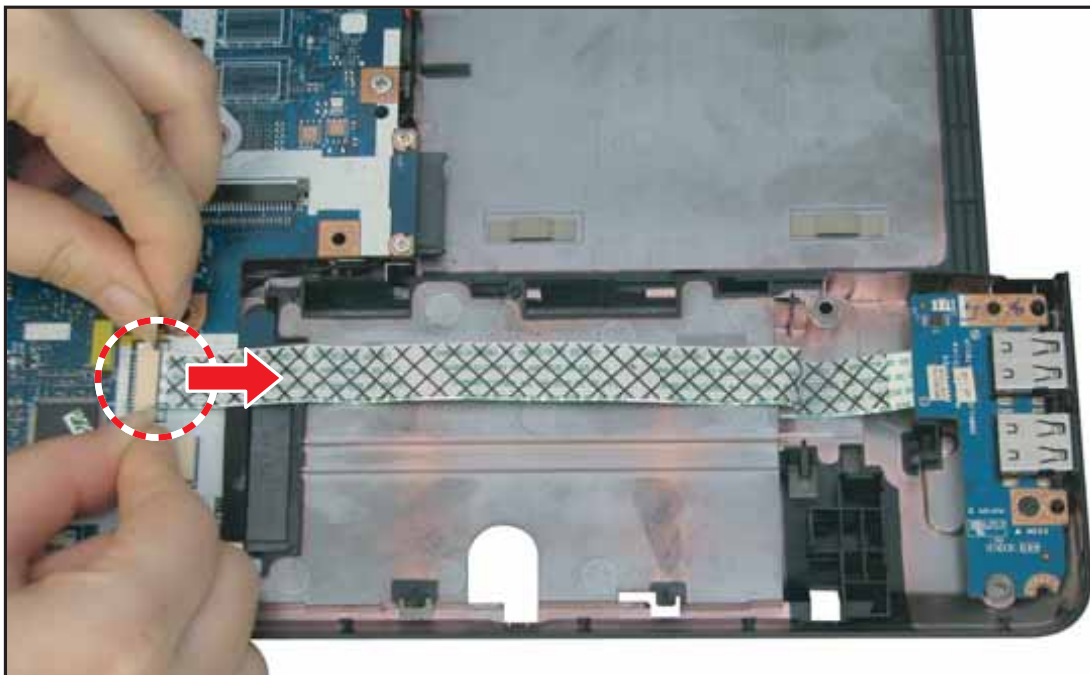
Figure 3:97.   Disconnecting the USB Module Cable

3. Remove the screw securing the USB module to the lower case.
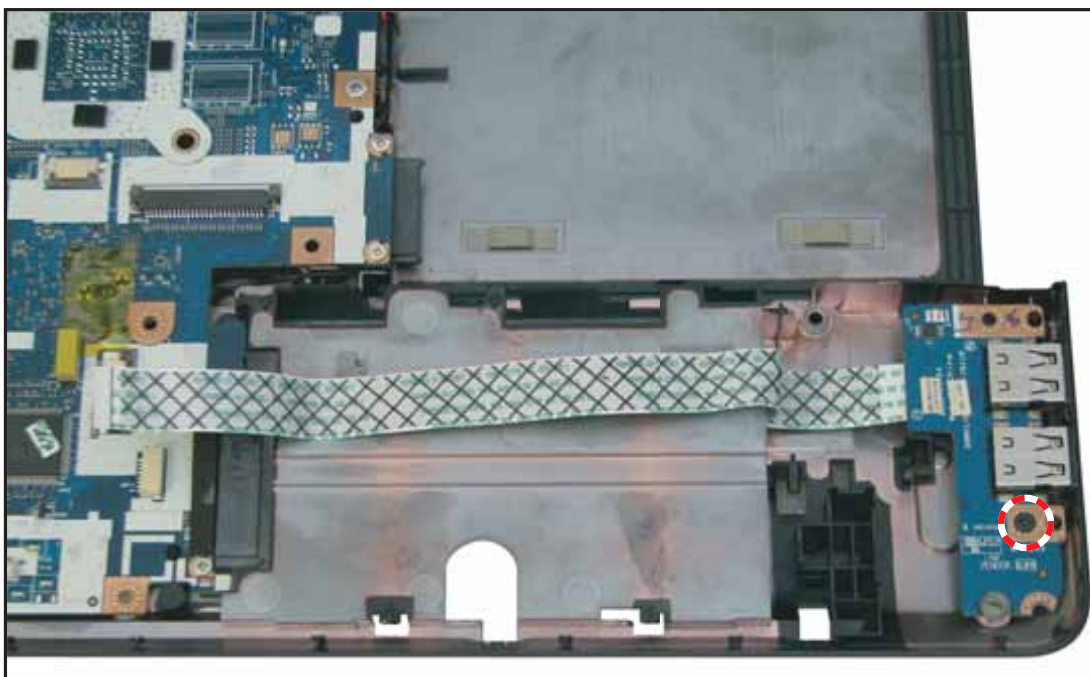
Figure 3:98.   Removing the USB Module Screw

Service and Maintenance

4. Lift to remove the USB module.
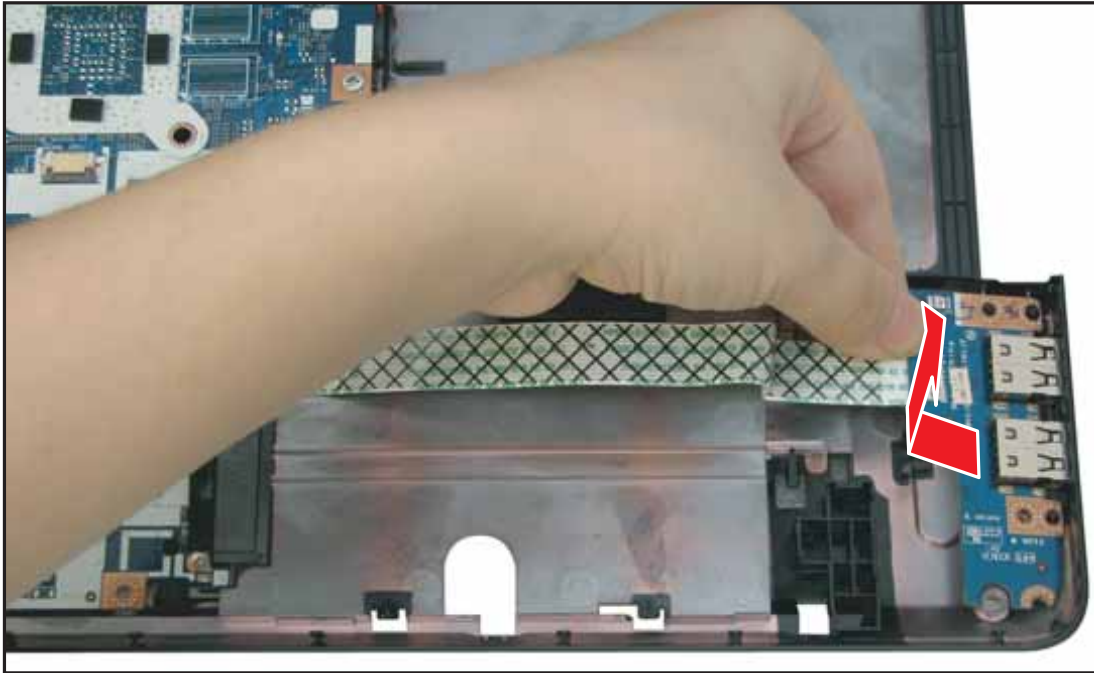
Figure 3:99.   Removing the USB Module

USB Module Installation

1. Align the USB connectors to the connector slots on the lower case.
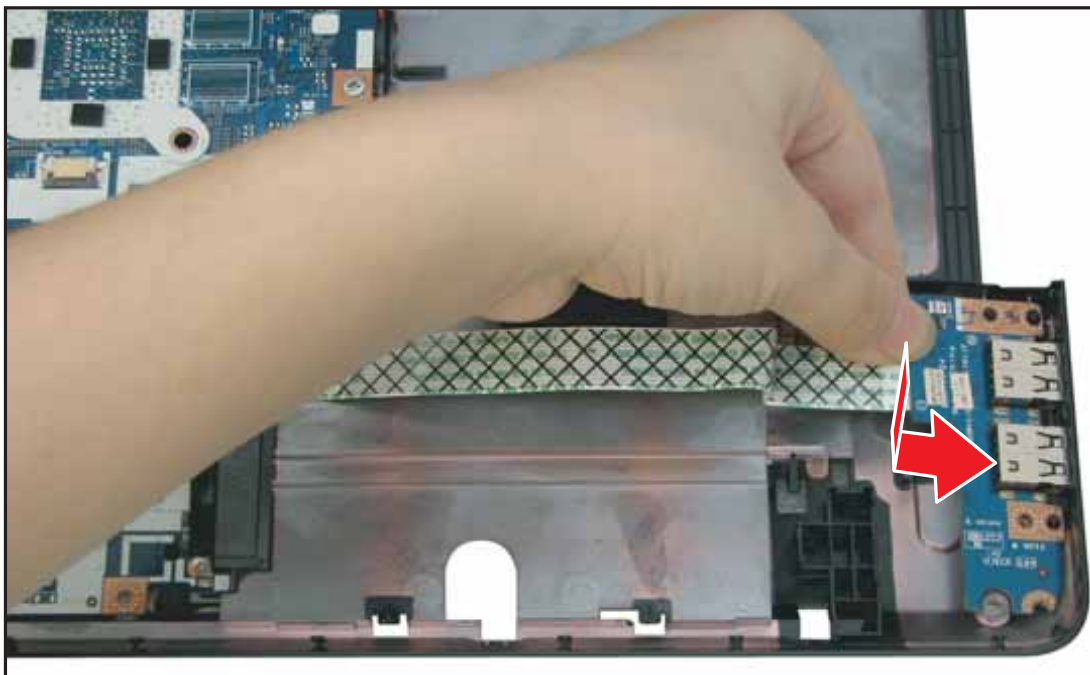
Figure 3:100.   Installing the USB Module

2. Attach the screw to secure the USB module to the lower case.
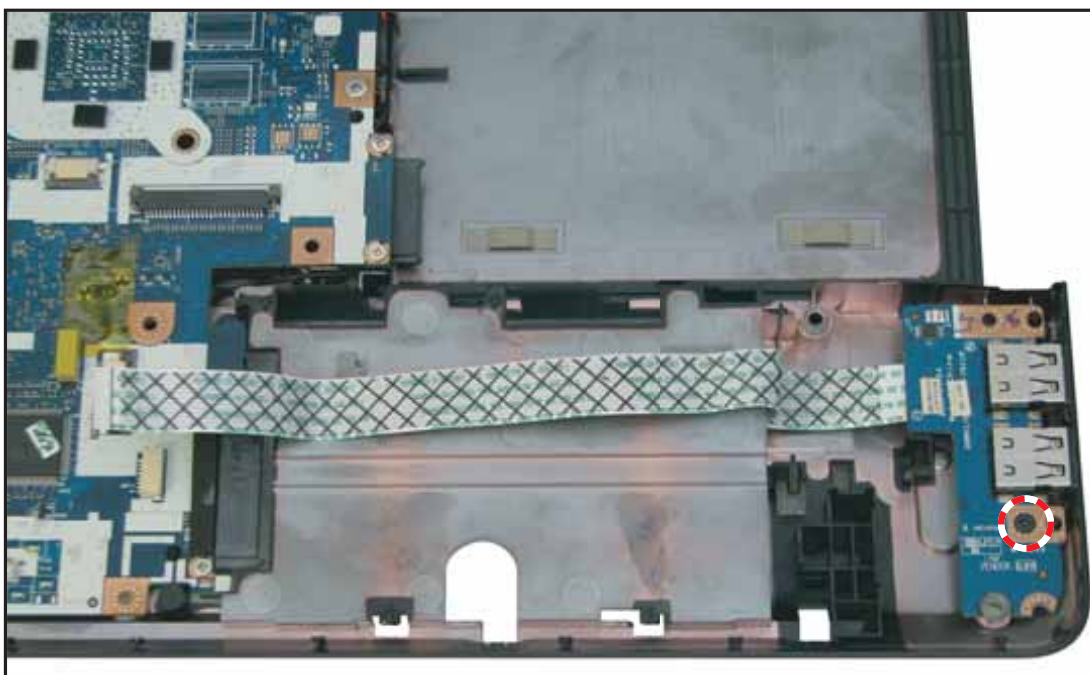
Figure 3:101.   Securing the USB Module Screw

Service and Maintenance

3. Press on (A) to attach the adhesives on the USB cable to the lower case and connect the USB module cable connector to the mainboard connector (B).
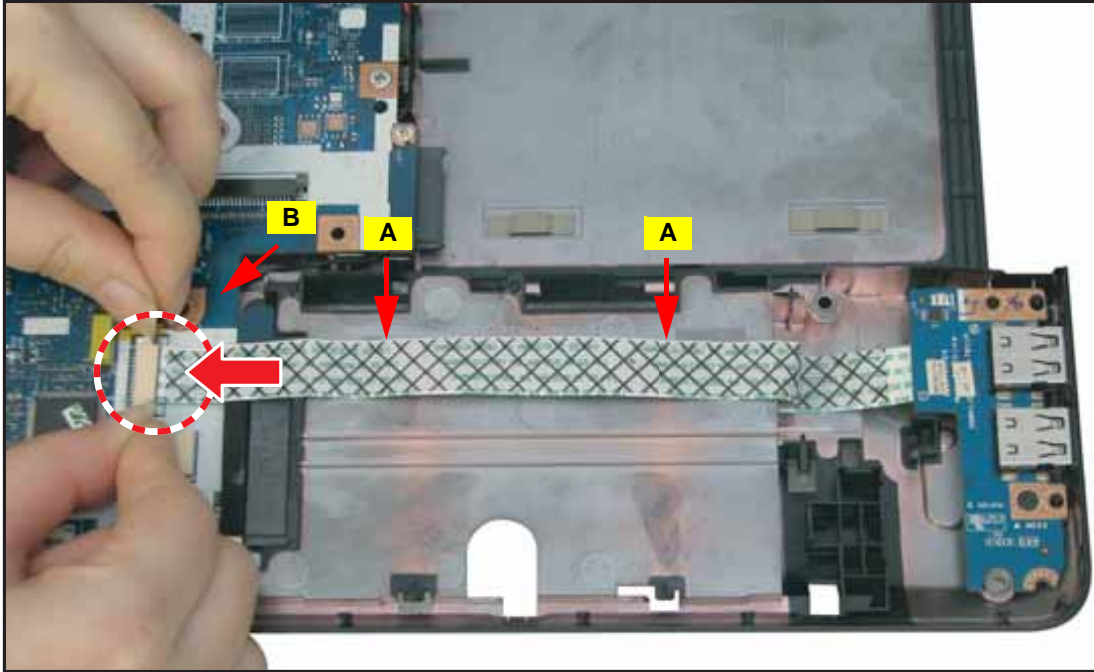
Figure 3:102.   Connecting the USB Module Cable

Table 3:13. USB Module Screws

Screw Name	Screw Type	Quantity
M 2.0 x 3.0	🔩	1

3-68

Power Board Removal

Prerequisite:

　　　　❋ **Upper Case Removal** on page **3-34**

1. Locate the power board on the underside of the upper case.

2. Remove the screw securing the power board to the upper case.
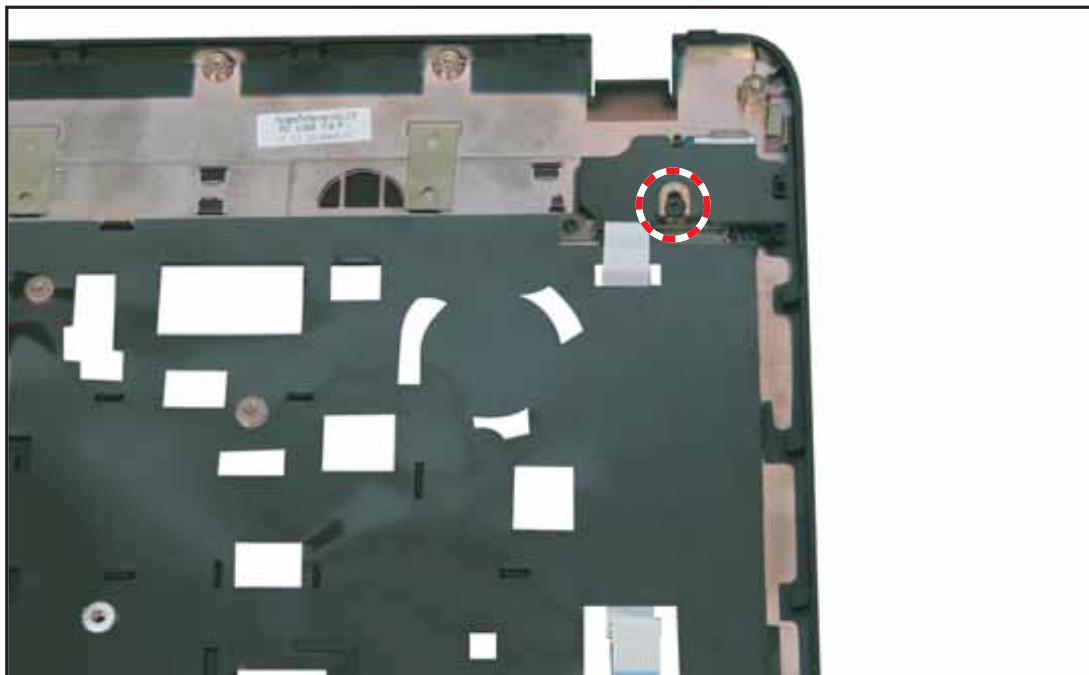
Figure 3:103.   Removing the Power Board Screw

3. On the front side of the upper case, lift the power board cable to detach the cable from the upper case.
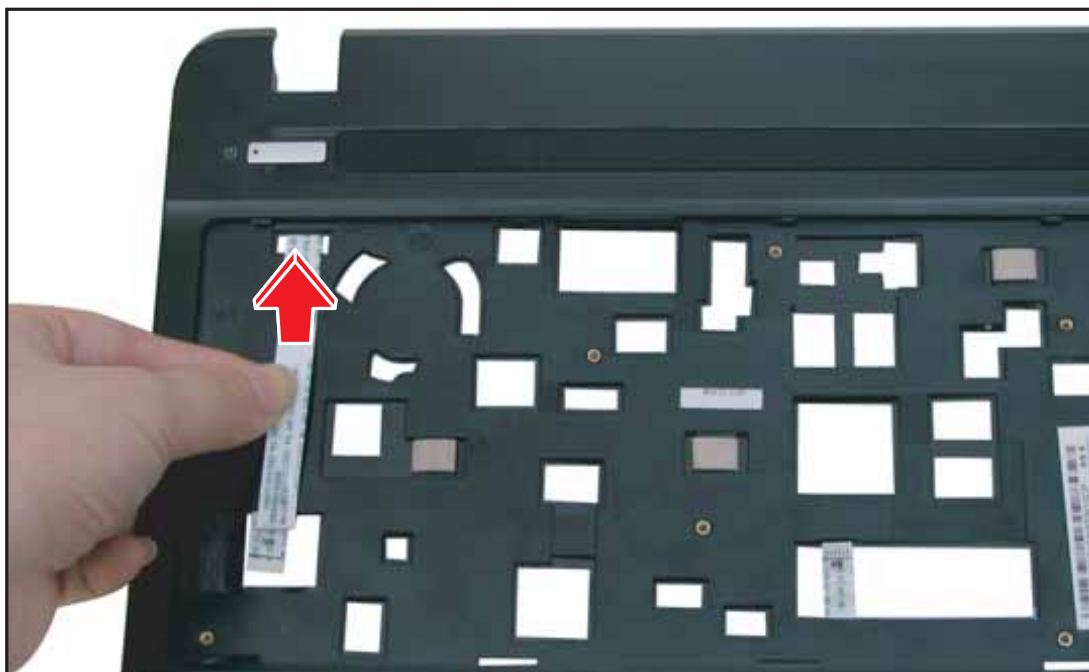
Figure 3:104.   Detaching the Power Board Cable

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4. Pull back then lift to remove the power board from the upper case.
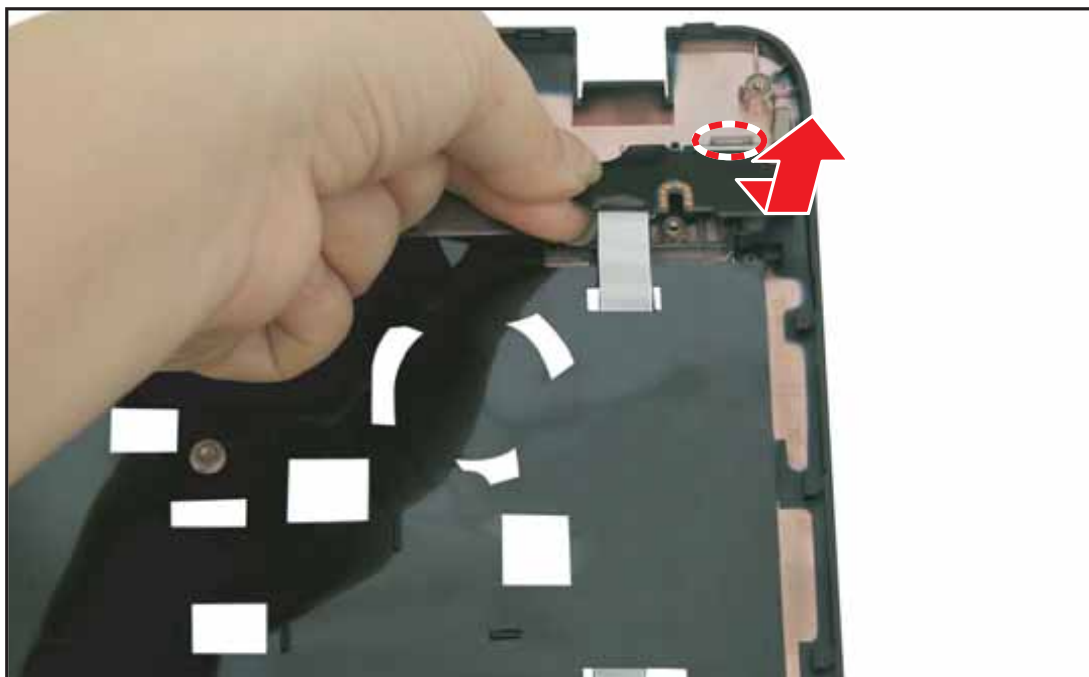
Figure 3:105.   Removing the Power Board

Power Board Installation

1. Route the power board cable into the slit on the upper case.
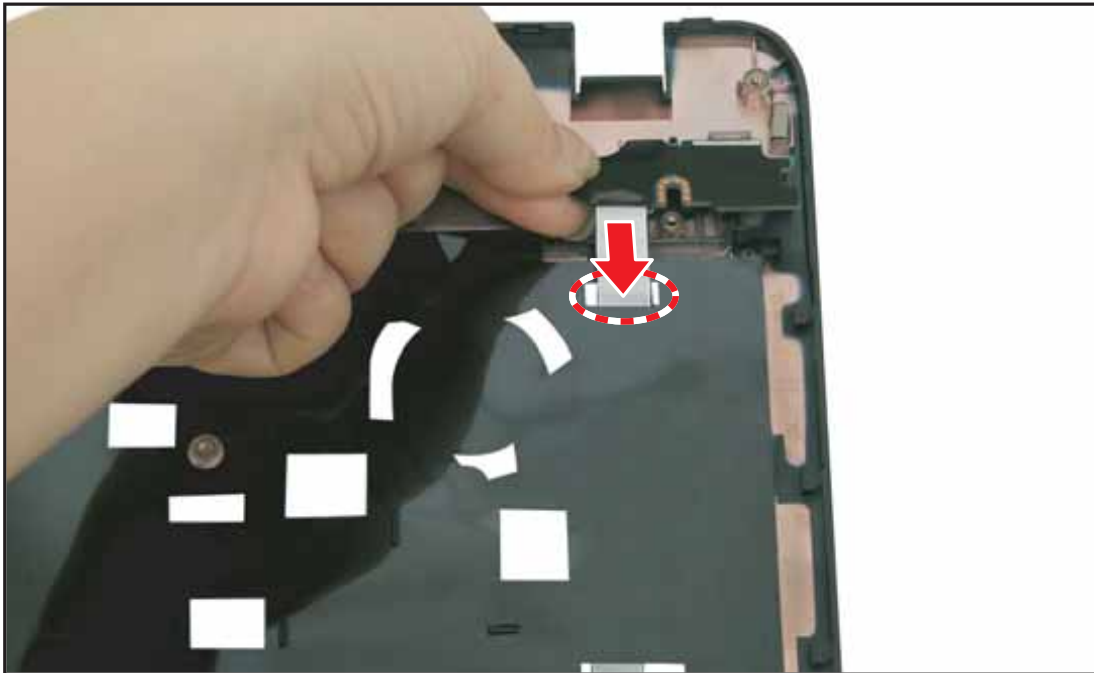
Figure 3:106.   Routing the Power Board Cable

2. Align the power board to the marker on the upper case.
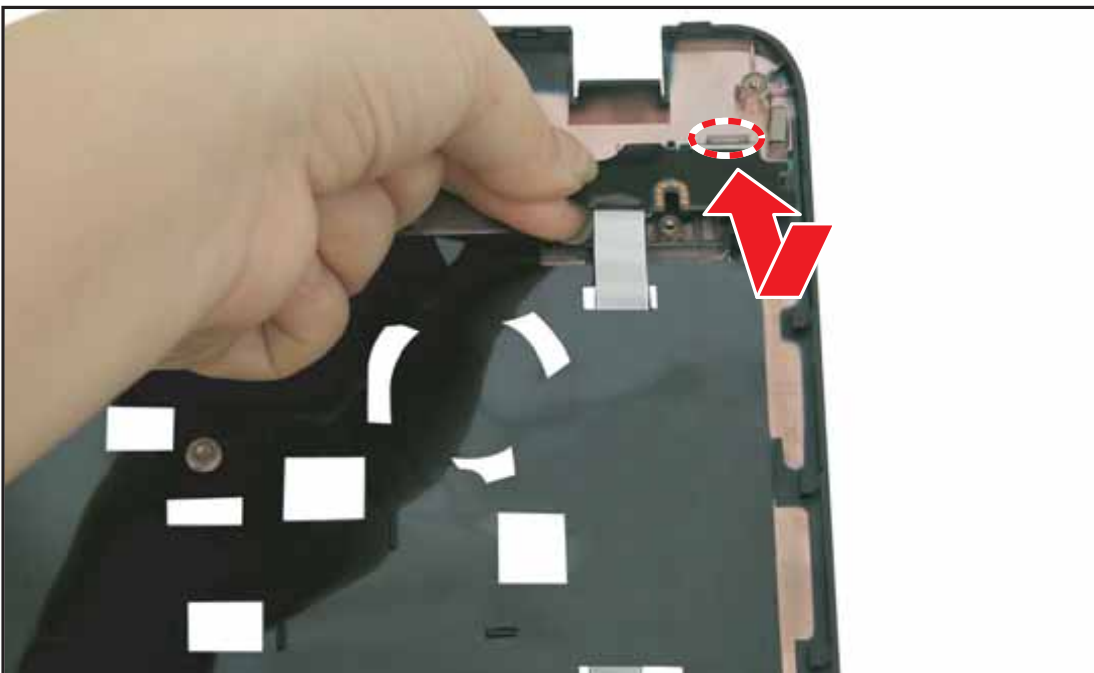
Figure 3:107.   Installing the Power Board

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3. Attach the screw to secure the power board to the upper case.
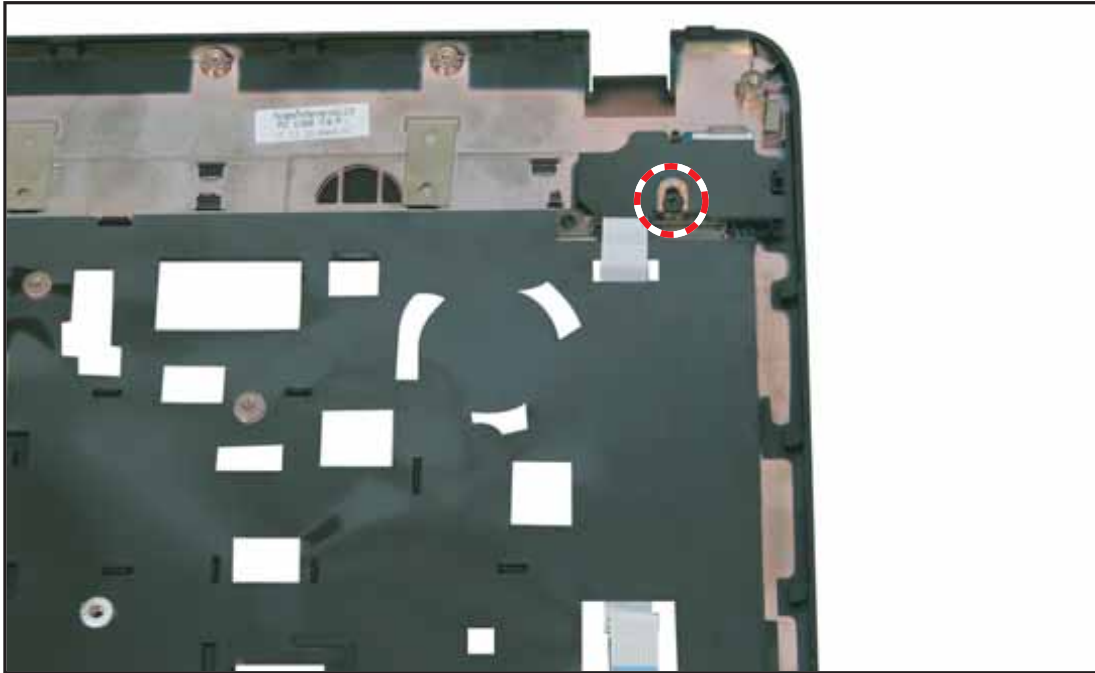
Figure 3:108.   Securing the Power Board Screw

4. Install the upper case (see **Upper Case Installation** on page **3-38**).

Table 3:14. Power Board Screw

Screw Name	Screw Type	Quantity
M 2.0 x 3.0		1

Touchpad FFC Removal

Prerequisite:

> ❊ **Upper Case Removal** on page **3-34**

1. Locate the touchpad FFC (flat flexible cable) on the underside of the upper case.

2. Remove the protective tape covering the touchpad cable connector.
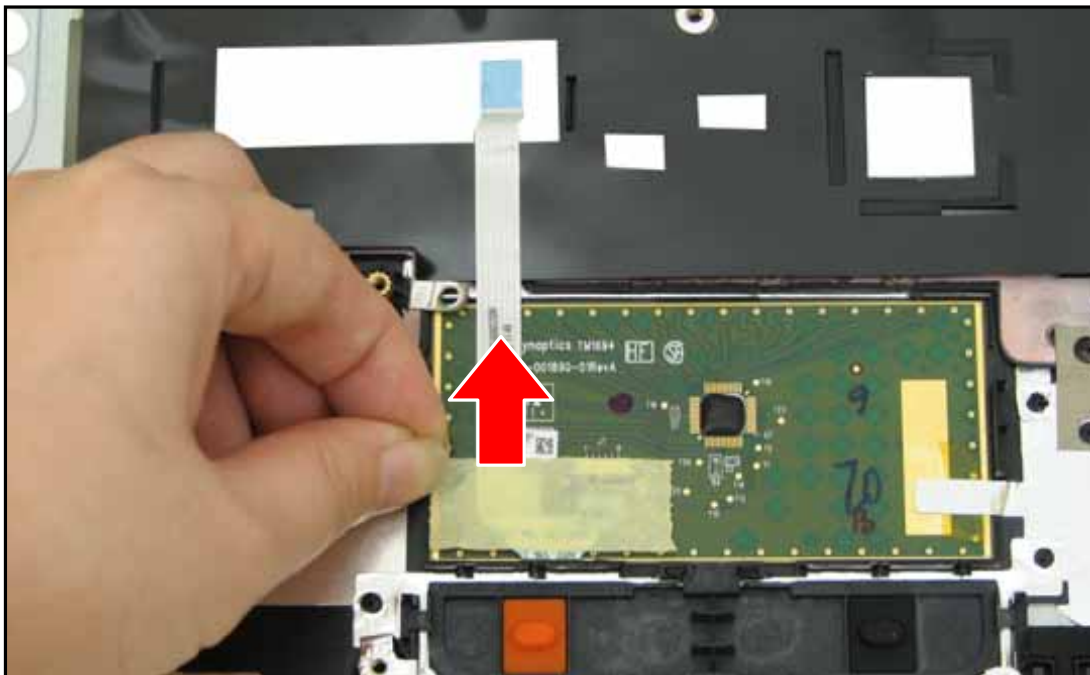
Figure 3:109.   Removing the Touchpad Cable (1 of 2)

3. Lift the connector clip to disconnect the touchpad cable connector.
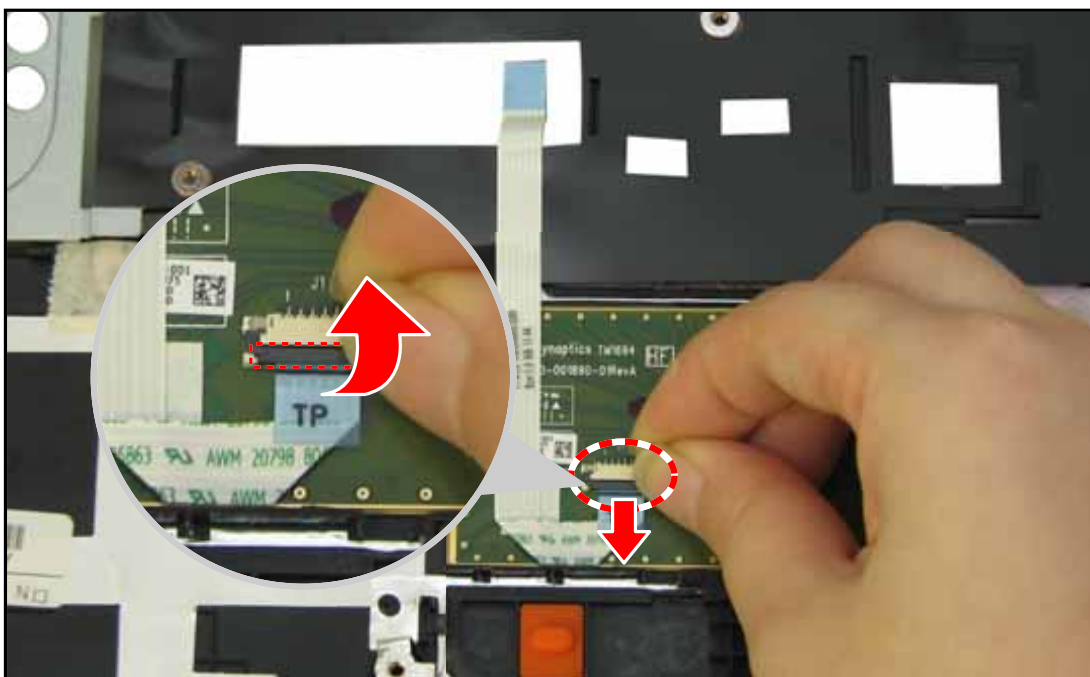
Figure 3:110.   Removing the Touchpad Cable (2 of 2)

Service and Maintenance

Touchpad FFC Installation

1. Connect the touchpad cable to the touchpad connector with the "**TP**" label side up. Flip the connector clip down to lock.
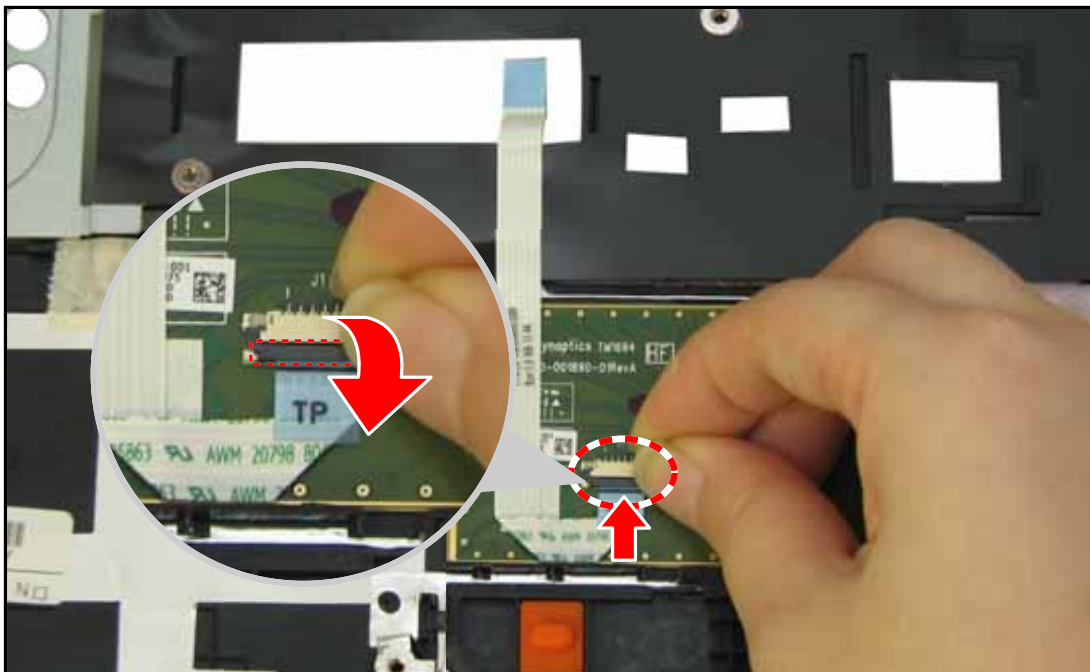
Figure 3:111. Installing the Touchpad Cable (1 of 2)

2. Attach the protective tape to cover the touchpad cable connector.
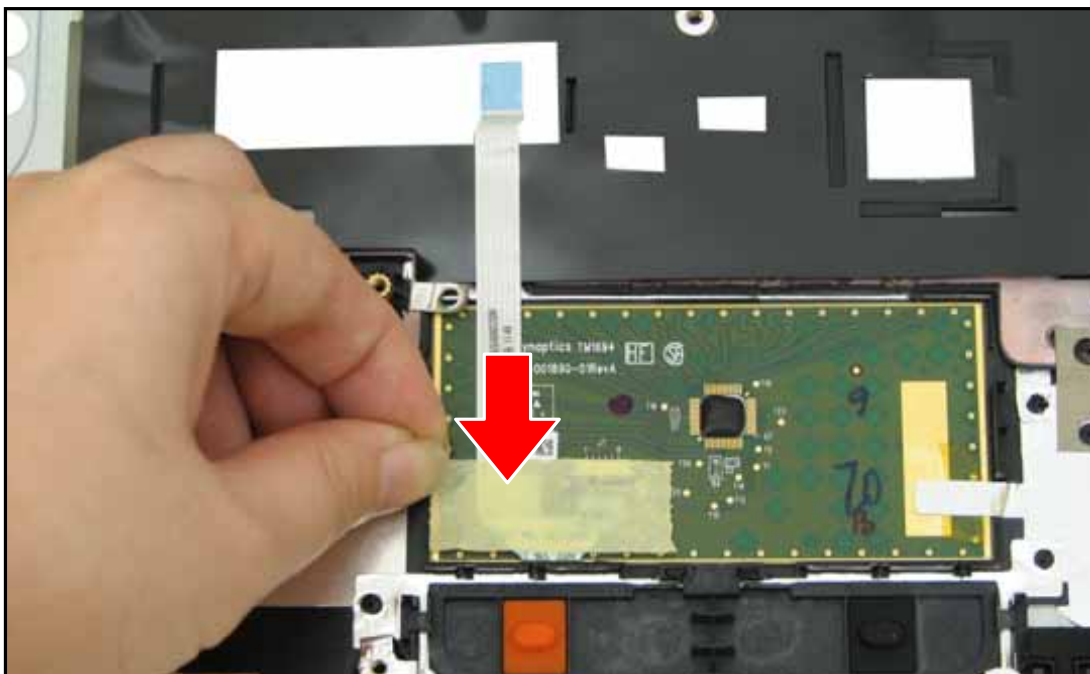
Figure 3:112. Installing the Touchpad Cable (2 of 2)

3. Install the upper case (see **Upper Case Installation** on page **3-38**).

LCD Module Removal

Prerequisite:

      ❋ **Mainboard Removal** on page **3-43**

      ❋ **Speaker Removal** on page **3-59**

1. Pull the main antenna cable to pass through the lower case hole (A), detach the adhesive tape, and remove from the hook guides.
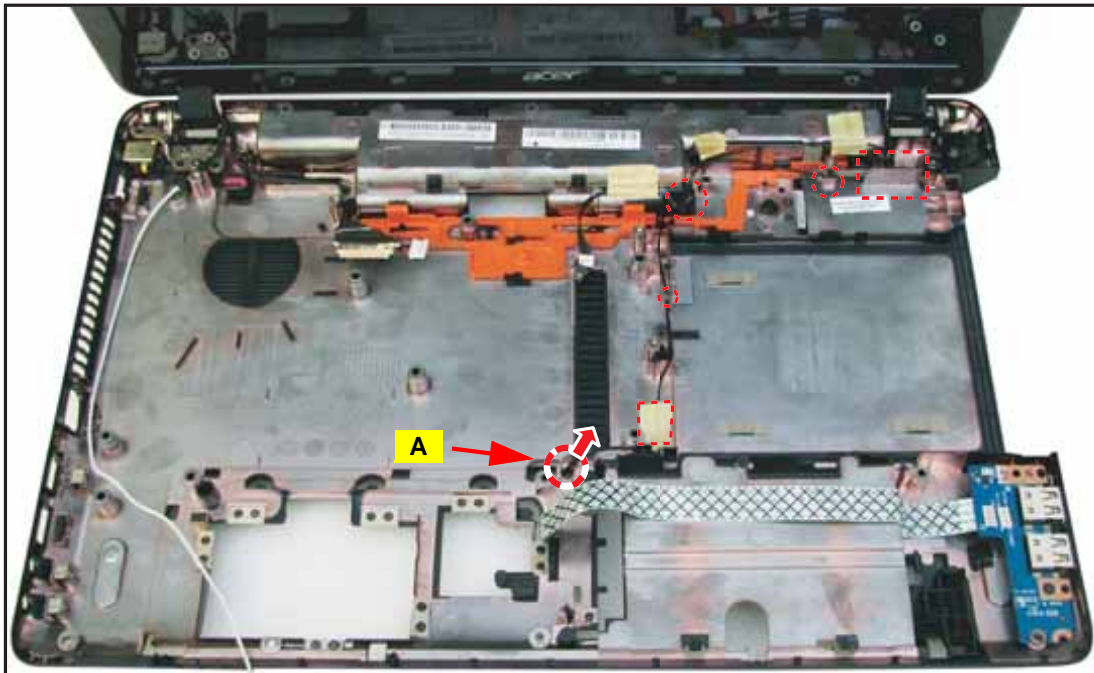
Figure 3:113.   Removing the Main Antenna Cable

2. Lift the LVDS cable to release from the guides on the lower case.
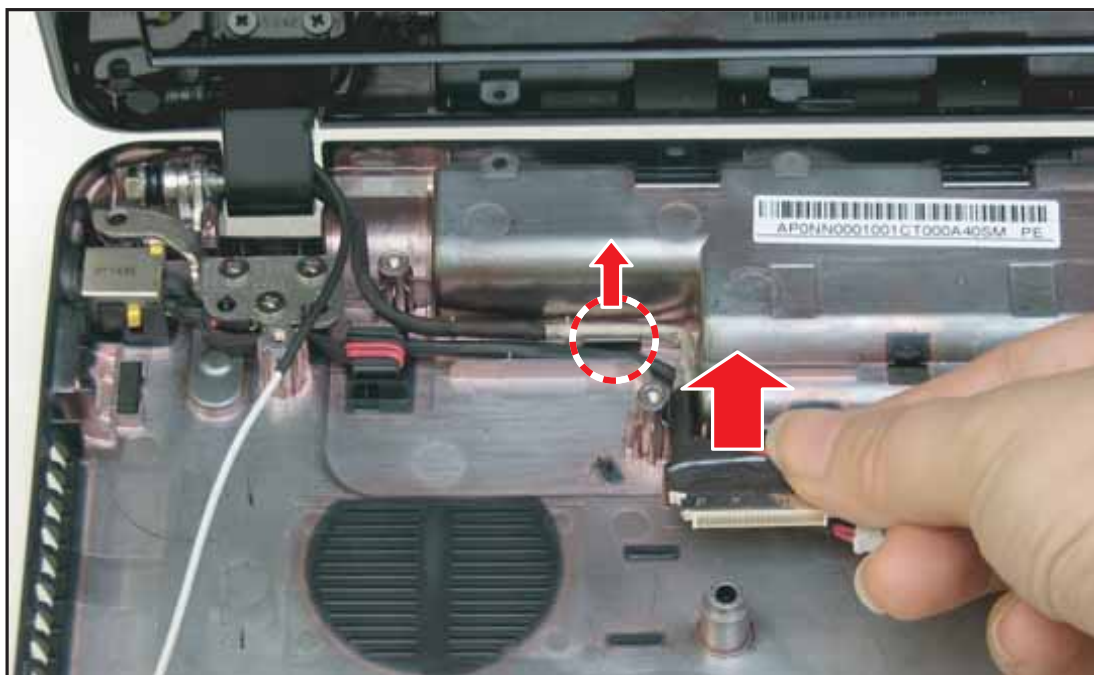
Figure 3:114.   Removing the LVDS Cable

3. Remove the adhesive tapes securing the microphone cable, then lift the microphone cable to release from the guides on the lower case.
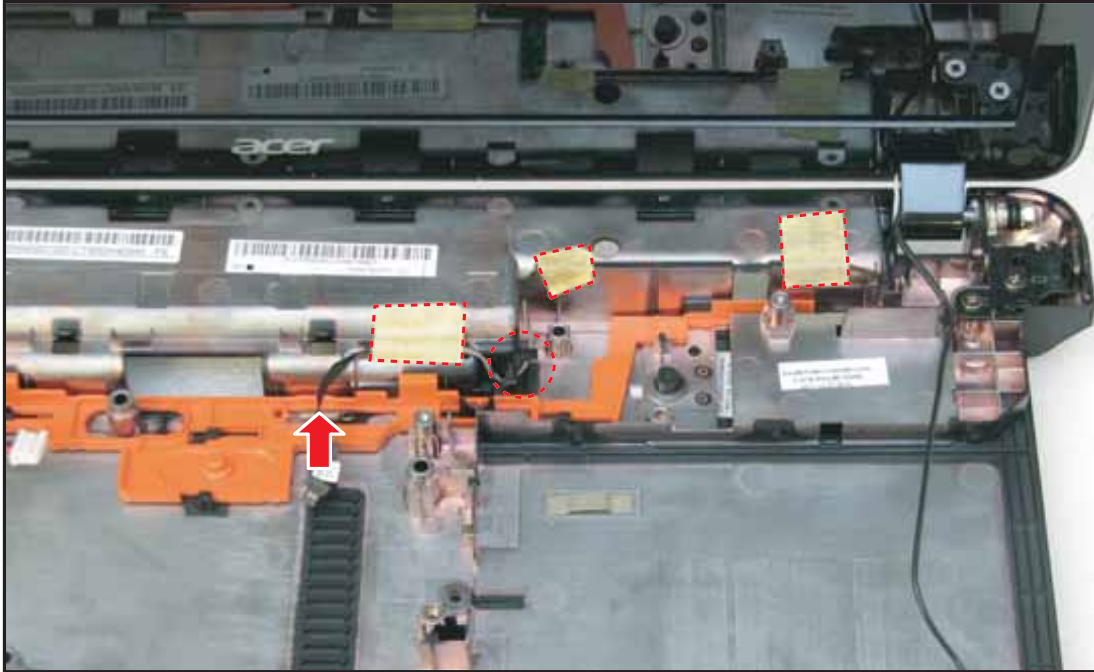
Figure 3:115.   Removing the Microphone Cable

4. Remove the five (5) screws securing the LCD module hinges to the lower case.

Figure 3:116.   Removing the LCD Module Screws

5. Lift to remove the LCD module.
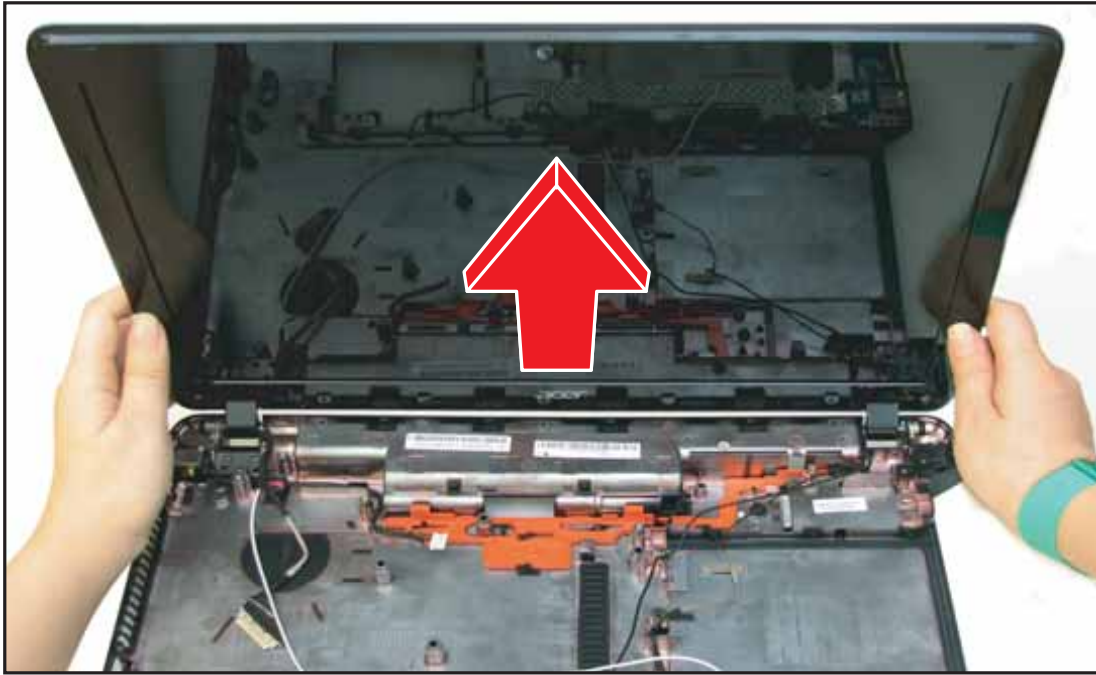
Figure 3:117.   Removing the LCD Module

LCD Module Installation

1. Align and place the LCD module hinges to the lower case.
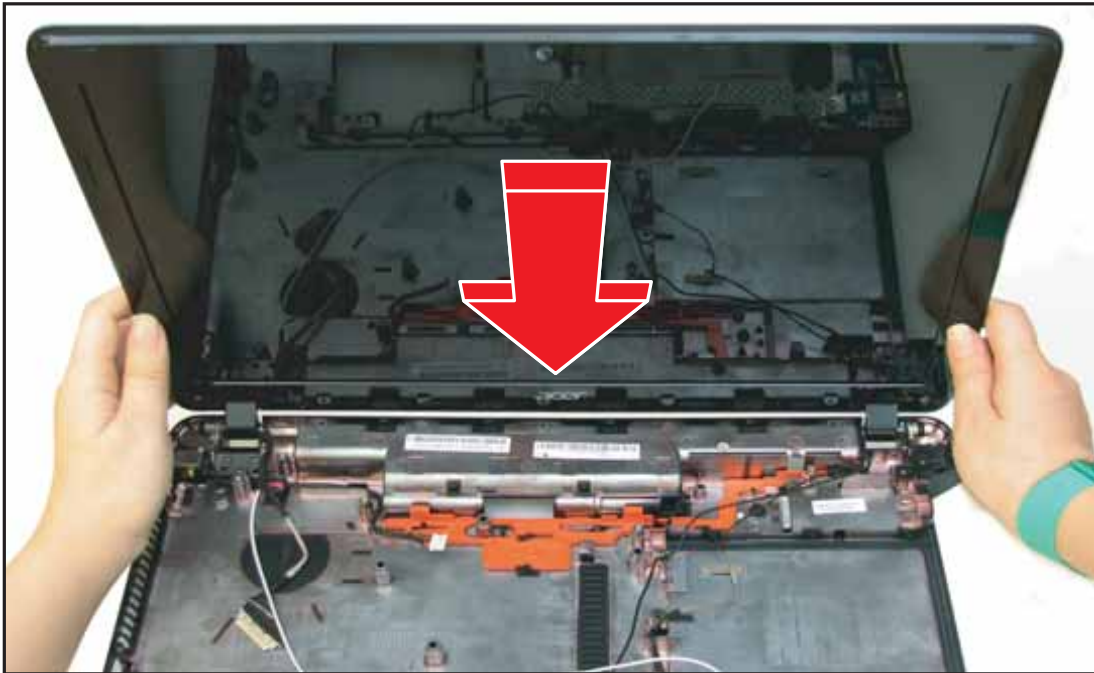
Figure 3:118.   Installing the LCD Module

2. Attach the five (5) screws to secure the LCD module hinges to the lower case.

Figure 3:119.   Securing the LCD Module Screws

3-78

Service and Maintenance

3. Route the microphone cable through the guides and attach the adhesive tapes to secure the cable in place.
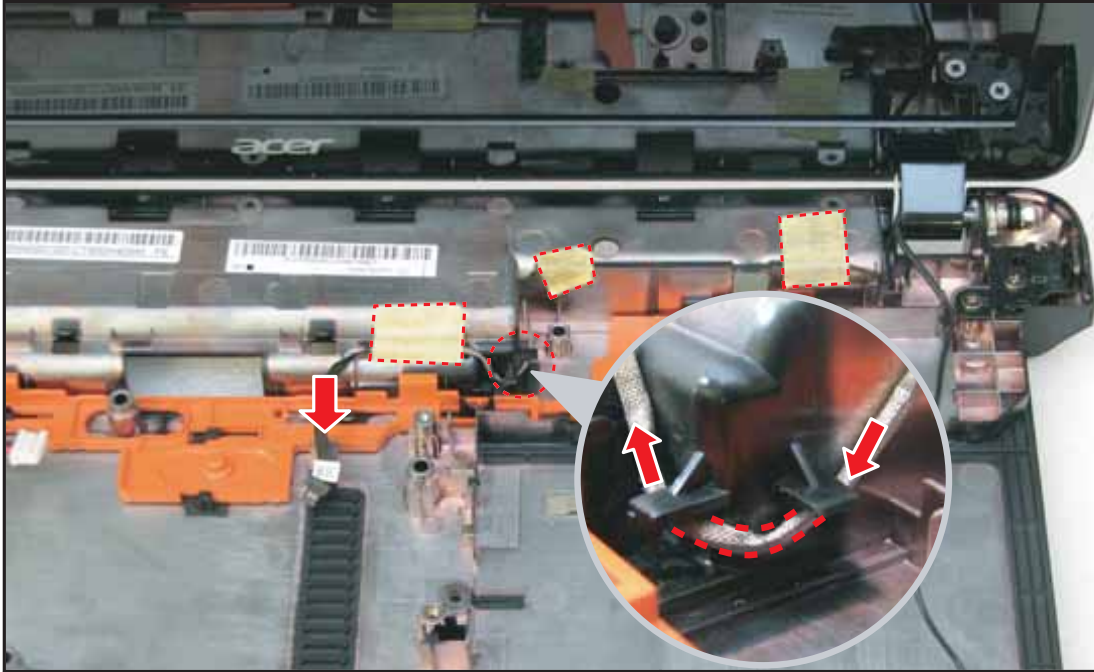
Figure 3:120.   Routing the Microphone Cable

4. Route the LVDS cable through the guides.
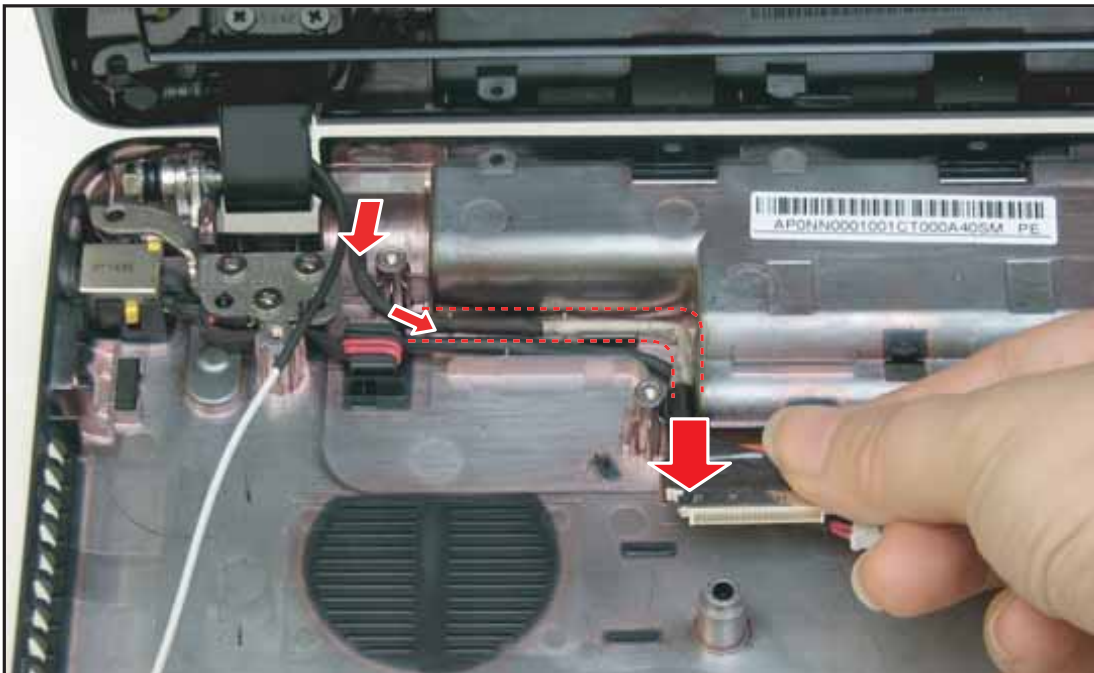
Figure 3:121.   Routing the LVDS Cable

5. Perform the following:

    a. Route the main antenna cable through the guides until it passes through the lower case hole (C). Take note of (A), (B) hooks.

    b. Attach the adhesive tape to fix the main antenna cable.
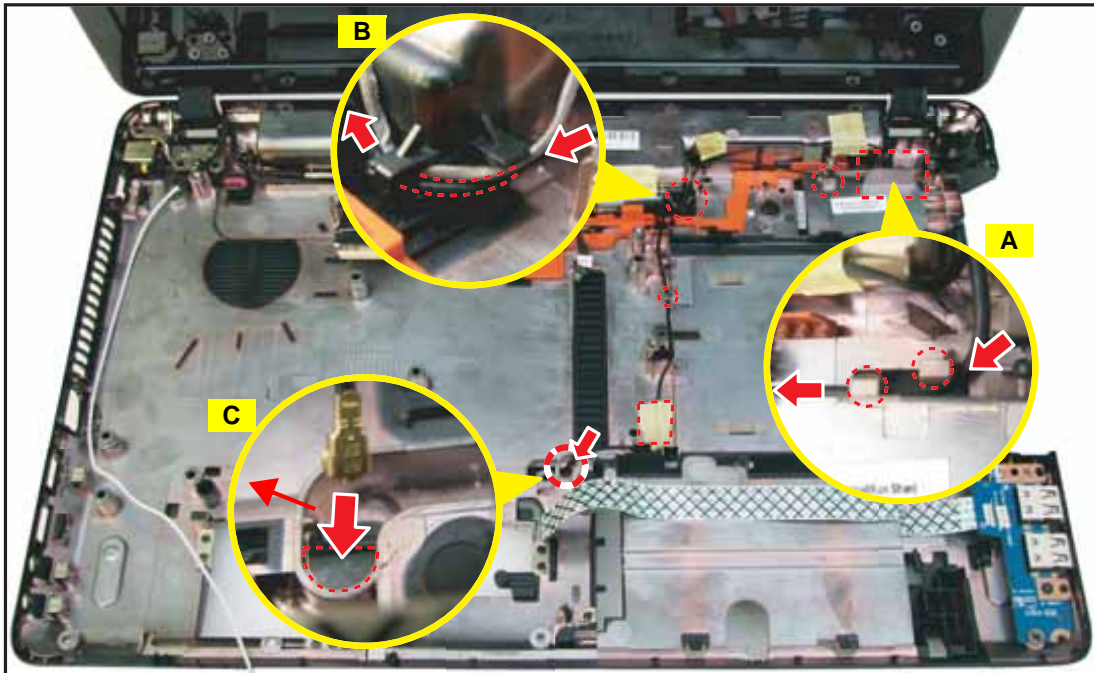
Figure 3:122.   Routing the WLAN Antenna Cables

6. On the underside of the lower case, continue to route the antenna cables.
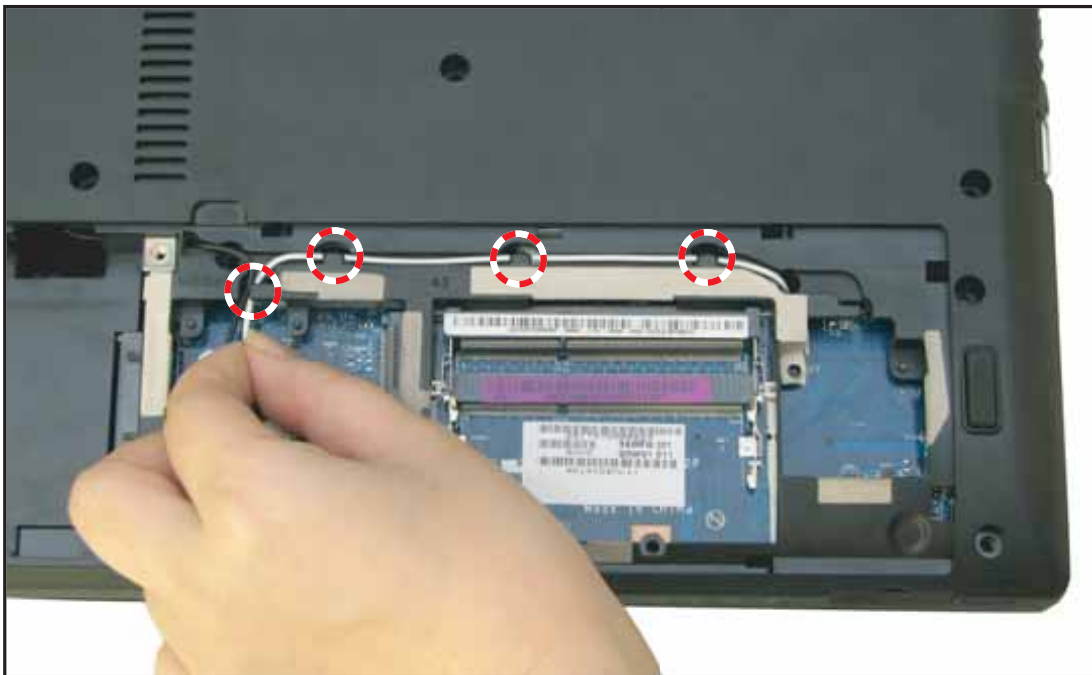
Figure 3:123.   Connecting the WLAN Antenna Cables

7. Perform step 3 of the **WLAN Module Installation** on page **3-28**.

8. Install the speakers (see **Speaker Installation** on page **3-62**).

Table 3:15. LCD Module Screws

Screw Name	Screw Type	Quantity
M 2.5 x 5.0		5

DC-In Cable Removal

Prerequisite

✱ **LCD Module Removal** on page **3-75**

1. Lift the DC-in cable jack and the cable adhesive from the lower case.

Figure 3:124.   Removing the DC-In Cable

2. Remove the DC-in cable completely from the guides on the lower case.

DC-In Cable Installation

1. Install the DC-in cable jack (A) and the cable adhesive (B) to their slots (**Figure 3:125**).

2. Route the DC-in cable through the guides on the lower case.
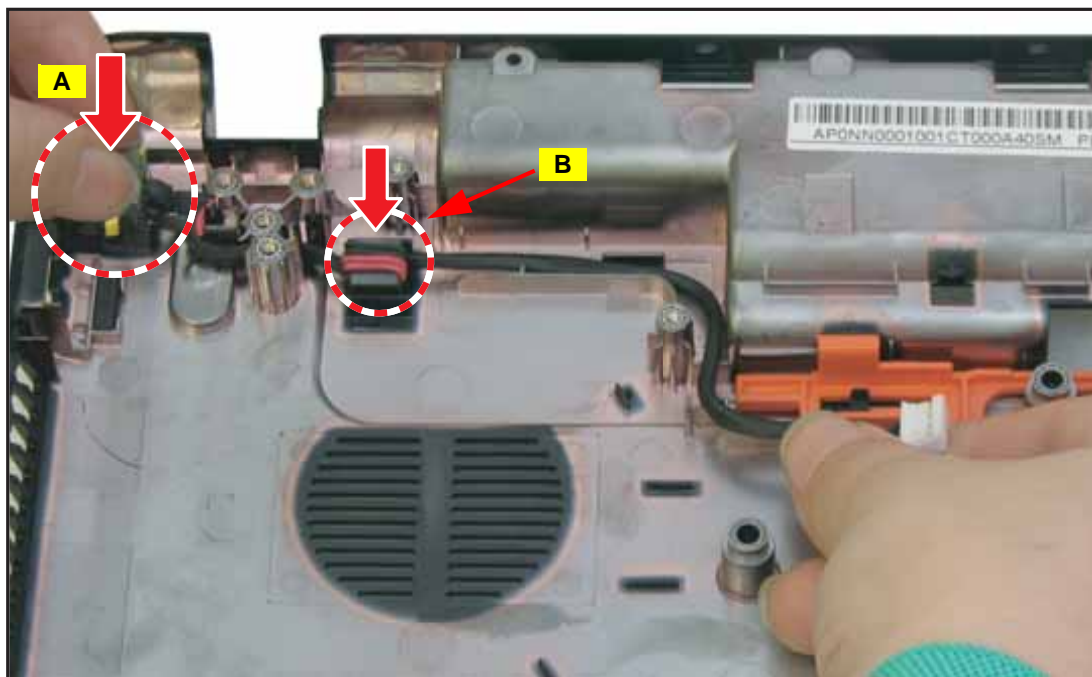
Figure 3:125.   Installing the DC-In Cable

3. Install the LCD module (see **LCD Module Installation** on page **3-78**).

LCD Bezel Removal

Prerequisite:

❋ **LCD Module Removal** on page **3-75**

1. Use a screwdriver to crush the mylar covers, and then remove the two (2) screws.

Figure 3:126.   Removing the LCD Bezel (1 of 3)

2. From the bottom side, pry inwards to release the latches of the LCD bezel.
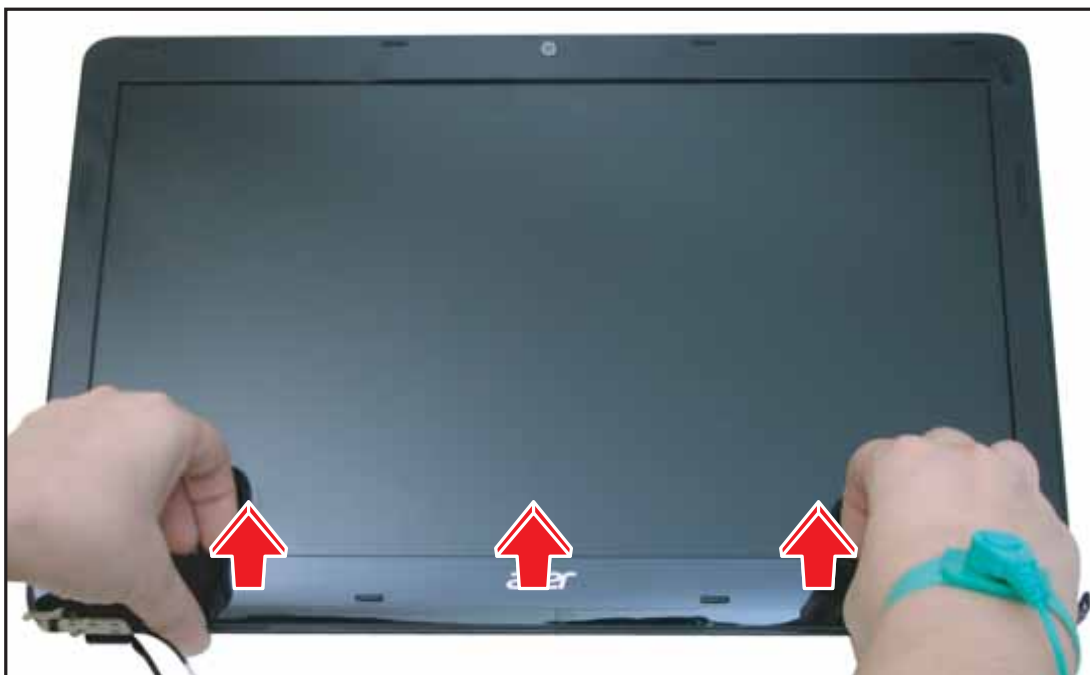
Figure 3:127.   Removing the LCD Bezel (2 of 3)

3. Continue to pry to release the latches of the LCD bezel.

Figure 3:128.   Removing the LCD Bezel (3 of 3)

LCD Bezel Installation

1. Align the LCD panel hinges to the LCD bezel.

Figure 3:129. Installing the LCD Bezel (1 of 4)

2. Secure the LCD bezel latches.
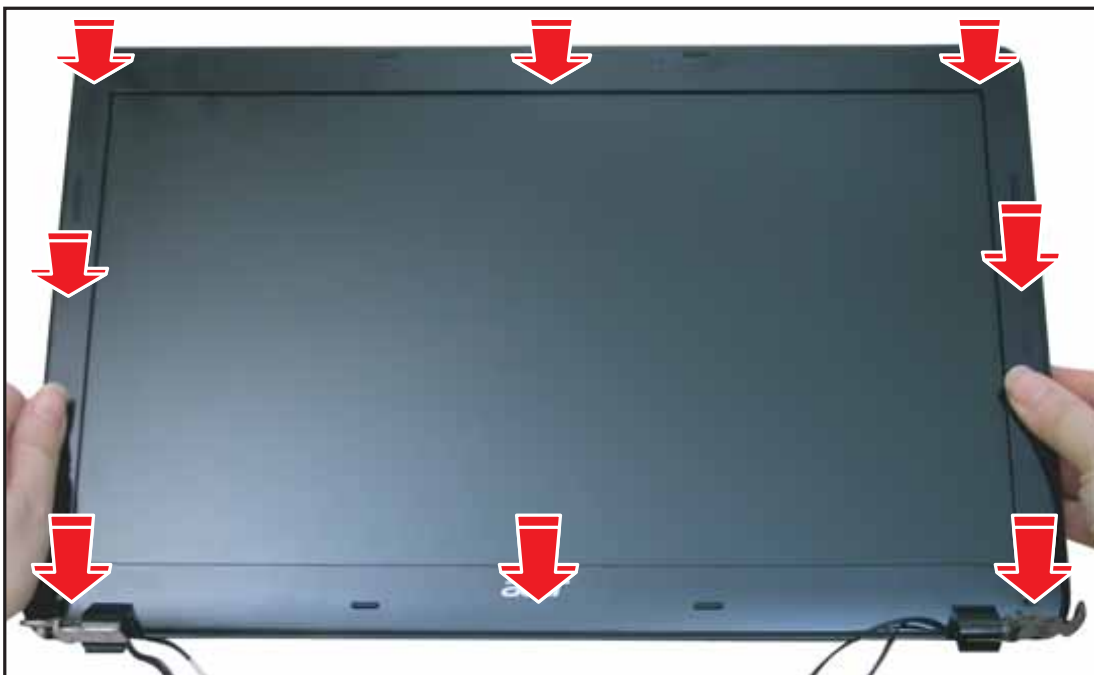
Figure 3:130. Installing the LCD Bezel (2 of 4)

3. Attach the two (2) screws to secure the LCD bezel to the LCD module.

Figure 3:131. Installing the LCD Bezel (3 of 4)

4. Attach new adhesive mylars to cover the two (2) screws.
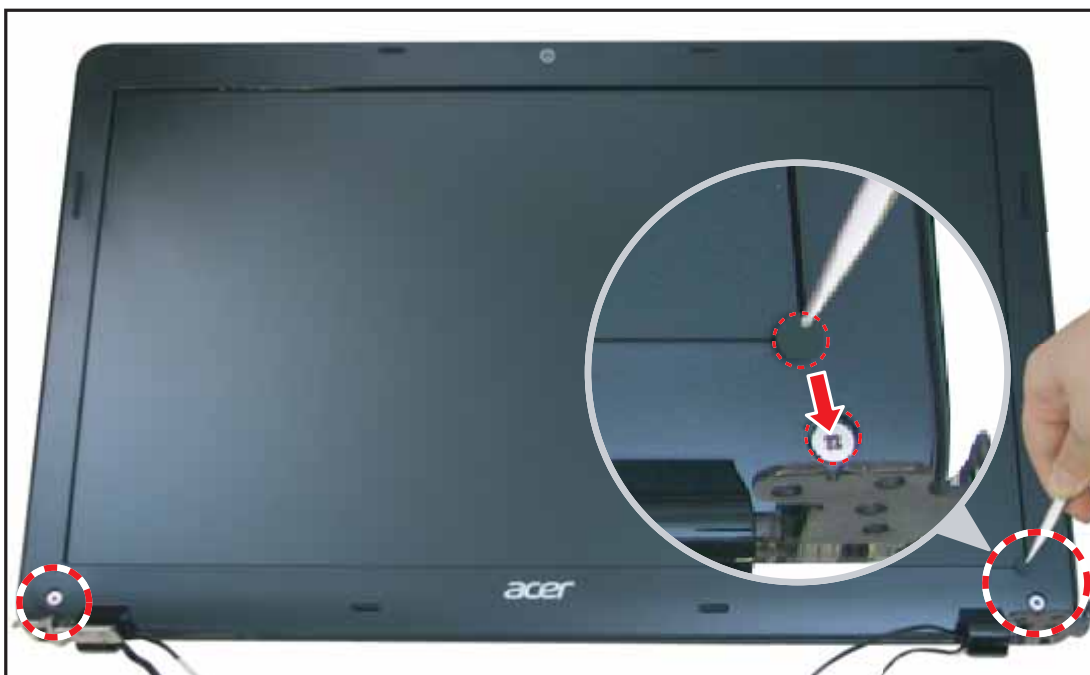
Figure 3:132. Installing the LCD Bezel (4 of 4)

5. Install the LCD module (see **LCD Module Installation** on page **3-78**).

Table 3:16. LCD Bezel Screws

Screw Name	Screw Type	Quantity
M 2.5 x 4.0		2

Service and Maintenance

CCD Module Removal

Prerequisite:

❋ **LCD Bezel Removal** on page **3-84**

1. Disconnect the camera cable connector from the camera module.
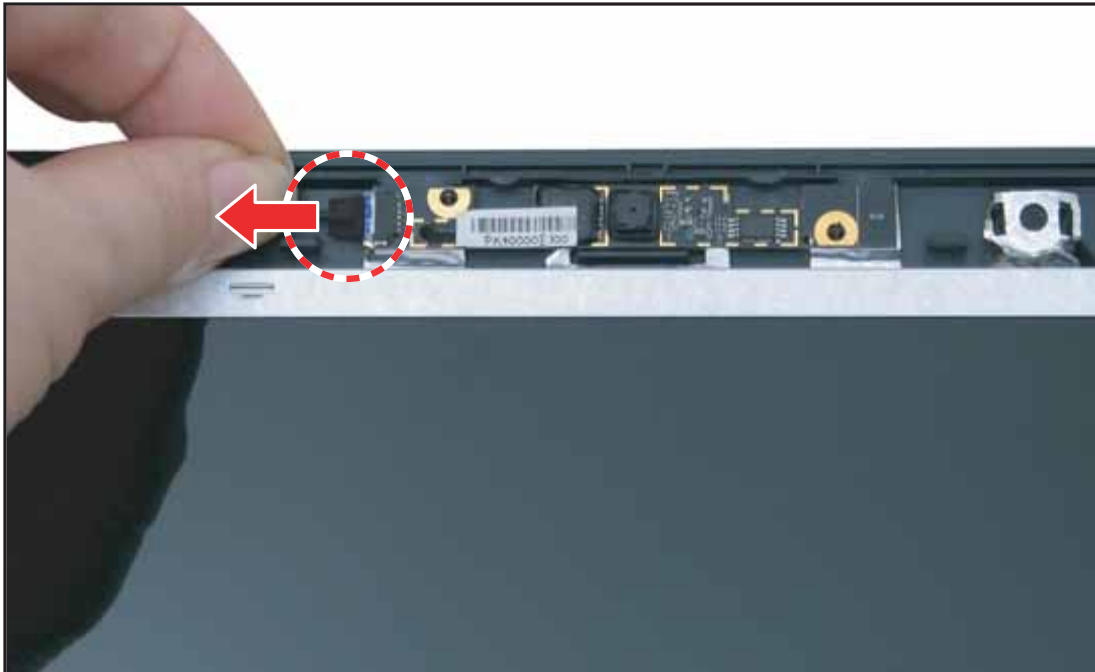
Figure 3:133.   Removing the Camera Module (1 of 2)

2. Lift to remove the camera module.
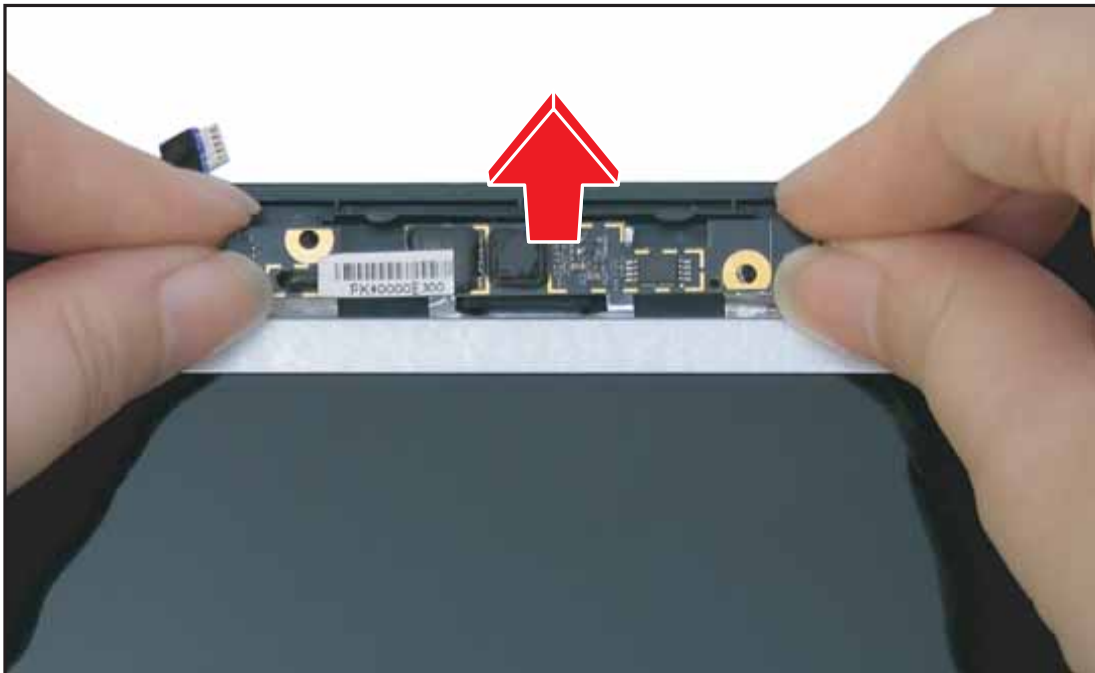
Figure 3:134.   Removing the Camera Module (2 of 2)

CCD Module Installation

1. Connect the camera cable connector.
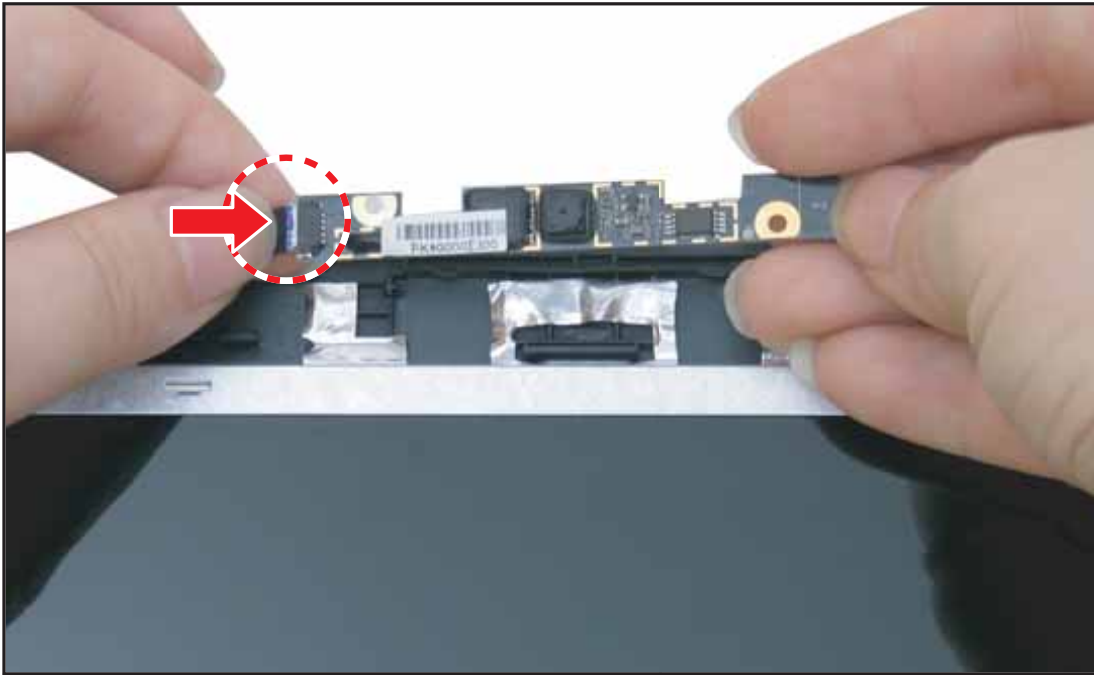
Figure 3:135.   Installing the Camera Module (1 of 2)

2. Align and attach the camera module to the slot on the LCD module.
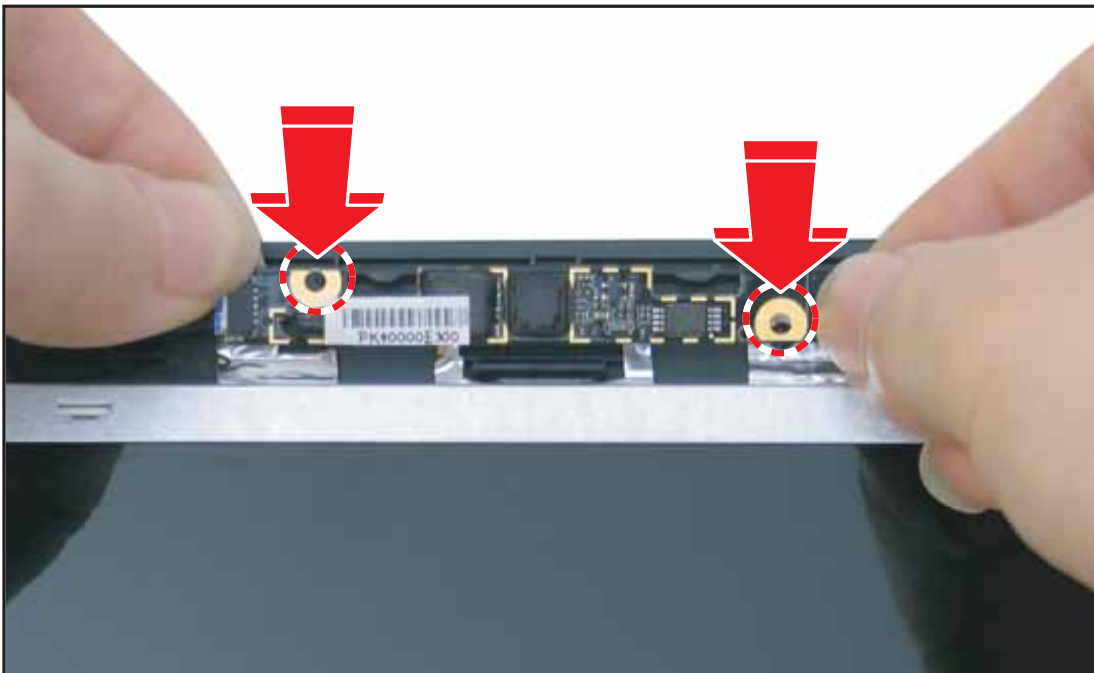
Figure 3:136.   Installing the Camera Module (2 of 2)

3. Install the LCD bezel (see **LCD Bezel Installation** on page **3-86**).

LCD Panel Removal

Prerequisite:

❋ **LCD Bezel Removal** on page **3-84**

1. Remove the four (4) screws securing the LCD panel to the LCD cover.

Figure 3:137. Removing the LCD Panel Screws

2. Remove the metallic tape securing the cables.
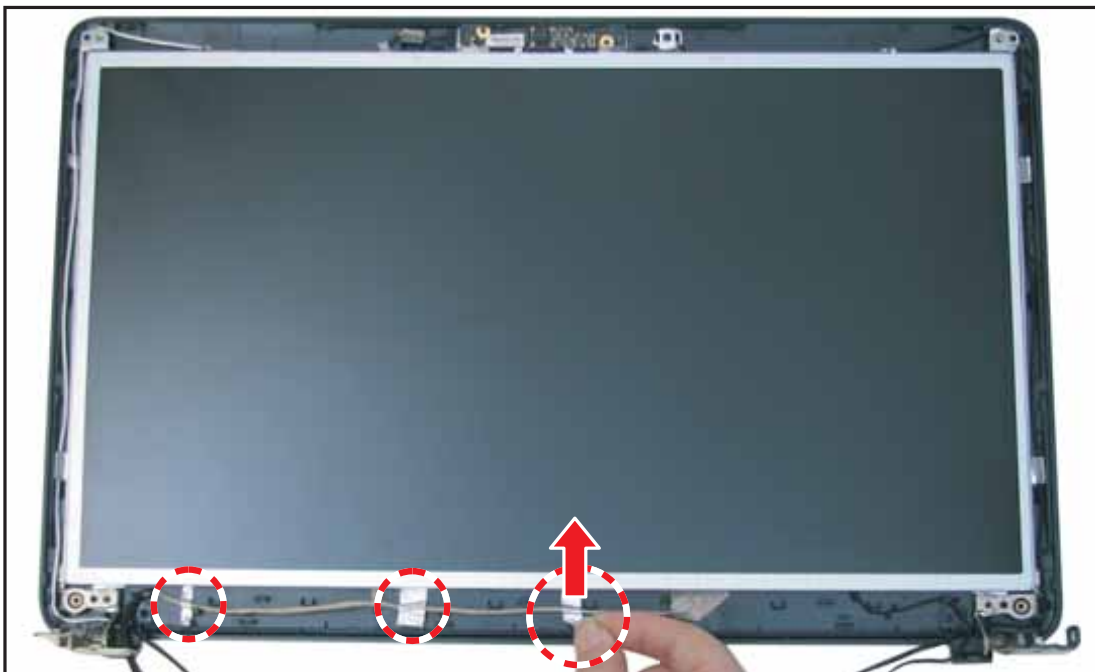
Figure 3:138. Removing the Metallic Tape

3. Remove the camera cable connector from camera module.
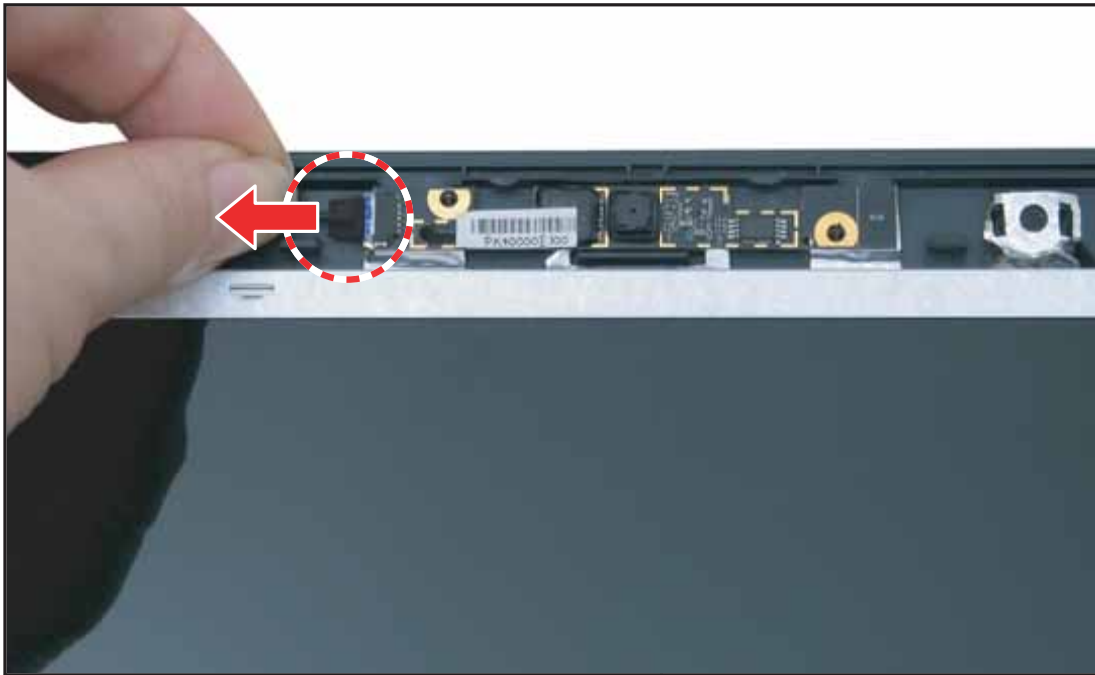
Figure 3:139. Disconnecting the Camera Cable

4. Lift to remove the LCD panel.

Figure 3:140. Removing the LCD Panel

5. Remove the camera cable from the LCD panel.
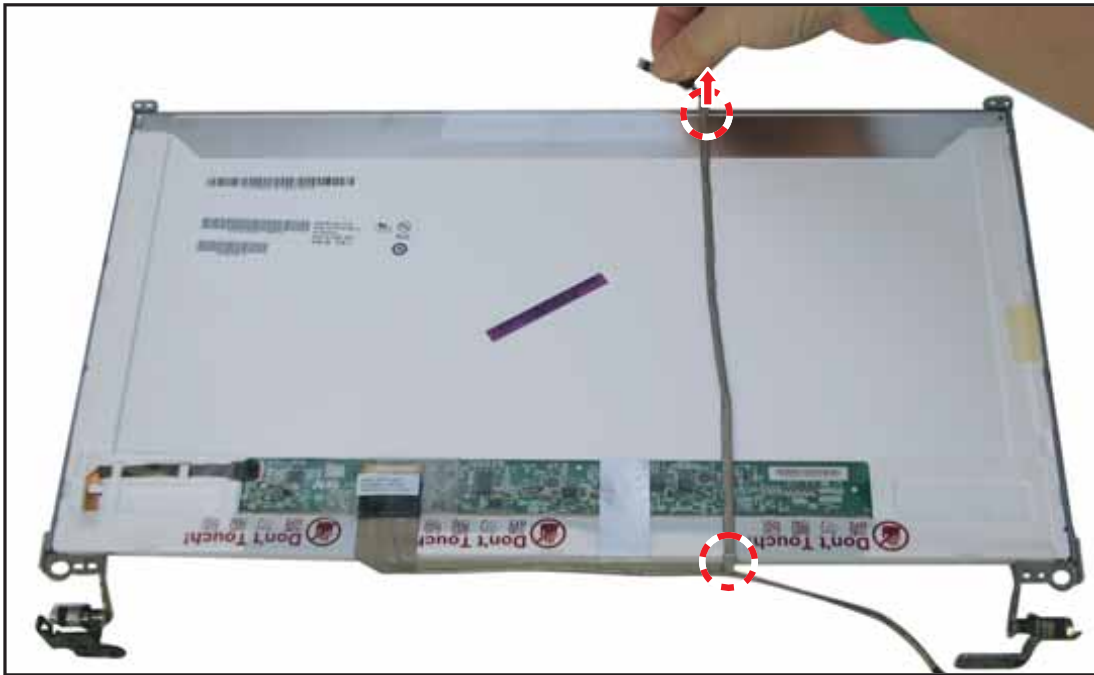
Figure 3:141.   Removing the Camera Cable

6. Remove the protective tape covering the LVDS cable connector.
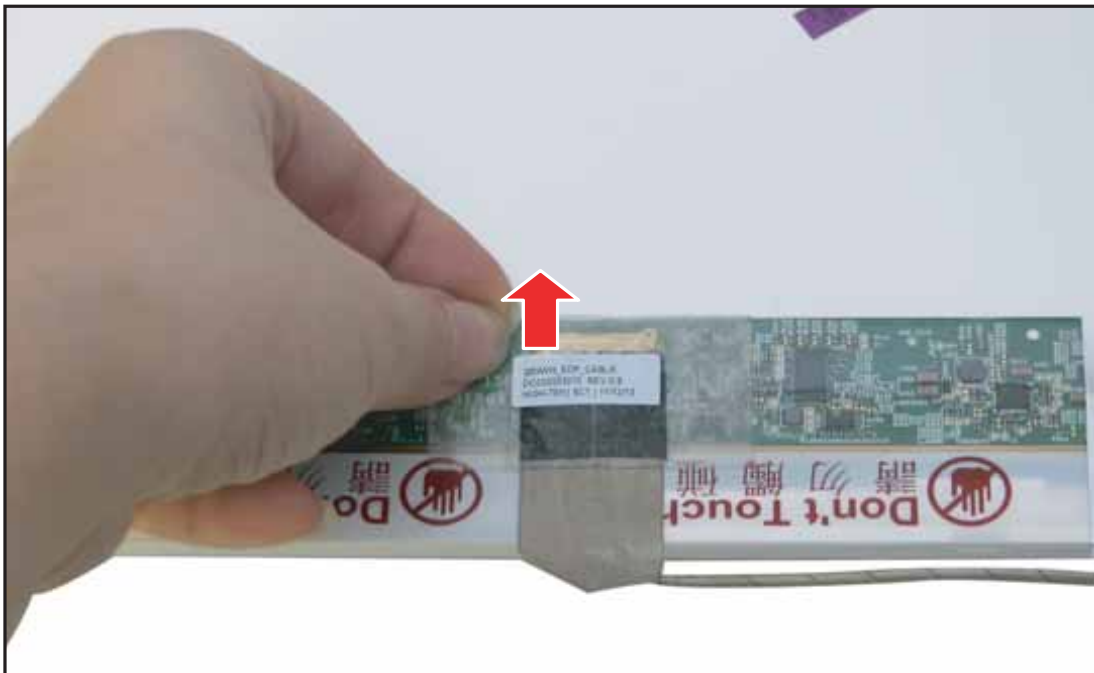
Figure 3:142.   Removing the LVDS Cable (1 of 2)

7. Disconnect the LVDS cable connector from the LCD panel connector.
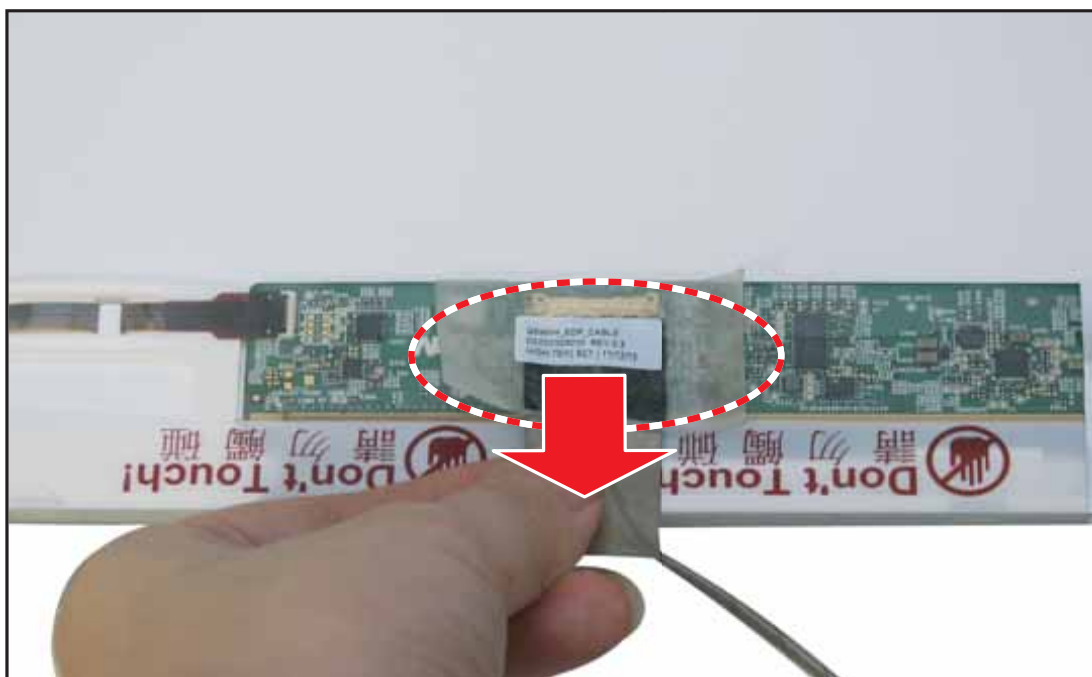
Figure 3:143.   Removing the LVDS Cable (2 of 2)

LCD Panel Installation

1. Connect the LVDS cable connector to the LCD panel connector.
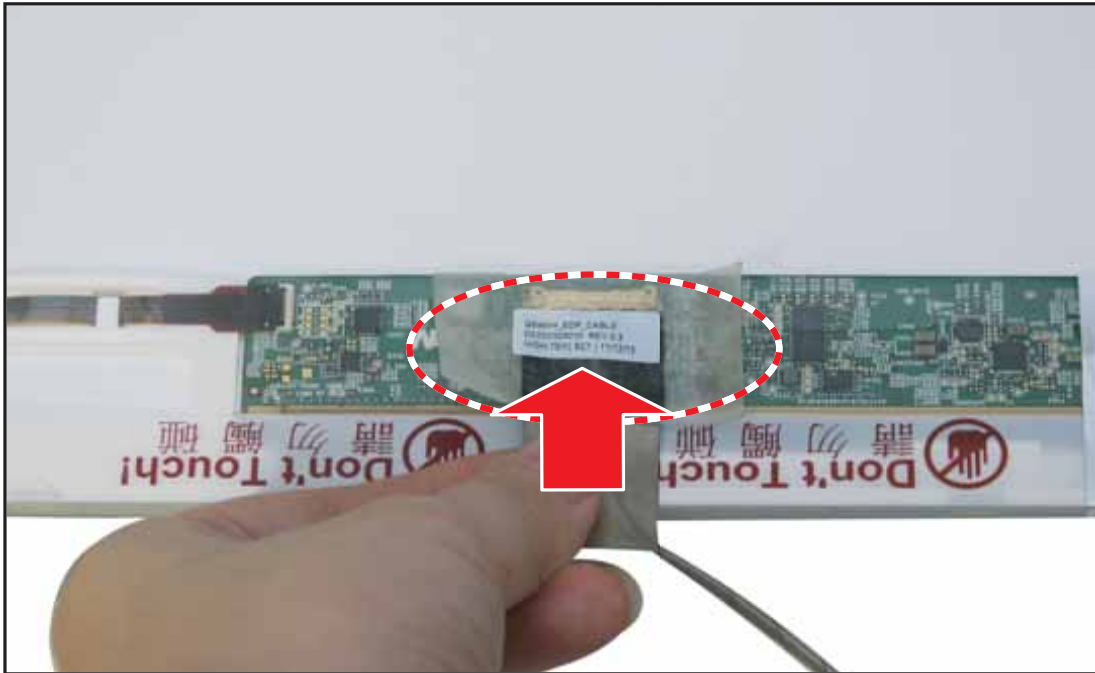
Figure 3:144.   Installing the LVDS Cable (1 of 3)

2. Attach the protective tape to cover the LVDS cable connector.
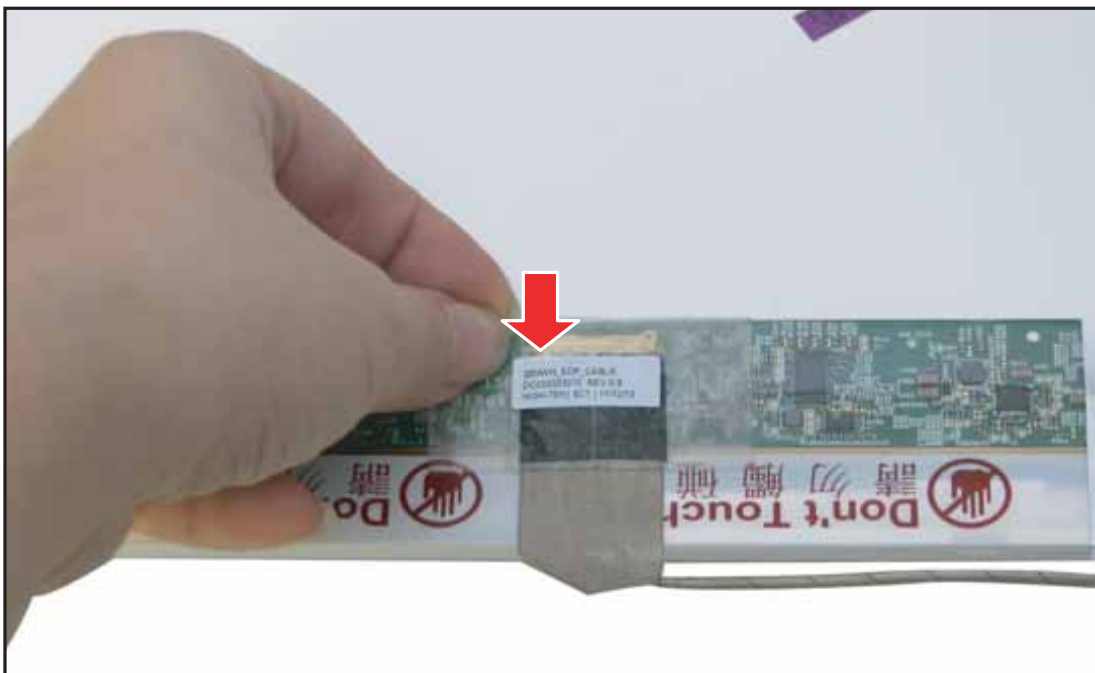
Figure 3:145.   Installing the LVDS Cable (2 of 2)

---

3. Attach the camera cable to the LCD panel.
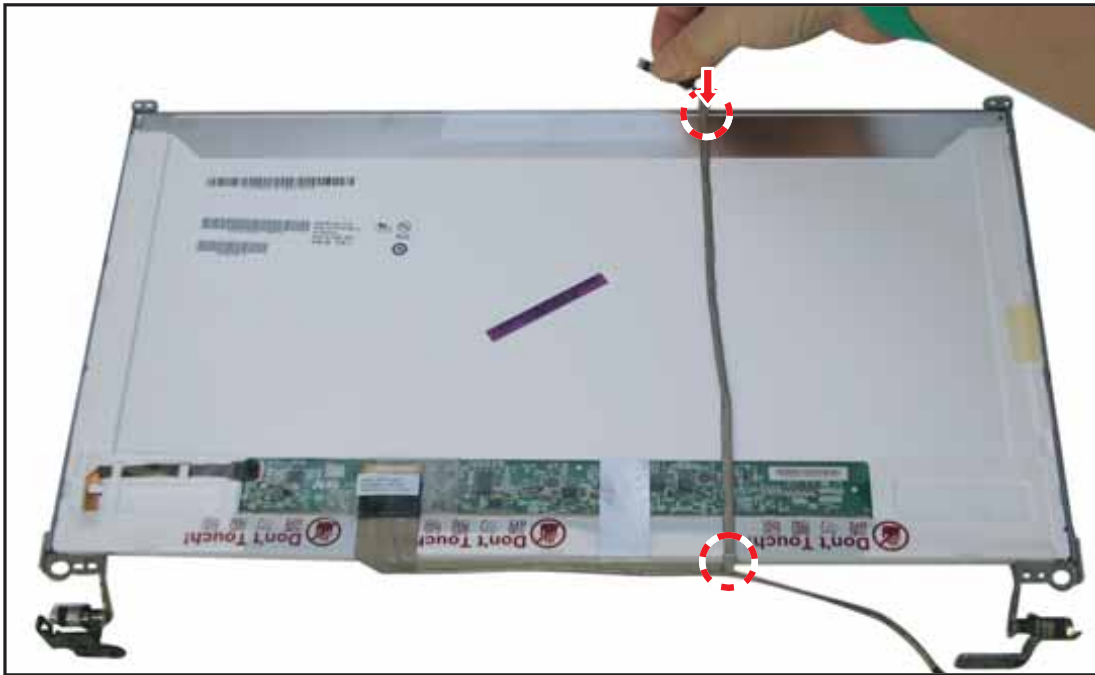
Figure 3:146. Securing the Camera Cable

4. Place the LCD panel onto the LCD cover.

Figure 3:147. Installing the LCD Panel

Service and Maintenance

5. Connect the camera cable connector to the camera module connector.
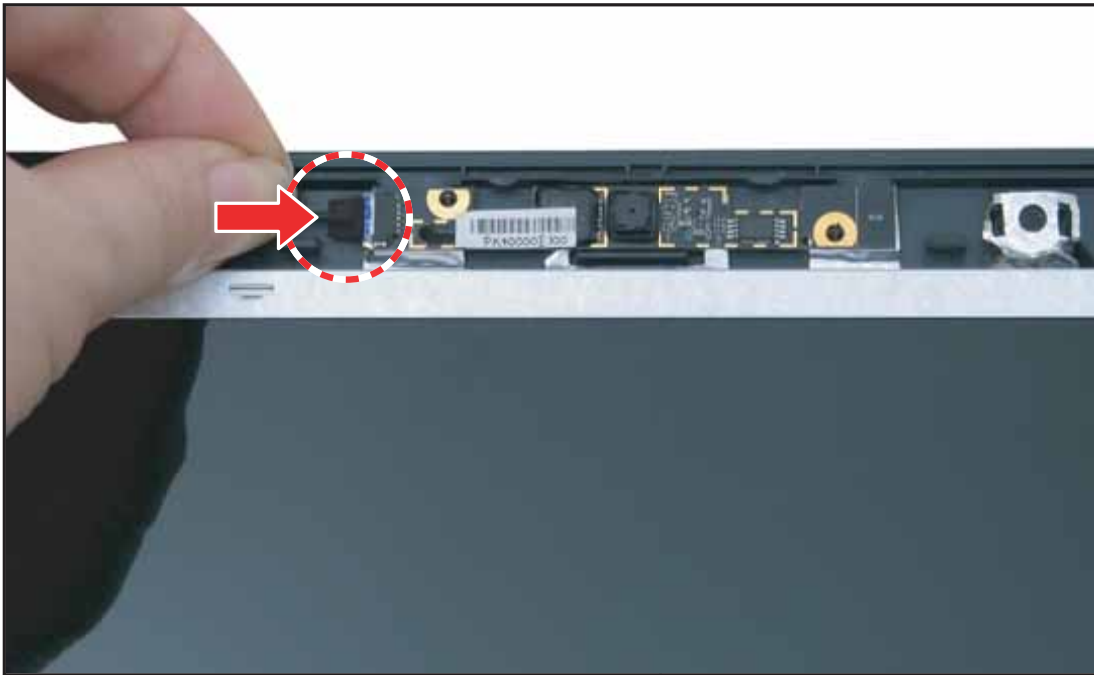
Figure 3:148.   Connecting the Camera Cable

6. Secure the cables with the metallic tape.
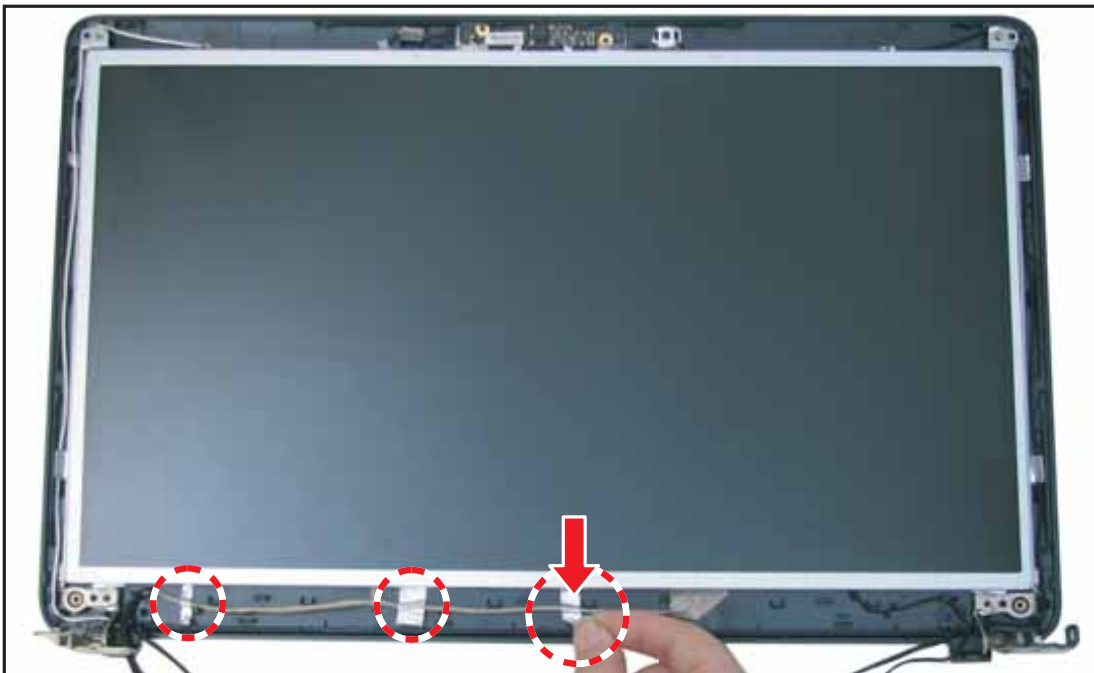
Figure 3:149.   Securing the Metallic Tape

7. Attach the four (4) screws to secure the LCD panel to the LCD cover.

Figure 3:150.   Securing the LCD Panel Screws

8. Install the LCD bezel (see **LCD Bezel Installation** on page **3-86**).

Table 3:17. LCD Bezel Screws

Screw Name	Screw Type	Quantity
M 2.5 x 4.0		4

LCD Panel Bracket Removal

Prerequisite:

　　　❋ **LCD Panel Removal** on page **3-91**

Remove the six (6) screws to detach the LCD panel brackets from the LCD panel.

Figure 3:151.   Removing the LCD Panel Brackets

LCD Panel Bracket Installation

1. Attach the six (6) screws to secure the LCD panel brackets to the LCD panel.

Figure 3:152.   Installing the LCD Panel Brackets

2. Install the LCD panel (see **LCD Panel Installation** on page **3-95**).

Table 3:18. LCD Panel Bracket Screws

Screw Name	Screw Type	Quantity
M 2.0 x 3.0		6

3-100

Service and Maintenance

WLAN Antenna Removal

Prerequisite:

❋ **LCD Panel Removal** on page **3-91**

1. Remove main (black) and the auxiliary (white) antenna cables from the guides on the LCD cover.
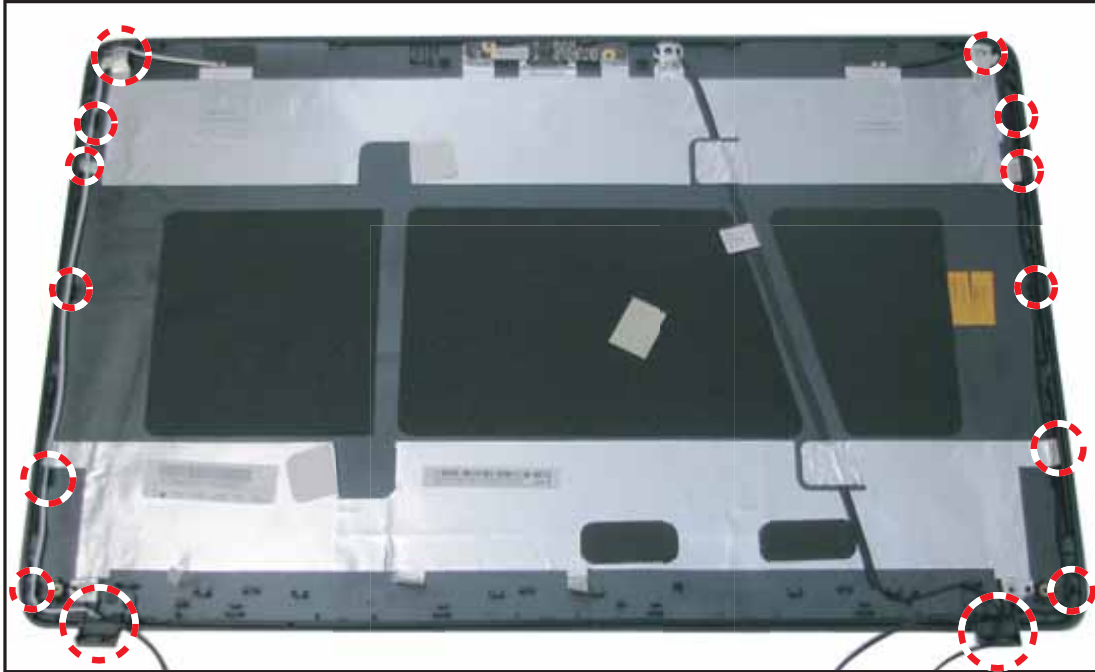
Figure 3:153.   Removing the Antenna Cables

2. Remove the auxiliary antenna.
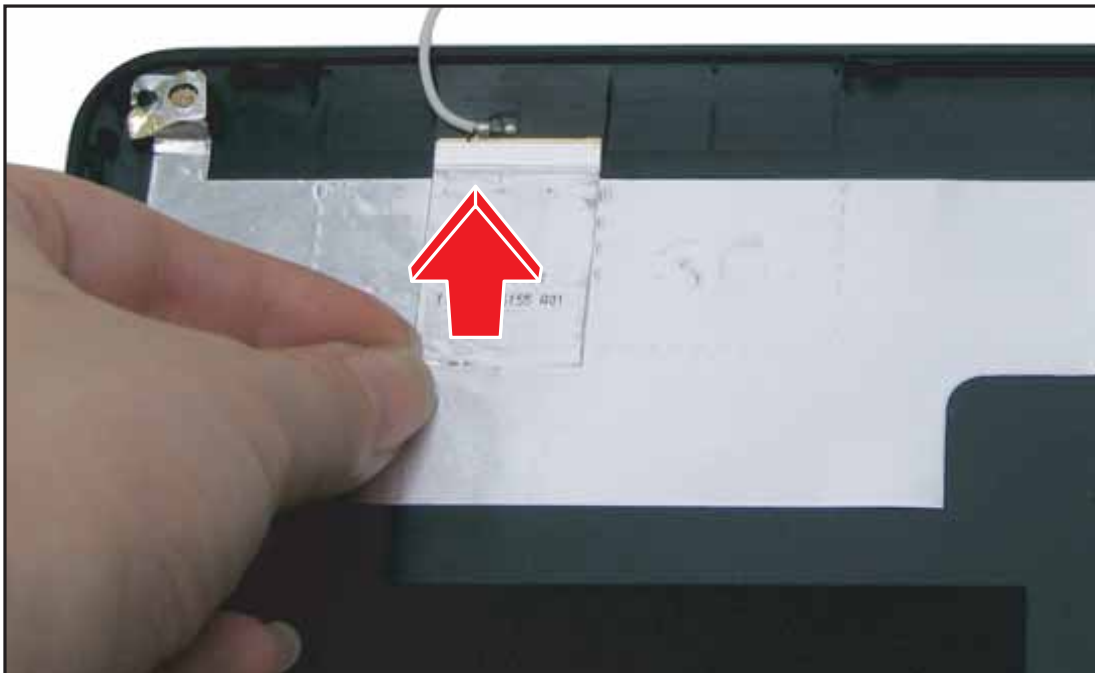
Figure 3:154.   Removing the WLAN Antennas (1 of 2)

Service and Maintenance

3. Remove the main antenna.
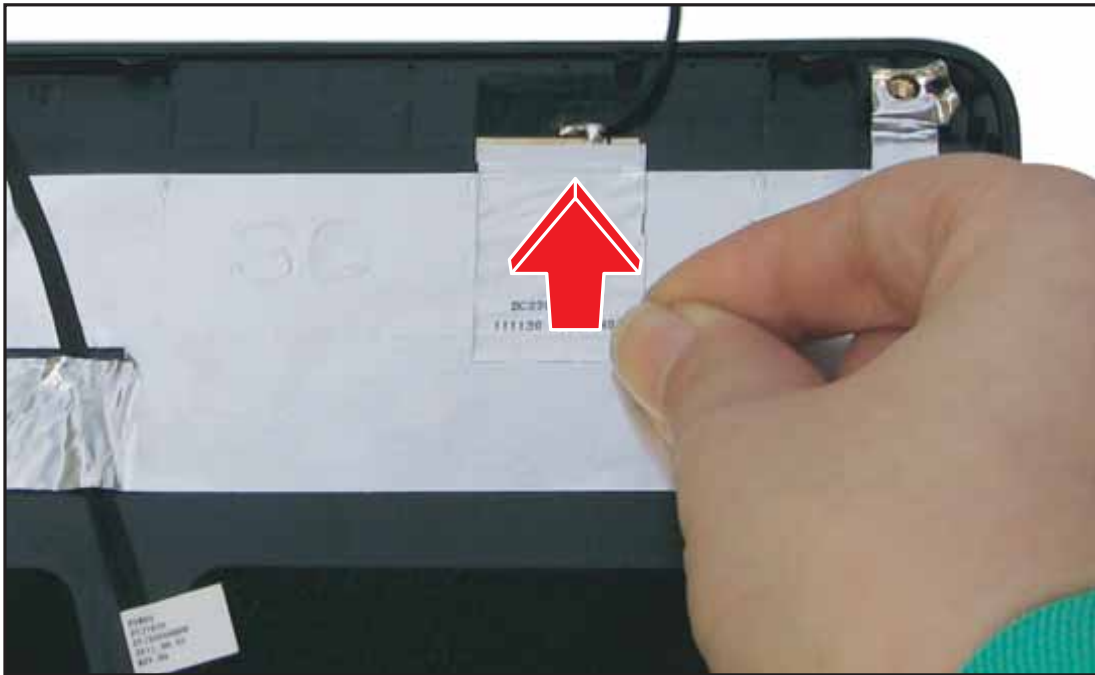
Figure 3:155.   Removing the WLAN Antennas (2 of 2)

WLAN Antenna Installation

1. Attach the main (black) WLAN antenna on the upper right corner of the LCD cover.
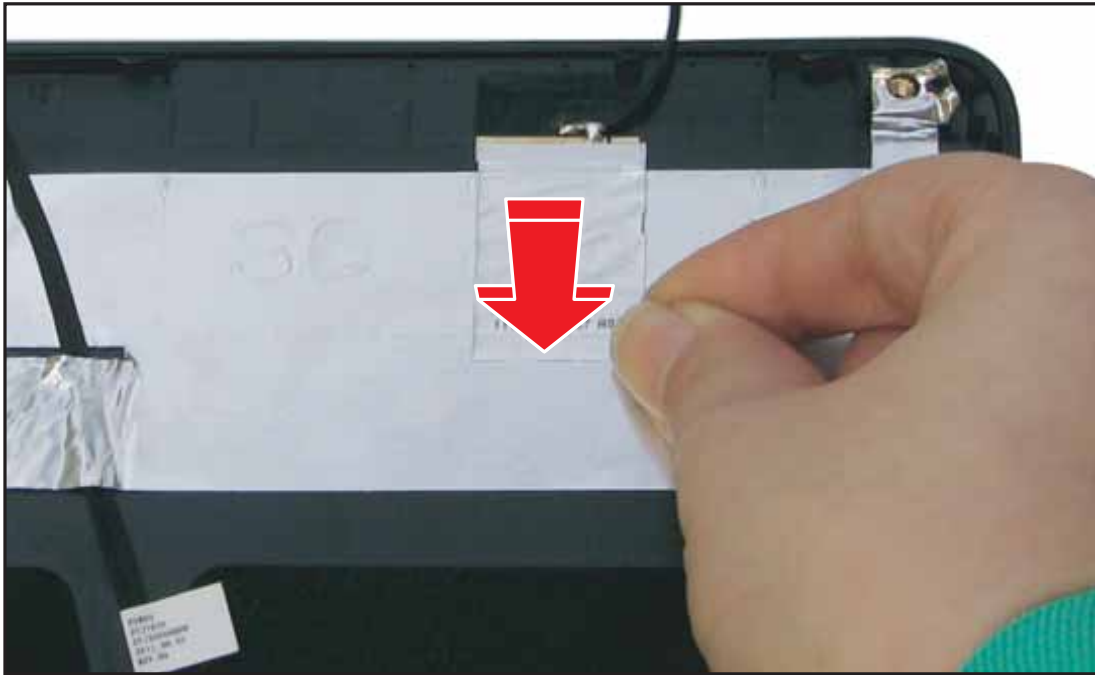
Figure 3:156.   Installing the WLAN Antennas (1 of 3)

2. Attach the auxiliary (white) WLAN antenna on the upper left corner of the LCD cover.
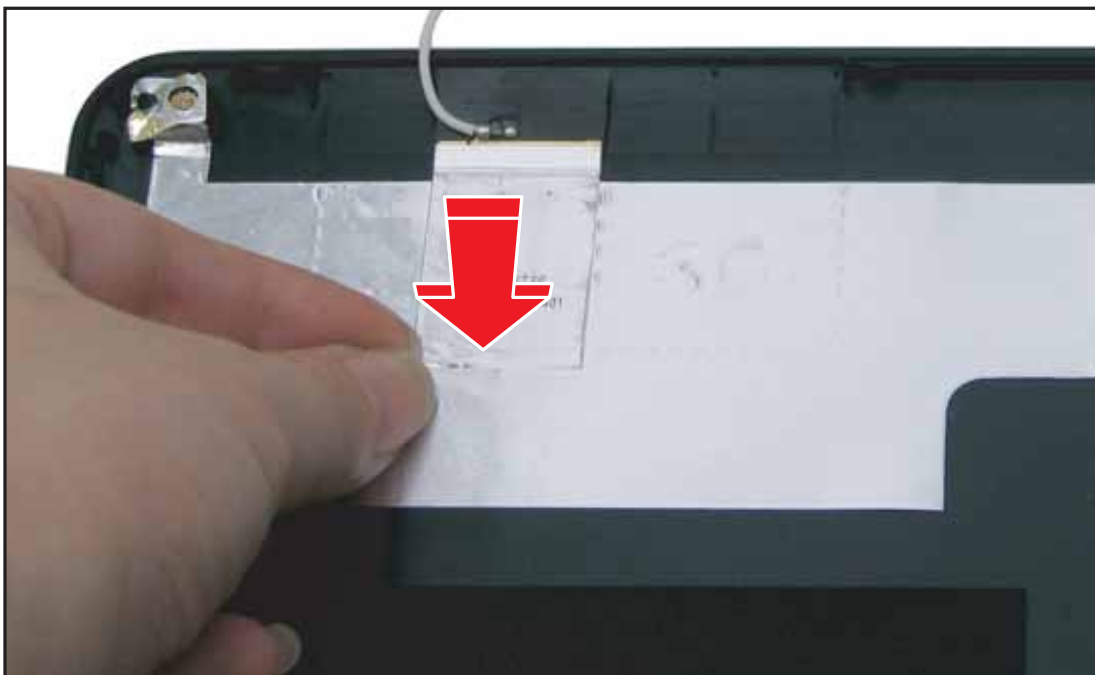
Figure 3:157.   Installing the WLAN Antennas (2 of 3)

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3. Route the WLAN antenna cables through the guides on the LCD cover.
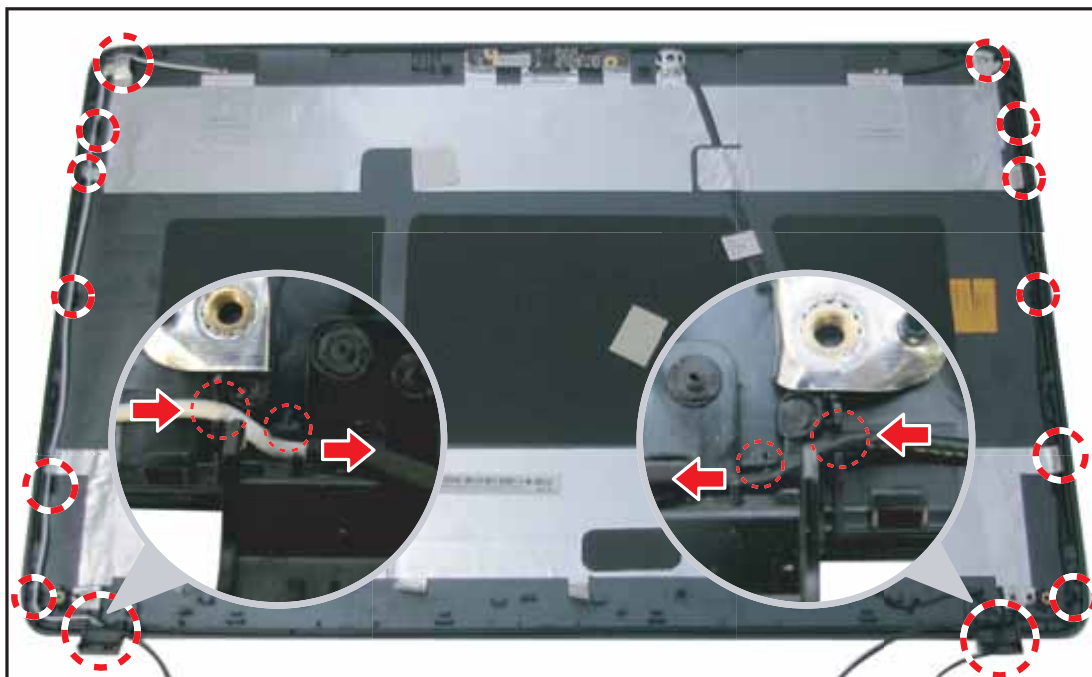
Figure 3:158. Installing the WLAN Antennas (3 of 3)

Microphone Module Removal

Prerequisite:

❋ **LCD Panel Removal** on page **3-91**

1. On the LCD cover, remove the metallic tape securing the microphone cable.
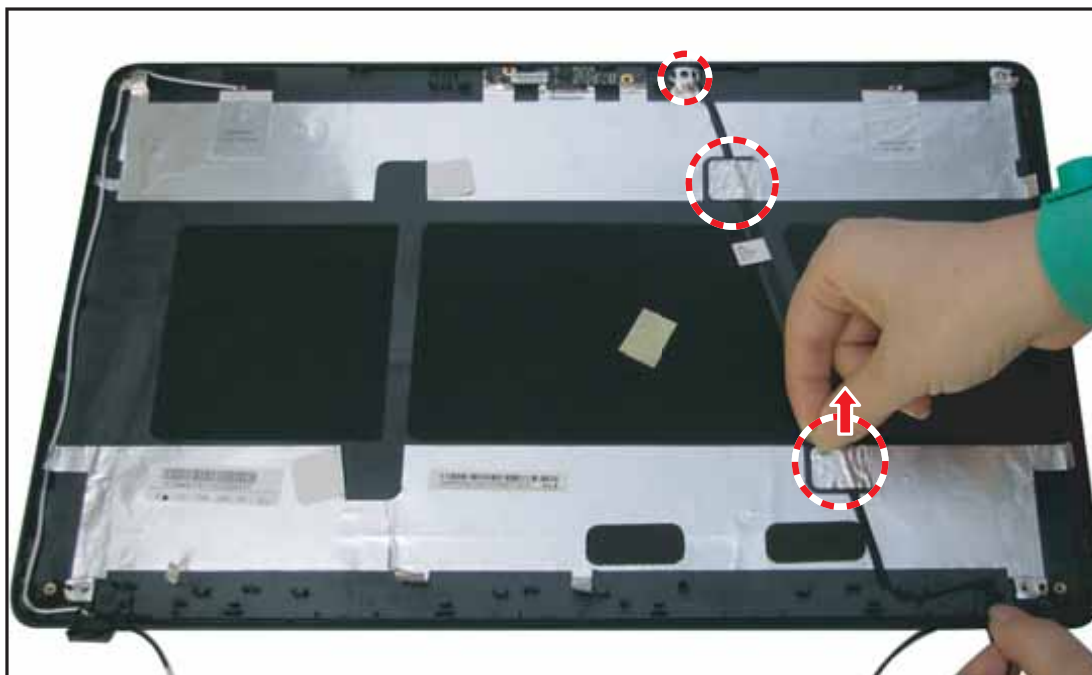
Figure 3:159.   Removing the Microphone Module (1 of 2)

2. Lift to remove the microphone from the slot on the LCD cover.
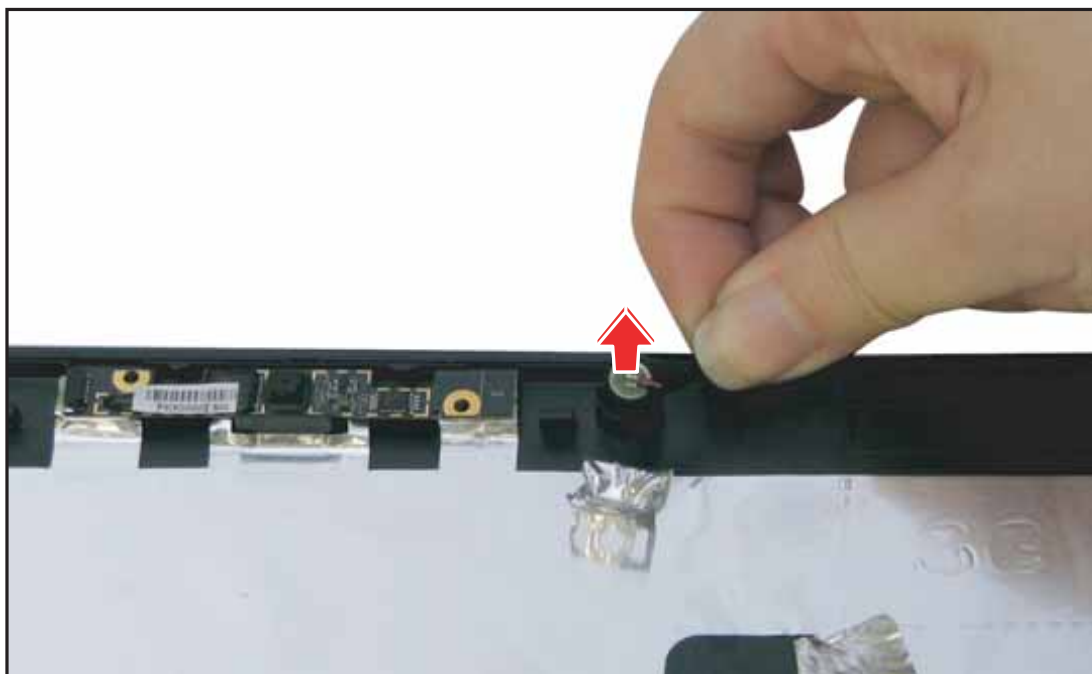
Figure 3:160.   Removing the WLAN Antennas (2 of 2)

Service and Maintenance

Microphone Module Installation

1. Install the microphone into the slot on the LCD cover.
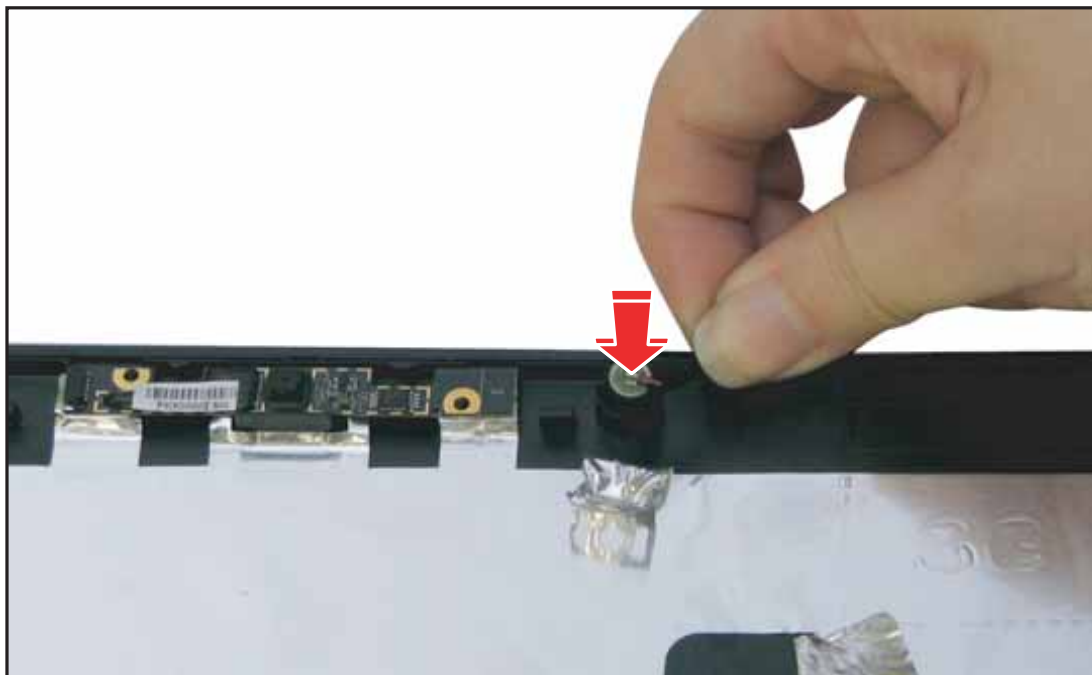
Figure 3:161.   Installing the Microphone Module (1 of 2)

2. Attach the metallic tape to secure the microphone cable on the LCD cover.
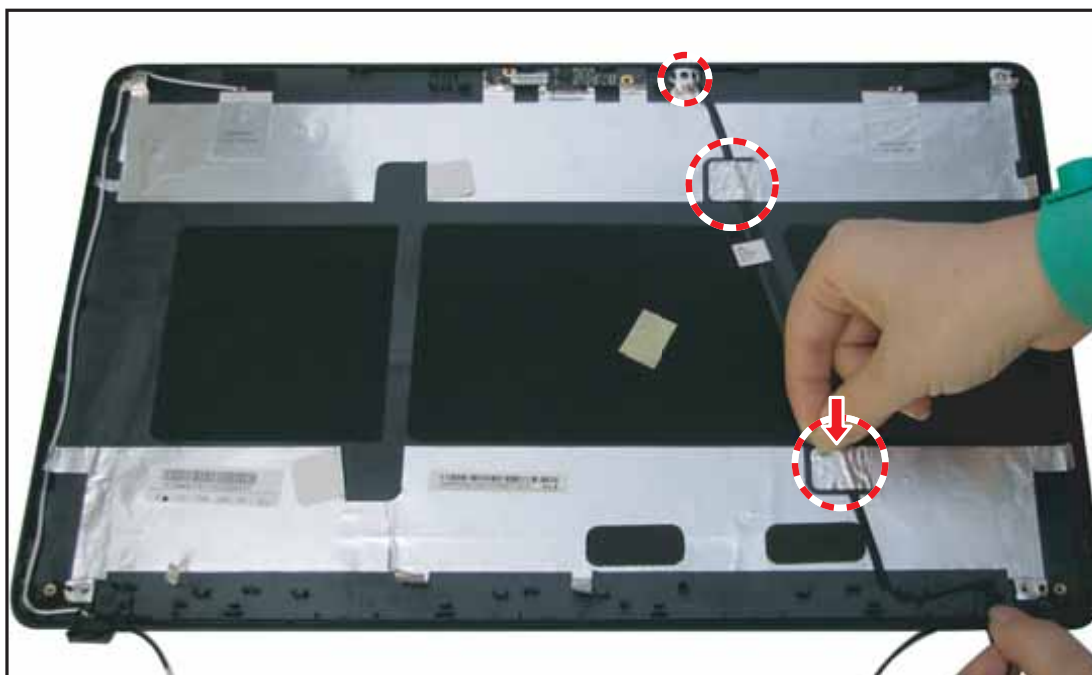
Figure 3:162.   Installing the Microphone Module (2 of 2)

3. Install the LCD panel (see **LCD Panel Installation** on page **3-95**).

CHAPTER **4**

Troubleshooting

Troubleshooting

This chapter contains information about troubleshooting common problems associated with the tablet.

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 to test only Acer products. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.
- Do not replace a non-defective FRU.

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

Table 4:1.   Verified Symptoms

Symptoms	See
Power on Issues	**Figure 4:1. Power On Issues** on page **4-3**
No Display Issues	**Figure 4:2. No Display Issues** on page **4-4**
LCD Picture Failure	**Figure 4:3. LCD Picture Failure** on page **4-6**
Internal Keyboard Failure	**Figure 4:4. Internal Keyboard Failure** on page **4-7**
Touchpad Failure	**Figure 4:5. Touchpad Failure** on page **4-8**
Internal Speaker Failure	**Figure 4:6. Internal Speaker Failure** on page **4-9**
Internal Microphone Failure	**Figure 4:7. Internal Microphone Failure** on page **4-11**
USB Failure	**Figure 4:8. USB Failure** on page **4-12**
Wireless Function Failure	**Figure 4:9. Wireless Function Failure** on page **4-13**
Bluetooth Function Failure	**Figure 4:10. Bluetooth Function Failure** on page **4-14**
4-in-1 Card Function Failure	**Figure 4:11. 4-in-1 Card Function Failure** on page **4-15**
Unit Thermal Failure	**Figure 4:12. Unit Thermal Failure** on page **4-16**
Cosmetic Failure	**Figure 4:13. Cosmetic Failure** on page **4-17**
Other Functions Failure	Page **4-18**

4. If the issue is still not resolved, see **Online Support Information** on page **8-2**.

Power On Issues

If the system does not power on, perform the following:
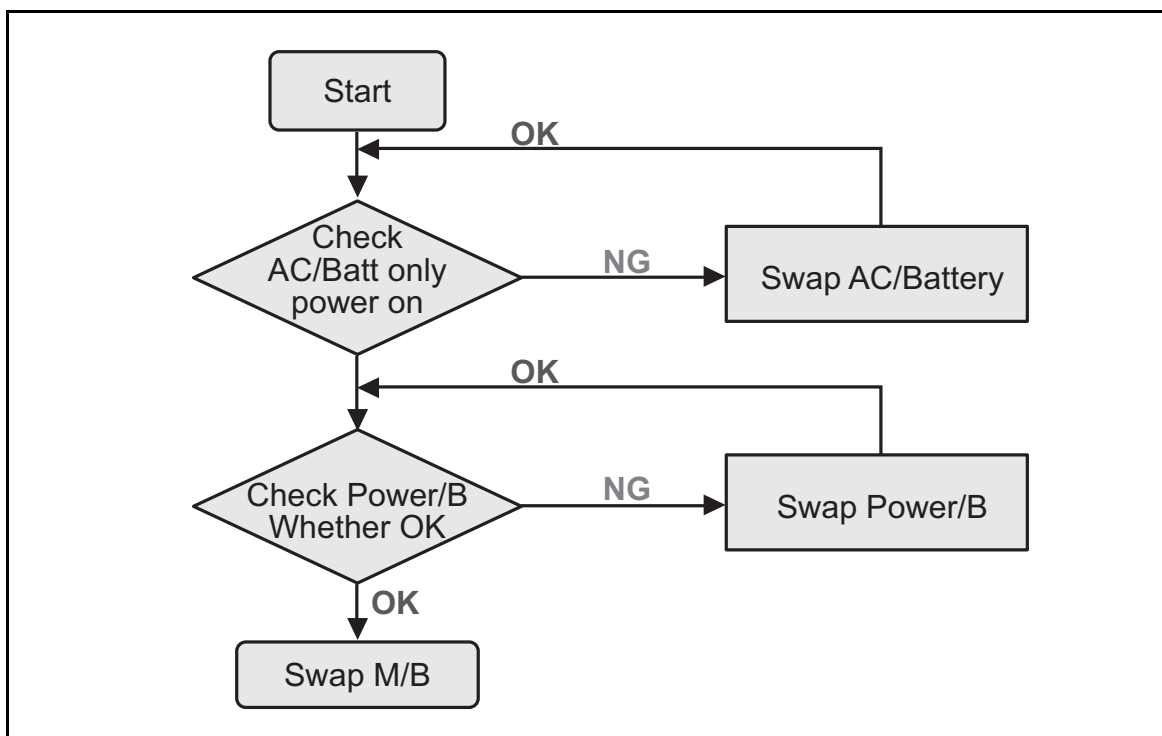
Figure 4:1.   Power On Issues

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 (See **Unit Thermal Failure** on page **4-16**) 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, refer to **Online Support Information** on page **8-2**.

No Display Issues

If the system does not display, perform the following:
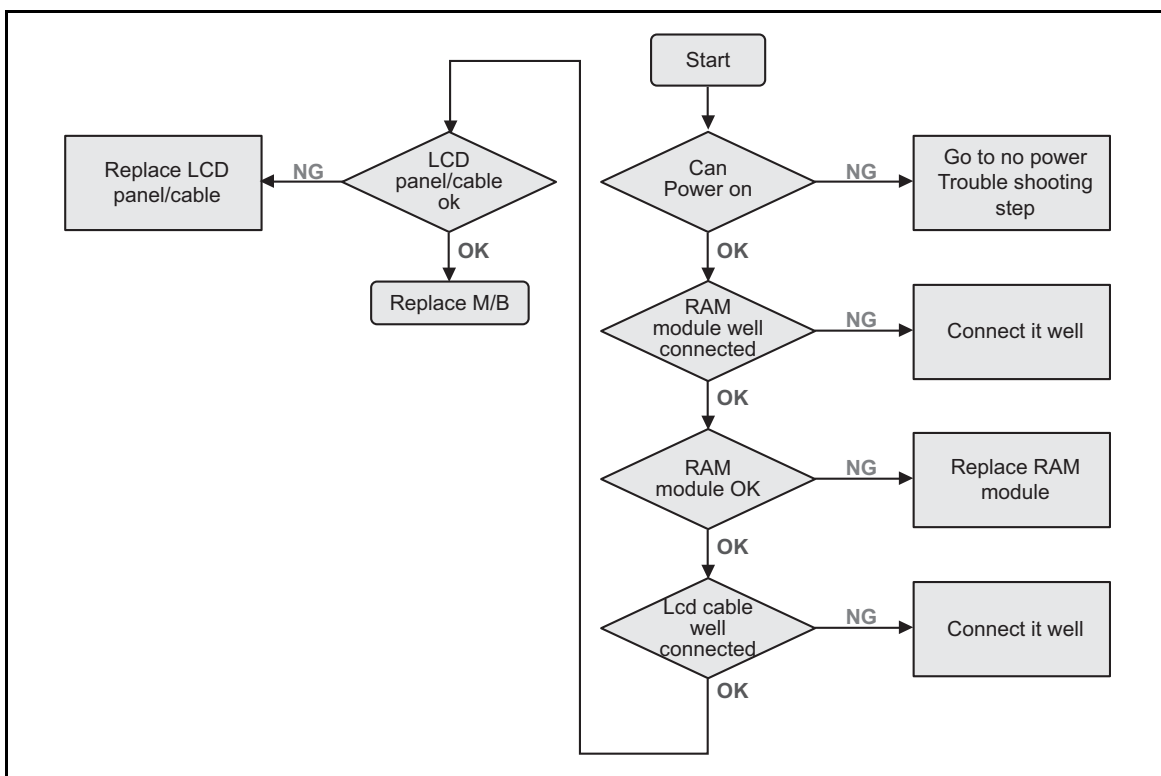
Figure 4:2.   No Display Issues

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

3. If there is no power, refer to **Power On Issues** on page **4-3**. Otherwise, continue to the next step.

4. If there is power, drain the stored power by removing the power cable and battery. Hold the power button for 10 seconds.

5. Connect the power and reboot the computer.

6. Connect an external monitor to the computer and switch between the internal display and the external display is by pressing Fn+F5.

7. If the POST or video appears on the external display only, refer to **LCD Picture Failure** on page **4-6**. Otherwise, continue to the next step.

8. Disconnect the power and all external devices including port replicators or docking stations.

9. Remove any memory cards and CD/DVD discs.

10. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.

11. Reseat the memory modules.

12. Remove the drives (refer to **Maintenance Flowchart** on page **3-4**).

13. If the issue is still not resolved, refer to **Online Support Information** on page **8-2**.

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.

- If extensive pixel damage is present (different colored spots in the same locations on the screen), the LCD is faulty and should be replaced.

⟹ **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.

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. Run the *Windows Memory Diagnostic* from the operating system DVD and follow the on-screen prompts.

8. If the issue is still not resolved, refer to **Online Support Information** on page **8-2**.

LCD Picture Failure

If the LCD picture fails, perform the following:

```
                    Start
                      |    OK
                      v  <-----------------------+
              +----------------+                 |
             /  Check LCD       \     NG      +-----------+
            <   module           >---------->| Swap       |
             \                  /            | LCD cable/  |
              +----------------+             | LCD panel   |
                      | OK                   +-----------+
                      v
              +----------------+
              |   Swap M/B      |
              +----------------+
```
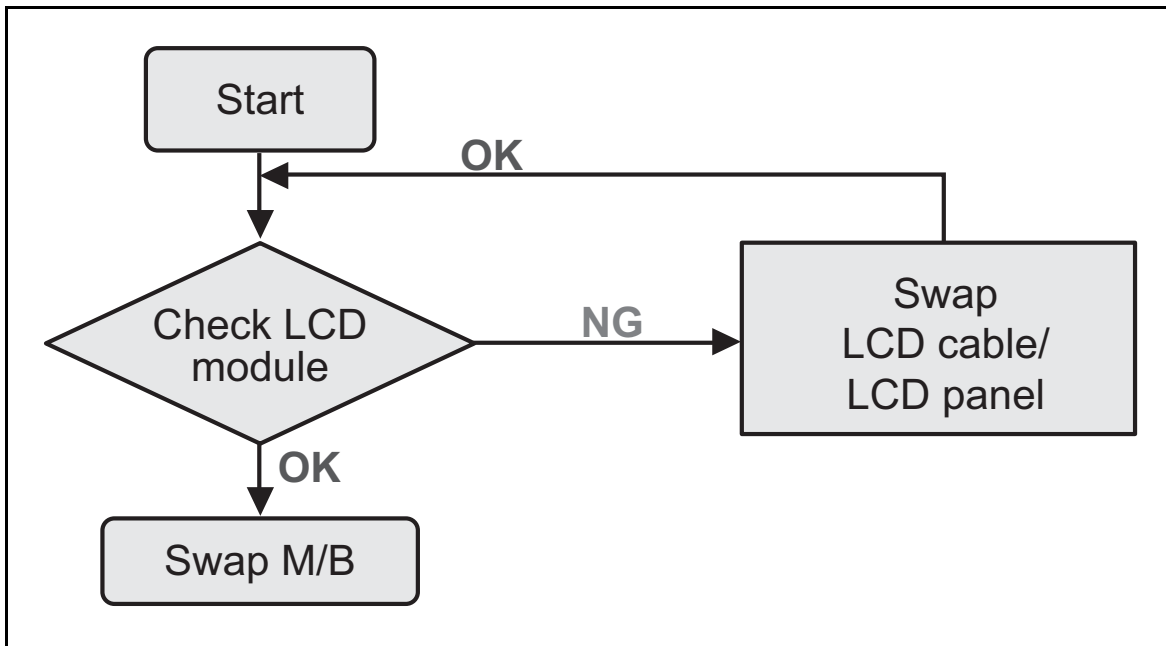
Figure 4:3.   LCD Picture Failure

Internal Keyboard Failure

If the internal keyboard fails, perform the following:
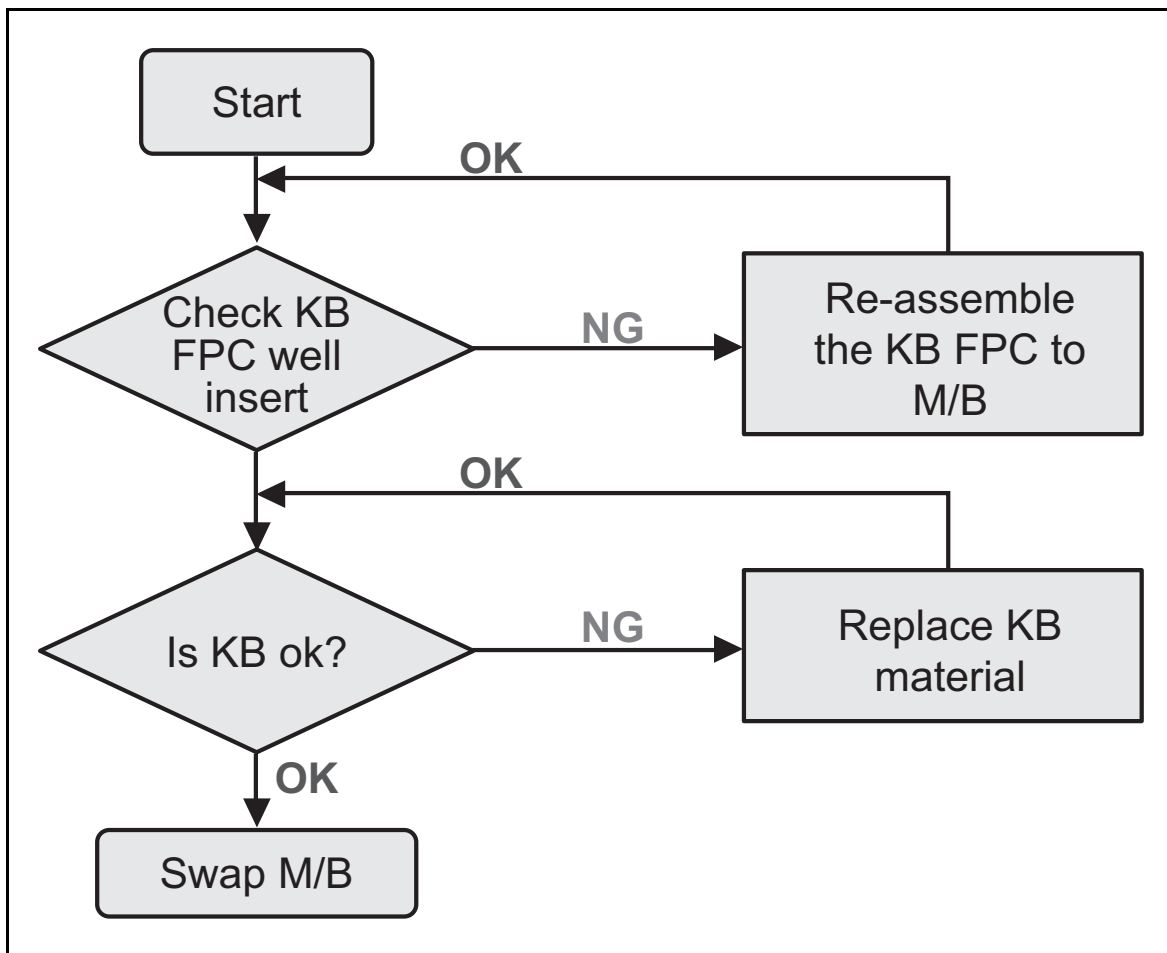
Figure 4:4.   Internal Keyboard Failure

Touchpad Failure

If the touchpad fail, perform the following:

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │        OK
                         ▼   ┌──────────────────┐
                    ◇        │   Re-assemble    │
            Check M/B ──NG──▶│ the T/P FFC to M/B│
              T/P FFC        └──────────────────┘
                    ◇
                         │        OK
                         ▼   ┌──────────────────┐
                    ◇        │ Swap/Re-assemble │
           Check Logic ─NG──▶│  the T/P board or│
             Upper           │T/P board or T/P FFC│
                    ◇        └──────────────────┘
                         │ OK
                         ▼
                    ┌──────────┐
                    │ Swap M/B │
                    └──────────┘
```
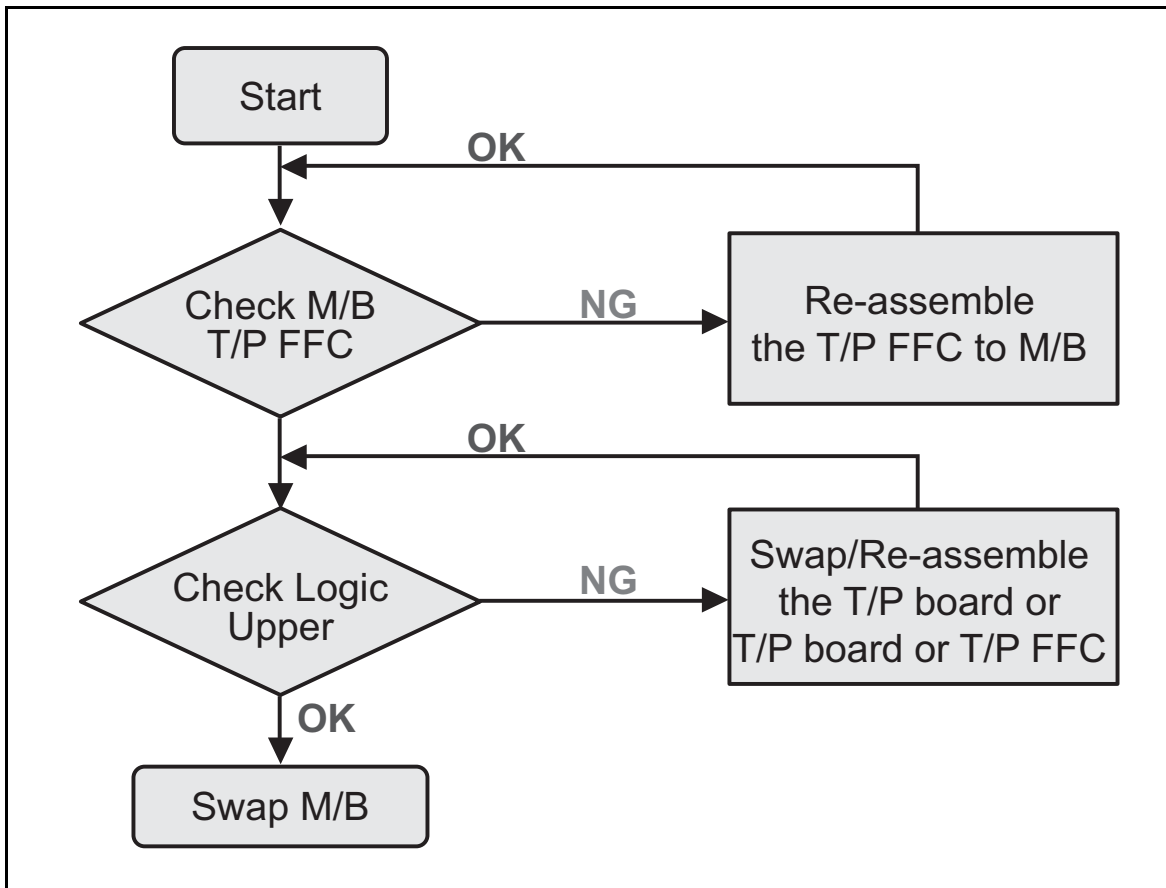
Figure 4:5.   Touchpad Failure

Internal Speaker Failure

If the internal speakers fail, perform the following:
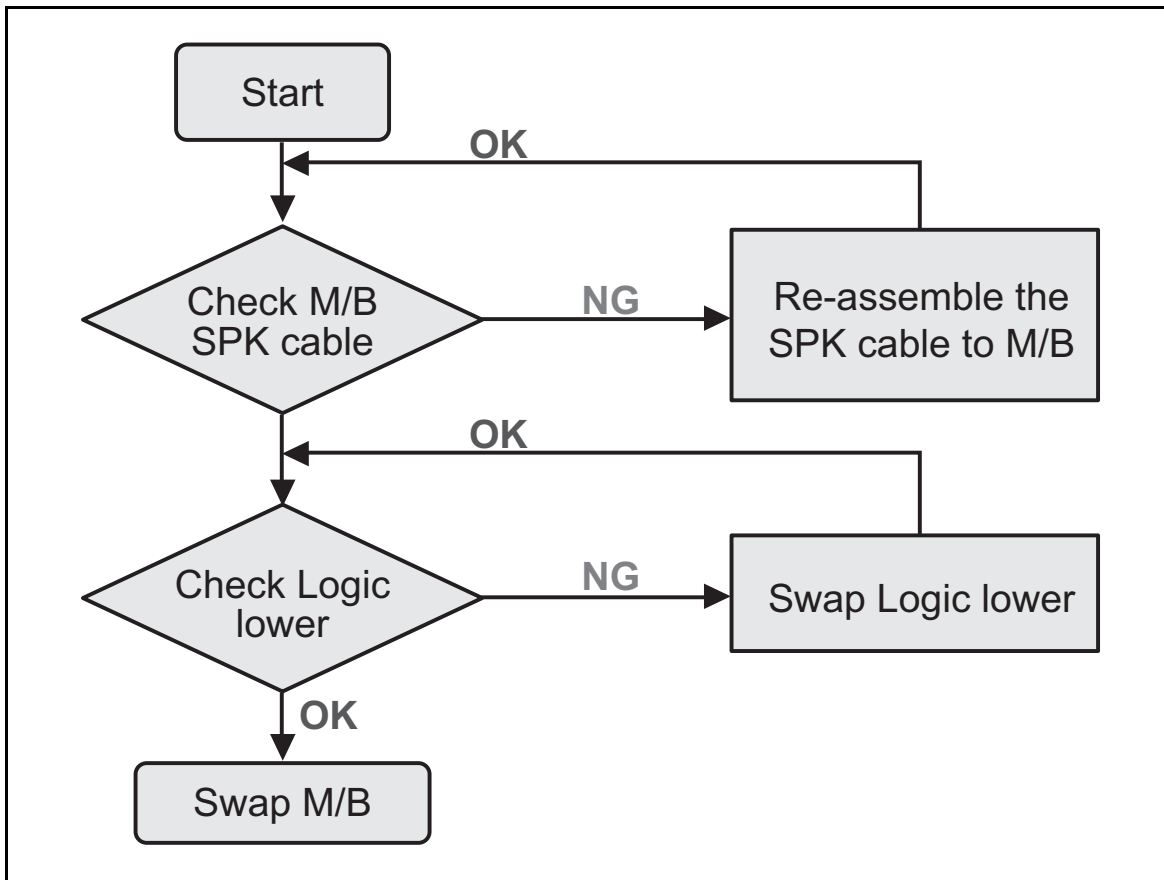
Figure 4:6. Internal Speaker Failure

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** on page **8-2**.

Internal Microphone Failure

If the internal microphone fails, perform the following:
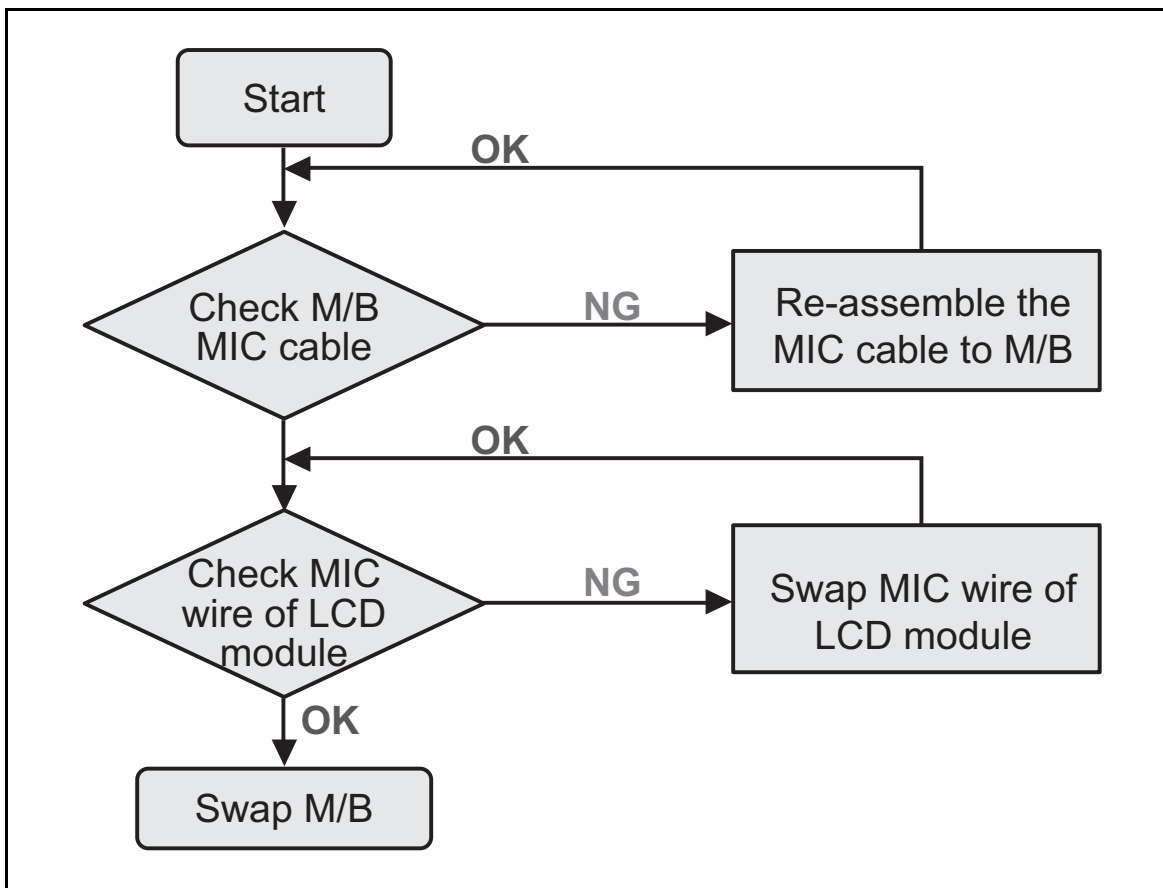
Figure 4:7.   Internal Microphone Failure

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** on page **8-2**.

USB Failure

If the USB fails, perform the following:

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │        OK ◄──────────────────┐
                         ▼                               │
                    ╱──────────╲                  ┌─────────────┐
                   ╱ Check USB  ╲      NG          │ Re-assemble │
                  ╱  FFC to USB  ╲────────────────►│  USB FFC    │
                   ╲   Connect   ╱                 └─────────────┘
                    ╲──────────╱
                         │        OK ◄──────────────────┐
                         ▼                               │
                    ╱──────────╲                  ┌─────────────┐
                   ╱  Check     ╲      NG          │  Swap       │
                  ╱   USB/B      ╲────────────────►│  USB/B      │
                   ╲            ╱                  └─────────────┘
                    ╲──────────╱
                         │        OK ◄──────────────────┐
                         ▼                               │
                    ╱──────────╲                  ┌─────────────┐
                   ╱ Check USB  ╲      NG          │  Replace    │
                  ╱  CONN is well ╲───────────────►│  USB CONN   │
                   ╲            ╱                  └─────────────┘
                    ╲──────────╱
                         │ OK
                         ▼
                    ┌──────────┐
                    │ Swap M/B │
                    └──────────┘
```
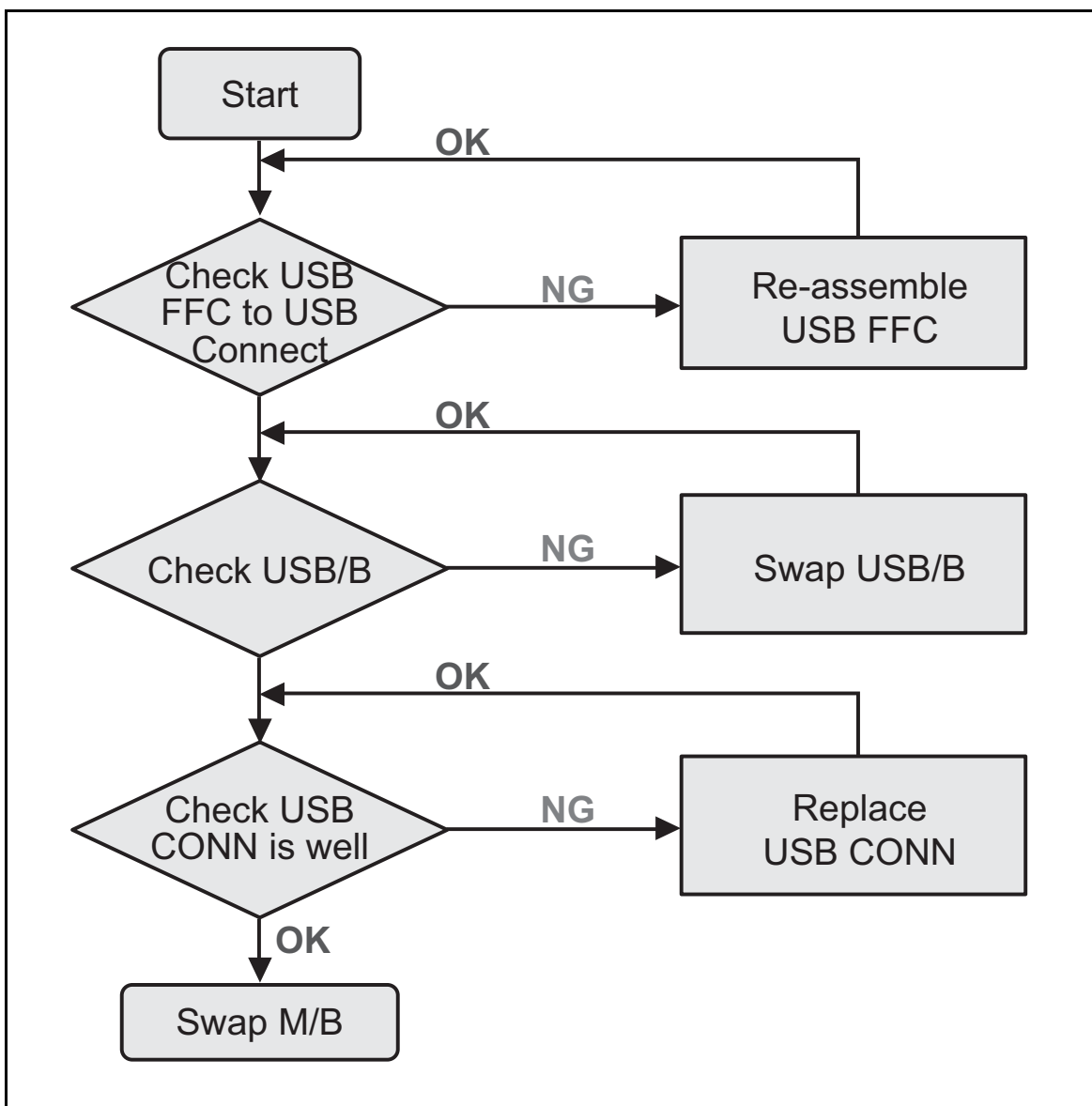
Figure 4:8.   USB Failure

Wireless Function Failure

If the wireless function fails, perform the following:
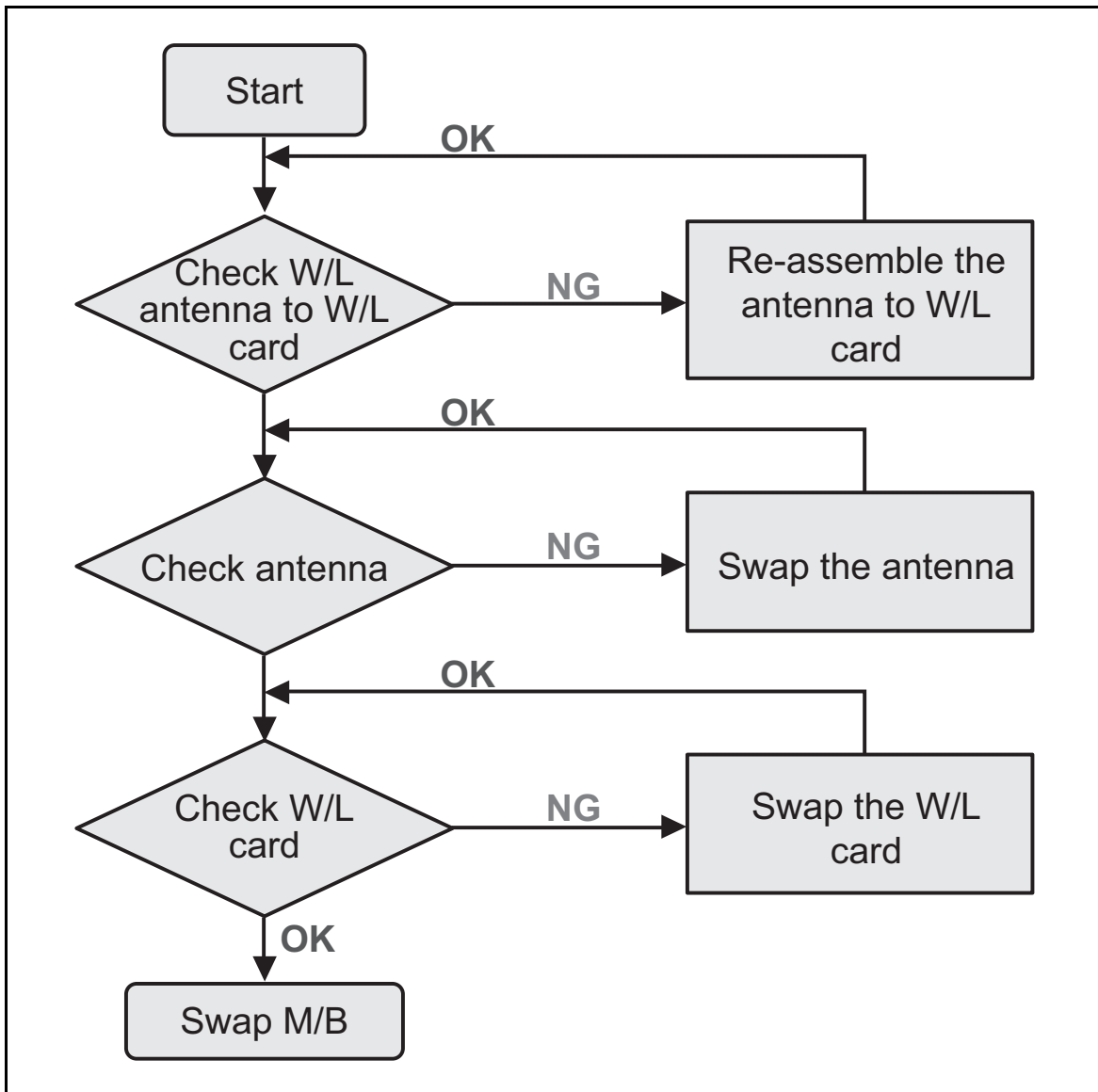
Figure 4:9.   Wireless Function Failure

Bluetooth Function Failure

If the Bluetooth function fails, perform the following:
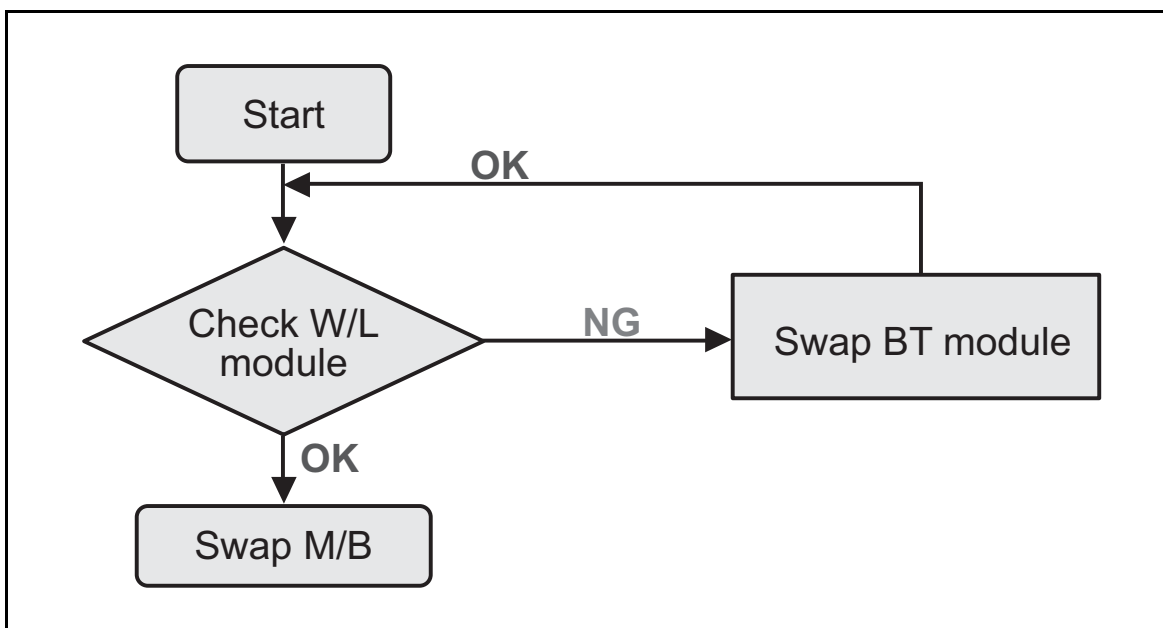
Figure 4:10. Bluetooth Function Failure

4-in-1 Card Function Failure

If the 4-in-1 card function fails, perform the following:
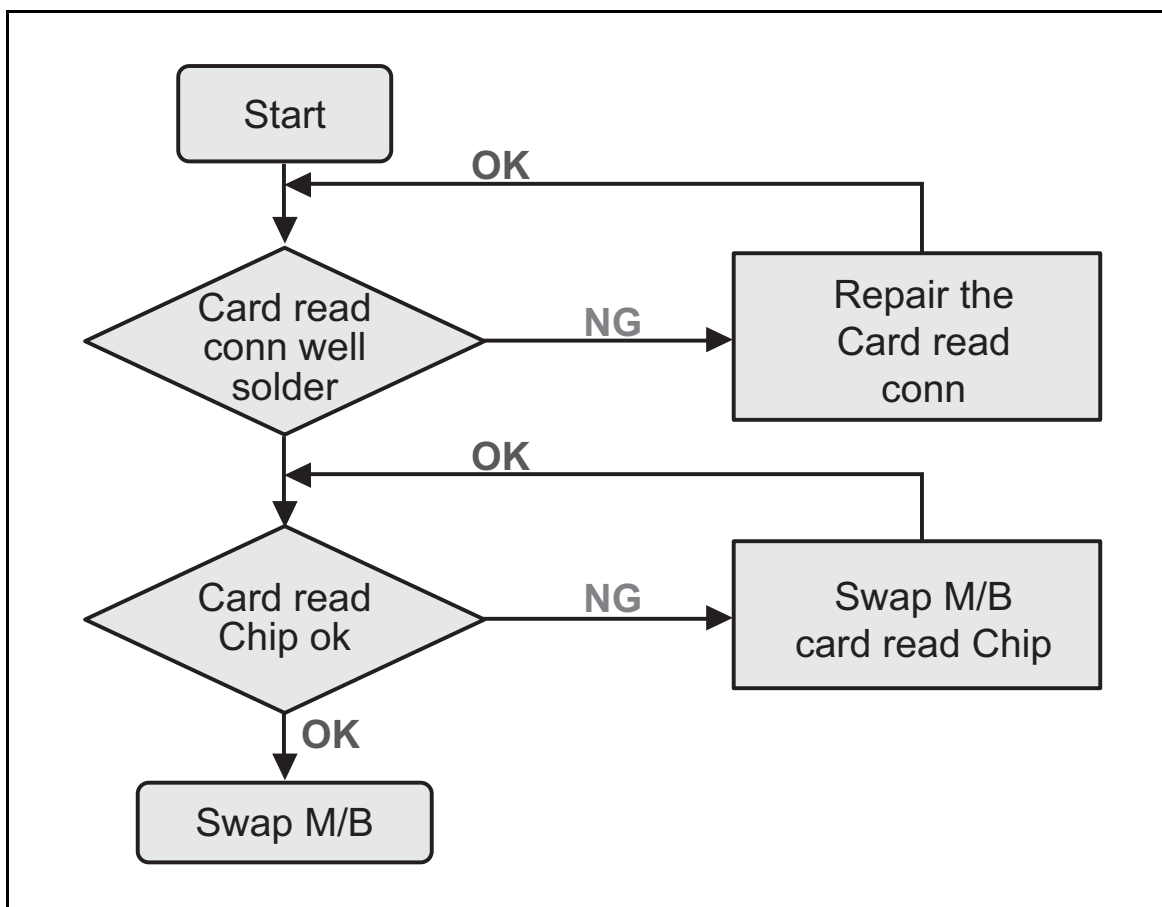
Figure 4:11.   4-in-1 Card Function Failure

Unit Thermal Failure

If the unit thermal fails, perform the following:

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘────────────── OK ──────────┐
                         │                                 │
                         ▼                                 │
                    ╱─────────╲                            │
                   ╱ Fan cable ╲          NG        ┌───────────────┐
                  ╱  Well       ╲──────────────────▶│ Connect it well│
                   ╲ connected  ╱                   └───────────────┘
                    ╲─────────╱
                         │◀───────────── OK ─────────────┐
                         ▼                               │
                    ╱─────────╲                          │
                   ╱           ╲        NG        ┌──────────────┐
                  ╱   Fan ok    ╲───────────────▶│  Replace fan  │
                   ╲           ╱                  └──────────────┘
                    ╲─────────╱
                         │◀───────────── OK ────────────┐
                         ▼                              │
                    ╱─────────╲                         │
                   ╱  Thermal   ╲      NG        ┌──────────────┐
                  ╱ well insert  ╲─────────────▶│ Insert is well│
                   ╲            ╱                └──────────────┘
                    ╲─────────╱
                         │ OK
                         ▼
                   ┌────────────┐
                   │ Replace M/B │
                   └────────────┘
```
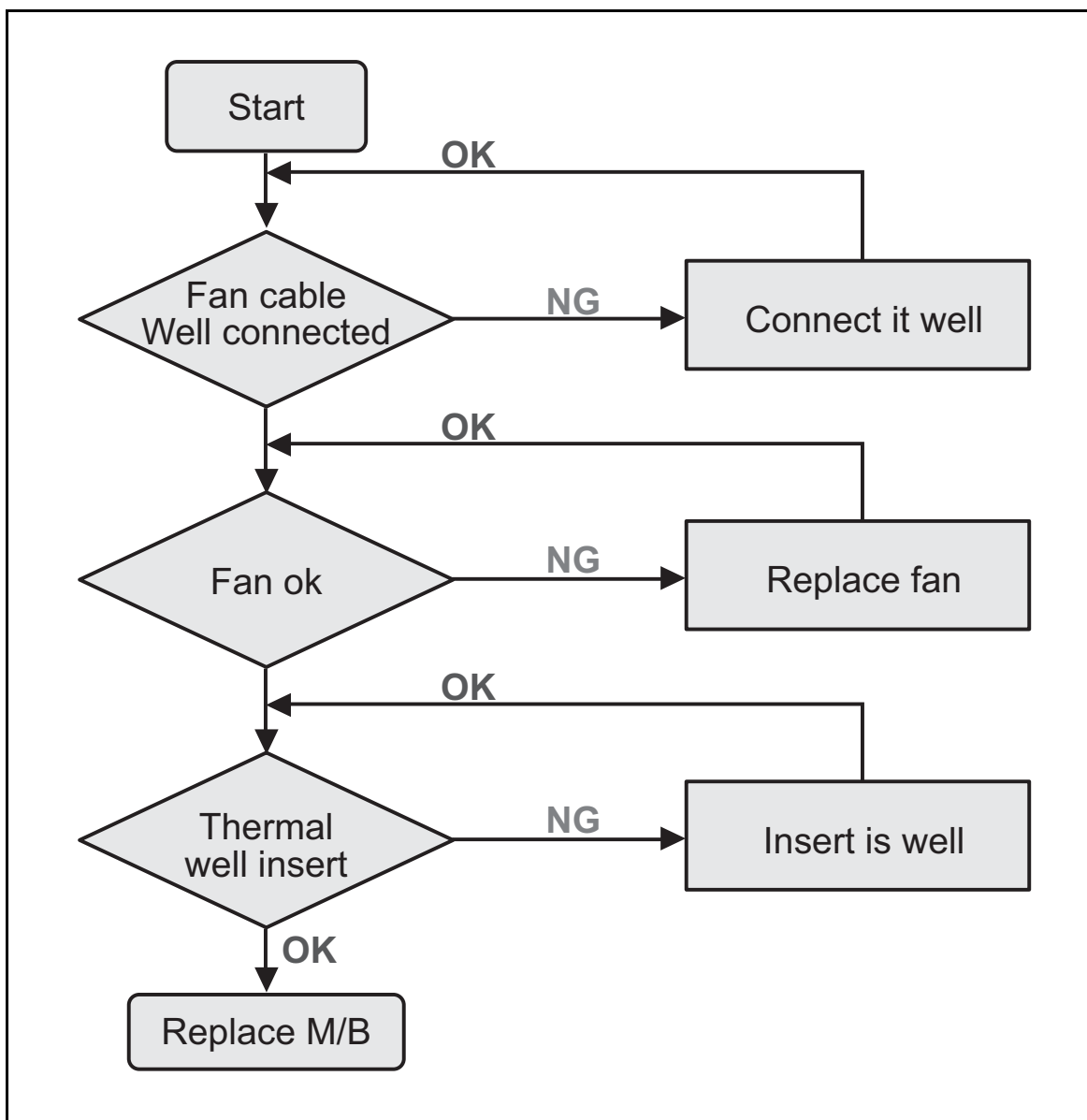
Figure 4:12.   Unit Thermal Failure

Cosmetic Failure

If the cosmetic fails, perform the following:
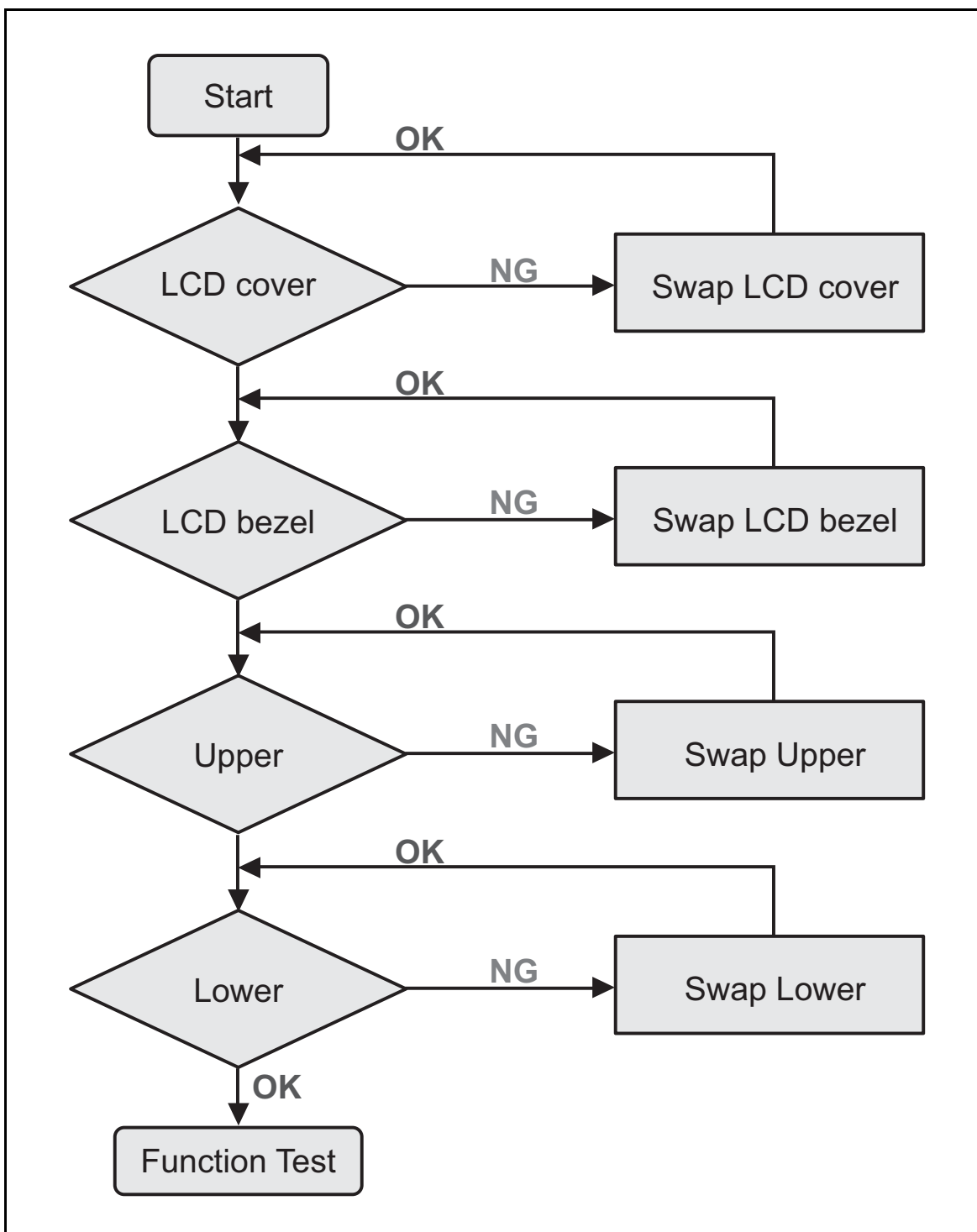
Figure 4:13.   Cosmetic Failure

Other Functions Failure

If other functions such as the CRT switch, HDMI switch, LAN connection, external microphone, external speaker, or USB 3.0, perform the following:

1. Check if the drive is ok.

2. Check if the test utility is ok.

3. Swap the mainboard.

BIOS Problems

Forget BIOS Password

If the user forgets the BIOS password, discharge CMOS by shorting the JCMOS1 connector.

Refer to **Clearing the Password Check and BIOS Password** on page **2-24**.

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** on page **8-2**.

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 (refer to **System Utilities** on page **2-2**) 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 do 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.

*   Verify that the power supply being used at the time of the failure is operating correctly. (refer to **Power On Issues** on page **4-3**).

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

CHAPTER 5

Jumper and Connectors Location

Jumper and Connector Locations

Mainboard Top View
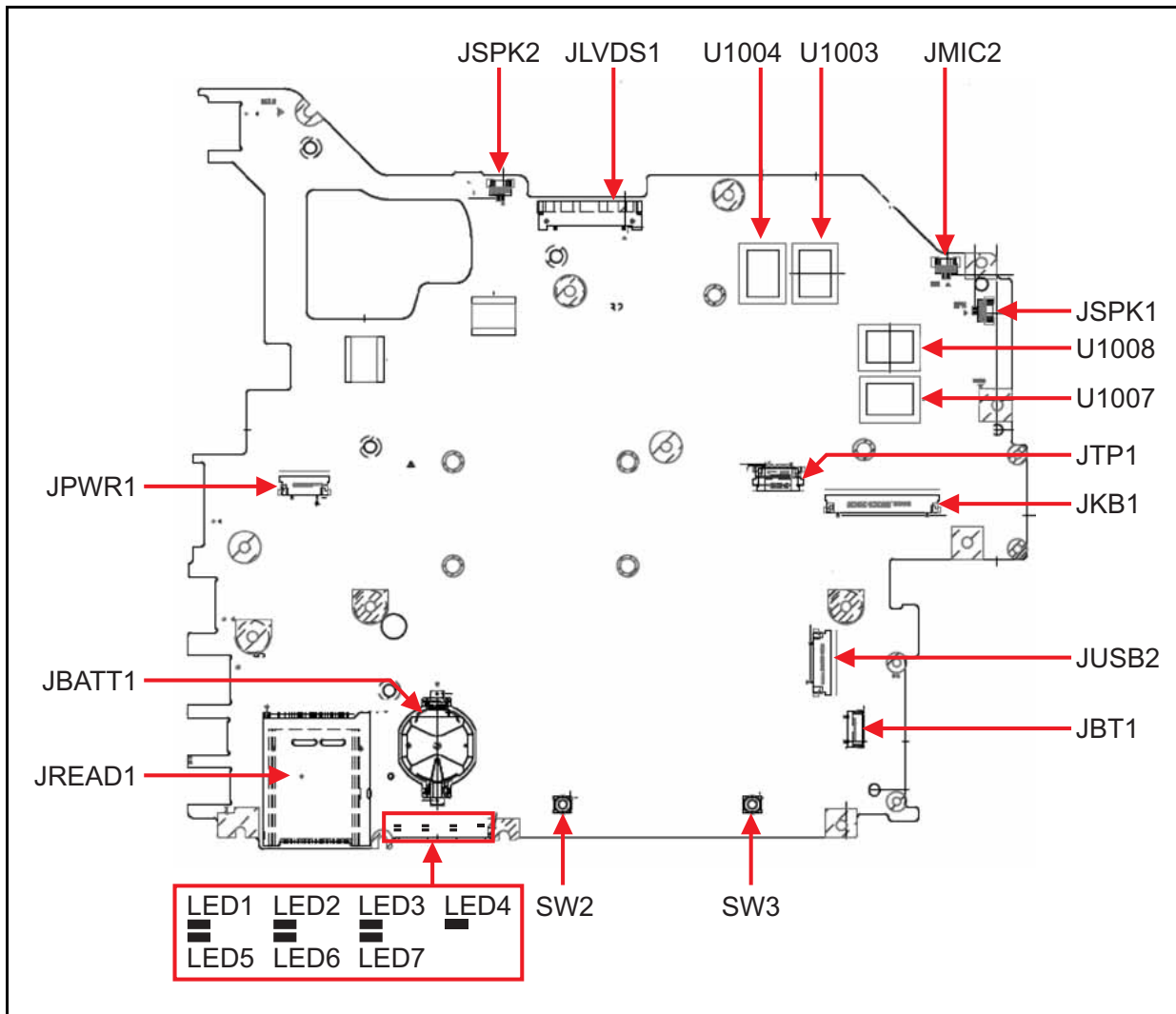
Figure 5:1.   Mainboard Top

Table 5:1.   Mainboard Top Jumper and Connectors

Item	Description
JSPK1, JSPK2	Internal Speaker Connector
JLVDS1	LVDS Connector
U1003, U1004, U1007, U1008	VRAM
JMIC2	Internal Digital MIC Connector
JTP1	Touchpad Connector
JKB1	Internal Keyboard Connector

Item	Description
JUSB2	USB Board Connector
JBT1	Bluetooth Connector
SW2, SW3	Touchpad Left/Right Button
LED1, LED5	Power LED
LED2, LED6	Battery Status LED (Amber./Blue)
LED3, LED7	HDD LED
LED4	WLAN LED
JREAD1	Card Reader Connector
JBATT1	CMOS Battery Connector
JPWR1	Power Board Connector

Mainboard Bottom View
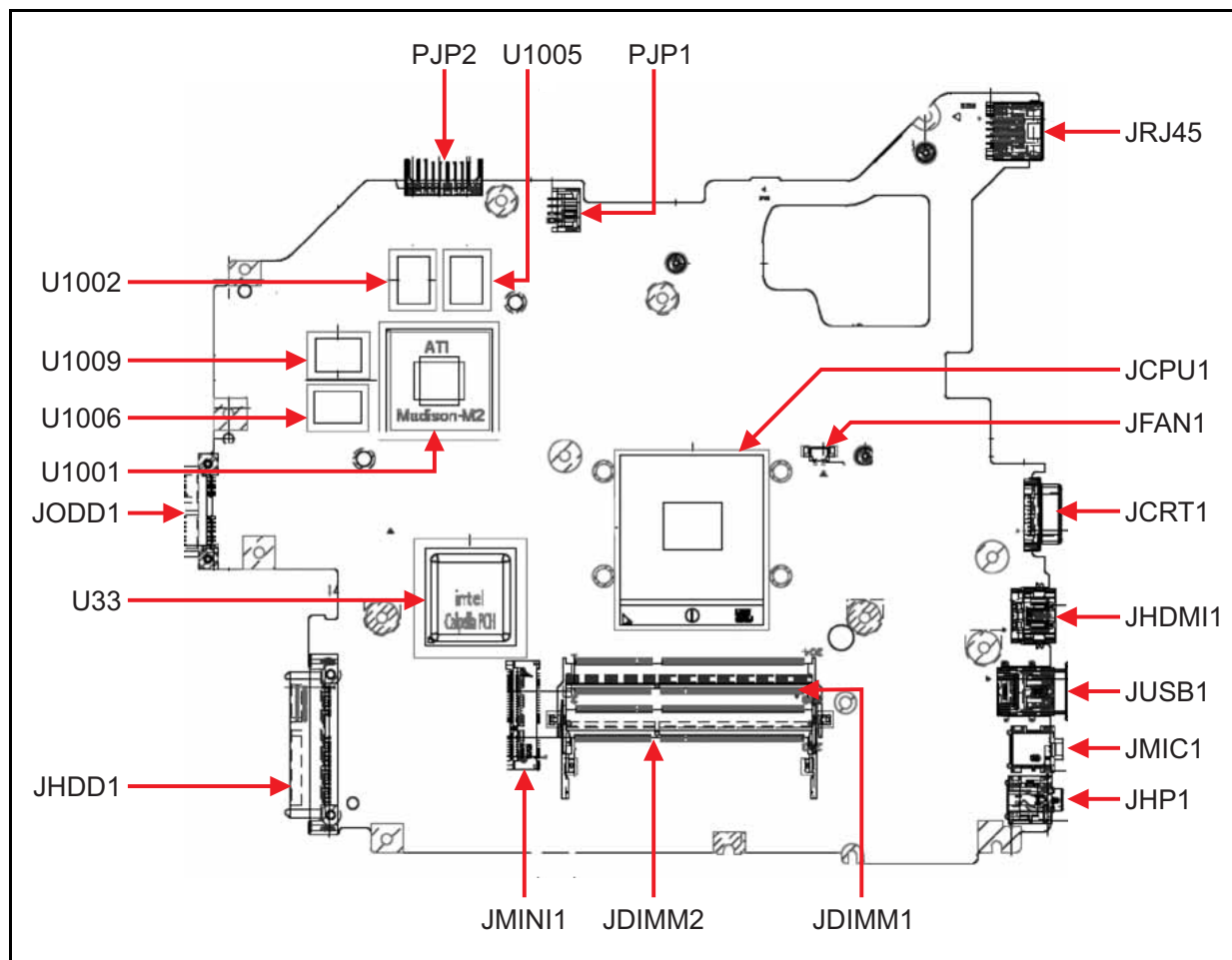
Figure 5:2. Mainboard Bottom

Table 5:2. Mainboard Bottom Jumper and Connectors

Item	Description
PJP1	DC-IN Connector
PJP2	Battery Connector
JRJ45	LAN Connector
JCRT1	D-SUB Connector
JHDMI1	HDMI Connector
JUSB1	USB3.0 or USB2.0 Connector
JMIC1	External MIC Connector
JHP1	Headphone/SPDIF Connector
JDIMM1	DDR3 Connector
JDIMM2	DDR3 Connector
JHDD1	HDD Connector

Item	Description
JODD1	ODD Connector
U33	PCH Chip
U1001	VGA Chip
JCPU1	CPU Connector
U1002,U1005,U1006,U1009	VRAM
JMINI1	Mini-Card Connector
JFAN1	FAN Connector

USB Board View

Bottom View   **Top View**
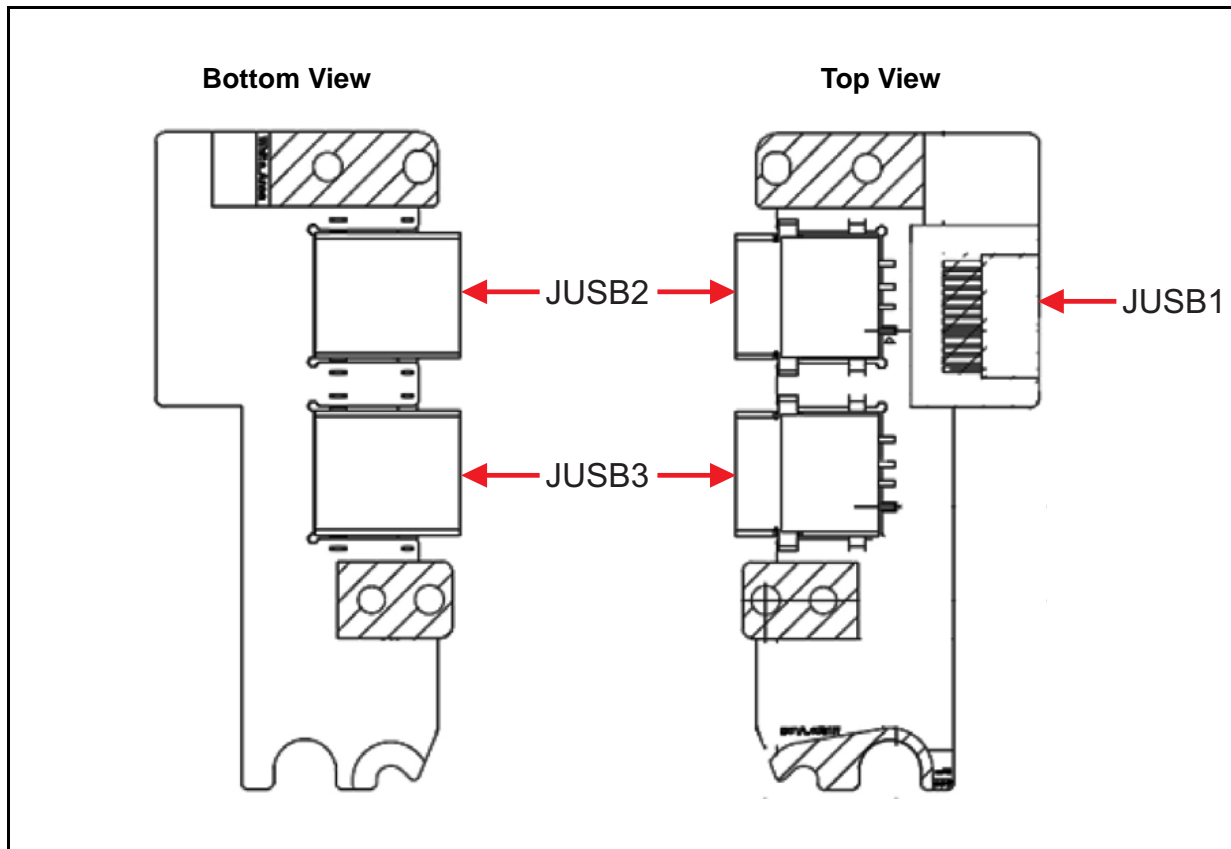
JUSB2

JUSB1

JUSB3

Figure 5:3.   USB Board

Table 5:3.   USB Board Jumper and Connectors

Item	Description
JUSB1	USB FFC Connector
JUSB2, JUSB3	USB 2.0 Connector

Power Board View

Top View

LED2   SW2

LED1   SW1   LED3

Bottom View

JPWR1

White.Area
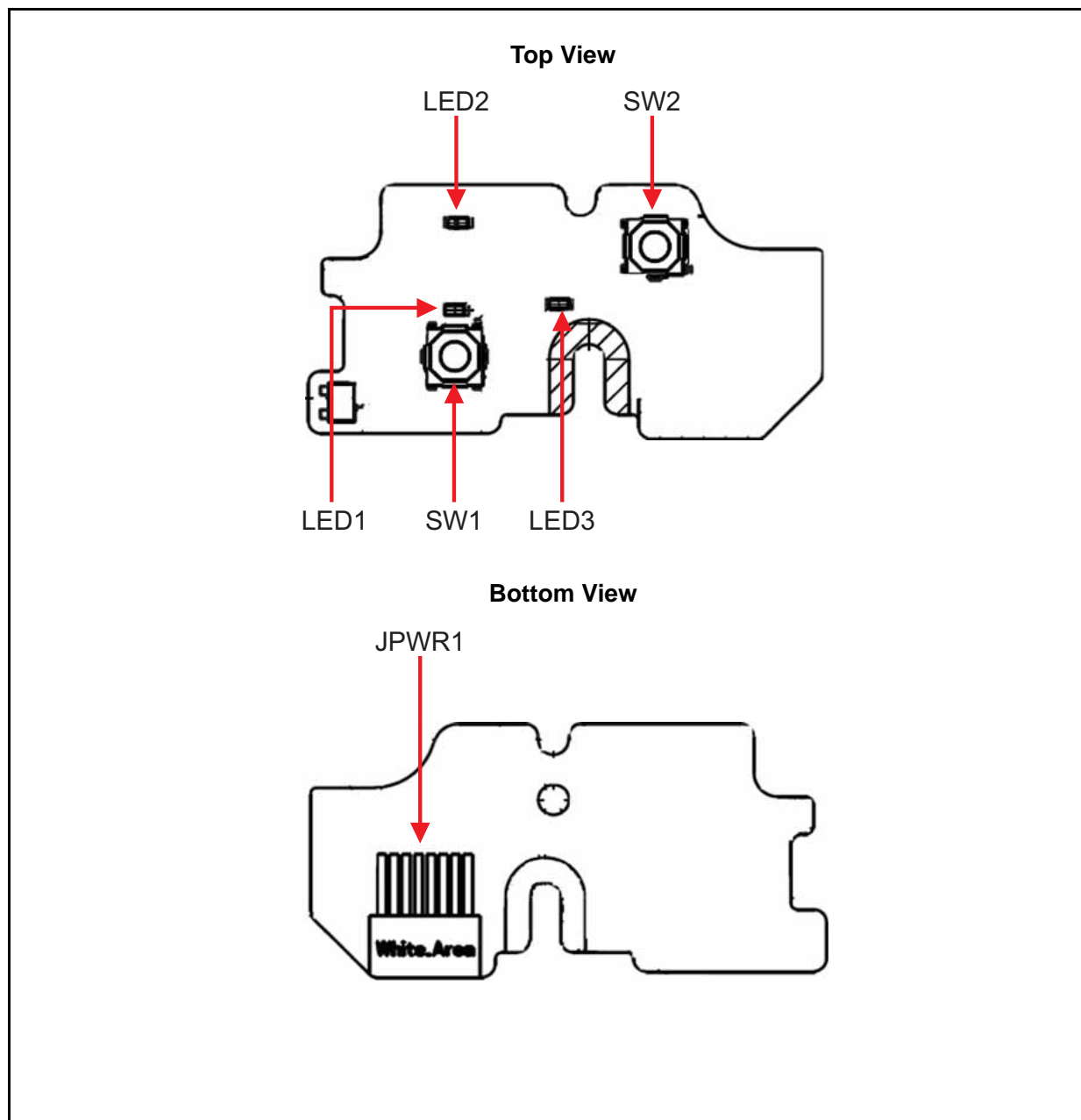
Figure 5:4.   Power Board

Table 5:4.   Power Board Jumper and Connectors

Item	Description
LED1	Power LED (VA50)
LED2	Power LED (VG50)
LED3	Power LED (EA50, EG50)
SW1	Power Button Switch (VA50, VG50)
SW2	Power Button Switch (EA50, EG50)
JPWR1	Power FFC Connector

Jumper and Connector Locations
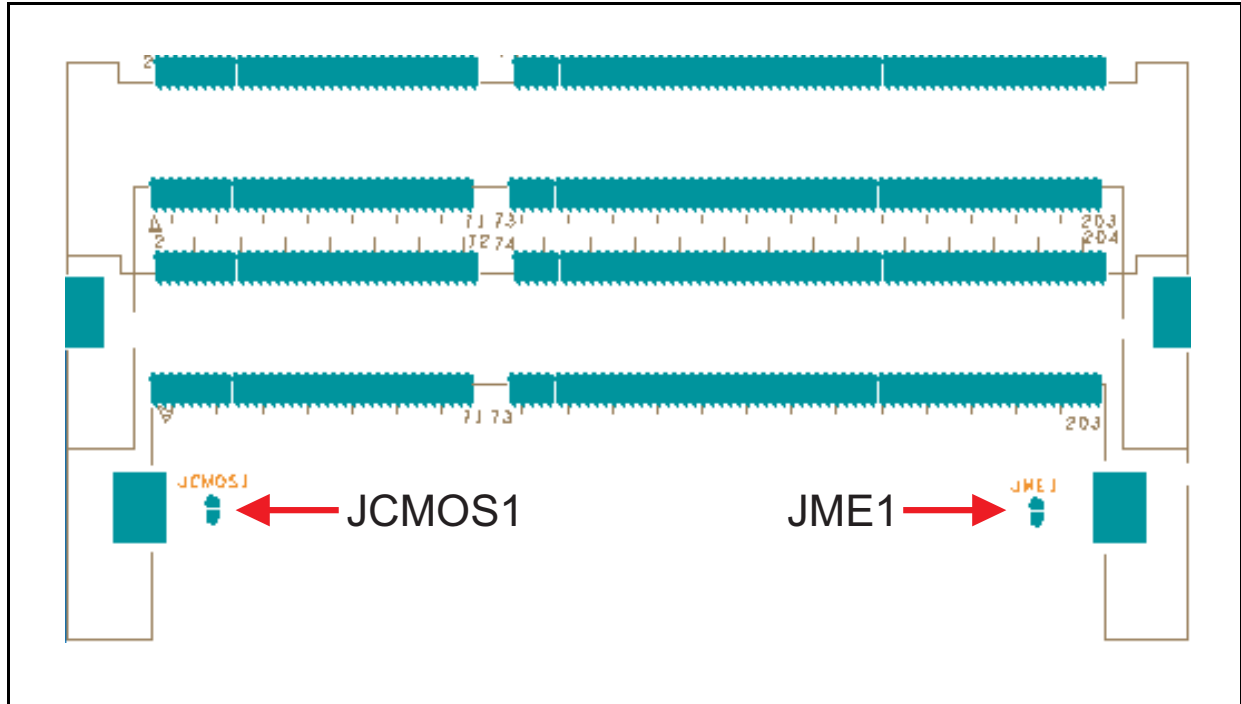
CMOS Jumper

Figure 5:5.   CMOS Jumper

Table 5:5.   Clear CMOS Jumper

Item	Description
JCMOS1	Clear CMOS Jumper
JME1	Clear ME Jumper

CHAPTER 6

Field Replaceable Unit List

FRU (Field Replaceable Unit) List

This chapter provides the FRU (Field Replaceable Unit) listing in global configurations for the Aspire XXXX. 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 local government ordinances or regulations on proper disposal, or follow the rules set by the regional Acer office on how to return the defective parts.

Exploded Diagram

Main Assembly
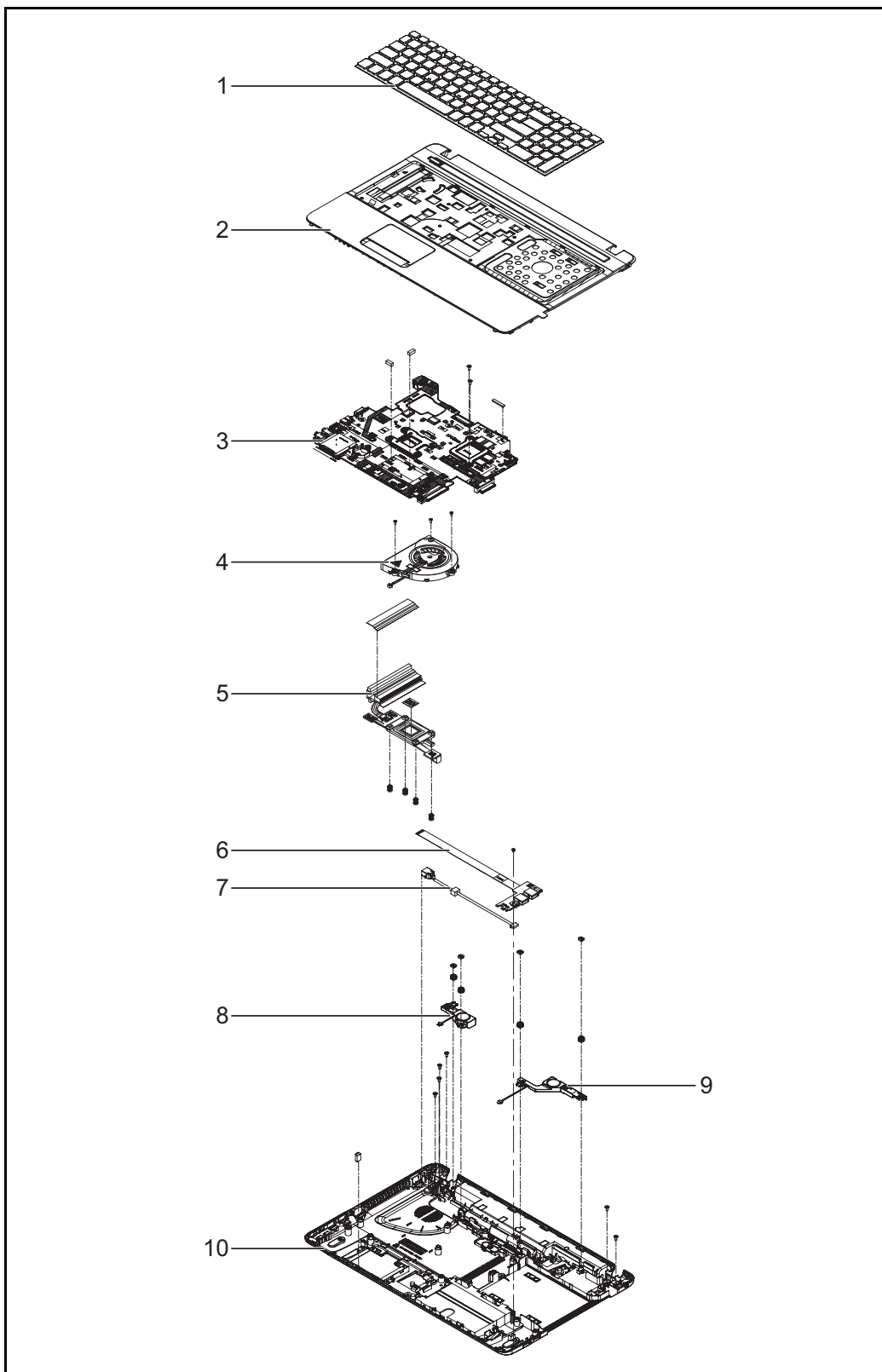
Figure 6:1.   Main Assembly Exploded Diagram

Table 6:1.   Main Assembly Exploded Diagram

No.	Description	P/N
1	KEYBOARD	NK.I1713.02L
2	UPPER CASE	60.M09N2.001
3	MAINBOARD	NB.C1F11.001
4	FAN	23.M03N2.001
5	THERMAL MODULE	60.M02N2.001
6	USB BOARD WITH FFC	55.M03N2.002
7	DC-IN CABLE	50.M09N2.002
8	SPEAKER R	23.M09N2.002
9	SPEAKER L	23.M09N2.003
10	LOWER CASE	60.M09N2.002

Lower Case Assembly
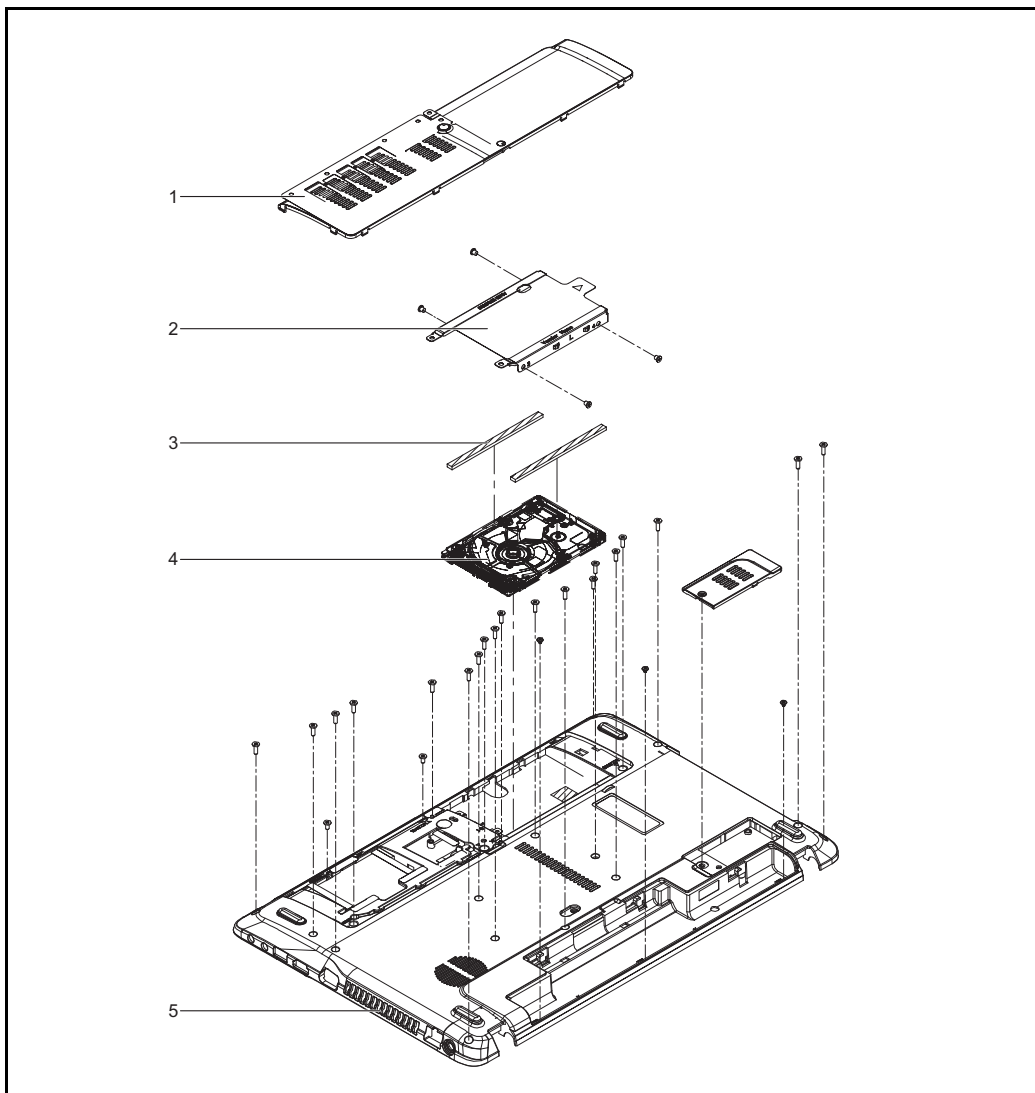
Figure 6:2.   Lower Case Assembly Exploded Diagram

Table 6:2.   Lower Case Assembly Exploded Diagram

No.	Description	P/N
1	HDD DOOR	60.M09N2.004
2	HDD BRACKET	33.M09N2.001
3	HDD SUPPORT RUBBER FOR H7.0 HDD	47.M09N2.003
4	HDD	TBD
5	LOWER CASE	60.M09N2.002

Upper Case Assembly
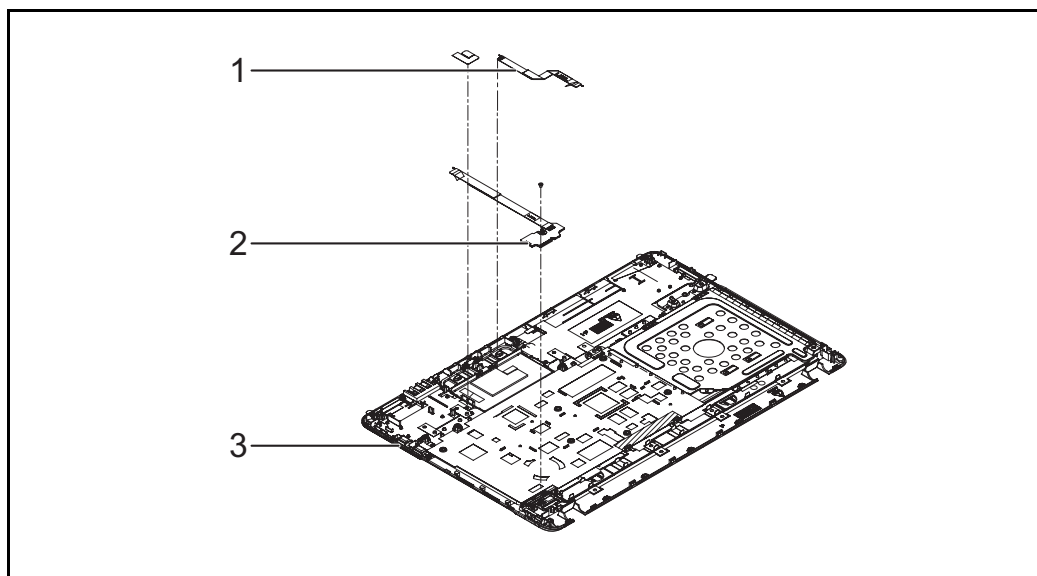
Figure 6:3.   Upper Case Assembly Exploded Diagram

Table 6:3.   Upper Case Assembly Exploded Diagram

No.	Description	P/N
1	TOUCHPAD FFC	50.M09N2.001
2	POWER BOARD WITH FFC	55.M09N2.001
3	UPPER CASE IMR, INCL TP/TP MYLAR	60.M09N2.001

LCD Assembly
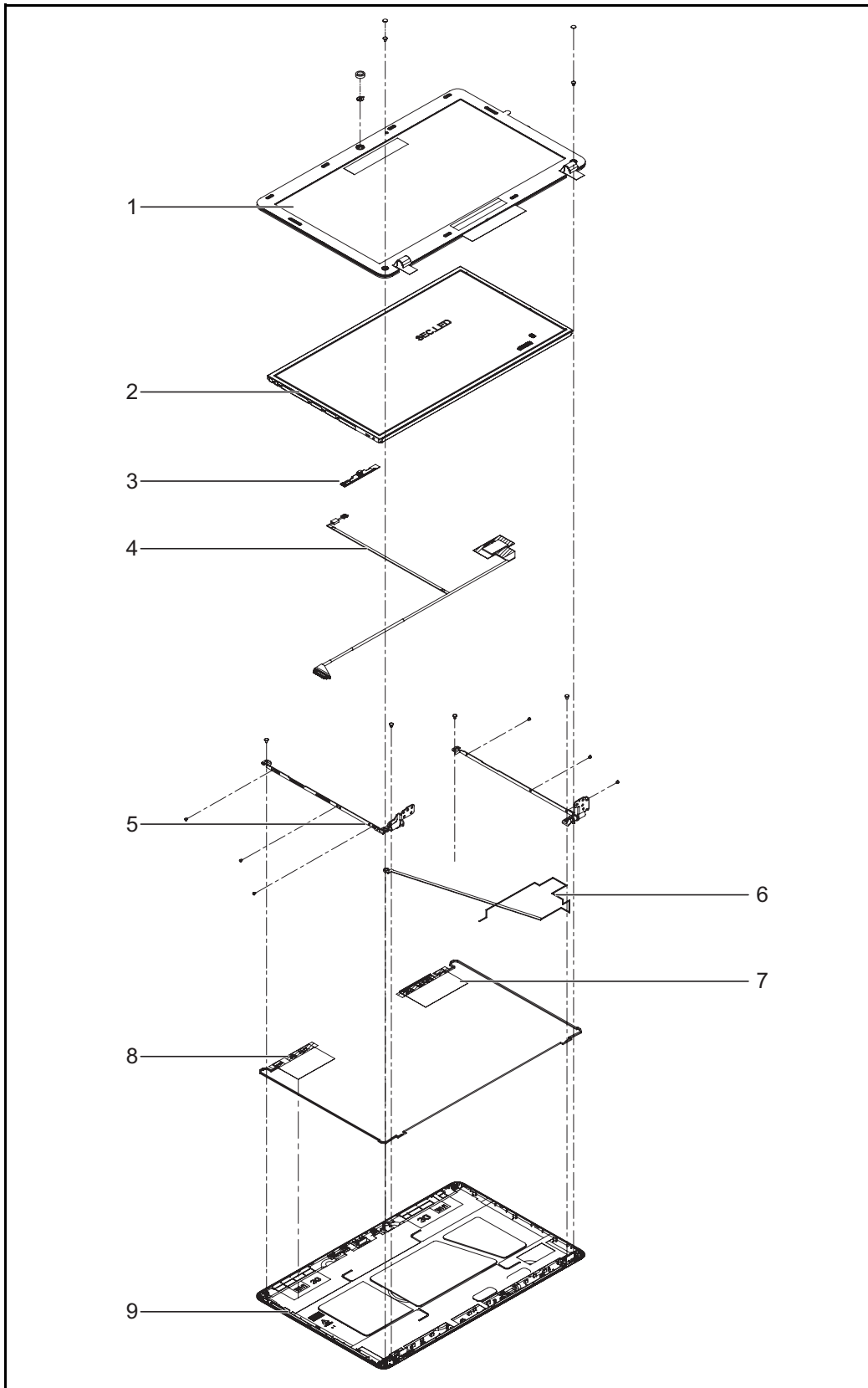
Figure 6:4.   LCD Assembly Exploded Diagram

Table 6:4.   LCD Assembly Exploded Diagram

No.	Description	P/N
1	LCD BEZEL, INCL MAGNET/CMOS MYLAR/CAMERA SPONGE - ACER	60.M09N2.006
2	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, BLACK	6M.M09N2.002
3	CAMERA 1.3M HD	57.M09N2.002
4	LVDS CABLE	50.M09N2.005
5	LCD BRACKET R&L	33.M09N2.003
6	MIC SET	23.M09N2.001
7	ANTENNA WLAN-MAIN	50.M09N2.003
8	ANTENNA WLAN-AUX	50.M09N2.004
9	LCD COVER IMR - ACER	60.M09N2.005

FRU List

CATEGORY	Description	Part No.
BOARD		
	Liteon Wireless LAN Atheros HB125 1x1 BGN	NI.23600.086
	Foxconn Wireless LAN Atheros HB125 1x1 BGN	NI.23600.085
	Foxconn Wireless LAN Broadcom 4313 IPA 1x1 BGN	NI.23600.090
	POWER BOARD W/ FFC	55.M09N2.001
	USB BOARD W/ FFC	55.M03N2.002
CABLE		
	TP FFC	50.M09N2.001
	DC-IN CABLE 65W	50.M09N2.002
	DC-IN CABLE 90W	50.M0DN2.001
	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
	POWER CORD BRAZIL 3 PIN	27.SAD02.001

CATEGORY	Description	Part No.
	ANTENNA WLAN-AUX	50.M09N2.004
	ANTENNA WLAN-MAIN	50.M09N2.003
	LVDS CABLE	50.M09N2.005
	EDP CABLE	50.M09N2.006
CASE/COVER/BRACKET ASSEMBLY		
	UPPER CASE IMR, INCL TP/TP MYLAR	60.M09N2.001
	LOWER CASE	60.M09N2.002
	MINI DOOR	60.M09N2.003
	HDD BRACKET	33.M09N2.001
	HDD Door	60.M09N2.004
	ODD BRACKET	33.M09N2.002
	ODD BEZEL SM	42.M09N2.001
	LCD COVER IMR - ACER	60.M09N2.005
	LCD BEZEL, INCL MAGNET/CMOS MYLAR/ CAMERA SPONGE - ACER	60.M09N2.006
	LCD BEZEL, INCL MAGNET/CMOS MYLAR/ CAMERA SPONGE - ACER FOR 1M CAMERA	60.M09N2.007

CATEGORY	Description	Part No.
	LCD BRACKET R&L	33.M09N2.003
ODD MODULE		
	ODD SUPER-MULTI DRIVE MODULE	6M.M09N2.001
KEYBOARD		
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black US International Y2010 Acer Legend	NK.I1713.02L
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black Greek Y2010 Acer Legend	NK.I1713.024
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black Arabic Y2010 Acer Legend	NK.I1713.01U
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black Chinese Y2010 Acer Legend	NK.I1713.01Z
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black Russian Y2010 Acer Legend	NK.I1713.02C
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black US International w/ Hebrew Y2010 Acer Legend	NK.I1713.02M
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black Thailand Y2010 Acer Legend	NK.I1713.02H
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 105KS Black Korean Y2010 Acer Legend	NK.I1713.028
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black UK Y2010 Acer Legend	NK.I1713.02K
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black German Y2010 Acer Legend	NK.I1713.023
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Swiss/G Y2010 Acer Legend	NK.I1713.02G

FRU (Field Replaceable Unit) List

CATEGORY	Description	Part No.
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Belgium Y2010 Acer Legend	NK.I1713.01V
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Danish Y2010 Acer Legend	NK.I1713.020
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Italian Y2010 Acer Legend	NK.I1713.026
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black French Y2010 Acer Legend	NK.I1713.022
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Hungarian Y2010 Acer Legend	NK.I1713.025
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Norwegian Y2010 Acer Legend	NK.I1713.02A
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Portuguese Y2010 Acer Legend	NK.I1713.02B
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Spanish Y2010 Acer Legend	NK.I1713.02E
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black US w/ Canadian French Y2010 Acer Legend	NK.I1713.02N
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Turkish Y2010 Acer Legend	NK.I1713.02J
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Sweden Y2010 Acer Legend	NK.I1713.02F
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black FR/Arabic Y2010 Acer Legend	NK.I1713.021
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Nordic Y2010 Acer Legend	NK.I1713.029
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black SLO/CRO Y2010 Acer Legend	NK.I1713.02D

CATEGORY	Description	Part No.
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black CZ/SK Y2010 Acer Legend	NK.I1713.01Y
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Bulgaria Y2010 Acer Legend	NK.I1713.01X
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 106KS Black Brazilian Portuguese Y2010 Acer Legend	NK.I1713.01W
	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard 109KS Black Japanese Y2010 Acer Legend	NK.I1713.027
LCD		
	ASSY LED LCD MODULE 15.6"W WXGA GLARE w/ ANTENNA*2, CCD 1.3M, BLACK	6M.M09N2.002
	ASSY LED LCD MODULE 15.6"W WXGA GLARE EDP w/ ANTENNA*2, CCD 1.3M, BLACK	6M.M09N2.003
DIGITAL LIGHT DEVICE		
	CAMERA 1M	57.M09N2.001
	CAMERA 1.3M HD	57.M09N2.002
MAINBOARD		
	Mainboard TE11HC HM70 LF UMA	NB.C1F11.001
	Mainboard TE11HC HM77 LF UMA	NB.C0A11.001
	Mainboard TE11HC HM77 LF N13MGS 1GB	NB.C0Z11.001
FAN		
	FAN	23.M03N2.001
HEATSINK		
	THERMAL MODULE - UMA W/O FAN	60.M02N2.001
	THERMAL MODULE N13PGL/N13MGS W/O FAN	60.M03N2.009

FRU (Field Replaceable Unit) List   6-13

CATEGORY	Description	Part No.
SPEAKER		6-14
	MIC SET	23.M09N2.001
	SPEAKER - R	23.M09N2.002
	SPEAKER - L	23.M09N2.003
MISCELLANEOUS		
	LCD SCREW MYLAR	47.M09N2.001
	SD DUMMY CARD	47.M09N2.002
	HDD SUPPORT RUBBER FOR H7.0 HDD	47.M09N2.003
	TP SUPPORT RUBBER	47.M09N2.004
	MB BATTERY RUBBER	47.M09N2.005
	UMA MB RUBBER	47.M09N2.006

Screw List

CATEGORY	Description	Part No.
SCREWS		
	SCREW 2.5D 4L K 5.5D NI NL	86.M09N2.001
	SCREW 2.5D 5.0L K 5.5D NI NL	86.M09N2.002
	SCREW 2.45D 8.0L K 5.5D 0.8T ZK NL	86.M09N2.003
	SCREW 1.98D 3.0L K 4.6D 0.8T ZK NL	86.M09N2.004
	SCREW 2D 5L K 4.6D NI NL	86.M09N2.005
	SCREW M3.0D 3.0L K 4.9D NI	86.M09N2.006
	SCREW 2D 3L K 8D ZK NL	86.M09N2.007
	SCREW 2.5D 3.2L K 6D NI	86.M09N2.008
	SCREW 2D 2.5L K 4.05D NI NL	86.M09N2.009

CHAPTER **7**

Test Compatible Components

Test Compatible Components

This computer's compatibility is tested and verified by Acer'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 Aspire XXXX Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft® Windows® 7 Environment Test

Aspire XXXX

Table 7:1.   Aspire XXXX

Vendor	Type	Description	Part No.
Adapter			
10001081 DELTA	65W	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65VH BA, LV5, Low profile LED LF	AP.06501.033
10001023 LITE-ON	65W	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-69AW, LV5, Low profile LED LF	AP.06503.029
60016453 CHICONY POWER	65W	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017
10001045 DELTA-MACAO	90W	Adapter DELTA 90W 19V 1.7x5.5x11 Blue ADP-90MD BBA, low profile, LV5 LF	AP.09001.032
10001023 LITE-ON	90W	Adapter LITE-ON 90W 19V 1.7x5.5x11 Blue PA-1900-32AW, LV5, Low profile LF	AP.09003.024
60016453 CHICONY POWER	90W	Adapter Chicony Power 90W 19V 1.7x5.5x11 Blue A10-090P3A / A090A029L, LV5 low profile LF	AP.0900H.001
Battery			
60001921 SANYO	6CELL2.2	Battery SANYO AS10D Li-Ion 3S2P SANYO 6 cell 4400mAh Main COMMON new IC BQ8055	BT.00603.124
10001063 SONY	6CELL2.2	Battery SONY AS10D Li-Ion 3S2P SONY 6 cell 4400mAh Main COMMON ID:AS10D41	BT.00604.049

Vendor	Type	Description	Part No.
60001535 PANASONIC	6CELL2.2	Battery PANASONIC AS10D51, for new IC max1787 Li-Ion 3S2P PANASONIC 6 cell 4400mAh Main COMMON	BT.00605.072
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
60032811 LGC	6CELL2.2	Battery LGC AS10D Li-Ion 3S2P LGC 6 cell 4400mAh Main COMMON ID:AS10D81	BT.0060G.001
60001921 SANYO	6CELL2.2	Battery SANYO AS10D51 sanyo pack with pana cell Li-Ion 3S2P PANASONIC 6 cell 4400mAh Main COMMON	KT.00603.001
CPU			
10001067 INTEL	CMB815	CPU Intel Celeron B815 PGA 1.6G 35W DDR3-1333	KC.81501.CMB
10001067 INTEL	Ci32350M	CPU Intel Core i3 i3-2350M PGA 2.3G 35W 2/4	KC.23501.DMP
10001067 INTEL	Ci32370M	CPU Intel Core i3 i3-2370M PGA 2.4G 35W 2/4	KC.23701.DMP
10001067 INTEL	Ci33110M	CPU Intel Core i3 i3-3110M PGA 2.3G 1600 35W Ivy Bridge	KC.31101.DMP
10001067 INTEL	PMDB960	CPU Intel Pentium Dual-Core B960 PGA 2.2G 35W DDR3-1333	KC.96001.DPB
10001067 INTEL	PMDB970	CPU Intel Pentium Dual-Core B970 PGA 2.3G 35W DDR3-1333	KC.97001.DPB
HDD			
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB DUMMY P.N for BOM use SATA 8MB LF F/W:NA	KH.32007.015
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J28213,Eagle B7, 320G/P 7mmzh SATA 8MB LF+HF F/W:DA4788	KH.32007.017
60002036 SEAGATE	N320GB5.4KS_4K	HDD SEAGATE 2.5" 5400rpm 320GB ST320LT020/9YG142-188, Sapta 15,320G/P SATA 8MB LF+HF F/W:0001SDM1 7mmzh	KH.32001.021

Test Compatible Components

Vendor	Type	Description	Part No.
60001922 TOSHIBA DIGI	N320GB5.4KS_4K	HDD TOSHIBA 2.5" 5400rpm 320GB MK3259GSXP, Capricorn 3BS, 375G/P, 4K drive SATA 8MB LF+HF F/W:GN003J 4K	KH.32004.005
60001994 WD	N320GB5.4KS_4K	HDD WD 2.5" 5400rpm 320GB WD3200BPVT-22JJ5T0, ML320S-AF2, 320G/P, 4K drive SATA 8MB LF+HF F/W:01.01A01	KH.32008.024
60002036 SEAGATE	N500GB5.4KS	HDD SEAGATE 2.5" 5400rpm 500GB ST9500325AS,9HH134-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.50001.017
60002005 HGST SG	N500GB5.4KS	HDD HGST 2.5" 5400rpm 500GB Dummy P.N for 500G SATA 8MB LF+HF F/W:	KH.50007.015
60001922 TOSHIBA DIGI	N500GB5.4KS_4K	HDD TOSHIBA 2.5" 5400rpm 500GB MK5059GSXP, Capricron 3BS, 375G/P SATA 8MB LF+HF F/W:GN003J 4K	KH.50004.003
60002005 HGST SG	N500GB5.4KS_4K	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380, Jaguar B7,0J23335, 500G/P SATA 8MB LF+HF F/W:DA4837	KH.50007.023
60001994 WD	N500GB5.4KS_4K	HDD WD 2.5" 5400rpm 500GB WD5000BPVT-22HXZT3, ML375M-AF2, 375G/P, 4K drive SATA 8MB LF+HF F/W:01.01A01	KH.50008.024
60001994 WD	N500GB5.4KS_4K	HDD WD 2.5" 5400rpm 500GB WD5000BPVT-22A1YT0, ML500M, 500G/P SATA 8MB LF+HF F/W:01.01A01	KH.50008.036
60002005 HGST SG	N750GB5.4KS	HDD HGST 2.5" 5400rpm 750GB Dummy P.N SATA 8MB LF+HF F/W: 0000	KH.75007.005
60002036 SEAGATE	N750GB5.4KS_4K	HDD SEAGATE 2.5" 5400rpm 750GB ST9750423AS,9ZW14G-188, Desaru5, 375G/P. SATA 8MB LF+HF F/W:0001SDM1	KH.75001.011
60002036 SEAGATE	N750GB5.4KS_4K	HDD SEAGATE 2.5" 5400rpm 750GB ST750LM022, HN-M750MBB, M8, 500G/P SATA 8MB LF+HF F/W:2AR10001	KH.75001.014
60001922 TOSHIBA DIGI	N750GB5.4KS_4K	HDD TOSHIBA 2.5" 5400rpm 750GB MK7559GSXP, 375G/P, Capricorn BS, 4K drive SATA 8MB LF+HF F/W:GN003J	KH.75004.001

Test Compatible Components

Vendor	Type	Description	Part No.
60002005 HGST SG	N750GB5.4KS_4K	HDD HGST 2.5" 5400rpm 750GB HTS547575A9E384, Jet B, 375G/P SATA 8MB LF F/W:DA3872	KH.75007.004
60001994 WD	N750GB5.4KS_4K	HDD WD 2.5" 5400rpm 750GB WD7500BPVT-22HXZT3, ML375M-AF2, 375G/P, 4K drive SATA 8MB LF+HF F/W:01.01A01	KH.75008.011
60001994 WD	N750GB5.4KS_4K	HDD WD 2.5" 5400rpm 750GB WD7500BPVT-22A1YT0, ML500M,500G/P SATA 8MB LF+HF F/W:01.01A01	KH.75008.017
LCD			
60003316 AUO	NLED15.6WXGAG	LED LCD AUO 15.6"W WXGA Glare B156XW02 V6 LF 200nit 8ms 400:1	LK.15605.019
60003089 LG	NLED15.6WXGAG	LED LCD LPL 15.6''W WXGA Glare LP156WH4-TLA1 LF 220nit 16ms 500:1	LK.15608.015
10001038 CMO	NLED15.6WXGAG	LED LCD CMO 15.6''W WXGA Glare N156B6-L0B LF 220nit 8ms 650:1	LK.1560D.010
60003316 AUO	NLED15.6WXGAGP	LED LCD AUO 15.6''W WXGA Glare B156XTN01.0 LF 200nit 8ms 500:1 (eDP)	LK.15605.027
60003089 LG	NLED15.6WXGAGP	LED LCD LPL 15.6''W WXGA Glare LP156WH4-TPA1 LF 220nit 16ms 500:1 (eDP)	LK.15608.018
10001022 CMI	NLED15.6WXGAGP	LED LCD CMI 15.6''W WXGA Glare N156BGE-E21 LF 220nit 8ms 650:1 (eDP)	LK.1560D.022
Memory			
60002041 QIMONDA	SO2GBIII	Memory NONE SO-DIMM DDRIII 2GB dummy LF+HF	KN.2GB00.004
60001993 NANYA	SO2GBIII13	Memory NANYA SO-DIMM DDRIII 1333 2GB NT2GC64B88G0NS-CG LF+HF	KN.2GB03.025
60002050 MICRON SG	SO2GBIII13	Memory MICRON SO-DIMM DDRIII 1333 2GB MT8KTF25664HZ-1G4M1 LF+HF 256*8 46nm V79D	KN.2GB04.019
60024207 KINGSTON-FAR EAST	SO2GBIII13	Memory KINGSTON SO-DIMM DDRIII 1333 2GB ACR256X64D3S13C9G LF+HF	KN.2GB07.006

Test Compatible Components

Vendor	Type	Description	Part No.
60004668 ELPIDA	SO2GBIII13	Memory ELPIDA SO-DIMM DDRIII 1600 2GB EBJ20UF8BDU0-GN-F LF+HF 256*8 38nm	KN.2GB09.012
60001955 A-DATA	SO2GBIII13	Memory A-DATA SO-DIMM DDRIII 1333 2GB AD73I1B0873EV LF+HF	KN.2GB0C.008
60002045 HYNIX	SO2GBIII13	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT325S6CFR8C-H9 LF+HF 256x8 38nm	KN.2GB0G.031
60002041 QIMONDA	SO4GBIII	Memory NONE SO-DIMM DDRIII 4GB dummy LF+HF	KN.4GB00.003
60001993 NANYA	SO4GBIII13	Memory NANYA SO-DIMM DDRIII 1333 4GB NT4GC64B8HG0NS-CG LF+HF 46nm	KN.4GB03.009
60002050 MICRON SG	SO4GBIII13	Memory MICRON SO-DIMM DDRIII 1333 4GB MT16KTF51264HZ-1G4M1 LF+HF 256*8 46nm V79D	KN.4GB04.005
60024207 KINGSTON-FAR EAST	SO4GBIII13	Memory KINGSTON SO-DIMM DDRIII 1333 4GB ACR512X64D3S13C9G LF+HF	KN.4GB07.001
60004668 ELPIDA	SO4GBIII13	Memory ELPIDA SO-DIMM DDRIII 1600 4GB EBJ40UG8BBU0-GN-F LF+HF 512*8 38nm	KN.4GB09.005
60001955 A-DATA	SO4GBIII13	Memory A-DATA SO-DIMM DDRIII 1333 4GB AD73I1C1674EV LF+HF	KN.4GB0C.001
60002045 HYNIX	SO4GBIII13	Memory HYNIX SO-DIMM DDRIII 1333 4GB HMT351S6CFR8C-H9 LF+HF 256x8 38nm	KN.4GB0G.012
ODD			
60001939 PIONEER	NSM8XS	ODD PIONEER Super-Multi DRIVE 12.7mm Tray DL 8X DVR-TD11RS LF W/O bezel 1.01 SATA HF + ZP (HME OPU)	KU.00805.051
60001535 PANASONIC	NSM8XS	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ8B0AW LF+HF W/O bezel SATA (Win7)	KU.00807.079
60003901 HITACHI EAST	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT51N LF W/O bezel SATA Zero Power Supported (HF + Windows 7)	KU.0080D.059
60001929 PHILIPS & LITE-ON	NSM8XS	ODD PLDS Super-Multi DRIVE 12.7mm Tray 8X DS-8A8SH LF+HF W/O bezel SATA	KU.0080F.021

Test Compatible Components

Vendor	Type	Description	Part No.
VGA Chip			
60001915 NVIDIA	N13MGS	VGA Chip nVidia N13M-GS-B-A2 28nm, 29mmx29mm, GB4-128 package	KG.MGS0V.001
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038
VRAM			
10000981 MISC	1G-DDR3 (128*16*4)	1G-DDR3 128*16*4	KI.23300.029
9999995 ONE TIME VENDER	N	N no VRAM	KI.23300.014
60002045 HYNIX	VR2GBIII9	VRAM HYNIX Graphic DDRIII 900 2Gb H5TQ2G63BFR-11C LF 128*16 46nm	VR.2GB0G.002
60002045 HYNIX	VR2GBIII9	VRAM HYNIX Graphic DDRIII 900 2Gb H5TQ2G63DFR-11C LF+HF 128*16 38nm Gemma die	VR.2GB0G.005
NB Chipset			
10001067 INTEL	HM70	NB Chipset Intel CS HM70 Chief River	KI.G7501.004
10001067 INTEL	HM77	NB Chipset Intel CS HM77 Chief River	KI.G7501.002
SB Chipset			
9999995 ONE TIME VENDER	N	N	KI.22800.011
Keyboard			
10001044 CHICONY	TM7T_A11B	Keyboard CHICONY TM7T_A11B TM7T Internal 17 Standard Black NONE Y2011 Acer Legend Texture	NK.I1713.002
60004864 DARFON	TM7T_A11B	Keyboard DARFON TM7T_A11B TM7T Internal 17 Standard Black NONE Y2011 Acer Legend Texture	NK.I1717.001
LAN			
60001948 BROADCOM	BCM57785X	Broadcom BCM57785X	NI.22400.052
WiFi Antenna			
10000105 WNC	PIFA	PIFA	LZ.23500.006
Audio Codec			
10004786 REALTEK	ALC271X_VB6	Realtek ALC271X_VB6 QFN-48	LZ.21000.161

Vendor	Type	Description	Part No.
A Cover			
60014273 NISSHA	Glossy Black IMR EAEG5A	A Cover Glossy Black IMR EAEG5A	LZ.21000.176
B Cover			
9999995 ONE TIME VENDER	Mirror w/ Camera	Mirror w/Camera	LZ.21000.009
Camera			
10001023 LITE-ON	HD	Liteon HD LT_OV9726_SP 3.5mm	NC.21411.002
10001044 CHICONY	HD	Chicony HD CH_OV9726_AU 3.5mm	NC.21411.006
Palmrest Cover			
60014273 NISSHA	Glossy Silver IMR EAEG5P	Palmrest Cover Glossy Silver IMR EAEG5P	LZ.21000.179
Card Reader			
PLM00014 ODM	5 in 1-Build in	5 in 1-Build in MS, MS Pro, SD, SC, XD	CR.21500.013
Software			
10000981 MISC	McAfee	Antivirus application McAfee	SR.23900.001
Wireless LAN			
10001018 HON HAI	3rd WiFi 1x1 BGN	Foxconn Wirelss LAN Atheros HB125 1x1 BGN	NI.23600.085
10001023 LITE-ON	3rd WiFi 1x1 BGN	Liteon Wireless LAN Atheros HB125 1x1 BGN	NI.23600.086
10001018 HON HAI	3rd WiFi 1x1 BGN	Foxconn Wirelss LAN Broadcom 4313 IPA 1x1 BGN	NI.23600.090

CHAPTER **8**

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 materials.

 Also contained on this website are:

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

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