

Aspire S3 MS2346

SERVICEGUIDE



Revision History

Refer to the table below for the updates made to this Aspire S3 MS2346 Service Guide.

Date	Chapter	Updates

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

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Conventions

The following conventions are used in this manual:

⚠ **WARNING:**

Indicates a potential for personal injury.

⚠ **CAUTION:**

Indicates a potential loss of data or damage to equipment.

+ **IMPORTANT:**

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

The following typographical conventions are used in this document:

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

Example:

the *DRS5 User's Guide*

/usr/local/bin/fd

the */TPH15spool_M* program

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

Example:

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

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

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

Example:

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

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

Example:

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

General information

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

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

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

Acer-authorized Service Providers: Your Acer office may have a different part number code than those given in the FRU list in this service guide. You must use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Aspire S3 MS2346

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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

Platform

- Huron River platform
 - Supports the Second Generation Intel® Core™ Mobile Processor (Sandy Bridge)
- Chipset: Mobile Intel® HM77 (6MB BIOS ROM) Chipset

System Memory

- On board, up to 8pcs DDRIII (4GB)

Display

- 13.3-inch High Definition WXGA LED LCD
- 1366x768 resolution, 16:9 aspect ratio
- 16.7 million colors, 200-nit brightness

Graphics

- Graphics controller:
 - Intel® HD Graphics 3000 with 128 MB of dedicated system memory, supporting Microsoft® DirectX® 10.1
- Dual independent display support
- Internal resolutions and refresh rate supported:
 - 800x600, 60 Hz
 - 1024x768, 60 Hz
 - 1280x720, 60 Hz
 - 1280x768, 60 Hz
 - 1360x768, 60 Hz
 - 1366x768, 60 Hz
 - Maximum Resolution HDMI: 1920x1080: 60Hz

Storage Subsystem

Hard disk drive

- 2.5-inch, 9.5 mm, 5400 rpm SATA hard disk drive (HDD) or
- 2.5-inch, 9.5 mm, Flash Disk SATA solid state drive (SSD)

Card reader

- 2-in-1 card reader slot
- Supports MultiMediaCard™ (MMC), MultiMediaCard Plus (MMCplus™) and Secure Digital™ (SD) cards

Audio Subsystem

- Built-in microphone
- Two 1W, built-in speakers
- Headphone and microphone combo jack
- Realtek 271X VB3

Communication

Webcam

- 1.3 MP HD webcam
- Acer Video Conference software, featuring:
 - Acer Crystal Eye webcam with 1280×1024 resolution
 - Acer Video Conference Manager featuring Video Quality Enhancement (VQE) technology
 - Supports 720p HD audio/video recording

Wireless and networking

- WLAN:
 - Acer InviLin™ Nplify™ 802.11b/g/n Wi-Fi CERTIFIED™
 - Supports Acer SignalUp™ wireless technology
- WPAN: Bluetooth® 4.0+HS

Privacy Control

- BIOS supervisor, user, and HDD passwords
- Strap slot

Power Adapter and Battery

- 19 V 3-pin AC adapter; 65 W
- 3 cell 3260 mAh 3S1P lithium polymer battery pack
- Battery life:
 - 7 hours for models with SSD
 - 6 hours for models with HDD
- Charging period:
 - 1.5 to 2 hours for 0–80% capacity
 - 3 to 3.5 hours for 0–99% capacity
 - 3.5 to 4 hours for 0–100% (charge-in-use)
- ACPI 3.0-compliant power management system
- ENERGY STAR compliant

Keyboard and Pointing Device

Keyboard

- 84-/85-/88-key full-size Acer FineTip keyboard with international language support
- Overlay numeric keys
- Inverted “T” cursor keys
- Hotkeys for volume and brightness level, media playback, wireless and sleep functions, and display and touchpad toggle
- Windows® and Application keys
- Multilanguage support

Touchpad

- Multi-gesture touchpad pointing device, supporting two-finger scroll, pinch, rotate, and flip
- Touchpad lock hotkey
- Adjustable touchpad sensitivity function

I/O Ports

- 2-in-1 card reader (SD/MMC)
- USB ports (2 x 3.0)
- HDMI™ port with HDCP support
- Headphone and microphone combo jack
- Internal microphone
- DC-in jack for AC adapter
- Strap slot

Software and Tools

Productivity

- Acer ePower Management
- Deep Sleep Settings
- Adobe® Flash® Player 10.1
- Adobe® Reader® X
- AUPEO! (US only)
- Bing™ Bar
- eSobi™
- Foz Kids
- Internet Explorer 9
- Kobo™ (Australia, Canada, New Zealand, UK only)
- Microsoft® Office Starter 2010: Includes limited-functionality Microsoft® Word and Excel with advertising; no PowerPoint or Outlook. Buy Office 2010 to use the full-featured software. (except Japan)
- newsXpresso
- Nook for PC (US only)
- Windows Live™ Essentials

Security

- Acer Backup Manager
- McAfee® Internet Security Suite (trial only)
- Norton™ Online Backup
- MyWinLocker® (except China, Hong Kong)

Multimedia

- Acer clear.fi
- NTI Media Maker™

Gaming

- Acer Games powered by WildTangent® (except China, Hong Kong, Japan, Korea)

Communication and ISP

- Acer Crystal Eye
- Acer Video Conference Manager
- Microsoft® Silverlight™
- Skype™

Web links and utilities

- Acer Accessory Store (Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, UK only)
- Acer Identity Card
- Acer Registration
- Acer Updater
- eBay® shortcut (Australia, Austria, Belgium, Canada, France, Germany, Italy, India, Ireland, Netherlands, Norway, Philippines, Poland, Russia, Singapore, Spain, Switzerland, Thailand, US, UK only)
- MercadoLibre (Mexico only)
- Netflix shortcut (Canada, US only)

Warranty

One-year International Travelers Warranty (ITW)

Dimensions and Weight

Dimensions

- Width x Depth x Height: 322 x 218.5 x 13.1/17.5mm (12.59x 8.52 x 0.51/0.68 in)

Weight

- 1.33 kg (2.93 lbs) (including battery) for models with SSD disk drive
- 1.35 kg (2.98 lbs) (including battery) for models with HDD disk drive

Environment

- Temperature:
 - Operating: 0 to 40 °C
 - Non-operating: -20 to 60 °C
- Humidity (non-condensing):
 - Operating: 20% to 80%
 - Non-operating: 20% to 80%

Notebook Tour

This section provides an overview of the features and functions of the notebook.

Open Front View

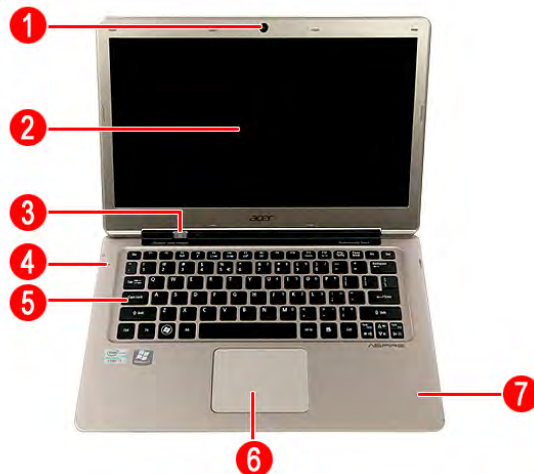




Figure 1-1. Open Front View

Table 1-1. Open Front View






No.	Icon	Item	Description
1		Integrated webcam	Web camera for video communication.
2		Display screen	Also called liquid crystal display (LCD), displays computer output.
3		Power button	Turns the computer on and off.
4		Integrated microphone	Internal microphone for sound recording and video communication.
5		Keyboard	For entering data into your computer.
6		Multi-Touch Pad	Touch-sensitive pointing device which functions like a computer mouse.
7		Palmrest	Comfortable support area for your hands when you use the computer.

Rear View



Figure 1-2. Rear View

Table 1-2. Rear View


No.	Icon	Item	Description
1		DC-in jack	Connects to the AC adapter.
2		HDMI port	Supports high definition digital video connections.
3		USB 2.0 ports	Connects to USB devices (e.g., USB mouse, USB camera).
4		Battery indicator	Indicates the computer's battery status. <ul style="list-style-type: none">• Blue: The computer is in AC mode.• Blinking amber: The battery is charging.
5		Power indicator	Indicates the computer's power status. <ul style="list-style-type: none">• Blue: The computer is turned on.• Blinking amber: The computer is in power-saving mode.

Left View



Figure 1-3. Left View

Table 1-3. Left View

No.	Icon	Item	Description
1		Headphone/Mic in combo jack	Connects to combo Headphone/Mic in devices

Right View



Figure 1-4. Right View

Table 1-4. Right View

No.	Icon	Item	Description
1		2-in-1 card reader	Supports MMC, MMCplus, and SD cards. Note: Only one card can operate at any given time.

Base View

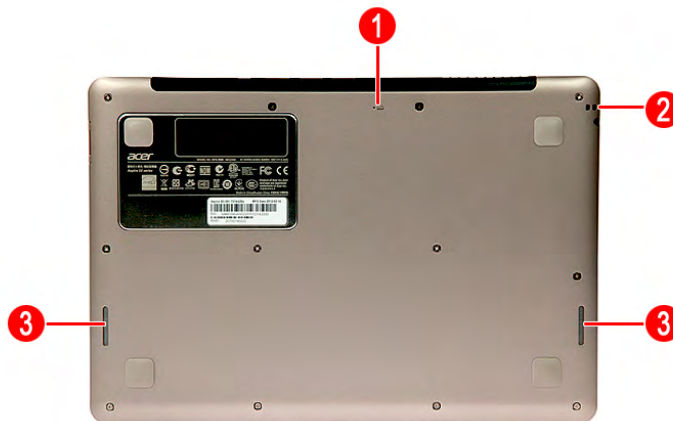




Figure 1-5. Base View

Table 1-5. Base View

No.	Icon	Item	Description
1		Battery reset pinhole	Insert a paperclip into the hole and press for four seconds to reset the computer (simulates removing and reinstalling the battery)
2		Strap Slot	For optional strap accessory.
3		Speakers	Deliver stereo audio output.

Touchpad Basics

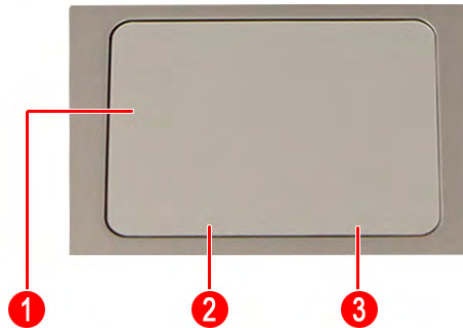


Figure 1-6. Touchpad

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

Table 1-6. Touchpad

Function	Touchpad (1)	Lower Left (2)	Lower Right (3)
Execute	Rapidly tap twice.	Quickly click twice.	
Select	Tap once.	Click once.	
Access context menu			Click once.

Keyboard

The keyboard contains an overlay numeric keys, inverted “T” cursor key, Windows® key, Application key, function lock keys, and hotkeys controlling various computer features.



Figure 1-7. Keyboard

Lock Keys

The keyboard has three lock keys which the user can toggle on and off.

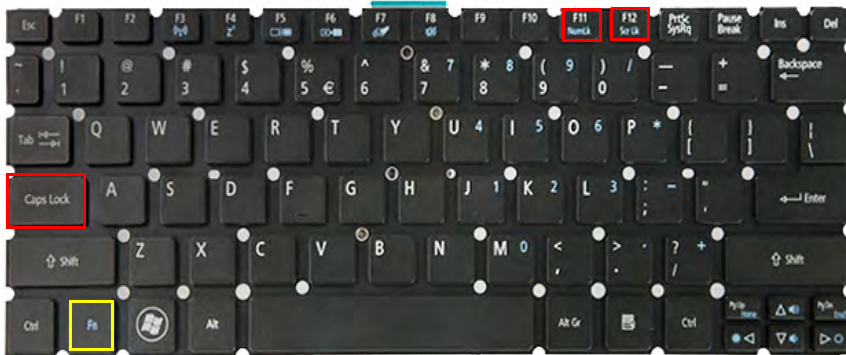


Figure 1-8. Keyboard Lock Keys

Table 1-8. Keyboard Lock Keys

Lock Key	Description
Caps Lock	When On, all typed alphabetic characters appears in uppercase.
Num Lock <i>Fn+F11</i>	Off by default. When On, the overlay numeric keys acts as a numeric keypad. If an external keyboard or keypad is present, the Num Lock will have the following definitions: <ul style="list-style-type: none">• When On, the system boots with external keyboard/keypad Num Lock status On. Internal keyboard overlay numeric keys are disabled.

Table 1-8. Keyboard Lock Keys

Lock Key	Description
Num Lock Fn+F11	<ul style="list-style-type: none"> • The key can be turned on/off via the internal keyboard (Fn+F11) or the external keyboard/keypad. Num Lock affects the external keyboard/keypad only. • Shift state is NOT required for the cursor movement by the numeric keys. • The state of the Num Lock is not changed by the attachment/removal (hot plug) of the external keyboard/keypad.
Scroll Lock Fn+F12	When On, the screen moves one line up or down when pressing the up or down cursor keys. Scroll Lock is not applicable for all applications.

Windows Keys

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

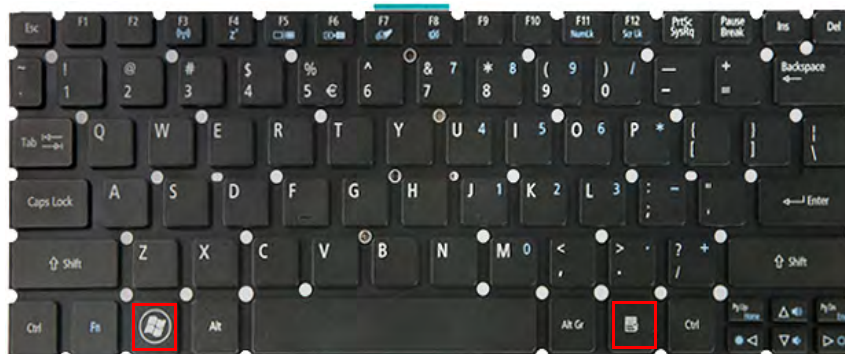


Figure 1-9. Windows-specific Keys

Table 1-9. Windows-specific Keys



















Key	Description
Windows Logo key 	<p>Pressed alone, this key has the same effect as clicking on the <i>Windows Start</i> button; it launches the <i>Start</i> menu. It can also be used with other keys to provide a variety of functions.</p> <p>Functions supported by Windows XP, Windows Vista, and Windows 7:</p> <ul style="list-style-type: none"> • : Open or close the <i>Start</i> menu •  + R: Open the <i>Run</i> dialog box •  + M: Minimizes all windows • Shift +  + M: Restore minimized windows to the desktop •  + F1: Show the <i>Help</i> window •  + E: Open <i>Windows Explorer</i> •  + F: Search for a file or folder •  + D: Display the desktop • Ctrl +  + F: Search for computers (if you are on a network)

Table 1-9. Windows-specific Keys

Key	Description
Windows Logo key 	<ul style="list-style-type: none"> • Ctrl++L: Lock your computer (if you are connected to a network domain), or switch users (if you're not connected to a network domain) • Ctrl++Tab: Moves focus from <i>Start</i> menu, to the <i>Quick Launch</i> toolbar, to the system tray (use < or > to move focus to items on the <i>Quick Launch</i> toolbar and the system tray) • +Tab: Cycle through programs on the taskbar • +Break: Display the <i>System Properties</i> dialog box <p>Functions supported by Windows XP:</p> <ul style="list-style-type: none"> • +Break: Display the <i>System Properties</i> dialog box • +U: Open the <i>Ease of Access Center</i> window
 Application key	This key has the same effect as clicking the right mouse button; it opens the application's context menu.

Hotkeys

The computer uses hotkeys or key combinations to access most computer controls. To activate hotkeys, press and hold the **Fn** key before pressing the key in the combination.

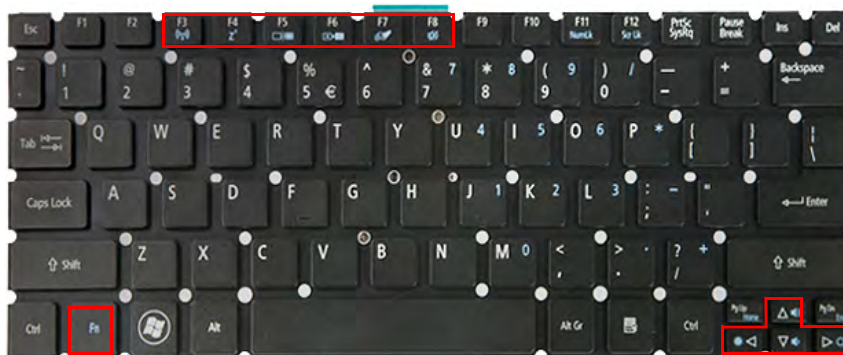


Figure 1-10. Hotkeys

Table 1-10. Hotkeys











Hotkey	Icon	Function	Description
Fn+F3		Communication device toggle	Toggles the WiFi, 3G and/or Bluetooth functions On and Off using a pop-up window.
Fn+F4		Sleep	Puts the computer in Sleep mode.
Fn+F5		Display off	Turns off the LCD back light
Fn+F6		Display toggle	Switches the display output between the display screen, external monitor (if connected) or both.
Fn+F7		Touchpad toggle	Turns the touchpad On or Off.

Table 1-10. Hotkeys

Hotkey	Icon	Function	Description
<i>Fn+F8</i>		Speaker toggle	Turns the speakers On or Off.
<i>Fn+△</i>		Volume Up	Increases the sound volume.
<i>Fn+▽</i>		Volume Down	Decreases the sound volume.
<i>Fn+◀</i>		Brightness Down	Decreases the screen brightness.
<i>Fn+▶</i>		Brightness Up	Increases the screen brightness.

D2D Recovery

The Acer Disk to Disk (D2D) recovery function allows you to use the recovery partition to troubleshoot your computer.

1. Restart the computer.
2. During POST, press **F1** to access the *BIOS Setup* screen.
3. Press **▷** to select the *Main* menu.
4. Press **▽** to select the *D2D Recovery* field and make sure it is set to **Enabled**.
5. Press **F10** to save settings and close the *BIOS Setup* screen.
6. During POST, press **Alt+F10** to enter the system recovery partition. This will display the *eRecovery Management* window.
7. Follow the onscreen instructions to return your computer to factory condition.

System Block Diagram

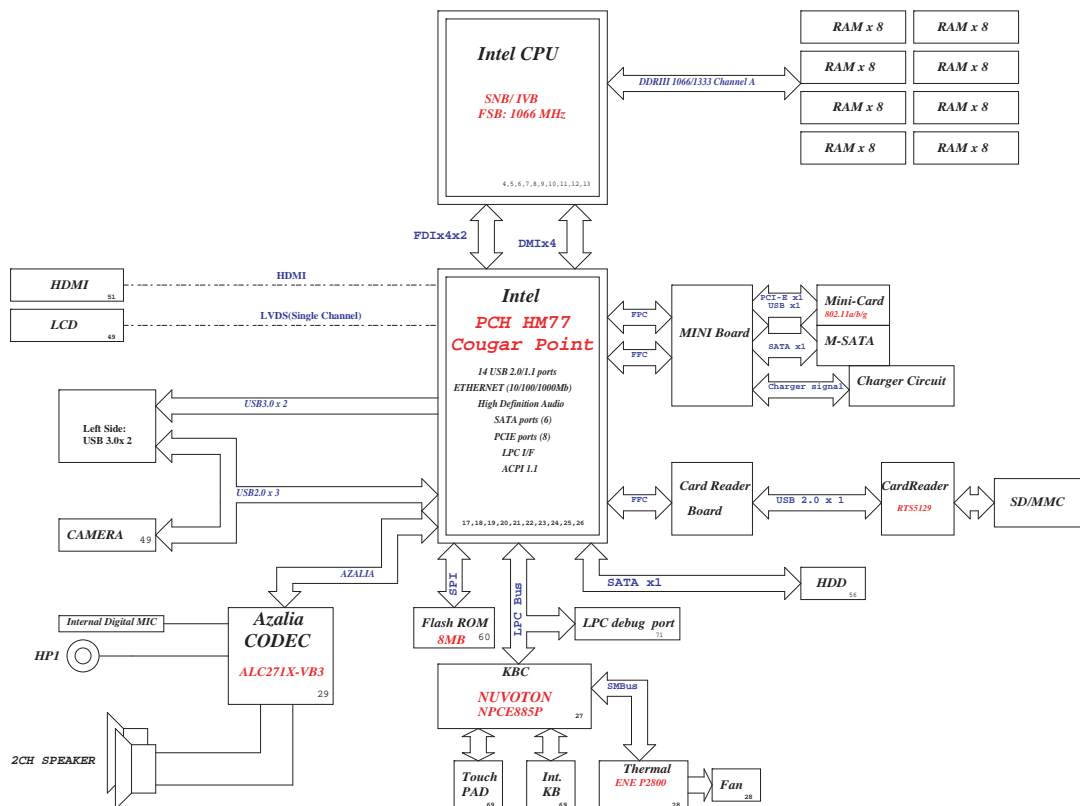


Figure 1-11. System Block Diagram

Specification Tables

Computer Specifications

Item	Metric	Imperial
Dimensions		
Width	32.2 cm	12.68 in
Depth	21.85 cm	8.52 in
Height	1.75 cm	0.68 in
Weight (equipped with 3-cell battery pack)	1.33 kg with SSD disk drive 1.35 kg with HDD disk drive	2.93 lbs 2.98 lbs
Input power		
Operating voltage	19 V, 65 W	
Operating current (max)	3.42 A	
Temperature		
Operating (not writing to optical disc)	0 to 35 °C	32 to 95 °F
Operating (writing to optical disc)	5 to 35 °C	41 to 95 °F
Nonoperating	-20 to 60 °C	-4 to 140 °F
Relative humidity		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 to 3,048 m	-50 to 10,000 ft
Nonoperating	-15 to 12,192 m	-50 to 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	TBD
Nonoperating	200 g, 2 ms, half-sine	TBD
Random vibration		
Operating	0.75 g zero-to-peak, 10 to 500 Hz, 0.25 oct/min sweep rate	
Non-operating	1.50 g zero-to-peak, 10 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

Item	Specification
Core logic	Mobile Intel® HM77 (6MB BIOS ROM) Chipset
Graphics	UMA: Integrated in the Intel® Core™ Mobile Processor
USB 2.0	Integrated in the Mobile Intel® HM65 Express Chipset
Wireless LAN	<ul style="list-style-type: none"> • Foxconn BCM 43225 • Foxconn Atheros HB97 • Intel® Centrino® Advanced-N 6205 (Taylor Peak)
Audio codec	Realtek 271X VB3
Card reader	Built-in

Processor

Item	Specification
CPU type	Second Generation Intel® Core™ Mobile Processor Family
Core logic	Four execution cores· <ul style="list-style-type: none"> • L1 cache size: Two 32 KB instruction caches and two 32 KB data caches • L2 cache size: Two 256 KB • L3 cache size: 3 to 8 MB
Chipset	Mobile Intel® UM67 (4MB SPI) Chipset

Processor Specifications

Item	CPU Speed	Cores/Threads	Max Turbo Freq	Mfg Tech	L3 Cache	Max TDP	Core Voltage
i3-2367M	1.4 GHz	2C/4T	1.4 GHz	32 nm	3 MB	17 W	1.1 V
i3-3217U	1.8 GHz	2C/4T	1.8 GHz	32 nm	3 MB	17 W	1.1 V
i5-2467M	1.6 GHz	2C/4T	2.3 GHz	32 nm	3 MB	17 W	1.1 V
i5-3317U	1.7 GHz	2C/4T	2.3 GHz	32 nm	3 MB	17 W	1.1 V
i7-2637M	1.7 GHz	2C/4T	2.8 GHz	32 nm	4 MB	17 W	1.1 V
i7-3517U	1.9 GHz	2C/4T	2.8 GHz	32 nm	4 MB	17 W	1.1 V

Heat Sink Fan True Value Table

CPU Temperature	Fan Speed (RPM)	SPL Spec (dBA)
44	2300	25
47	4450	28
52	4850	31

CPU Temperature	Fan Speed (RPM)	SPL Spec (dBA)
68	5700	34
78	6200	37
85	6500	40
Throttling 50%: On= 85 °C; OFF=84 °C		
OS shuts down at 97 °C; Hardware shuts down at 85 °C		

System Memory

Item	Specification
Memory controller	Integrated in the Intel® Core™ Mobile Processor
Memory size	4 GB onboard
Maximum system memory size	4 GB

Graphics Controller

Item	Specification
Chipset	Intel® HD Graphics 3000 with 128 MB of dedicated system memory, supporting Microsoft® DirectX® 10.1

System BIOS

Item	Specification
BIOS vendor	InsydeH2O
BIOS version	v1.08
BIOS ROM type	Hardware
BIOS ROM size	4 MB
Protocols supported	<ul style="list-style-type: none"> • Legacy BIOS and EFI architectures • ACPI 3.0b compliance • PXE specification v2.1 • SMBIOS reference specification v2.5 or later • USB specification revision 1.1, 2.0. and 3.0 • ASF specification v2.0 or later • PCI Express base specification revision 2.1 • PCI BIOS specification revision 2.1 • BIOS Boot specification v1.01 • Simple boot flag specification v2.1 • System management bus specification v2.0 • AHCI support • Microsoft XP/Vista/Windows 7 logo program • Microsoft SLP 1.0 support • Microsoft OA 2.0 and 2.1 support

Keyboard

Item	Specification
Type	Aspire AF1S Flat keyboard
Total number of keys	84 keys
Windows logo key	Yes
Internal and external USB keyboard work simultaneously?	Yes
Features	<ul style="list-style-type: none"> • Overlay numeric keys • Inverted "T" cursor keys • Hotkeys for volume and brightness level, media playback, wireless and sleep functions, and display and touchpad toggle • Windows and Application keys • Multilanguage support configurable by OEM customer

Hard Disk Drive

Item	Specification	
Vendor and models	HGST HTS543232A7A384, Seagate ST320LT020/9YG142-188, Seagate ST320LT012/9WS14C-188, Seagate 9YG142-190, Western Digital WD3200LPVT-22G33T0	HGST HTS545050A7E380, Seagate ST500LT012/9WS142-188, Western Digital WD5000LPVT-22G33T0
Product series	<ul style="list-style-type: none"> • Hitachi Eagle B7/Jaguar B7 • Seagate Sapta • Western Digital 	
Configuration		
Interface	SATA, Third Generation	
Capacity (GB)	320	500
Bytes per sector	512	512
Data heads	3, 2, 2, 2, n/a	4, n/a, 4, n/a
Disks	1, 2/1, 1, 1, n/a	2, n/a, 2, n/a
Performance		
Data buffer	8	8
Spindle speed (RPM)	5400	
Media data transfer rate (Mbits/sec, max)	875, 875/994, 1175, n/a	875, n/a, n/a, n/a
Interface transfer rate (MB/sec, max)	300	

Item	Specification
Power	
Requirement	5 VDC

Solid State Drive (SSD)

Item	Specification
Vendor and models	A-DATA SSD NAND AS511S7-120GM A-DATA SSD NAND AS511S7-240GM
Product series	A-DATA SSD NAND AS511S7
Configuration	
Interface	Serial ATA-6Gb/s
Capacity (GB)	120 240
Performance	
Max. Read Speed	550MB / s 550MB / s
Max. Read Speed	510MB / s 520MB / s
Power	
Requirement	5 VDC

Card Reader

Item	Specification
Controller	RTS 5209
Cards supported	<ul style="list-style-type: none"> • MultiMediaCard™ (MMC) • MultiMediaCard Plus (MMCplus™) • Secure Digital™ (SD)
Manufacturing technology	65 nm

LCD Panel

Item	Specification
Vendor and models	B133XTF01.0 LF
Screen size (diagonal)	337.8 mm (13.3 in)
Active area	293.4×165 mm
Display resolution (pixels)	HD (1366×768)
Pixel pitch	0.215 mm
Viewing angle (H/V)	90/60
Brightness	200 nit
Contrast ratio	500:1

Item	Specification
Response time	
Typical	8 ms
Maximum	16 ms
Typical power consumption (watt)	3 W
Electrical interface	1-channel LVDS
Backlight	White LED (WLED)
Weight	310 g
Physical size	306.8 × 189.2 × 3.6 mm

Supported Display Resolutions

Specification	UMA
800×600, 60 Hz, 16:9	Yes
1024×768, 60 Hz, 16:9	Yes
1280×600, 60 Hz, 16:9	No
1280×720, 60 Hz, 16:9	Yes
1280×768, 60 Hz, 16:9	Yes
1360×768, 60 Hz, 16:9	Yes
1366×768, 60 Hz, 16:9	Yes

Audio Codec

Item	Specification
Controller	Conexant CX-20584
Features	<ul style="list-style-type: none"> • 98 dB Signal-to-Noise Ratio (A-weighting) for DAC output • 90 dB Signal-to-Noise Ratio (A-weighting) for ADC input • Internal Digital Power support: 3.3 V digital core power; 1.5–3.3 V digital IO power for HDA link; 3.0–5.0 V analog power; 3.0–5.0 V power stage voltage • Acoustic Echo Cancellation (AEC), Noise Suppression (NS), and Beam Forming (BF) technologies for voice application • 48-pin green QFN package

Audio Interface

Item	Specification
Controller	Conexant CX-20584
Audio onboard	Yes
Audio channel	Stereo
Resolution	18 bit stereo full duplex

Item	Specification
Compatibility	High Definition Audio Specification
Sampling rate	1 Hz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker/quantity	Yes, two speakers

Webcam

Item	Specification
Vendor and models	<ul style="list-style-type: none"> • Lite-On HD_S LT_119_SP • Primax PM_S119_SP • Suyin SY_S119_SP
Resolution	1.3 MP HD

Wireless LAN

Item	Specification
Module	<ul style="list-style-type: none"> • Broadcom 4313iPA+20702 • Foxconn Atheros WB225 • Lite-On Atheros WB225
Frequency band	2.4 GHz
Protocols and data rates supported	<ul style="list-style-type: none"> • 802.11b – 1-11 Mbps • 802.11g – 6-54 Mbps • 802.11n – 6.5-300 Mbps
Interface	PCI Express
Form factor	Compact Half-Mini Card
Antennae	Yes, two routed in the display assembly

USB Interface

Item	Specification
Controller	USB 2.0 – Integrated in the Mobile Intel® HM65/HM67/QM67 Express Chipset
Number and location of USB port	USB 2.0 – Two (Back)
EHCI	2
Output current	1.0A for each connector

HDMI Port

Item	Specification
Compliance level	HDMI 1.4a

Item	Specification
Data throughput	Up to 16.7 million colors
Number of HDMI port	1
Location	Back

System LED Indicators

Item	Specification
Power status	<ul style="list-style-type: none"> • Solid blue: The computer is turned on. • Blinking amber: The computer is in power-saving mode. • Indicator off: The computer is turned off.
Battery status	<p>AC adapter connected:</p> <ul style="list-style-type: none"> • Solid blue: The battery charge is at full capacity. • Solid amber: Battery charging. • Blinking amber: Battery is in abnormal stop charge or battery is in low power state. <p>AC adapter disconnected:</p> <ul style="list-style-type: none"> • Blinking amber: Battery charge is in critically low state • Indicator off: Discharging state.

Battery Pack

Item	Specification
Vendor and models	<ul style="list-style-type: none"> • Sanyo AP11D Main Common ID:AP11D3F • Sony AP11D Main COMMON ID:AP11D4F
Battery type	Lithium-polymer
Pack capacity	3260mAh
Number of battery cell	3
Package configuration	3S2P

AC Adapter

Item	Specification
Input rating	UMA: 65 W
Input AC current (max)	100-240 V, 1.5 A, 50-60 Hz
Output	19 V, 2-pin

System Power Management

Item	Specification
Power management system	ACPI 3.0-compliant

Item	Specification
Power global states	<ul style="list-style-type: none"> ● G3 Mechanical Off - This off state is entered through a mechanical means; no electrical current is running through the circuitry and it can be worked on without damaging the hardware or endangering service personnel. Except for the real-time clock, power consumption is zero. ● G2/S5 Soft Off - OS initiated shutdown. The computer consumes a minimal amount of power. No user mode or system mode code is run. It is not safe to disassemble the machine in this state. ● G1 Sleeping - The computer consumes a small amount of power, user mode threads are not being executed, and the system “appears” to be off. It is not safe to disassemble the machine in this state ● G0 Working - The computer dispatches user mode (application) threads and they execute. It is not safe to disassemble the machine in this state. ● S4 Non-Volatile Sleep - Also known as hibernation state. A special global system state that allows system context to be saved and restored (relatively slowly) when power is lost to the mainboard. It is not safe to disassemble the machine in this state.

System DMA Specification

Legacy Mode	Power Management
DMA0	Free
DMA1	Free
DMA2	Free
DMA3	Free
DMA4	Direct memory access controller
DMA5	Free
DMA6	Free
DMA7	Free

System Interrupt Specification

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Standard PS/2 keyboard
IRQ2	Not in use
IRQ3	Not in use
IRQ5	Not in use
IRQ6	Not in use
IRQ7	Not in use
IRQ8	System CMOS/real time clock
IRQ9	Not in use
IRQ10	Not in use
IRQ11	Not in use
IRQ12	PS/2 port Touchpad
IRQ13	Numeric data processor
IRQ14	Not in use
IRQ15	Not in use

System IO Address Map

I/O address (hex)	System Function (shipping configuration)
0000 - 001F	Direct Memory Access Controller
0000- 0CF7	PCI bus
0020- 0021	Programmable Interrupt Controller
0024- 0025	Programmable Interrupt Controller
0028- 0029	Programmable Interrupt Controller
002C - 002D	Programmable Interrupt Controller
002E - 002F	Motherboard resources
0030- 0031	Programmable Interrupt Controller
0034- 0035	Programmable Interrupt Controller
0038- 0039	Programmable Interrupt Controller
003C - 003D	Programmable Interrupt Controller
0040 - 0043	System Timer
004E - 004F	Motherboard resources
0050- 0053	System Timer
0060- 0060	Standard PS/2 Keyboard
0061- 0061	Motherboard resources
0062- 0062	Microsoft ACPI-Compliant Embedded Controller
0063- 0063	Motherboard resources
0064- 0064	Standard PS/2 Keyboard
0065- 0065	Motherboard resources
0066- 0066	Microsoft ACPI-Compliant Embedded Controller
0067- 0067	Motherboard resources
0068- 006F	Motherboard resources
0070- 0070	Motherboard resources
0070- 0077	System CMOS/real time clock
0080- 0080	Motherboard resources
0081- 0091	Direct Memory Access Controller
0092- 0092	Motherboard resources
0093- 009F	Direct Memory Access Controller
00A0- 00A1	Programmable Interrupt Controller
00A4- 00A5	Programmable Interrupt Controller
00A8- 00A9	Programmable Interrupt Controller

I/O address (hex)	System Function (shipping configuration)
00AC - 00AD	Programmable Interrupt Controller
00B0- 00B1	Programmable Interrupt Controller
00B2- 00B3	Motherboard resources
00B4- 00B5	Programmable Interrupt Controller
00B8- 00B9	Programmable Interrupt Controller
00BC - 00BD	Programmable Interrupt Controller
00C0- 00DF	Direct Memory Access Controller
00C0- 00F0	Numeric data processor
03B0- 03BB	Intel HD Graphics
03C0- 03DF	Intel HD Graphics
0400 - 0453	Motherboard resources
0454 - 0457	Motherboard resources
0458 - 047F	Motherboard resources
04D0 - 04D1	Programmable Interrupt Controller
0500 - 057F	Motherboard resources
0680 - 069F	Motherboard resources
0D00 - FFFF	PCI bus
1000 - 100F	Motherboard resources
1010 - 1013	Motherboard resources
104E - 104F	Motherboard resources
2000 - 203F	Intel ® HD Graphics Family
EFA0 - EFBF	Intel 7 Series/C216 Series Chipset Family SMBus Controller
2060 - 207F	Intel ® 7 Mobile Express Chipset SATA AHCI Controller
2080 - 2087	Intel ® 7 Mobile Express Chipset SATA AHCI Controller
2088 - 208F	Intel ® 7 Mobile Express Chipset SATA AHCI Controller
2090 - 2093	Intel ® 7 Mobile Express Chipset SATA AHCI Controller
2094 - 2097	Intel ® 7 Mobile Express Chipset SATA AHCI Controller
FFFF - FFFF	Motherboard resources

CHAPTER 2

System Utilities

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System Utilities

BIOS Setup Utility

This utility is a hardware configuration program built into a computer's BIOS (Basic Input/Output System).

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

To enter this utility, during POST (power-on self-test), press **F2** when the prompt appears on the bottom of screen.

The default setting of the `F12 Boot Menu` is `Disabled`. To change the boot device without entering the *BIOS Setup Utility*, set the parameter to `Enabled`. During the next POST, press **F12** to enter the `multi-boot` menu.

Navigating the BIOS Utility

The *BIOS Setup Utility* has five menu options, namely:

- Information
- Main
- Security
- Boot
- Exit

Perform the following actions to navigate through the *BIOS Setup Utility*:

- Press `<>` to select items in the menu bar.
- Press `△▽` to select an item in the menu screen or in an option box.
- Press **F5** or **F6** to change the parameter value.
- Press **Esc** to exit from the *Setup Utility*.
- Press **F9** to load the default settings.
- Press **F10** to save changes and exit from the *Setup Utility*.

⇒ NOTE:

Parameter values enclosed in square brackets [] can be change. Navigation keys appear on the bottom of the screen. Read the item specific help on the right area of the screen before making changes to the parameter values.

⇒ NOTE:

System information can vary depending on the computer model.

BIOS Menus

This section describes the *InsydeH2O BIOS Setup Utility* menu tabs.

⇒ **NOTE:**

The screenshots used in this chapter are for reference only. Actual values can vary depending on the computer model.

Information

This tab shows a summary of the computer’s hardware information.

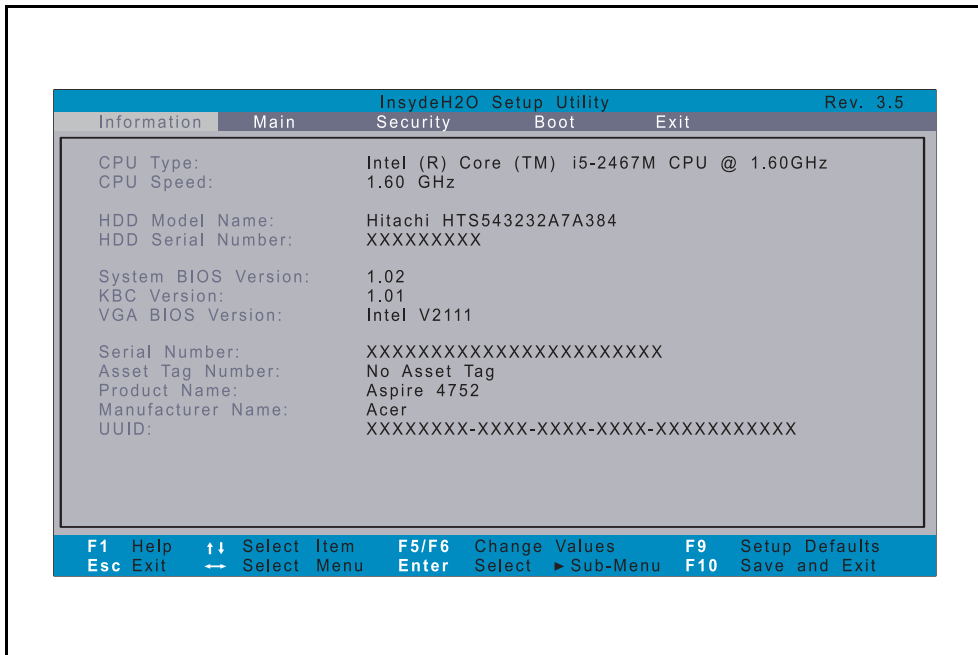


Figure 2-1. Hardware Information

Table 2-1. Hardware Information

Parameter	Description
CPU Type	Model name and core frequency of the installed processor
CPU Speed	Core frequency of the installed processor
HDD Model Name	Model name of the installed hard drive
HDD Serial Number	Serial number of the installed hard drive
System BIOS Version	Current system BIOS version
KBC Version	Current keyboard controller version
VGA BIOS Version	Current firmware version of the system VGA
Serial Number	Serial number of the computer
Asset Tag Number	Asset tag number of the computer

Table 2-1. Hardware Information (Continued)

Parameter	Description
Product Name	Model name of the computer
Manufacturer Name	Computer manufacturer
UUID	The universally unique identifier tag assigned to the computer

Main

Use this tab to set the system time and date, enable or disable boot options, and enable or disable the D2D recovery feature.

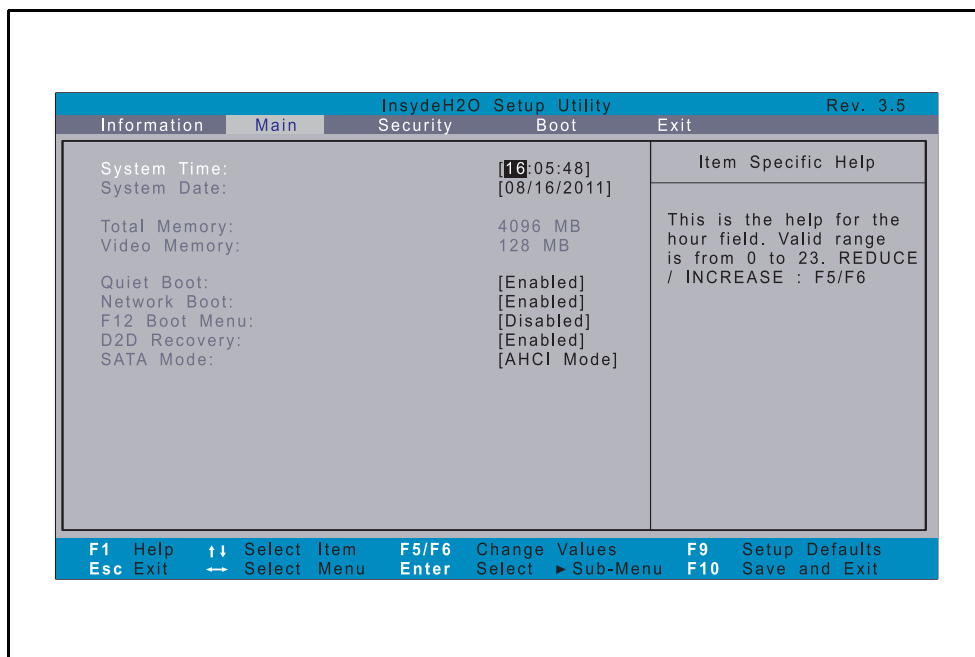


Figure 2-2. BIOS Main

Table 2-2. BIOS Main

Parameter	Description	Format/Option
System Time	System time expressed in 24-hour format	Format: HH:MM:SS (hour:minute:second)
System Date	System date	Format MM/DD/YYYY (month/day/year)
Total Memory	Total system memory available	–
Video Memory	System memory allocated for graphics processing	–
Quiet Boot	Show the original equipment manufacturer (OEM) screen during system boot instead of the typical POST screen	Option: Enabled or Disabled
Network Boot	Option to boot system from LAN	Option: Enabled or Disabled
F12 Boot Menu	Option to enter the <i>Boot</i> menu during POST	Option: Enabled or Disabled
D2D Recovery	Option to use the <i>D2D Recovery</i> function	Option: Enabled or Disabled
SATA Mode	Option to set the SATA controller mode	Option: AHCI or IDE

Security

Use this tab to safeguard and protect the computer from unauthorized use.

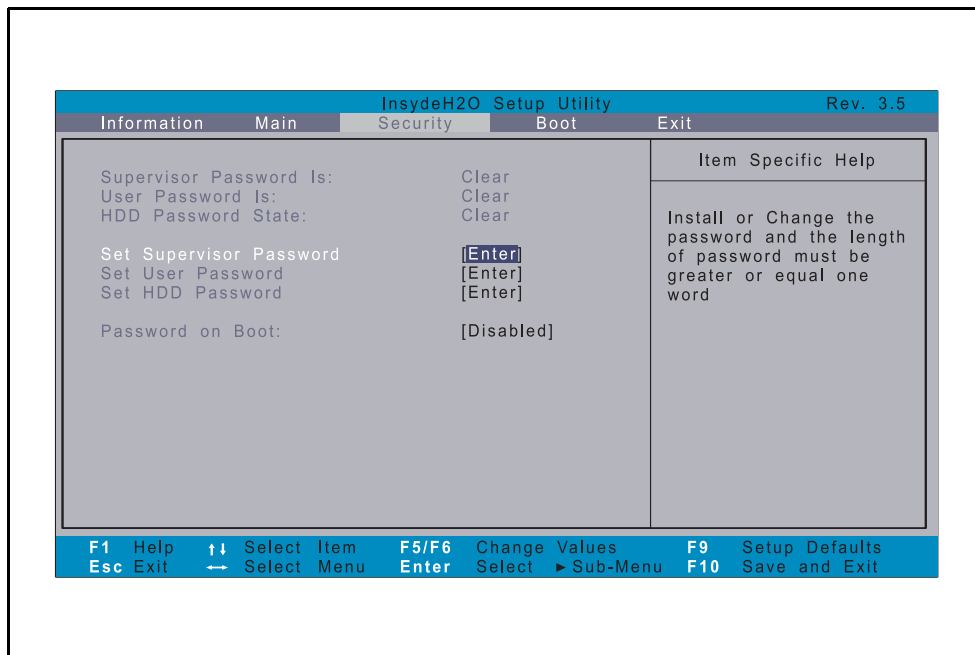


Figure 2-3. BIOS Security

Table 2-3. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Supervisor password setting	Clear or Set
User Password Is	User password setting	Clear or Set
HDD Password State	Hard drive password setting	Clear or Set
Set Supervisor Password	Option to set the supervisor password	–
Set User Password	Option to set a user password	–
Set HDD Password	Option to set the hard drive password	–
Password on Boot	Option to enable password requirement during system boot	Enabled or Disabled

⇒ NOTE:

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

Setting a Password

Follow the succeeding instructions to set the user or supervisor passwords.

1. Press $\Delta \nabla$ to highlight a Set _____ Password parameter and press **Enter**. The Set _____ Password dialog box appears.

Set Supervisor Password	
Enter New Password	[]
Confirm New Password	[]

Figure 2-4. Set Supervisor Password

2. Type a new password in the Enter New Password field and press **Enter**. Passwords are not case sensitive and the length must not exceed eight alphanumeric characters (A-Z, a-z, 0-9).
3. Retype the password in the Confirm New Password field and press **Enter**.

+ **IMPORTANT:**

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

4. Press **Enter**.

⇒ **NOTE:**

Users can choose to enable the Password on Boot parameter.

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

Removing a Password

Perform the following:

1. Press $\Delta \nabla$ to highlight a Set _____ Password parameter and press **Enter**. The Set _____ Password dialog box appears.

Set Supervisor Password	
Enter Current Password	[]
Enter New Password	[]
Confirm New Password	[]

Figure 2-5. 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.
4. Press **F10** to save changes and exit from the *BIOS Setup Utility*.

Changing a Password

1. Press $\Delta \nabla$ to highlight a Set _____ Password parameter and press **Enter**. The Set _____ 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.
4. Retype the password in the Confirm New Password field.

Setup Notice
Changes have been saved.
Continue

Figure 2-7. Setup Notice

5. Press **Enter**. Computer sets Supervisor Password parameter to Set.

⇒ NOTE:

Users can choose to enable the Password on Boot parameter.

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

Boot

Use this tab to set the preferred drive sequence in which the *Setup Utility* attempts to boot the operating system. By default, the computer searches for boot devices in the following order:

1. Hard disk drive
2. External USB bootable device
3. Network boot
4. External USB hard drive
5. External USB optical drive

Press Δ / ∇ to select a device and press **F5** or **F6** to move it up or down the list.

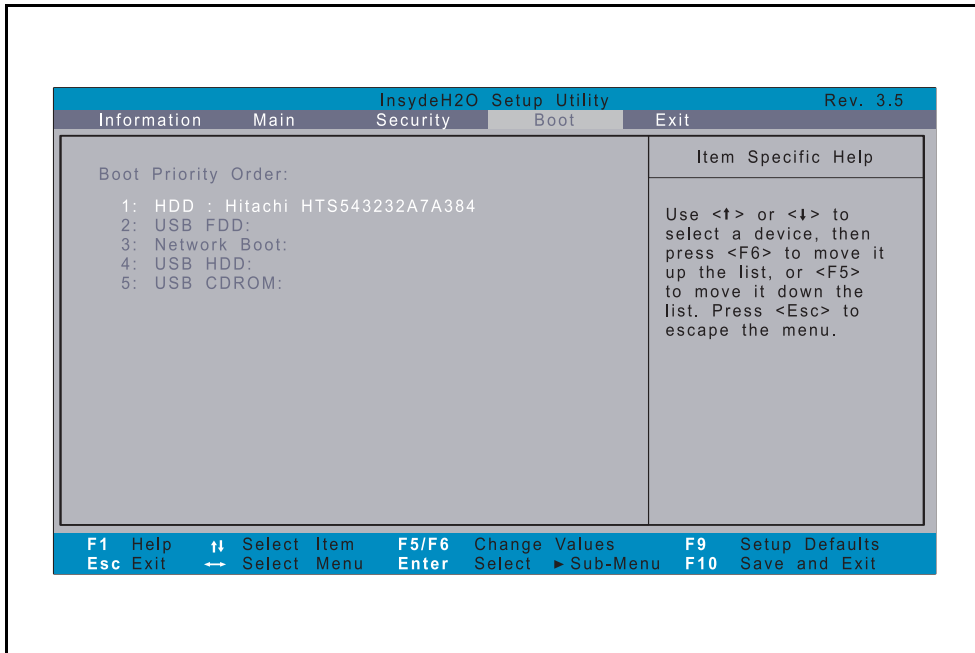


Figure 2-8. BIOS Boot

Exit

Use the Exit tab to save or discard changes and close the *BIOS Setup Utility*.

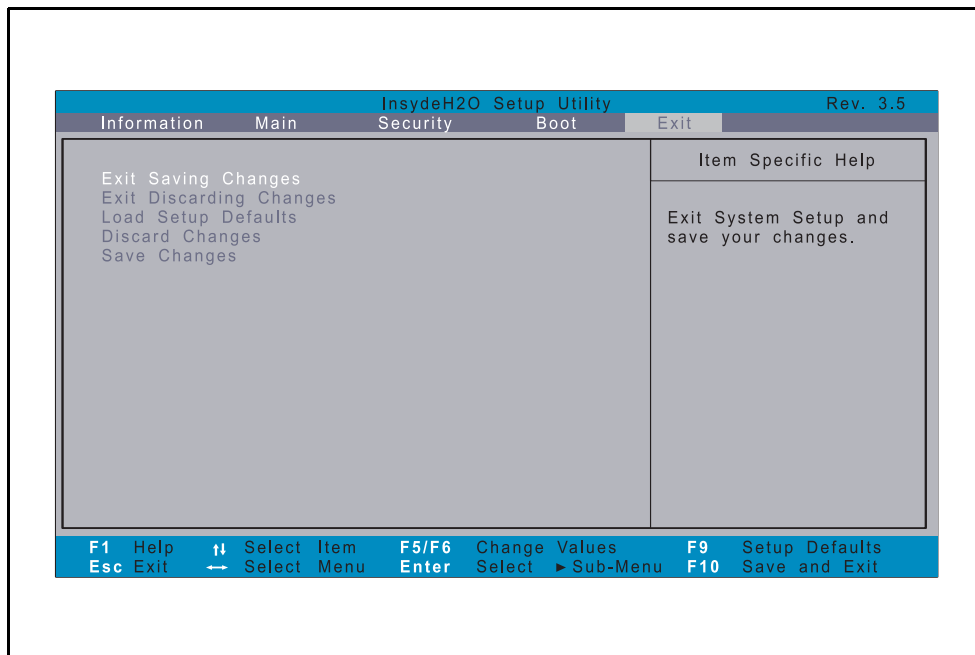


Figure 2-9. BIOS Exit

Table 2-4. Exit Parameters

Parameter	Description
Exit Saving Changes	Close the <i>BIOS Setup Utility</i> and save the setup changes.
Exit Discarding Changes	Close the <i>BIOS Setup Utility</i> without saving the setup changes.
Load Setup Default	Load the default values for all setup items.
Discard Changes	Load the previous values for all setup items.
Save Changes	Save the setup changes.

BIOS Flash Utilities

BIOS Flash memory updates are required for the following conditions:

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

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

⇒ **NOTE:**

If a Crisis Recovery Disc is not available, create one before Flash utility is used.

⇒ **NOTE:**

Do not install memory related drivers (XMS, EMS, DPML) when Flash is used.

⇒ **NOTE:**

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

Perform the following to run Flash.

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

⇒ **NOTE:**

Flash utility has auto execution function.

DOS Flash Utility

Perform the following to use the *DOS Flash Utility*:

1. Press **F2** during boot to enter Setup Menu.
2. Select Boot Menu to modify boot priority order.

Example: If using USB HDD to Update BIOS, move USB HDD to position 1.

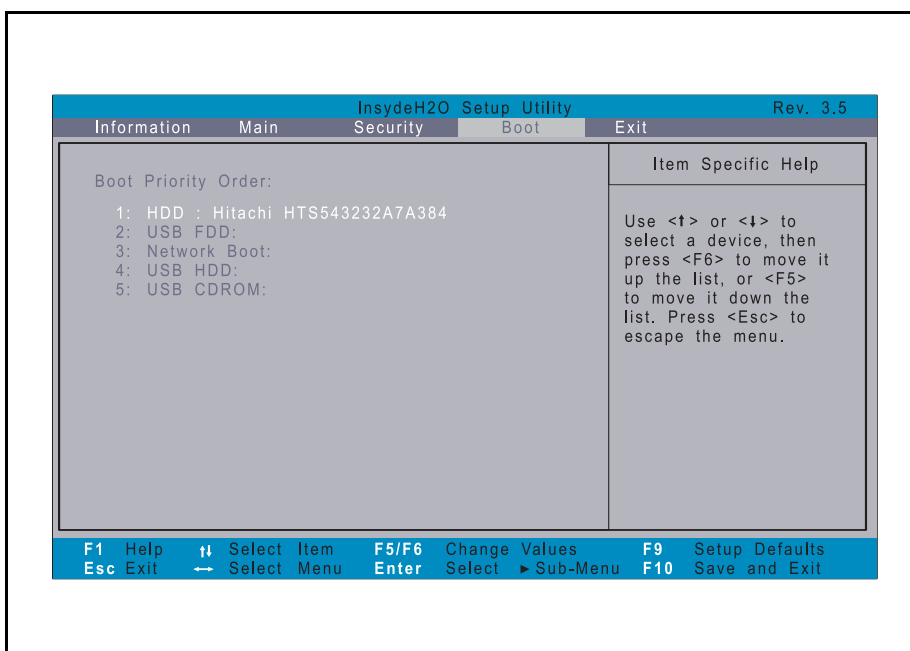


Figure 2-10. BIOS Boot

3. Insert the USB HDD and reboot computer.
4. Execute <BIOS.BAT> to update BIOS.

WinFlash Utility

Perform the following to use the WinFlash Utility:

1. Double click the WinFlash executable file.
2. Click **OK** to begin the update.

Remove HDD/BIOS Password Utilities

This section explains how to remove the HDD and BIOS passwords.

Removing the HDD Password

⇒ **NOTE:**

If the incorrect HDD password is entered three times in succession, an error is generated. (Figure 2-11)

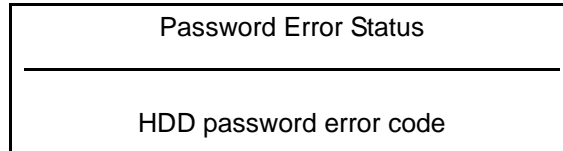


Figure 2-11. Password Error Status

To reset the HDD password:

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

```
A\> unlockhd XXXXXXXX
```

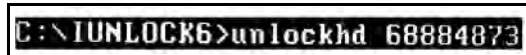


Figure 2-12. Unlock Key Code

⇒ **NOTE:**

XXXXXXXX = HDD Password Error Code

3. Press **Enter** to generate a new password.

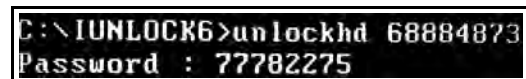


Figure 2-13. Password Encoding

4. Write down the generated master password.
5. Reboot the computer.
6. In the HDD password prompt, type the master password generated in step 3, then press **Enter**.

Removing the BIOS Passwords

To clear a lost BIOS password (user or supervisor password), you need to short the clear password hardware gap (G2201) located on the mainboard. Refer to the [“Clearing the BIOS Passwords”](#) on page 5-5 section for detailed instructions.

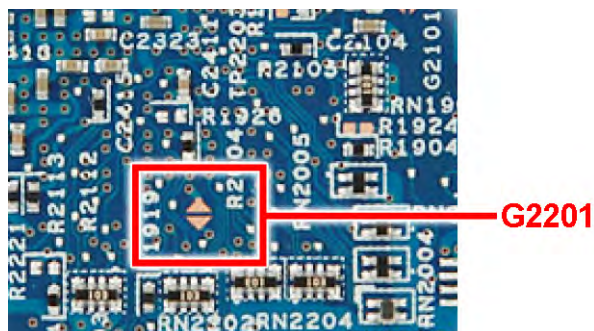


Figure 2-14. G2201 Hardware Gap

Using DMI Tools

The *DMI* (Desktop Management Interface) *Tool* copies BIOS information to EEPROM (Electrically Erasable Programmable Read-Only Memory). Used in the DMI pool for hardware management.

LAN EEPROM Utility

LAN EEPROM Utility enables to change the MAC address.

Perform the following steps to use the LAN EEPROM Utility:

1. Create a DOS bootable USB HDD.
2. Copy the contents of the MAC folder to the HDD and remove the HDD from the computer.
3. Reboot the computer and press **F2** during the boot sequence to enter the setup menu.
4. Select the Boot menu item and move the entry "USB HDD" to the first position.

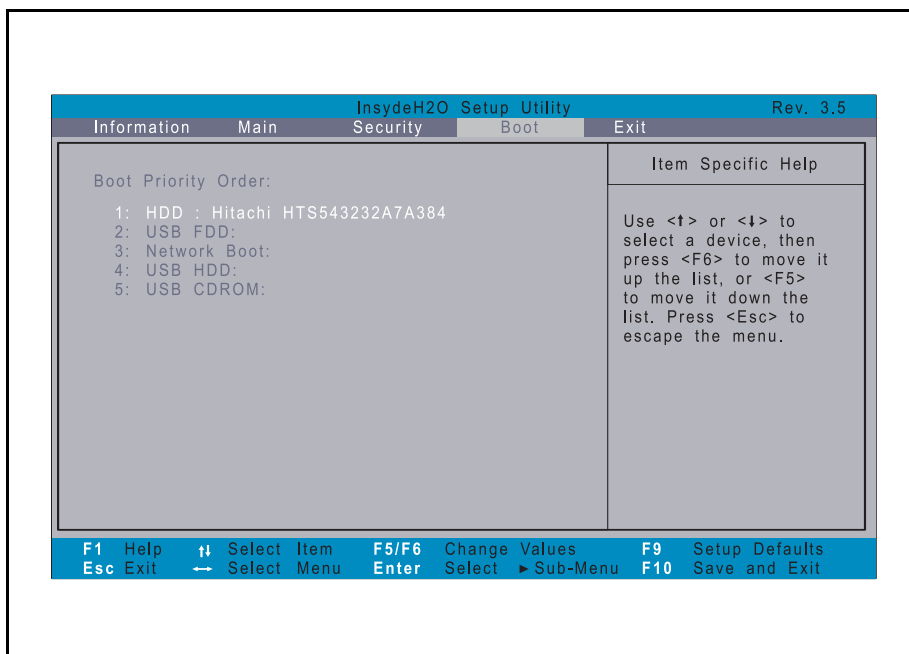


Figure 2-15. BIOS Boot

5. Connect the USB HDD and reboot the computer.
6. At the command prompt, navigate to the MAC folder.
7. Execute the < **MAC.BAT**> file.
8. At prompt type in MAC address.
9. Press **Enter**.
10. Reboot when the process has completed.

CHAPTER 3

Machine Maintenance

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Machine Maintenance

Machine Disassembly and Replacement

This chapter contains step-by-step procedures on how to disassemble the notebook computer for maintenance and troubleshooting.

Cable paths and positioning may not represent the actual model. During the removal and installation of the components, ensure all available cable channels and clips are used and that the cables are replaced in the same position.

The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

The product previews seen in the disassembly procedures may not represent the final product color or configuration.

Recommended Equipment

To disassemble the computer, the following tools are suggested:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge
- Non-marring scribe
- Phillips screwdriver
- Flat-blade screwdriver
- Plastic flat screwdriver
- Plastic tweezers
- Cyanoacrylate glue

Replacement Requirements

⇒ NOTE:

Cabling and components require adhesive to be applied during the replacement and reassembly process.

Pre-disassembly Instructions

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.



Figure 3-1. AC Adapter

3. Remove any dummy cards that are present.
4. Place the system on a flat, stable surface.

Disassembly Process

The flowchart provided in this disassembly section illustrate the entire disassembly sequence. Observe the order of the sequence to avoid damage to any of the hardware components. For example, if you want to remove the WLAN/M-SATA board, you must first remove the battery pack, then the WLAN module, in that order.

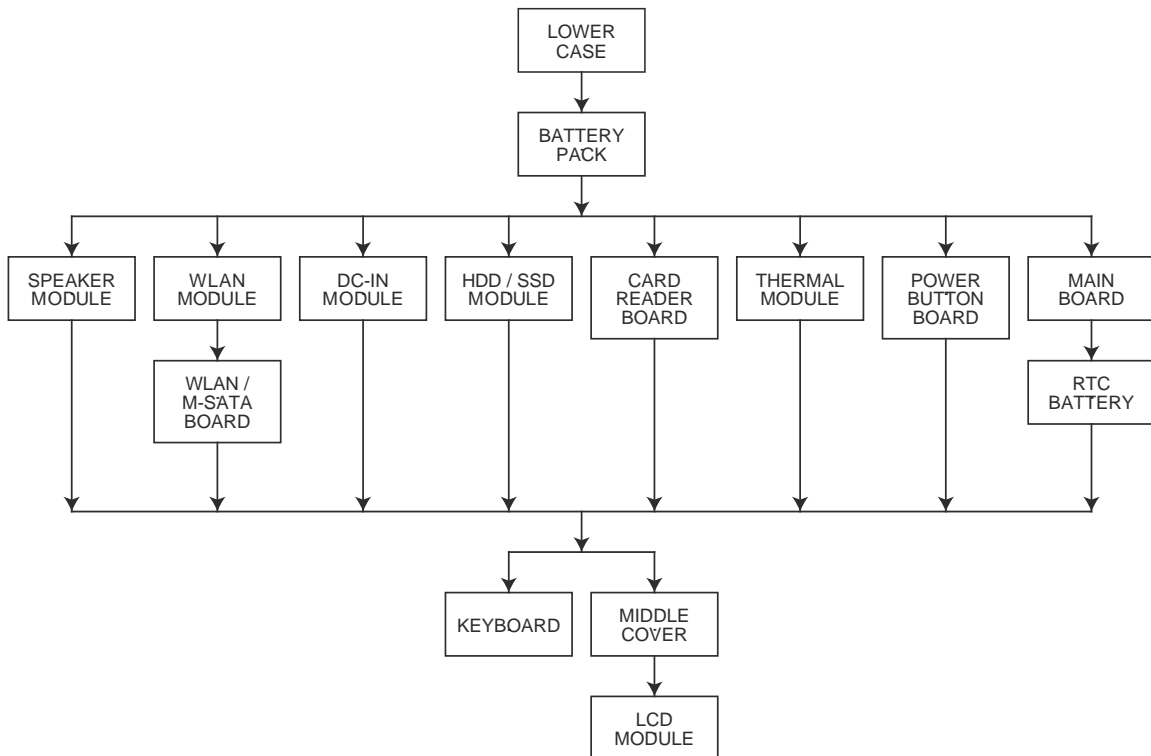


Figure 3-2. Disassembly Flowchart

Table 3-2. Screw List

Step	Screw	Quantity	Acer Part Number
Lower Case Disassembly	M2 x L4.5	12	86.EA552.4R5
Battery Pack Disassembly	M2 x L4.5	2	86.EA552.4R5
Speaker Module Disassembly	M1.4 x L3	4	86.EA36N.3R0
WLAN Module Disassembly	M2 x L3	1	86.00E14.523
DC-In Module Disassembly	-	-	-
HDD/SSD Module Disassembly	M2 x L3	1	86.00E14.523
	M3 x L4	4	86.9A524.4R0
Card Reader Board Disassembly	M2 x L3	2	86.00E14.523
Thermal Module Disassembly	Thermal Screw	3	N/A
Power Button Board Disassembly	-	-	-

Table 3-2. Screw List

Step	Screw	Quantity	Acer Part Number
Mainboard Disassembly	M2 x L3	1	86.00E14.523
RTC Battery Disassembly	-	-	-
WLAN Board Disassembly	-	-	-
Keyboard Disassembly	M1.4 x L1.2	29	86.EA322.2R0
Middle Cover Disassembly	M2 x L3	4	86.00E14.523
LCD Module Disassembly	M2 x L4.5	4	86.EA552.4R5

Removing the Lower Case

1. Remove the twelve screws securing the lower case.

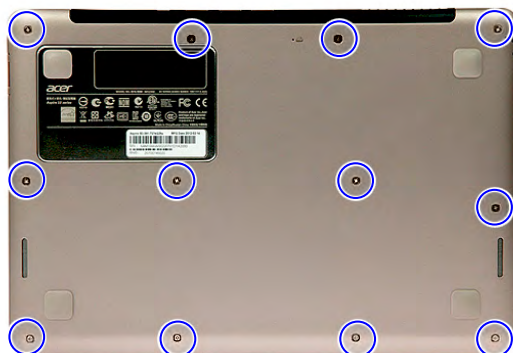



Figure 3-3. Lower Case Screws

Table 3-3. Screws

Step	Screw	Quantity	Screw Type
Lower Case Disassembly	M2 x L4.5	12	

2. Gently lift the lower case and lay it down beside the main unit.



Figure 3-4. Lower Case


Removing the Battery Pack

1. Perform the “[Removing the Lower Case](#)” procedure described on page [3-9](#).
2. Remove the two screws securing the left speaker to the upper case.



Figure 3-5. Left Speaker Screws

Table 3-5. Screws

Step	Screw	Quantity	Screw Type
Left Speaker Module Disassembly	M1.4 x L3	2	

3. Lift the left speaker off the upper case and temporarily place it at the side of the right speaker.



Figure 3-6. Left Speaker

4. Lift the DC-In & Power cable off the battery pack.

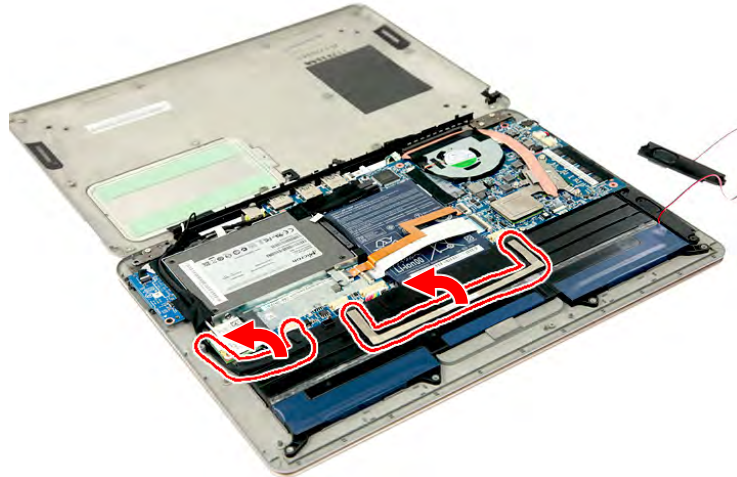


Figure 3-7. DC-In & Power Cable

5. Remove the two screws securing the battery pack to the upper case.

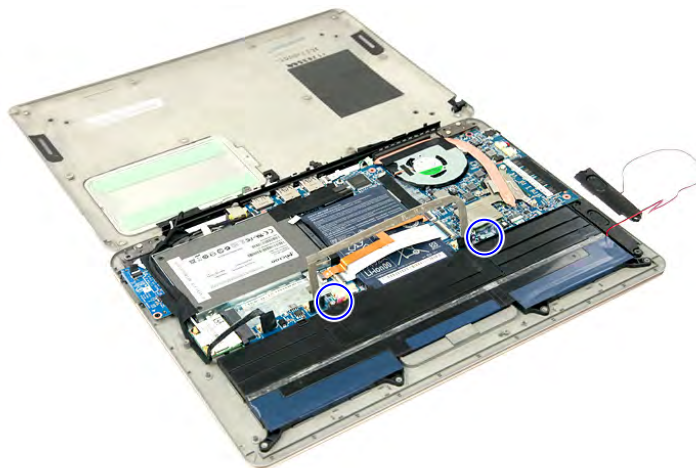



Figure 3-8. Battery Pack Screws

Table 3-8. Screws

Step	Screw	Quantity	Screw Type
Battery Pack Disassembly	M2 x L4.5	2	

6. Lift the battery pack off its socket in the upper case then slide it a few millimeters away from the mainboard (1). Disconnect the battery cable from the WLAN board (2).

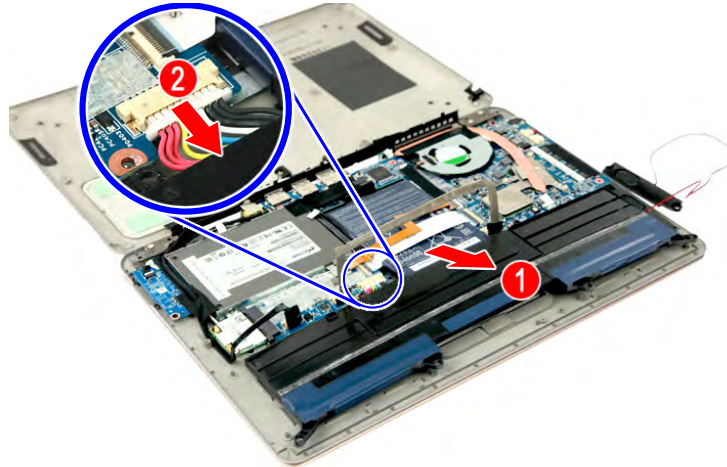


Figure 3-9. Battery Cable

7. Detach the battery pack from the upper case.

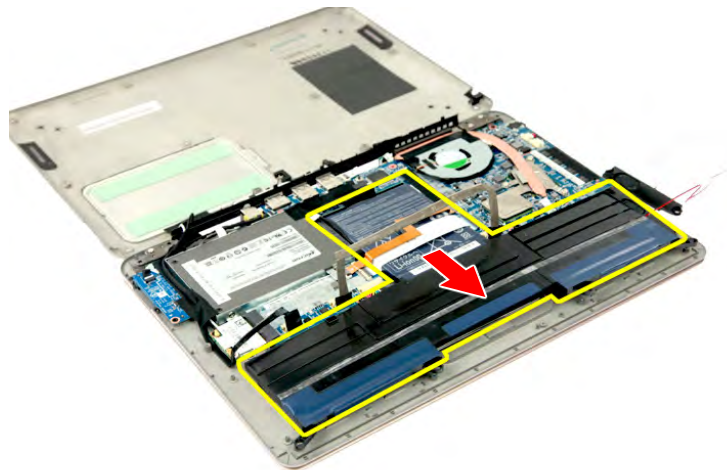


Figure 3-10. Battery Pack

⇒ NOTE:

The battery has been highlighted with the yellow border in [Figure 3-10](#). Remove the battery and follow local regulations for disposal.

Removing the Left and Right Speakers

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Remove the two screws securing the right speakers to the upper case (1).

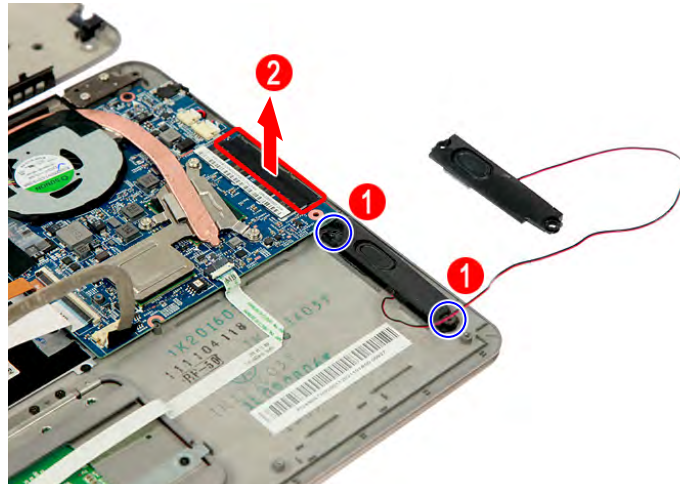



Figure 3-11. Right Speaker Screws and Adhesive Tape

Table 3-11. Screws

Step	Screw	Quantity	Screw Type
Right Speaker Module Disassembly	M1.4 x L3	2	

4. Release the speaker cable from the adhesive tape securing it (2).
5. Detach the right speaker from the upper case.

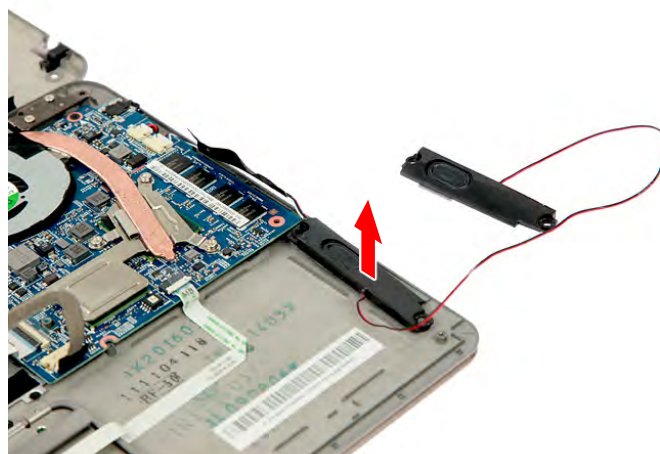


Figure 3-12. Right Speaker

6. Disconnect the speaker's cable from the mainboard.

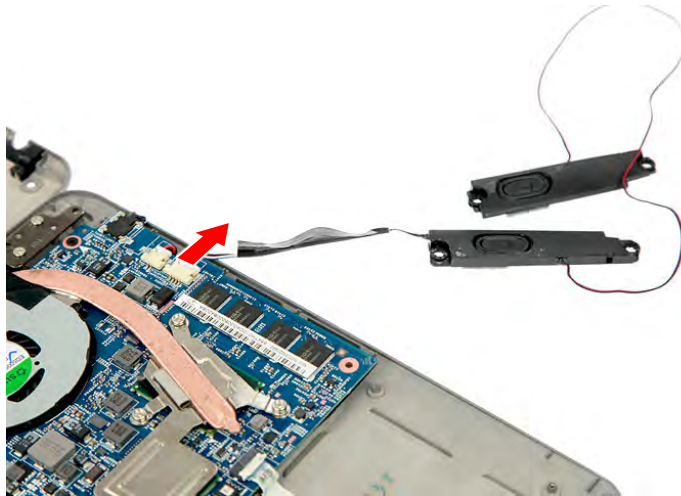


Figure 3-13. Speaker Cable

Removing the WLAN Module

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Unplug the two antenna cables from the WLAN module.



Figure 3-14. WLAN Module Antennas

+ **IMPORTANT:**

For reference during machine reassembly, note which cable color corresponds to the main (black) and auxiliary (white) connectors.

4. Release the antenna cables from the adhesive tapes securing it.




Figure 3-15. Antenna Cables Adhesive Tapes

- Remove the screw securing the WLAN module to the WLAN/M-SATA board.



Figure 3-16. WLAN Module Screw

Table 3-16. Screw

Step	Screw	Quantity	Screw Type
WLAN Module Disassembly	M2 x L3	1	

- Detach the WLAN module from the slot.



Figure 3-17. WLAN Module

⇒ NOTE:

A circuit board that is > 10cm² has been highlighted with a yellow rectangle in [Figure 3-17](#). Follow the local regulations for disposing this type of circuit board.

Removing the DC-In Module (WLAN Board)

⇒ NOTE:

For models that have M-SATA board installed, please proceed to page 3-18, “[Removing the DC-In Module \(M-SATA Board\)](#)”

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Disconnect the DC-In cable from the WLAN board (1) then release the DC-In cable from the self adhesive tape securing it (2).

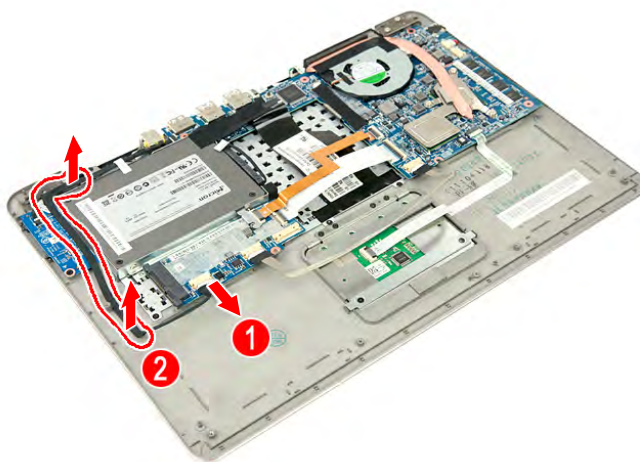


Figure 3-18. DC-In Cable (WLAN Board)

4. Detach the DC-In socket from the upper case.

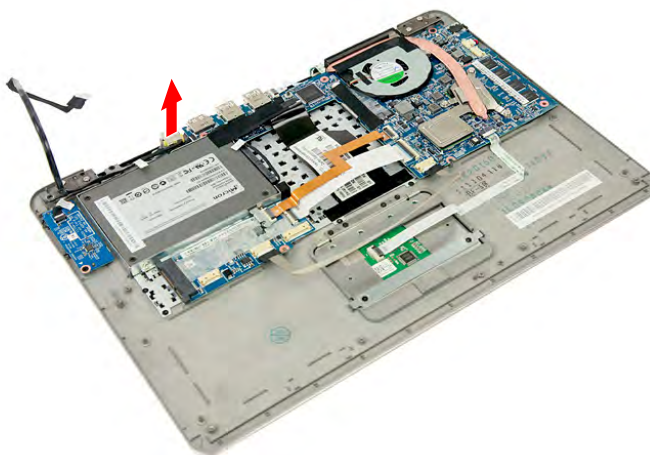


Figure 3-19. DC-In

Removing the DC-In Module (M-SATA Board)

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Disconnect the DC-In cable from the M-SATA board & the mainboard (1) then release the DC-In cable from the self adhesive tape securing it (2).

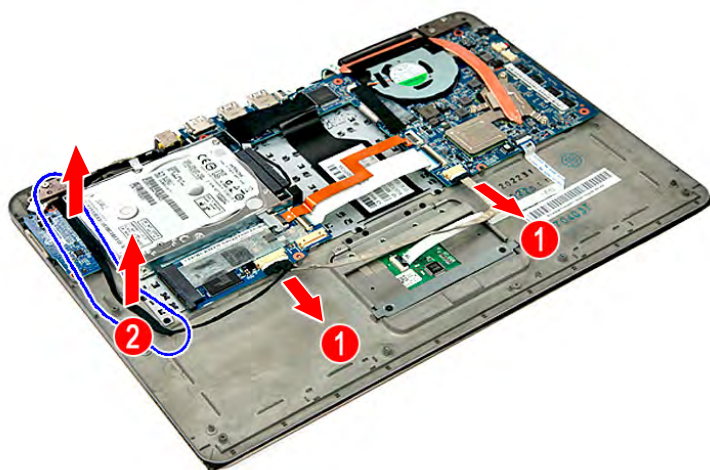


Figure 3-20. DC-In Cable (M-SATA Board)

4. Detach the DC-In socket from the upper case.

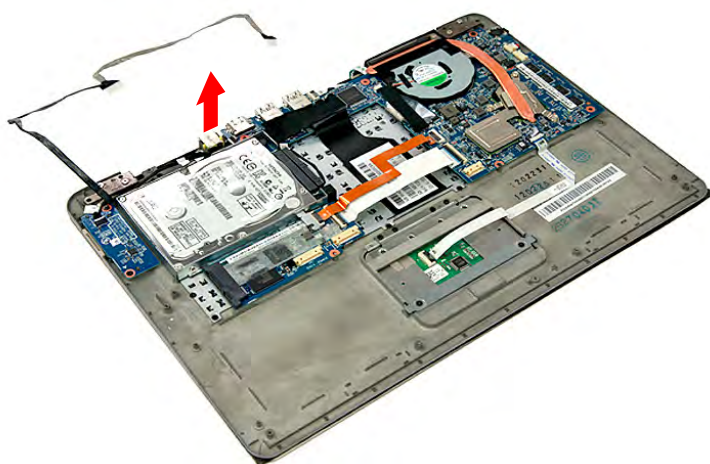


Figure 3-21. DC-In

Removing the HDD Module

⇒ NOTE:

For models that have SSD disk drive installed, please proceed to page 3-22, “Removing the SSD Module”.

1. Perform the “Removing the Lower Case” procedure described on page 3-9.
2. Perform the “Removing the Battery Pack” procedure described on page 3-10.
3. Release the HDD cable from the adhesive tape securing it.

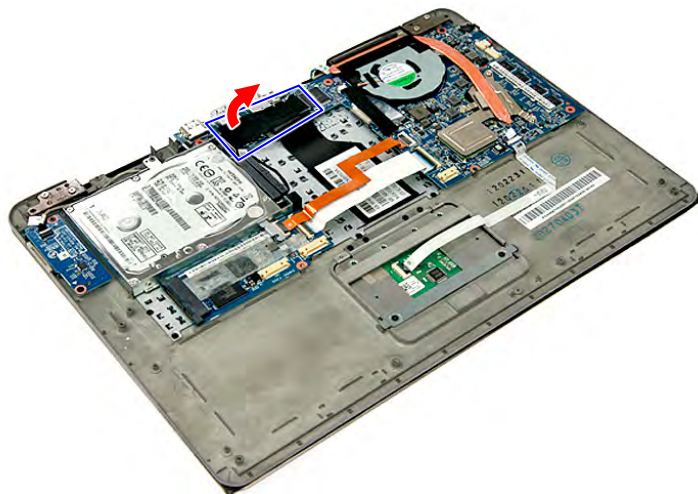


Figure 3-22. HDD Cable Adhesive Tape

4. Grasp the plastic tab and use it to disengage the HDD cable from its connector.



Figure 3-23. HDD Cable

5. Remove the screw securing the HDD module to the upper case.

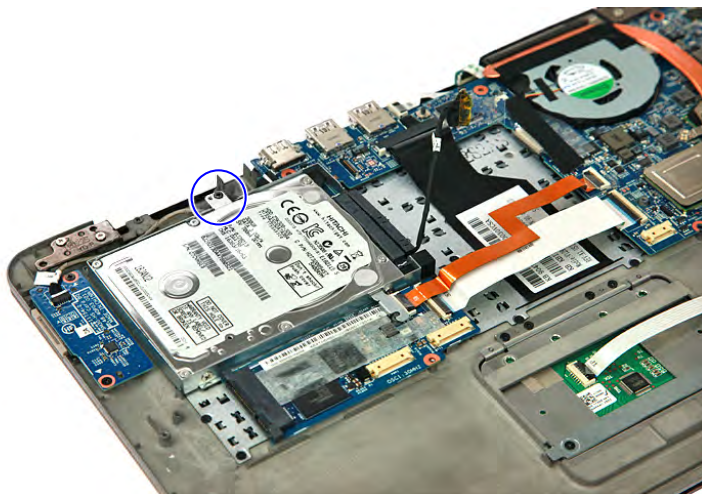



Figure 3-24. HDD Module Screw

Table 3-24. Screw

Step	Screw	Quantity	Screw Type
HDD Module Disassembly	M2 x L3	1	

6. Detach the HDD module from the upper case.

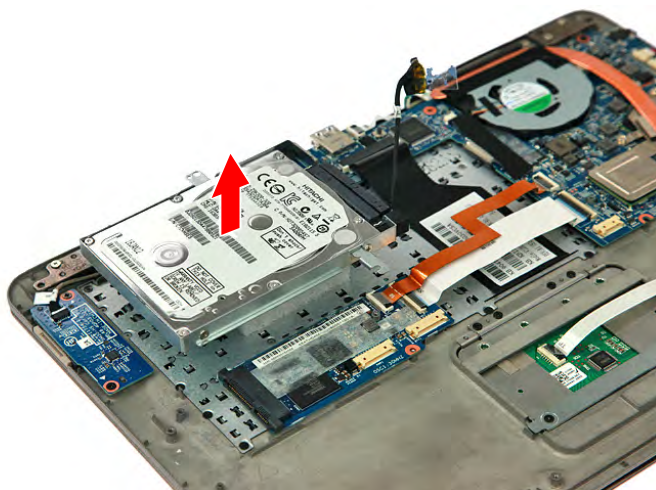


Figure 3-25. HDD Module

- Detach the cable from the HDD module.



Figure 3-26. HDD Cable

- Remove the four screws securing the HDD module to the bracket (1) then detach the HDD module from the bracket (2).

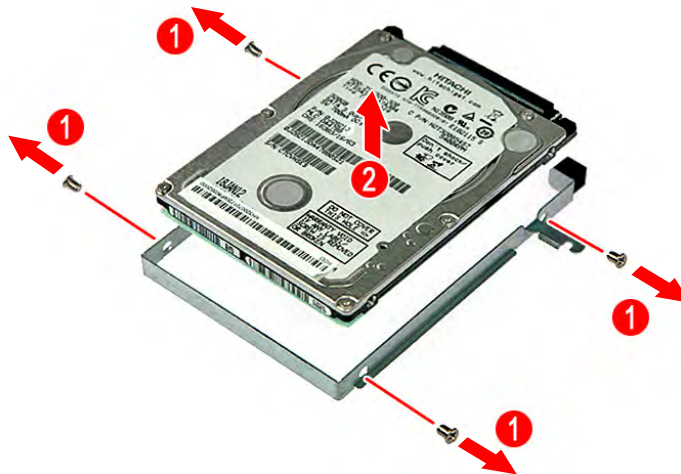



Figure 3-27. HDD Bracket Screws

Table 3-27. Screws

Step	Screw	Quantity	Screw Type
HDD Bracket Disassembly	M3 x L4	4	

Removing the SSD Module

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Release the SSD cable from the adhesive tape securing it.

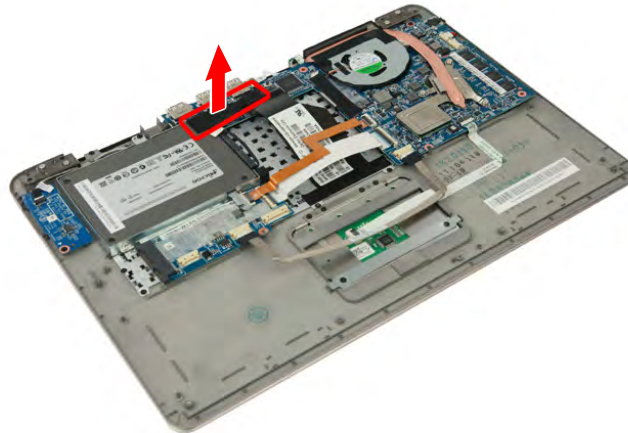


Figure 3-28. SSD Cable Adhesive Tape

4. Grasp the plastic tab and use it to disengage the SSD cable from its connector.

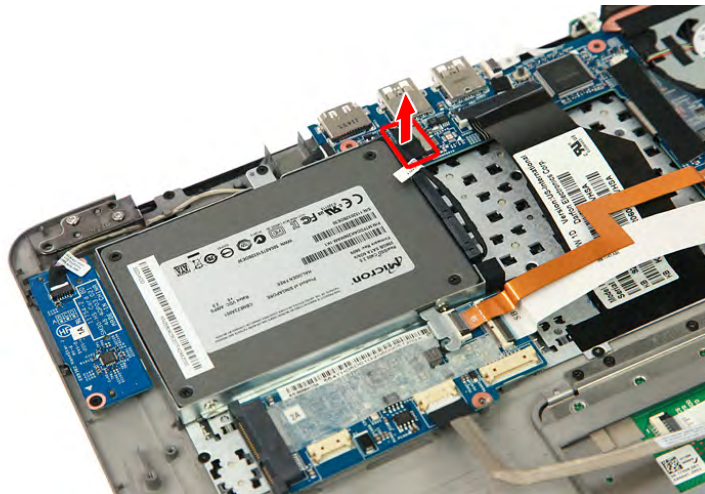



Figure 3-29. SSD Cable

5. Remove the screw securing the SSD module to the upper case.



Figure 3-30. SSD Module Screw

Table 3-30. Screw

Step	Screw	Quantity	Screw Type
SSD Module Disassembly	M2 x L3	1	

6. Detach the SSD module from the upper case.

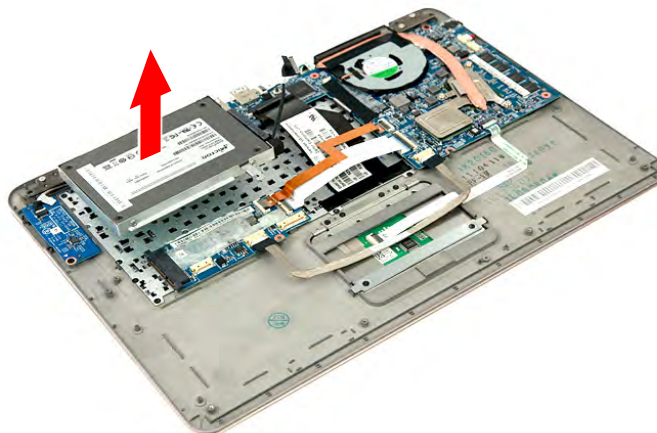


Figure 3-31. SSD Module

- Detach the cable from the SSD module.




Figure 3-32. SSD Cable

- Remove the four screws securing the SSD module to the bracket (1) then detach the SSD module from the bracket (2).



Figure 3-33. SSD Bracket Screws

Table 3-33. Screws

Step	Screw	Quantity	Screw Type
SSD Bracket Disassembly	M3 x L4	4	

Removing the Card Reader Board

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Disconnect the card reader cable from the mainboard and the card reader board.




Figure 3-34. Card Reader Cable

4. Remove the two screws securing the card reader board to the upper case.



Figure 3-35. Card Reader Board Screws

Table 3-35. Screws

Step	Screw	Quantity	Screw Type
Card Reader Board Disassembly	M2 x L3	2	

5. Detach the card reader board from the upper case.



Figure 3-36. Card Reader Board

⇒ NOTE:

A circuit board that is $> 10\text{cm}^2$ has been highlighted with a yellow rectangle in [Figure 3-36](#). Follow the local regulations for disposing this type of circuit board.

Removing the Mainboard

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Release the connector latch (1) from the mainboard, then disconnect the touchpad cable (2).

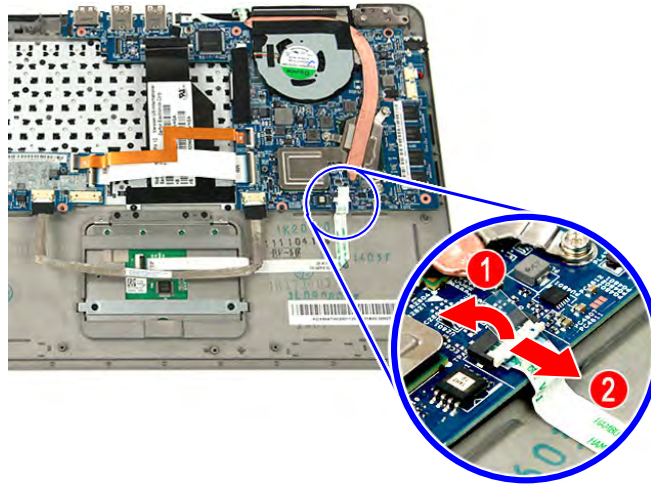


Figure 3-37. Touchpad Cable

4. Release the connector latches (1) from the mainboard, then disconnect the WLAN & mini 1 cables (2). Disconnect the power cable from the mainboard (3).

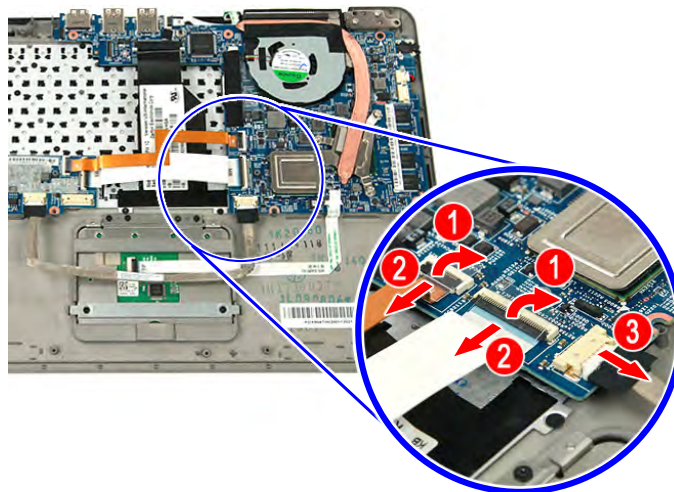


Figure 3-38. WLAN, Mini 1 & Power Cables

5. Release the connector latch (1) from the mainboard, then disconnect the power button cable (2).

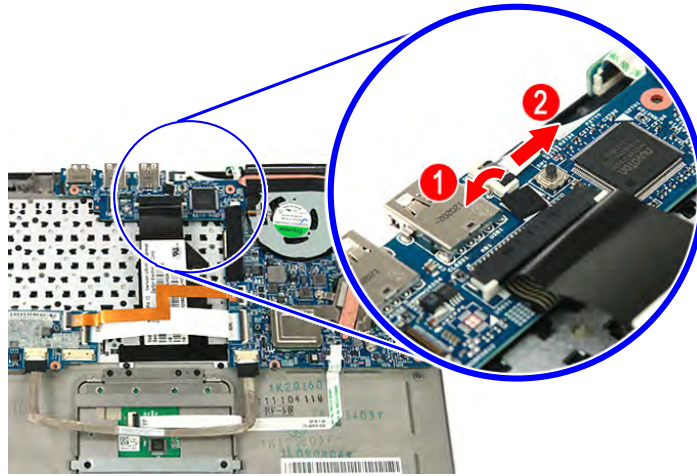


Figure 3-39. Power Button Cable

6. Release the latch (1) from the mainboard then disconnect the keyboard cable (2).

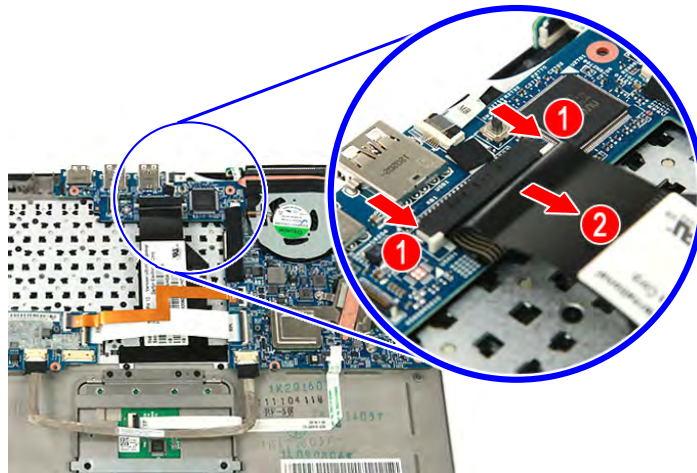


Figure 3-40. Keyboard Cable

7. Release the LCD cable from the adhesive tape securing it.

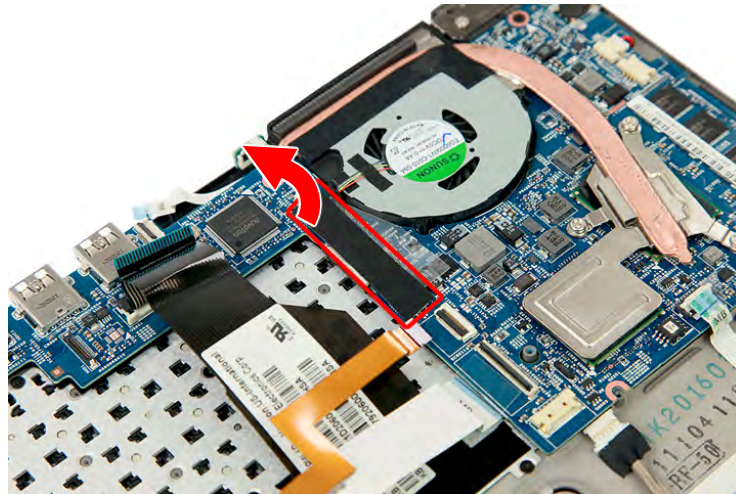


Figure 3-41. LCD Cable Adhesive Tape

8. Disconnect the LCD cable from the mainboard.

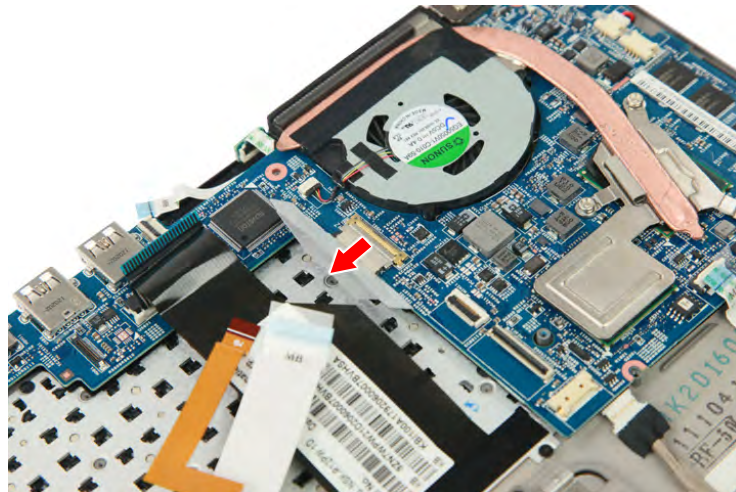


Figure 3-42. LCD Cable

9. Remove the screw securing the mainboard to the upper case.

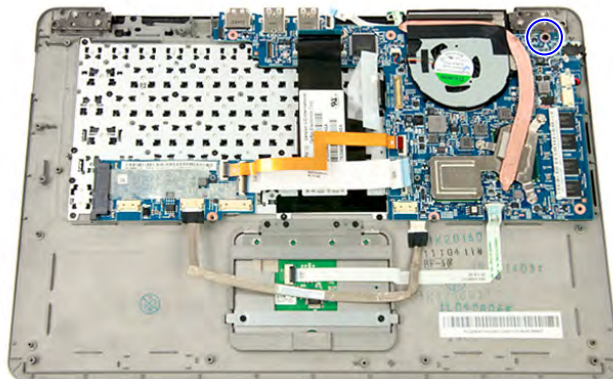



Figure 3-43. Mainboard Screw

Table 3-43. Screw

Step	Screw	Quantity	Screw Type
Mainboard Disassembly	M2 x L3	1	

10. Detach the mainboard from the upper case.

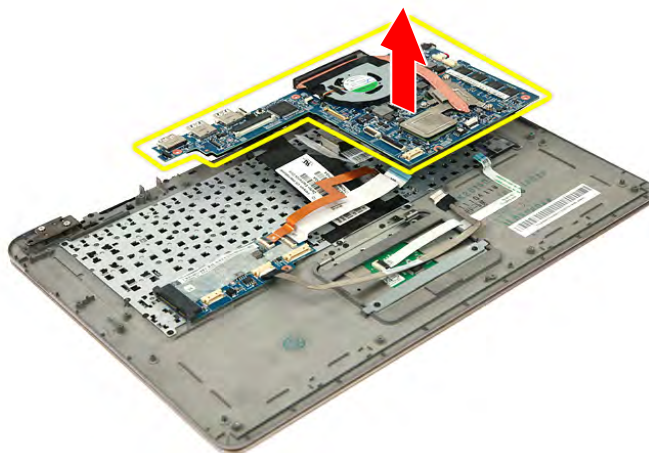


Figure 3-44. Mainboard

⇒ **NOTE:**

A circuit board that is > 10cm² has been highlighted with a yellow rectangle in [Figure 3-44](#). Follow the local regulations for disposing this type of circuit board.

Removing the Thermal Module

1. Perform the “[Removing the Lower Case](#)” procedure described on page [3-9](#).
2. Perform the “[Removing the Battery Pack](#)” procedure described on page [3-10](#).
3. Disconnect the thermal module fan cable from the mainboard.



Figure 3-45. Fan Cable

4. Loosen the spring-loaded captive screws securing the thermal module. Follow the screw sequence indicated on [Figure 3-46](#).

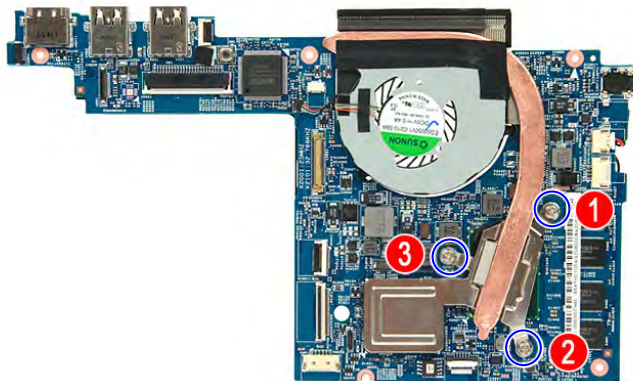


Figure 3-46. Thermal Module Screws

Table 3-46. Screws

Step	Screw	Quantity	Screw Type
Thermal Module Disassembly	–	3	–

5. Detach the thermal module from the mainboard.

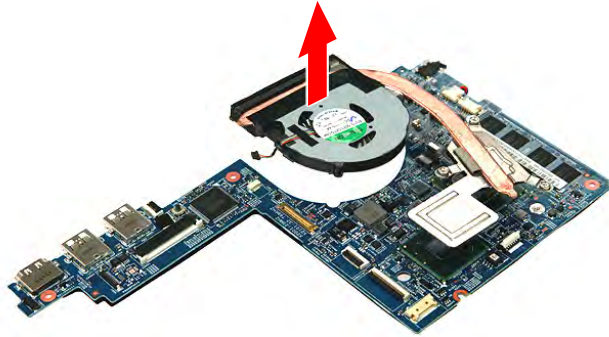


Figure 3-47. Thermal Module

Removing the RTC Battery

1. Perform the “[Removing the Lower Case](#)” procedure described on page [3-9](#).
2. Perform the “[Removing the Battery Pack](#)” procedure described on page [3-10](#).
3. Perform the “[Removing the Mainboard](#)” procedure described on page [3-27](#).
4. Disconnect the RTC battery cable from the mainboard.



Figure 3-48. RTC Battery Cable

5. Detach the RTC battery from the mainboard.

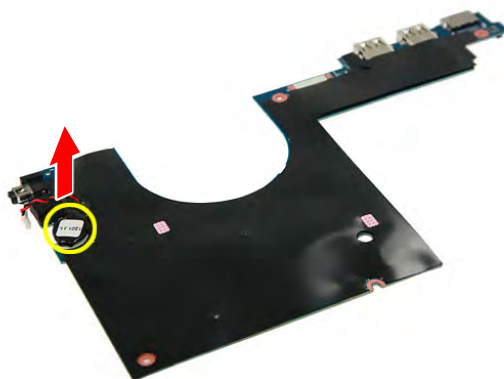


Figure 3-49. RTC Battery

⇒ NOTE:

The battery has been highlighted with the yellow circle in [Figure 3-49](#). Remove the battery and follow local regulations for disposal.

Removing the WLAN Board

⇒ **NOTE:**

For models that have M-SATA board installed, please proceed to page 3-35, “Removing the M-SATA Board”.

1. Perform the “Removing the Lower Case” procedure described on page 3-9.
2. Perform the “Removing the Battery Pack” procedure described on page 3-10.
3. Perform the “Removing the WLAN Module” procedure described on page 3-15.
4. Release the connector latches (1) from the WLAN board, then disconnect the WLAN & mini 1 cables (2). Disconnect the power cable from the WLAN board (3).

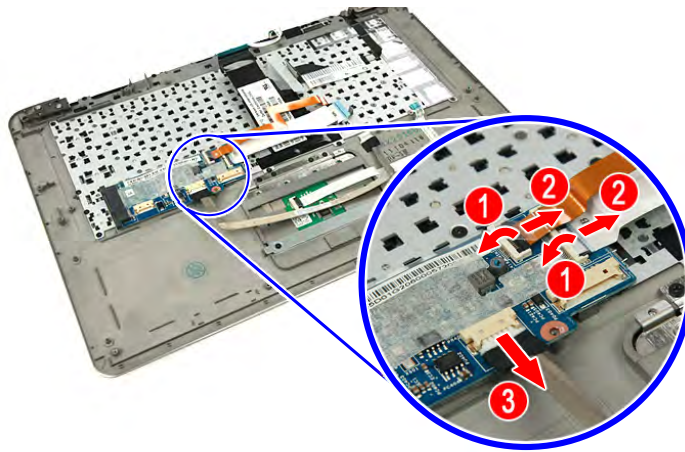


Figure 3-50. WLAN, Mini 1 & Power Cables

5. Detach the WLAN board from the upper case.

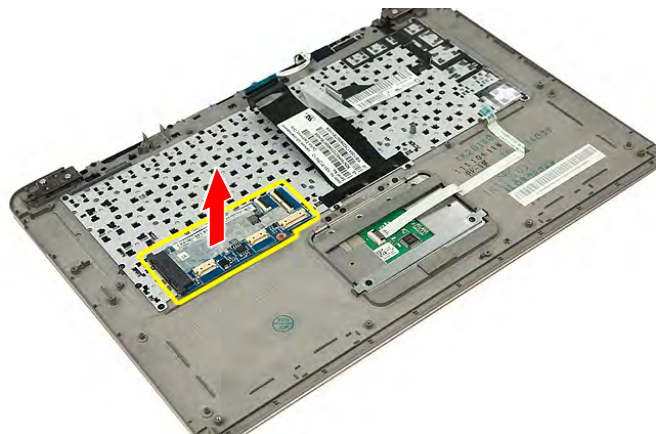


Figure 3-51. WLAN Board

⇒ **NOTE:**

A circuit board that is > 10cm² has been highlighted with a yellow rectangle in Figure 3-51. Follow the local regulations for disposing this type of circuit board.

Removing the M-SATA Board

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Perform the “[Removing the WLAN Module](#)” procedure described on page 3-15.
4. Release the connector latches (1) from the M-SATA board, then disconnect the WLAN & mini 1 cables (2).

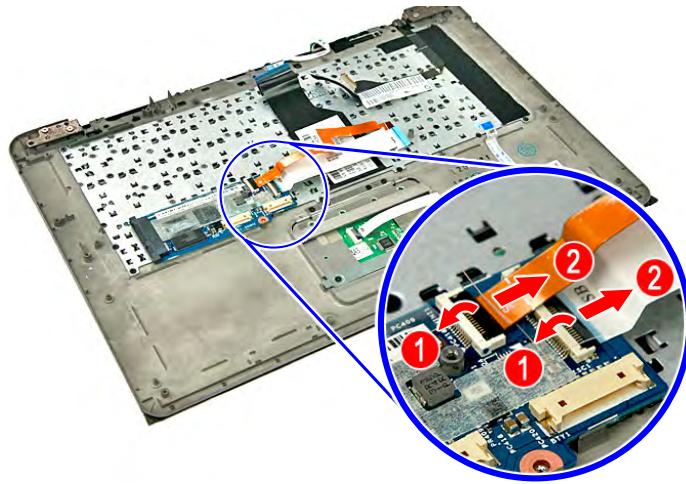


Figure 3-52. WLAN & Mini 1 Cables

5. Detach the M-SATA board from the upper case.

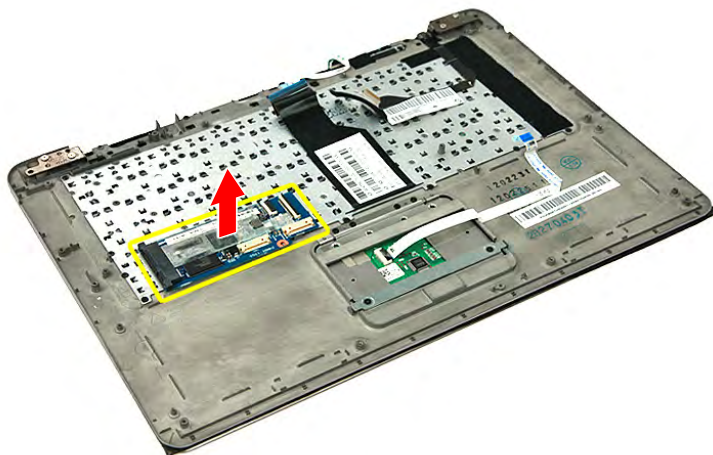


Figure 3-53. M-SATA Board

⇒ **NOTE:**

A circuit board that is > 10cm² has been highlighted with a yellow rectangle in [Figure 3-53](#). Follow the local regulations for disposing this type of circuit board.

Removing the Keyboard

⇒ NOTE:

The keyboard is easily warped or damaged during the removal process. Take care not to use excessive force when removing.

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Perform the “[Removing the Left and Right Speakers](#)” procedure described on page 3-13.
4. Perform the “[Removing the WLAN Module](#)” procedure described on page 3-15.
5. Perform the “[Removing the DC-In Module \(WLAN Board\)](#)” procedure described on page 3-17.
6. Perform the “[Removing the HDD Module](#)” procedure described on page 3-19.
7. Perform the “[Removing the Card Reader Board](#)” procedure described on page 3-25.
8. Perform the “[Removing the Mainboard](#)” procedure described on page 3-27.
9. Perform the “[Removing the WLAN Board](#)” procedure described on page 3-34.
10. Gently lift the LCD cable off the upper case.

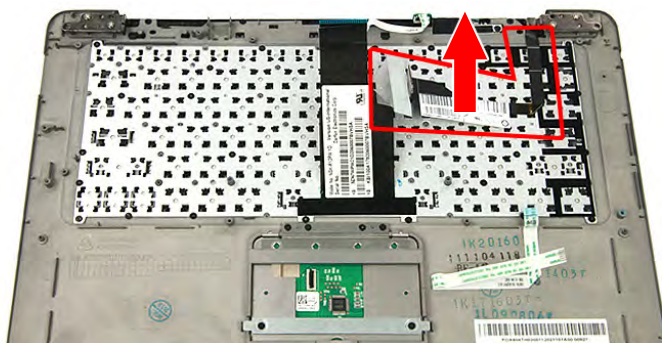


Figure 3-54. LCD Cable

11. Release the keyboard from the adhesive tape securing it.

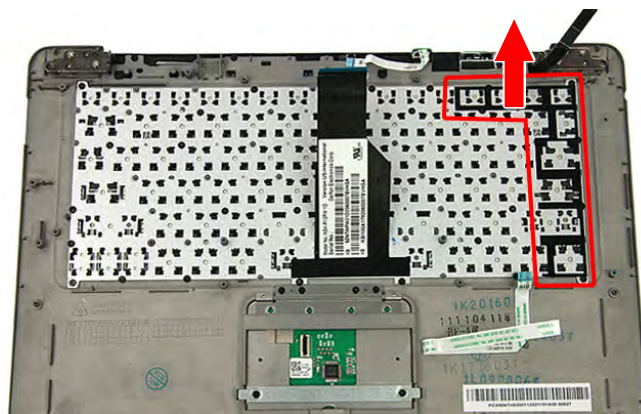


Figure 3-55. Keyboard Adhesive Tape

12. Remove the twenty nine screws securing the keyboard to the upper case.

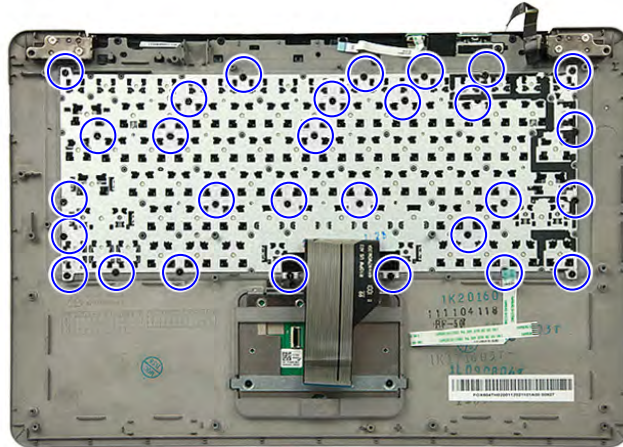



Figure 3-56. Keyboard Screws

Table 3-56. Screws

Step	Screw	Quantity	Screw Type
Keyboard Disassembly	M1.4 x L1.2	29	

13. Detach the keyboard from the upper case.

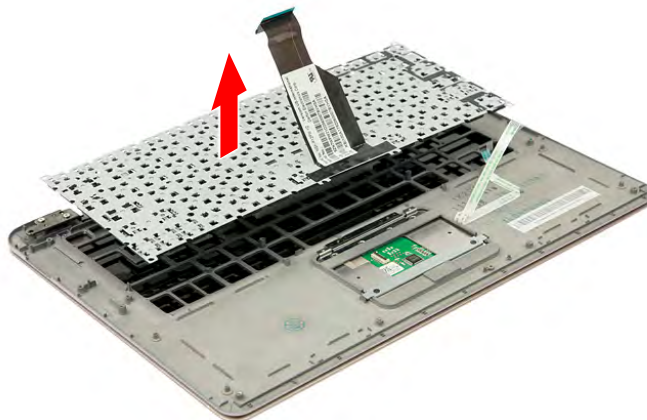


Figure 3-57. Keyboard

Removing the Power Button Board

1. Perform the “[Removing the Lower Case](#)” procedure described on page 3-9.
2. Perform the “[Removing the Battery Pack](#)” procedure described on page 3-10.
3. Release the latch (1) from the mainboard then disconnect the power button cable (2).

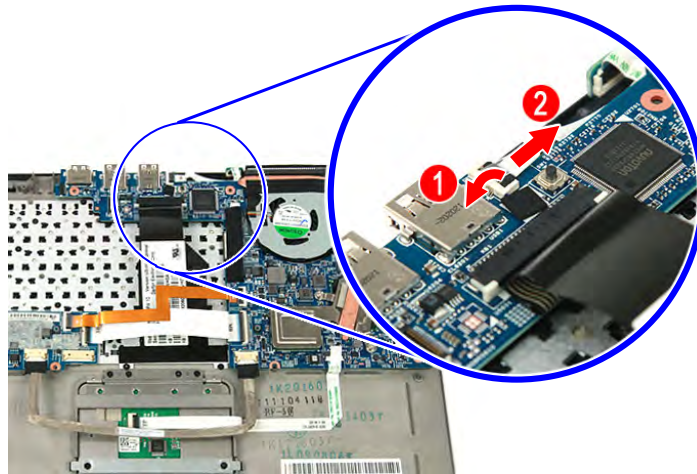


Figure 3-58. Power Button Cable

4. Release the power button board from the adhesive tape securing it (1) then tilt the power button board (2) and detach it from the upper case.



Figure 3-59. Power Button Board Adhesive Tape

⇒ **NOTE:**

A circuit board that is > 10cm² has been highlighted with a yellow rectangle in [Figure 3-59](#). Follow the local regulations for disposing this type of circuit board.

Removing the Middle Cover Assembly

1. Perform the “[Removing the Lower Case](#)” procedure described on page [3-9](#).
2. Perform the “[Removing the Battery Pack](#)” procedure described on page [3-10](#).
3. Perform the “[Removing the Left and Right Speakers](#)” procedure described on page [3-13](#).
4. Perform the “[Removing the WLAN Module](#)” procedure described on page [3-15](#).
5. Perform the “[Removing the DC-In Module \(WLAN Board\)](#)” procedure described on page [3-17](#).
6. Perform the “[Removing the HDD Module](#)” procedure described on page [3-19](#).
7. Perform the “[Removing the Card Reader Board](#)” procedure described on page [3-25](#).
8. Perform the “[Removing the Mainboard](#)” procedure described on page [3-27](#).
9. Perform the “[Removing the Keyboard](#)” procedure described on page [3-36](#).
10. Perform the “[Removing the Power Button Board](#)” procedure described on page [3-38](#).
11. Remove the four screws securing the middle cover assembly to the upper case.

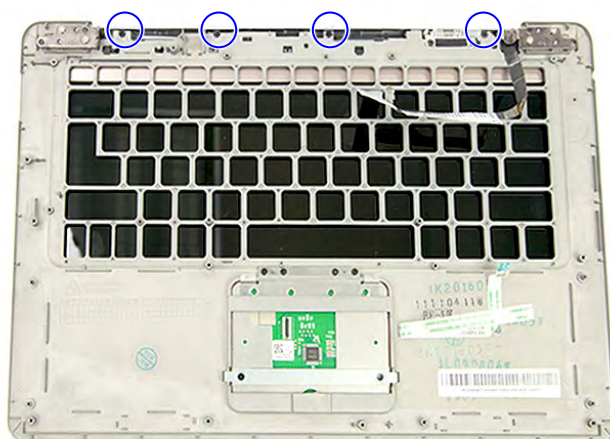


Figure 3-60. Middle Cover Assembly Screws

Table 3-60. Screws

Step	Screw	Quantity	Screw Type
Middle Cover Disassembly	M2 x L3	4	

12. Tilt the upper case until it is approximately at a 100° angle with the LCD assembly.



Figure 3-61. Upper Case Assembly

13. Detach the middle cover assembly from the upper case.



Figure 3-62. Middle Cover Assembly

Removing the LCD Module

1. Perform the “[Removing the Lower Case](#)” procedure described on page [3-9](#).
2. Perform the “[Removing the Battery Pack](#)” procedure described on page [3-10](#).
3. Perform the “[Removing the Left and Right Speakers](#)” procedure described on page [3-13](#).
4. Perform the “[Removing the WLAN Module](#)” procedure described on page [3-15](#).
5. Perform the “[Removing the DC-In Module \(WLAN Board\)](#)” procedure described on page [3-17](#).
6. Perform the “[Removing the HDD Module](#)” procedure described on page [3-19](#).
7. Perform the “[Removing the Card Reader Board](#)” procedure described on page [3-25](#).
8. Perform the “[Removing the Mainboard](#)” procedure described on page [3-27](#).
9. Perform the “[Removing the Keyboard](#)” procedure described on page [3-36](#).
10. Perform the “[Removing the Power Button Board](#)” procedure described on page [3-38](#).
11. Perform the “[Removing the Middle Cover Assembly](#)” procedure described on page [3-39](#).
12. Tilt the upper case until it is approximately at a 45° angle with the LCD assembly.




Figure 3-63. Upper Case Assembly

13. Remove the four screws securing the upper case to the LCD hinges.



Figure 3-64. Upper Case Screws – LCD Hinges

Table 3-64. Screws

Step	Screw	Quantity	Screw Type
LCD Module Disassembly	M2 x L4.5	4	

14. Gently detach the LCD cable from the upper case (1) and lift the upper case away from the LCD module (2).

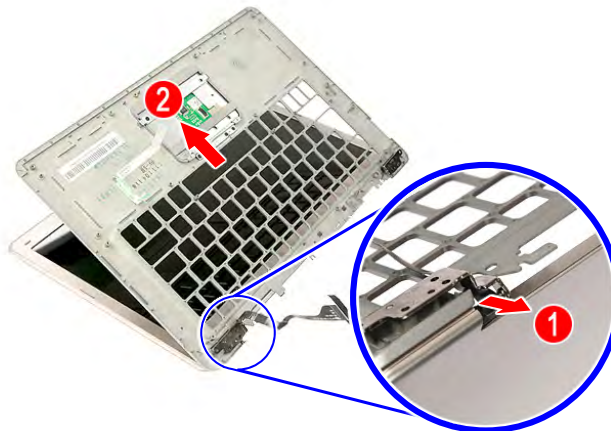


Figure 3-65. LCD Module

+ **IMPORTANT:**

Make sure that the LCD cable is not entangled with the upper case and take extra care not to scratch the LCD cable.

Reassembly Process

Replacing the LCD Module

1. Tilt the LCD hinge approximately at a 45° angle then insert the upper case and align the screw posts of the upper case with the screw holes in the LCD hinges.



Figure 3-66. Upper Case

2. Verify that the LCD cable is looped properly in the LCD hinge as shown.

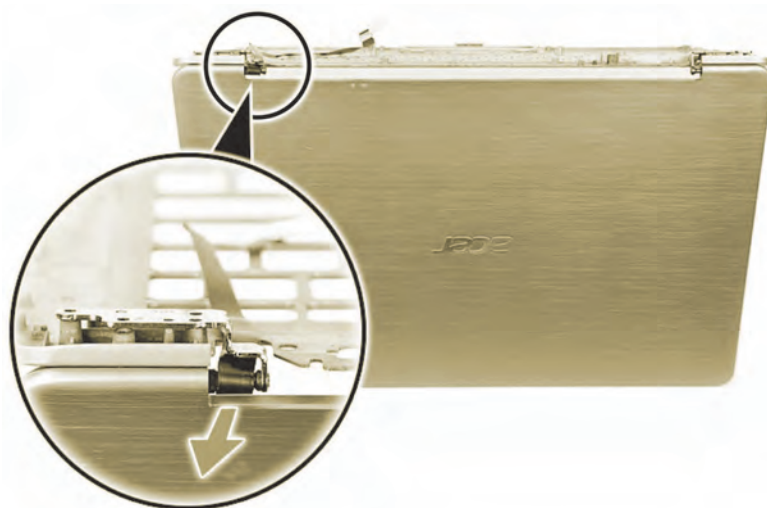


Figure 3-67. Upper Case

+ IMPORTANT:


Make sure that the LCD cable is not entangled with the upper case and take extra care not to scratch the LCD cable.

- Secure the upper case to the LCD hinges using four screws.



Figure 3-68. Upper Case - LCD Hinge Screws

Table 3-68. Screws

Step	Screw	Quantity	Screw Type
Upper Case Reassembly	M2 x L4.5	4	

Replacing the Middle Cover Assembly

1. Tilt the upper case until it is approximately at a 100° angle with the LCD assembly



Figure 3-69. Upper Case Assembly

2. Insert the middle cover assembly in its slot.



Figure 3-70. Middle Cover Assembly

3. Pull the upper case downward until it sits parallel with the LCD assembly.




Figure 3-71. Upper Case Assembly

4. Secure the middle cover assembly to the upper case using four screws.



Figure 3-72. Middle Cover Assembly Screws

Table 3-72. Screws

Step	Screw	Quantity	Screw Type
Middle Cover Reassembly	M2 x L3	4	

Replacing the Power Button Board

1. Insert the power button board in its slot in the middle cover (1), then secure it using adhesive tapes (2).



Figure 3-73. Power Button Board

2. Connect the power button cable to the mainboard (1), then press the connector latch (2) until it locks into place.

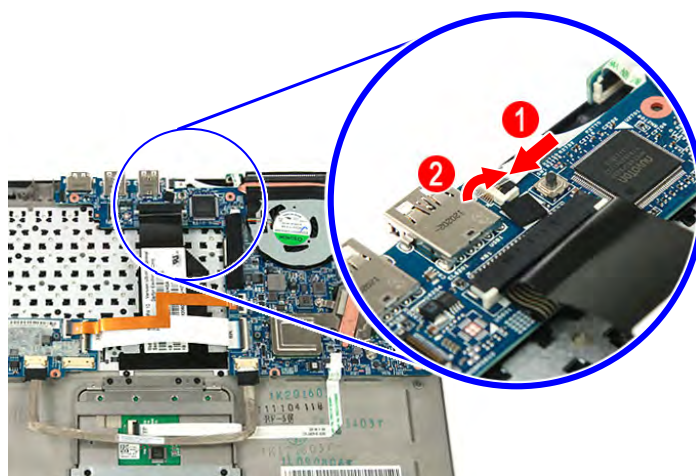


Figure 3-74. Power Button Cable

Replacing the Keyboard

1. Place the keyboard in its slot in the upper case.

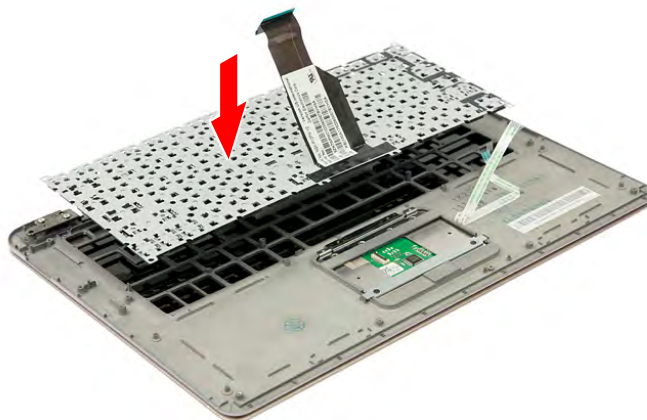


Figure 3-75. Keyboard

2. Secure the keyboard to the upper case using twenty nine screws.

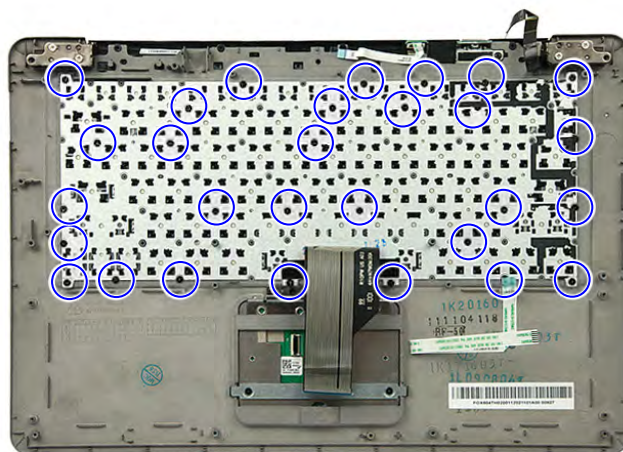



Figure 3-76. Keyboard Screws

Table 3-76. Screws

Step	Screw	Quantity	Screw Type
Keyboard Reassembly	M1.4 x L1.2	29	

3. Secure the keyboard to the upper case using adhesive tape.

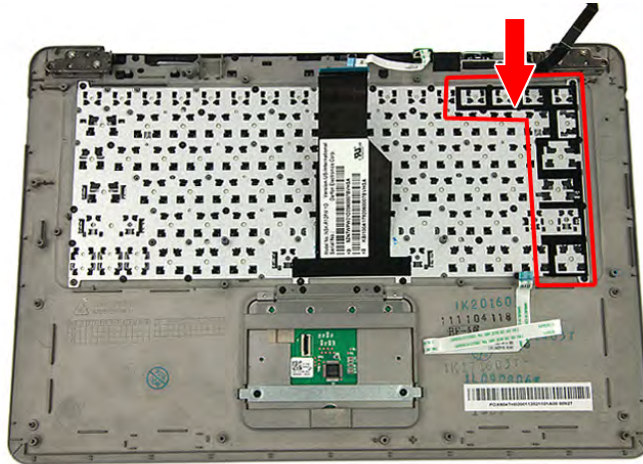


Figure 3-77. Keyboard

4. Fix the LCD cable to the upper case.

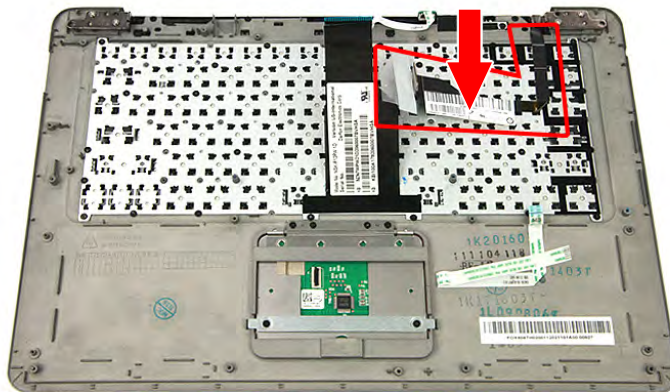


Figure 3-78. LCD Cable

+ **IMPORTANT:**

Make sure that the LCD cable is installed as highlighted in [Figure 3-78](#) to avoid damaging the LCD cable.

Replacing the WLAN Board

⇒ **NOTE:**

For models that have M-SATA board installed, please proceed to page 3-51, “[Replacing the M-SATA Board](#).”

1. Place the WLAN board in its slot in the upper case.

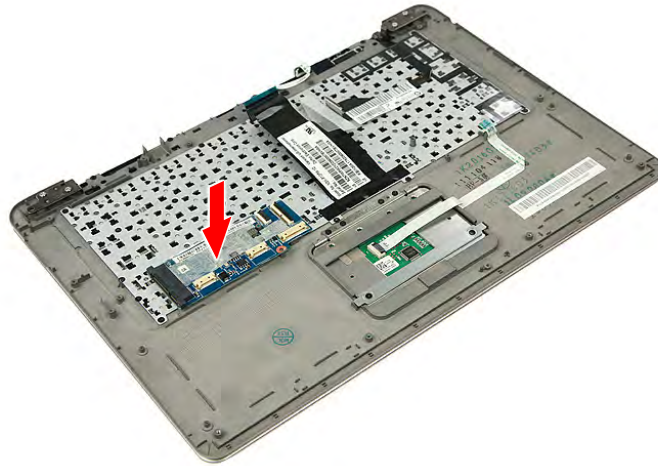


Figure 3-79. WLAN Board

2. Connect the WLAN & mini 1 cables (1) to the WLAN board, then press the connector latch (2) until it locks into place. Connect the power cable to the WLAN board (3).

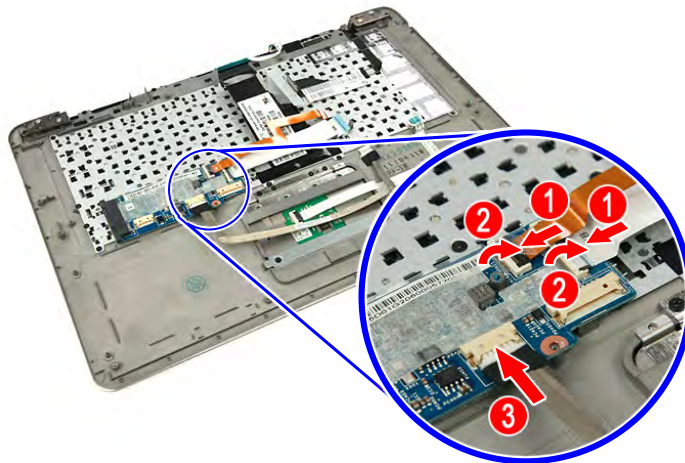


Figure 3-80. WLAN, Mini 1 & Power Cables

Replacing the M-SATA Board.

1. Place the M-SATA board in its slot in the upper case.

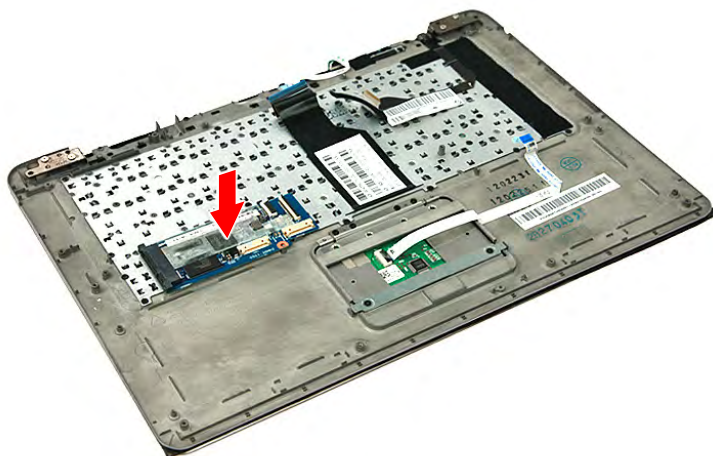


Figure 3-81. M-SATA Board

2. Connect the WLAN & mini 1 cables (1) to the M-SATA board, then press the connector latch (2) until it locks into place.

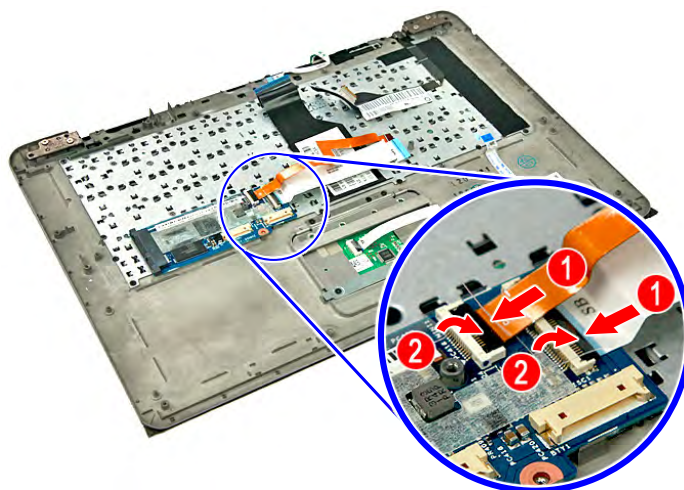


Figure 3-82. WLAN & Mini 1 Cables

Replacing the RTC Battery

1. Secure the RTC battery to the bottom of the mainboard using self adhesive tape.

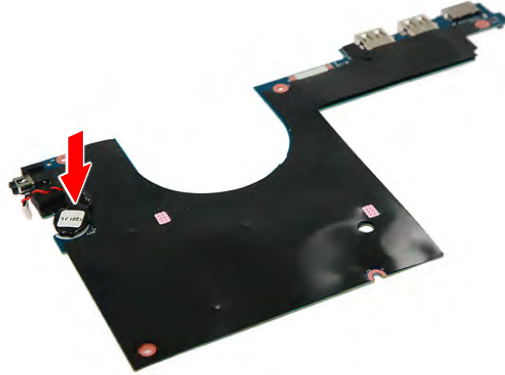


Figure 3-83. RTC Battery

2. Connect the RTC battery cable to the mainboard.



Figure 3-84. RTC Battery Cable

Replacing the Thermal Module

1. Place the thermal module in its slot in the mainboard.

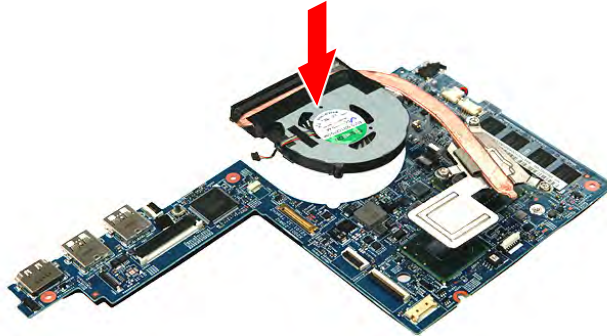


Figure 3-85. Thermal Module

2. Secure the thermal module using the spring-loaded captive screws. Follow the screw sequence indicated on [Figure 3-86](#).

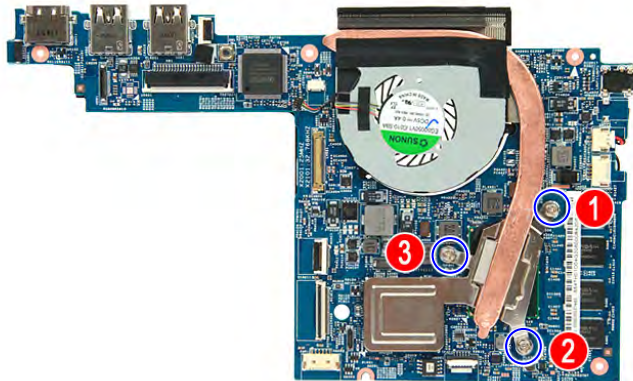


Figure 3-86. Thermal Module Screws

Table 3-86. Screws

Step	Screw	Quantity	Screw Type
Thermal Module Reassembly	—	3	—

3. Connect the thermal module fan cable to the mainboard.

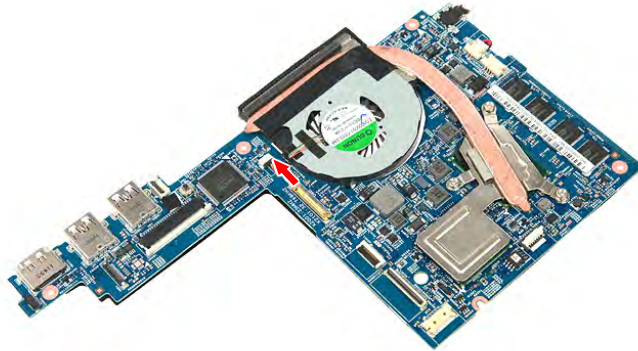


Figure 3-87. Fan Cable

Replacing the Mainboard

1. Place the mainboard in its slot in the upper case.

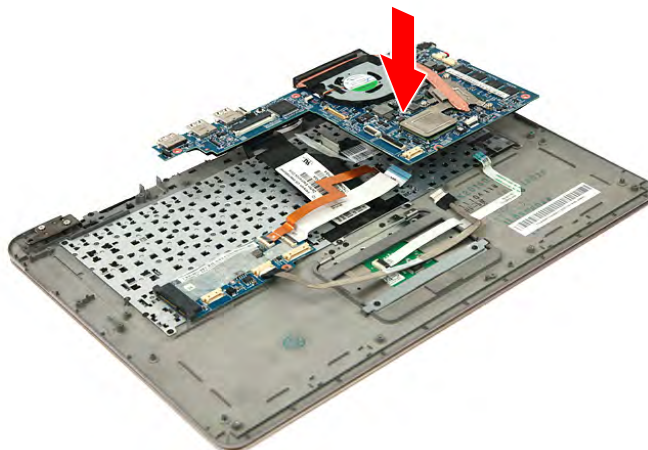


Figure 3-88. Mainboard

2. Secure the mainboard to the upper case using one screw.

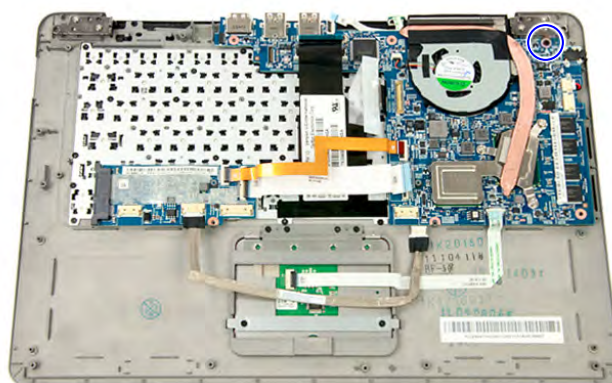



Figure 3-89. Mainboard Screw

Table 3-89. Screw

Step	Screw	Quantity	Screw Type
Mainboard Reassembly	M2 x L3	1	

3. Connect the LCD cable to the mainboard.



Figure 3-90. LCD Cable

4. Secure the LCD cable to the mainboard using adhesive tape.

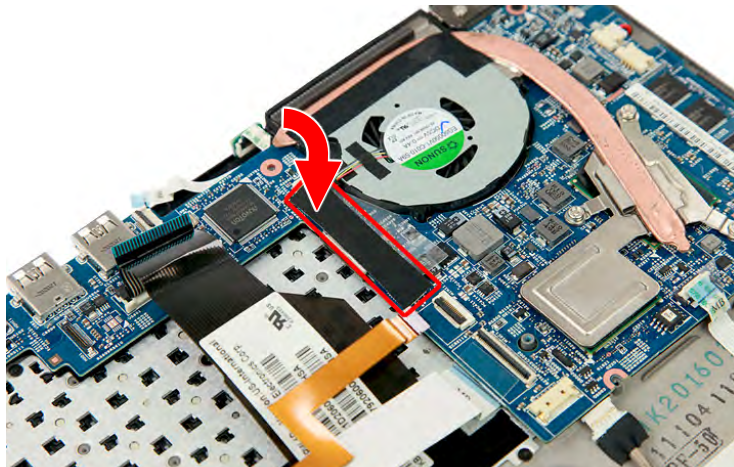


Figure 3-91. LCD Cable Adhesive Tape

5. Connect the keyboard cable to the mainboard (1) and then push the connector latch (2) until it locks into place.

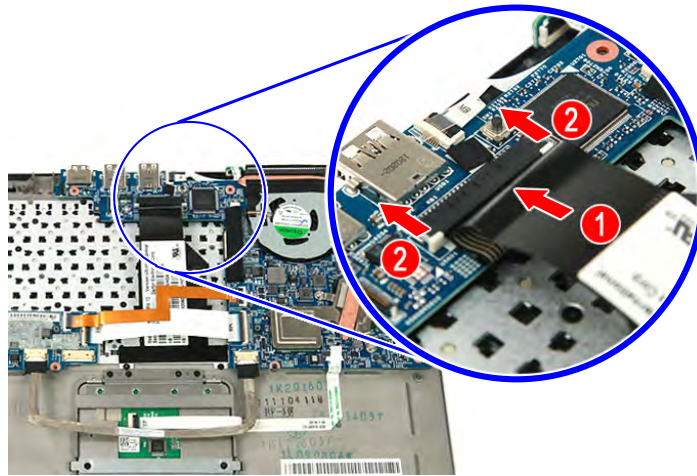


Figure 3-92. Keyboard Cable

6. Connect the WLAN & mini 1 cables (1) to the mainboard, then press the connector latch (2) until it locks into place. Connect the power cable to the mainboard (3).

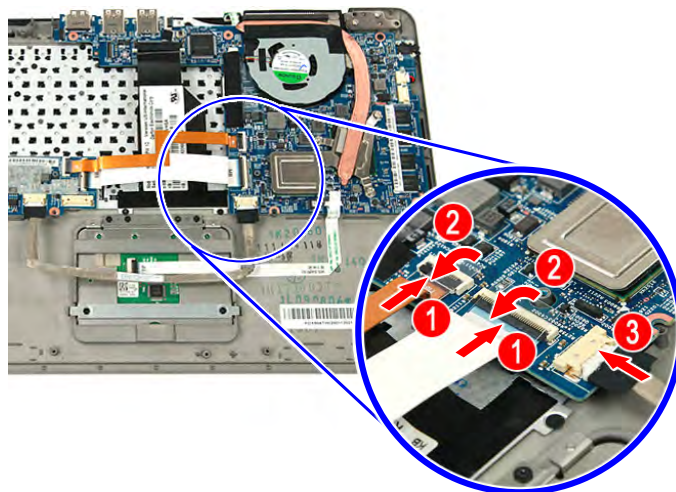


Figure 3-93. WLAN, Mini 1 & Power Cables

7. Connect the touchpad cable to the mainboard (1) and then press the connector latch (2) until it locks into place.

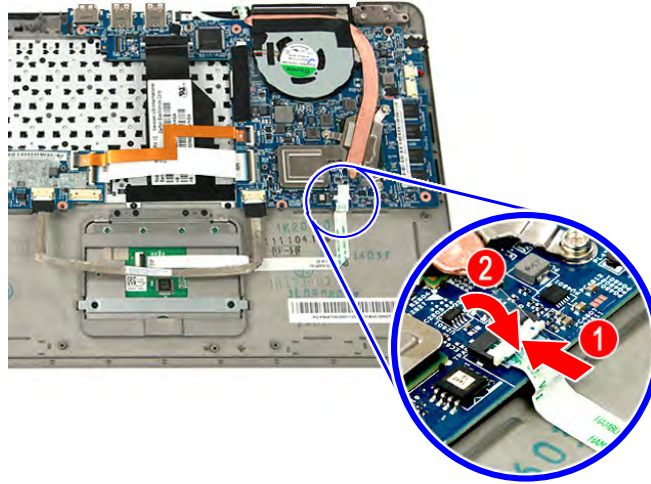


Figure 3-94. Touchpad Cable

Replacing the Card Reader Board

1. Place the card reader board in its slot in the upper case.




Figure 3-95. Card Reader Board

2. Secure the card reader board to the upper case using two screws.



Figure 3-96. Card Reader Board Screws

Table 3-96. Screws

Step	Screw	Quantity	Screw Type
Card Reader Board Reassembly	M2 x L3	2	

3. Connect the card reader cable to the mainboard and the card reader board.



Figure 3-97. Card Reader Cable

Replacing the HDD Module

⇒ **NOTE:**

For models that have SSD disk drive installed, please proceed to page 3-64, "Replacing the SSD Module"

1. Place the HDD module in the bracket (1) and then secure the HDD bracket using four screws (2).

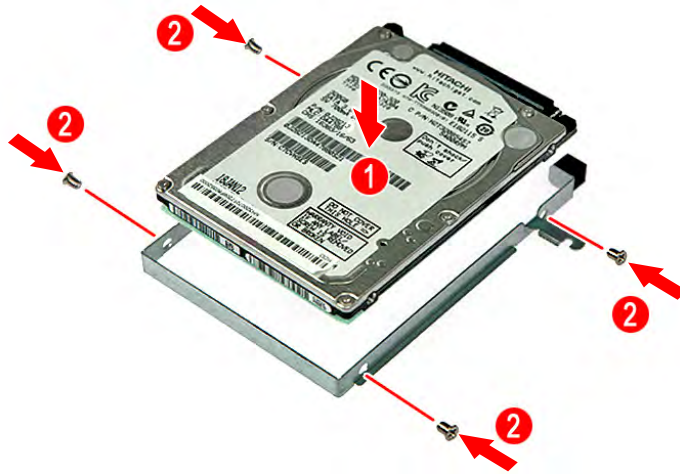



Figure 3-98. HDD Bracket Screws

Table 3-98. Screws

Step	Screw	Quantity	Screw Type
HDD Bracket Reassembly	M3 x L4	4	

2. Connect the cable to the HDD module.



Figure 3-99. HDD Cable

3. Place the HDD module in its slot in the upper case.

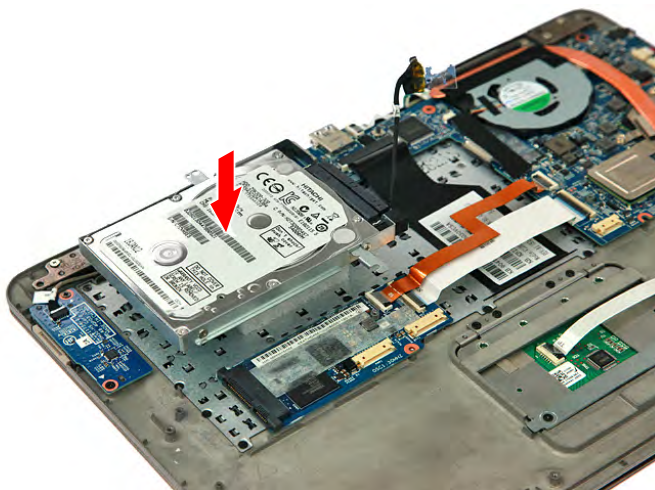


Figure 3-100. HDD Module

4. Secure the HDD module to the upper case using one screw.

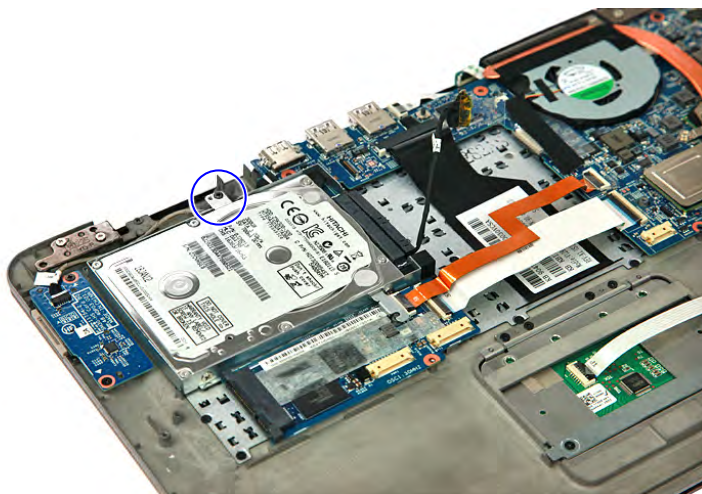



Figure 3-101. HDD Module Screw

Table 3-101. Screw

Step	Screw	Quantity	Screw Type
HDD Module Reassembly	M2 x L3	1	

5. Connect the HDD cable to the mainboard.

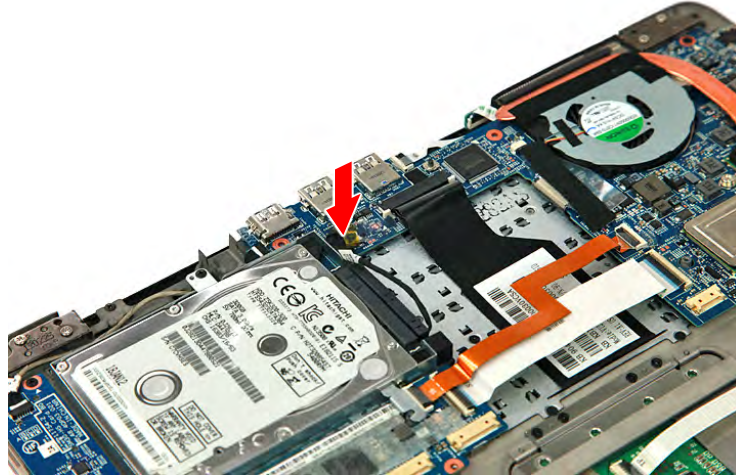


Figure 3-102. HDD Cable

6. Secure the HDD cable to the upper case using adhesive tape.

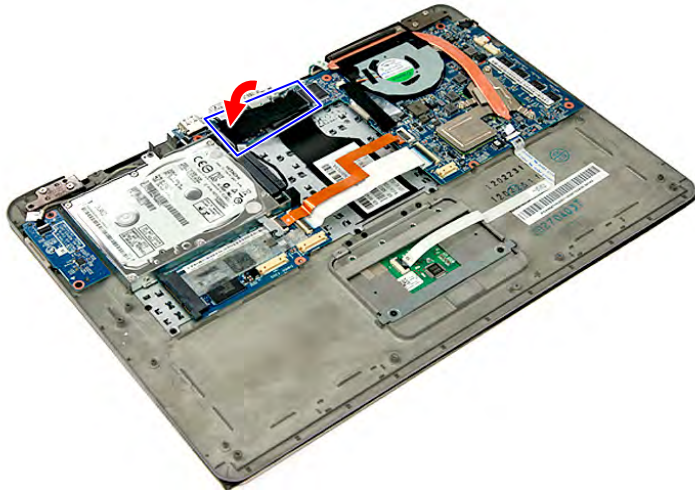


Figure 3-103. HDD Cable Adhesive Tape

Replacing the SSD Module

1. Place the SSD module in the bracket (1) and then secure the SSD bracket using four screws (2).

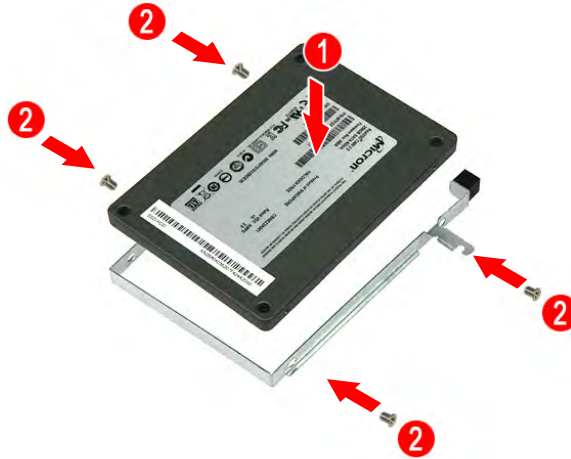



Figure 3-104. SSD Bracket Screws

Table 3-104. Screws

Step	Screw	Quantity	Screw Type
SSD Bracket Reassembly	M3 x L4	4	

2. Connect the cable to the SSD module.



Figure 3-105. HDD Cable

3. Place the SSD module in its slot in the upper case.

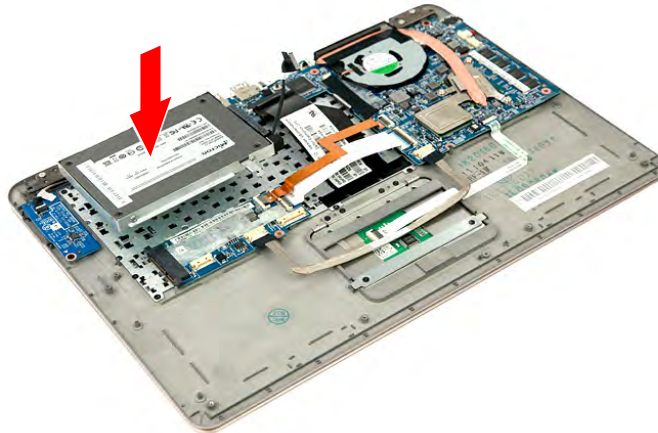



Figure 3-106. SSD Module

4. Secure the SSD module to the upper case using one screw.



Figure 3-107. SSD Module Screw

Table 3-107. Screw

Step	Screw	Quantity	Screw Type
SSD Module Reassembly	M2 x L3	1	

5. Connect the SSD cable to the mainboard.

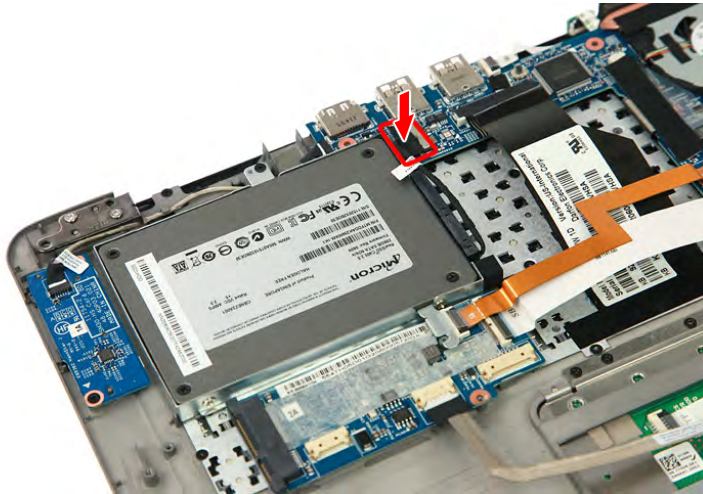


Figure 3-108. SSD Cable

6. Secure the SSD cable to the upper case using adhesive tape.



Figure 3-109. SSD Cable Adhesive Tape

Replacing the DC-In Module (WLAN Board)

1. Place the DC-In socket in its slot in the upper case.

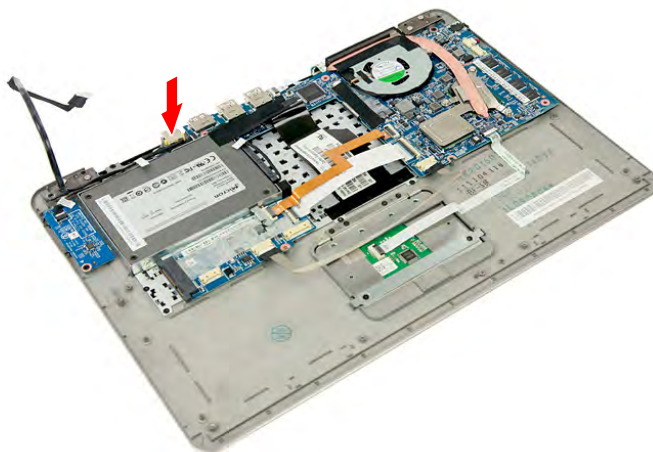


Figure 3-110. DC-In

2. Connect the DC-In cable to the WLAN board (1) then secure the DC-In cable to the upper case using self adhesive tape (2).

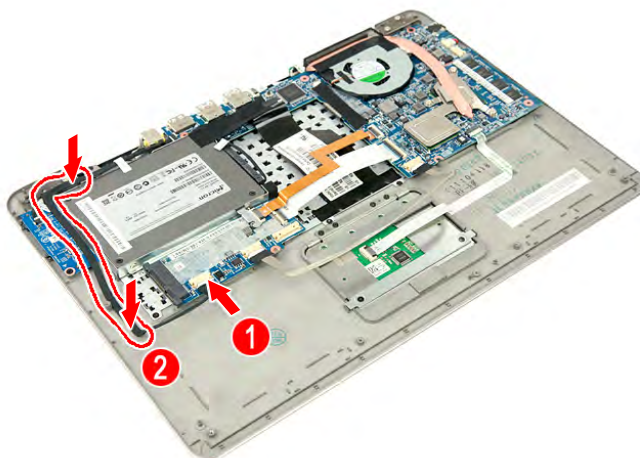


Figure 3-111. DC-In Cable

Replacing the DC-In Module (M-SATA Board)

1. Place the DC-In socket in its slot in the upper case.

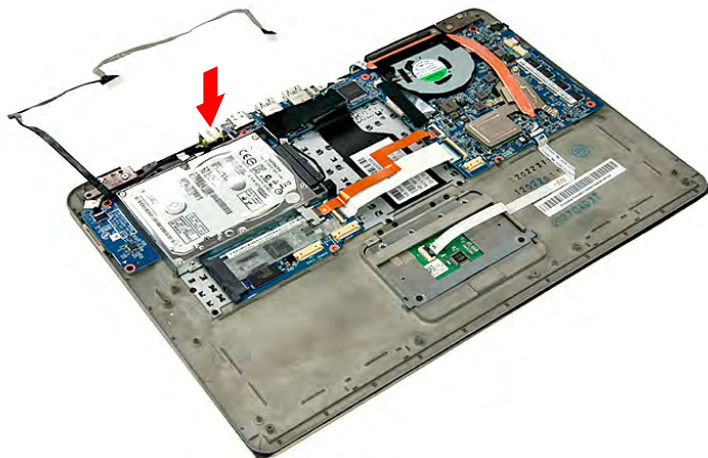


Figure 3-112. DC-In

2. Connect the DC-In cable to the M-SATA board and the mainboard (1) then secure the DC-In cable to the upper case using self adhesive tape (2).

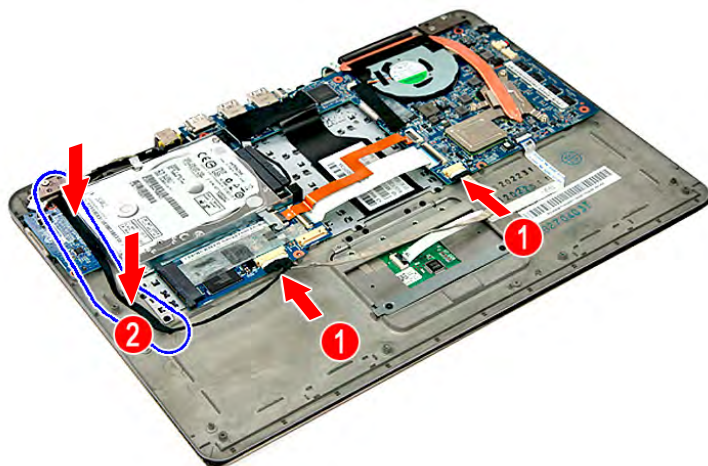


Figure 3-113. DC-In Cable

Replacing the WLAN Module

1. Insert the WLAN module in its slot in the WLAN board.




Figure 3-114. WLAN Module

2. Secure the WLAN module to the upper case using one screw.



Figure 3-115. WLAN Module Screw

Table 3-115. Screw

Step	Screw	Quantity	Screw Type
WLAN Module Reassembly	M2 x L3	1	

3. Secure the antenna cables to the upper case using adhesive tapes.



Figure 3-116. Antenna Cables Adhesive Tapes

4. Connect the two antenna cables to the WLAN module.



Figure 3-117. WLAN Module Antennas

+ **IMPORTANT:**

Connect the black cable to the main connector and the white cable to the auxiliary connector.

Replacing the Right Speakers

1. Connect the speaker's cable to the mainboard.

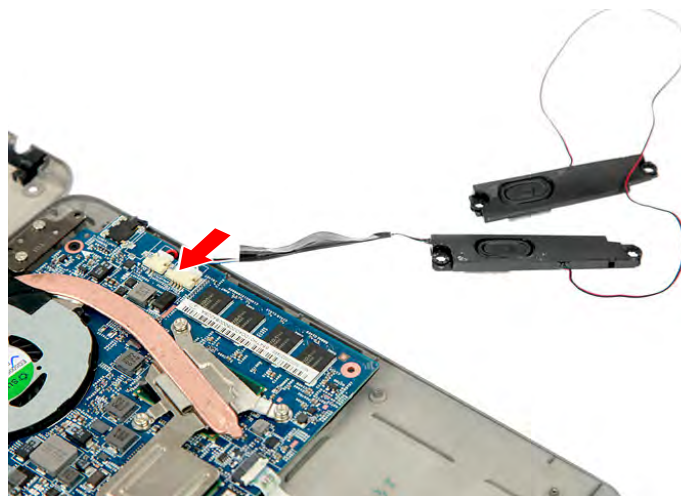


Figure 3-118. Speaker Cable

2. Place the right speaker in its slot in the upper case.

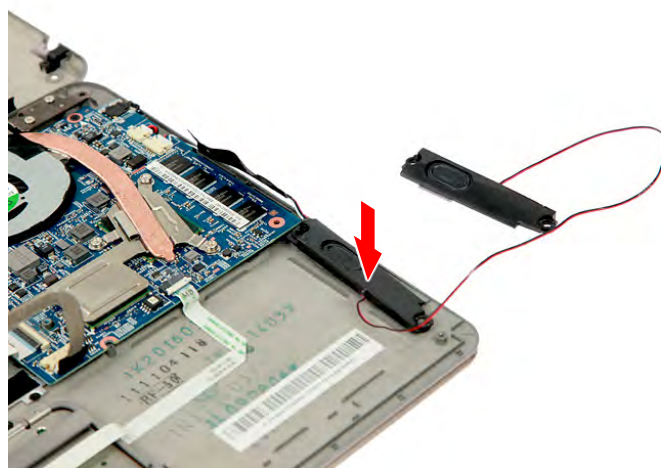


Figure 3-119. Speakers

- Secure the speaker cable to the upper case using adhesive tapes (1), then secure the right speaker to the upper case using two screws (2).

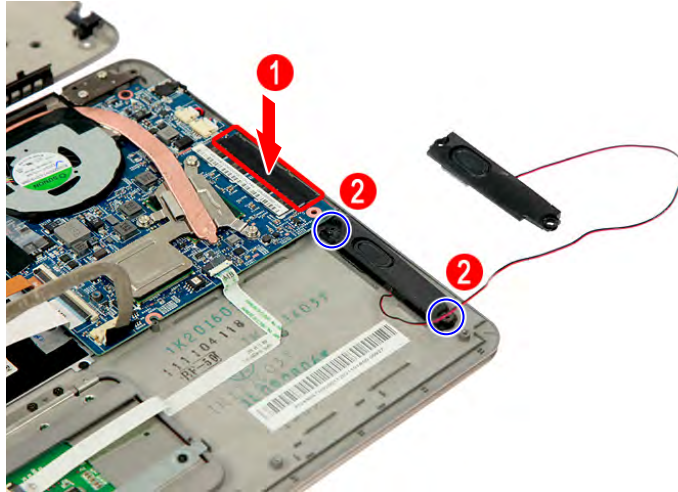



Figure 3-120. Right Speaker Screws and Adhesive Tape

Table 3-120. Screws

Step	Screw	Quantity	Screw Type
Right Speaker Module Reassembly	M1.4 x L3	2	

Replacing the Battery Pack

1. Slide the battery pack underneath the mini 1 and WLAN/M-SATA cables as shown.



Figure 3-121. Battery Pack

2. Connect the battery cable to the WLAN board (1), then push the battery pack forward until its four socket holes fits into the screw posts in the upper case (2).

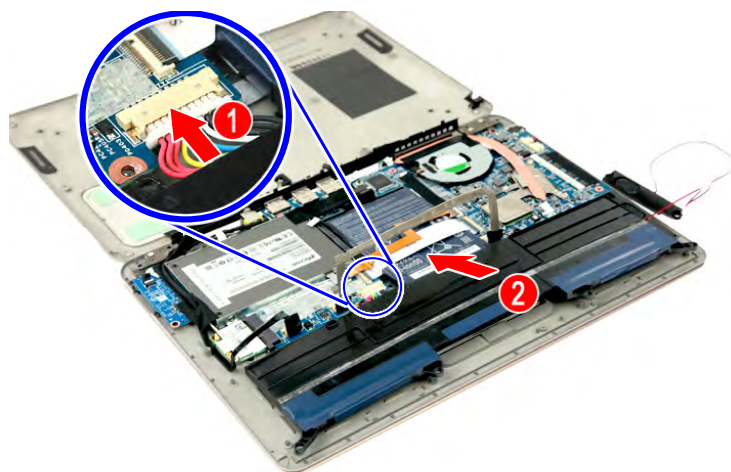



Figure 3-122. Battery Cable

- Secure the battery pack to the upper case using two screws.



Figure 3-123. Battery Pack Screws

Table 3-123. Screws

Step	Screw	Quantity	Screw Type
Battery Pack Reassembly	M2 x L4.5	2	

- Secure the DC-In & Power cable to the battery pack surface using self adhesive tapes.

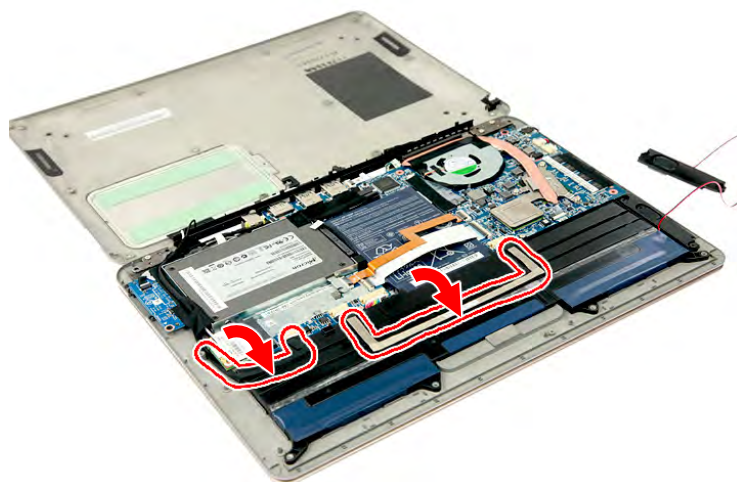


Figure 3-124. DC-In & Power Cable Self Adhesive Tapes

5. Place the left speaker in its slot in the upper case.




Figure 3-125. Left Speaker

6. Secure the left speaker to the upper case using two screws.



Figure 3-126. Left Speaker Screws

Table 3-126. Screws

Step	Screw	Quantity	Screw Type
Left Speaker Module Reassembly	M1.4 x L3	2	

Replacing the Lower Case

1. Place the lower case into the upper case, making sure the I/O ports of the mainboard are extruding from their port holes.



Figure 3-127. Lower Case

2. Secure the lower case using twelve screws.

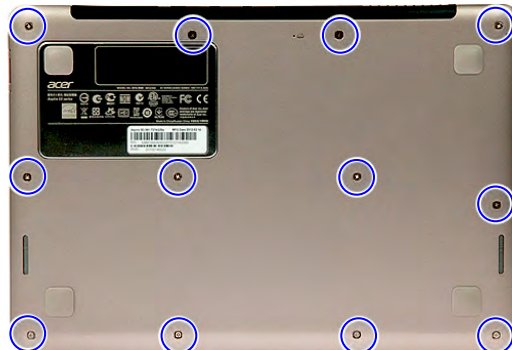



Figure 3-128. Lower Case Screws

Table 3-128. Screws

Step	Screw	Quantity	Screw Type
Lower Case Reassembly	M2 x L4.5	12	

CHAPTER 4

Troubleshooting

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Troubleshooting

Introduction

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

General Information

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

⇒ **NOTE:**

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

1. Obtain as much detailed information as possible about the problem.
2. If possible, verify the symptoms by re-creating the failure through diagnostic tests or repeating the operation that led to the problem.
3. Refer to [Table 4-1](#) for a list of verified symptom category to determine the solution.

Table 4-1. Common Problems

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

4. If the issue is still not resolved, refer to the [Online Support Information](#) on page 9-3

Power On Issues

If the system does not power on, perform the following, one at a time, to correct the problem. Do not replace a non-defective FRU.

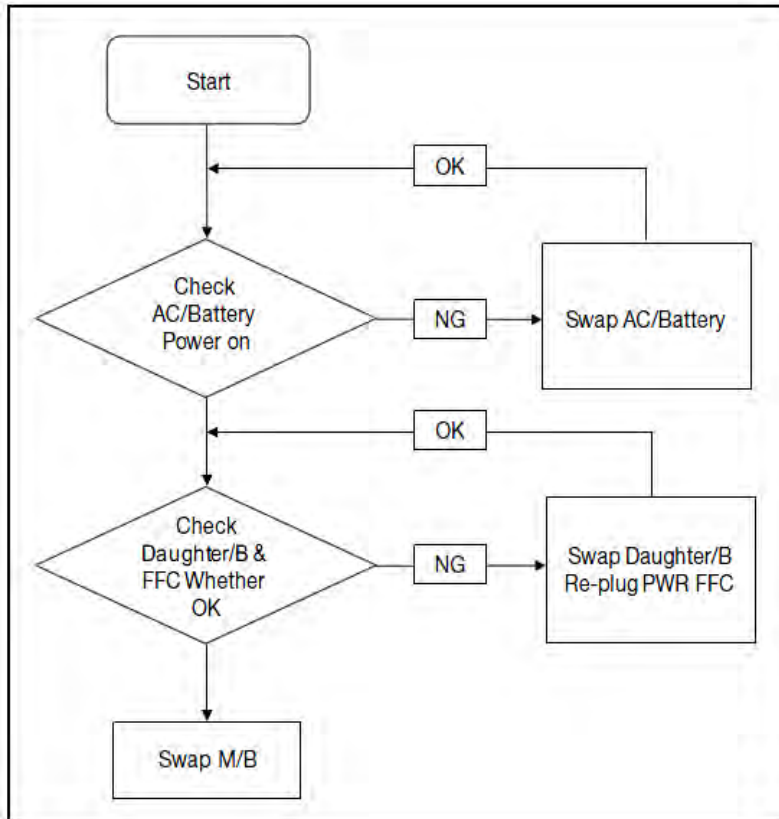


Figure 4-1. Power On Issue

Computer Shuts Down Intermittently

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

1. Make 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 module and fan airways are free of obstructions. Refer to the "Thermal Unit Failure" section on page 4-16.
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 the [Online Support Information](#) on page 9-3.

No Display Issues

If the Display does not work, perform the following, one at a time. Do not replace a non-defective FRU:

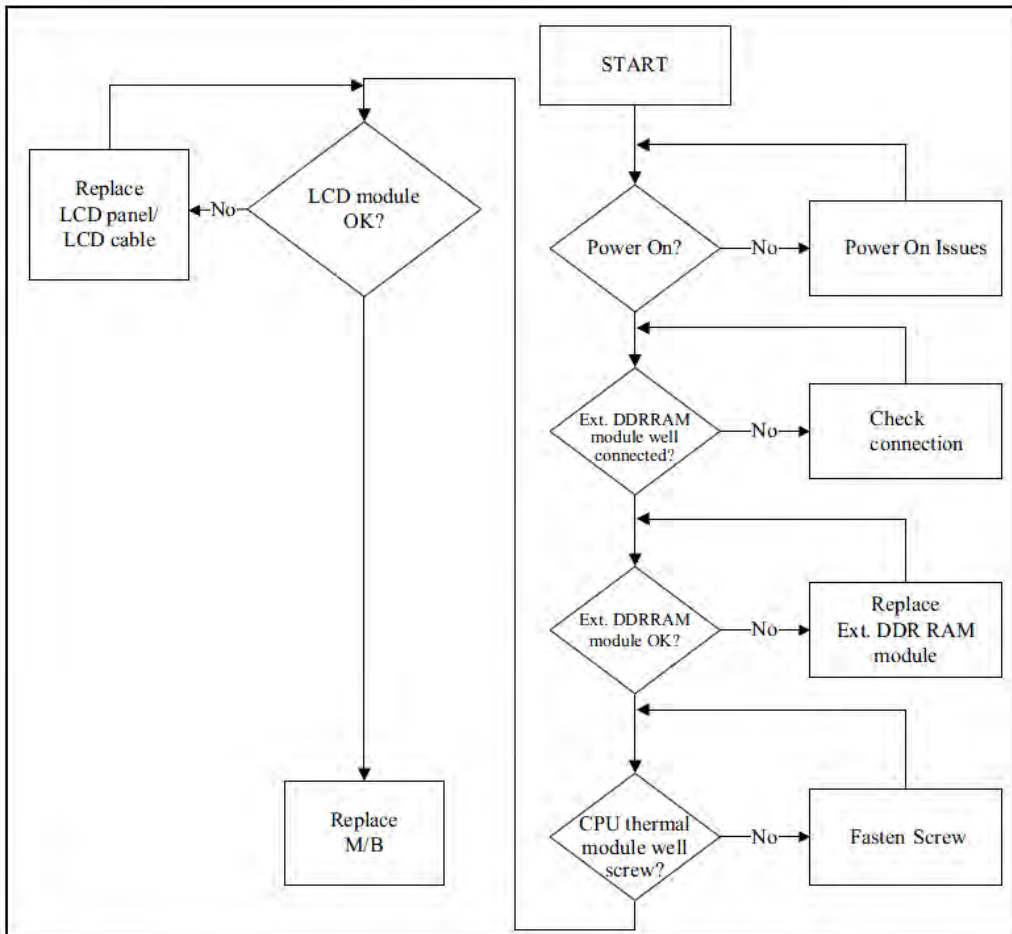


Figure 4-2. No Display Issue

No POST or Video

If the POST or video does not appear, perform the following one at a time.

1. Make sure that internal display is selected. Switch between the internal and external display by pressing **Fn+F5**.

⇒ **NOTE:**

This hotkey may not apply to all models. Refer to the computer's user manual for the applicable hotkey sequence.

2. Make sure the computer has power by checking for one of the following:
 - Fans start up
 - Status LEDs illuminate

If there is no power, refer to the [“Power On Issues”](#) section on page 4-4.

3. Drain stored power by removing the power cable and the battery pack. Hold the power button for 10 seconds.
4. Connect the power cable and reboot the computer.
5. Connect an external monitor to the computer and switch between the internal display and the external display by pressing **Fn+F5**.
6. If the POST or video appears on the external display only, refer to the “[LCD Failure](#)” section on page 4-7.
7. Disconnect power and all external devices including port replicators or docking stations.
8. Remove any memory cards.
9. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
10. Reinstall the memory modules.
11. Perform the “[Replacing the HDD Module](#)” procedure described on pages 3-61.
12. If the issue is still not resolved, refer to the [Online Support Information](#) on page 9-3.

Abnormal Video

If the video appears abnormal, perform the following one at a time.

1. Boot the computer.

If permanent vertical/horizontal lines or dark spots appear in the same location, the LCD panel is faulty and should be replaced. The same goes for when there is extensive pixel damage (i.e. different colored spots in the same locations on the screen). Perform the “[Reassembly Process](#)” procedure described on page 3-43.

⇒ NOTE:

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

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

8. Run the Windows Memory Diagnostic from the operating system DVD and follow the on-screen prompts.
9. If the issue is still not resolved, refer to the [Online Support Information](#) on page 9-3

LCD Failure

If the LCD fails, perform the following, one at a time. Do not replace a non-defective FRU:

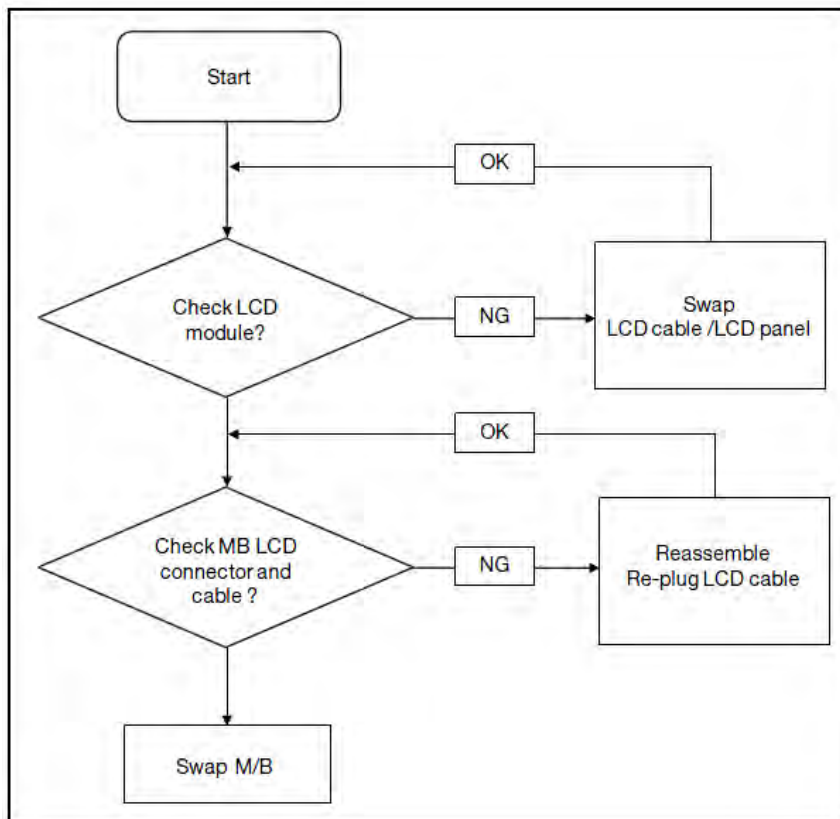


Figure 4-3. LCD Failure

Keyboard Failure

If the Keyboard fails, perform the following, one at a time. Do not replace a non-defective FRU:

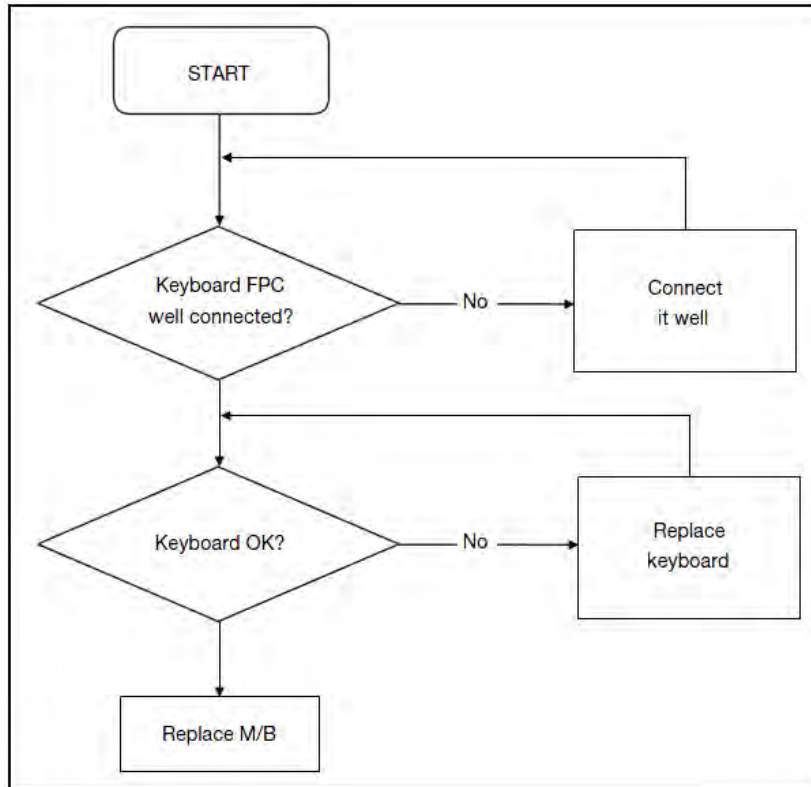


Figure 4-4. Keyboard Failure

Touchpad Failure

If the Touchpad fails, perform the following, one at a time. Do not replace a non-defective FRU:

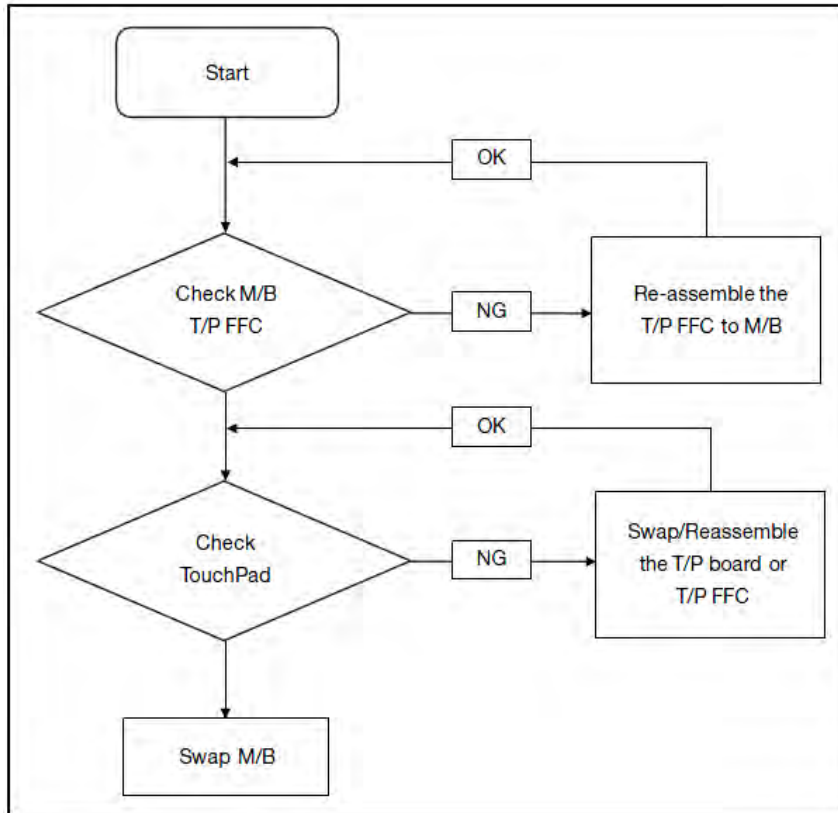


Figure 4-5. Touchpad Failure

Internal Speaker Failure

If internal Speakers fail, perform the following, one at a time. Do not replace a non-defective FRU:

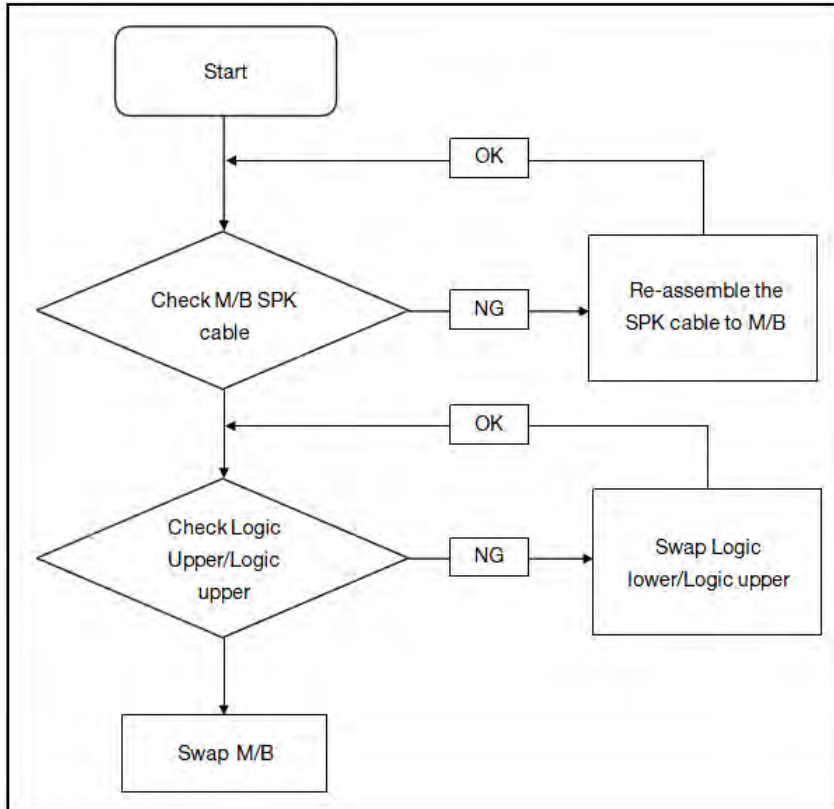


Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following, one at a time.

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 task bar

- 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 do 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 the [Online Support Information](#) on page 9-3

Microphone Failure

If internal or external Microphones fail, perform the following, one at a time.

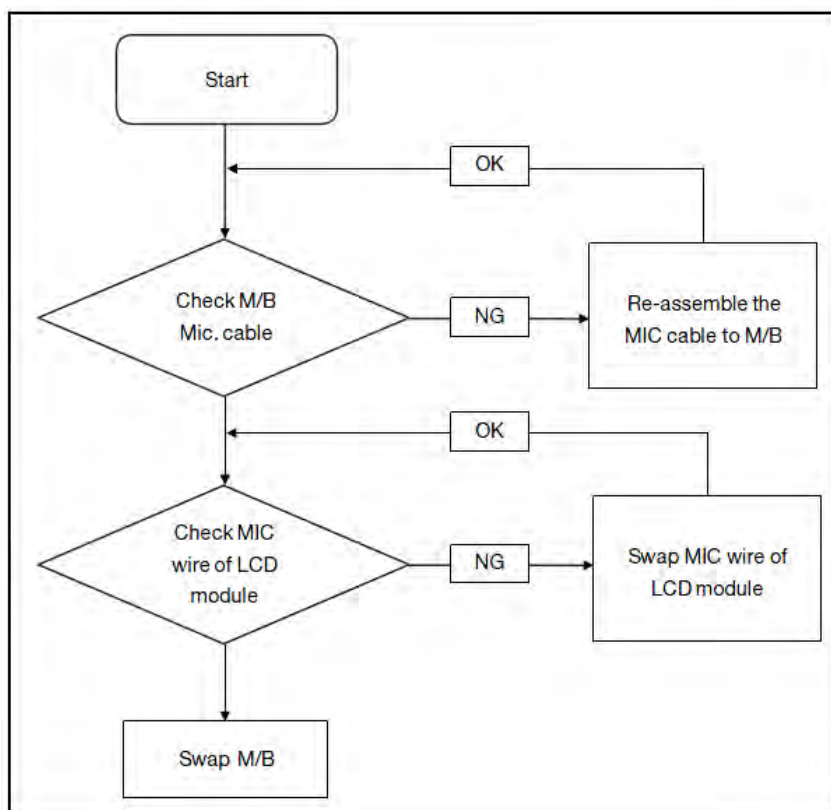


Figure 4-7. Microphone Failure

1. Check that the microphone is enabled. Navigate to Start → Control Panel → Hardware and Sound → Sound and select the *Recording* tab.
2. Right click on the *Recording* tab and select *Show Disabled Devices* (clear by default). The microphone appears on the *Recording* tab.
3. Right click on the microphone and select **Enable**.
4. Select the microphone then click **Properties**. Select the *Levels* tab.
5. Increase the volume to the maximum setting and click **OK**.
6. Test the microphone hardware:
 - Select the microphone and click **Configure**.
 - Select **Set up microphone**.
 - Select the microphone type from the list and click **Next**.
 - Follow the on-screen prompts to complete the test.
7. If the issue is still not resolved, refer to the [Online Support Information](#) on page 9-3

USB Failure

If the USB fails, perform the following, one at a time. Do not replace a non-defective FRU:

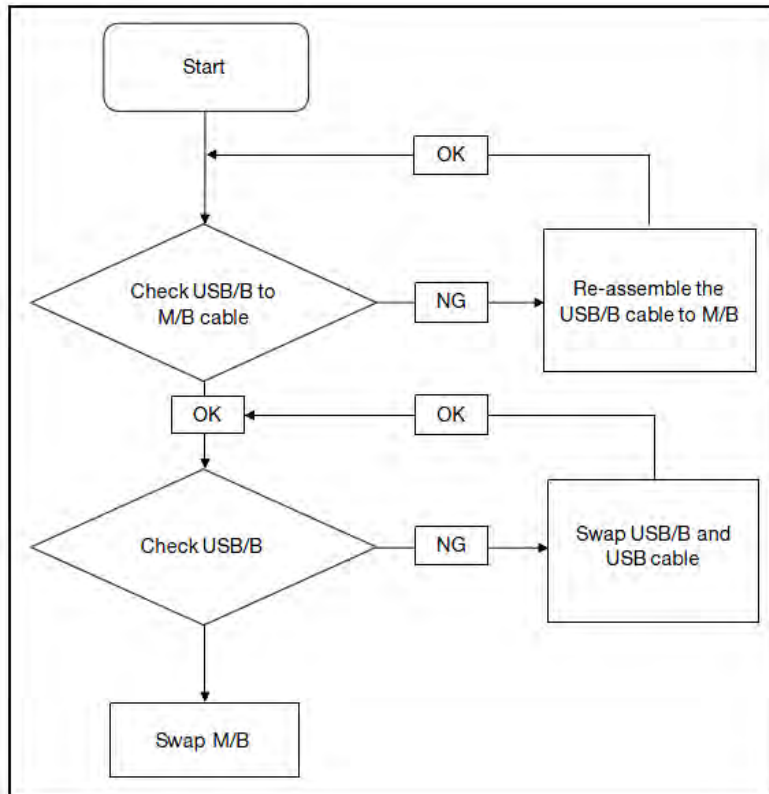


Figure 4-8. USB Failure

WLAN Failure

If the WLAN fails, perform the following, one at a time. Do not replace a non-defective FRU:

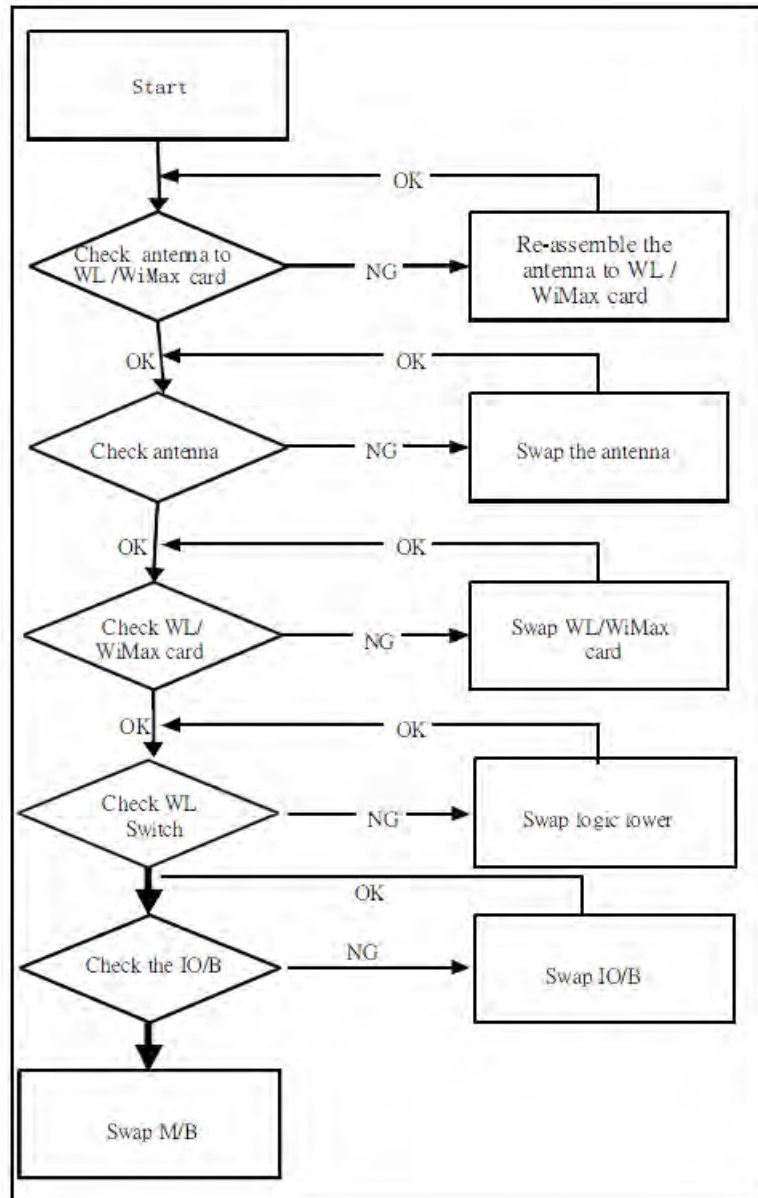


Figure 4-9. WLAN Failure

Card Reader Failure

If the Card Reader fails, perform the following, one at a time. Do not replace a non-defective FRU:

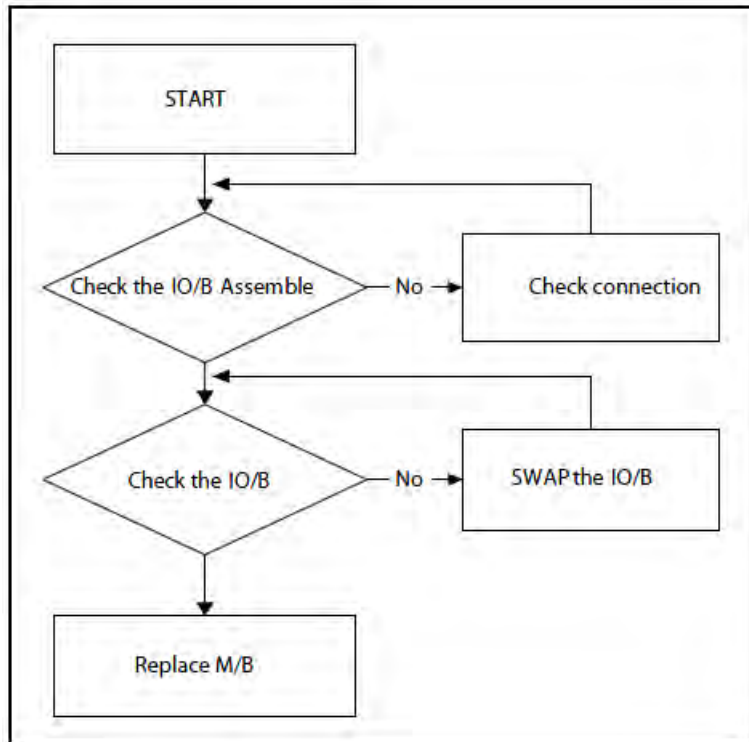


Figure 4-10. Card Reader Failure

Thermal Unit Failure

If the Thermal Unit fails, perform the following, one at a time. Do not replace a non-defective FRU:

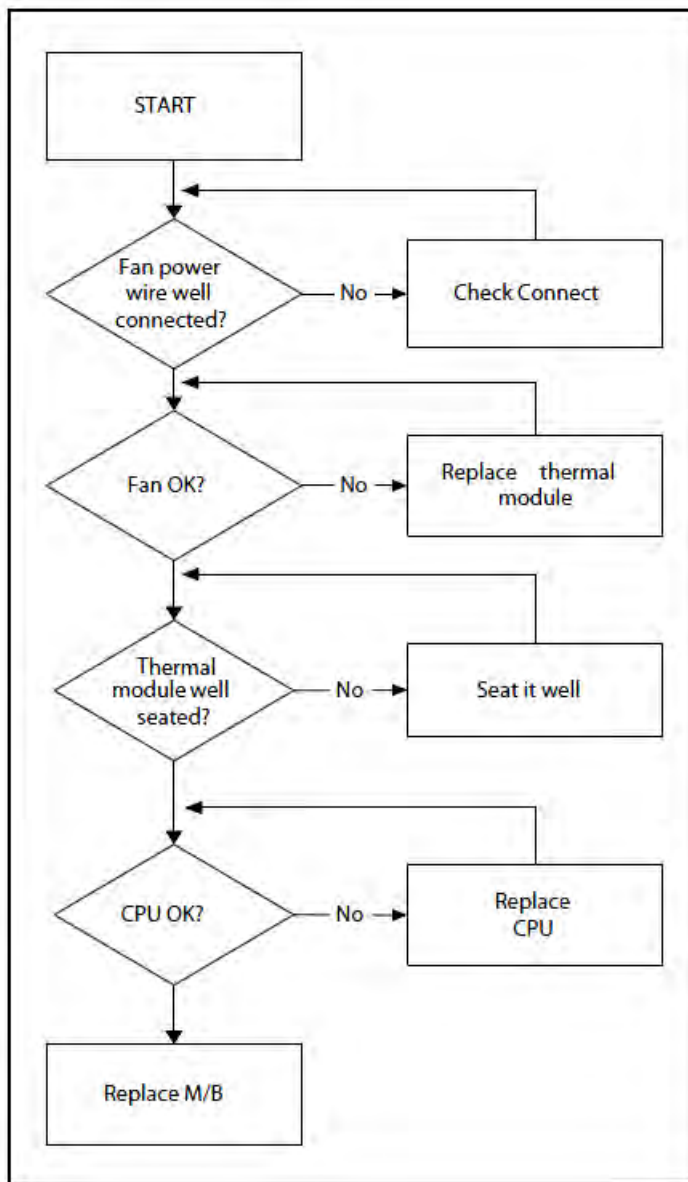


Figure 4-11. Thermal Unit Failure

Other Functions Failure

1. Check if drives are functioning correctly.
2. Check if external modules are functioning correctly.
3. Change mainboard to check if current one is defective.

Intermittent Problems

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

When analyzing an intermittent problem, perform the following:

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

Undetermined Problems

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

Perform the following procedures to isolate the failing FRU (do not isolate non-defective FRU).

⇒ **NOTE:**

Verify that all attached devices are supported by the computer.

⇒ **NOTE:**

Verify that the power supply being used at the time of the failure is operating correctly.

1. Remove power from the computer.
2. Visually check the components 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 one at a time until failing FRU is found.
7. If the problem remains, replace the following FRUs one at a time. Do not replace a non-defective FRU:
 - Mainboard
 - LCD assembly

Error Codes

Table 4-2. Error Codes

Error Codes	Error Messages
006	Equipment Configuration Error Causes: 1. CPU BIOS Update Code Mismatch 2. IDE Primary Channel Master Drive Error (The causes will be shown before "Equipment Configuration Error")
010	Memory Error at xxx:xxx:xxxh (R:xxxh, W:xxxh)
070	Real Time Clock Error
071	CMOS Battery Bad
072	CMOS Checksum Error
110	System is disabled. An incorrect password was entered.
<No error code>	Battery critically low. In this situation BIOS will issue four (4) short beeps, then shuts the system down. No message is displayed.
<No error code>	Temperature is critically high. In this situation BIOS shuts the system down. No message is displayed.

BIOS Beep Codes

Table 4-3. BIOS Beep Codes

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

Table 4-3. BIOS Beep Codes

Code	Beeps	POST Routine Description
2Fh		Enable cache before system BIOS shadow
30h	1-4-1-1	RAM failure on data bits xxxx of high byte of memory bus
32h		Test CPU bus-clock frequency
33h		Initialize Phoenix Dispatch Manager
36h		Warm start shut down
38h		Shadow system BIOS ROM
3Ah		Autosize cache
3Ch		Advanced configuration of chipset registers
3Dh		Load alternate registers with CMOS values
42h		Initialize interrupt vectors
45h		POST device initialization
46h	2-1-2-3	Check ROM copyright notice
48h		Check video configuration against CMOS
49h		Initialize PCI bus and devices
4Ah		Initialize all video adapters in system
4Bh		QuietBoot start (optional)
4Ch		Shadow video BIOS ROM
4Eh		Display BIOS copyright notice
50h		Display CPU type and speed
51h		Initialize EISA board
52h		Test keyboard
54h		Set key click if enabled
58h	2-2-3-1	Test for unexpected interrupts
59h		Initialize POST display service
5Ah		Display prompt "Press F2 to enter SETUP"
5Bh		Disable CPU cache
5Ch		Test RAM between 512 and 640 KB
60h		Test extended memory
62h		Test extended memory address lines
64h		Jump to User Patch1
66h		Configure advanced cache registers
67h		Initialize Multi Processor APIC
68h		Enable external and CPU caches

Table 4-3. BIOS Beep Codes

Code	Beeps	POST Routine Description
69h		Setup System Management Mode (SMM) area
6Ah		Display external L2 cache size
6Bh		Load custom defaults (optional)
6Ch		Display shadow-area message
6Eh		Display possible high address for UMB recovery
70h		Display error messages
72h		Check for configuration errors
76h		Check for keyboard errors
7Ch		Set up hardware interrupt vectors
7Eh		Initialize coprocessor if present
80h		Disable onboard Super I/O ports and IRQs
81h		Late POST device initialization
82h		Detect and install external RS232 ports
83h		Configure non-MCD IDE controllers
84h		Detect and install external parallel ports
85h		Initialize PC-compatible PnP ISA devices
86h		Re-initialize onboard I/O ports
87h		Configure Motherboard Configurable Devices (optional)
88h		Initialize BIOS Area
89h		Enable Non-Maskable Interrupts (NMIs)
8Ah		Initialize Extended BIOS Data Area
8Bh		Test and initialize PS/2 mouse
8Ch		Initialize floppy controller
8Fh		Determine number of ATA drives (optional)
90h		Initialize hard-disk controllers
91h		Initialize local-bus hard-disk controllers
92h		Jump to UserPatch2
93h		Build MPTABLE for multi-processor boards
95h		Install CD ROM for boot
96h		Clear huge ES segment register
97h		Fixup Multi Processor table
98h	1-2	Search for option ROMs. One long, two short beeps on checksum failure.

Table 4-3. BIOS Beep Codes

Code	Beeps	POST Routine Description
99h		Check for SMART drive (optional)
9Ah		Shadow option ROMs
9Ch		Set up Power Management
9Dh		Initialize security engine (optional)
9Eh		Enable hardware interrupts
9Fh		Determine number of ATA and SCSI drives
A0h		Set time of day
A2h		Check key lock
A4h		Initialize Typematic rate
A8h		Erase F2 prompt
AAh		Scan for F2 key stroke
ACh		Enter SETUP
A Eh		Clear Boot flag
B0h		Check for errors
B2h		POST done- prepare to boot operating system
B4h	1	One short beep before boot
B5h		Terminate QuietBoot (optional)
B6h		Check password (optional)
B9h		Prepare Boot
BAh		Initialize DMI parameters
BBh		Initialize PnP Option ROMs
BCh		Clear parity checkers
BDh		Display MultiBoot menu
BEh		Clear screen (optional)
BFh		Check virus and backup reminders
C0h		Try to boot with INT 19
C1h		Initialize POST Error Manager (PEM)
C2h		Initialize error logging
C3h		Initialize error display function
C4h		Initialize system error handler
C5h		PnPnd dual CMOS (optional)
C6h		Initialize notebook docking (optional)
C7h		Initialize notebook docking late

Table 4-3. BIOS Beep Codes

Code	Beeps	POST Routine Description
C8h		Force check (optional)
C9h		Extended checksum (optional)
D2h		Unknown interrupt
E0h		Initialize the chipset
E1h		Initialize the bridge
E2h		Initialize the CPU
E3h		Initialize the system timer
E4h		Initialize system I/O
E5h		Check force recovery boot
E6h		Checksum BIOS ROM
E7h		Go to BIOS
E8h		Set Huge Segment
E9h		Initialize Multi Processor
EAh		Initialize OEM special code
EBh		Initialize PIC and DMA
ECh		Initialize Memory type
EDh		Initialize Memory size
EEh		Shadow Boot Block
EFh		System memory test
F0h		Initialize interrupt vectors
F1h		Initialize Run Time Clock
F2h		Initialize video
F3h		Initialize System Management Mode
F4h	1	Output one beep before boot
F5h		Boot to Mini DOS
F6h		Clear Huge Segment
F7h		Boot to Full DOS

POST Codes

There are two types of POST codes: Progress Codes and Error Codes. Progress Codes are designed to show the execution point while booting or executing services. Error Codes are designed to halt on exceptional (fatal) error conditions.

Component Codes

The Component Code is an unsigned integer value that is assigned by the build process. The following tables describe the various ranges of component codes:

The Component Code is assigned to an individual component (or driver) using the POSTCODE= option in the DSC file. If the value that follows POSTCODE= is a hexadecimal or decimal number, in the range 0x00-0xdf, then that code will be used with all POST Codes associated with that driver.

Table 4-4. Component Codes

Range	Description
0x00-0x1f	OEM Components. These values are reserved for OEM components
0x20-0x9f	These values are reserved for SecureCore Tiano™ core components. POSTCODE_CC_VARIABLE_SERVICES (0x20) POSTCODE_CC_KEYBOARD_CONTROLLER (0x21) POSTCODE_CC_BOOT_MODE (0x22) POSTCODE_CC_S3_SUPPORT (0x23) POSTCODE_CC_TCG (0x24) POSTCODE_CC_HDD_PASSWORD (0x25) POSTCODE_CC_CPU_IO (0x26) POSTCODE_CC_BOOT_SCRIPT (0x27) POSTCODE_CC_STATUS_CODE (0x28) POSTCODE_CC_DATA_HUB (0x29) POSTCODE_CC_HII_DATABASE (0x2a) POSTCODE_CC_RESET (0x2b) POSTCODE_CC_METRONOME (0x2c) POSTCODE_CC_INTERRUPT_CONTROLLER (0x2d) POSTCODE_CC_DIAGNOSTIC_SUMMARY (0x2e) POSTCODE_CC_SMBIOS (0x2f) POSTCODE_CC_SMM_COMMUNICATION (0x30) POSTCODE_CC_SMM_RUNTIME (0x31) POSTCODE_CC_SMM_SERVICES (0x32) POSTCODE_CC_FIRMWARE_DEVICE (0x33) POSTCODE_CC_CAPSULE_SERVICES (0x34) POSTCODE_CC_MONOTONIC_COUNTER (0x35) POSTCODE_CC_SMBIOS_EVENT_LOG (0x36) POSTCODE_CC_RTC (0x37) POSTCODE_CC_BOOT_MANAGER (0x38) POSTCODE_CC_VGA (0x39)

Table 4-4. Component Codes

Range	Description
	POSTCODE_CC_HII_FORMS_BROWSER (0x3a) POSTCODE_CC_BOOT_MENU (0x3b) POSTCODE_CC_USER_MANAGER (0x3c) POSTCODE_CC_TIMER (0x3d) POSTCODE_CC_PCI_BUS (0x3e) POSTCODE_CC_ISA_BUS (0x3f) POSTCODE_CC_IDE_BUS (0x40) POSTCODE_CC_AHCI_BUS (0x41) POSTCODE_CC_SCSI_BUS (0x42) POSTCODE_CC_USB_BUS (0x43) POSTCODE_CC_FLOPPY (0x44) POSTCODE_CC_SERIAL_PORT (0x45) POSTCODE_CC_PS2_MOUSE (0x46) POSTCODE_CC_PS2_KEYBOARD (0x47) POSTCODE_CC_EHCI (0x48) POSTCODE_CC_XHCI (0x49) POSTCODE_CC_UHCI (0x4a) POSTCODE_CC_OHCI (0x4b) POSTCODE_CC_USB_KEYBOARD (0x4c) POSTCODE_CC_USB_MOUSE (0x4d) POSTCODE_CC_USB_MASS_STORAGE (0x4e) POSTCODE_CC_CONSOLE_SPLITTER (0x4f) POSTCODE_CC_GRAPHICS_CONSOLE (0x50) POSTCODE_CC_SERIAL_CONSOLE (0x51) POSTCODE_CC_TEXT_CONSOLE (0x52) POSTCODE_CC_DISK_IO (0x53) POSTCODE_CC_PARTITION (0x54) POSTCODE_CC_SETUP (0x55) POSTCODE_CC_LEGACY_BIOS (0x56) POSTCODE_CC_BLOCK_IO_THUNK (0x57) POSTCODE_CC_CRYPT (0x58)

Table 4-4. Component Codes

Range	Description
0xa0-0xaf	<p>These values are reserved for SecureCore Tiano™ platform components.</p> <p>POSTCODE_CC_PLATFORM_STAGE0 (0xa0) - Early PEI Platform Initialization.</p> <p>POSTCODE_CC_PLATFORM_STAGE1 (0xa1) - PEI Platform Initialization.</p> <p>POSTCODE_CC_PLATFORM_DXE (0xa1) - DXE Platform Initialization.</p> <p>POSTCODE_CC_PLATFORM_SMM (0xa1) - SMM Platform Initialization.</p> <p>POSTCODE_CC_PLATFORM_FLASH (0xa2) - Flash Platform Initialization.</p> <p>POSTCODE_CC_PLATFORM_CSM (0xa3) - CSM Platform Initialization.</p> <p>0xa4-0xa7 - Reserved for future expansion.</p> <p>0xa8-0xaf - Reserved for use by the individual platform.</p>
0xb0-0xbf	<p>These values are reserved for future expansion.</p>
0xc0-0xcf	<p>These values are reserved for core chipset drivers (north bridge, south bridge and CPU) and are assigned by chipset family.</p> <p>POSTCODE_CC_MEMORY_CONTROLLER (0xc0) - Memory Controller.</p>
0xd0-0xd7	<p>These values are reserved for Small Silicon drivers (SIOs, flash, fingerprint, etc.)</p> <p>POSTCODE_CC_SUPER_IO (0xd0) - Super I/O</p> <p>POSTCODE_CC_FLASH_CONTROLLER (0xd1) - Flash Controller</p> <p>POSTCODE_CC_FLASH_DEVICE (0xd2) - Flash Device</p> <p>POSTCODE_CC_FINGERPRINT (0xd3) - Fingerprint Sensor</p> <p>POSTCODE_CC_CLOCK_CONTROLLER (0xd4) - Clock Controller</p> <p>POSTCODE_CC_MGMT_CONTROLLER (0xd5) - Embedded controller or management controller.</p> <p>0xd6-0xd7 - Reserved for future expansion.</p>
0xd8-0xdf	<p>Reserved for platform usage.</p>

Table 4-4. Component Codes

Range	Description
0xe0-0xff	<p>These are not components, but rather represent Architectural Progress Codes or Error Codes detailing milestones in the system boot progress. The corresponding Progress Code value is always set to zero.</p> <p>POSTCODE_PC_SEC_ENTRY (0xe0) - Reset vector.</p> <p>POSTCODE_PC_SEC_EXIT (0xe1) - Leaving SEC/Going to PEI.</p> <p>POSTCODE_PC_PEI_ENTRY (0xe2) - Entering PEI Dispatch.</p> <p>POSTCODE_PC_PEI_EXIT (0xe3) - Exiting PEI Dispatch.</p> <p>POSTCODE_PC_IPL_DXE (0xe4) - Entering DXE IPL's normal boot path.</p> <p>POSTCODE_PC_IPL_S3 (0xe5) - Entering DXE IPL's S3 boot path.</p> <p>POSTCODE_PC_S3_OS (0xe6) - Exiting S3 boot path back to the OS.</p> <p>POSTCODE_PC_IPL_RECOVERY (0xe7) - Entering DXE IPL's recovery boot path.</p> <p>POSTCODE_PC_IPL_EXIT (0xe8)</p> <p>POSTCODE_PC_DXE_ENTRY (0xe9) - Entering DXE Dispatch.</p> <p>POSTCODE_PC_DXE_EXIT (0xea) - Exiting DXE Dispatch.</p> <p>POSTCODE_EC_PEI_MEMORY (0xeb) - No permanent memory found at the end of PEI.</p> <p>POSTCODE_EC_PEI_IPL (0xec) - No DXE IPL found at the end of PEI.</p> <p>POSTCODE_EC_IPL_DXE (0xed) - No DXE found at end of DXE IPL.</p> <p>POSTCODE_EC_IPL_PPI (0xee) - Couldn't find PPIs needed by DXE.</p> <p>POSTCODE_EC_DXE_ARCH (0xef) - Missing one or more architectural protocols at the end of DXE.</p>

Progress Codes

This section describes the progress code values.

Table 4-5. Progress Codes

Range	Description
0x00-0x1f	<p>Standard progress Codes. All other values are reserved.</p> <p>POSTCODE_PC_COMP_PEI_BEGIN (0x01) - The component was loaded and the PEI entry point called.</p> <p>POSTCODE_PC_COMP_PEI_END (0x02) - The component returned from the PEI entry point.</p> <p>POSTCODE_PC_COMP_DXE_BEGIN (0x03) - The component was loaded and the DXE/UEFI entry point called.</p> <p>POSTCODE_PC_COMP_DXE_END (0x04) - The component returned from the DE/UEFI entry point.</p> <p>POSTCODE_PC_COMP_SUPPORTED (0x05) - The Supported() member function of the component's instance of the Driver Binding protocol was called.</p> <p>POSTCODE_PC_COMP_START (0x06) - The Start() member function of the component's instance of the Driver Binding protocol was called.</p> <p>POSTCODE_PC_COMP_STOP (0x07) - The Stop() member function of the component's instance of the Driver Binding protocol was called.</p> <p>POSTCODE_PC_COMP_SMM_INIT (0x08) - The component was loaded and the entry point called inside of SMM.</p> <p>POSTCODE_EC_DEVICE_ERROR (0x09) - The driver encountered a condition where it cannot proceed due to a hardware failure.</p> <p>POSTCODE_EC_RESOURCE_ERROR (0x0a) - The driver encountered a condition where it cannot proceed due to being unable to acquire resources.</p> <p>POSTCODE_EC_DATA_CORRUPT (0x0b) - The driver encountered a condition where it found invalid data and could not continue.</p>
0x20-0x3f	<p>Component-Specific Progress Codes. These values are specific to the component type.</p>
0x40-0x5f	<p>OEM Progress Codes. These progress codes are reserved for OEM usage.</p>
0x60-0x7f	<p>Reserved. These are reserved for future expansion.</p>

CHAPTER 5

Jumper and Connector Locations

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Clearing the BIOS Passwords	5-5
Performing a BIOS Recovery	5-6

Jumper and Connector Locations

Mainboard Layout

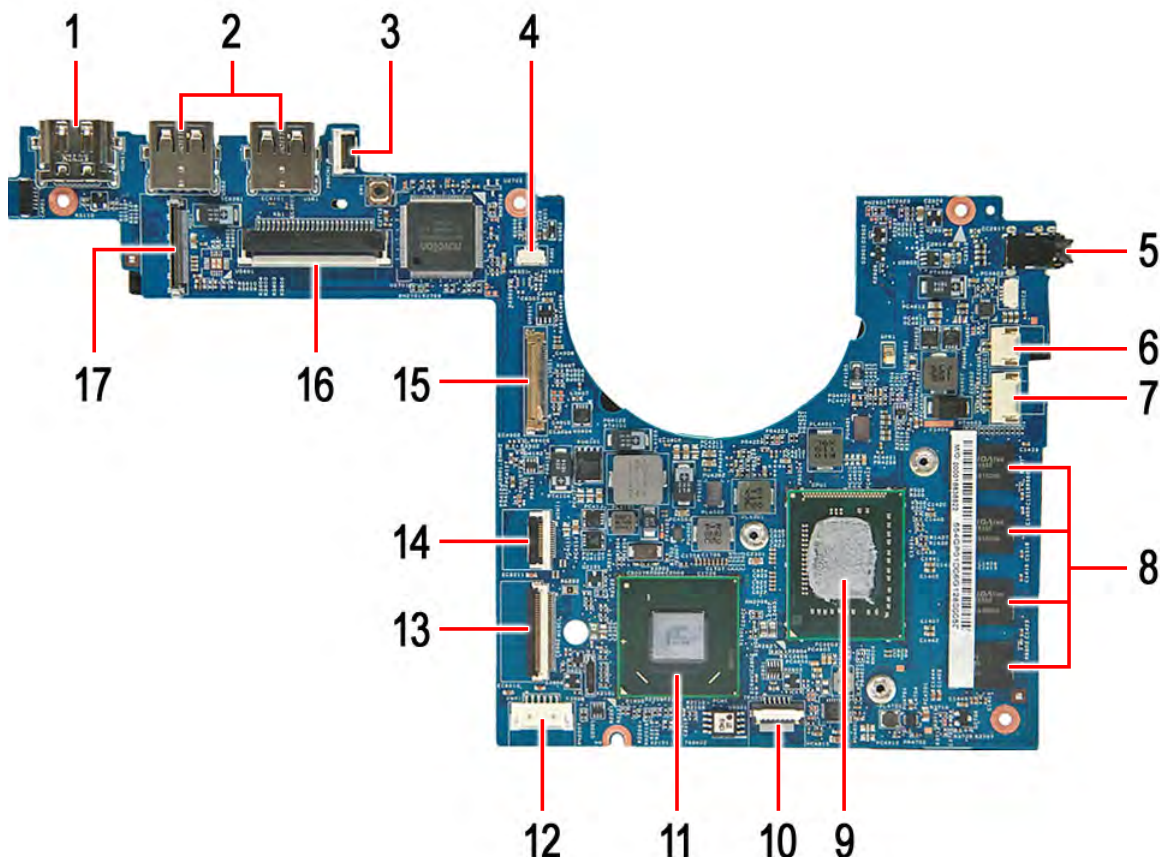


Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

No.	Code	Component	No.	Code	Component
1	HDMI1	HDMI out port	10	TPAD1	Touchpad connector
2	USB	USB port	11	PCH1	Mobile Intel UM67 Chipset
3	CARD1	Card reader connector	12	PWR1	Power connector
4	FAN1	Fan connector	13	MISC1	WLAN connector
5	LOUT1	Mic/Headphone port	14	MINI1	Mini-board connector
6	RTC1	RTC battery connector	15	LVDS1	LCD cable connector
7	SPK1	Speaker connector	16	KB1	Keyboard connector
8	RAM1/3/5/7	Onboard memory	17	HDD1	HDD connector
9	CPU1	CPU			

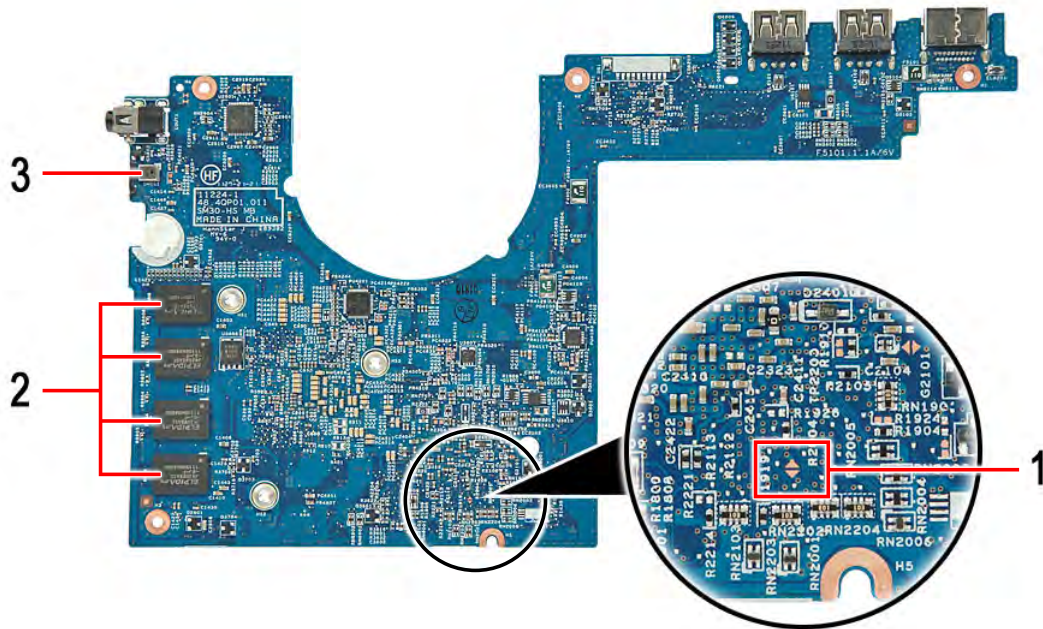


Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

No.	Code	Component
1	G2201	Clear password hardware gap
2	RAM2/4/6/8	Onboard memory
3	DMIC1	Mic-in

Clearing Password Check and BIOS Recovery

This section provides procedures for:

- Clearing the BIOS passwords
- Performing a BIOS recovery

Clearing the BIOS Passwords

To clear a lost BIOS password (user or supervisor password), you need to short the clear password hardware gap (G2201) located on the mainboard.

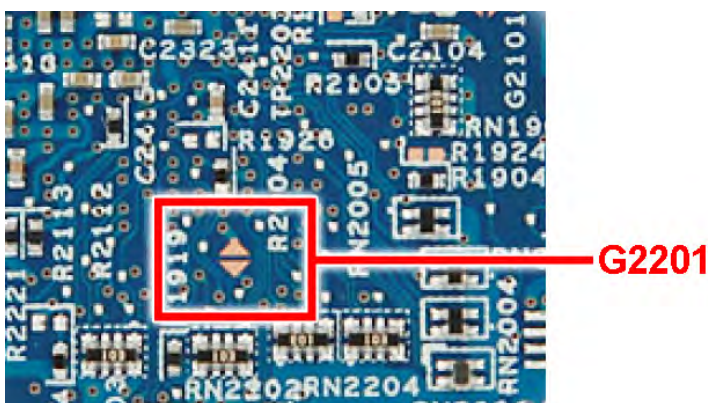


Figure 5-3. G2201 Hardware Gap

1. Shut down the computer and disconnect the AC adapter and all other peripherals from the computer.
2. Perform the [“Removing the Middle Cover Assembly”](#) procedure described on page 3-39.
3. Use an electrical conductivity tool to short the two contacts on the hardware gap together.
4. Connect the DC-In cable to the mainboard.
5. While resting the tool on the two contacts, plug one end of the AC adapter into the DC-in jack and plug one end to an electrical outlet.
6. Press the \mathcal{O} button to turn on the computer.
7. After the BIOS POST, remove the tool from the hardware gap.
8. Perform the [“Replacing the Thermal Module”](#) procedure described on page 3-53.
9. Perform the [“Replacing the Battery Pack”](#) procedure described on page 3-73.
10. Perform the [“Replacing the Lower Case”](#) procedure described on page 3-76.
11. Turn on the computer and press **F2** during bootup to access the *Setup Utility*. If no password prompt appears, the BIOS passwords have been cleared. If the prompt appears, repeat steps 4-10 until the BIOS passwords have been cleared.
12. Press **F9** to load the system defaults.
13. Press **F10** to save the changes you made and close the Setup Utility.

Performing a BIOS Recovery

Boot Block

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

Creating the Crisis Disk

⇒ NOTE:

The BIOS crisis recovery disk should be prepared in a computer running the Windows XP, Vista, or 7 OS.

1. Prepare a removable USB flash drive.
Note that all data in the USB flash drive will be cleared during the creation of the crisis disk.
2. Set up a computer running the Windows XP, Vista, or 7 operating system and plug in the USB flash drive into an available USB port.
3. Open the *Notepad* program and create a new file.
4. Type **startup.nsh**.

For example, the USB key prompt is *fs0*. The *PFlash.efi* and *BIOS.cap* files are in the *fs0: root directory*.

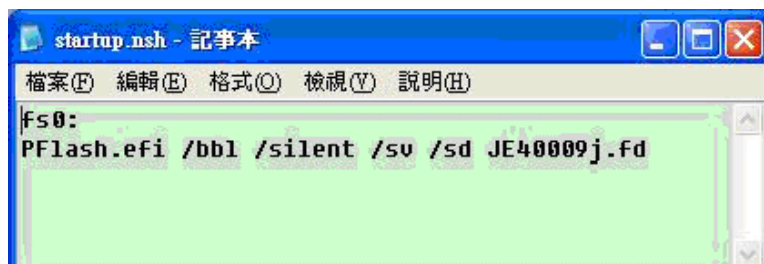


Figure 5-4. Startup.nsh File

5. Save this file as *startup.nsh* in the USB flash drive's root directory.
6. Decompress the Crisis Package Source in the USB flash drive's root directory.
7. Eject and reconnect the USB flash drive from the computer, and make sure it contains the following files:
 - *EFI folder*
 - *BIOS image file*
 - *BIOS.cap*
 - *PFlash.efi*
 - *PFlashX86efi*
 - *Startup.nsh*


Performing a BIOS recovery

⇒ NOTE:

Make sure the battery pack is installed to the system and that the computer is connected to a UPS unit during the BIOS recovery process.

The function hotkey sequence **Fn+Esc** is used to enable the BIOS recovery process when system is powered On during BIOS POST. If this function is enabled, the system will force the BIOS to execute the boot block program.

To perform a BIOS recovery:

1. Shut down the BIOS failed-computer.
2. Connect the USB flash drive containing the Crisis Recovery disk files to the computer.
3. Press and hold the **Fn+Esc** keys, then press the power button .

The BIOS recovery process begins. When the process is complete the computer will automatically reboot.

4. Disconnect the USB flash drive from the computer.
5. Perform a BIOS flash procedure to update the BIOS firmware. Refer to the “[BIOS Flash Utilities](#)” section on page [2-12](#) for detailed instructions.

CHAPTER 6

FRU List

Aspire S3 MS2346 Exploded Diagrams.	6-4
Main Assembly	6-4
FRU List	6-6

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the Aspire S3 MS2346. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

⇒ **NOTE:**

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

⇒ **NOTE:**

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

Aspire S3 MS2346 Exploded Diagrams

Main Assembly

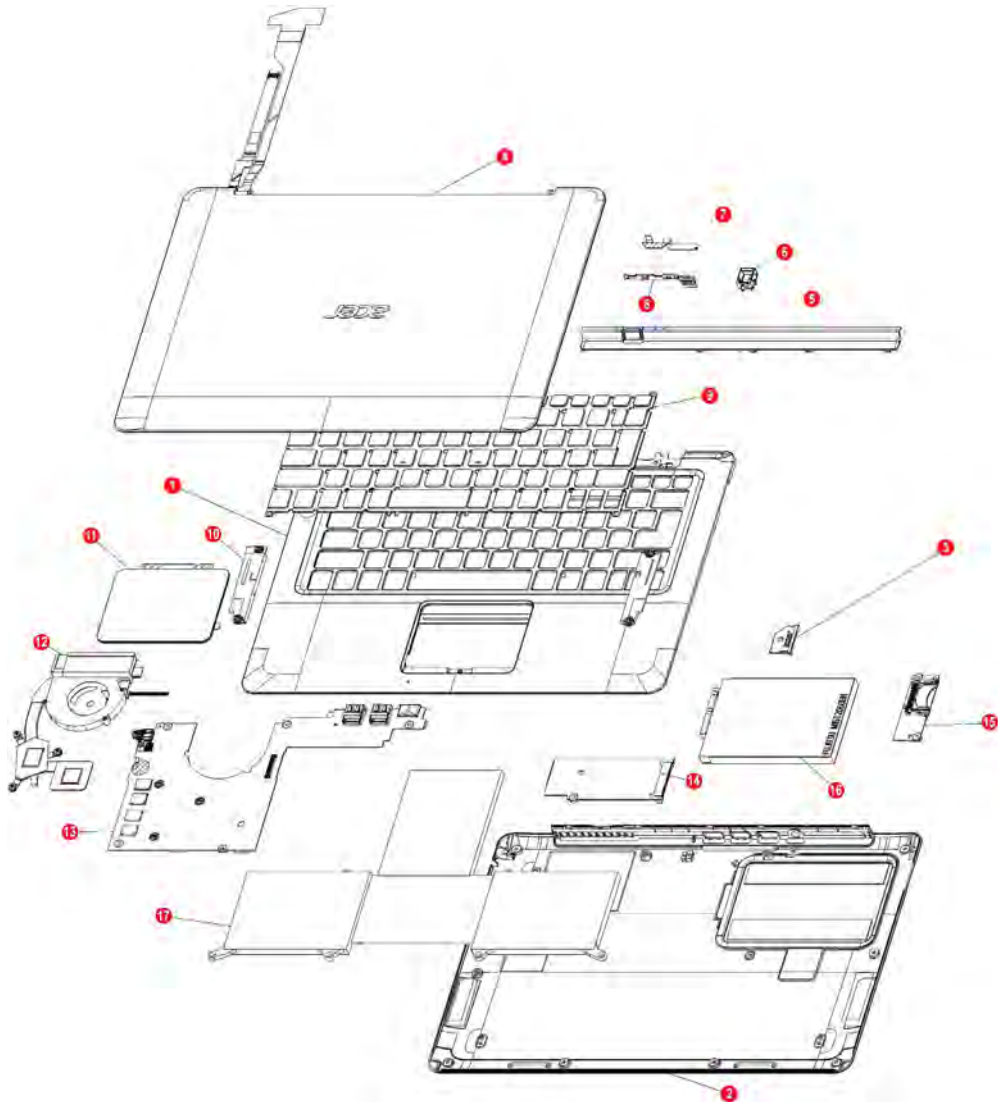


Figure 6-1. Main Assembly Exploded Diagram

Table 6-1. Main Assembly Exploded Diagram







No.	Description	Part Number
1	Upper Case Assembly	60.4QP04.001
2	Lower Case Assembly	60.4QP03.001
3	Dummy Card	42.4QP15.001
4	LCD Assembly	65.4QP03.001

Table 6-1. Main Assembly Exploded Diagram

No.	Description	Part Number
5	Middle Assembly	60.4QP06.001
6	DC In	50.4QP01.001
7	Power Cable	50.4QP04.001
8	Power Board	55.XXXXX.001
9	Keyboard	
10	Speaker	23.40A1V.001
11	Touchpad	56.17008.031
12	Thermal module	
13	Motherboard	55.XXXXX.001
14	WLAN Board	55.XXXXX.001
15	Card Reader Board	50.XXXXX.001
16	HDD Assembly	65.4QP02.001
17	Battery	

FRU List

Category	Description	Acer Part No.
ADAPTER 	ADP 65W 19V LV5 ADP-65VH BA LOW PROFILE	AP.06501.033
	ADP LITEON 65W 19V PA-1650-69AW LV5 L	AP.06503.029
BATTERY 	BTY PACK LI+ SANYO 3C 3.26AH SANYO POLYM	BT.00303.026
	BTY PACK LI+ SONY 3C 3.26AH SONY POLYMER	BT.00304.010
BOARDS 	FOXCONN 3RD WIFI 2X2 AGN+ BT4.0 Atheros	NI.23600.102
	LITEON 3RD WIFI 2X2 AGN+ BT4.0 Atheros	NI.23600.103
	HM2-CR POWER BD PD(D)	55.M1FN1.001
	HM2-CR CARD BD PD (D)	55.M1FN1.002
	HM2-CR MSATA BD 11808-1 PD D	55.M1FN1.003
	HM2-CR SMALL BD FOR WLAN 11752-2 PD D	55.M10N1.001
	TOUCHPAD EMC S8664C-2602	RESERVE

Category	Description	Acer Part No.
CABLES 	ARGENTINA 1M	27.RSF01.012
	AUSTRALIA BK 1M HAVE LABEL	27.RSF01.016
	BRAZIL BK 1M	27.RSF01.013
	CHINA BK 1M	27.RSF01.007
	DENMARK BK 1M	27.RSF01.004
	EU BK 1M	27.RSF01.002
	ISRAEL BK 1M	27.RSF01.011
	ITALY BK 1M	27.RSF01.006
	JAPAN BK 1M	27.RSF01.009
	KOREA BK 1M	27.RSF01.010
	SOUTH AFRICA 2.5A BK 1M	27.RSF01.015
	SOUTH AFRICA BK 2.5A 1M	27.RSF01.014
	SWISS BK 1M	27.RSF01.005
	TAIWANESE BK 1M	27.RSF01.008
	UK BK 1M	27.RSF01.003
US BK 1M	27.RSF01.001	
	C.A. CARD READER SM30HS HL	50.RSF01.002
	C.A. DC_IN SM30HS SINGATRON	50.RSE01.001
	C.A. HDD_HM2_ICT	50.M1FN1.001
	C.A. M SATA CABLE	50.RSF01.007
	C.A. POWER BOARD FFC SM30HS HB	50.RSF01.001


Category	Description	Acer Part No.
	C.A. POWER WIRE SM30HS HL	50.RSE01.002
	C.A. TP FFC SM30HS HB	50.RSF01.003
	C.A. WLAN FFC SM30HS JH	50.RSF01.004
	C.A. WLAN FPC SM30HS CAREER	50.RSF01.005
CASE/COVER/BRACKET ASSEMBLY 	60 ASSY TP BAR L/T SM30HS	RESERVE
	60 HDD BKT BACK ASSSY SM30HS	33.M1FN1.001
	60 MID ASSY SM30HS	42.RSF01.001
	60 UCASE ASSY HM2 KASHUI	RESERVE
	UCASE MODULE W/TP BAR&BOARD&MYLAR&SCREW	60.M1FN1.002
	ASSY 60 LCASE HM2 KASHUI	60.M1FN1.001
	DUMMY CARD HM2	42.M1FN1.001

Category	Description	Acer Part No.
HDD/HARD DISK DRIVE 	HDD 320GB HTS543232A7A384 0J28213	KH.32007.017
	HDD 500GB HTS545050A7E380 0J23335 5.4K	KH.50007.023
	HDD N320GB5.4KS_4K+FO0020S 2(20G)	
	HDD N320GB5.4KS+FO0020S2(2 0G)	
	HDD N500GB5.4KS_4K+FO0020S 2(20G)	
	HDD N500GB5.4KS+FO0020S2(2 0G)	
	HDD SSD25240 FOR HUMMINGBIRD2	
	SSD 256GB MICRON MTFDDAK256MAM-1K1	KN.25604.035
HEATSINK 	ASSY THM UMA AURAS+SUNON SM30HS	60.RSF01.003
KEYBOARD 	KB 9Z.N7WPW.200 SWISS/G	NK.I1017.00R
	KB 9Z.N7WPW.202 CHINESE	NK.I1017.008
	KB 9Z.N7WPW.203 THAILAND	NK.I1017.00S
	KB 9Z.N7WPW.206 PORTUGUESE	NK.I1017.00L
	KB 9Z.N7WPW.20A ARABIC	NK.I1017.003
	KB 9Z.N7WPW.20B BULGARIA	NK.I1017.006
	KB 9Z.N7WPW.20D DANISH	NK.I1017.009
	KB 9Z.N7WPW.20E ITALIAN	NK.I1017.00F

Category	Description	Acer Part No.
KEYBOARD	KB 9Z.N7WPW.20F FRENCH	NK.I1017.00B
	KB 9Z.N7WPW.20G GERMAN	NK.I1017.00C
	KB 9Z.N7WPW.20H HEBREW	NK.I1017.00W
	KB 9Z.N7WPW.20K KOREAN	NK.I1017.00H
	KB 9Z.N7WPW.20L GREEK	NK.I1017.00D
	KB 9Z.N7WPW.20N NORWEGIAN	NK.I1017.00K
	KB 9Z.N7WPW.20Q HUNGARIAN	NK.I1017.00E
	KB 9Z.N7WPW.20R RUSSIAN	NK.I1017.00M
	KB 9Z.N7WPW.20S SPANISH	NK.I1017.00P
	KB 9Z.N7WPW.20T TURKISH	NK.I1017.00T
	KB 9Z.N7WPW.20U UK	NK.I1017.00U
	KB 9Z.N7WPW.20W SWEDEN	NK.I1017.00Q
	KB 9Z.N7WPW.213 CZ/SK	NK.I1017.007
	KB 9Z.N7WPW.21A BELGIUM	NK.I1017.004
	KB 9Z.N7WPW.21B BRAZILIAN PORTUGUESE	NK.I1017.005
	KB 9Z.N7WPW.21D US-INTERNATION	NK.I1017.00V
	KB 9Z.N7WPW.21F SLO/CRO	NK.I1017.00N
	KB 9Z.N7WPW.21K NORDIC	NK.I1017.00J
	KB 9Z.N7WPW.22A FR/ARABIC	NK.I1017.00A
	KB 9Z.N7WPW.22M CANADA FRENCH	NK.I1017.00X
KB V128230BJ1 JA JAPANESE	NK.I101S.00G	
KB V128230BK1 AF FR/ARABIC	NK.I101S.00A	

Category	Description	Acer Part No.
KEYBOARD	KB V128230BK1 BE BELGIUM	NK.I101S.004
	KB V128230BK1 BG BULGARIA	NK.I101S.006
	KB V128230BK1 BR BRAZILIAN PORTUGUESE	NK.I101S.005
	KB V128230BK1 CS CZ/SK	NK.I101S.007
	KB V128230BK1 DM DANISH	NK.I101S.009
	KB V128230BK1 EF CANADA FRENCH	NK.I101S.00X
	KB V128230BK1 FR FRENCH	NK.I101S.00B
	KB V128230BK1 GR GERMAN	NK.I101S.00C
	KB V128230BK1 HG HUNGARIAN	NK.I101S.00E
	KB V128230BK1 IT ITALIAN	NK.I101S.00F
	KB V128230BK1 NE NORDIC	NK.I101S.00J
	KB V128230BK1 NW NORWEGIAN	NK.I101S.00K
	KB V128230BK1 PO PORTUGUESE	NK.I101S.00L
	KB V128230BK1 SD SWEDEN	NK.I101S.00Q
	KB V128230BK1 SP SPANISH	NK.I101S.00P
	KB V128230BK1 SV SLO/CRO	NK.I101S.00N
	KB V128230BK1 SW SWISS/G	NK.I101S.00R
	KB V128230BK1 TR TURKISH	NK.I101S.00T
	KB V128230BK1 UK UK	NK.I101S.00U
	KB V128230BS1 AR ARABIC	NK.I101S.003
	KB V128230BS1 CH CHINESE	NK.I101S.008
KB V128230BS1 GK GREEK	NK.I101S.00D	
KB V128230BS1 HB HEBREW	NK.I101S.00W	

Category	Description	Acer Part No.
KEYBOARD	KB V128230BS1 KR KOREAN	NK.I101S.00H
	KB V128230BS1 RU RUSSIAN	NK.I101S.00M
	KB V128230BS1 TI THAILAND	NK.I101S.00S
	KB V128230BS1 UI US-INTERNATION	NK.I101S.00V
LCD 	"LCD 13.3" WXGA AU B133XTF01.2"	KL.13305.002
MAINBOARD 	HM2-CR MB I3 2367M 1.4G ELPIDA 4G (D)	NB.M1011.001
	HM2-CR MB I5 2467M 1.6G ELPIDA 4G (D)	NB.M1011.002
MISCELLANEOUS	ANTENNA MYLAR TAPE SM30HS	47.RSF01.003
	FIX POWER BOARD MYLAR SM30	47.M1FN1.002
	HDD DOOR SYSTEM LABEL MYLAR SM30	47.RSF01.006
	MINI BOARD ACETATE ACID TAPE	47.RSF01.010
	MYLAR BATTERY SM30HS	47.RSF01.008
	MYLAR TP HM2	RESERVE
	SM30 HS KB TAPE	47.RSF01.011
	SM30 HS LED RUBBER	47.RSF01.007
	SM30 HS BATTTERY RESET RUBBER	47.RSF01.001
	SPONGE HDD BACK SM30HS	47.M1FN1.001
	THERMAL MYLAR TAPE UCASE SM30HS	47.RSF01.004

Category	Description	Acer Part No.
SCREWS	SCREW M1.4*1(OD3.8)	86.9AR51.1R2
	SCREW M3X4	86.9A524.4R0
	SCREW IMS M1.4*3 BZN	86.9A33N.3R0
	SCREW IMS M2*2 #1 BZN	86.EA322.2R0
	SCREW IMS M2*4.5 (H0.8) #1 NI	86.9A552.4R5
	SCREW M2XL3 HEAD T=0.3 BZN	86.00E14.523
SPEAKER 	SPEAKER SM30-HS FG STICKER CANCEL	23.RSF01.001

CHAPTER 7

Test Compatible Components

Microsoft Windows 7 Environment Test 7-3

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 Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft Windows 7 Environment Test

Vendor	Type	Description	Part No.
Adapter			
10001023 LITE-ON	65W	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-69AW, LV5, Low profile LED LF	AP.06503.029
10001081 DELTA	65W	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65VH BA, LV5, Low profile LED LF	AP.06501.033
60016453 CHICONY POWER	65W	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017
Audio Codec			
10004786 REALTEK	ALC271X_VB3	Realtek ALC271X_VB3	LZ.21000.085
Battery			
60001921 SANYO	3CELL3.26	Battery SANYO AP11D3F Polymer 3S1P SANYO 3 cell 3260mAh Main COMMON	BT.00303.026
10001063 SONY	3CELL3.26	Battery SONY AP11D4F Polymer 3S1P SONY 3 cell 3260mAh 2nd COMMON	BT.00304.010
Camera			
10001023 LITE-ON	1.3M HD_S	Liteon 1.3M HD_S LT_119_SP	AM.21400.110
PLM00012 Suyin	1.3M HD_S	Suyin Camera SY_S119_SP_slim	AM.21400.120
10001044 CHICONY	1.3M HD_S	Chicony Camera CH_S119_SP_Slim	AM.21400.119
Card Reader			
10000981 MISC	2-in-1 card reader	2-in-1 card reader	CR.21500.030

Vendor	Type	Description	Part No.
CPU			
10001067 INTEL	Ci32367MB	CPU Intel Core i3 2367M BGA 1.4G 17W	KC.23601.7MB
10001067 INTEL	Ci33217UB	CPU Intel Core i3 3217U BGA 1.8G 1600 17W Ivy Bridge	KC.32101.3UM
10001067 INTEL	Ci52467MB	CPU Intel Core i5 2467M BGA 1.6G 17W	KC.24601.7MB
10001067 INTEL	Ci53317UB	CPU Intel Core i5 3317U BGA 1.7G 1600 17W Ivy Bridge	KC.33101.5UM
10001067 INTEL	Ci72637MB	CPU Intel Core i7 2637M BGA 1.7G 17W	KC.26301.7MB
10001067 INTEL	Ci73517UB	CPU Intel Core i7 3517U BGA 1.9G 1600 17W Ivy Bridge	KC.35101.7UM
HDD			
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	KH.32001.021
60002036 SEAGATE	N320GB5.4KS_4K	HDD SEAGATE 2.5" 5400rpm 320GB 9WS14C-188 ST320LT012, Yarra 500G/P, 7mmzh SATA 8MB LF+HF F/W:0001SDM1	KH.32001.024
60002036 SEAGATE	N320GB5.4KS_4K	HDD SEAGATE 2.5" 5400rpm 320GB 320G/P, 7mmzh, 9YG142-190, Sapta 15 SATA 8MB LF+HF F/W:0010SDM1	KH.32001.026
60001994 WD	N320GB5.4KS_4K	HDD WD 2.5" 5400rpm 320GB WD3200LPVT-22G33T0, MN500S, 500G/P, 7mmzh HDD SATA 8MB LF+HF F/W:01.01A01	KH.32008.031
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
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

Vendor	Type	Description	Part No.
60002036 SEAGATE	N500GB5.4KS_4K	HDD SEAGATE 2.5" 5400rpm 500GB 9WS142-188 ST500LT012, Yarra 500G/P, 7mmzh SATA 8MB LF+HF F/W:0001SDM1	KH.50001.030
60001994 WD	N500GB5.4KS_4K	HDD WD 2.5" 5400rpm 500GB WD5000LPVT-22G33T0, MN500S, 500G/P, 7mmzh HDD SATA 8MB LF+HF F/W: 01.01A01	KH.50008.040
SSD			
60024207 KINGSTON - FAR EAST	F20GB	Flash Disk NONE SSD NAND 20GB 20GB FFS SATA II LF+HF Dummy PN	KF.02000.001
60003533 YOSUN	FO0020S2	Flash Disk PHISON SSD NAND 20GB 20GB cache SSD SATA II LF+HF Dummy PN	KN.0200Q.003
60001955 A-DATA	SSD25120	Flash Disk A-DATA SSD NAND 120GB AS511S7-120GM LF+HF	KF.1200C.001
60003544 LITE-ON OPT	FM0128S3	Flash Disk LITE-ON SSD NAND 128GB LMT-128M3M LF+HF firmware: VYC2	KF.1280L.001
60003544 LITE-ON OPT	SSD250128S3	Flash Disk LITE-ON SSD NAND 128GB LCT-128M3S LF+HF Firmware:VAC7	KF.1280L.002
60003544 LITE-ON OPT	SSD250128S3	Flash Disk LITE-ON SSD NAND 128GB LCT-128M3S(VAC8) LF+HF Firmware: VAC8	KN.1280L.003
60001955 A-DATA	SSD25240	Flash Disk A-DATA SSD NAND 240GB AS511S7-240GM LF+HF	KF.2400C.001
60003544 LITE-ON OPT	FM0256S3	Flash Disk LITE-ON SSD NAND 256GB LMT-256M3M LF+HF firmware:VZC2	KF.2560L.001
60002050 MICRON SG	SSD25256	Flash Disk MICRON SSD NAND 256GB MTFDDAK256MAM-1K1 LF+HF	KF.25604.001
60002050 MICRON SG	SSD25256	Flash Disk MICRON SSD NAND 256GB MTFDDAK256MAM-1K1 (F/W:0609) LF+HF Firmware: 0609	KN.25604.035
10001079 SYNNEX	FM0256S3	Flash Disk SANDISK SSD NAND 256GB SD5SF2-256G(X100) LF+HF	KN.2560D.007
Keyboard			
60004864 DARFON	AF1P_A10B	Keyboard DARFON AF1P_A10B AF1P Internal 10 Standard Black NONE Y2010 Acer Legend	NK.11017.002

Vendor	Type	Description	Part No.
10000981 MISC	AF1P_A10B	Keyboard SUNREX AF1P_A10B AF1P Internal 10 Standard Black NONE Sunrex Y2010 Acer Legend	NK.I101S.001
10000981 MISC	AF1P_A10B	Keyboard ACER AF1S_A10B AF1S Internal 10 Standard Black NONE Y2010 Acer Legend	KB.I100A.179
10000981 MISC	AF1S_A10S	Keyboard ACER AF1S_A10S AF1S Internal 10 Standard Black NONE Painting Y2010 Acer Legend	KB.I100A.180
LCD			
60003316 AUO	NLED13.3WXG AGSH	LED LCD AUO 13.3' WXGA Glare B133XTF01.2 LF 200nit 8ms 500:1 (Hinge-up) (Gold)	KL.13305.002
60003316 AUO	NLED13.3WXG AGSH	LED LCD AUO 13.3' WXGA Glare B133XTF01.2 1B LF 200nit 8ms 500:1 (Hinge up) (Gold) (HB1 LCD)	KL.13305.003
60003316 AUO	NLED13.3WXG AGSH	LED LCD AUO 13.3" WXGA Glare B133XTF01.0 LF 200nit 8ms 500:1 (Hinge-up module)	LK.13305.006
Memory			
60004668 ELPIDA	CM4GbIII13	Memory Chip ELPIDA DDRIII 1333 4GB EDJ4208BASE-DJ-F LF+HF 46nm	KM.4GB09.001
60004668 ELPIDA	CM4GbIII16	Memory Chip ELPIDA DDRIII 1600 4GB EDJ4208BBBG-GN-F LF+HF 512*8 B-die, 38nm	KM.4GB09.002
60002050 MICRON SG	CM4GbIIIL	Memory Chip MICRON DDRIII 1333 4GB MT41J512M8RA-15E:D LF+HF	KM.4GB04.001
60002041 QIMONDA	OB4GBIII (512x8*8)	Memory NONE DDRIII 1333 4GB Dummy LF+HF 512x8x8	KN.4GB00.005
60002215 SAMSUNG	CM4GbIII13	Memory Chip SAMSUNG DDRIII 1333 4GB K4B4G0846B-HYH9 LF+HF 35nm	KM.4GB0B.001
NB Chipset			
10001067 INTEL	HM77	NB Chipset Intel CS HM77 Chief River	KI.G7501.002
10001067 INTEL	UM67	NB Chipset Intel CS BD82UM67 B3	KI.G6501.006
VGA Chip			
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038

Vendor	Type	Description	Part No.
Wireless LAN			
10001023 LITE-ON	3rd WiFi 1x1 BGN+ BT4.0	Lite-On 3rd WiFi 1x1 BGN+ BT4.0 Atheros WB225(WLAN HB195 1x1 BGN +BT4.0 ATH3012)	NI.23600.098
10001018 HON HAI	3rd WiFi 1x1 BGN+ BT4.0	Wireless LAN Broadcom 4313iPA+20702 (WLAN 4313iPA 1x1 BGN+ BT4.0 20702)	NI.23600.099
10001018 HON HAI	3rd WiFi 1x1 BGN+ BT4.0	Foxconn 3rd WiFi 1x1 BGN+ BT4.0 Atheros WB225(WLAN HB195 1x1 BGN +BT4.0 ATH3012)	NI.23600.101
10001023 LITE-ON	3rd WiFi 2x2 AGN+ BT4.0	Lite-On 3rd WiFi 2x2 AGN+ BT4.0 Broadcom 43228+20702 (WiFi 43228 2x2 DB AGN+BT4.0 20702)	NC.23611.003
10001023 LITE-ON	3rd WiFi 2x2 AGN+ BT4.0	Liteon 3rd WiFi 2x2 AGN+ BT4.0 Atheros WB222	NI.23600.103
10001018 HON HAI	3rd WiFi 2x2 AGN+ BT4.0	Foxconn 3rd WiFi 2x2 AGN+ BT4.0 Broadcom 43228+20702 (WiFi 43228 2x2 DB AGN+BT4.0 20702)	NI.23600.100
10001018 HON HAI	3rd WiFi 2x2 AGN+ BT4.0	Foxconn 3rd WiFi 2x2 AGN+ BT4.0 Atheros WB222	NI.23600.102

CHAPTER 8

Online Support Information

Online Support Information

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

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

Acer's Website offers convenient and valuable support resources.

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

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

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

Also contained on this website are:

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

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

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