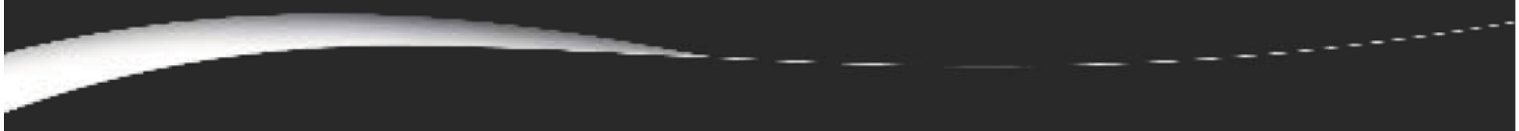
Acer M5 481/481G/481T/481TG

SERVICE GUIDE



Revision History

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

Date	Chapter	Updates

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

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Conventions

The following conventions are used in this manual:

⚠ WARNING:

Indicates a potential for personal injury.

⚠ CAUTION:

Indicates a potential loss of data or damage to equipment.

☞ IMPORTANT:

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

⇒ NOTE:

Follow local regulations for battery and circuit board disposal. Batteries and Circuit Boards >10 cm² have been highlighted in yellow.

The following typographical conventions are used in this document:

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

  Example:

  the *DRS5 User's Guide*

  /usr/local/bin/fd

  the */TPH15spool_M* program

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

  Example:

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

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

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

  Example:

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

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

  Example:

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

General Information

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

When ordering FRU parts:

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

Acer-authorized Service Providers:

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

CHAPTER 1
Hardware Specifications

CHAPTER 2
System Utilities

CHAPTER 3
Maintenance Procedures

CHAPTER 4
Troubleshooting

CHAPTER 1

Hardware Specifications

Hardware Specifications and Configurations

Features

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

Operating System

- Genuine Windows® 7 Professional 64-bit
- Genuine Windows® 7 Professional 32-bit
- Genuine Windows® 7 Home Premium 64-bit
- Genuine Windows® 7 Home Basic 64-bit

CPU and Chipset

Acer M5 481/481T

- Intel® Core™ i5-3317U processor (3 MB L3 cache, 1.70GHz with Turbo Boost up to 2.60/2.80 GHz, DDR3 1600 MHz, 17 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Intel® Core™ i5-2467M processor (3 MB L3 cache, 1.60 GHz with Turbo Boost up to 2.30 GHz, DDR3 1333 MHz, 17 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Intel® Core™ i3-2377M processor (3 MB L3 cache, 1.50 GHz, DDR3 1333 MHz, 17 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Mobile Intel® HM77 Express Chipset

Acer M5 481G/481TG

- Intel® Core™ i7-3517U processor (4 MB L3 cache, 1.90 with Turbo Boost up to 3.0 GHz, DDR3 1600 MHz, 17 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Intel® Core™ i5-3317U processor (3 MB L3 cache, 1.70 GHz with Turbo Boost up to 2.60 GHz, DDR3 1600 MHz, 17 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Intel® Core™ i5-2467M processor (3 MB L3 cache, 1.60 GHz with Turbo Boost up to 2.30 GHz, DDR3 1333 MHz, 17 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Intel® Core™ i3-2377M processor (3 MB L3 cache, 1.50 GHz, DDR3 1333 MHz, 17W), supporting Intel® 64 architecture, Intel® Smart Cache

Memory

Single-channel DDR3 SDRAM support:

- Up to 4 GB of DDR3 system memory, upgradable to 6 GB using on soDIMM module (64-bit OS)
- On-board memory 2G

Display

- 14" HD 1366 x 768 resolution, Acer CineCrystal™ LED-backlit TFT LCD

Audio

- High-definition audio support
- Two built-in Acer 3DSonic stereo speakers
- MS-Sound compatible
- Built-in microphone

Graphics

- Simultaneous multi-monitor display support
- 16.7 million colors
- MPEG-2/DVD decoding
- WMV9 (VC-1) and H.264 (AVC) decoding
- HDMI® (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

Acer M5 481/481T

- Intel® HD Graphics 3000 with up to 1760 MB Dynamic Video Memory (128 MB of dedicated system memory), supporting Microsoft® DirectX® 10.1
  - Dual independent display support
  - External resolution / refresh rates:
    - HDMI® port up to 1920 x 1080: 60 Hz
  - MPEG-2/DVD decoding
  - WMV9 (VC-1) and H.264 (AVC) decoding
- Intel® HD Graphics 4000 with up to 1760 MB Dynamic Video Memory (128 MB of dedicated system memory, up to 1632 MB of shared system memory), supporting Microsoft® DirectX® 10.1
  - Triple independent display support
  - External resolution / refresh rates:
    - VGA port up to 2048 x 1536: 75 Hz
    - HDMI® port up to 1920 x 1080: 60 Hz
  - MPEG-2 decoding

Acer M5 481G/481TG

- NVIDIA® GeForce® GT 640M LE with 1 GB of dedicated GDDR5 VRAM, supporting NVIDIA® CUDA™, PhysX™, PureVideo® HD technology, OpenEXR High Dynamic-Range (HDR) technology, Shader Model 5.0, Microsoft® DirectX® 11, OpenGL® 4.1, OpenCL™ 1.1
- Triple independent display support

- External resolution / refresh rates:
  - HDMI® port up to 1920 x 1080: 60 Hz
- MPEG-2/DVD decoding
- WMV9 (VC-1) and H.264 (AVC) decoding
- MPeG-4 Part 2 DivX® decoding

Storage

Hard disk drive

- 320/500/640/750 GB or larger

2-in-1 card reader, supporting:

- Secure Digital™ (SD) Card, eXtended-Capacity (SDXC) and UH104

Optical Media Drive

8X DVD-Super Multi double-layer drive:

- Read: 24X CD-ROM, 24X CD-R, 24X CD-RW, 8X DVD-ROM, 8X DVD-R, 8X DVD+R, 5X DVD-RAM
- Write: 24X CD-R, 16X CD-RW, 8X DVD-R, 8X DVD+R, 6X DVD-R DL, 6X DVD+R DL, 6X DVD-RW, 8X DVD+RW, 5X DVD-RAM

Webcam

Acer Video Conference, featuring:

- Integrated Acer Crystal Eye webcam with 1280 x 1024 resolution
- Acer Video Conference Manager software, featuring Video Quality Enhancement (VQE) technology, supporting 640 x 480 resolution online video calls

Wireless Networking

WLAN and Bluetooth Combo:

- WLAN+BT Combo
- Acer InviLink™ Nplify™ 802.11b/g/n Wi-Fi CERTIFIED™
- Supporting Acer SignalUp™ wireless technology

Dimension and Weight

Dimensions

- 376.8 (W) x 253 (D) x 33.8/23.1 (H) mm (14.69 x 9.86 x 1.31/0.92 inches) with 6-cell battery pack
- 376.8 (W) x 253 (D) x 33.8/23.1 (H) mm (14.69 x 9.86 x 1.31/0.92 inches) with 9-cell battery pack

Weight

- 1.95 kg (4.30 lbs.) for models with HDD
- 1.85 kg (4.08 lbs.) for models with SSD

Security

- Acer ProShield is a suite of essential security and manageability tools included in our business notebooks and desktops. It's a single-client console application that integrates key security and management features under a unified user interface. The following modules are available with Acer ProShield Security Manager and can be configured via software setup:
  - BIOS Password, Boot Order, and Import/Export BIOS Settings under Acer ProShield BIOS-Settings Module
  - File Encryption & Decryption and Personal Secure Drive under Acer ProShield Data Protection Module
  - File Shredder under Acer ProShield Data Removal Module
- BIOS user, supervisor, HDD passwords
- Kensington lock slot

Power Adapter

- ACPI 3.0 CPU power management standard: supports Standby and Hibernation power-saving modes
- 3-pin 65 W AC adapter
- 95 (W) x 50 (D) x 25.4 (H) mm (3.74 x 1.96 x 1 inches)
- 216 g (0.47 lbs.)13 with 180 cm DC cable

Battery

- 54Wh 4850 mAh 3-cell Li-ion battery pack
- Battery life: 8 hours
- ENERGY STAR®

Input and Control

Keyboard

- 105-/106-/109-key Acer FineTip keyboard with backlight, international language support.

Touchpad

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

Media keys

- Media control keys (printed on keyboard): play/pause, stop, previous, next, volume up, volume down

Input and Output

- 2-in-1 card reader (SD™, MMC)
- Two USB 3.0 ports (1 x power-off charging)
- HDMI® port with HDCP support
- Headphone/speaker jack

- Microphone-in jack
- Ethernet (RJ-45) port
- DC-in jack for AC adapter

Special Keys and Controls

- S3 Fast resume
- iRST (FFS)
- Fast boot
- Deep S3
- Diskeeper
- ADPS
- Smart timer
- Intel Anti-thief/IPT
- AGPS
- ENERGY STAR®

Environment

Temperature

- Operating: 5°C ~ 35°C
- Non-operating: -20°C ~ 65°C

Humidity (non-condensing)

- Operating: 20% to 80%
- Non-operating: 20% to 80%

Options and Accessories

- 2/4 GB DDR3 soDIMM module
- 3-pin 65 W AC adapter
- HDMI to VGA cable

Quality and Reliability Tests

- Temperature and humidity
- Hinge life
- Weight and pressure
- Acoustics
- Spillage
- Free drop
- Shock and vibration
- Electrostatic discharge immunity
- Keyboard-switch life
- MTBF (mean time between failures)

Warranty

- One-year International Travelers Warranty (ITW)

Software

Productivity

- Acer Backup Manager
- Acer ePower Management
- Acer eRecovery Management
- Adobe® Flash® Player 11.x
- Adobe® Reader® 10.x
- AUPEO! (US only)
- Bing™ Bar
- BookLive (Japan only)
- Evernote (except Japan)
- Internet Explorer 9
- Kobo™ (Australia, Canada, New Zealand, United Kingdom 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)
- Microsoft® Office Personal 2010 (Japan only, subject to customer request)
- newsXpresso
- NOOK for PC (US only)
- Norton™ Online Backup
- Windows Live™ Essentials1

Security

- Acer Theft Shield
- McAfee® Internet Security Suite Trial17
- MyWinLocker®1 (except China, Hong Kong)

Multimedia

- Acer clear.fi1
- NTI Media Maker™
- Cyberlink® MediaEspresso

Gaming

- Acer Games powered by WildTangent®1 (except China, Hong Kong, Japan, Korea)
- Fooz Kids (except Japan)

Communication and ISP

- Acer Crystal Eye
- Acer Video Conference Manager[1]
- 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® shortcut1 (Australia, Austria, Canada, France, Germany, Italy, India, Ireland, Mexico, Netherlands, Philippines, Poland, Russia, Singapore, Spain, Switzerland, United States, United Kingdom only)
- Eurosport Player Standard
- Eurosport Player Olympic Edition
- ExpressCache™1
- McAfee Anti-Theft shortcut (except China)
- Netflix shortcut1 (Canada, Latin America, United States only)
- Sleep Memory Optimizer1
- Smart Timer1
- Starsoftcomm ZDL shortcut (China only)

Notebook Tour

Top View

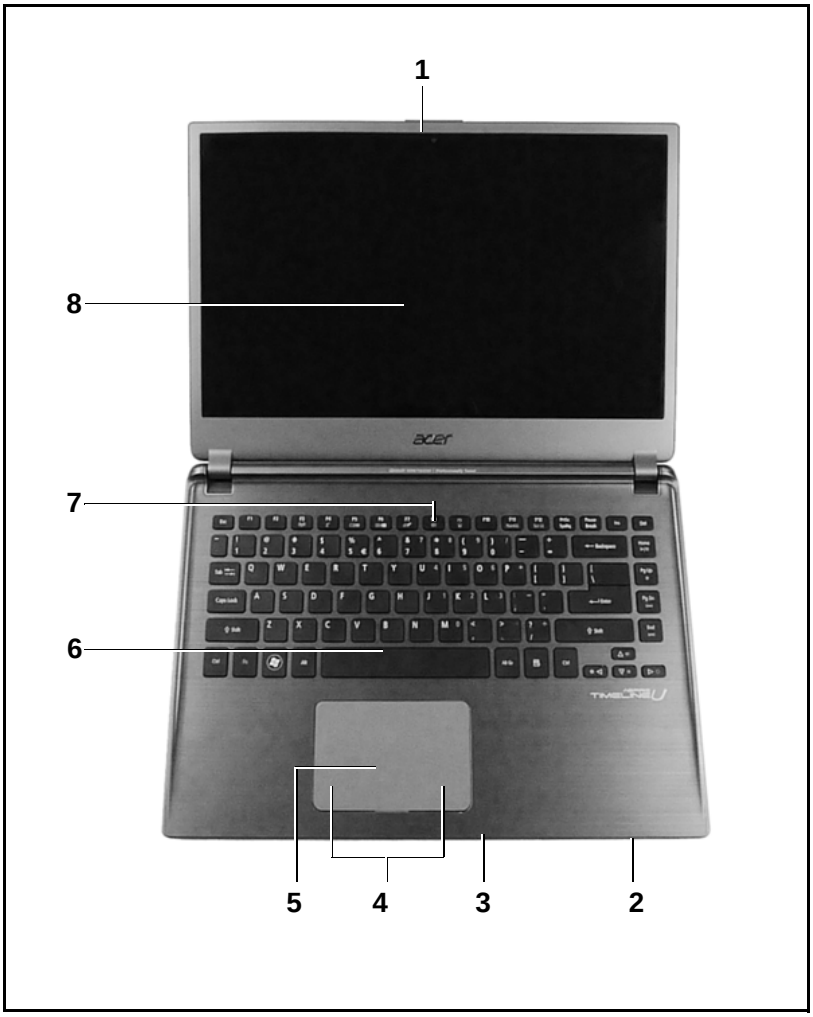


Figure 1-1. Top View

Table 1-1. Top View

No	Icon	Item	Description
1		Integrated webcam	Web camera for video communication (only for certain models).
2	⏻	Power button / indicator	Turns the computer on and off. Indicates the computer's power status.
3		Microphone	Internal microphone for sound recording.
4		Click buttons (left and right)	The left and right buttons function like the left and right mouse buttons.

Table 1-1. Top View (Continued)

No	Icon	Item	Description
5		Touchpad	Touch-sensitive pointing device which functions like a computer mouse.
6		Keyboard	For entering data into your computer.
7		Speaker toggle	Turns the speakers on and off.
8		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output (Configuration may vary by model).

Closed Rear View

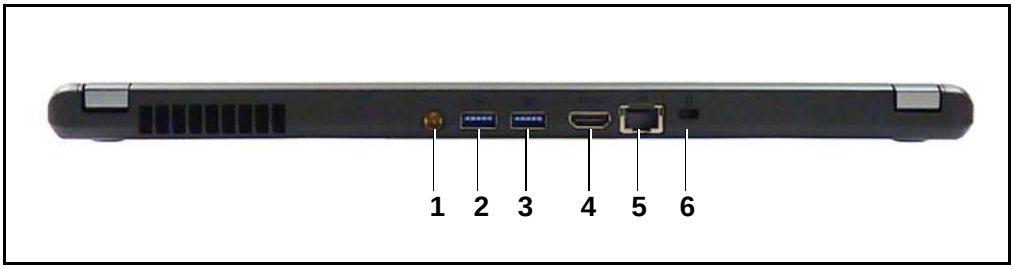
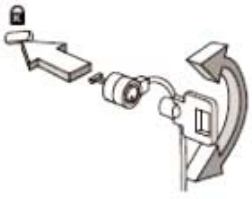


Figure 1-2. Front View

Table 1-2. Front View

No	Icon	Item	Description
1		DC-in jack	Connects to an AC adapter.
2		USB 3.0 port	Connects to USB 3.0 devices (e.g., USB mouse, USB camera).
3		USB 3.0 port + USB Charging	Connects to USB 3.0 devices (e.g., USB mouse, USB camera).
4	HDMI	HDMI port	Supports high-definition digital video connections.
5		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000-based network.
6	K	Kensington lock slot 	Connects to a Kensington-compatible computer security lock. **NOTE:** Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.

Closed Front View

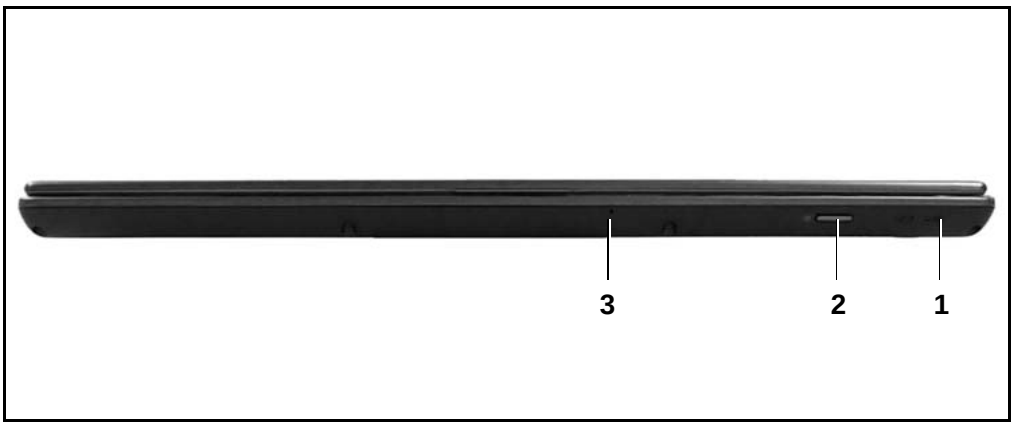


Figure 1-3. Front View

Table 1-3. Front View

No	Icon	Item	Description
1		Battery indicator	Indicates the computer's battery status. • **Charging**: The light shows amber when the battery is charging. • **Fully charged**: The light shows blue when in AC mode.
		Power indicator	Indicates the computer's power status.
2		Power button / indicator	Turns the computer on and off. Indicates the computer's power status.
3		Microphone	Internal microphone for sound recording.
NOTE: The front panel indicators are visible even when the computer cover is closed.			

Left View

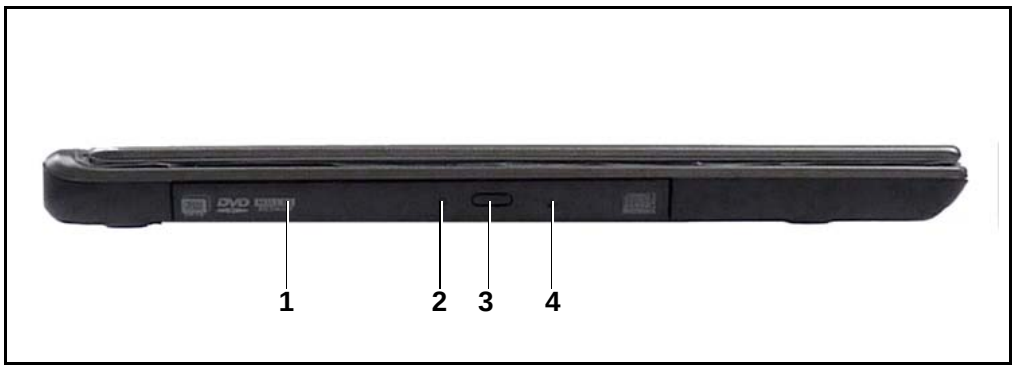


Figure 1-4. Left View

Table 1-4. Left View

No	Icon	Item	Description
1		Optical drive	Internal optical drive; accepts CDs or DVDs.
2		Optical drive access indicator	Lights up when the optical drive is active.
3		Optical drive eject button	Ejects the optical disc from the drive.
4		Emergency eject hole	Ejects the optical drive tray when the computer is turned off. **NOTE:** Insert a paper clip to the emergency eject hole to eject the optical drive tray when the computer is off.

Right View

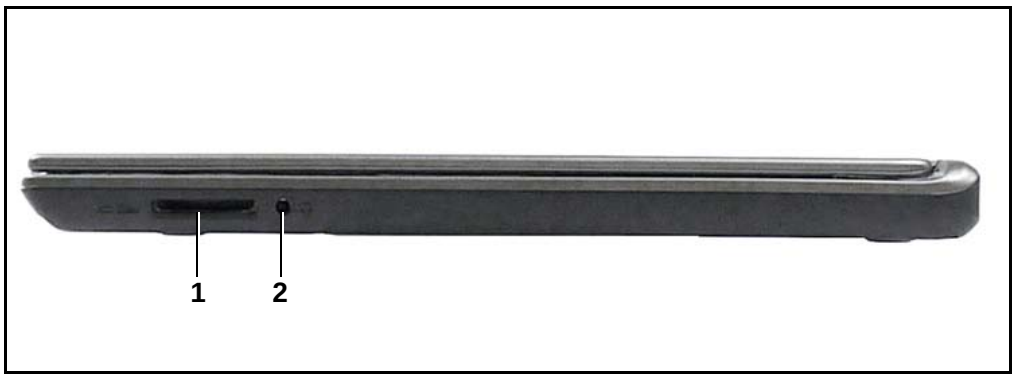


Figure 1-5. Right View

Table 1-5. Right View

No	Icon	Item	Description
1	MULTIMEDIACARD SD xD PRO	2-in-1 card reader	Accepts Secure Digital (SD) **NOTE:** Push to remove/install the card. Only one card can operate at any given time.
2		Combo (Headphones/speaker /MIC) jack	Connects to audio devices (e.g., speakers, headphones, mic). **NOTE:** Supports compatible 3.5 mm headsets with built-in microphone (e.g. Acer smart handheld headsets).

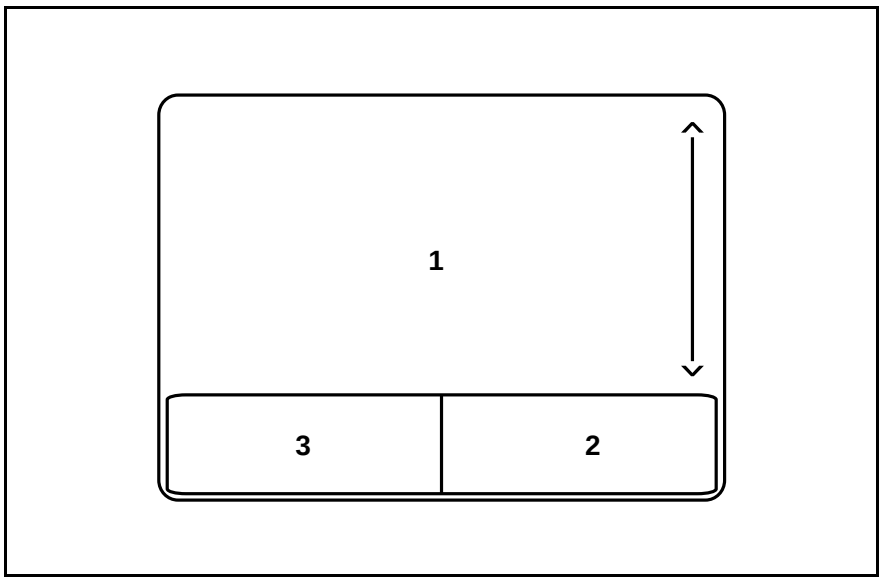


Figure 1-6. Touchpad

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

Table 1-6. Touchpad

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

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

Figure 1-7. Keyboard Lock Keys

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

Table 1-7. Keyboard Lock Keys

Lock key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num Lock <Fn> + <F11>	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when doing a lot of numeric data entry. A better solution would be to connect an external keypad.
Scroll Lock <Fn> + <F12>	When Scroll Lock is on, the screen moves one line up or down when the up or down arrow keys are pressed respectively. Scroll Lock does not work with some applications.

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

Table 1-8. Embedded Numeric Keypad

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

Windows Keys

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

- Windows Logo key
- Application key

Table 1-9. Windows Keys

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

Hotkeys

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

Figure 1-8. Keyboard Hotkeys

To activate hotkeys, press and hold the ***Fn*** key before pressing the other key in the hotkey combination.

Table 1-10. Keyboard Hotkeys

Hotkey	Icon	Function	Description
<Fn> + <F3>		Communication switch	Enables/disables the computer's communication devices. (Communication devices may vary by configuration.)
<Fn> + <F4>		Sleep	Puts the computer in Sleep mode.
<Fn> + <F5>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<Fn> + <F6>		Screen blank	Turns the display screen backlight off to save power. Press any key to return.
<Fn> + <F7>		Touchpad toggle	Turns the touchpad on and off.
<Fn> + <F8>		Speaker toggle	Turns the speakers on and off.
<Fn> + <F9>		Keyboard backlight	Turns the keyboard backlight on and off.

Table 1-10. Keyboard Hotkeys (Continued)

Hotkey	Icon	Function	Description
<Fn> + <▷>		Brightness up	Increases the screen brightness.
<Fn> + <◁ >		Brightness down	Decreases the screen brightness.
<Fn> + <△>		Volume up	Increases audio volume.
<Fn> + <▽>		Volume down	Decreases audio volume.
<Fn> + <Home>		Play/Pause	Plays or pauses media files
<Fn> + <Pg Up>		Stop	Stops media file
<Fn> + <Pg Dn>		Previous	Plays the previous media file in the play sequence
<Fn> + <End>		Next	Plays the next media file in the play sequence

System Block Diagram

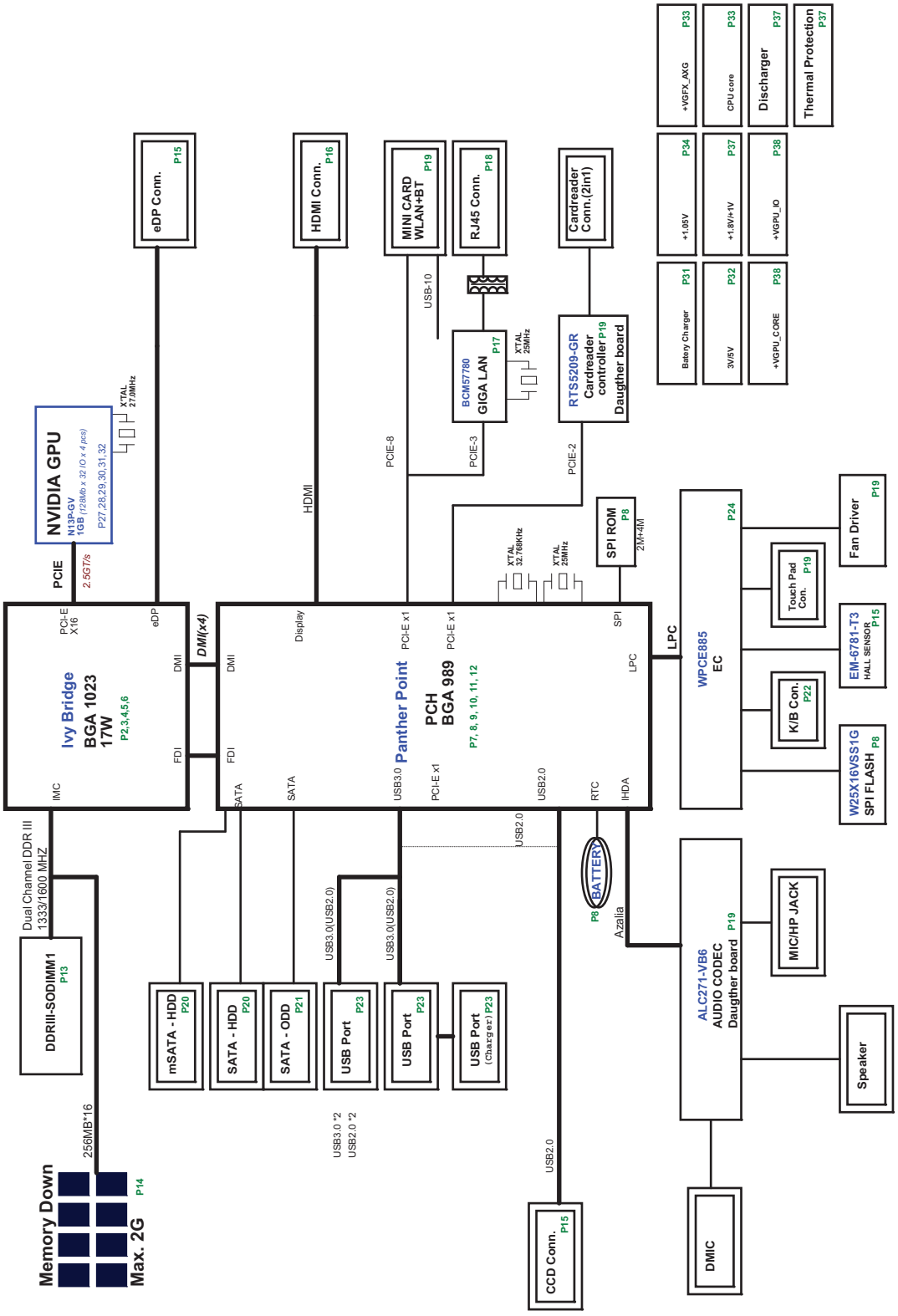


Figure 1-9. System Block Diagram

Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	24.5 cm	9.65 in
Width	34.0 cm	13.39 in
Height (front to rear)	2.0 cm	0.81 in
Weight (equipped with optical drive, hard drive, and battery)	1.95 kg	4.30 lbs
Input power		
Operating voltage	19V	
Operating current	65W	
Temperature		
Operating (not writing to optical disc)	0°C ~ 32°C	32°F ~ 95°F
Operating (writing to optical disc)	5°C ~ 35°C	41°F ~ 95°F
Nonoperating	-20°C ~65°C	-4°F ~ 140°F
Relative humidity		
Operating	20% to 80%	
Nonoperating	20% to 80%	
Maximum altitude (unpressurized)		
Operating	-15 to 3,048m	-50 to 10,000ft
Nonoperating	-15 to 12,192m	-50 to 40,000ft
Shock		
Operating	105G, 2 ms, half-sine	
Nonoperating	220 G, 2 ms, half-sine	
Random vibration		
Operating	0.6G/5~500HZ/30min per axis	
Nonoperating	1.5G/5~500HZ/30 min per axis	

NOTE:
Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.

System Board Major Chips

Item	Specification
Core logic	Intel Sandy Bridge Dual-Core PGA SV (i3/5/i7) processor (Mobile Intel® HM77 Express Chipset)
VGA	NVidia N13P-LP
LAN	BCM57780
USB 3.0	2 Port USB
Super I/O controller	Nuvoton NPCE791C
Bluetooth	See Wireless
Wireless	Broadcom 43228+20702
PCMCIA	N/A
Audio codec	Realtek ALC271VBG
Card reader	Realtek RTS5209 (Same As Previous)

Processor

Item	Specification
CPU type	Intel Sandy Bridge (Dual Core) processor
CPU package	rPGA988B
Core Logic	Four or two execution cores A 32-KB instruction and 32-KB data first-level cache (L1) for each core A 256-KB shared instruction/data second-level cache (L2) for each core Up to 8-MB shared instruction/data third-level cache (L3), shared among all cores
Chipset	HM77

Processor Specifications

Item	CPU Speed (GHz)	Cores/ Threads	Bus Speed (FSB/ DMI/QBI)	Mfg Tech (nm)	Cache Size	Package	Voltage
i3-2377M	1.50	2/4	5GT (DMI)	32nm	3MB	BGA1023	17W
i5-2467M	1.60	2/4	5GT (DMI)	32nm	3MB	BGA1023	17W
i5-3317U	1.70	2/4	5GT (DMI)	32nm	3MB	BGA1023	17W
I7-3517U	1.90	2/4	5GT (DMI)	32nm	4MB	BGA1023	17W

CPU Fan True Value Table (Tj=85)

CPU Temperature	Fan Speed (RPM)	SPL Spec (dBA)
Fan On = 35°C; Fan Off = 30°C	2600	28
Fan On = 43°C; Fan Off = 39°C	3150	31
Fan On = 53°C; Fan Off = 48°C	3450	34
Fan On = 63°C; Fan Off =58°C	3800	37
Fan On = 75°C; Fan Off = 69°C	4050	40
Fan On = 80°C; Fan Off = 77°C	5V	N/A
• Throttling 50%: On= 82°C; OFF= 77°C • OS shut down at 85°C; H/W shut down at 85°C		

CPU Fan True Value Table (Tj=100)

CPU Temp	Fan Speed (RPM)	SPL Spec (dBA)
Fan On = 35°C; Fan Off = 30°C	2600	28
Fan On = 43°C; Fan Off = 39°C	3150	31
Fan On = 53°C; Fan Off = 48°C	3450	34
Fan On = 70°C; Fan Off = 60°C	3800	37
Fan On = 88°C; Fan Off = 81°C	4050	40
Fan On = 95°C; Fan Off = 93°C	5V	N/A
• Throttling 50%: On= 97°C; OFF= 93°C • OS shut down at 100°C; H/W shut down at 100°C		

GPU Fan True Value Table (Tj=105)

CPU Temp	Fan Speed (RPM)	SPL Spec (dBA)
Fan On = 35°C; Fan Off = 30°C	2600	28
Fan On = 43°C; Fan Off = 39°C	3150	31
Fan On = 53°C; Fan Off = 48°C	3450	34
Fan On = 70°C; Fan Off = 60°C	3800	37
Fan On = 88°C; Fan Off = 81°C	4050	40
Fan On = 95°C; Fan Off = 93°C	5V	N/A
• Throttling 50%: On= 97°C; OFF= 93°C • OS shut down at 100°C; H/W shut down at 100°C		

System Memory

Item	Specification
Memory controller	Built in at CPU
Memory size	DDRIII 1GB, 2GB, 4GB
DIMM socket number	1
Supports memory size per socket	4GB
Supports maximum memory size	Total 6GB
Supports DIMM type	SODIMM
Supports DIMM Speed	DDRIII
Support DIMM voltage	1.5V
Supports DIMM package	20 4-pins DDR3-SODIMM

Memory Combinations

On-board (MB)	Slot 1(MB)	Total Memory (MB)
2048	0	2048
2048	1024	3072
2048	2048	4096
2048	4096	6144

Video Interface

Item	Specification
Chipset	NVidia N13P-LP
Package	973-pins BGA
Interface	PCIE X 16
Compatibility	Fully compliant with PCI Express Base Specification Rev. 2.1 Support CRT/LVDS/HDMI/DP interface (concurrent) Dual-channel LVDS interface support: single channel 24 bpp dual link HDCP compliance embed-in Direct X 11 and Shader Model 5.0 OpenGL 3.2 NVIDA® Ageia PhysXTM technology NVIDA® CUDA technology LVDS / Engine and Memory / DP Spread Spectrum Support The following video formats are supported MPEG-2 MPEG-4 Part 2 Advanced Simple Profile H.264 SVC codec support VC1 DivX version 3.11 and later MVC
Sampling rate	60Hz

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	1.02
BIOS ROM type	EEPRom
BIOS ROM size	4M
Features	uEFI

LAN Interface

Item	Specification
LAN Chipset	BCM57780
LAN connector type	RJ-45
LAN connector location	Left side
Features	Supports 10/100/1000

Keyboard

Item	Specification
Type	New Acer BW7T_A10B FinteTip keyboard
Total number of keypads	US, UK 129 keys, JP 132 keys
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	Support Application keys for Windows Vista / Windows 7 Multi-Langue support

Hard Disk Drive (AVL components)

Item	Specification			
Vendor & Model Name	HGST 2.5" 5400rpm 320GB HTS543232A7A384	SEAGATE 2.5" 5400rpm 320GB 9WS14C-188 ST320LT012	HGST 2.5" 5400rpm 320GB HTS545032A7E380	WD 2.5" 5400rpm 320GB WD3200LPVT-22G33T0
Capacity (GB)	250	320	500	640
Bytes per sector	512	512	512	512
Data heads	2	2	4, 3	4, 4
Drive Format				
Disks	1	1	2	2
Spindle speed (RPM)	5400			
Performance Specifications				
Buffer size	8MB			
Interface	SATA			
Fast data transfer rate (Mbits / sec, max)	3.0, 3.0	3.0, 3.0	3.0, 3.0	3.5, 3.0
Media data transfer rate (Mbytes/sec max)	875, 300	875, 300	875, 300	464 -1148 Mbytes/s, 97
DC Power Requirements				
Voltage tolerance	5V ± 5%			

Solid State Disk (SSD)

Item	Specification			
Vendor & Model Name	PHISON SSD NAND	LiteOn LMT-64	SanDisk SSD U100	SSD X100
Capacity (GB)	20GB			128, 256, 512GB
Performance Specifications				
Form Factor				2.5” 7.0mm
Buffer size	64MB			
Interface	SATA (1.5/3 Gbps), mDDR			
DC Power Requirements				
Voltage tolerance	3.3V			5V

Super-Multi Drive

Item	Specification	
Vendor & Model name	ODD HLDS Super-Multi DRIVE 9.0mm Tray 8X GU61N LF+HF W/O bezel SATA	
Performance Specification	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: Max 3.6 (24x)	Sustained: Max 10.08Mbytes/sec
Buffer Memory	1.5MB	
Interface	SATA	
Applicable disc format	DVD: DVD-ROM (Book 1.02), DVD-Dual DVD-Video (Book 1.1) DVD-R (Book 1.0, 3.9G) DVD-R (Book 2.0, 4.7G) - General & Authoring DVD+R (Version 1.0) DVD+RW DVD-RW (Non CPRM & CPRM) DVD±R Dual DVD-RAM CD: CD-DA (Red Book) - Standard Audio CD & CD-TEXT CD-ROM (Yellow Book Mode1 & 2) - Standard Data CD-ROM XA (Mode2 Form1 & 2) - Photo CD, Multi-Session CD-I (Green Book, Mode2 Form1 & 2, Ready, Bridge) CD-Extra/ CD-Plus (Blue Book) - Audio & Text/Video Video-CD (White Book) - MPEG1 CD-R (Orange Book Part ‡U) CD-RW & HSRW (Orange Book Part‡V Volume1 & Volume2) Super Audio CD (SACD) Hybrid type US & US+ RW (US 32X CD-RW Disc recording disable)	
Loading mechanism	Drawer (Solenoid Open)	
Power Requirement		
Input Voltage	DC +5V ± 5%	

Item	Specification	
Super-Multi Drive (continue)		
Vendor & Model name	TSST TS-L633F	
Performance Specification	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: CD-ROM inside: 1.5 CD-ROM outside: 3.6	Sustained: DVD-R inside: 2.7 DVD-R outside: 10.8 DVD+R inside: 3.24 DVD+R outside: 10.8
Buffer Memory	1.5MB	
Interface	SATA	
Applicable disc format	KODAK PhotoCD Single and Multi-session CD Extra (CDPLUS) Video CD CD text data (Read/Write) CD-R discs (Read/Write) CD-RW discs (Read/Write) DVD-ROM DVD-R Ver.2.0 &2.1 for General (Read/Write) DVD-R DL Ver.3.0 (Read/Write) DVD-RW Ver.1.0&1.1&1.2 (Read/Write) DVD+R Ver.1.3 (Read/Write) DVD+R DL Ver1.0&1.1 (Read/Write) DVD+RW Ver.1.3 (Read/Write) DVD+RW high speed Ver.1.0 (Read/Write) DVD-RAM Ver.2.0&2.1&2.2 (*1)	
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release	
Power Requirement		
Input Voltage	5V +/- 5% (Operating)	

Blu-Ray Drive (N/A)

Items	Specifications		
Vendor & Model name			
Performance Specification			
Transfer rate (KB/sec)			
Buffer Memory			
Interface			
Applicable disc format			
Loading mechanism			
Power Requirement			
Input Voltage			

LED 14”

Item	Specification
Vendor/Model name	AUO B156XW02 V3
Screen Diagonal (mm)	394.91
Active Area (mm)	344.23 x 193.54
Display resolution (pixels)	1366(H) x 768(V)
Pixel Pitch (mm)	0.2588 x0.2588
Typical White Luminance (cd/m^2) also called Brightness	200 typ. (5 points average) 170 min. (5 points average)
Contrast Ratio	400 typ
Response Time (Optical Rise Time/Fall Time) msec	8 typ / 16 Max
Typical Power Consumption (watt)	5.6 max. (Include Logic and Blu power)
Weight (without inverter)	450 max.
Physical Size (mm)	359.3 x 209.5 (typical) 360 x 210 x 5.5 (max)
Electrical Interface	1 channel LVDS
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	45 / 45 / 15 / 35 (typical) 40 / 40 / 10 / 30 (min)

Item	Specification
Vendor/Model name	AUO B156XW02 V6
Screen Diagonal (mm)	394.91
Active Area (mm)	344.23 x 193.54
Display resolution (pixels)	1366 x 3(RGB) x 768
Pixel Pitch (mm)	0.252 x 0.252
Typical White Luminance (cd/m^2) also called Brightness	200 typ. (5 points average) 170 min. (5 points average)
Contrast Ratio	500 typ
Response Time (Optical Rise Time/Fall Time) msec	16 Max
Typical Power Consumption (watt)	4.5 max. (Include Logic and Blu power)
Weight (without inverter)	450 max.
Physical Size (mm)	359.3 x 209.5 (typical) 360 x 210 x 5.5 (max)
Electrical Interface	1 channel LVDS
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	45 / 45 / 15 / 35 (typical) 40 / 40 / 10 / 30 (min)

LCD Inverter (N/A)

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

Display Supported Resolution (LCD)

Resolution	8 bits	16 bits	32 bits	36 bits	48 bits
800x600p/60Hz 16:9	Y	Y	Y	Y	Y
1024x768p/60Hz 16:9	Y	Y	Y	Y	Y
1280x600/60Hz 16:9	Y	Y	Y	Y	Y
1280x720/60Hz 16:9	Y	Y	Y	Y	Y
1280x768/60Hz 16:9	Y	Y	Y	Y	Y
1360x768/60Hz 16:9	Y	Y	Y	Y	Y
1366x768/60Hz 16:9	Y	Y	Y	Y	Y

Graphics Controller (GPU not Interface)

Item	Specification
VGA Chip	NvidiaNGeForce GT 640M (Optimus)
Supports	Advanced Scheduler 2.0, 1.0, XPDM support DX10.1, DX10, DX9 support OGL 3.0 support Support CRT/LVDS/HDMI/DP interface (concurrent) Dual-channel LVDS interface support: single channel 24 bpp dual link Direct X 11 and Shader Model 5.0 OpenGL 3.2 support

Display Supported Resolution (GPU)

Resolution	8 bits	16 bits	32 bits	48 bits
800x600p/60Hz 16:9	Y	Y	Y	N/A
1024x768p/60Hz 16:9	Y	Y	Y	Y
1280x600/60Hz 16:9	Y	Y	Y	Y
1280x720/60Hz 16:9	Y	Y	Y	Y
1280x768/60Hz 16:9	Y	Y	Y	Y
1360x768/60Hz 16:9	Y	Y	Y	Y
1366x768/60Hz 16:9	Y	Y	Y	Y

Bluetooth Interface (Optional)

Item	Specifications	
Chipset		
Data throughput		
Protocol		
Interface		
Connector type		
Supported protocol		

Bluetooth Module (Optional)

Item	Specifications

Camera

Item	Specification
Vendor and Model	Liteon 1.3M 10P2SF205, Suyin 1.3M HD HF1316
Type	1.3M

3G Card (N/A)

Item	Specification

Audio Codec and Amplifier

Item	Specification
Audio Controller	Conexant CX20584-21Z

Item	Specification
Features	• 24-bit, 2 pairs of independent DACs and 3 pairs of independent ADCs • ProCoustic headphone driver delivers 50 mW into 32 _ load with no pop, eliminating the need for an external amplifier and DC-blocking capacitors • Integrated 5 V to 3.3 V low-dropout voltage regulator for improved audio performance, eliminating need for external regulator or power transistor. • Integrated 3.3 V to 1.8 V low-dropout voltage regulator, used to power digital blocks • Integrated 2 WRMS (per channel) class-D stereo speaker amplifier with Spread • Spectrum and 10-kV ESD withstand capability • Digital Microphone interface with internal MIC boost supporting 2 digital microphone elements ■ Works with all digital microphones. • Internal microphone boost ■ Digital: 0, 12, 24, 36, 48 dB ■ Analog: 0, 10, 20, 30, 40 dB • Microphone Security Control ■ Please contact Conexant Sales/FAE for additional confidential document to disable the bit in microphone from the BIOS. • Exceeds Windows Vista and Windows 7 Desktop and Notebook Premium Logo Requirements, WLP4.0 • D-Flex power management exceeds Intel ECR 15B requirements, and features • Wake-On-PCBeep functionality • Hardware Headphone limiter bit (supports GS Mark EN50332-2) • Compliant with Intel High Definition Audio Specification Rev. 1.0 • Supports both 1.5 V and 3.3 V signaling with the core logic chipset • Retaskable ports ■ Configure between Headphone and Line-out or between Mic and Line-in • Independent sampling rate for DAC and ADC; supports audio formats ranging • from 16-bit, 44.1 kHz to 24-bit, 192 kHz for DACs, and from 16-bit, 44.1 kHz to 24-bit,96 kHz for ADCs.

Item	Specification
Features	• Independent sampling rate for DAC and ADC; supports audio formats ranging • from 16-bit, 44.1 kHz to 24-bit, 192 kHz for DACs, and from 16-bit, 44.1 kHz to 24-bit,96 kHz for ADCs. • Pop Shield: pops and clicks reduction circuitry, including class-D speaker outputs • Jack sense detects up to 8 jacks using only two sense pins • Dual Sony Philips Digital Interface (S/PDIF) outputs • Digital Mixer • Simultaneous DAC and SPDIF engines • +3.3 V analog and I/O operation; uses Vaux for power management modes • SmartAudio GUI (optional) - advanced audio control • Digital Parametric SmartEQ with Dynamic Range Compression (DRC) ■ Enhances the sound quality on low cost speakers ■ Night Mode • 3D Expander • Third-party Logo software support ■ Andrea ■ Creative Labs ■ Dolby® ■ Fortemedia ■ MaxxAudio ■ Sonic FocusTM ■ SRS® • Supports 32-bit/64-bit Windows OS and Linux • 48-QFN packages
Amplifier	N/A

Audio Interface

Item	Specification
Audio Controller	Realtek ALC271-VB
Audio onboard or optional	On board
Mono or Stereo	Stereo
Compatibility	HD audio Interface
Sampling rate	Sample rate up to 192Khz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker/quantity	Yes/(2W speakers x2)

Wireless Module 802.11b/g/n

Item	Specification
Chipset	Atheros WB222
Data throughput	11-54 Mbps, up to 300 Mbps for Draft-N
Protocol	b, g, n
Interface	PCI-E

Battery

Item	Specification		
Vendor & Model name	SANYO AP12A3i		
Battery Type	Li-Ion		
Pack capacity	4850mAh		
Number of battery cell	3		
Package configuration	2S1P		

VRAM

Item	Specification	
Chipset	Elpida	Hynix
Memory size	4Gb	4Gb
Interface	Standard define	Standard define

USB Port

Item	Specification
USB compliance level	USB 3.0
EHCI	2
Number of USB port(s)	2
Location	2 on rear side
Output Current	0.5A, 0.75A(ACER SPEC)

HDMI Port

Item	Specification
Compliance level	HDMI1.4a
Data throughput	Up to 16.7 million colors
Number of HDMI port(s)	1
Location	1 left side

AC Adapter

Item	Specification
Input rating	100-240V~1.7A(1,7A) 50-60Hz
Maximum input AC current	1.7A(1,7A) 50-60Hz Maximum input AC current 264 Vrms
Inrush current	264 Vac (Cold/Hot start) No damage; meet fuse and bridge diode I2t de-rating.
Efficiency	Meets EPA 2.0 level V requirement. The adapter efficiency shall be more than 87%, that is the average value of 25%, 50%, 75% and 100% load with both 115Vac/60Hz and 230Vac/50Hz input voltage condition

System Power Management

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

Card Reader

Item	Specification
Chipset	Realtek RTS5209
Package	48-PIN LQFP
Maximum supported size	32G
Features	• Compliant with PCI Express Base Specification Revision 1.1 • Support 1-Lane 2.5Gbps PCI Express Bus • Support 93C46 EEPROM • Compliant with SD Part 1 Physical Layer Specification Version 3.01 • Compliant with SDIO Specification Version 2.00 • Compliant with MultiMediaCard System Specification version 4.4 • Compliant with Memory Stick XC Duo Format Specification Version 1.00-00 • Compliant with Memory Stick XC-HG Duo Format Specification Version 1.00-00 • Compliant with Memory Stick XC Micro Format Specification Version 1.00-00 • Compliant with Memory Stick XC-HG Micro Format Specification Version 1.00-00 • Compliant with Memory Stick PRO-HG Duo Format Specification Version 1.03-00 • Compliant with Memory Stick HG Micro Format Specification Version 1.00-00 • Compliant with Memory Stick PRO Standard Format Specification Version 1.05-00 • Compliant with Memory Stick Standard Format Specification Version 1.43 • Compliant with xD-Picture Card Specifications Version 1.2 • Support the following memory card interfaces: ■ Secure Digital TM (SD), SDXC, SDHC, MultiMediaCard TM (MMC), Mini-SD, Micro-SD (T-flash),

System LED Indicator

Item	Specification
Lock	• Caps Lock on = Blue • Caps Lock on = Blue
System state	• Blue color on: System on • Blue color and amber color off: System off • Amber color on: S3
HDD access state	HDD access active = Blue
Wireless state	Wifi on = Amber
Power button backlight	• Blue color solid on: System on • Blue color off: System off
Battery state	• Full charging = Blue • Battery charging = Amber

System DMA Specification

Legacy Mode	Power Management
DMA4	Direct memory access controller

System Interrupt Specification

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Standard PS/2 Keyboard
IRQ8	System CMOS/real time clock
IRQ12	ELAN Ps/2 Port Smart-Pad
IRQ13	Numberic data processor
IRQ81 ~ IRQ190	Microsoft ACPI-Compliant
PCI10	Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
PCI16	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
PCI16	Intel(R) 7 Series/C216 chipset family PCI Express Root Port 2 - 1E12
PCI16	Intel(R) 7 Mangement Engine Interface
PCI16	NVIDIA GeForce GT 640M LE
PCI16	Xeon(R) processor E3-1200 v2/3rd Gen Core processor PCI Express Root Port -0151
PCI17	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10

Hardware IRQ	System Function
PCI18	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 3- 1E10
PCI19	Intel(R) 7 Series chipest family SATA AHCI Controller
PCI19	Qualcomm Atheros AR5BWB222 Wireless Network Adapter
PCI22	High Definition Audio Controller
PCI23	Intel(R) 7 Series/c216 chipset family sub enhanced Host Controller -1E26
PCI-5	Broadcom Netlink (TM) Gigabit Ethernet
PCI-4	Intel(R) 7 USB 3.0 eXtensible Host Controller
PCI-3	Intel(R) 7 HD Gaphics 4000
PCI-2	Intel(R) 7 series/c216 chipset family pci Express Root Port 8 - 1E1E

System IO Address Map

I/O address (hex)	System Function (shipping configuration)
000 - 01F	Direct memory access controller
020 - 021	Programmable interrupt controller
024 - 025	Programmable interrupt controller
028 - 029	Programmable interrupt controller
02C - 02D	Programmable interrupt controller
02E - 02F	Motherboard resources
030 - 031	Programmable interrupt controller
034 - 035	Programmable interrupt controller
038 - 039	Programmable interrupt controller
03C - 03D	Programmable interrupt controller
040 - 043	System timer
04E - 04F	Motherboard resources
050 - 053	System timer
60	Standard PS/2 Keyboard
61	Motherboard resources
62	Microsoft ACPI-Compliant Embedded Controller
63	Motherboard resources
64	Standard PS/2 Keyboard
65	Motherboard resources
66	Microsoft ACPI-Compliant Embedded Controller
67	Motherboard resources
07	Motherboard resources
070 - 077	System CMOS/real time clock
80	Motherboard resources
081 - 091	Direct memory access controller
92	Motherboard resources
093 - 09F	Direct memory access controller
0A0 - 0A1	Programmable interrupt controller
0A4 - 0A5	Programmable interrupt controller
0A8 - 0A9	Programmable interrupt controller
0AC - 0AD	Programmable interrupt controller
0B0 - 0B1	Programmable interrupt controller

I/O address (hex)	System Function (shipping configuration)
0B2 - 0B3	Motherboard resources
0B4 - 0B5	Programmable interrupt controller
0B8 - 0B9	Programmable interrupt controller
0BC - 0BD	Programmable interrupt controller
0C0 - 0DF	Direct memory access controller
0F0	Numeric data processor
3B0 - 3BB	Inter(R)HD Graphics Family
3C0 - 3DF	Inter(R)HD Graphics Family
400-453	Motherboard resources
454 - 457	Motherboard resources
458 - 47F	Motherboard resources
4D0 - 4D1	Programmable interrupt controller
500 - 57F	Motherboard resources
680 - 69F	Motherboard resources
D00-FFFF	PCI BUS
1100-110F	Motherboard resources
164E-164F	Motherboard resources
2000-2FFF	Inte® 6 Series/C200 Series Chipset Family PCI Express Root Port 6-1C1A
3000-3FFF	Intel® 6 Series/C200 Series Chipset Family PCI Express Root Port 5-1C18
3F80-3FFF	NVIDIA GeForce GT 640M LE
4000-4FFF	Intel® 6 Series/C200 Series Chipset Family PCI Express Root Port 2-1C12
5000-5FFF	2nd generation Intel® Core™ processor family PCI Express Controller - 0101
6000-603F	Intel® HD Graphics Family
6060-607F	Intel® 6 Series/C200 Series Chipset Family SMBus Controller - 1C22
6080-6087	Intel® Mobile Express Chipset SATA AHCI Controller
6088-608F	Intel® Mobile Express Chipset SATA AHCI Controller
6098-609B	Intel® Mobile Express Chipset SATA AHCI Controller
609C-609F	Intel® Mobile Express Chipset SATA AHCI Controller
FFFF	Motherboard resources

System I/O Address Specifications

(Not available for this model)

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

CHAPTER 2

System Utilities

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 *Troubleshooting* when a problem arises.

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

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

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

Navigating the BIOS Utility

Six menu options are:

- Information
- Main
- Security
- Boot
- Exit

To navigate through the following:

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

NOTE:

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

NOTE:

System information is subject to specific models.

BIOS

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

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

Information

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

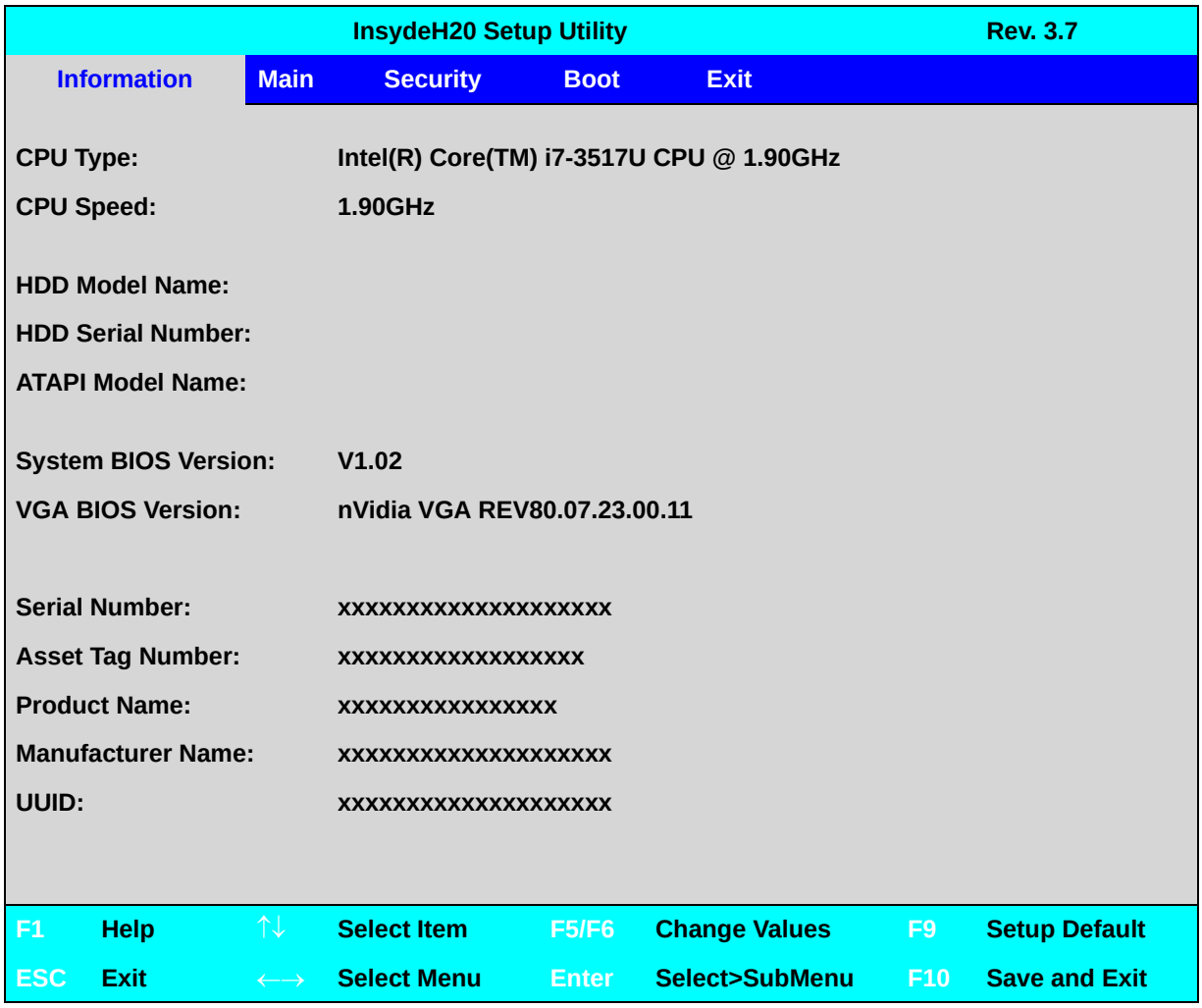


Figure 2-1. BIOS Information

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

Table 2-1. BIOS Information

Parameter	Description
CPU Type	CPU (central processing unit) type and speed of system
CPU Speed	Speed of the CPU
HDD0 Model Name	Model name of HDD0 (hard disk drive) installed on primary IDE master
HDD0 Serial Number	Serial number of HDD0 installed on primary IDE master
ATAPI Model Name	Model name of Optical device installed in system
System BIOS Version	System BIOS version
VGA BIOS Version	VGA (video graphics array) firmware version of system
Serial Number	Serial number of unit
Asset Tag Number	Asset tag number of system
Product Name	Product name of the system
UUID	Universally Unique Identifier

Main

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

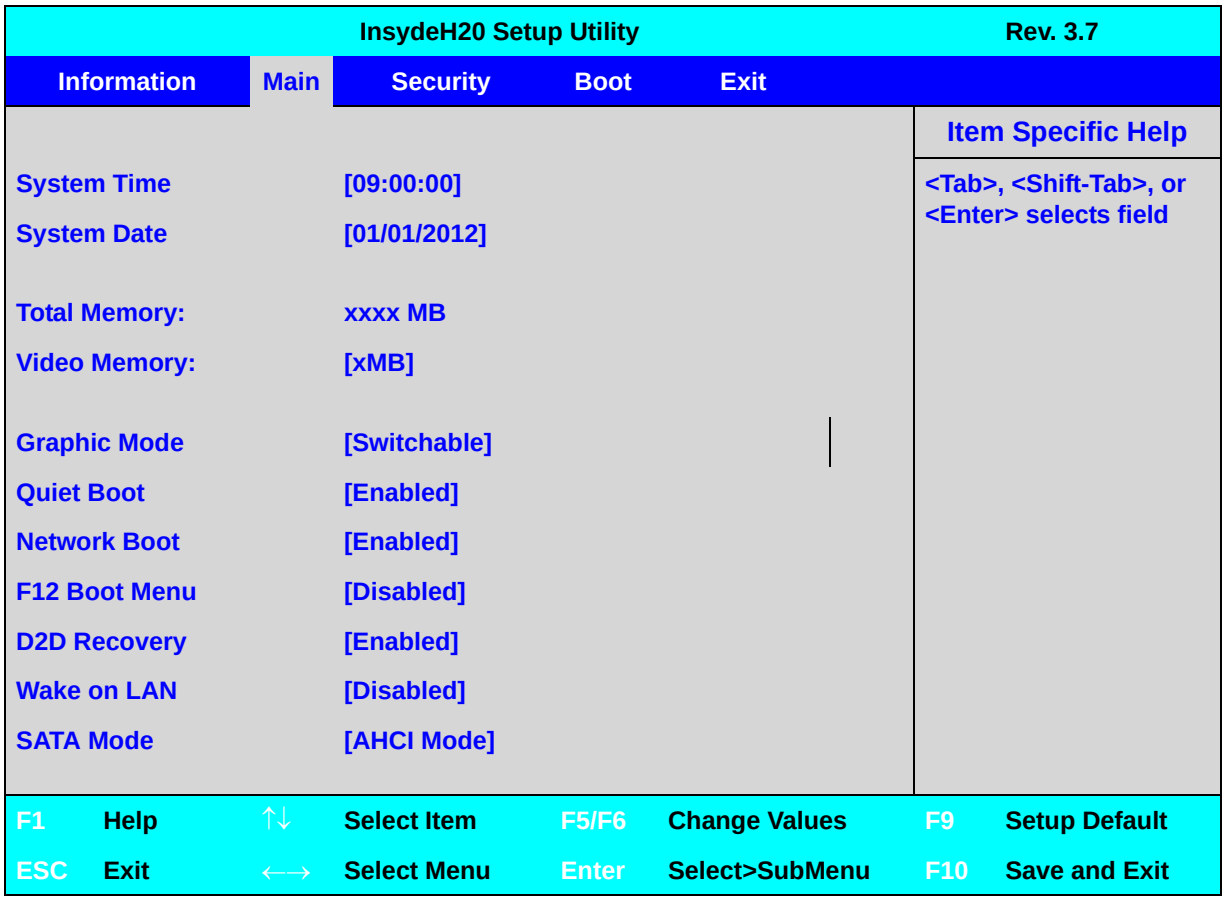


Figure 2-2. BIOS Main

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

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Table 2-2. BIOS Main

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

Table 2-2. BIOS Main (Continued)

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

Security

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

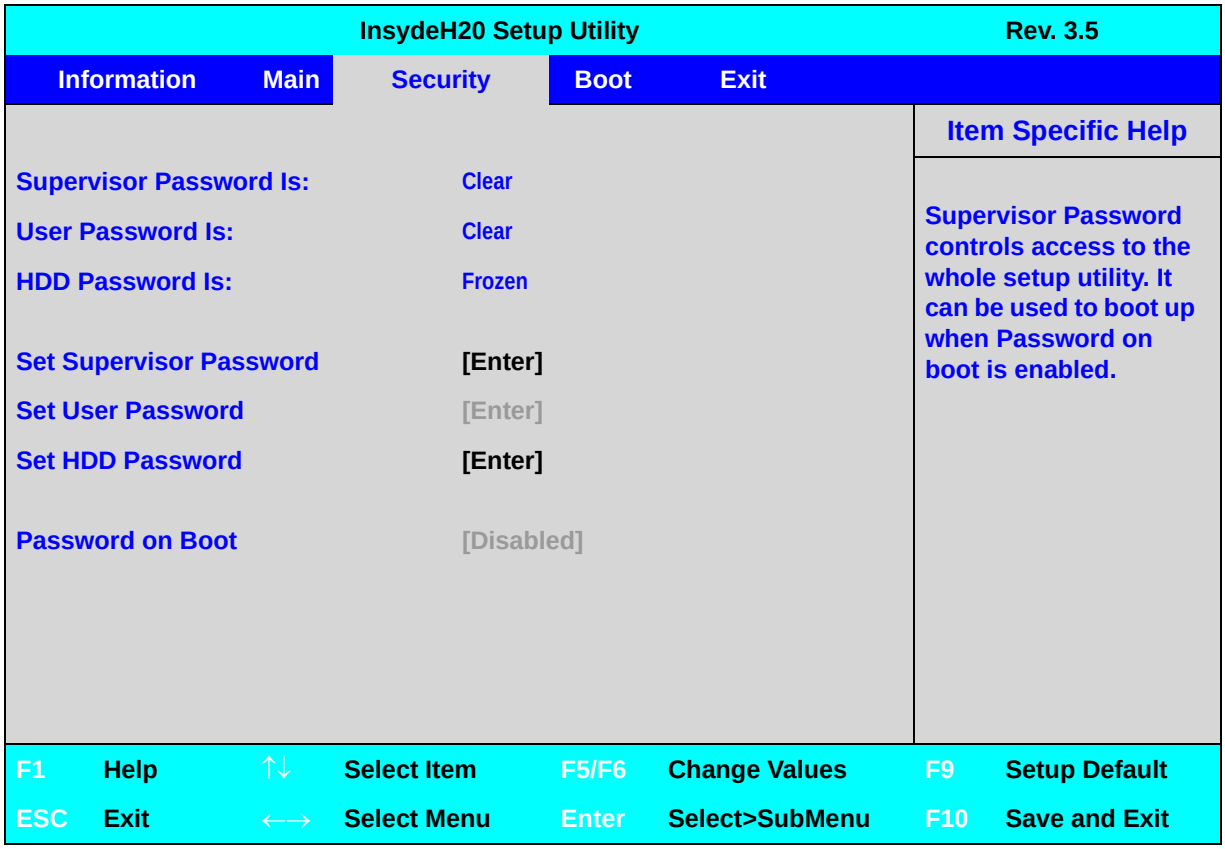

Figure 2-3. BIOS Security

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

Table 2-3. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Supervisor password setting	Clear or Set
User Password Is	User password setting	Clear or Set
HDD0 Password Is	HDD0 password setting	Clear or Set
Set Supervisor Password	Option to set supervisor password	N/A
Set User Password	Option to set user password	N/A
Set HDD Password	Option to set HDD0 password	N/A
Password on Boot	Shows if password is required during system boot	Disabled or Enabled

NOTE:

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

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

Passwords are not case sensitive.

A password must be alphanumeric (A-Z, a-z, 0-9), not longer than 12 characters.

Setting a Password

Perform the following to set a new user or supervisor password:

1. Use the ↑ and ↓ keys to highlight the `Set Supervisor Password` parameter and press ***Enter***. The `Set Supervisor Password` dialog box is shown. (Figure 2-4)

NOTE:

To change an existing password, refer to *Changing a Password*.

Figure 2-4. Setting a Password: Set Supervisor Password

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

NOTE:

The following characters may be used in a password:

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

IMPORTANT:

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

3. Retype password in the `Confirm New Password` field and press ***Enter***.
4. If new password and confirm new password strings match, the `Setup Notice` dialog screen is shown (Figure 2-5). If it is not, go to step 5.

Figure 2-5. Setting a Password Confirmation Notice

   a. Press ***Enter*** to return to the *BIOS Setup Utility Security* menu.
   b. `The Supervisor Password` parameter is shown as `Set.`
   c. Press ***F10*** to save changes and exit *BIOS Setup Utility*.

5. If new password and confirm new password strings do not match, the `Setup Warning` dialog is shown. (Figure 2-6)

Figure 2-6. Setting a Password: Passwords Do Not Match

   a. Press ***Enter*** to return to the *BIOS Setup Utility Security* menu.
   b. `The Supervisor Password` parameter is shown as `Clear.`
   c. To try to set a new password again, repeat steps 1 through 3.

Removing a Password

Perform the following:

1. Use the ↑ and ↓ keys to highlight `Set Supervisor Password` and press ***Enter***. The `Set Supervisor Password` dialog box is shown. (Figure 2-7)

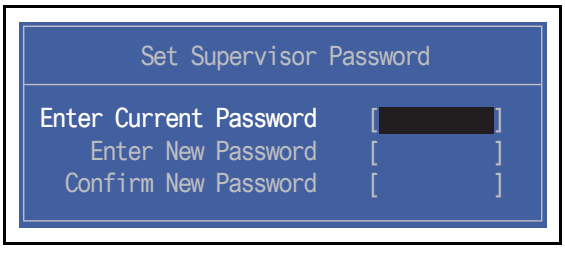

Figure 2-7. Removing a Password: Set Supervisor Password

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

Changing a Password

1. Use the ↑ and ↓ keys to highlight `Set Supervisor Password` and press ***Enter***. The `Set Supervisor Password` dialog is shown. (Figure 2-8)

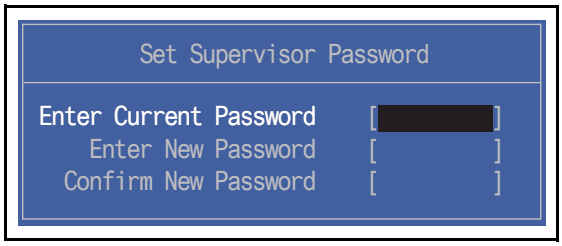

Figure 2-8. Changing a Password: Set Supervisor Password

2. Type current password in `Enter Current Password` field and press ***Enter***.
3. Type new password in `Enter New Password` field and press ***Enter***.
4. Retype new password in `Confirm New Password` field and press ***Enter***.
5. If new password and confirm new password strings match, The `Setup Notice` dialog is shown (Figure 2-9). If it is not shown, go to step 6.

Figure 2-9. Changing a Password: Setup Notice

   a. Press ***Enter*** to return to the *BIOS Setup Utility Security* menu.
   b. `The Supervisor Password` parameter is shown as `Set.`
   c. Press ***F10*** to save changes and exit *BIOS Setup Utility*.

6. If current password and new password strings do not match, the `Setup Warning` dialog is shown (Figure 2-10). If it is not shown, go to step 7.

Figure 2-10. Changing a Password: Invalid Password

a. Press ***Enter*** to return to the *BIOS Setup Utility Security* menu.

b. `The Supervisor Password` parameter is shown as `Clear.`

c. To try to change the password again, repeat steps 1 through 4.

7. If new password and confirm new password strings do not match, the `Setup Warning` dialog is shown (Figure 2-11).

Figure 2-11. Changing a Password: Passwords Do Not Match

a. Press ***Enter*** to return to the *BIOS Setup Utility Security* menu.

b. `The Supervisor Password` parameter is shown as `Clear.`

c. To try to change the password again, repeat steps 1 through 4.

Boot

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

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

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

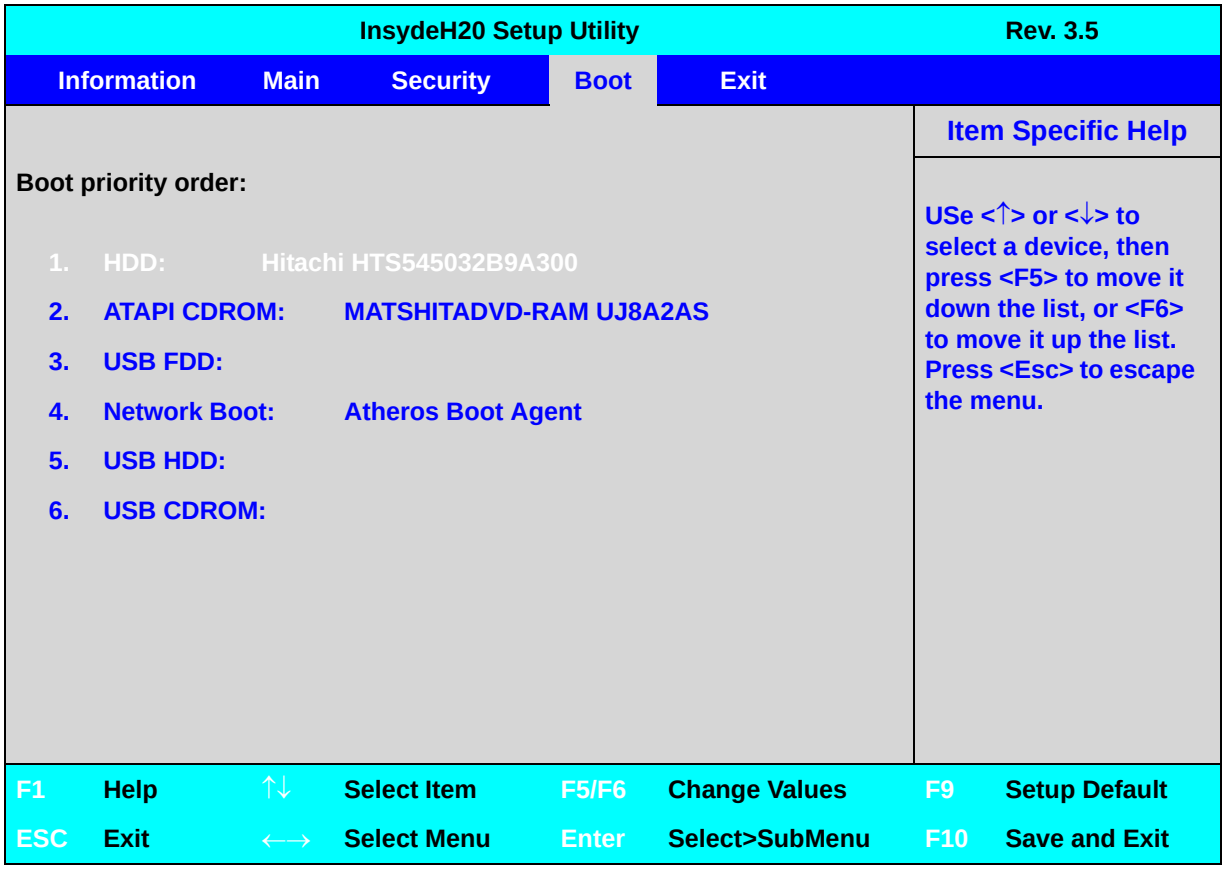

Figure 2-12. BIOS Boot

Exit

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

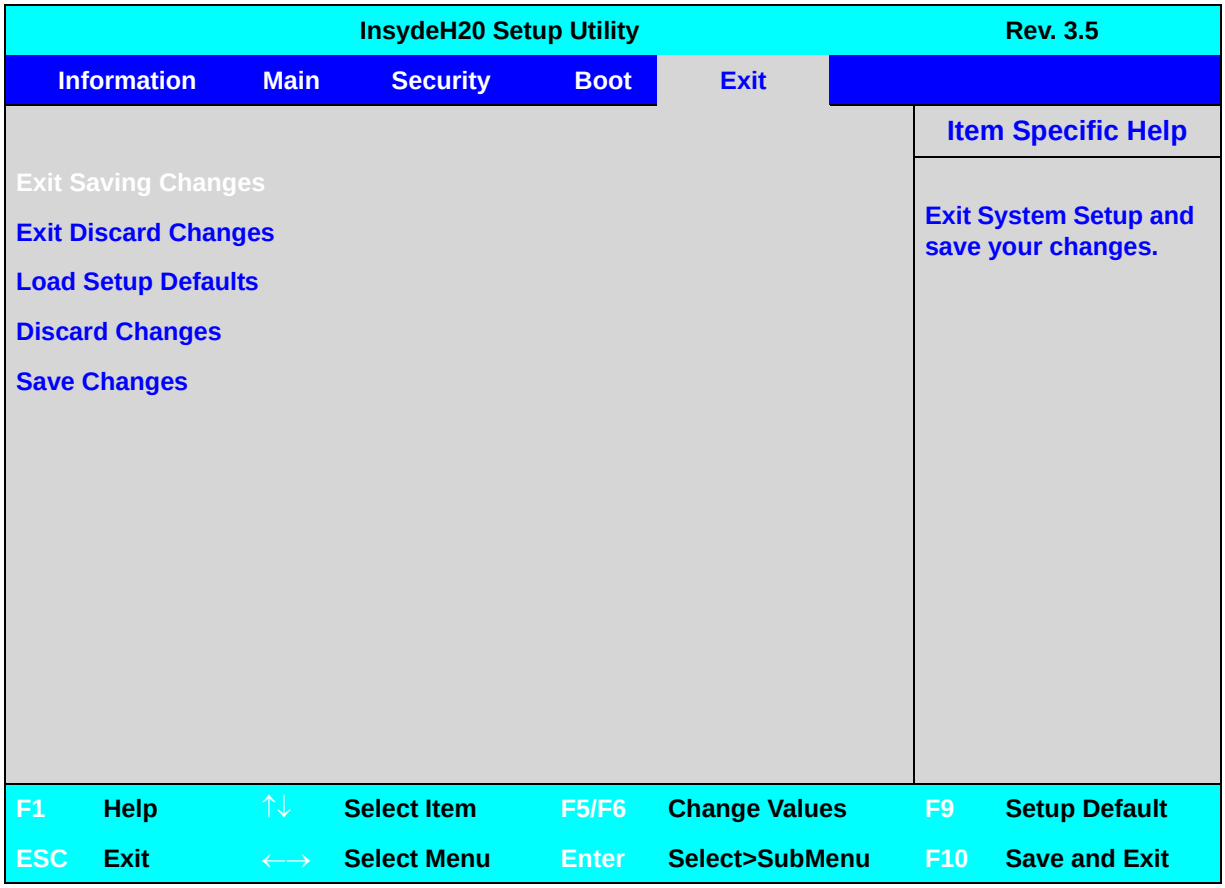

Figure 2-13. BIOS Exit

Table 2-4 describes the parameters in Figure 2-13.

Table 2-4. BIOS Exit

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

BIOS Flash Utilities

BIOS Flash memory updates are required for the following conditions:

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

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

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

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

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

Prerequisites for BIOS Flashing utilities:

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

NOTE:
BIOS Flash utility has auto execution function.

DOS Flash Utility

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

1. Press ***F2*** during boot to enter `Setup Menu`.
2. Select `Boot Menu` to modify boot priority order.
3. Move USB HDD to position 1 (Figure 2-14). (Refer to *Boot* menu)

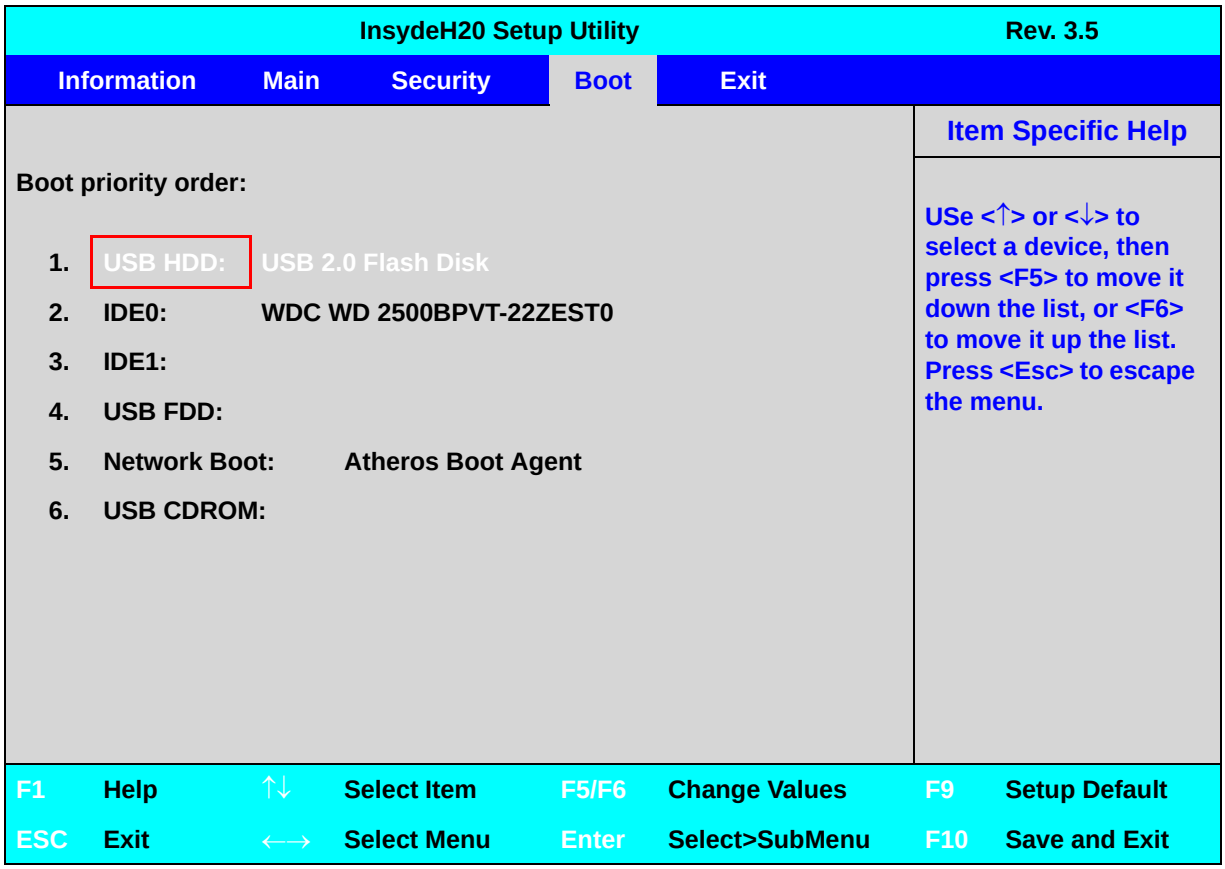

Figure 2-14. Change BIOS Boot Priority Order

4. Copy **`Z09_022.exe`** to USB device, and insert device into a system port.
5. Boot to DOS mode.
6. Execute **`Z09_022.exe`** to update BIOS. (Figure 2-15, where C: is the name of the USB drive)
   The system restarts after update is complete.

Figure 2-15. Executing ZRJ_0.08

BIOS flash process begins. (Figure 2-16)

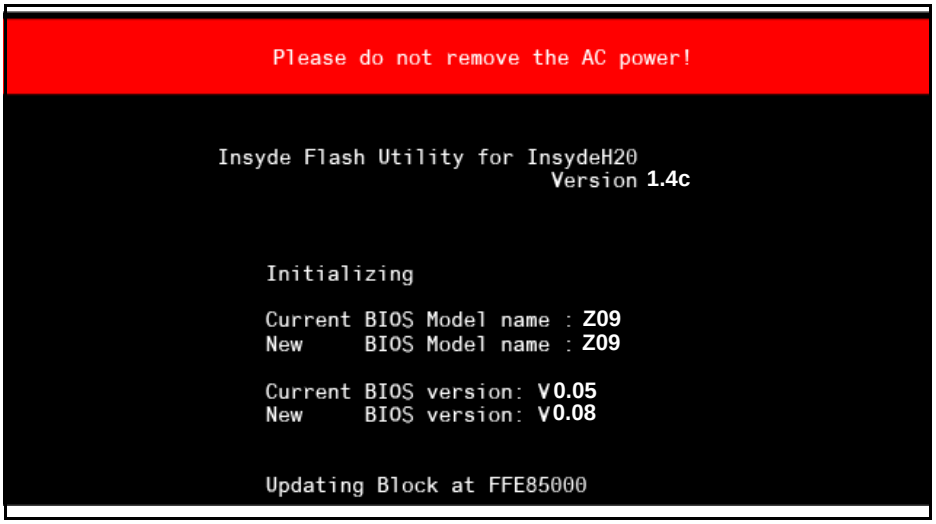

Figure 2-16. Updating Flash ROM Blocks

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

NOTE:

If AC power is not connected, the following message is shown (Figure 2-17). Plug in the AC power to continue.

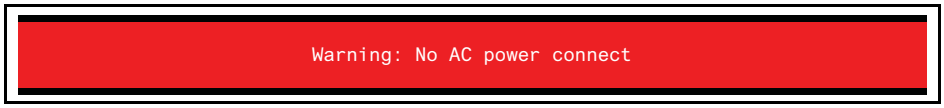

Figure 2-17. AC Power Warning

WinFlash Utility

Perform the following to use the WinFlash Utility:

1. Boot to Windows OS.
2. Copy Z09_022W.exe (WinFlash Executable) to the Desktop--recommended for easy access.
3. Double click the WinFlash executable.
4. Click ***OK*** to begin the update. A progress screen is shown. (Figure 2-18)

Figure 2-18. InsydeFlash

NOTE:

If the error message appears (Figure 2-19), check the system BIOS *ROM-file* size.

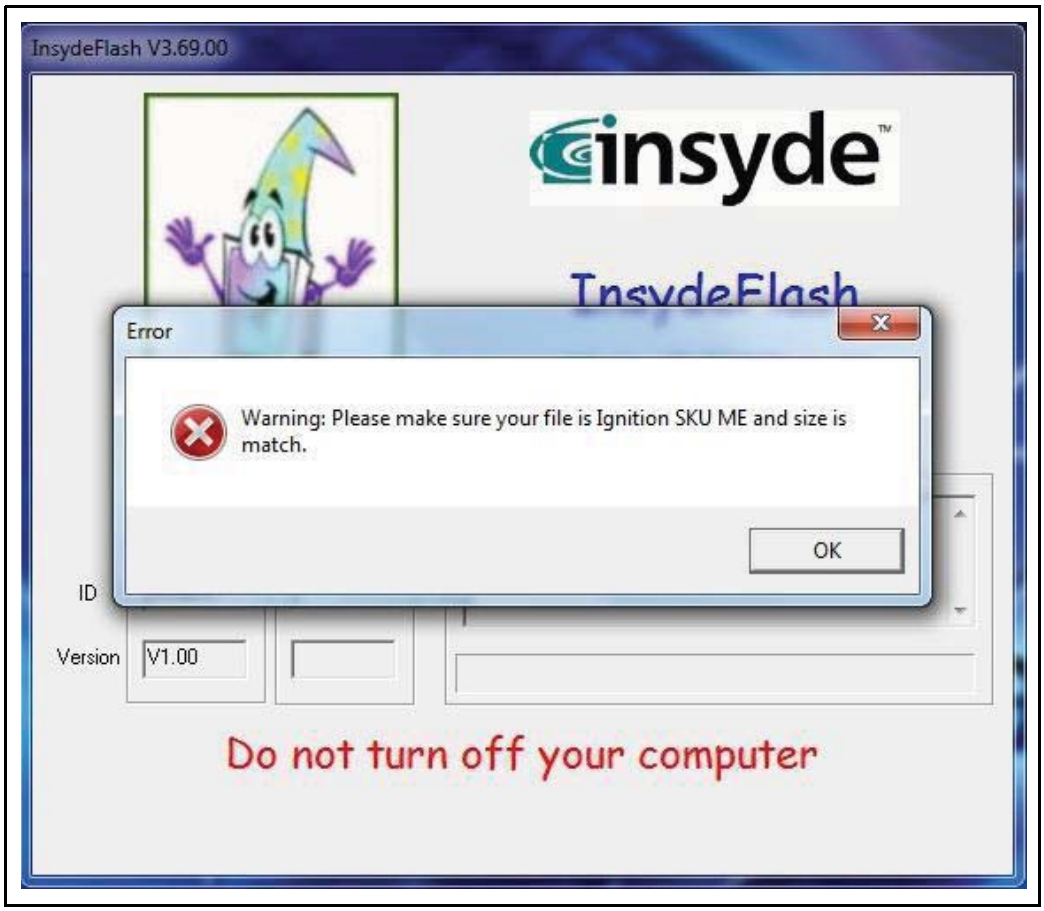

Figure 2-19. InsydeFlash

Remove Password Utilities

This section provides details about removing HDD/BIOS passwords.

Remove HDD Password

Remove HDD Password as follows:

NOTE:

If the HDD password is incorrectly entered three times, an error is generated. (Figure 2-20)

Figure 2-20. Password Error Status

To remove the HDD password, perform the following:

1. From `Password Error Status` dialog shown in Figure 2-20, press ***Enter*** to continue.
2. The `Enter Unlock Password` dialog (Figure 2-21) is shown.

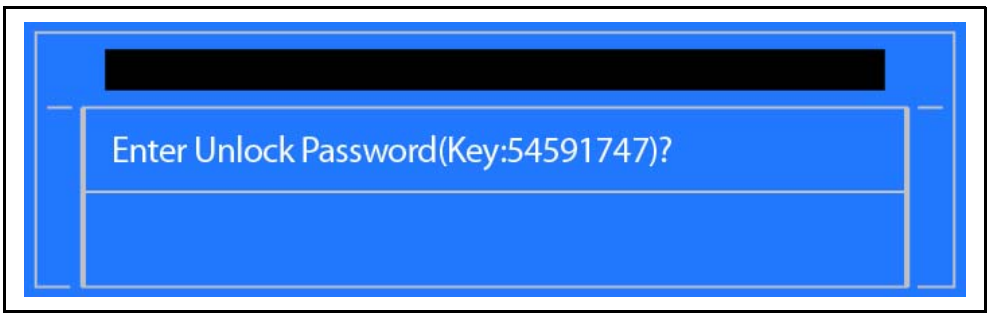

Figure 2-21. Enter Unlock Password Key

NOTE:

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

3. On separate, compatible device, boot to DOS.
4. Execute *UnlockHD.exe* (Figure 2-22) to create a password unlock code. Use the format <*`UnlockHD [key code]`*> with the code noted in the Figure 2-21.

   Example: **UnlockHD 54591747**

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

Example: **`Password:`** `41499389`

Figure 2-22. Unlock Password

5. On original device, enter password (Figure 2-22) in `Enter Unlock Password` dialog (Figure 2-21).

Removing BIOS Password

If wrong supervisor password is entered three times, the `System will halt!` dialog is shown. (Figure 2-23)

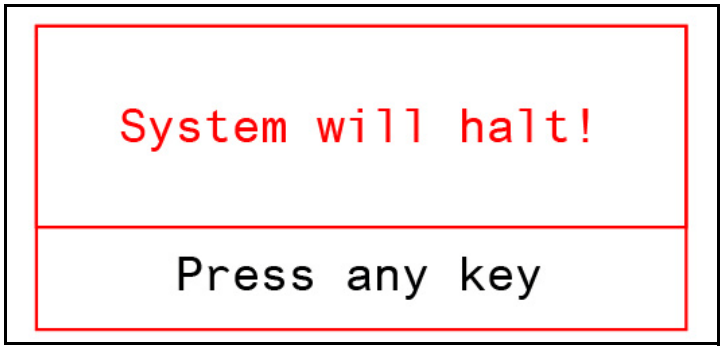

Figure 2-23. Supervisor Password Error

1. Press the **Power** button
2. Press the “[“ key at Post.

Figure 2-24. Enter “[“ Key at Post

3. In the **Boot Option** Menu, select **USB HDD:** to boot from a USB device.

NOTE:

The Password on Boot setting must be Disabled in BIOS setup.

4. At a DOS prompt, enter **ClearSuPw.exe**. (Figure 2-25)

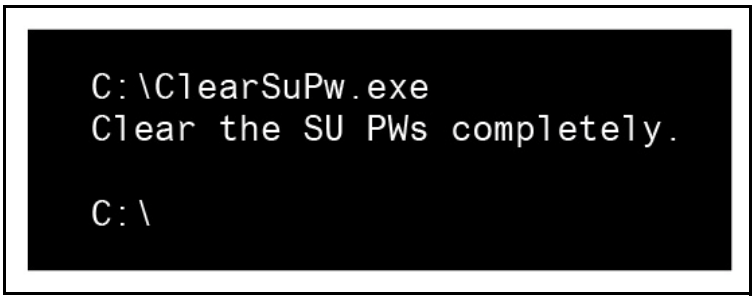

Figure 2-25. Clear Supervisor Password Utility

5. When message `Clear the SU Pws completely` is shown, supervisor password has been removed.

Miscellaneous Tools

Using DMI Tools

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

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

Prerequisites:

Copy qdmi301.exe and VEEPROM to a bootable USB device

To update the DMI Pool, perform the following:

1. Insert USB device in system.
2. Boot to DOS.
3. At the prompt, enter **`qdmi301.exe`**. To execute a specific function, select the associated menu number. (Figure 2-26)

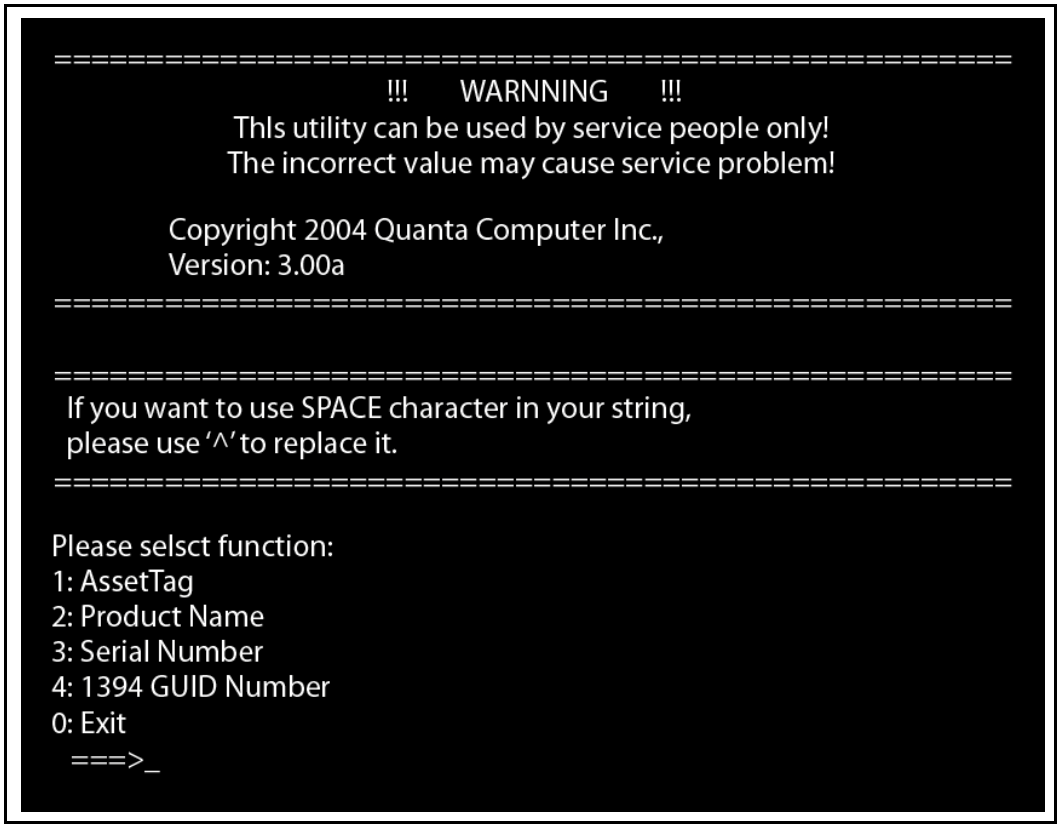

Figure 2-26. DMI Tools Main Menu Screen

4. Press **1** to modify asset tag key. (Figure 2-27)

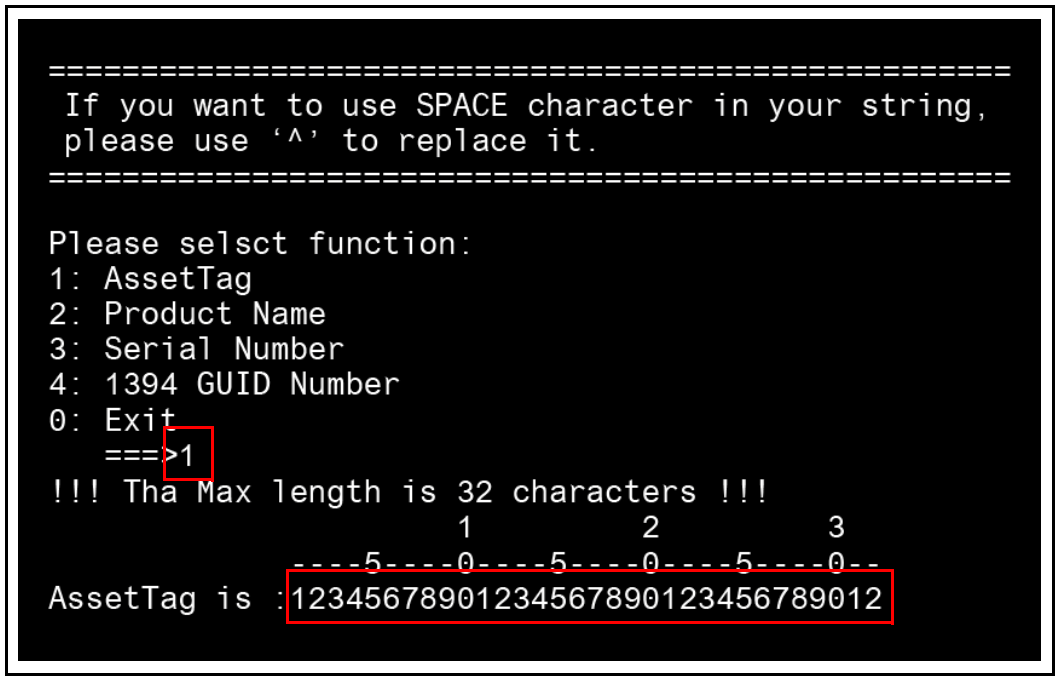

Figure 2-27. Asset Tag Menu Item

5. Press **2** to modify the product number key. (Figure 2-28)

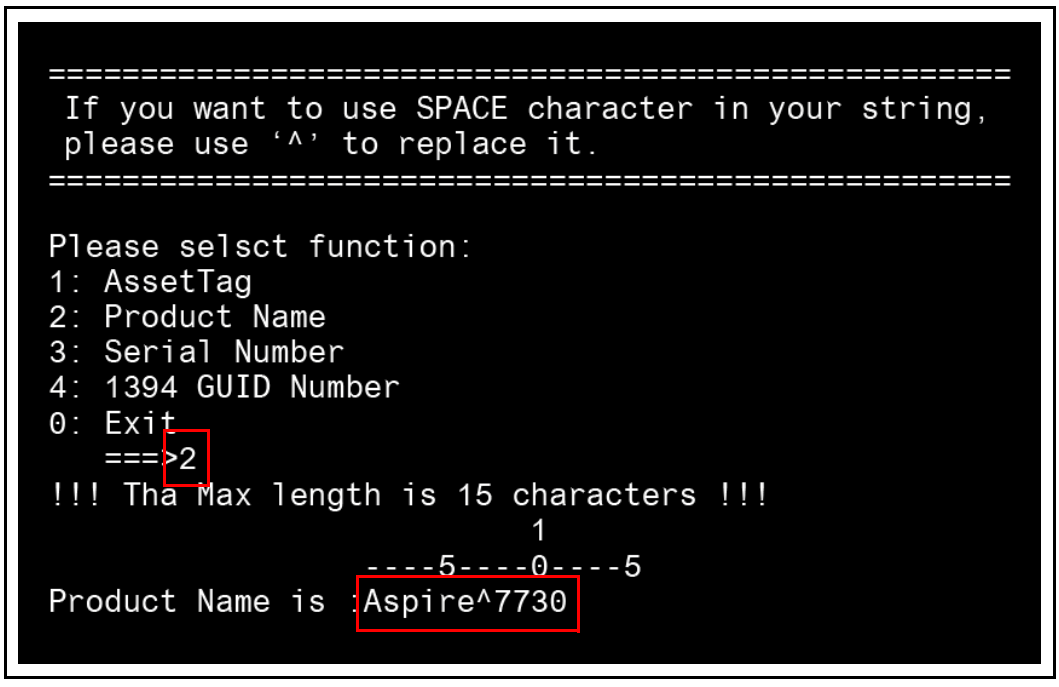

Figure 2-28. Product Name Menu Item

6. Press **3** to modify serial number key.

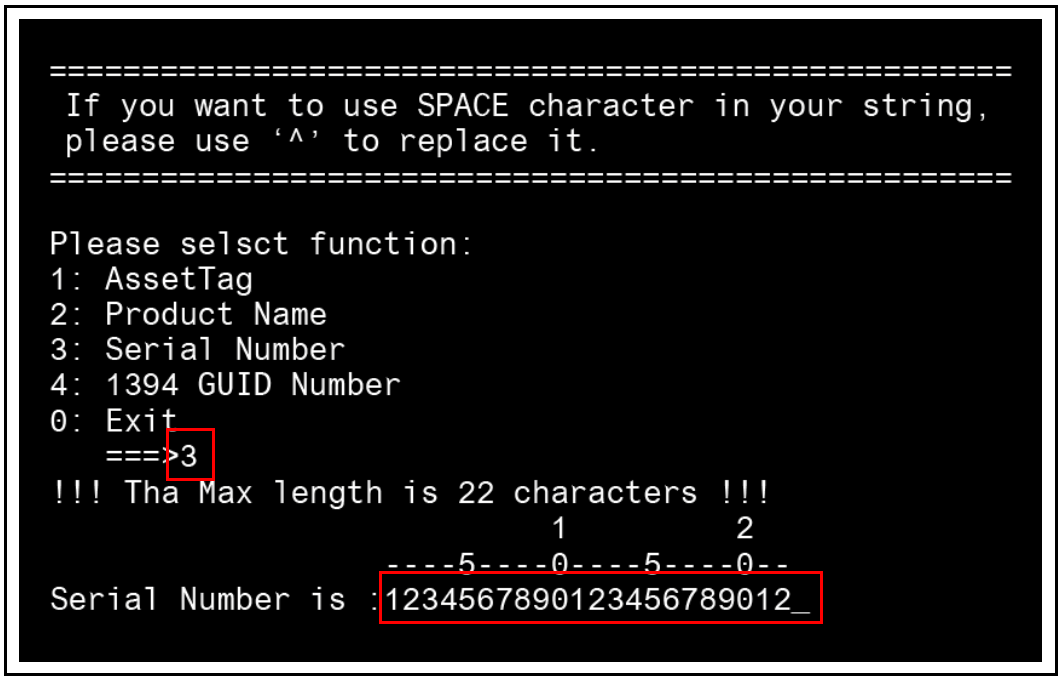

Figure 2-29. Serial Number Menu Item

7. Press **4** to modify the 1394 GUID number key.

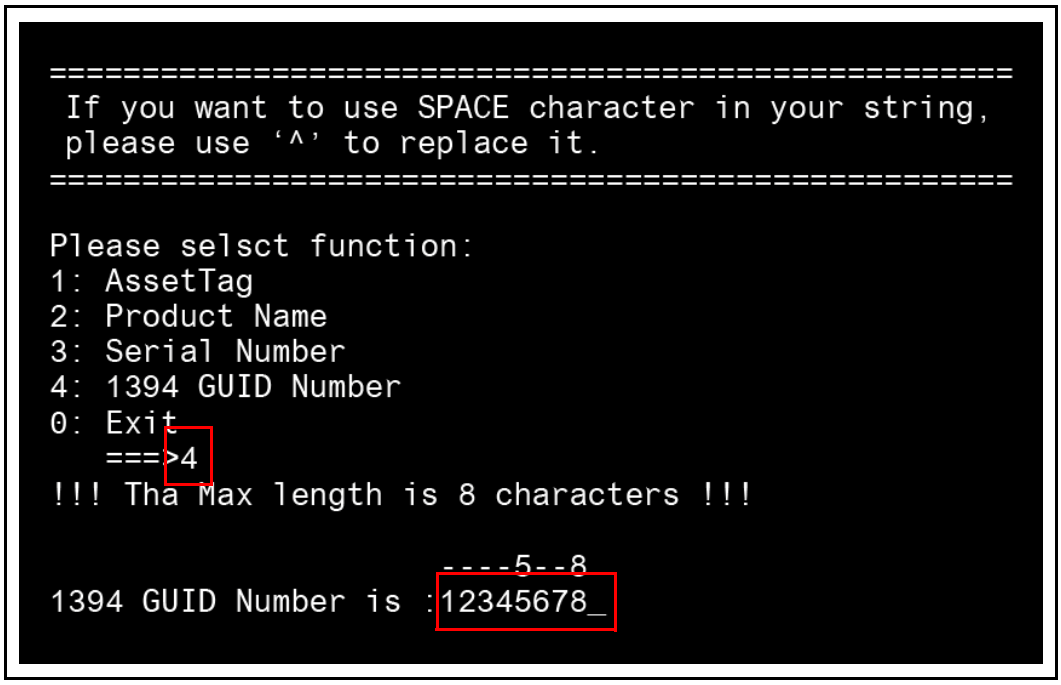

Figure 2-30. 1394 GUID Number Menu Item

8. Press **0** to exit.

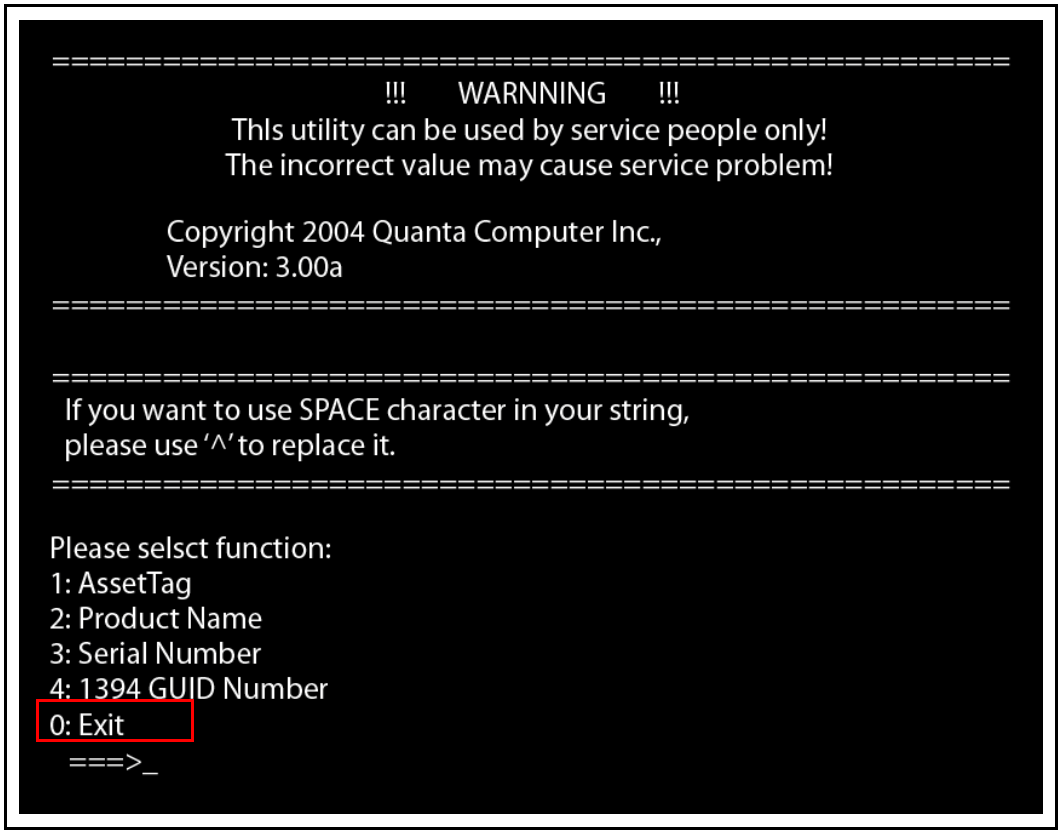

Figure 2-31. Exit Menu Item

9. At the command prompt, type **VEEPROM** to write any changes in the data to the EEPROM.

Figure 2-32. VEEPROM Command Prompt

NOTE:

When using any of the write options, restart the system to make the new DMI data effective.

Using the LAN MAC EEPROM Utility

Use MAC.BAT utility to write the MAC.CFG file to EEPROM under DOS mode.

1. Use a text editor (e.g. Notepad) to open and edit the MAC.CFG file. (Figure 2-33)

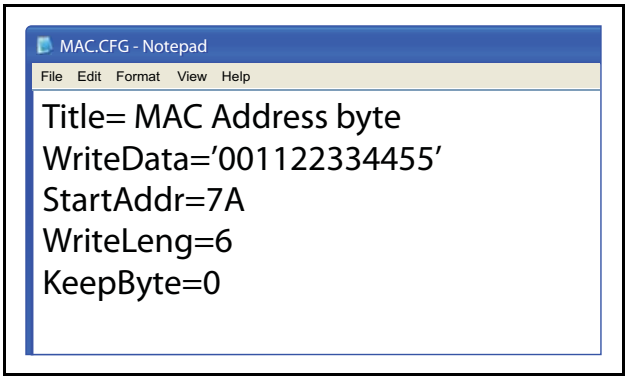

Figure 2-33. MAC.CFG File

Table 2-5.

Field Name	Value	Description
Title	MAC Address byte	N/A
WriteData	001122334455	MAC value
StartAddr	7A	MAC address
WriteLeng	6	MAC value length
KeepByte	0	N/A

2. In DOS mode, run **MAC.BAT** to write MAC values to eeprom. (Figure 2-34)

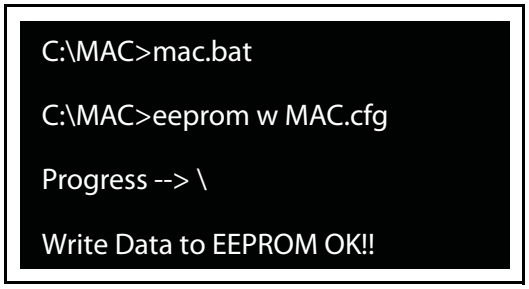

Figure 2-34. MAC.BAT

3. Reboot computer when process has completed.

CHAPTER 3

Maintenance Procedures

Maintenance Procedures

Introduction

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

General Information

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

Recommended Equipment

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

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

Screw Table

The following screw table provides a list of all required screws to assemble the computer.

Table 1-1. Main Screw List

Screw Name	Quantity
M1.4x1.0	31
M2.5x6.0	16
M2.5x4.0	9
M2.0x3.0	5
M2.0x2.5	2
M3.0x3.5	2
M2.5x2.0	12
M2.0x2.0	1

Maintenance Flowchart

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

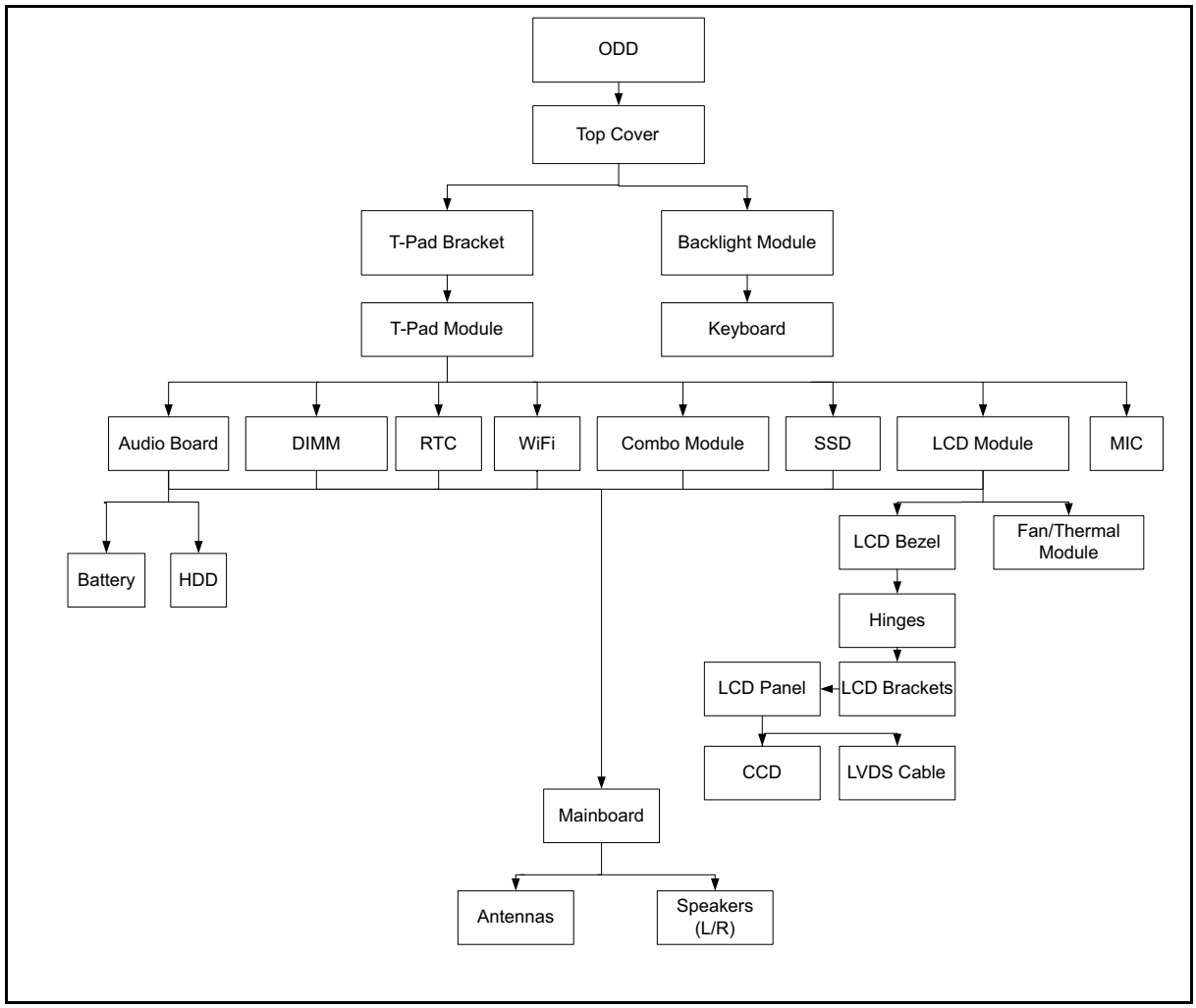

Figure 3-1. Maintenance Flow

Machine Disassembly

Getting Started

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

Perform the following prior to performing any maintenance procedures:

1. Remove power (A) from the system and peripherals. (Figure 3-1)
2. Remove all cables from system.

Figure 3-1. AC Adapter

3. Place system on a stable work surface.

ODD Module Removal

Prerequisite:

Disconnect AC adapter

Turn off device

1. Locate ODD Module on lower cover. (Figure 3-1)
2. Remove screw.

Figure 3-1. ODD Module Removal

3. Remove ODD module from lower cover.
4. Insert a thin tool in the manual eject hole to open the drive.
5. Remove the ODD bezel (Figure 3-2).

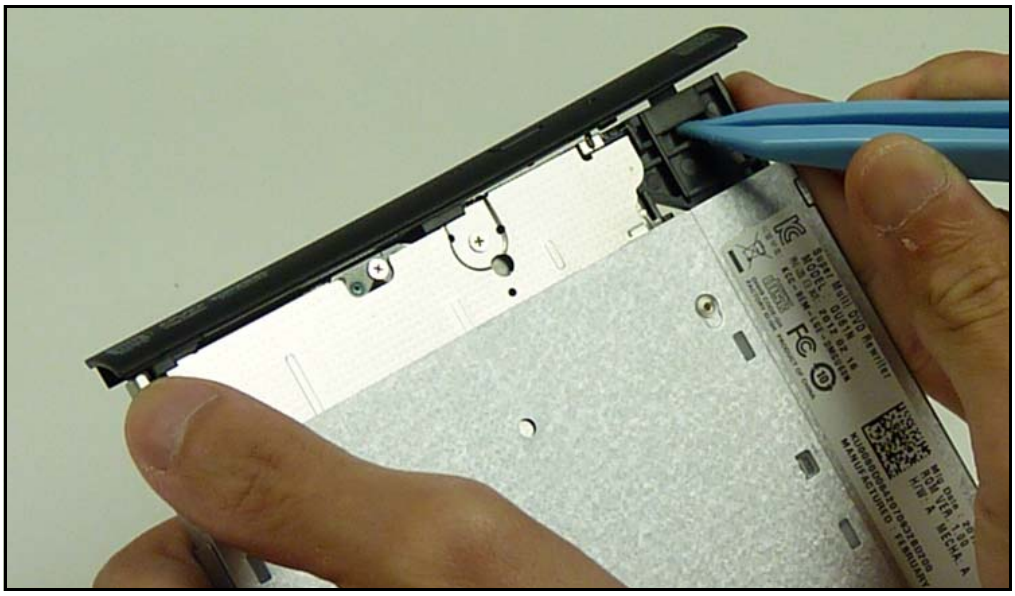

Figure 3-2. ODD Bezel Removal

6. Remove screws from the bracket.
7. Remove the bracket.

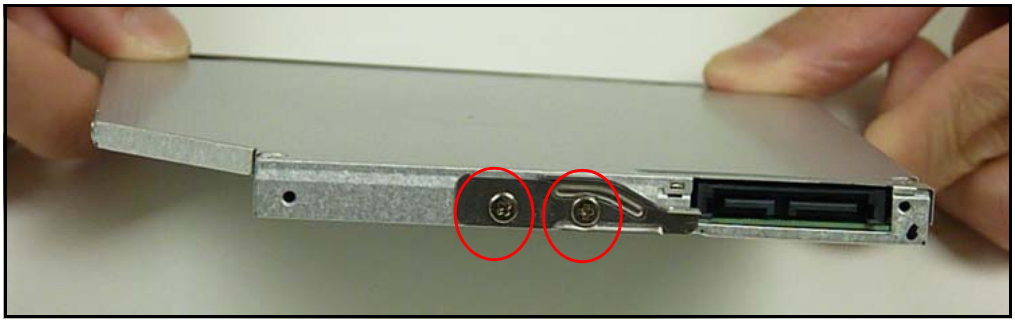

Figure 3-3. ODD Bracket Removal

ID	Size	Quantity	Screw Type
A	M2x2	2	
B	M2.5x5.0	1	

Lower Cover Removal

The lower cover is attached to the mainboard. The lower cover screws are removed to allow access to:

Top Cover

Prerequisite:

ODD Module Removal

1. Remove securing screw (Figure 3-1).

Figure 3-1. Lower Cover Screw Removal

2. Turn the device over on a secure surface.
3. Partially remove the top cover.
4. Disconnect the cables.

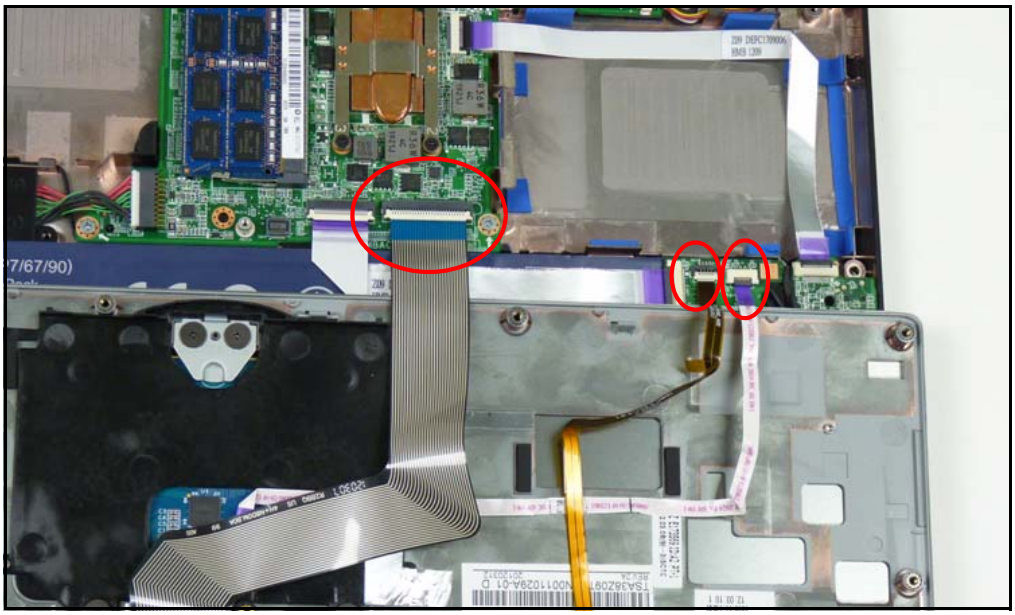

Figure 3-2. Lower Cover Cabling

ID	Size	Quantity	Screw Type
A	M2.5x5.0	15	

Keyboard Backlight Removal

Prerequisite:

Top Cover Removal

1. Turn the top cover to expose the bottom.
2. Remove the Backlight module.

Figure 3-1. Backlight Removal

Keyboard Removal

Prerequisite:

Top Cover Removal

Backlight Module Removal

1. Turn the top cover to expose the bottom.
2. Remove the screw(s).
3. Lift up the keyboard (Figure 3-1).

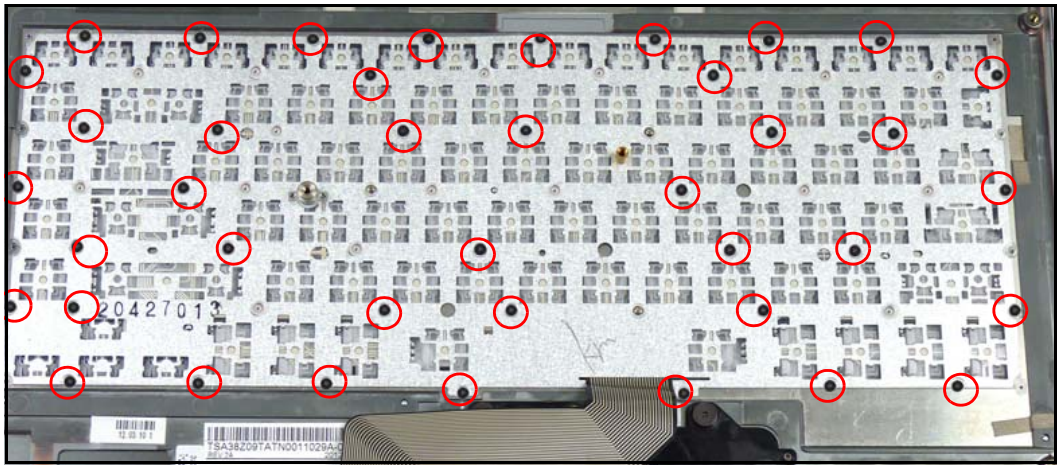

Figure 3-1. Keyboard Screw Removal

ID	Size	Quantity	Screw Type
	M1.0 x 0.43	40	

Touch Pad Bracket Removal

Prerequisite:

Top Cover Removal

1. Turn the top cover to expose the bottom.
2. Remove the screw(s).

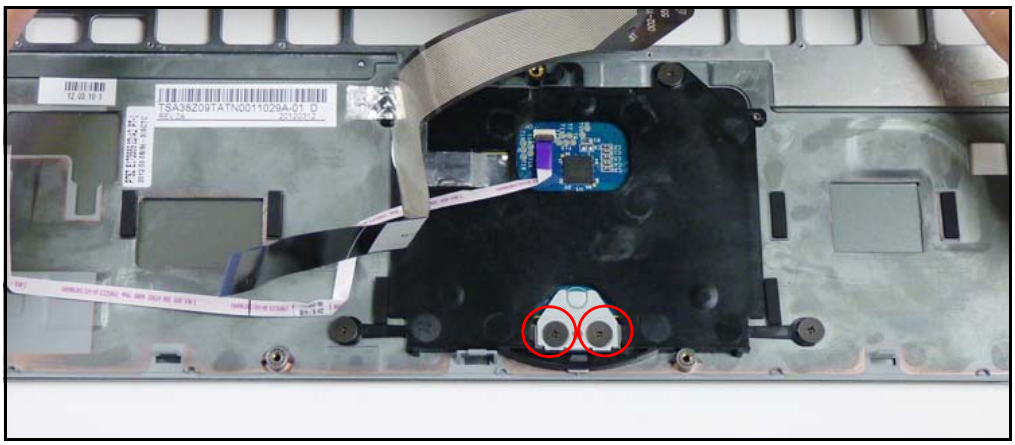

Figure 3-1. T-pad Bracket Screw Removal

3. Remove the T-pad bracket.
4. Lift up the keyboard (Figure 3-2).

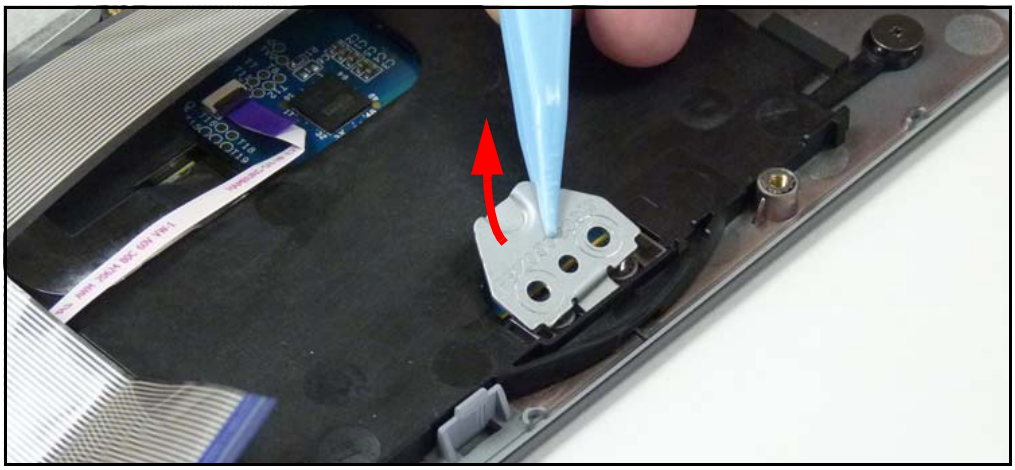

Figure 3-2. T-pad Bracket Removal

ID	Size	Quantity	Screw Type
	M2.5 x 1 x 7 (Flat head)	2	

Audio Board Removal

Prerequisite:

Top Cover Removal

Touch Pad Bracket Removal

1. Turn the top cover to expose the bottom.
2. Disconnect the FFC and adhesive strip.

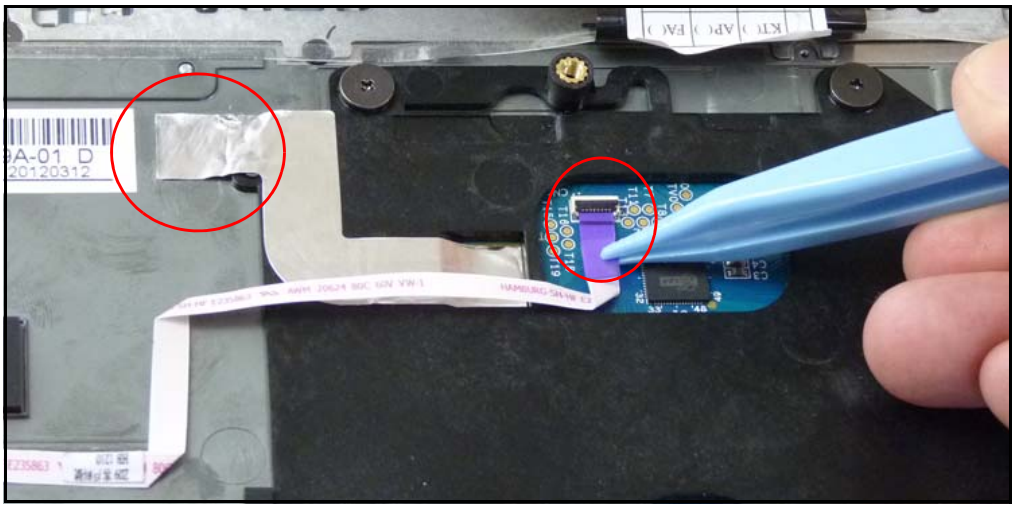

Figure 3-1. Audio Board FFC Removal

3. Remove the screw(s).
4. Remove the Audio Board.

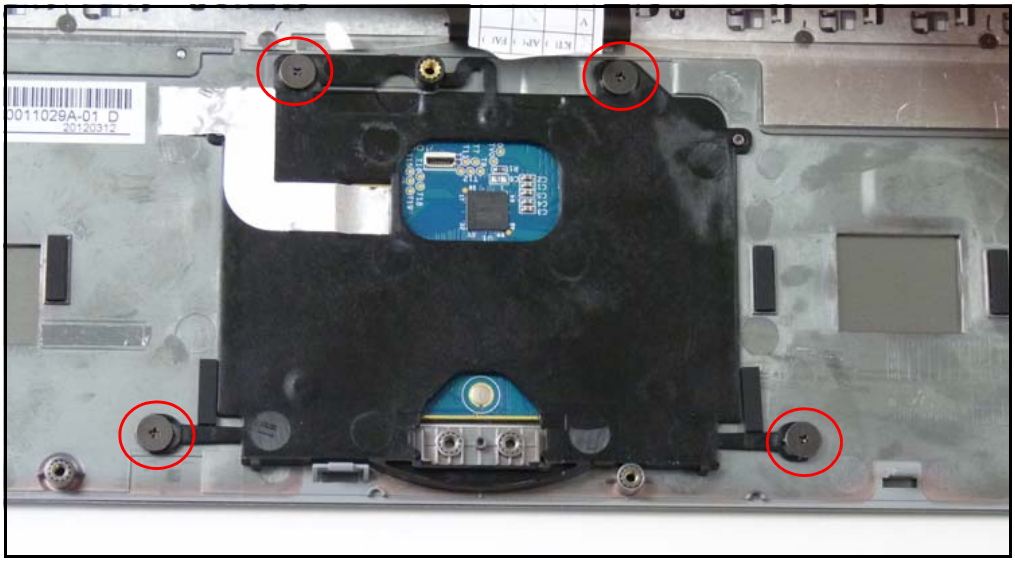

Figure 3-2. Audio Board Screw Removal

ID	Size	Quantity	Screw Type
	M2.5 x 1 x 7 (Flat head)	4	

Audio Board Removal

Prerequisite:

Top Cover Removal

1. Disconnect the FFC from the audio board.
2. Disconnect the MIC cable from the audio board.
3. Disconnect the HDD FFC from the audio board.
4. Disconnect the speaker cable from the audio board.

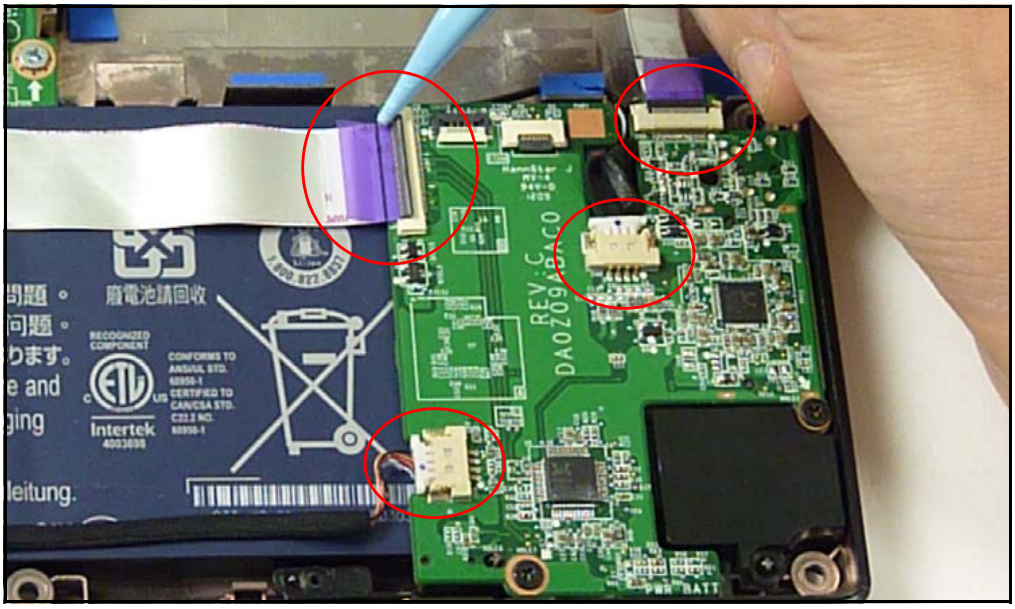

Figure 3-1. Audio Board Cabling Removal

5. Remove the screw(s).

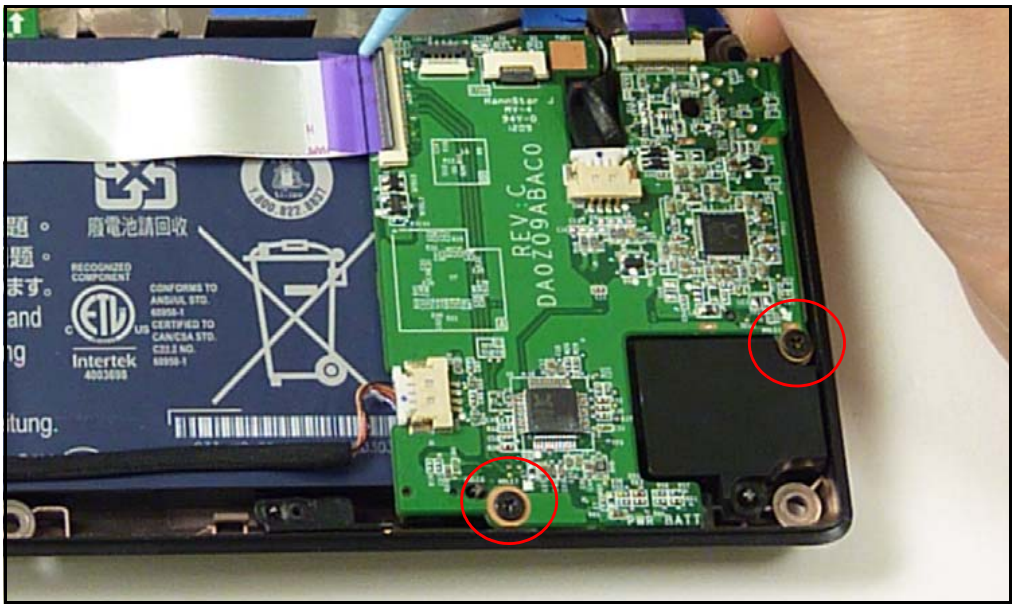

Figure 3-2. Audio Board Screws Removal

6. Remove the screw(s).
7. Remove the Audio Board.

ID	Size	Quantity	Screw Type
	M2.0 x 3.0	2	

DIMM Removal

Prerequisite:

Top Cover Removal

1. Locate DIMM module on mainboard.
2. Push module clips outwards.
3. Remove DIMM module from mainboard connector.

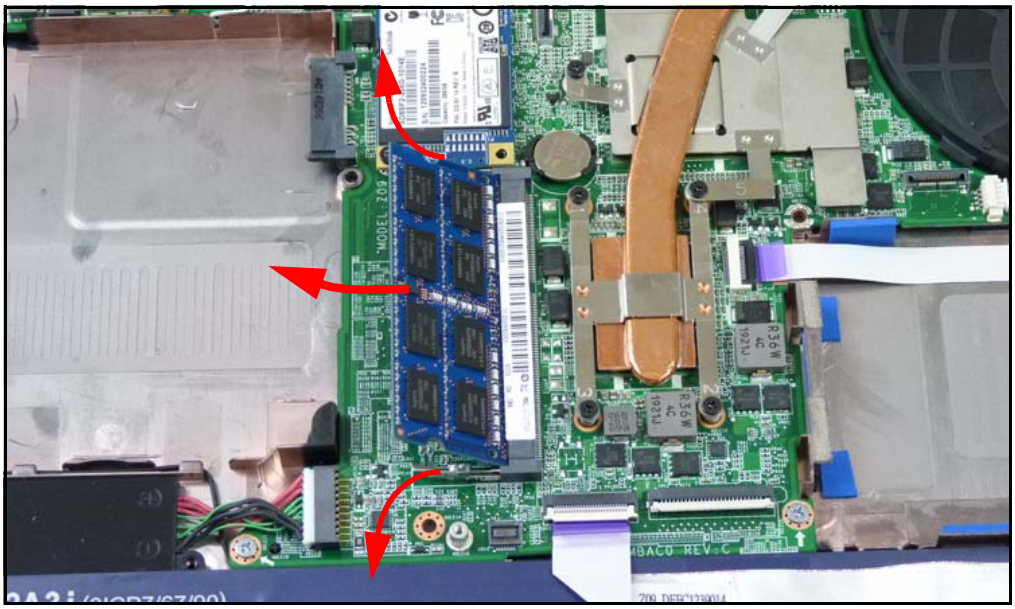

Figure 3-1. DIMM Removal

RTC Removal

Prerequisite:

Top Cover Removal

1. Locate RTC battery on mainboard.
2. Remove the RTC battery.

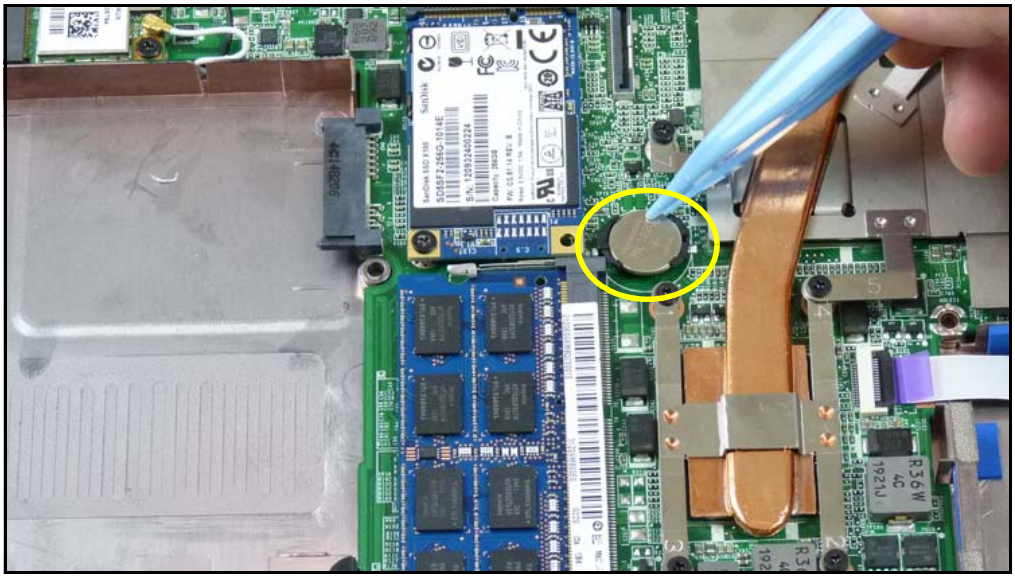

Figure 3-1. Audio Board Cabling Removal

3. Remove RTC battery (D).

☞ **IMPORTANT:**

Follow local regulations for battery disposal.

Combo Module Removal

Prerequisite:

Top Cover Removal

1. Remove the antenna cables.
2. Remove the screw(s).

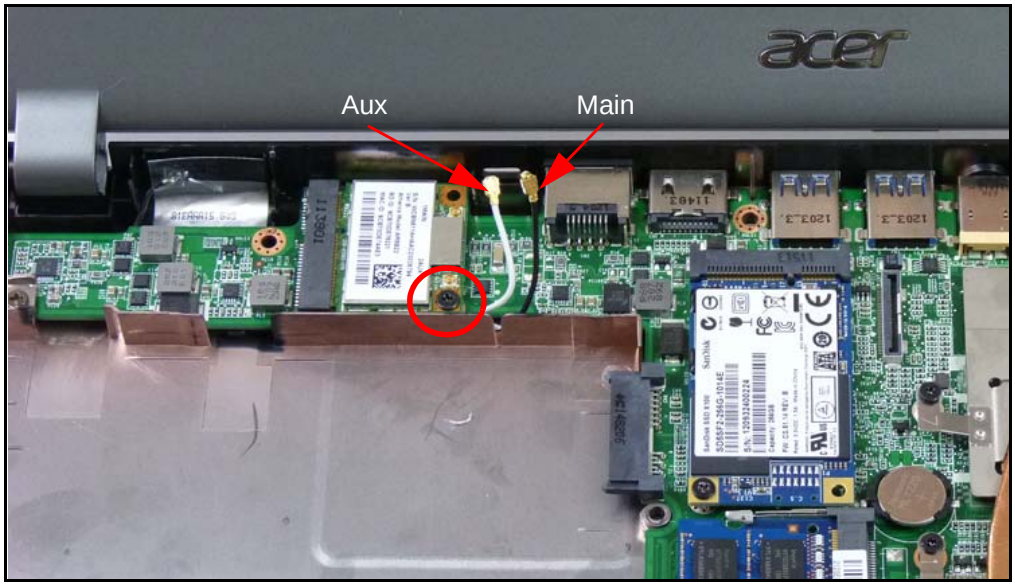

Figure 3-1. Antenna Disconnection

3. Remove the module.

Figure 3-2. Combo Module Removal

ID	Size	Quantity	Screw Type
	M2.0 x 2.0	1	

Solid State Disk Removal

Prerequisite:

Top Cover Removal

1. Remove the screw(s).

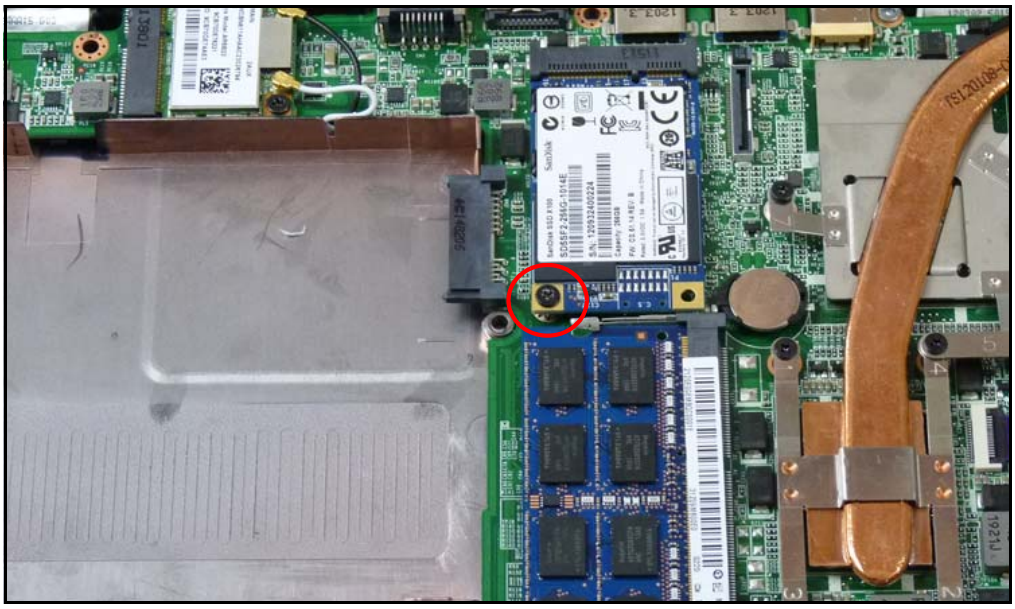

Figure 3-1. Solid State Disk Screw Removal

2. Remove the Solid State Disk (SSD) module.

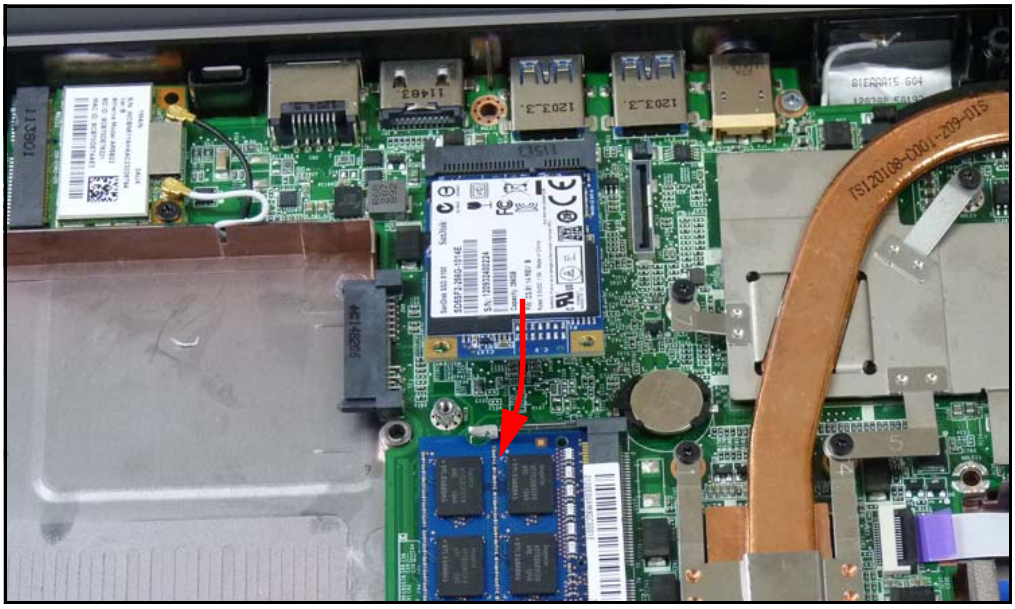

Figure 3-2. Solid State Disk Removal

ID	Size	Quantity	Screw Type
	M2.0 x 2.0	1	

MIC Removal

Prerequisite:

Top Cover Removal

1. Disconnect the MIC cable.
2. Remove the cable.

Figure 3-1. MIC Cabling Removal

3. Remove the MIC.

Figure 3-2. MIC Module Removal

LCD Module Removal

Prerequisite:

Top Cover Removal

1. Disconnect the LVDS cable.

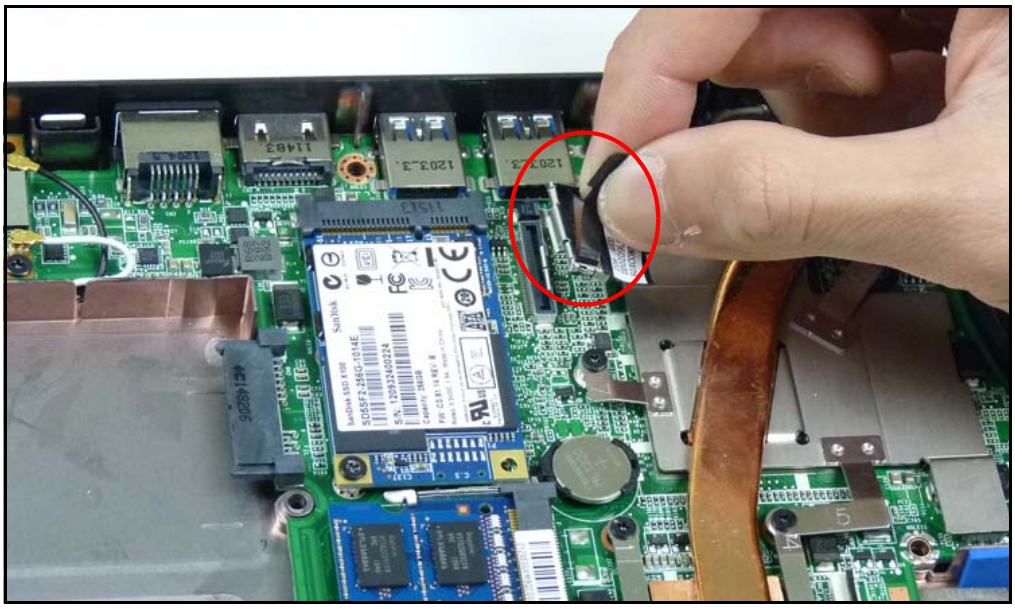

Figure 3-1. LVDS Cable Removal

2. Remove the screw(s).

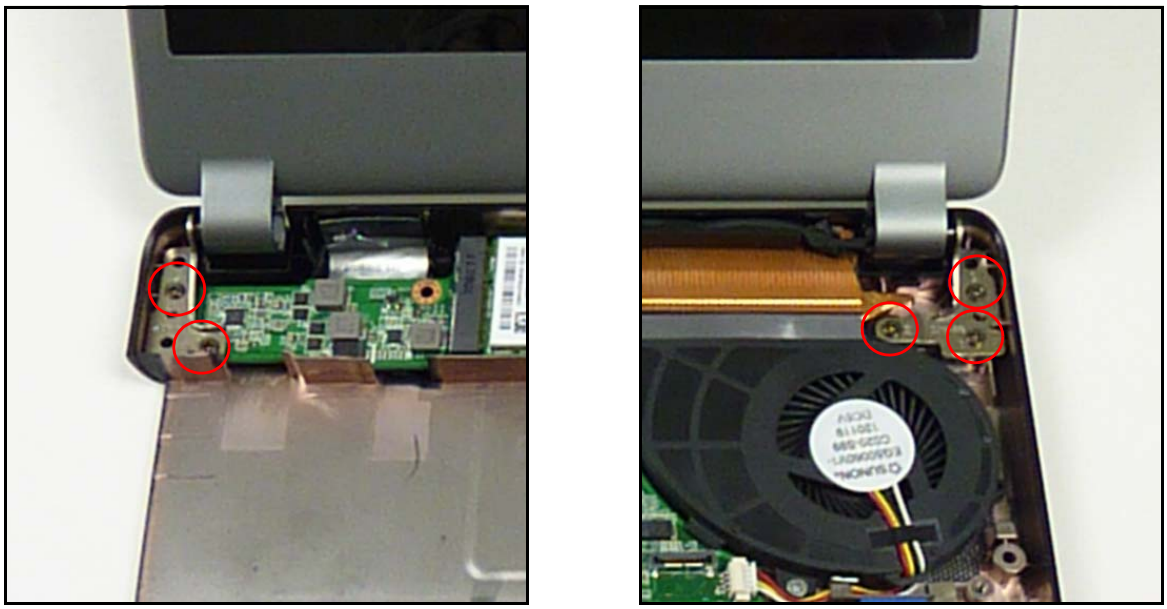

Figure 3-2. LCD Module Screws Removal

3. Remove LCD Module.

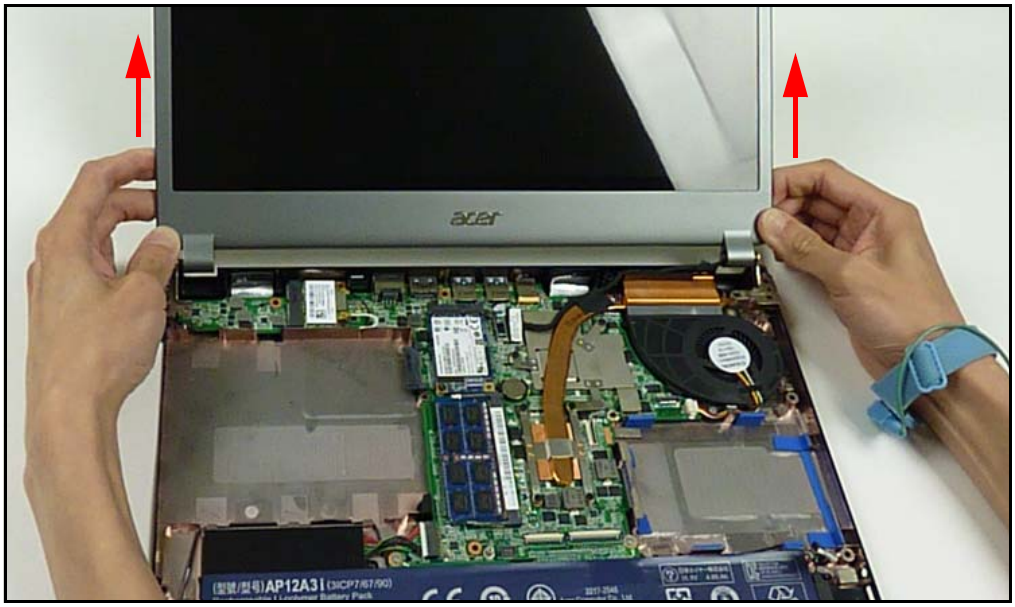

Figure 3-3. LVDS Cable Removal

ID	Size	Quantity	Screw Type
A	M2.5 x 2.5	2	
B	M2.5 x 2.5	3	

Battery Pack Removal

Prerequisite:

Top Cover Removal

Audio Board Removal

1. Move the MIC cable off the battery. It is not necessary to remove the MIC module.

Figure 3-1. MIC Cabling Preparation

2. Disconnect the power cable.

Figure 3-2. Power Cable Removal

3. Remove battery pack.

NOTE:

Follow local regulations for battery disposal.

Figure 3-3. Battery Battery Removal

Hard Disk Drive Removal

Prerequisite:

Top Cover Removal

Audio Board Removal

1. Disconnect the Audio Board FFC and move away.

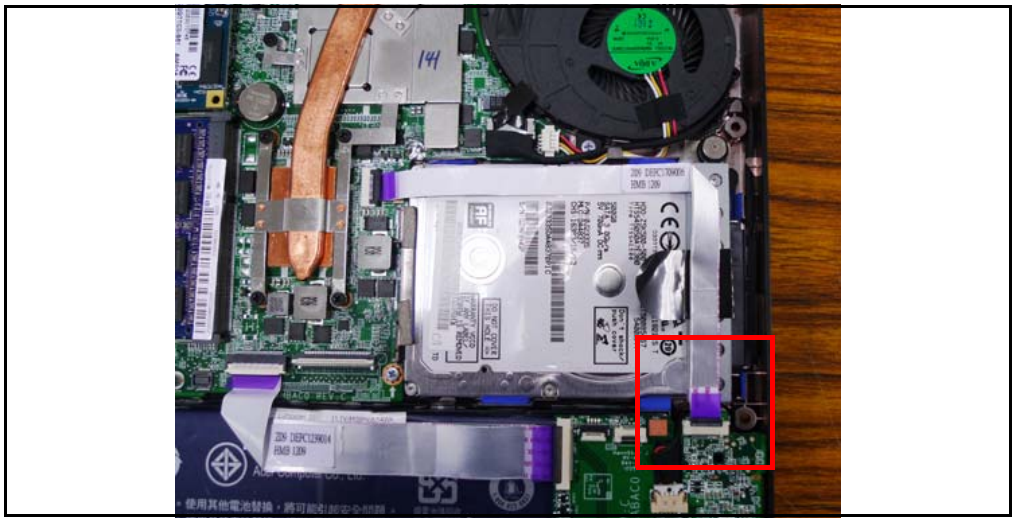

Figure 3-1. Audio FFC Preparation

2. Disconnect the HDD cable.

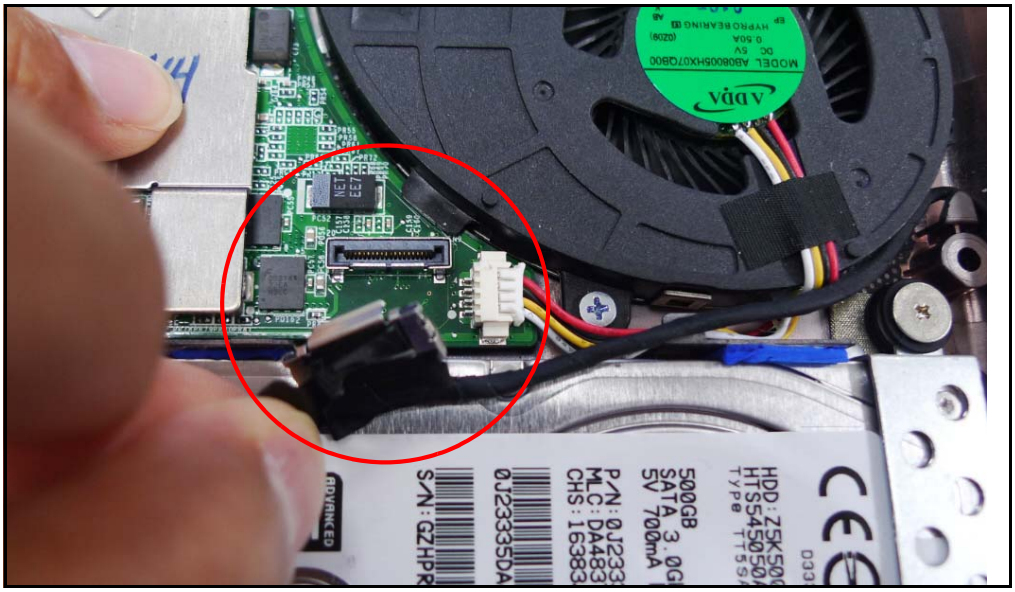

Figure 3-2. HDD Cable Removal

3. Remove the screw(s).
4. Remove the HDD.

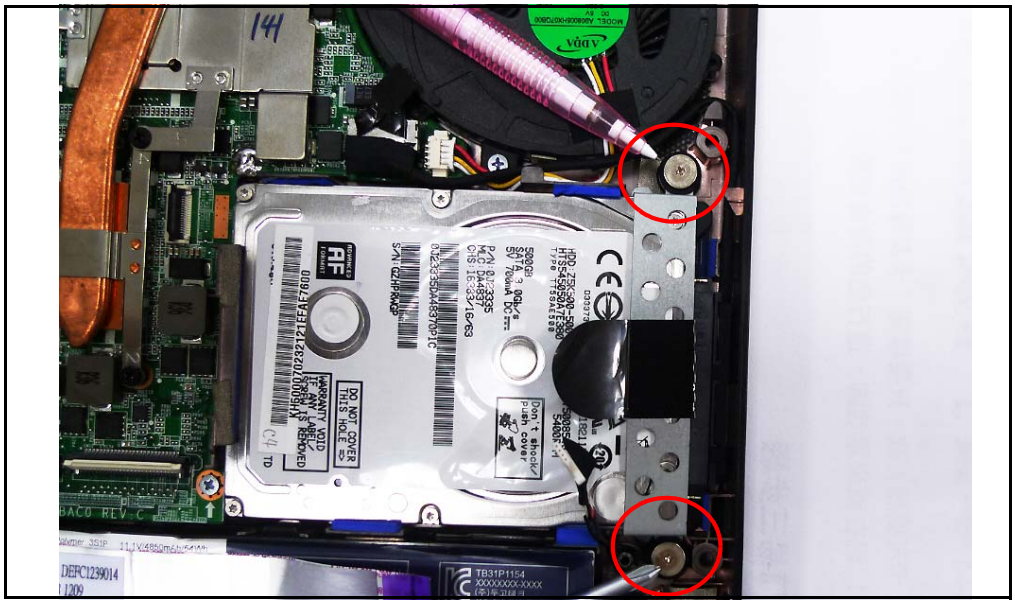

Figure 3-3. HDD Removal

5. Remove the screw(s).

NOTE:

There are two screws on the HDD bracket.

6. Remove the HDD bracket.

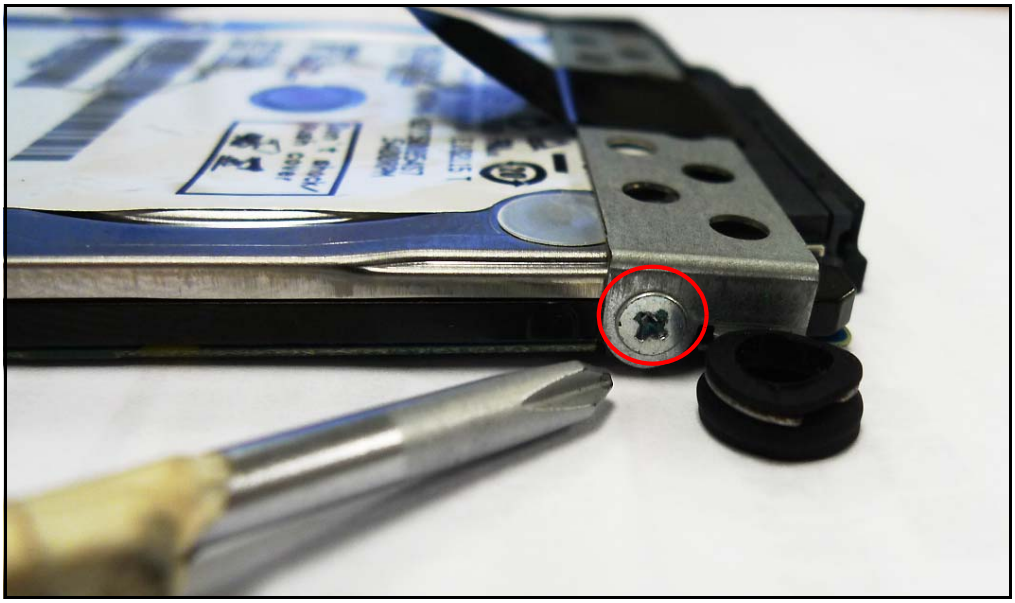

Figure 3-4. HDD Bracket Screws Removal

ID	Size	Quantity	Screw Type
A	M2.0 x 2.0	2	
B	M2.0 x 2.0	2	

LCD Bezel Removal

Prerequisite:

LCD Module Removal

1. Place LCD module on a clean dry surface.
2. Grasp the corner of the bezel and remove.
3. Continue to remove the bezel as shown (Figure 3-1).

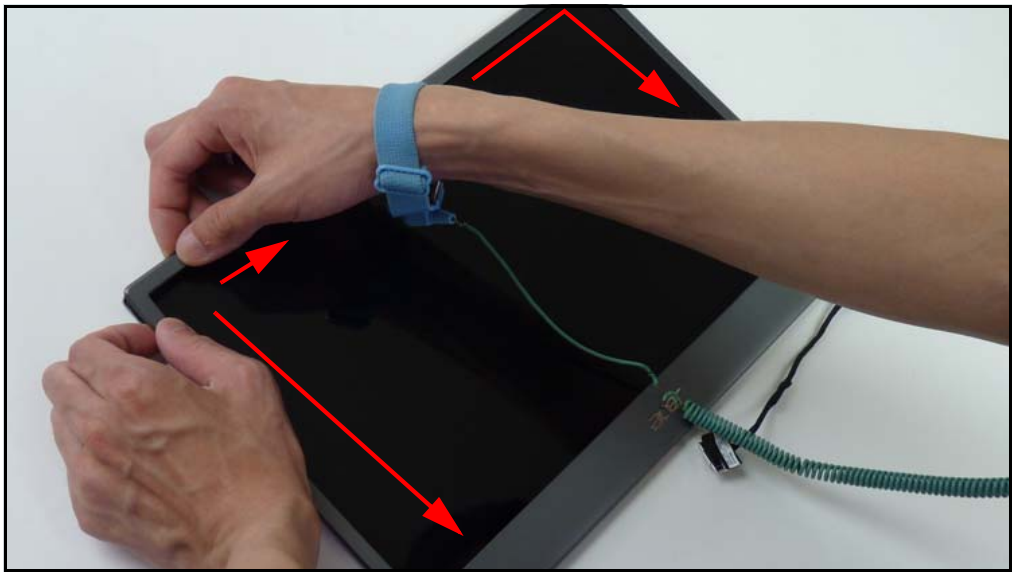

Figure 3-1. LCD Bezel Removal

4. Remove the bezel.

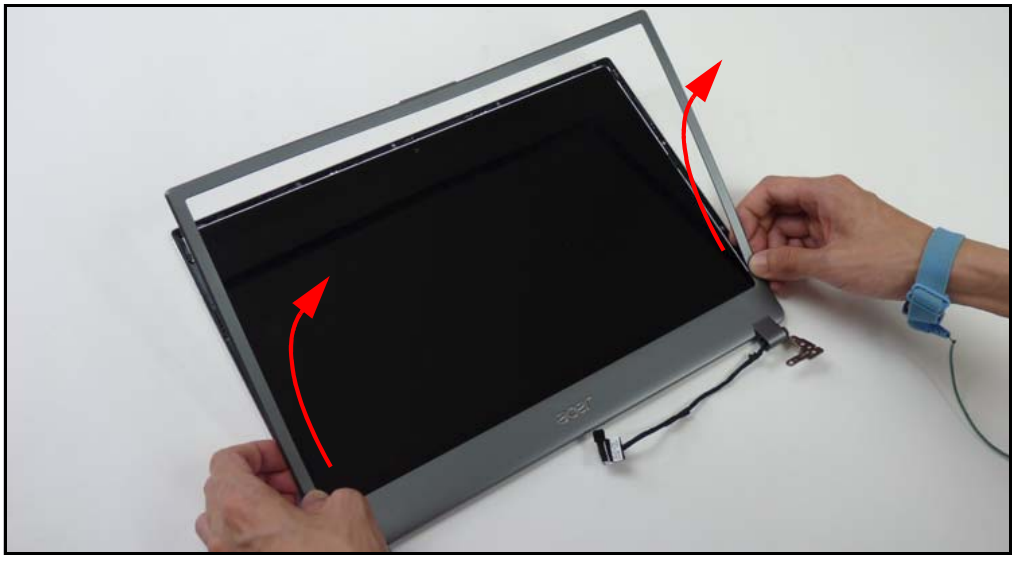

Figure 3-2. LCD Bezel Removal Continued

Fan Thermal Assembly Removal

⚠ CAUTION:

Make sure the system has cooled before removing the termal assembly to avoid injury.

Prerequisite:

LCD Module

1. Disconnect the fan cable.
2. Loosen the screw(s).

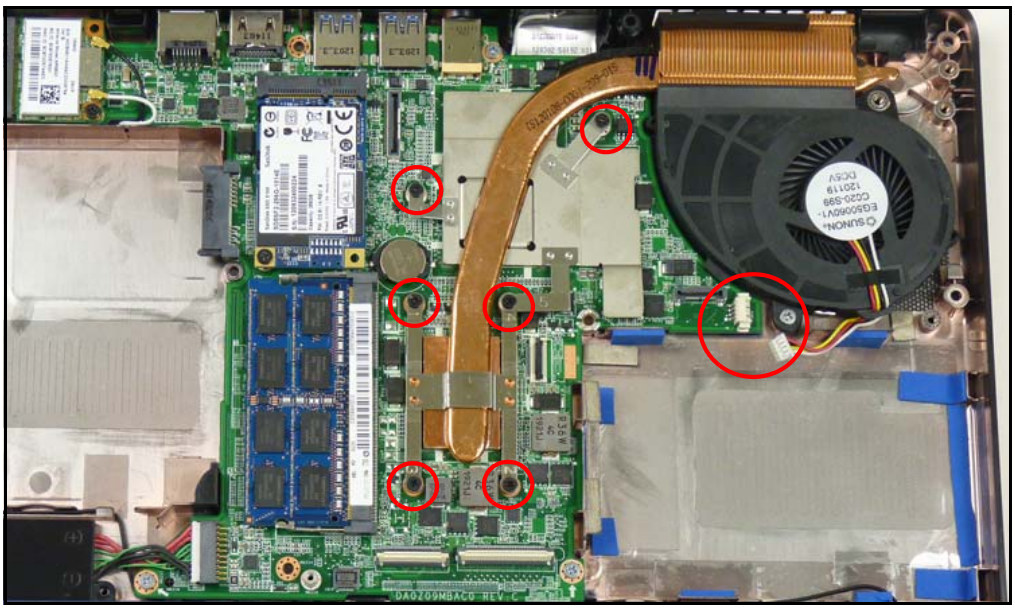

Figure 3-1. Fan/Thermal Screw Removal

3. Remove the assembly.

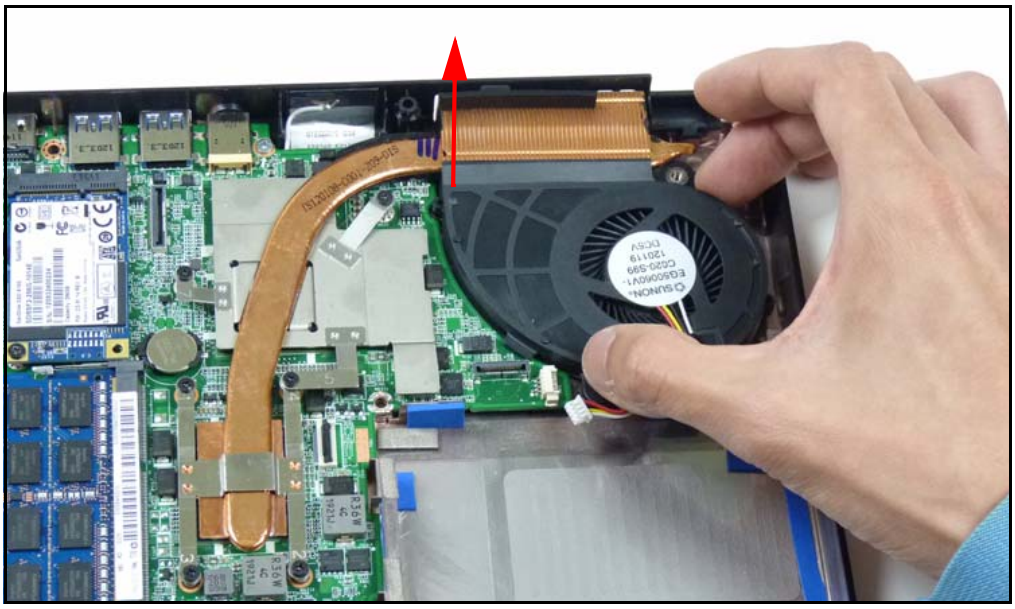

Figure 3-2. Fan/Thermal Assembly Removal

LCD Hinge Removal

Prerequisite:

LCD Bezel Removal

1. Locate the hinges.

Figure 3-1. LVDS Cable Removal

2. Remove the screw(s).

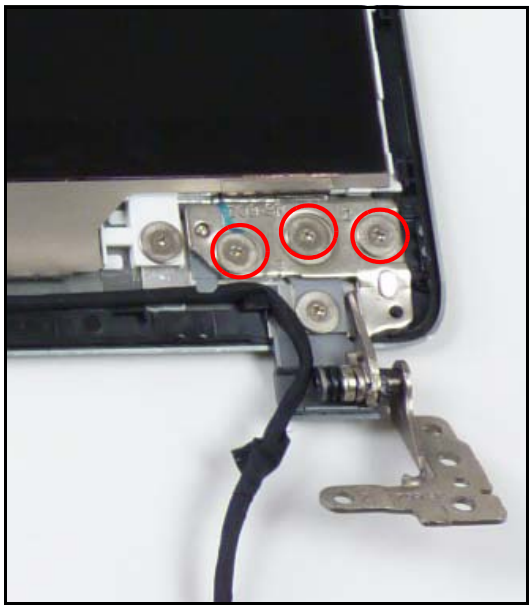

Figure 3-2. LCD Hinge Screws Removal

ID	Size	Quantity	Screw Type
A	M2.0 x 0.5 x 7.0 (Flathead)	3	
B	M2.0 x 0.5 x 7.0 (Flathead)	3	

LCD Bracket Removal

Prerequisite:

LCD Hinge Removal

1. Remove the screw(s).
2. Remove the bracket.

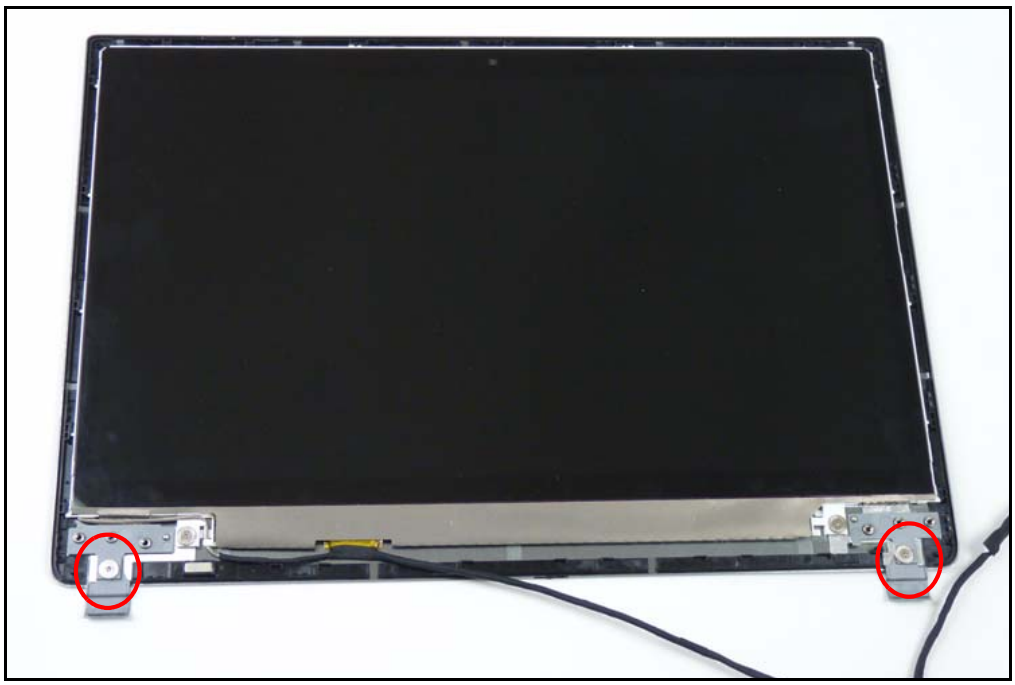

Figure 3-1. LCD Bracket Removal

ID	Size	Quantity	Screw Type
	M2.0 x 0.5 x 7 (flathead)	2	

LCD Module Removal

Prerequisite:

LCD Hinge Removal

1. Place the LCD on a clean flat surface.

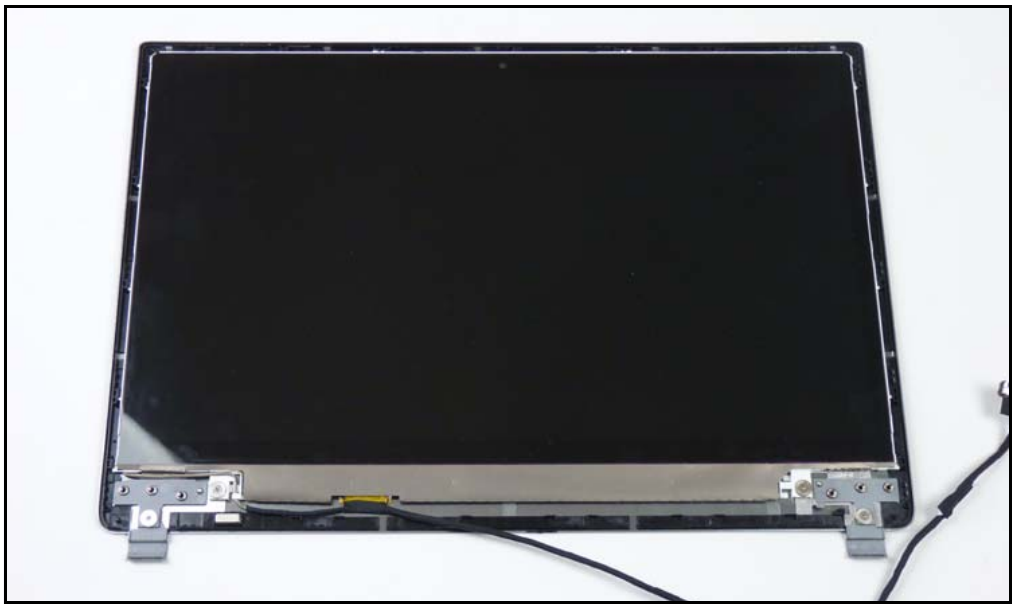

Figure 3-1. LCD Panel Removal

2. Remove the screw(s).

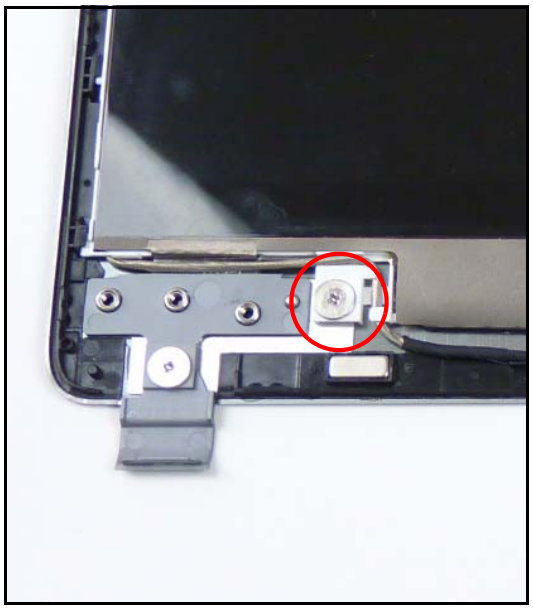

Figure 3-2. LCD Panel Screws Removal

3. Slide the panel down to release from the panel cover.

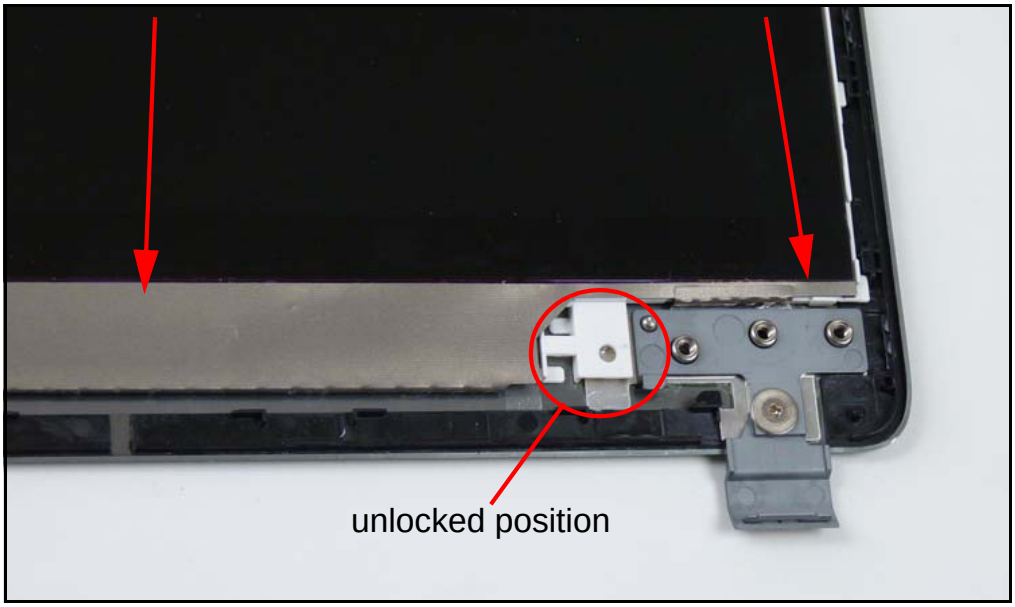

Figure 3-3. LCD Panel Unlock

4. Remove the panel.

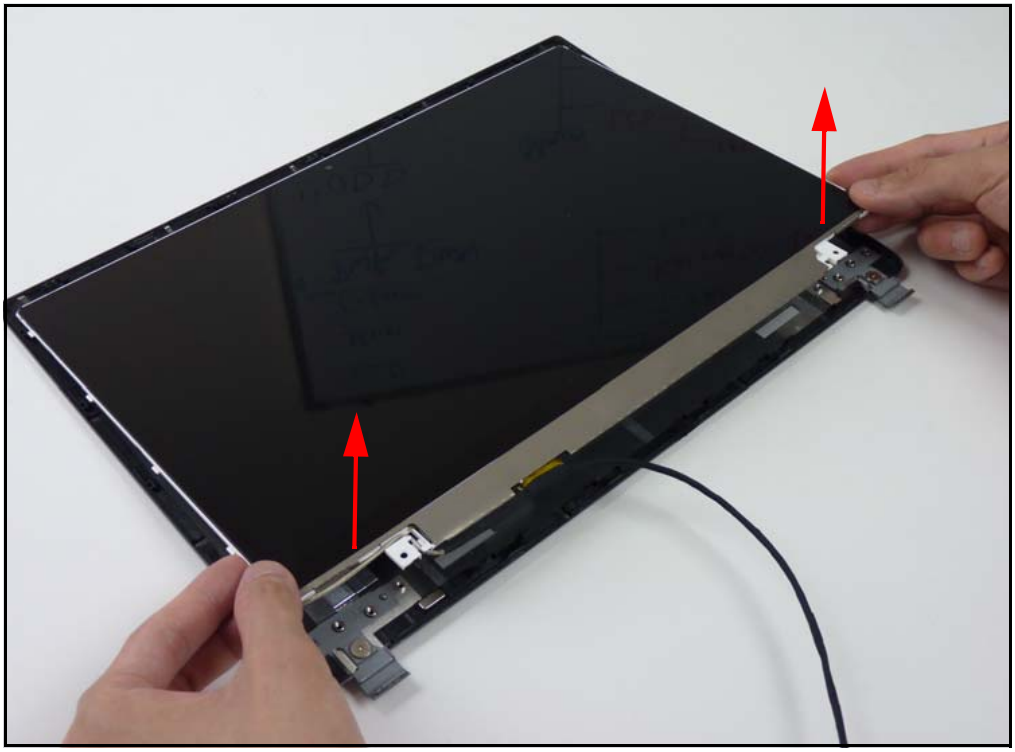

Figure 3-4. LCD Panel Removal

ID	Size	Quantity	Screw Type
A	M2.0 x 0.5 x 7.0 (flathead)	2	

LCD LVDS Removal

Prerequisite:

LCD Module Removal

1. Disconnect the LVDS cable from the panel.

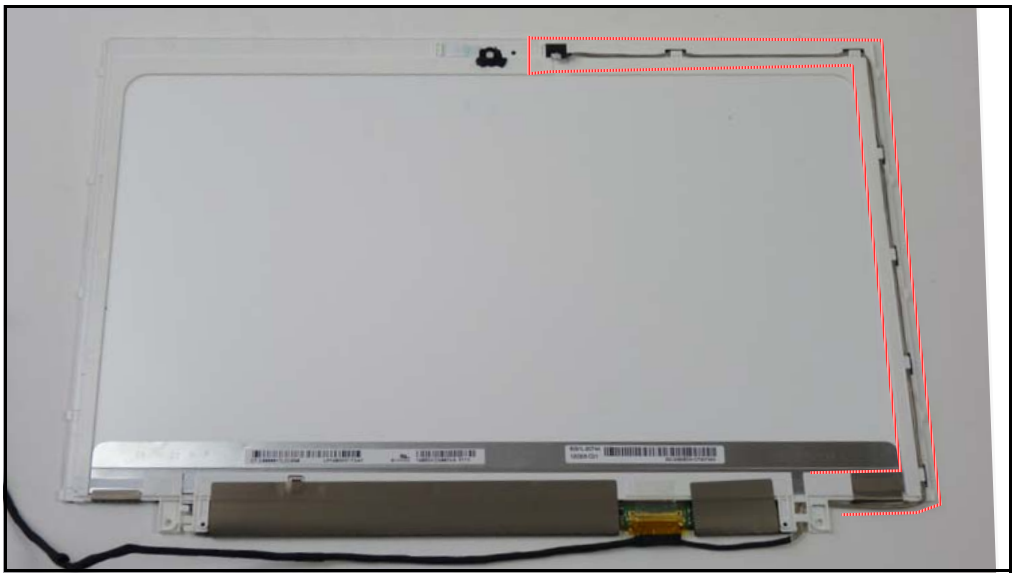

Figure 3-1. LVDS Cable Removal

2. Disconnect LVDS connector from the panel.
3. Disconnect the cable from the panel inner bracket.
4. Remove the LVDS cable.

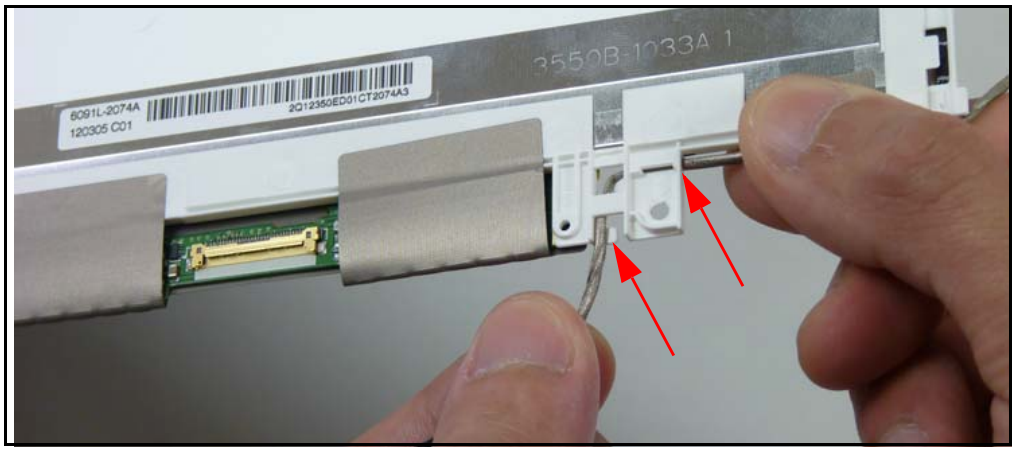

Figure 3-2. LVDS Cable Removal

CCD Module Removal

Prerequisite:

LCD Module Removal

1. Locate the CCD module on the back of the LCD panel.
2. Remove module and disconnect from cable.

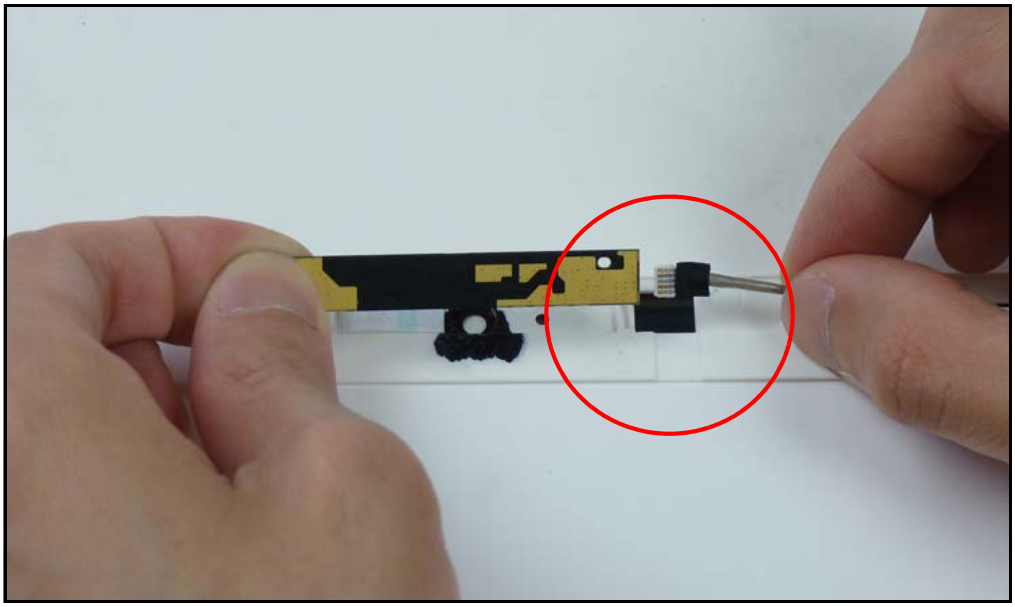

Figure 3-1. CCD Cable Removal

3. Remove the module.

Mainboard Removal

Prerequisite:

Removal of Combo Module, Audio Board, HDD, SSD Module, DIMM, Battery Pack, Fan/Thermal Assembly, and LCD Module

1. Clear the antenna cables and position them out of the way.
2. Remove the screw(s).

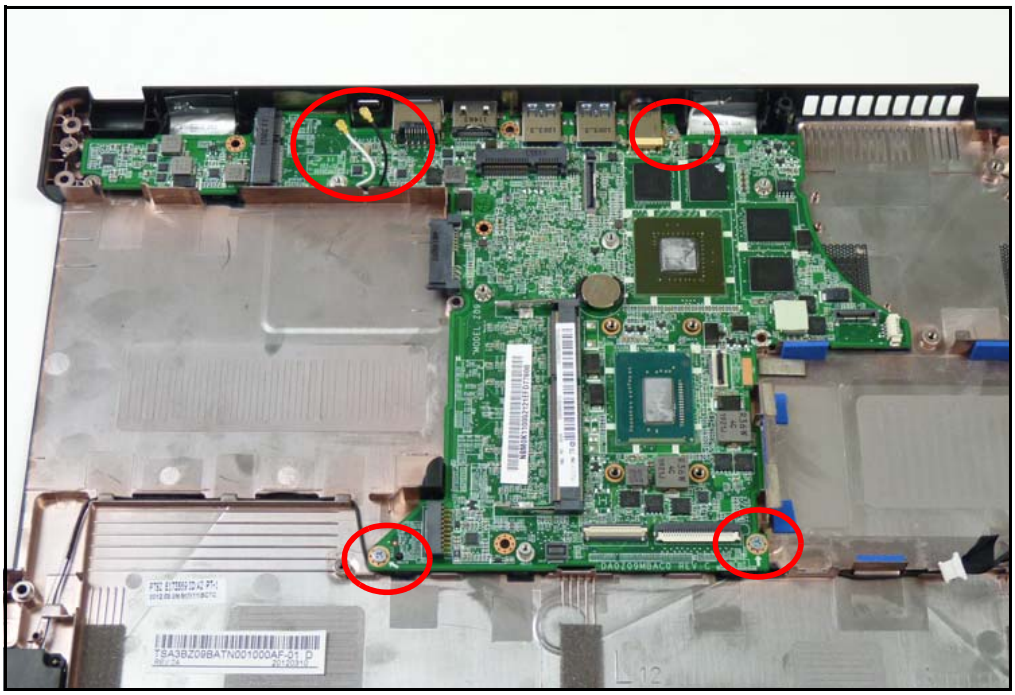

Figure 3-1. Mainboard Screw Removal

3. Remove the mainboard.

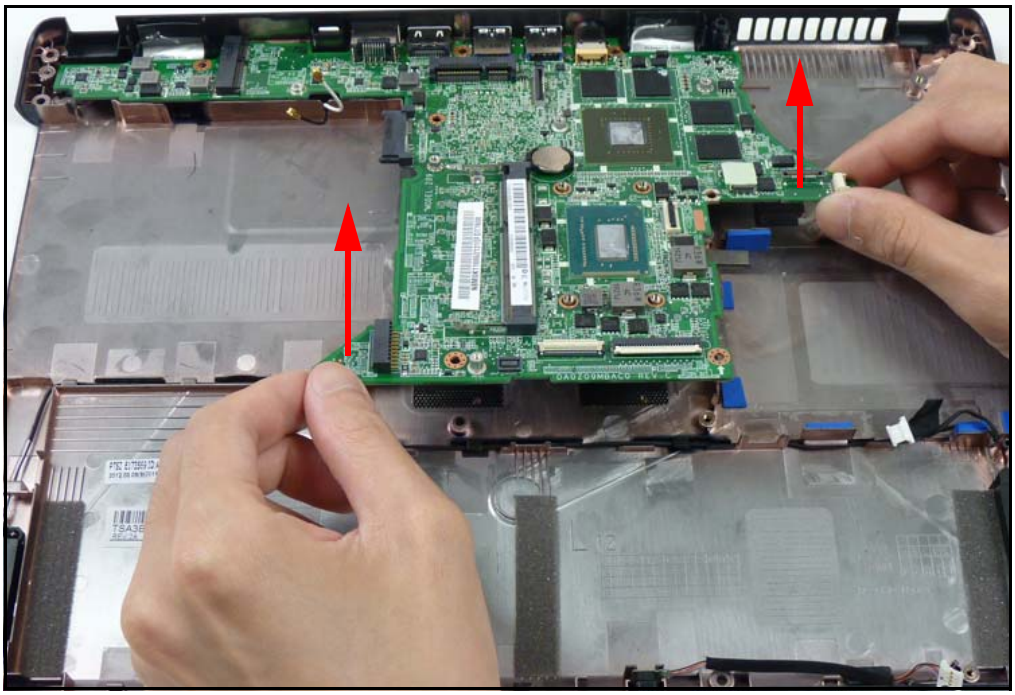

Figure 3-2. Mainboard Removal

☞ **IMPORTANT:**

Follow local regulations for board disposal.

ID	Size	Quantity	Screw Type
	M2.5 x 3.0	3	

Antenna Removal

Prerequisite:

Mainboard Removal

1. Locate the antenna cables.
2. Gently remove the cabling.

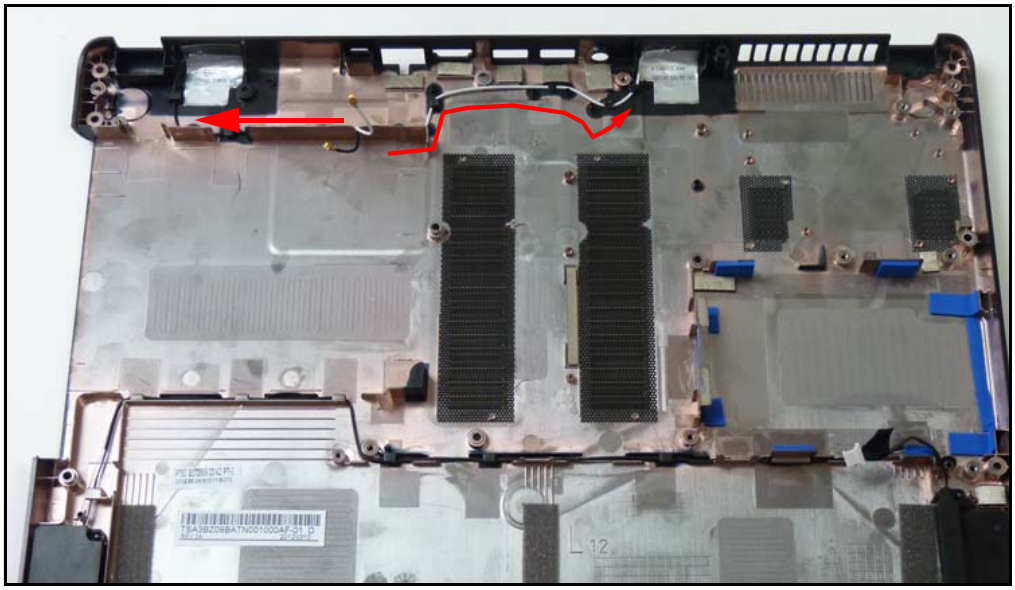

Figure 3-1. Antenna Cabling Removal

3. Remove the antennas

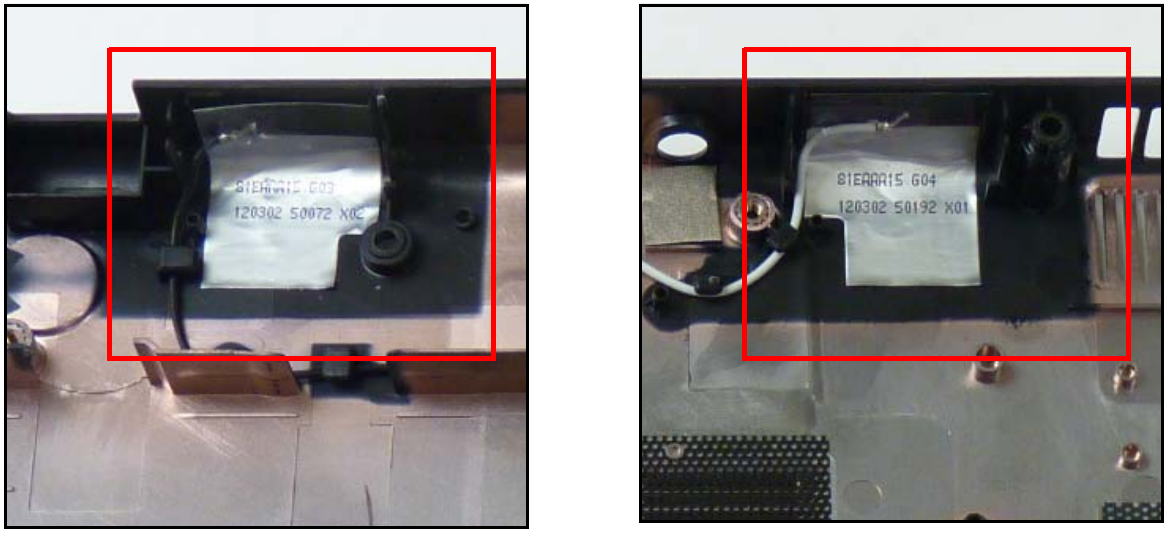

Figure 3-2. Antenna Removal

Speaker Modules Removal

Prerequisite:

Mainboard Removal

1. Locate the speaker cables.

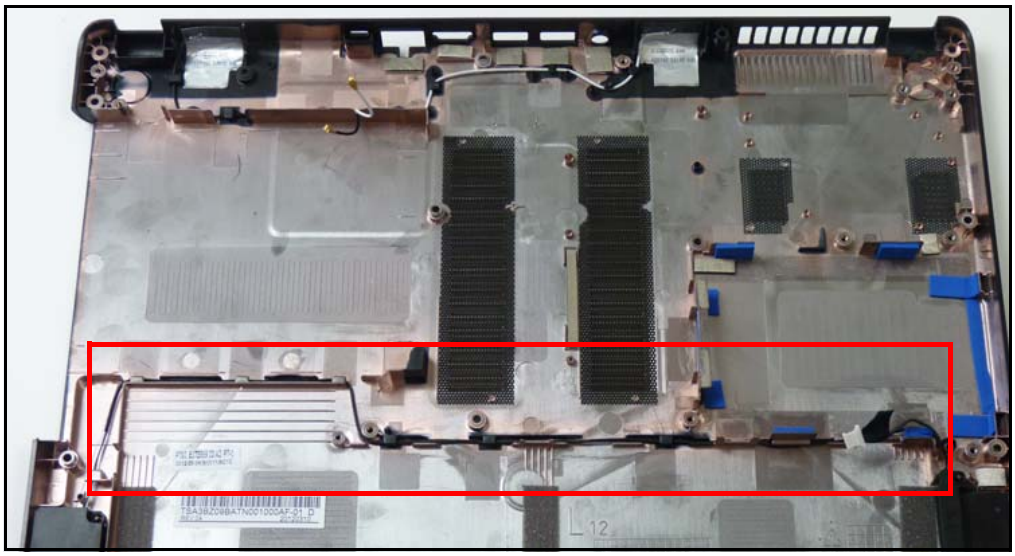

Figure 3-1. Speaker Location

2. Remove the speaker (L/R) modules.

Figure 3-2. Speaker Removal

3. Remove the speaker cabling.

ODD Module Installation

1. Install the ODD bezel.

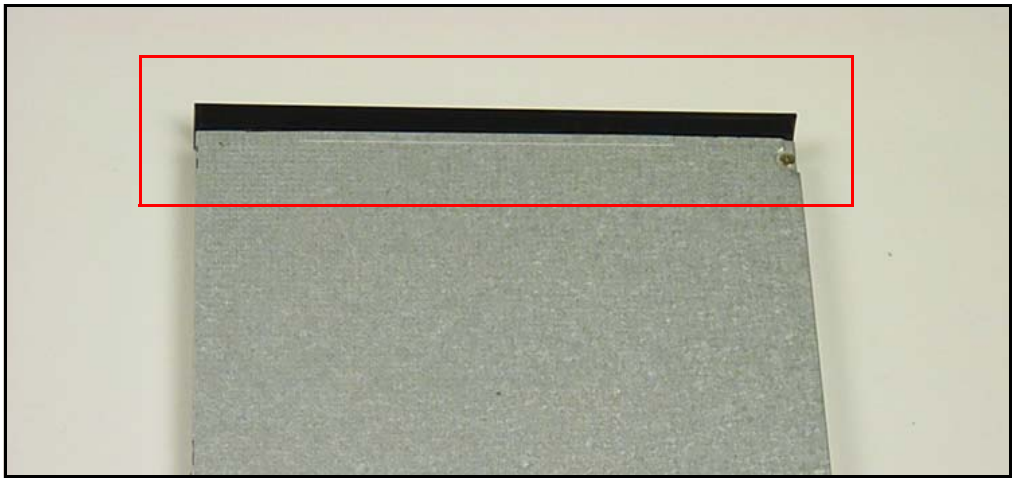

Figure 3-1. ODD Bezel Removal

2. Install the ODD the bracket.
3. Secure with the screw(s).

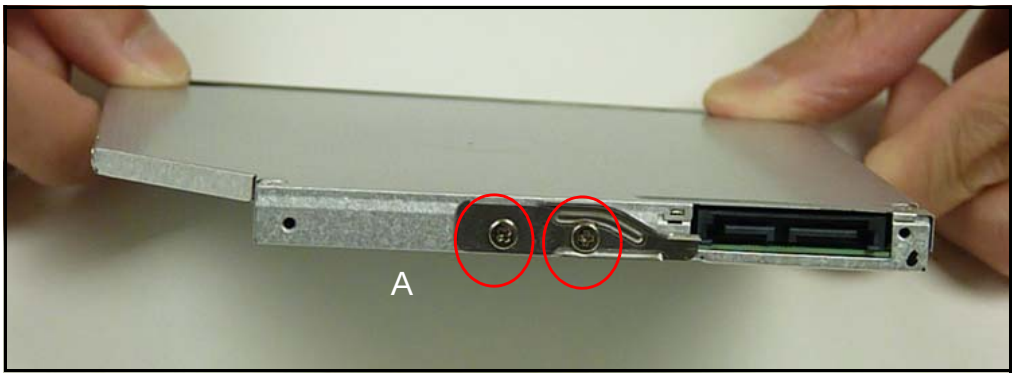

Figure 3-2. ODD Bracket Removal

4. Install ODD module in lower cover.
5. Install and secure with screw.

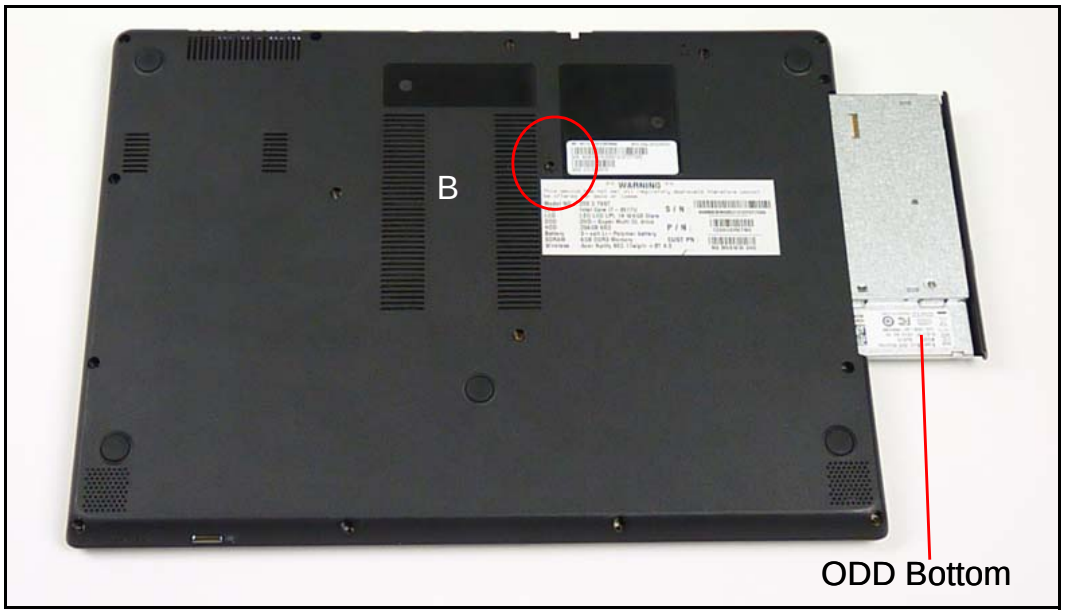

Figure 3-3. ODD Module Installation

ID	Size	Quantity	Screw Type
A	M2x2	2	
B	M2.5x5.0	1	

Lower Cover Installation

1. Connect the cabling to the main unit.

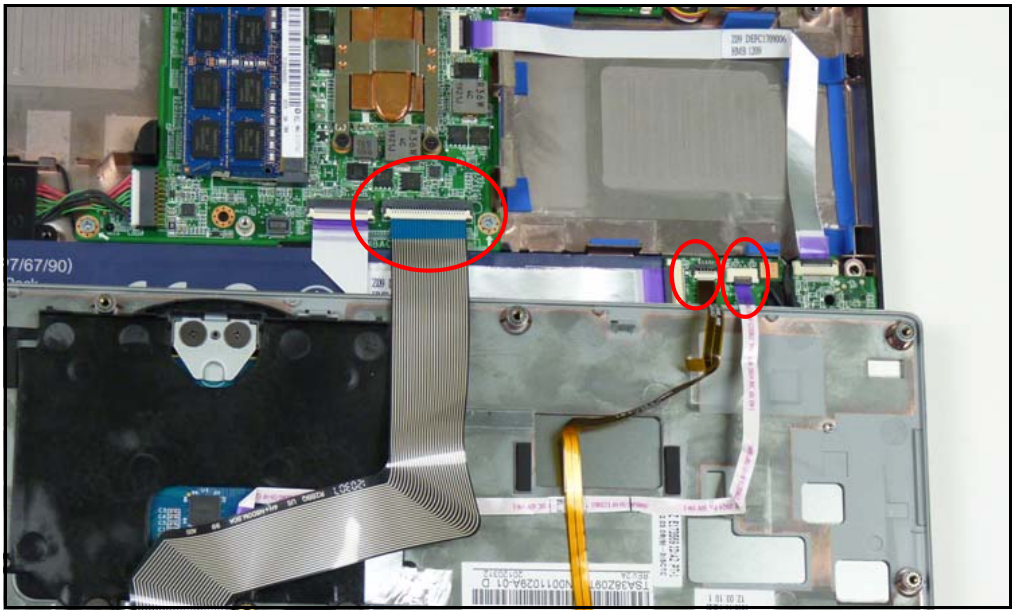

Figure 3-1. Lower Cover Cabling Installation

2. Turn the device to expose the bottom lower cover.
3. Secure with screw(s), Figure 3-2.

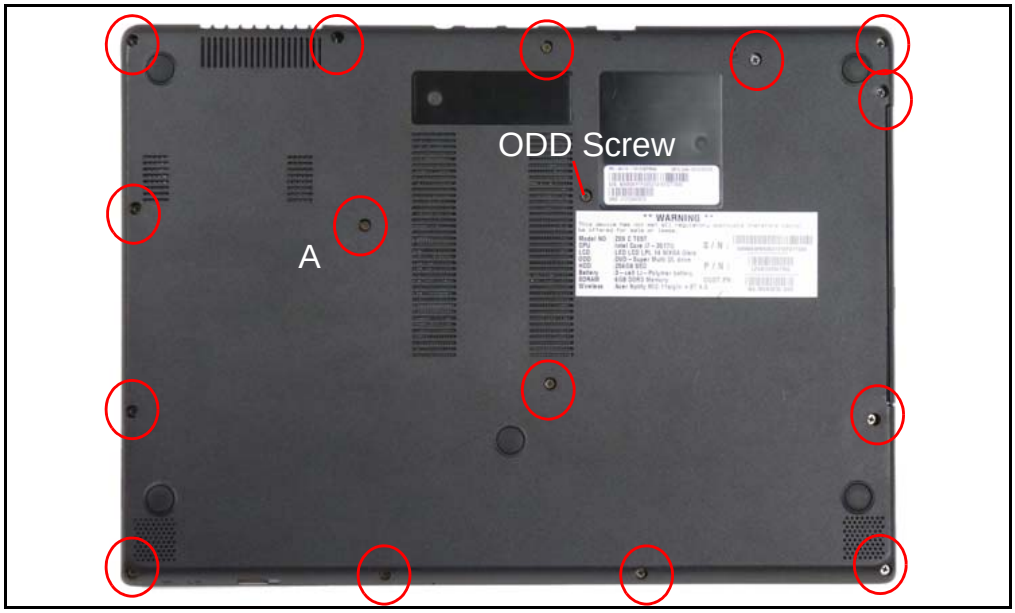

Figure 3-2. Lower Cover Screw Intallation

ID	Size	Quantity	Screw Type
A	M2.5x5.0	15	

Keyboard Backlight Installation

1. Install the keyboard module.
2. Align the Backlight module with the keyboard plate.

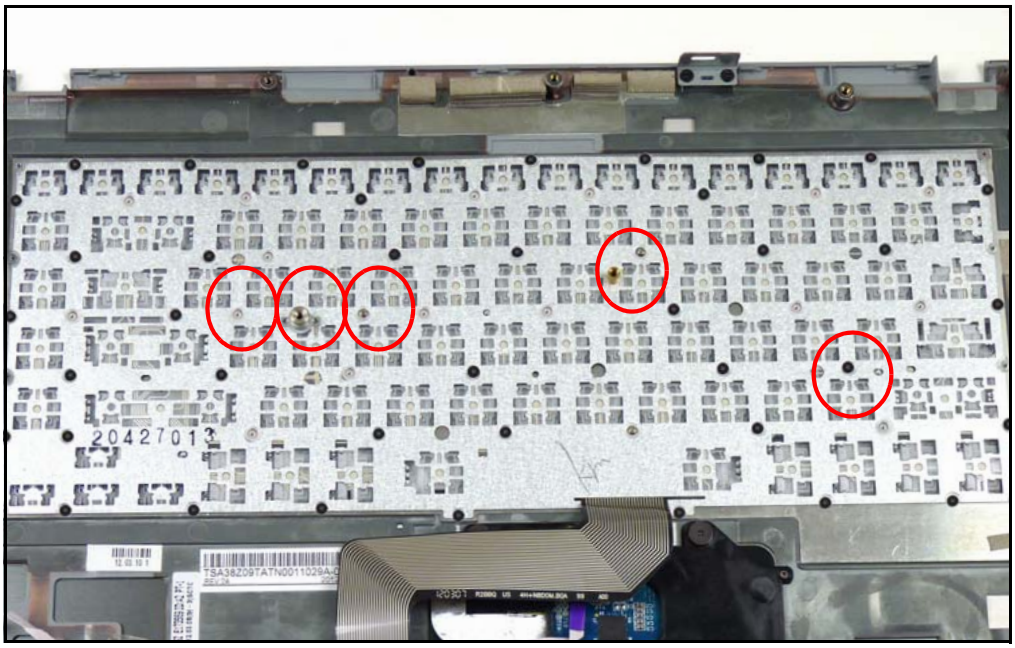

Figure 3-1. Backlight and Keyboard Alignment

3. Install the Backlight module.

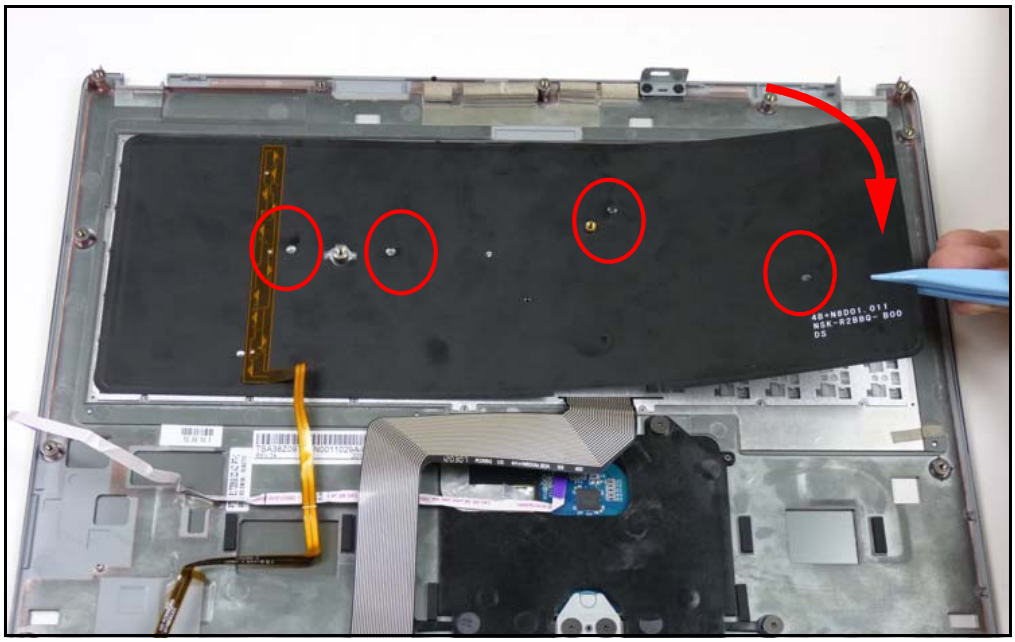

Figure 3-2. Backlight Installation

Keyboard Installation

1. Place the keyboard on the top cover.
2. Secure with screw(s), Figure 3-1.

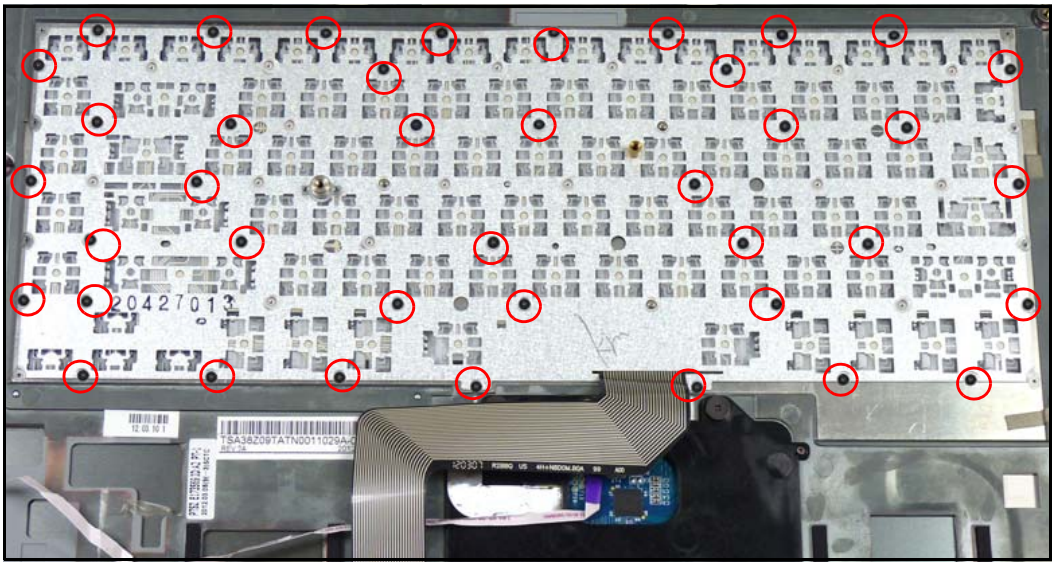

Figure 3-1. Keyboard Installation

3. Align the mylar strip and install in place.
4. Turn the device over on a secure surface.

ID	Size	Quantity	Screw Type
	M1.0 x 0.43	40	

Touch Pad Bracket Installation

1. Insert the T-pad bracket and align the screw holes on the bracket and top cover.
2. Secure with screw(s), Figure 3-1.

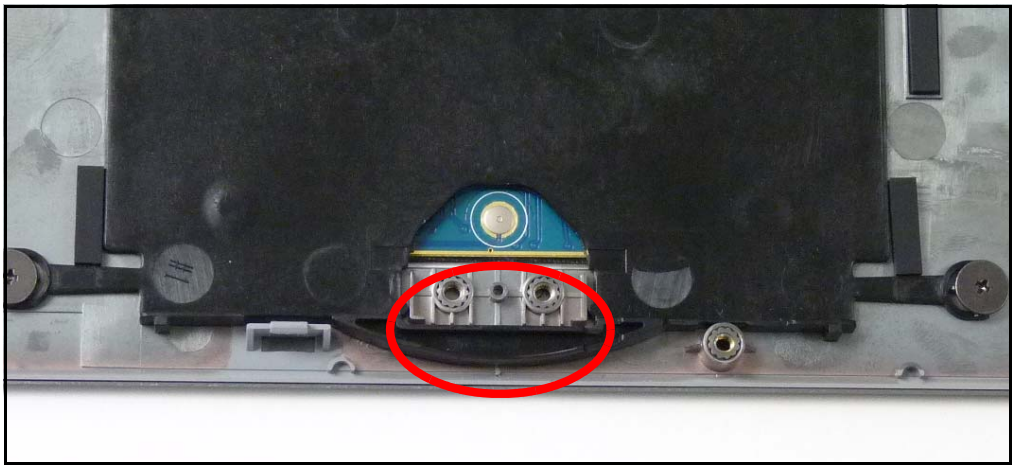

Figure 3-1. T-pad Bracket Installation

ID	Size	Quantity	Screw Type
	M2.5 x 1 x 7 (Flat head)	2	

Audio Module Installation

1. Insert the Audio Board and align the screw holes on the module and top cover.
2. Secure with screw(s), Figure 3-1.

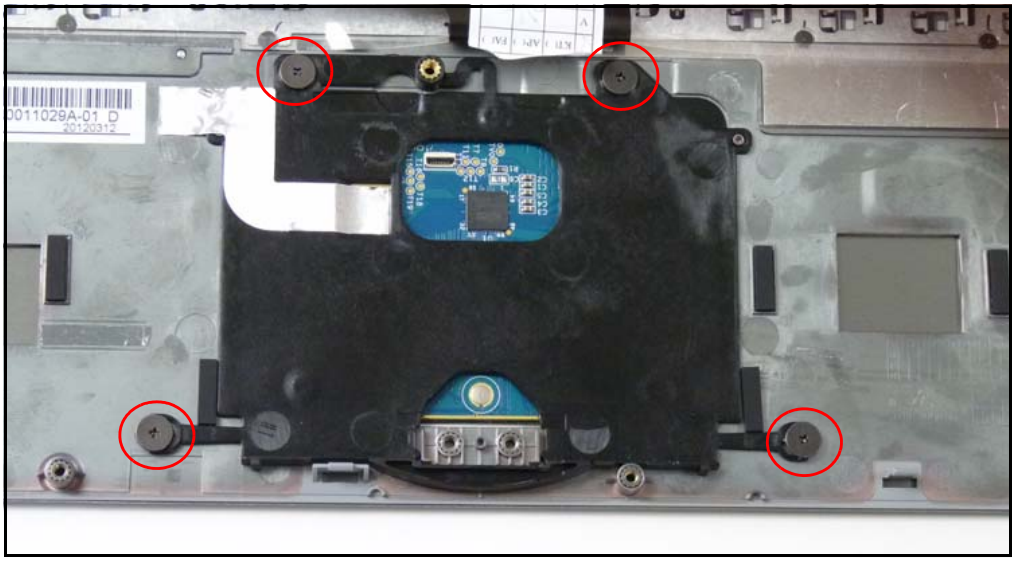

Figure 3-1. Audio Board Installation

3. Insert the FFC into the module.
4. Secure with the adhesive.

Figure 3-2. T-pad FFC Intallation

ID	Size	Quantity	Screw Type
	M2.5 x 1 x 7 (Flat head)	4	

Audio Board Installation

1. Insert the Audio Board and align the screw holes on the module and chassis.

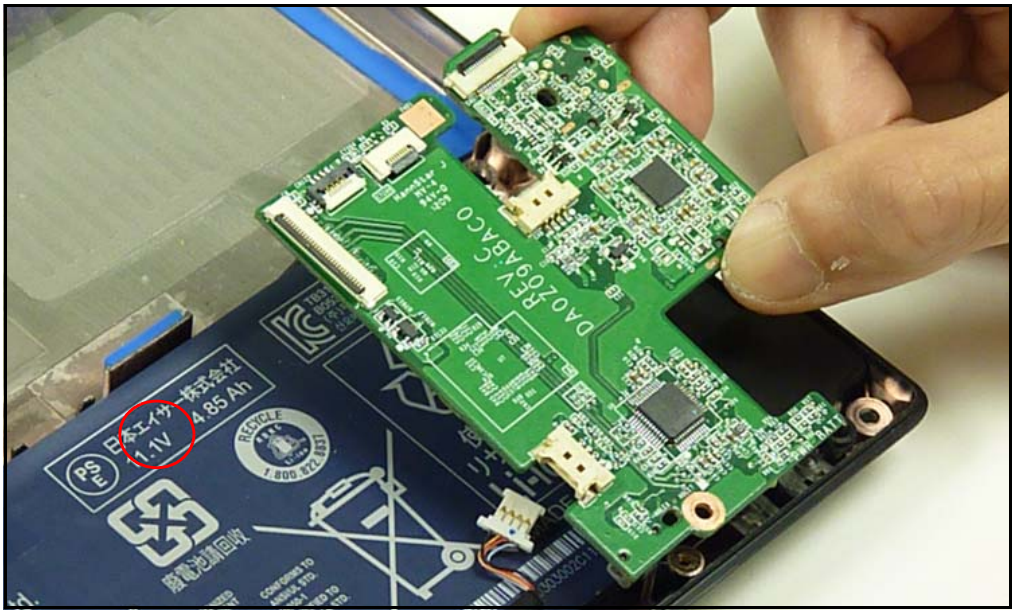

Figure 3-1. Audio Board Installation

2. Secure with screw(s).
3. Connect the FFC to the audio board.
4. Connect the MIC cable to the audio board.
5. Connect the HDD FFC to the audio board.
6. Connect the speaker cable to the audio board.

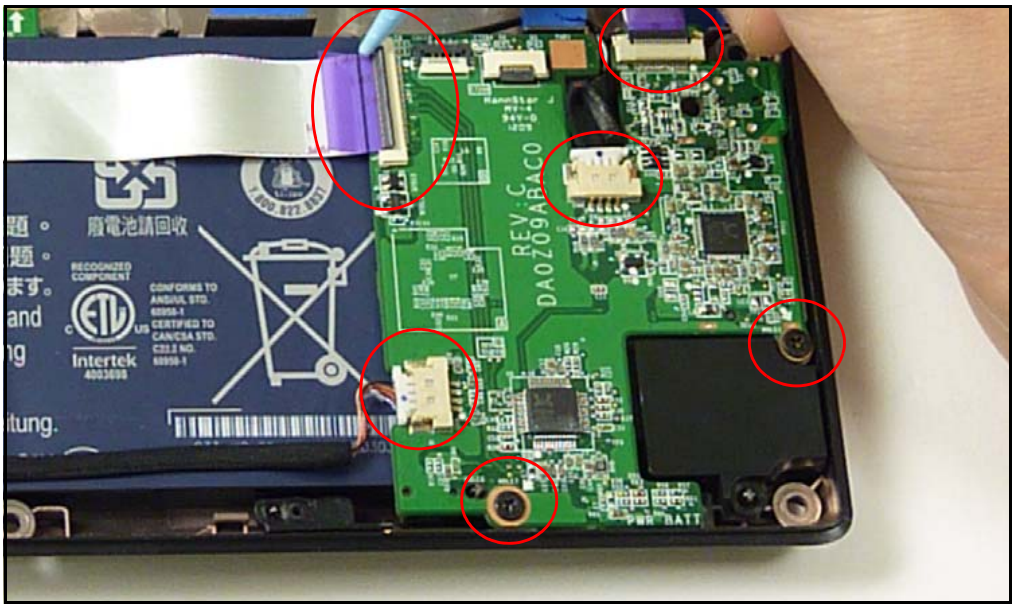

Figure 3-2. Audio Board Screws Removal

ID	Size	Quantity	Screw Type
	M2.0 x 3.0	2	

DIMM Installation

1. Connect DIMM module to mainboard connector.
2. Push down on module until clips lock in place.

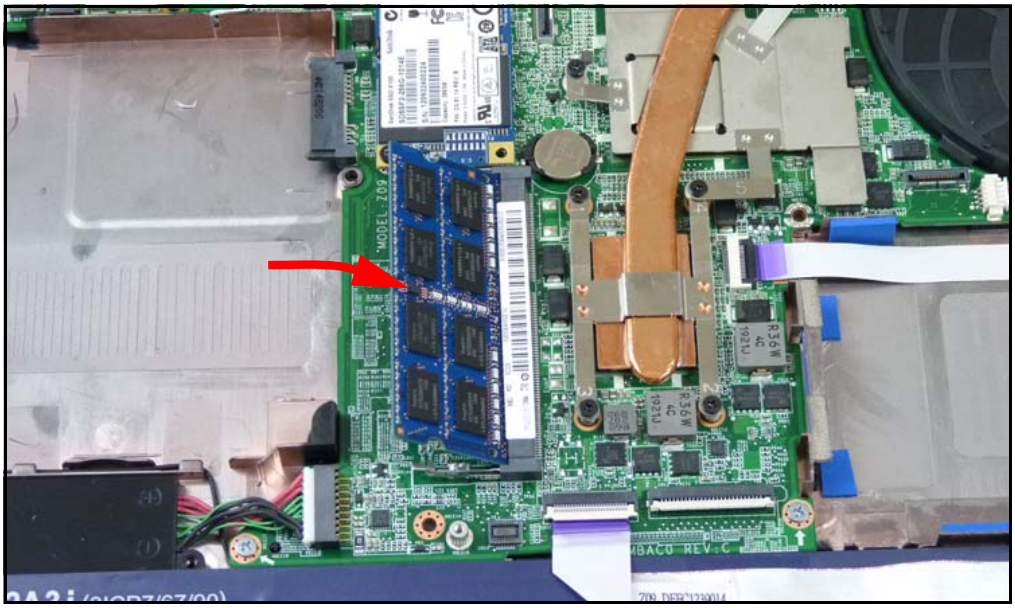

Figure 3-1. DIMM Installation

RTC Installation

1. Locate RTC socket on the mainboard.
2. Place RTC module on mainboard.

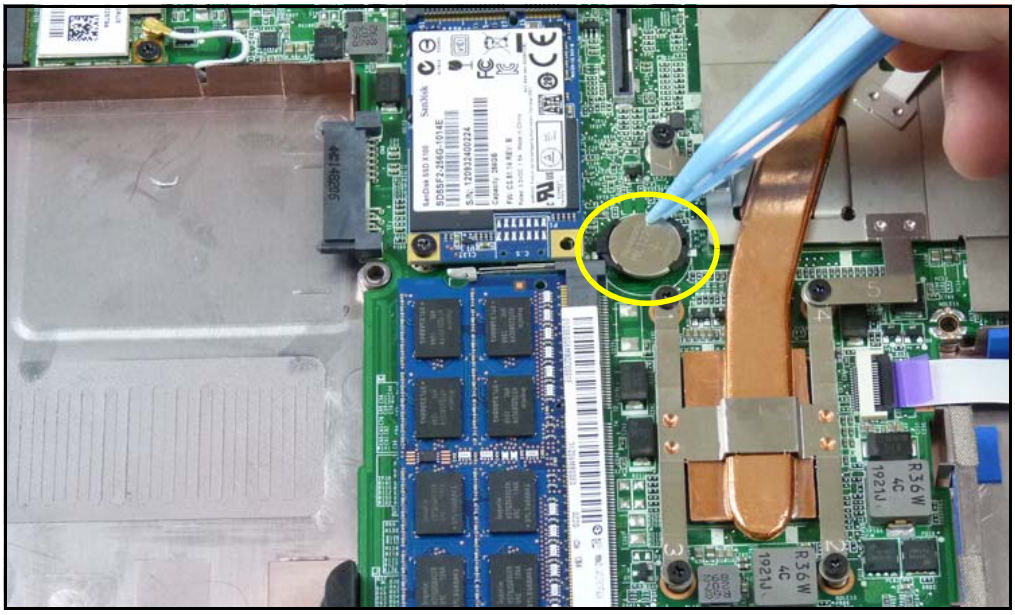

Figure 3-1. RTC Installation

Combo Module Installation

1. Align the module with the mainboard.
2. Install the module and hold down in place.

Figure 3-1. Combo Module Installation

3. Secure with screw(s).
4. Connect the antenna cables.

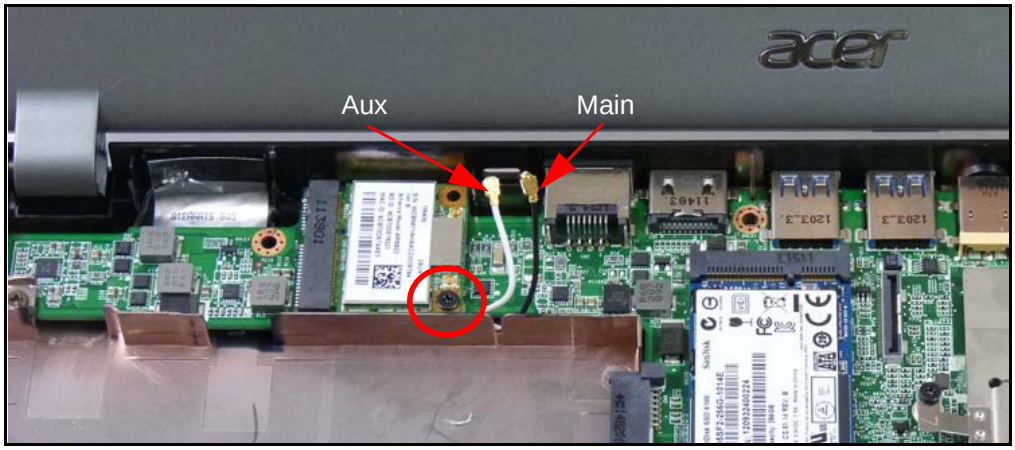

Figure 3-2. Antenna Connection

ID	Size	Quantity	Screw Type
	M2.0 x 2.0	1	

Solid State Disk (SSD) Installation

1. Locate the SSD connector on the mainboard.
2. Insert the board and hold down.

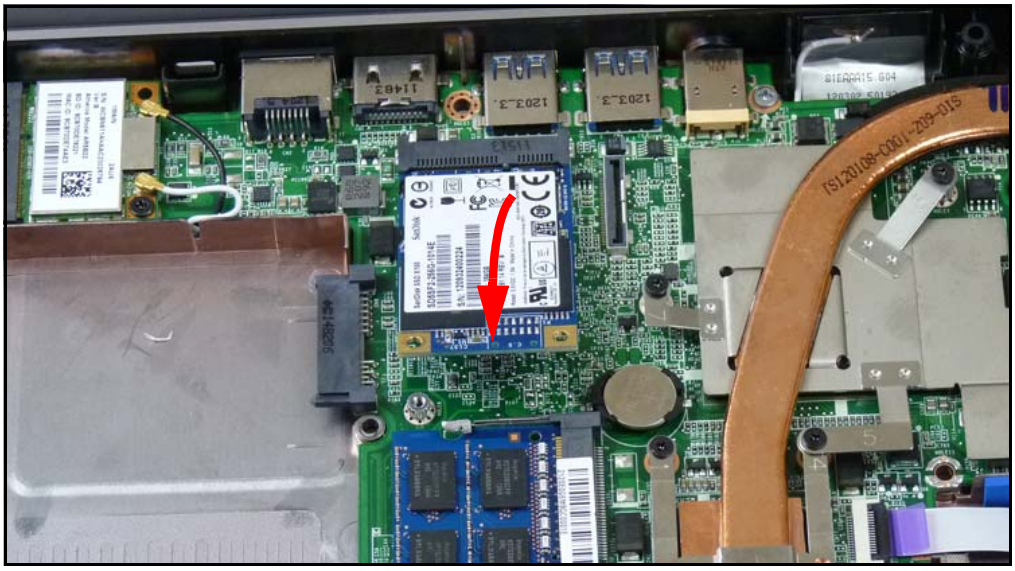

Figure 3-1. Solid State Disk Installation

3. Secure with screw(s).

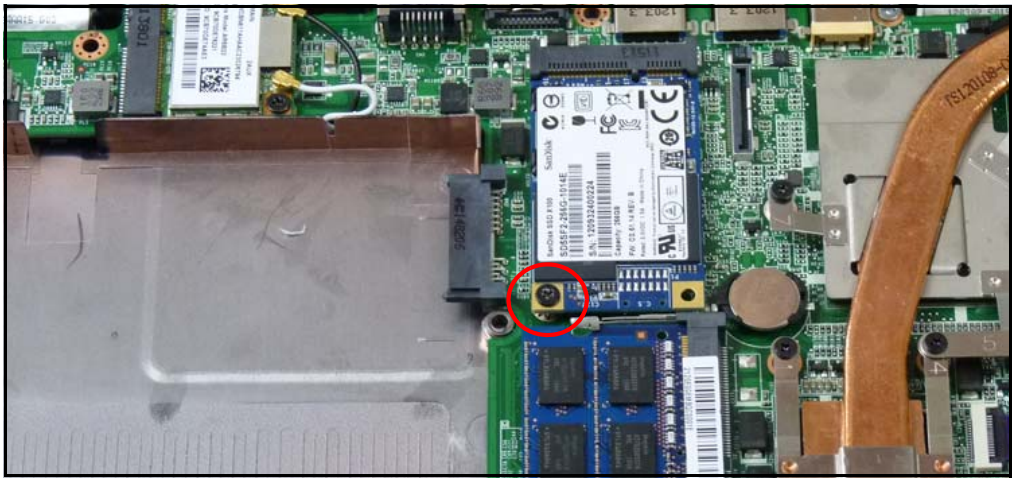

Figure 3-2. Solid State Disk Screw Installation

ID	Size	Quantity	Screw Type
	M2.0 x 2.0	1	

MIC Installation

1. Insert the MIC into the chassis.

Figure 3-1. MIC Installation

2. Place the cable along the battery.
3. Connect the MIC cable.

Figure 3-2. MIC Cable Connection

Audio Board Installation

1. Align the LCD module with the chassis and install the LCD module.

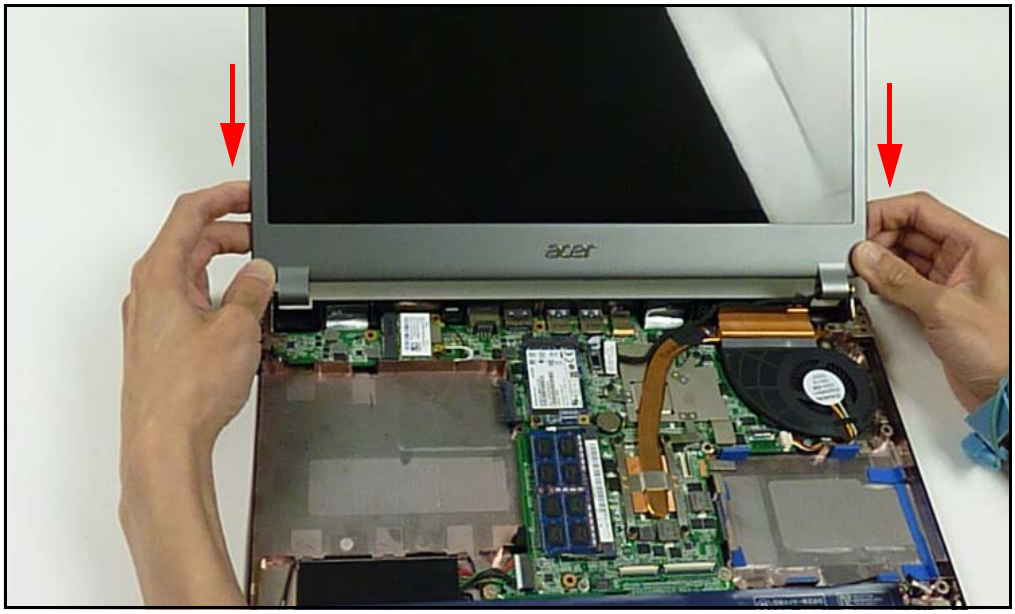

Figure 3-1. LCD Module Installation

2. Secure with screw(s).

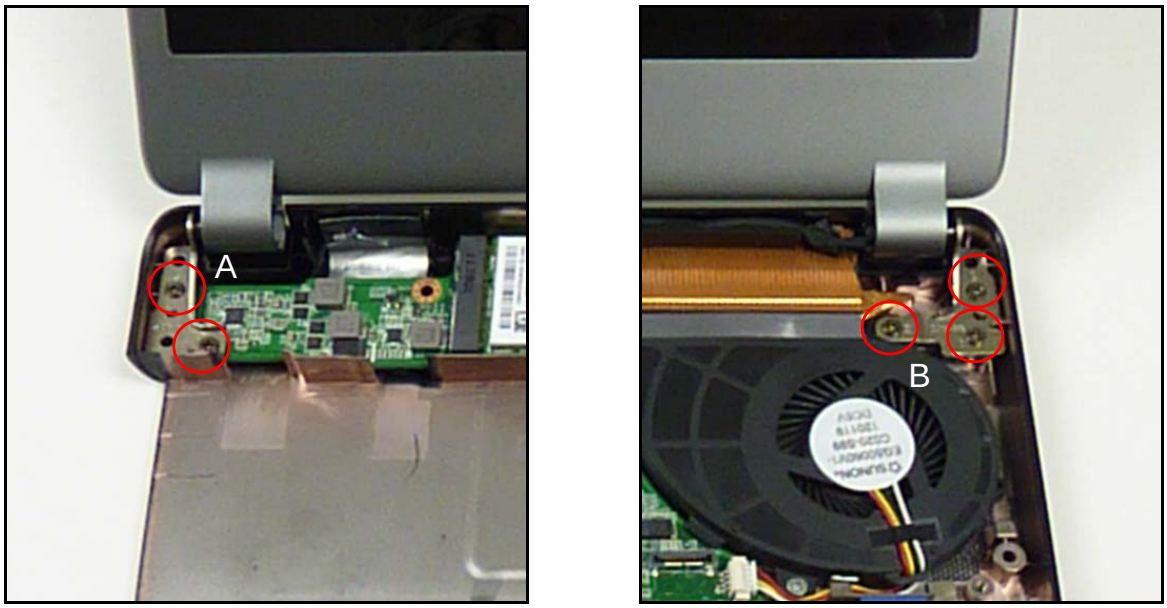

Figure 3-2. LCD Module Screws Removal

3. Connect the LVDS cable.

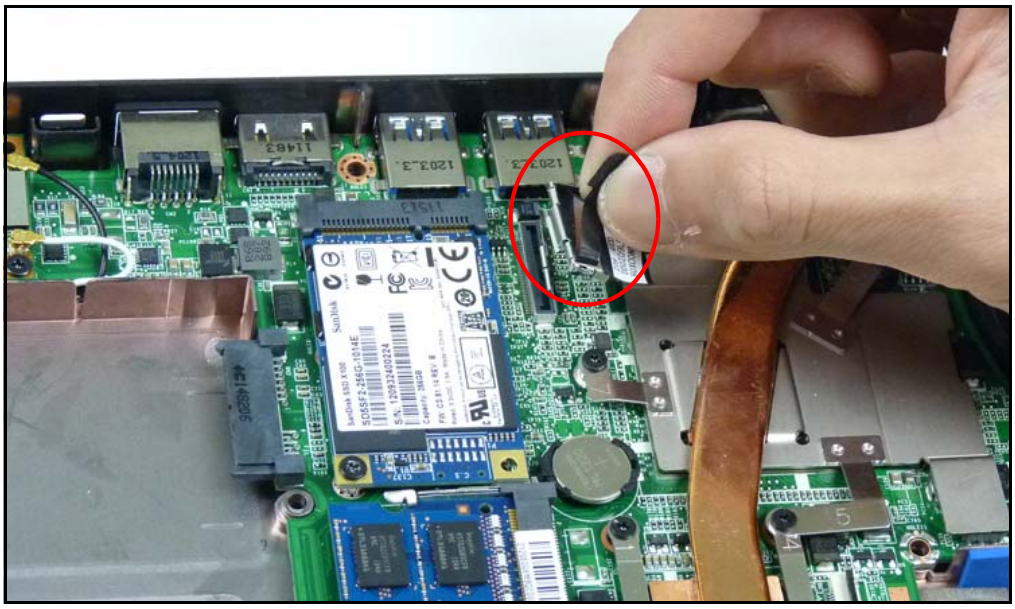

Figure 3-3. Audio Board Screws Removal

ID	Size	Quantity	Screw Type
A	M2.5 x 2.5	2	
B	M2.5 x 2.5	3	

Battery Pack Installation

1. Position the battery pack in the chassis.
2. Install the battery pack.

Figure 3-1. Battery Pack Installation

3. Connect the power cable.

Figure 3-2. Power Cable Connection

4. Replace MIC cable to its position.

Figure 3-3. MIC Cable Positioning

1. Install the HDD carrier on the HDD.
2. Secure with the screw(s).

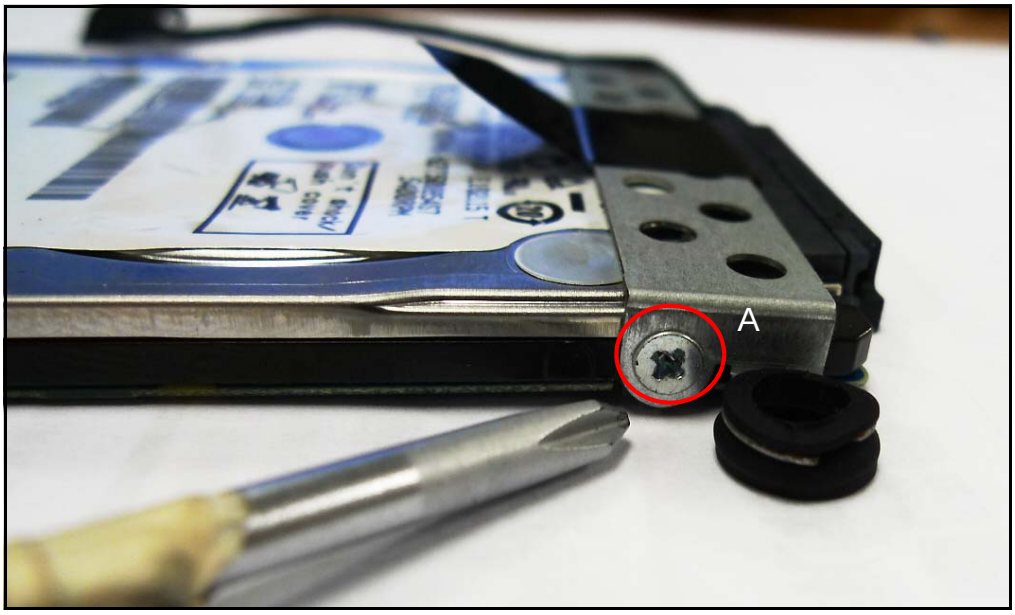

Figure 3-1. HDD Bracket Installation

3. Install the HDD in the chassis.
4. Secure with the screw(s).

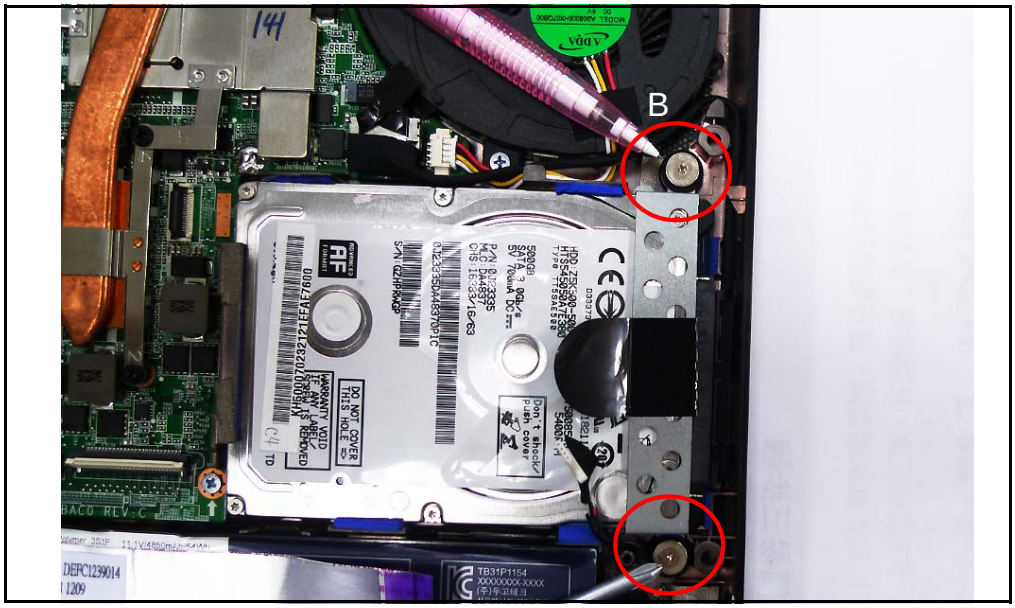

Figure 3-2. HDD Screw Installation

5. Connect the HDD cable connector.
6. Connect the Audio Board FFC.

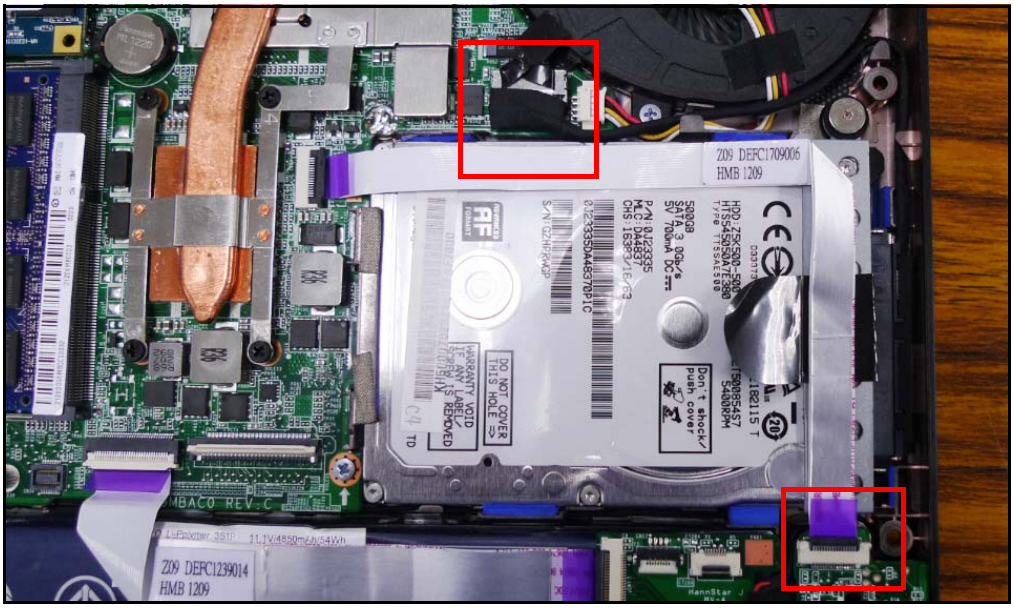

Figure 3-3. Cable Connections

ID	Size	Quantity	Screw Type
A	M2.0 x 2.0	2	
B	M2.0 x 2.0	2	

1. Align the bezel with the module and install.

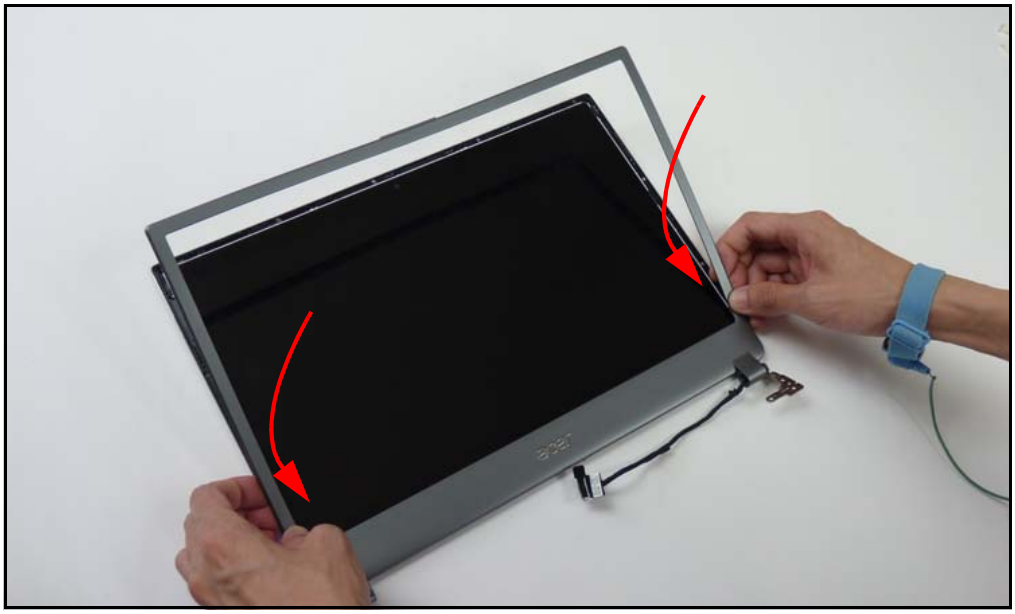

Figure 3-1. LCD Bezel Installation

2. Move around the bezel and press down to secure.

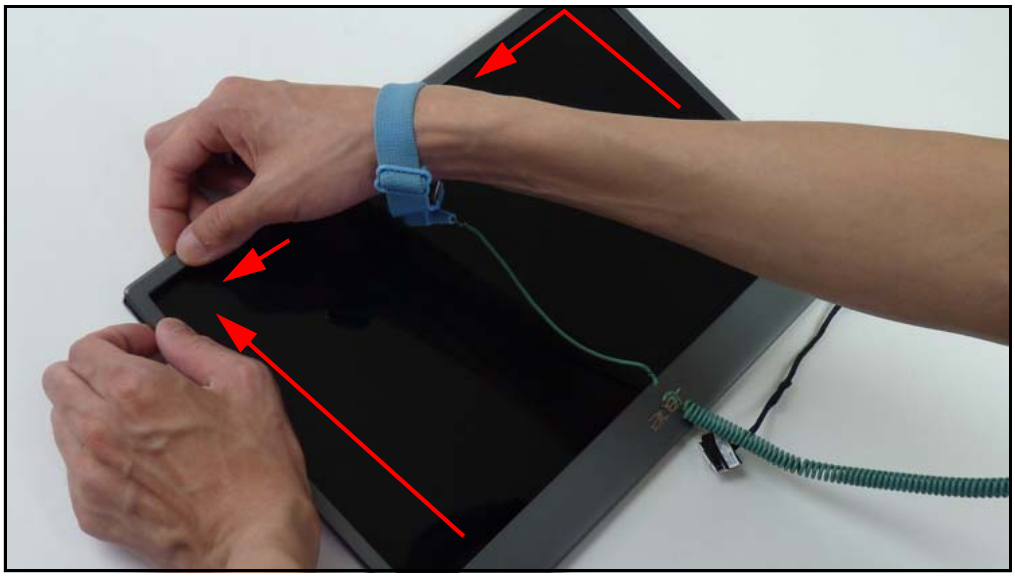

Figure 3-2. LCD Bezel Removal

NOTE:

Bezel locks in place easily. If there is any resistance, make sure the LVDS cable is correctly located inside the LCD module.

Fan Thermal Assembly Installation

☞ IMPORTANT:

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

⚠ CAUTION:

Thermal grease can damage mainboard. Use caution when applying.

The following thermal grease types are approved for use:

- N302
  - Remove all traces of thermal grease from CPU using a lint-free cloth or cotton swab and Isopropyl Alcohol, Acetone, or other approved cleaning agent.
  - Apply small amount of thermal grease to center of CPU.

1. Align the assembly to the mainboard screw holes.

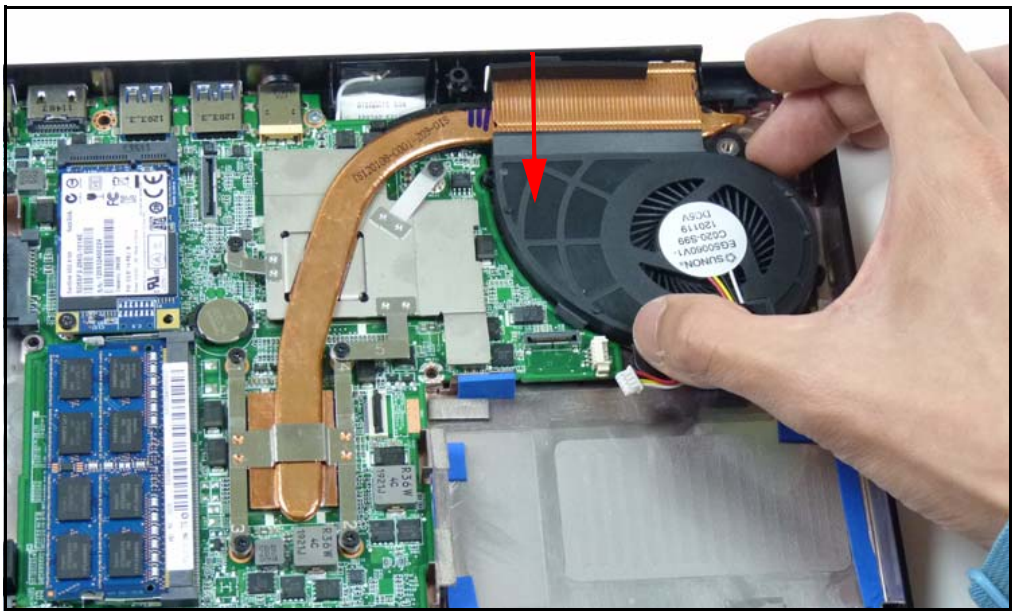

Figure 3-1. Fan/Thermal Module Installation

⇛ NOTE:

The captive screws must be installed and secured in numerical order for thermal grease to spread evenly.

2. Install and secure five (5) captive screws (E/1 - E/5) to mainboard, in numerical order from one (1) to five (5).
3. Connect the Fan cable.

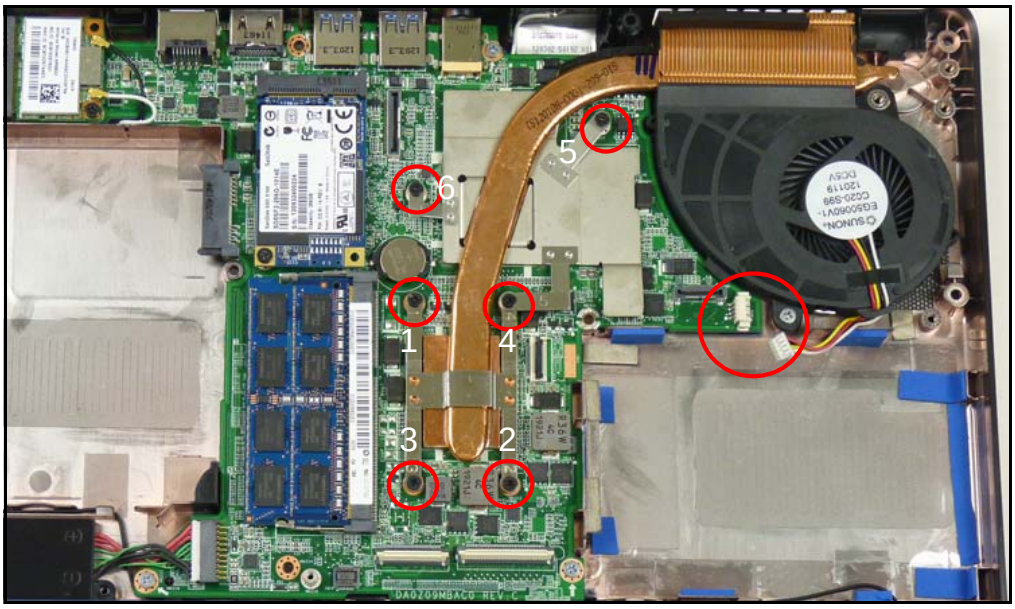

Figure 3-2. Fan/Thermal Screw Removal

1. Align the hinges with the LCD cover.
2. Secure with the screw(s).

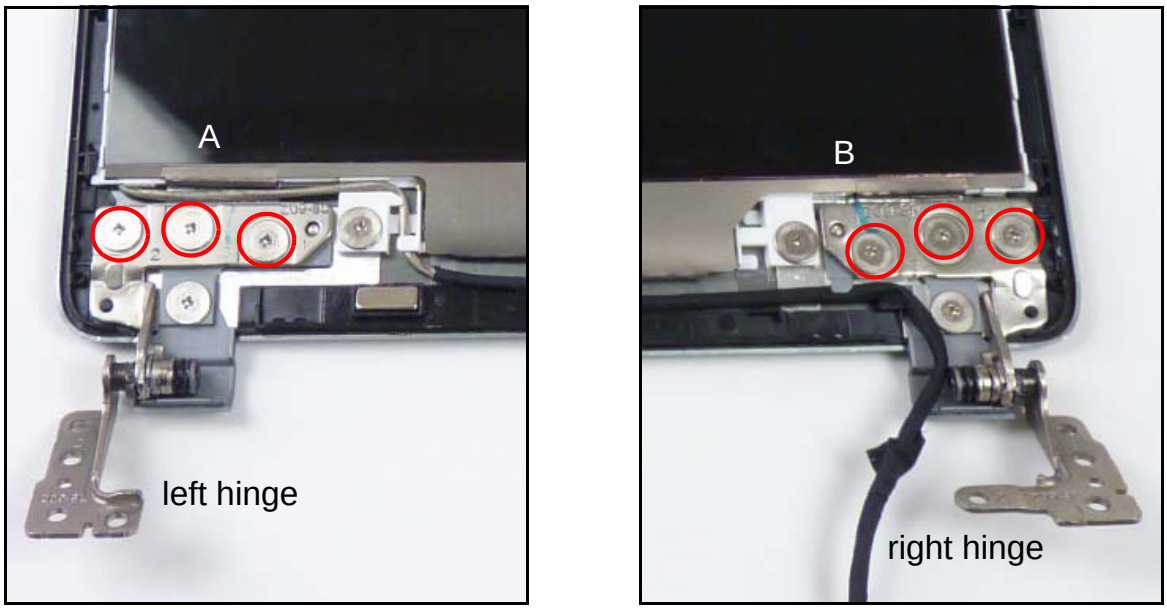

Figure 3-1. LCD Hinge Screws Installation

ID	Size	Quantity	Screw Type
A	M2.0 x 0.5 x 7.0 (Flathead)	3	
B	M2.0 x 0.5 x 7.0 (Flathead)	3	

LCD Bracket Installation

1. Align the bracket in the LCD cover.
2. Install the bracket.
3. Secure with the screw(s).

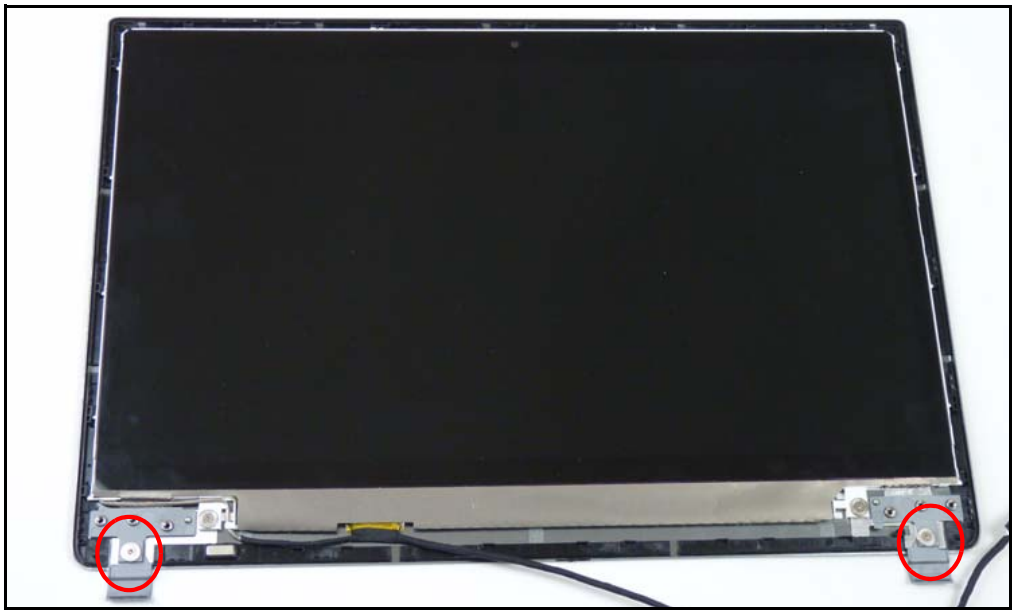

Figure 3-1. LCD Bracket Installation

ID	Size	Quantity	Screw Type
	M2.0 x 0.5 x 7 (flathead)	2	

LCD Panel Installation

1. Align the LCD panel with the chassis and install the panel.

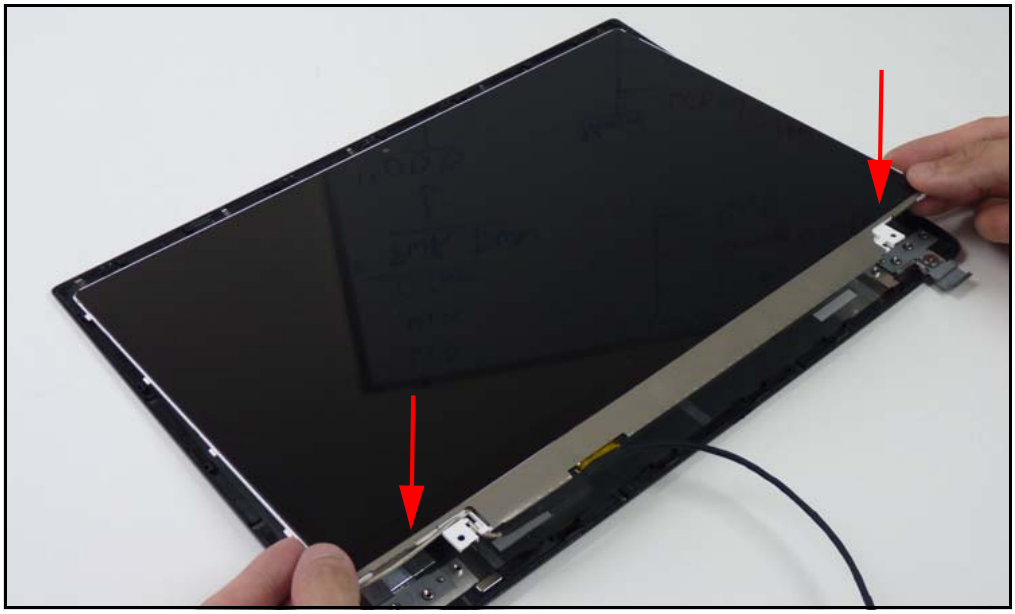

Figure 3-1. LCD Module Installation

2. Position the LCD correctly and slide up to lock in place.

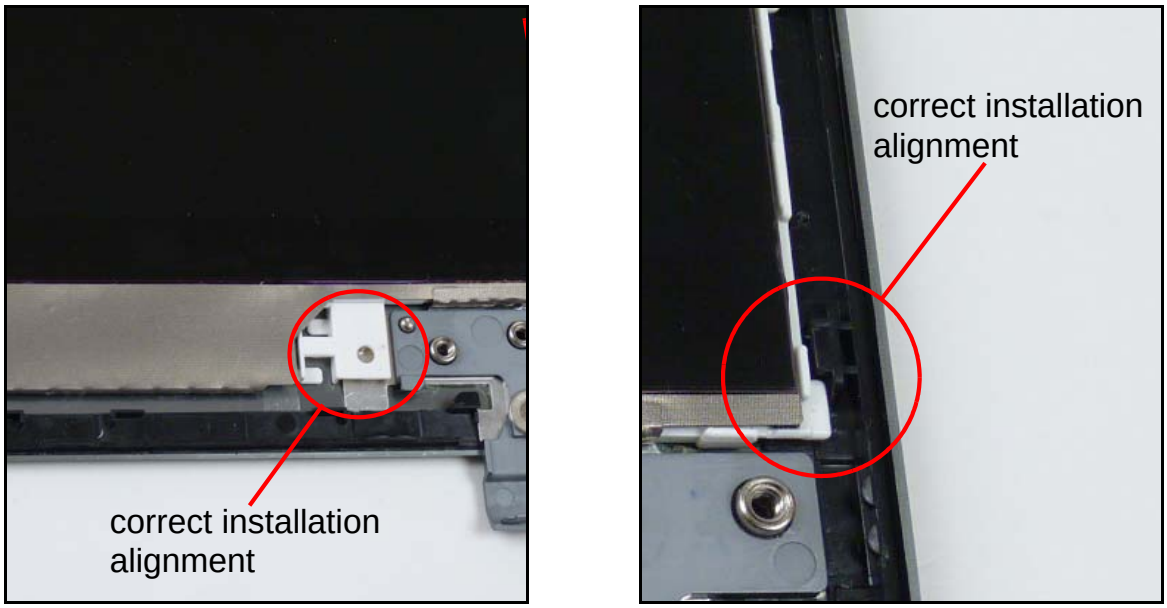

Figure 3-2. LCD Module Screws Removal

3. Slide the panel in place to install.

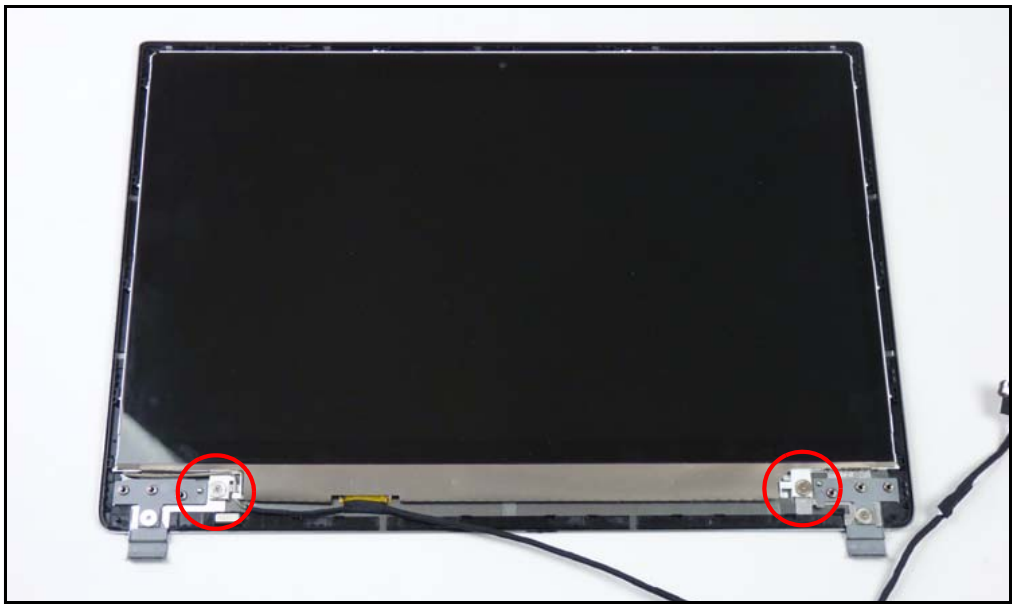

Figure 3-3. LCD Panel Insatllation

ID	Size	Quantity	Screw Type
A	M2.0 x 0.5 x 7.0 (flathead)	2	

1. Insert the cable into the panel inner bracket.

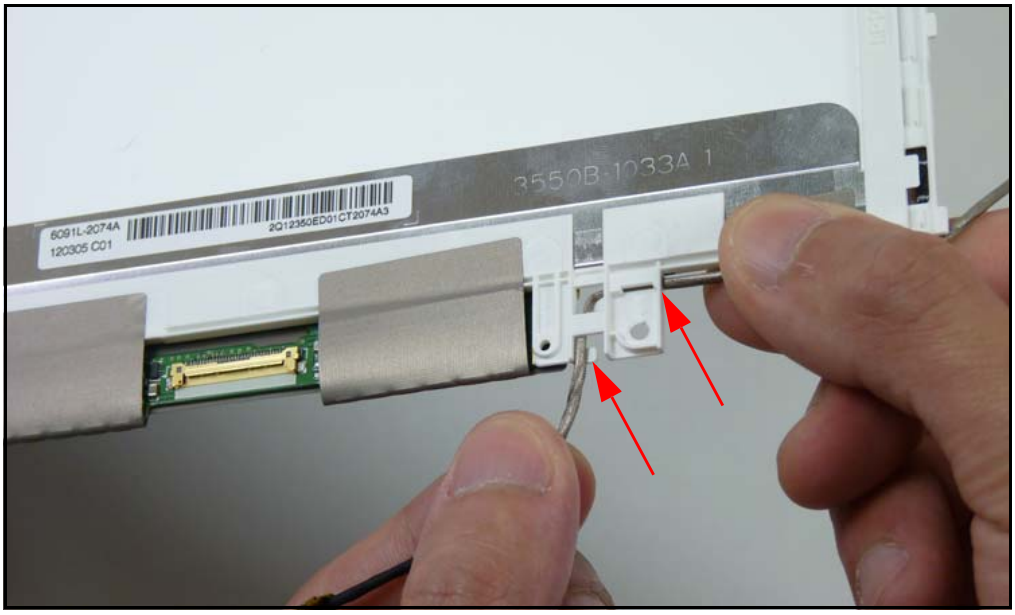

Figure 3-1. LCD Module Installation

2. Connect the LVDS cable to the panel connector.
3. Attach the securing adhesive.

Figure 3-2. LVDS Connection

4. Insert the LVDS cable in the panel cover.

Figure 3-3. LVDS Alignment

CCD Installation

1. Connect the cable to the CCD module.

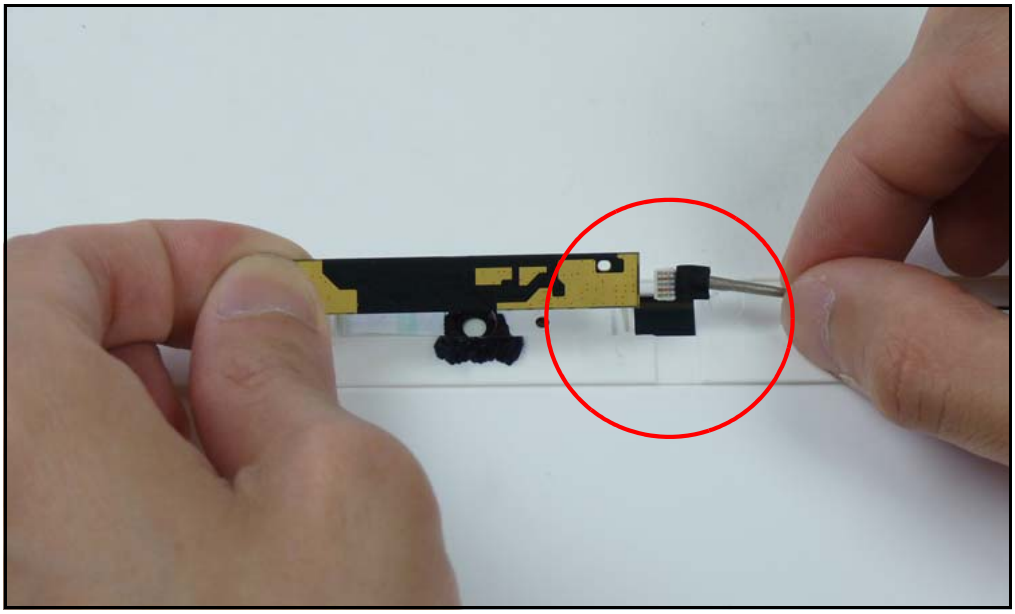

Figure 3-1. CCD Cable Installation

2. Install the CCD module.

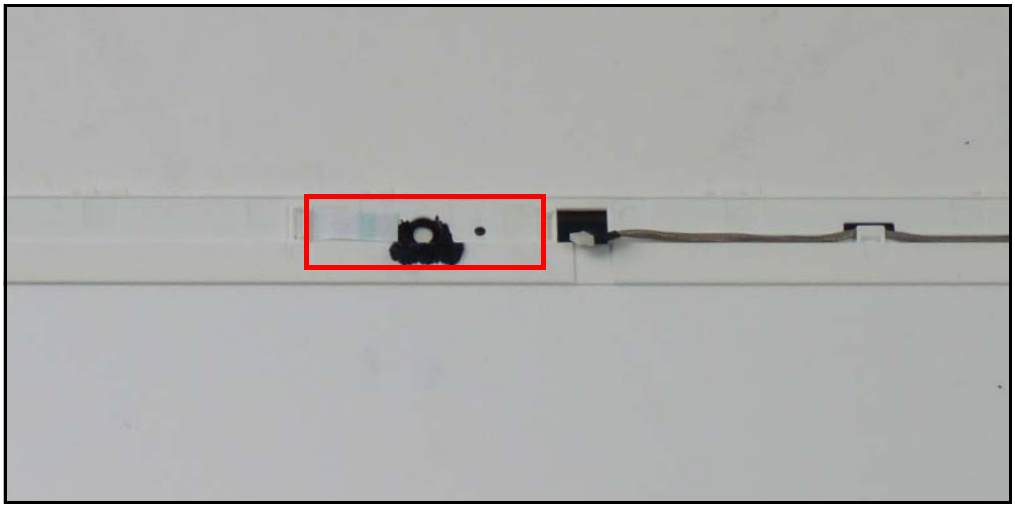

Figure 3-2. CCD Module Installation

Mainboard Installation

1. Position the I/O ports on the mainboard in the chassis.
2. Install the mainboard and slide down over the chassis screw holes.

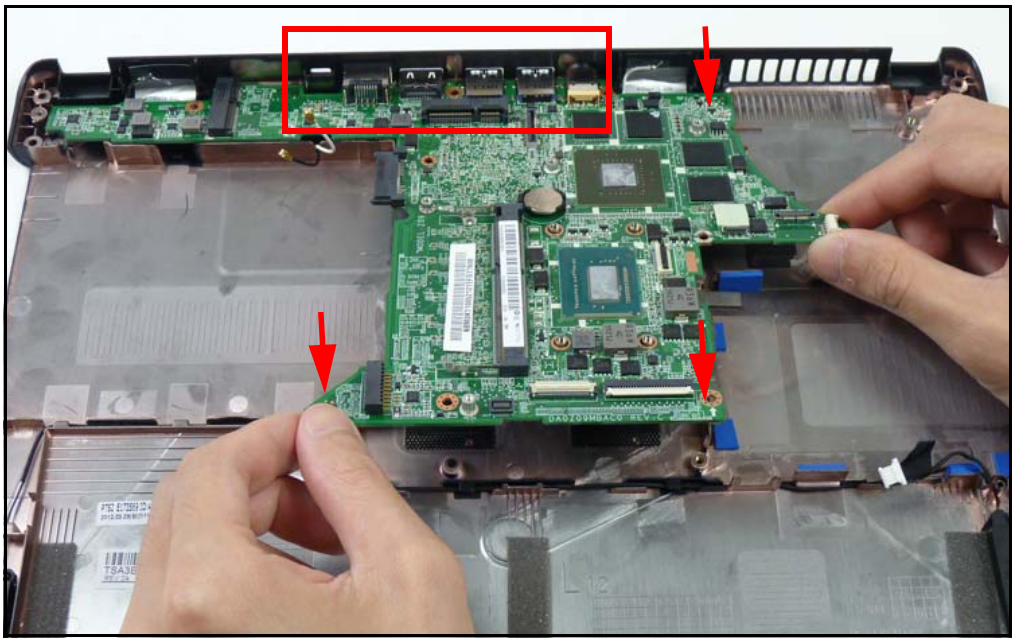

Figure 3-1. Mainboard Installation

3. Install the screw(s).

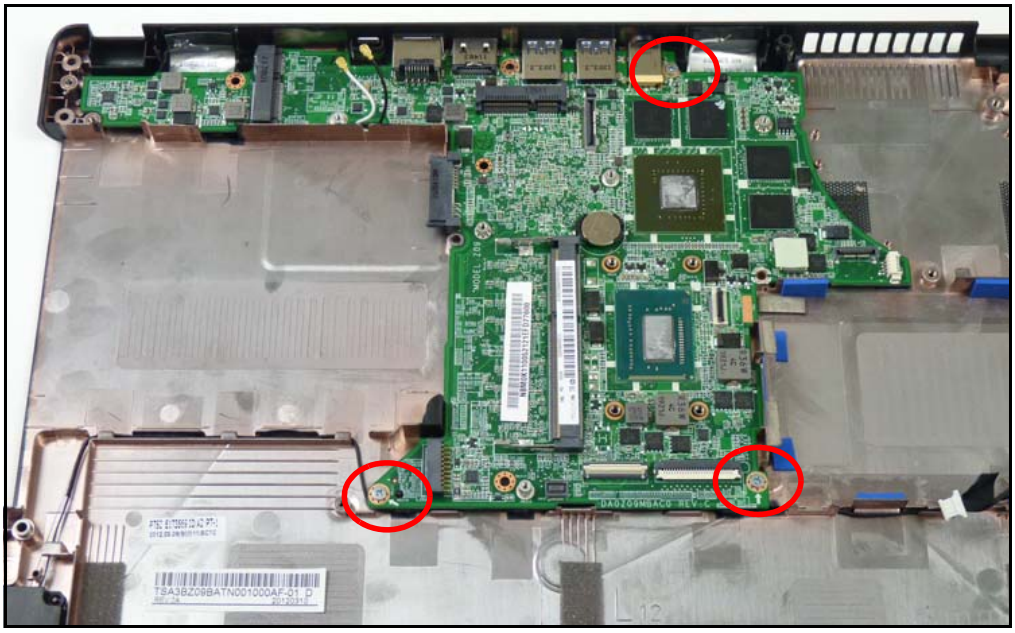

Figure 3-2. Mainboard Screw Installation

ID	Size	Quantity	Screw Type
	M2.5 x 3.0	3	

Antenna Installation

1. Position the antennas in the chassis.
2. Install the antennas.

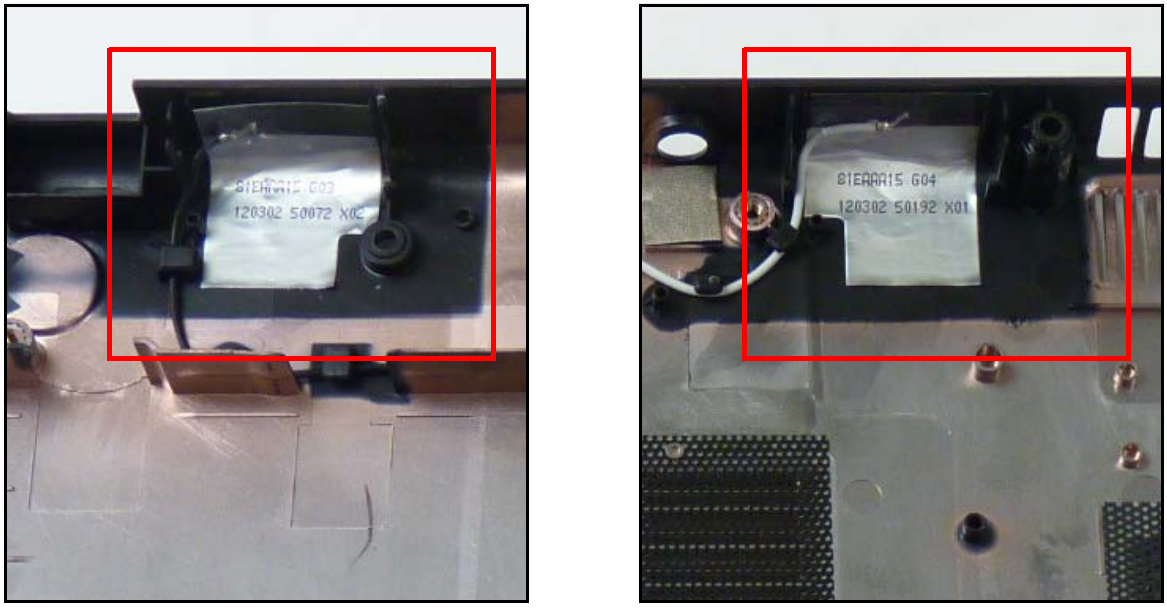

Figure 3-1. Antenna Installation

3. Install the cabling in the chassis.

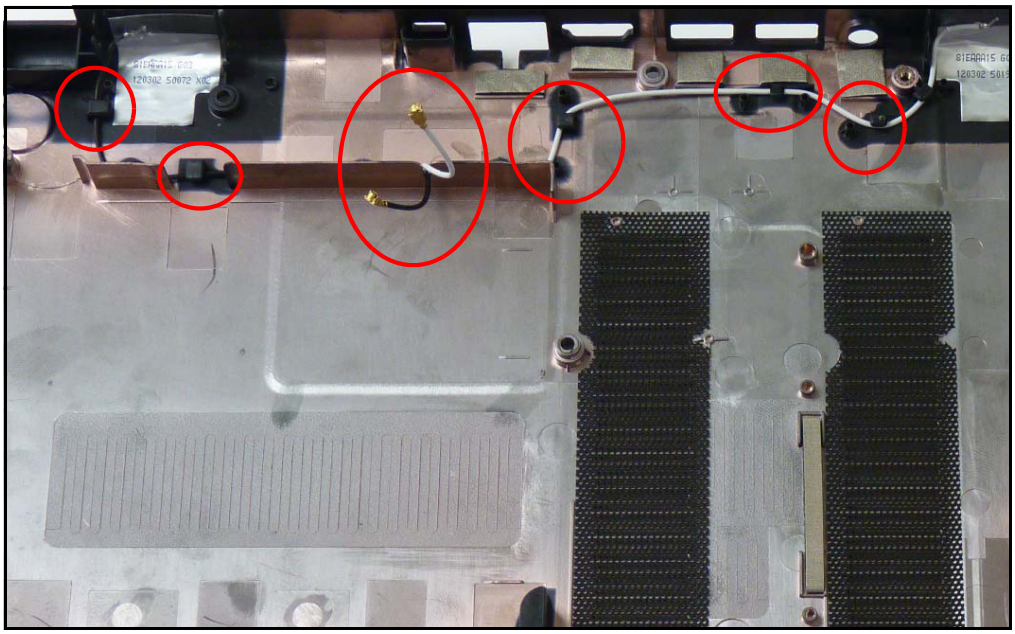

Figure 3-2. Antenna Cabling Installation

Speaker Installation

1. Install a single speaker.
2. Insert the cabling in the chassis.

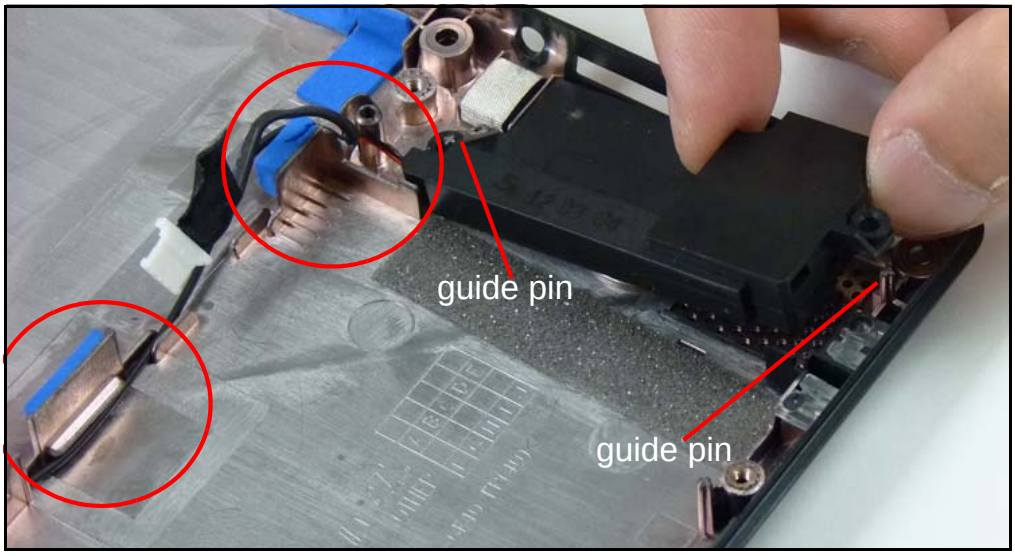

Figure 3-1. Right Speaker Installation

3. Continue to install the cabling in the chassis.

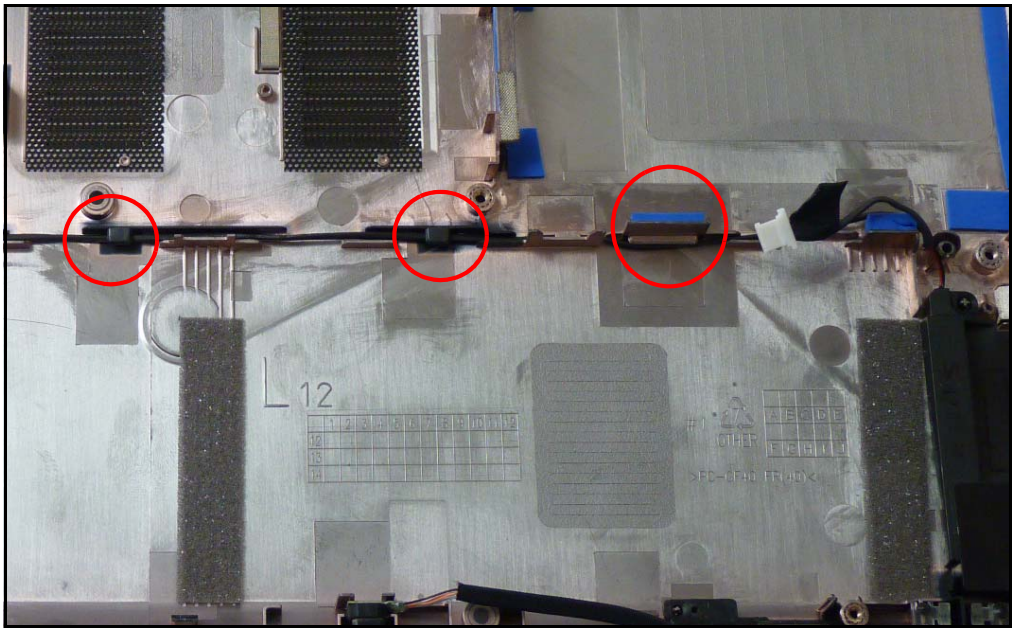

Figure 3-2. Speaker Cabling Installation

4. Install the second speaker.

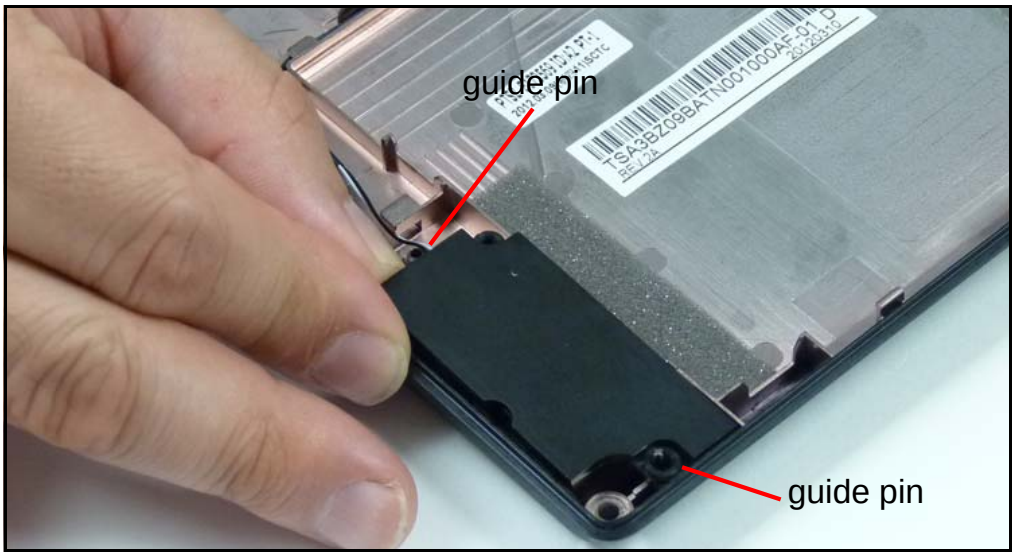

Figure 3-3. Left Speaker Installation

5. Install the remaining cabling in the chassis.

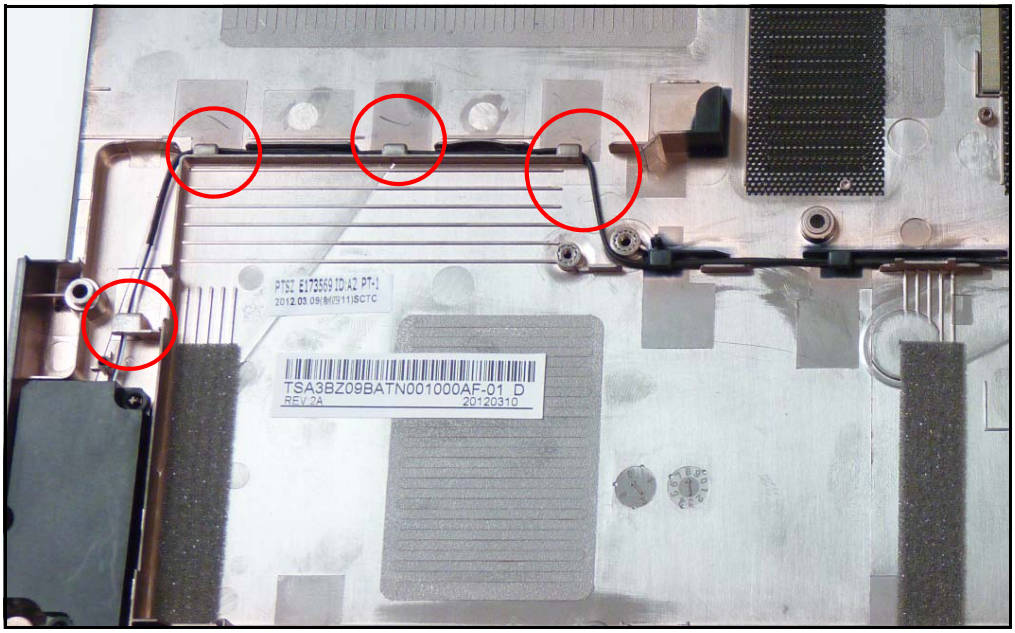

Figure 3-4. Speaker Cabling Installation

CHAPTER 4

Troubleshooting

Troubleshooting

Introduction

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

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. Use Table 4-1 with the verified symptom to determine the solution.

Symptoms (Verified)
Power On Issues
No Display Issues
LCD Failure
Internal Keyboard Failure
Touchpad Failure
Internal Speaker Failure
Internal Microphone Failure
Audio and Cardreader Failure
Other Functions Failure

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

Power On Issues

If the system doesn't power on, perform the following:

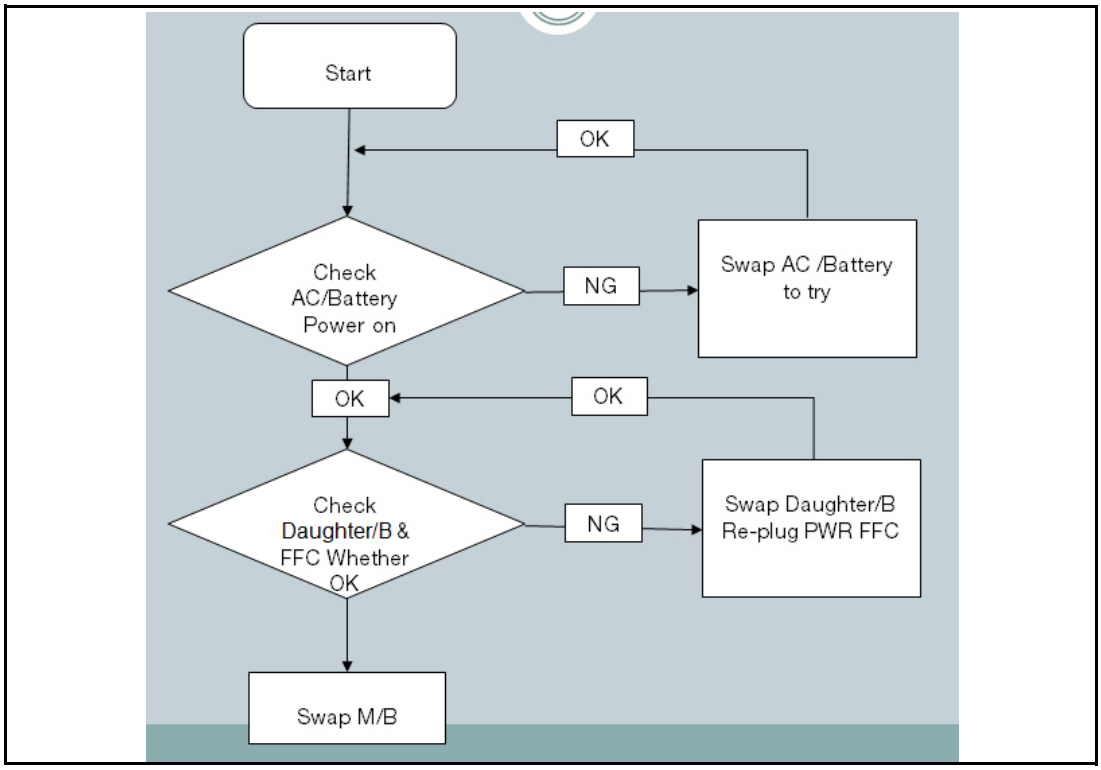

Figure 1-1. Power On Issue

Computer Shuts Down Intermittently

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

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

No Display Issues

If the Display doesn't work, perform the following:

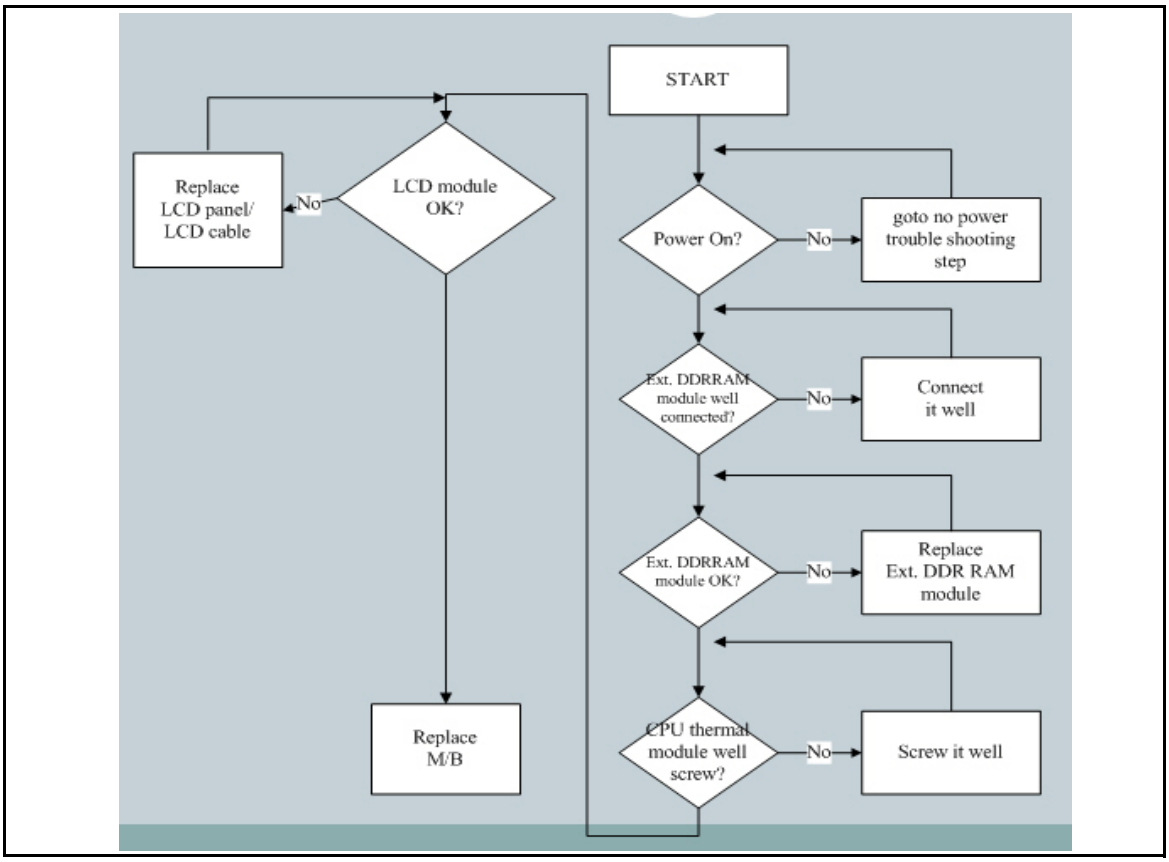

Figure 1-2. No Display Issue

No POST or Video

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

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

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

3. Drain stored power by removing the power cable and battery. Hold the power button for 10 seconds.
4. Connect the power and reboot the computer.
5. Connect an external monitor to the computer and switch between the internal display and the external display is by pressing ***Fn+F5***.
6. If the POST or video appears on the external display only, refer to *LCD Failure*.

7. Disconnect power and all external devices including port replicators or docking stations. Remove any memory cards and CD/DVD discs.
8. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
9. Reseat the memory modules.
10. Remove the drives (refer to *Maintenance Flowchart*).
11. If the Issue is still not resolved, refer to *Online Support Information*.

Abnormal Video

If the video appears abnormal, perform the following:

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

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

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

LCD Failure

If the LCD fails, perform the following:

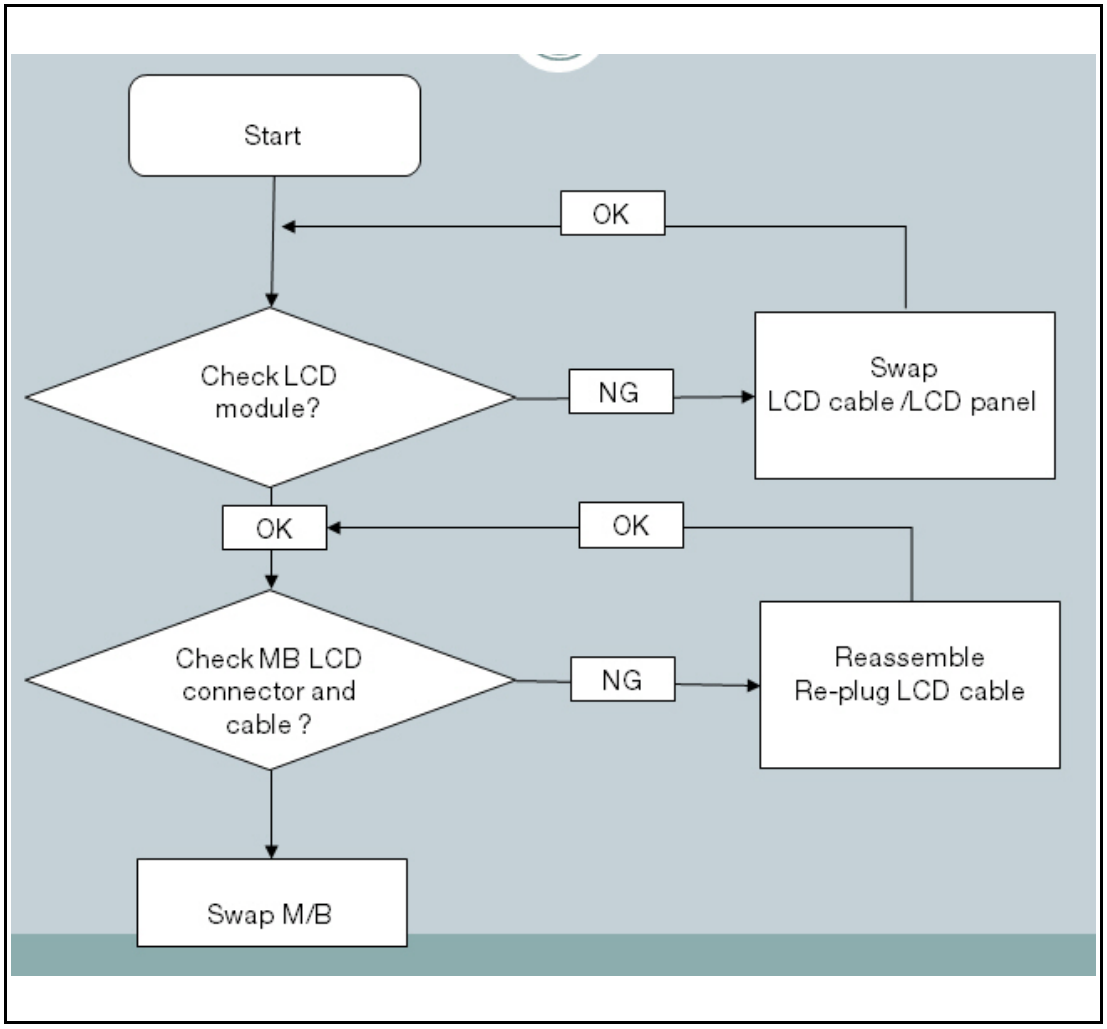

Figure 1-3. LCD Failure

Keyboard Failure

If the Keyboard fails, perform the following:

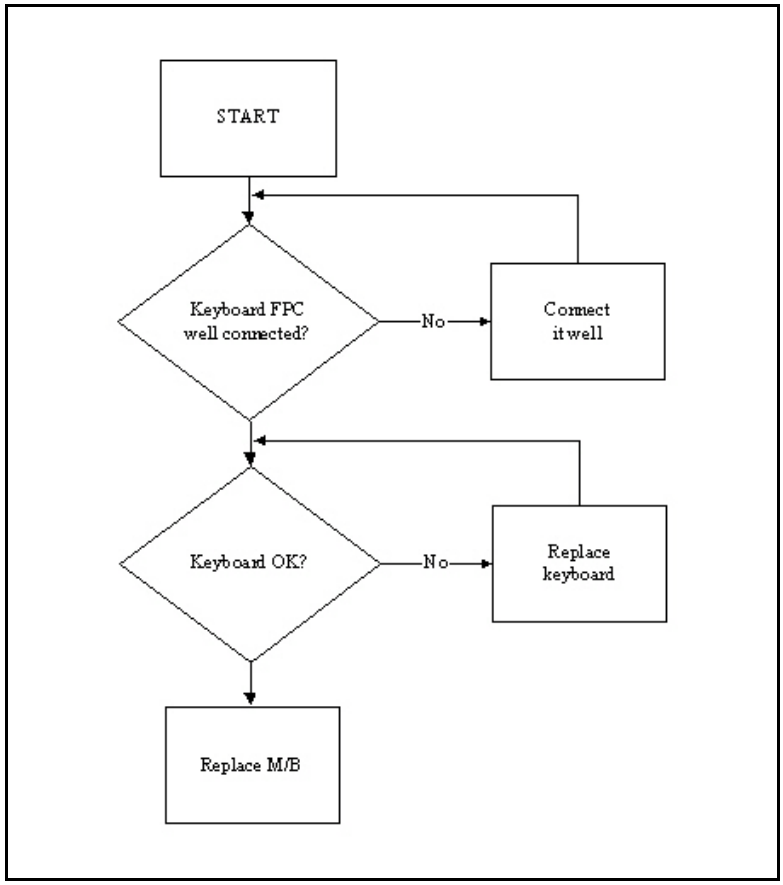

Figure 1-4. Keyboard Failure

Touchpad Failure

If the Touchpad fails, perform the following:

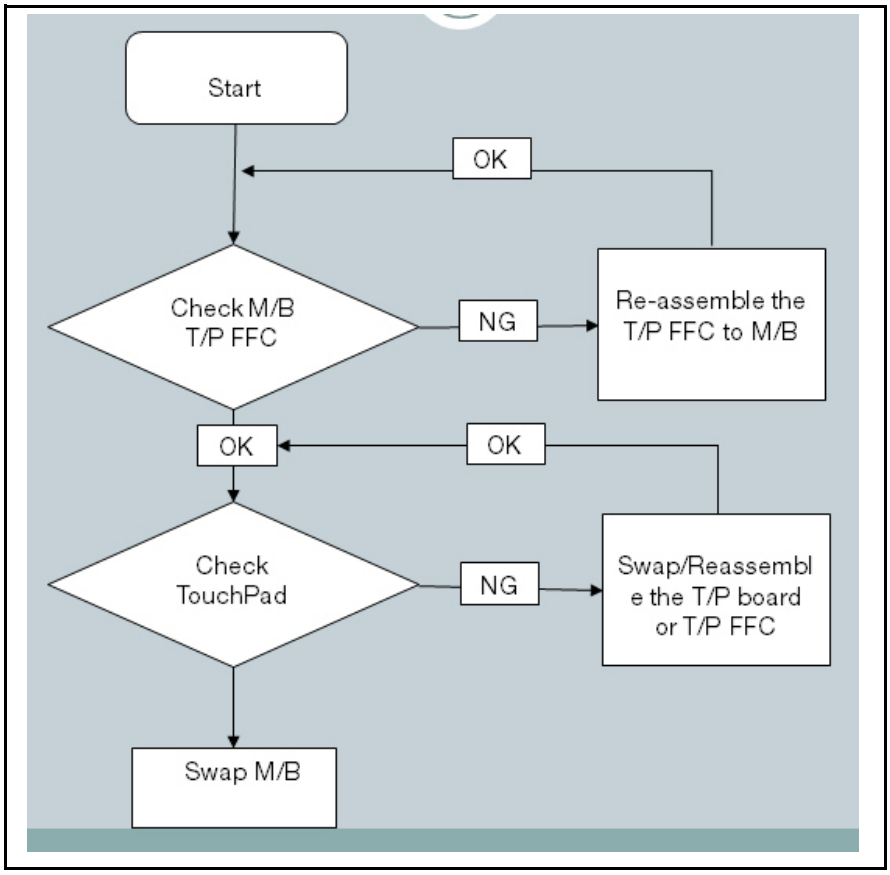

Figure 1-5. Touchpad Failure

Internal Speaker Failure

If internal Speakers fail, perform the following:

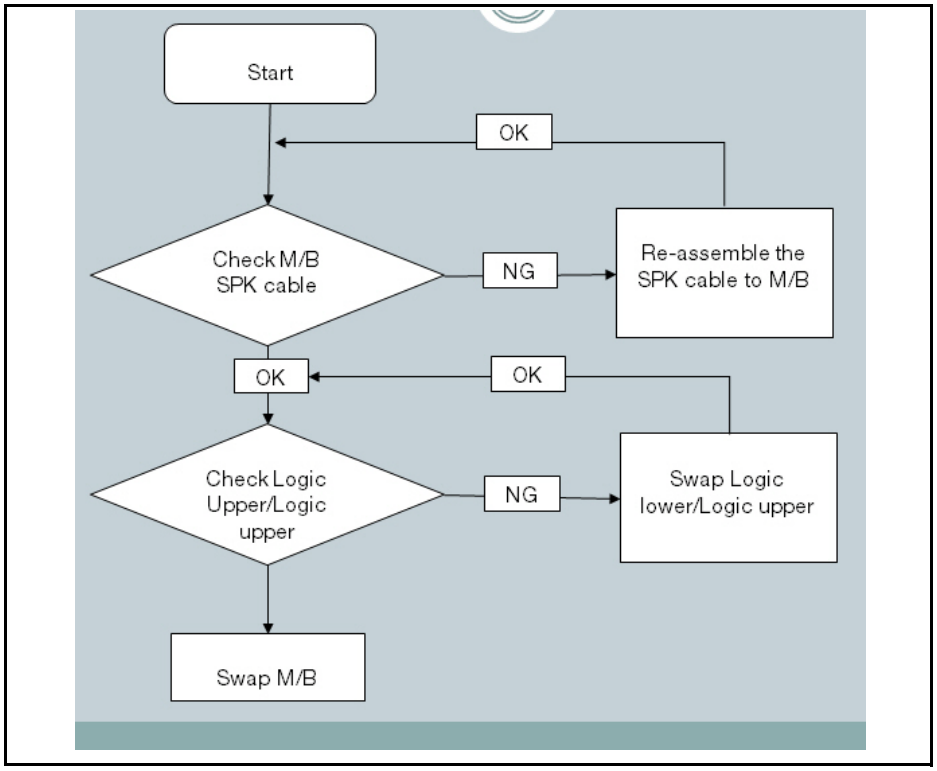

Figure 1-6. Internal Speaker Failure

Sound Problems

Perform the following:

1. Boot the computer.
2. Navigate to ***Start → Control Panel → System and Maintenance → System → Device Manager***. Check the Device Manager to determine that:
   - The device is properly installed
   - There are no red Xs or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under Other Devices
3. If updated recently, roll back the audio driver to the previous version.
4. Remove and reinstall the audio driver.
5. Make sure that all volume controls are set mid range:
   - Click the volume icon on the taskbar
   - Drag the slider to 50. Confirm that the volume is not muted.
   - Click Mixer to verify that other audio applications are set to 50 and not muted.
6. Navigate to ***Start → Control Panel → Hardware and Sound → Sound***. Confirm that

Speakers are selected as the default audio device (green check mark).

NOTE:

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

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

Microphone Failure

If internal or external Microphones fail, perform the following:

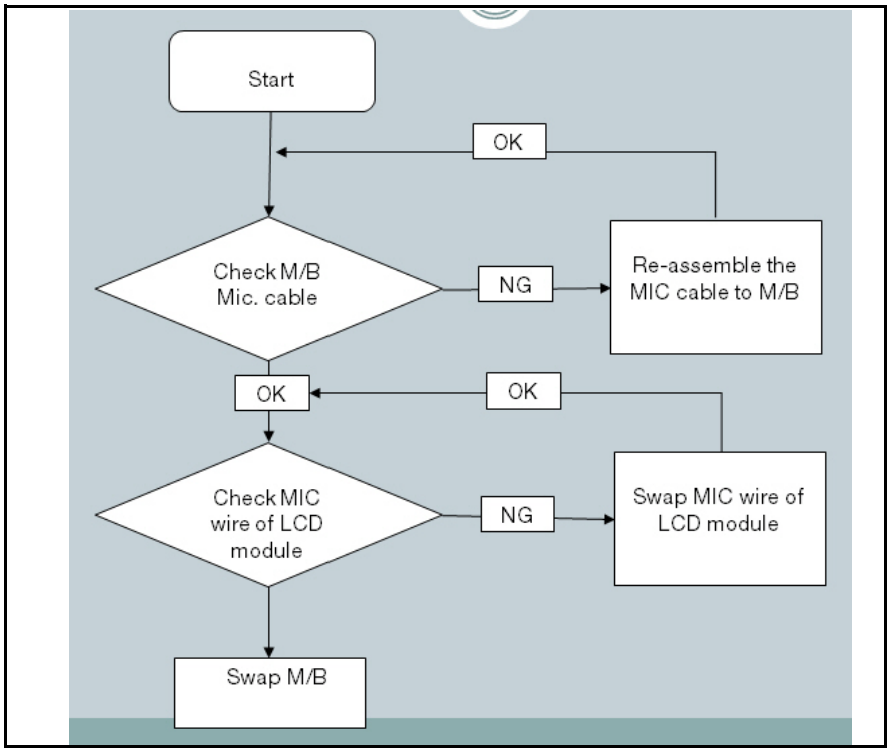

Figure 1-7. Microphone Failure

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

Other Functions Failure

HDD Not Operating Correctly

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

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

NOTE:

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

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

NOTE:

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

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

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

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

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. (Refer to *Power On Issues*).

1. Remove power from the computer.
2. Visually check them 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:
   - System board
   - LCD assembly

Post Codes

The following are the InsydeH2O™ Functionality POST code tables. The components of the POST code table includes: SEC phase, PEI phase, DXE phase, BDS phase, CSM functions, S3 functions and ACPI functions.

Post Code Range

Phase	POST Code Range
SEC	0x01 - 0x0F
PEI	0x70 - 0x9F
DXE	0x40 - 0x6F
BDS	0x10 - 0x3F
SMM	0xA0 - 0xBF
S3	0xC0 - 0xCF
ASL	0x51 – 0x55 0xE1 – 0xE4
PostBDS	0xF9 – 0xFE
InsydeH2ODDT™ Reserve	0xD0 – 0xD7
OEM Reserve	0xE8 – 0xEB
Reserved	0xD8 – 0xE0 0xE5 – 0xE7 0xEC – 0xF8

SEC Phase Post Code

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
SEC_SYSTEM_POWER_ON	SEC	01	CPU power on and switch to Protected mode
SEC_BEFORE_MICROCODE_PATCH	SEC	02	Patching CPU microcode
SEC_AFTER_MICROCODE_PATCH	SEC	03	Setup Cache as RAM
SEC_ACCESS_CSR*	SEC	04	PCIE MMIO Base Address initial
SEC_GENERIC_MSRINIT*	SEC	05	CPU Generic MSR initialization
SEC_CPU_SPEEDCFG*	SEC	06	Setup CPU speed
SEC_SETUP_CAR_OK	SEC	07	Cache as RAM test
SEC_FORCE_MAX_RATIO*	SEC	08	Tune CPU frequency ratio to maximum level
SEC_GO_TO_SECSTARTUP	SEC	09	Setup BIOS ROM cache

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
SEC_GO_TO_PEICORE	SEC	0A	Enter Boot Firmware Volume
* 3rd party related functions – Platform dependence.			

PEI Phase Post Code Table

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
PEI_SIO_INIT	PEI	70	Super I/O Initialization
PEI_CPU_REG_INIT	PEI	71	CPU Early Initialization
PEI_CPU_AP_INIT*	PEI	72	Multi-processor Early Initial
PEI_CPU_HT_RESET*	PEI	73	HyperTransport Initialization
PEI_PCIE_MMIO_INIT	PEI	74	PCIE MMIO BAR Initialization
PEI_NB_REG_INIT	PEI	75	North Bridge Early Initialization
PEI_SB_REG_INIT	PEI	76	South Bridge Early Initialization
PEI_PCIE_TRAINING*	PEI	77	PCIE Training
PEI_TPM_INIT	PEI	78	TPM Initialization
PEI_SMBUS_INIT	PEI	79	SMBUS Early Initialization
PEI_PROGRAM_CLOCK_GEN	PEI	7A	Clock Generator Initialization
PEI_IGD_EARLY_INITIAL*	PEI	7B	Internal Graphic device early Initialization
PEI_HECI_INIT*	PEI	7C	HECI Initialization
PEI_WATCHDOG_INIT*	PEI	7D	Watchdog timer Initialization
PEI_MEMORY_INIT	PEI	7E	Memory Initial for Normal boot.
PEI_MEMORY_INIT_FOR_CRISIS	PEI	7F	Memory Initial for Crisis Recovery
PEI_MEMORY_INSTALL	PEI	80	Simple Memory test
PEI_TXTPEI*	PEI	81	TXT function early Initialization
PEI_SWITCH_STACK	PEI	82	Start to use Memory
PEI_MEMORY_CALLBACK	PEI	83	Set cache for physical memory
PEI_ENTER_RECOVERY_MODE	PEI	84	Recovery device Initialization
PEI_RECOVERY_MEDIA_FOUND	PEI	85	Found Recovery image
PEI_RECOVERY_MEDIA_NOT_FOUND	PEI	86	Recovery image not found
PEI_RECOVERY_LOAD_FILE_DONE	PEI	87	Load Recovery Image completed
PEI_RECOVERY_START_FLASH	PEI	88	Start Flash BIOS with Recovery image

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
PEI_ENTER_DXEIPL	PEI	89	Loading BIOS image to RAM
PEI_FINDING_DXE_CORE	PEI	8A	Loading DXE core
PEI_GO_TO_DXE_CORE	PEI	8B	Enter DXE core
* 3rd party relate functions – Platform dependence.			

DXE Phase POST Code Table

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
DXE_TCGDXE*	DXE	40	TPM initial in DXE
DXE_SB_SPI_INIT*	DXE	41	South bridge SPI initialization
DXE_CF9_RESET*	DXE	42	Setup Reset service
DXE_SB_SERIAL_GPIO_INIT*	DXE	43	South bridge Serial GPIO initialization
DXE_SMMACCESS*	DXE	44	Setup SMM ACCE SS service
DXE_NB_INIT*	DXE	45	North bridge Middle initialization
DXE_SIO_INIT*	DXE	46	Super I/O DXE initialization
DXE_LEGACY_REGION*	DXE	47	Setup Legacy Region service
DXE_SB_INIT*	DXE	48	South Bridge Middle initialization
DXE_IDENTIFY_FLASH_DEVICE	DXE	49	Identify Flash device
DXE_FTW_INIT	DXE	4A	Fault Tolerant Write verification
DXE_VARIABLE_INIT	DXE	4B	Variable Service initialization
DXE_VARIABLE_INIT_FAIL	DXE	4C	Fail to initial Variable Service
DXE_MTC_INIT	DXE	4D	MTC Initial
DXE_CPU_INIT	DXE	4E	CPU Middle Initialization
DXE_MP_CPU_INIT	DXE	4F	Multi-processor MiddleInitialization
DXE_SMBUS_INIT	DXE	50	SMBUS Driver Initialization
DXE_SMART_TIMER_INIT	DXE	51	8259 Initialization
DXE_PCRTC_INIT	DXE	52	RTC Initialization
DXE_SATA_INIT*	DXE	53	SATA Controller earlyInitialization
DXE_SMM_CONTROLER_INIT*	DXE	54	Setup SMM Control service

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
DXE_LEGACY_INTERRUPT*	DXE	55	Setup Legacy Interrupt service
DXE_RELOCATE_SMBASE	DXE	56	Relocate SMM BASE
DXE_FIRST_SMI	DXE	57	SMI test
DXE_VTD_INIT*	DXE	58	VTD Initial
DXE_BEFORE_CSM16_INIT	DXE	59	Legacy BIOS Initialization
DXE_AFTER_CSM16_INIT	DXE	5A	Legacy interrupt function Initialization
DXE_LOAD_ACPI_TABLE	DXE	5B	ACPI Table Initialization
DXE_SB_DISPATCH*	DXE	5C	Setup SB SMM Dispatcher service
DXE_SB_IOTRAP_INIT*	DXE	5D	Setup SB IOTRAP Service
DXE_SUBCLASS_DRIVER*	DXE	5E	Build AMT Table
DXE_PPM_INIT*	DXE	5F	PPM Initialization
DXE_HECIDRV_INIT*	DXE	60	HECIDRV Initialization
* 3rd party relate functions – Platform dependence.			

BDS Phase POST Code

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_ENTER_BDS	BDS	10	Enter BDS entry
BDS_INSTALL_HOTKEY	BDS	11	Install Hotkey service
BDS_ASF_INIT*	BDS	12	ASF Initialization
BDS_PCI_ENUMERATION_START	BDS	13	PCI enumeration
BDS_BEFORE_PCIIO_INSTALL	BDS	14	PCI resource assign complete
BDS_PCI_ENUMERATION_END	BDS	15	PCI enumeration complete
BDS_CONNECT_CONSOLE_IN	BDS	16	Keyboard Controller, keyboard and mouse initialization
BDS_CONNECT_CONSOLE_OUT	BDS	17	Video device initialization
BDS_CONNECT_STD_ERR	BDS	18	Error report device initialization
BDS_CONNECT_USB_HC	BDS	19	USB host controller initialization

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_CONNECT_USB_BUS	BDS	1A	USB BUS driver initialization
BDS_CONNECT_USB_DEVICE	BDS	1B	USB device driver initialization
BDS_NO_CONSOLE_ACTION	BDS	1C	Console device initial fail
BDS_DISPLAY_LOGO_SYSTEM_INFO	BDS	1D	Display logo or system information
BDS_START_IDE_CONTROLLER	BDS	1E	IDE controller initialization
BDS_START_SATA_CONTROLLER	BDS	1F	SATA controller initialization
BDS_START_ISA_ACPI_CONTROLLER	BDS	20	SIO controller initialization
BDS_START_ISA_BUS	BDS	21	ISA BUS driver initialization
BDS_START_ISA_FDD	BDS	22	Floppy device initialization
BDS_START_ISA_SEIRAL	BDS	23	Serial device initialization
BDS_START_IDE_BUS	BDS	24	IDE device initialization
BDS_START_AHCI_BUS	BDS	25	AHCI device initialization
BDS_CONNECT_LEGACY_ROM	BDS	26	Dispatch option ROMs
BDS_ENUMERATE_ALL_BOOT_OPTION	BDS	27	Get boot device information
BDS_END_OF_BOOT_SELECTION	BDS	28	End of boot selection
BDS_ENTER_SETUP	BDS	29	Enter Setup Menu
BDS_ENTER_BOOT_MANAGER	BDS	2A	Enter Boot manager
BDS_BOOT_DEVICE_SELECT	BDS	2B	Try to boot system to OS
BDS_EFI64_SHADOW_ALL_LEGACY_ROM	BDS	2C	Shadow Misc Option ROM
BDS_ACPI_S3SAVE	BDS	2D	Save S3 resume required data in RAM
BDS_READY_TO_BOOT_EVENT	BDS	2E	Last Chipset initial before boot to OS
BDS_GO_LEGACY_BOOT	BDS	2F	Start to boot Legacy OS
BDS_GO_UEFI_BOOT	BDS	30	Start to boot UEFI OS
BDS_LEGACY16_PREPARE_TO_BOOT	BDS	31	Prepare to Boot to Legacy OS

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_EXIT_BOOT_SERVICES*	BDS	32	Send END of POST Message to ME via HECI
BDS_LEGACY_BOOT_EVENT	BDS	33	Last Chipset initial before boot to Legacy OS.
BDS_ENTER_LEGACY_16_BOOT	BDS	34	Ready to Boot Legacy OS.
BDS_RECOVERY_START_FLASH	BDS	35	Fast Recovery Start Flash.
BDS_START_SDHC_BUS	BDS	36	SDHC device initial.
BDS_RECOVERY_START_FLASH	BDS	37	Ata Legacy device initial.
BDS_RECOVERY_START_FLASH	BDS	38	SD Legacy device initial.
* 3rd party relate functions – Platform dependence.			

PostBDS Post Code

Functionality Name (Include\ PostCode.h)	Phase	Post Codes	Description
POST_BDS_NO_BOOT_DEVICE	POST_BDS	F9	No Boot Device
POST_BDS_START_IMAGE	POST_BDS	FB	UEFI Boot Start Image
POST_BDS_ENTER_INTI9	POST_BDS	FD	Legacy 16 boot entry
POST_BDS_BOOT_SECTOR	POST_BDS	FE	Try to Boot with INT 19

S3 Functions POST Code

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
S3_RESTORE_MEMORY_CONTROLLER	PEI	C0	Memory initial for S3 resume
S3_INSTALL_S3_MEMORY	PEI	C1	Get S3 resume required data from memory
S3_SWITCH_STACK	PEI	C2	Start to use memory during S3 resume
S3_MEMORY_CALLBACK	PEI	C3	Set cache for physical memory during S3 resume
S3_ENTER_S3_RESUME_PEIM	PEI	C4	Start to restore system configuration
S3_BEFORE_ACPI_BOOT_SCRIPT	PEI	C5	Restore system configuration stage1

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
S3_BEFORE_RUNTIME_BOOT_SCRIPT	PEI	C6	Restore system configuration stage2
S3_BEFORE_RELOCATE_SMM_BASE	PEI	C7	Relocate SMM BASE during S3 resume
S3_BEFORE_MP_INIT	PEI	C8	Multi-processor initial during S3 resume
S3_BEFORE_RESTORE_ACPI_CALLBACK	PEI	C9	Start to restore system configuration in SMM
S3_AFTER_RESTORE_ACPI_CALLBACK	PEI	CA	Restore system configuration in SMM complete
S3_GO_TO_FACS_WAKING_VECTOR	PEI	CB	Back to OS

ACPI Functions POST Code

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
ASL_ENTER_S1	ASL	51	Prepare to enter S1
ASL_ENTER_S3	ASL	53	Prepare to enter S3
ASL_ENTER_S4	ASL	54	Prepare to enter S4
ASL_ENTER_S5	ASL	55	Prepare to enter S5
ASL_WAKEUP_S1	ASL	E1	System wakeup from S1
ASL_WAKEUP_S3	ASL	E3	System wakeup from S3
ASL_WAKEUP_S4	ASL	E4	System wakeup from S4

SMM Functions POST Code

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
SMM_IDENTIFY_FLASH_DEVICE	SMM	0xA0	Identify Flash device in SMM
SMM_SMM_PLATFORM_INIT	SMM	0xA2	SMM service initial
SMM_ACPI_ENABLE_START	SMM	0xA6	OS call ACPI enable function
SMM_ACPI_ENABLE_END	SMM	0xA7	ACPI enable function complete
SMM_S1_SLEEP_CALLBACK	SMM	0xA1	Enter S1
SMM_S3_SLEEP_CALLBACK	SMM	0xA3	Enter S3
SMM_S4_SLEEP_CALLBACK	SMM	0xA4	Enter S4
SMM_S5_SLEEP_CALLBACK	SMM	0xA5	Enter S5
SMM_ACPI_DISABLE_START	SMM	0xA8	OS call ACPI disable function
SMM_ACPI_DISABLE_END	SMM	0xA9	ACPI disable function complete

InsydeH20DDT Debugger POST Code

Functionality Name (Include\ PostCode.h)	Post Code	Description
Used by Insyde debugger	0x0D	Waiting for device connect
Used by Insyde debugger	0xD0	Waiting for device connect
Used by Insyde debugger	0xD1	InsydeH2ODDT Ready
Used by Insyde debugger	0xD2	EHCI not found
Used by Insyde debugger	0xD3	Debug port connect low speed device
Used by Insyde debugger	0xD4	DDT Cable become low speed device
Used by Insyde debugger	0xD5	DDT Cable Transmission Error (Get descriptor fail)
Used by Insyde debugger	0xD6	DDT Cable Transmission Error (Set Debug mode fail)
Used by Insyde debugger	0xD7	DDT Cable Transmission Error (Set address fail)

CHAPTER 5

Jumper and Connector Locations

Jumper and Connector Locations

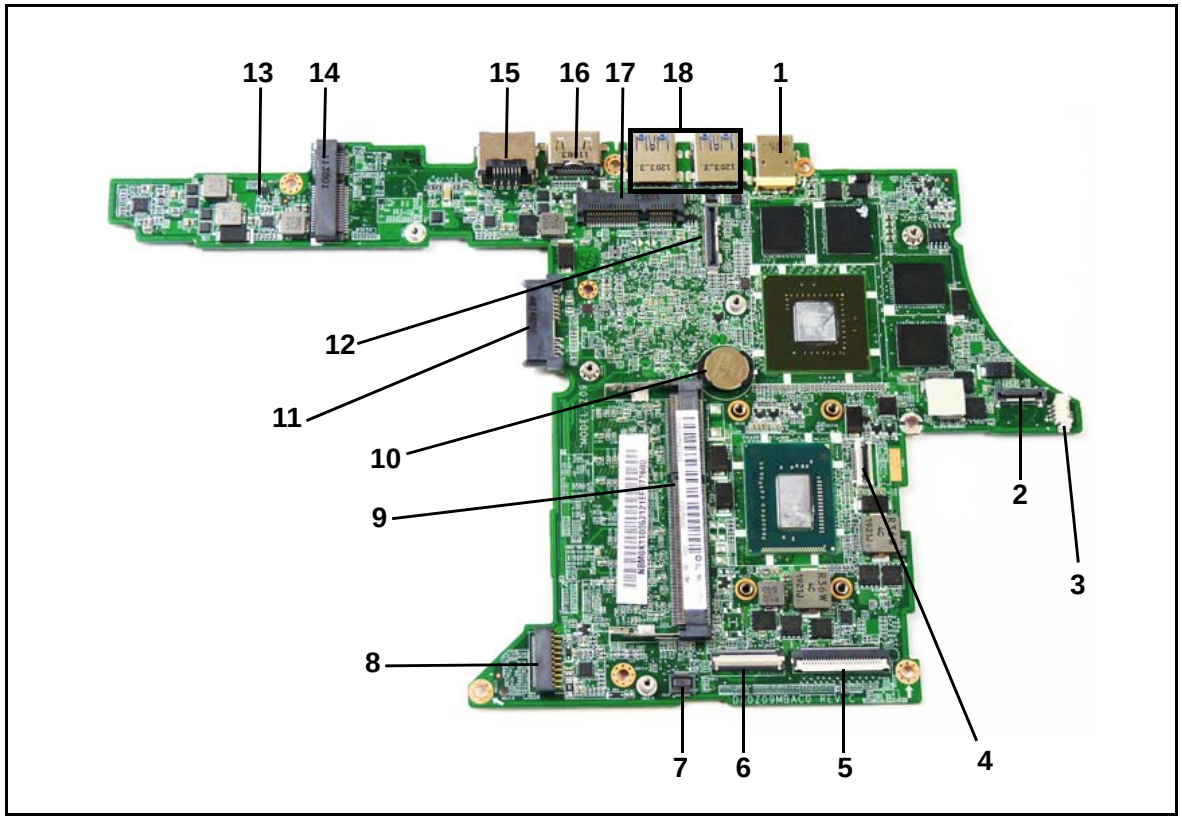

Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Description	Item	Description
1.	PJ1 DC-In	2.	CN9 HDD con
3.	CN10 Fan con	4.	CN11 Audio con
5.	CN12 Keyboard con	6.	CN13 Card reader con
7.	CN14 TPM con	8.	PJ2 Battery con
9.	JDIM1 DIMM con	10.	BT1 RTC
11.	CN8 ODD con	12.	CN7 eDP con
13.	HE1 Hall IC	14.	CN5 WLAN + BT con
15.	CN2 LAN con	16.	CN1 HDMI con
17.	CN6 SSD HDD con	18.	CN2, CN3 USB con

CHAPTER 6

FRU (Field Replaceable Unit) List

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the Acer M5 481/481G/481T/481TG. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE:

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

NOTE:

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

Exploded Diagrams

Main Assembly

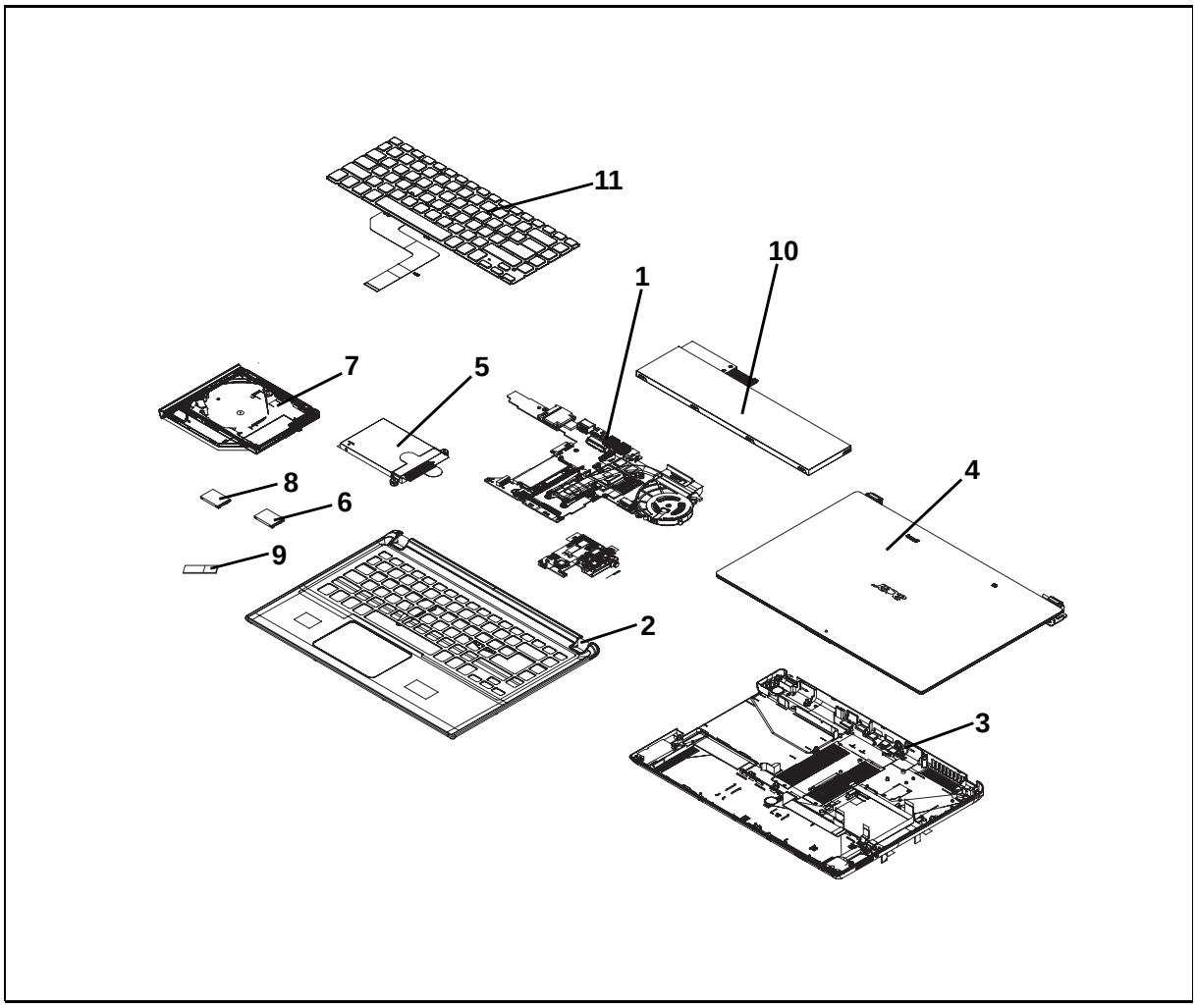

Figure 1-1. Main Assembly Exploded Diagram

Table 1-1. Main Assembly Exploded Diagram

No.	Description	P/N
1	Mainboard	NB.M0J11.004
2	Top assembly	
3	Base assembly	
4	LCD	LK.14008.014
5	HDD	KH.32007.016
6	SSD	KN.0200Q.002

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

No.	Description	P/N
7	ODD	KU.0080D.064
8	WL/BT AGN	NI.23600.100
9	RAM	KN.2GB03.025
10	Battery Lithium	KT.00303.002
11	Keyboard	NK.I1417.01Y

LCD Assembly

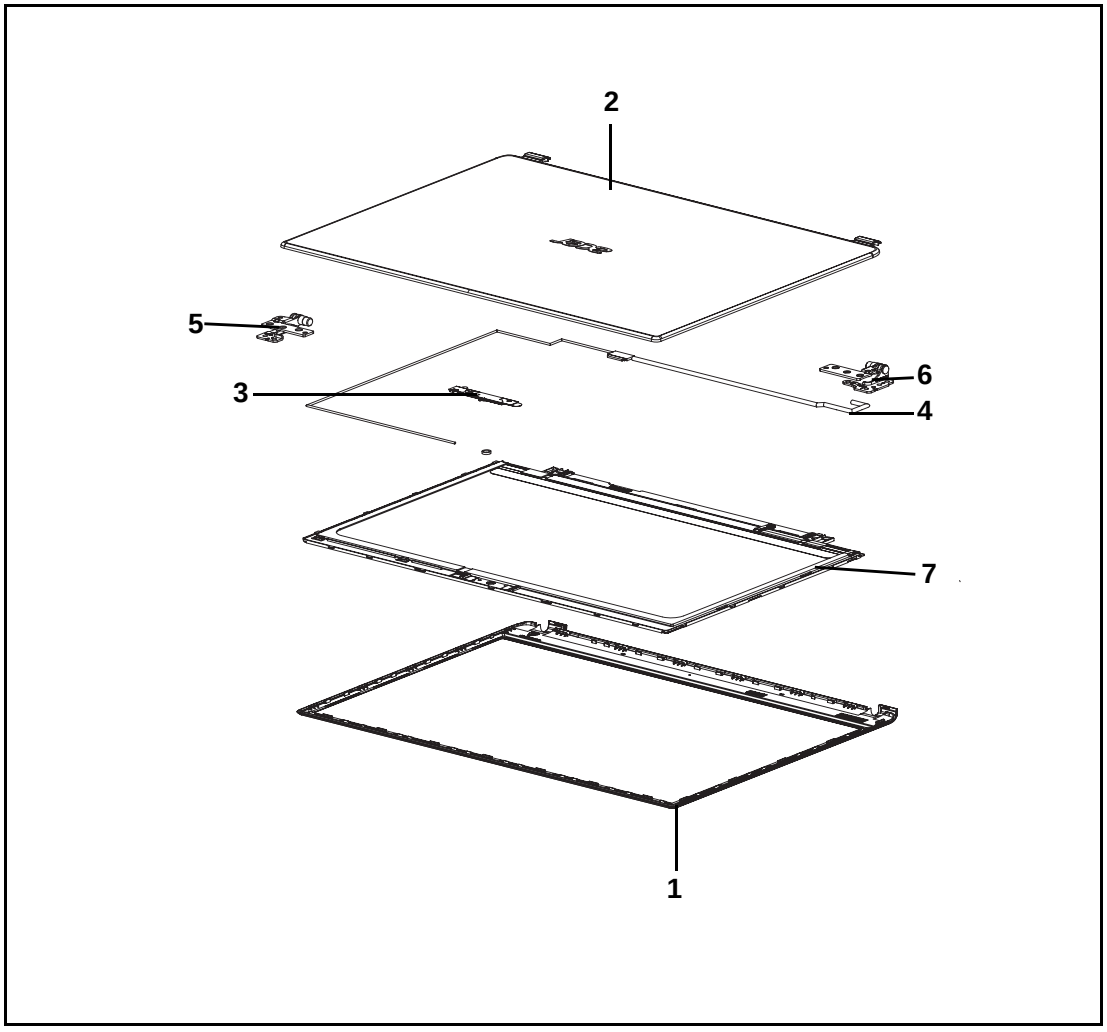

Figure 1-2. LCD Assembly Exploded Diagram

Table 1-2. LCD Assembly Exploded Diagram

No.	Description	P/N
1.	LCD bezel sub assembly	
2.	LCD cover sub assembly	
3.	Camera module	NC.21411.00D
4.	Cable assembly GLE	
	Cable assembly FOX	
	Cable assembly MEC	
	Cable assembly LNT	

Table 1-2. LCD Assembly Exploded Diagram (Continued)

No.	Description	P/N
5.	Left Hinge SZS	
	Left Hinge GYI	
	Left Hinge AJP	
6.	Right Hinge SZS	
	Right Hinge GYI	
	Right Hinge AJP	
7.	LCD	LK.14008.014

FRU List

Table 1-3. FRU List

Category	Description	P/N
ADAPTER		
	Adapter DELTA 65W 19V 1.7x5.5x11 Yellow ADP-65VH BA, LV5, Low profile LED LF	AP.06501.033
	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-69AW, LV5, Low profile LED LF	AP.06503.029
	Adapter LITE-ON 65W 19V 1.7x5.5x11 Yellow PA-1650-86AW, LV5, Low profile LF	AP.06503.031
	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow CPA09-A065N1, LV5, low profile LF	AP.0650A.017
	Adapter Chicony Power 65W 19V 1.7x5.5x11 Yellow A065R035L / A11-065N1A, LV5, low profile LF	AP.0650H.003
BATTERY		
	Battery SANYO AP12A3i, for 7.5mm embedded type Li-Polymar 3S1P SANYO 3 cell 4850mAh Main COMMON	KT.00303.002
WiFi MODULE		
	Foxconn 3rd WiFi 2x2 AGN+ BT4.0 Broadcom 43228+20702 (WiFi 43228 2x2 DB AGN+BT4.0 20702)	NI.23600.100
	Foxconn 3rd WiFi 2x2 AGN+ BT4.0 Atheros WB222	NI.23600.102
	Liteon 3rd WiFi 2x2 AGN+ BT4.0 Broadcom 43228+20702 (WiFi 43228 2x2 DB AGN+BT4.0 20702)	NC.23611.003
	Liteon 3rd WiFi 2x2 AGN+ BT4.0 Atheros WB222	NI.23600.103

Table 1-3. FRU List (Continued)

Category	Description	P/N
CABLE		
	POWER CORD(EU) 1.8M 3PBLACK FM010008-010	27.TATV7.001
	POWER CORD(SWI)1.8M 3PBLACK FZ010008-011	27.A99V7.004
	POWER CORD(S.A) 1.8M 3BLACK FZ010008-006	27.T48V7.001
	POWER CORD ITALIAN 3PIN	27.A99V7.005
	PWR CORD V943B30001218008 DANISH 3P	27.A03V7.006
	POWER CORD UK 3PIN	27.A03V7.004
	PWR CORD(ISR)1.8M 3PBLK FZ0I0008-038	27.TATV7.005
	POWER CORD JAPAN	27.TAXV7.003
	POWER CORD US 3PIN ROHS	27.TAXV7.001
	POWER CORD PRC 3P Y536B30001218008	27.TATV7.004
	PWR CORD V50CB3T3012180QD TW-110V,3P	27.A99V7.002
	POWER CORD BRAZIL IMETRO 3 PIN	27.S0607.001
	POWER CORD ARGENTINE 3 PIN BLACK	27.S0207.001
	POWER CORD AU W/LABEL (3 PIN)	27.A50V7.003
	POWER CORD AF-S (INDIA)	27.A50V7.001
CPU/PROCESSOR		
	CPU Intel Core i3 2367M BGA 1.4G 17W	KC.23601.7MB
	CPU Intel Core i3 2377M BGA 1.5G 17W	KC.23701.7MB
	CPU Intel Core i5 2467M BGA 1.6G 17W	KC.24601.7MB
	CPU Intel Core i3 i3-3217U BGA 1.8G 1600 17W Ivy Bridge	KC.32101.3UM
	CPU Intel Core i5 i5-3317U BGA 1.7G 1600 17W Ivy Bridge	KC.33101.5UM
	CPU Intel Core i7 i7-3517U BGA 1.9G 1600 17W Ivy Bridge	KC.35101.7UM
	CPU Intel Core i7 i7-3517U BGA 1.9G 1600 17W Ivy Bridge	KC.35101.7UM
DVD RW DRIVE		
	ODD HLDS Super-Multi DRIVE 9.0mm Tray 8X GU61N LF+HF W/O bezel SATA	KU.0080D.064

Table 1-3. FRU List (Continued)

Category	Description	P/N
HDD/HARD DISK DRIVE		
	HDD HGST 2.5" 5400rpm 320GB HTS545032A7E380, Jaguar B7 500G/P SATA 8MB LF+HF F/W:DA4466	KH.32007.016
	HDD SEAGATE 2.5" 5400rpm 320GB 9WS14C-188 ST320LT012, Yarra 500G/P, 7mmzh SATA 8MB LF+HF F/W:0001SDM1	KH.32001.024
	HDD SEAGATE 2.5" 5400rpm 320GB 320G/P, 7mmzh, 9YG142-190, Sapta 15 SATA 8MB LF+HF F/W:0010SDM1	KH.32001.026
	HDD WD 2.5" 5400rpm 320GB WD3200LPVT-22G33T0,MN500S, 500G/P, 7mmzh HDD SATA 8MB LF+HF F/W:01.01A01	KH.32008.031
	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J28213,Eagle B7, 320G/P 7mmzh SATA 8MB LF+HF F/W:DA4788	KH.32007.017
	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380,Jaguar B7, 500G/P SATA 8MB LF+HF F/W:DA4466	KH.50007.016
	HDD SEAGATE 2.5" 5400rpm 500GB 9WS142-188 ST500LT012, Yarra 500G/P, 7mmzh SATA 8MB LF+HF F/W:0001SDM1	KH.50001.030
	HDD HGST 2.5" 5400rpm 500GB HTS545050A7E380, Jaguar B7,0J23335, 500G/P SATA 8MB LF+HF F/W:DA4837	KH.50007.023
	HDD WD 2.5" 5400rpm 500GB WD5000LPVT-22G33T0, MN500S, 500G/P, 7mmzh HDD SATA 8MB LF+HF F/W: 01.01A01	KH.50008.040
	Flash Disk PHISON SSD NAND 20GB SSE020GTTC0-S51 LF+HF	KN.0200Q.002
	Flash Disk SANDISK SSD NAND 128GB SDSA5DK-128G LF+HF	KF.1280D.002
	Flash Disk SANDISK SSD NAND 128GB SD5SF2-128G(X100) LF+HF	KN.1280D.002
	Flash Disk LITE-ON SSD NAND 128GB LMT-128M3M LF+HF	KF.1280L.001
	Flash Disk LITE-ON SSD NAND 256GB LMT-256M3M LF+HF	KF.2560L.001
	Flash Disk SANDISK SSD NAND 256GB SD5SF2-256G(X100) LF+HF	KN.2560D.007
	Flash Disk SANDISK SSD NAND 256GB SDSA5DK-256GB LF+HF	KN.2560D.004

Table 1-3. FRU List (Continued)

Category	Description	P/N
KEYBOARD		
	K/B(TAIWAN)Z09(AEZ09#00,3A)86,API,BK	
	K/B(GREEK)Z09(AEZ09+00,3A)86,API,BK	
	K/B(THAI)Z09(AEZ09-00,3A)86,API,BK	
	K/B(BULGARIA)Z09(AEZ09100,3A)87,API,BK	
	K/B(CROATIAN)Z09(AEZ09200,3A)87,API,BK	
	K/B(CZ-SLOVAK)Z09(AEZ09300,3A)87,API,BK	
	K/B(HUNGARIAN)Z09(AEZ09400,3A)87,API,BK	
	K/B(BRAZIL)Z09(AEZ09600,3A)87,API,BK	
	K/B(RUSSIAN)Z09(AEZ09700,3A)86,API,BK	
	K/B(TURKISH)Z09(AEZ09A00,3A)87,API,BK	
	K/B(BELGIUM)Z09(AEZ09B00,3A)87,API,BK	
	K/B(SWEDISH)Z09(AEZ09D00,3A)87,API,BK	
	K/B(UK)Z09(AEZ09E00,3A)87,API,BK	
	K/B(FRENCH)Z09(AEZ09F00,3A)87,API,BK	
	K/B(GERMAN)Z09(AEZ09G00,3A)87,API,BK	
	K/B(ITALIAN)Z09(AEZ09I00,3A)87,API,BK	
	K/B(JAPANESE)Z09(AEZ09J00,3A)90,API,BK	
	K/B(US-FR-CAN)Z09(AEZ09K00,3A)87,API,BK	
	K/B(DANISH)Z09(AEZ09M00,3A)87,API,BK	
	K/B(SPANISH)Z09(AEZ09P00,3A)87,API,BK	
	K/B(ARAB-EN)Z09(AEZ09Q00,3A)86,API,BK	
	K/B(ARAB-FR)Z09(AEZ09Q01,3A)87,API,BK	
	K/B(UI)Z09(AEZ09R00,3A)86,API,BK	
	K/B(SWISS)Z09(AEZ09S00,3A)87,API,BK	
	K/B(PORTUGUESE)Z09(AEZ09T00,3A)87,API,BK	
	K/B(HEBREW)Z09(AEZ09V00,3A)86,API,BK	
	K/B(NORWEGIAN)Z09(AEZ09W00,3A)87,API,BK	
	K/B(SCAND)Z09(AEZ09N00,3A)87,API,BK	
	K/B(KOREA)Z09(AEZ09Y00,3A)86,API,BK	
	KB(TAIWAN)Z09(AEZ09#00,3A)86,NON BL,CNY	
	KB(GREEK)Z09(AEZ09+00,3A)86,NON BL,CNY	
	KB(THAI)Z09(AEZ09-00,3A)86,NONBL,CNY	

Table 1-3. FRU List (Continued)

Category	Description	P/N
	KB(BULGARIA)Z09(AEZ09100,3A)87,NONBL,CNY	
	KB(CROATIAN)Z09(AEZ09200,3A)87,NONBL,CNY	
	KB(CZ-SLOVAK)Z09(AEZ09300,3A)87,NOBL,CNY	
	KB(HUNGARIAN)Z09(AEZ09400,3A)87NONBL,CNY	
	KB(BRAZIL)Z09(AEZ09600,3A)87,NON BL,CNY	
	KB(RUSSIAN)Z09(AEZ09700,3A)86,NON BL,CNY	
	KB(TURKISH)Z09(AEZ09A00,3A)87,NONBL,CNY	
	KB(BELGIUM)Z09(AEZ09B00,3A)87,NONBL,CNY	
	KB(SWEDISH)Z09(AEZ09D00,3A)87,NONBL,CNY	
	KB(UK)Z09(AEZ09E00,3A)87,NON BL,CNY	
	KB(FRENCH)Z09(AEZ09F00,3A)87,NON BL,CNY	
	KB(GERMAN)Z09(AEZ09G00,3A)87,NONBL,CNY	
	KB(ITALIAN)Z09(AEZ09I00,3A)87,NON BL,CNY	
	KB(JAPANESE)Z09(AEZ09J00,3A)90,NONBL,CNY	
	KB(US-FR-CAN)Z09(AEZ09K00,3A)87NONBL,CNY	
	KB(DANISH)Z09(AEZ09M00,3A)87,NON BL,CNY	
	KB(SPANISH)Z09(AEZ09P00,3A)87,NON BL,CNY	
	KB(ARAB-EN)Z09(AEZ09Q00,3A)86,NONBL,CNY	
	KB(ARAB-FR)Z09(AEZ09Q01,3A)87,NONBL,CNY	
	K/B(UI)Z09(AEZ09R00,3A)86,NON BL,CNY,BK	
	KB(SWISS)Z09(AEZ09S00,3A)87,NONBL,CNY	
	KB(PORTUGUESE)Z09(AEZ09T00,3A)87NOBL,CNY	
	KB(HEBREW)Z09(AEZ09V00,3A)86,NON BL,CNY	
	KB(NORWEGIAN)Z09(AEZ09W00,3A)87NONBL,CNY	
	KB(SCAND)Z09(AEZ09X00,3A)87,NON BL,CNY	
	KB(KOREA)Z09(AEZ09Y00,3A)86,NON BL,CNY	
LCD		
	LED LCD LPL 14'' WXGA Glare LP140WH7-TSA1 LF 200nit 16ms 500:1 (Open cell) (eDP)	LK.14008.014

Table 1-3. FRU List (Continued)

Category	Description	P/N
MEMORY		
	Memory NANYA SO-DIMM DDRIII 1333 2GB NT2GC64B88G0NS-CG LF+HF	KN.2GB03.025
	Memory KINGSTON SO-DIMM DDRIII 1333 2GB ACR256X64D3S13C9G LF+HF	KN.2GB07.006
	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5773DH0-CH9 LF 256*8	KN.2GB0B.030
	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT325S6CFR8C-H9 LF+HF 256x8 38nm	KN.2GB0G.031
	Memory NANYA SO-DIMM DDRIII 1333 4GB NT4GC64B8HG0NS-CG LF+HF 46nm	KN.4GB03.009
	Memory SAMSUNG SO-DIMM DDRIII 1333 4GB M471B5273DH0-CH9 LF 256*8 35nm	KN.4GB0B.015
	Memory KINGSTON SO-DIMM DDRIII 1333 4GB ACR512X64D3S13C9G LF+HF	KN.4GB07.001
	Memory HYNIX SO-DIMM DDRIII 1333 4GB HMT351S6CFR8C-H9 LF+HF 256x8 38nm	KN.4GB0G.012
	Memory ELPIDA SO-DIMM DDRIII 1600 2GB EBJ20UF8BDU0-GN-F LF+HF 256*8 38nm	KN.2GB09.012
	Memory ELPIDA SO-DIMM DDRIII 1600 4GB EBJ40UG8BBU0-GN-F LF+HF 512*8 38nm	KN.4GB09.005
HEATSINK		
	Z09 THERMAL MODULE ASSY 35W DIS (SOL)	
	Z09 THERMAL MODULE ASSY 35W DIS (FOX)	
	Z09 THERMAL MODULE ASSY 35W UMA (SOL)	
	Z09 THERMAL MODULE ASSY 35W UMA (FOX)	
MAINBOARD		
	Mainboard M5-481T LF HR/1.4G,H2G/UMA	NB.M0J11.004
	Mainboard M5-481T LF CR/1.8G,H2G/UMA	NB.M0J11.005
	Mainboard M5-481TG LF (HR/1.6G,H2G/N13PL,H1G	NB.M0K11.007
	Mainboard M5-481TG LF CR/1.7G,H2G/N13PL,H1G	NB.M0K11.003
SPEAKER		

Table 1-3. FRU List (Continued)

Category	Description	P/N
	SPEAKER MODULE(W-L/R)PB20C	
	SPEAKER MODULE(W-L/R)FG-QT	
	SPEAKER MODULE(W-L/R)SNCN-	

Screw List

Table 1-4. Screw List

Category	Description	P/N
SCREW		
	ZB1 SCREW M2.5*6-I(BNI)(NYLOK)S/P	86.A08V7.004
	ZY5D SCREW M2.0*3.0-I(BKAG)(NYLOK) S.P	86.S0207.001
	ZR6 SCREW M2.5*4.0-I(NYLON PATCH)IRON S.P	86.EDM07.003
	ZR1 SCREW M2.5*2-I (NI,NYLOK) S/P	86.TDY07.001
	ZY2 SCREW M3.0*3.5-I(BUWZN) IRON S.P	86.TPK07.002
	EI2 SCREW M2.0*2.5-I(NI)(NYLOK) KIT S.P.	86.TADV7.001

CHAPTER 7

Model Definition and Configuration

Model Definition and Configuration

M5-481T

Table 1-1. RO and Description

Model	Country	P/N	RO	Description
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	WW	M5-481T-32364G34Mass W7HP64ASWW1 MC UMACss_3U 2*2G/320+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	AAP	M5-481T-32364G52Mass EM W7HP64EMASVN1 MC UMACss_3U 2*2G/500+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	AAP	M5-481T-32364G34Mass EM W7HP64EMASVN1 MC UMACss_3U 2*2G/320+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	WW	M5-481T-33214G34Mass W7HP64ASWW1 MC UMACss_3U 2*2G/320+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481T-32364 G52Mass	US	NX.M0JAA.001	PA	M5-481T-32364G52Mass W7HP64ASUS1 MC UMACss_3U 2*2G/500_L+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_FRBESP1

Table 1-1. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	PA	M5-481T-323a4G52Mass W7HP64ASUS1 MC UMACss_3U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_FRBESP1
M5-481T-53314 G52Mass	US	NX.M0JAA.003	PA	M5-481T-53314G52Mass W7HP64ASUS1 MC UMACss_3U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_FRBESP1
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	AAP	M5-481T-53314G52Mass EM W7HP64EMASMY1 MC UMACss_3U 2*2G/500+F20G/3L4.85/2R/C B_Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	PA	M5-481T-53316G52Mass EM W7HP64EMASCL3 MC UMACss_3U 2G+4G/500_L+F20G/3L4.85/ 2R/CB_Atheros WB222_HD_Wiping Cloth_AL_PT21SP1
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	PA	M5-481T-323a6G52Mass W7HP64ASUS1 MC UMACss_3U 2G+4G/500_L+F20G/3L4.85/ 2R/CB_Atheros WB222_HD_Wiping Cloth_AL_FRBESP1
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	PA	M5-481T-53316G34Mass EM W7HP64EMASBR2 MC UMACss_3U 2G+4G/320+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_XC31SP1

Table 1-1. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	PA	M5-481T-53316G52Mass EM W7HP64EMASBR2 MC UMACss_3U 2G+4G/500_L+F20G/3L4.85/ 2R/CB_Atheros WB222_HD_Wiping Cloth_AL_XC31SP1
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	PA	M5-481T-323a4G52Mass EM W7HP64EMASEA1 MC UMACss_3U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_PT22SP1
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	PA	M5-481T-53314G52Mass EM W7HP64EMASEA1 MC UMACss_3U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_PT22SP1
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	PA	M5-481T-53316G52Mass W7HP64ASCA2 MC UMACss_3U 2G+4G/500_L+F20G/3L4.85/ 2R/CB_Atheros WB222_HD_Wiping Cloth_AL_FR86SP1

Table 7-2. BOM Name and CPU

Model	Country	P/N	BOM Name	CPU
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	M5-481T_UMACss_3U	Ci32367MB
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	M5-481T_UMACss_3U	Ci32367MB
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	M5-481T_UMACss_3U	Ci32367MB
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	M5-481T_UMACss_3U	Ci33217UB
M5-481T-32364 G52Mass	US	NX.M0JAA.001	M5-481T_UMACss_3U	Ci32367MB
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	M5-481T_UMACss_3U	Ci32377MB

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

Model	Country	P/N	BOM Name	CPU
M5-481T-53314 G52Mass	US	NX.M0JAA.003	M5-481T_UMACss_3U	Ci53317UB
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	M5-481T_UMACss_3U	Ci53317UB
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	M5-481T_UMACss_3U	Ci53317UB
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	M5-481T_UMACss_3U	Ci32377MB
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	M5-481T_UMACss_3U	Ci53317UB
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	M5-481T_UMACss_3U	Ci53317UB
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	M5-481T_UMACss_3U	Ci32377MB
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	M5-481T_UMACss_3U	Ci53317UB
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	M5-481T_UMACss_3U	Ci53317UB

Table 7-3. LCD and VGA Chip

Model	Country	P/N	LCD	VGA Chip
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	NLED14WXGAGSOP	UMA
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	NLED14WXGAGSOP	UMA
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	NLED14WXGAGSOP	UMA
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	NLED14WXGAGSOP	UMA
M5-481T-32364 G52Mass	US	NX.M0JAA.001	NLED14WXGAGSOP	UMA
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	NLED14WXGAGSOP	UMA
M5-481T-53314 G52Mass	US	NX.M0JAA.003	NLED14WXGAGSOP	UMA
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	NLED14WXGAGSOP	UMA

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

Model	Country	P/N	LCD	VGA Chip
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	NLED14WXGAGSOP	UMA
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	NLED14WXGAGSOP	UMA
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	NLED14WXGAGSOP	UMA
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	NLED14WXGAGSOP	UMA
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	NLED14WXGAGSOP	UMA
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	NLED14WXGAGSOP	UMA
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	NLED14WXGAGSOP	UMA

Table 7-4. VRAM and Memory 1

Model	Country	P/N	VRAM	Memory 1
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	N	OB2GBIII(256x16*4)
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	N	OB2GBIII(256x16*4)
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	N	OB2GBIII(256x16*4)
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	N	OB2GBIII(256x16*4)
M5-481T-32364 G52Mass	US	NX.M0JAA.001	N	OB2GBIII(256x16*4)
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	N	OB2GBIII(256x16*4)
M5-481T-53314 G52Mass	US	NX.M0JAA.003	N	OB2GBIII(256x16*4)
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	N	OB2GBIII(256x16*4)
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	N	OB2GBIII(256x16*4)
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	N	OB2GBIII(256x16*4)
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	N	OB2GBIII(256x16*4)

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

Model	Country	P/N	VRAM	Memory 1
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	N	OB2GBIII(256x16*4)
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	N	OB2GBIII(256x16*4)
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	N	OB2GBIII(256x16*4)
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	N	OB2GBIII(256x16*4)

Table 7-5. Memory 2 and HDD1

Model	Country	P/N	Memory 2	HDD 1 (GB)
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	SO2GBIII13	N320GB5.4KS_4K
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	SO2GBIII	N500GB5.4KS_4K
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	SO2GBIII	N320GB5.4KS_4K
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	SO2GBIII	N320GB5.4KS_4K
M5-481T-32364 G52Mass	US	NX.M0JAA.001	SO2GBIII	N500GB5.4KS_4K
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	SO2GBIII	N500GB5.4KS_4K
M5-481T-53314 G52Mass	US	NX.M0JAA.003	SO2GBIII	N500GB5.4KS_4K
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	SO2GBIII	N500GB5.4KS_4K
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	SO4GBIII	N500GB5.4KS_4K
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	SO4GBIII	N500GB5.4KS_4K
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	SO4GBIII	N320GB5.4KS_4K
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	SO4GBIII	N500GB5.4KS_4K
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	SO2GBIII	N500GB5.4KS_4K

Table 7-5. Memory 2 and HDD1 (Continued)

Model	Country	P/N	Memory 2	HDD 1 (GB)
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	SO2GBIII	N500GB5.4KS_4K
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	SO4GBIII	N500GB5.4KS_4K

Table 7-6. HDD 2 and ODD

Model	Country	P/N	HDD 2 (GB)	ODD
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	FM0020S2	NSM8XS9.0
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	FM0020S2	NSM8XS9.0
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	FM0020S2	NSM8XS9.0
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	FM0020S2	NSM8XS9.0
M5-481T-32364 G52Mass	US	NX.M0JAA.001	FM0020S2	NSM8XS9.0
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	FM0020S2	NSM8XS9.0
M5-481T-53314 G52Mass	US	NX.M0JAA.003	FM0020S2	NSM8XS9.0
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	FM0020S2	NSM8XS9.0
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	FM0020S2	NSM8XS9.0
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	FM0020S2	NSM8XS9.0
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	FM0020S2	NSM8XS9.0
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	FM0020S2	NSM8XS9.0
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	FM0020S2	NSM8XS9.0
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	FM0020S2	NSM8XS9.0
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	FM0020S2	NSM8XS9.0

Table 7-7. NB Chopset, Battery and Adapter

Model	Country	P/N	NB Chipset	Battery	Adapter
M5-481T-32364 G34Mass	WW	N9.M0JWW.001	HM77	3CELL4.85	65W
M5-481T-32364 G52Mass	VN	NX.M0JSV.001	HM77	3CELL4.85	65W
M5-481T-32364 G34Mass	VN	NX.M0JSV.002	HM77	3CELL4.85	65W
M5-481T-33214 G34Mass	WW	N9.M0JWW.002	HM77	3CELL4.85	65W
M5-481T-32364 G52Mass	US	NX.M0JAA.001	HM77	3CELL4.85	65W
M5-481T-323a4 G52Mass	US	NX.M0JAA.002	HM77	3CELL4.85	65W
M5-481T-53314 G52Mass	US	NX.M0JAA.003	HM77	3CELL4.85	65W
M5-481T-53314 G52Mass	MY	NX.M0JSM.001	HM77	3CELL4.85	65W
M5-481T-53316 G52Mass	CL	NX.M0JAL.001	HM77	3CELL4.85	65W
M5-481T-323a6 G52Mass	US	NX.M0JAA.004	HM77	3CELL4.85	65W
M5-481T-53316 G34Mass	BR	NX.M0JAL.002	HM77	3CELL4.85	65W
M5-481T-53316 G52Mass	BR	NX.M0JAL.003	HM77	3CELL4.85	65W
M5-481T-323a4 G52Mass	ACLA-ES	NX.M0JAL.004	HM77	3CELL4.85	65W
M5-481T-53314 G52Mass	ACLA-ES	NX.M0JAL.005	HM77	3CELL4.85	65W
M5-481T-53316 G52Mass	CA	NX.M0JAA.006	HM77	3CELL4.85	65W

Table 7-8. RO and Description

Model	Country	P/N	RO	Description
M5-481TG-32364G52Mass	CN	NX.M0KCN.001	CN	M5-481TG-32364G52Mass W7HB64SCASCN1 MC N13PLP1GBCss_3V5U 2*2G/500_L+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_SC11SP1
M5-481TG-33212G34Mass	WW	N9.M0KWW.001	WW	M5-481TG-33212G34Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 1*2G/320+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-52464G52Mass	GCTWN	NX.M0KTA.001	TWN	M5-481TG-52464G52Mass W7HP64ASTW1 MC N13PLP1GBCss_3V5U 2*2G/500+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_TC41SP1
M5-481TG-52466G12Mass	MY	NX.M0KSM.001	AAP	M5-481TG-52466G12MassEM W7HP64EMASMY1 MC N13PLP1GBCss_3V5U 2G+4G/F128G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481TG-52466G52Mass	TH	NX.M0KST.005	AAP	M5-481TG-52466G52MassEM W7HP64EMASTH1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_TH71SP1
M5-481TG-53314G25Mass	GCTWN	NX.M0KTA.002	TWN	M5-481TG-53314G25Mass W7HP64ASTW1 MC N13PLP1GBCss_3V5U 2*2G/F256G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_TC41SP1

Table 7-8. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481TG-5331 4G52Mass	PH	NX.M0KSP.001	AAP	M5-481TG-53314G52Mass EM W7HP64EMASPH1 MC N13PLP1GBCss_3V5U 2*2G/500+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481TG-5331 6G12Mass	HK	NX.M0KCF.002	CN	M5-481TG-53316G12Mass W7HP64ASHK2 MC N13PLP1GBCss_3V5U 2G+4G/F128G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ZH31SP1
M5-481TG-5331 6G25Mass	HK	NX.M0KCF.003	CN	M5-481TG-53316G25Mass W7HP64ASHK2 MC N13PLP1GBCss_3V5U 2G+4G/F256G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ZH31SP1
M5-481TG-5331 6G52Mass	SG	NX.M0KSG.001	AAP	M5-481TG-53316G52Mass W7HP64ASSG1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ZH31SP1
M5-481TG-5331 6G52Mass	TH	NX.M0KST.001	AAP	M5-481TG-53316G52Mass EM W7HP64EMASTH1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_TH71SP1
M5-481TG-5331 6G52Mass	HK	NX.M0KCF.001	CN	M5-481TG-53316G52Mass W7HP64ASHK2 MC N13PLP1GBCss_3V5U 2G+4G/500_L+F20G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_ZH31SP1
M5-481TG-7351 6G12Mass	TH	NX.M0KST.004	AAP	M5-481TG-73516G12Mass EM W7HP64EMASTH1 MC N13PLP1GBCss_3V5U 2G+4G/F128G/3L4.85/2R/CB_Atheros WB222_HD_Wiping Cloth_AL_TH71SP1

Table 7-8. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481TG-7351 6G52Mass	SG	NX.M0KSG.002	AAP	M5-481TG-73516G52Mass W7HP64ASSG1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_ZH31SP1
M5-481TG-7351 6G52Mass	TH	NX.M0KST.002	AAP	M5-481TG-73516G52Mass EM W7HP64EMASTH1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_TH71SP1
M5-481TG-7351 6G52Mass	GCTWN	NX.M0KTA.003	TWN	M5-481TG-73516G52Mass W7HP64ASTW1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_TC41SP1
M5-481TG-7351 6G25Mass	AU/NZ	NX.M0KSA.001	AAP	M5-481TG-73516G25Mass W7HP64ASAU1 MC N13PLP1GBCss_3V5U 2G+4G/F256G/3L4.85/2R/CB _Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-5331 6G25Mass	AU/NZ	NX.M0KSA.002	AAP	M5-481TG-53316G25Mass W7HP64ASAU1 MC N13PLP1GBCss_3V5U 2G+4G/F256G/3L4.85/2R/CB _Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-5331 6G12Mass	MY	NX.M0KSM.002	AAP	M5-481TG-53316G12Mass EM W7HP64EMASMY1 MC N13PLP1GBCss_3V5U 2G+4G/F128G/3L4.85/2R/CB _Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	AAP	M5-481TG-53316G52Mass EM W7HP64EMASMY1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_ES61SP1

Table 7-8. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	TWN	M5-481TG-53316G52Mass W7HP64ASTW1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_TC41SP1
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	WW	M5-481TG-32366G34Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2G+4G/320+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	WW	M5-481TG-52466G52Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	WW	M5-481TG-53316G52Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	WW	M5-481TG-73516G25Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2G+4G/F256G/3L4.85/2R/CB _Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	CN	M5-481TG-52464G52Mass W7HB64SCASCN1 MC N13PLP1GBCss_3V5U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_SC11SP1

Table 7-8. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	CN	M5-481TG-53314G52Mass W7HB64SCASCN1 MC N13PLP1GBCss_3V5U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_SC11SP1
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	WW	M5-481TG-73514G25Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2*2G/F256G/3L4.85/2R/CB_ Atheros WB222_HD_Wiping Cloth_AL_ES61SP1
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	AAP	M5-481TG-32366G52Mass EM W7HP64EMASTH1 MC N13PLP1GBCss_3V5U 2G+4G/500+F20G/3L4.85/2R /CB_Atheros WB222_HD_Wiping Cloth_AL_TH71SP1
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	WW	M5-481TG-73514G25Mass W7HP64AWW1 MC N13PLP1GBCss_3V5U 2*2G/F256G/3L4.85/2R/CB_ Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	WW	M5-481TG-73514G25Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2*2G/F256G/3L4.85/2R/CB_ Atheros WB222_HD_Wiping Cloth_AL_ES62SP1
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	PA	M5-481TG-53316G52Mass W7HP64ASUS1 MC N13PLP1GBCss_3V5U 2G+4G/500_L+F20G/3L4.85/ 2R/CB_Atheros WB222_HD_Wiping Cloth_AL_FRBESP1
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	PA	M5-481TG-53314G52Mass W7HP64ASUS1 MC N13PLP1GBCss_3V5U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_FRBESP1

Table 7-8. RO and Description (Continued)

Model	Country	P/N	RO	Description
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	PA	M5-481TG-73514G52Mass EM W7HP64EMASEA1 MC N13PLP1GBCss_3V5U 2*2G/500_L+F20G/3L4.85/2 R/CB_Atheros WB222_HD_Wiping Cloth_AL_PT22SP1
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	WW	M5-481TG-32364G25Mass W7HP64ASWW1 MC N13PLP1GBCss_3V5U 2*2G/F256G/3L4.85/2R/CB_ Atheros WB222_HD_Wiping Cloth_AL_ES62SP1

Table 7-9. BOM Name and CPU

Model	Country	P/N	BOM Name	CPU
M5-481TG-3236 4G52Mass	CN	NX.M0KCN.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci32367MB
M5-481TG-3321 2G34Mass	WW	N9.M0KWW.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci33217UB
M5-481TG-5246 4G52Mass	GCTWN	NX.M0KTA.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci52467MB
M5-481TG-5246 6G12Mass	MY	NX.M0KSM.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci52467MB
M5-481TG-5246 6G52Mass	TH	NX.M0KST.005	M5-481TG_N13PLP1GBC ss_3V5U	Ci52467MB
M5-481TG-5331 4G25Mass	GCTWN	NX.M0KTA.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 4G52Mass	PH	NX.M0KSP.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G12Mass	HK	NX.M0KCF.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G25Mass	HK	NX.M0KCF.003	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G52Mass	SG	NX.M0KSG.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G52Mass	TH	NX.M0KST.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G52Mass	HK	NX.M0KCF.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB

Table 7-9. BOM Name and CPU (Continued)

Model	Country	P/N	BOM Name	CPU
M5-481TG-7351 6G12Mass	TH	NX.M0KST.004	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-7351 6G52Mass	SG	NX.M0KSG.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-7351 6G52Mass	TH	NX.M0KST.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-7351 6G52Mass	GCTWN	NX.M0KTA.003	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-7351 6G25Mass	AU/NZ	NX.M0KSA.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-5331 6G25Mass	AU/NZ	NX.M0KSA.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G12Mass	MY	NX.M0KSM.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci32367MB
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	M5-481TG_N13PLP1GBC ss_3V5U	Ci52467MB
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	M5-481TG_N13PLP1GBC ss_3V5U	Ci52467MB
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	M5-481TG_N13PLP1GBC ss_3V5U	Ci32367MB
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	M5-481TG_N13PLP1GBC ss_3V5U	Ci73517UB
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	M5-481TG_N13PLP1GBC ss_3V5U	Ci53317UB

Table 7-9. BOM Name and CPU (Continued)

Model	Country	P/N	BOM Name	CPU
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	M5-481TG_N13PLP1GBCss_3V5U	Ci53317UB
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	M5-481TG_N13PLP1GBCss_3V5U	Ci73517UB
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	M5-481TG_N13PLP1GBCss_3V5U	Ci32367MB

Table 7-10. LCD and VGA Chip

Model	Country	P/N	LCD	VGA Chip
M5-481TG-3236 4G52Mass	CN	NX.M0KCN.001	NLED14WXGAGSOP	N13PLP
M5-481TG-3321 2G34Mass	WW	N9.M0KWW.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5246 4G52Mass	GCTWN	NX.M0KTA.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5246 6G12Mass	MY	NX.M0KSM.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5246 6G52Mass	TH	NX.M0KST.005	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 4G25Mass	GCTWN	NX.M0KTA.002	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 4G52Mass	PH	NX.M0KSP.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G12Mass	HK	NX.M0KCF.002	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G25Mass	HK	NX.M0KCF.003	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	SG	NX.M0KSG.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	TH	NX.M0KST.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	HK	NX.M0KCF.001	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 6G12Mass	TH	NX.M0KST.004	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 6G52Mass	SG	NX.M0KSG.002	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 6G52Mass	TH	NX.M0KST.002	NLED14WXGAGSOP	N13PLP

Table 7-10. LCD and VGA Chip (Continued)

Model	Country	P/N	LCD	VGA Chip
M5-481TG-7351 6G52Mass	GCTWN	NX.M0KTA.003	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 6G25Mass	AU/NZ	NX.M0KSA.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G25Mass	AU/NZ	NX.M0KSA.002	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G12Mass	MY	NX.M0KSM.002	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	NLED14WXGAGSOP	N13PLP
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	NLED14WXGAGSOP	N13PLP
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	NLED14WXGAGSOP	N13PLP
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	NLED14WXGAGSOP	N13PLP
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	NLED14WXGAGSOP	N13PLP
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	NLED14WXGAGSOP	N13PLP
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	NLED14WXGAGSOP	N13PLP
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	NLED14WXGAGSOP	N13PLP

Table 7-11. VRAM and Memory 1

Model	Country	P/N	VRAM	Memory 1
M5-481TG-32364G52Mass	CN	NX.M0KCN.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-33212G34Mass	WW	N9.M0KWW.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-52464G52Mass	GCTWN	NX.M0KTA.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-52466G12Mass	MY	NX.M0KSM.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-52466G52Mass	TH	NX.M0KST.005	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53314G25Mass	GCTWN	NX.M0KTA.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53314G52Mass	PH	NX.M0KSP.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G12Mass	HK	NX.M0KCF.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G25Mass	HK	NX.M0KCF.003	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G52Mass	SG	NX.M0KSG.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G52Mass	TH	NX.M0KST.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G52Mass	HK	NX.M0KCF.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-73516G12Mass	TH	NX.M0KST.004	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-73516G52Mass	SG	NX.M0KSG.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-73516G52Mass	TH	NX.M0KST.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-73516G52Mass	GCTWN	NX.M0KTA.003	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-73516G25Mass	AU/NZ	NX.M0KSA.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G25Mass	AU/NZ	NX.M0KSA.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-53316G12Mass	MY	NX.M0KSM.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)

Table 7-11. VRAM and Memory 1 (Continued)

Model	Country	P/N	VRAM	Memory 1
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	1G-DDR5 (64*32*4)	OB2GBIII(256x16*4)

Table 7-12. Memory 2 and HDD 1

Model	Country	P/N	Memory 2	HDD 1 (GB)
M5-481TG-3236 4G52Mass	CN	NX.M0KCN.001	SO2GBIII	N500GB5.4KS_4K
M5-481TG-3321 2G34Mass	WW	N9.M0KWW.001	N	N320GB5.4KS_4K
M5-481TG-5246 4G52Mass	GCTWN	NX.M0KTA.001	SO2GBIII	N500GB5.4KS_4K
M5-481TG-5246 6G12Mass	MY	NX.M0KSM.001	SO4GBIII	FM0128S3
M5-481TG-5246 6G52Mass	TH	NX.M0KST.005	SO4GBIII	N500GB5.4KS_4K
M5-481TG-5331 4G25Mass	GCTWN	NX.M0KTA.002	SO2GBIII	FM0256S3
M5-481TG-5331 4G52Mass	PH	NX.M0KSP.001	SO2GBIII	N500GB5.4KS_4K
M5-481TG-5331 6G12Mass	HK	NX.M0KCF.002	SO4GBIII	FM0128S3
M5-481TG-5331 6G25Mass	HK	NX.M0KCF.003	SO4GBIII	FM0256S3
M5-481TG-5331 6G52Mass	SG	NX.M0KSG.001	SO4GBIII	N500GB5.4KS_4K
M5-481TG-5331 6G52Mass	TH	NX.M0KST.001	SO4GBIII	N500GB5.4KS_4K
M5-481TG-5331 6G52Mass	HK	NX.M0KCF.001	SO4GBIII	N500GB5.4KS_4K
M5-481TG-7351 6G12Mass	TH	NX.M0KST.004	SO4GBIII	FM0128S3
M5-481TG-7351 6G52Mass	SG	NX.M0KSG.002	SO4GBIII	N500GB5.4KS_4K
M5-481TG-7351 6G52Mass	TH	NX.M0KST.002	SO4GBIII	N500GB5.4KS_4K
M5-481TG-7351 6G52Mass	GCTWN	NX.M0KTA.003	SO4GBIII	N500GB5.4KS_4K
M5-481TG-7351 6G25Mass	AU/NZ	NX.M0KSA.001	SO4GBIII	FM0256S3
M5-481TG-5331 6G25Mass	AU/NZ	NX.M0KSA.002	SO4GBIII	FM0256S3
M5-481TG-5331 6G12Mass	MY	NX.M0KSM.002	SO4GBIII	FM0128S3

Table 7-12. Memory 2 and HDD 1 (Continued)

Model	Country	P/N	Memory 2	HDD 1 (GB)
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	SO4GBIII	N500GB5.4KS_4K
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	SO4GBIII	N500GB5.4KS_4K
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	SO4GBIII	N320GB5.4KS_4K
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	SO4GBIII	N500GB5.4KS_4K
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	SO4GBIII	N500GB5.4KS_4K
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	SO4GBIII	FM0256S3
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	SO2GBIII	N500GB5.4KS_4K
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	SO2GBIII	N500GB5.4KS_4K
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	SO2GBIII	FM0256S3
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	SO4GBIII	N500GB5.4KS_4K
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	SO2GBIII	FM0256S3
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	SO2GBIII	FM0256S3
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	SO4GBIII	N500GB5.4KS_4K
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	SO2GBIII	N500GB5.4KS_4K
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	SO2GBIII	N500GB5.4KS_4K
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	SO2GBIII	FM0256S3

Table 7-13. HDD 2 and ODD

Model	Country	P/N	HDD 2 (GB)	ODD
M5-481TG-3236 4G52Mass	CN	NX.M0KCN.001	FM0020S2	NSM8XS9.0
M5-481TG-3321 2G34Mass	WW	N9.M0KWW.001	FM0020S2	NSM8XS9.0

Table 7-13. HDD 2 and ODD (Continued)

Model	Country	P/N	HDD 2 (GB)	ODD
M5-481TG-5246 4G52Mass	GCTWN	NX.M0KTA.001	FM0020S2	NSM8XS9.0
M5-481TG-5246 6G12Mass	MY	NX.M0KSM.001	N	NSM8XS9.0
M5-481TG-5246 6G52Mass	TH	NX.M0KST.005	FM0020S2	NSM8XS9.0
M5-481TG-5331 4G25Mass	GCTWN	NX.M0KTA.002	N	NSM8XS9.0
M5-481TG-5331 4G52Mass	PH	NX.M0KSP.001	FM0020S2	NSM8XS9.0
M5-481TG-5331 6G12Mass	HK	NX.M0KCF.002	N	NSM8XS9.0
M5-481TG-5331 6G25Mass	HK	NX.M0KCF.003	N	NSM8XS9.0
M5-481TG-5331 6G52Mass	SG	NX.M0KSG.001	FM0020S2	NSM8XS9.0
M5-481TG-5331 6G52Mass	TH	NX.M0KST.001	FM0020S2	NSM8XS9.0
M5-481TG-5331 6G52Mass	HK	NX.M0KCF.001	FM0020S2	NSM8XS9.0
M5-481TG-7351 6G12Mass	TH	NX.M0KST.004	N	NSM8XS9.0
M5-481TG-7351 6G52Mass	SG	NX.M0KSG.002	FM0020S2	NSM8XS9.0
M5-481TG-7351 6G52Mass	TH	NX.M0KST.002	FM0020S2	NSM8XS9.0
M5-481TG-7351 6G52Mass	GCTWN	NX.M0KTA.003	FM0020S2	NSM8XS9.0
M5-481TG-7351 6G25Mass	AU/NZ	NX.M0KSA.001	N	NSM8XS9.0
M5-481TG-5331 6G25Mass	AU/NZ	NX.M0KSA.002	N	NSM8XS9.0
M5-481TG-5331 6G12Mass	MY	NX.M0KSM.002	N	NSM8XS9.0
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	FM0020S2	NSM8XS9.0
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	FM0020S2	NSM8XS9.0
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	FM0020S2	NSM8XS9.0

Table 7-13. HDD 2 and ODD (Continued)

Model	Country	P/N	HDD 2 (GB)	ODD
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	FM0020S2	NSM8XS9.0
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	FM0020S2	NSM8XS9.0
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	N	NSM8XS9.0
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	FM0020S2	NSM8XS9.0
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	FM0020S2	NSM8XS9.0
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	N	NSM8XS9.0
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	FM0020S2	NSM8XS9.0
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	N	NSM8XS9.0
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	N	NSM8XS9.0
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	FM0020S2	NSM8XS9.0
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	FM0020S2	NSM8XS9.0
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	FM0020S2	NSM8XS9.0
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	N	NSM8XS9.0

Table 7-14. NB Chipset, Battery and Adapter

Model	Country	P/N	NB Chipset	Battery	Adapter
M5-481TG-3236 4G52Mass	CN	NX.M0KCN.001	HM77	3CELL4.85	65W
M5-481TG-3321 2G34Mass	WW	N9.M0KWW.001	HM77	3CELL4.85	65W
M5-481TG-5246 4G52Mass	GCTWN	NX.M0KTA.001	HM77	3CELL4.85	65W
M5-481TG-5246 6G12Mass	MY	NX.M0KSM.001	HM77	3CELL4.85	65W
M5-481TG-5246 6G52Mass	TH	NX.M0KST.005	HM77	3CELL4.85	65W

Table 7-14. NB Chipset, Battery and Adapter (Continued)

Model	Country	P/N	NB Chipset	Battery	Adapter
M5-481TG-5331 4G25Mass	GCTWN	NX.M0KTA.002	HM77	3CELL4.85	65W
M5-481TG-5331 4G52Mass	PH	NX.M0KSP.001	HM77	3CELL4.85	65W
M5-481TG-5331 6G12Mass	HK	NX.M0KCF.002	HM77	3CELL4.85	65W
M5-481TG-5331 6G25Mass	HK	NX.M0KCF.003	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	SG	NX.M0KSG.001	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	TH	NX.M0KST.001	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	HK	NX.M0KCF.001	HM77	3CELL4.85	65W
M5-481TG-7351 6G12Mass	TH	NX.M0KST.004	HM77	3CELL4.85	65W
M5-481TG-7351 6G52Mass	SG	NX.M0KSG.002	HM77	3CELL4.85	65W
M5-481TG-7351 6G52Mass	TH	NX.M0KST.002	HM77	3CELL4.85	65W
M5-481TG-7351 6G52Mass	GCTWN	NX.M0KTA.003	HM77	3CELL4.85	65W
M5-481TG-7351 6G25Mass	AU/NZ	NX.M0KSA.001	HM77	3CELL4.85	65W
M5-481TG-5331 6G25Mass	AU/NZ	NX.M0KSA.002	HM77	3CELL4.85	65W
M5-481TG-5331 6G12Mass	MY	NX.M0KSM.002	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	MY	NX.M0KSM.003	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	GCTWN	NX.M0KTA.004	HM77	3CELL4.85	65W
M5-481TG-3236 6G34Mass	WW	N9.M0KWW.002	HM77	3CELL4.85	65W
M5-481TG-5246 6G52Mass	WW	N9.M0KWW.003	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	WW	N9.M0KWW.004	HM77	3CELL4.85	65W
M5-481TG-7351 6G25Mass	WW	N9.M0KWW.005	HM77	3CELL4.85	65W

Table 7-14. NB Chipset, Battery and Adapter (Continued)

Model	Country	P/N	NB Chipset	Battery	Adapter
M5-481TG-5246 4G52Mass	CN	NX.M0KCN.002	HM77	3CELL4.85	65W
M5-481TG-5331 4G52Mass	CN	NX.M0KCN.003	HM77	3CELL4.85	65W
M5-481TG-7351 4G25Mass	GCTWN	N9.M0KTW.001	HM77	3CELL4.85	65W
M5-481TG-3236 6G52Mass	TH	NX.M0KST.003	HM77	3CELL4.85	65W
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.008	HM77	3CELL4.85	65W
M5-481TG-7351 4G25Mass	WW	N9.M0KWW.007	HM77	3CELL4.85	65W
M5-481TG-5331 6G52Mass	US	NX.M0KAA.001	HM77	3CELL4.85	65W
M5-481TG-5331 4G52Mass	US	NX.M0KAA.002	HM77	3CELL4.85	65W
M5-481TG-7351 4G52Mass	ACLA-ES	NX.M0KAL.001	HM77	3CELL4.85	65W
M5-481TG-3236 4G25Mass	WW	N9.M0KWW.006	HM77	3CELL4.85	65W

CHAPTER 8

Test Compatible Components

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® 7 environment.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the Acer M5 481/481G/481T/481TG. Compatibility Test Report released by the Acer Mobile System Testing Department.

Acer M5 481/481G/481T/481TG

Table 8-1. Acer M5 481/481G/481T/481TG

Vendor	Type	Description	P/N
2nd HDD			
60003533 YOSUN	FM0020S2	Flash Disk PHISON SSD NAND 20GB SSE020GTTC0-S51 LF+HF	KN.0200Q.002
Accessory			
10000981 MISC	Acer HDMI(A) to VGA converter	Acer HDMI(A) to VGA converter	NC.23811.005
10001012 COMPAL	Wiping KB Cloth 004	Wiping KB Cloth Ultra Book 300 x 180	NC.23511.004
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_VB6	Realtek ALC271X_VB6 QFN-48	LZ.21000.161
Battery			
10001063 SONY	3CELL4.85	Battery SONY ID:AP12A4i Li-Polymar 3S1P SONY 3 cell 4850mAh Main COMMON for embedded type	BT.00304.011
Camera			
10001023 LITE-ON	HD_S	Liteon HD_S LT_SONY119_SP (Shuriken)	NC.21411.00D
Card Reader			
10000981 MISC	2-in-1 card reader	2-in-1 card reader	CR.21500.030

Table 8-1. Acer M5 481/481G/481T/481TG (Continued)

Vendor	Type	Description	P/N
CPU			
10001067 INTEL	Ci32377MB	CPU Intel Core i3 2377M BGA 1.5G 17W	KC.23701.7MB
10001067 INTEL	Ci52467MB	CPU Intel Core i5 2467M BGA 1.6G 17W	KC.24601.7MB
10001067 INTEL	Ci53317UB	CPU Intel Core i5 i5-3317U BGA 1.7G 1600 17W Ivy Bridge	KC.33101.5UM
10001067 INTEL	Ci73517UB	CPU Intel Core i7 i7-3517U BGA 1.9G 1600 17W Ivy Bridge	KC.35101.7UM
HDD			
10001079 SYNNEX	FM0128S3	Flash Disk SANDISK SSD NAND 128GB SDSA5DK-128G LF+HF	KF.1280D.002
10001079 SYNNEX	FM0128S3	Flash Disk SANDISK SSD NAND 128GB SD5SF2-128G(X100) LF+HF	KN.1280D.002
10001079 SYNNEX	FM0256S3	Flash Disk SANDISK SSD NAND 256GB SDSA5DK-256GB LF+HF	KN.2560D.004
10001079 SYNNEX	FM0256S3	Flash Disk SANDISK SSD NAND 256GB SD5SF2-256G(X100) LF+HF	KN.2560D.007
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
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
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
60002005 HGST SG	N320GB5.4KS_4K	HDD HGST 2.5" 5400rpm 320GB HTS545032A7E380, Jaguar B7 500G/P SATA 8MB LF+HF F/W:DA4837	KH.32007.016
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

Table 8-1. Acer M5 481/481G/481T/481TG (Continued)

Vendor	Type	Description	P/N
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 7mmzh HDD	KH.50007.023
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	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
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	FM0256S3	Flash Disk LITE-ON SSD NAND 256GB LMT-256M3M LF+HF firmware:VZC2	KF.2560L.001
Keyboard			
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black UK Y2010 Acer Legend	NK.I1413.00W
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Sweden Y2010 Acer Legend	NK.I1413.00S
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black Russian Y2010 Acer Legend	NK.I1413.00P
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Norwegian Y2010 Acer Legend	NK.I1413.00M
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Nordic Y2010 Acer Legend	NK.I1413.00L
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Italian Y2010 Acer Legend	NK.I1413.00H
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black Greek Y2010 Acer Legend	NK.I1413.00F

Table 8-1. Acer M5 481/481G/481T/481TG (Continued)

Vendor	Type	Description	P/N
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black German Y2010 Acer Legend	NK.I1413.00E
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black French Y2010 Acer Legend	NK.I1413.00D
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Brazilian Portuguese Y2010 Acer Legend	NK.I1413.007
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black US w/ Canadian French Y2010 Acer Legend	NK.I1413.00Z
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black US International w/ Hebrew Y2010 Acer Legend	NK.I1413.00Y
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black US International Y2010 Acer Legend	NK.I1413.00X
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Turkish Y2010 Acer Legend	NK.I1413.00V
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black Thailand Y2010 Acer Legend	NK.I1413.00U
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Swiss/G Y2010 Acer Legend	NK.I1413.00T
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Spanish Y2010 Acer Legend	NK.I1413.00R
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black SLO/CRO Y2010 Acer Legend	NK.I1413.00Q
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Portuguese Y2010 Acer Legend	NK.I1413.00N
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black Korean Y2010 Acer Legend	NK.I1413.00K

Table 8-1. Acer M5 481/481G/481T/481TG (Continued)

Vendor	Type	Description	P/N
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 107KS Black Japanese Y2010 Acer Legend	NK.I1413.00J
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Hungarian Y2010 Acer Legend	NK.I1413.00G
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black FR/Arabic Y2010 Acer Legend	NK.I1413.00C
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Danish Y2010 Acer Legend	NK.I1413.00B
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black Chinese Y2010 Acer Legend	NK.I1413.00A
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black CZ/SK Y2010 Acer Legend	NK.I1413.009
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Bulgaria Y2010 Acer Legend	NK.I1413.008
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 104KS Black Belgium Y2010 Acer Legend	NK.I1413.006
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF4S Internal 14 Standard 103KS Black Arabic Y2010 Acer Legend	NK.I1413.005
10001044 CHICONY	AF4S_A10B	Keyboard CHICONY AF4S_A10B AF1S Internal 14 Standard Black NONE Y2010 Acer Legend	NK.I1413.001
LAN			
610112 BROADCOM	BCM57780	Broadcom BCM57780	NI.22400.047
LCD			
60003089 LG	NLED14WXGA GSOP	LED LCD LPL 14" WXGA Glare LP140WH7-TSA1 LF 200nit 16ms 500:1 (Open cell) (eDP)	LK.14008.014

Table 8-1. Acer M5 481/481G/481T/481TG (Continued)

Vendor	Type	Description	P/N
MEM			
60002041 QIMONDA	OB2GBIII(256x16*4)	Memory NONE DDR3L 1333 2GB Dummy LF+HF 256x16*4pcs	KN.2GB00.006
60002041 QIMONDA	SO2GBIII	Memory NONE SO-DIMM DDRIII 2GB dummy LF+HF	KN.2GB00.004
60002041 QIMONDA	SO4GBIII	Memory NONE SO-DIMM DDRIII 4GB dummy LF+HF	KN.4GB00.003
NB Chipset			
10001067 INTEL	HM77	NB Chipset Intel CS HM77 Chief River	KI.G7501.002
ODD			
60001944 LG HK	NSM8XS9.0	ODD HLDS Super-Multi DRIVE 9.0mm Tray 8X GU61N LF+HF W/O bezel SATA	KU.0080D.064
SB Chipset			
9999995 ONE TIME VENDER	N	N	KI.22800.011
Touchpad			
10000981 MISC	CP4ISV1M	Elantech Touchpad CP4ISV1M	NC.24611.005
VGA Chip			
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038
60001915 NVIDIA	N13PLP	VGA Chip nVidia N13P-LP-A2 28nm, 29mmx29mm, GB4-128 package	KG.PLP0V.001
VRAM			
10000981 MISC	1G-DDR5 (64*32*4)	VRAM NONE Graphic GDDR5 5Gbps 1GB Dummy LF+HF 64*32	KN.1GB00.007
Wireless LAN			
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
10001023 LITE-ON	3rd WiFi 2x2 AGN+ BT4.0	Liteon 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

CHAPTER 9

Online Support Information

Online Support Information

Introduction

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

For distributors, dealers, ASP or TPM, please refer the technical queries to a local Acer branch office. Acer Branch Offices and Regional Business Units may access our website. However some information sources will require a user identification 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.