Swift SF314-51

SERVICE GUIDE

Revision History

Refer to the table below for the updates made to this Swift SF314-51 service guide.

Date	Revision	Chapter	Updates
2016/8/15	First Release		

Disclaimer

The information in this guide is subject to change without notice.

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Conventions

The following conventions are used in this manual:

⚠ WARNING:
Indicates a potential for personal injury.

⚠ CAUTION:
Indicates a potential loss of data or damage to equipment.

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

The following typographical conventions are used in this document:

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

  Example:

  the *DRS5 User's Guide*

  /usr/local/bin/fd

the */TPH15spool_M* program

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

  Example:

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

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

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

  Example:

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

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

  Example:

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

General information

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

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

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

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

CHAPTER 1
Hardware Specifications

CHAPTER 2
System Utilities

CHAPTER 3
Machine Maintenance

CHAPTER 4
Troubleshooting

CHAPTER 5
Jumper and Connector Locations

CHAPTER 6
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CHAPTER 7
Test Compatible Components

CHAPTER 8
Online Support Information

CHAPTER 1

Hardware Specifications

Hardware Specifications and Configurations

Features

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

Operating System

- Windows® 10 64-bit

Platform

- Intel® Core™ i3-6100U processor (3 MB L3 cache, 2.30 GHz, 15W) supporting Intel® 64 architecture, Intel® Smart Cache

  Intel® Core™ i5-6200U processor (3 MB L3 cache, 2.30 GHz, 15W) supporting Intel® 64 architecture, Intel® Smart Cache

  Intel® Core™ i7-6500U processor (4 MB L3 cache, 2.50 GHz, 15W) supporting Intel® 64 architecture, Intel® Smart Cache

  Intel® PENTIUM® 4405U processor (2 MB L3 cache, 2.10 GHz, 15W) supporting Intel® 64 architecture, Intel® Smart Cache

- Intel® 100 series Chipset family

System Memory

- On board up to 8G DDR4 support

Display

- 14.0" FHD 1920 x 1080 resolution, high-brightness (220-nit) LED-backlit none Glare TFT LCD, 30 ms typical response time
- 14.0" FHD 1920 x 1080 resolution, high-brightness (250-nit) LED-backlit none Glare TFT LCD, 25 ms typical response time
- 14.0" HD 1366 x 768 resolution, high-brightness (220 -nit) LED-backlit none Glare TFT LCD, 8 ms typical response time
- 14.0" HD 1366 x 768 resolution, high-brightness (220 -nit) LED-backlit none Glare TFT LCD, 10 ms typical response time
- Mercury-free, environment-friendly
- LED-backlight with driving circuit design
- 16:9 aspect ratio

Graphics

Intel® HD Graphics 520 with 300-1024MHz frequency, supporting Intel® Clear Video HD Technology,Intel® Clear Video HD Technology, Intel® Quick Sync Video ,Intel® InTru™ 3D Technology ,Intel® Insider™ ,Intel® Wireless Display, Intel® Clear Video Technology, HDMI, Microsoft® DirectX® 12, OpenGL® 4.4

- Triple independent display support
- 9.43 million colors
- External resolution / refresh rates:
  - HDMI® port up to 4096 x 2304: 24 Hz
  - DP port up to 4096 x 2304: 60 Hz
  - eDP port up to 4096 x 2304: 60 Hz
- HDMI® (High-Definition Multimedia Interface) interface support HDMI with 3D, 4Kx2K@24HZ, deep color, and x,v,color.

Intel® HD Graphics 510 with 300-950MHz frequency, supporting Intel® Quick Sync Video,Intel® Wireless Display, Intel® Clear Video Technology, Intel® Clear Video HD Technology, Microsoft® DirectX® 12, OpenGL® 4.4

- Triple independent display support
- 9.43 million colors
- External resolution / refresh rates:
  - HDMI® port up to 4096 x 2304: 24 Hz
  - DP port up to 4096 x 2304: 60 Hz
  - eDP port up to 4096 x 2304: 60 Hz
- HDMI® (High-Definition Multimedia Interface) interface support HDMI with 3D, 4Kx2K@24HZ, deep color, and x,v,color

Storage Subsystem

Hard disk drive

- M.2 2280 SATA Gen3x2 SSD
- 128GB/256GB/512GB SSD

SD card reader, supporting:

- Secure Digital™(SD), MultiMediaCard™(MMC), SDHC, SDXC, Mini-SD, Micro-SD (T-flash),RS-MMC, Mobile-MMC, MMCPlus and MMC-micro
- Memory Stick™(MS), Memory Stick PRO™(MS-PRO), MS Duo, MS-PRO Duo and Micro-MS (M2)
- MSPRO-HG Duo 8-bit mode
- xD-Picture Card™ (xD) including Type M, Type M+ and Type H

Audio Subsystem

- Two built-in stereo speakers
- High-definition audio support
- Direct Sound 3D™ compatible
- EAX™ 1.0 & 2.0 compatible
- I3DL2 compatible
- Built-in digital microphone

Communication

Webcam

- Video Conference, featuring:
  - 1.0M webcam with 1280*720 effective resolution
  - USB 2.0 High Speed interface
  - Supports 720P resolution online image applications

Wireless and networking

- WLAN:
  - WiFi 2X2 802.11a/b/g/n
  - WiFi 2X2 802.11b/g/n
  - WiFi 2X2 802.11ac

Privacy Control

- BIOS user/supervisor password
- Kensington lock slot

Dimensions and Weight

Dimensions

- 341 (L) x 236.6(W) x 17.95(H) mm

Weight

- 1.65kg with battery

Power Adapter and Battery

ACPI 5.0 CPU power management standard: supports Standby and Hibernation power-saving modes

Power adapter

- 3-pin 45 W AC adapter:
  - 1.1 (W) x 3.0 (D) x 7.7 (H) mm

Battery

- 3220 mAh 4-cell LGC/SANYO for 5.5mm battery pack thickness

Special Keys and Controls

Keyboard

- AR-87/GR-87/HE-87/KO-87/RU-87/TA-87/TW-87/UI-87/A1-88/BE-88/BG-88/BR-88/CF-88/DE-88/E2-88/FR-88/GE-88/HU-88/IT-88/LA-88/ND-88/NW-88/PO-88/SD-88/SF-88/SP-88/TU-88/UK-88/WB-88/JP-91-key-layout keyboard with embedded numeric keypad, international language support

Touchpad

- Multi-finger gesture touchpad, supporting single finger press or tap or slide, Two-finger press ,slide ,pinch ,Three-finger press ,swipe

Media keys

- Media controls: Pause/Play/stop/Previous/next
- Volume controls: up/down

I/O Ports

- SD card reader
- 1 USB 2.0 port
- 1 USB 3.0/Offline USB Charger port
- 1 Type C USB3.1 Gen 1+PD+DP port
- HDMI® port
- Headphone/speaker/line-out jack
- DC-in jack for AC adapter
- 1, K lock

Software

Content

- abFiles (For Win10)
- abPhoto (For Win10)
- Acer Care Center V2 (For Win10 RS1)
- Acer Configuration Manager
- Acer Portal (Win10)
- Agoda Weblink (Win10)
- Amazon (Win10)
- App Explorer
- BaiduIME
- Booking.com Weblink (Win10)
- Dashlane
- eBay Worldwide (Win10)
- Firefox
- Gomaji (Win10)
- Hao123 Weblink (Win10)

- Internet Explorer (Jumpstart 2016)
- Kindle (Win10)
- Lazada
- McAfee Internet Security (Win10)
- McAfee Settings (For Win10)
- Music Maker Jam (Win10)
- Netflix (Win10)
- Office 2016
- Office 2016 Installer
- PC Manager
- PowerDVD (Win10)
- Priceline.com
- Pubu
- Quick Access (For Win10)
- Quick Access Settings (For Win10)
- Software Value Pack
- Sohu Video (Win10)
- User Behavior Tracking Framework (For Win10)
- WildTangent Game List Setting (For Win10)
- WildTangent Games (Win10)
- WildTangent _Remove_From_4K
- Yandex Weblink (Win10)

Environment

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

Notebook Tour

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

Screen View

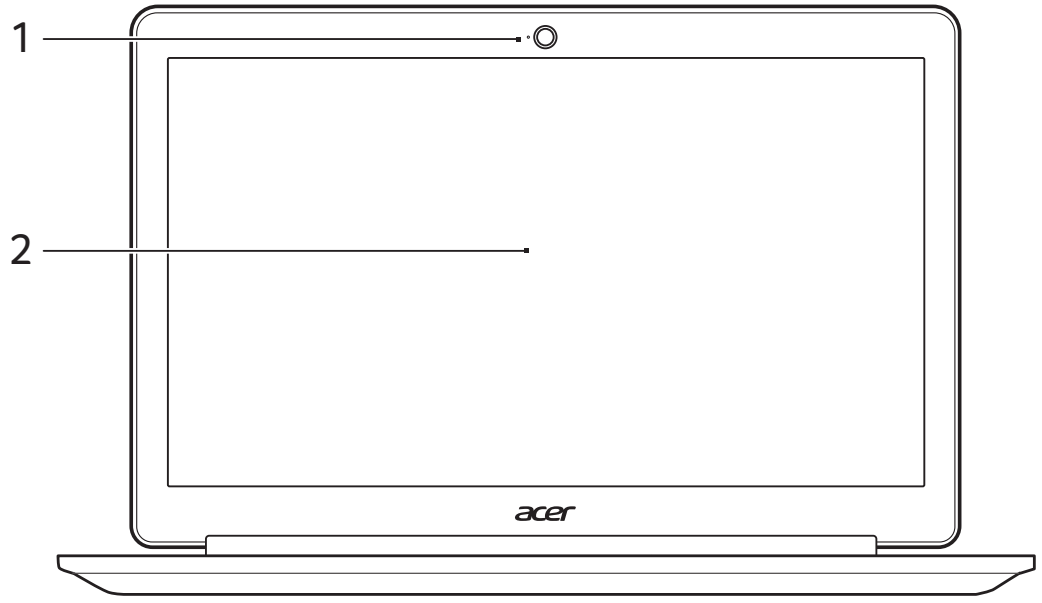


Figure 1-1. Screen View

Table 1-1. Screen View

No	Icon	Item	Description
1		Webcam	Web camera for video communication. *A light next to the webcam indicates that the webcam is active.*
2		screen	Displays computer output

Keyboard View

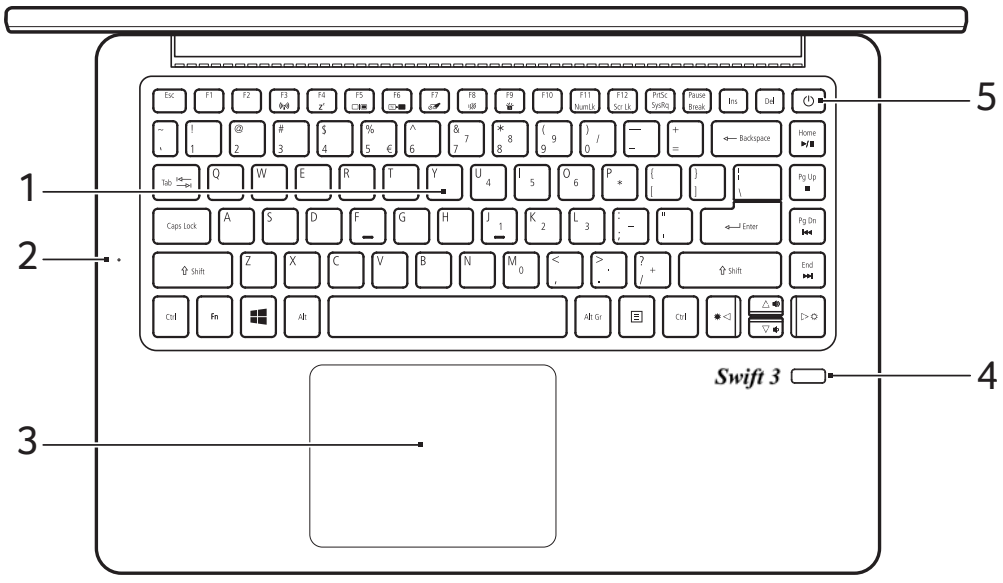


Figure 1-2. Keyboard View

Table 1-2. Keyboard View

No	Icon	Item	Description
1		Keyboard	For entering data into your computer.
2		Microphone	Internal digital microphone for sound recording.
3		Touchpad	Touch-sensitive pointing device. The touchpad and selection buttons form a single surface. Press down firmly on the touchpad surface to perform a left click. Press down firmly on the lower right corner to perform a right click.
4		Fingerprint reader	Fingerprint reader for Acer ProShield Security Suite (configuration may vary by model).
5	⏻	Power button	Turns the computer on and off.

Left View

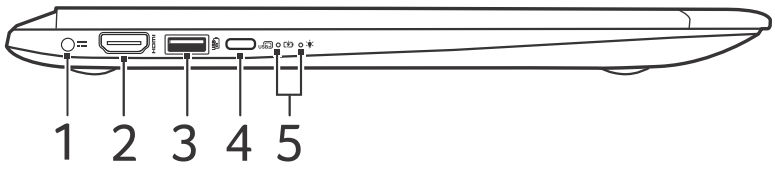


Figure 1-3. Left View

Table 1-3. Left View

No	Icon	Item	Description
1		DC-in jack	Connects to an AC adapter.
2	HDMI	HDMI port	Supports high-definition digital video connections.
3	USB	USB port with power-off charging	Connects to USB devices.
4	USB	USB Type-C port	Connects to USB devices that adopt the USB Type-C connector. Supports Display Port over USB-C
5		Power indicator	Indicates the computer's power status.
		Battery indicator	Indicates the computer's battery status. ***Charging:*** *The light show amber when the battery is charging.* ***Fully charged:*** *The light show blue when in AC mode.*

NOTE:

Information on USB 3.0

- USB 3.0 compatible ports are blue.
- Compatible with USB 3.0 and earlier devices.
- For optimal performance, use USB 3.0-certified devices.
- Defined by the USB 3.0 specification (SuperSpeed USB).

NOTE:

USB Type-C information

- USB 3.1 Gen 1 with transfer speeds up to 5 Gps.
- Supports DisplayPort™ over USB-C ™ audio/video output.
- Delivers up to 3 A at 5 V DC for USB charging.

Right View

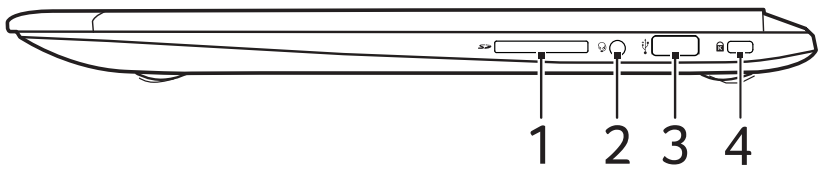
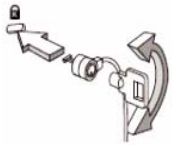


Figure 1-4. Right View

Table 1-4. Right View

No	Icon	Item	Description
1		SD Card reader	Accepts one Secure Digital (SD or SDHC) card. ***Note:*** *Only one card can operate at a time.*
2		Headphones/speaker jack	Connects to audio devices (e.g., speakers, headphones) or a headset with microphone.
3		USB port	Connects to USB devices.
4		Kensington lock slot 	Connects to a Kensington-compatible computer security lock. *Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.*

Base View

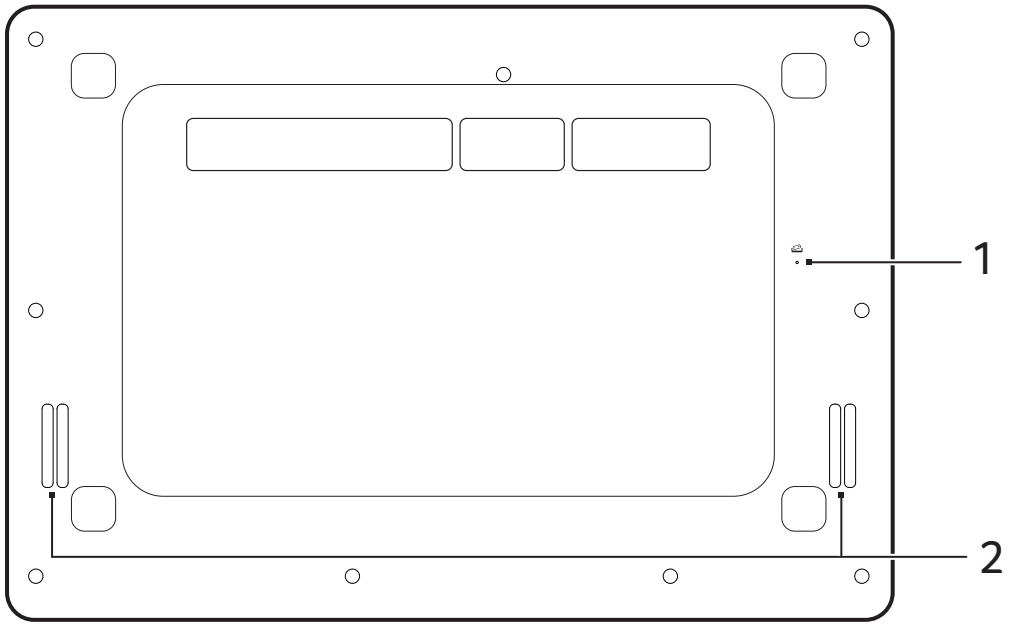


Figure 1-5. Base View

Table 1-5. Base View

No	Icon	Item	Description
1		Battery reset pinhole	Simulates removing and reinstalling the battery. *Insert a paperclip into the hole and press for four seconds.*
2		Speakers	Deliver stereo audio output.

Indicators

The computer has two easy-to-read status indicators. The following indicators are visible even when the computer cover is closed.

Table 1-6. Indicators

Icon	Function	Description
	Power indicator	Indicates the computer's power status.
	Battery indicator	Indicates the computer's battery status. ***Charging:*** *The light show amber when the battery is charging.* ***Fully charged:*** *The light show blue when in AC mode.*

Touchpad Basics

The touchpad controls the arrow (or 'cursor') on the screen. As you slide your finger across the touchpad, the cursor will follow this movement.The Precision Touchpad (PTP) is designed to provide a more uniform, smooth, and accurate touchpad experience. Many applications support precision touchpad gestures that use one or more fingers, however, some gestures may not be supported by the specific application or program you are using.

NOTE:

The touchpad is sensitive to finger movement; the lighter the touch, the better the response.

Please keep the touchpad and your fingers dry and clean.

Support for touchpad gestures depends on the active application.

These allow you to control applications with a few simple gestures, such as:

- **Single-finger slide:** Slide a finger across the touchpad to move the cursor.

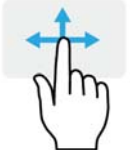


Figure 1-6. Single-finger slide

- **Single-finger press** or **tap:**Press the touchpad down, or lightly tap the touchpad with your finger, to perform a 'click', which will select or start an item. Quickly repeat the tap to perform a double tap or 'double click'.

Figure 1-7. Single-finger press or **tap**

- **Two-finger press:** Lightly tap the touchpad with two fingers to perform a 'right click'. In the Start screen, this will toggle the app commands. In most apps this will open a context menu related to the selected item.

Figure 1-8. Two-finger press

- **Two-finger slide:** Swiftly scroll through web pages, documents and playlists by placing two fingers on the touchpad and moving both in any direction.

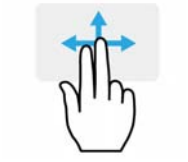


Figure 1-9. Two-finger slide

- **Two-finger pinch:** Zoom in and out of photos, maps and documents with a simple finger-and-thumb gesture.

Figure 1-10. Two-finger pinch

- **Three-finger press:** Lightly tap the touchpad with three fingers to open Cortana (if your computer supports Cortana) or open the Action Center (if your computer does not support Cortana).
-

Figure 1-11. Three-finger press

- **Three-finger swipe:** Swipe across the touchpad with three fingers.
  - Swipe up to open Task Vi ew. Move the cursor over a window and tap the touchpad to select that window, or swipe downwards to exit Task View.
  - Swipe down to minimize all open windows and show Desktop; swipe upwards to restore the minimized windows.
  - Swipe left or right to switch between open windows.

Figure 1-12. Three-finger swipe

Using the Keyboard

The keyboard has full-sized keys and a embedded numeric keypad, separate cursor,lock, Windows, function and special keys.

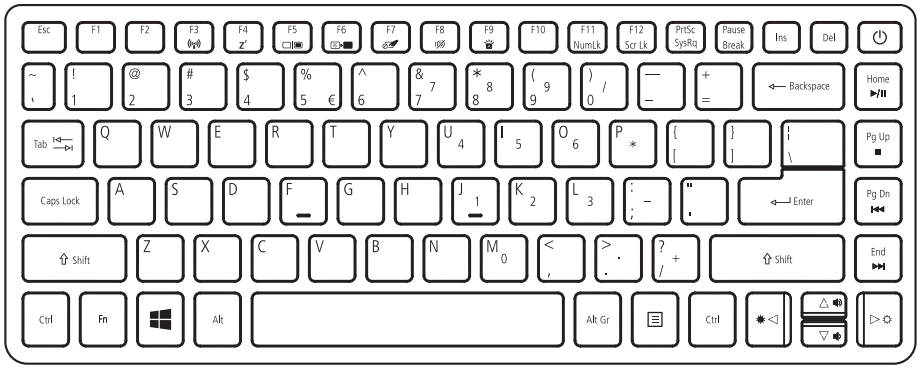


Figure 1-13. Keyboard Lock Keys

Lock Keys

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

Table 1-7. Lock Keys

Lock key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num Lock	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when you need to do a lot of numeric data entry.
Scroll Lock <**Fn**> +<**F12**>	When Scroll Lock is on, the screen moves one line up or down when you press the up or down arrow keys 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 keycaps. To simplify the keyboard legend, cursor-control key symbols are not printed on the keys.	

Windows Keys

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

-  Windows key
-  Application key

Table 1-8. Windows Keys

Key	Description
Windows key	Pressed alone, this key brings up the Start Screen. You can start typing to search for an application, just like the Windows 7 Start Menu. **Functions supported by Windows 10:** <  >: Start Screen <  > + <D>: Show desktop <  > + <E>: Open Windows Explorer <  > + <F>: Go to Files in Search charm <  > + <G>: Cycle through desktop gadgets <  > + <H>: Share charm <  > + <I>: Settings charm <  > + <J>: Switch focus between snapped and larger apps <  > + <K>: Devices charm <  > + <L>: Switch Users (Lock computer if on a domain) <  > + <M>: Minimize all windows (desktop) <  > + <O>: Lock screen orientation <  > + <P>: Projection options <  > + <Q>: Search charm <  > + <R>: Run... <  > + <T>: Set focus on task and cycle through running desktop apps <  > + <U>: Ease of Access Center

Key	Description
Windows key	<  > + <X>: Quick link power user commands (Opens Windows Mobility Center if present) <  > + <1> ~ <9>: Go to the app at the given position on the task bar <  > + <+>: Zoom in (Magnifier) <  > + <->: Zoom out (Magnifier) <  > + <,>: Peek at the desktop <  > + <Enter>: Narrator <  > + <Tab>: Cycle through metro app history (use Ctrl to use arrow keys) <  > + <Esc>: Exit Magnifier <  > + <Home>+<Fn>: Minimize non-active desktop windows <  > + : System properties <  > + <◁>: Snap desktop window to the left <  > + <▷>: Snap desktop window to the right <  > + < △ >: Maximize desktop window <  > + < ▽ >: Restore/minimize desktop window <CTRL> + <  > + <F>: Find computers on a network <SHIFT> + <  > + <V>: Go backward
Application key	This key has the same effect as clicking the right mouse button; opening the application's context menu.

Hotkeys

The computer employs hotkeys or key combinations to access most computer controls like screen brightness and volume output.

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

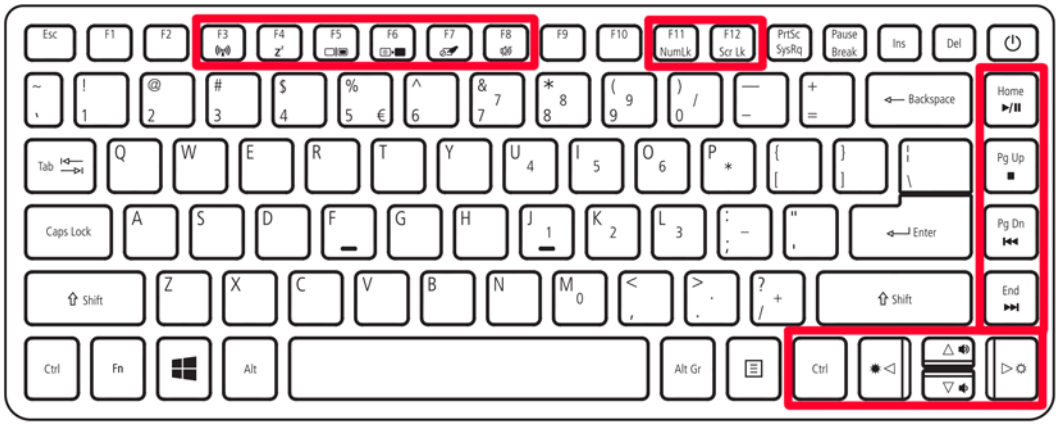


Figure 1-14. Keyboard Hotkeys

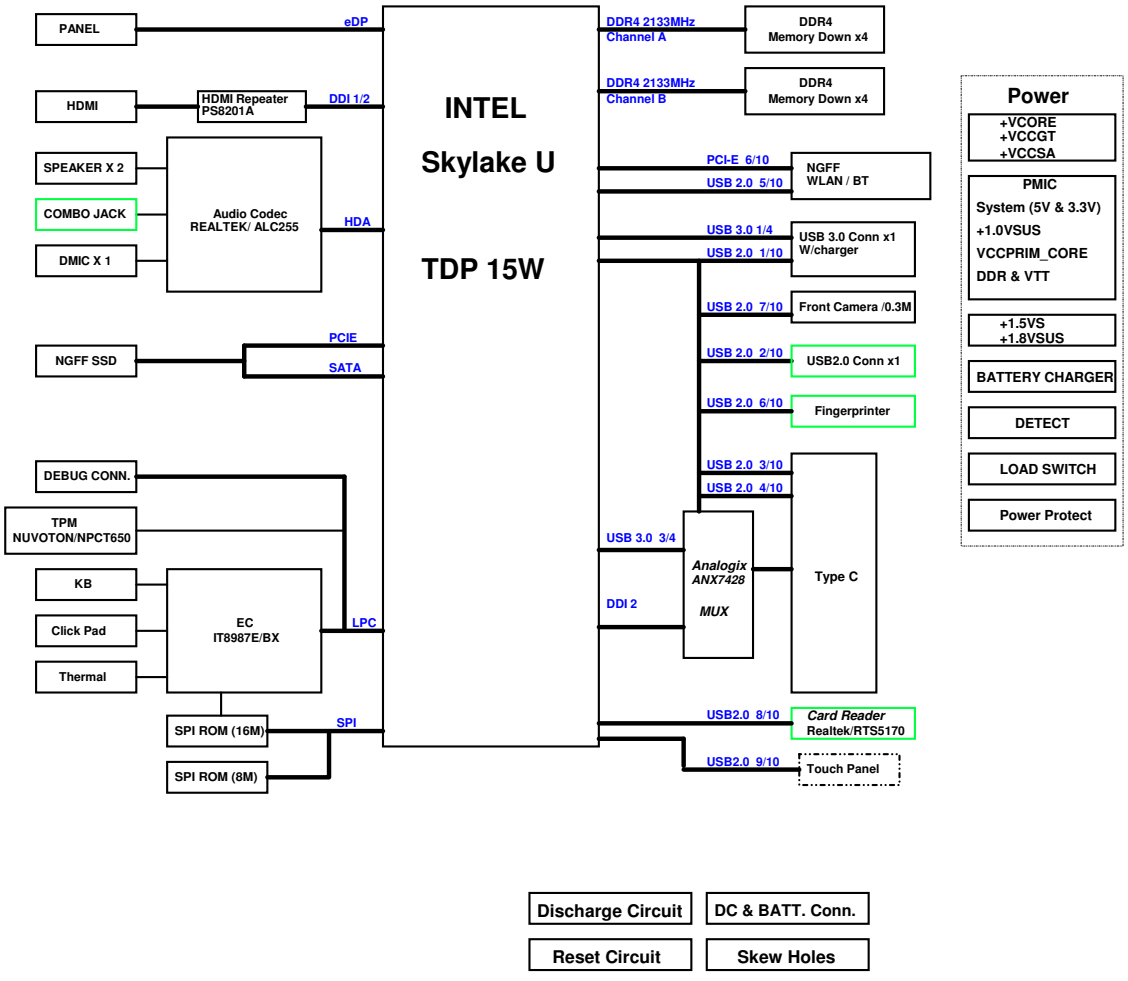
Table 1-9. Hotkeys

Hotkey	Icon	Function	Description
<Fn> + <F3>		Airplane mode	Turns on / off the computer's network devices.
<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>		Display off	Turns the display screen backlight off to save power. Press any key to return.
<Fn> + <F7>		Touchpad toggle	Turns the built-in touchpad on and off.
<Fn> + <F8>		Speaker toggle	Turns the speakers on and off.
<Fn> + <F11>	NumLk	Numeric Lock	Turns the number lock feature on or off.
<Fn> + <F12>	Scr Lk	Scroll Lock	Turns Scroll Lock on or off.
<Fn> + <▷>		Brightness up	Increases the screen brightness.
<Fn> + <◁>		Brightness down	Decreases the screen brightness.
<Fn> + < △ >		Volume up	Increases the sound volume.

Table 1-9. Hotkeys (Continued)

Hotkey	Icon	Function	Description
<Fn> + < ▽ >		Volume down	Decreases the sound volume.
<Fn> + <Home>		Play/Pause	Play or pause a selected media file.
<Fn> + <Pg Up>		Stop	Stop playing the selected media file.
<Fn> + <Pg Dn>		Previous	Return to the previous media file.
<Fn> + <End>		Next	Jump to the next media file.

System Block Diagram



Discharge Circuit	DC & BATT. Conn.
Reset Circuit	Skew Holes

Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	341 mm	13.43 in
Width	236.6 mm	9.31 in
Height	17.95 mm	0.71 in
Weight (equipped with optical drive, flash drive, and battery)	1.65 kg with 4-cell battery	3.64 lbs with 4-cell battery
Input power		
Operating voltage	19V at 2.37A Max for 45W	
Operating current	2.37A(Max)	
Temperature		
Operating	0°C to 40°C	32°F to 104°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity		
Operating	0% to 80%	
Nonoperating	20% to 80%	
Random vibration		
Operating	0.60 g zero-to-peak, 5 Hz to 500 Hz, 30 minutes test duration	
Nonoperating	1.50 g zero-to-peak, 5 Hz to 500 Hz, 30 minutes per axis test duration	

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

System Board Major Chips

Item	Specification
Core logic	Intel® 100 series Chipset family
VGA	Intel® HD Graphics 520/Intel® HD Graphics 510
USB 3.0	Intel® 100 series Chipset family
Bluetooth (chip of WLAN combo card)	Qualcomm Atheros NFA344A
Wireless (chip of WLAN combo card)	Qualcomm Atheros NFA344A
PCMCIA	N/A
Audio codec	Realtek ALC255-CGT
Card reader	RealtekRT/RTS5170-GRT

Processor

Item	Specification
CPU type	Intel® Mobile Skylake Core® i3 Processor Intel® Mobile Skylake Core® i5 Processor Intel® Mobile Skylake Core® i7 Processor Intel® Mobile Skylake Pentium® Processor
CPU package	FCBGA1356
Chipset	Intel® 100 series Chipset family

Processor Specifications

Item	CPU Speed (GHz)	Cores	Mfg Tech	L3 Cache Size	Package
P-4405U	2.1	2	14nm	2MB	FCBGA1356
i3-6100U	2.3	2	14nm	3MB	FCBGA1356
i5-6200U	2.3	2	14nm	3MB	FCBGA1356
i7-6500U	2.5	2	14nm	4MB	FCBGA1356

UMA CPU Fan1 True Value Table (Tj100)

CPU Temperature	Fan Speed (RPM)
40	2800
50	3400
65	4200
70	4800
75	5400
Throttling 0%	
Tj100:OS Critical shut down at 98°C; EC Force shut down at 99°C	

UMA CPU Fan2 True Value Table (Tj100)

CPU Temperature	Fan Speed (RPM)
40	2400
50	3000
65	3800
70	4400
75	4800
Throttling 0%	
Tj100:OS Critical shut down at 98°C; EC Force shut down at 99°C	

System Memory

Item	Specification
Memory controller	Built in CPU
Memory size	4/8 GB DDR4 SDRAM
DIMM socket number	0
Supports maximum memory size	8 GB

Graphics Controller

Item	Specification
VGA Chip	Intel® HD Graphics 520/510
Supports	Intel® Clear Video HD Technology,Intel® Clear Video HD Technology, Intel® Quick Sync Video ,Intel® InTru™ 3D Technology ,Intel® Insider™ ,Intel® Wireless Display, Intel® Clear Video Technology, HDMI, Microsoft® DirectX® 12, OpenGL® 4.4

Item	Specification
Package	42mm x 24mm
Interface	eDP/DP/HDMI/DVI
Max Resolution (Intel® WiDi)	1080p
Sampling rate	300MHz

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS ROM type	WINBOND/W25Q128FVSIQ
BIOS ROM size	16Mbit
BIOS Features	● Insyde code base ● Flash ROM 16Mbit ● Support Acer UI ● Support multi-boot ● Suspend to RAM (S3)/Disk (S4) ● Various hotkeys for system control ● DMI utility for BIOS serial number configurable/asset tag-Support PXE ● Support WinFlash ● System information ● HDD password ● Refer to Acer BIOS specification.

Keyboard

Item	Specification
Type	LV4T keyboard
Total number of keypads	AR-87/GR-87/HE-87/KO-87/RU-87/TA-87/TW-87/UI-87/A1-88/BE-88/BG-88/BR-88/CF-88/DE-88/E2-88/FR-88/GE-88/HU-88/IT-88/LA-88/ND-88/NW-88/PO-88/SD-88/SF-88/SP-88/TU-88/UK-88/WB-88/JP-91 keys
Windows key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	● Embedded numeric keypad ● Support independent pgdn/pgup/home/end keys ● Factory configurable different languages by OEM customer

Hard Disk Drive (AVL components)

Item	Specification		
Vendor & Model Name	TOSHIBA/THNSNK128GVN8	SK HYNIX/HFS128G39TND-N210A	LITEON/CV3-8D128
Capacity (GB)	128	128	128
Physical bytes per sector	512		
Drive Format			
Height x Width x Length(mm)	2.23x22.00x80.00	2.23x22.00x80.00	2.3x22.00x80.00
Performance Specifications			
SATA revision	3.2	NA	3.0
Interface	SATA	SATA	SATA
Fast data transfer rate (Gbits/s, max)	6.0	NA	6.0
Sequential Read (MB/s)	520	540	530
Sequential Write (MB/s)	130	130	130
DC Power Requirement			
Voltage tolerance	3.3V +/- 5%		

Item	Specification		
Vendor & Model Name	TOSHIBA/THNSNK256GVN8	SK HYNIX/HFS256G39TND-N210A	LITEON/CV3-8D256
Capacity (GB)	256	256	256
Physical bytes per sector	512		
Drive Format			
Height x Width x Length(mm)	2.23x22.00x80.00	2.23x22.00x80.00	2.3x22.00x80.00

Item	Specification		
Performance Specifications			
SATA revision	3.2	NA	3.0
Interface	SATA	SATA	
Fast data transfer rate (Gbits/s, max)	6.0	NA	6.0
Sequential Read (MB/s)	520	540	540
Sequential Write (MB/s)	250	250	170
DC Power Requirement			
Voltage tolerance	3.3V +/- 5%		

Item	Specification		
Vendor & Model Name	TOSHIBA/THNSNK512GVN8	SK HYNIX/HFS512G39TND-N210A	LITEON/CV3-8B512
Capacity (GB)	512	512	512
Physical bytes per sector	512		
Drive Format			
Height x Width x Length(mm)	2.23x22.00x80.00	2.23x22.00x80.00	2.3x22.00x80.00
Performance Specifications			
SATA revision	3.2	NA	3.0
Interface	SATA	SATA	SATA
Fast data transfer rate (Gbits/s, max)	6.0	NA	6.0
Sequential Read (MB/s)	520	540	520
Sequential Write (MB/s)	250	460	450
DC Power Requirement			
Voltage tolerance	3.3V +/- 5%		

LCD 14.0” (FHD, None Glare)

Item	Specification	
Vendor/model name	AUO B140HAN02.1	INNOLUX/N140HCA-EAB
Screen Diagonal (mm)	354.69	354.69
Display resolution (pixels)	1920x3(RGB)x1080	1920x3(RGB)x1080
Pixel Pitch (mm)	0.16101(H) x 0.16101 (V)	0.1611 (H) x 0.1611 (V)
Typical White Luminance (cd/m^2) also called Brightness	220 typ., 187 min.	250 typ.
Contrast Ratio	700 : 1	700 : 1
Response Time (ms)	35 max., 30 typ.	30 max., 25typ.
Power Consumption (watt)	3.8 max.	3.24 max.
Weight(g)	270 max.(panel only)	270 max.(panel only)
Physical Size (mm)	320.9 x 205.6 x 3.0 max.	320.9 x 187.6x 3.0 max.
Electrical Interface	2 Lane eDP 1.2	2 Lane eDP 1.2

LCD 14.0” (HD, None Glare)

Item	Specification	
Vendor/model name	AU B140XTN02.E	INNOLUX/N140BGA-EA3
Screen Diagonal (mm)	354.95	354.69
Display resolution (pixels)	1366x3(RGB)x768	1366x3(RGB)x768
Pixel Pitch (mm)	0.2265(H) x 0.2265 (V)	0.2265 (H) x 0.2265 (V)
Typical White Luminance (cd/m^2) also called Brightness	220 typ., 187 min.	220 typ.
Contrast Ratio	400 : 1	500 : 1
Response Time (ms)	16 max., 8 typ.	20 max., 10 typ.
Power Consumption (watt)	2.9 max.	3.07 max.
Weight(g)	270 max.(panel only)	270 max.(panel only)
Physical Size (mm)	320.9 x 205.6 x 3.0 max.	320.9 x 187.9x 3.0 max.
Electrical Interface	1 Lane eDP	1 Lane eDP

FHD Display Supported Resolution (System Supported Resolution)

Resolution	32bit	Intel
800x600p/60Hz	Y	Y

Resolution	32bit	Intel
1024x768p/60Hz	Y	Y
1152x864/60Hz	Y	Y
1280x600/60Hz	Y	Y
1280x720/60Hz	Y	Y
1280x768/60Hz	Y	Y
1280x800/60Hz	Y	Y
1280x960/60Hz	Y	Y
1280x1024/60Hz	Y	Y
1360x768/60Hz	Y	Y
1366x768/60Hz	Y	Y
1440x900/60Hz	Y	Y
1440x1050/60Hz	Y	Y
1600x900/60Hz	Y	Y
1680x1050/60Hz	Y	Y
1920x1080/60Hz	Y	Y

HD Display Supported Resolution (System Supported Resolution)

Resolution	32bit	Intel
800x600p/60Hz	Y	Y
1024x768p/60Hz	Y	Y
1280x600/60Hz	Y	Y
1280x720/60Hz	Y	Y
1280x768/60Hz	Y	Y
1360x768/60Hz	Y	Y
1366x768/60Hz	Y	Y

Camera

Item	Specification
Vendor and Model	CHICONY/CNFFH3521004970LH LITEON/5SF119N2
Type	1.0M Pixels CMOS

Audio Codec and Amplifier

Item	Specification
Audio Controller	Realtek ALC255-CGT

Item	Specification
Features	● Meets Microsoft® WLP (Windows Logo Program) and Lync™ audio requirements for Windows systems ● 97dB Signal-to-Noise Ratio (A-weighting) for DAC output ● 90dB Signal-to-Noise Ratio (A-weighting) for ADC input ● 4-channel DAC supports 16/20/24-bit PCM format for independent two stereo channel or 2.1 audio playback ● 4-channel ADC supports 16/20/24-bit PCM format for independent two stereo channel audio input ● All DACs support 44.1k/48k/96k/192kHz sample rate ● All ADCs support 44.1k/48k/96k/192kHz sample rate ● SPDIF-OUT supports 16/20/24-bit format and 44.1/48/88.2/96/192kHz rate ● Supports MONO line level output ● Analog port-E (LINE2) supports input and output re-tasking ● Port-C (LINE1) and port-F (MIC2) are dedicated inputs with boost gain ● Supports external PCBEEP input and features built-in digital BEEP generator ● Software selectable 2.5V/3.2V/4.0V VREFOUT as bias voltage for analog microphone input ● Programmable +10/+20/+30dB boost gain for analog microphone input ● Supports stereo digital microphone input, and programmable boost gain and volume control ● Built-in headphone amplifiers for port-E (LINE2) and port-I (HP-OUT) ● Headphone amplifier for port-I does not require DC blocking capacitors ● Supports three jack detection pins each designed to detect up to 2 jacks, and SPDIF-OUT jack detection ● Supports combo jack with stereo headphone output and mono microphone input on a 4-pole jack ● Combo jack detection without extra MOSFET needed ● Supports Headset Push-Button Control for combo jack ● 4 GPIOs for customized applications (pin-shared with digital microphone interface and SPDIF-OUT) ● Supports Anti-pop mode when analog power AVDD1 is on and DVDD/AVDD2 are off ● Supports PCBEEP pass-through to Class-D output (Port D) ● Supports Line-In pass-through to speaker out (Sleep & Music mode) ● Volume synchronization for PCBEEP in D0/D3 mode change ● PCBEEP input signal level detection ● Enhanced power management features for normal operation and standby mode ● Stereo Bridge-Tied Load Class-D amplifier at port-D has 2Watt (rms)/4Ω per channel output

Item	Specification
Features	● DC detector, short circuit and thermal overload protection for Class-D amplifier ● Class-D amplifier has seven band hardware equalizers and high pass filter to compensate for frequency response and protect the speaker
Features	● AGC (Auto Gain Control) function for Class-D amplifier removes distortion when outputting high volume sound ● Class-D amplifier output with slew rate control to improve EMI performance ● ntel low power DCN (HDA015-B) compliant, supports power status control, jack detection, and wake-up event in D3 mode ● 48-pin MQFN 'Green' package (6x6 mm dimension)
Amplifier	An integrated stereo Class-D Speaker Amplifier with 2 watt per channel output power

Audio Interface

Item	Specification
Audio Controller	Realtek ALC255-CGT
Audio onboard or optional	On board
Mono or Stereo	Stereo and Mono
Resolution	Support 16/20/24bit PCM
Compatibility	Digital serial interface
Sampling rate	All DACs supports 44.1k/48k/96k/192kHz sample rate All ADCs support 44.1k/48k/96k/192kHz sample rate
Internal microphone	Yes
Internal speaker/quantity	Yes/(2W speaker set x2)

WLAN Combo Card

Item	Specification
Vendor and Model	FOXCONN/T77H644.01 LITEON/WCBN807A-AA
Form Factor	M.2
WiFi Function	
Wireless LAN Standards	IEEE802.11a/b/g/n/ac standards
Operating Frequency	5GHz 802.11ac,or 2.4/5GHz 802.11n
Host Interface	PCI-Express Bus interface
Bluetooth Function	

Item	Specification
Data throughput	● 1 Mbps (GFSK) ● 2 Mbps (π/4-DQPSK) for EDR ● 3 Mbps (8-DPSK) for EDR
Protocal	Bluetooth V4.1 Bluetooth V4.0 LE Bluetooth V3.0+HS Bluetooth V2.1+EDR
Host interface	USB 2.0

Battery

Item	Specifications
Vendor & Model name	AC14B8K/AC14B3K
Battery Type	Lithium ion
Pack capacity	3220 mAh
Number of battery cell	4
Package configuration	4S1P

USB Port

Item	Specification
USB compliance level	USB 3.0, USB 2.0
XHCI	1
Number of USB port(s)	USB 3.0x2, USB 2.0x1
Location	USB 3.0/Offline USB Charger one at the left side Type C USB3.1 Gen 1+PD+DP one at the left side USB 2.0 one at the right side
Output Current	0.5A for USB 2.0 connector 1.0A for USB 3.0 connector 3A for USB type C connector

HDMI Port

Item	Specification
Compliance level	HDMI1.4b
Maximum Total Throughput	10.2Gbps
Number of HDMI port	1
Location	HDMI at left side

AC Adapter

Item	Specification
Vendor & Model Name	DELTA/ADP-45HE BB LITEON/PA-1450-26AC
Power	45W
Input rating	90~264VAC, Voltage range
Maximum input AC current	1.2A max (at input voltage 90Vac/47Hz and maximum load)
Inrush current	264Vac, No damage; Meet fuse and bridge diode I^2t de-rating
Efficiency	87.73% min. at test input 115 and 230 Vac voltage.
Output Voltage range	18.55~19.95V when the load is 0A~2.37A steadily
Output current	2.37 max
Item	**Specification**
Vendor & Model Name	LITEON/PA-1450-26AC
Power	45W
Input rating	90~264VAC, Voltage range
Maximum input AC current	1.2A max (at input voltage 90Vac/60Hz and maximum load)
Inrush current	264Vac, No damage; Meet fuse and bridge diode I^2t de-rating
Efficiency	87.8% min. at test input 115 and 230 Vac voltage.
Output Voltage range	18.55~19.95V when the load is 0A~2.37A steadily
Output current	2.37 max
Item	**Specification**
Vendor & Model Name	CHICONY/A045R016L
Power	45W
Input rating	90~264VAC, Voltage range
Maximum input AC current	1.2A max (at input voltage 90Vac/60Hz and maximum load)
Inrush current	264Vac, No damage; Meet fuse and bridge diode I^2t de-rating
Efficiency	87.8% min. at test input 115 Vac voltage. 86.2% min. at test input 230 Vac voltage.
Output Voltage range	18.05~19.95V when the load is 0A~2.37A steadily
Output current	2.37 max

System Power Management

Item	Specification
Mech. Off (G3)	All devices in the system are turned off completely.

Item	Specification
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices like CPU and hard disc can be power managed.
Suspend to RAM (S3)	CPU set power down, Audio, Power Down, Hard Disk Power Down.
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	RealtekRT/RTS5170-GRT
Package	24-pin QFN
Type	non-Push
Maximum supported size	Support SDXC and MSXC up to 2TB
Features	Support the following memory card interfaces: -Secure Digital™(SD), MultiMediaCard™(MMC), SDHC, SDXC, Mini-SD, Micro-SD (T-flash),RS-MMC, Mobile-MMC, MMCPlus and MMC-micro Memory Stick™(MS), Memory Stick PRO™(MS-PRO), MS Duo, MS-PRO Duo and Micro-MS (M2) -MSPRO-HG Duo 8-bit mode -xD-Picture Card™ (xD) including Type M, Type M+ and Type H

System LED Indicator

Item	Specification
Power indicator	● Blue color steady on: System on ● Blue color and Orange color off: System off ● Orange color breeze: S3 state(**LED on/off = 1S/3S**)
Charge indicator	● Orange steady on - the computer is charging and plugged in(electricity: 0% ~ 98%) ● Blue color steady on - the computer is fully charged and plugged in or plugged in (electricity: 9% ~ 100%) ● Orange breeze (**LED on/off = 1S/3S**)- The computer is at low power and plugged in.(electricity: less than 10% battery) ● Orange blink (**LED on/off = 1S/1S**)- The computer is at low power and un-plugged.(electricity: less than 3% battery) or abnormal.

System DMA Specification

Hardware DMA	System Function
DMA0	Not applicable
DMA1	Not applicable
DMA2	Not applicable
DMA3	Not applicable
DMA4	Not applicable
DMA5	Not applicable
DMA6	Not Assigned
DMA7	Not Assigned
ExpressCard controller can use DMA 1, 2, or 5.	

System Interrupt Specification

Hardware IRQ	System function
IRQ0	System timer
IRQ1	Standard PS/2 Keyboard
IRQ2	Not in used
IRQ3	Not in used
IRQ4*	Not in used
IRQ5*	Not in used
IRQ6	Not in used
IRQ7*	Not in used
IRQ8	System CMOS/real-time clock
IRQ9*	Not in used
IRQ10*	Not in used
IRQ11	Not in used
IRQ12	PS/2 Compatible Mouse
IRQ13	Not in used
IRQ14	Motherboard resources
IRQ15	Not in used
*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.	
ExpressCards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.	

System IO Address Map

I/O address (hex)	System Function (shipping configuration)
000 - CF7	PCI Express Root Complex
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
060	Standard PS/2 Keyboard
061	Motherboard resources
062	Microsoft ACPI-Compliant Embedded Controller
063	Motherboard resources
064	Standard PS/2 Keyboard
065	Motherboard resources
066	Microsoft ACPI-Compliant Embedded Controller
067	Motherboard resources
070	Motherboard resources
070 - 077	System CMOS/real time clock
080	Motherboard resources
092	Motherboard resources
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
0B2 - 0B3	Motherboard resources
0B4 - 0B5	Programmable interrupt controller
0B8 - 0B9	Programmable interrupt controller

I/O address (hex)	System Function (shipping configuration)
0BC - 0BD	Programmable interrupt controller
4D0 - 4D1	Programmable interrupt controller
680 - 69F	Motherboard resources
0D00 - FFFF	PCI Express Root Complex
1800 - 18FE	Motherboard resources
1854 - 1857	Motherboard resources
2000 - 20FE	Motherboard resources
3000 - 303F	Intel(R) HD Graphics 520
3040 - 305F	Intel(R) 100 Series Chipset Family SMBUS - 9D23
3060 - 307F	Intel(R) 6th Generation Core Processor Family Platform I/O SATA AHCI Controller
3080 - 3087	Intel(R) 6th Generation Core Processor Family Platform I/O SATA AHCI Controller
3088 - 308B	Intel(R) 6th Generation Core Processor Family Platform I/O SATA AHCI Controller
FFFF - FFFF	Motherboard resources

CHAPTER 2

System Utilities

System Utilities

BIOS Setup Utility

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

Preconfigured and optimized so users do not need to run this utility. If configuration problems occur, users may need to run Setup. Refer to Chapter 4, Troubleshooting when problem arises.

To activate the BIOS Utility, press ***F2*** during POST when prompted at the bottom of screen.

The default parameter of F12 Boot Menu is set to disabled. To change boot device without entering BIOS Setup Utility, set the parameter to enabled.

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

Navigating the BIOS Utility

Five 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. System information is subject to specific models.

BIOS

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

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

Information

This tab shows a summary of computer hardware information.

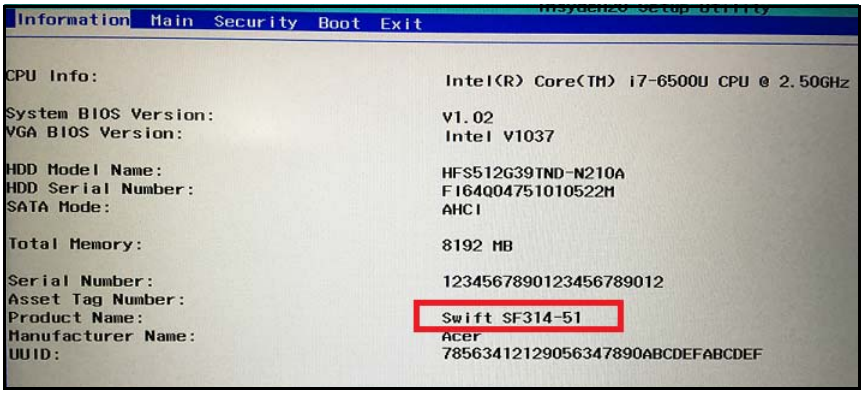


Figure 2-1. BIOS Information

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

Table 2-1. Parameters

Parameter	Description
CPU Info	The CPU type and speed of the system.
System BIOS Version	Displays system BIOS version.
GOP Version	Displays version of Intel GOP Driver
HDD Model Name	The model name of HDD installed.
HDD Serial Number	The serial number of HDD installed.
SATA Mode	Displays SATA Mode.
Total Memory	Displays total memory.
Serial Number	The serial number of this unit.
Asset Tag Number	The asset tag number of the system.
Product Name	The product name of the system.
Manufacturer Name	The manufacturer Name of the system
UUID	Universally Unique Identifier (UUID) is an identifier standard used in software construction, standardized by the Open Software Foundation (OSF) as part of the Distributed Computing Environment (DCE).

Main

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

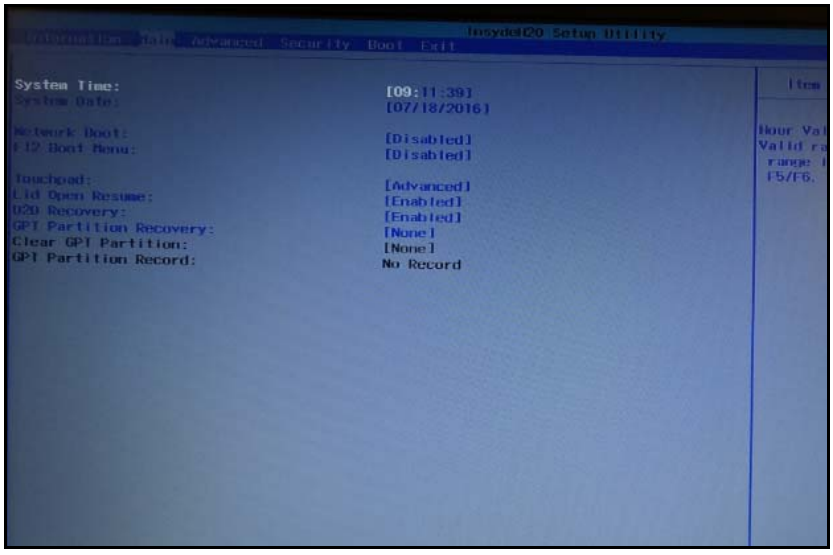


Figure 2-2. BIOS Main

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

Table 2-2. BIOS Main

Parameter	Description	Format/Option
System Time	Sets the system time. The hours are shown with 24-hour format.	Format: HH:MM:SS (hour:minute:second)
System Date	Sets the system date.	Format MM/DD/YYYY (month/day/year)
Network Boot	Enables, disables the system boot from LAN (remote server).	Enabled or Disabled
F12 Boot Menu	Enables, disables Boot Menu during POST.	Enabled or Disabled
Touchpad	Select touchpad mode	Basic or Advanced
Lid Open Resume	Enables, disables system resume from S3 state by Lid open	Enabled or Disabled
D2D Recovery	Enables, disables Disk to Disk recovery.	Enabled or Disabled
GPT Partition Recovery	Select GPT partition recovery mode.	None, Save or Restore

Table 2-2. (Continued)BIOS Main

Parameter	Description	Format/Option
GPT Partition Record	Display GPT Partition Record.	N/A

Advanced

This tab allows the user to enable or disable some system features.

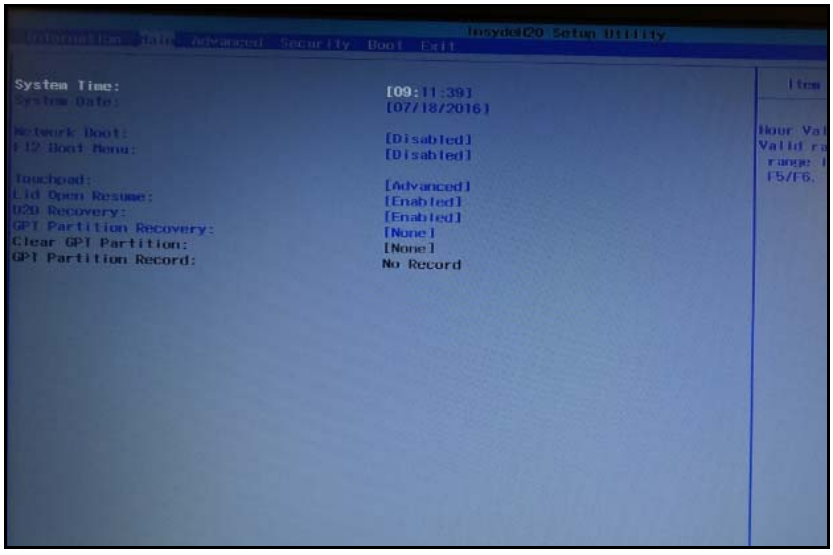


Figure 2-3. BIOS Advanced

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

Table 2-3. BIOS Advanced

Parameter	Description	Format/Option
Wi-Fi	Set Wi-Fi enable or disable.	Enabled or Disabled
Bluetooth	Set Bluetooth enable or disable.	Enabled or Disabled
Card Reader	Set Card Reader enable or disable.	Enabled or Disabled
USB Ports	Set USB Ports enable or disable.	Enabled or Disabled
Audio	Set Audio enable or disable.	Enabled or Disabled
Camera	Set Camera enable or disable.	Enabled or Disabled
Fingerprint	Set Fingerprint enable or disable.	Enabled or Disabled
Type C	Set Type C port enable or disable.	Enabled or Disabled
Power-off Usb Charge	Set Power-off Usb Charge enable or disable.	Enabled or Disabled
Battery Threshold	Set a computer battery charge limit, below which charging stops.	10% or 20% or 30%
USB Boot	Set USB Boot enable or disable.	Enabled or Disabled

Table 2-3. (Continued)BIOS Advanced

Parameter	Description	Format/Option
Disk Sanitizer	Do disk sanitizer option.	N/A

Security

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

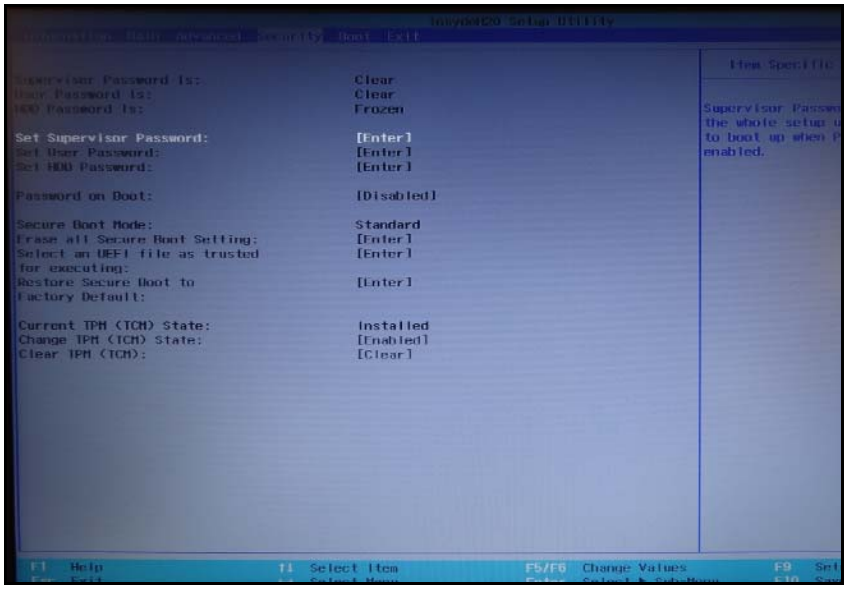


Figure 2-4. BIOS Security

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

Table 2-4. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Shows the setting of the supervisor password	Clear or Set
User Password Is	Shows the setting of the user password.	Clear or Set
HDD Password Is	Shows the setting of the HDD password.	Clear or Set
Set Supervisor Password	Press ***Enter*** to set the supervisor password. When set, this password protects the BIOS Setup Utility from unauthorized access. The user can not either enter the Setup menu nor change the value of parameters.	N/A
Set User Password	Press ***Enter*** to set the user password. When user password is set, this password protects the BIOS Setup Utility from unauthorized access. The user can enter Setup menu only and does not have right to change the value of parameters.	N/A
Set HDD Password	Enter HDD Password.	N/A
Password on Boot	Defines whether a password is required or not while the events defined in this group happened. The following sub-options are all requires the Supervisor password for changes and should be grayed out if the user password was used to enter setup.	Disabled or Enabled
Secure Boot Mode	Display current Secure Boot Mode Status	N/A

Table 2-4. BIOS Security (Continued)

Parameter	Description	Option
Erase all Secure Boot Setting	Press ***Enter*** to erase all secure boot setting.	N/A
Select an UEFI file as trusted for executing	Press ***Enter*** to select an UEFI file as trusted for executing.	N/A
Restore Secure Boot to Factory Default	Press ***Enter*** to restore secure boot options to factory default.	N/A
Current TPM (TCM) State	Display Current TPM State	N/A
Change TPM (TCM) State	Enable or disable storage and endorsement hierarchy	Enable or Disable
Clear TPM (TCM)	Clear TPM	Clear
NOTE: When prompted to enter a password, three attempts are allowed before the system halts. Resetting the BIOS password may require the computer be returned to the dealer.		

Setting a Password

Perform the following to set the user or supervisor password:

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

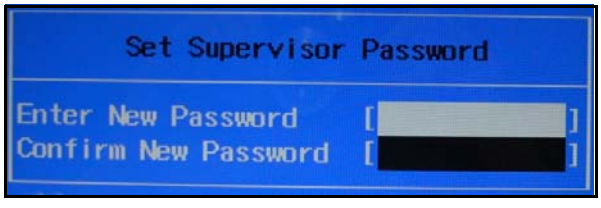


Figure 2-5. Set Supervisor Password

2. Type a new password in the *Enter New Password* field. Password length is not to exceed 8 alphanumeric characters (A-Z, a-z, 0-9, not case sensitive). Retype the password in the *Confirm New Password* field.

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

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

NOTE:
Users can opt to enable the Password on boot parameter.

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

Removing a Password

Perform the following:

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

Figure 2-6. Set Supervisor Password

2. Type the current password in the *Enter Current Password* field and press ***Enter***.
3. Press ***Enter*** twice without typing anything in the *Enter New Password* and *Confirm New Password* fields. The computer then sets the 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 the ***Enter***. The Set Supervisor Password box appears.

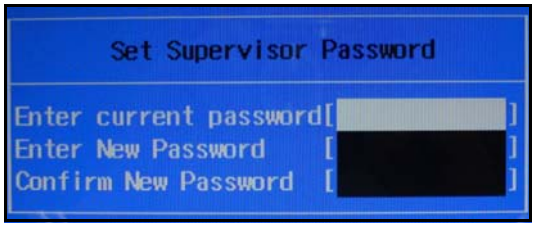


Figure 2-7. Set Supervisor Password

2. Type the current password in the *Enter Current Password* field and press ***Enter***.
3. Type a password in the *Enter New Password* field. Retype the password in the *Confirm New Password* field.

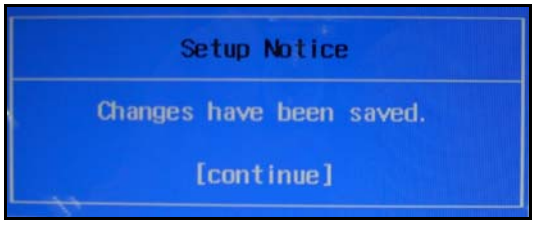


Figure 2-8. Setup Notice

4. Press ***Enter***. The computer sets User Password parameter to Set.

NOTE:

Users can enable the Password on boot parameter.

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

If the verification is OK, the screen will show as following.

Figure 2-9. This Setup Warning

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

If the current password entered does not match the actual current password, the screen will show the Setup Warning (Figure 2-9).

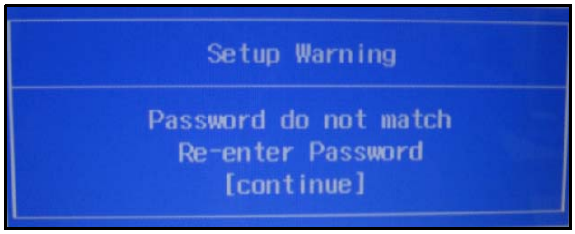


Figure 2-10. Setup Warning

Boot

This 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 move it up or down the list.

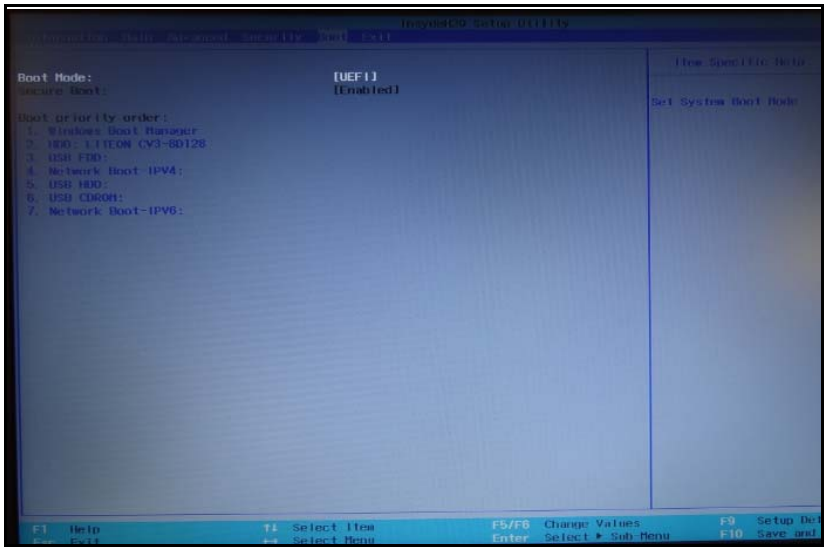


Figure 2-11. BIOS Boot

Exit

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

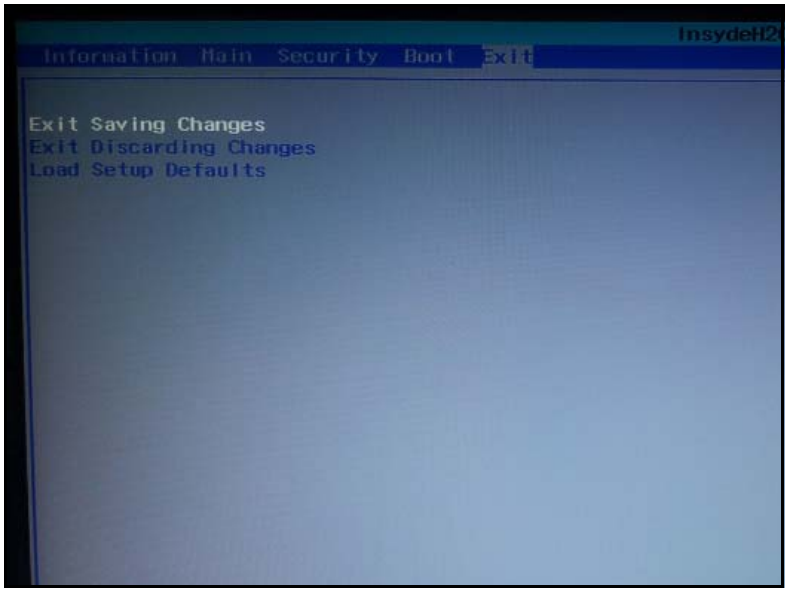


Figure 2-12. BIOS Exit

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

Table 2-5. Exit Parameters

Parameter	Description
Exit Saving Changes	Exit System Setup and save changes to the system.
Exit Discarding Changes	Exit utility without saving setup data to.
Load Setup Default	Load default values for all setup item.

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

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

Perform the following to use the WinFlash Utility:

1. Double click the flash tool (an executable file).

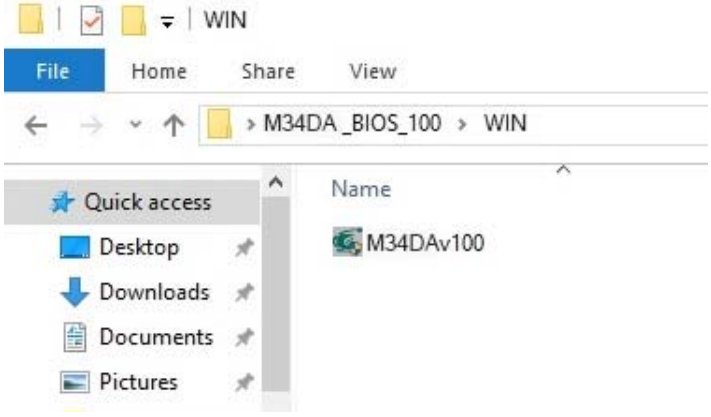


Figure 2-13. WinFlash executable

2. Click ***OK*** to begin the update. A progress screen is shown (Figure 2-14).

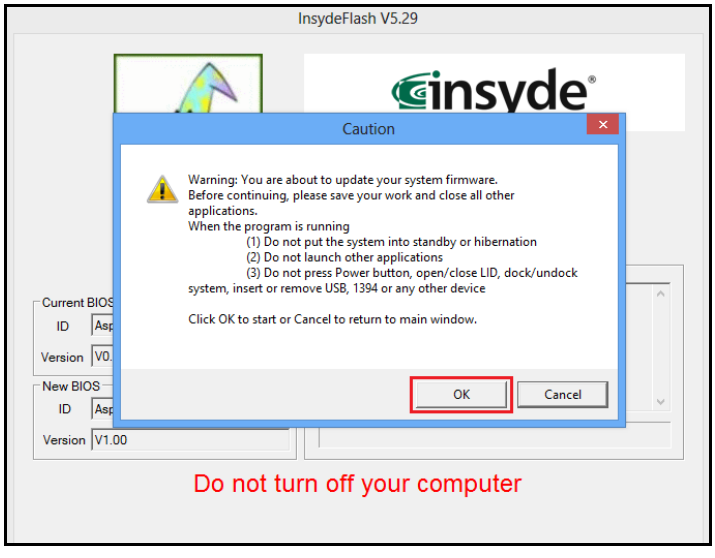


Figure 2-14. InsydeFlash

3. Computer will restart and update the BIOS.

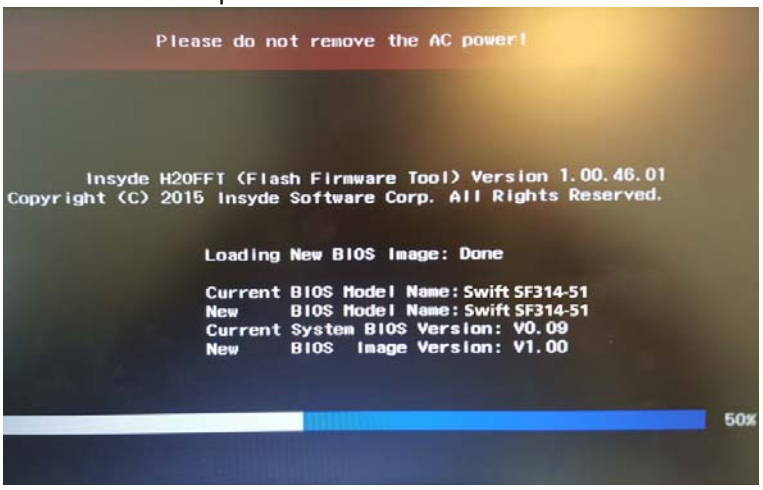


Figure 2-15. BIOS Update

NOTE:

If AC power is not connected, the following message is shown.

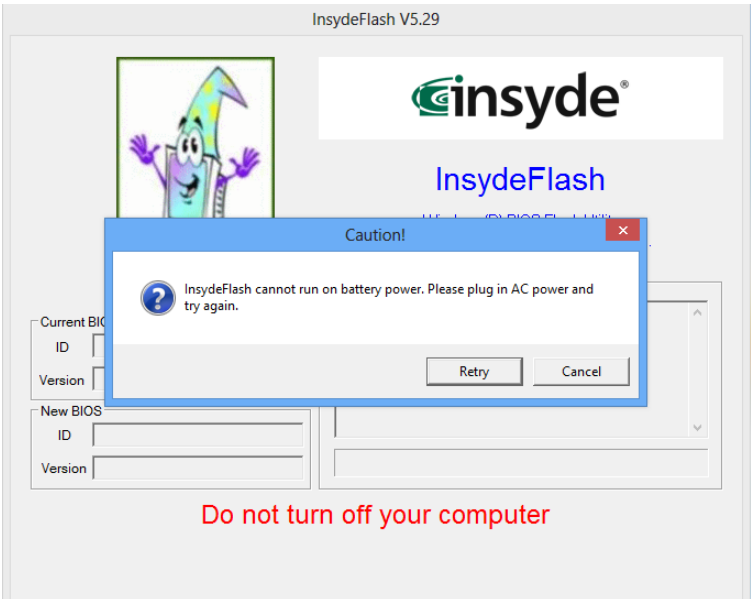


Figure 2-16. AC Power Warning

NOTE:

Plug in the AC power to continue.

4. Flash is complete when the message *update progress 100%* is shown and then loading in Windows.

Remove HDD/BIOS Password Utilities

This section provides details for removing HDD/BIOS passwords.

Remove HDD Password Utilities

This section provides details for removing HDD passwords.

Remove HDD Password as follows:

⇛ NOTE:

If the HDD password is incorrectly entered three times, an error is generated, you will see below menu (Figure 2-17).

Figure 2-17. HDD Security

To reset the HDD password, perform the followings:

1. Select *Enter Unlock Password* option.

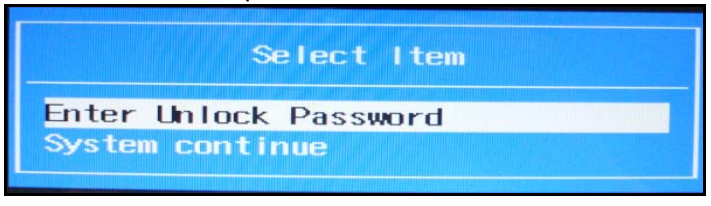


Figure 2-18. Select Item

⇛ NOTE:

An Encode key is generated for unlocking utilities. Make note for this key.

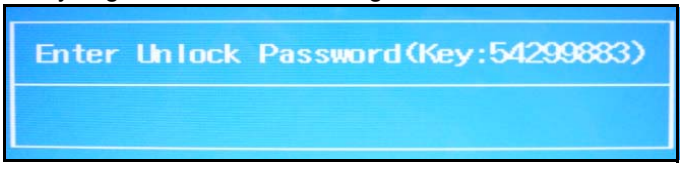


Figure 2-19. Unlock Password

2. Running the UnlockHD.exe in a bootable USB flash disk (with winpe4.0X64), command: UnlockHD ***Key Code***, as below photo, then he could get a ***Unlock Code***.

Figure 2-20. Unlock Code

Example: UnlockHD 54299883

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

Password: 30685279

Enter the password from the Step 1 to unlock the HDD.

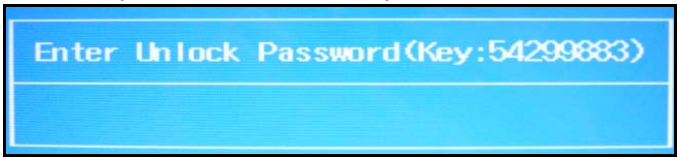


Figure 2-21. Unlock Password

NOTE:

After users clearing the HDD password, HDD maybe in “Frozen” state. Please power off system. Then, power on to Win system, HDD Password will be in normal.

Cleaning BIOS Passwords

If users have set the supervisor password and forgotten it, users need cleaning BIOS passwords' tool. If users have input wrong password for 3 times, BIOS will be locked and can't enter BIOS setting and system.

Then users need to do as follows:

NOTE:

The method of cleaning BIOS passwords is a bit same as cleaning HDD password. But there is more one step for clearing BIOS passwords. Please get attention to the following steps.

To clear the BIOS password, perform the followings:

1. Select *Enter Unlock Password* option.

Figure 2-22. Select Item

NOTE:

An Encode key is generated for unlocking utilities. Make note for this key.

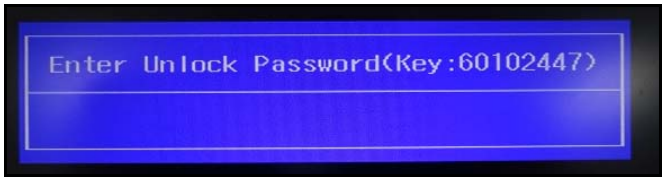


Figure 2-23. Unlock Password

2. Running the UnlockHD.exe in a bootable USB flash disk (with winpe4.0X64),

command: UnlockHD.exe ***Key Code***, as below photo, then he could get a ***Unlock Code***.

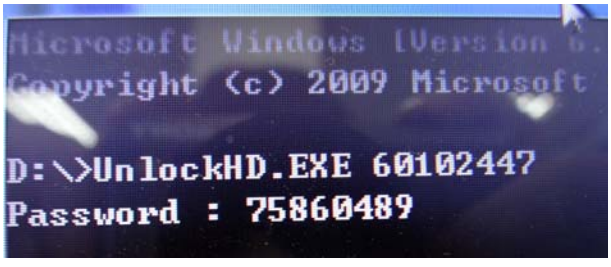


Figure 2-24. Type command and press enter to get the password

Example: UnlockHD 60102447

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

Password: 75860489

Enter the password from the Step 1 to unlock the BIOS.

Figure 2-25. Input sample password 75860489 to unlock.

NOTE:

After users clearing the BIOS password, computer will continue run and enter the Windows system automatically. But it doesn't means the BIOS passwords has been cleared completely. Please do as follows.

Important: Shut down the computer, repower it and press F2 to enter BIOS settings. But users now cannot enter. It will ask users "Enter Current Password:". And it means inputting supervisor password again. Actually the supervisor password has been changed to the ***unlock password*** through input *Unlock Code* with the use of UnlockHD.exe tool. At this time, users need to use the unlocked password that has got before now. (Refer to Figure 2-23 eg. 75860489). After that, please remove password according to page 2-10.

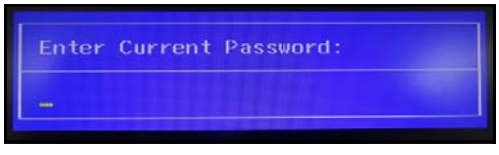


Figure 2-26. Input sample password 75860489 which got by step2 to unlock.

Using DMI Tools

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

NOTE:

Running the DMI tools in a bootable USB flash disk with winpe4.0X64 mode.

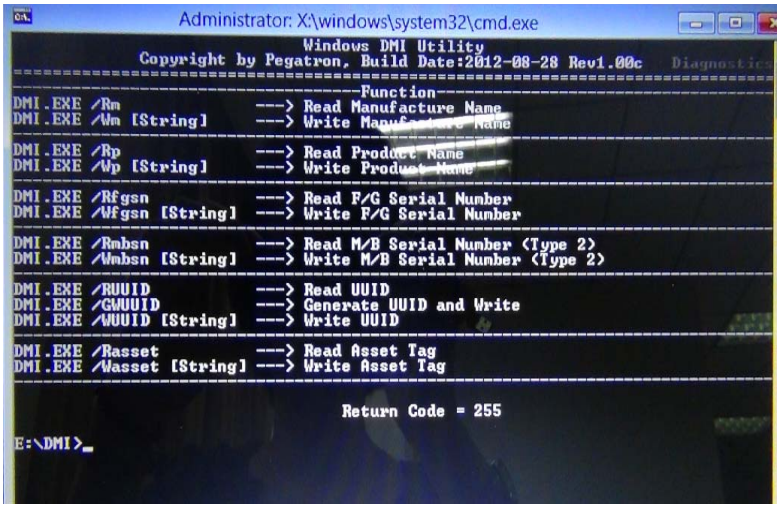


Figure 2-27. DMI Tools

Update Manufacture Name

1. Execute <***DMI.EXE /Rm***> to read Manufacturer Name(Figure 2-26 & Figure2-27).

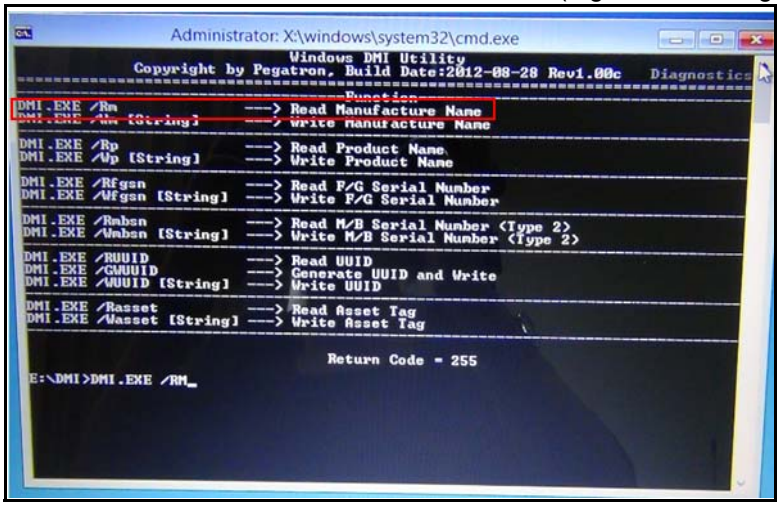


Figure 2-28. Read Manufacturer Name

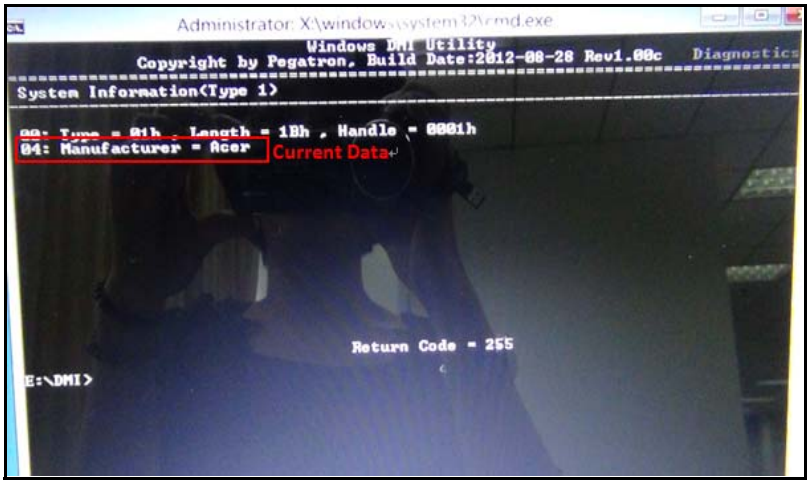


Figure 2-29. Read Manufacturer Name

2. Execute < ***DMI.EXE /Wm***> to write new Manufacturer Name(Figure 2-28 to Figure 2-30).

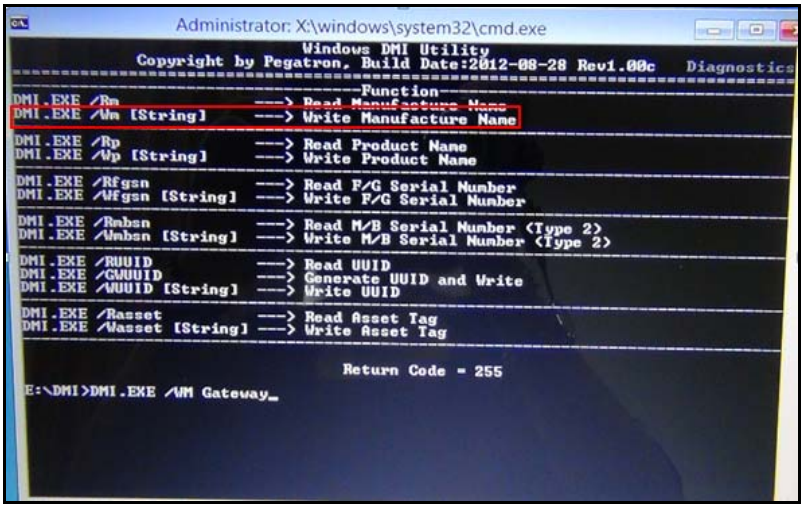


Figure 2-30. Write Manufacturer Name

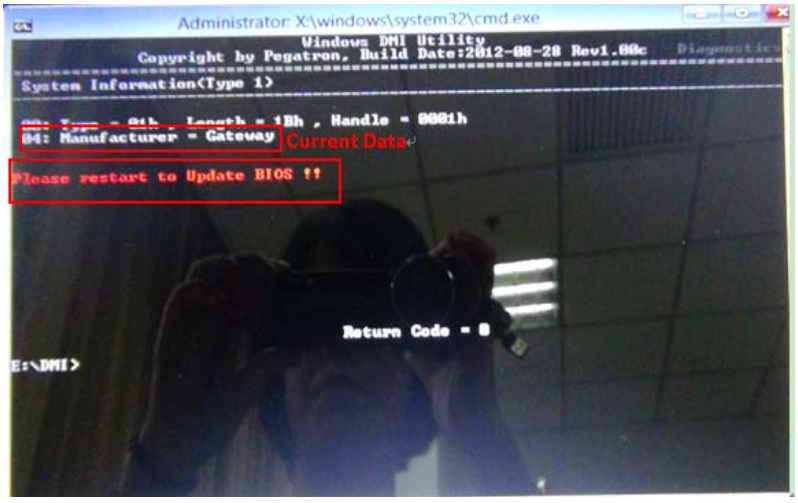


Figure 2-31. Write Manufacturer Name

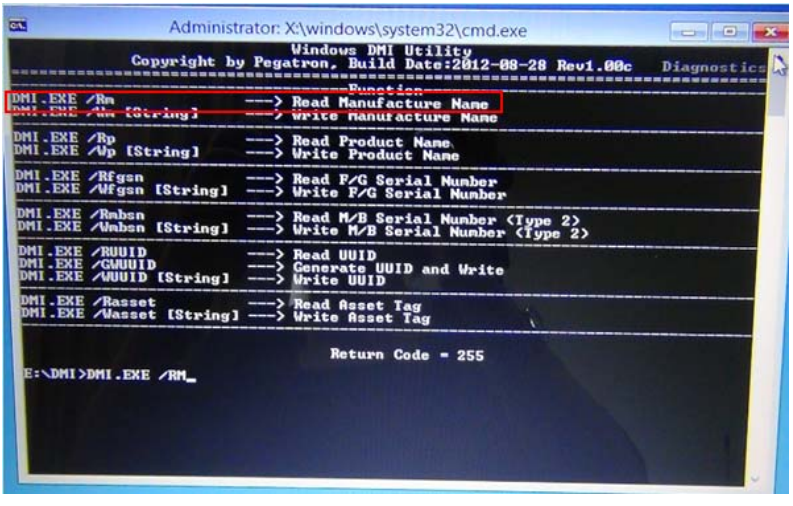


Figure 2-32. Write Manufacturer Name

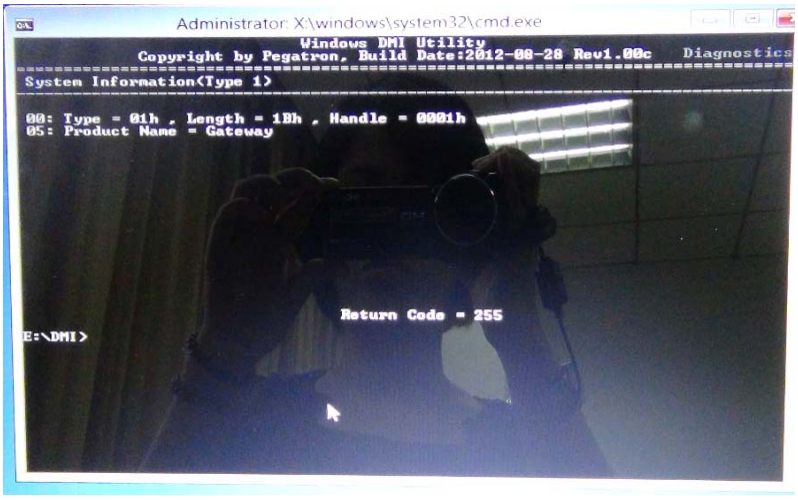


Figure 2-33. Write Manufacturer Name

Update Product Name

1. Execute < ***DMI.EXE /Rp***> to Read Product Name(Figure 2-32 & Figure 2-33).

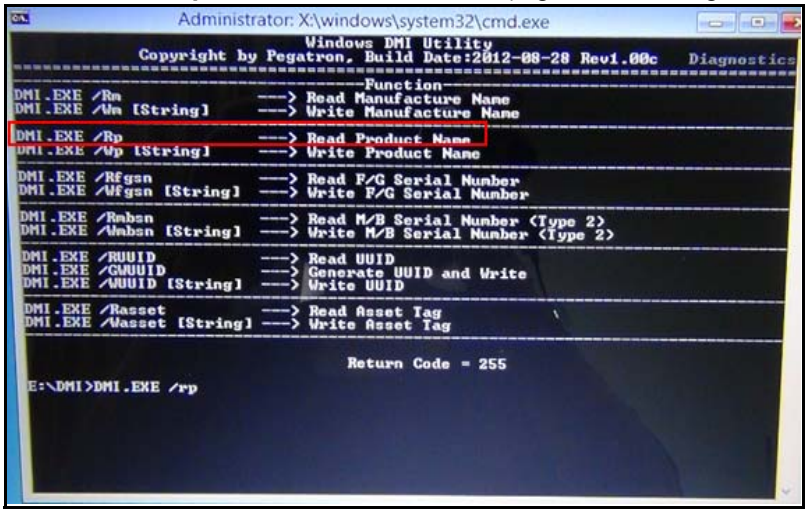


Figure 2-34. Read Product Name

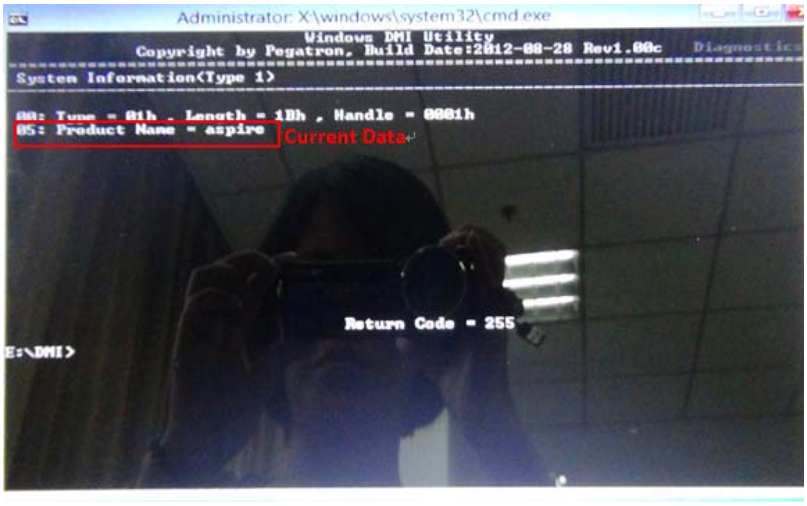


Figure 2-35. Read Product Name

2. Execute < ***DMI.EXE /Wp***> to write Product Name(Figure 2-34 to Figure 2-37).

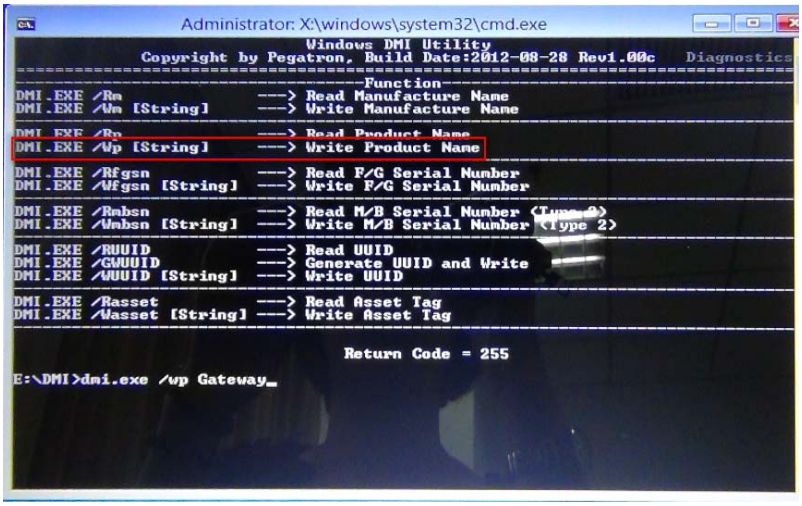


Figure 2-36. Write Product Name

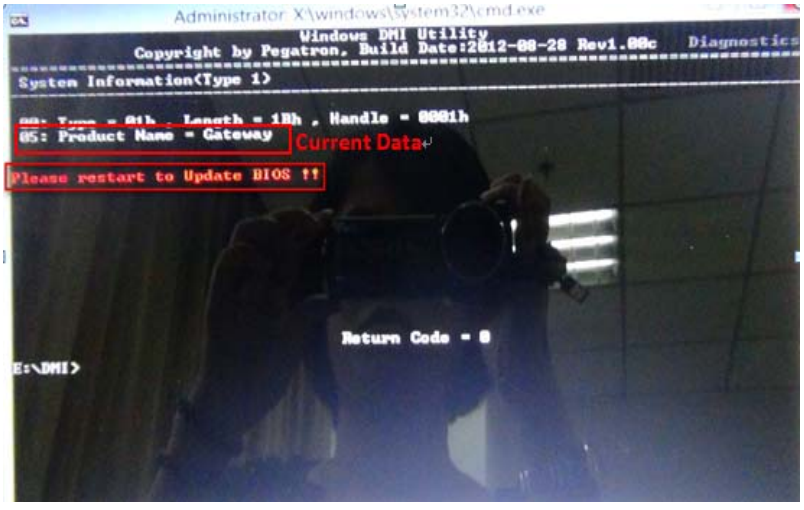


Figure 2-37. Write Product Name

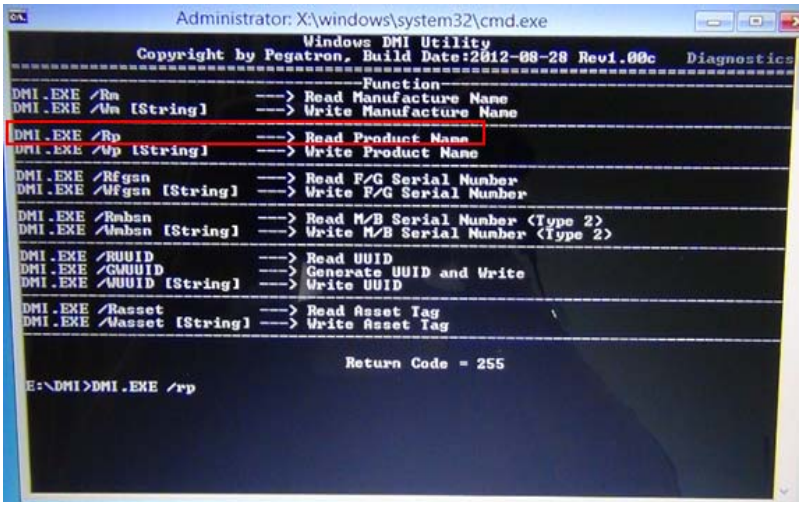


Figure 2-38. Write Product Name

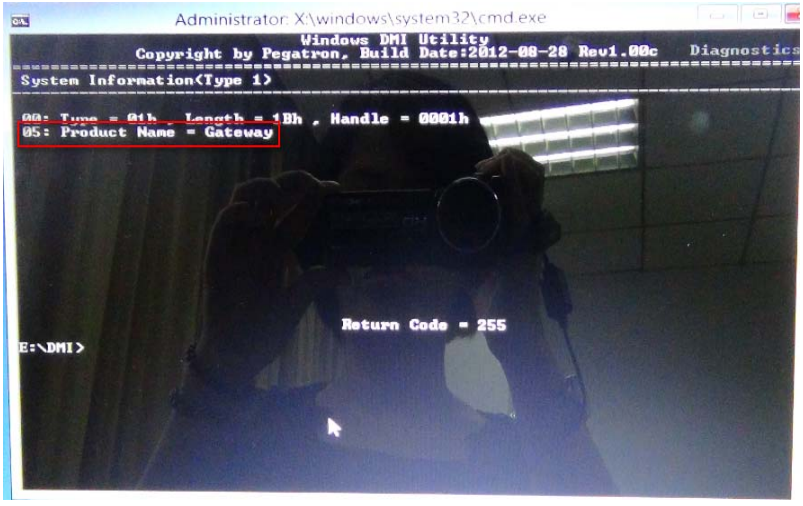


Figure 2-39. Write Product Name

Update Serial Number

1. Execute < ***DMI.EXE /Rfgsn***> to read F/G Serial Number(Figure 2-38 & Figure 2-39).

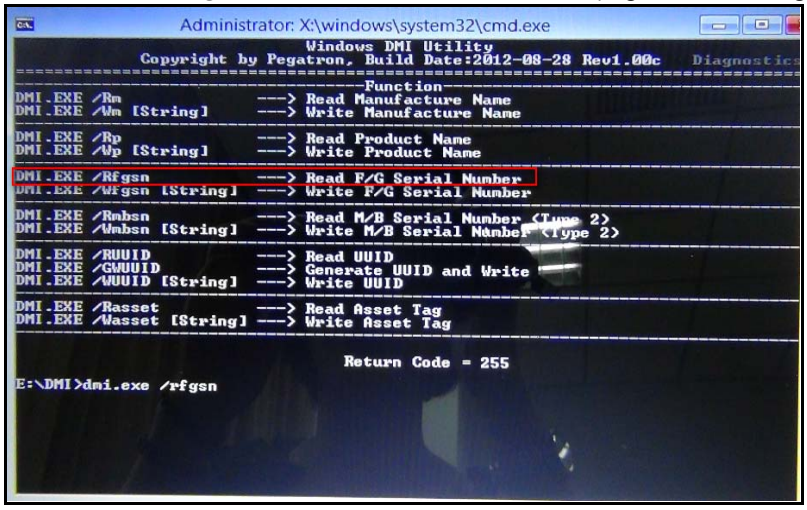


Figure 2-40. Read Serial Number

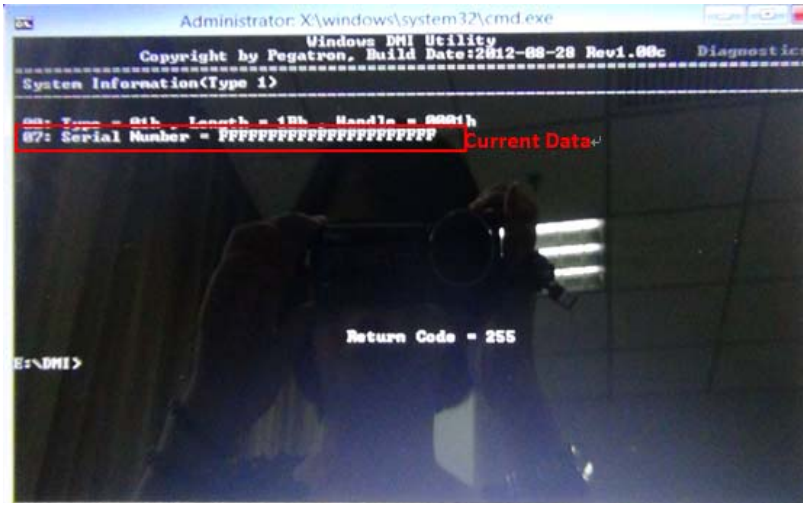


Figure 2-41. Read Serial Number

2. Execute < ***DMI.EXE /Wfgsn***> to write F/G Serial Number(Figure 2-40 & Figure 2-43).

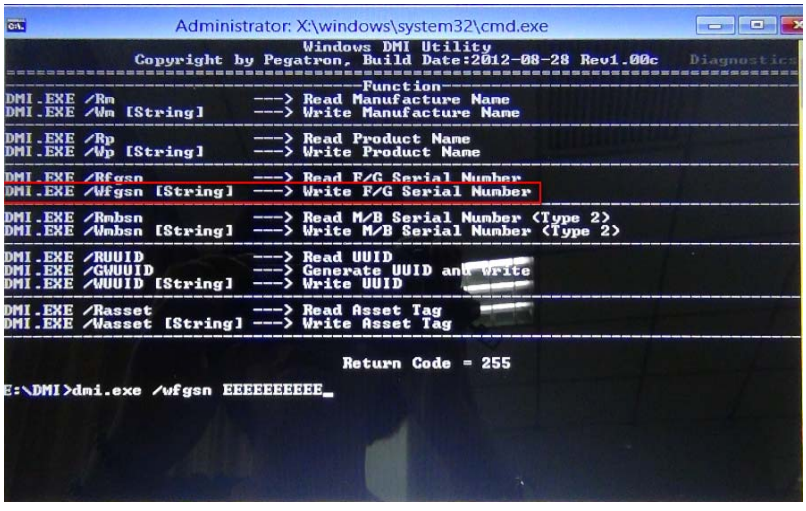


Figure 2-42. Write Serial Number

Figure 2-43. Write Serial Number

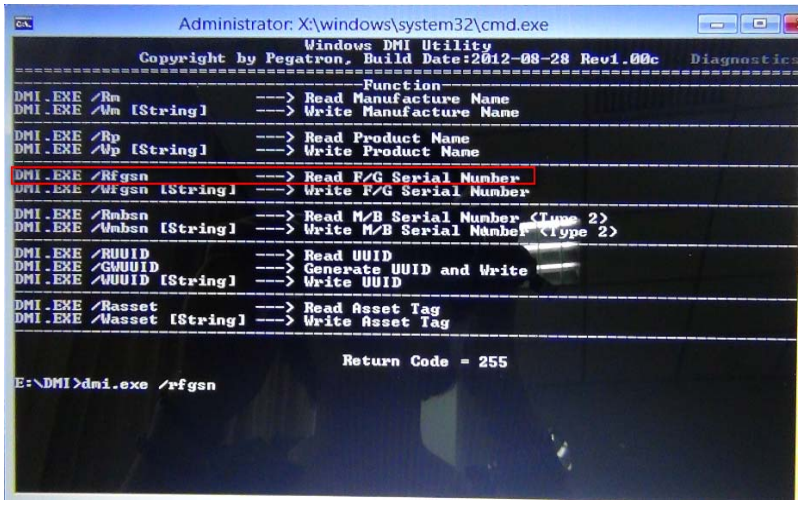


Figure 2-44. Write Serial Number

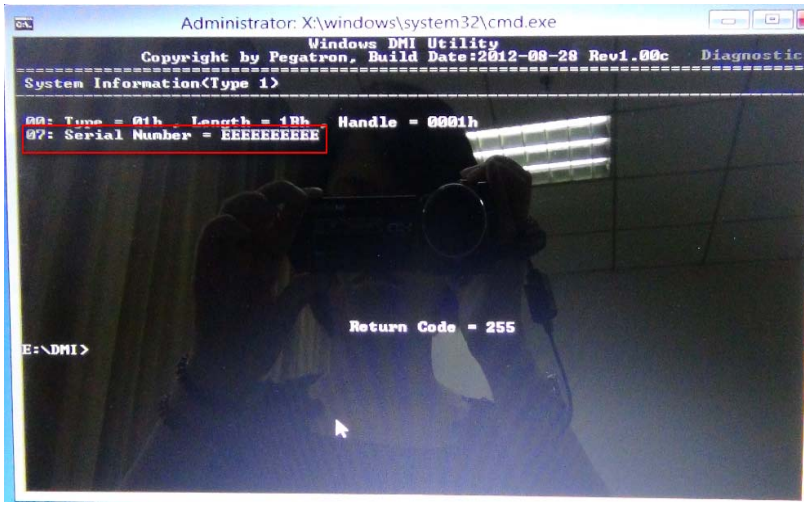


Figure 2-45. Write Serial Number

Update Motherboard Serial Number

1. Execute < ***DMI.EXE /Rmbsn***> to read Motherboard Serial Number(Figure 2-44 & Figure 2-45).

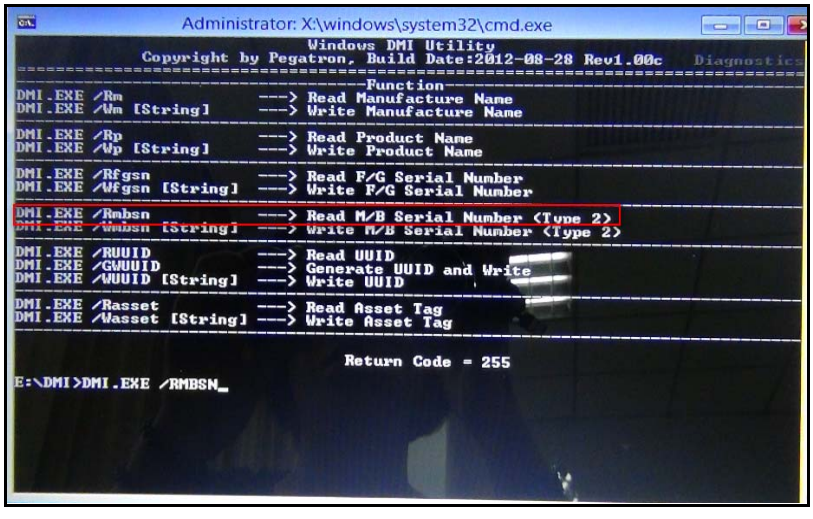


Figure 2-46. Read Motherboard Serial Number

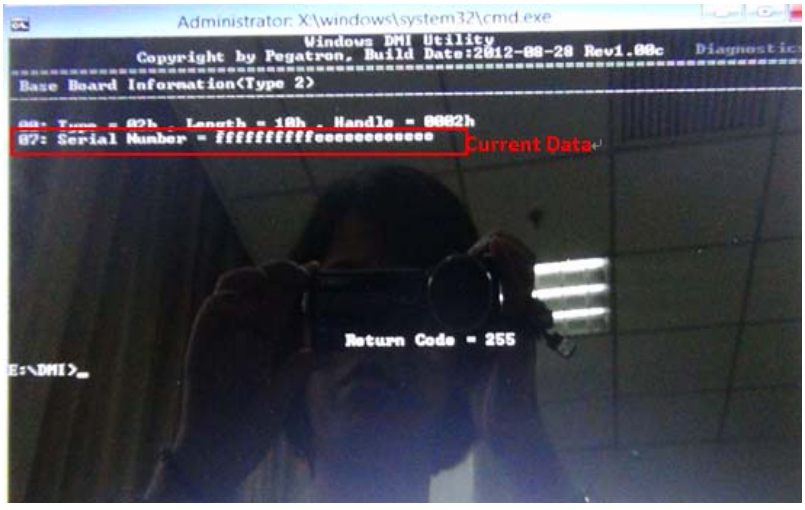


Figure 2-47. Read Motherboard Serial Number

2. Execute < ***DMI.EXE /Wmbsn***> to write Motherboard Serial Number(Figure 2-45 to Figure 2-48).

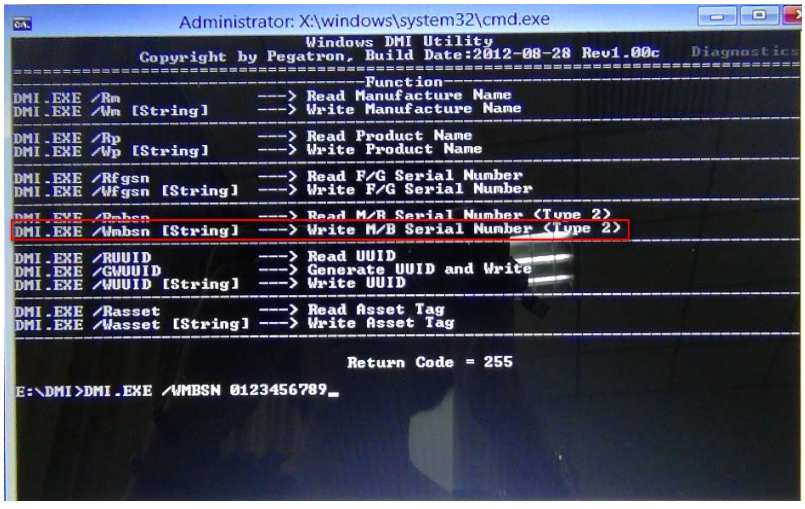


Figure 2-48. Write Motherboard Serial Number

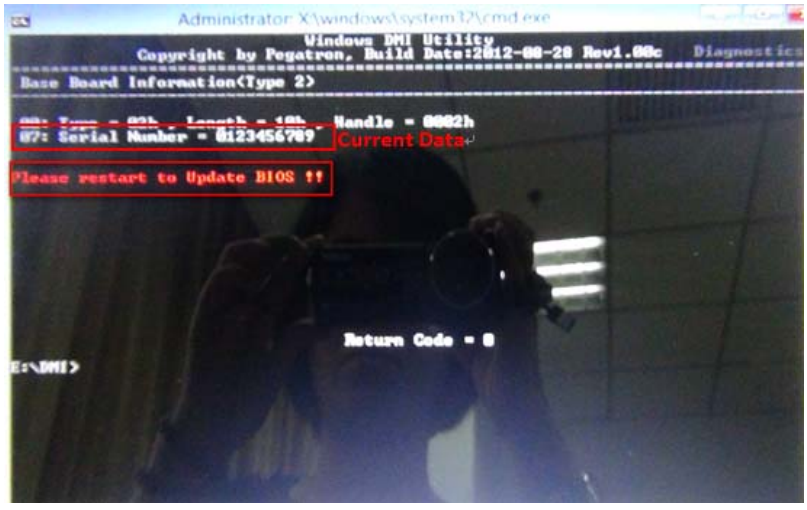


Figure 2-49. Write Motherboard Serial Number

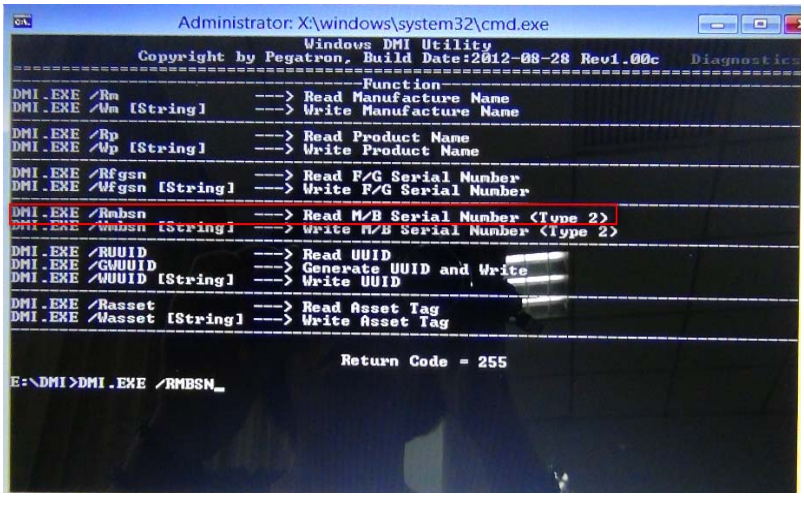


Figure 2-50. Write Motherboard Serial Number

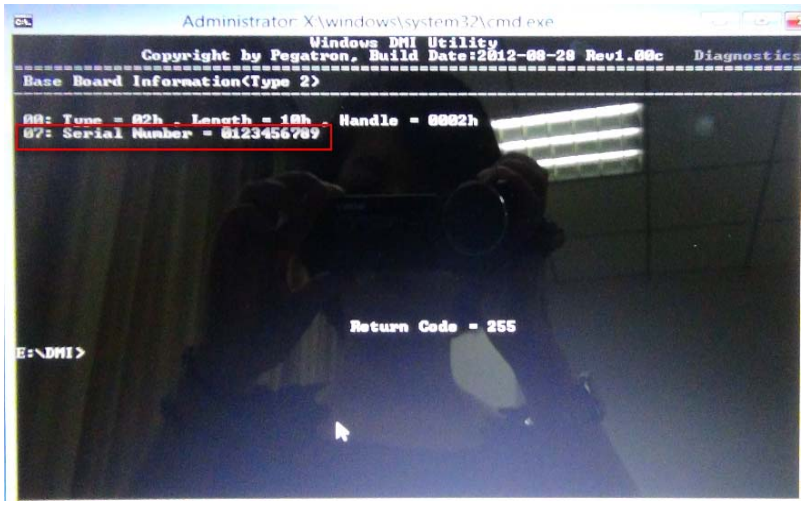


Figure 2-51. Write Motherboard Serial Number

Update UUID

1. Execute < ***DMI.EXE /RUUID***> to read UUID(Figure 2-50 & Figure 2-51).

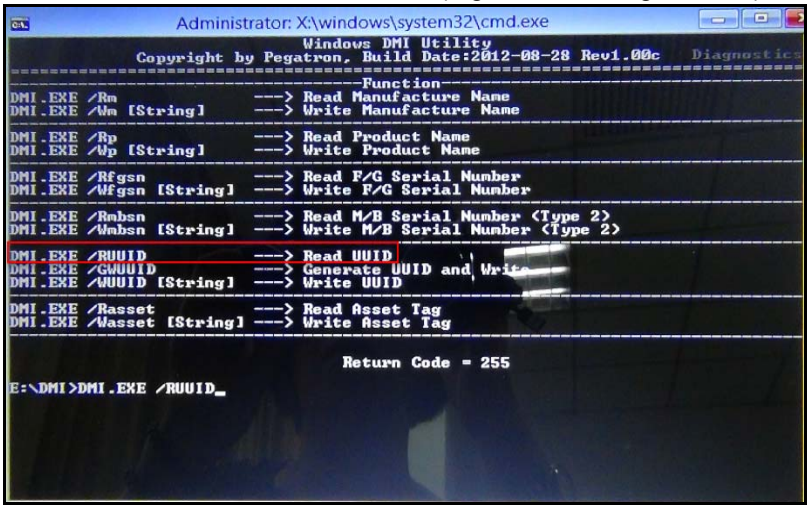


Figure 2-52. Read UUID

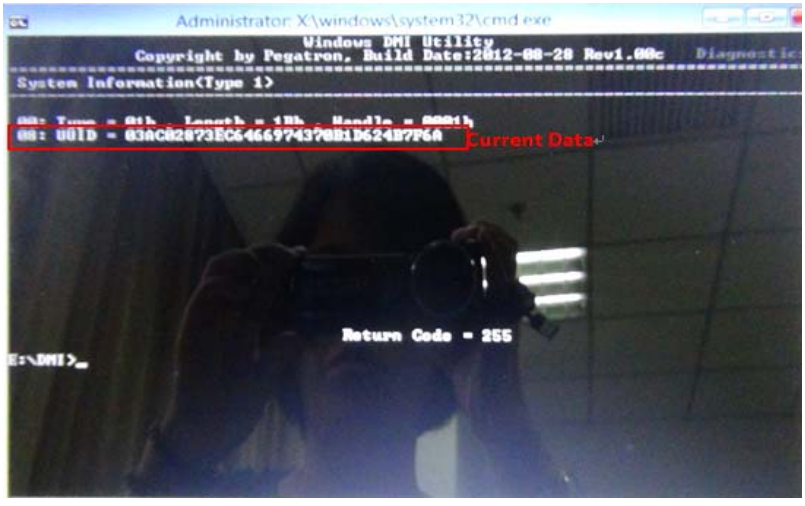


Figure 2-53. Read UUID

2. Execute < ***DMI.EXE /GUUID***> to generate and write the UUID(Figure 2-52 & Figure 2-55).

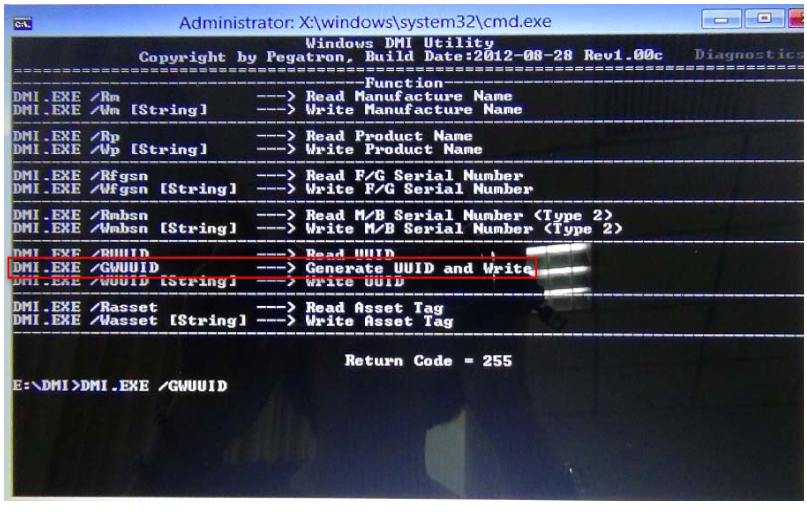


Figure 2-54. Generate and Write UUID

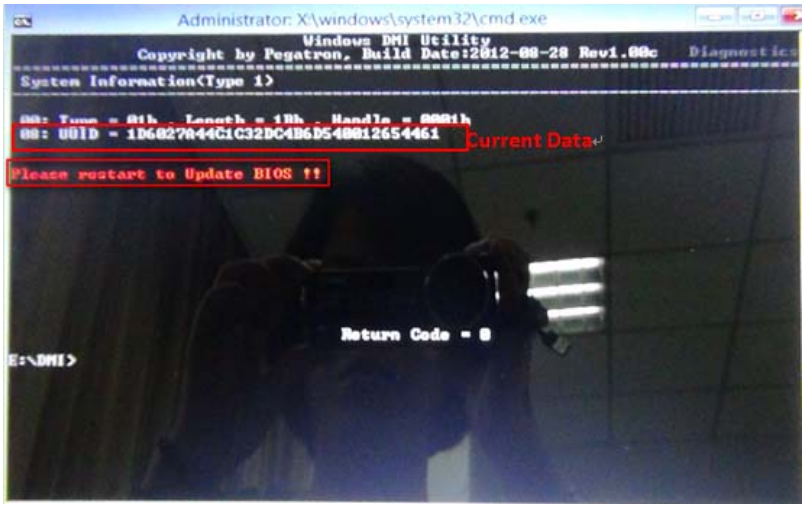


Figure 2-55. Generate and Write UUID

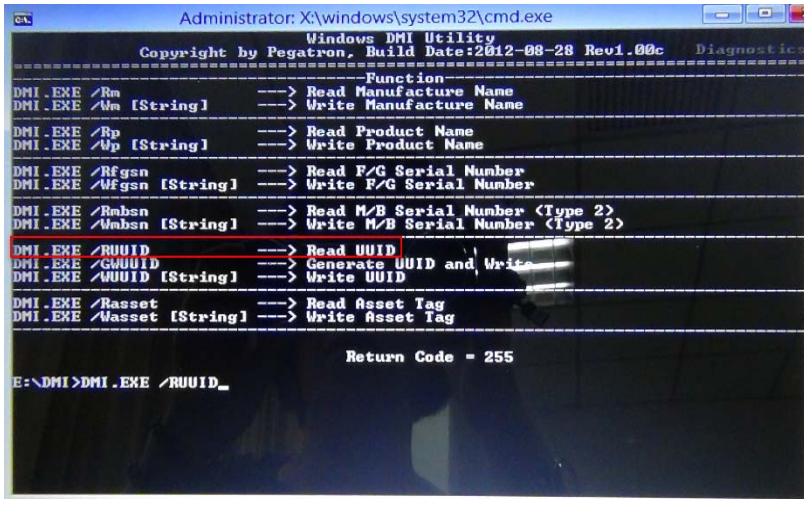


Figure 2-56. Generate and Write UUID

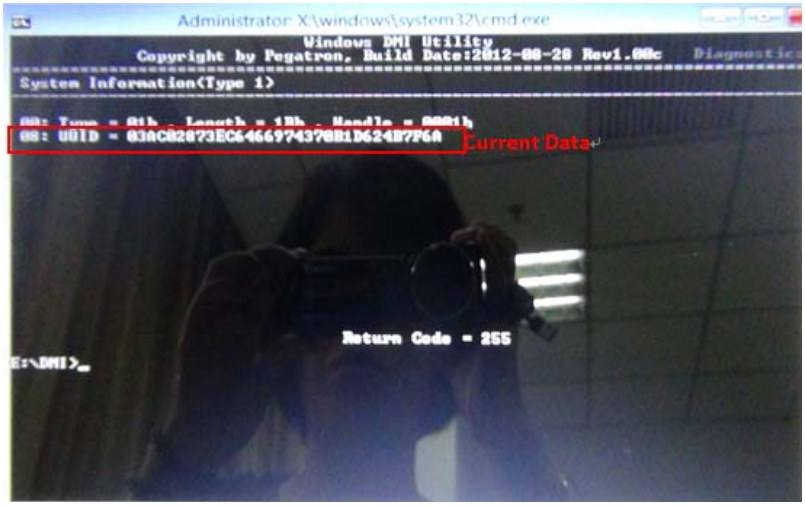


Figure 2-57. Generate and Write UUID

3. Execute < ***DMI.EXE /WUUID***> to write UUID(Figure 2-56 & Figure 2-59).

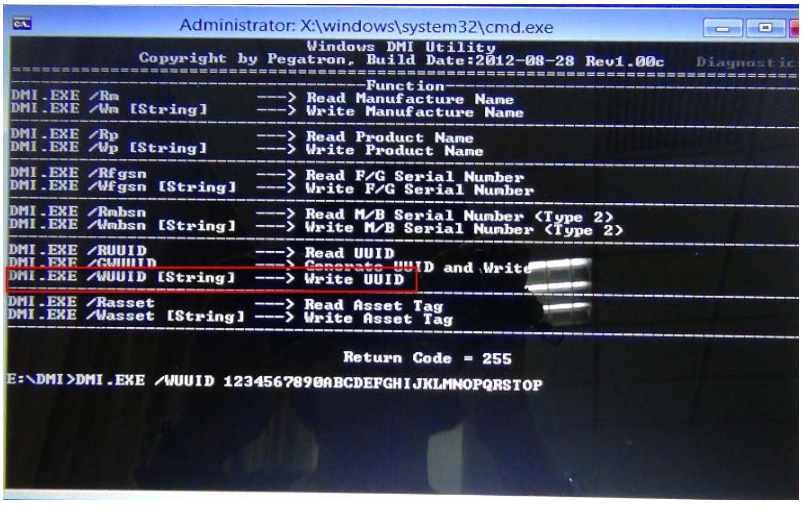


Figure 2-58. Write UUID

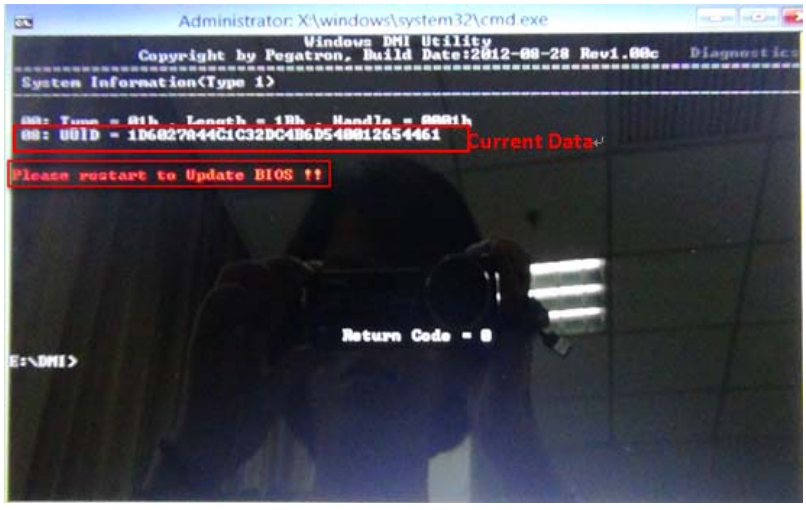


Figure 2-59. Write UUID

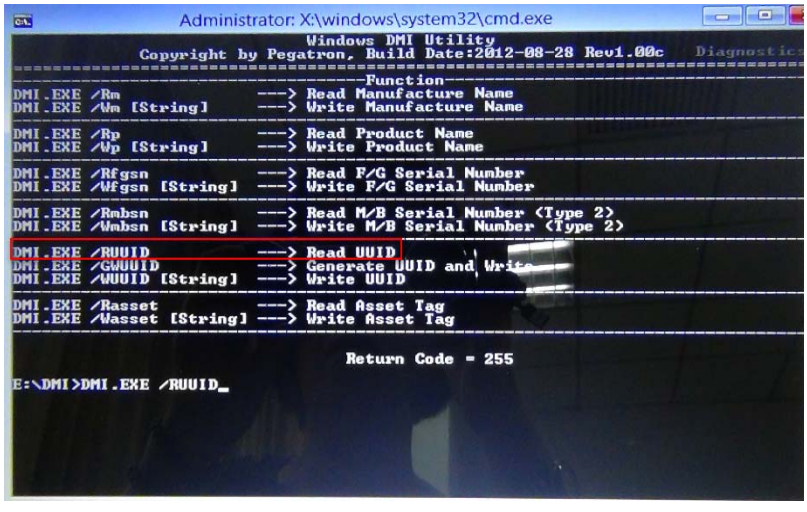


Figure 2-60. Write UUID

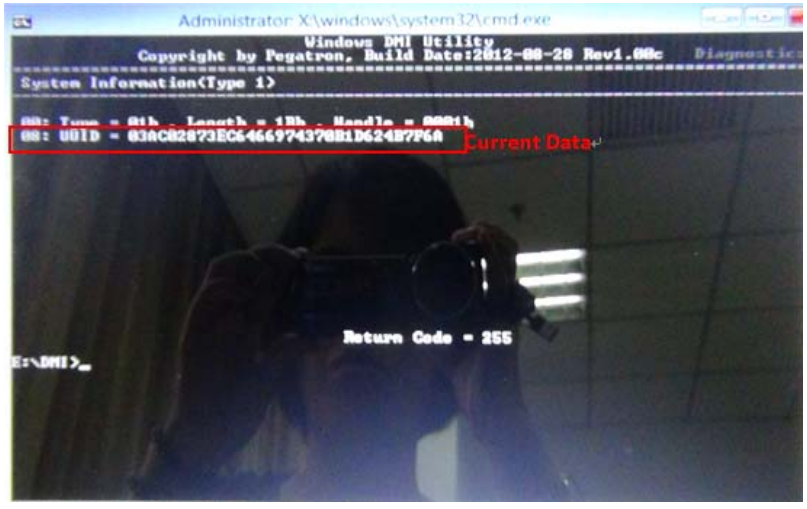


Figure 2-61. Write UUID

Update Asset Tag

1. Execute < ***DMI.EXE /Rasset***> to read Asset Tag (Figure 2-60 & Figure 2-61).

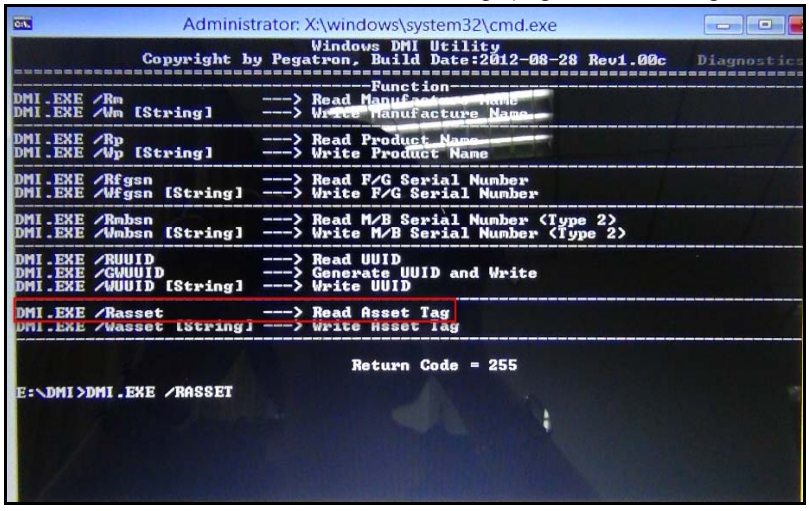


Figure 2-62. Read Asset Tag

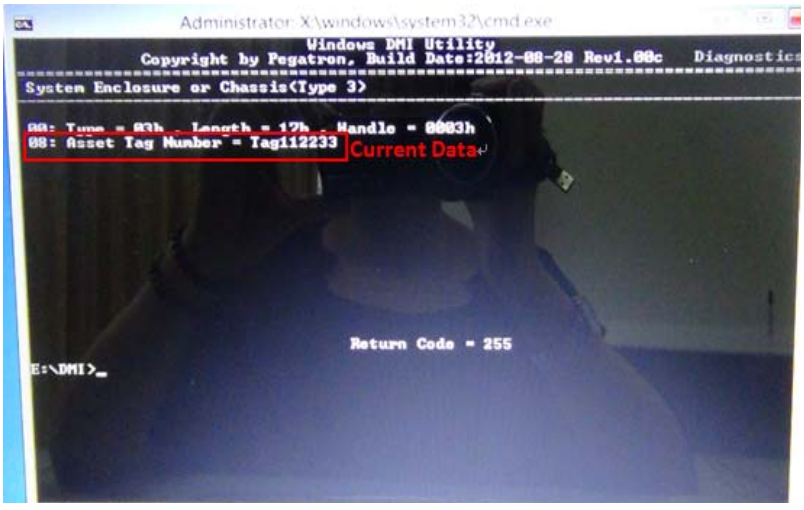


Figure 2-63. Read Asset Tag

2. Execute < ***DMI.EXE /Wasset***> to write Asset Tag(Figure 2-61 & Figure 2-64).

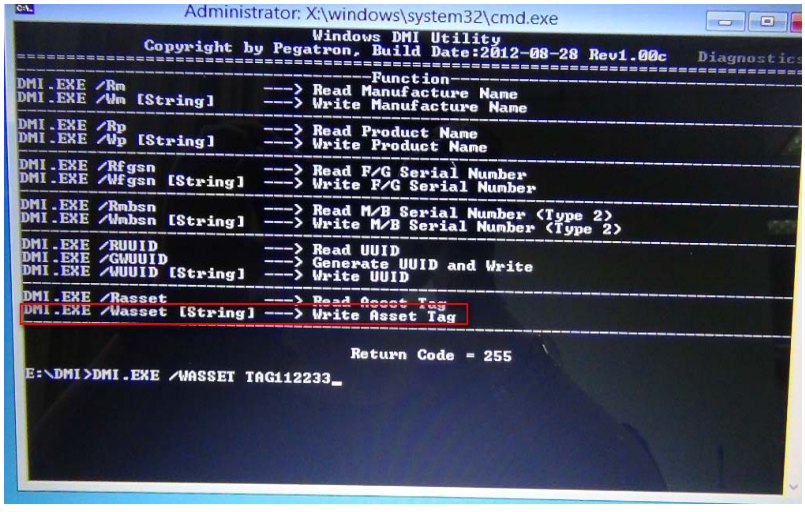


Figure 2-64. Write Asset Tag

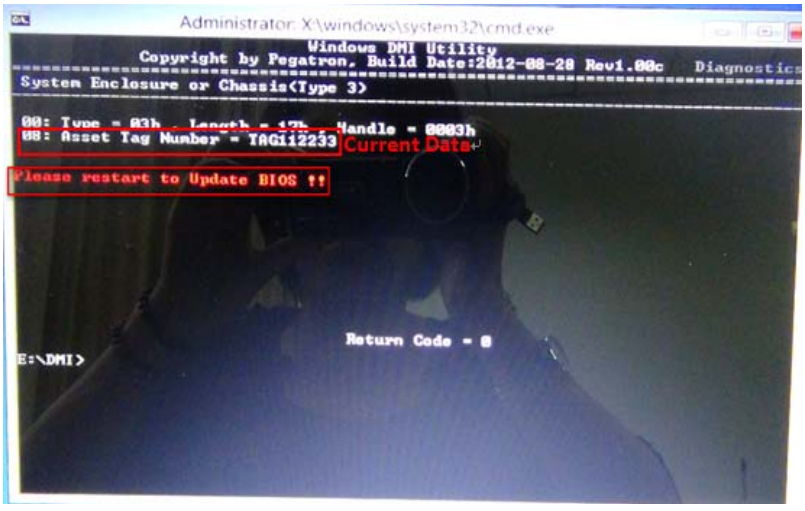


Figure 2-65. Write Asset Tag

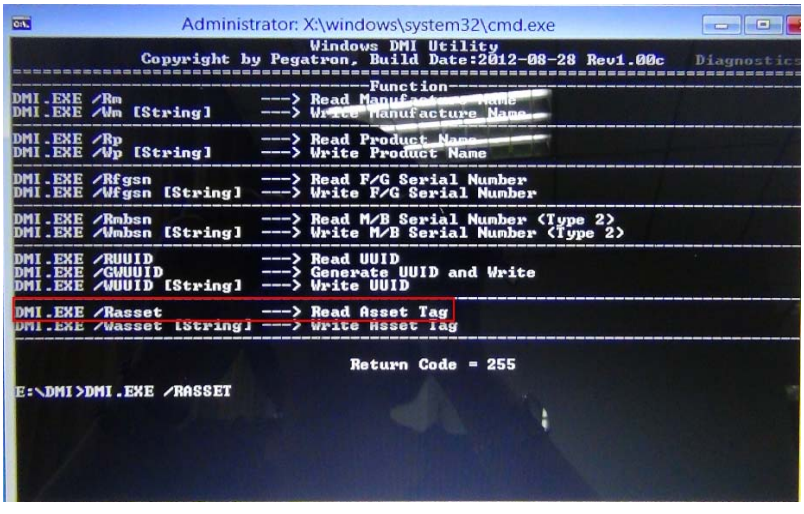


Figure 2-66. Write Asset Tag

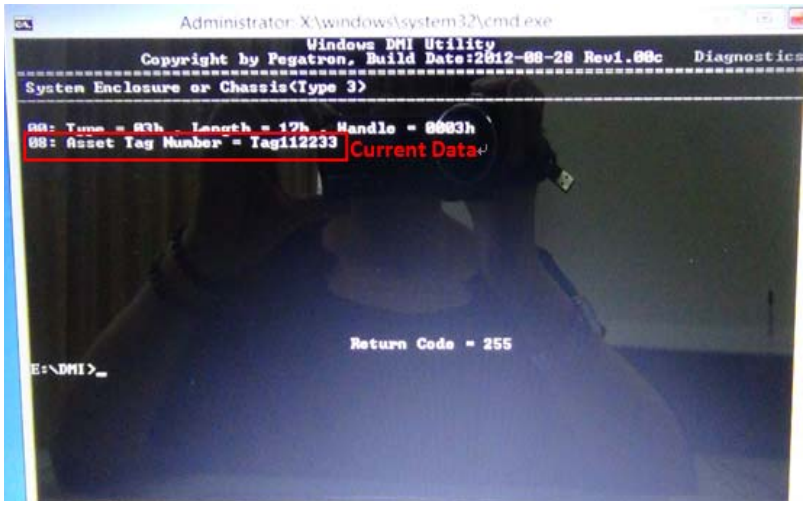


Figure 2-67. Write Asset Tag

Crisis Disk Utility

Crisis Disk is a BIOS recovery function, when the BIOS is damaged, users can use it to recovery the BIOS.

1. Prepare an empty USB flash disk with FAT32 format file system.
2. Copy BIOS recovery file (in the folder of crisis disk) to the root folder of the USB flash disk and make sure it is renamed to M34DA.FD.
3. Keep the adaptor inserted and do not plug it out. Shutdown the computer and plug in the USB flash disk.
4. Holding down ***Fn + ESC*** key, and power on the computer from off state.
5. After the computer is powered on, release ***Fn*** and ***ESC*** key, the system will start recovering the BIOS automatically.
6. Then computer will shutdown automatically after the recovery work is done.
7. Users can power on the computer to check whether the BIOS has been repaired.

NOTE:

The USB flash disk must be format as FAT32. Make sure it is empty before copy recovery BIOS file.

NOTE:

The crisis process will take a period of time, and system will be always no-display from the recovery work start to the end, it is a normal situation, waiting for the process is over, the power led will be off after it is over. Then users can power on the computer.

CHAPTER 3

Machine Maintenance

Machine Disassembly and Replacement

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

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

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

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

Recommended Equipment

To disassemble the computer, the following tools are recommended:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge
- Flat screwdriver
- Phillips screwdriver
- Plastic flat screwdriver
- Plastic tweezers

Replacement Requirements

NOTE:

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

Pre-disassembly Instructions

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

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

Figure 3-1. AC Adapter

3. Place the system on a flat, stable surface.

Disassembly Process

The disassembly process is divided into the following sections:

- Main unit disassembly

The flowcharts provided in the succeeding disassembly sections illustrate the entire disassembly sequence. Observe the order of the sequence to avoid damage to any of the hardware components.

Table 3-1. Main Screw List

Screw	Quantity	Acer Part Number
SCREW M2*3L K W-NI #1 NY	6	86.Q04N5.009
SCREW M2*2.5L(K,D4.5) B-NI,NY	4	86.VDFN5.001
SCREW M2*6.5L(K,D4.5) SW B-NI,NY	5	86.VDFN5.003
SCREW M2*4L(K,D4.5) SW B-NI,NY	4	86.VDFN5.002
SCREW M2*2L (K) B-ZN #1 NY	11	86.RYNN5.004
SCREW M2*4L (K) B-ZN #1 NY	23	86.B430U.006

Main Unit Disassembly Process

Main Unit Disassembly Flowchart

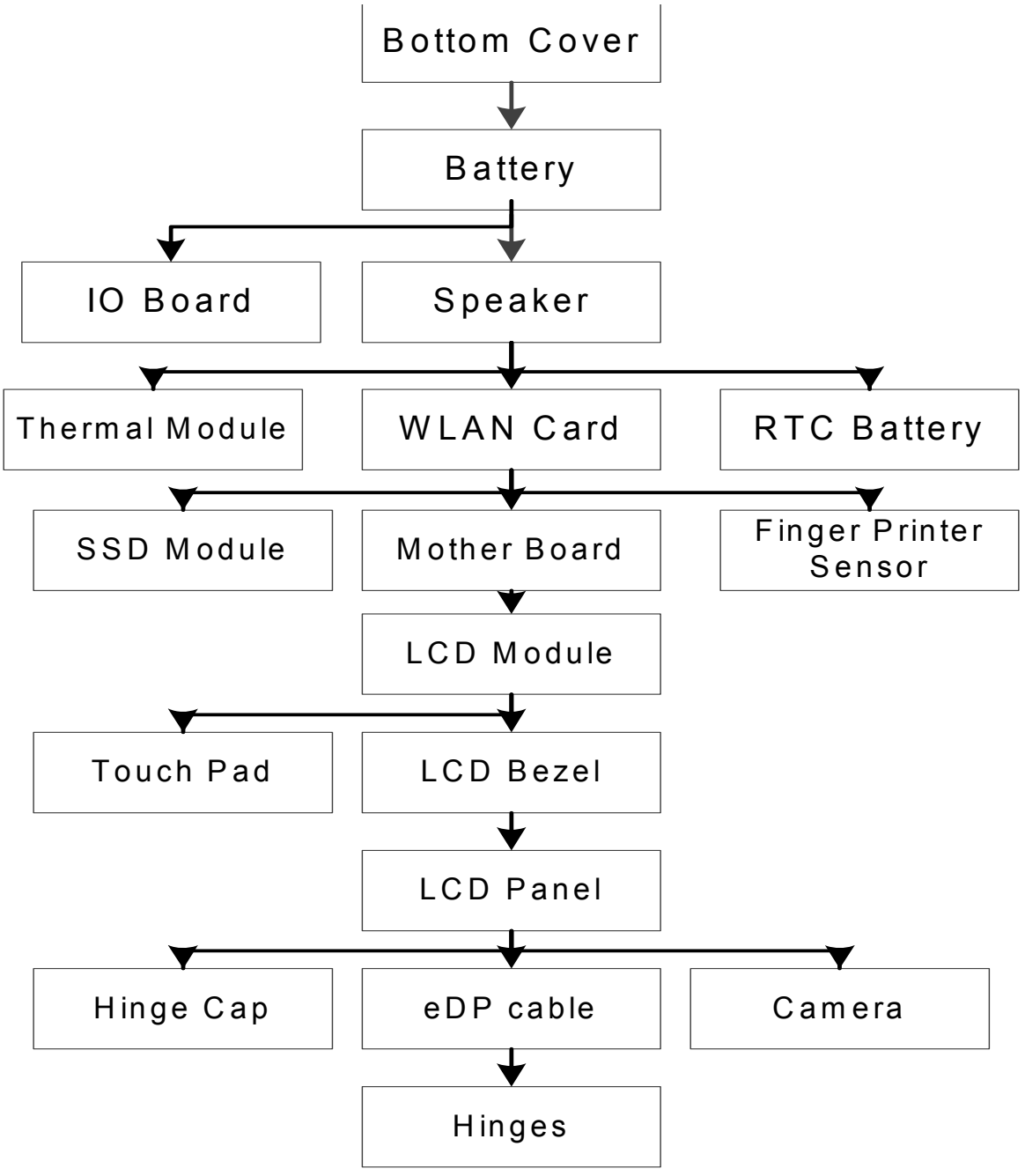


Figure 3-2. Main Unit Disassembly Flowchart

Removing the Bottom Cover

1. Remove 5 screws and 4 screws from bottom cover.

Figure 3-3. Bottom Cover

Table 3-2. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Bottom Cover Disassembly	SCREW M2*4L(K,D4.5) SW B-NI,NY	4		2.0+/-0.2
	SCREW M2*6.5L(K,D4.5) SW B-NI,NY	5		2.0+/-0.2

2. Use a plastic pry slice to insert to the gap near the middle hinge cap, pry left and right to release top edge hocks of the bottom case.

Figure 3-4. Bottom Cover

Figure 3-5. Bottom Cover

Figure 3-6. Bottom Cover

3. Use your fingers to pry and rotate the upper edge of bottom cover to unlock all hocks of bottom case and remove it from top case.

Figure 3-7. Bottom Cover

Figure 3-8. Bottom Cover

Removing the Battery

1. Disconnect the battery cable from main board.

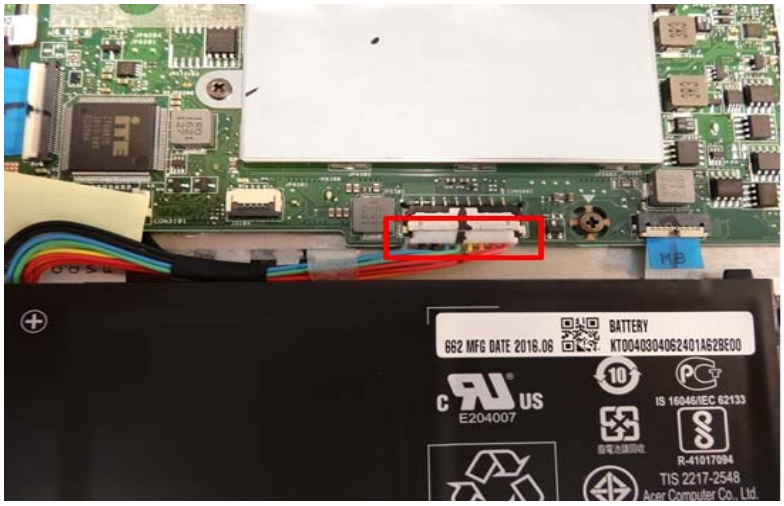


Figure 3-9. Battery

2. Remove 2 screws from battery.

Figure 3-10. Battery

Table 3-3. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Battery Disassembly	SCREW M2*4L (K) B-NI,NY	2		2.0+/-0.2

3. Lift the battery and remove the Mylar to remove the battery.

(Note: remove the battery per WEEE directive where Annex VII)

WEEE ANNEX VII PARTS: Battery

Figure 3-11. Battery

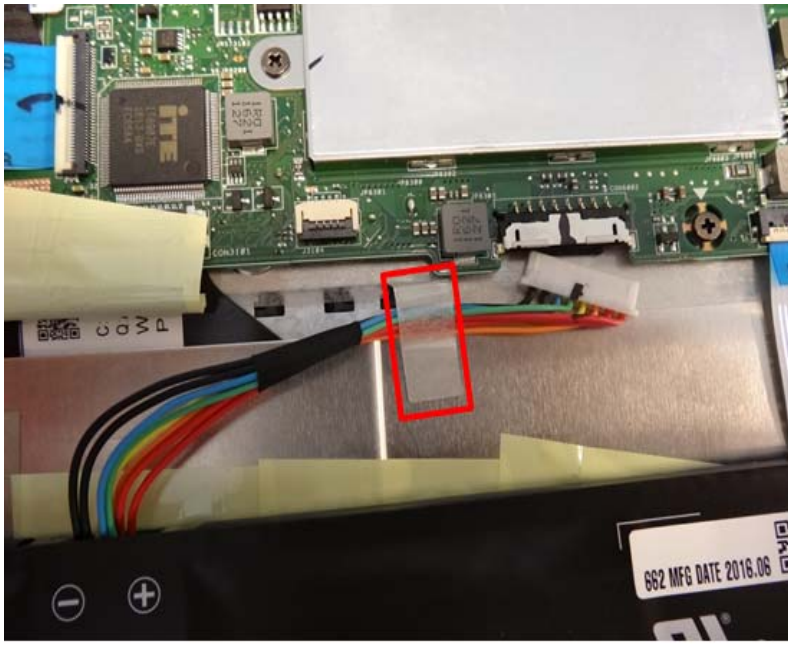


Figure 3-12. Battery

Removing the IO Board

1. Disconnect the IO board FFC from the IO board and motherboard.

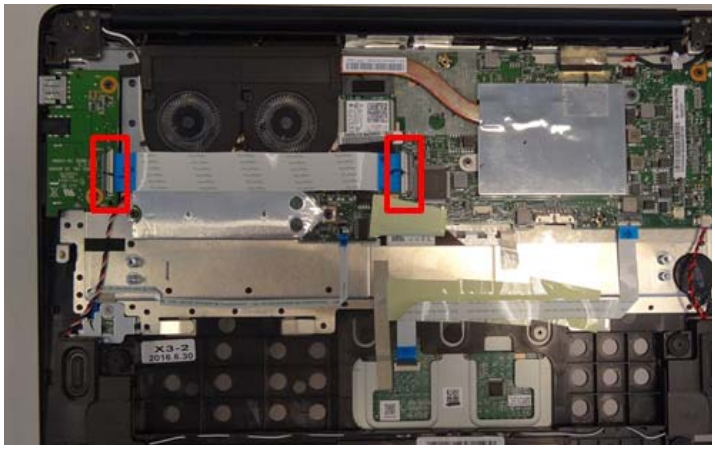


Figure 3-13. IO Board

2. Remove 2 screws and lift to remove the IO board.

(Note: remove the PCB its area >10cm^2 per WEEE directive where Annex VII)

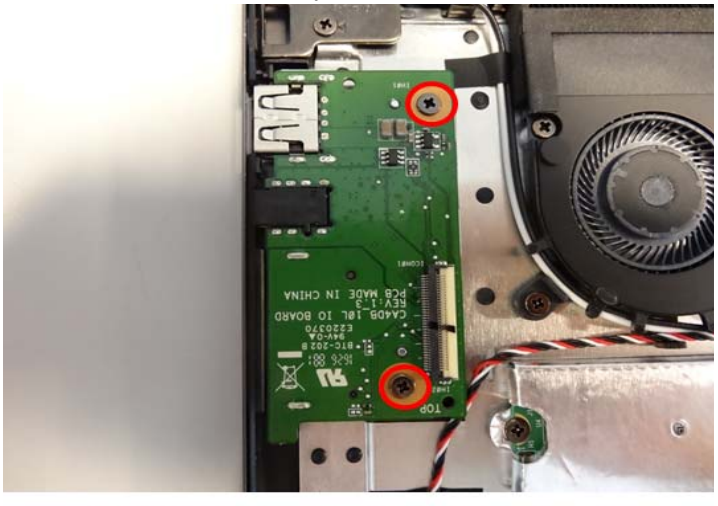


Figure 3-14. IO Board

Table 3-4. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
IO Board Disassembly	SCREW M2*4L (K) B-ZN #1 NY	2		2.0+/-0.2

Removing the Speaker

1. Disconnect the speaker cable from the motherboard and make the cable out of its slot.

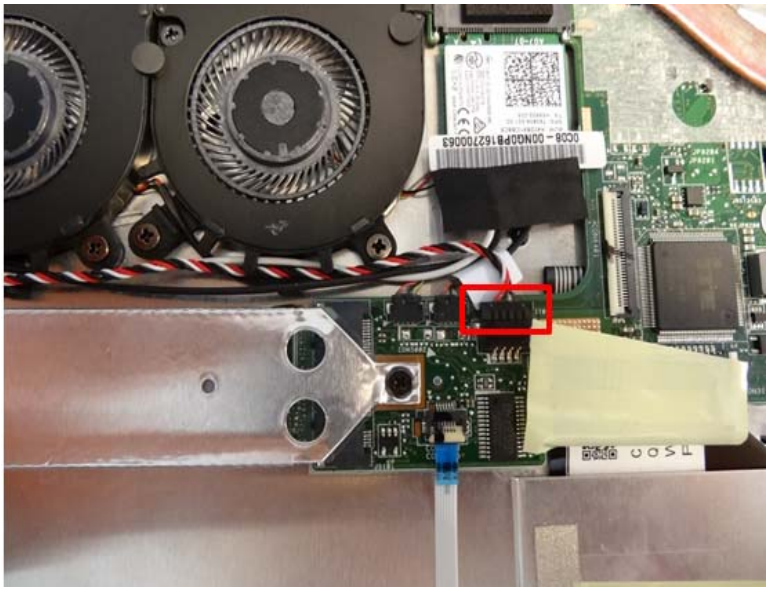


Figure 3-15. Speaker

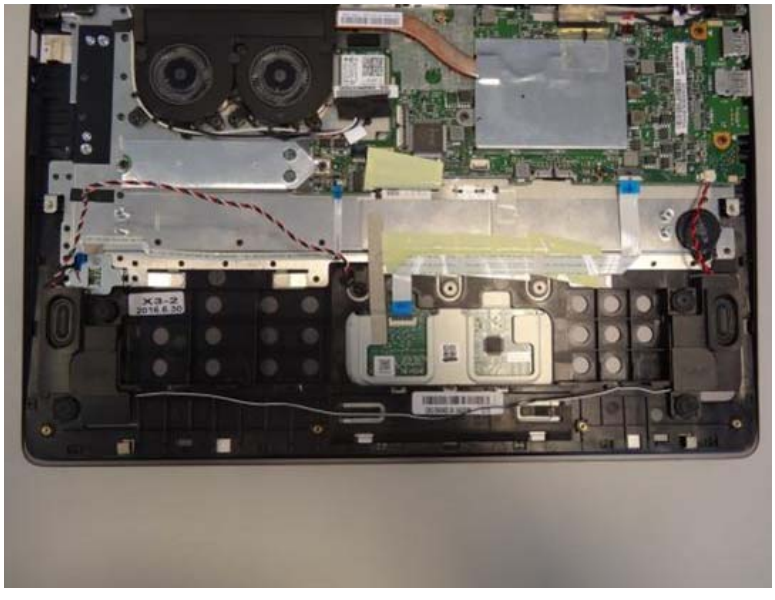


Figure 3-16. Speaker

2. Remove 4 screws and lift to remove the speaker.

Figure 3-17. Speaker

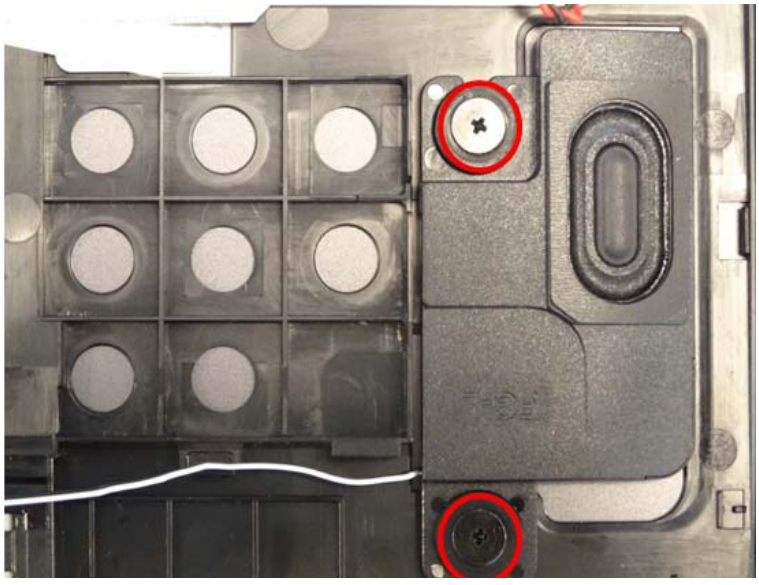


Figure 3-18. Speaker

Figure 3-19. Speaker

Figure 3-20. Speaker

Table 3-5. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Speaker Disassembly	SCREW M2*2L (K) B-ZN #1 NY	4		2.0+/-0.2

Removing the WLAN Card

1. Remove 1 piece of acetate fabric from WLAN card.

Figure 3-21. WLAN Card

2. Disconnect the antenna cables from WLAN Card.

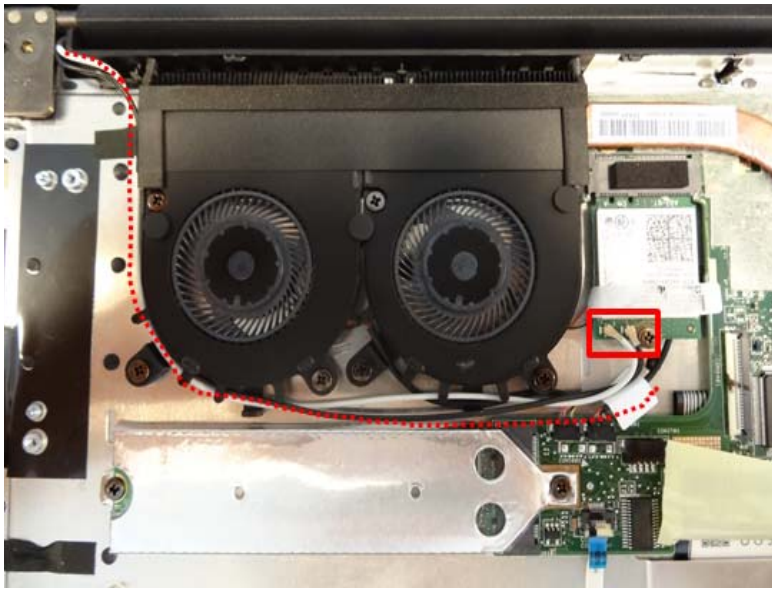


Figure 3-22. WLAN Card

3. Remove 1 screw from WLAN card.

Figure 3-23. WLAN Card

Table 3-6. Screw

Step	Screw	Quantity	Screw Type	Torque/kgfcm
WLAN Card Disassembly	SCREW M2*4L (K) B-ZN #1 NY	1		2.0+/-0.2

4. Pull out the WLAN card from the socket of main board to remove it.

Figure 3-24. WLAN Card

Removing the RTC Battery

1. Disconnect the RTC battery cable and remove the battery.
(Note: remove the battery per WEEE directive where Annex VII)

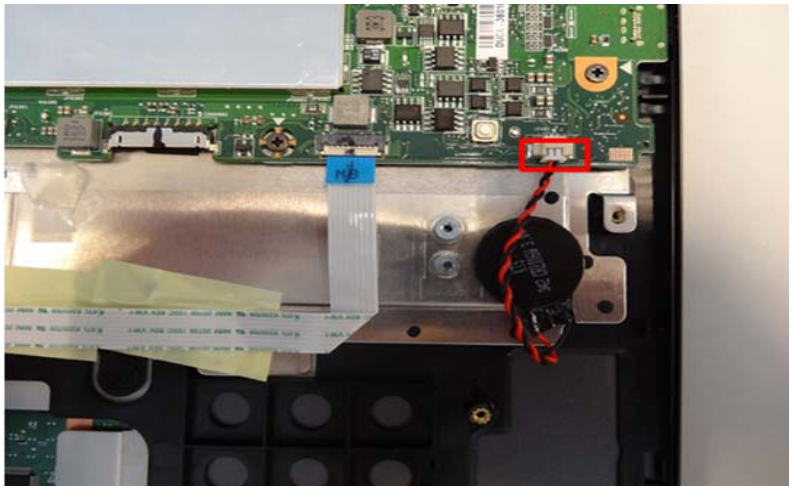


Figure 3-25. RTC Battery

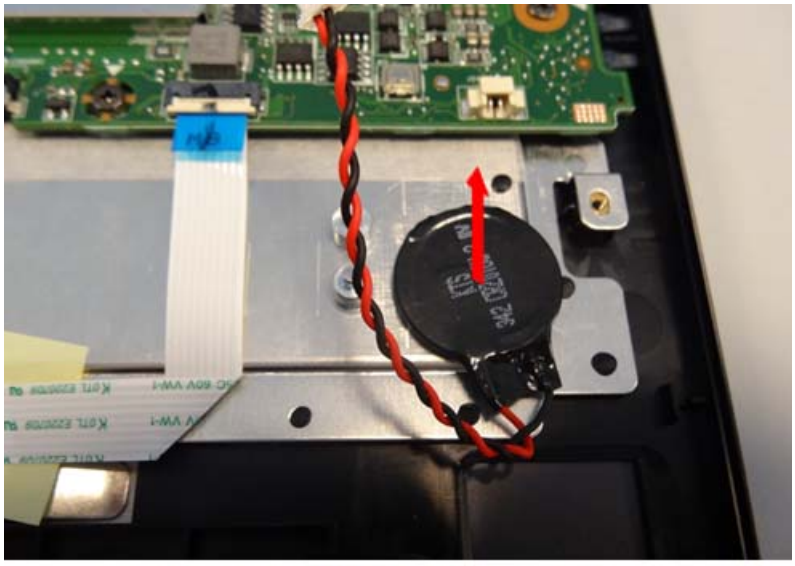


Figure 3-26. RTC Battery

1. Remove the Mylar and disconnect the eDP cable.

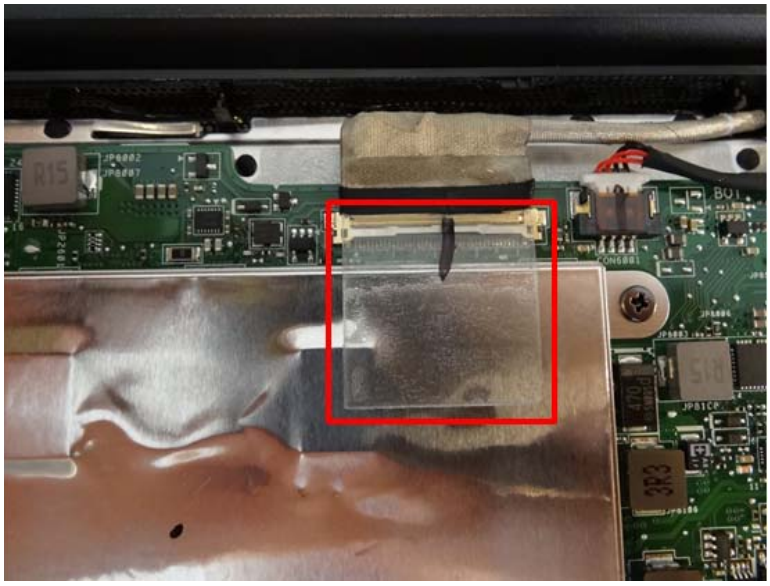


Figure 3-27. Thermal Module

2. Disconnect the fan cable.

Figure 3-28. Thermal Module

3. Remove 2 screws from the motherboard bottom shielding.

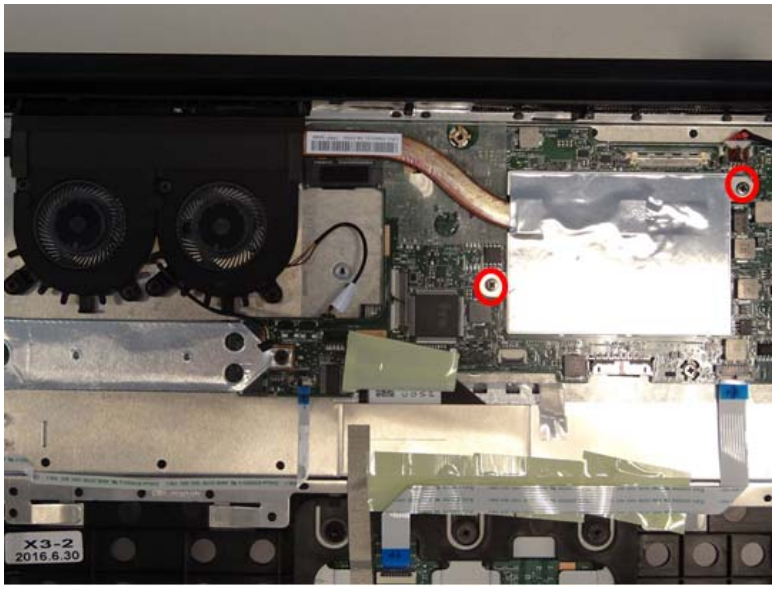


Figure 3-29. Thermal Module

Table 3-7. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Motherboard Shielding Disassembly	SCREW M2*4L (K) B-ZN #1 NY	2		2.0+/-0.2

4. Release the hooks and lift to remove the shielding.

Figure 3-30. Thermal Module

Figure 3-31. Thermal Module

Figure 3-32. Thermal Module

Figure 3-33. Thermal Module

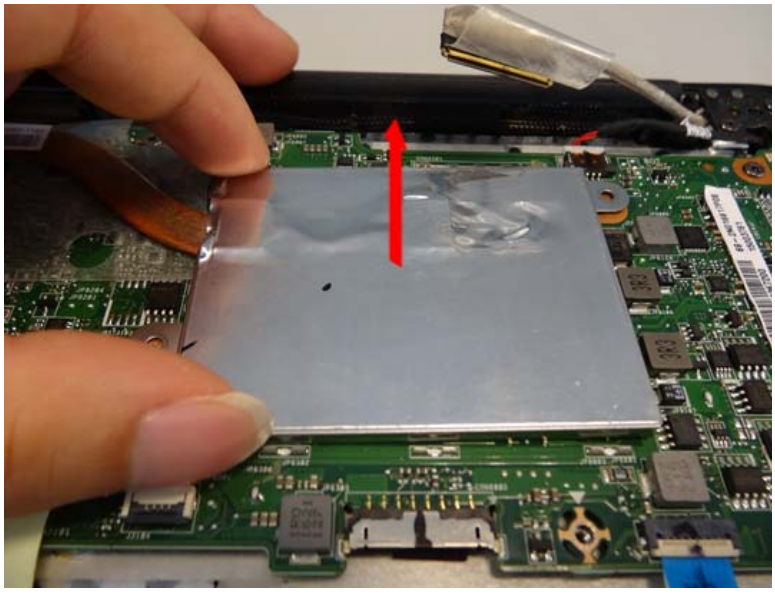


Figure 3-34. Thermal Module

5. Loose 4 screws from thermal module around CPU and remove 6 screws from fans to remove the thermal module.

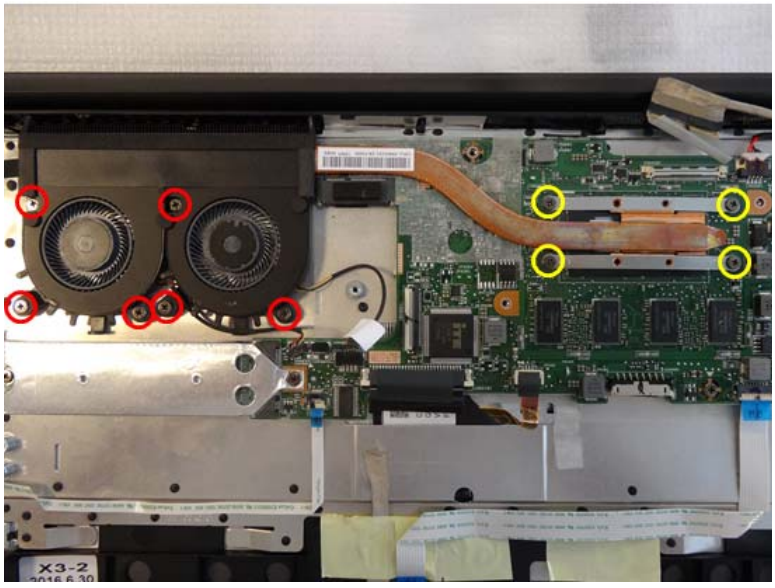


Figure 3-35. Thermal Module

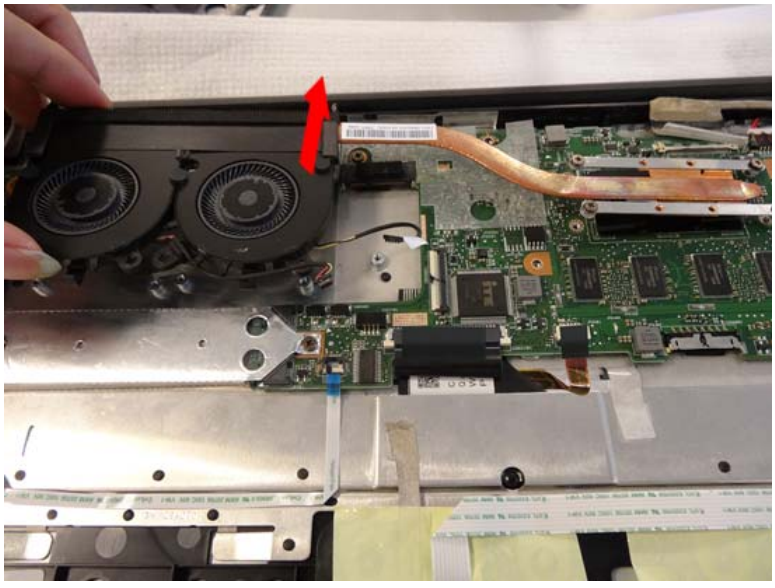


Figure 3-36. Thermal Module

Table 3-8. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Thermal Module Disassembly	SCREW M2*4L (K) B-ZN #1 NY	6		2.0+/-0.2

Removing the SSD Module

1. Remove 2 screws from the SSD.

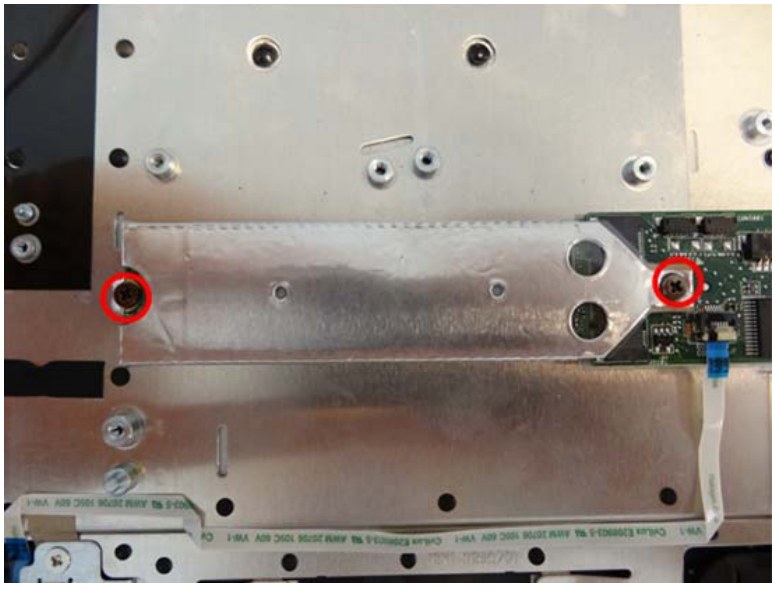


Figure 3-37. SSD Module

Table 3-9. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
SSD Module Disassembly	SCREW M2*4L (K) B-ZN #1 NY	2		2.0+/-0.2

2. Remove the SSD AL Mylar and SSD from main board.

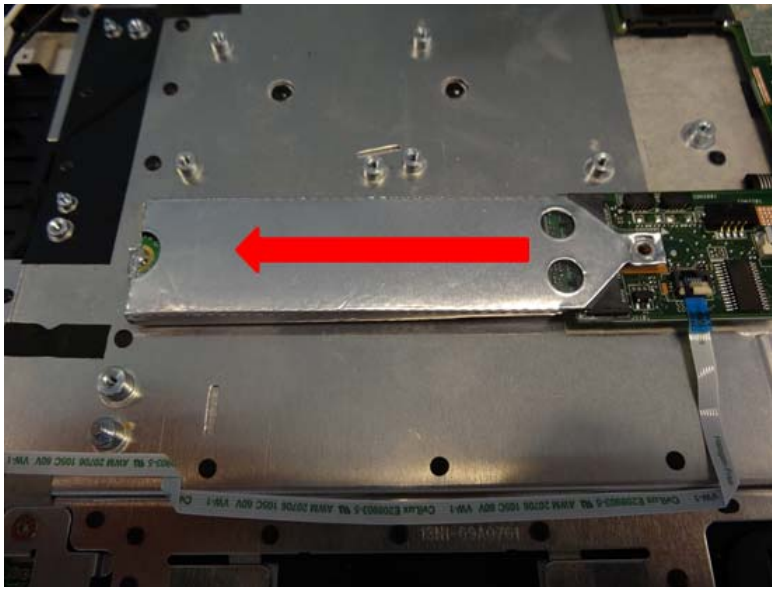


Figure 3-38. SSD Module

Figure 3-39. SSD Module

1. Remove two pieces of acetate fabric from keyboard FFC and backlight FPC. Disconnect the DC-in cable, touch pad FFC, finger printer FFC, keyboard FFC and KB backlight FPC from the motherboard.

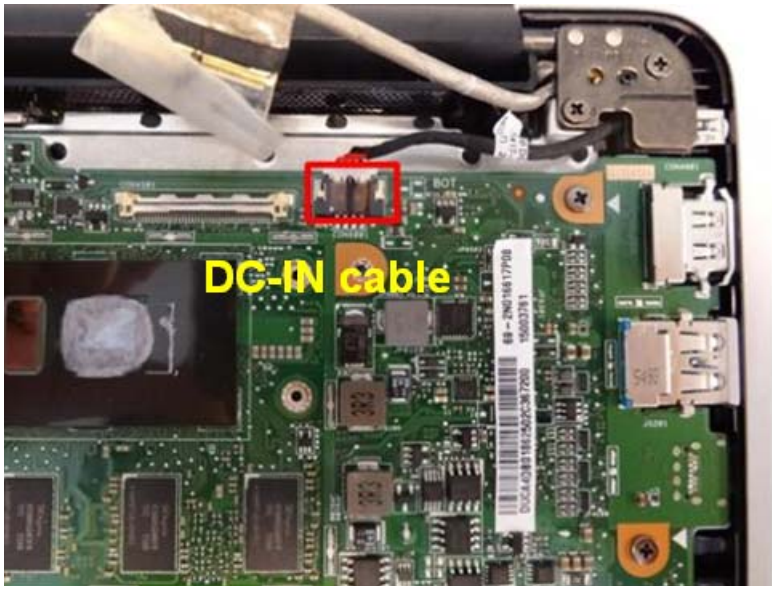


Figure 3-40. Motherboard

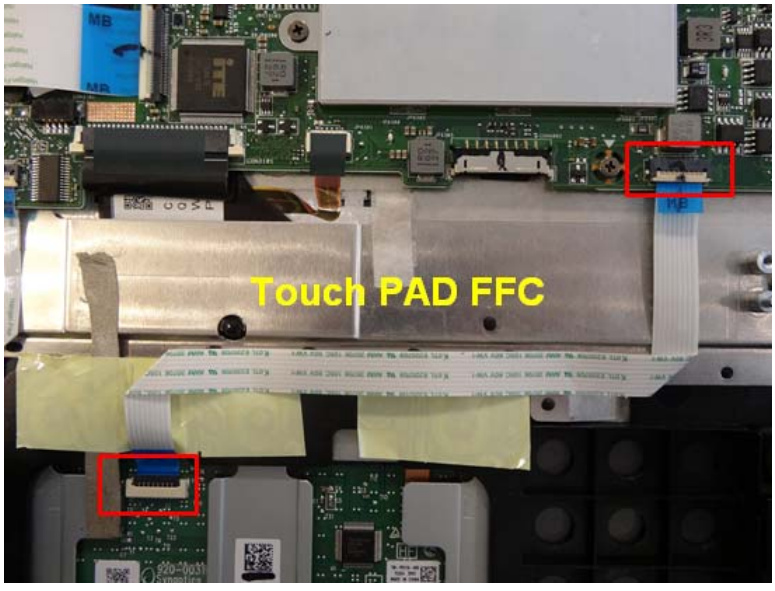


Figure 3-41. Motherboard

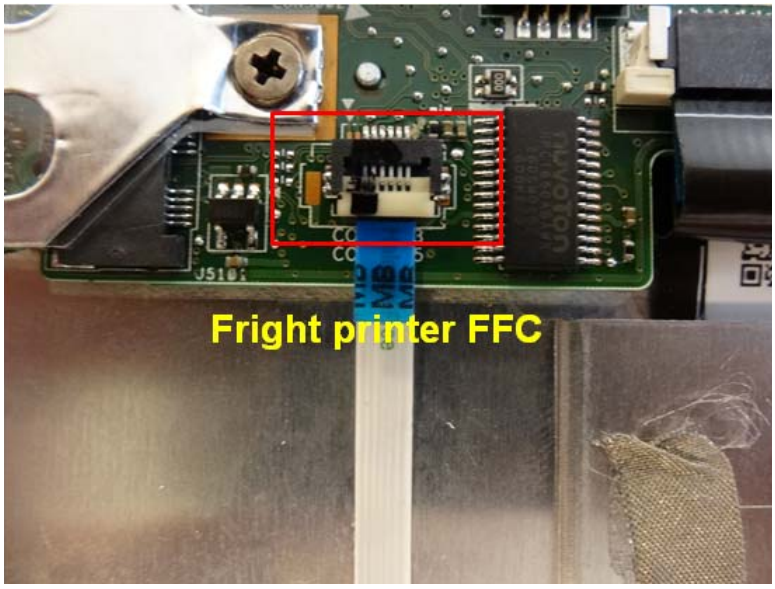


Figure 3-42. Motherboard

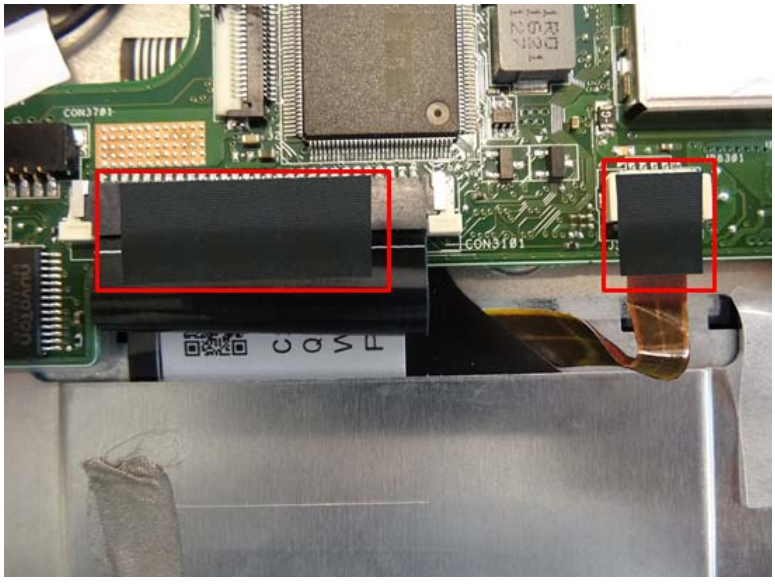


Figure 3-43. Motherboard

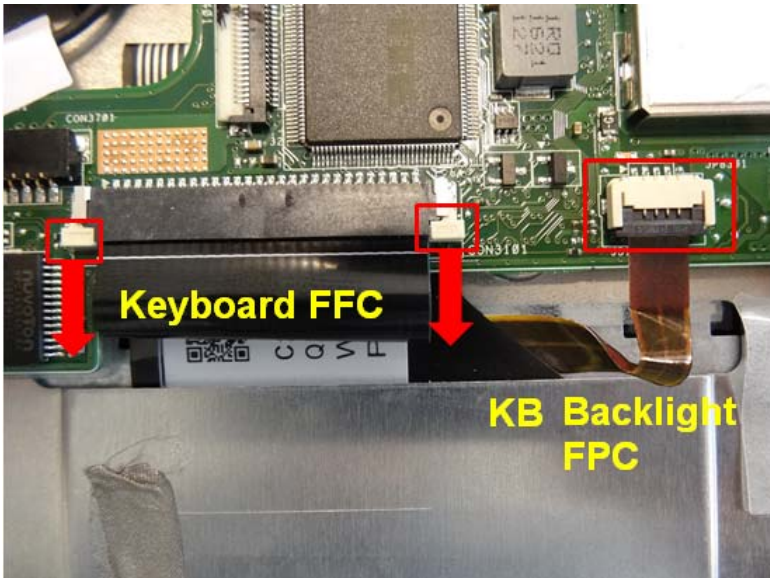


Figure 3-44. Motherboard

2. Remove 4 screws and lift to remove the motherboard.

(Note: remove the PCB its area >10cm^2 per WEEE directive where Annex VII)

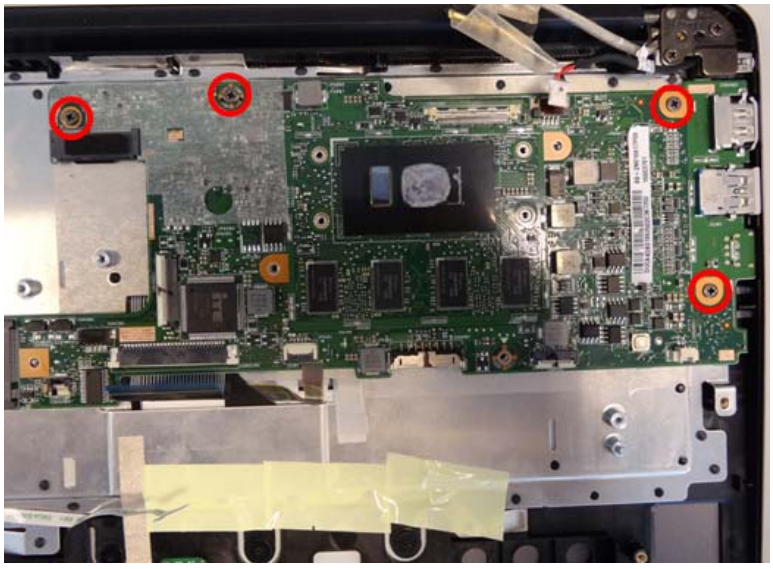
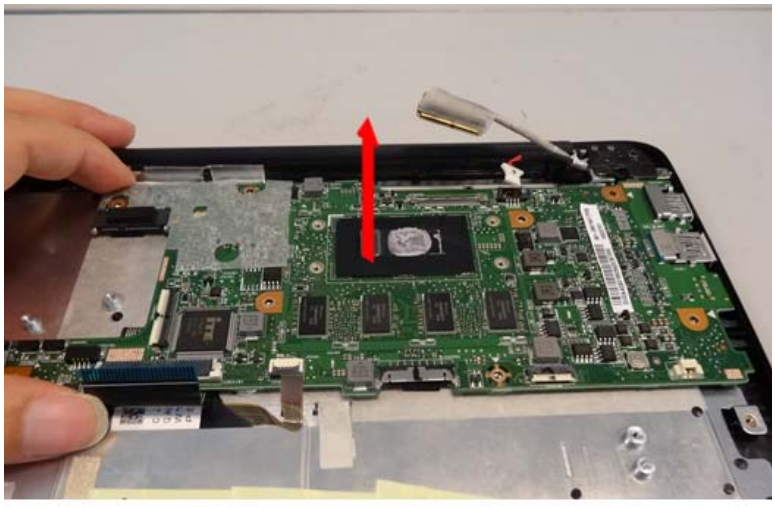


Figure 3-45. Motherboard



WEEE ANNEX VII PARTS: Motherboard

Figure 3-46. Motherboard

Table 3-10. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Motherboard Disassembly	SCREW M2*4L (K) B-ZN #1 NY	4		2.0+/-0.2

Removing the Finger Printer Sensor

1. Remove 1 screw and lift to remove the finger printer sensor bracket.

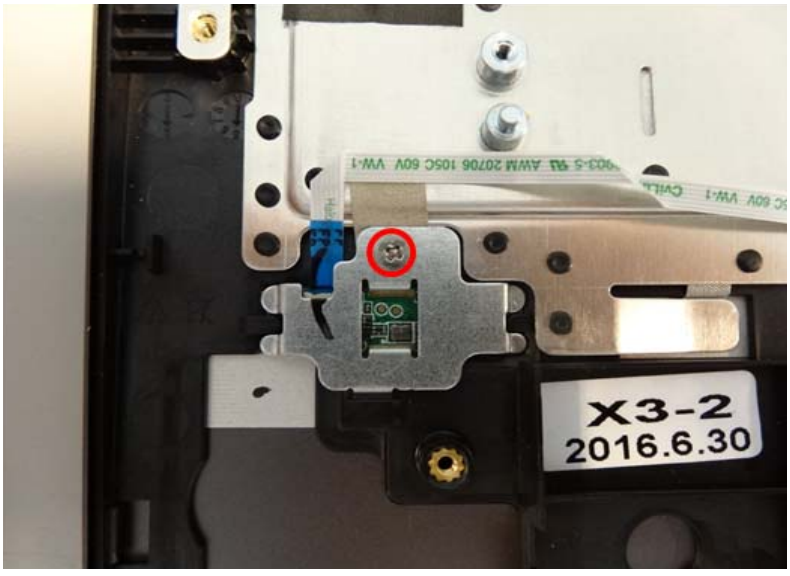


Figure 3-47. Finger Printer Sensor

Table 3-11. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Finger Printer Sensor Disassembly	SCREW M2*4L (K) B-ZN #1 NY	1		2.0+/-0.2

2. Disconnect the finger printer sensor FFC and lift to remove the finger printer sensor.

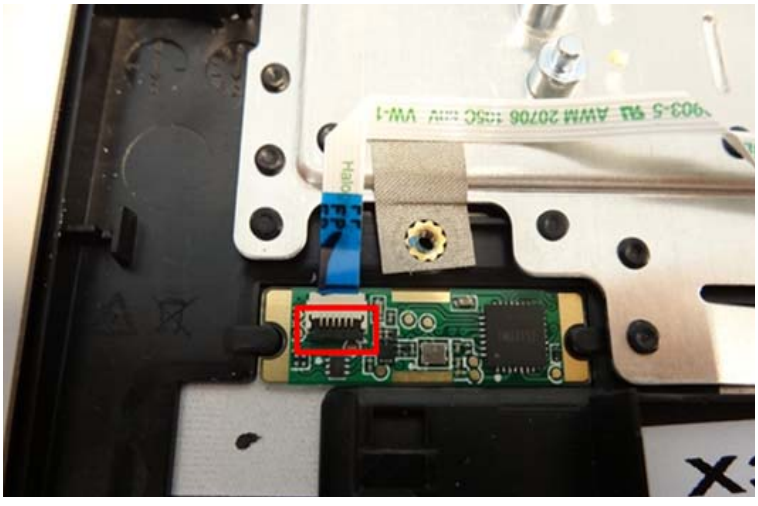


Figure 3-48. Finger Printer Sensor

1. Remove 4 screws from hinges.

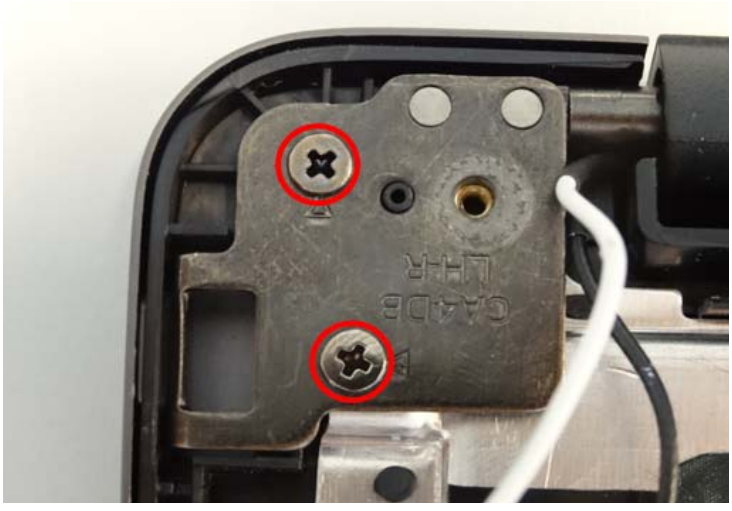


Figure 3-49. LCD Module

Figure 3-50. LCD Module

Table 3-12. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
LCD Module Disassembly	SCREW M2*4L (K) B-ZN #1 NY	4		2.0+/-0.2

2. Rotate the hinge to an approximate 90-degrees angle.

Figure 3-51. LCD Module

Figure 3-52. LCD Module

3. Lift to remove the DC-in cable.

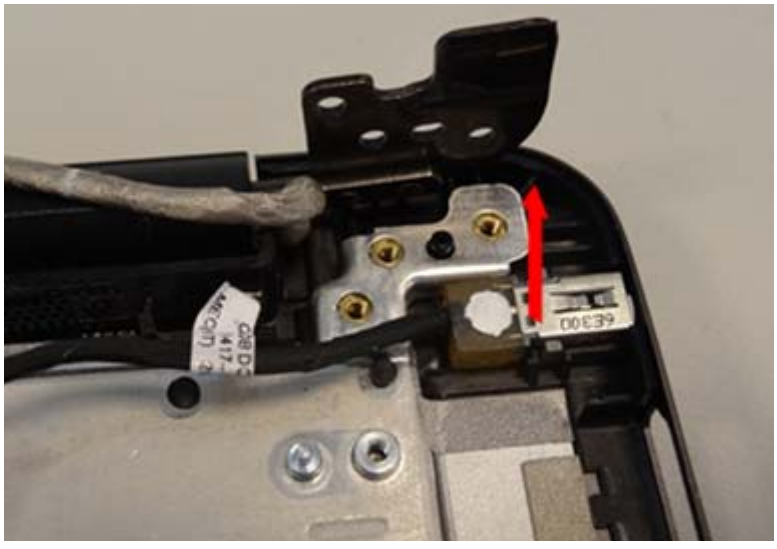


Figure 3-53. LCD Module

4. Separate top case from LCD module.

(Note: remove the LCD panel per WEEE directive where Annex VII)

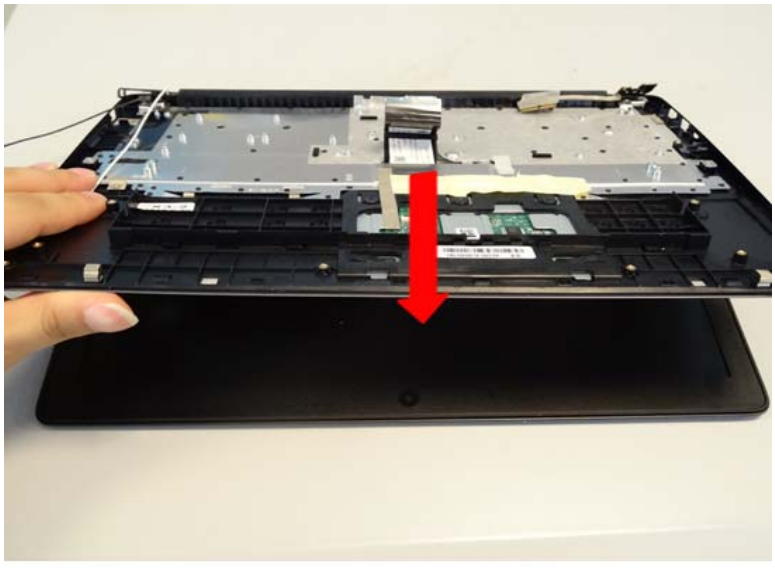


Figure 3-54. LCD Module

Removing the Touch Pad

1. Remove the Mylar from the touch pad.

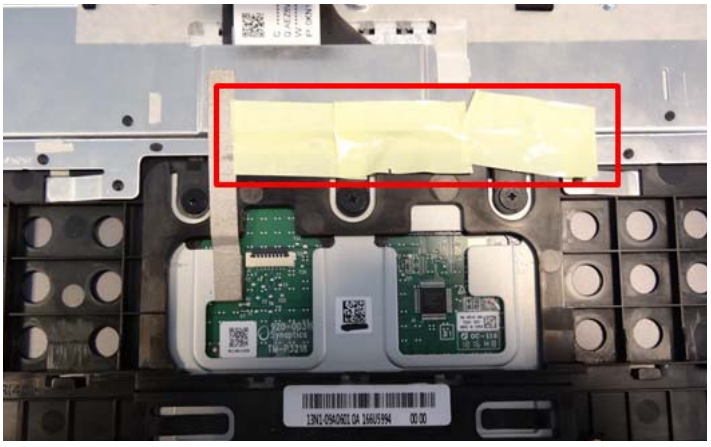
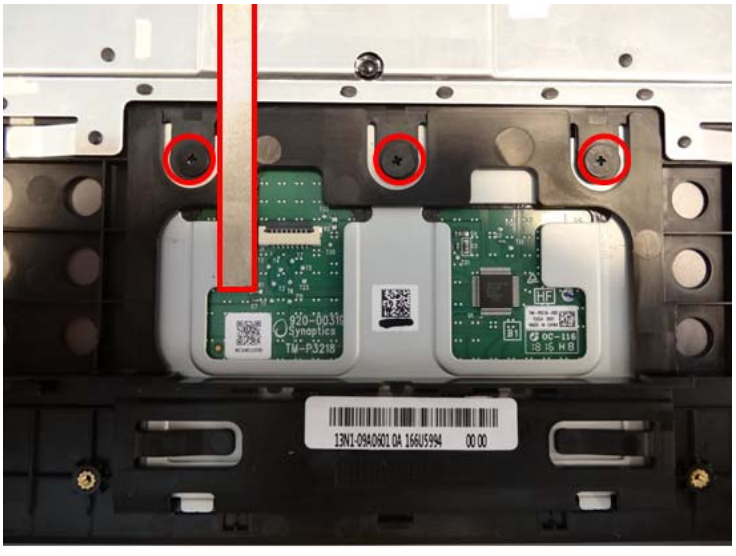


Figure 3-55. Touch Pad

2. Remove the acetate fabric and 3 screws to remove the touch pad.

(Note: remove the PCB its area >10cm^2 per WEEE directive where Annex VII)



WEEE ANNEX VII PARTS: Touch Pad

Figure 3-56. Touch Pad

Table 3-13. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Touch Pad Disassembly	SCREW M2*2L (K) B-ZN #1 NY	3		2.0+/-0.2

Removing the LCD Bezel

NOTE:

Because bezel LCD is very easy to deform, please disassemble it very carefully.

1. Use a plastic pry slice to insert to the gap between LCD bezel and LCD cover to release all latches.

Figure 3-57. LCD Bezel

2. Lift to remove the LCD bezel from LCD module.

Figure 3-58. LCD Bezel

Removing the LCD Panel

1. Remove 4 screws from LCD panel.

Figure 3-59. LCD Panel

Table 3-14. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
LCD Panel Disassembly	SCREW M2*2.5L(K,D4.5) B-NI,NY	4		2.0+/-0.2

2. Lift the upper side of LCD panel to rotate it to an approximate 130-degrees angle

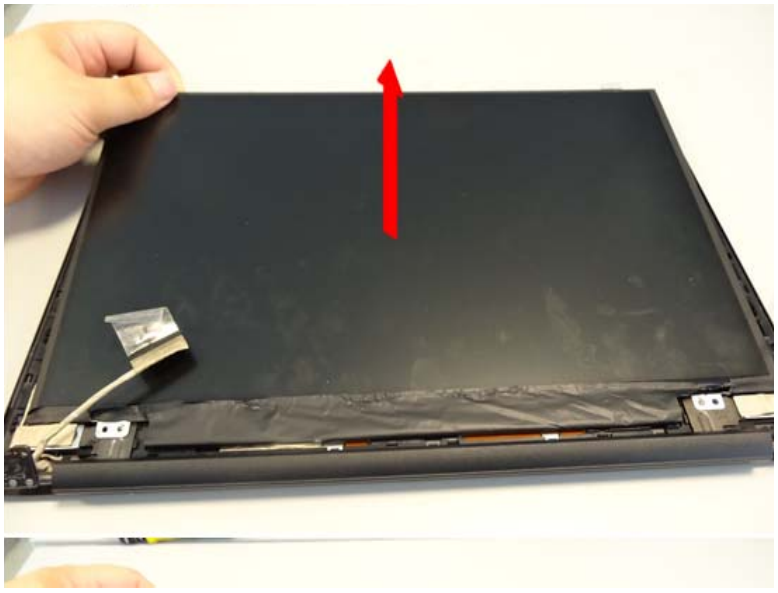


Figure 3-60. LCD Panel

3. Tear off transparent tape of eDP cable from LCD panel and disconnect the eDP cable from LCD panel.

.(Note: remove the LCD panel per WEEE directive where Annex VII)

Figure 3-61. LCD Panel

WEEE ANNEX VII PARTS:LCD Panel

Figure 3-62. LCD Panel

WEEE ANNEX VII PARTS:LCD Panel

Figure 3-63. LCD Panel

Removing the Hinge Cap

1. Use a plastic pry slice to unlock all latches of hinge cap.

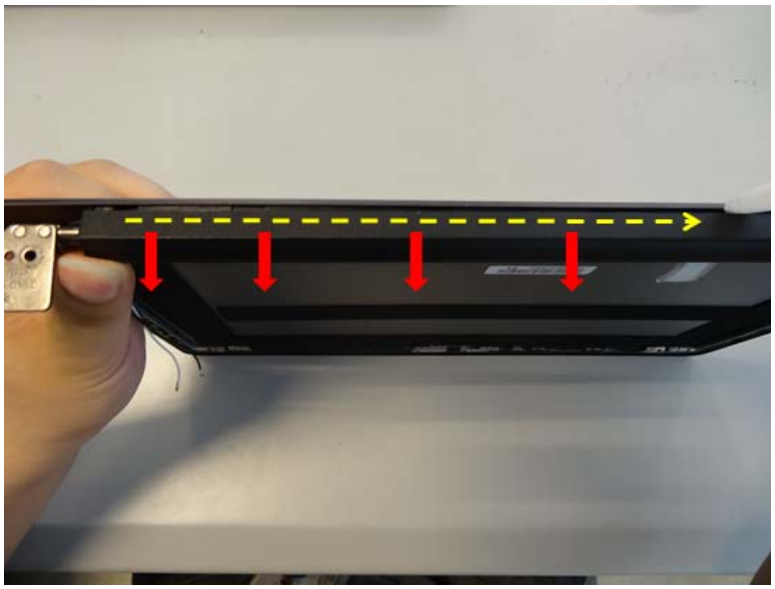


Figure 3-64. Hinge Cap

2. Rotate and push the hinge cap to the direction of the front to unlock all latches of hinge cap.

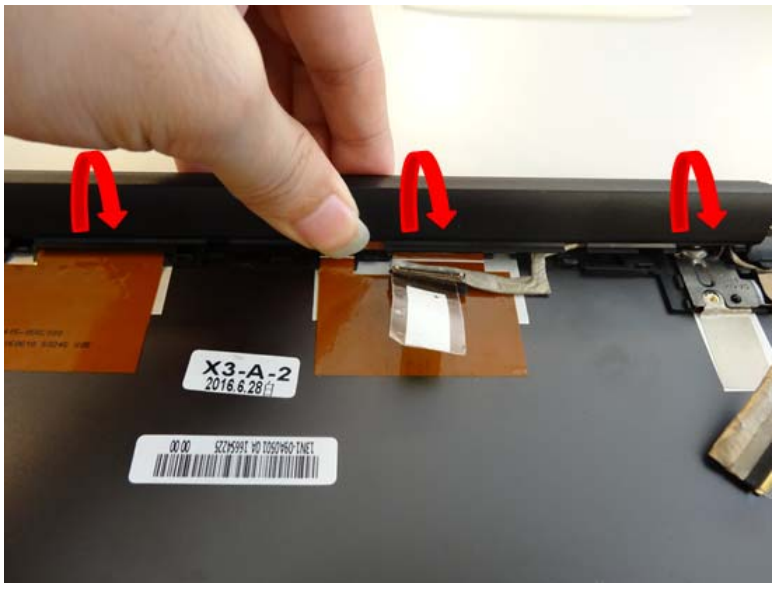


Figure 3-65. Hinge Cap

3. Use a plastic pry slice to unlock the latches to separate the hinge cap from LCD cover

Figure 3-66. Hinge Cap

Figure 3-67. Hinge Cap

Removing the Camera

1. Disconnect the eDP cable from camera and lift to remove the camera.

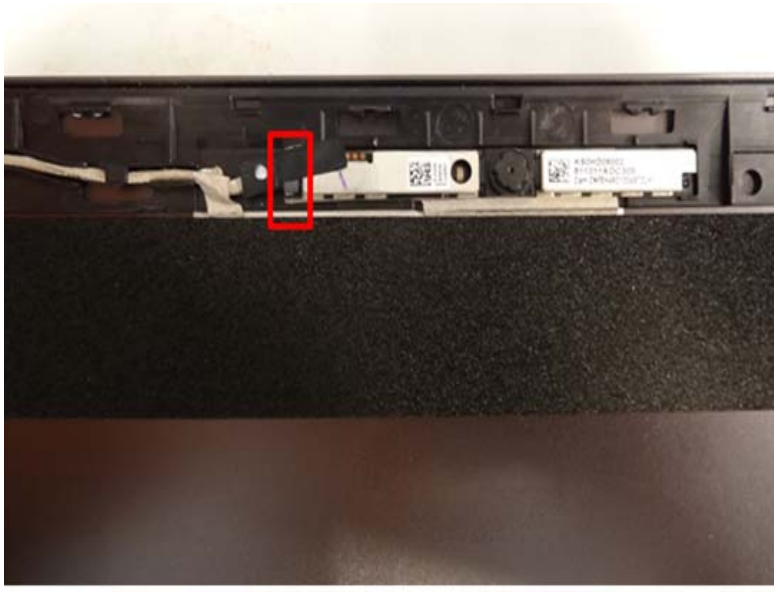


Figure 3-68. Camera

Removing the eDP Cable

1. Remove the acetate fabric to remove the eDP cable.

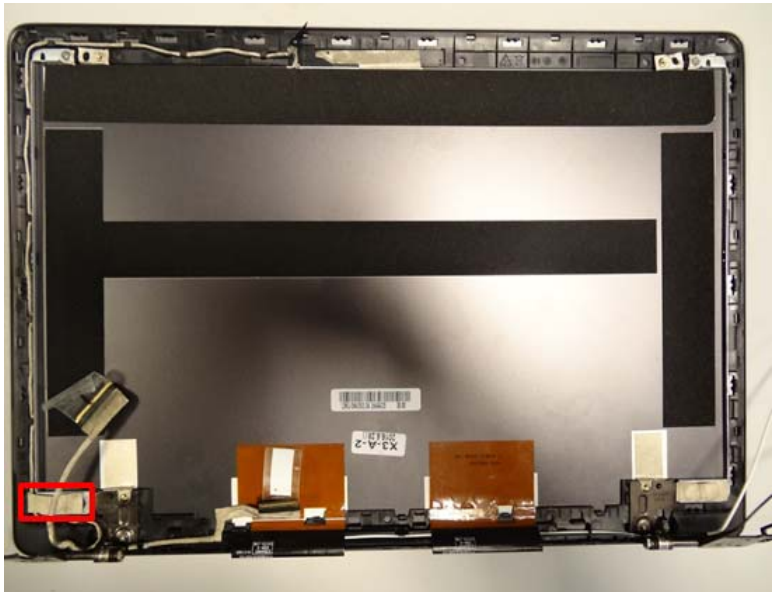


Figure 3-69. eDP Cable

Removing the Hinges

1. Remove the acetate fabric and 8 screws to remove hinges.

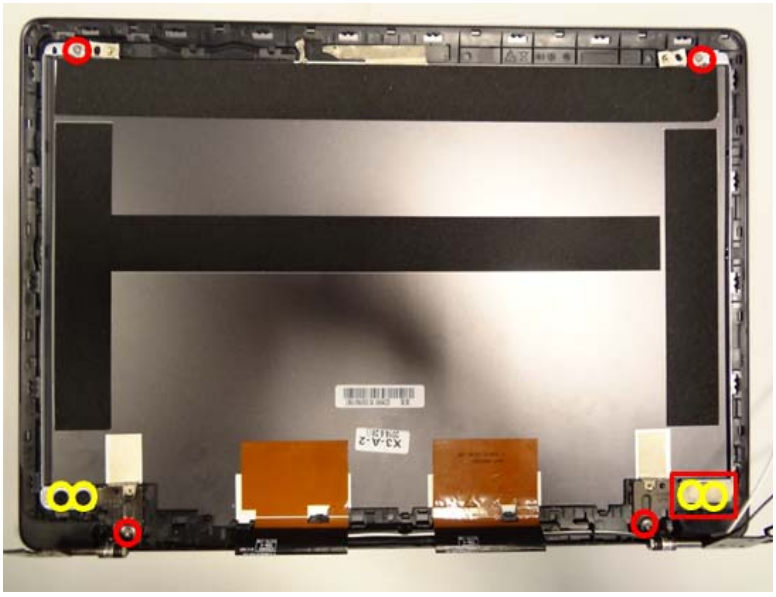


Figure 3-70. Hinge

Table 3-15. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Hinge Disassembly	SCREW M2*2L (K) B-ZN #1 NY	4		2.0+/-0.2
	SCREW M2*4L (K) B-ZN #1 NY	4		2.0+/-0.2

Main Unit Reassembly Procedure

Replacing the Hinges

1. Position the hinges on LCD cover, fix 8 screws and adhere1 piece of acetate fabric.

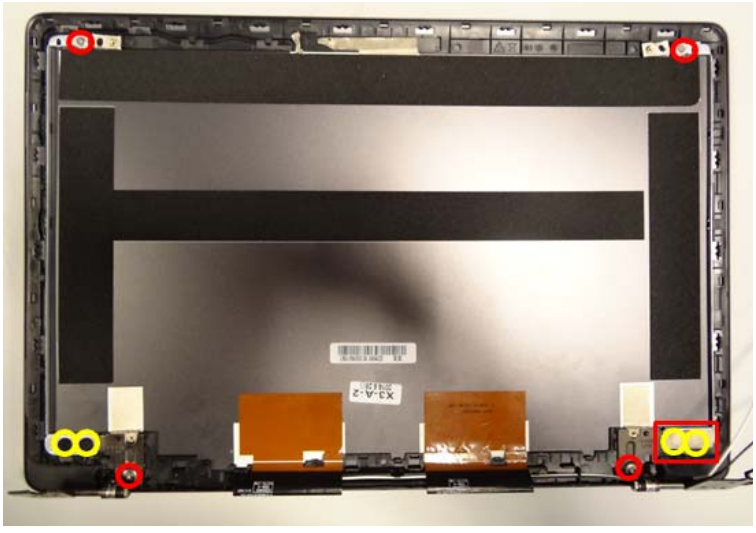


Figure 3-71. Hinge

Table 3-16. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Hinge Assembly	SCREW M2*2L (K) B-ZN #1 NY	4		2.0+/-0.2
	SCREW M2*4L (K) B-ZN #1 NY	4		2.0+/-0.2

Replacing the eDP Cable

1. Replace the eDP cable and adhere1 piece of acetate fabric.

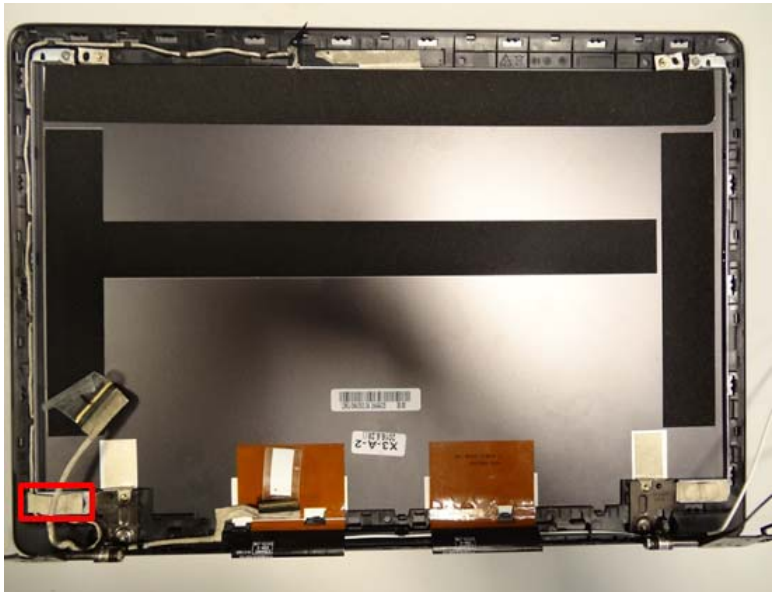


Figure 3-72. eDP Cable

Replacing the Camera

1. Replace the camera and connect the eDP cable.

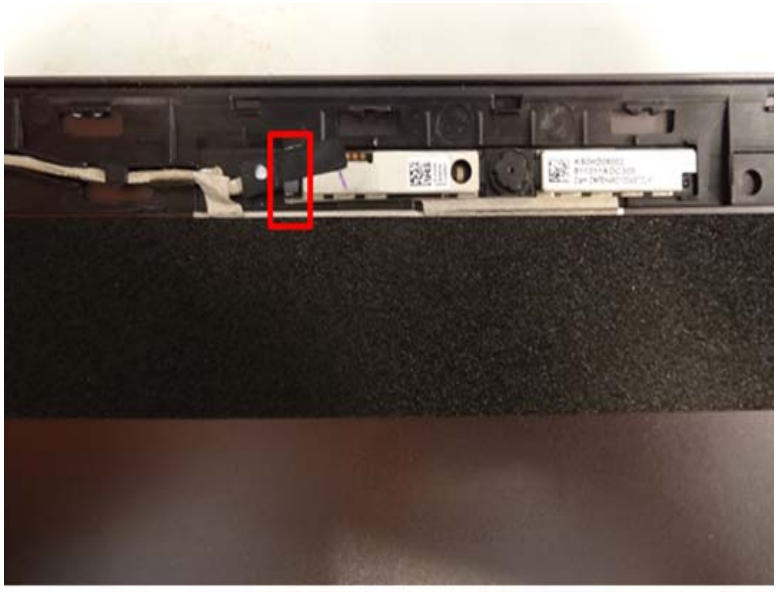


Figure 3-73. Camera

Replacing the Hinge Cap

1. Position the hinge cap on LCD cover and press it down to lock all latched.

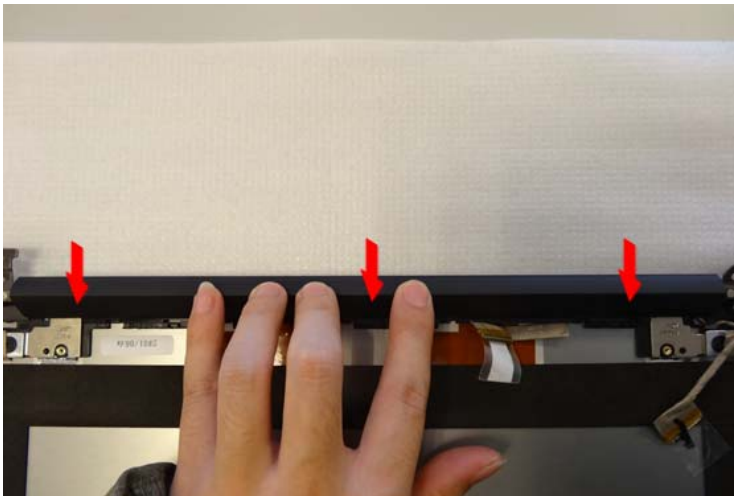


Figure 3-74. Hinge Cap

1. Connect the eDP cable to LCD panel and adhere transparent tape of eDP cable on LCD panel.

Figure 3-75. LCD Panel

2. Lay down the LCD panel on LCD cover.

(Note: replace the LCD panel per WEEE directive where Annex VII)

Figure 3-76. LCD Panel

3. Consolidate the LCD panel with 4 screws.

Figure 3-77. LCD Panel

Table 3-17. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
LCD Panel Assembly	SCREW M2*2.5L(K,D4.5) B-NI,NY	4		2.0+/-0.2

Replacing the LCD Bezel

1. Replace the LCD bezel on LCD module and press all edges of LCD bezel to lock all latches.

Figure 3-78. LCD Bezel

Figure 3-79. LCD Bezel

1. Replace the touch pad, fix 3 screws and adhere the acetate fabric.

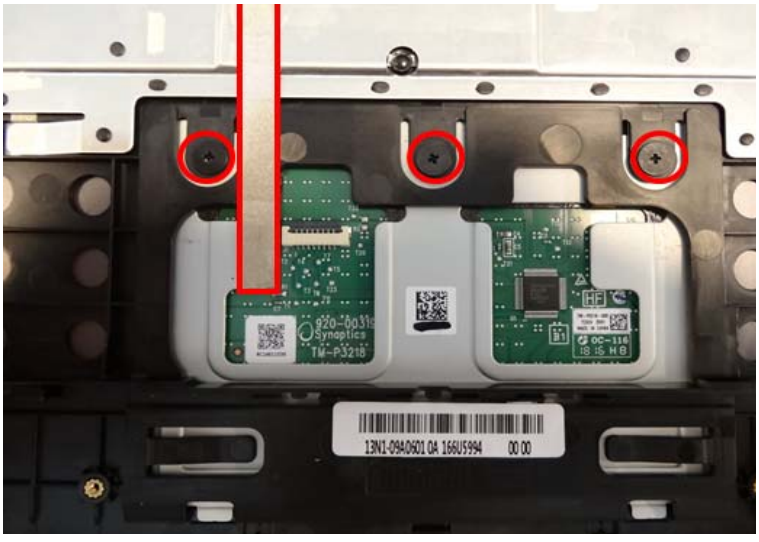


Figure 3-80. Touch Pad

Table 3-18. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Touch Pad Assembly	SCREW M2*2L (K) B-ZN #1 NY	3		2.0+/-0.2

2. Stick the Mylar on the touch pad.

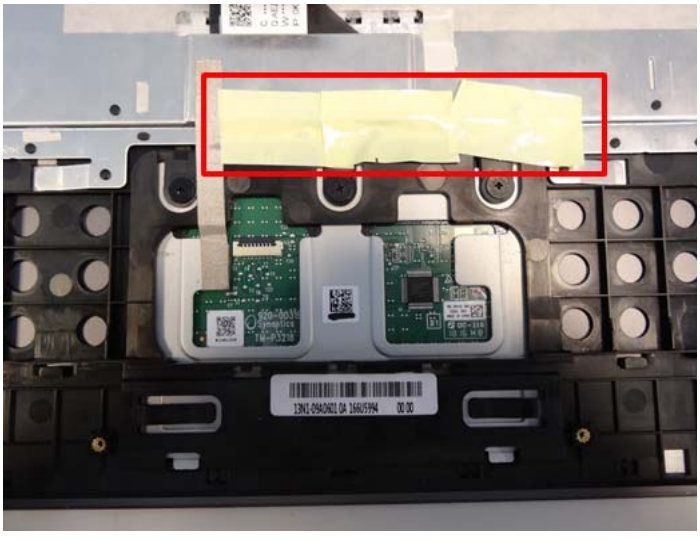


Figure 3-81. Touch Pad

1. Position the LCD module to the top case, then lay down it.

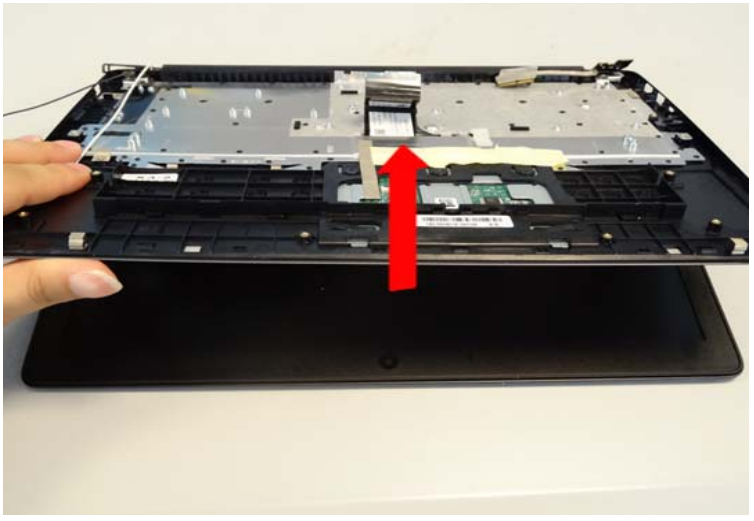


Figure 3-82. LCD Module

2. Replace the DC-in cable.

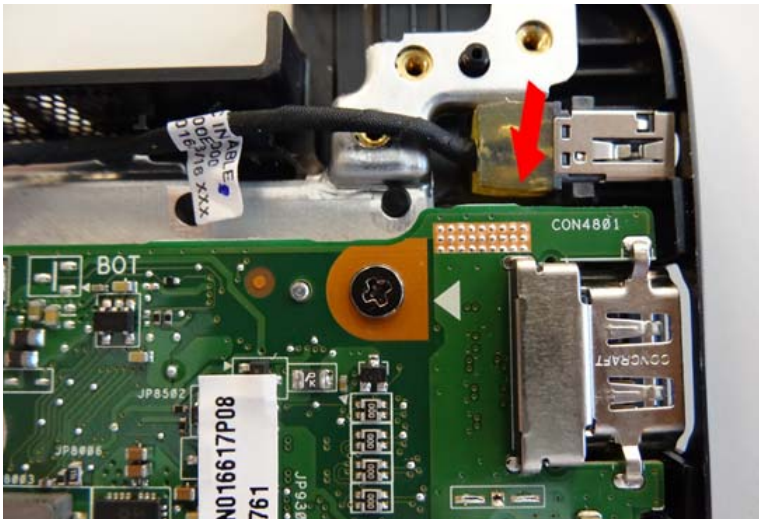


Figure 3-83. LCD Module

Figure 3-84. LCD Module

3. Press down the hinge to fix the top case.

Figure 3-85. LCD Module

Figure 3-86. LCD Module

4. Consolidate the hinges with 4 screws.

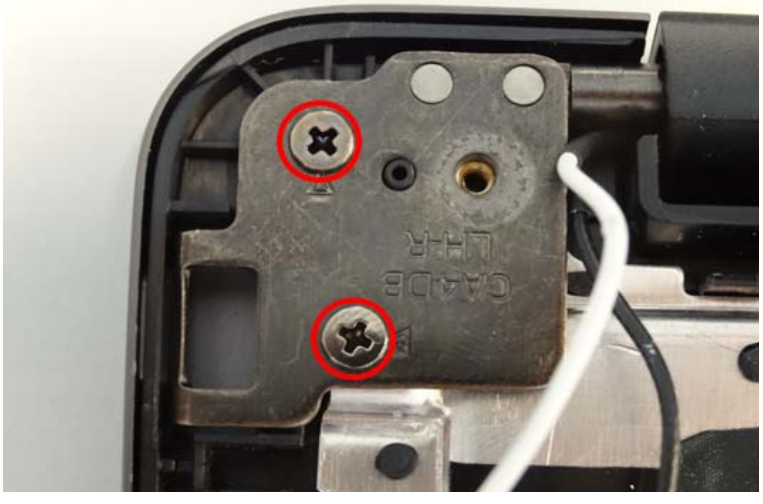


Figure 3-87. LCD Module

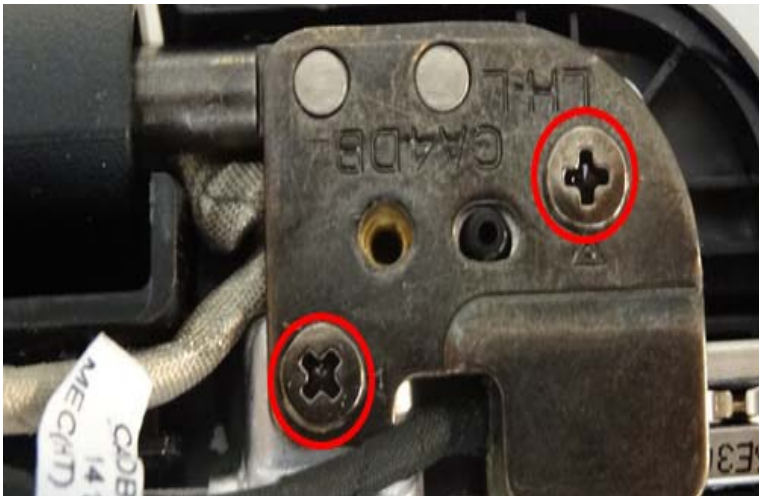


Figure 3-88. LCD Module

Table 3-19. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
LCD Module Assembly	SCREW M2*4L (K) B-ZN #1 NY	4		2.0+/-0.2

1. Replace the finger printer sensor and connect the FFC.

Figure 3-89. Finger Printer Sensor

2. Replace the finger printer sensor bracket and fix 1 screw.

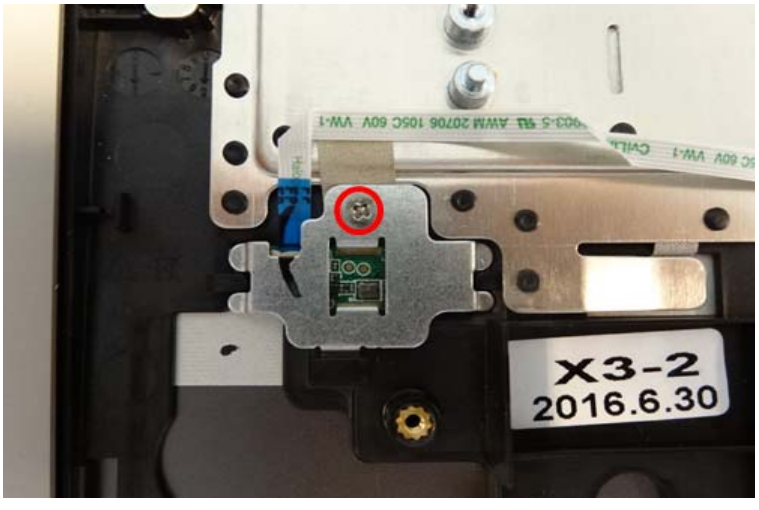


Figure 3-90. Finger Printer Sensor

Table 3-20. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Finger Printer Sensor Assembly	SCREW M2*4L (K) B-ZN #1 NY	1		2.0+/-0.2

1. Replace the main board to the top case.

(Note: replace the PCB its area >10cm^2 per WEEE directive where Annex VII)

Figure 3-91. Motherboard

2. Consolidate motherboard with 4 screws.

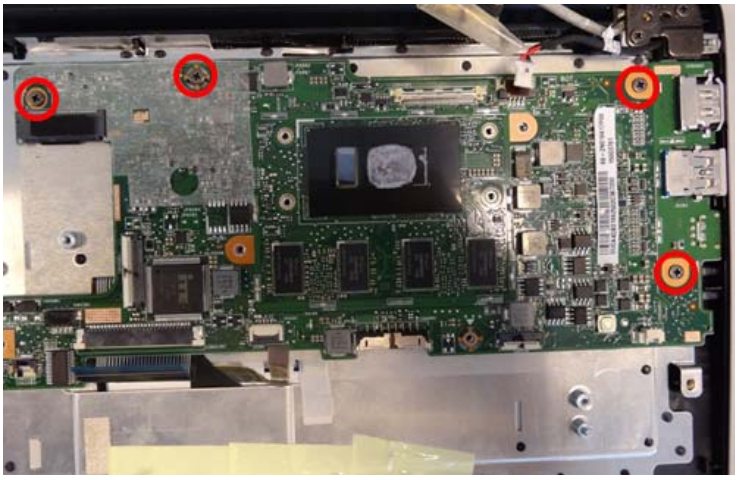


Figure 3-92. Motherboard

Table 3-21. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Motherboard Assembly	SCREW M2*4L (K) B-NI,NY	4		2.0+/-0.2

3. Connect the keyboard FFC, KB backlight FPC, finger printer FFC, touch pad FFC and DC-in cable from the motherboard.Stick two pieces of acetate fabric on keyboard FFC and backlight FPC.

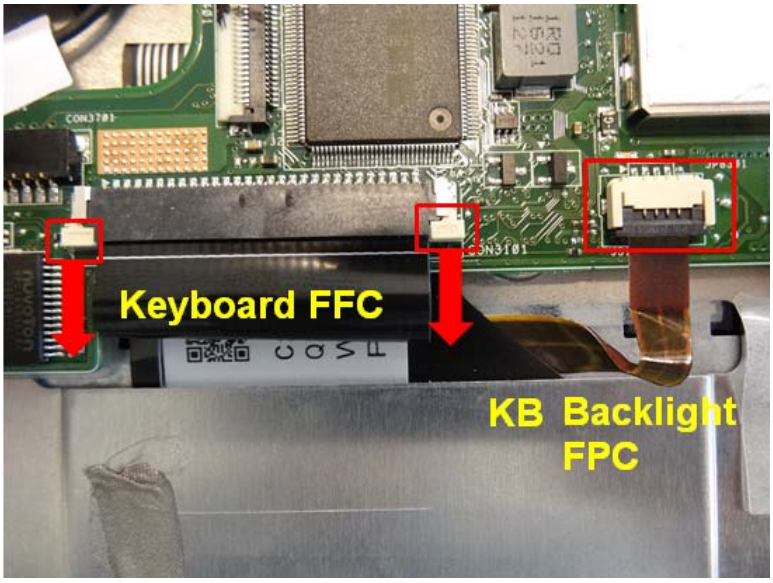


Figure 3-93. Motherboard

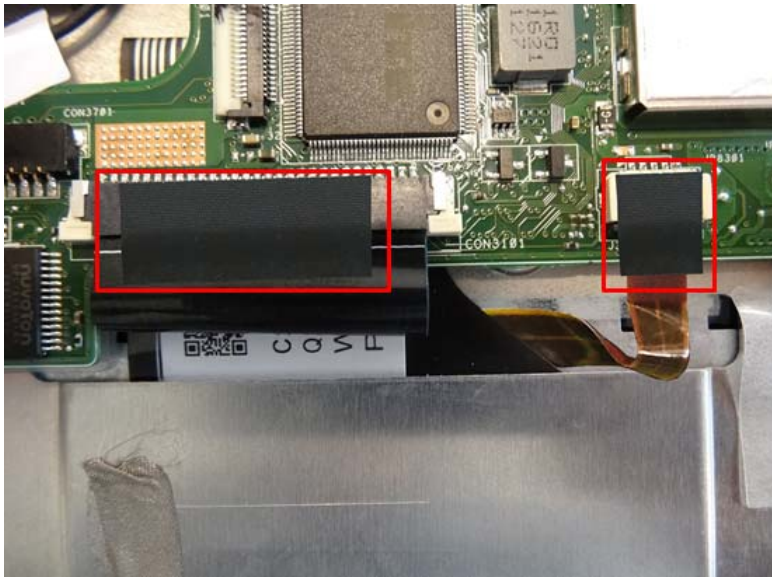


Figure 3-94. Motherboard

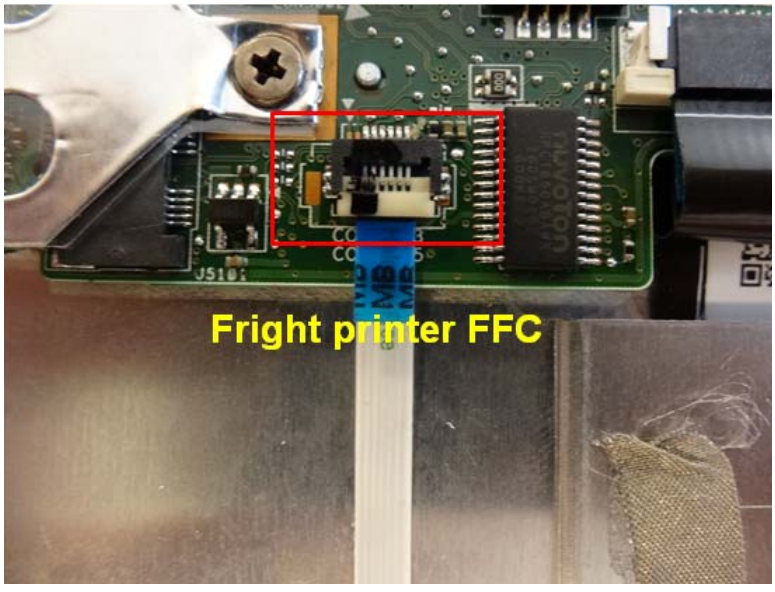


Figure 3-95. Motherboard

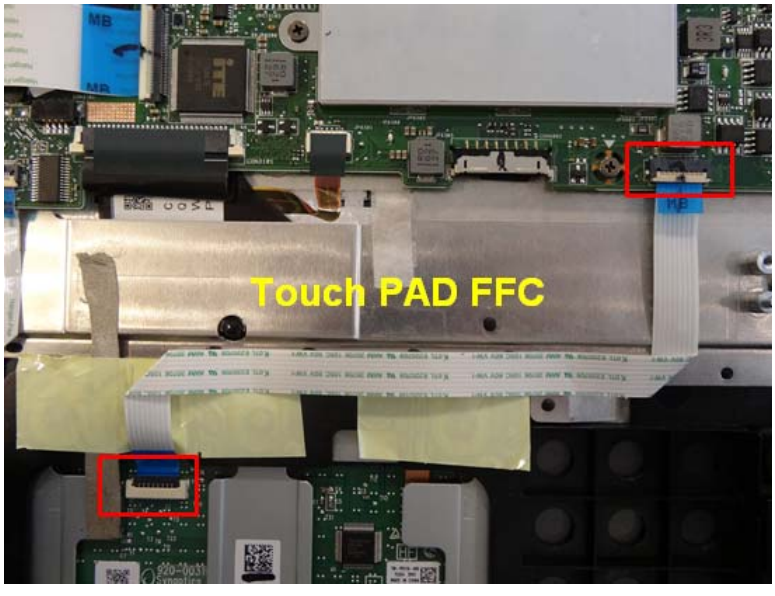


Figure 3-96. Motherboard

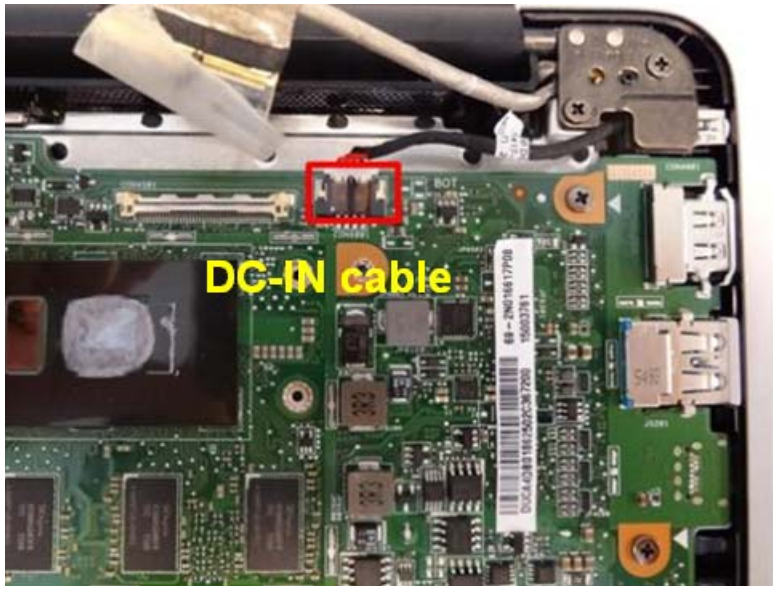


Figure 3-97. Motherboard

Replacing the SSD Module

1. Replace the SSD and AL Mylar.

Figure 3-98. SSD Module

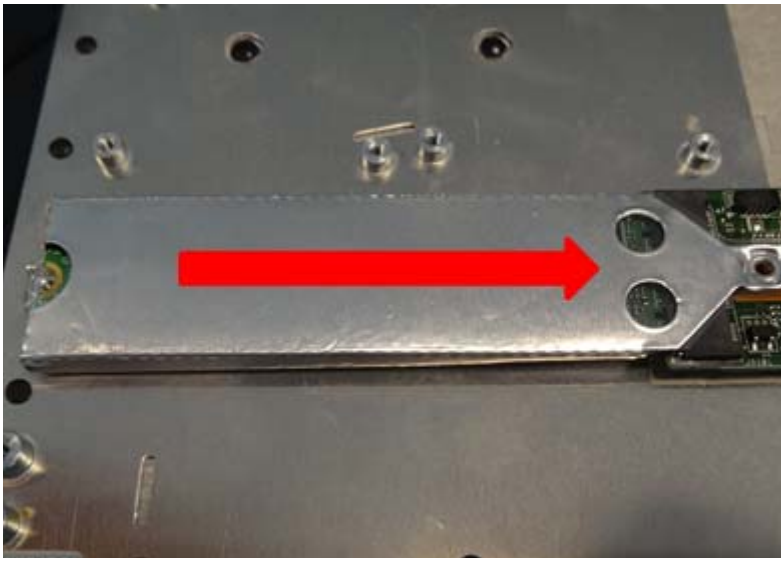


Figure 3-99. SSD Module

2. Fix 2 screws from the SSD.

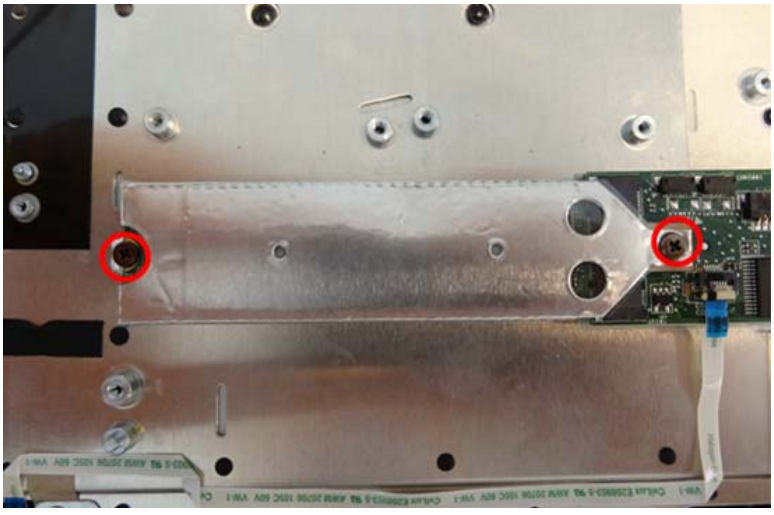


Figure 3-100. SSD Module

Table 3-22. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
SSD Module Assembly	SCREW M2*4L (K) B-ZN #1 NY	2		2.0+/-0.2

1. Replace the thermal module and consolidate 4 screws on thermal module around CPU and fix 6 screws on fans.

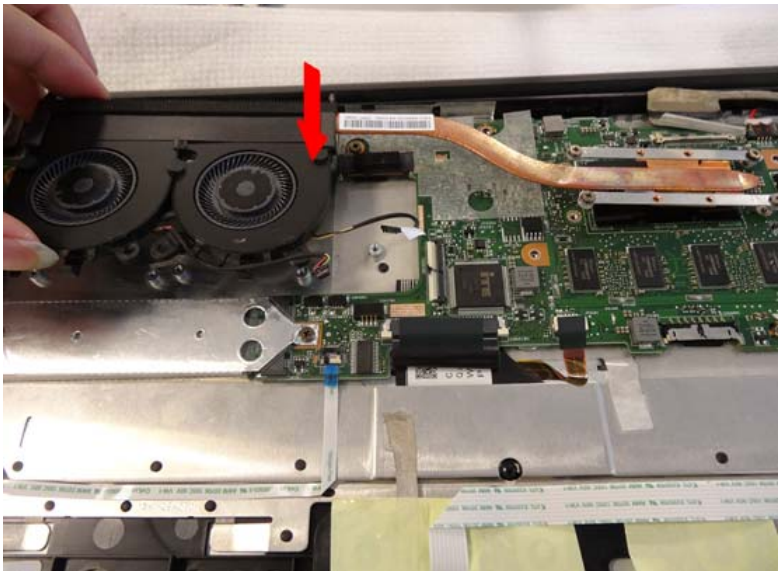


Figure 3-101. Thermal Module

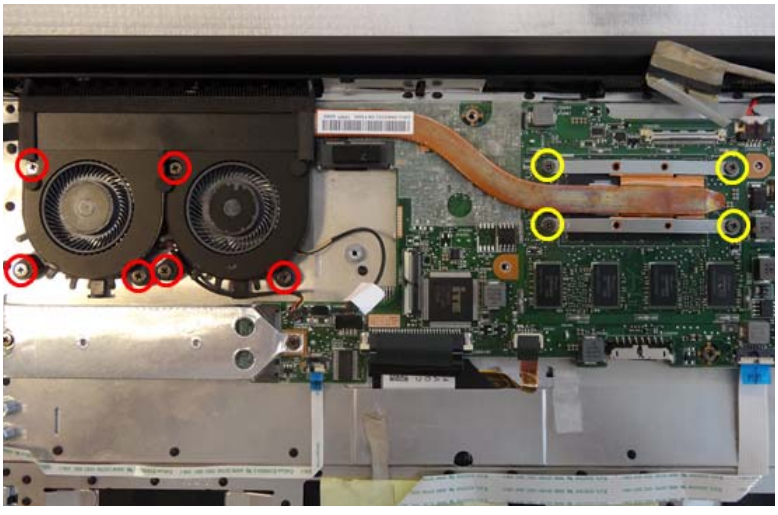


Figure 3-102. Thermal Module

Table 3-23. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Thermal Module Assembly	SCREW M2*4L (K) B-ZN #1 NY	6		2.0+/-0.2

2. Replace the mother board bottom shielding and press to fix it.

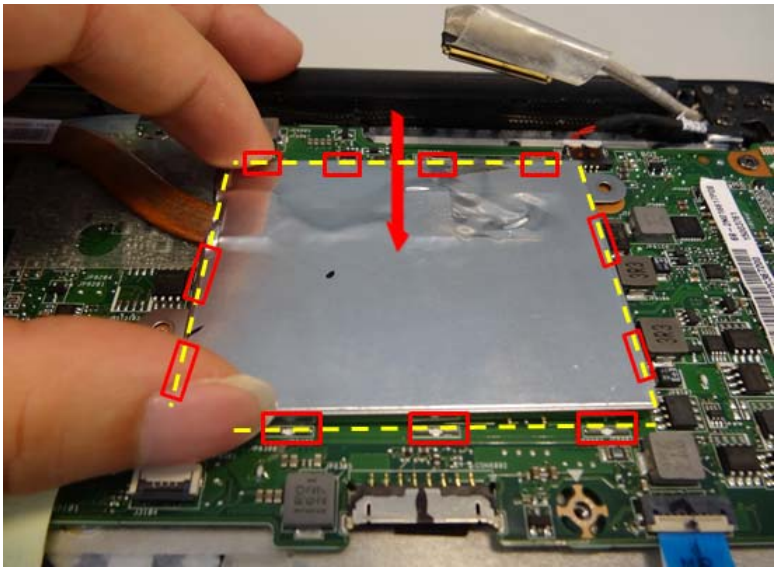


Figure 3-103. Thermal Module

3. Fix 2 screws on the shielding.

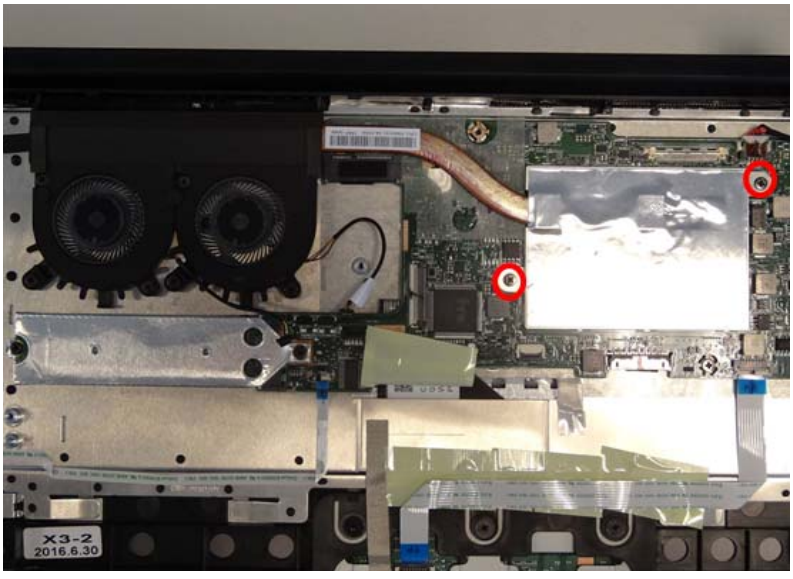


Figure 3-104. Thermal Module

Table 3-24. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Motherboard Shielding Assembly	SCREW M2*4L (K) B-ZN #1 NY	2		2.0+/-0.2

4. Connect the fan cable.

Figure 3-105. Thermal Module

5. Connect the eDP cable and stick the Mylar
.

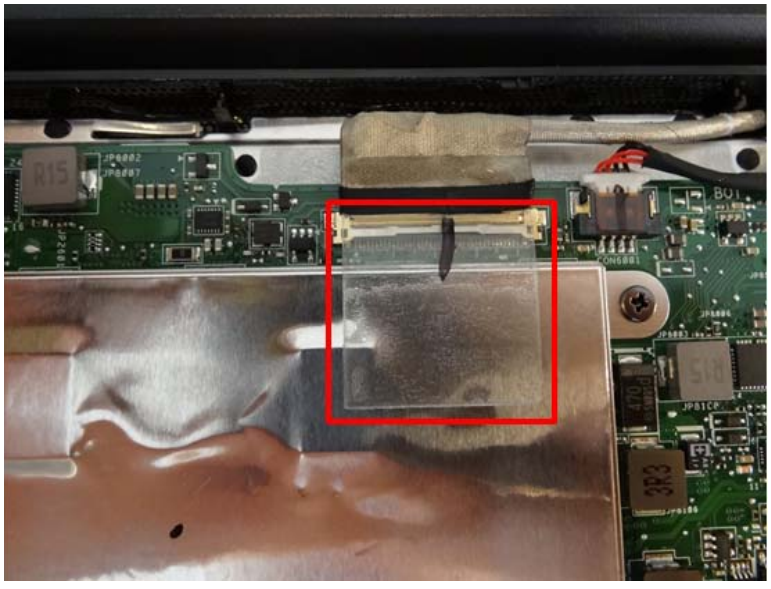


Figure 3-106. Thermal Module

Replacing the RTC Battery

1. Replace the RTC battery and connect the cable to motherboard.
(Note: replace the battery per WEEE directive where Annex VII)

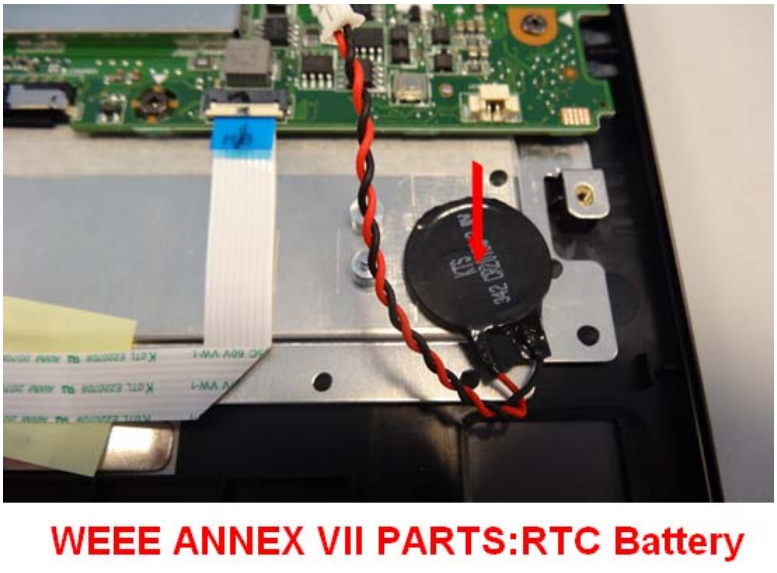


Figure 3-107. RTC Battery

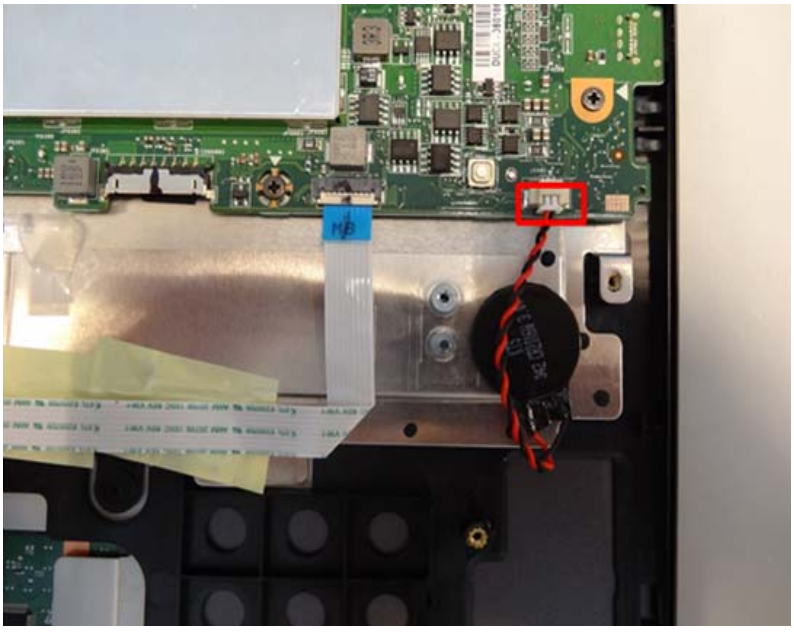


Figure 3-108. RTC Battery

1. Insert the WLAN card into the socket of main board.

Figure 3-109. WLAN Card

2. Consolidate WLAN card with 1 screw.

Figure 3-110. WLAN Card

Table 3-25. Screw

Step	Screw	Quantity	Screw Type	Torque/kgfcm
WLAN Card Assembly	SCREW M2*4L (K) B-ZN #1 NY	1		2.0+/-0.2

3. Connect the antenna cables to WLAN Card.

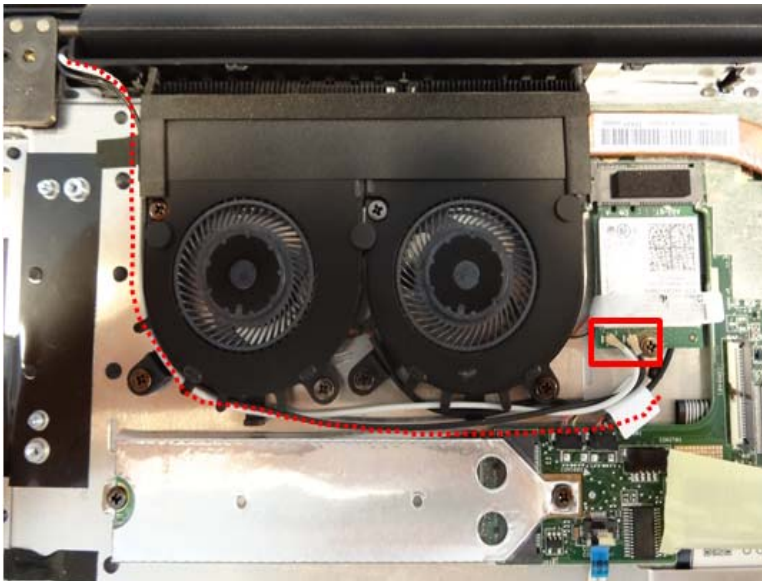


Figure 3-111. WLAN Card

4. Adhere 1 piece of acetate fabric on WLAN card.

Figure 3-112. WLAN Card

Replacing the Speaker

1. Replace the speaker and fix 4 screws.

Figure 3-113. Speaker

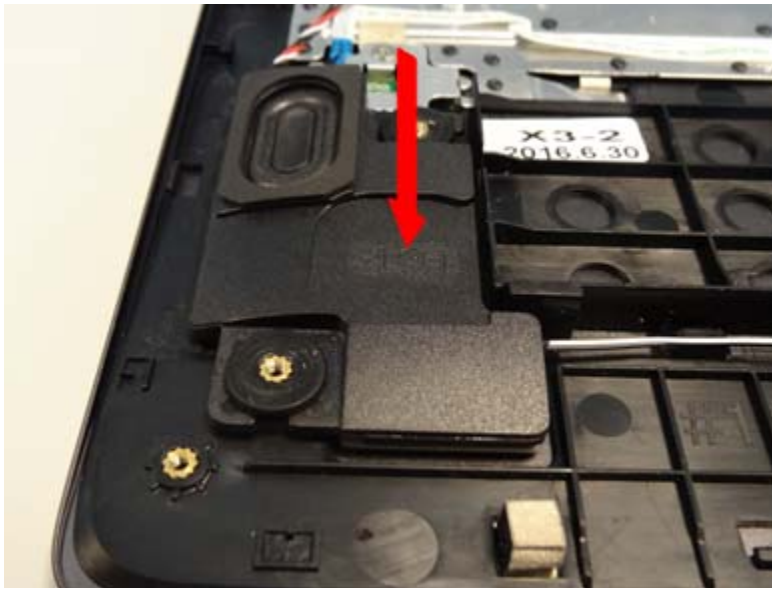


Figure 3-114. Speaker

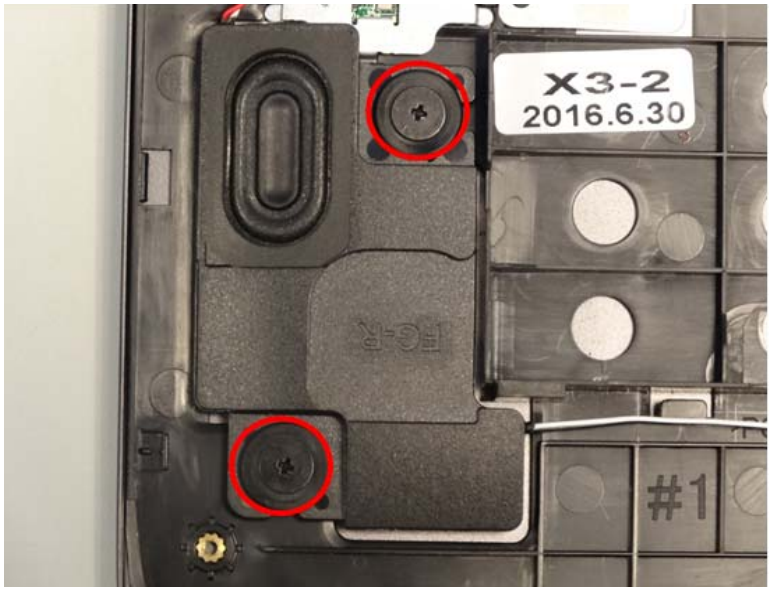


Figure 3-115. Speaker

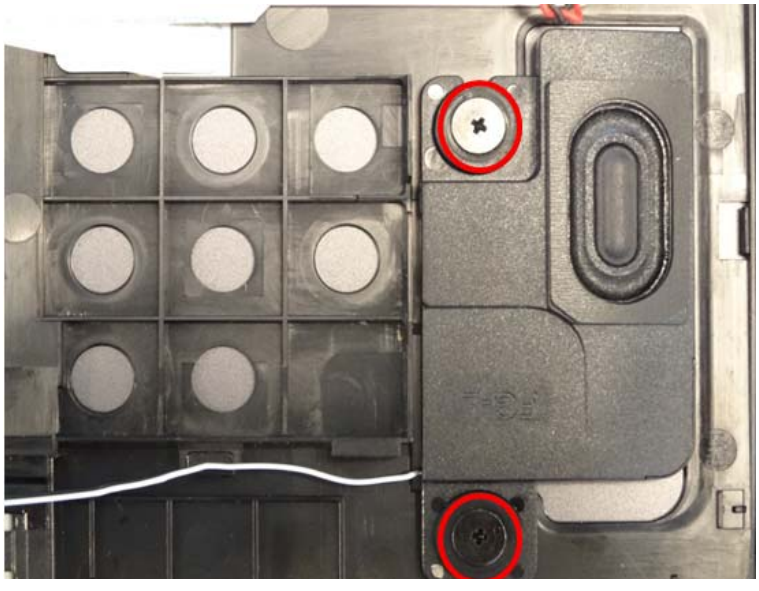


Figure 3-116. Speaker

Table 3-26. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Speaker Assembly	SCREW M2*2L (K) B-ZN #1 NY	4		2.0+/-0.2

2. Connect the speaker cable to the motherboard and make the cable in its slot.

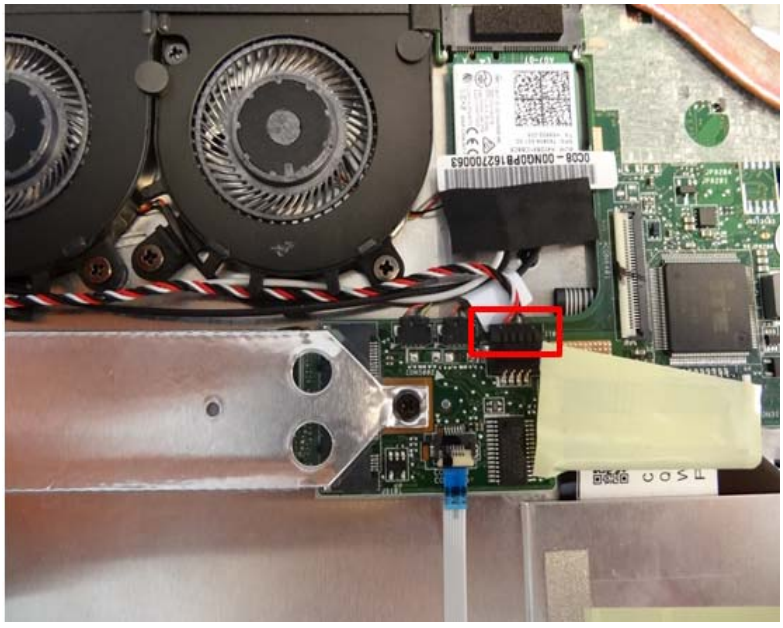


Figure 3-117. Speaker

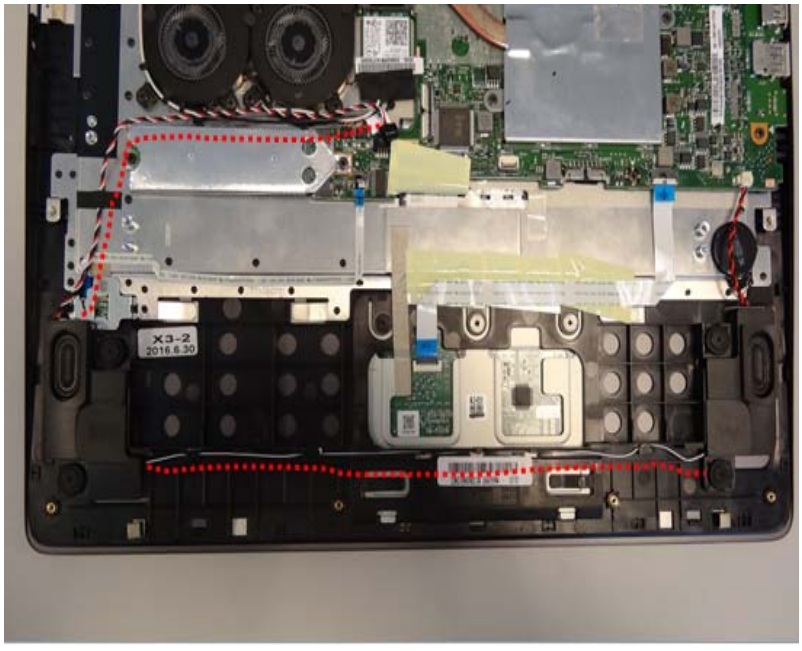


Figure 3-118. Speaker

1. Replace the IO board and fix 2 screws.

(Note: replace the PCB its area >10cm^2 per WEEE directive where Annex VII)

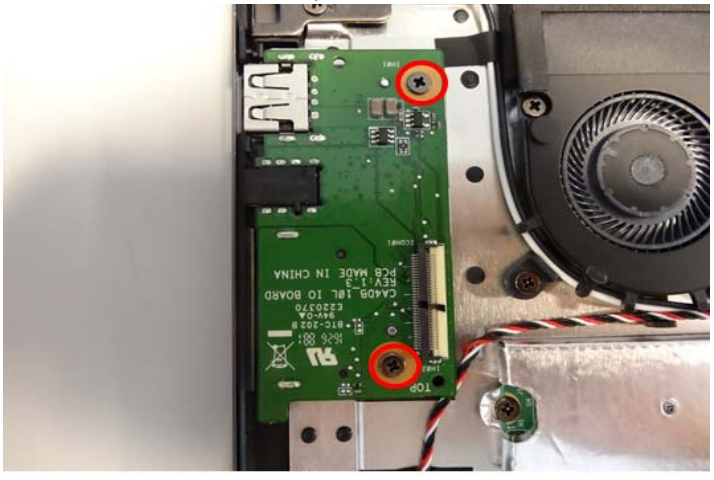


Figure 3-119. IO Board

Table 3-27. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
IO Board Assembly	SCREW M2*4L (K) B-ZN #1 NY	2		2.0+/-0.2

2. Connect the IO board FFC to the IO board and motherboard.

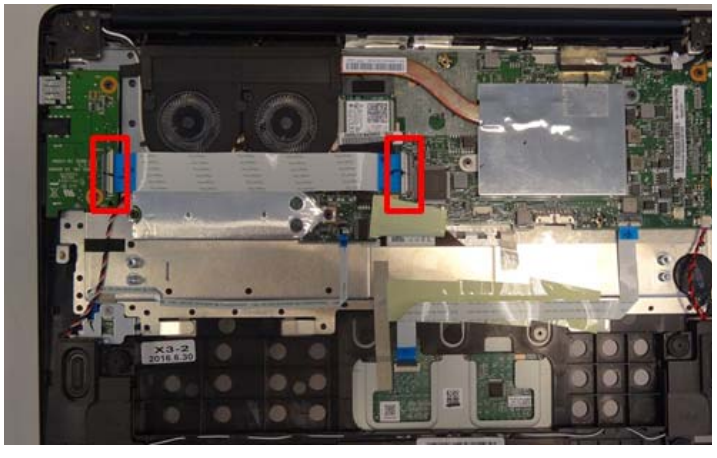


Figure 3-120. IO Board

1. Connect the battery cable and stick the Mylar.

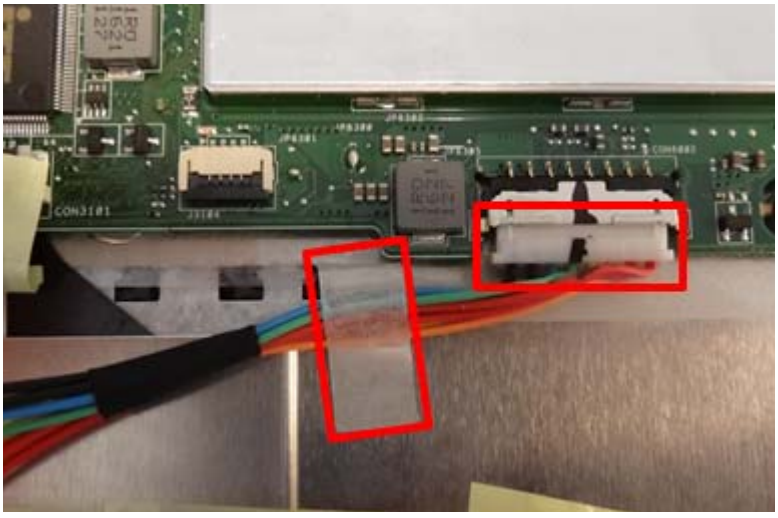


Figure 3-121. Battery

2. Position the battery on top case and fix 2 screws.

(Note: replace the battery per WEEE directive where Annex VII)

Figure 3-122. Battery

Table 3-28. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Battery Assembly	SCREW M2*4L (K) B-NI,NY	2		2.0+/-0.2

Replacing the Bottom Cover

1. Position the Bottom cover on top case.Press the four sides to fix it.

Figure 3-123. Bottom Cover

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Figure 3-124. Bottom Cover

2. Consolidate bottom cover with 5 screws and 4 screws

Figure 3-125. Bottom Cover

Table 3-29. Screws

Step	Screw	Quantity	Screw Type	Torque/kgfcm
Bottom Cover Assembly	SCREW M2*4L(K,D4.5) SW B-NI,NY	4		2.0+/-0.2
	SCREW M2*6.5L(K,D4.5) SW B-NI,NY	5		2.0+/-0.2

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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.

Table 4-1. Common Problems

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

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

Power On Issues

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

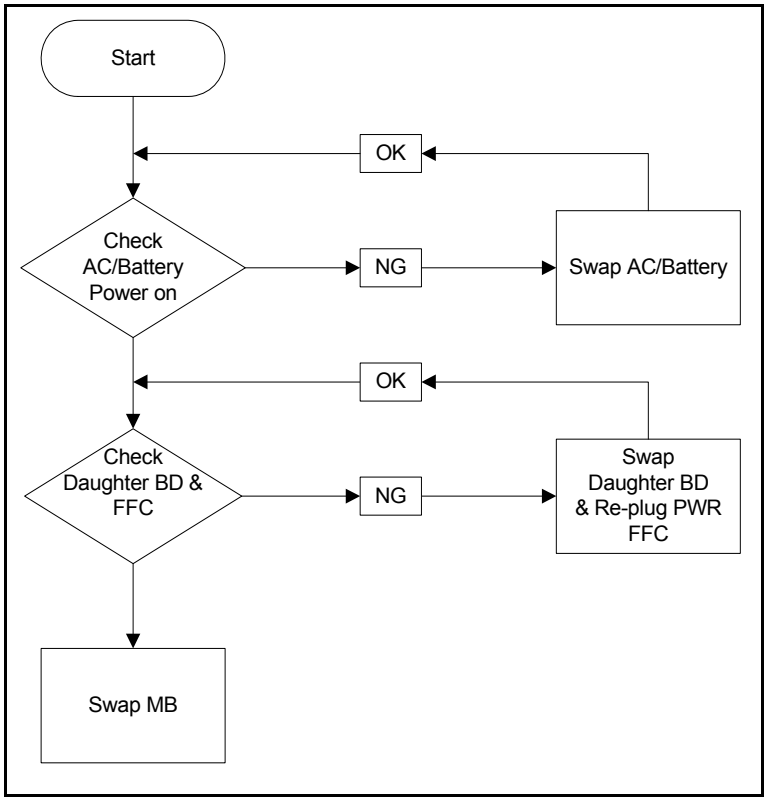


Figure 4-1. Power On Issue

Please wait for 3 min. after removing all power (AC adapter and Battery), then re-insert to try power on.

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

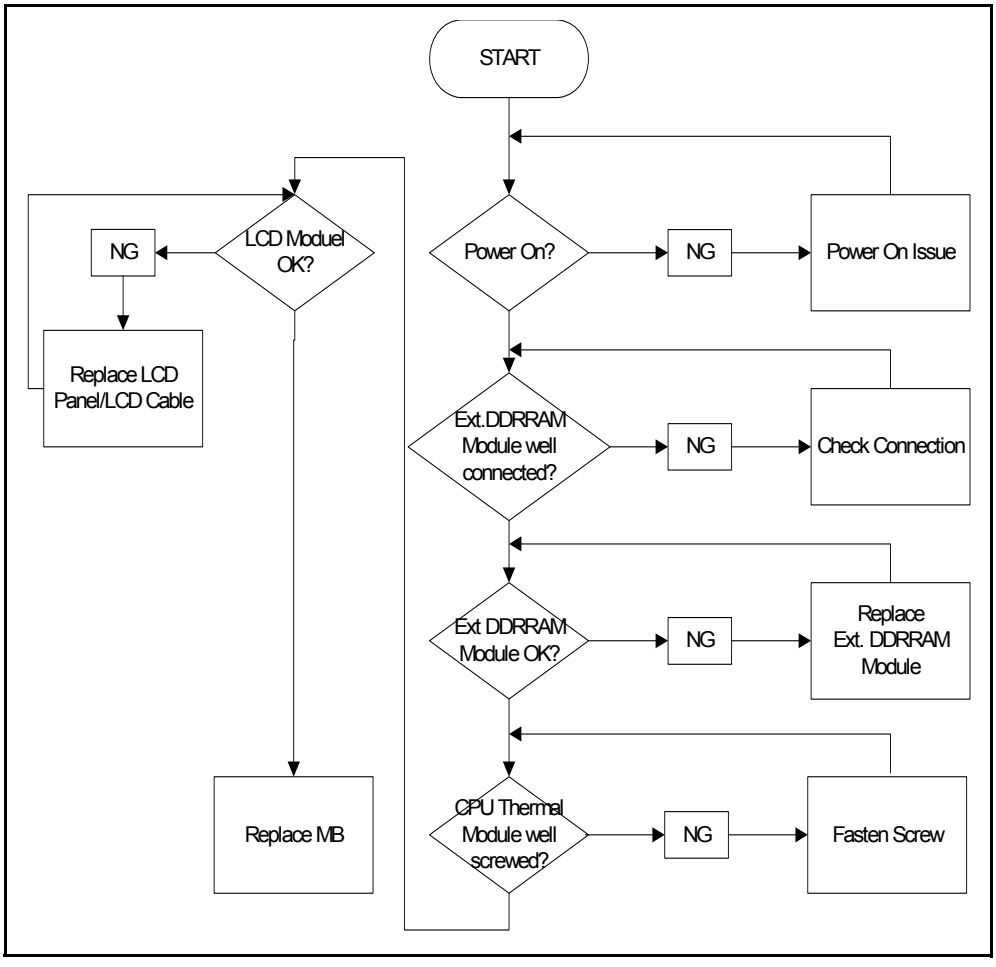


Figure 4-2. No Display Issue

No POST or Video

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

1. Make sure that internal display is selected. 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.
8. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
9. Re-set the memory modules.
10. Remove the drives (refer to Disassembly Process).
11. If the Issue is still not resolved, refer to Online Support Information.

Abnormal Video

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

1. Boot the computer.
   - If permanent vertical/horizontal lines or dark spots appear in the same location, the LCD is faulty and should be replaced. Refer to Disassembly Process.
   - 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 Disassembly Process.

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

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

LCD Failure

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

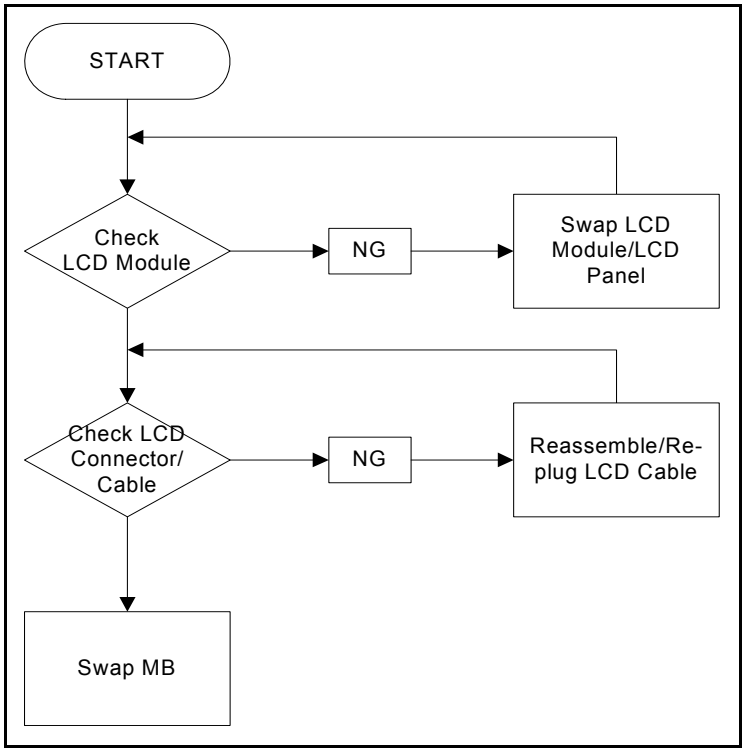


Figure 4-3. LCD Failure

Keyboard Failure

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

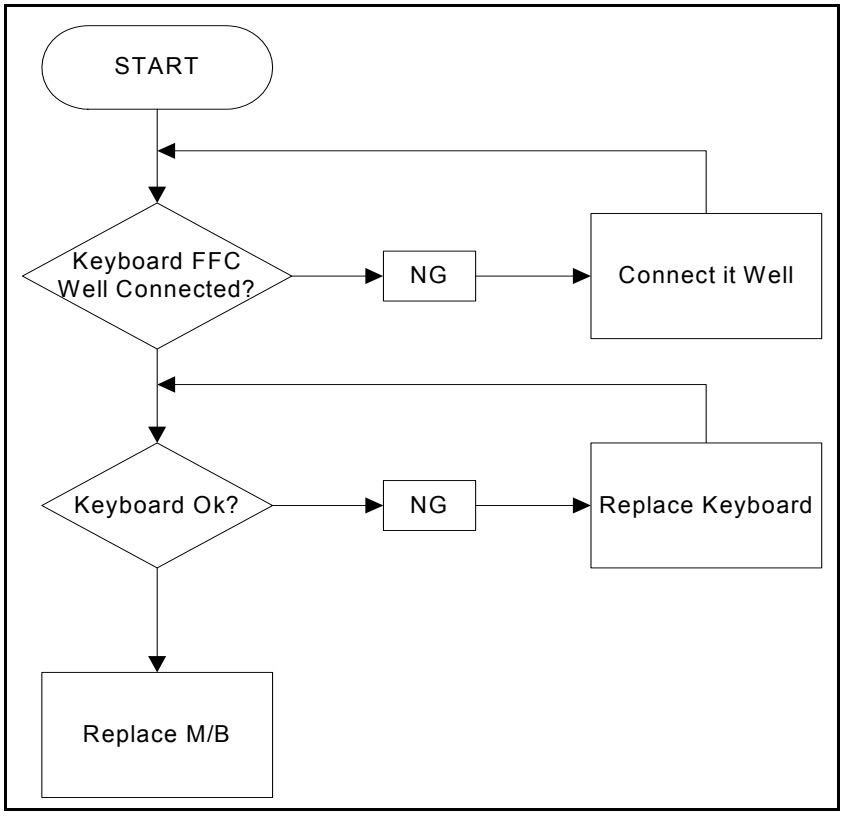


Figure 4-4. Keyboard Failure

Touchpad Failure

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

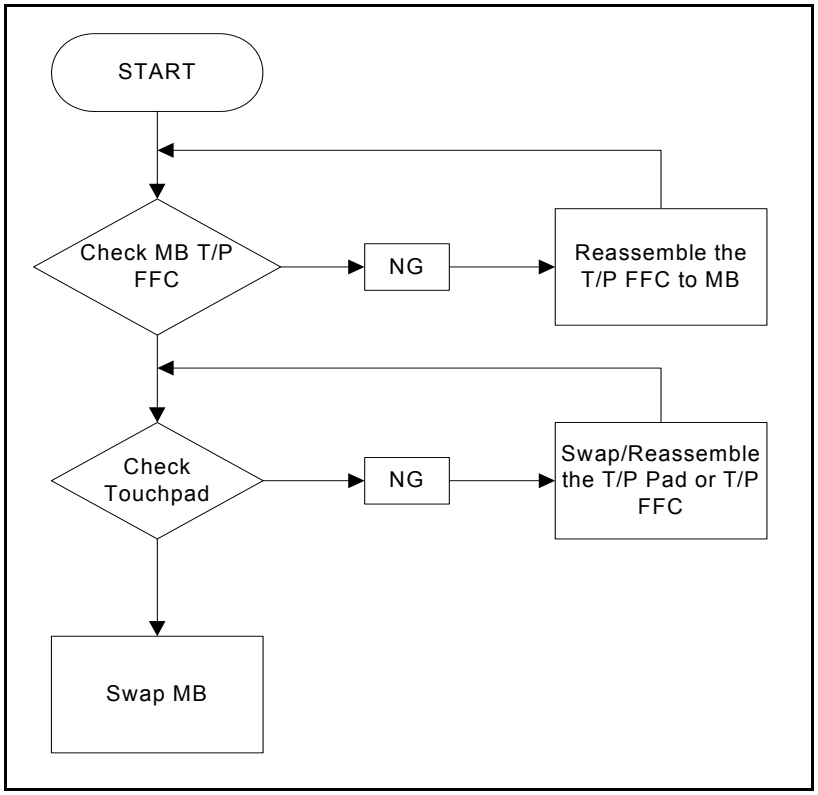


Figure 4-5. Touchpad Failure

Internal & External Speaker Failure

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

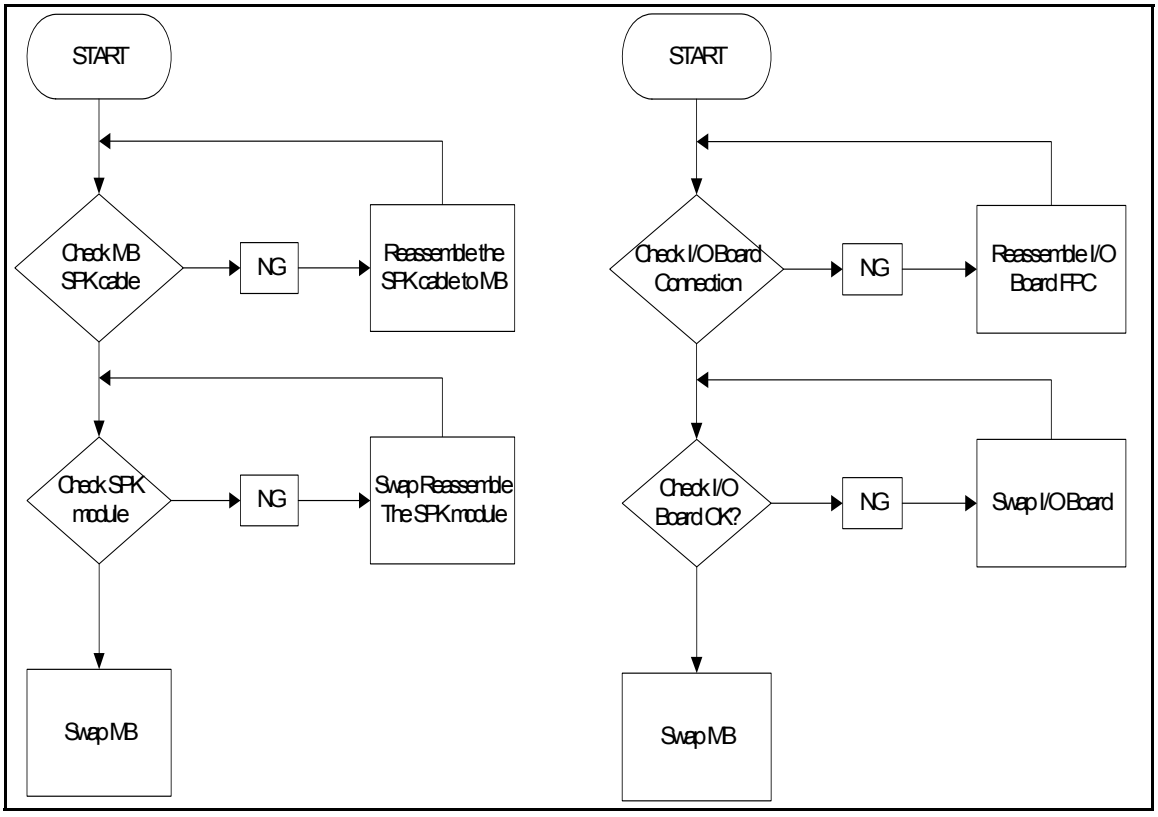


Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following, one at a time.

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

- Click Mixer to verify that other audio applications are set to 50 and not muted.

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

NOTE:

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

7. Select Speakers and click Configure to start Speaker Setup. Follow the on-screen prompts to configure the speakers.
8. Remove any recently installed hardware or software.
9. Restore system and file settings from a known good date using System Restore.
10. If the issue is remains, repeat step 9, selecting an earlier time and date.
11. Reinstall the Operating System.
12. Connect a set of earphones or external speakers. If these function correctly, the internal speaker or I/O board may be defective. If they do not function correctly, the mother board may be defective or damaged.
13. If the Issue is still not resolved, refer to Online Support Information.

Microphone Failure

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

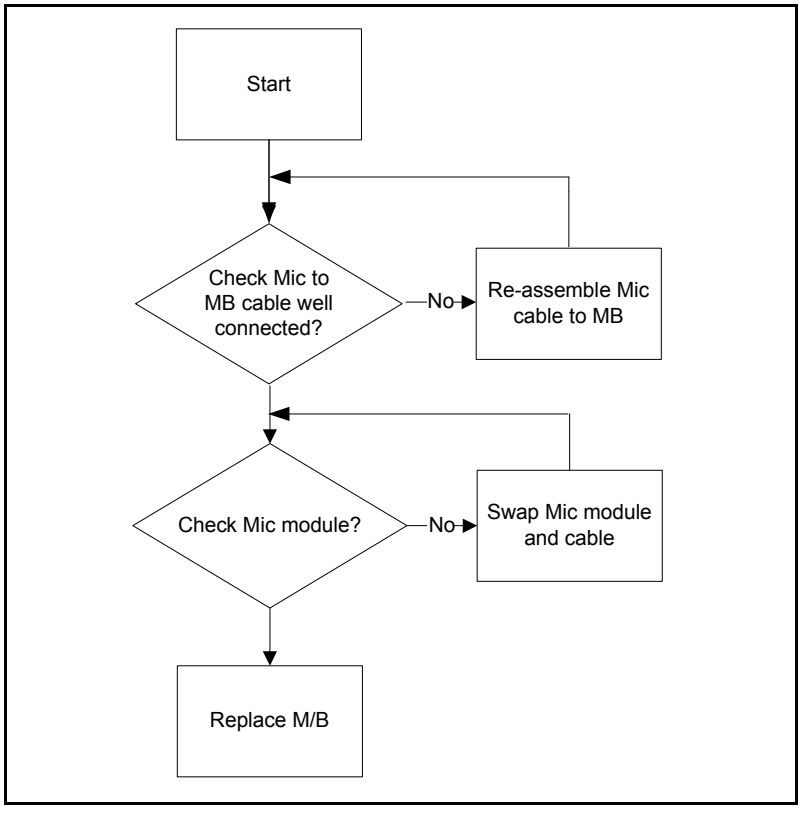


Figure 4-7. Microphone Failure

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

USB Failure

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

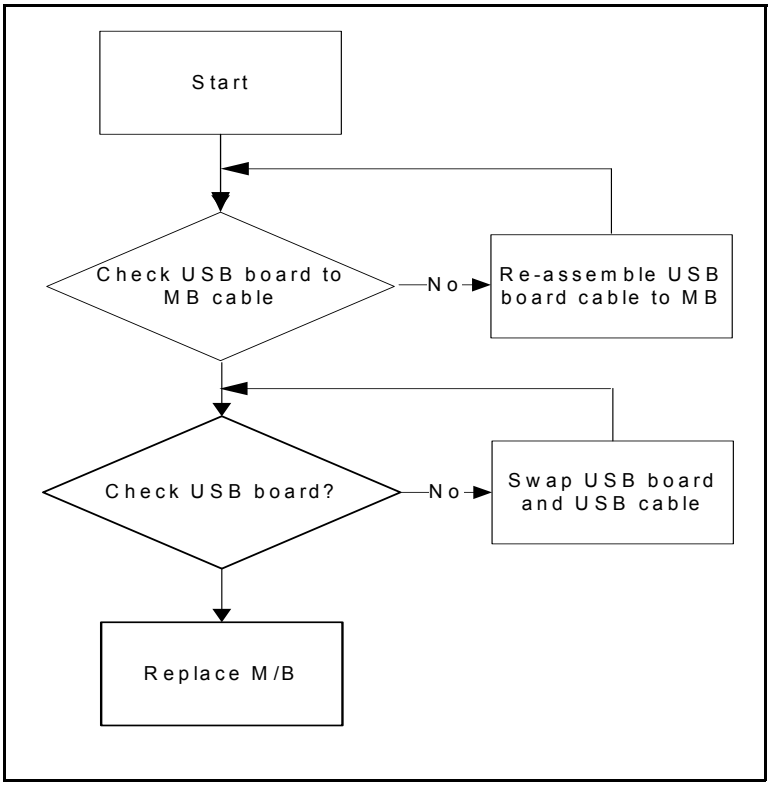


Figure 4-8. USB Failure.

WLAN Failure

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

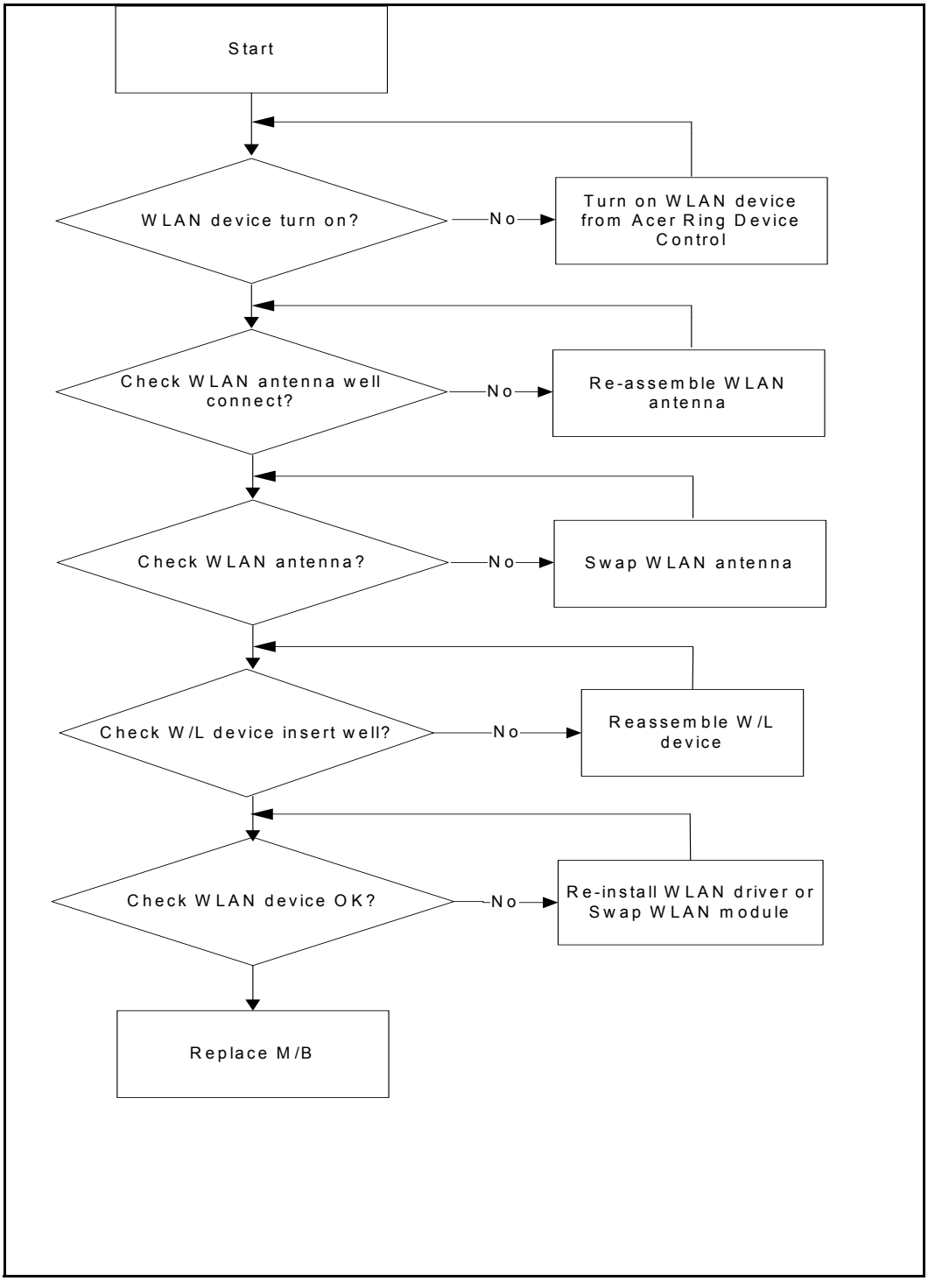


Figure 4-9. WLAN Failure

Card Reader Failure

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

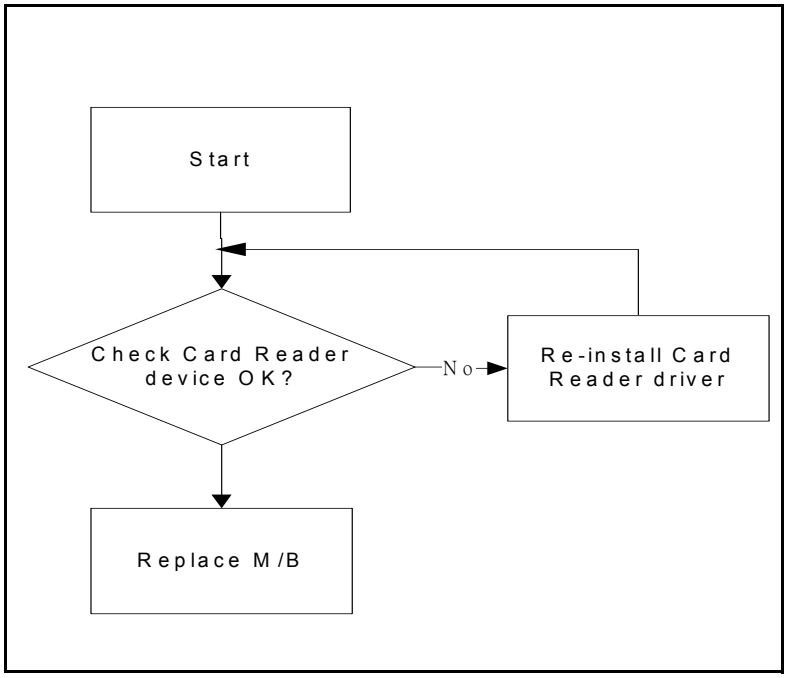


Figure 4-10. Card Reader Failure

The Card Reader device will disappear in device manager for power saving if there is no card inserted. Try to insert card, then the Card Reader appear in device manager.

Thermal Unit Failure

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

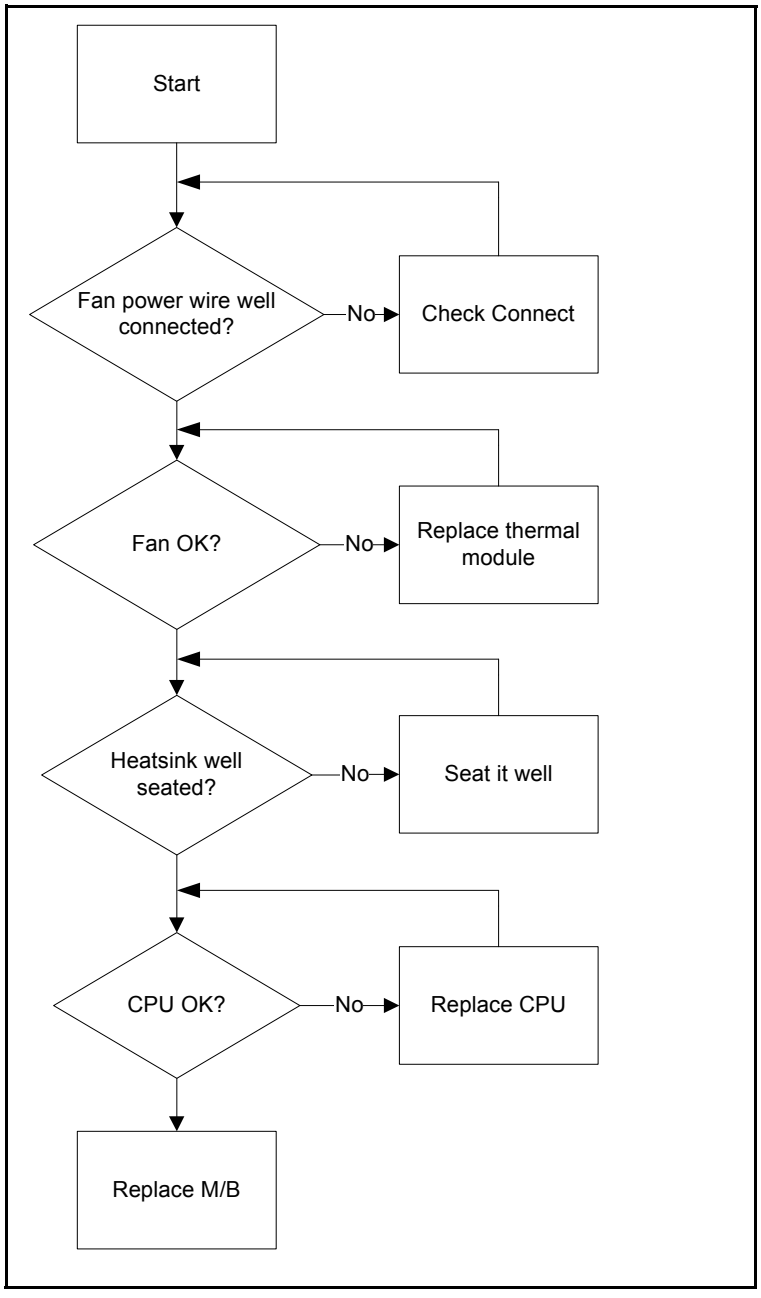


Figure 4-11. Thermal Unit Failure

HDMI Failure

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

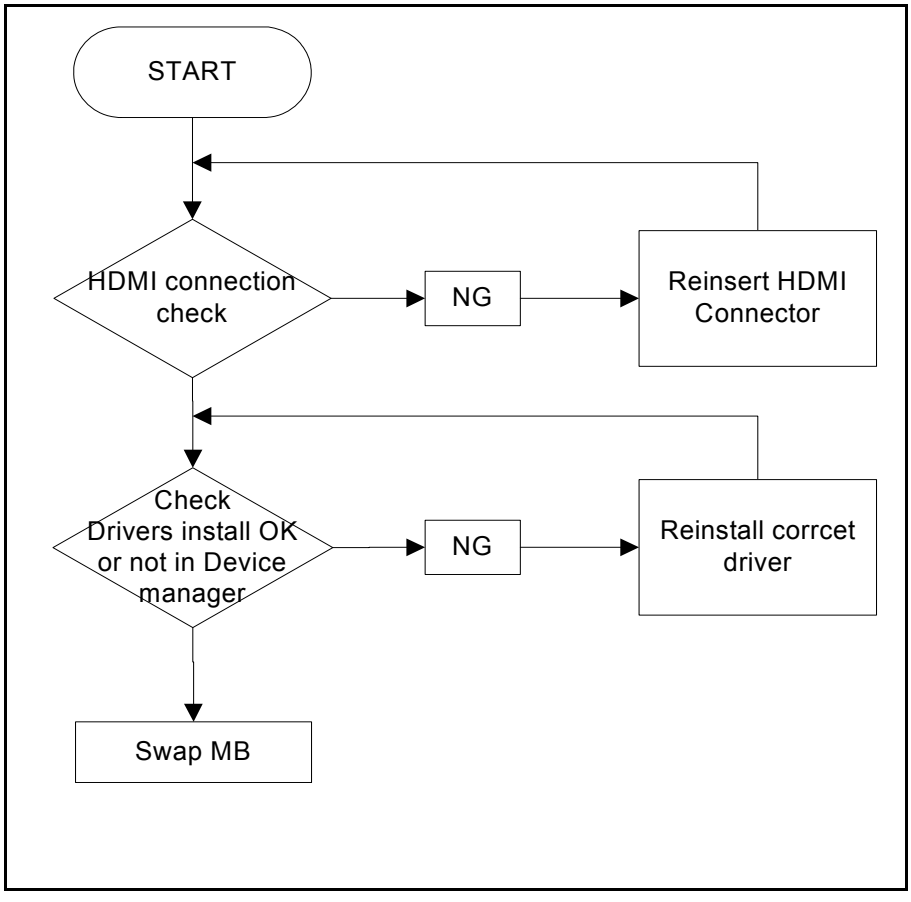


Figure 4-12. HDMI Failure

Other Functions Failure

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

Intermittent Problems

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

When analyzing an intermittent problem, perform the following:

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

Undetermined Problems

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

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

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

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

1. Remove power from the computer.
2. Visually check the components for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Battery pack
   - Hard disk drive
   - DIMM
   - 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

Table 4-2. 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

Table 4-3. SEC Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
SEC_SYSTEM_POWER_ON	SEC	1	CPU power on and switch to Protected mode
SEC_BEFORE_MICROCODE_PATCH	SEC	2	Patching CPU microcode
SEC_AFTER_MICROCODE_PATCH	SEC	3	Setup Cache as RAM
SEC_ACCESS_CSR*	SEC	4	PCIE MMIO Base Address initial
SEC_GENERIC_MSRINIT*	SEC	5	CPU Generic MSR initialization
SEC_CPU_SPEEDCFG*	SEC	6	Setup CPU speed

Table 4-3. SEC Phase POST Code Table (Continued)

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
SEC_SETUP_CAR_OK	SEC	7	Cache as RAM test
SEC_FORCE_MAX_RATIO*	SEC	8	Tune CPU frequency ratio to maximum level
SEC_GO_TO_SECSTARTUP	SEC	9	Setup BIOS ROM cache
SEC_GO_TO_PEICORE	SEC	0A	Enter Boot Firmware Volume
* 3rd party relate functions – Platform dependence.			

Table 4-4. 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

Table 4-4. PEI Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
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
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.			

Table 4-5. 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_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

Table 4-5. DXE Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
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
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.			

Table 4-6. BDS Phase POST Code Table

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

Table 4-6. BDS Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_CONNECT_STD_ERR	BDS	18	Error report device initialization
BDS_CONNECT_USB_HC	BDS	19	USB host controller initialization
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
BDS_EXIT_BOOT_SERVICES*	BDS	32	Send END of POST Message to ME via HECI

Table 4-6. BDS Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
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.
* 3rd party relate functions – Platform dependence.			

Table 4-7. S3 Function POST Code Table

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
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

Table 4-8. ACPI Function POST Table

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

Table 4-9. SMM Functions POST Code Table

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

Table 4-10. InsydeH2ODDT Debugger POST Code Table

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

Table 4-10. InsydeH2ODDT Debugger POST Code Table (Continued)

Functionality Name (Include\ PostCode.h)	Post Code	Description
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

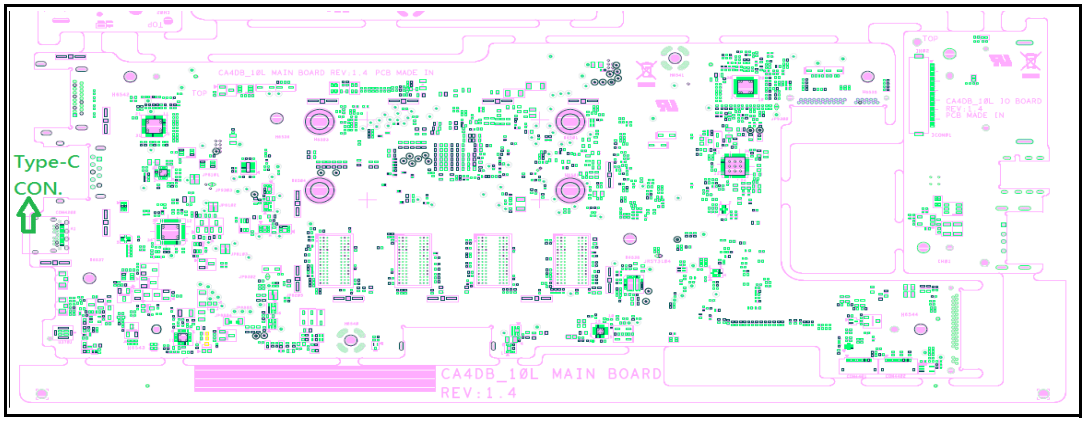


Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Connector	Description
1	CON4200	Type-C CON.

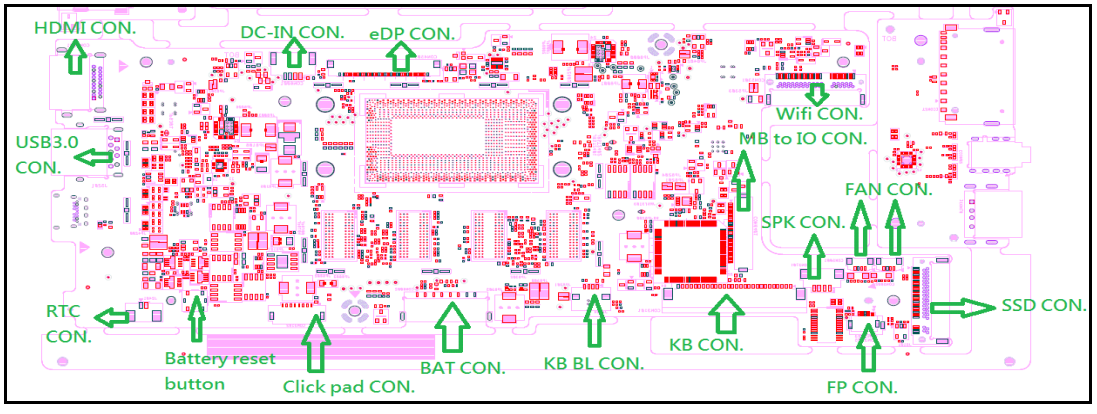


Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

Item	Connector	Description
1	SW6003	Battert reset button
2	CON4801	HDMI CON.
3	J5201	USB3.0 CON.
4	CON3701	SPK CON.

Table 5-2. Mainboard Bottom

Item	Connector	Description
5	J2401	RTC CON.
6	CON5001&CON5002	FAN CON.
7	CON6002	BAT CON.
8	CON6001	DC-IN CON.
9	J3104	KB BL CON.
10	CON3102	Click pad CON.
11	CON3103/CON3105	FP CON.
12	CON3101	KB CON.
13	CON6401	MB to IO CON.
14	CON4501	eDP CON.
15	J5101	SSD CON.
16	CON5301	Wifi CON

Clearing Password Check and BIOS Recovery

This section provides procedures for:

Clearing Passwords

BIOS Recovery.

This Machine has one Hardware Open Gap on the main board for clearing password check and one Hotkey for enabling BIOS Recovery.

Clearing Password Check

NOTE:

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

Steps for Clearing BIOS Password Check

If users set BIOS Passwords (Supervisor Password and/or User Password) for a security reason, BIOS will ask the password during systems POST or when system enters the BIOS Setup menu. If it is necessary to bypass the password check, short the HW Gap to clear the password by performing the following steps:

1. Remove power from the system.
2. Remove HDD, AC and Battery.
3. Disconnect the RTC Battery (Figure 5-3).

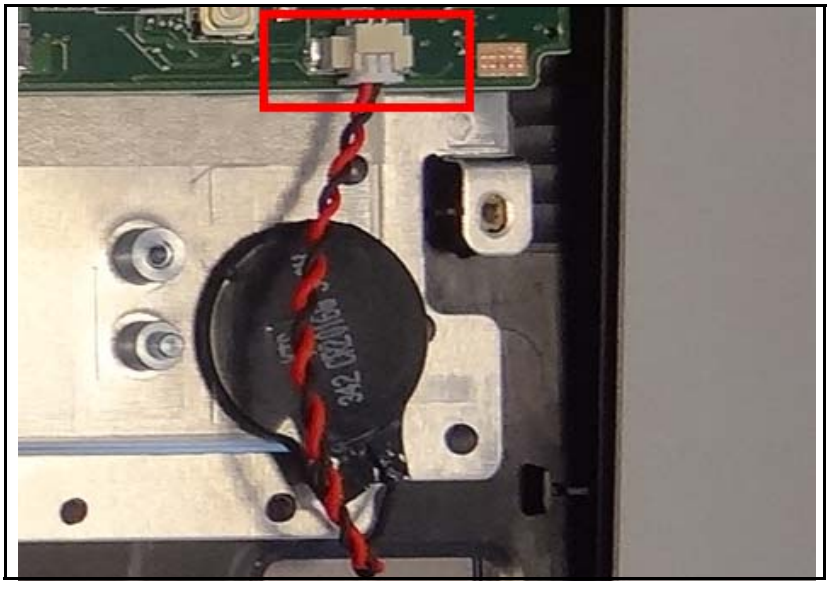


Figure 5-3. RTC Battery

4. Locate the JRST2401# jumper.
5. Use an electric conductivity tool to short the two points of the JRST2401# jumper.
6. Plug in AC, keeping the JRST2401# jumper shorted.

7. Press *Power Button* until BIOS POST is finished, then remove the conductivity tool from the JRST2401# jumper.
8. Restart the system. Press ***F2*** to enter BIOS Setup menu.
9. If there is no Password request, BIOS Password is cleared.
10. If a password is requested, repeat Steps 1 through 9.

Clear CMOS Jumper

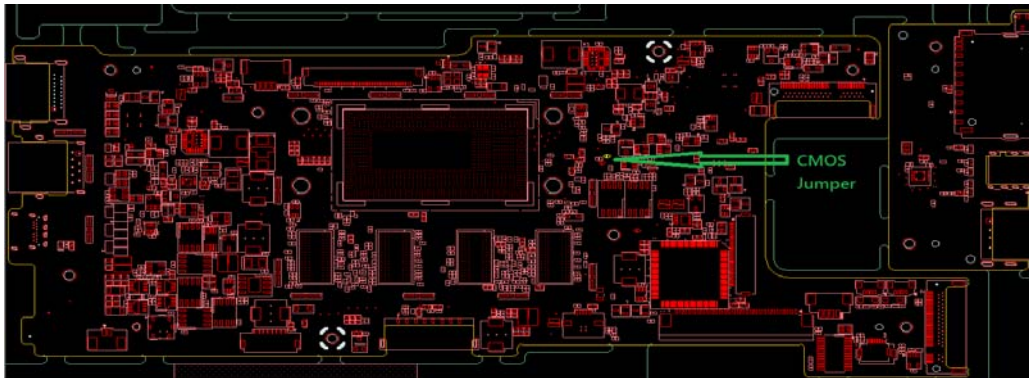


Figure 5-4. CMOS Jumper

Table 5-3. CMOS Jumper

Item	Description
JRST2401	CMOS Jumper

BIOS Recovery by Crisis Disk

BIOS Recovery Boot Block

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

BIOS Recovery Hotkey

A function hotkey- **<*Fn+Esc*>**, used to enable the BIOS Recovery process when system is powered On during BIOS POST. To use this function, it is strongly recommended to have the AC adapter and Battery present. If this function is enabled, the system will force the BIOS to enter a special BIOS block, called Boot Block.

Steps for BIOS Recovery from USB Storage

NOTE:

Prior to performing the recovery, prepare a Crisis USB key. The Crisis USB key is created by executing the Crisis Disk program in another system with Windows 10 OS.

To Create a Crisis USB key, perform the following:

1. Copy BIOS file to USB flash disk and rename it to CA4DBX64.fd (flash disk must format to FAT32 format).
2. Power off the system. Plug-in the USB flash disk, and insert AC adapter.
3. Holding down **<*Fn+Esc*>** key, and power on the system from off state
4. After system power on, release Fn + ESC key, the system will start recovering the BIOS automatically, and system will shutdown after recovering. (Notice: System will be No display when recovering, it's normal.)
5. When CRISIS is complete, the system auto restarts with a workable BIOS.
6. Update the latest version BIOS for this machine by regular BIOS flashing process.

CHAPTER 6

FRU List

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the **Swift SF314-51** Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE:

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

NOTE:

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

Exploded Diagrams

Main Assembly

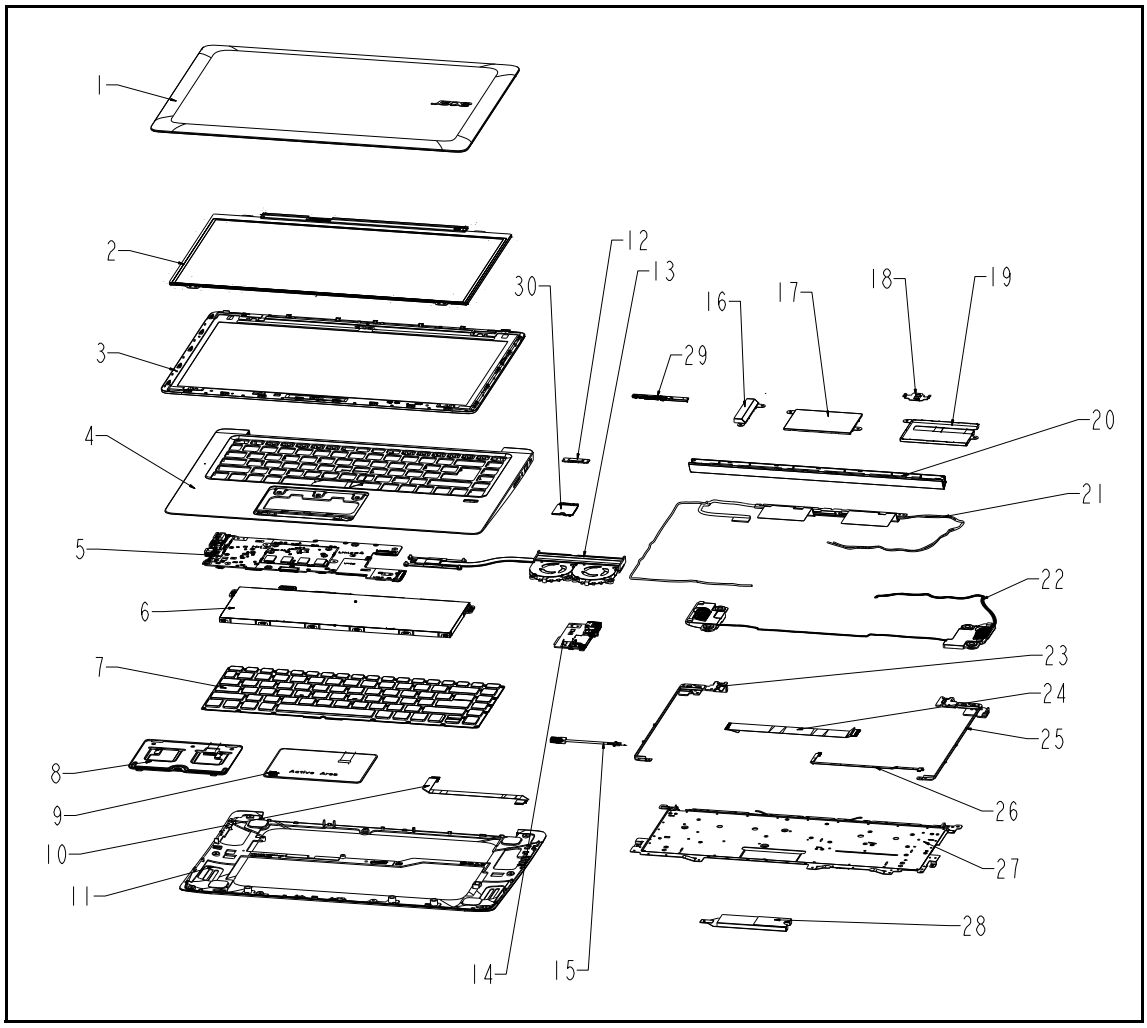


Figure 6-1. Main Assembly Exploded Diagram

Table 6-1. Main Assembly Exploded Diagram

Item	Description	Item	Description
1	M34DA(PB) 1A LCD COVER ASSY	16	CA4DB(00) IO TOP SHIELDING
2	LCD TFT 14.0’ FHD LED	17	CA4DB(00) MB T SHIELDING ASSY
3	M34DA(00) 1A LCD BEZEL ASSY	18	CA4DB(00) FP SUP BKT
4	M34DA(PB) 1A TOP CASE ASSY	19	CA4DB(00) MB B SHIELDING ASSY
5	CA4DB MAIN_BD._MODULE/AR	20	CA4DB(00) 1A HINGE CAP ASSY

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

Item	Description	Item	Description
6	P5HCJ PAN 3220 4S1P	21	SPEAKER MODULE CA4DB(00)
7	AR KB UK CA4DB 297MM(A1)	22	SPEAKER MODULE CA4DB(00)
8	CA4DB(00) CLICKPAD BRKT ASSY	23	CA4DB(00) HINGE L
9	CLICKPAD CA4DB 105*76.7mm	24	SUB BD FFC 34P 0.5mm CA4DB
10	CLICK PAD FFC 8P 1.0 mm CA4DB	25	CA4DB(00) HINGE R
11	M34DA(PB)-1A BOTTOM CASE ASSY	26	FP FFC 6P 0.5mm CA4DB
12	FINGER PRINTER SENSOR	27	CA4DB(00) FP SUP BKT
13	CA4DB(00) UMA THM MOD ASSY	28	SSD M.2 128GB FW:30000P10
14	CA4DB 10L IO	29	CMOS CAMERA 1M HD
15	DC IN CABLE CA4DB	30	WLAN+BT M2 AC 2X2 7265 M2

FRU List

Table 6-2. FRU List

Category	Acer Description	Acer Part No
ADAPTER		
	Adapter LITE-ON 45W 19V 1.1x3.0x7.5 PA-1450-26AC LF black with acer logo	KP.04503.004
	Adapter Chicony Power 45W 19V 1.1x3.0x7.5 A045R016L LF Black with acer logo	KP.0450H.001
	Adapter DELTA 45W 19V 1.1x3.0x7.5 ADP-45HE BB LF Black with acer logo	KP.04501.003
BATTERY		
	Battery SANYO AC14B (5.5mm) Prismatic 4S1P SANYO 4 cell 3220mAh Main COMMON (JPN cell, lower capacity)	KT.00403.032
	Battery SANYO AC14B Prismatic 4S1P SANYO 4 cell 3220mAh Main COMMON (KT.00403.032 add BIS logo)	KT.00403.040
	Battery LGC AC14B (5.5mm) Prismatic 4S1P LGC 4 cell 3220mAh Main COMMON (KT.0040G.004 add Acer logo)	KT.0040G.006
BOARD		
	Foxconn 3rd WiFi 2x2 AC+ BT M.2 QCA NFA344A MU-MIMO	NC.23611.030
	Liteon 3rd WiFi 2x2 AC+ BT M.2 QCA NFA344A MU-MIMO	NC.23611.02Z
	CA4DB IO_BD.//PEGATRON	55.VDFN5.001
CABLE		
	EDP CABLE CA4DB(00)//HIGH-TEK/0CTPG016007N	50.VDFN5.001
	EDP CABLE CA4DB(00)//HONGLIN/250-31201	50.VDFN5.001

Table 6-2. FRU List (Continued)

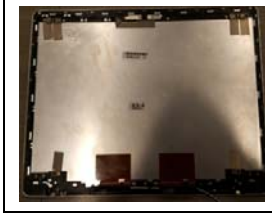
Category	Acer Description	Acer Part No
	FP FFC 6P 0.5mm 329.5mm CA4DB//JINLONG/JA2061H167016	50.VDFN5.002
	FP FFC 6P 0.5mm CA4DB//CVILUX/FFCE06091D16Q0090-NH	50.VDFN5.002
	CLICK PAD FFC 8P 1.0mm CA4DB//JINLONG/JA3081H167015	50.VDFN5.003
	CLICK PAD FFC 8P 1.0mm CA4DB//CVILUX/FFCC08141C16Q0094-NH	50.VDFN5.003
	SUB FFC 34P 0.5mm CA4DB//JINLONG/JA2341H167040	50.VDFN5.004
	SUB BD FFC 34P 0.5mm CA4DB//CVILUX/FFCE34091B16Q0169-NH	50.VDFN5.004
	DC IN CABLE CA4DB//SIMULA/CB2A5B-3200-1YF	50.VDFN5.005
	DC IN CABLE CA4DB//MEC/70-5919-300HF	50.VDFN5.005
	WLAN ANTENNA MAIN+AUX CA4DB//WNC/81EAAL15.GET	50.VDFN5.006
CASE/COVER/BRACKET ASSEMBLY		
	M34DA(00) 1A LCD BEZEL ASSY//CQHARDWARE	60.GKKN5.001
	M34DA(00) 1B LCD BEZEL ASSY//CQHARDWARE	60.GKBN5.001
	M34DA(PB) 1A LCD COVER ASSY//AOJIE	60.GKKN5.002
	M34DA(PB) 1B LCD COVER ASSY//AOJIE	60.GKBN5.002

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
	M34DA(PB)-1A BOTTOM CASE ASSY//AOJIE	60.GKKN5.003
	M34DA(PB)-1B BOTTOM CASE ASSY//AOJIE	60.GKBN5.003
	CA4DB(00) HINGE R//LIDON	33.VDFN5.001
	CA4DB(00) HINGE R//LIAN HONG	33.VDFN5.001
	CA4DB(00) HINGE L//LIDON	33.VDFN5.002
	CA4DB(00) HINGE L//LIAN HONG	33.VDFN5.002
	CA4DB(00) 1A HINGE CAP ASSY//KAICHUAN	42.VDFN5.001
	CA4DB(00) FP SUP BKT//KINGYA	33.VDFN5.003
SSD		
	Flash Disk HYNIX SSD NAND 128GB HFS128G39TND-N210A LF+HF	KN.1280G.003
	Flash Disk LITE-ON SSD NAND 128GB Toshiba 15nm M.2 2280 128GB CV3-8D128 LF+HF	KN.1280L.016
	Flash Disk HYNIX SSD NAND 256GB HFS256G39TND-N210A LF+HF	KN.2560G.022
	Flash Disk LITE-ON SSD NAND 256GB Toshiba 15nm M.2 2280 256GB CV3-8D256 LF+HF	KN.2560L.015
	Flash Disk HYNIX SSD NAND 512GB Hynix SC308 16nm M.2 2280 512GB LF+HF	KN.5120G.028
	Flash Disk LITE-ON SSD NAND 512GB Toshiba 15nm M.2 2280 512GB CV3-8D512 LF+HF	KN.5120L.009

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
KB ASSEMBLY		
	M34DA-1A K/B_(UI)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.001
	M34DA-1A K/B_(FR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.002
	M34DA-1A K/B_(AR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.003
	M34DA-1A K/B_(CF)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.004
	M34DA-1A K/B_(WB)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.005
	M34DA-1A K/B_(ND)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.006
	M34DA-1A K/B_(LA)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.007
	M34DA-1A K/B_(GR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.008
	M34DA-1A K/B_(SP)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.009
	M34DA-1A K/B_(A1)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.010
	M34DA-1A K/B_(KO)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.011
	M34DA-1A K/B_(JP)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.012
	M34DA-1A K/B_(BR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.013
	M34DA-1A K/B_(E2)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.014
	M34DA-1A K/B_(RU)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.015
	M34DA-1A K/B_(BG)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.016
	M34DA-1A K/B_(GE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.017
	M34DA-1A K/B_(NW)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.018
	M34DA-1A K/B_(TW)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.019

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
	M34DA-1A K/B_(TU)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.020
	M34DA-1A K/B_(SD)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.021
	M34DA-1A K/B_(DE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.022
	M34DA-1A K/B_(HU)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.023
	M34DA-1A K/B_(SF)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.024
	M34DA-1A K/B_(UK)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.025
	M34DA-1A K/B_(BE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.026
	M34DA-1A K/B_(IT)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.027
	M34DA-1A K/B_(PO)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.028
	M34DA-1A K/B_(HE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.029
	M34DA-1A K/B_(TA)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKKN5.030
	M34DA-1B K/B_(UI)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.001
	M34DA-1B K/B_(FR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.002
	M34DA-1B K/B_(AR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.003
	M34DA-1B K/B_(CF)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.004
	M34DA-1B K/B_(WB)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.005
	M34DA-1B K/B_(ND)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.006
	M34DA-1B K/B_(LA)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.007
	M34DA-1B K/B_(GR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.008
	M34DA-1B K/B_(SP)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.009

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
	M34DA-1B K/B_(A1)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.010
	M34DA-1B K/B_(KO)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.011
	M34DA-1B K/B_(JP)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.012
	M34DA-1B K/B_(BR)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.013
	M34DA-1B K/B_(E2)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.014
	M34DA-1B K/B_(RU)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.015
	M34DA-1B K/B_(BG)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.016
	M34DA-1B K/B_(GE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.017
	M34DA-1B K/B_(NW)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.018
	M34DA-1B K/B_(TW)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.019
	M34DA-1B K/B_(TU)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.020
	M34DA-1B K/B_(SD)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.021
	M34DA-1B K/B_(DE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.022
	M34DA-1B K/B_(HU)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.023
	M34DA-1B K/B_(SF)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.024
	M34DA-1B K/B_(UK)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.025
	M34DA-1B K/B_(BE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.026
	M34DA-1B K/B_(IT)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.027
	M34DA-1B K/B_(PO)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.028
	M34DA-1B K/B_(HE)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.029

Table 6-2. FRU List (Continued)

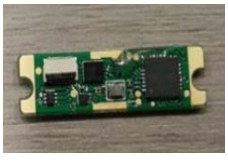
Category	Acer Description	Acer Part No
	M34DA-1B K/B_(TA)_MODULE W/TOPCASE/BRACKET//PEGATRON	6B.GKBN5.030
LCD		
	LED LCD Panel AUO 14' FHD None Glare B140HAN02.1 LF 220nit 25ms 700:1 (eDP1.2) (Value IPS) (3.0mm)	KL.14005.029
	LED LCD Panel CMI 14' FHD None Glare N140HCA-EAB LF 250nit 25ms 700:1 FHD value IPS	KL.1400D.021
	LED LCD Panel AUO 14' WXGA None Glare B140XTN02.E LF 220nit 8ms 400:1 (eDP) new panel for 2015	KL.14005.020
	LED LCD Panel CMI 14' WXGA None Glare N140BGA-EA3 LF 220nit 10ms 500:1 (eDP, 3.0mm Max)	KL.1400D.020
	LED LCD Panel AUO 14' WXGA Glare B140XTK01.0 LF 200nit 8ms 500:1 (eDP) total solution oTP lite	KL.14005.023
FINGER PRINT		
	LTT ETU801 module	NC.22011.002
MAINBOARD		
	CA4DB MB/944338 I5-6200U 2.3G SR2EY/4G //PEGATRON	NB.VDF11.003
	CA4DB MB/944338 I5-6200U 2.3G SR2EY/8G//PEGATRON	NB.VDF11.004
	CA4DB MB/944334 I3-6100U 2.3G SR2EU/4G//PEGATRON	NB.VDF11.001
	CA4DB MB/944334 I3-6100U 2.3G SR2EU/8G//PEGATRON	NB.VDF11.002
	CA4DB MB/944339 I7-6500U 2.5G SR2EZ/4G//PEGATRON	NB.VDF11.005
	CA4DB MB/944339 I7-6500U 2.5G SR2EZ/8G//PEGATRON	NB.VDF11.006

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
THEMERAL MODULE		
	CA4DB(00) UMA THM MOD ASSY//FORCECON	60.VDFN5.004
SPEAKER		
	SPEAKER MODULE CA4DB(00)//FORGRAND/FG-PGT043000	23.VDFN5.001
	SPEAKER MODULE CA4DB(00)//SNC/SNCN-0000027	23.VDFN5.001
CAMERA		
	Camera CHICONY HD Camera CH_OV9728_SPA2087 AOET Unified 2	KS.0HD06.001
	Camera LITEON HD Camera LT_HM1061_RTS5838H AOET Unified 2	KS.0HD05.004
MISCELLANEOUS		
	P4GCR(00) HINGE GASKET//E-POWER	47.VDFN5.001
	P3HCJ SSD AL MYLAR//EASYRUN	47.G8SN5.001
TOUCHPAD		
	M34DA-1A CLICKPAD ASSY(ELAN) w/bracket & mylar//PEGATRON	56.GKKN5.001
	M34DA-1A CLICKPAD ASSY(Synaptics)w/bracket & mylar//PEGATRON	56.GKKN5.002
	M34DA-1B CLICKPAD ASSY(ELAN) w/bracket & mylar//PEGATRON	56.GKBN5.001
	M34DA-1B CLICKPAD ASSY(Synaptics)w/bracket & mylar//PEGATRON	56.GKBN5.002
Power cord		
	POWER CORD 1.0M BLACK 3 PIN JAPAN	27.V5M0U.001
	POWER CORD 1.0M BLACK 3 PIN JAPAN	27.V5M0U.001
	POWER CORD 1.0M BLACK 3 PIN US	27.RN60U.003
	POWER CORD 1.0M BLACK 3 PIN US	27.RN60U.003

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
	POWER CORD 1.0M BLACK 3 PIN US	27.RN60U.003
	POWER CORD 1.0M BLACK 3 PIN UK	27.RN60U.008
	POWER CORD 1.0M BLACK 3 PIN UK	27.RN60U.008
	POWER CORD 1.0M BLACK 3 PIN UK	27.RN60U.008
	POWER CORD 1.0M BLACK 3 PIN EU	27.RN60U.002
	POWER CORD 1.0M BLACK 3 PIN EU	27.RN60U.002
	POWER CORD 1.0M BLACK 3 PIN DANISH	27.RN60U.001
	POWER CORD 1.0M BLACK 3 PIN DANISH	27.RN60U.001
	POWER CORD 1.0M BLACK 3 PIN DANISH	27.RN60U.001
	POWER CORD 1M BLACK 3 PIN ITALY	27.RN60U.005
	POWER CORD 1M BLACK 3 PIN ITALY	27.RN60U.005
	POWER CORD 1M BLACK 3 PIN ITALY	27.RN60U.005
	POWER CORD 1.0M BLACK 3 PIN AF	27.RN60U.007
	POWER CORD 1.0M BLACK 3 PIN AF	27.RN60U.007
	POWER CORD 1.0M BLACK 3 PIN AF	27.RN60U.007
	POWER CORD 1.0M BLACK 3 PIN US-110V (BSMI)	27.V6ZN5.001
	POWER CORD 1.0M BLACK 3 PIN US-110V (BSMI)	27.V6ZN5.001
	POWER CORD 1.0M BLACK 3 PIN US-110V (BSMI)	27.V6ZN5.001
	POWER CORD 1.0M BLACK 3 PIN AU	27.RN60U.009
	POWER CORD 1.0M BLACK 3 PIN AU	27.RN60U.009
	POWER CORD 1.0M BLACK 3 PIN AU	27.RN60U.009
	POWER CORD 1.0M BLACK 3 PIN INDIA	27.V5M0U.002
	POWER CORD 1.0M BLACK 3 PIN INDIA	27.V5M0U.002
	POWER CORD 1.0M BLACK 3 PIN SWISS	27.RN60U.004
	POWER CORD 1.0M BLACK 3 PIN SWISS	27.RN60U.004
	POWER CORD 1.0M BLACK 3 PIN SWISS	27.RN60U.004
	POWER CORD 1.0M BLACK 3 PIN ISRAEL	27.GC2N5.003
	POWER CORD 1.0M BLACK 3 PIN ISRAEL	27.GC2N5.003
	POWER CORD 1.0M BLACK 3 PIN Brazil IMETRO	27.MHMN5.001
	POWER CORD 1.0M BLACK 3 PIN Brazil IMETRO	27.MHMN5.001
	POWER CORD 1.0M BLACK 3 PIN Brazil IMETRO	27.MHMN5.001

Table 6-2. FRU List (Continued)

Category	Acer Description	Acer Part No
	POWER CORD 1.0M BLACK 3 PIN ARGENTINA	27.GC2N5.004
	POWER CORD 1.0M BLACK 3 PIN ARGENTINA	27.GC2N5.004
	POWER CORD 1.0M BLACK 3 PIN ARGENTINA	27.GC2N5.004
	POWER CORD 1.0M BLACK 3 PIN PRC	27.RN60U.006
	POWER CORD 1.0M BLACK 3 PIN PRC	27.RN60U.006
	POWER CORD 1.0M BLACK 3 PIN PRC	27.RN60U.006

Screw List

Table 6-3. Screw List

Category	Description	Acer Part No.
Screw		
	SCREW M2*2.5L(K,D4.5) B-NI,NY//GERLENG/TERESA	86.VDFN5.001
	SCREW M2*4L K B-NI #1 NY//KL D=4.5	86.VDFN5.002
	SCREW M2*6.5L K B-NI #1 NY//KL D=4.5	86.VDFN5.003
	SCREW M2*2L (K) B-ZN #1 NY//GERLENG D=7.0	86.RYNN5.004
	SCREW M2*3L K W-NI #1 NY//KL MACHINE D=4.5 H=0.4	86.Q04N5.009
	SCREW M2*4L (K) B-NI,NY//GL;BLUE	86.B430U.006

CHAPTER 7

Test Compatible Components

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® Windows® 10 environment.

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

Microsoft® Windows® 10 Environment Test

Swift SF314-51

Table 8-1. Swift SF314-51

Vendor	Type	Description	Part No.
Adapter			
60035715 DELTA-SINGAPORE	45W_3phy	Adapter DELTA 45W 19V 1.1x3.0x7.7 ADP-45HE BB LF Black with acer logo	KP.04501.003
60035715 DELTA-SINGAPORE	45W_3phy	Adapter DELTA 45W 19V 1.1x3.0x7.7 ADP-45HE DB LF black with acer logo, cost	KP.04501.012
60036752 LITE-ON SINGAPORE	45W_3phy	Adapter LITE-ON 45W 19V 1.1x3.0x7.7 PA-1450-26AC LF black with acer logo	KP.04503.004
60016453 CHICONY POWER	45W_3phy	Adapter Chicony Power 45W 19V 1.1x3.0x7.7 A045R016L LF Black with acer logo	KP.0450H.001
Audio Codec			
10004786 REALTEK	Non-AVAP Audio Codec - Realtek ALC255(HDA)	Non-AVAP Audio Codec - Realtek ALC255(HDA)	NC.21011.02R
Battery			
60001921 SANYO	4CELL3.22	Battery SANYO AC14B Prismatic 4S1P SANYO 4 cell 3220mAh Main COMMON (KT.00403.032 add BIS logo)	KT.00403.040
60032811 LGC	4CELL3.22	Battery LGC AC14B (5.5mm) Prismatic 4S1P LGC 4 cell 3220mAh Main COMMON (KT.0040G.004 add Acer logo)	KT.0040G.006
Camera			
10001023 LITE-ON	HD_Unified	Camera LITEON HD Camera LT_HM1061_RTS5838H AOET Unified 2	KS.0HD05.004
10001044 CHICONY	HD_Unified	Camera CHICONY HD Camera CH_OV9728_SPA2087 AOET Unified 2	KS.0HD06.001

Table 8-1. Swift SF314-51

Vendor	Type	Description	Part No.
CPU			
10001067 INTEL	Ci36100U	CPU(BGA) Intel Core i3 i3-6100U BGA Skylake SR2EU	KC.61001.U00
10001067 INTEL	Ci56200U	CPU(BGA) Intel Core i5 i5-6200U BGA Skylake SR2EY	KC.62001.U00
10001067 INTEL	Ci76500U	CPU(BGA) Intel Core i7 i7-6500U BGA Skylake SR2EZ	KC.65001.U00
10001067 INTEL	PMD4405U	CPU(BGA) Intel PentiumM 4405U BGA Skylake	KC.44001.5UB
HDD			
10002146 TOSHIBA	F80128S3	Flash Disk TOSHIBA SSD NAND 128GB SG5 15nm M.2 2280 THNSNK128GVN8 LF+HF	KN.1280A.010
60002045 SK HYNIX	F80128S3	Flash Disk HYNIX SSD NAND 128GB HFS128G39TND-N210A LF+HF	KN.1280G.003
10001023 LITE-ON	F80128S3	Flash Disk LITE-ON SSD NAND 128GB Toshiba 15nm M.2 2280 128GB CV3-8D128 LF+HF	KN.1280L.016
10002146 TOSHIBA	F80256S3	Flash Disk TOSHIBA SSD NAND 256GB SG5 15nm M.2 2280 THNSNK256GVN8 LF+HF	KN.2560A.011
60002045 SK HYNIX	F80256S3	Flash Disk HYNIX SSD NAND 256GB HFS256G39TND-N210A LF+HF	KN.2560G.022
10001023 LITE-ON	F80256S3	Flash Disk LITE-ON SSD NAND 256GB Toshiba 15nm M.2 2280 256GB CV3-8D256 LF+HF	KN.2560L.015
10002146 TOSHIBA	F80512S3	Flash Disk TOSHIBA SSD NAND 512GB SG5 15nm M.2 2280 THNSNK512GVN8 LF+HF	KN.5120A.010
60002045 SK HYNIX	F80512S3	Flash Disk HYNIX SSD NAND 512GB Hynix SC308 16nm M.2 2280 512GB LF+HF	KN.5120G.028
10001023 LITE-ON	F80512S3	Flash Disk LITE-ON SSD NAND 512GB Toshiba 15nm M.2 2280 512GB CV3-8D512 LF+HF	KN.5120L.009
Keyboard			
60004864 DARFON	LV4P_A51BWL	Phantom KB DARFON LV4P_A51BWL LV4P Internal 14 Standard Black Y2015 Acer Legend Fine Power+Dish White Backlit	NK.I1417.0JX

Table 8-1. Swift SF314-51

Vendor	Type	Description	Part No.
10001044 CHICONY	LV4T_A51B	Phantom KB CHICONY LV4T_A51B LV4T Internal 14 Standard Black Y2015 Acer Legend Win 8 Fine Power+Dish	NK.I1413.0BU
60052236 SUNREX	LV4T_A51B	Phantom KB SUNREX LV4T_A51B LV4T Internal 14 Standard Black Y2015 Acer Legend Win 8 Fine Power+Dish	NK.I141S.04K
LAN			
10000981 MISC	none LAN	LAN none LAN without LAN	NI.22400.051
MEM			
60002050 MICRON SG	CM4GbIV	Memory Chip MICRON DDRIV 2400 4Gb MT40A256M16GE-083E:B LF+HF 256*16	KN.00404.010
60002215 SAMSUNG	CM4GbIV	Memory Chip SAMSUNG DDRIV 2133 4Gb K4A4G165WD-BCPB LF+HF 256*16	KN.0040B.010
60002215 SAMSUNG	CM4GbIV	Memory Chip SAMSUNG DDRIV 2400 4Gb K4A4G165WE-BCRC LF+HF 256*16 20nm	KN.0040B.014
60002045 SK HYNIX	CM4GbIV	Memory Chip HYNIX DDRIV 2133 4Gb H5AN4G6NAFR-TF LF+HF 256*16	KN.0040G.015
60002045 SK HYNIX	CM4GbIV	Memory Chip HYNIX DDRIV 2400 4Gb H5AN4G6NAFR-UHC LF+HF 256*16	KN.0040G.016
60002050 MICRON SG	CM8GbIV	Memory Chip MICRON DDRIV 2400 8Gb MT40A512M16JY-083E:B LF+HF 512*16 20nm	KN.8GB04.013
60002215 SAMSUNG	CM8GbIV	Memory Chip SAMSUNG DDRIV 2133 8Gb K4A8G165WB-BCPB LF+HF 512*16 20nm	KN.8GB0B.036
60002215 SAMSUNG	CM8GbIV	Memory Chip SAMSUNG DDRIV 2400 8Gb K4A8G165WB-BCRC LF+HF 512*16 20nm	KN.8GB0B.048
60002045 SK HYNIX	CM8GbIV	Memory Chip HYNIX DDRIV 2400 8Gb H5AN8G6NAFR-UHC LF+HF 512*16 21nm	KN.8GB0G.049
60002041 QIMONDA	OB4GBIV(256x 16*8)	Memory Chip DDRIV 4GB Dummy LF+HF 256*16	KN.4GB00.017
60002041 QIMONDA	OB8GBIV(512x 16*8)	Memory Chip DDRIV 8GB Dummy LF+HF 512*16	KN.8GB00.007

Table 8-1. Swift SF314-51

Vendor	Type	Description	Part No.
NB Chipset			
10000981 MISC	none NB Chipset	NB Chipset none NB Chipset without NB Chipset	KI.22600.054
VGA Chip			
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038
Wireless LAN			
10001018 HON HAI	3rd WiFi 2x2 AC+ BT M.2	Foxconn 3rd WiFi 2x2 AC+ BT M.2 QCA NFA344A MU-MIMO	NC.23611.02Z
10001023 LITE-ON	3rd WiFi 2x2 AC+ BT M.2	Liteon 3rd WiFi 2x2 AC+ BT M.2 QCA NFA344A MU-MIMO	NC.23611.030
A cover			
10411482 AOJIE(HK)	Luxury Gold 14 Al Anodize SH	AOJIE A cover Luxury Gold 14 Al Anodize SH	NC.21011.09C
10411482 AOJIE(HK)	Sparkly Silver 14 Al Anodize SH	AOJIE A cover Sparkly Silver 14 Al Anodize SH	NC.21011.09S
B cover			
10006583 PEGATRON	Luxury Gold 14 Al Texture w/ Camera SH	PEGATRON B cover Luxury Gold 14 Al Texture w/ Camera SH	NC.21011.09D
10006583 PEGATRON	Sparkly Silver 14 Al Texture w/ Camera SH	PEGATRON B cover Sparkly Silver 14 Al Texture w/ Camera SH	NC.21011.09T
C cover			
10411482 AOJIE(HK)	Luxury Gold 14 Al Anodize SH	AOJIE C cover Luxury Gold 14 Al Anodize SH	NC.21011.09E
10411482 AOJIE(HK)	Sparkly Silver 14 Al Anodize SH	AOJIE C cover Sparkly Silver 14 Al Anodize SH	NC.21011.09U
D cover			
10411482 AOJIE(HK)	Luxury Gold 14 Al Anodize SH	AOJIE D cover Luxury Gold 14 Al Anodize SH	NC.21011.09F
10411482 AOJIE(HK)	Sparkly Silver 14 Al Anodize SH	AOJIE D cover Sparkly Silver 14 Al Anodize SH	NC.21011.09V
Software			
10000981 MISC	McAfee	Antivirus application McAfee	SR.23900.001

Table 8-1. Swift SF314-51

Vendor	Type	Description	Part No.
WiFi Antenna			
Antivirus application McAfee	PIFA 1.4	WNC PIFA 1.4 WiFi Antenna	NC.23511.002
LCD			
60003316 AUO	N14FHDSUPIL	LED LCD Panel AUO 14' FHD None Glare B140HAN02.1 LF 220nit 25ms 700:1 (eDP1.2) (Value IPS) (3.0mm)	KL.14005.029
60031663 CMI STSP BRANCH	N14FHDSUPIL	LED LCD Panel CMI 14' FHD None Glare N140HCA-EAB LF 250nit 25ms 700:1 FHD value IPS	KL.1400D.021
60003316 AUO	N14FHDSUPIL	LED LCD Panel AUO 14' WXGA Glare B140XTK01.0 LF 200nit 8ms 500:1 (eDP) total solution oTP lite	KL.14005.023
60003316 AUO	N14HDSUP	LED LCD Panel AUO 14' WXGA None Glare B140XTN02.E LF 220nit 8ms 400:1 (eDP) new panel for 2015	KL.14005.020
60031663 CMI STSP BRANCH	N14HDSUP	LED LCD Panel CMI 14' WXGA None Glare N140BGA-EA3 LF 220nit 10ms 500:1 (eDP, 3.0mm Max)	KL.1400D.020
Packaging			
10001071 GOLDEN ARROW	2016-E-Brown	2016 Package WW E series Brown Rev 1.0	NC.25811.04G
10001071 GOLDEN ARROW	2016-S-Brown	11"~15" Brown Box w/o QG & w/o Handle Rev 1.0	NC.25811.085
Touchpad			
60040547 SYNAPTICS	CP5WIP1M	Synaptics Touchpad CP5WIP1M PTP TM-P3218-003 105x76.7mm PCB (add noise immunity)	NC.24611.039
60040786 ELANTECH	CP5WIP1M	Elantec Touchpad CP5WIP1M PTP SA577C-1202 105x76.7mm PCB	NC.24611.02S
Finger Print			
PLM00019 LTT	ETU801 module	LTT ETU801 module	NC.22011.002
Card Reader			
10000981 MISC	Non AVAP SD card reader	Non AVAP SD card reader	NC.21511.003

CHAPTER 8

Online Support Information

Online Support Information

Introduction

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

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

Acer's Website offers convenient and valuable support resources.

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

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

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