

Aspire A515-52/A515-52G

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

Table of Contents

Chapter 1. Hardware Specifications and Configurations

Features	1-2
Notebook Tour	1-6
Top View	1-6
Left View	1-7
Right View	1-8
Base View	1-9
Touchpad Basics	1-10
Keyboard Basics	1-11
System Block Diagram	1-14
Specifications Table	1-15

Chapter 2. System Utilities

BIOS Setup Utility	2-2
Navigating the Bios Setup Utility	2-2
Information Tab	2-3
Main Tab	2-5
Advanced Tab	2-7
Security Tab	2-8
Boot Tab	2-15
Exit Tab	2-17
Boot Manager	2-18
Flash Utilities	2-19
BIOS Secure Flash Utilities	2-19
DMITools Utility SOP	2-34
LAN EEPROM Utility SOP	2-50
Crisis Utility SOP	2-52
BIOS Shipping Mode SOP	2-57

Chapter 3. Jumper and Connector Locations

Mainboard Top View	3-2
Mainboard Bottom View	3-3
USB Board	3-4
Clear CMOS Jumper	3-5

Chapter 4. Troubleshooting

General Information	4-2
Power On Issues	4-3
No Display Issues	4-4
LCD Picture Failure	4-6
Internal Keyboard Failure	4-7
Touchpad Failure	4-7
Internal Speaker Failure	4-8
Internal Microphone Record Failure	4-10
USB Failure	4-11
Wireless Function Test Failure	4-12
Bluetooth Function Test Failure	4-13
SD Card Function Test Failure	4-14
Units Thermal Failure	4-15
Cosmetic Failure	4-16
Other Functions Failure	4-17

Intermittent Problems	4-18
Undetermined Problems	4-19
Post Codes	4-20

Chapter 5. Service and Maintenance

Introduction	5-3
Recommended Equipment	5-3
Maintenance Flowchart	5-4
Getting Started	5-6
Lower Case Removal	5-7
Lower Case Installation	5-10
Battery Removal	5-12
Battery Installation	5-14
HDD Module Removal	5-17
HDD Module Installation	5-19
HDD Carrier Removal	5-22
HDD Carrier Installation	5-23
USB Board Removal	5-25
USB Board Installation	5-28
DIMM Modules Removal	5-31
DIMM Modules Installation	5-32
SSD Module Removal	5-33
SSD Module Installation	5-34
WLAN Module Removal	5-36
WLAN Module Installation	5-38
Fan Module Removal	5-40
Fan Module Installation	5-42
Thermal Module Removal	5-44
Thermal Module Installation	5-46
Mainboard Removal	5-49
Mainboard Installation	5-53
DC-IN Cable Removal	5-57
DC-IN Cable Installation	5-58
RTC Battery Removal	5-59
RTC Battery Installation	5-60
Touchpad Removal	5-61
Touchpad Installation	5-64
Speaker Removal	5-68
Speaker Installation	5-71
LCD Module Removal	5-74
LCD Module Installation	5-77
LCD Bezel Removal	5-81
LCD Bezel Installation	5-83
CMOS and Microphone Module Removal	5-84
CMOS and Microphone Module Installation	5-86
LCD Panel Brackets Removal	5-88
LCD Panel Brackets Installation	5-89
LCD Panel Removal	5-91
LCD Panel Installation	5-95
WLAN Antenna (Main) Removal	5-99
WLAN Antenna (Main) Installation	5-100
WLAN Antenna (Aux) Removal	5-101
WLAN Antenna (Aux) Installation	5-102

Chapter 6. FRU (Field Replaceable Unit) List

Exploded Diagram 6-3

 Main Assembly..... 6-3

 Upper Cover Assembly 6-5

 LCD Assembly 6-6

FRU List 6-8

Screw List..... 6-32

Chapter 7. Test Compatible Components

Microsoft® Windows® 10 Environment Test 7-2

 Aspire A515-52/A515-52G 7-2

Chapter 8. Online Support Information

Introduction 8-2

Revision History

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

Date	Chapter	Updates
2018/08/17		Initial Release

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

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Conventions

The following conventions are used in this manual:



WARNING:

Indicates a potential for personal injury.



CAUTION:

Indicates a potential loss of data or damage to equipment.



IMPORTANT:

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



NOTE:

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

The following typographical conventions are used in this document:

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

Example:

the DRS5 User's Guide
/usr/local/bin/fd
the /TPH15spool_M program

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

Example:

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

- User input (text that represents information entered by a computer user, such as command names, option letters, and words) are shown in constant width **bold**. Variables contained within user input are shown in square brackets ([]).

Example:

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

- Keyboard keys are shown in bold italics.

Example:

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

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

Example:

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

General Information

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

When ordering FRU parts:

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

For Acer-authorized service providers:

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

Hardware Specifications and Configurations

Hardware Specifications and Configurations	1-2
Features	1-2
Notebook Tour	1-6
Top View	1-6
Left View	1-7
Right View	1-8
Base View	1-9
Touchpad Basics	1-10
Keyboard Basics	1-11
System Block Diagram	1-14
Specifications Table	1-15

Hardware Specifications and Configurations

Features

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

Operating System

- Windows Series
- Linux

Platform

- Intel Whiskey Lake U

System Memory

DDR4 2133/2400 SODIMM memory interface design:

- DDR4 SODIMM slot x 2
- Maximum memory is up to 32GB

Display

- 15.6"
- Resolution: 1920 x 1080 (FHD) / 1366 x 768 (HD)
- TN (3.2mm) / IPS (3.2mm)
- eDP

Privacy Control

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

Storage Subsystem

- SATA HDD/SSD
 - HDD 7.0mm
 - M.2 SSD
- SD Card
 - Secure Digital™ (SD) Card, Mini SD™, Micro SD™, SDXC™, SDHC
- Specification: SD 3.0 (Maximum support capacity up to 2GB)

Type	Model	Test Result
SDHC	Toshiba 4GB(Class 4)	Pass
SDHC	Toshiba 32GB(Class 4)	Pass
SDHC	SanDisk 32GB(Class 4)	Pass
SDHC	SanDisk 4GB(Class 6)	Pass
SDHC	Transcend 4GB(Class 6)	Pass
SDHC	SAMSUNG 16GB(Class 6)	Pass
SDHC	ADATA 16GB(Class 10)	Pass
SDHC	Transcend 8GB(Class 10)	Pass
SDHC	Toshiba 16GB(Class 10)	Pass
SDHC	Kingston 16GB(Class 10)	Pass
SDXC	Sandisk 64GB(Class 10)	Pass
SDXC	Transcend 64GB(Class 10)	Pass

Graphics

- nVidia MX130 - 2GB VRAM
- nVidia MX150 - 2GB VRAM

Audio Subsystem

- Codec: Realtek ALC255-CG
- Speaker x 2
- Audio Jack x 1
- Dual digital MIC on Camera Module

Communication

Webcam

- HD Camera

Wireless

- 802.11 AC/BGN +BT

Dimensions and Weight

Dimension

- 363.4 (L) x 247.5 (W) x 18.85 (H) mm (14.31 (L) x 9.74 (W) x 0.74 (H) inches)

Weight

- 1.9kg (4.2lbs)

Power Adapter and Battery

Battery

- 4-cell, 3320/3220 mAh Li-Ion battery

Power Adapter

- 65W AC adapter

I/O Ports

- One DC-in jack for AC adapter
- One USB 3.0 port (Support offline charging)
- One USB 3.1 Type-C Gen1 port
- Two USB 2.0 ports
- One HDMI port
- One LAN port
- One Headphone jack
- One Card Reader
- One Kensington Lock

Special Keys and Controls

Control Buttons

- Power button x1 (embedded on the keyboard)

Keyboard

- Phantom key auto detection
- Supports independent pgdn/pgup/home/end keys
- Support reverse T cursor keys

Touchpad

- Precision touchpad

Environment

Temperature

- Operating: 0°C to 40°C (32°F to 104°F)
- Non-operating: -20°C to 60°C (-4°F to 140°F)

Humidity (non-condensing)

- Operating: 0%R.H to 80%R.H
- Non-operating: 0%R.H to 80%R.H

Warranty

- One-year International Travellers Warranty (ITW)

Accessories

- 65W AC adapter
- Manual Kits
- Power cord

Notebook Tour

Top View

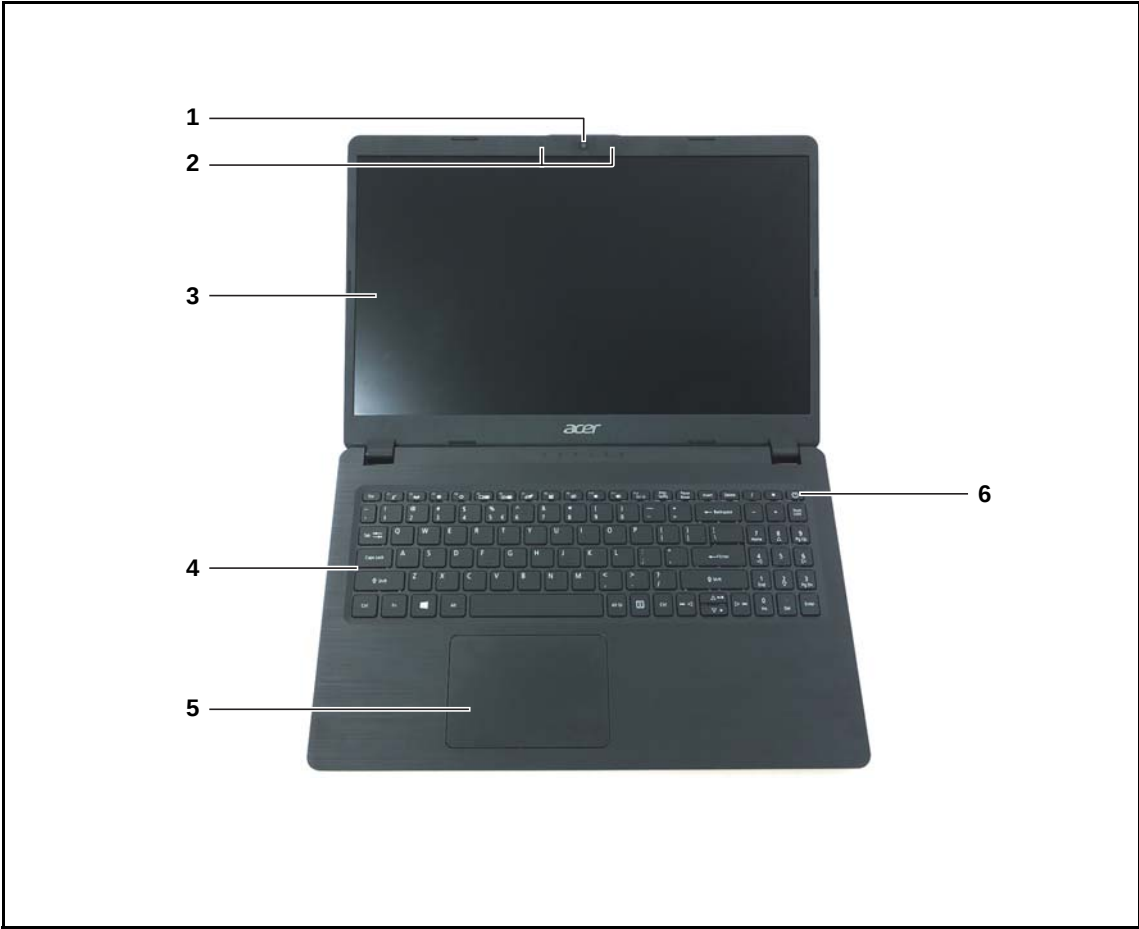


Figure 1-1. Top View

Table 1-1. Top View

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

Left View

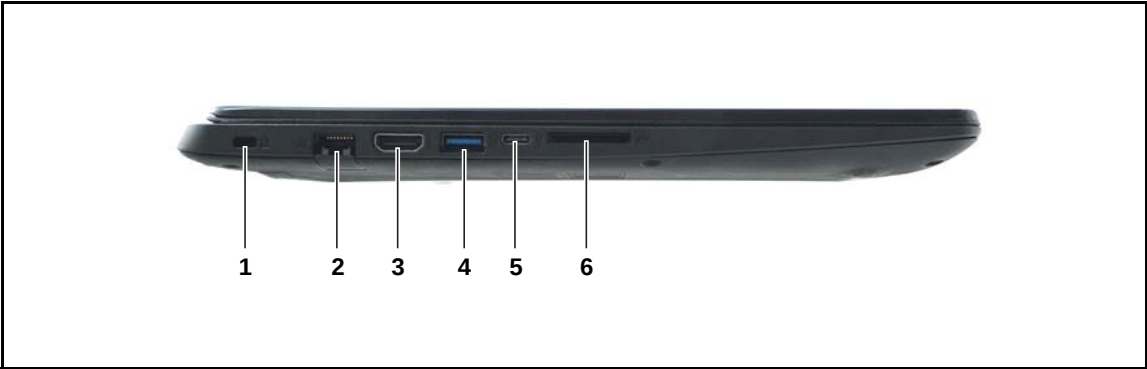
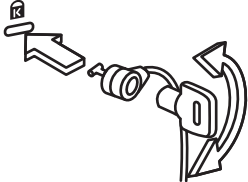


Figure 1-2. Left View

Table 1-2. Left View

#	Icon	Item	Description
1		Kensington Lock	Connects to a Kensington-compatible computer security lock. ⇒ NOTE: Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available. 
2		LAN Port	Connects to a local area network.
3	HDMI	HDMI Port	Supports high-definition digital video connections.
4		USB 3.0 Port	Connects to USB 3.0 Super Speed (USB) device. ⇒ NOTE: Devices without USB 3.0 certification may not be compatible.
5		USB 3.1 Type-C Port	Connects to USB 3.1 Type-C compatible devices.
6		Card Reader	Insert a memory card such as Secure Digital™ (SD), Mini SD™, Micro SD™, SDXC™, SDHC for external storage. ⇒ NOTE: Only one card can be inserted at one time.

Right View

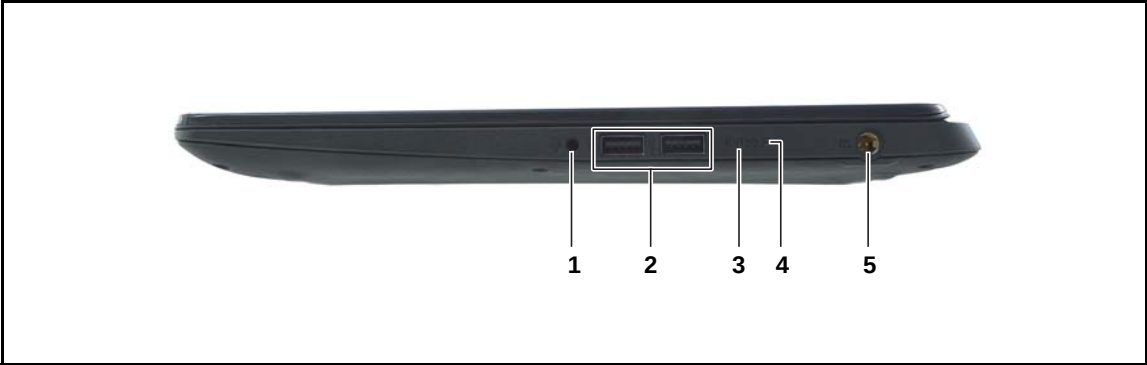


Figure 1-3. Right View

Table 1-3. Right View

#	Icon	Item	Description
1		Audio Jack	Connects to a headset.
2		USB 2.0 Ports	Connects to USB 2.0 devices.
3		Power Indicator	Indicates the computer power status: • Off: System is off. • Blue: System is on. • Orange (flashing): S3 state
4		Battery Indicator	Indicates the computer battery status: • Orange (flashing): Battery low. • Orange: Battery is charging. • Blue: Battery is fully charged.
5		DC-In Jack	Connects to an AC adapter.

Base View



Figure 1-4. Base View

Table 1-4. Base View

#		Item	Description
1		Air Vents	Use for air flow.  CAUTION: Do not cover the air vents.
2		Speakers	Emits audio sound.
3		Reset Button	Insert a suitable tool into the hole to reset the device.

Touchpad Basics

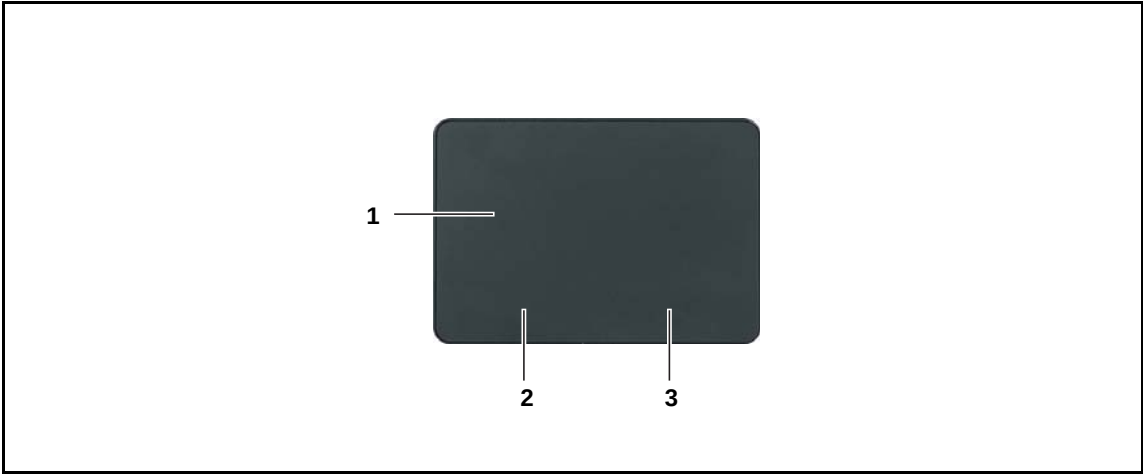


Figure 1-5. Touchpad

Table 1-5. Touchpad

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

Using the Touchpad

⇒ **NOTE:**

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

Below is a description of basic touchpad operations:

Table 1-6. Touchpad Operations

Function	Touchpad	Bottom Left Side	Bottom Right Side
Execute	Tap twice (same speed as double-clicking a mouse button).	Quickly click twice.	
Select	Tap once.	Click once.	

Function	Touchpad	Bottom Left Side	Bottom Right Side
Drag	Tap twice; on the second tap, rest your finger on the touchpad and drag the cursor.	Press and hold, then use your finger on the touchpad to drag the cursor.	
Access context menu			Click once.

Keyboard Basics



Figure 1-6. Keyboard

Table 1-7. Keyboard

#	Icon	Item	Description
1		Caps Lock Key	When Caps Lock is on, all alphabetic characters are typed in uppercase.
2	Fn	Function Key	Use with other key combinations to perform special functions.
3		Windows Key	- Press to launch the Start menu. - When used with other keys, provides a variety of functions. See Windows Key on page 1-12.
4		Application Key	Press to open the context menu of the current application. This key has the same effect as clicking the right mouse button.

Windows Key

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

Table 1-8. Windows Key Combinations

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

Hotkeys

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

Table 1-9. Hotkey Combinations

Function	Key Combination	Icon	Description
Sleep	<F1>		Puts the computer in Sleep mode.
Communication Switch	<F2>		Enables/disables wireless connectivity of your computer.
Brightness Down	<F3>		Decreases screen brightness.
Brightness Up	<F4>		Increases screen brightness.
Display Toggle	<F5>		Switches the display output between the display screen, external monitor (if connected), and both.
Screen Blank	<F6>		Turns the display screen backlight off to save power. Press any key to return.
Touchpad Toggle	<F7>		Turns the touchpad on and off.
Keyboard Backlight Toggle	<F8>		Turns the keyboard backlight on or off.
Speaker Toggle	<F9>		Turns the speaker on or off.
Volume Down	<F10>		Decreases audio volume.
Volume Up	<F11>		Increases audio volume.
Scroll Lock	<F12>	Scr Lk	Turns scroll lock on or off.
Play/Pause	<Fn> + Up key		Plays or pauses media file.
Stop	<Fn> + Down key		Stops media file.
Previous	<Fn> + Left key		Plays the previous media file in the play sequence.
Next	<Fn> + Right key		Plays the next media file in the play sequence.

System Block Diagram

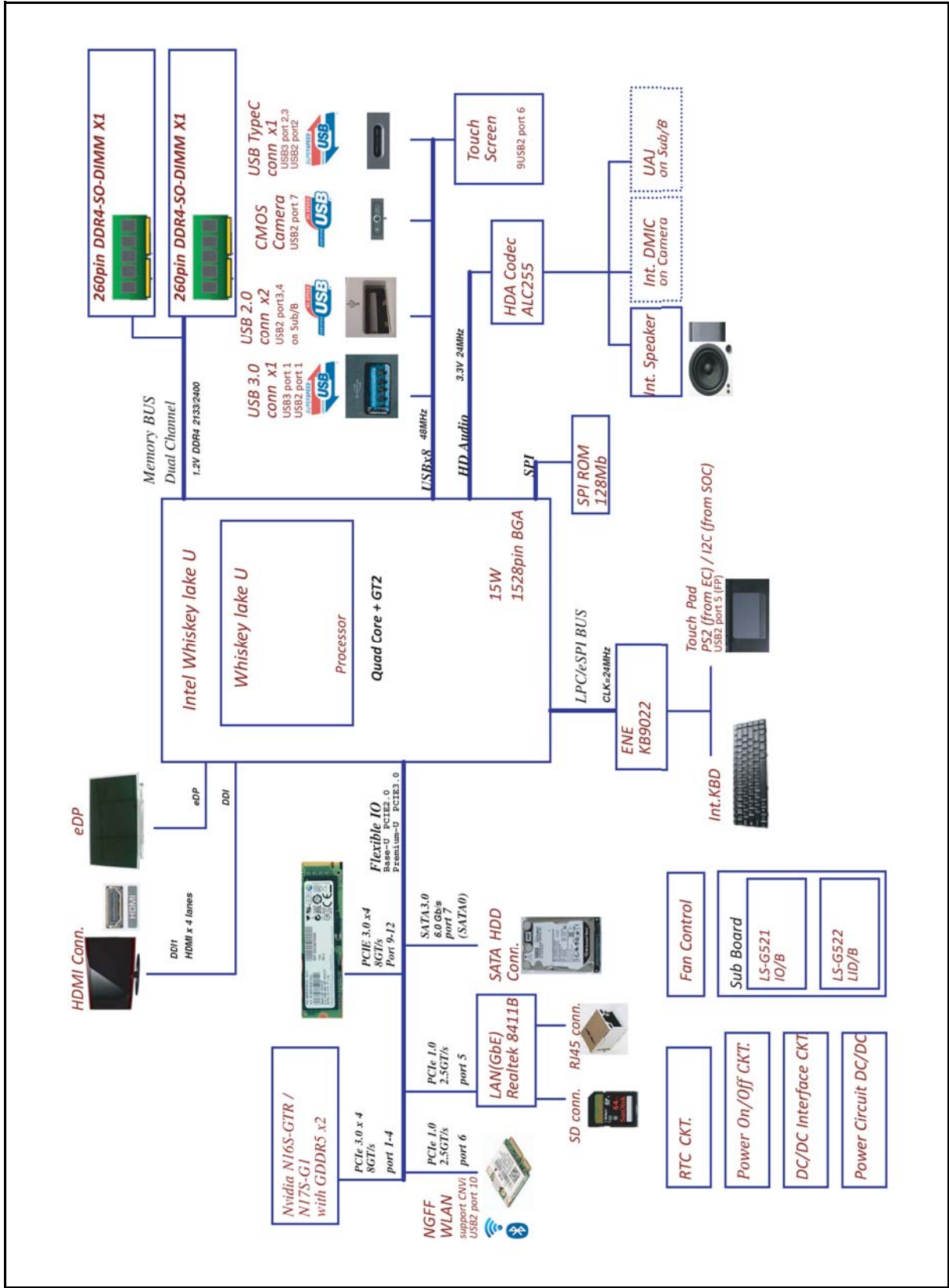


Figure 1-7. System Block Diagram

Specifications Table

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	363.4 mm	14.31 inches
Width	247.5 mm	9.74 inches
Height	18.85 mm	0.74 inch
Weight (equipped with optical drive, flash drive, and battery)	1.9 kg	4.2 lbs
Weight (equipped with optical drive, flash drive, and without battery)	N/A (Embedded Battery)	N/A (Embedded Battery)
Input power		
Operating voltage	19V	
Operating current	3.42A	
Temperature		
Operating (not writing to optical disc)	0°C ~ 40°C	32°F ~ 104°F
Operating (writing to optical disc)	N/A	N/A
Non-operating	-20°C ~ 60°C	-4° ~ 140°F
Relative humidity		
Operating	0%R.H ~ 80%R.H	
Non-operating	0%R.H ~ 80%R.H	
Maximum altitude (unpressurized)		
Operating	N/A	N/A
Non-operating	N/A	N/A
Shock		
Operating	Amplitude: 105G	
Non-operating	Amplitude: 220G	
Random vibration		
Operating	0.6 grms	
Non-operating	1.5 grms	
⇒ NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.		

System Board Major Chips

Item	Specification
Core logic	- INTEL Whiskey Lake Processor Family (U4+2, 15W) - INTEL Whiskey Lake Processor Family (U2+2, 15W)
VGA	Intel HD Graphics Family (GT2)
VGA (Discrete)	NVIDIA N16S-GTR / N17S-G1
USB 2.0	X2
USB 3.0	X1
USB Type-C	X1
Audio codec	Realtek ALC255 codec
Amplifier	Realtek ALC255 build-in class-D speaker amplifier
LAN/Card reader	Realtek RTL8411B with SD card reader
EC	ENE KB9022QD

Processor

Item	Specification
CPU	- INTEL Whiskey Lake Processor Family (U4+2, 15W) - INTEL Whiskey Lake Processor Family (U2+2, 15W)
CPU package	BGA1528

Processor Specifications

Item	CPU Speed (GHz)	Cores	Bus Speed (FSB/DMI/QBI)	Mfg Tech	Cache Size	Package	Voltage
I7-8565U	1.8G	4	N/A	14nm	8MB	BGA1528	0-1.05V
I5-8265U	1.6G	4	N/A	14nm	6MB	BGA1528	0-1.05V
I3-8145U	2.1G	2	N/A	14nm	4MB	BGA1528	0-1.05V

System Memory

Item	Specification
Memory controller	INTEL Whiskey Lake platform
DIMM socket number	X2 DDR4 socket
Supports memory size per socket	2G/4G/8G/16G
Supports maximum memory size	Total 32GB
Supports DIMM Speed	DDR4 2133/2400
Support DIMM voltage	1.2V
Supports DIMM package	260-pin DDR4 SODIMM

Graphics Controller and VRAM

Item	Specification
Graphics Controller Chip	Intel Whiskey lake-U Processor (Intel integrate)
Package	BGA1528
Interface	Intel integrate
Memory	64MB (BIOS allocate) 128MB (WIN 10 Dedicated)
VRAM Chipset	N/A
Supports	- The processor graphics is based on Gen 9 LP (generation 9 Low Power) graphics core architecture that enables substantial gains in performance and lower-power consumption over prior generations. - Gen 9 LP architecture supports up to 48 Execution Units (EUs). - Operating Systems Support - Windows* 10 x64, OS X, Linux* OS, Chrome* OS - API Support (Windows*) - Direct3D* 2015, Direct3D 11.2, Direct3D 11.1, Direct3D 9, Direct3D 10, Direct2D - OpenGL* 4.5 - OpenCL* 2.1, OpenCL 2.0, OpenCL 1.2 - Hardware Accelerated Video Decode - Direct3D* 9 Video API (DXVA2) - Direct3D11 Video API - Intel Media SDK - MFT (Media Foundation Transform) filters Supports full HW accelerated video decoding for AVC/VC1/ MPEG2/HEVC/ VP8/JPEG. - Hardware Accelerated Video Encode - Intel Media SDK - MFT (Media Foundation Transform) filters Supports full HW accelerated video encoding for AVC/ MPEG2/HEVC/VP8/ JPEG. - Hardware Accelerated Video Processing - Direct3D* 9 Video API (DXVA2) - Direct3D 11 Video API - Intel Media SDK - MFT (Media Foundation Transform) filters - Intel CUI SDK - Hardware Accelerated Transcoding - Low-power and low-latency AVC encoder for video conferencing and Wireless Display applications. - Lossless memory compression for media engine to reduce media power. - HW assisted Advanced Video Scaler. - Low power Scaler and Format Converter

Item	Specification	
Graphics Controller Chip	NVIDIA N16S-GTR	NVIDIA N17S-G1
Package	FCBGA 595P	FCBGA 595P
Interface	Internal PCIE x4	Internal PCIE x4
Memory	2GB GDDR5 at 1.35V	2GB GDDR5 at 1.35V
VRAM Chipset	Hynix/ Micron	Hynix/ Micron
Supports	• PCI Express 3.0 Interface • NVIDIA Optimus technology • DirectX* 11.2 support • OpenGL* 4.4 or later support • NVIDIA® PhysX®, CUDA™	• PCI Express 3.0 Interface • NVIDIA Optimus technology • DirectX* 11.2 support • OpenGL* 4.4 or later support • NVIDIA® PhysX®, CUDA™

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	1.01
BIOS ROM type	SPI ROM
BIOS ROM size	16 MB
Features	N/A

LAN Interface

Item	Specification
LAN Chipset	Realtek RTL8411B
LAN connector type	RJ45
LAN connector location	JRJ45 on the left side
Features	• Hardware • Integrated 10/100/1000M transceiver • Auto-Negotiation with Next Page capability • Supports PCI Express 1.1 • Supports 1-Lane 2.5Gbps PCI Express Bus • Supports pair swap/polarity/skew correction • Crossover Detection & Auto-Correction • Wake-On-LAN support • Embedded OTP memory can replace the external EEPROM • Transmit/Receive on-chip buffer support • Supports hardware ECC(Error Correction Code) function • Supports hardware CRC(Cyclic Redundancy Check) function • Customizable LEDs • Controllable LED Blinking Frequency and Duty Cycle • Built-in switching regular • Built-in LDO regulator • Supports PCI MSI (Message Signaled Interrupt) and MSI-X • Supports LTR(Latency Tolerance Reporting) and OBFF (Optimized Buffer Flush/Fill) • Supports 16-set 128-byte Wake-Up Frame pattern ex-act matching • Supports Microsoft WPD (Wake Packet Detection) • Supports PCIe L1.Off and L1.Snooze • Embeds an adaptive equalizer in-PCI Express PHY (PCB traces to reach up to 20cm) • Supports power down/link down power saving/PHY disable mode/LAN disable mode • IEEE • Fully complies with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab • Supports Full Duplex flow Control (IEEE 802.3x) • Supports IEEE 802.IP Layer 2 Priority Encoding • Supports IEEE 802.1Q VLAN tagging • Supports IEEE 802.3az-2010 (EEE)

Keyboard

Item	Specification
Type	SV5P_A72BWL / SV5T_A72B
Total number of keypads	100-US / 101-UK, BR / 104-JP keys
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	• Phantom key auto detect • Support independent pgdn/pgup/home/end keys • Support reverse T cursor keys • Factory configurable different languages by OEM customer

Hard Disk Drive (Listed items from AVL list)

Item	Specification		
Vendor and model names	TOSHIBA MQ01ABF050 F:AM002	WDC WD5000LPCX-21VHAT0	TOSHIBA MQ04ABF100
Capacity	500GB	500GB	1TB
Bytes per sector	4096	4096	4096
Data heads	2	2	2
Drive Format			
Disks	1	1	1
Spindle speed	5400RPM		
Performance Specifications			
Buffer size	8MB	16MB	128MB
Interface	SATA 6Gb/s		
Fast data transfer rate (Mbits/sec, max)	135 MB/s	147 MB/s	135 MB/s
Media data transfer rate (Mbytes/sec max)	1469.7 Mb/s	147 MB/s	1733 MB/s
DC Power Requirements			
Voltage tolerance	5V ±5%		

Item	Specification		
Vendor and model names	WDC WD10SPZX-21Z10T0	SEAGATE ST1000LM035 F:ACM2	SEAGATE ST2000LM007 F:ACM2
Capacity	1TB	1TB	2TB
Bytes per sector	4096	4096	4096
Data heads	2	2	4
Drive Format			
Disks	1	1	2
Spindle speed	5400RPM		
Performance Specifications			
Buffer size	128MB	128MB	128MB
Interface	SATA 6Gb/s		
Fast data transfer rate (Mbits/sec, max)	130 MB	140 MB	140 MB

Item	Specification		
Media data transfer rate (Mbytes/sec max)	130 MB	140 MB	140 MB
DC Power Requirements			
Voltage tolerance	5V ±5%		

Solid-State Drive (Listed items from AVL list)

Item	Specification		
Vendor and model names	SANDISK SD9SN8W-128G-1014	HYNIX HFS128G39TND-N210A	KINGSTON RBU-SNS8180DS3/128GJ
Capacity (GB)	128	128	128
Performance Specifications			
Interface	SATA 6Gb/s		
Fast data transfer rate (Mbits / sec, max)	560 MB	560 MB	535 MB
DC Power Requirements			
Voltage tolerance	3.3V ±5%		

Item	Specification		
Vendor and model names	SANDISK SD9SN8W-256G-1014	HYNIX HFS256G39TNH-72A0A	MICRON MTFDDAV256TBN-1AR1ZABYY
Capacity (GB)	256	256	256
Performance Specifications			
Interface	SATA 6Gb/s		
Fast data transfer rate (Mbits / sec, max)	560 MB	560 MB	530MB
DC Power Requirements			
Voltage tolerance	3.3V ±5%		

LED 15.6"

Item	Specification
Vendor/Model name	Slim, eDP, FHD, IPS: - N156HCA-EAB - NV156FHM-N48 Slim, eDP, FHD, TN: - B156HTN06.1 - N156HGA-EA3 - NT156FHM-N61 Slim, eDP, HD, TN: - B156XTN08.1 - N156BGA-EA3 - NT156WHM-N44
Screen Diagonal (mm)	394.87 mm (FHD) 394.91 mm (HD)
Active Area (mm)	344.16 x 193.59 mm (FHD) 344.23 x 193.54 mm (HD)
Display resolution (pixels)	1920 x 1080 (FHD) 1366 x 768 (HD)
Pixel Pitch (mm)	0.17925 mm x 0.17925 mm (FHD) 0.252 mm x 0.252 mm (HD)
Typical White Luminance (cd/m ²) also called Brightness	Slim, eDP, FHD, IPS: - N156HCA-EAB • 250 cd/m² - NV156FHM-N48 • 250 cd/m² Slim, eDP, FHD, TN: - B156HTN06.1 • 220 cd/m² - N156HGA-EA3 • 220 cd/m² - NT156FHM-N61 • 220 cd/m² Slim, eDP, HD, TN: - B156XTN08.1 • 220 cd/m² - N156BGA-EA3 • 220 cd/m² - NT156WHM-N44 • 220 cd/m²

Item	Specification
Contrast Ratio	Slim, eDP, FHD, IPS: - N156HCA-EAB • 500/700 - NV156FHM-N48 • TBD/800 Slim, eDP, FHD, TN: - B156HTN06.1 • 300/400 - N156HGA-EA3 • 400/500 - NT156FHM-N61 • 400/500 Slim, eDP, HD, TN: - B156XTN08.1 • 300/400 - N156BGA-EA3 • 400/500 - NT156WHM-N44 • 400/500
Response Time (Optical Rise Time/Fall Time) msec	Slim, eDP, FHD, IPS: - N156HCA-EAB • 25/30 - NV156FHM-N48 • 30/35 Slim, eDP, FHD, TN: - B156HTN06.1 • 8/16 - N156HGA-EA3 • 10/20 - NT156FHM-N61 • 12/16 Slim, eDP, HD, TN: - B156XTN08.1 • 8/16 - N156BGA-EA3 • 10/20 - NT156WHM-N44 • 12/16
Typical Power Consumption (watt)	Slim, eDP, FHD, IPS: - N156HCA-EAB • 4.158W - NV156FHM-N48 • 3.73W Slim, eDP, FHD, TN: - B156HTN06.1 • 3.4W - N156HGA-EA3 • 3.45W - NT156FHM-N61 • 3.12W Slim, eDP, HD, TN: - B156XTN08.1 • 3.2W - N156BGA-EA3 • 3.32W - NT156WHM-N44 • 3W

Item	Specification
Weight (without inverter)	Slim, eDP, FHD, IPS: - N156HCA-EAB • 365g - NV156FHM-N48 • 360g Slim, eDP, FHD, TN: - B156HTN06.1 • 360g - N156HGA-EA3 • 370g - NT156FHM-N61 • 360g Slim, eDP, HD, TN: - B156XTN08.1 • 360g - N156BGA-EA3 • 370g - NT156WHM-N44 • 360g
Physical Size (mm)	Slim, eDP, FHD, IPS: - N156HCA-EAB • 350.66 x 216.25 mm - NV156FHM-N48 • 350.66 x 216.25 mm Slim, eDP, FHD, TN: - B156HTN06.1 • 350.66 x 216.15 mm - N156HGA-EA3 • 350.66 x 216.25 mm - NT156FHM-N61 • 350.66 x 216.25 mm Slim, eDP, HD, TN: - B156XTN08.1 • 350.66 x 216.15 mm - N156BGA-EA3 • 350.73 x 216.25 mm - NT156WHM-N44 • 350.68 x 216.245 mm
Electrical Interface	eDP 1.2
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	Slim, eDP, FHD, IPS: - N156HCA-EAB • 89/89/89/89 (typ.) - NV156FHM-N48 • 85/85/85/85 (typ.) Slim, eDP, FHD, TN: - B156HTN06.1 • 45/45/15/35 (typ.) - N156HGA-EA3 • 45/45/20/45 (typ.) - NT156FHM-N61 • 45/45/20/40 (typ.) Slim, eDP, HD, TN: - B156XTN08.1 • 45/45/15/35 (typ.) - N156BGA-EA3 • 45/45/20/45 (typ.) - NT156WHM-N44 • 45/45/20/40 (typ.)

Supported Resolution (GPU: Include all supported resolution)

Resolution	16 bits	32 bits	36 bits	48 bits	Others
640x480p/60Hz	X	V	X	X	X
800x600p/60Hz	X	V	X	X	X
1024x768p/60Hz	X	V	X	X	X
1152x864p/60Hz	X	V	X	X	X
1280x600/60Hz	X	V	X	X	X
1280x720/60Hz	X	V	X	X	X
1280x768/60Hz	X	V	X	X	X
1280x800/60Hz	X	V	X	X	X
1280x960/60Hz	X	V	X	X	X
1280x1024/60Hz	X	V	X	X	X
1360x768/60Hz	X	V	X	X	X
1366x768/60Hz	X	V	X	X	X
1400x1050/60Hz	X	V	X	X	X
1440x900/60Hz	X	V	X	X	X
1600x900/60Hz	X	V	X	X	X
1680x1050/60Hz	X	V	X	X	X
1920x1080/60Hz	X	V	X	X	X
Legend: V = Supported; X = Not supported					

Front Camera

Item	Specification
Vendor and Model	• Chicony CNFGH6921004970LH • Tech-Front 1YHJZZZ000A(YHJS) • Tech-Front 1YHJZZZ000S(YHJS-1) • Chicony CNFHH6221004970LH
Type	HD

Rear Camera

Item	Specification
Vendor and Model	N/A
Type	N/A

Mini Card

Item	Specification
Number supported	N/A
Features	N/A

3G Card

Item	Specification
Features	N/A

Audio Interface

Item	Specification
Audio Controller	Realtek ALC255-CG
Audio onboard or optional	On board
Mono or Stereo	Stereo
Resolution	Support 16/20/24bit PCM
Compatibility	High-Definition Audio Codec
Sampling rate	Sample rate up to 192Khz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker/quantity	Yes (2W speakers x2)
Phone Jack	Combo jack

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 • 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 • Supports external PCBEEP input and features built-in digital BEEP generator • Programmable +10/+20/+30dB boost gain for analog microphone input • Supports stereo digital microphone input, and programmable boost gain and volume control • Supports combo jack with stereo headphone output and mono microphone input on a 4-pole jack • Supports Headset Push-Button Control for combo jack • Supports Anti-pop mode when analog power AVDD1 is on and DVDD/AVDD2 are off • 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 2 Watt (rms) / 4 Ω per channel output • 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 • 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 • Intel low power DCN (HDA015-B) compliant, supports power status control, jack detection, and wake-up event in D3 mode
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Audio Codec and Amplifier

Item	Specification
Amplifier IC	Realtek ALC255 build-in class-D speaker amplifier

Wireless Module 802.11b/g/n

Item	Specification		
Wireless module	Intel9560 Wifi /BT combo module	Intel9462 Wifi /BT combo module	Qualcomm Atheros QCNFA435 Wifi module
Chipset	9560.NGWG.NV	9462.NGWG.NV	Qualcomm Atheros QCA9377-5
Data throughput	- Wifi: 2TX/2RX, transmission rate can up to 1533Mbps in 802.11ac. - BT: Transmission rate can up to 1425 Kbps	- Wifi:1TX/1RX, transmission rate can up to 433Mbps in 802.11ac. - BT: Transmission rate can up to 1425 Kbps	- Wifi:1TX/1RX, transmission rate can up to 150Mbps in 802.11n, and 433Mbps in 802.11ac. - BT:TX 1.2Mbits/sec - BT:RX 1.2Mbits/sec
Protocol	802.11abgn+acR2 MIMO2x2, 802.11w, WMM, WMM-PS, WFD, Miracast, Passpoint R2, Voice personal - Bluetooth V5.0LE, V3.0+HS, V2.1+EDR system	802.11abgn+acR2 MIMO2x2, 802.11w, WMM, WMM-PS, WFD, Miracast, Passpoint R2, Voice personal - Bluetooth V5.0LE, V3.0+HS, V2.1+EDR system	802.11a / 802.11b / 802.11g / 802.11n / 802.11ac - Bluetooth V4.0LE, V3.0+HS, V2.1+EDR system
Interface	- Wifi: CNVi - BT: USB	- Wifi: CNVi - BT: USB	- Wifi: PCIe - BT: USB
Connector type	M.2 (NGFF) 2230	M.2 (NGFF) 2230	JST SM06B-XSRK-ETB
Supported protocol (List only supported protocols from Acer specs)	A2DP / AVCTP / AVRCP / BIP / BPP / DUN / Fax / FTP / GAVDP / HCRP / Headset / Hands Free / HID / OPP / PAN / SDAP / Serial / SYNC	A2DP / AVCTP / AVRCP / BIP / BPP / DUN / Fax / FTP / GAVDP / HCRP / Headset / Hands Free / HID / OPP / PAN / SDAP / Serial / SYNC	A2DP / AVCTP / AVRCP / BIP / BPP / DUN / Fax / FTP / GAVDP / HCRP / Headset / Hands Free / HID / OPP / PAN / SDAP / Serial / SYNC

Bluetooth Module

Item	Specification
Controller	- Qualcomm Atheros NFA435A - Intel 9560 / Intel 9462
Features	- PCIe/USB/CNVi/BRI module with built-in antenna - Bluetooth 4.1/5.0

Battery

Item	Specification	
Vendor & Model name	Simplo AC14B7K	LG AC14B8K
Battery type	Li-Ion	Li-Ion
Pack capacity	3320mAh	3220mAh
Number of battery cell	4	4
Package configuration	4S1P	4S1P

USB Port

Item	Specification
USB compliance level	USB2.0 / USB3.0
Modes	xHCI
Speed	• USB2.0: 480Mbps • USB3.0: 5Gbps
Number of USB port(s)	4
Location	• 2x USB 2.0 ports on the right side • 1x USB 3.0 ports on the left side • 1x Type-C port on the left side
Output Current	• 2A (for the USB ports on the left side and on the right side) • 3A (for the Type-C port on the left side)

USB Type-C connecto

Item	Specification
USB Version (Speed)	USB 3.1 Gen1 (5 Gbps)
Max. output currents of 5V power bus	3.0 A
Support Power-Off USB charger Mode	No
Thunderbolt Version (Speed)	N/A
DisplayPort Version	N/A
Power Delivery for Charging	N/A

HDMI Port

Item	Specification
Compliance level	HDMI 1.4b
Data throughput	16Gbps
Number of HDMI port(s)	1
Location	JHDMI1 at the left side

AC Adapter

Item	Specification
Input rating	65W
Maximum input AC current	1.5A Max at 100Vac input voltage
Inrush current	No damage; meet fuse and bridge diode I 2t de-rating specified
Efficiency	Average Efficiency value of 25%, 50%, 75% and 100% load condition shall be more than 88% with both 115VAC/230VAC

Card Reader

Item	Specification
Chipset	Realtek RTL8411B
Package	48-pin QFN
Maximum supported size	• Support SD • Support SDXC • Support SDHC

System LED Indicator

Item	Specification
Lock	N/A
System state	PWR LED behavior: • Power on: Blue • Suspend: Orange in breeze mode (1 sec on/ 3 sec off) • Power off: OFF
HDD access state	N/A
Wireless state	N/A
Power button backlight	N/A
Battery state	BAT LED behavior: • Fully charged / idle: Blue • Under charging: Orange • Battery low (10%): Orange in breeze mode (1 sec on, 3 sec off) • Battery critical low (less than 3%) or abnormal battery situation: Orange in blinking mode (1 sec on, 1 sec off) • Using battery or not connected to AC power: OFF

Power Specification

Legacy Mode	ACPI Mode	Power Management
Off	Mech. Off (G3)	All devices in the system are turned off completely.
	Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
On	Working (G0/S0)	Individual devices such as the CPU and hard disk may be power managed in this state.
	S3 Sleeping State	• CPU Set Power Down • VGA Suspend • PCMCIA Suspend • Audio Power Down • Hard Disk Power Down • Super I/O Low Power mode
	S4 Sleeping State	Also called Hibernation Mode. System saves all system states and data onto the disc prior to power off the whole system.

System Utilities	2-2
BIOS Setup Utility	2-2
Navigating the Bios Setup Utility	2-2
Information Tab	2-3
Main Tab	2-5
Advanced Tab	2-7
Security Tab	2-8
Selecting a UEFI File as Trusted	2-11
Setting a Password	2-12
Changing a Password	2-13
Removing a Password	2-14
Boot Tab	2-15
Exit Tab	2-17
Boot Manager	2-18
Flash Utilities	2-19
BIOS Secure Flash Utilities	2-19
Shell Secure Flash Utility SOP (For Service BIOS)	2-20
Windows Secure Flash Utility SOP	2-24
Windows Secure Flash Utility SOP (For Service BIOS)	2-29
DMITools Utility SOP	2-34
Using DMITools (x64)	2-34
Using DMITools (x86)	2-42
LAN EEPROM Utility SOP	2-50
LAN EEPROM Utility SOP (x64)	2-50
Crisis Utility SOP	2-52
When to Use the Crisis S.O.P?	2-52
Creating a USB Flash Crisis Disk	2-52
Using the Crisis Utility Disk	2-55
BIOS Shipping Mode SOP	2-57

System Utilities

BIOS Setup Utility

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

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

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

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

Navigating the Bios Setup Utility

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

To navigate through the menus options, perform the following:

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

⇒ NOTE:

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

The succeeding sections are descriptions of the menu tabs found on the *InsydeH20 BIOS Setup Utility* screen.

⇒ NOTE:

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

Information Tab

The Information tab displays a summary of the computer hardware information.

InsydeH20 Setup Utility					Rev. 5.0
Information	Main	Advanced	Security	Boot	Exit
CPU info: Intel (R) Core(TM) i3-8145U CPU @ 2.10GHz System BIOS Version: V1.00 GOP Version: Intel(R) GOP Driver [9.0.1079] HDD0 Model Name: Micron_1100_MTFDDAV256TBN HDD0 Serial Number: 18011A8B59F6 HDD1 Model Name: ST2000LM007-1R8174 HDD1 Serial Number: WDZC58PQ SATA Mode: RST with Optane Total Memory: 32768 MB Serial Number: 1234567890123456789012 Asset Tag Number: Product Name: Aspire A515-52G Manufacturer Name: Acer UUID: BDBE9C83-EEF1-E711-80C8-9828A6009779					
F1	Help	Select Item	F5/F6	Change Values	F9 Setup Defaults
Esc	Exit	Select Menu	Enter	Select►Sub-Menu	F10 Save and Exit

Figure 2-1. BIOS Information (Windows 10)

Table 2-1. BIOS Information Tab Parameters (Windows 10)

Product Information	Remark
CPU Info	Should be same with processor brand string, BIOS can get processor brand string by calling CPUID instruction.
System BIOS Version	Should be same with SMBIOS Type 0 Offset 05h.
GOP Version	GOP Version will only be shown when Boot Mode is [UEFI].
HDD Model Name	- This item show the model name of HDD installed. - The hard disk mode name is automatically detected by the system. If there is no hard disk present or unknown type, "None" should be shown on this field.
HDD Serial Number	- This item will show the serial number of HDD installed. - If no hard disk or other devices are installed, then it will display a blank line. - If system has more than 1 device, the item should be listed as below: - HDD0 Model Name - HDD0 Serial Number - HDD1 Model Name - HDD1 Serial Number
SATA Mode	Display SATA Mode setting.
Total Memory	The field reports the system total installed memory.
Serial Number	Should be the same with SMBIOS Type 1 Offset 07h.

Product Information	Remark
Asset Tag Number	Should be same with SMBIOS Type 3 Offset 08h.
Product Name	• Should be same with SMBIOS Type 1 Offset 05h. • Product Name is defined by project POR. • The string is case sensitive and the maximum length is 25 bytes.
Manufacturer Name	• Should be same with SMBOS Type 1 Offset 04h. • The string is case sensitive.
UUID	• It is required for all systems. • Display format: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx (follow UUID Standard)

Main Tab

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

InsydeH20 Setup Utility				Rev. 5.0
Information	Main	Advanced	Security	Boot Exit
System Time : [01:00:00] System Date : [01/01/2018] Network Boot: [Enabled] F12 Boot Menu: [Disabled] SATA Mode: [RST with Optane] Wake on LAN: [Disabled] USB Wake from S4 Support: [Disabled] Function Key behavior: [Media Key] Lid Open Resume: [Enabled] Wake on USB while lid closed [Disabled] D2D Recovery: [Enabled]				Item Specific Help Hour valid range is from 0 to 23. Minute Valid range is from 0 to 59. Second Valid range is from 0 to 59. REDUCE/INCREASE : F5/F6.
F1	Help	Select Item	F5/F6	Change Values
Esc	Exit	Select Menu	Enter	Select► Sub-Menu
F9	Setup Defaults			
F10	Save and Exit			

Figure 2-2. BIOS Main (Windows 10)

Table 2-2. BIOS Main Tab Parameters (Windows 10)

Product Information	Example	Remark
System Time	HH:MM:SS	- The format is the number of string. - The hours are displayed in 24-hour format. - The values set in the two fields take effect immediately.
System Date	MM/DD/YY	
Network Boot	[Enabled] / [Disabled]	The default Network Boot value in different Boot Mode: [UEFI] Boot Mode: [Disabled] [Legacy] Boot Mode: [Enabled]
F12 Boot Menu	[Enabled] / [Disabled]	- This function enables or disables the ability that user can press F12 while POST to quickly select the boot device. - Modification to the boot device order apply only for the current session. The next time your computer is rebooted it will use again the boot device sequence as set in the BIOS Setup Utility > Boot > Boot priority order. - The default value is [Disabled].
SATA Mode	[RST with Optane] / [AHCI]	- Determines how STAT controller(s) operate. - The default value is [RST with Optane].

Product Information	Example	Remark
Wake On LAN	[Enabled] / [Disabled]	- Wake on LAN feature allows to turn on a network computer remotely by sending Magic Packet even if the system is in off state. - The default value is [Disabled]. - Panel off when wake on LAN.
USB Wake from S4 Support	[Enabled] / [Disabled]	Enable/Disable support USB wake from S4.
Function Key behavior	[Function Key] / [Media Key]	[Media Key]: Perform the media function by default. Hold Fn to activate F1 to F12. [Function Key]: Activate F1 to F12 by default, Hold Fn to perform media function.
Lid Open Resume	[Enabled] / [Disabled]	- System will resume from S3 state by opening the lid. - This option is only visible and functions on non-connected standby supported systems. - The default value depends on project definition.
Wake on USB while lid closed	[Enabled] / [Disabled]	- If enabled, USB devices can wake the system, even if the lid is closed. - The option is only visible on non-modern standby supported system. - The default value is [Disabled].
D2D Recovery	[Enabled] / [Disabled]	- This function enables/disables Acer disc-to-disc Recovery. - To do Acer disc-to-disc system recovery, press Alt+F10 key during POST.

Advanced Tab

The Advanced tab allows the user to set VTX/VTD function switch configuration.

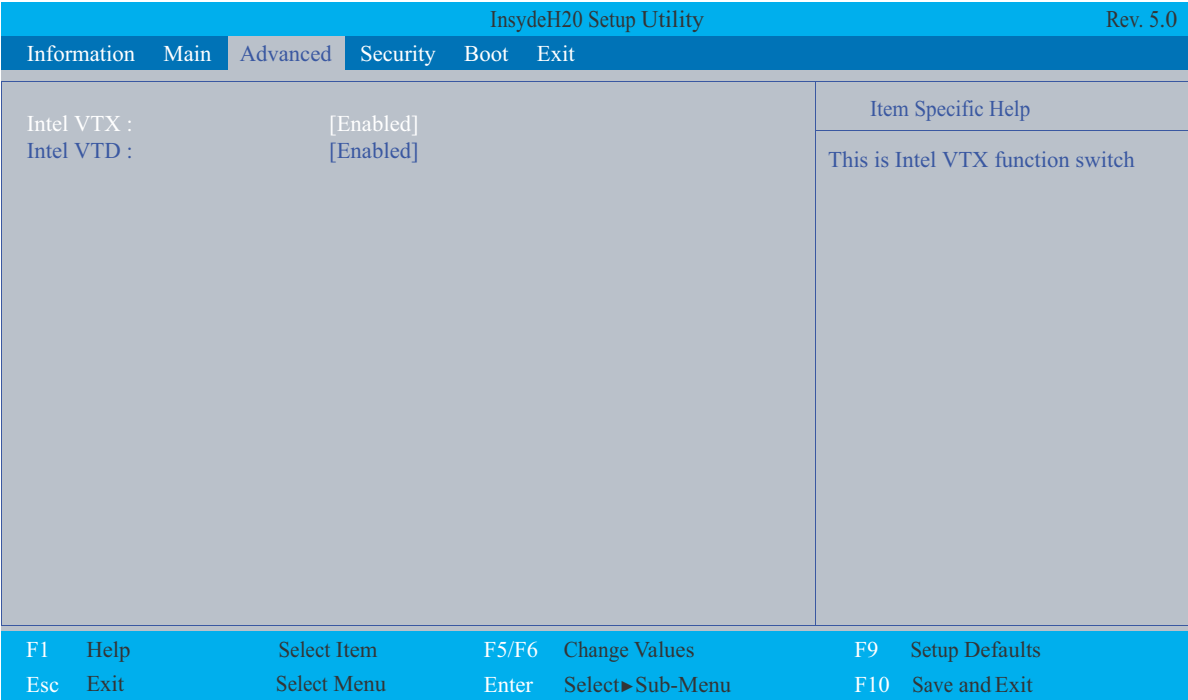


Figure 2-3. BIOS Advanced (Windows 10)

Table 2-3. BIOS Advanced Tab Parameters (Windows 10)

Product Information	Example	Remark
VTX	[Enabled] / [Disabled]	• This is Intel VTX function switch. • Only appear if the platform supports the function. • The default value is [Enabled].
VTD	[Enabled] / [Disabled]	• This is Intel VTD function switch. • Only appear if the platform supports the function. • The default value is [Enabled].

Security Tab

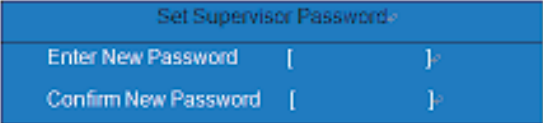
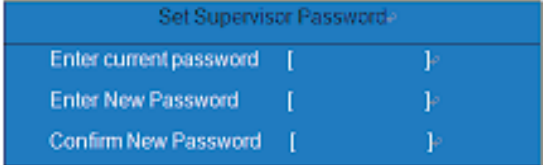
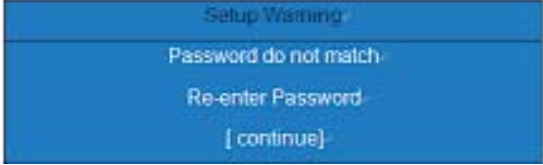
The Security tab allows the user to configure and protect the computer from unauthorized use.

InsydeH20 Setup Utility					Rev. 5.0
Information	Main	Advanced	Security	Boot	Exit
Supervisor Password Is: Clear User Password Is: Clear HDD0 Password Is: Clear HDD1 Password Is: Clear Set Supervisor Password [Enter] Set User Password [Enter] Set HDD0 Password [Enter] Set HDD1 Password [Enter] Password on Boot [Disabled] Secure Boot Mode: Standard Erase all Secure Boot: [Enter] Select an UEFI file as for executing : [Enter] Restore Secure Boot to Factory Default : [Enter] Current TPM (TCM) State : Install Change TPM (TCM) State : [Enable] Clear TPM (TCM) : [Clear]					Item Specific Help Supervisor Password controls access to the whole setup utility. It can be used to boot up when Password on boot is enabled.
F1	Help	Select Item	F5/F6	Change Values	F9 Setup Defaults
Esc	Exit	Select Menu	Enter	Select►Sub-Menu	F10 Save and Exit

Figure 2-4. BIOS Security (Windows 10)

Table 2-4. BIOS Security Tab Parameters (Windows 10)

Product Information	Example	Remark
Supervisor Password	[Set] / [Clear]	This field indicates if the Supervisor Password is set or not. The default value is [Clear]. [Set]: Supervisor Password is set. [Clear]: Supervisor Password is not set.
User Password	[Set] / [Clear]	This field indicates if the User Password is set or not. The default value is [Clear]. [Set]: User Password is set. [Clear]: User Password is not set.
HDD Password	[Set] / [Clear]	This field indicates if HDD Password is set or not. The default value is [Clear]. [Set]: HDD Password is set. [Clear]: User Password is not set. For NVMe SSD which doesn't support HDD password, the BIOS must display "HDDx:NVMe SSD don't support HDD password".

Product Information	Example	Remark
Set Supervisor Password	[Enter]	This field shows always the default value [Enter]. If the Supervisor Password is not set then the User Password is grayed out. 1. Use the ↑ and ↓ keys to highlight the Set Supervisor Password parameter and press Enter. The Set Supervisor Password dialog box appears  If you already have set a Supervisor Password previously, the following dialog box appears:  2. Type the current password in the Enter Current Password field and press Enter. 3. Type the new password in the Enter New Password field and press Enter. 4. Retype the new password in the Confirm New Password field. 5. Press Enter. If the passwords match, the Setup Notice dialog box appears.  If the current password entered does not match the actual current password, press Enter and re-type the passwords.  If the new password and confirm new password do not match, press Enter and re-type the passwords. 
Set User Password	[Enter]	

Product Information	Example	Remark
Set HDD Password	[Enter]	• This field shows always the default value [Enter]. • HDD Password Security: This feature is available to the user if the HDD password is set. Password can be added to the HDD usage only when the HDD password is set. • If the system has more than 1 HDD, listed items in Security Menu are as follows: • Set HDD0 Password • Set HDD1 Password
Password on Boot	[Enabled] / [Disabled]	• Defines whether a password is required or not when the events defined in this group take place. • Password on Boot option requires the Supervisor Password. During login, this should be grayed out if the User Password was used to enter BIOS Setup Utility. • Allows user to specify whether or not a password is required for boot. • The default value is [Disabled].

⇒ NOTE:

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

Selecting a UEFI File as Trusted

Perform the following to select a UEFI file as trusted for execution:

1. Use the ↑ and ↓ keys to highlight the **Select an UEFI File as trusted for executing** parameter and press **Enter**. This will open the page for you to select the location of the trusted file.



Figure 2-5. Select UEFI File Location

2. Use the ↑ and ↓ keys to select a location, then press **Enter** until you find the file which will be added to trusted file database.



Figure 2-6. Select UEFI File

3. Select the *.efi file to execute (only *.efi files can be added to the signature database).
4. Enter Boot Description of this file. Select “Yes” to add the signature database and return to the security section. Boot description will be added in the end of the Boot device order list (maximum of 5 entries are allowed).

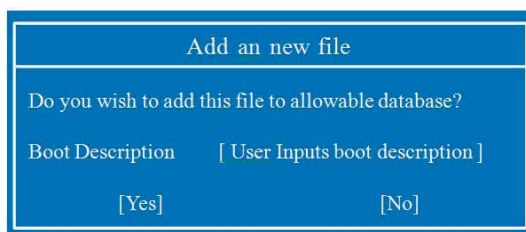


Figure 2-7. Add New File

Setting a Password

Perform the following to set the supervisor password:

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

A blue rectangular dialog box titled "Set Supervisor Password". It contains two text input fields. The first field is labeled "Enter New Password" and the second field is labeled "Confirm New Password". Both fields are currently empty.

Figure 2-8. Set Supervisor Password

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

⇒ NOTE:

Passwords are not case sensitive and the length must not exceed 12 characters. The following characters may be used in a password.

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

🚧 IMPORTANT:

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

3. Retype the password in the **Confirm New Password** field.
4. Press **Enter**. The **Setup Notice** dialog box appears.

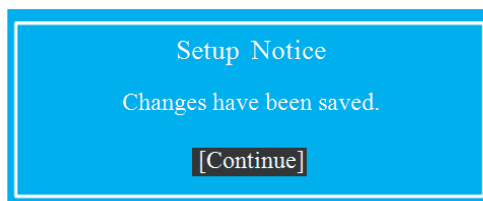
A blue rectangular dialog box titled "Setup Notice". It contains the text "Changes have been saved." and a button labeled "[Continue]" at the bottom.

Figure 2-9. Setup Notice

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

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

⇒ NOTE:

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

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

Changing a Password

Perform the following to change a password:

⇒ NOTE:

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

1. Use the $\uparrow$ and $\downarrow$ keys to highlight the `Set Supervisor Password` parameter and press **Enter**. The `Set Supervisor Password` dialog box appears.

A blue rectangular dialog box with a white border. The title "Set Supervisor Password" is centered at the top. Below the title, there are three labels: "Enter Current Password", "Enter New Password", and "Confirm New Password". To the right of "Enter Current Password" is a white text input field. To the right of "Enter New Password" is a white text input field. To the right of "Confirm New Password" is a black text input field.

Figure 2-10. Set Supervisor Password

2. Type the current password in the `Enter Current Password` field and press **Enter**.
3. Type the new password in the `Enter New Password` field and press **Enter**.
4. Retype the new password in the `Confirm New Password` field.
5. Press **Enter**. If the passwords match, the `Setup Notice` dialog box appears.

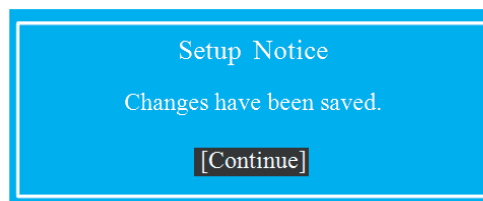
A blue rectangular dialog box with a white border. The title "Setup Notice" is centered at the top. Below the title, the text "Changes have been saved." is centered. At the bottom center, there is a button labeled "[Continue]".

Figure 2-11. Setup Notice

6. Press **Enter** to complete the password setting. The computer sets the `Supervisor Password Is` parameter to `Set`.
7. Press **F10** to save changes and exit *BIOS Setup Utility*.

Removing a Password

Perform the following to remove a password:

⇒ NOTE:

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

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

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

A blue rectangular dialog box with a white border. The title "Set Supervisor Password" is centered at the top. Below the title, there are three labels: "Enter Current Password", "Enter New Password", and "Confirm New Password". To the right of "Enter Current Password" is a white text input field. To the right of "Enter New Password" and "Confirm New Password" is a black password input field with a vertical cursor on the right side.

Figure 2-12. Set Supervisor Password

2. Type the current password in the `Enter Current Password` field and press **Enter**.
3. Press **Enter** twice without typing anything in the `Enter New Password` and `Confirm New Password` fields. The `Setup Notice` dialog box appears.

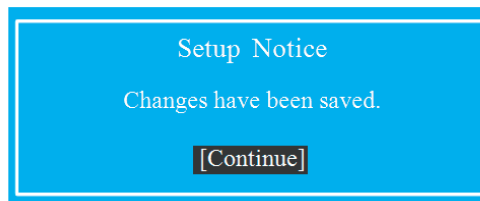
A blue rectangular dialog box with a white border. The title "Setup Notice" is centered at the top. Below the title, the text "Changes have been saved." is centered. At the bottom center, there is a button labeled "[Continue]".

Figure 2-13. Setup Notice

4. Press **Enter** to complete the password setting. The computer sets the `Supervisor Password Is` parameter to `Clear`.
5. Press **F10** to save changes and exit *BIOS Setup Utility*.

Boot Tab

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

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

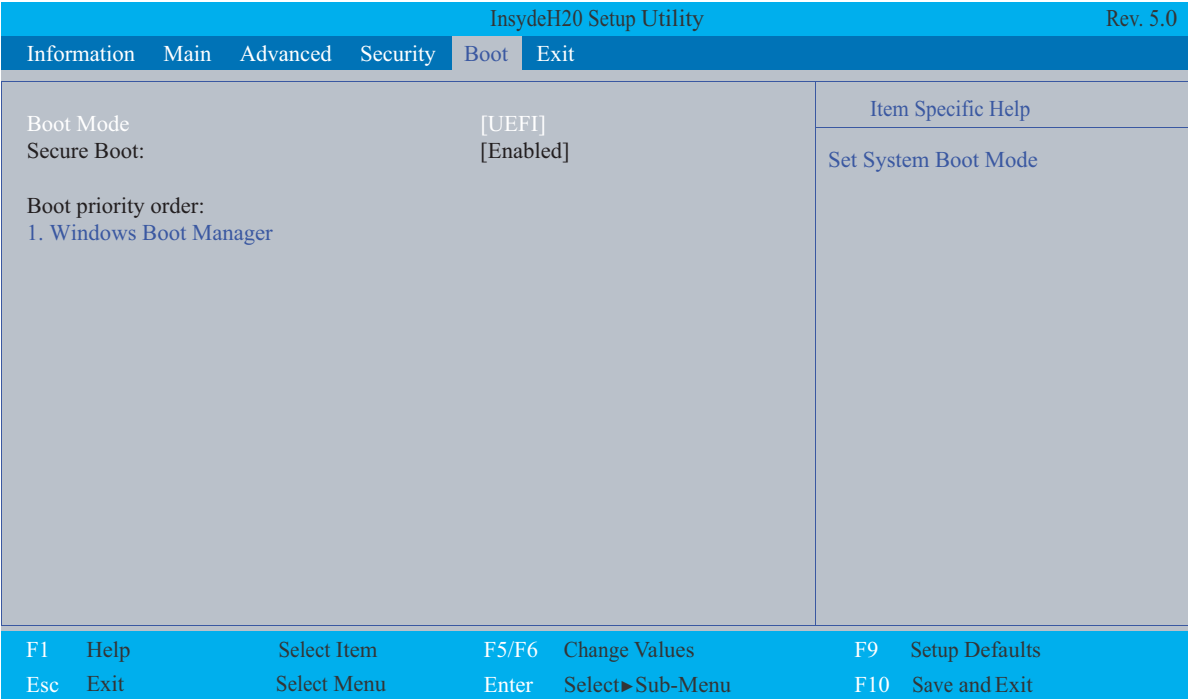


Figure 2-14. BIOS Boot (Windows 10)

Table 2-5. BIOS Boot Tab Parameters (Windows 10)

Product Information	Example	Remark
Boot Mode	[UEFI]	- After user flashes BIOS or loads the Setup Defaults, the Boot Mode should return to its factory default value. - The default value is [UEFI].

Product Information	Example	Remark
Secure Boot	[Enabled] / [Disabled]	- If the default Boot Mode is [UEFI], then the default Secure Boot status is [Enabled] and CSM module can't be loaded during boot. - If the user sets the Secure Boot to [Disabled], the firmware will bypass secure boot verification. - The Secure Boot status is only available on [UEFI] Boot Mode and it is hidden under [Legacy] Boot Mode. - In [UEFI] Boot Mode, the Secure Boot status is default gray out and could only be modified by following actions: 1. Supervisor password had been set. - When BIOS "Load Setup Defaults" is executed, if the default Boot Mode is [UEFI], the Secure Boot status will reset to [Enabled]. On the contrary, if the default Boot Mode is [Legacy], the Secure Boot will be disabled and hidden in the Boot Menu. - When user changes the Boot Mode from [Legacy] to [UEFI], Secure Boot status will be set to [Enabled] and shown in the Boot Menu.
Boot Priority Order		- If the Boot Mode has changed, the Boot Priority Order will not be refreshed until the next BIOS Setup Utility entry. - When the Boot Mode is [UEFI] or [Legacy] (UEFI+CSM), and users enable Windows To GO Startup Options under OS, an USB class boot entry name "USB Entry for Windows To GO" will be inserted into the top of the Boot Priority Order and Boot Option Menu. - If the "USB Entry for Windows To Go" is present, and BIOS "Load Setup Defaults" is executed, "USB Entry for Windows To Go" will be set to 1st Boot Device in Boot Priority Order. - If eMMC and HDD exist in the same time, eMMC is set as the default boot device.

⇒ NOTE:

- Wired connection will display Network Boot-IPV4 and Network Boot-IPV6 as two separate network boot devices.
- After Windows 10 OS is installed, a Windows Boot Manager will be generated and displayed on top of the boot device priority.
- Non-physical boot devices can be deleted in the Boot Priority Order List, this includes a trusted boot entry and Windows Boot Manager.
- If two (2) HDD is configured as RAID, only HDD0 is presented.

Exit Tab

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



Figure 2-15. BIOS Exit (Windows 10)

Table 2-6. BIOS Exit Tab Parameters (Windows 10)

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

Boot Manager

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

⇒ NOTE:

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

Perform the following to use the F12 Boot menu:

1. Start the computer.
2. When prompted, press **F12** during POST. The **Boot Manager** screen appears.

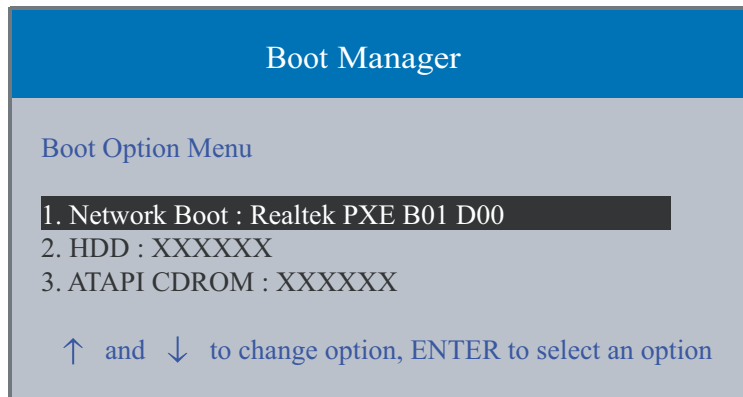


Figure 2-16. Boot Manager Screen

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

Flash Utilities

BIOS Secure Flash Utilities

BIOS Flash memory updates are required for the following conditions:

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

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

Perform the following to run a BIOS Flash update:

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

BIOS Flash may be performed by one of the following:

- Shell Secure Flash Utility (see [Shell Secure Flash Utility SOP \(For Service BIOS\)](#) on page [2-20](#)).
- Windows Secure Flash Utility (see [Windows Secure Flash Utility SOP](#) on page [2-24](#) or [Windows Secure Flash Utility SOP \(For Service BIOS\)](#) on page [2-29](#)).

⇒ NOTE:

- If a Crisis Recovery Disc is not available, create one before BIOS Flash utility is used. See [Creating a USB Flash Crisis Disk](#) on page [2-52](#).
- Do not install memory related drivers (XMS, EMS, DPMI) when BIOS Flash is used.
- Use an AC adaptor power supply when running BIOS Flash utility. If the battery pack does not contain power to finish loading BIOS Flash, do not boot the system.
- Flash utility has auto execution function.

Shell Secure Flash Utility SOP (For Service BIOS)

⇒ **NOTE:**

Plug the AC power adapter to a power source before performing the Shell Secure Flash Utility.

- 1. In Windows OS, unzip the compressed file of BIOS ROM package “Raticate_WL_BIOS_V1.xx_Win10X64.zip” (V1.xx = Version 1.xx), and then copy the “Shell” and “EFI” folder to the root of the USB HDD (formatted as FAT32).

⇒ **NOTE:** In the example below, the file is unzip and saved in E:\ location.

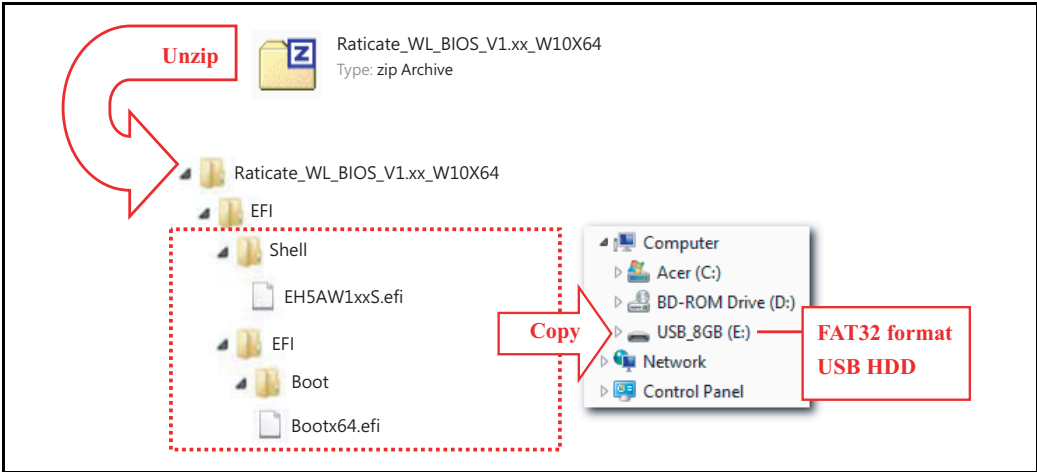


Figure 2-17. Unzip and Copy BIOS ROM Package

- 2. Power on the target machine. Press **F2** during boot to enter the *BIOS Setup Menu*. In the **Boot** menu, ensure the **Boot Mode** is “**UEFI**”. Then set the “**USB HDD:**” as the first boot device in *Boot priority order*.

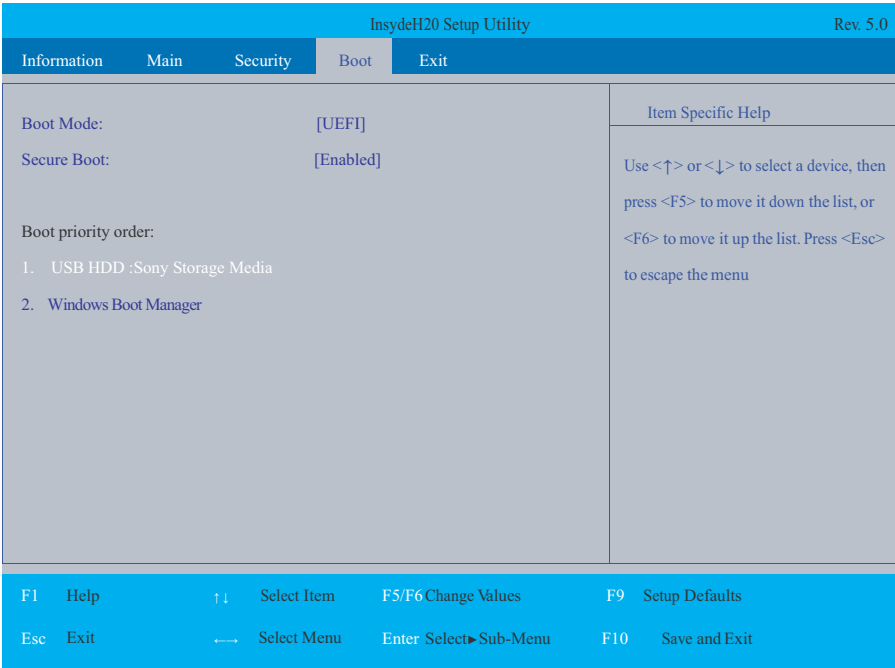


Figure 2-18. Configure Boot Parameters

3. On the **Exit** menu, choose **"YES"** on **Exit Saving Changes**. The system will save changes and reboot.
4. The system will reboot and enter Shell environment from the USB disk. Find the location of the "Removable HardDisk" in the device mapping table and open that path. For this example, the disk path is set to "fs1:" and the folder path is set to "cd shell".

```
EFI Shell version 2.40[21793.40]
Current running mode 1.1.2
Device mapping table
fs0 :HardDisk - Alias hd27a0a1 blk0
      PciRoot(0x0)/Pci(0x13,0x0)/Sata(0x0,0x0,0x0)/HD(1,GPT,96CBFE01-4E78-
fs1 :Removable HardDisk - Alias hd28e0b0b blk1
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x4,0x0)/USB(0x1,0x0)/HD(1,MBR,0x009

Shell> fs1:

fs1:\>cd shell

fs1:\Shell>
```

Figure 2-19. Change Folder Path

5. Execute the **"EH5AW1xxS.efi"** file to unlock Intel ME, and then the system will perform auto reboot.

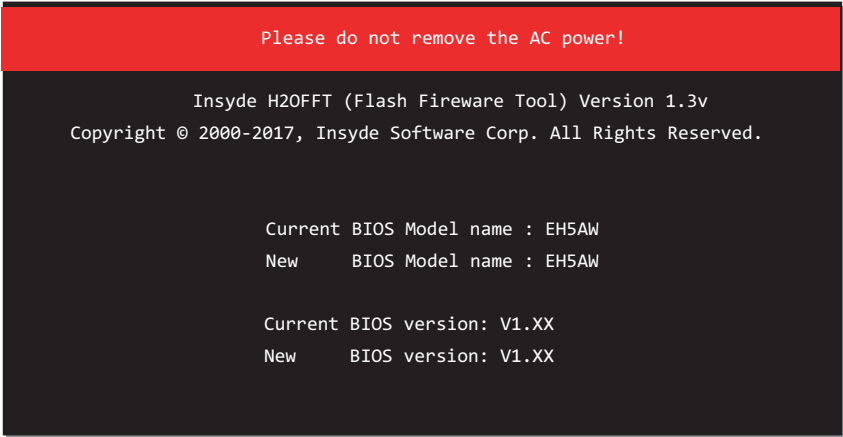
```
Shell> fs1:

fs1:\>cd shell

fs1:\Shell> EH5AW1xxS.efi
-
```

Figure 2-20. Execute the EH5AW1xxS.efi

6. After the system reboot, the Intel ME, BIOS, and EC firmware are now ready to be updated.



```
Please do not remove the AC power!

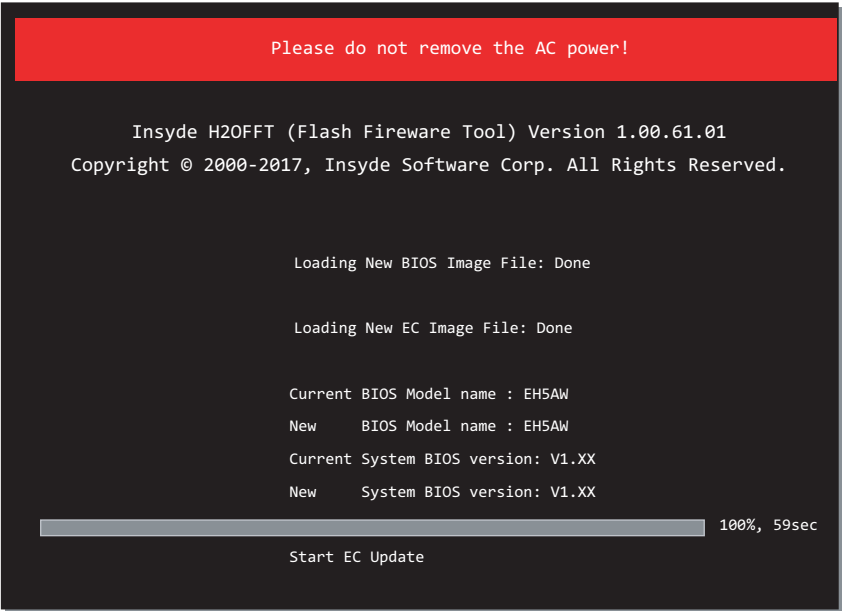
Insyde H2OFFT (Flash Firmware Tool) Version 1.3v
Copyright © 2000-2017, Insyde Software Corp. All Rights Reserved.

Current BIOS Model name : EH5AW
New      BIOS Model name : EH5AW

Current BIOS version: V1.XX
New      BIOS version: V1.XX
```

Figure 2-21. Ready to Update

7. The system will start doing secure flash.



```
Please do not remove the AC power!

Insyde H2OFFT (Flash Firmware Tool) Version 1.00.61.01
Copyright © 2000-2017, Insyde Software Corp. All Rights Reserved.

Loading New BIOS Image File: Done

Loading New EC Image File: Done

Current BIOS Model name : EH5AW
New      BIOS Model name : EH5AW
Current System BIOS version: V1.XX
New      System BIOS version: V1.XX

100%, 59sec

Start EC Update
```

Figure 2-22. Start Secure Flash

IMPORTANT:

- While flashing BIOS, do not remove the AC power source. If the warning message below is shown, check if the AC power is plugged in.

```
Insyde H2OFFT (Flash Firmware Tool) Version 1.3v
Copyright(C) 2000-2017 Insyde Software Corp. All Rights Reserved.

#=====#
#                               Warning: NO AC Connected                               #
# This process requires AC power and a charged battery to avoid an accidental #
# power-off during an update.                                                #
#=====#

Error: Update BIOS Failed!

Fs1:\>_
```

Figure 2-23. AC Detect Error

- If the warning message below is displayed, make sure the battery is not disconnected from the system.

```
Insyde H2OFFT (Flash Firmware Tool) Version 1.3v
Copyright(C) 2000-2017 Insyde Software Corp. All Rights Reserved.

#=====#
#                               Warning: NO Battery Connected                               #
# This process requires AC power and a charged battery to avoid an accidental #
# power-off during an update.                                                #
#=====#

Error: Update BIOS Failed!

Fs1:\>_
```

Figure 2-24. Battery Disconnected

- If the warning message below is displayed, make sure the battery power is above 25%.

```
Insyde H2OFFT (Flash Firmware Tool) Version 1.3v
Copyright(C) 2000-2017 Insyde Software Corp. All Rights Reserved.

#=====#
#                               Warning: Battery Too Low                               #
# This process requires AC power and a charged battery to avoid an accidental #
# power-off during an update. Connect the AC adapter and make sure a charged #
# battery is in the computer.                                                #
#=====#

Error: Update BIOS Failed!

Fs1:\>_
```

Figure 2-25. Battery Power is Low

Windows Secure Flash Utility SOP

⇒ **NOTE:**

Due to ESP(EFI System Partition), Winflash does not support Legacy mode. If the platform without windows OS, please use Shell Flash Utility package to flash Intel ME, BIOS, and EC firmware.

- 1. In Windows OS, unzip the compressed file of BIOS ROM package “Raticate_WL_BIOS_V1.xx_W10X64.zip” (V1.xx = Version 1.xx), and copy the contents of the folder to your computer.

⇒ **NOTE:** In the example below, the file is unzip and saved in “C:\” location.

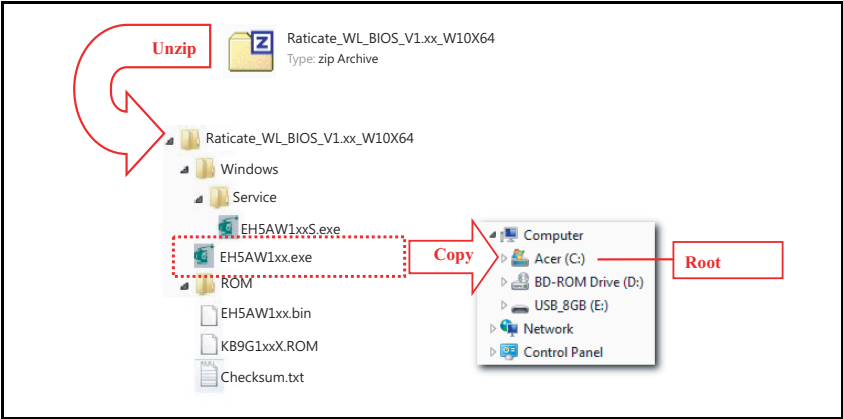


Figure 2-26. Unzip and Copy BIOS ROM Package

- 2. Click the Windows key shortcut “**WINKEY + X**” on the keyboard to display the Windows Mobility Center application. Then choose “**Command Prompt (Admin)**”.

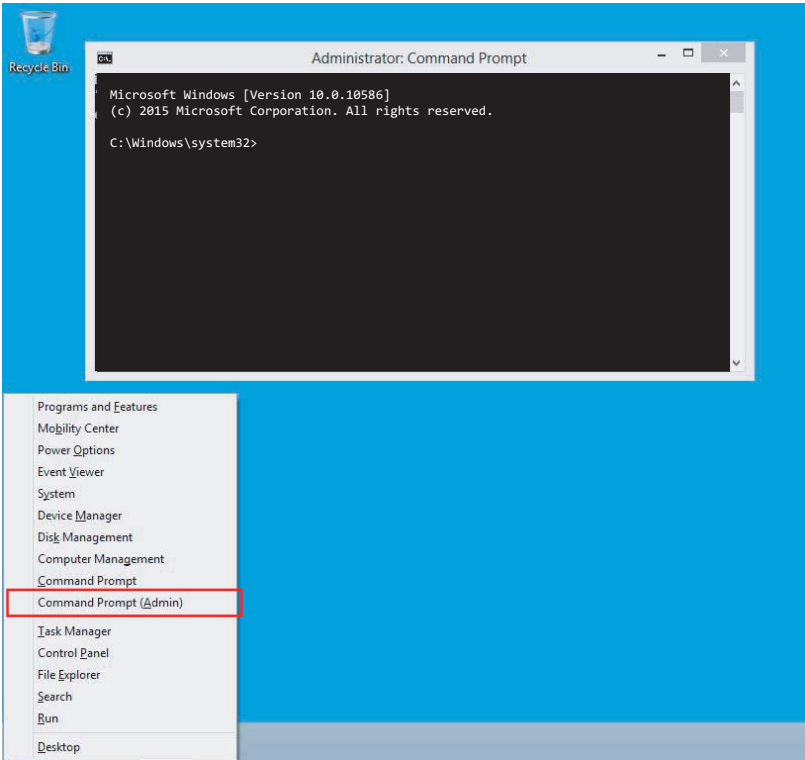


Figure 2-27. Run Command Prompt

3. If User Account Control is enabled, a “Do you want to allow the following program to make changes to this computer?” appears on the screen. Click **Yes** to continue.

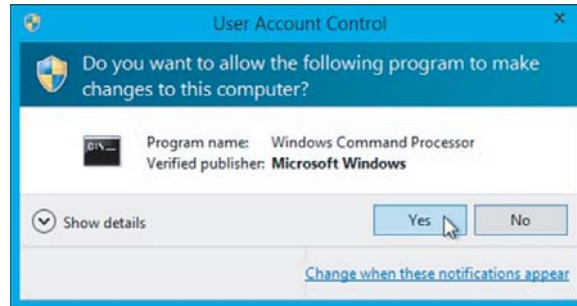


Figure 2-28. User Account Control

4. Change the directory to the "**Raticate_WL_BIOS_V1.xx_W10X64\Windows**" folder with Command Prompt window.

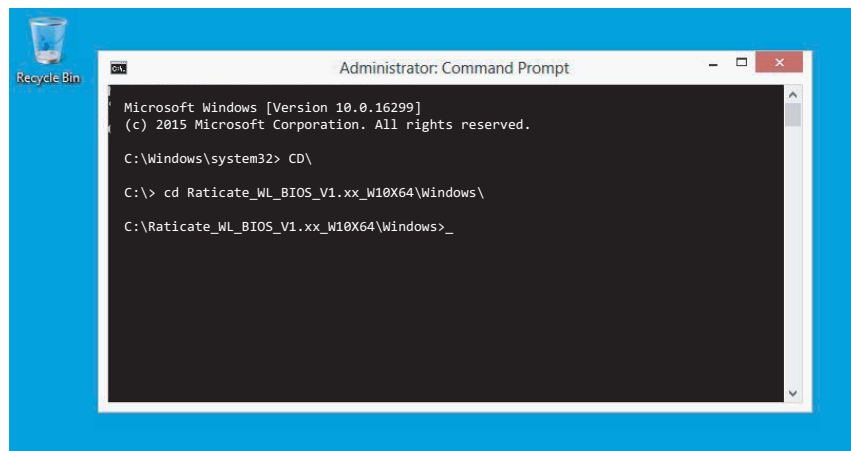


Figure 2-29. Change the Directory

5. Execute the "**EH5AW1xx.exe**" file to prepare for flashing Intel ME, BIOS, and EC firmware. The system will automatically reboot.

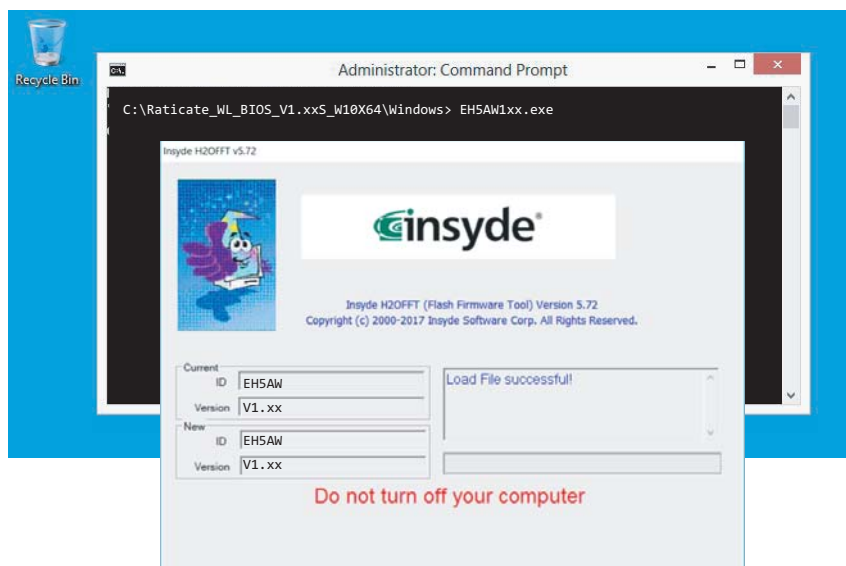


Figure 2-30. Execute the EH5AW1xx.exe

⇒ **NOTE:**

Before flashing BIOS, make sure that the AC power source is plugged in. If the warning message below appears, check if the AC is properly plugged in.



Figure 2-31. AC Detect Error

⚠ **CAUTION:**

If the warning message below is displayed, make sure the battery is not disconnected from the system.



Figure 2-32. Battery Disconnected

⚠ **CAUTION:**

If the warning message below is displayed, make sure the battery power is above 25%.

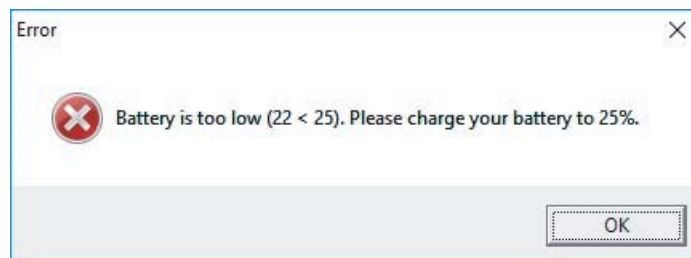


Figure 2-33. Battery Power is Low

6. The system will automatically reboot and start doing secure flash.

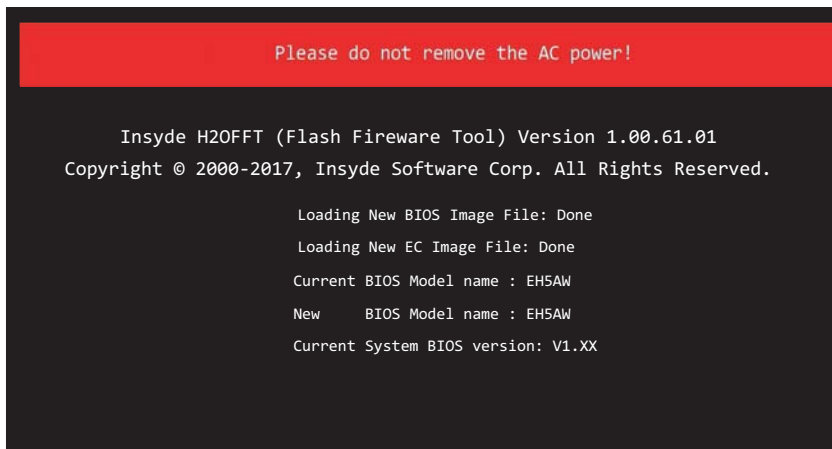


Figure 2-34. Start Secure Flash

⇒ **NOTE:**

While flashing BIOS on Secure flash window, do not remove the AC power source. If the warning message below is shown, check if the AC power is plugged in.

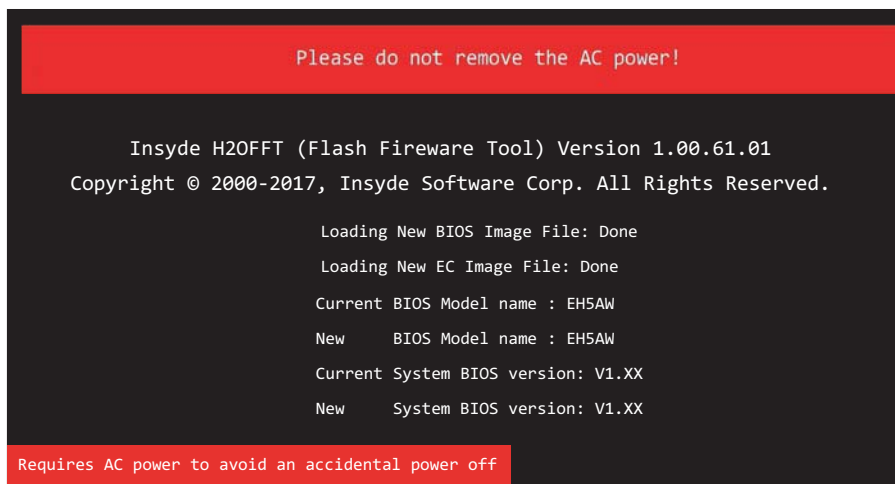


Figure 2-35. AC Detect Error

7. When the flash process is complete, the update progress shows 100%. The system will reboot.

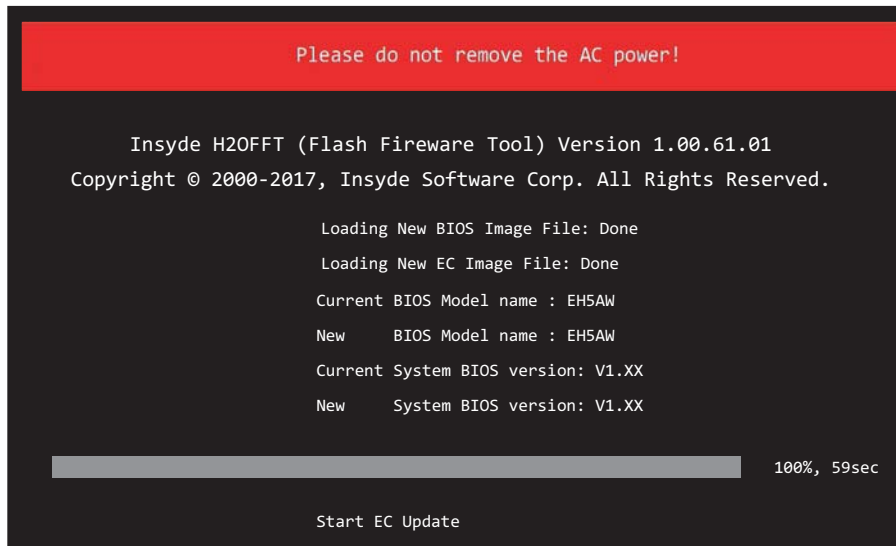


Figure 2-36. Flash Complete

Windows Secure Flash Utility SOP (For Service BIOS)

⇒ NOTE:

Due to ESP(EFI System Partition), Winflash does not support Legacy mode. If the platform without windows OS, please use Shell Flash Utility package to flash Intel ME, BIOS, and EC firmware.

- 1. In Windows OS, unzip the compressed file of BIOS ROM package “Raticate_WL_BIOS_V1.xx_ W10X64.zip” (V1.xx = Version 1.xx), and copy the contents of the folder to your computer.

⇒ NOTE: In the example below, the file is unzip and saved in “C:\” location.

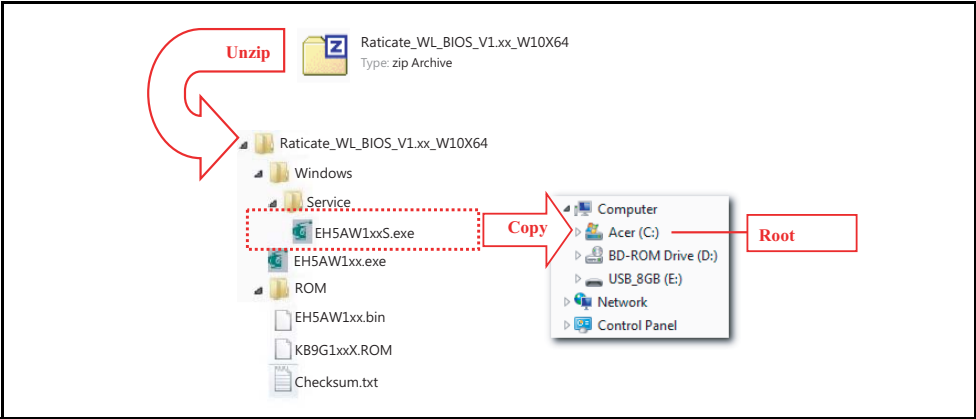


Figure 2-37. Unzip and Copy BIOS ROM Package

- 2. Click the Windows key shortcut “**WINKEY + X**” on the keyboard to display the Windows Mobility Center application. Then choose “**Command Prompt (Admin)**”.

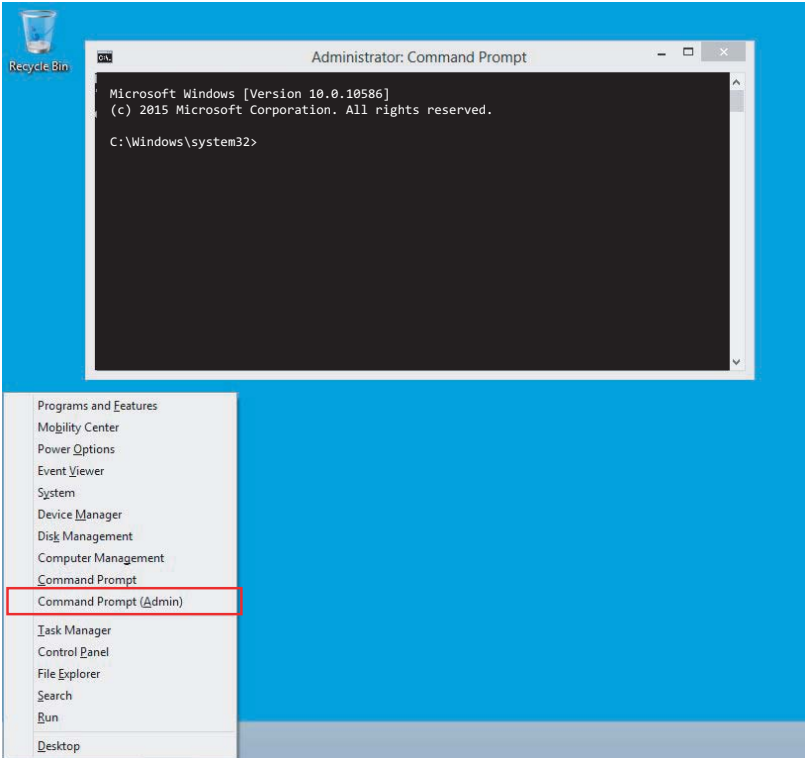


Figure 2-38. Run Command Prompt

3. If User Account Control is enabled, a “Do you want to allow the following program to make changes to this computer?” appears on the screen. Click **Yes** to continue.

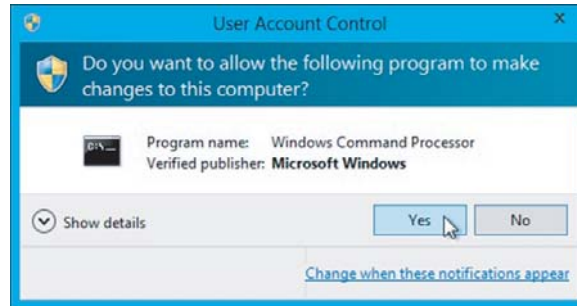


Figure 2-39. User Account Control

4. Change the directory to the "**Raticate_WL_BIOS_V1.xx_W10X64\Windows\Service**" folder with Command Prompt window.

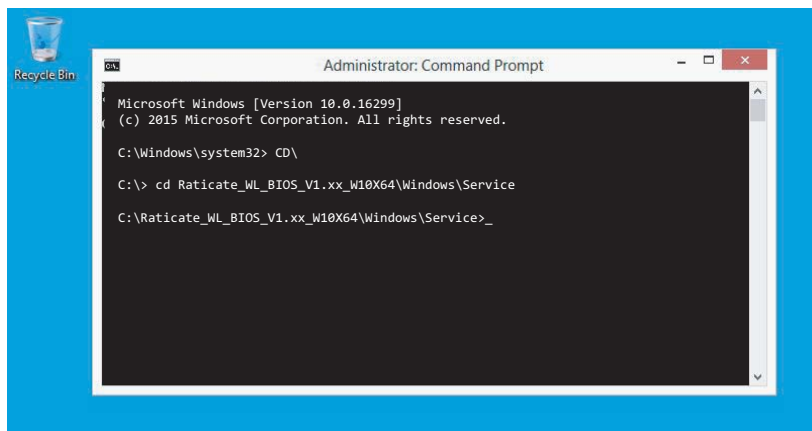


Figure 2-40. Change the Directory

5. Execute the “**EH5AW1xxS.exe**” file to prepare for flashing Intel ME, BIOS, and EC firmware. The system will automatically reboot.

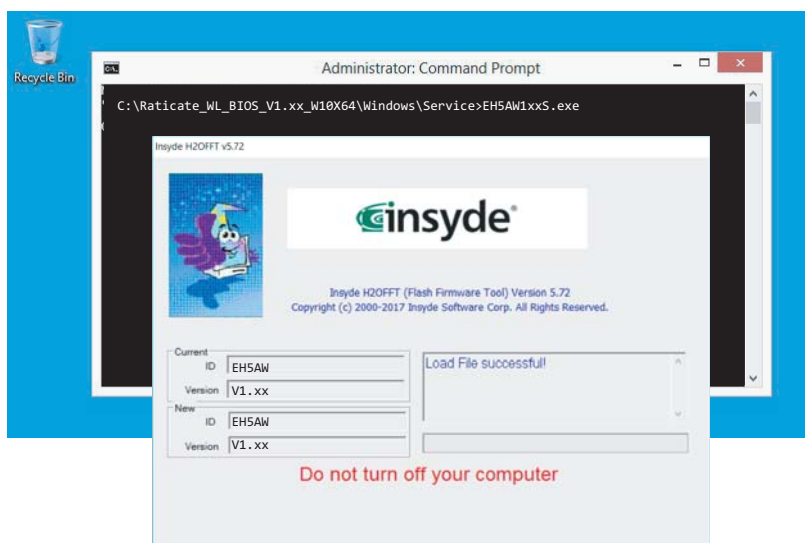


Figure 2-41. Execute the EH5AW1xxS.exe

⇒ **NOTE:**

Before flashing BIOS, make sure that the AC power source is plugged in. If the warning message below appears, check if the AC is properly plugged in.



Figure 2-42. AC Detect Error

⚠ **CAUTION:**

If the warning message below is displayed, make sure the battery is not disconnected from the system.



Figure 2-43. Battery Disconnected

⚠ **CAUTION:**

If the warning message below is displayed, make sure the battery power is above 25%.

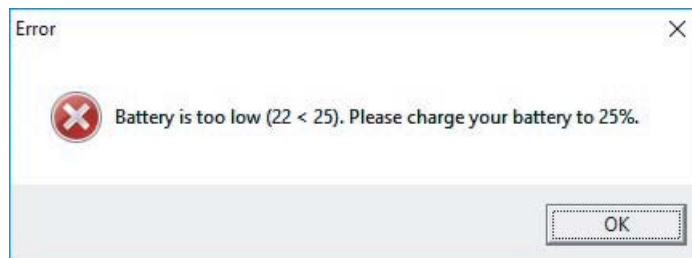


Figure 2-44. Battery Power is Low

6. The system will automatically reboot and start doing secure flash.

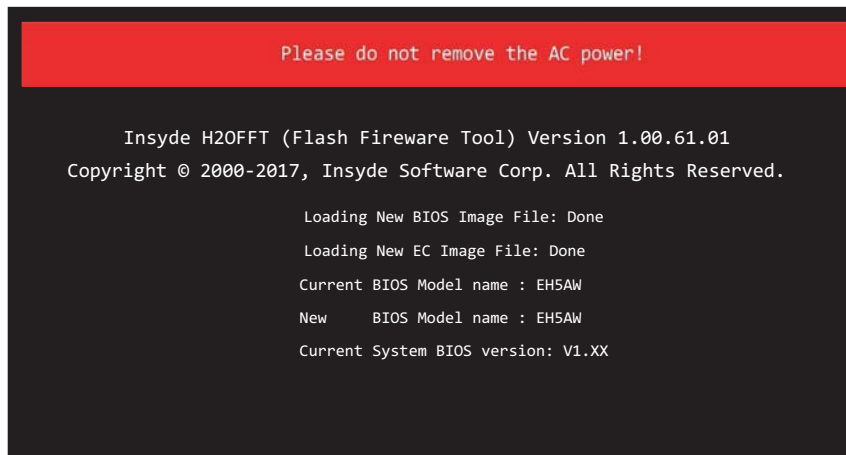


Figure 2-45. Start Secure Flash

⇒ **NOTE:**

While flashing BIOS on Secure flash window, do not remove the AC power source. If the warning message below is shown, check if the AC power is plugged in.

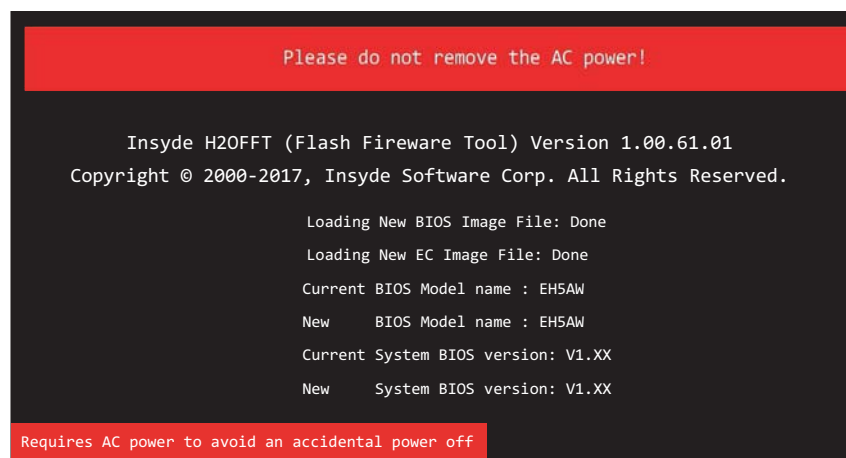


Figure 2-46. AC Detect Error

7. When the flash process is complete, the update progress shows 100%. The system will reboot.

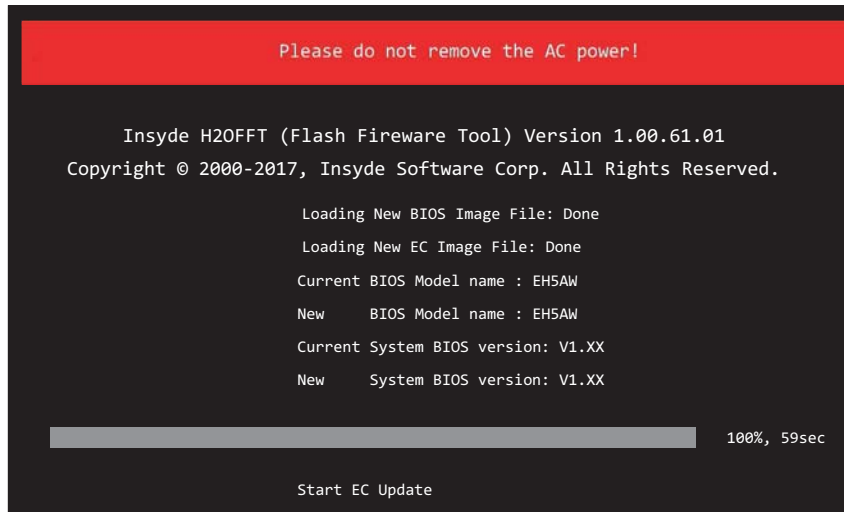


Figure 2-47. Flash Complete

DMITools Utility SOP

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

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

Using DMITools (x64)

Filename: **DMITOOLSx64.exe**

Usage Options:

```
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====
USAGE : DMITOOLSx64 [/Rm |/Rp |/Rfgsn |/Rmbn |/RUUID |/Rasset |/RLM]
           [/Wm |/Wp |/Wfgsn |/Wmbn |/GWUUID |/WUUID |/Wasset]
           [/WLM] [STRING]

[/Rm]      : Read Manufacturer Name.
[/Wm]      : Write Manufacturer Name to EEPROM. (Max.= 16 characters)
[/Rp]      : Read Product Name.
[/Wp]      : Write Product Name to EEPROM.      (Max.= 25 characters)
[/Rfgsn]   : Read F/G Serial Number.
[/Wfgsn]   : Write F/G Serial Number to EEPROM. (Max.= 22 characters)
[/Rmbn]    : Read M/B Serial Number.
[/Wmbn]    : Write M/B Serial Number to EEPROM. (Max.= 32 characters)
[/RUUID]   : Read UUID.
[/GWUUID]  : Generate UUID and Write.          (Ignore String )
[/WUUID]   : Write UUID to EEPROM.             (Max.= 20 Hex number)
[/Rasset]  : Read Asset Tag.
[/Wasset]  : Write Asset Tag to EEPROM.        (Max.= 32 characters)
[/RLM]     : Read LAN MAC from EEPROM.
[/WLM]     : Write LAN MAC to EEPROM.          (Max.= 12 Hex number)
           <Write LAN MAC only support Atheros/ Realtek LAN>
```

Figure 2-48. Usage Options

To update the DMI Pool, perform the following:

1. In Windows OS, copy “**DMITOOLSx64.exe**” to the Tools directory of a WinPE3.0/4.0 System Disk.

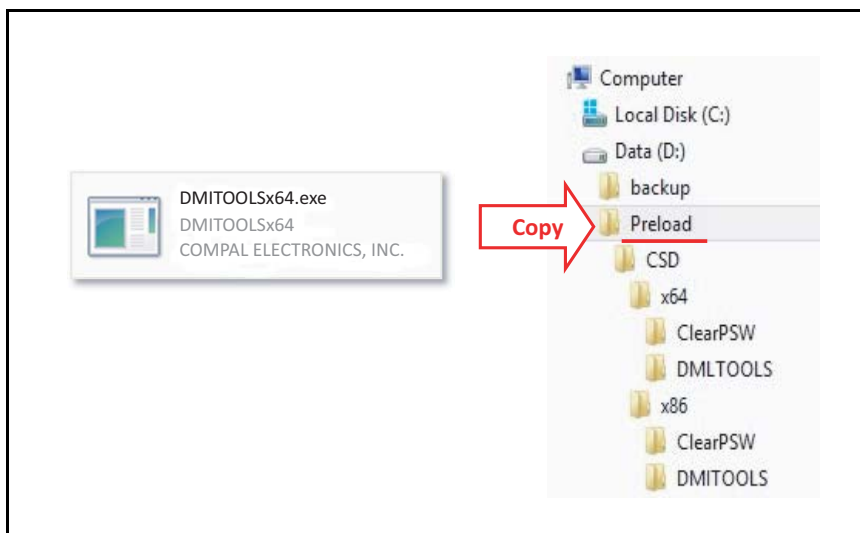


Figure 2-49. Copy File

⇒ NOTE:

Above path is an example only.

2. On the target device, boot to WinPE3.0/4.0 Server and execute **DMITOOLSx64.exe** to display the usage options help.

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

1. Read DMI Information from Memory

[Instruction & Output] Read Manufacture Name

```
C:\>DMITOOLSx64 /Rm
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Manufacturer : Acer
```

Figure 2-50. Read Manufacture Name

[Instruction & Output] Read Product Name

```
C:\>DMITTOOLSx64 /Rp
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Product Name   : xxxx xx-xxx
```

Figure 2-51. Read Product Name

[Instruction & Output] Read Serial Number

```
C:\>DMITTOOLSx64 /Rfgsn
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Serial Number  : 01234567890123456789
```

Figure 2-52. Read Serial Number

[Instruction & Output] Read M/B Serial Number

```
C:\>DMITTOOLSx64 /Rmbsn
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

M/B Serial Number : 1122334455667788990
```

Figure 2-53. Read M/B Serial Number

[Instruction & Output] Read UUID

```
C:\>DMITTOOLSx64 /RUUID
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

UUID String      : E37BADAD-7022-E811-9855-9828A606B8AD
                  AD AD 7B E3 22 70 11 E8 98 55 98 28 A6 06 B8 AD
```

Figure 2-54. Read UUID

[Instruction & Output] Read Asset Tag

```
C:\>DMITTOOLSx64 /Rasset
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Asset Tag String : Acer Asset Tag
```

Figure 2-55. Read Asset Tag

[Instruction & Output] Read LAN MAC

```
C:\>DMITTOOLSx64 /RLM
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

LAN MAC: B8-88-E3-42-6F-BF
```

Figure 2-56. Read LAN MAC Address

2. Write Manufacturer Name to EEPROM

[Instruction] DMITOOLSx64 /Wm Acer

```
C:\>DMITOOLSx64 /Wm Acer
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-57. Write Manufacturer Name

3. Write Product Name to EEPROM

[Instruction] DMITOOLSx64 /Wp xxxx xx-xxx

```
C:\>DMITOOLSx64 /Wp xxxx xx-xxx
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-58. Write Product Name

4. Write Serial Number to EEPROM

[Instruction] DMITOOLSx64 /Wfgsn 01234567890123456789

```
C:\>DMITOOLSx64 /Wfgsn 01234567890123456789
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-59. Write Serial Number

5. Write M/B Serial Number to EEPROM

[Instruction] DMITOOLSx64 /WmbSn 01234567890123456789

```
C:\>DMITOOLSx64 /WmbSn 01234567890123456789
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-60. Write M/B Serial Number

6. Generate and Write UUID to EEPROM (Create UUID from Intel [WFM20.pdf](#))

[Instruction] DMITOOLSx64 /GWUID

```
C:\>DMITOOLSx64 /GWUID
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Write UUID... 39643236-6134-6231-6232
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-61. Generate and Write UUID

7. Write UUID to EEPROM

[Instruction] DMITOOLSx64 /WUID B57428EB4CB211E1BED7

```
C:\>DMITOOLSx64 /WUID B57428EB4CB211E1BED7
=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-62. Write UUID

⇒ **NOTE:**

SMBIOS UUID used little-endian byte encoding for the first three fields:
time_low, **time_mid**, **time_hi_and_version**.

For example:

The UUID **00112233-4455-6677-8899-AABBCCDDEEFF**
would thus be represented as: **33221100554477668899AABBCCDDEEFF**.

Table 2-7. UUID Byte Order and RFC4122 Field Names

Offset	RFC 4122 Name	Length	Value	Description
00h	time_low	DWORD	Varies	Low field of the timestamp
04h	time_mid	WORD	Varies	Middle field of the timestamp
06h	time_hi_and_version	WORD	Varies	High field of the timestamp multiplexed with the version number
08h	clock_seq_hi_and_reserved	BYTE	Varies	High field of the clock sequence multiplexed with the variant
09h	clock_seq_low	BYTE	Varies	Low field of the clock sequence
0Ah	Node	6 BYTES	Varies	Spatially unique node identifier

8. Write Asset Tag to EEPROM

[Instruction] DMITOOLSx64 /Wasset Acer Asstag

```
C:\>DMITOOLSx64 /Wasset Acer Asstag

=====
Compal Electronics, INC.                      V3. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx64.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-63. Write Asset Tag

⇒ NOTE:

- After writing items (2)~(8), restart the system to get the latest DMI data.
- If using the write command, enter the correct command string. Otherwise, it will display a syntax error.

```
C:\>DMITTOOLSx64 /wlm

ERROR:  The syntax of the command is incorrect!

Parameter is lack case:
ERROR : The input parameter is lack.
Over parameters case:
ERROR : The input parameter is too much.
Syntax is wrong case:
ERROR : The syntax of the command is incorrect.
Write command with String which length is too long case:
ERROR : The string length is invalid.
Write UUID and its length is too long or short case:
ERROR : The UUID length is invalid.
Write LAN MAC and its length is too long or short case:
ERROR : The LAN MAC length is invalid.
Write UUID and don't use Hexadecimal number case:
ERROR : The input parameter is invalid, Please use hexadecimal number.
Write LAN MAC in Broadcom LAN case:
ERROR : Write LAN MAC only support Atheros/ Realtek LAN
```

Figure 2-64. Syntax error

Using DMITools (x86)

Filename: **DMITOOLSx86.exe**

Usage Options:

```
=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====
USAGE : DMITOOLSx86  [/Rm  | /Rp  | /Rfgsn | /Rmbn  | /RUUID | /Rasset | /RLM]
                  [/Wm  | /Wp  | /Wfgsn | /Wmbn  | /GWUID | /WUID  | /Wasset]
                  [/WLM] [STRING]

[/Rm]   : Read Manufacturer Name.
[/Wm]   : Write Manufacturer Name to EEPROM.  (Max.= 16 characters)
[/Rp]   : Read Product Name.
[/Wp]   : Write Product Name to EEPROM.      (Max.= 25 characters)
[/Rfgsn] : Read F/G Serial Number.
[/Wfgsn] : Write F/G Serial Number to EEPROM. (Max.= 22 characters)
[/Rmbn]  : Read M/B Serial Number.
[/Wmbn]  : Write M/B Serial Number to EEPROM. (Max.= 32 characters)
[/RUUID] : Read UUID.
[/GWUID] : Generate UUID and Write.          (Ignore String )
[/WUID]  : Write UUID to EEPROM.             (Max.= 20 Hex number)
[/Rasset] : Read Asset Tag.
[/Wasset] : Write Asset Tag to EEPROM.       (Max.= 32 characters)
[/RLM]   : Read LAN MAC from EEPROM.
[/WLM]   : Write LAN MAC to EEPROM.         (Max.= 12 Hex number)
          <Write LAN MAC only support Atheros/ Realtek LAN>
```

Figure 2-65. Usage Options

To update the DMI Pool, perform the following:

1. In Windows OS, copy “**DMITOOLSx86.exe**” to the Tools directory of a WinPE3.0/4.0 System Disk.

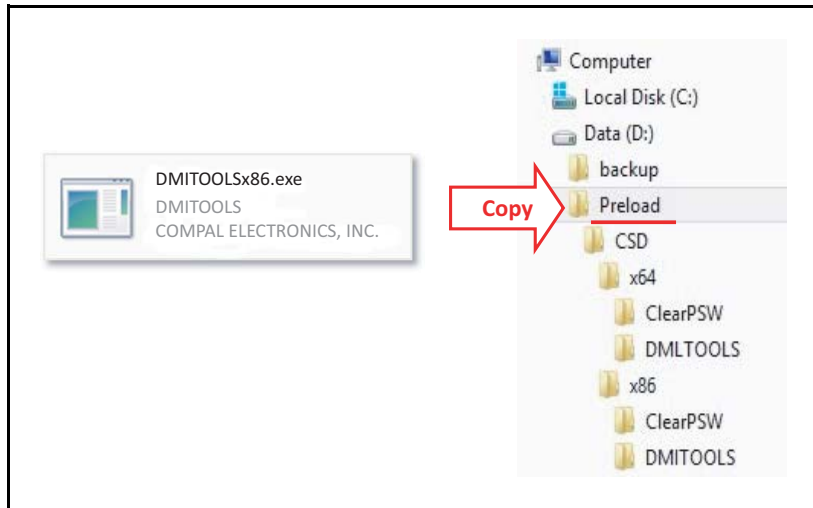


Figure 2-66. Copy File

⇒ **NOTE:**

Above path is an example only.

2. On the target device, boot to WinPE3.0/4.0 Server and execute **DMITOOLSx86.exe** to display the usage options help.

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

1. Read DMI Information from Memory

[Instruction & Output] Read Manufacture Name

```
C:\>DMITOOLSx86 /Rm
=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Manufacturer : Acer
```

Figure 2-67. Read Manufacture Name

[Instruction & Output] Read Product Name

```
C:\>DMITTOOLSx86 /Rp
=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Product Name   : xxxx XX-xxx
```

Figure 2-68. Read Product Name

[Instruction & Output] Read Serial Number

```
C:\>DMITTOOLSx86 /Rfgsn
=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Serial Number  : 01234567890123456789
```

Figure 2-69. Read Serial Number

[Instruction & Output] Read M/B Serial Number

```
C:\>DMITTOOLSx86 /Rmbn
=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

M/B Serial Number : 1122334455667788990
```

Figure 2-70. Read M/B Serial Number

[Instruction & Output] Read UUID

```
C:\>DMITTOOLSx86 /RUUID

=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

UUID String   : E37BADAD-7022-E811-9855-9828A606B8AD
               AD AD 7B E3 22 70 11 E8 98 55 98 28 A6 06 B8 AD
```

Figure 2-71. Read UUID

[Instruction & Output] Read Asset Tag

```
C:\>DMITTOOLSx86 /Rasset

=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Asset Tag String : Acer Asset Tag
```

Figure 2-72. Read Asset Tag

[Instruction & Output] Read LAN MAC

```
C:\>DMITTOOLSx86 /RLM

=====
Compal Electronics, INC.                      V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITTOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

LAN MAC: B8-88-E3-42-6F-BF
```

Figure 2-73. Read LAN MAC Address

2. Write Manufacturer Name to EEPROM

[Instruction] DMITOOLSx86 /Wm Acer

```
C:\>DMITOOLSx86 /Wm Acer

=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-74. Write Manufacturer Name

3. Write Product Name to EEPROM

[Instruction] DMITOOLSx86 /Wp xxxx xx-xxx

```
C:\>DMITOOLSx86 /Wp xxxx xx-xxx

=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-75. Write Product Name

4. Write Serial Number to EEPROM

[Instruction] DMITOOLSx86 /Wfgsn 01234567890123456789

```
C:\>DMITOOLSx86 /Wfgsn 01234567890123456789

=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-76. Write Serial Number

5. Write M/B Serial Number to EEPROM

[Instruction] DMITOOLSx86 /WmbSn 01234567890123456789

```
C:\>DMITOOLSx86 /WmbSn 01234567890123456789
=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-77. Write M/B Serial Number

6. Generate and Write UUID to EEPROM (Create UUID from Intel [WFM20.pdf](#))

[Instruction] DMITOOLSx86 /GWUUID

```
C:\>DMITOOLSx86 /GWUUID
=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Write UUID... 39643236-6134-6231-6232
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-78. Generate and Write UUID

7. Write UUID to EEPROM

[Instruction] DMITOOLSx86 /WUUID B57428EB4CB211E1BED7

```
C:\>DMITOOLSx86 /WUUID B57428EB4CB211E1BED7
=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-79. Write UUID

⇒ **NOTE:**

SMBIOS UUID used little-endian byte encoding for the first three fields:
time_low, **time_mid**, **time_hi_and_version**.

For example:

The UUID **00112233-4455-6677-8899-AABBCCDDEEFF**
would thus be represented as: **33221100554477668899AABBCCDDEEFF**.

Table 2-8. UUID Byte Order and RFC4122 Field Names

Offset	RFC 4122 Name	Length	Value	Description
00h	time_low	DWORD	Varies	Low field of the timestamp
04h	time_mid	WORD	Varies	Middle field of the timestamp
06h	time_hi_and_version	WORD	Varies	High field of the timestamp multiplexed with the version number
08h	clock_seq_hi_and_reserved	BYTE	Varies	High field of the clock sequence multiplexed with the variant
09h	clock_seq_low	BYTE	Varies	Low field of the clock sequence
0Ah	Node	6 BYTES	Varies	Spatially unique node identifier

8. Write Asset Tag to EEPROM

[Instruction] DMITOOLSx86 /Wasset Acer Asstag

```
C:\>DMITOOLSx86 /Wasset Acer Asstag
=====
Compal Electronics, INC.                                V2. 0. 0. 10
Author : STD SID TEAM
Utility: [WinPE] DMITOOLSx86.exe
WARNING: THIS PROGRAM IS FOR INTERNAL USE ONLY.
Copyright (C) 2015 Compal Electronics, INC. All rights reserved.
=====

Waiting.....
Successful, Please restart system to make this new DMI data effective.
```

Figure 2-80. Write Asset Tag

⇒ NOTE:

- After writing items (2)~(8), restart the system to get the latest DMI data.
- If using the write command, enter the correct command string. Otherwise, it will display a syntax error.

```
C:\>DMIToolsx86 /wlm

ERROR:  The syntax of the command is incorrect!

Parameter is lack case:
ERROR : The input parameter is lack.
Over parameters case:
ERROR : The input parameter is too much.
Syntax is wrong case:
ERROR : The syntax of the command is incorrect.
Write command with String which length is too long case:
ERROR : The string length is invalid.
Write UUID and its length is too long or short case:
ERROR : The UUID length is invalid.
Write LAN MAC and its length is too long or short case:
ERROR : The LAN MAC length is invalid.
Write UUID and don't use Hexadecimal number case:
ERROR : The input parameter is invalid, Please use hexadecimal number.
Write LAN MAC in Broadcom LAN case:
ERROR : Write LAN MAC only support Atheros/ Realtek LAN
```

Figure 2-81. Syntax error

4. To manually specify your MAC address, find **"WINPG64.BAT"**. Right-click your mouse on the file and select "Edit" to edit the file.

Add **RTNicPgW64.exe/efuse/nodeid "MAC"** as shown in the below illustration. Then save the file and repeat step 3.

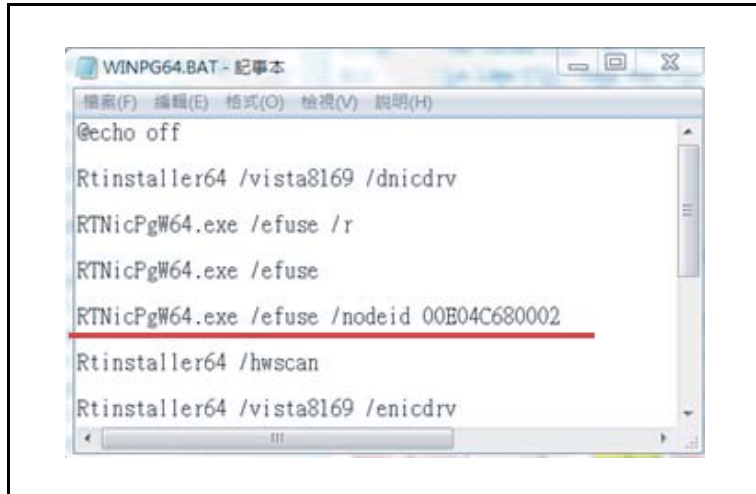


Figure 2-84. Modify MAC Address

Crisis Utility SOP

When to Use the Crisis S.O.P?

- When the system hangs while updating BIOS.
- When power failure occurs and the system shuts down while updating BIOS.
- When the system cannot boot normally after updating BIOS (i.e. a black screen appears without a POST logo, etc.).

Creating a USB Flash Crisis Disk

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

1. On a machine with Windows OS, plug in a USB flash disk.
2. Launch *Windows Explorer*, the USB flash disk is shown as a “Removable Disk”. Right-click the mouse on the USB flash disk, then select *Format* to format the USB disk.

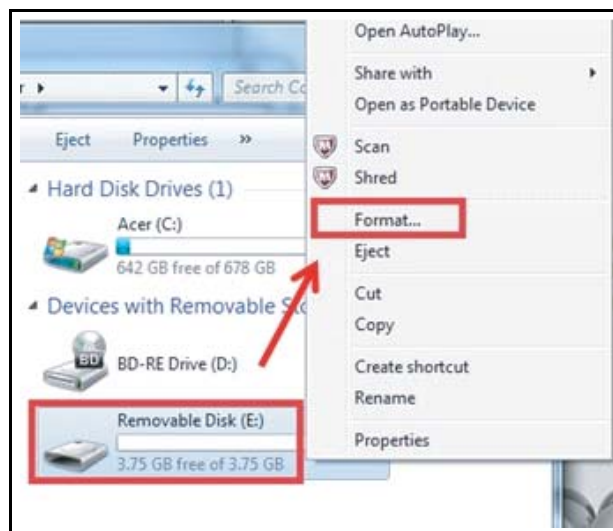


Figure 2-85. Format USB Flash Disk (1 of 2)

3. In the dialog shown below, set the following options:

- File System: Select “FAT32”
- Format Options: Select “Quick Format”

Then, click **Start** to execute the formatting operation.

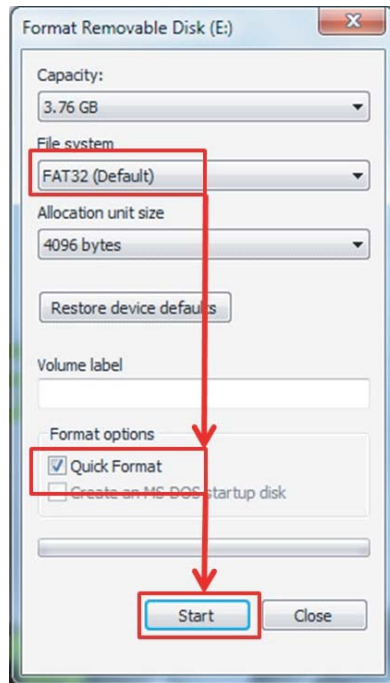


Figure 2-86. Format USB Flash Disk (2 of 2)

4. Click **OK** to confirm format when the following dialog box appears on the screen.

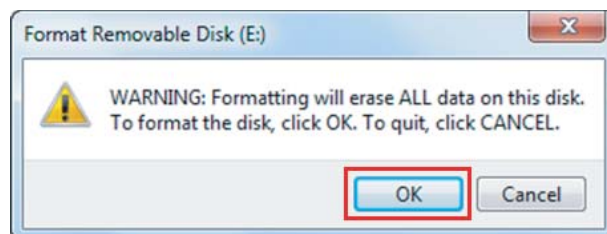


Figure 2-87. Confirm Format

5. When formatting is complete, click **OK** to close the dialog box.

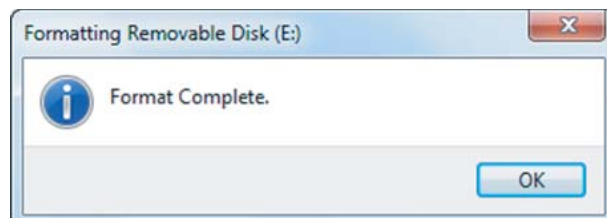


Figure 2-88. Format Complete

6. In Windows OS, unzip the compressed Crisis utility package (i.e. in this case, “**Crisis_Disk_v1.xx.zip**”). Then copy the “**EH5AWX64.fd**” file to the root directory of the USB flash disk made in the preceding steps.

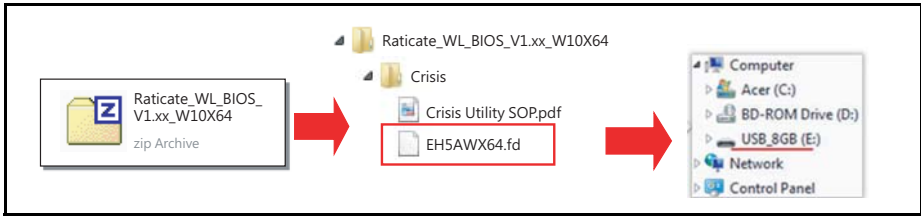


Figure 2-89. Unzip and Copy Crisis Package

⇒ NOTE:

Make sure the size of “**EH5AWX64.fd**” is about 11MB, and that there is no other *.fd file in the root directory of the USB flash disk.

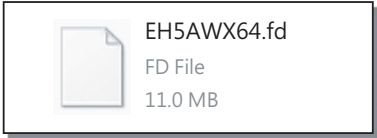


Figure 2-90. Check File Size

Using the Crisis Utility Disk

1. Turn off the target machine and make sure that AC is plugged in.

⇒ NOTE:

Make sure the Power LED () is off.



Figure 2-91. Ensure Power is Off

2. Plug in the USB flash disk.



Figure 2-92. Plug AC Adapter

3. Press and hold ***Fn*** and ***Esc***.

DO NOT release ***Fn*** and ***Esc*** so far, and continue with step 4.



Figure 2-93. Hold Down <Fn> + <Esc>

4. As ***Fn*** and ***Esc*** are pressed, press the ***Power*** button to turn on the machine.

Wait for 3~5 seconds to make sure the system fan is on full speed, and then you may release ***Fn*** and ***Esc***.

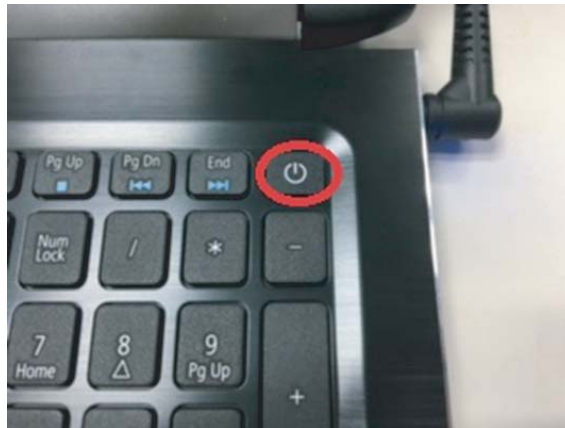


Figure 2-94. Hold Down <Fn> + <Esc> and Power On

5. Wait for 3~5 minutes for the system to complete the *Crisis* operation. The system will automatically shutdown.

⇒ NOTE:

If the waiting time takes more than 5 minutes, the system recovery might have failed. Check the following:

- BIOS filename (i.e. "**EH5AWX64.fd**") is correct and the file is in the root directory of the USB flash Crisis disk.
- Remove the battery to reset the embedded controller status.
- Repeat steps 1~4.

BIOS Shipping Mode SOP

1. Power on the system. Then press **F2** and **Shift** simultaneously to boot into Setup Utility.

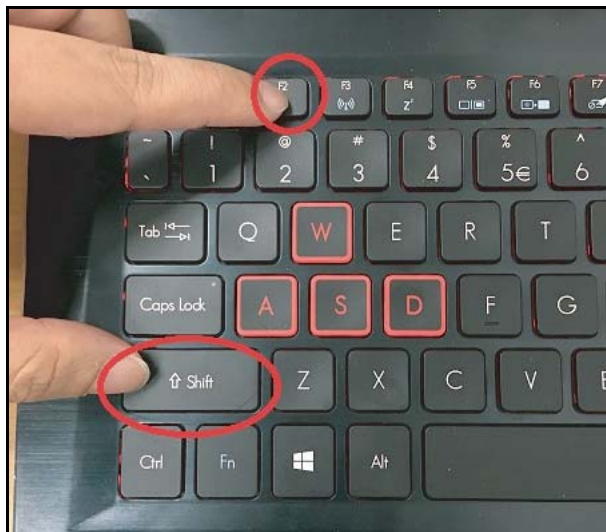


Figure 2-95. Press <F2> + <Shift>

2. Verify that the Setup Utility label (**InsydeH20 Setup Utility (Manufacture)**) is displayed in RED text.



Figure 2-96. Verify Setup Utility Label

3. Ensure that the AC adapter has been removed.



Figure 2-97. Unplug the AC Adapter

4. Press **F9** to load setup default, and then press **F10** to save changes and exit. The system will automatically shut down and enter **Shipping** mode.
5. In **Shipping** mode, press the **Power** button to check the system CANNOT be powered on for ensuring safe transport of the device.

Jumper and Connectors Location

Jumper and Connector Locations	3-2
Mainboard Top View	3-2
Mainboard Bottom View	3-3
USB Board	3-4
Clear CMOS Jumper	3-5

Jumper and Connector Locations

Mainboard Top View

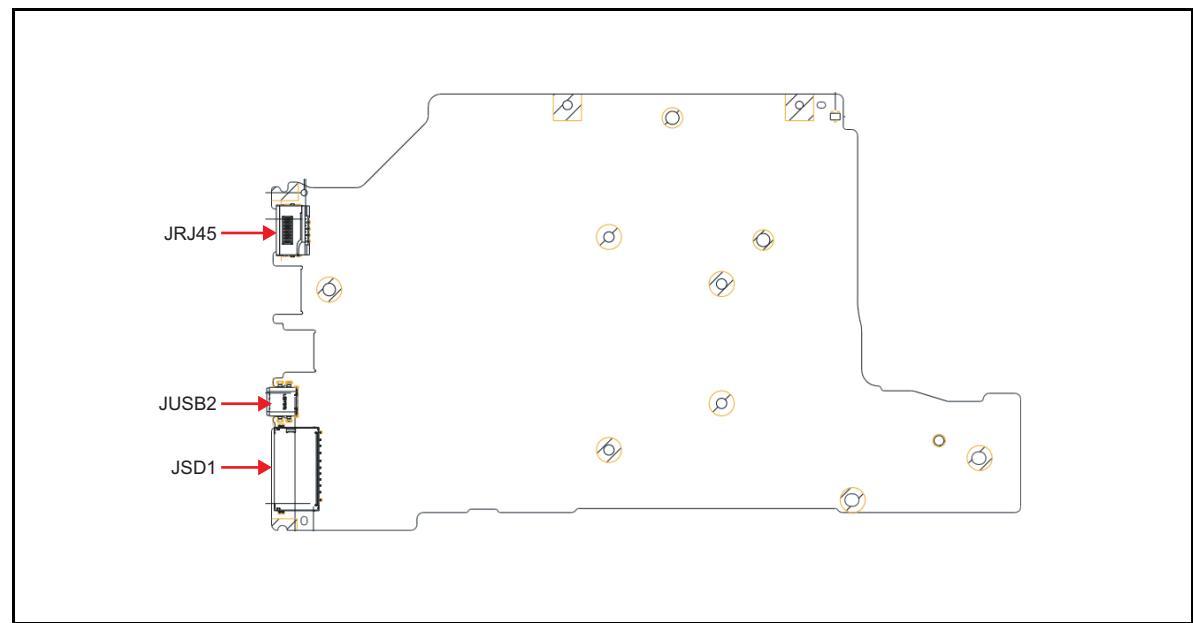


Figure 3-1. Mainboard Top

Table 3-1. Mainboard Top Jumper and Connectors

Item	Description	Item	Description
JRJ45	LAN Connector	JSD1	Card Reader
JUSB2	Type-C Connector		

Mainboard Bottom View

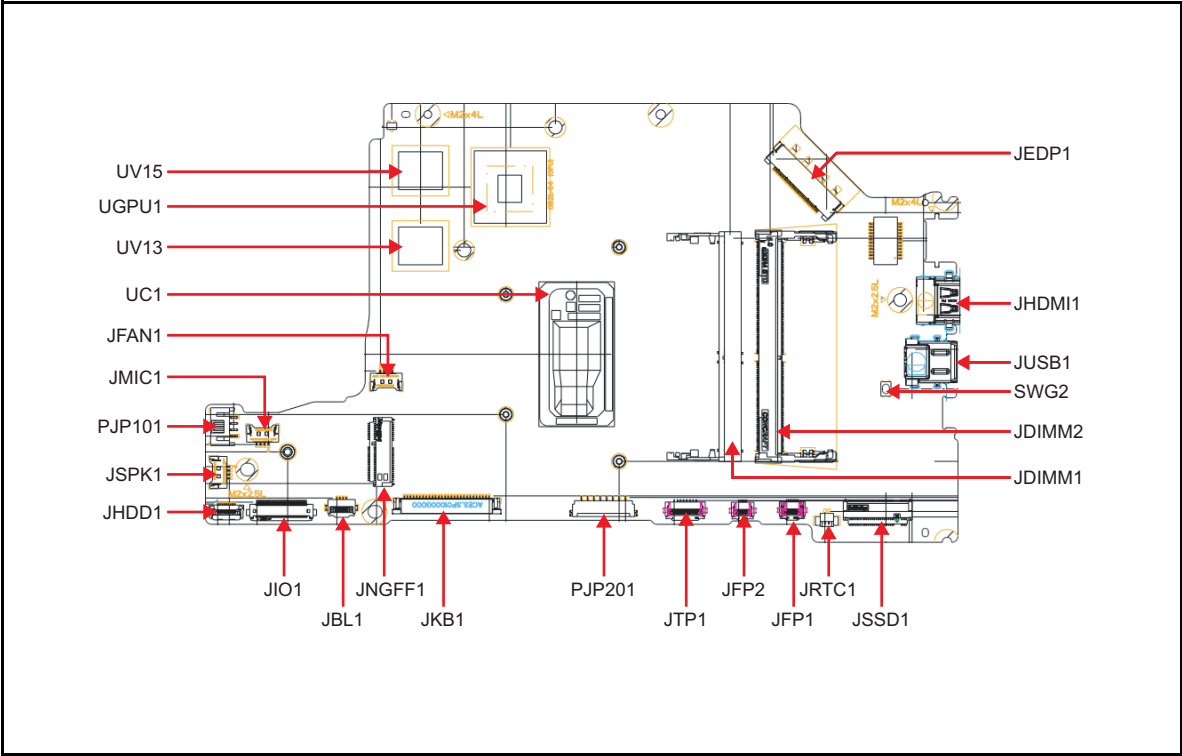


Figure 3-2. Mainboard Bottom

Table 3-2. Mainboard Bottom Jumper and Connectors

Item	Description	Item	Description
UV15	On board GDDR5 VRAM	PJP201	Battery Connector
UGPU1	Nvidia DGPU chip	JTP1	Touchpad Connector
UV13	On board GDDR5 VRAM	JFP2	Fingerprint Connector
UC1	Intel CPU Chip	JFP1	Fingerprint Connector
JFAN1	Fan Connector	JRTC1	RTC Battery Connector
JMIC1	MIC Cable Connector	JSSD1	SSD Connector
PJP101	DC-IN Connector	JDIMM1	DDR4 Connector
JSPK1	Speaker Connector	JDIMM2	DDR4 Connector
JHDD1	HDD Connector	SWG2	EC Reset Switch
JIO1	IO/B connector	JUSB1	USB3.0 Connector
JBL1	Keyboard Backlight Connector	JHDMI1	HDMI Connector
JNGFF1	Mini Card Connector	JEDP1	eDP Connector
JKB1	Keyboard Connector		

USB Board

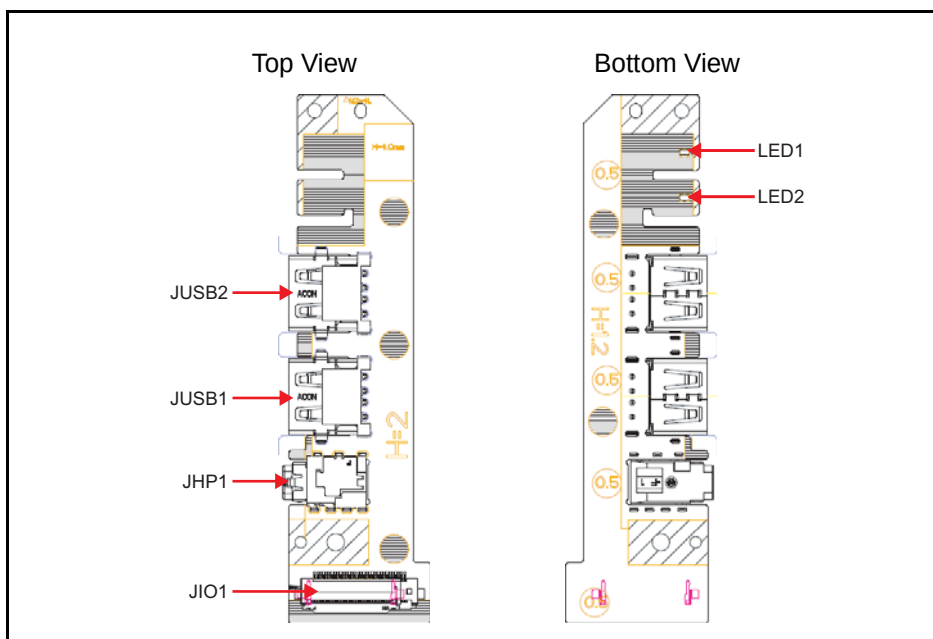


Figure 3-3. USB Board

Table 3-3. USB Board Connectors

Item	Description	Item	Description
JUSB2	USB2.0 Connector	JIO1	IO FFC connector
JUSB1	USB2.0 Connector	LED1	Battery LED
JHP1	Headphone Connector	LED2	Power LED

Clear CMOS Jumper

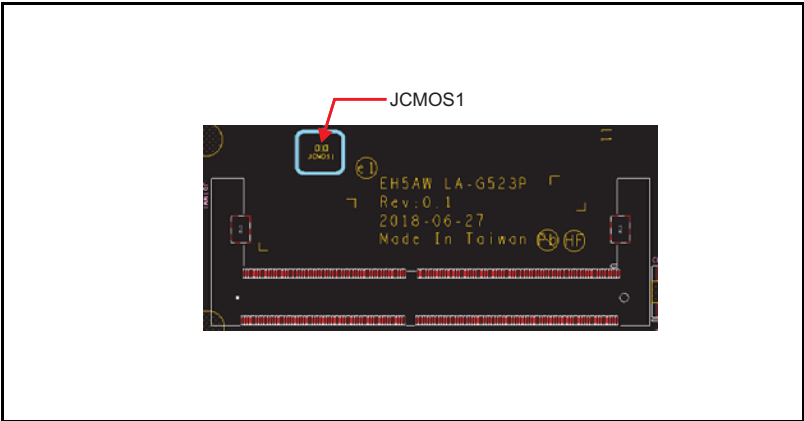


Figure 3-4. Clear CMOS

Table 3-4. Clear CMOS Jumper

Item	Description
JCMOS1	Clear CMOS Jumper

Troubleshooting	4-2
General Information	4-2
Power On Issues	4-3
No Display Issues	4-4
LCD Picture Failure	4-6
Internal Keyboard Failure	4-7
Touchpad Failure	4-7
Internal Speaker Failure	4-8
Internal Microphone Record Failure	4-10
USB Failure	4-11
Wireless Function Test Failure	4-12
Bluetooth Function Test Failure	4-13
SD Card Function Test Failure	4-14
Units Thermal Failure	4-15
Cosmetic Failure	4-16
Other Functions Failure	4-17
Intermittent Problems	4-18
Undetermined Problems	4-19
Post Codes	4-20

Troubleshooting

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

General Information

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

⇒ NOTE:

- The diagnostic tests are intended to test only Acer products. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.
 - Do not replace a non-defective FRU.
1. Obtain as much detail as possible about the problem.
 2. If possible, verify the symptoms by re-creating the failure through diagnostic tests or by repeating the operation that led to the problem.
 3. Use Table 4-1 with the verified symptom(s) to determine the solution.

Table 4-1. Verified Symptoms

Symptoms	See
Power on Issues	Figure 4-1. Power On Issues on page 4-3
No Display Issues	Figure 4-2. No Display Issues on page 4-4
LCD Picture Failure	Figure 4-3. LCD Picture Failure on page 4-6
Internal Keyboard Failure	Figure 4-4. Internal Keyboard Failure on page 4-7
Touchpad Failure	Figure 4-5. Touchpad Failure on page 4-7
Internal Speaker Failure	Figure 4-6. Internal Speaker Failure on page 4-8
Internal Microphone Failure	Figure 4-7. Internal Microphone Record Failure on page 4-10
USB3.0 Failure	Figure 4-8. USB Failure on page 4-11
Wireless Function Failure	Figure 4-9. Wireless Function Test Failure on page 4-12
Bluetooth Function Failure	Figure 4-10. Bluetooth Function Test Failure on page 4-13
SD Card Function Failure	Figure 4-11. SD Card Function Test Failure on page 4-14
Units Thermal Failure	Figure 4-12. Units Thermal Failure on page 4-15
Cosmetic Failure	Figure 4-13. Cosmetic Failure on page 4-16
Other Functions Failure	Page 4-17

4. If the issue is still not resolved, see [Online Support Information](#) on page [8-2](#).

Power On Issues

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

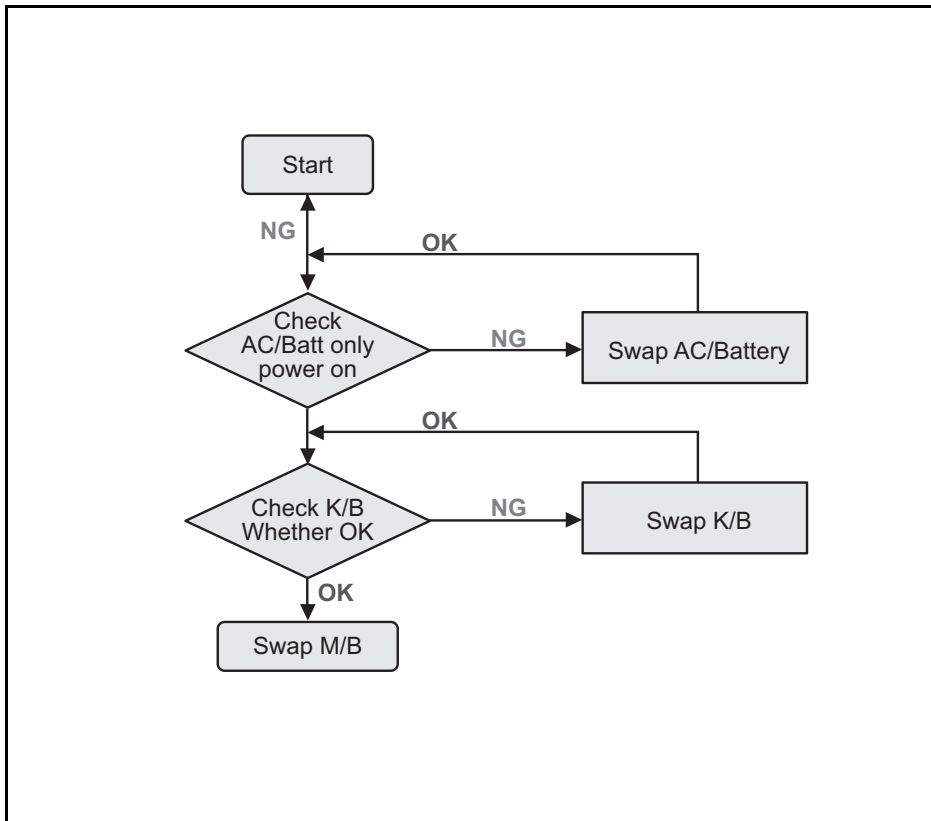


Figure 4-1. Power On Issues

Computer Shuts Down Intermittently

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

1. Makes sure the power cable is properly connected to the computer and the electrical outlet.
2. Remove all extension cables between the computer and the outlet.
3. Remove all surge protectors between the computer and the electrical outlet. Plug the computer directly into a known serviceable electrical outlet.
4. Remove all external and non-essential hardware connected to the computer that are not necessary to boot the computer to the failure point.
5. Remove any recently installed software.
6. If the issue is still not resolved, refer to [Online Support Information](#) on page 8-2.

No Display Issues

If the system does not display, perform the following:

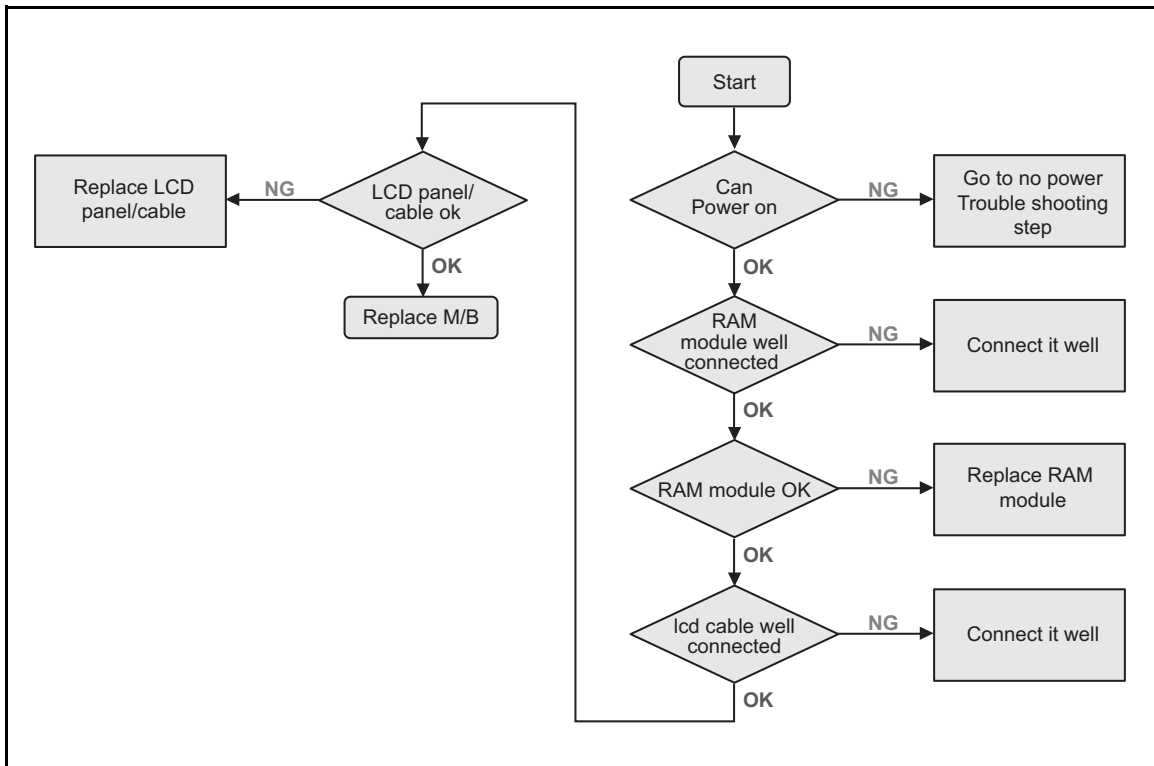


Figure 4-2. No Display Issues

No POST or Video

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

1. Make sure that internal display is selected. Switching between internal and external by pressing Fn+F5. Reference Product pages for specific model procedures.
2. Make sure the computer has power by checking for one of the following:
 - Fans start up
 - Status LEDs illuminate
3. If there is no power, refer to [Power On Issues](#) on page 4-3. Otherwise, continue to the next step.
4. If there is power, drain the stored power by removing the power cable. Hold the power button for 10 seconds.
5. Connect the power and reboot the computer.
6. Connect an external monitor to the computer and switch between the internal display and the external display is by pressing Fn+F5.
7. If the POST or video appears on the external display only, refer to [LCD Picture Failure](#) on page 4-6. Otherwise, continue to the next step.
8. Disconnect the power and all external devices including port replicators or docking stations.

9. Remove any memory cards.
10. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
11. If the issue is still not resolved, refer to [Online Support Information](#) on page 8-2.

Abnormal Video

If the video appears abnormal, perform the following:

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

⇒ NOTE:

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

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

LCD Picture Failure

If the LCD picture fails, perform the following:

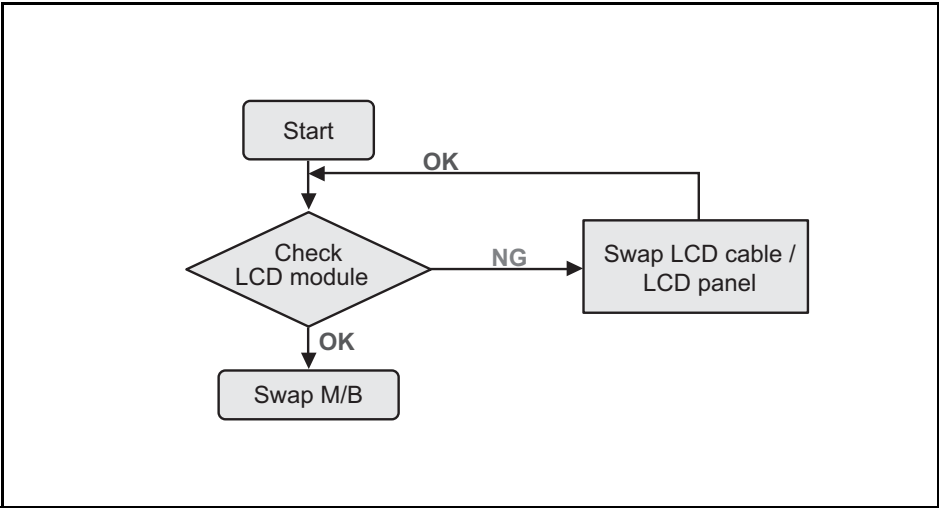


Figure 4-3. LCD Picture Failure

Internal Keyboard Failure

If the internal keyboard function fails, perform the following:

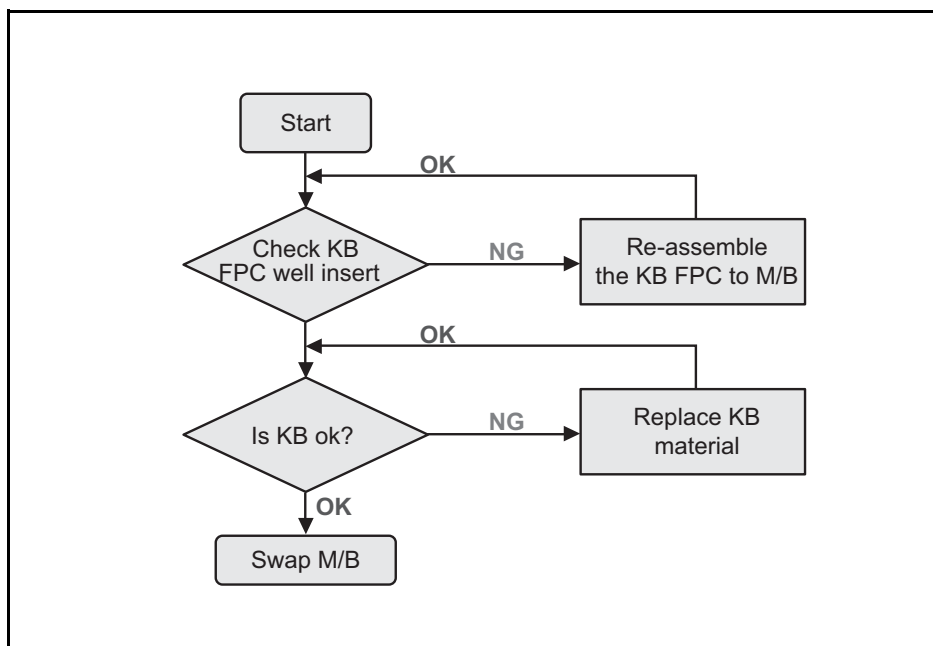


Figure 4-4. Internal Keyboard Failure

Touchpad Failure

If the touchpad fails, perform the following:

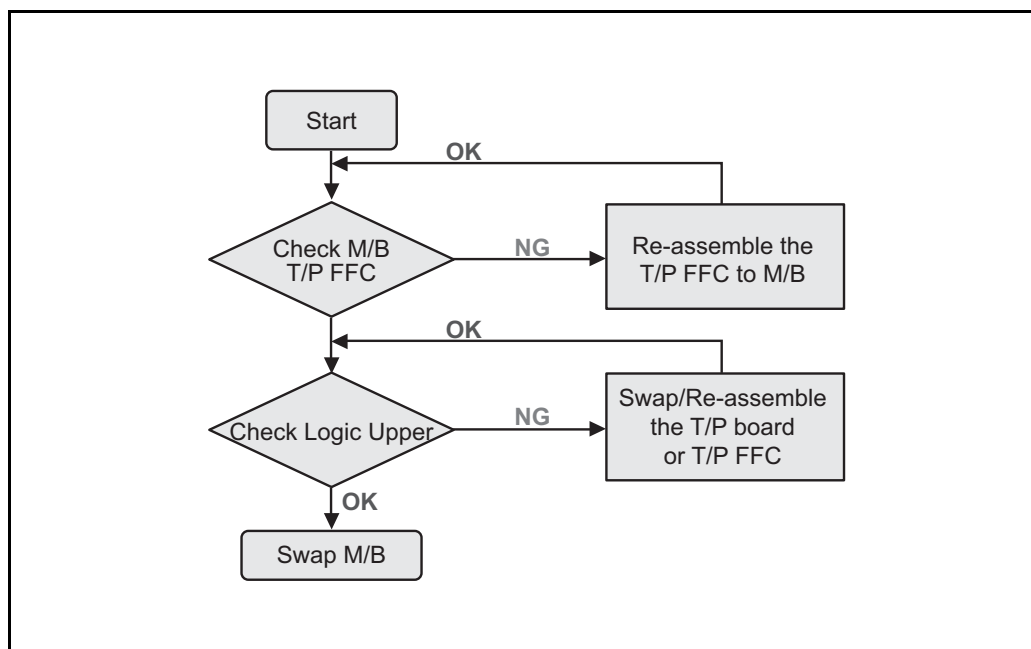


Figure 4-5. Touchpad Failure

Internal Speaker Failure

If the internal speaker fails, perform the following:

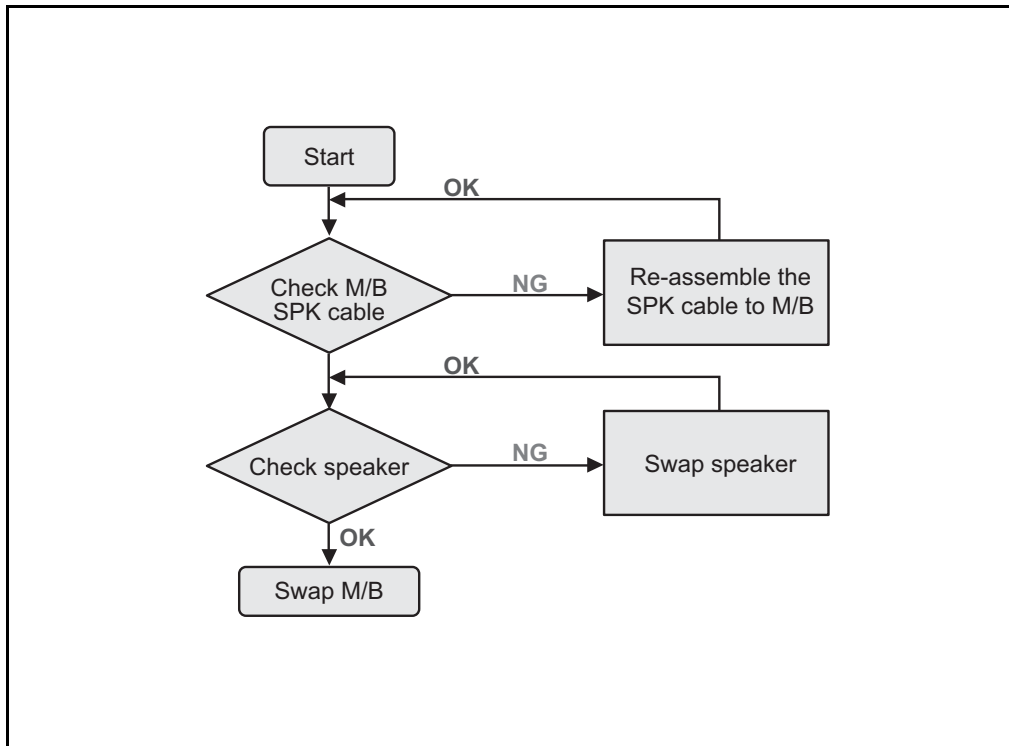


Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following:

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

⇒ **NOTE:**

If **Speakers** is not shown, 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 remains, repeat step 9, selecting an earlier time and date.
11. Reinstall the Operating System.
12. If the issue is still not resolved, refer to [Online Support Information](#) on page 8-2.

Internal Microphone Record Failure

If the internal microphone fails to record, perform the following:

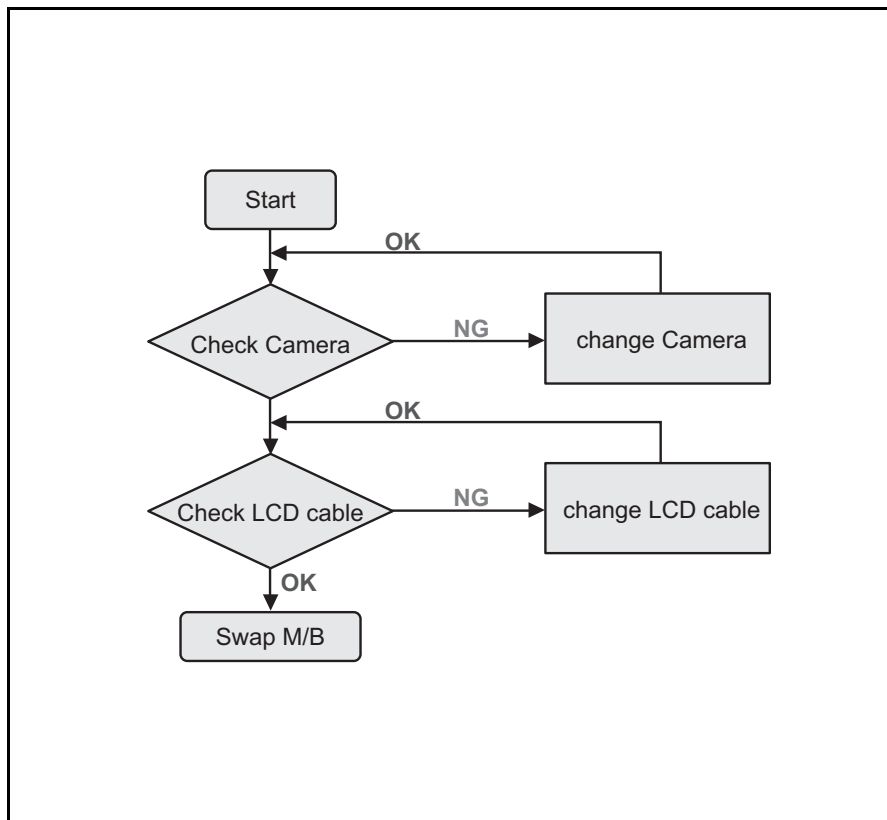


Figure 4-7. Internal Microphone Record Failure

USB Failure

If the USB function fails, perform the following:

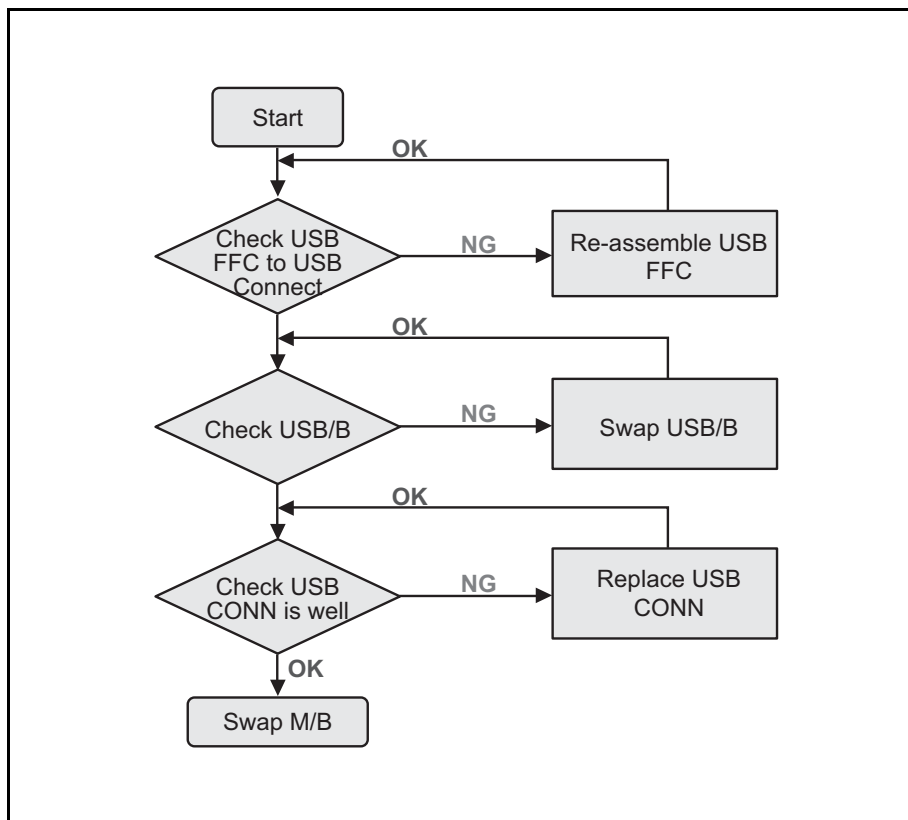


Figure 4-8. USB Failure

Wireless Function Test Failure

If the wireless function test fails, perform the following:

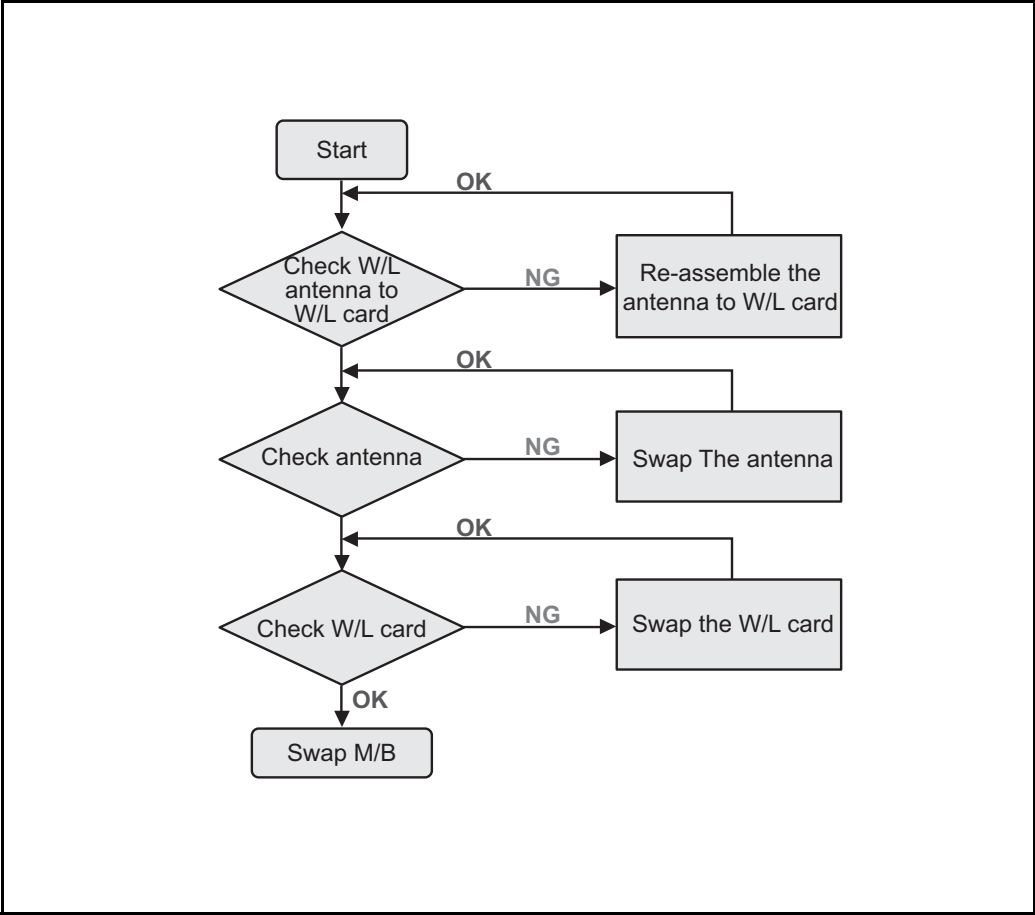


Figure 4-9. Wireless Function Test Failure

Bluetooth Function Test Failure

If the Bluetooth function test fails, perform the following:

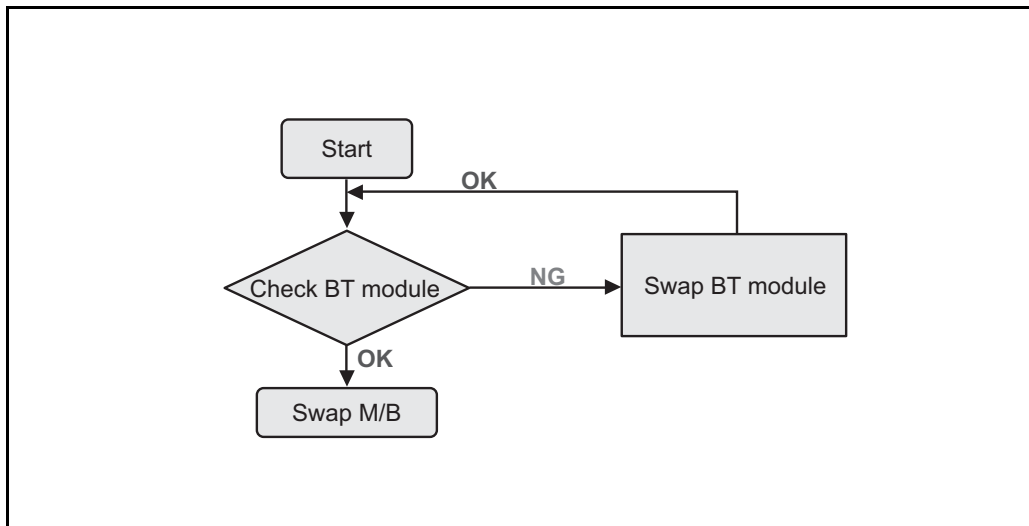


Figure 4-10. Bluetooth Function Test Failure

SD Card Function Test Failure

If the SD card function test fails, perform the following:

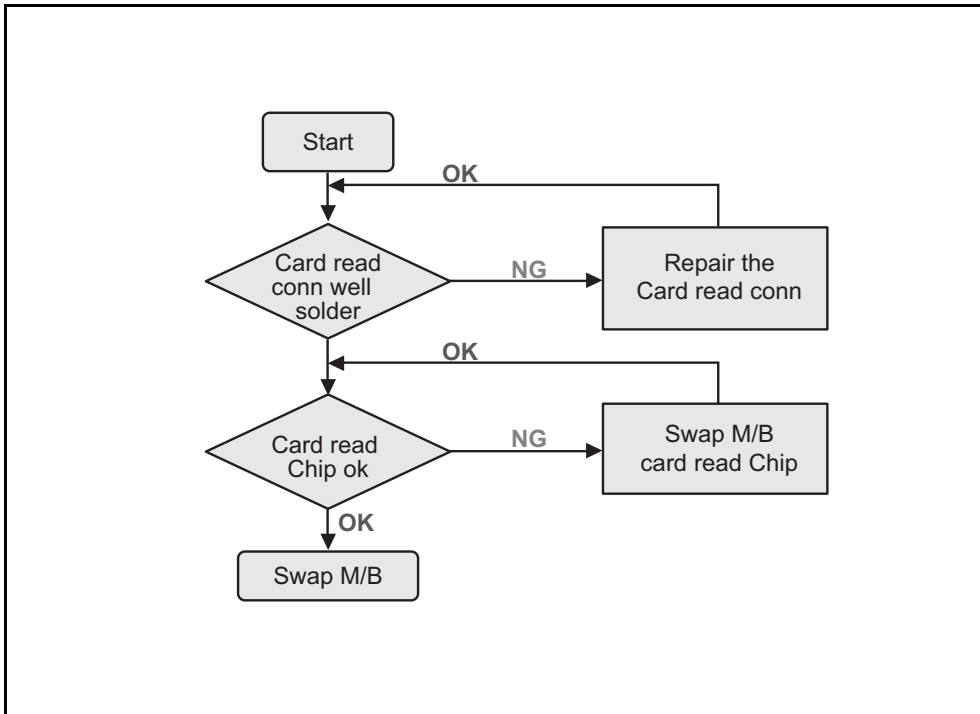


Figure 4-11. SD Card Function Test Failure

Units Thermal Failure

If the units thermal fails, perform the following:

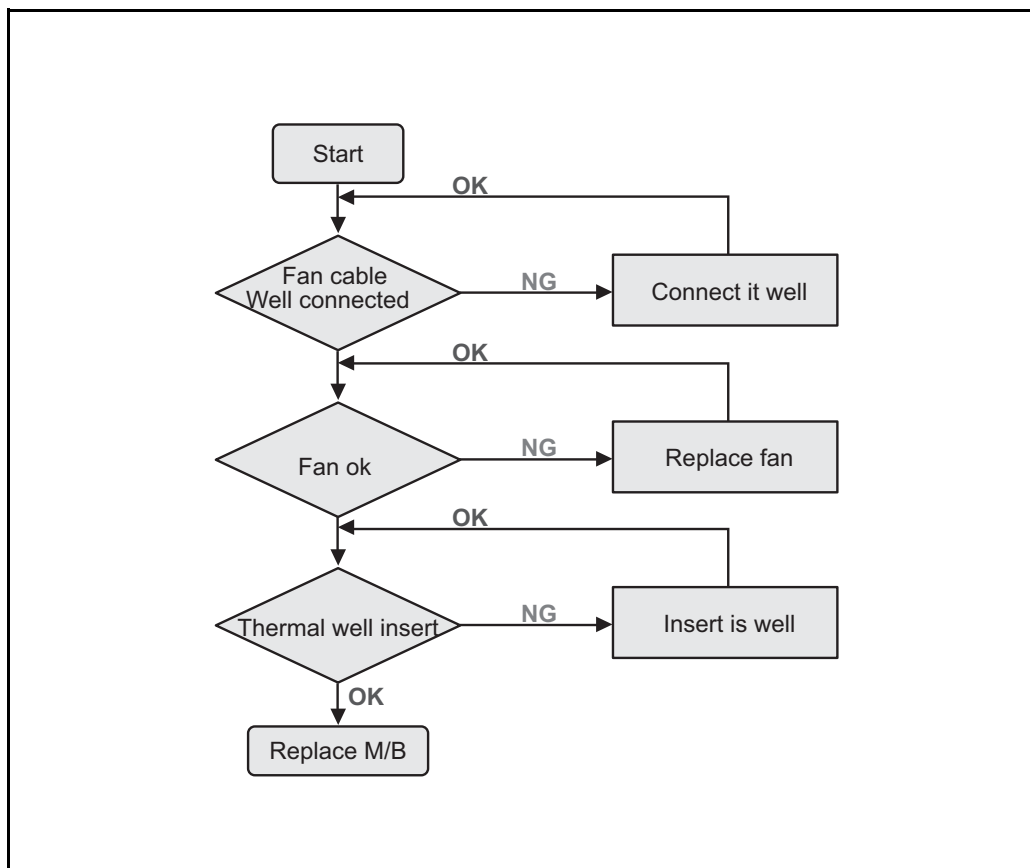


Figure 4-12. Units Thermal Failure

Cosmetic Failure

If the cosmetic fails, perform the following:

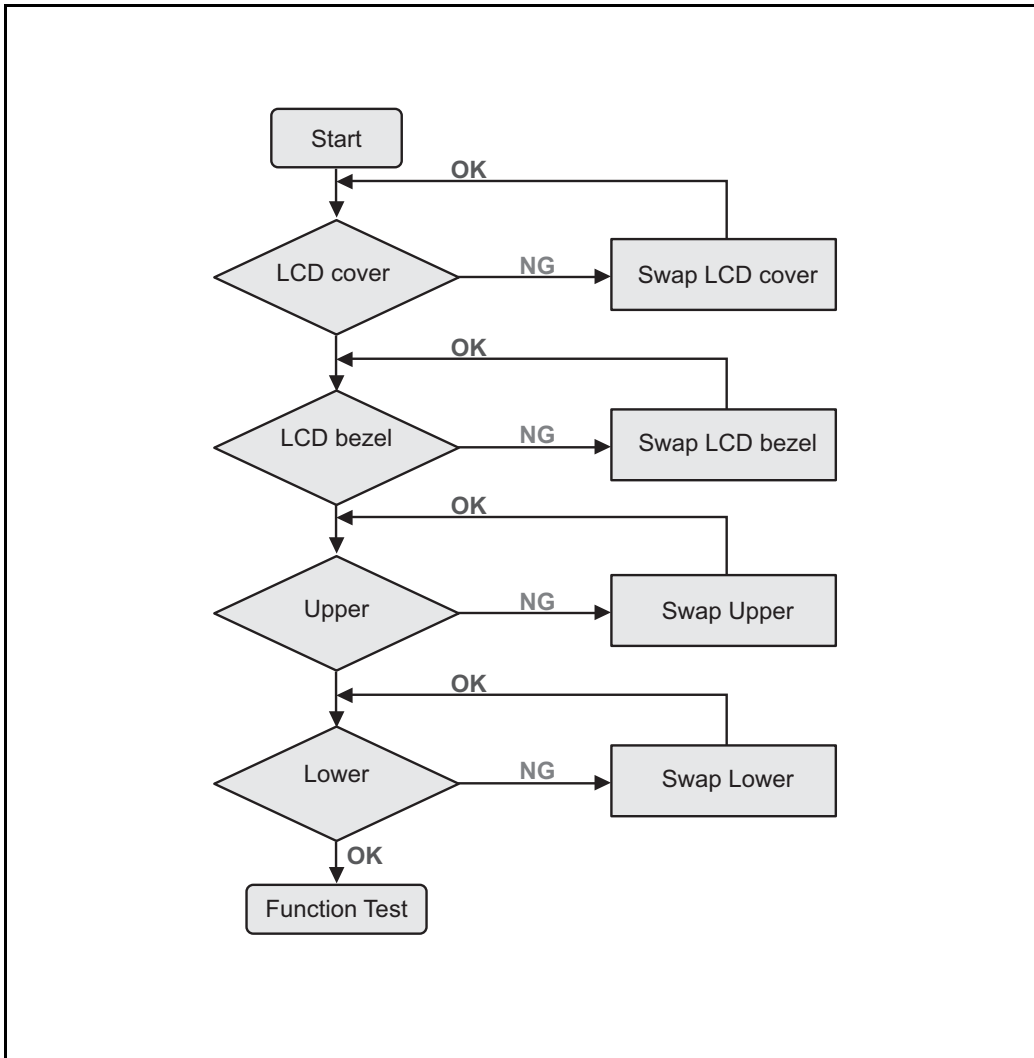


Figure 4-13. Cosmetic Failure

Other Functions Failure

If other functions such as the DP switch, HDMI switch, LAN connect, extend MIC, extend speaker, USB3.0 fail, perform the following:

1. Check if the Drive is working properly.
2. Check if the test fixture is ok.
3. Swap the mainboard.

Mainboard CMOS Discharge

If there is a wrong CMOS setting, such as password, CMOS data will be cleaned to default setting by discharging (short pads): **JCMOS1**.

The discharge location is near RAM connector as shown on the following illustration.

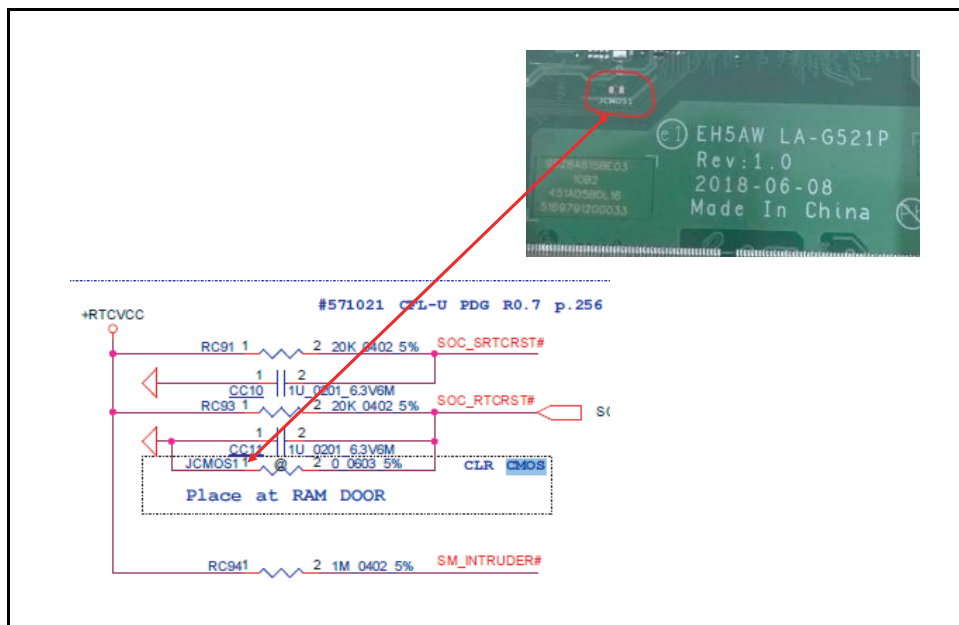


Figure 4-14. Location of JCMOS1

Random Loss of BIOS Settings

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

1. If the computer is more than one year old, replace the CMOS battery.
2. Run a complete virus scan using up to date software to confirm the computer is virus free.
3. If the computer is experiencing HDD information loss, disconnect and reconnect the power.
4. If the BIOS settings are still lost, replace the cables.
5. If HDD information is missing from the BIOS, the drive may be defective and should be replaced.
6. Replace the mainboard.
7. If the issue is still not resolved, refer to [Online Support Information](#) on page 8-2.

Intermittent Problems

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

When analyzing an intermittent problem, perform the following:

1. Run the advanced diagnostic test (refer to [System Utilities](#) on page 2-2) for the system board in loop mode at least 10 times.
2. If no error is detected, do not replace any FRU.
3. If an error is detected, replace the FRU. Rerun the test to verify that there are no more errors.

Undetermined Problems

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

⇒ NOTE:

- Verify that all attached devices are supported by the computer.
- Verify that the power supply being used at the time of the failure is operating correctly. (refer to [Power On Issues](#) on page 4-3).

Perform the following procedures to isolate the failing FRU:

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

Post Codes

The following 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.

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	01	CPU power on and switch to Protected mode
SEC_BEFORE_MICROCODE_PATCH	SEC	02	Patching CPU microcode
SEC_AFTER_MICROCODE_PATCH	SEC	03	Setup Cache as RAM
SEC_ACCESS_CSR*	SEC	04	PCIE MMIO Base Address initial
SEC_GENERIC_MSRRINIT*	SEC	05	CPU Generic MSR initialization
SEC_CPU_SPEEDCFG*	SEC	06	Setup CPU speed
SEC_SETUP_CAR_OK	SEC	07	Cache as RAM test
SEC_FORCE_MAX_RATIO*	SEC	08	Tune CPU frequency ratio to maximum level
SEC_GO_TO_SECSTARTUP	SEC	09	Setup BIOS ROM cache
SEC_GO_TO_PEICORE	SEC	0A	Enter Boot Firmware Volume
⇒ NOTE: * 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

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
PEI_IGD_EARLY_INITIAL*	PEI	7B	Internal Graphic device early Initialization
PEI_HECI_INIT*	PEI	7C	HECI Initialization
PEI_WATCHDOG_INIT*	PEI	7D	Watchdog timer Initialization
PEI_MEMORY_INIT	PEI	7E	Memory Initial for Normal boot.
PEI_MEMORY_INIT_FOR_CRISIS	PEI	7F	Memory Initial for Crisis Recovery
PEI_MEMORY_INSTALL	PEI	80	Simple Memory test
PEI_TXTPEI*	PEI	81	TXT function early Initialization
PEI_SWITCH_STACK	PEI	82	Start to use Memory
PEI_MEMORY_CALLBACK	PEI	83	Set cache for physical memory
PEI_ENTER_RECOVERY_MODE	PEI	84	Recovery device Initialization
PEI_RECOVERY_MEDIA_FOUND	PEI	85	Found Recovery image
PEI_RECOVERY_MEDIA_NOT_FOUND	PEI	86	Recovery image not found
PEI_RECOVERY_LOAD_FILE_DONE	PEI	87	Load Recovery Image completed
PEI_RECOVERY_START_FLASH	PEI	88	Start Flash BIOS with Recovery image
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
PEI_IFFS_TRANSITION_START	PEI	8C	iFFS Transition Start
PEI_IFFS_TRANSITION_END	PEI	8D	iFFS Transition End
⇒ NOTE: * 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

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
DXE_SMMACCESS*	DXE	44	Setup SMM ACCESS service
DXE_NB_INIT*	DXE	45	North bridge Middle initialization
DXE_SIO_INIT*	DXE	46	Super I/O DXE initialization
DXE_LEGACY_REGION*	DXE	47	Setup Legacy Region service
DXE_SB_INIT*	DXE	48	South Bridge Middle initialization
DXE_IDENTIFY_FLASH_DEVICE	DXE	49	Identify Flash device
DXE_FTW_INIT	DXE	4A	Fault Tolerant Write verification
DXE_VARIABLE_INIT	DXE	4B	Variable Service initialization
DXE_VARIABLE_INIT_FAIL	DXE	4C	Fail to initial Variable Service
DXE_MTC_INIT	DXE	4D	MTC Initial
DXE_CPU_INIT	DXE	4E	CPU Middle Initialization
DXE_MP_CPU_INIT	DXE	4F	Multi-processor Middle Initialization
DXE_SMBUS_INIT	DXE	50	SMBUS Driver Initialization
DXE_SMART_TIMER_INIT	DXE	51	8259 Initialization
DXE_PCRTC_INIT	DXE	52	RTC Initialization
DXE_SATA_INIT*	DXE	53	SATA Controller early Initialization
DXE_SMM_CONTROLLER_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

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
DXE_HECIDRV_INIT*	DXE	60	HECIDRV Initialization
DXE_VARIABLE_RECLAIM	DXE	61	Variable store garbage collection and reclaim operation
DXE_FLASH_PART_NONSUPPORT	DXE	62	Do not support flash part (which is defined in SpiDevice.c)
⇒ NOTE: * 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
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

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
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_OPTIO N	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
BDS_LEGACY_BOOT_EVENT	BDS	33	Last Chipset initial before boot to Legacy OS.
BDS_ENTER_LEGACY_16_BOOT	BDS	34	Ready to Boot Legacy OS.
BDS_RECOVERY_START_FLASH	BDS	35	Fast Recovery Start Flash.
BDS_START_SDHC_BUS	BDS	36	SDHC device initial.
BDS_CONNECT_ATA_LEGACY	BDS	37	Ata Legacy device initial.
BDS_CONNECT_SD_LEGACY	BDS	38	SD Legacy device initial.
⇒ NOTE: * 3rd party relate functions - Platform dependence.			

Table 4-7. PostBDS POST Code Table

Functionality Name (Include\PostCode.h)	Phase	Post Code	Description
POST_BDS_NO_BOOT_DEVICE	POST_BDS	F9	No Boot Device
POST_BDS_START_IMAGE	POST_BDS	FB	UEFI Boot Start Image
POST_BDS_ENTER_INT19	POST_BDS	FD	Legacy 16 boot entry
POST_BDS_JUMP_BOOT_SECTOR	POST_BDS	FE	Try to Boot with INT 19

Table 4-8. S3 Functions 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 4-9. ACPI Functions POST Code 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
ASL_WAKEUP_S5	ASL	E5	System wakeup from S5

Table 4-10. 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 4-11. InsydeH20DDT Debugger POST Code Table

Functionality Name	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	InsydeH20DDT Ready
Used by Insyde debugger	0xD2	EHCI not found
Used by Insyde debugger	0xD3	Debug port connect low speed device
Used by Insyde debugger	0xD4	DDT Cable become low speed device
Used by Insyde debugger	0xD5	DDT Cable Transmission Error (Get descriptor fail)
Used by Insyde debugger	0xD6	DDT Cable Transmission Error (Set Debug mode fail)
Used by Insyde debugger	0xD7	DDT Cable Transmission Error (Set address fail)

Service and Maintenance

Service and Maintenance	5-3
Introduction	5-3
Recommended Equipment	5-3
Maintenance Flowchart	5-4
Getting Started	5-6
Lower Case Removal	5-7
Lower Case Installation	5-10
Battery Removal	5-12
Battery Installation	5-14
HDD Module Removal	5-17
HDD Module Installation	5-19
HDD Carrier Removal	5-22
HDD Carrier Installation	5-23
USB Board Removal	5-25
USB Board Installation	5-28
DIMM Modules Removal	5-31
DIMM Modules Installation	5-32
SSD Module Removal	5-33
SSD Module Installation	5-34
WLAN Module Removal	5-36
WLAN Module Installation	5-38
Fan Module Removal	5-40
Fan Module Installation	5-42
Thermal Module Removal	5-44
Thermal Module Installation	5-46
Mainboard Removal	5-49
Mainboard Installation	5-53
DC-IN Cable Removal	5-57
DC-IN Cable Installation	5-58
RTC Battery Removal	5-59

Service and Maintenance (cont.)

RTC Battery Installation	5-60
Touchpad Removal	5-61
Touchpad Installation	5-64
Speaker Removal	5-68
Speaker Installation	5-71
LCD Module Removal	5-74
LCD Module Installation	5-77
LCD Bezel Removal	5-81
LCD Bezel Installation	5-83
CMOS and Microphone Module Removal	5-84
CMOS and Microphone Module Installation	5-86
LCD Panel Brackets Removal	5-88
LCD Panel Brackets Installation	5-89
LCD Panel Removal	5-91
LCD Panel Installation	5-95
WLAN Antenna (Main) Removal	5-99
WLAN Antenna (Main) Installation	5-100
WLAN Antenna (Aux) Removal	5-101
WLAN Antenna (Aux) Installation	5-102

Service and Maintenance

Introduction

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

Recommended Equipment

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

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

Table 5-5. Main Screw List

Screw Name	Screw Type	Quantity
M 2.5 x 2.5		6
M 2.0 x 3.0		1
M 2.0 x 4.0		16 (Discrete)
		14 (UMA)
M 2.0 x 2.5		3
M 2.5 x 5.0		6
M 3.0 x 3.0		4
M 2.5 x 6.0		10

Maintenance Flowchart

The flowchart in **Figure 5-1. Maintenance Flow** provides a graphic representation of the module removal and installation sequences. It provides information on what components need to be removed and installed during servicing.

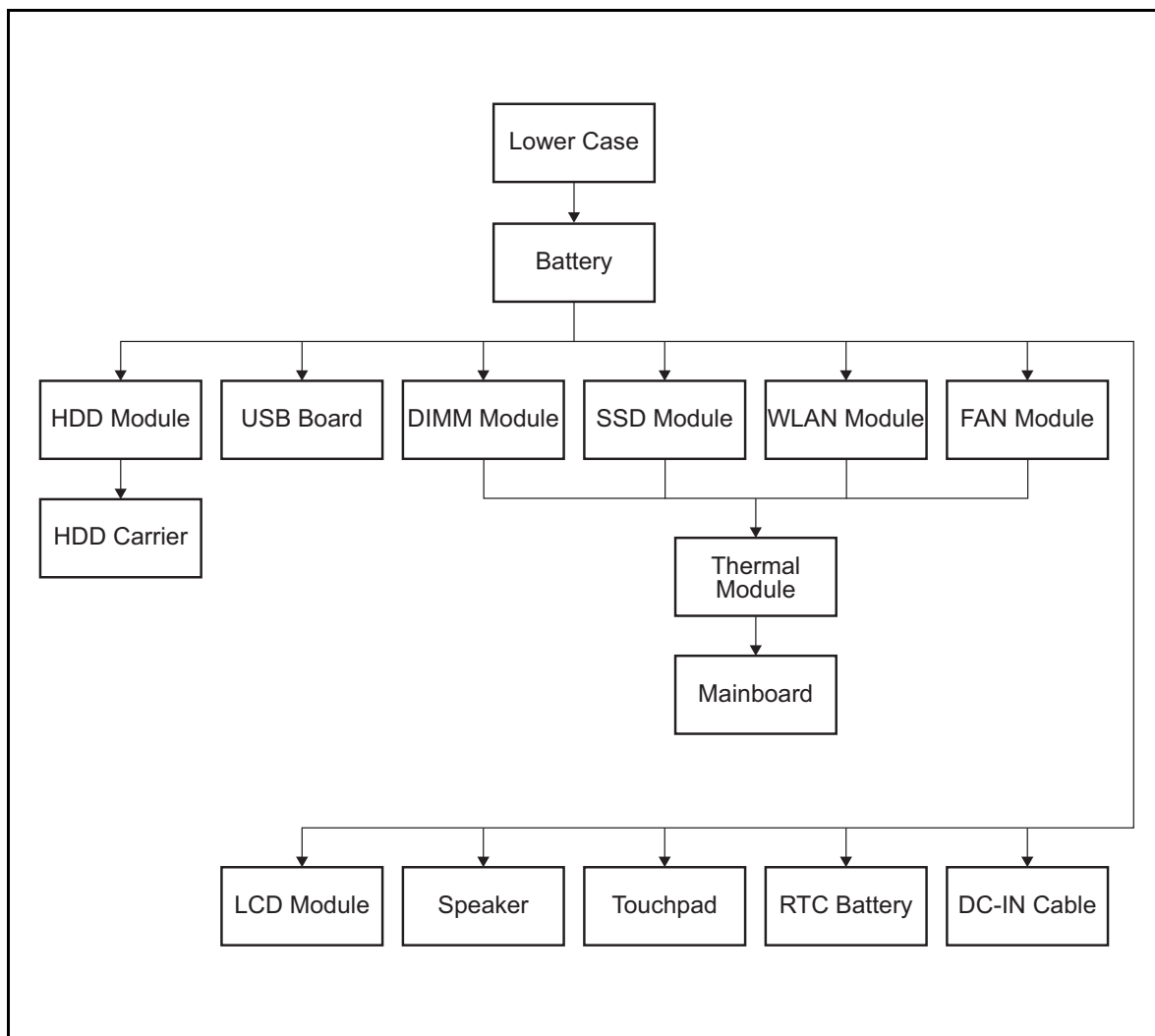


Figure 5-1. Maintenance Flow

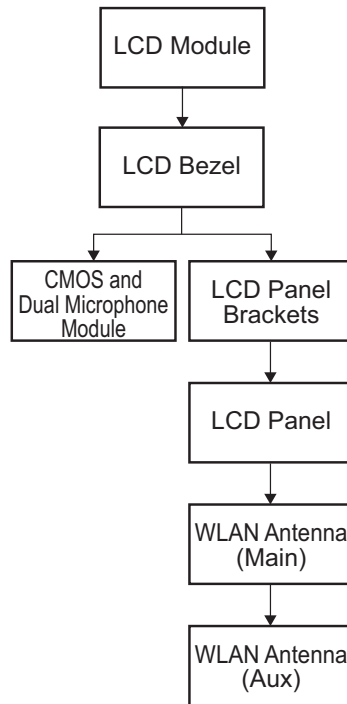


Figure 5-2. LCD Module Maintenance Flow

Getting Started

The flowchart ([Figure 5-1](#), page [5-4](#)) identifies sections illustrating the entire removal and installation sequence. Observe the order of the sequence to avoid damage to any of the hardware components.

Perform the following prior to performing any maintenance procedures:

1. Place the system on a flat work surface.
2. Make sure the system is completely powered down.
 - a. If the device is in powered up mode, shut down the system normally.
 - b. If the device is in sleep mode, wait for the Home Screen to clear. Then, shut down normally.
3. Disconnect the AC Adapter and remove all cables from the system and its peripherals.



Figure 5-3. Disconnecting the Power Adapter

Lower Case Removal

1. Remove the ten (10) screws securing the lower case to the upper case.

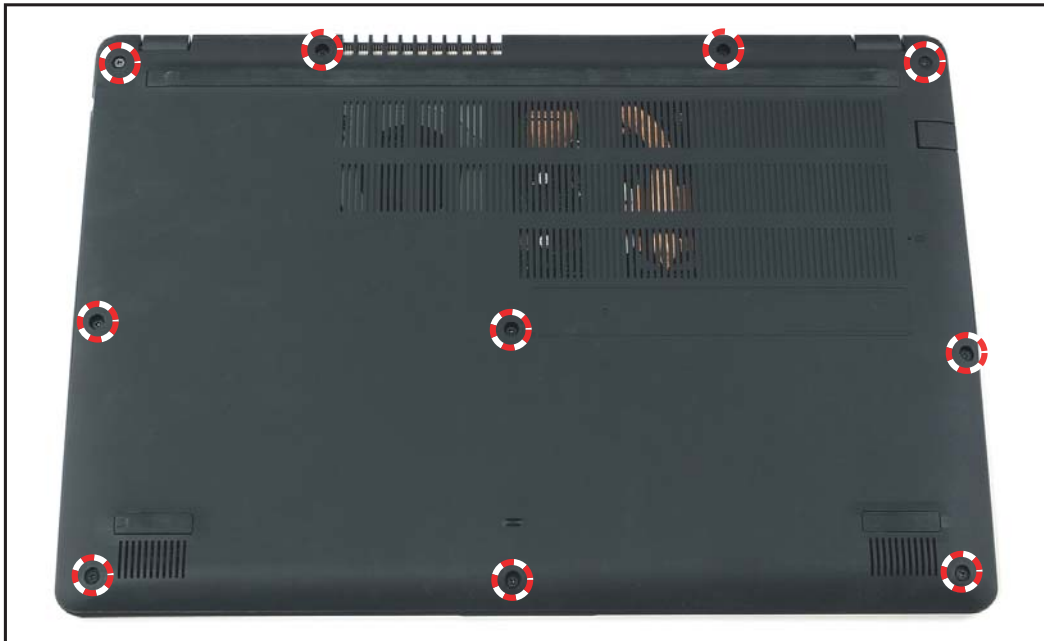


Figure 5-4. Removing the Screws

2. Place the device on the surface. Starting from the bottom right side, pry to release the bottom side latches, following the direction arrow.



Figure 5-5. Releasing the Lower Case (1 of 3)

3. Continue releasing the left side latches, following the direction of the arrow.



Figure 5-6. Releasing the Lower Case (2 of 3)

4. Release the right side latches.



Figure 5-7. Releasing the Lower Case (3 of 3)

5. Remove the lower case.

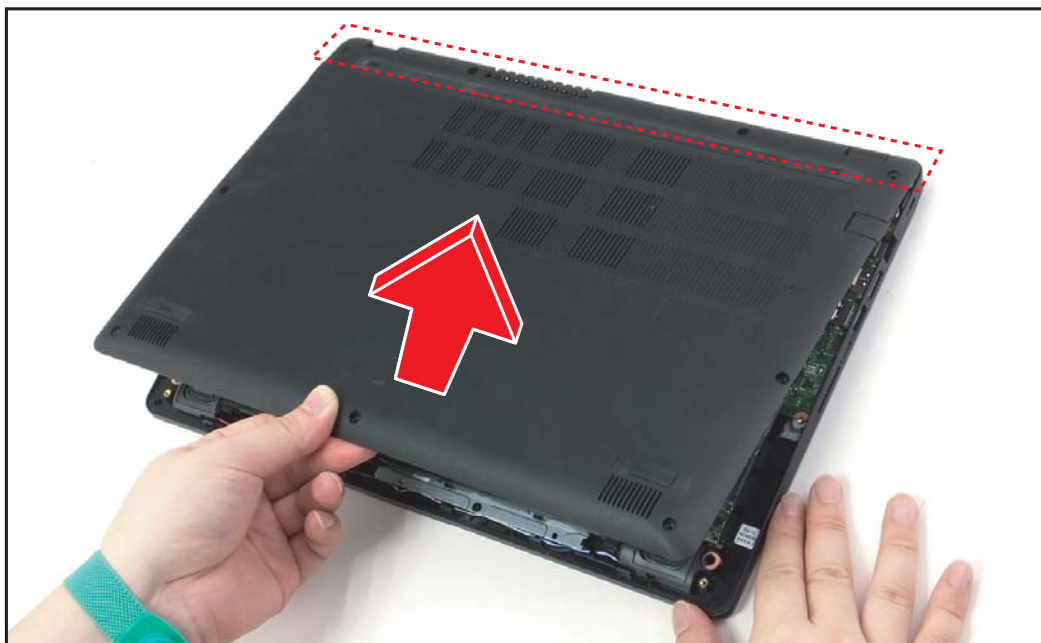


Figure 5-8. Removing the Lower Case

Lower Case Installation

1. Align and install the lower case on the upper case.



Figure 5-9. Installing the Lower Case (1 of 2)

2. Press firmly the side latches until they snapped into place.

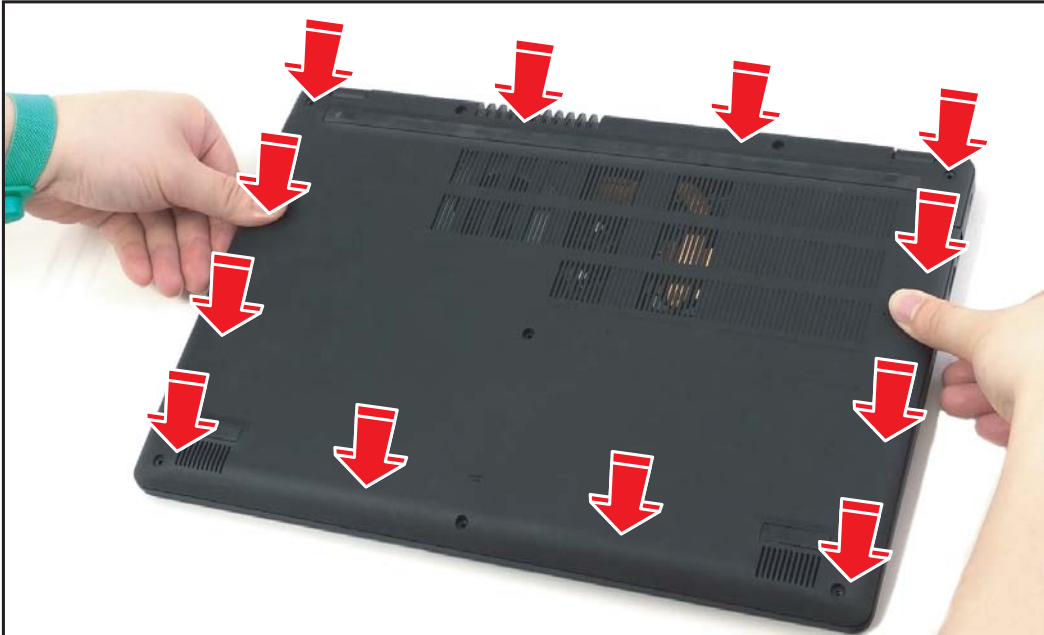


Figure 5-10. Installing the Lower Case (2 of 2)

3. Attach the ten (10) screws to secure the lower case.

⇒ **NOTE:** Screw torque force = 2.55~3.0kgf.cm

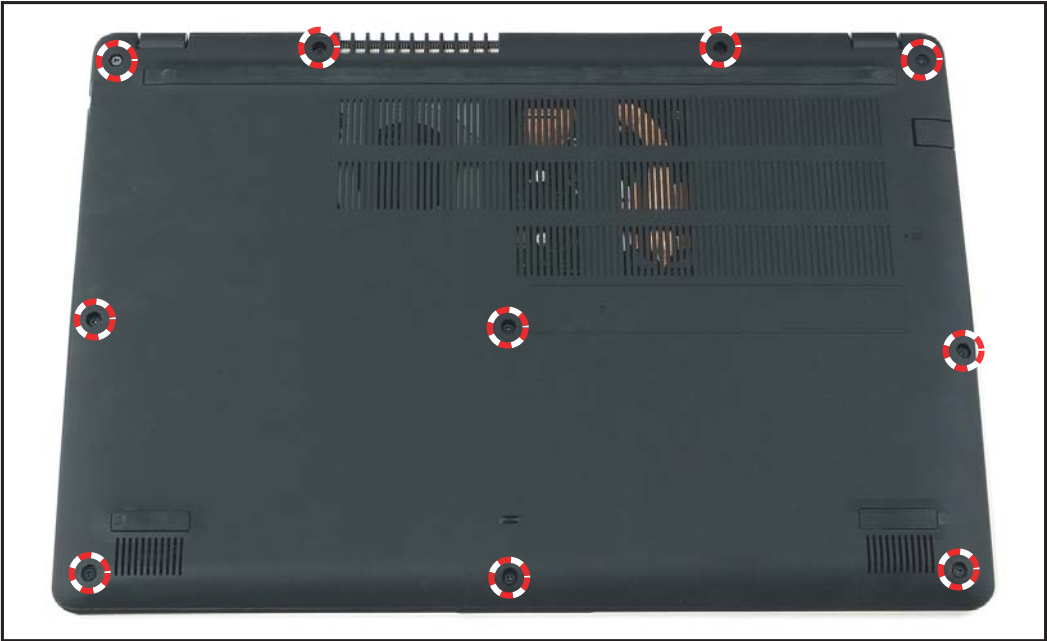


Figure 5-11. Securing the Screws

Table 5-6. Lower Case Screws

Screw Name	Screw Type	Torque	Quantity
M 2.5 x 6.0		2.55~3.0kgf.cm	10

Battery Removal

Prerequisite:

※ **Lower Case Removal** on page 5-7

1. Disconnect the battery cable from the mainboard connector.



Figure 5-12. Disconnecting the Battery Cable

2. Remove the two (2) screws securing the battery to the upper case.



Figure 5-13. Removing the Screws

3. Pull the upper latches upwards to release the upper tabs of the battery.



Figure 5-14. Releasing the Upper Tabs of the Battery

4. Lift the upper part of the battery and slide to release the remaining latches from the slot on the upper case. Then remove the battery.



Figure 5-15. Removing the Battery

Battery Installation

1. Align and slide the bottom tabs to the slots on the upper case.



Figure 5-16. Installing the Battery (1 of 2)

2. Push down the upper tabs of the battery firmly until the battery is fully seated onto its slot.



Figure 5-17. Installing the Battery (2 of 2)

- Attach the two (2) screws to secure the battery to the upper case.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm



Figure 5-18. Securing the Screws

- Connect the battery cable to the mainboard connector.



Figure 5-19. Connecting the Battery Cable

- Install the lower case (see [Lower Case Installation](#) on page 5-10).

Table 5-7. Battery Screws

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 4.0		1.8~2.2kgf.cm	2

HDD Module Removal

Prerequisite:

※ [Lower Case Removal](#) on page 5-7

1. Disconnect the speaker cable and HDD FFC from the mainboard connectors. Then carefully lift the middle portion on the HDD FFC to detach it from the adhesive tape underneath.



Figure 5-20. Disconnecting the Cables

2. Remove the four (4) screws securing the HDD module to the upper case.

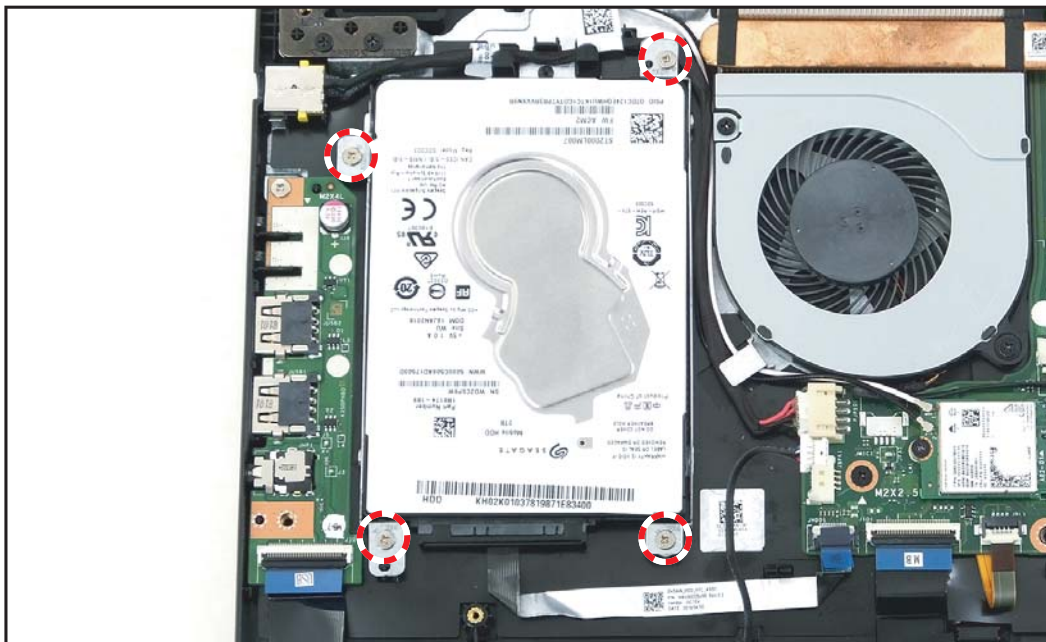


Figure 5-21. Removing the Screws

3. Lift to remove the HDD module out from the slot.

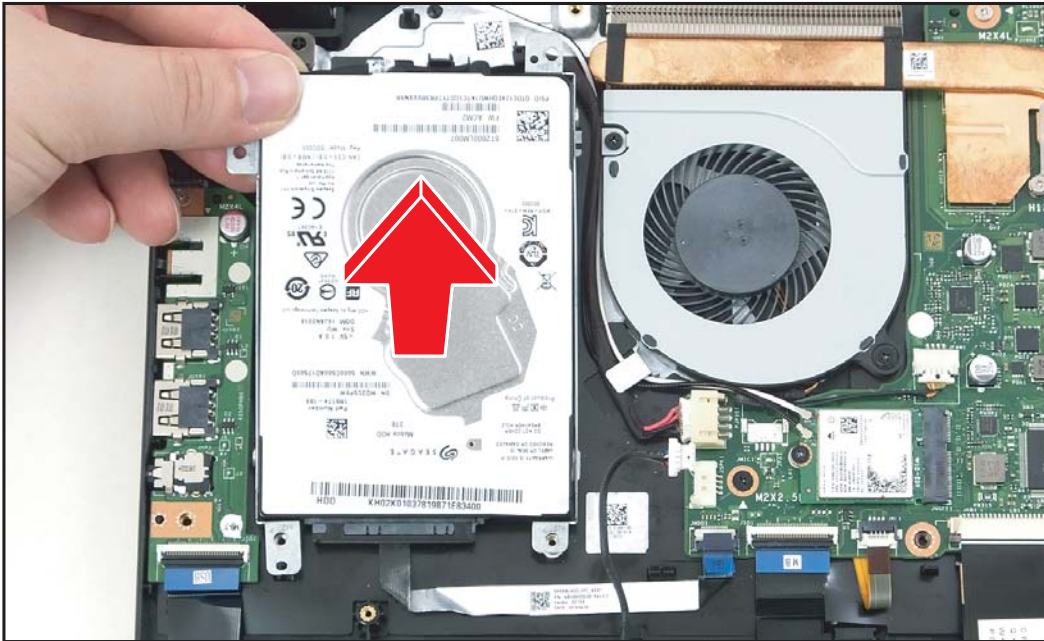


Figure 5-22. Removing the HDD Module

4. Disconnect the HDD FFC from the HDD module connector.

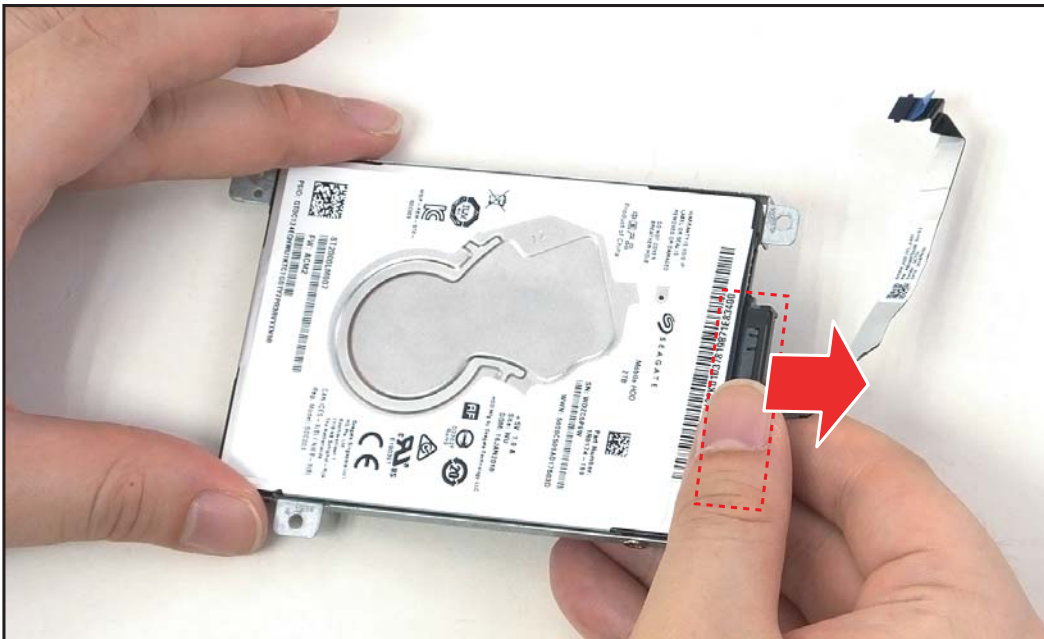


Figure 5-23. Disconnecting the HDD FFC

HDD Module Installation

1. Connect the HDD FFC to the HDD module connector.

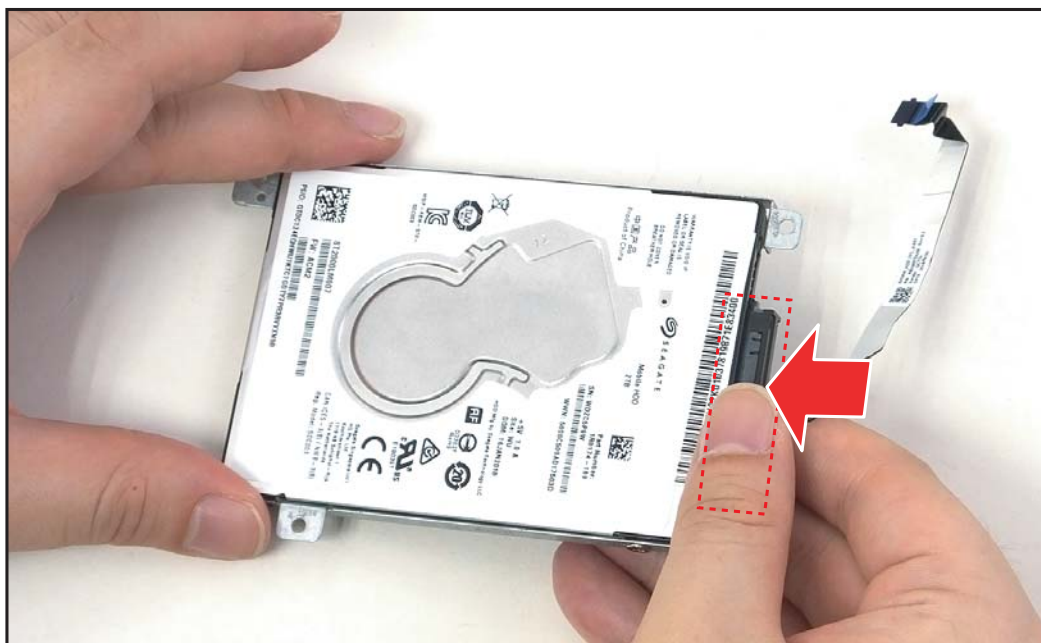


Figure 5-24. Connecting the HDD FFC

2. Align and install the HDD module into its slot on the upper case.

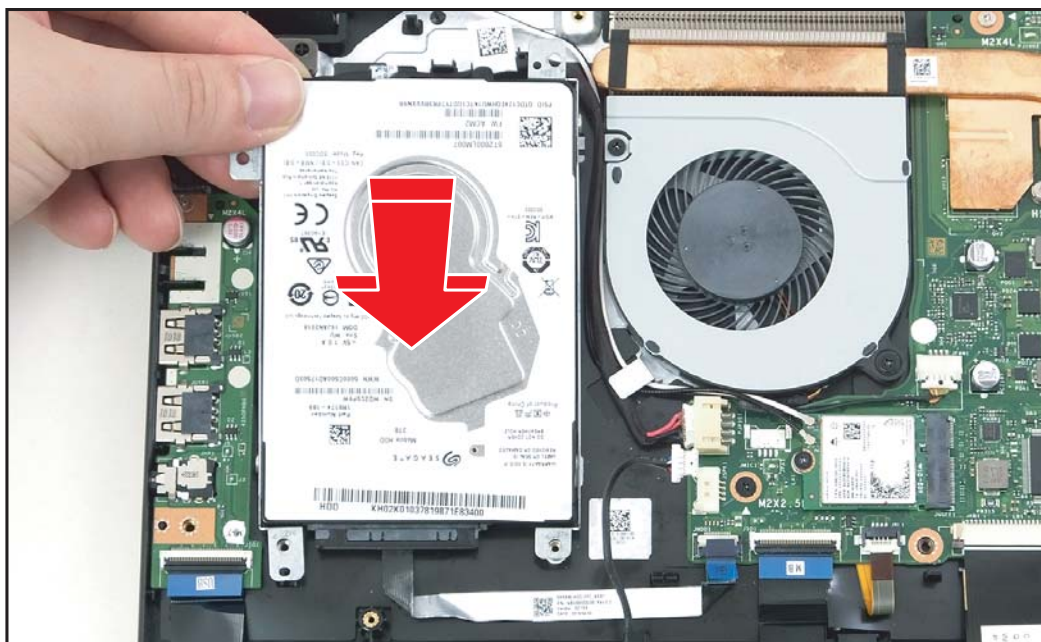


Figure 5-25. Installing the HDD Module

3. Attach the four (4) screws to secure the HDD module to the upper case.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm

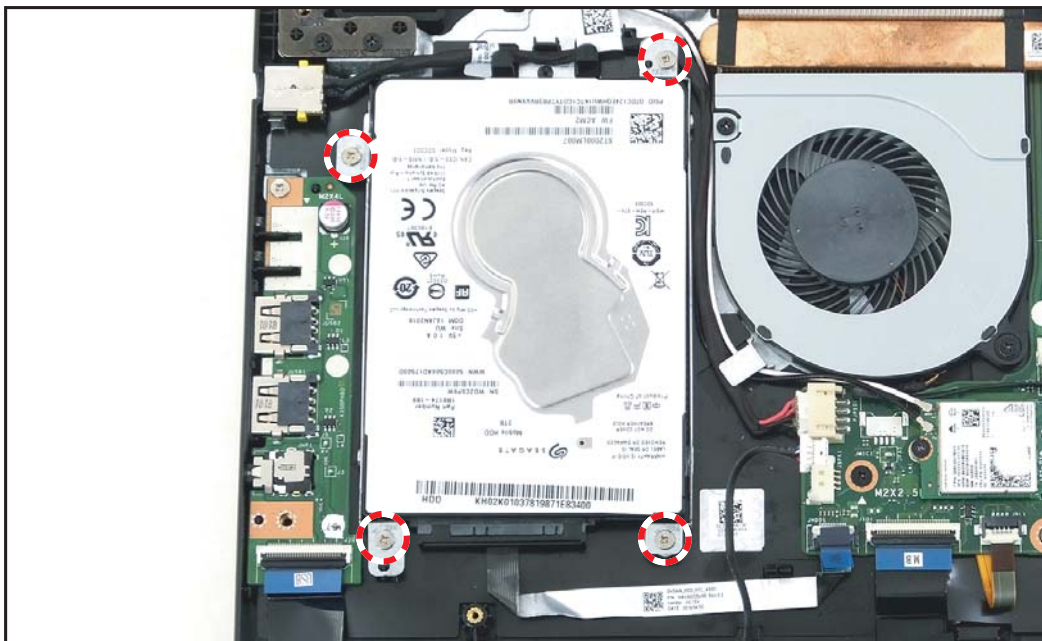


Figure 5-26. Securing the Screws

4. Press the middle portion of the HDD FFC to attach it with the adhesive tape underneath. Then connect the HDD FFC and speaker cable to the mainboard connectors.

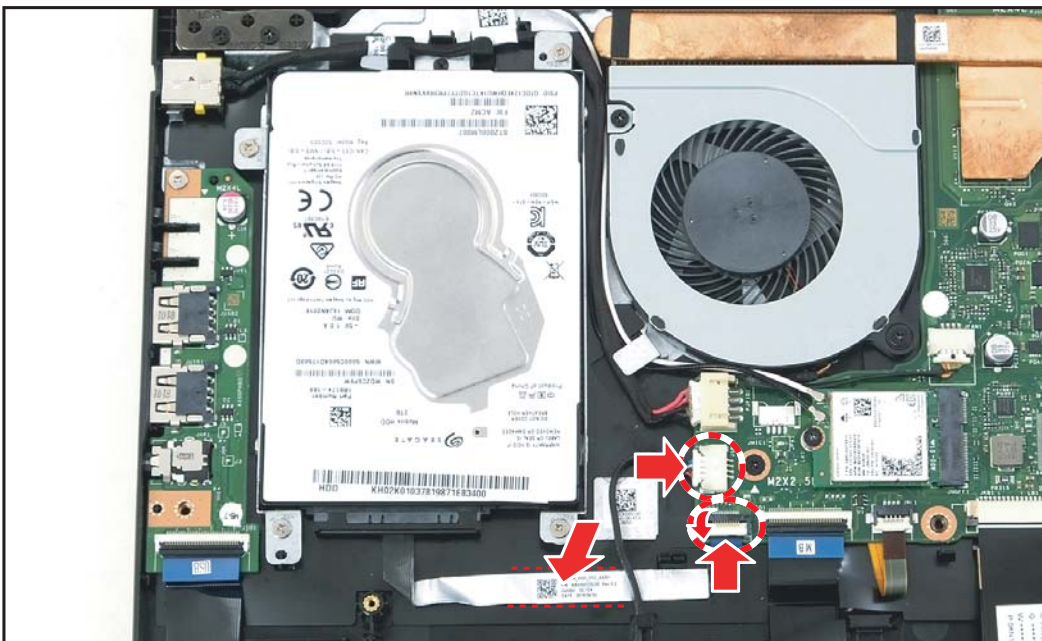


Figure 5-27. Connecting the Cables

5. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-8. HDD Module Screws

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 4.0		1.8~2.2kgf.cm	4

HDD Carrier Removal

Prerequisite:

※ [HDD Module Removal](#) on page 5-17

Remove the four (4) screws securing the HDD carrier to the HDD. Then lift to remove the HDD carrier.



Figure 5-28. Removing the HDD Carrier

HDD Carrier Installation

1. Install the HDD carrier onto the HDD. Make sure the HDD and HDD carrier screw holes are properly aligned.

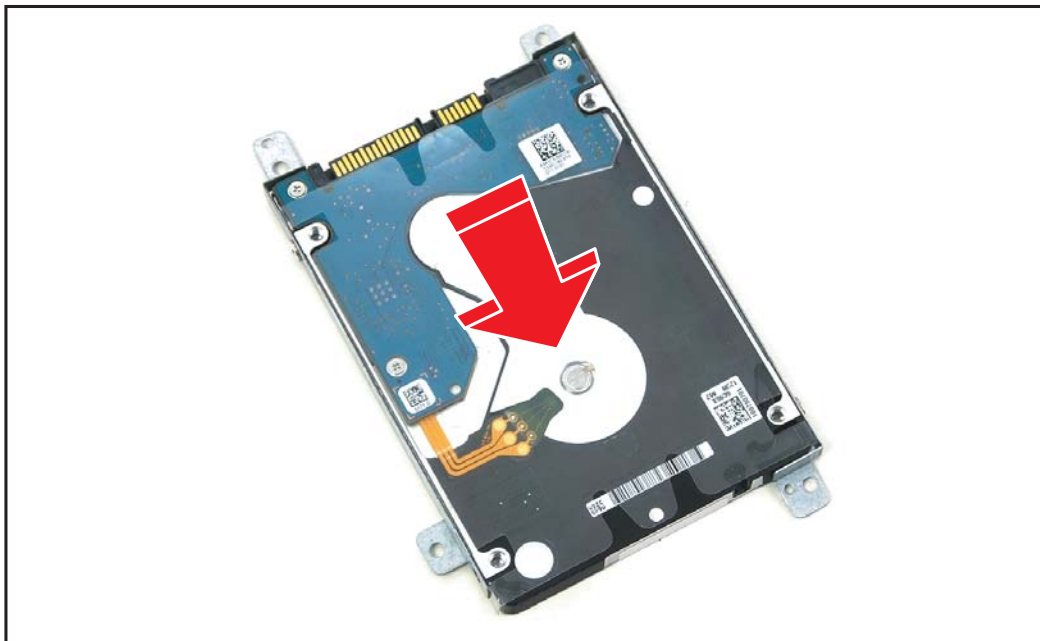


Figure 5-29. Assembling the HDD Module

2. Attach the four (4) screws to secure the HDD carrier to the HDD.

⇒ **NOTE:** Screw torque force = 3.0~3.45kgf.cm

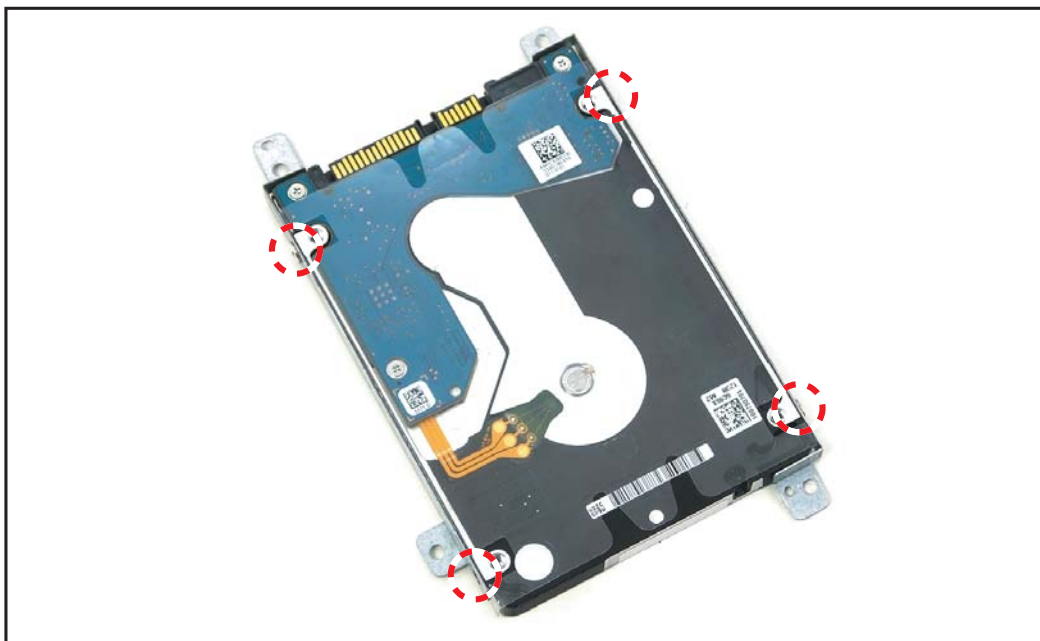


Figure 5-30. Securing the Screws

3. Install the HDD module (see [HDD Module Installation](#) on page [5-19](#)).

Table 5-9. HDD Carrier Screws

Screw Name	Screw Type	Torque	Quantity
M 3.0 x 3.0		3.0~3.45kgf.cm	4

USB Board Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Disconnect the speaker cable from the mainboard connector and unroute the speaker cable from the guides on the upper case. When reaching the guide tab (as marked in the illustration), make sure to release the cable first before continuing unrouting the speaker cable.
2. Release the latch and disconnect the USB board FFC from the mainboard connector. Then carefully lift the marked portion on the USB board FFC to detach it from the adhesive tape underneath.

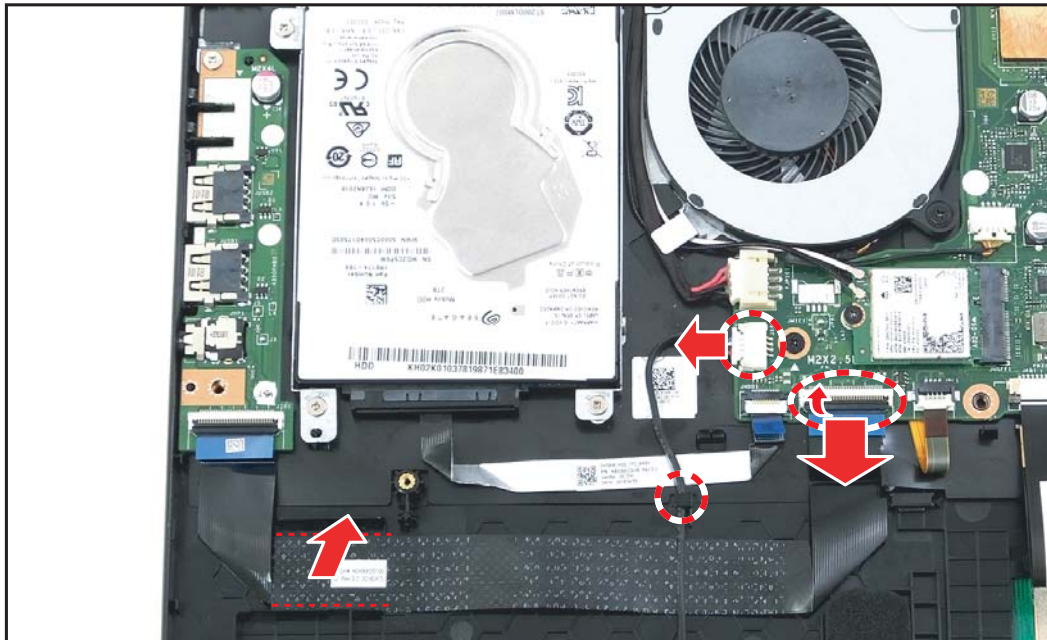


Figure 5-31. Disconnecting the Cables

3. Remove the screw securing the the USB board to the upper case.



Figure 5-32. Removing the Screw

4. Lift to remove the USB board from the upper case.



Figure 5-33. Removing the USB Board

5. Release the latch and disconnect the USB board FFC from the USB board connector.

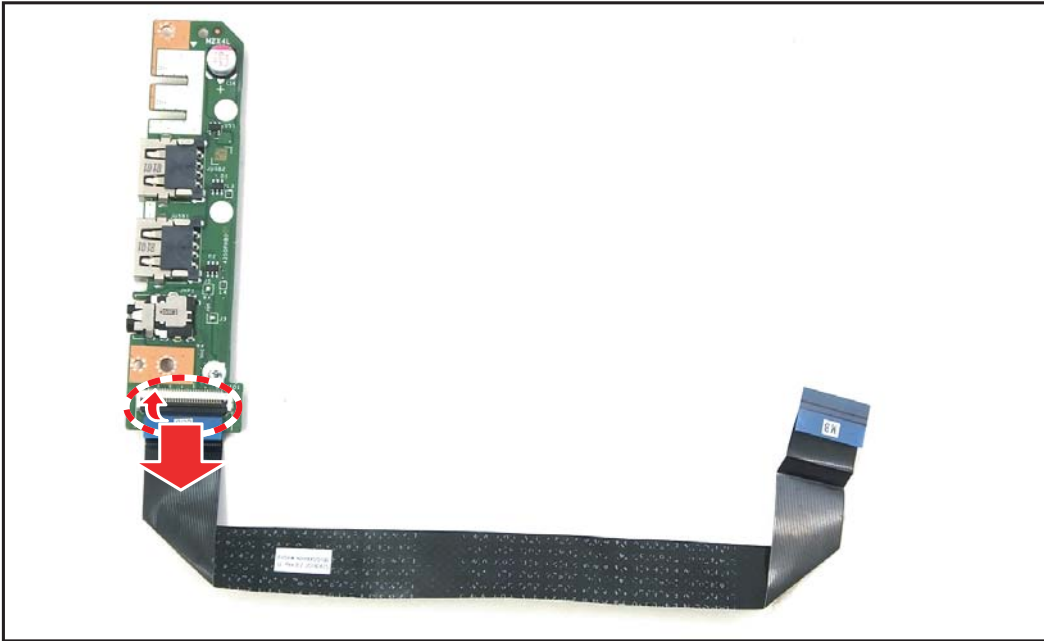


Figure 5-34. Removing the USB Board FFC

USB Board Installation

1. Connect the USB board FFC to the USB board connector and secure the latch.

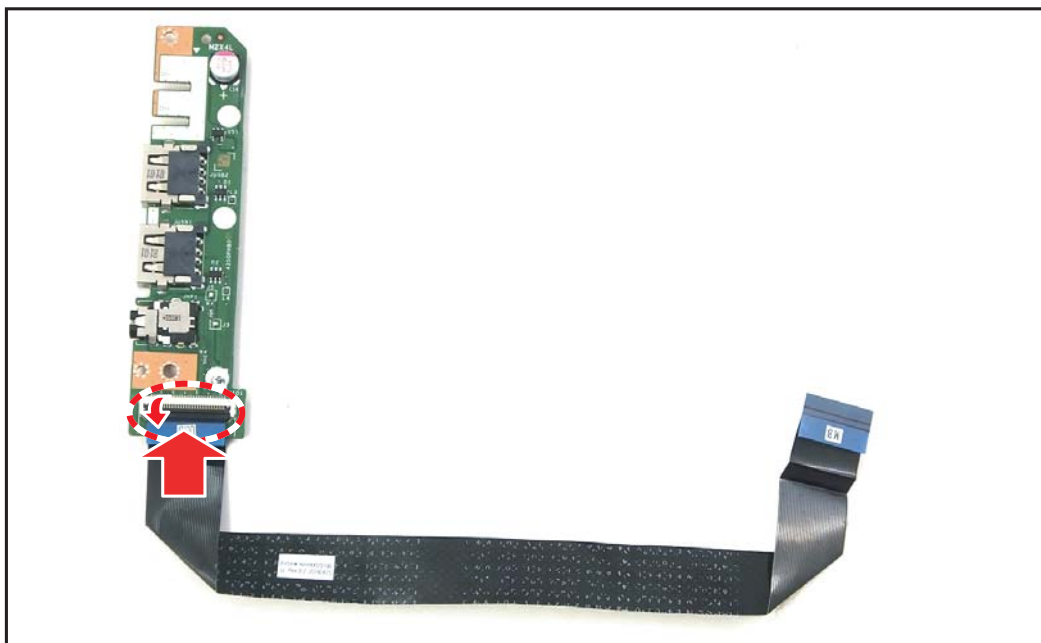


Figure 5-35. Connecting the USB Board FFC

2. By aligning the USB board with the guide pins on the upper case, install the USB board onto its slot on the upper case.

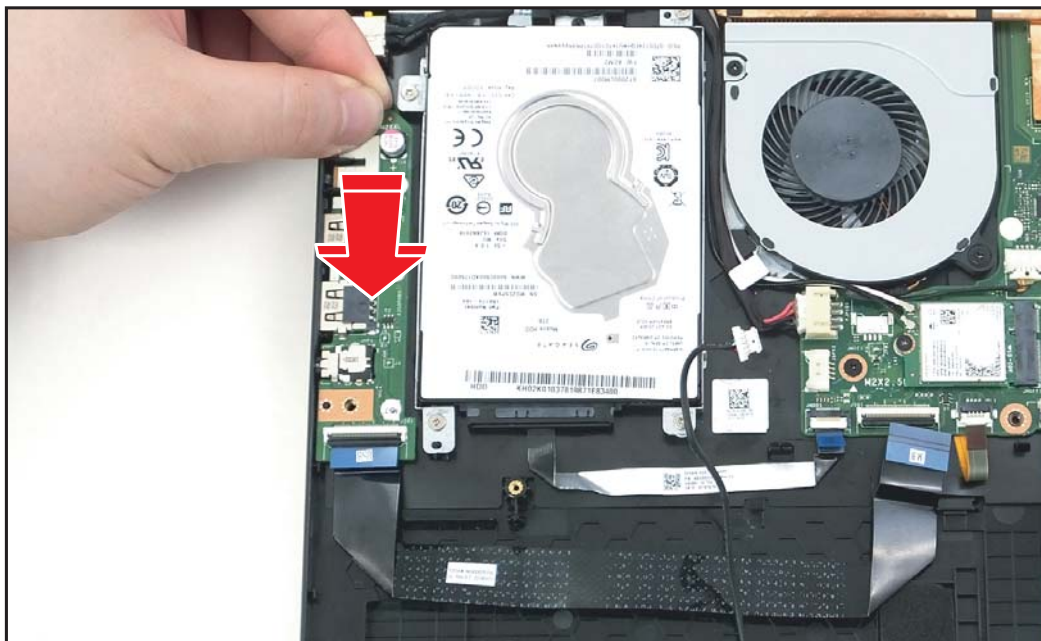


Figure 5-36. Installing the USB Board

3. Attach the screw to secure the USB board to the upper case.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm



Figure 5-37. Securing the Screw

4. Press the marked portion of the USB board FFC to attach it with the adhesive tape underneath. Then connect the USB board FFC to the mainboard connector and secure the latch.
5. Carefully route the speaker cable through the guides on the upper case. When reaching the guide tab (as marked in the illustration), make sure to slide the cable into the tab to secure the speaker cable in place. Then connect the speaker cable to the mainboard connector.

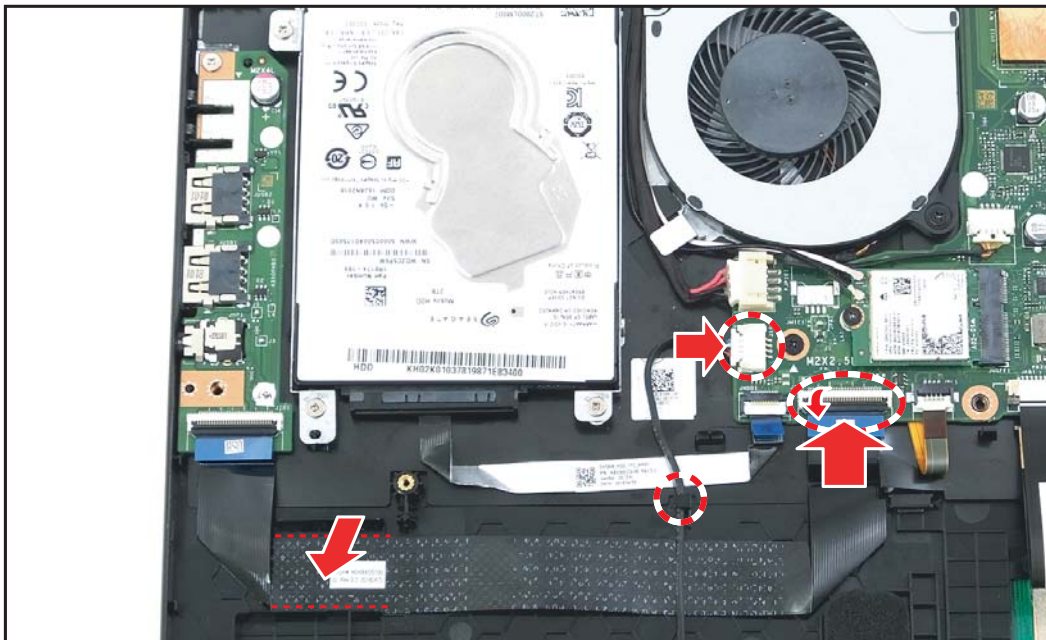


Figure 5-38. Connecting the Cables

6. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-10. USB Board Screw

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 4.0		1.8~2.2kgf.cm	1

DIMM Modules Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Push the module clips outwards.

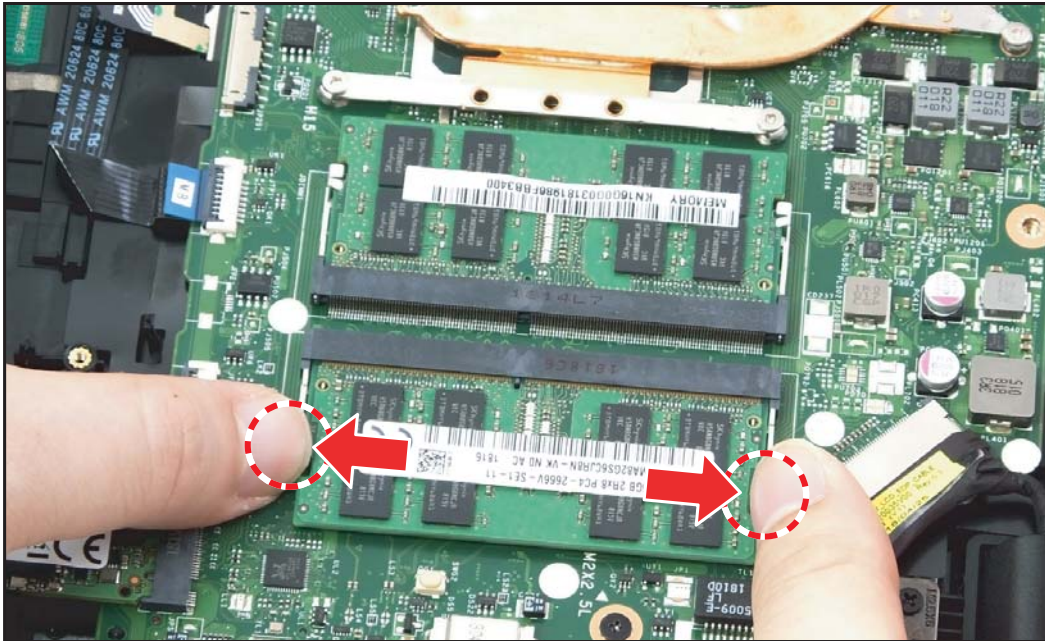


Figure 5-39. Unclipping the Module Clips

2. Pull to remove the memory module from the mainboard connector. Then remove the memory module.

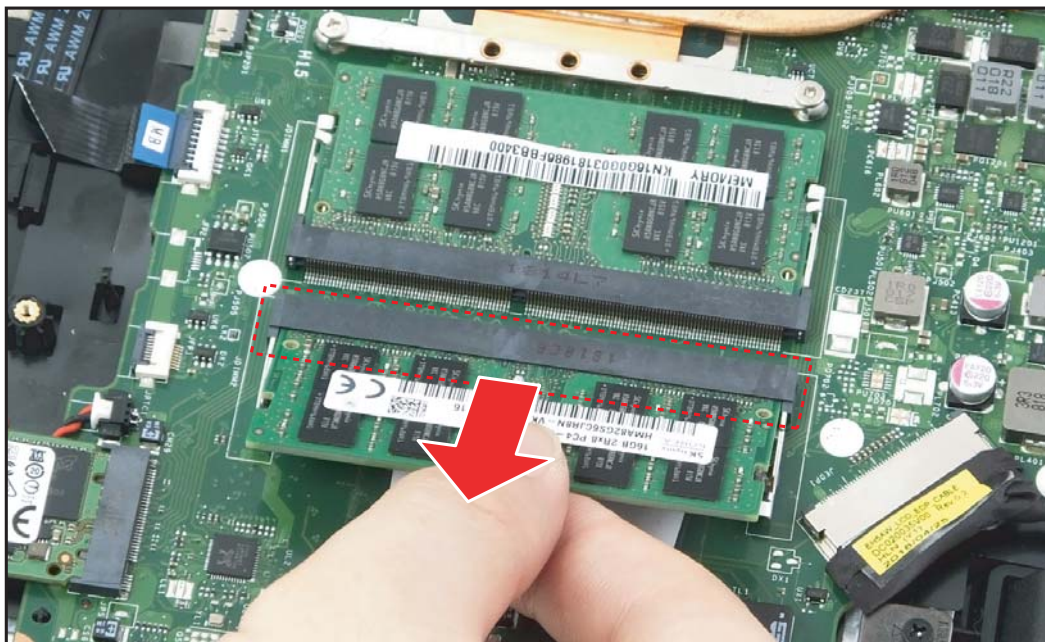


Figure 5-40. Removing the DIMM Module

3. Repeat steps 1~2 to remove another DIMM module.

DIMM Modules Installation

1. Connect the memory module to the mainboard connector.

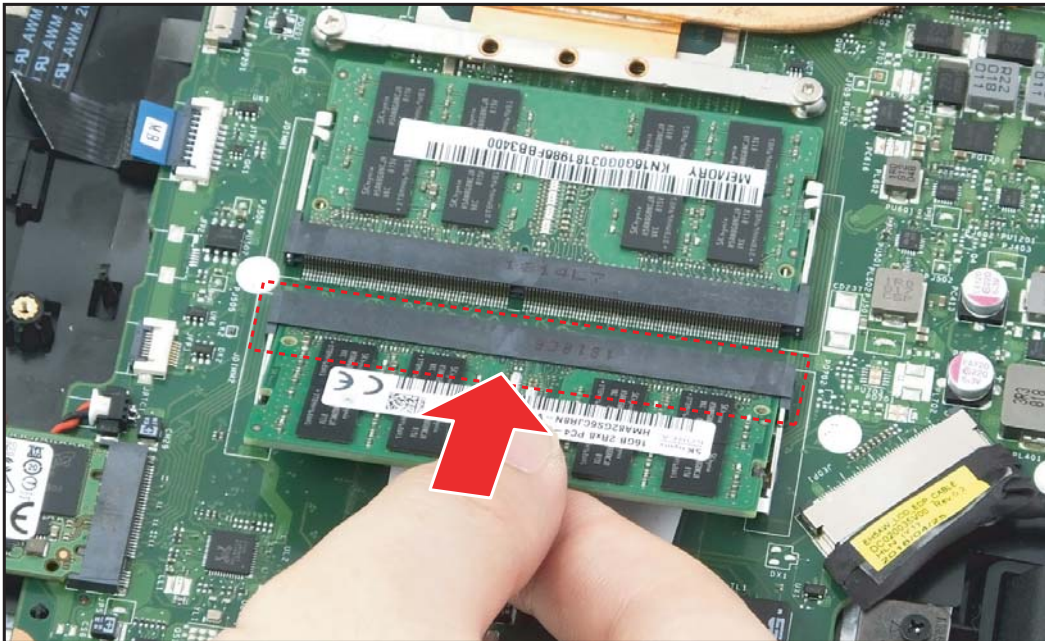


Figure 5-41. Installing the DIMM Module (1 of 2)

2. Push down the memory module until the clips lock in place.

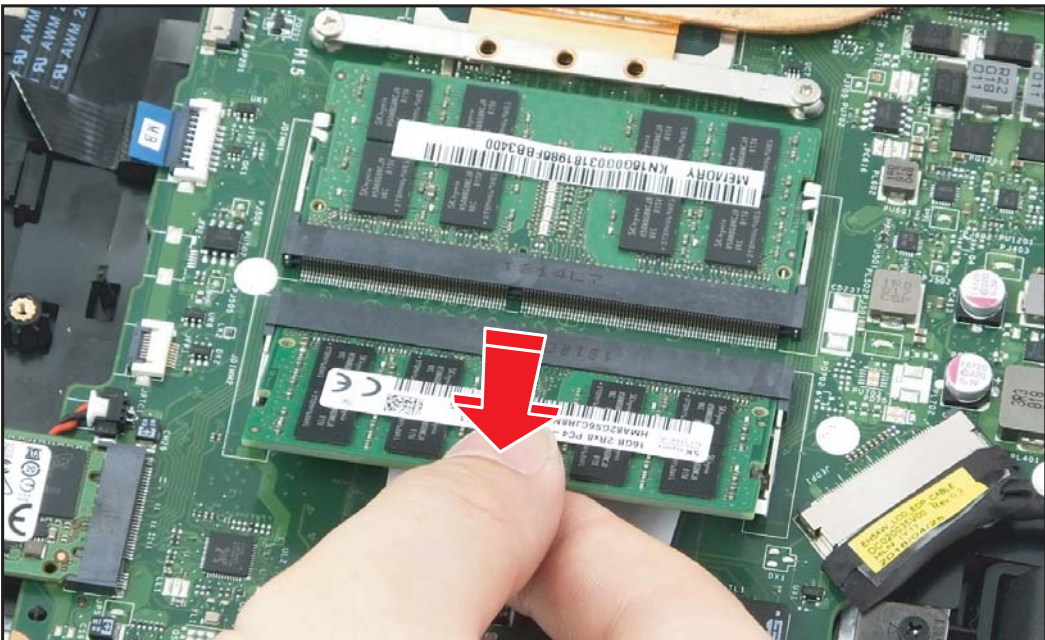


Figure 5-42. Installing the DIMM Module (2 of 2)

3. Repeat steps 1~2 to install another DIMM module.
4. Install the battery (see [Battery Installation](#) on page [5-14](#)).

SSD Module Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Remove the screw securing the SSD module to the mainboard.

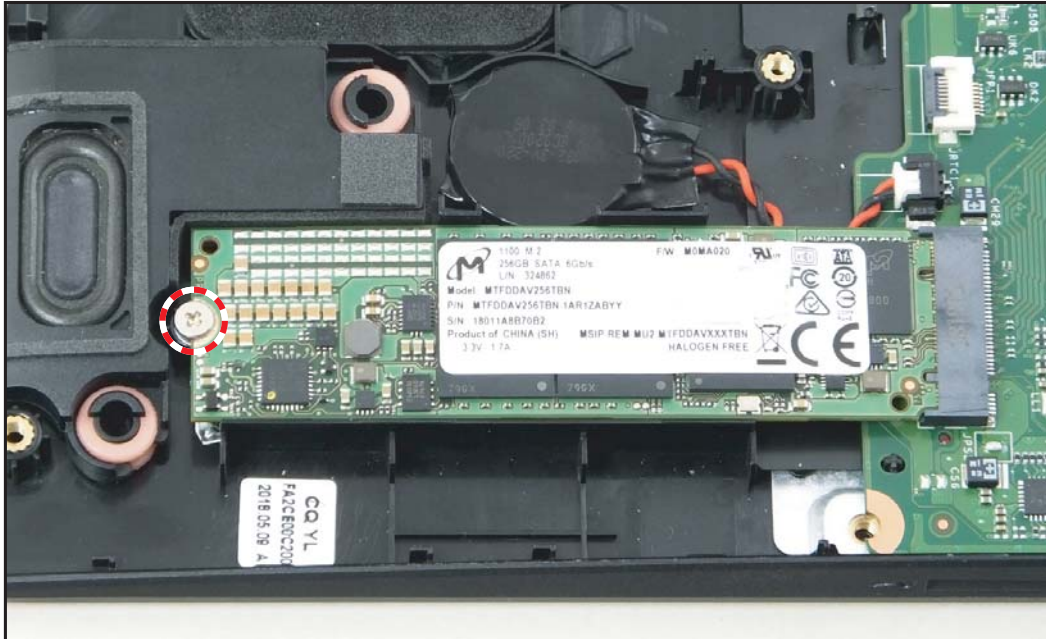


Figure 5-43. Removing the Screw

2. Pull to disconnect the SSD module from the mainboard connector. Then remove the SSD module.



Figure 5-44. Removing the SSD Module

SSD Module Installation

1. Connect the SSD module to the mainboard connector.



Figure 5-45. Connecting the SSD Module Connector

2. Attach the screw to secure the SSD module to the mainboard.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm

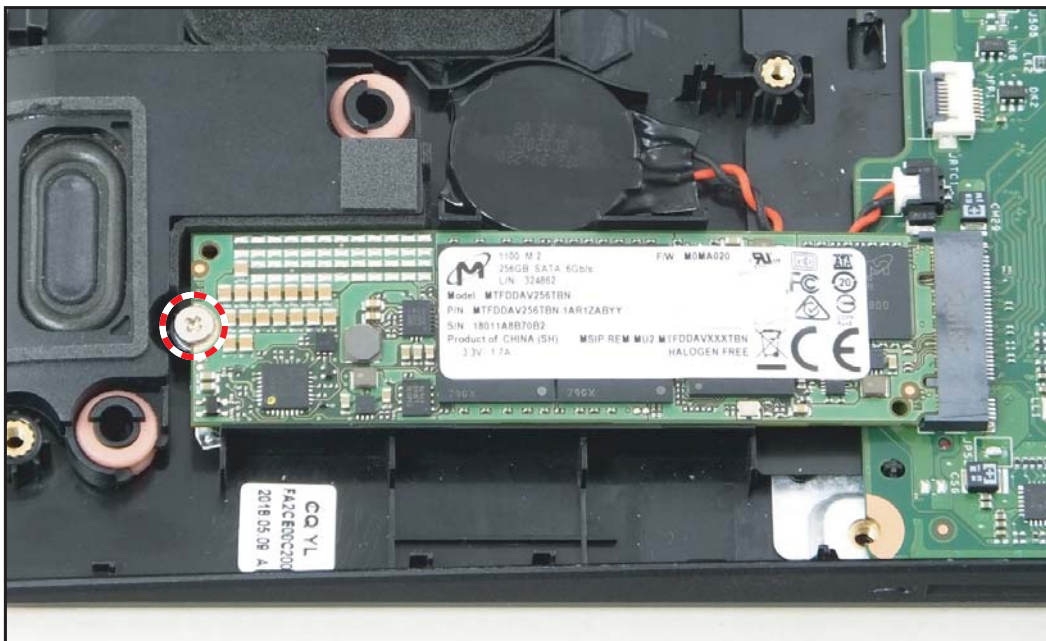


Figure 5-46. Securing the Screw

3. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-11. SSD Module Screw

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 4.0		1.8~2.2kgf.cm	1

WLAN Module Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Disconnect the WLAN antenna cables.

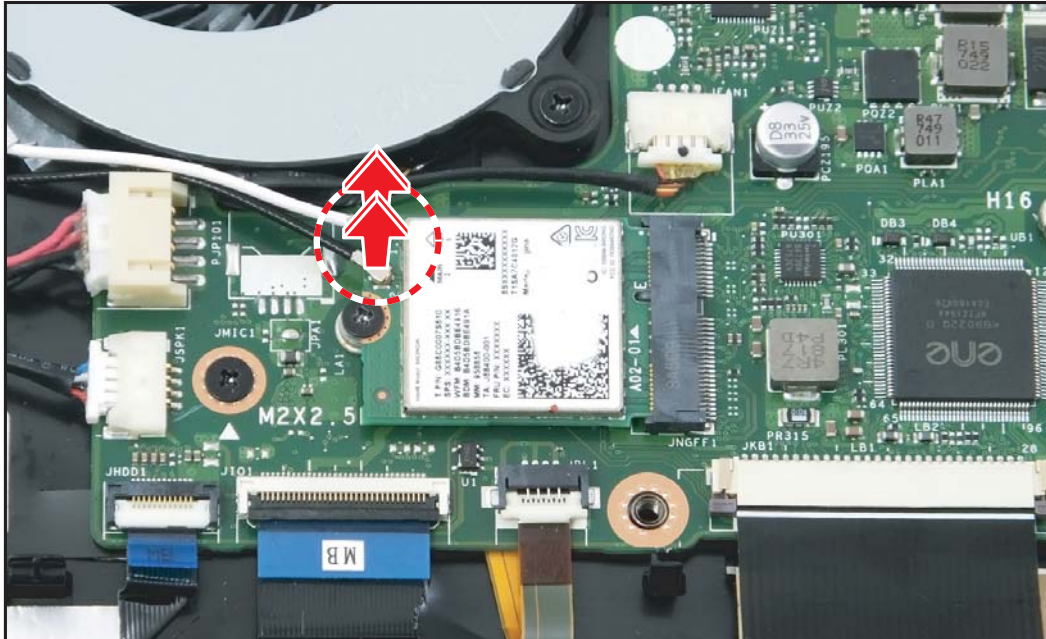


Figure 5-47. Disconnecting the WLAN Antenna Cables

2. Remove the screw securing the WLAN module to the mainboard.

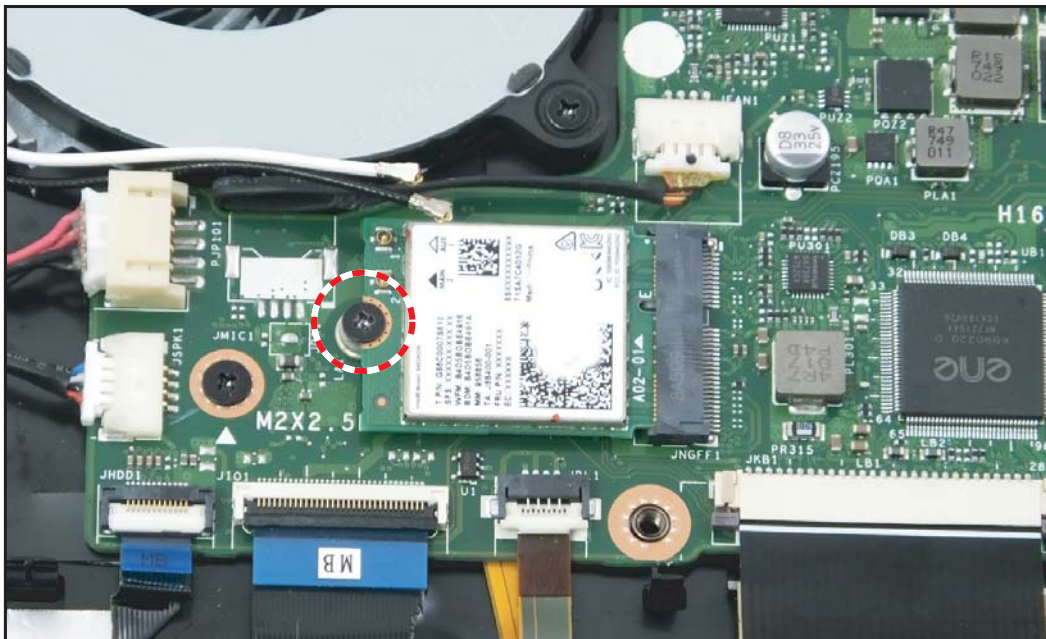


Figure 5-48. Removing the Screw

3. Pull to disconnect the WLAN module from the mainboard connector. Then remove the WLAN module.

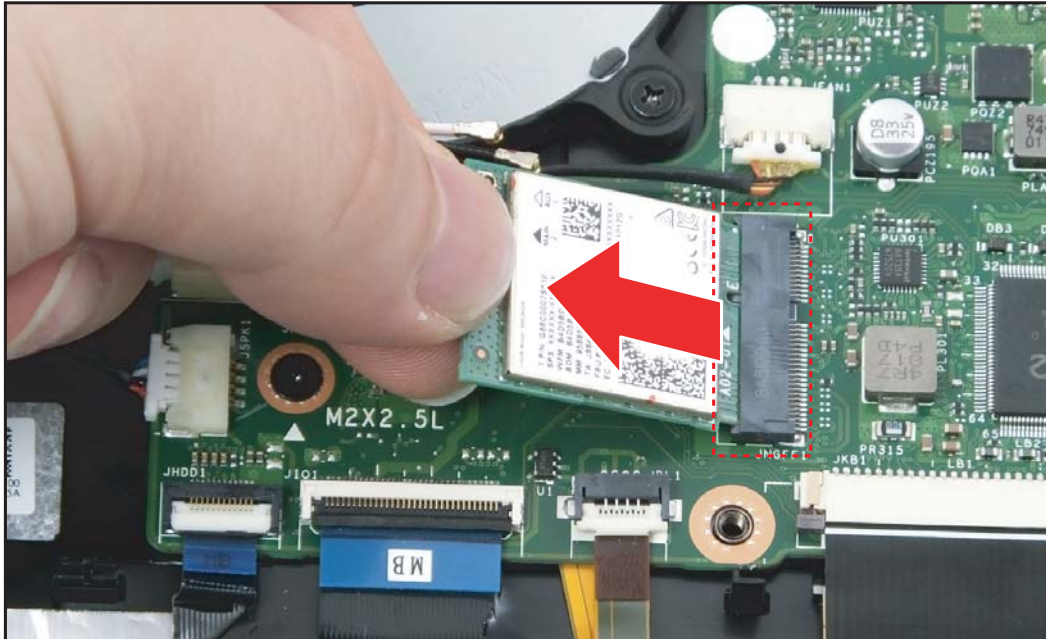


Figure 5-49. Removing the WLAN Module

WLAN Module Installation

1. Connect the WLAN module to the mainboard connector.

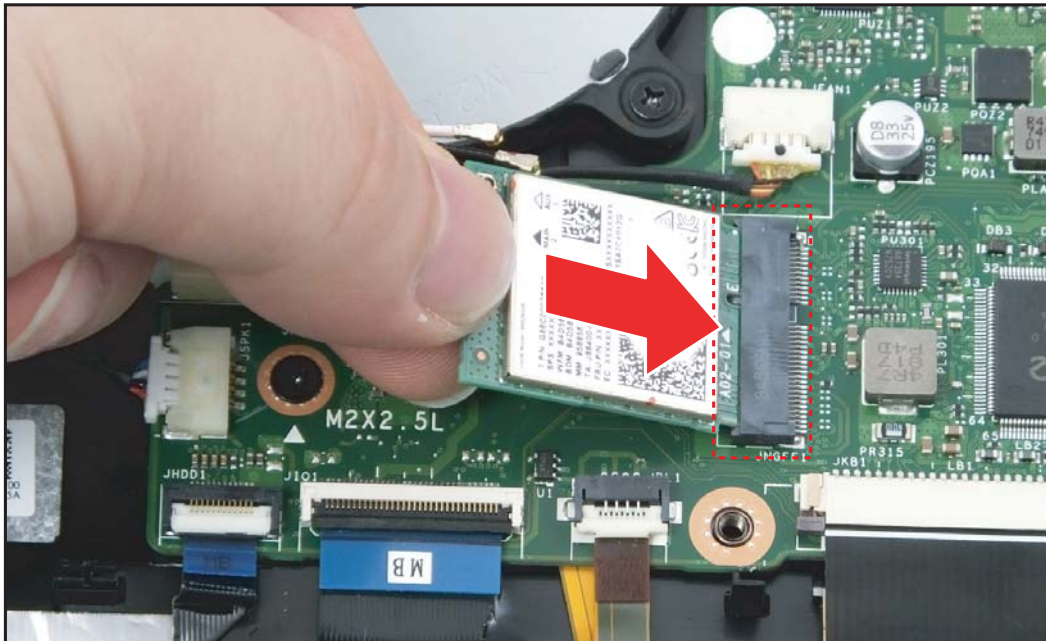


Figure 5-50. Connecting the WLAN Module Connector

2. Attach the screw to secure the WLAN module to the mainboard.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm

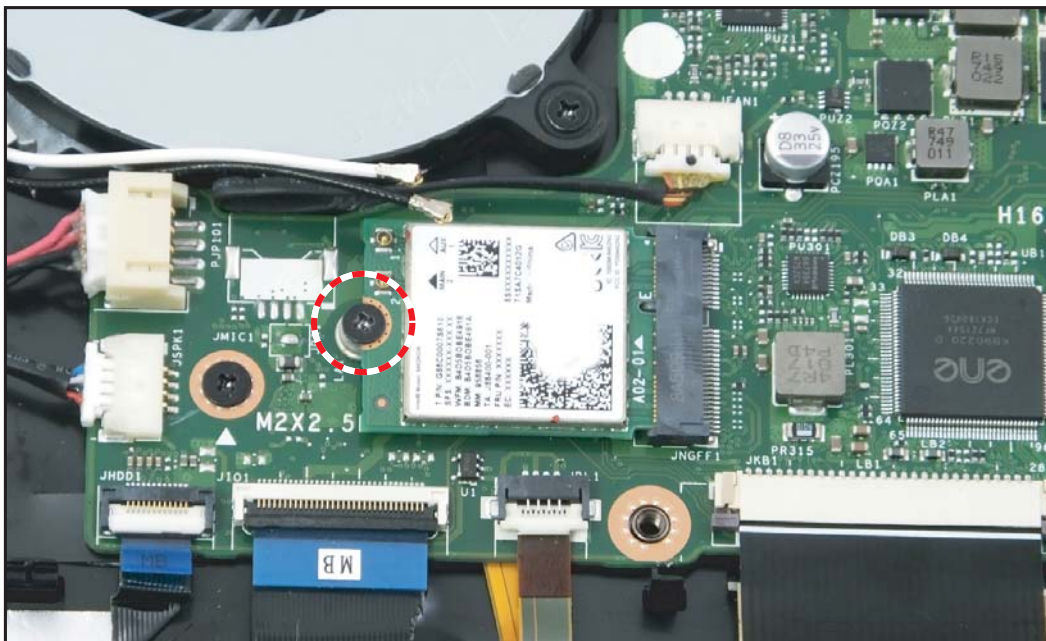


Figure 5-51. Securing the Screw

3. Connect the main antenna cable (black) to the connector closer to the screw and the auxiliary antenna cable (white) to the other connector on the board.

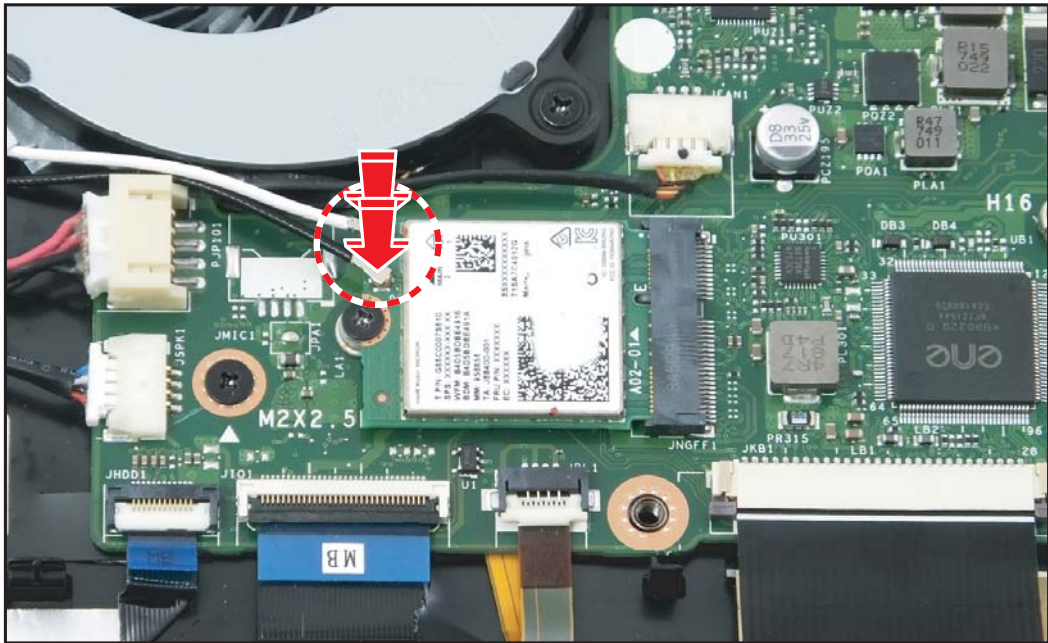


Figure 5-52. Connecting the WLAN Antenna Cables

4. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-12. WLAN Module Screw

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 2.5		1.8~2.2kgf.cm	1

Fan Module Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Disconnect the fan cable from the mainboard connector.

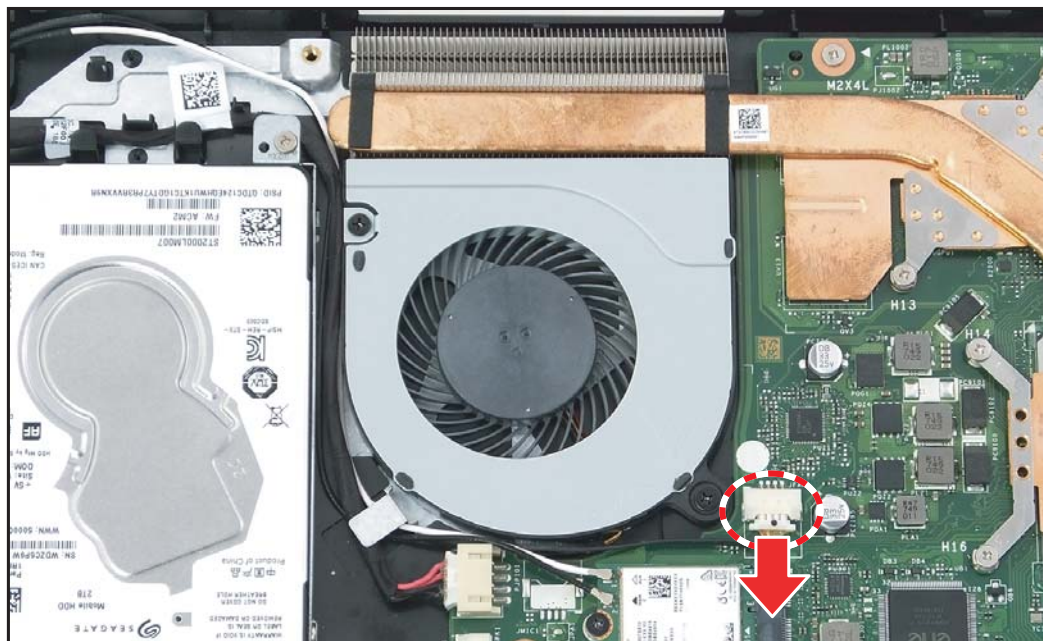


Figure 5-53. Removing the Fan Cable

2. Remove the two (2) screws securing the fan module to the upper case.

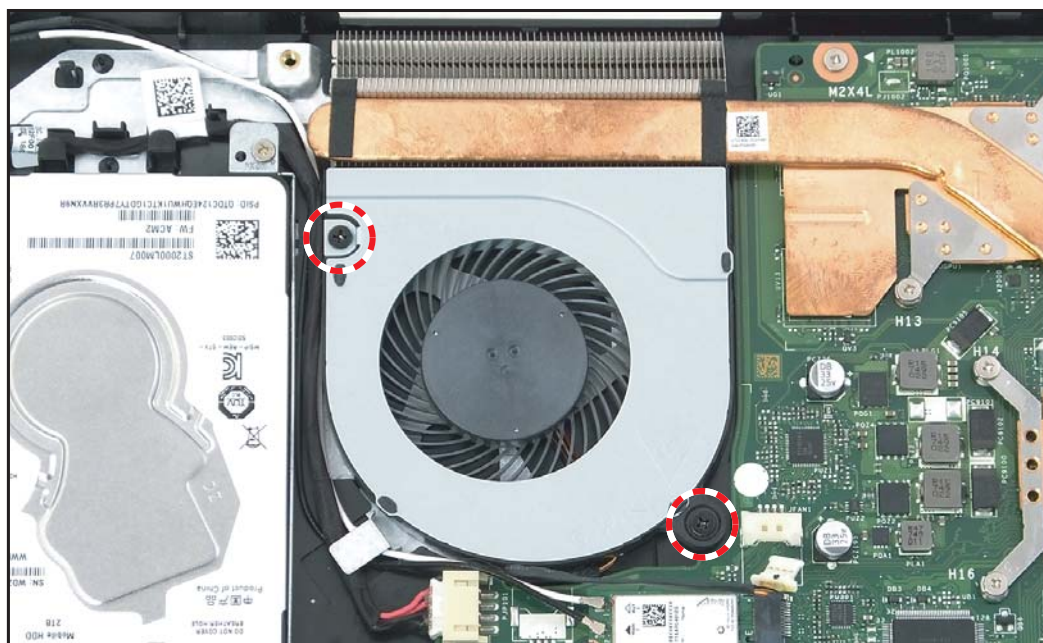


Figure 5-54. Removing the Screws

3. Lift to remove the fan module from the upper case.

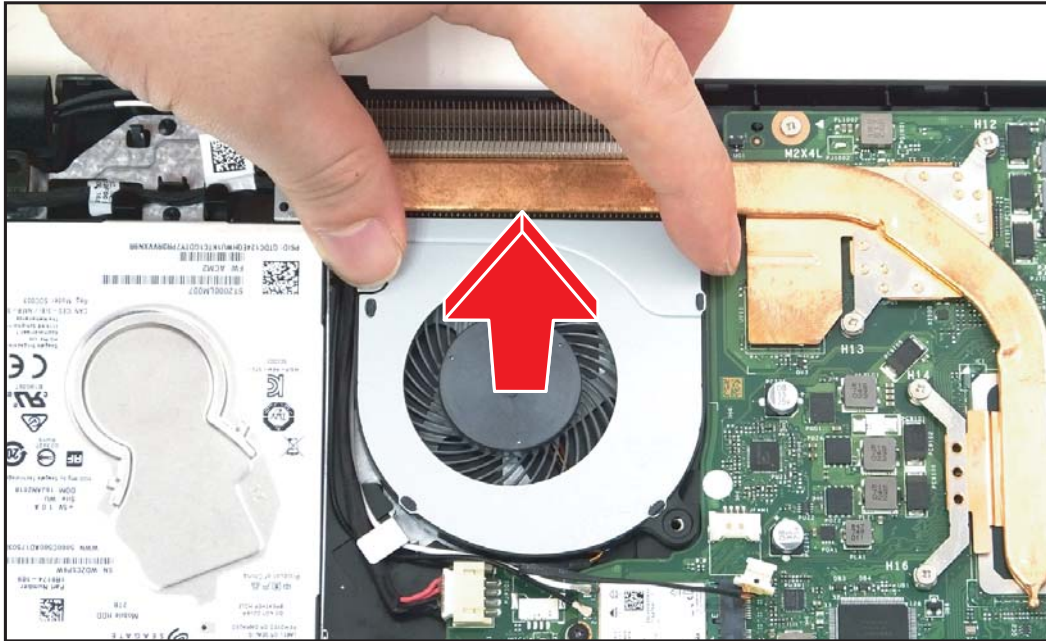


Figure 5-55. Removing the Fan Module

Fan Module Installation

1. Align and install the fan module onto its slot on the upper case.

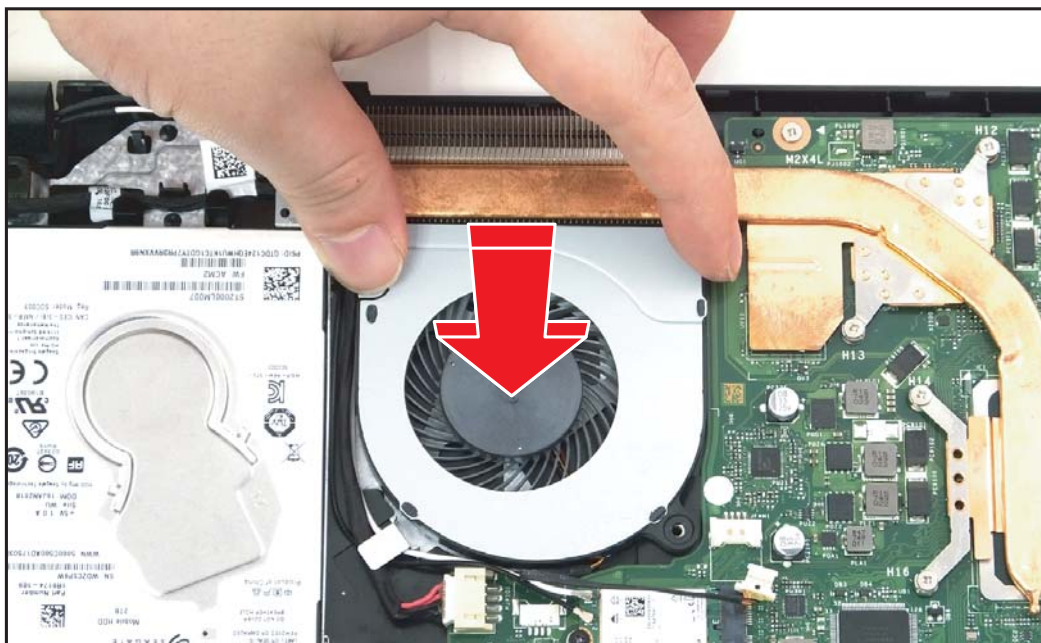


Figure 5-56. Installing the Fan Module

2. Attach the two (2) screws to secure the fan module to the upper case.

⇒ **NOTE:** Screw torque force = 2.55~3.0kgf.cm

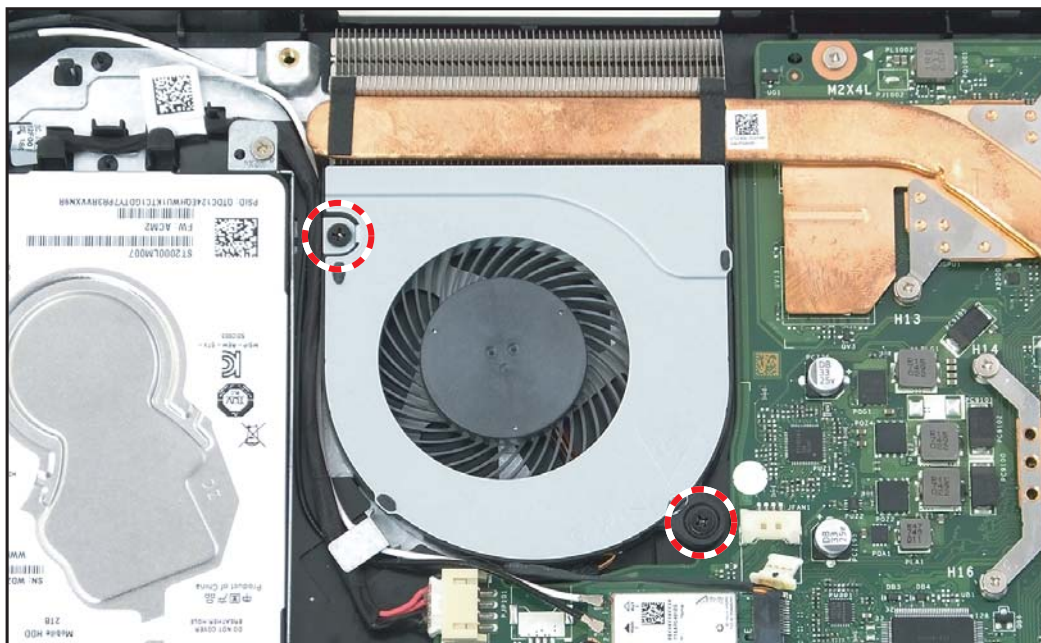


Figure 5-57. Securing the Screws

3. Connect the fan cable to the mainboard connector.

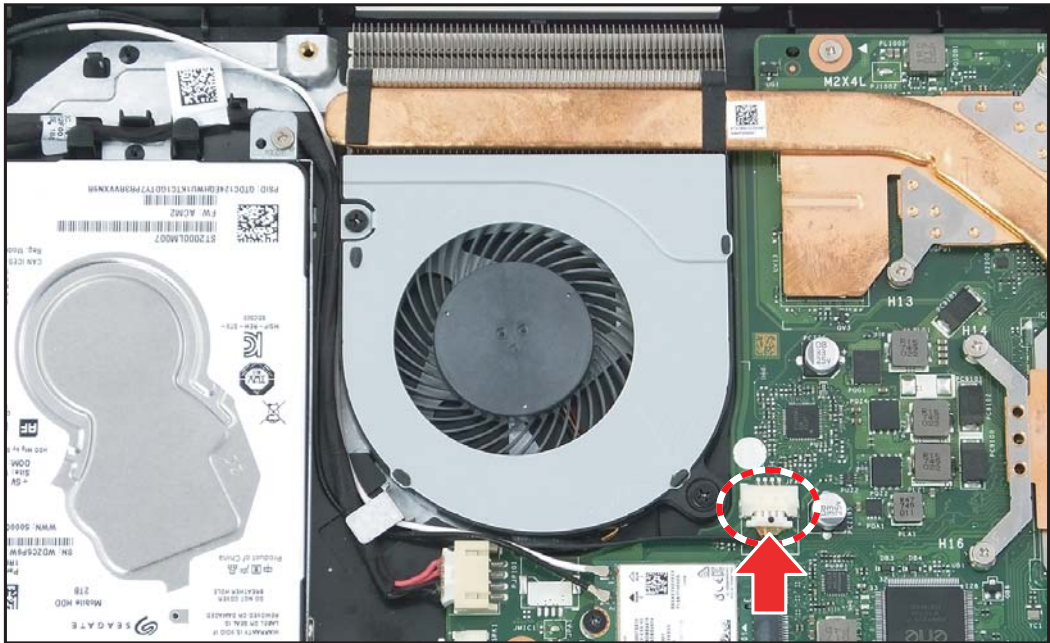


Figure 5-58. Connecting the Fan Cable

4. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-13. Fan Module Screws

Screw Name	Screw Type	Torque	Quantity
M 2.5 x 5.0		2.55~3.0kgf.cm	2

Thermal Module Removal

Prerequisite:

- * [DIMM Modules Removal](#) on page 5-31
- * [SSD Module Removal](#) on page 5-33
- * [WLAN Module Removal](#) on page 5-36
- * [Fan Module Removal](#) on page 5-40

1. Remove the six (6) screws (for Discrete type) or four (4) screws (for UMA type) securing the thermal module to the mainboard.

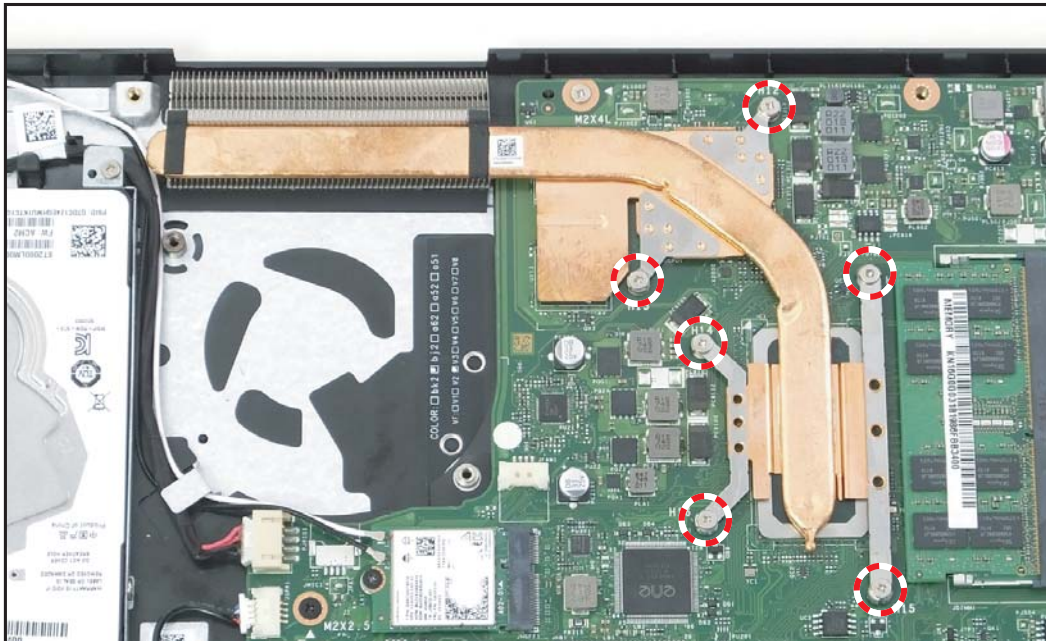


Figure 5-59. Removing the Screws (Discrete)

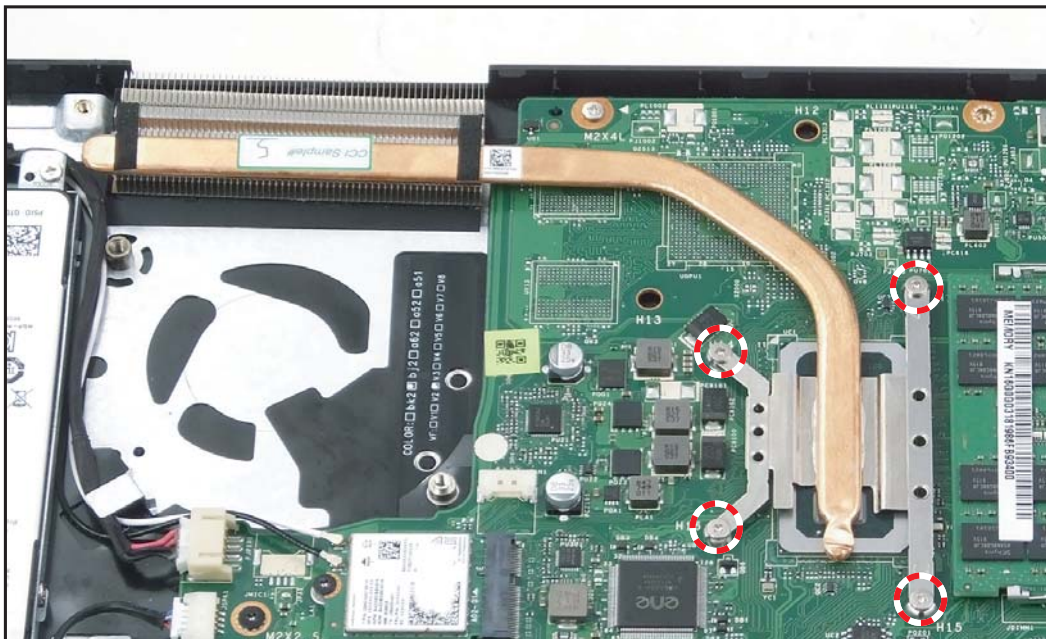


Figure 5-60. Removing the Screws (UMA)

2. Lift to remove the thermal module from the mainboard and upper case.

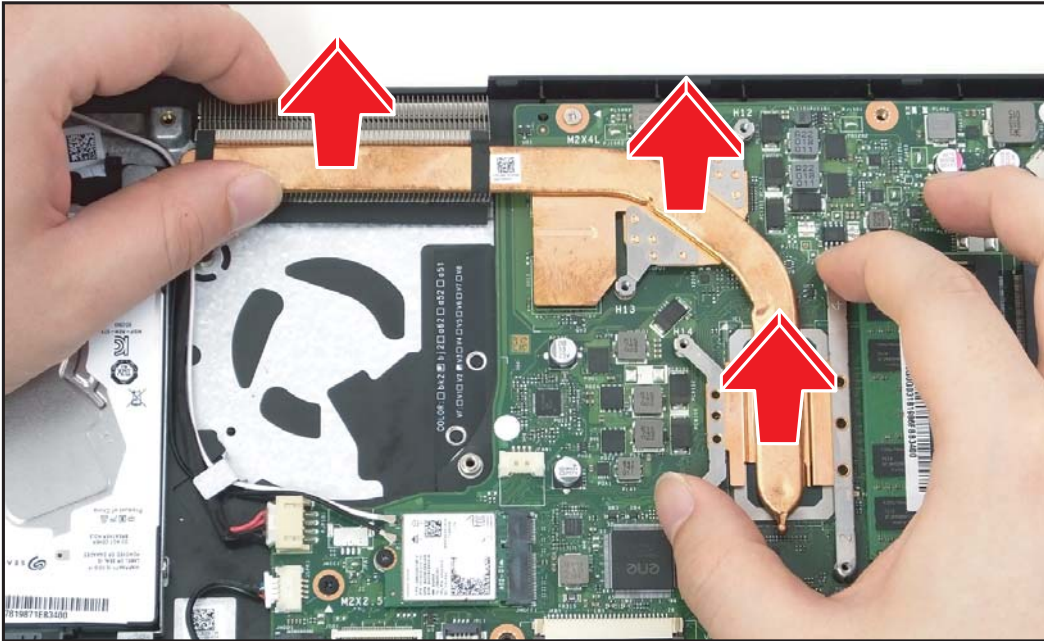


Figure 5-61. Removing the Thermal Module (Discrete)

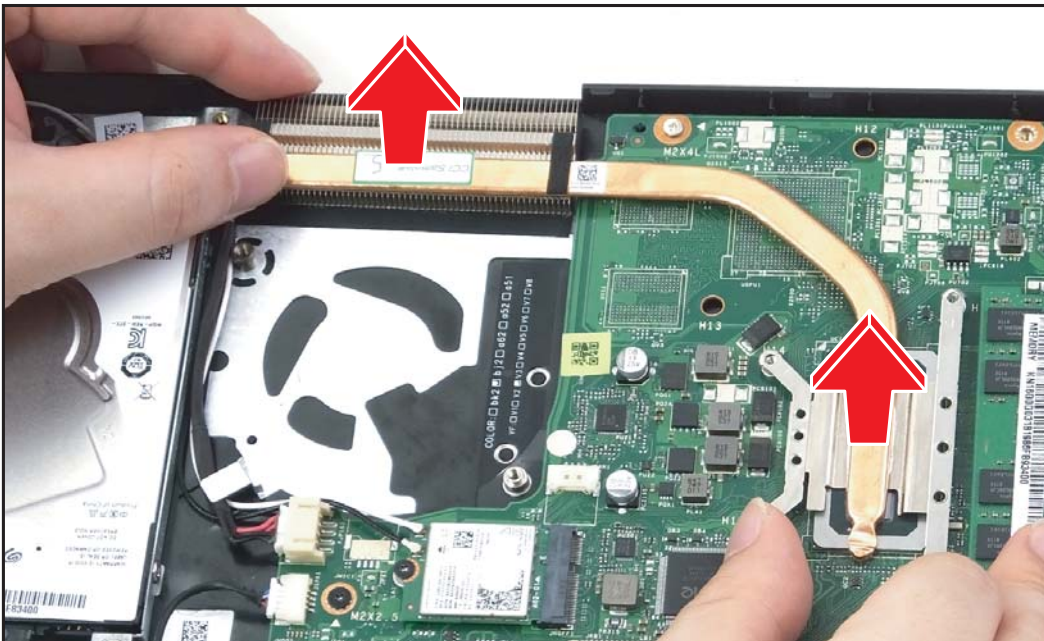


Figure 5-62. Removing the Thermal Module (UMA)

Thermal Module Installation

1. Align and install the thermal module onto its slot on the mainboard and upper case.

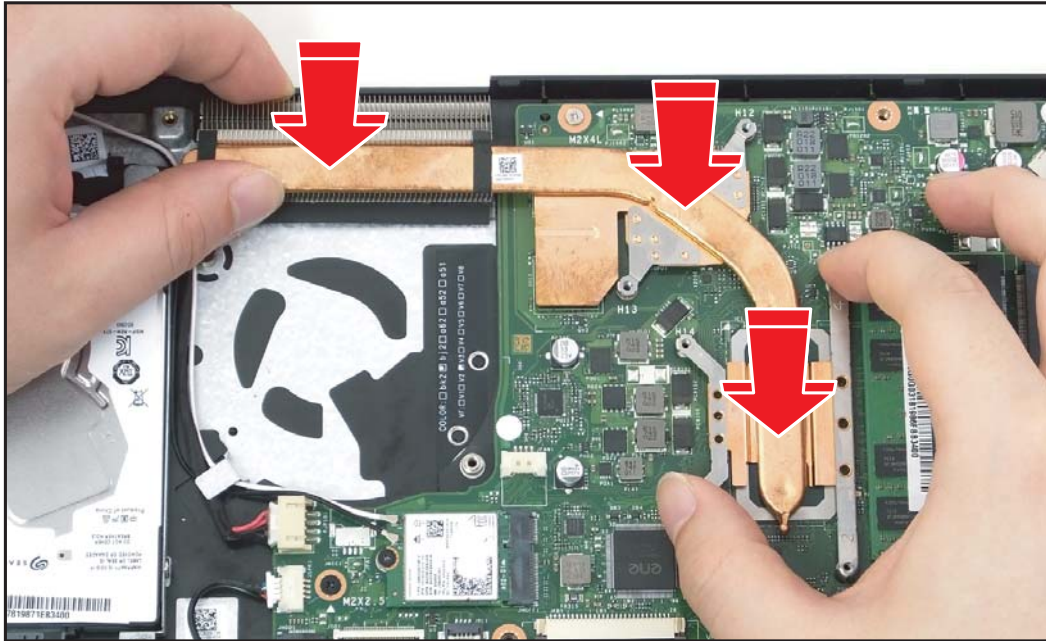


Figure 5-63. Installing the Thermal Module (Discrete)

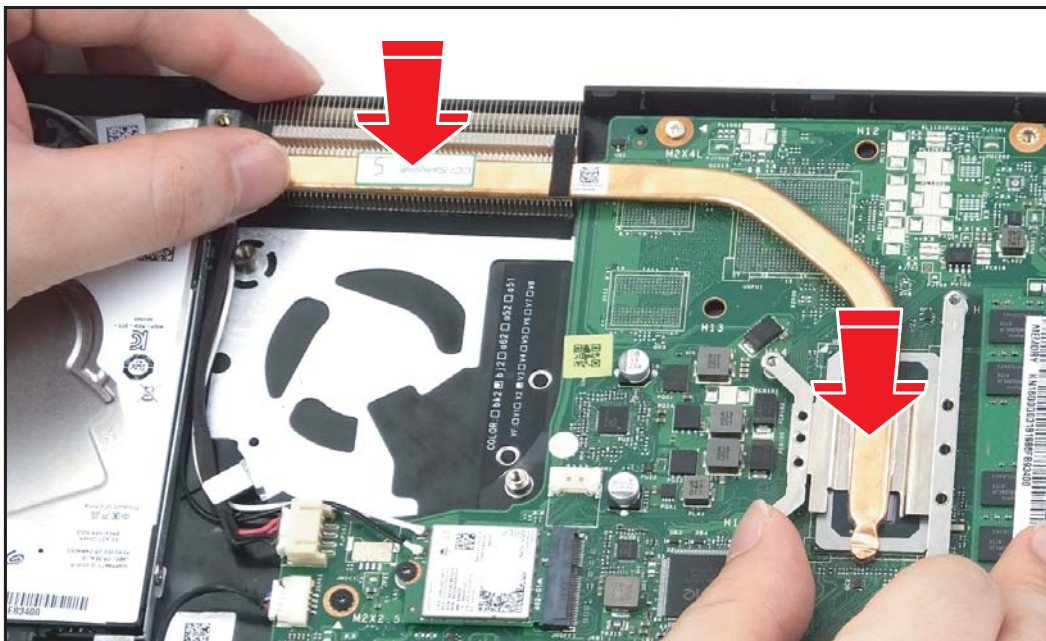


Figure 5-64. Installing the Thermal Module (UMA)

2. Attach the six (6) screws (for Discrete type) or four (4) screws (for UMA type) to secure the thermal module to the mainboard.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm

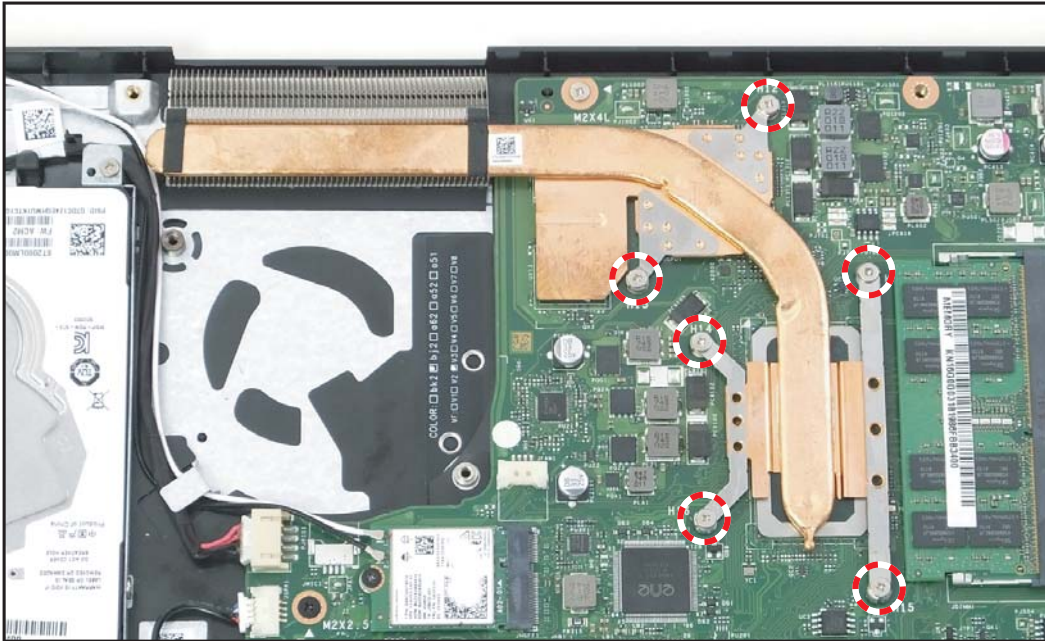


Figure 5-65. Securing the Screws (Discrete)

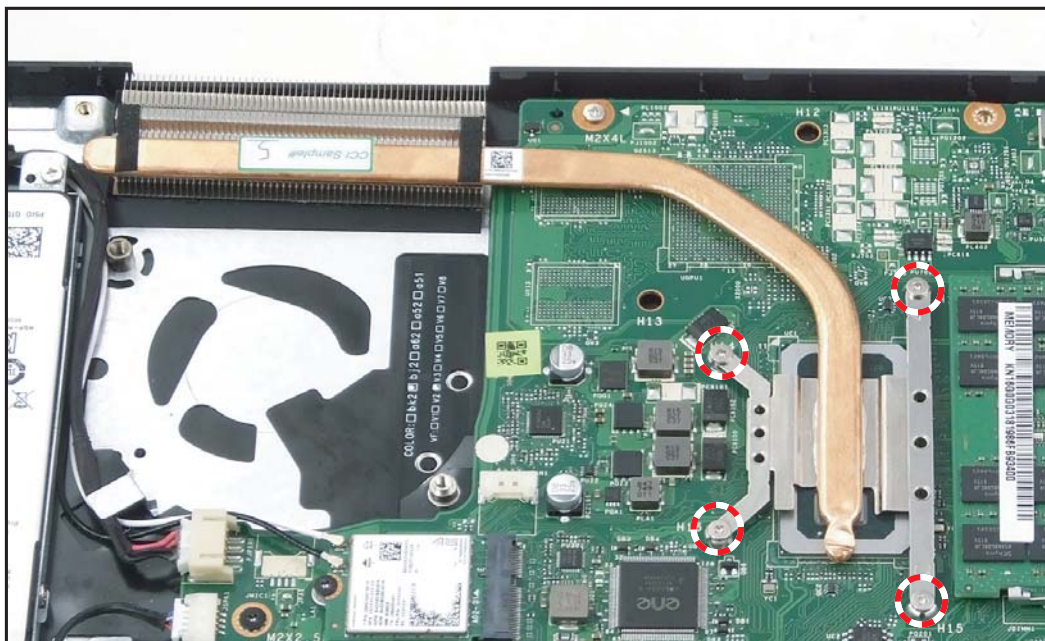


Figure 5-66. Securing the Screws (UMA)

3. Install the memory module (see [DIMM Modules Installation](#) on page 5-32).
4. Install the SSD module (see [SSD Module Installation](#) on page 5-34)
5. Install the WLAN module (see [WLAN Module Installation](#) on page 5-38)

6. Install the fan module (see [Fan Module Installation](#) on page 5-42).

Table 5-14. Thermal Module Screws

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 4.0		1.8~2.2kgf.cm	6 (Discrete)
			4 (UMA)

Mainboard Removal

Prerequisite:

* [Thermal Module Removal](#) on page 5-44

1. Release the latch (if necessary) and disconnect the following cables from the mainboard connectors:

- DC-IN cable (A)
- Speaker cable (B)
- HDD FFC (C)
- USB board FFC (D)
- Keyboard backlight FPC (E)
- Keyboard FPC (F)
- Touchpad FFC (G)
- RTC battery cable (H)
- eDP cable (I)

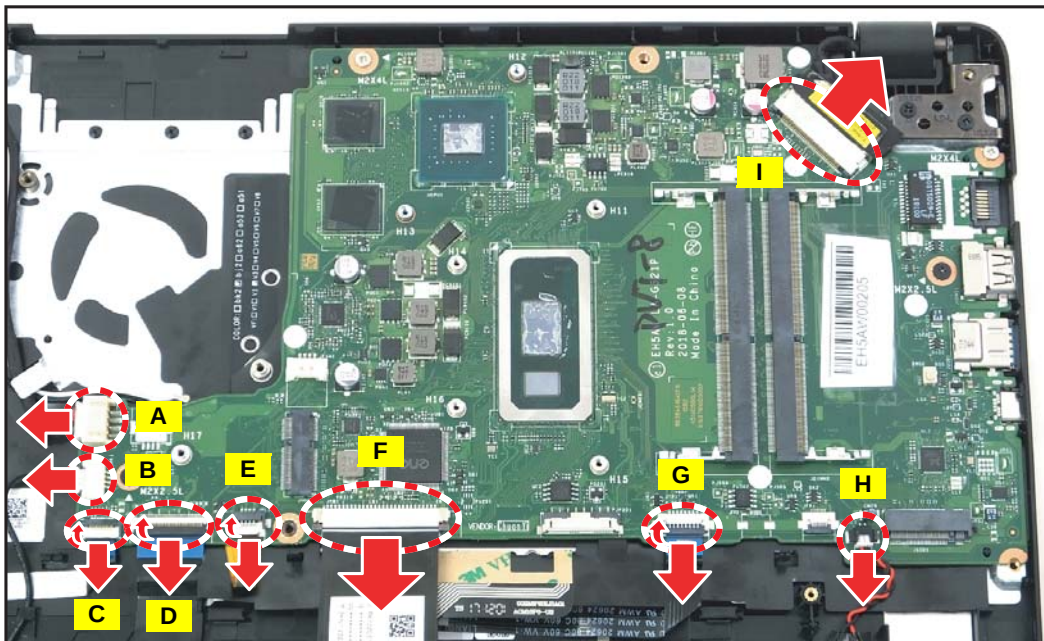


Figure 5-67. Disconnecting the Cables (Discrete)

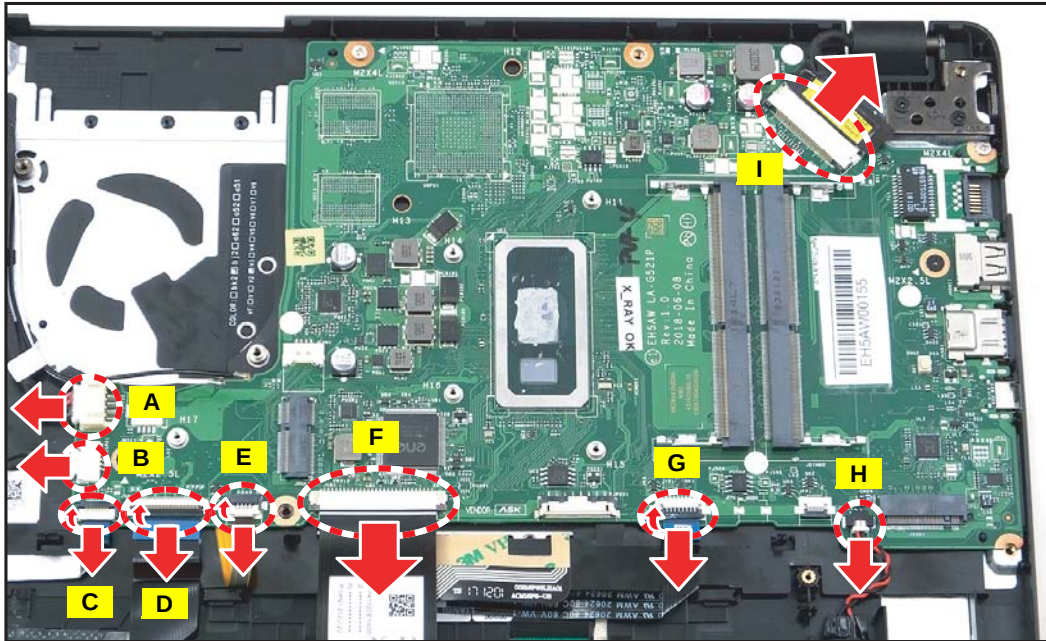


Figure 5-68. Disconnecting the Cables (UMA)

2. Remove the four (4) screws securing the mainboard to the upper case.

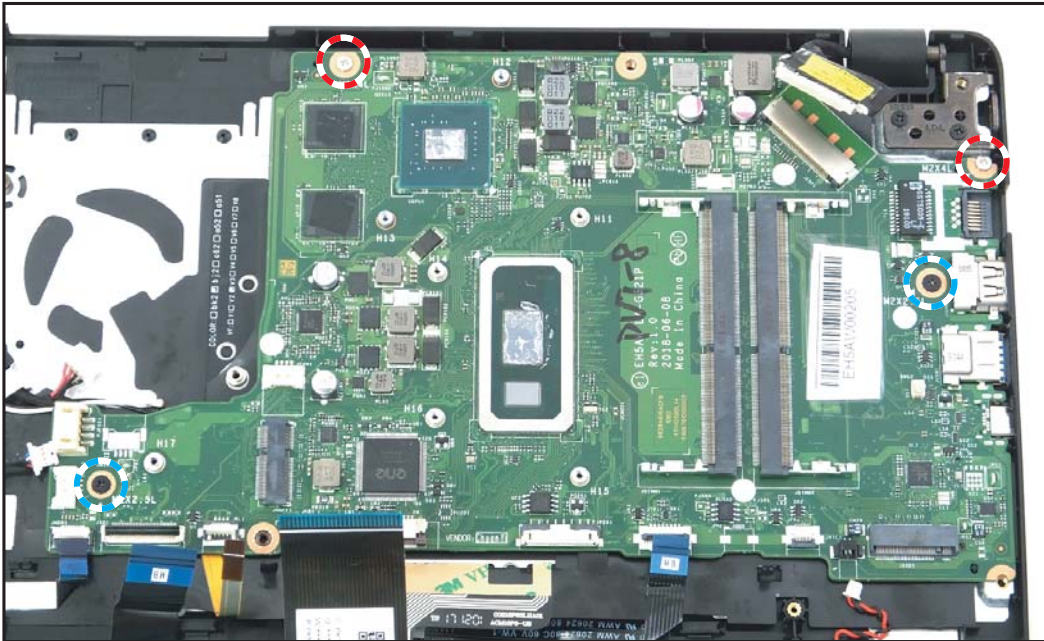


Figure 5-69. Removing the Screws (Discrete)

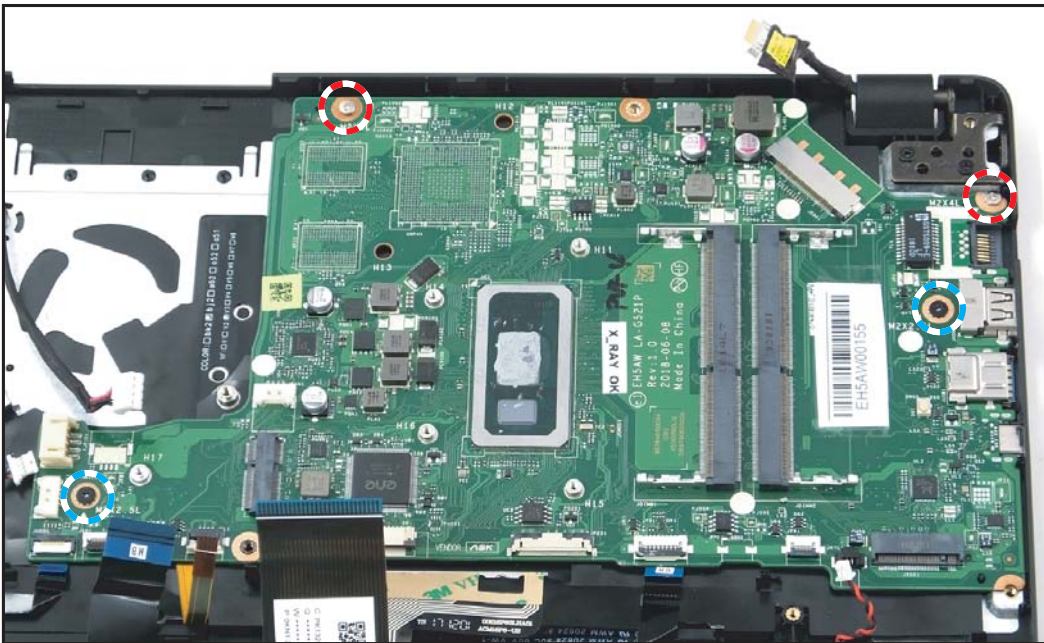


Figure 5-70. Removing the Screws (UMA)

3. Slide the mainboard to release the I/O connectors from their slots and then remove the mainboard from the upper case.

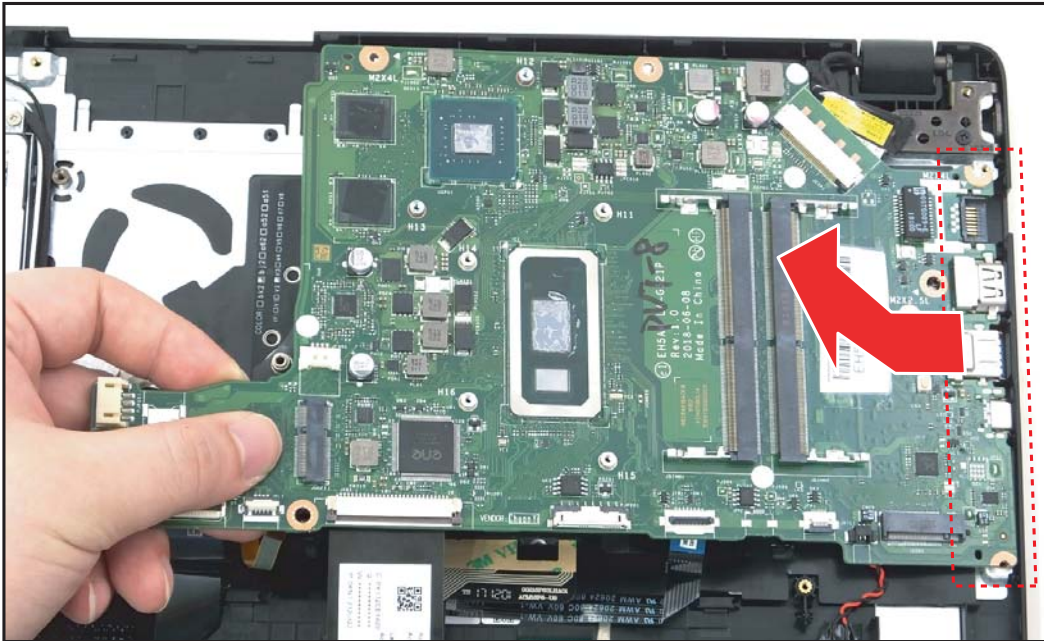


Figure 5-71. Removing the Mainboard (Discrete)

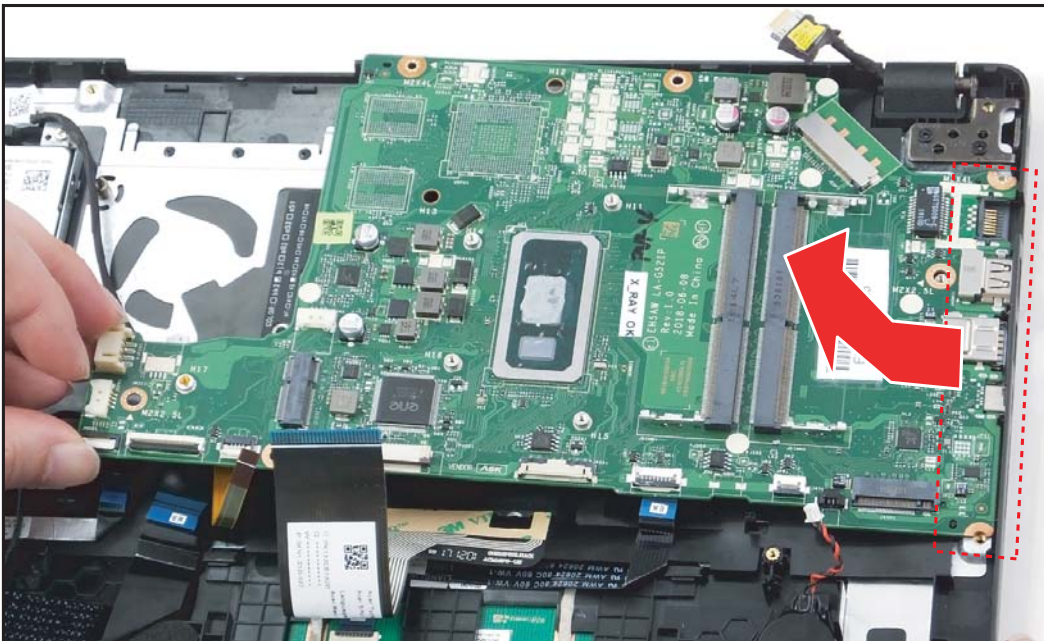


Figure 5-72. Removing the Mainboard (UMA)

Mainboard Installation

1. Install the mainboard by aligning and inserting its I/O connectors into their slots on the upper case.



Figure 5-73. Installing the Mainboard (Discrete)

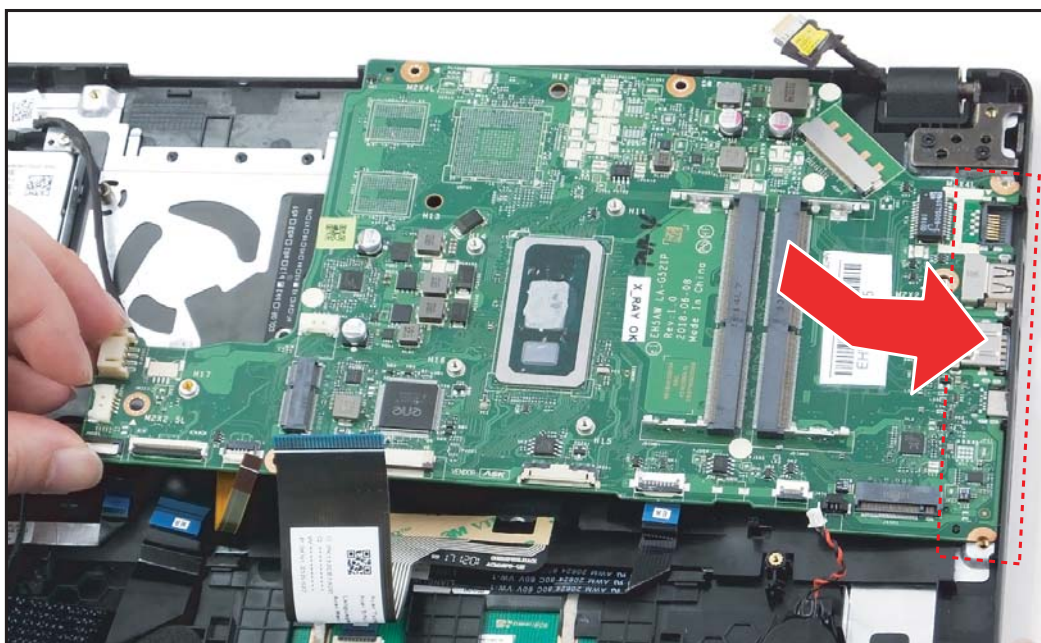


Figure 5-74. Installing the Mainboard (UMA)

2. Attach the two (2) screws M 2.0 x 4.0 (marked with red-white circle) and the two (2) screws M 2.0 x 2.5 (marked with blue-white circle) to secure the mainboard to the upper case.

⇒ **NOTE:** Screw torque force:

- ❑ M 2.0 x 4.0 = 1.8~2.2kgf.cm
- ❑ M 2.0 x 2.5 = 1.8~2.2kgf.cm

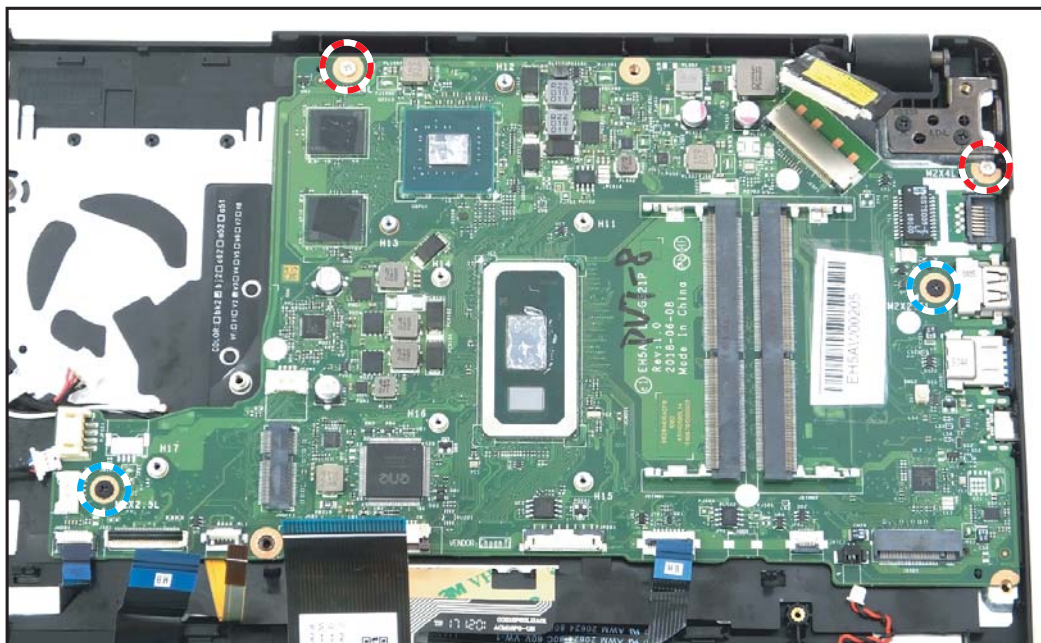


Figure 5-75. Securing the Screws (Discrete)

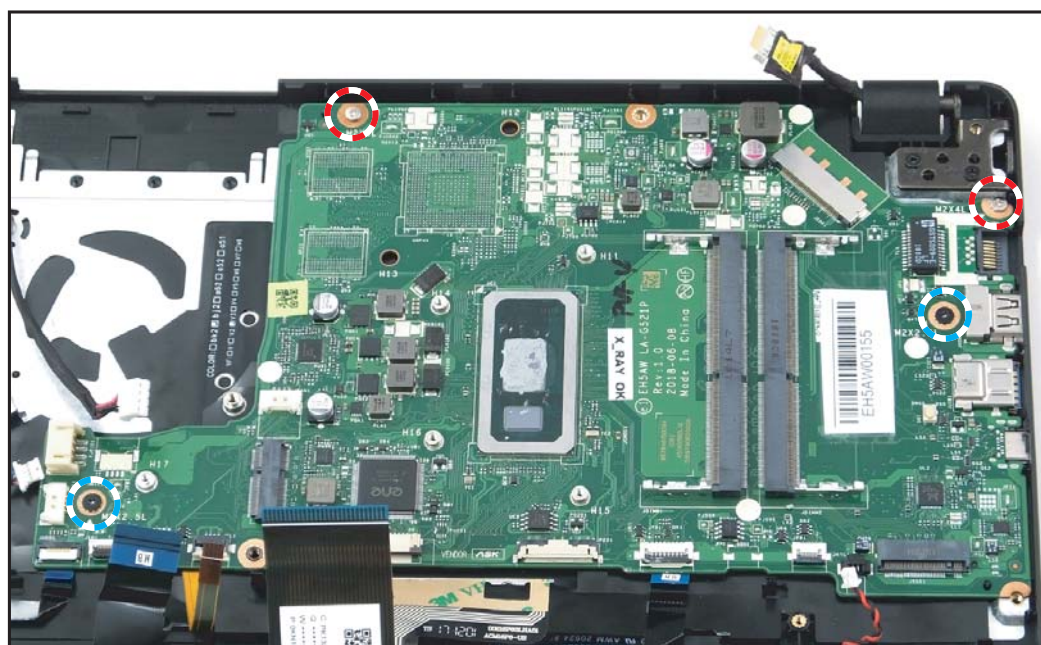


Figure 5-76. Securing the Screws (UMA)

3. Connect the following cables from the mainboard connectors and secure the latch (if necessary):
- DC-IN cable (A)
 - Speaker cable (B)
 - HDD FFC (C)
 - USB board FFC (D)
 - Keyboard backlight FPC (E)
 - Keyboard FPC (F)
 - Touchpad FFC (G)
 - RTC battery cable (H)
 - eDP cable (I)

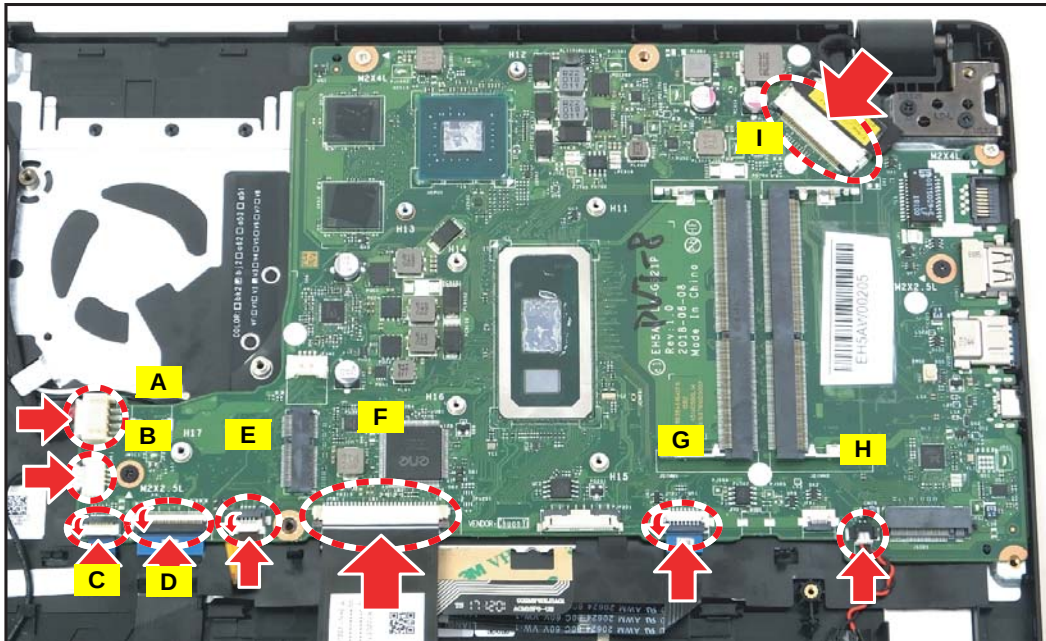


Figure 5-77. Connecting the Cables (Discrete)

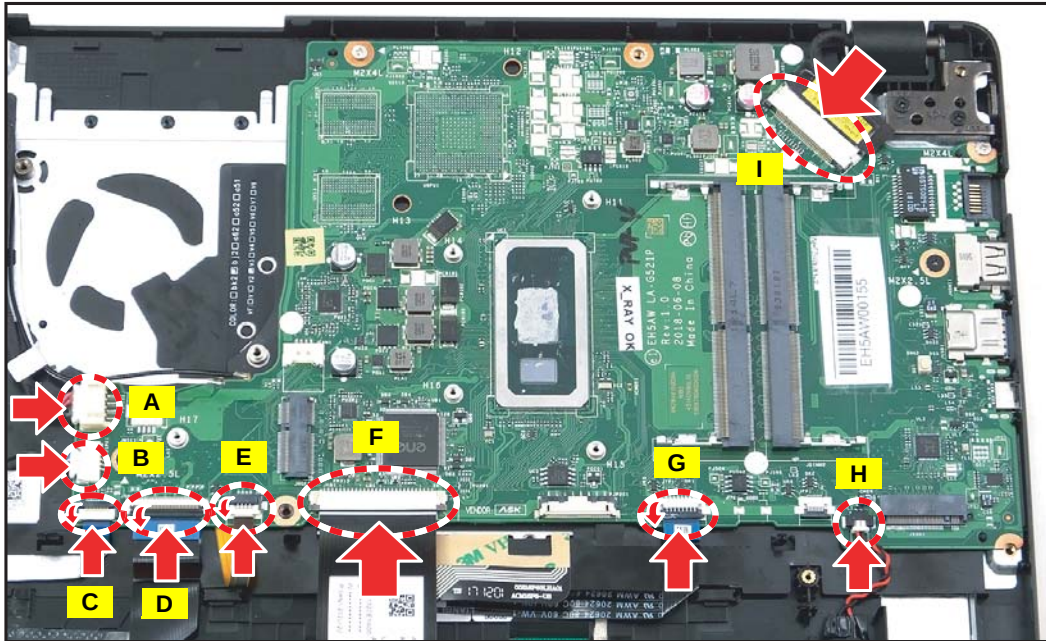


Figure 5-78. Connecting the Cables (UMA)

4. Install the thermal module (see [Thermal Module Installation](#) on page 5-46).

Table 5-15. Mainboard Screws

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 4.0		1.8~2.2kgf.cm	2
M 2.0 x 2.5		1.8~2.2kgf.cm	2

DC-IN Cable Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Disconnect the DC-IN cable from the mainboard connector.

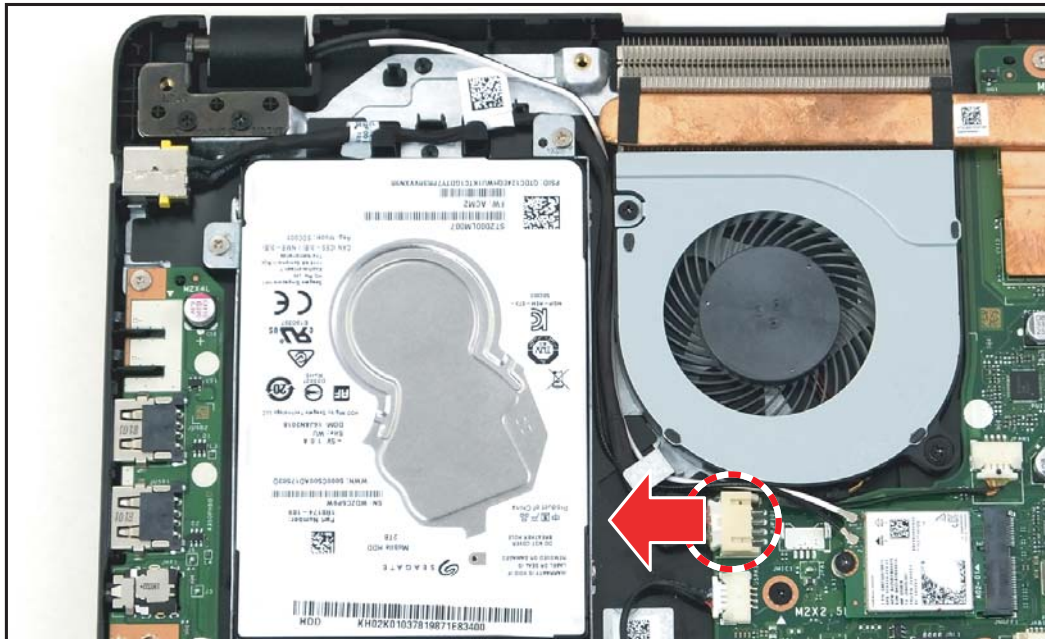


Figure 5-79. Disconnecting the DC-IN Cable

2. Unroute the DC-IN cable from the guides on the upper case. When reaching the guide tabs (as marked in the illustration), make sure to release the cable first before continuing unrouting the DC-IN cable. Then remove the cable connector from its slot on the upper case.

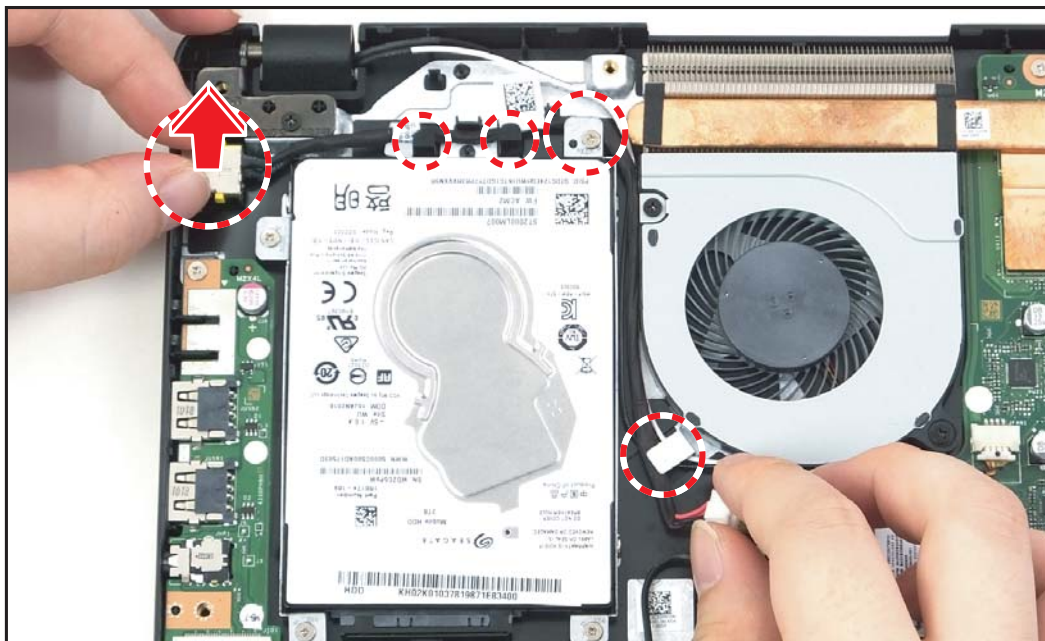


Figure 5-80. Removing the DC-IN Cable

DC-IN Cable Installation

1. Install the DC-IN cable connector into its slot on the upper case. Then route the DC-IN cable through the guides on the upper case. When reaching the guide tabs (as marked in the illustration), make sure to slide the cable into the respective tab to secure the DC-IN cable in place.

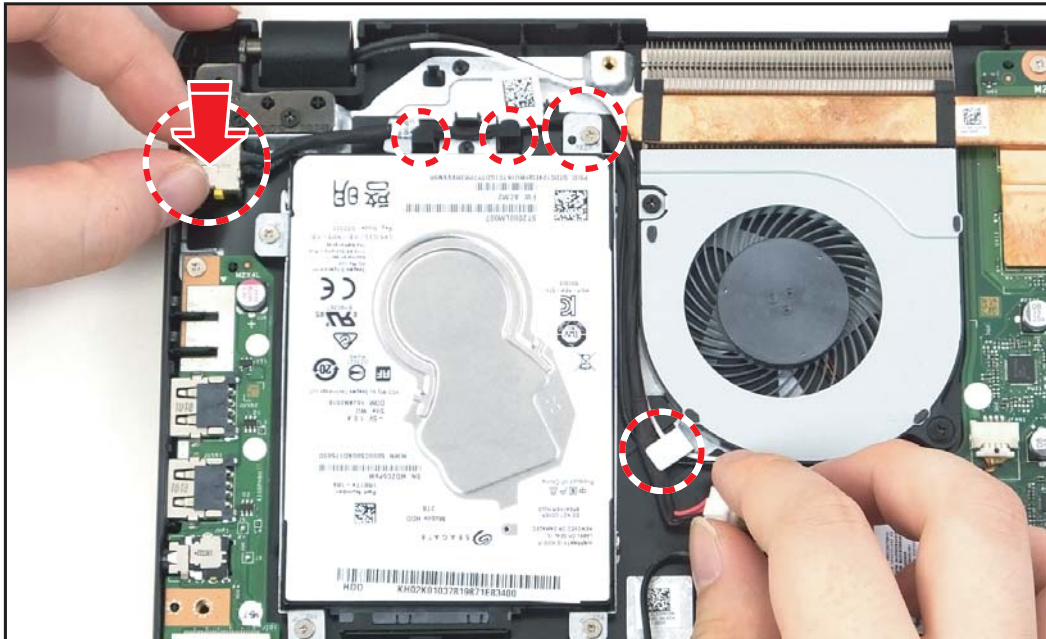


Figure 5-81. Installing the DC-IN Cable

2. Connect the DC-IN cable to the mainboard connector.



Figure 5-82. Connecting the DC-IN Cable

3. Install the battery (see [Battery Installation](#) on page 5-14).

RTC Battery Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Disconnect the RTC battery cable from the mainboard connector.

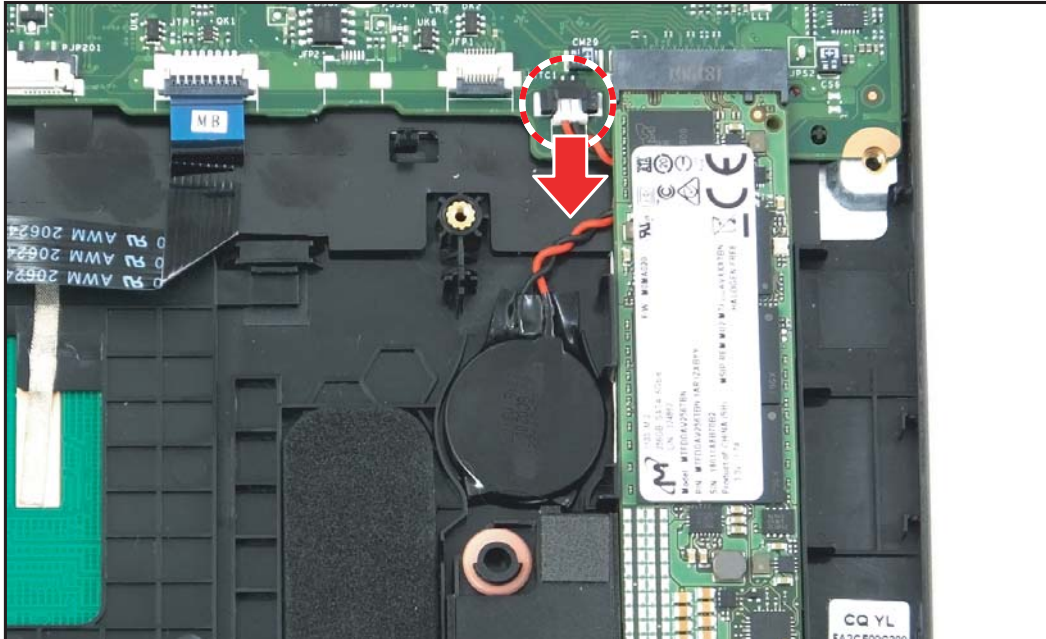


Figure 5-83. Disconnecting the RTC Battery Cable

2. Pry to detach the adhesive tape underneath the RTC battery. Then remove the RTC battery.



Figure 5-84. Removing the RTC Battery

RTC Battery Installation

1. Align and install the RTC battery onto its slot on the upper case.

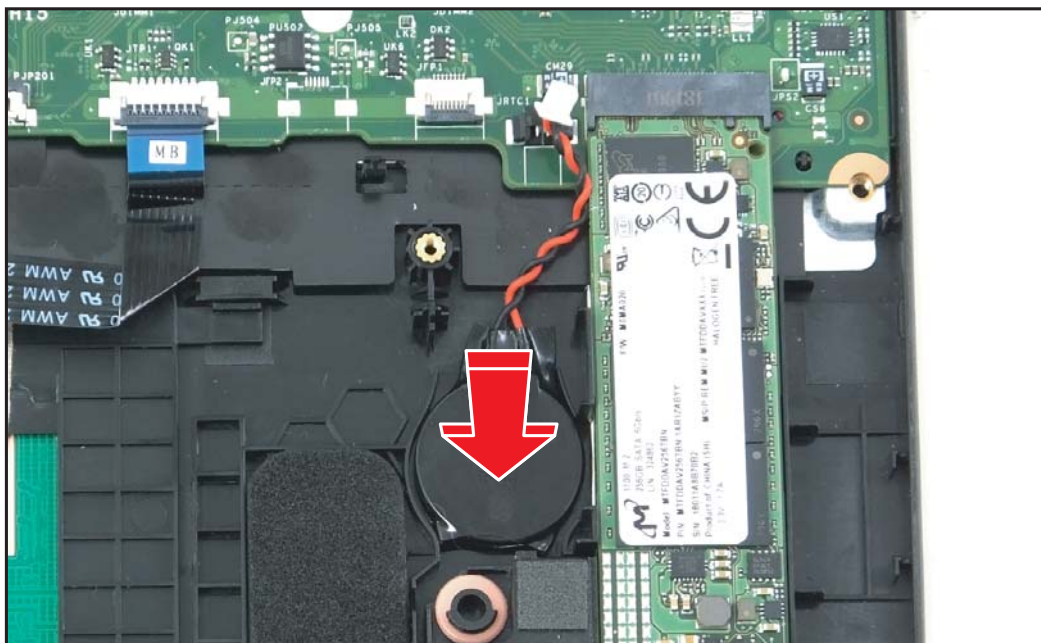


Figure 5-85. Installing the RTC Battery

2. Connect the RTC battery cable to the mainboard connector.

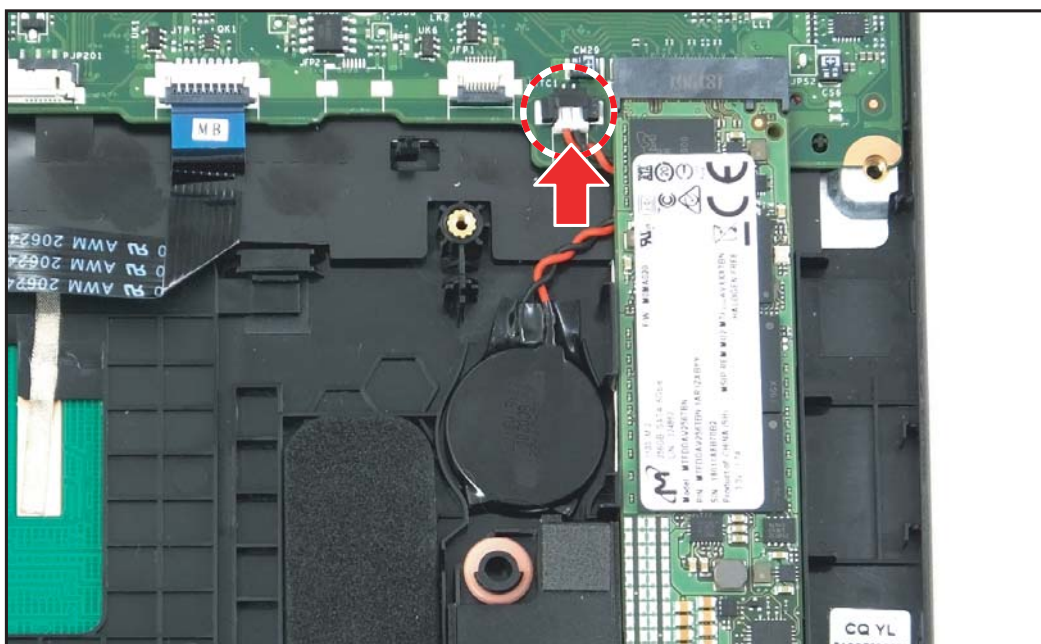


Figure 5-86. Connecting the RTC Battery Cable

3. Install the battery (see [Battery Installation](#) on page 5-14).

Touchpad Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Remove the screw securing the touchpad support bracket to the upper case.

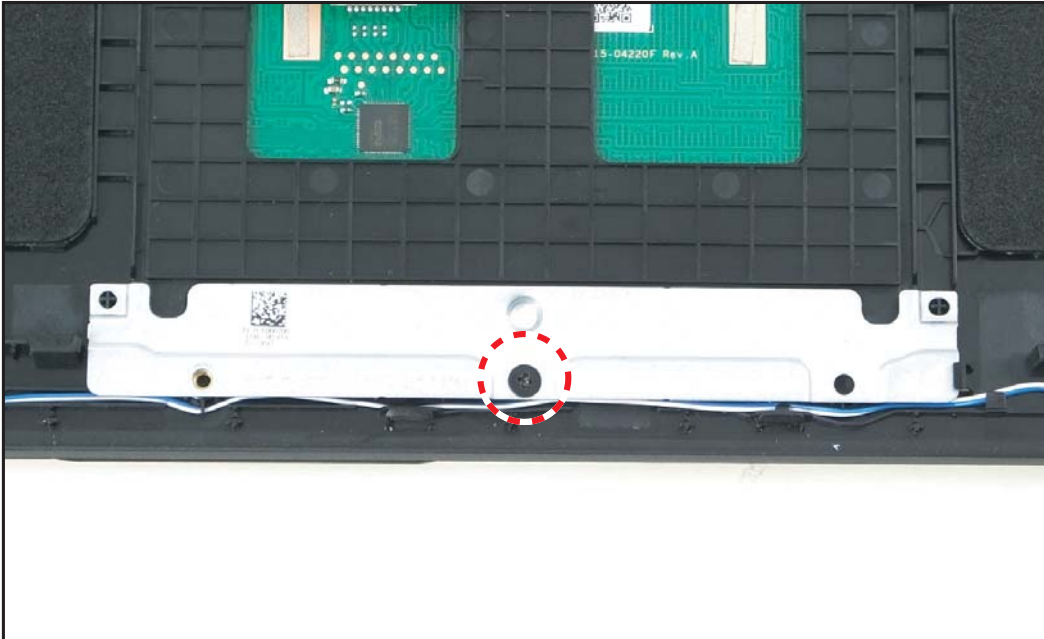


Figure 5-87. Removing the Screw

2. Slightly pull the touchpad support bracket backwards to release it from the latch on the upper case. Then remove the touchpad support bracket.

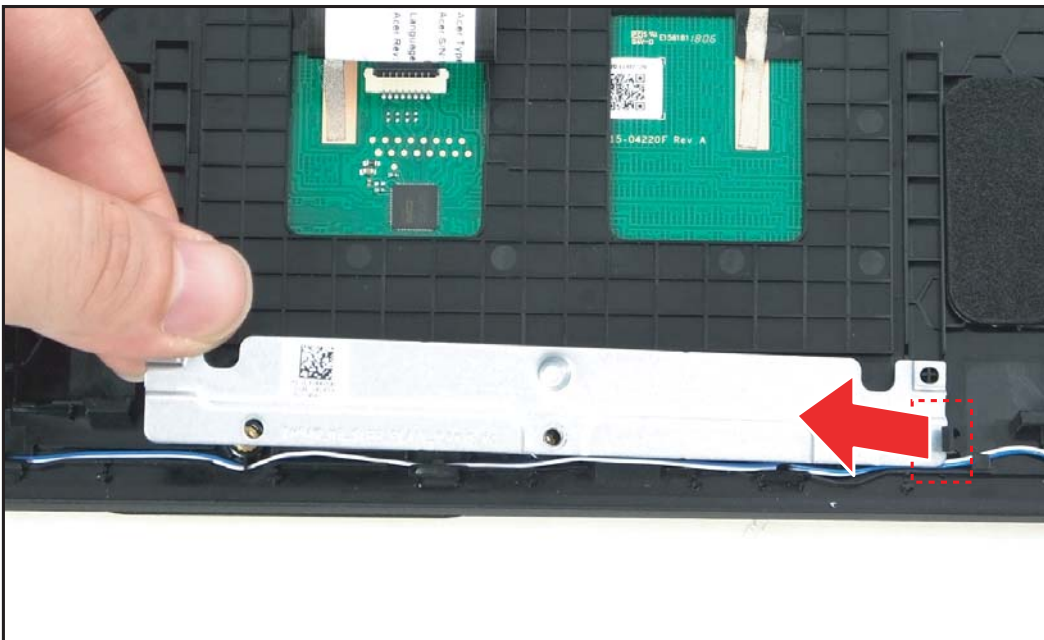


Figure 5-88. Removing the Touchpad Support Bracket

3. Release the latch and disconnect the touchpad FFC from the mainboard connector.

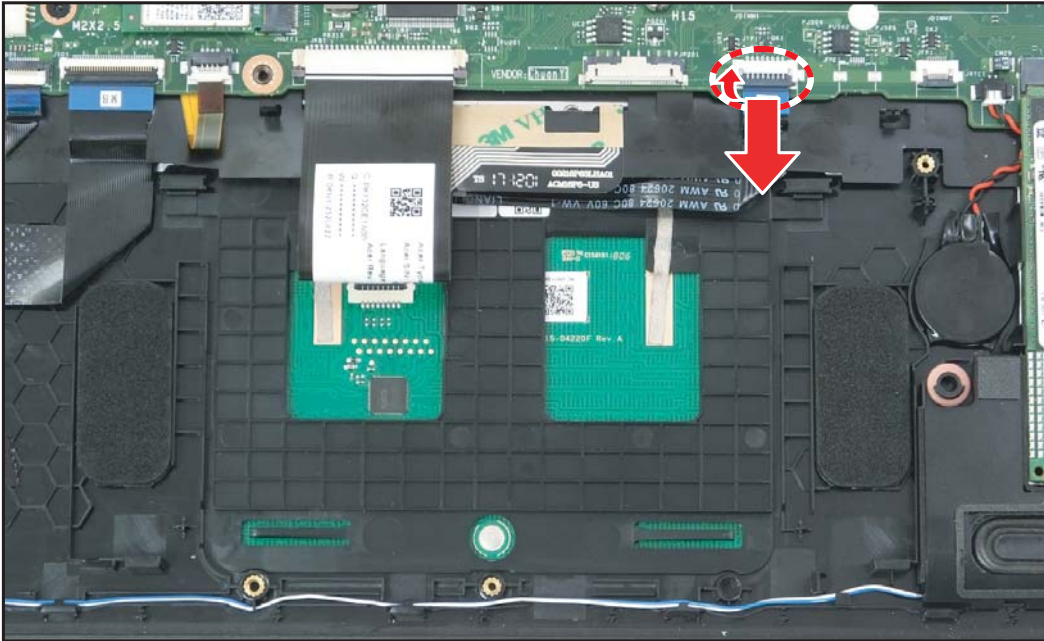


Figure 5-89. Disconnecting the Touchpad FFC

4. Lift the mylar to access the latches on the upper part of the touchpad. Then detach the conductive tapes securing the touchpad.

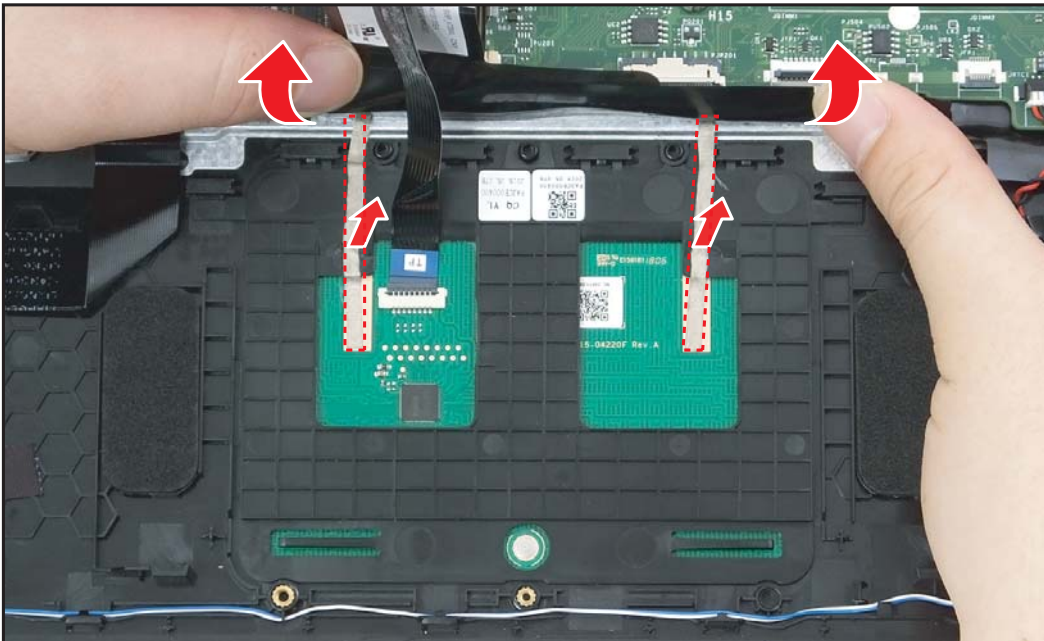


Figure 5-90. Detaching the Conductive Tapes

5. Lift the mylar slightly and pull the bottom part of the touchpad backwards to disengage it from the latches. Then remove the touchpad from the upper case.

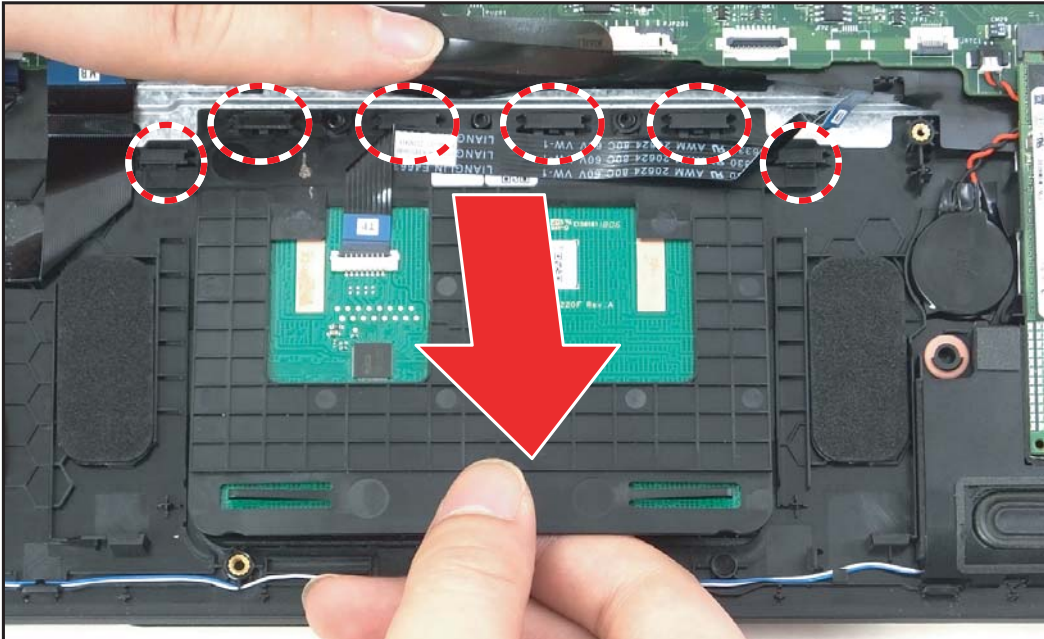


Figure 5-91. Removing the Touchpad

6. Release the latch and disconnect the touchpad FFC from the touchpad connector. Then remove the touchpad FFC.

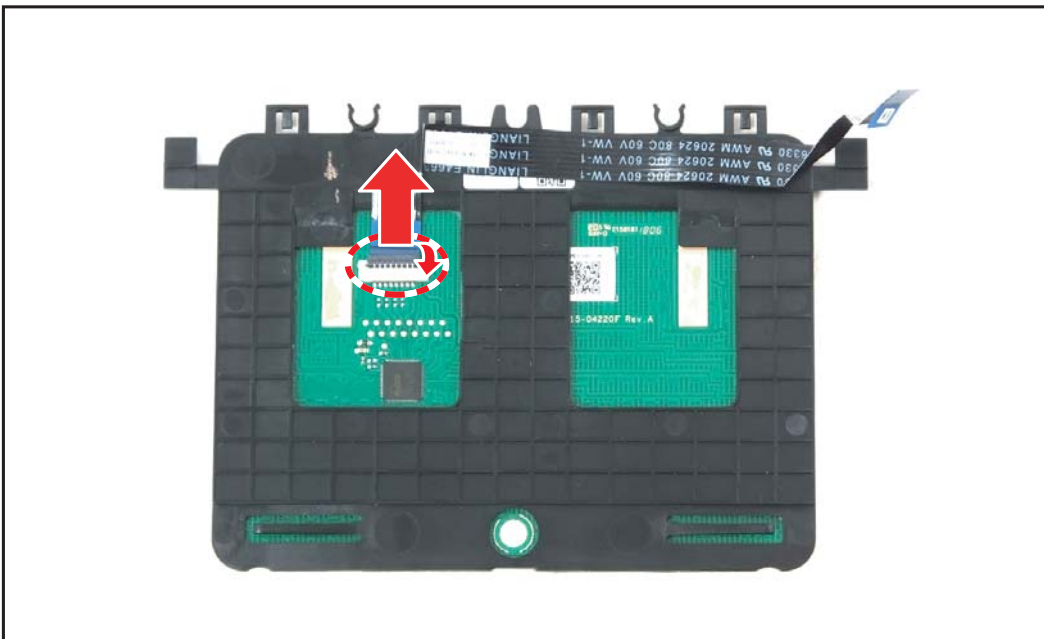


Figure 5-92. Removing the Touchpad FFC

Touchpad Installation

1. Connect the touchpad FFC from the touchpad connector and secure the latch.

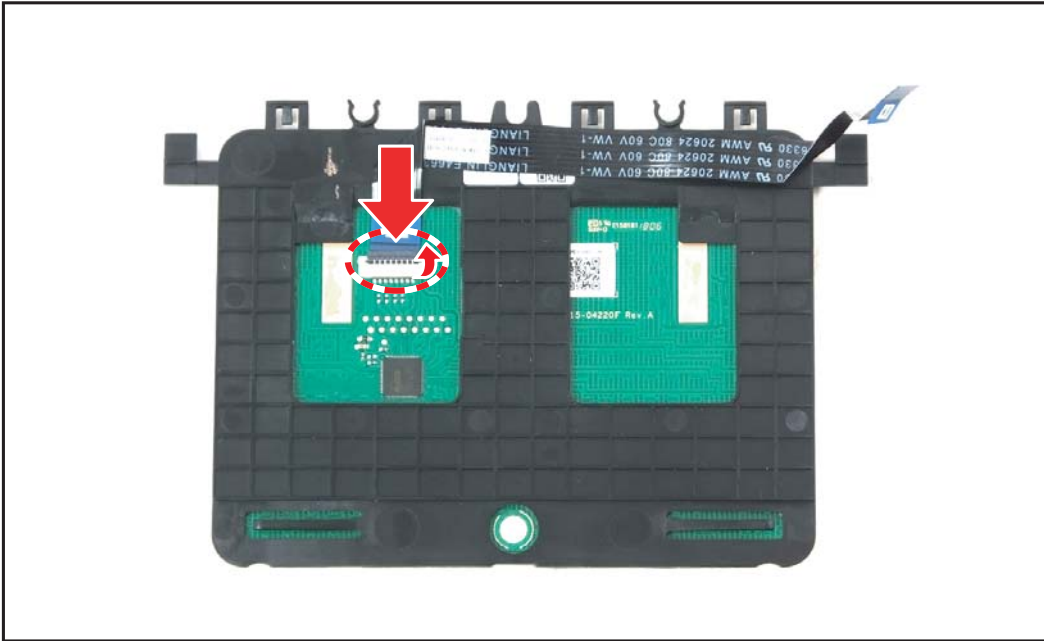


Figure 5-93. Connecting the Touchpad FFC

2. Lift the mylar slightly and slide the touchpad into the upper tabs until it is fully engaged. Then place the touchpad onto its slot.

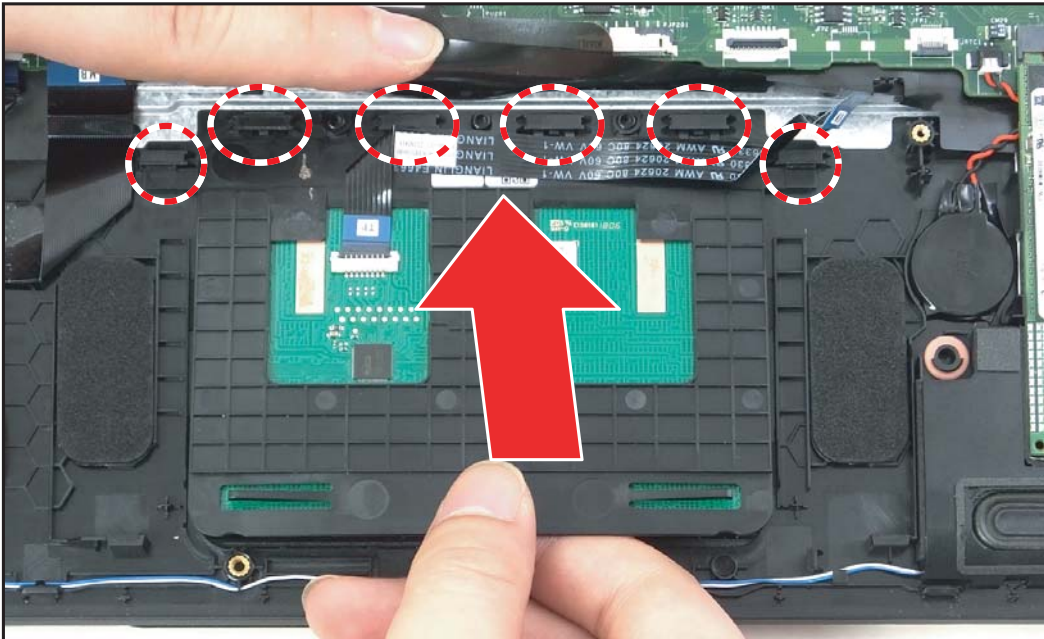


Figure 5-94. Installing the Touchpad

3. Lift the mylar to access the latches on the upper part of the touchpad. Then attach the conductive tapes to secure the touchpad.

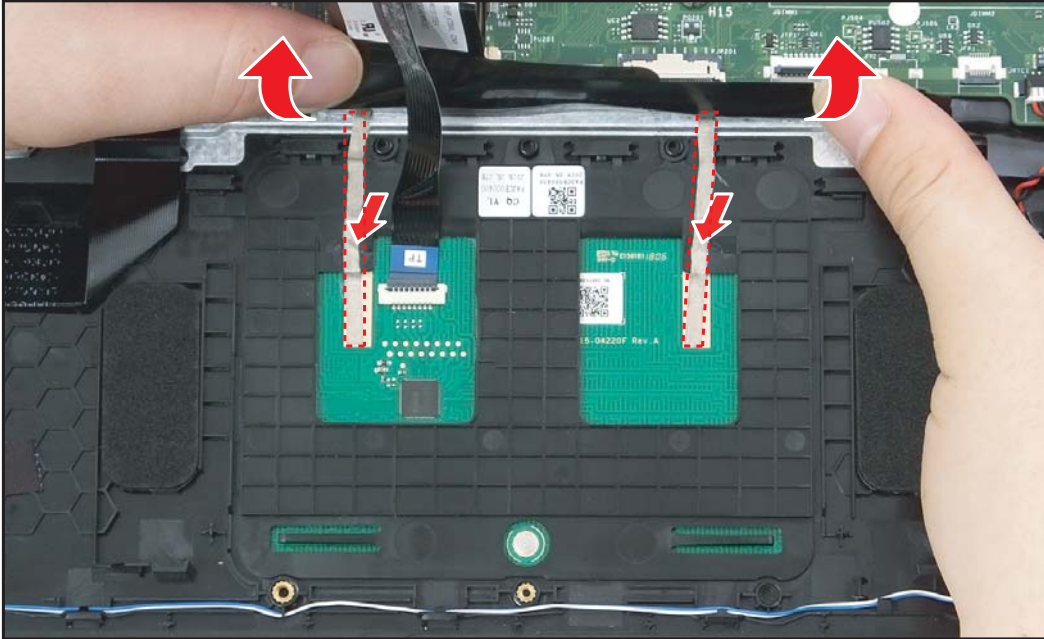


Figure 5-95. Attaching the Conductive Tapes

4. Connect the touchpad FFC from the mainboard connector and secure the latch.

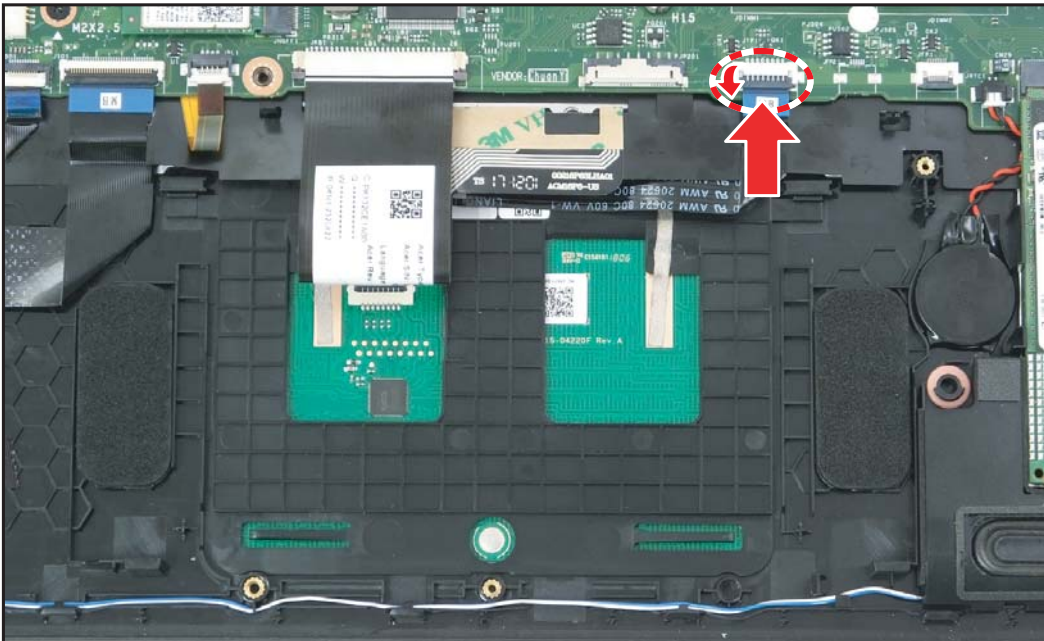


Figure 5-96. Connecting the Touchpad FFC

5. Slide the right side of the touchpad support bracket into the tab until it is fully engaged. Then place the touchpad support bracket into its slot.

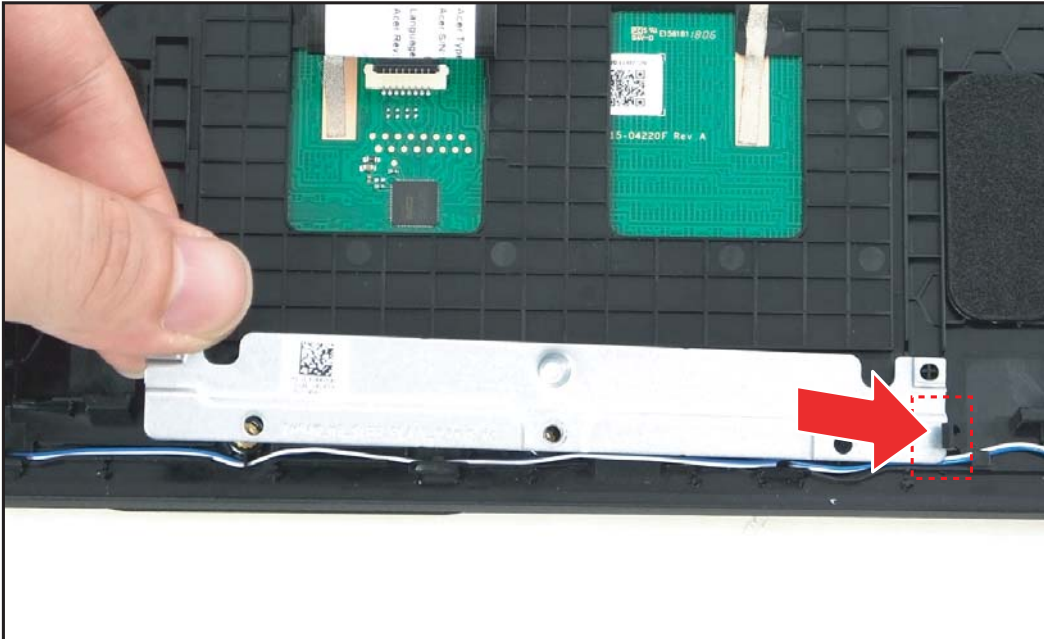


Figure 5-97. Installing the Touchpad Support Bracket

6. Attach the screw to secure the touchpad support bracket to the upper case.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm

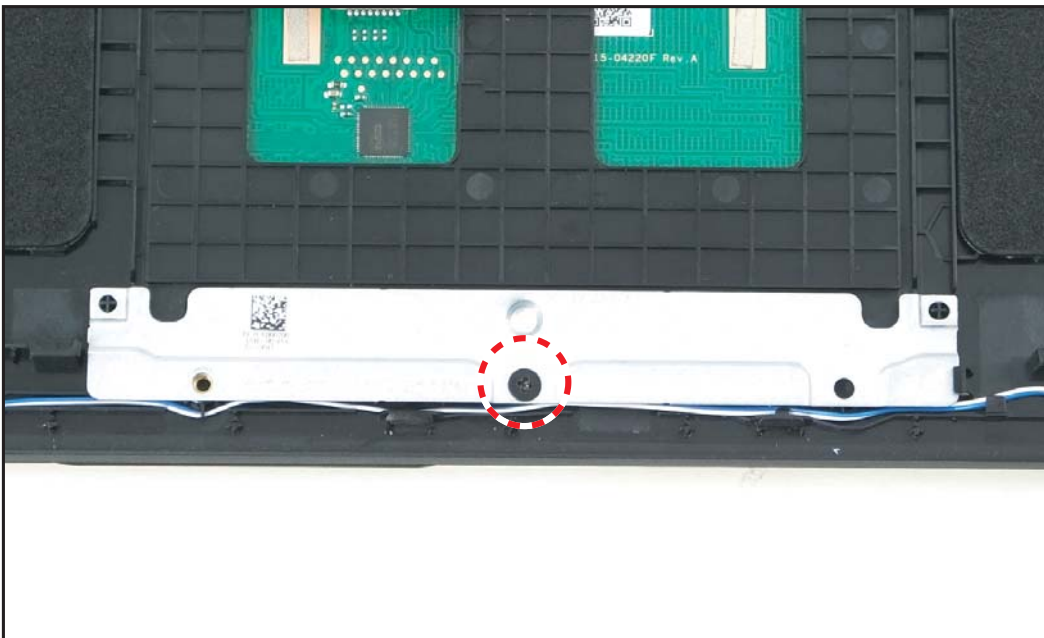


Figure 5-98. Securing the Screw

7. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-16. Touchpad Support Bracket Screw

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 3.0		1.8~2.2kgf.cm	1

Speaker Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Remove the screw securing the touchpad support bracket to the upper case.

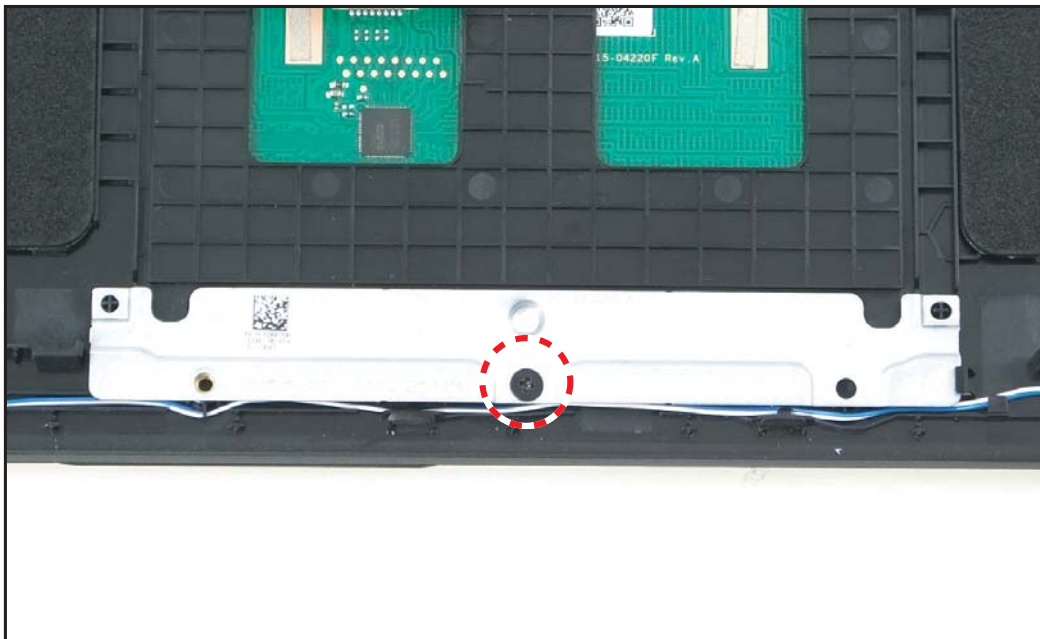


Figure 5-99. Removing the Screw

2. Slightly pull the touchpad support bracket backwards to release it from the latch on the upper case. Then remove the touchpad support bracket.

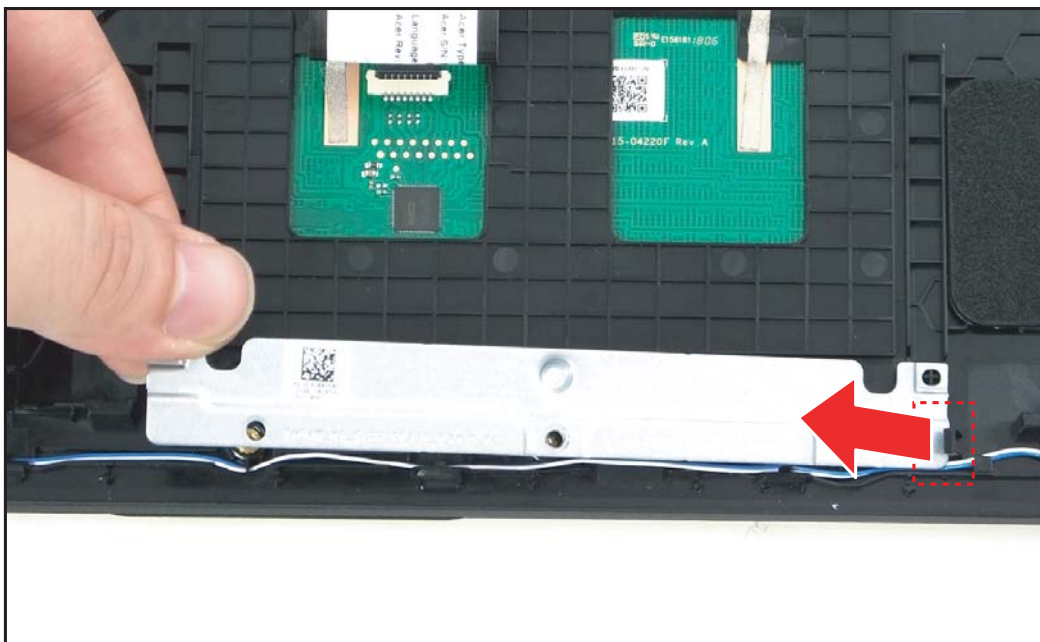


Figure 5-100. Removing the Touchpad Support Bracket

3. Disconnect the speaker cable from the mainboard connector.

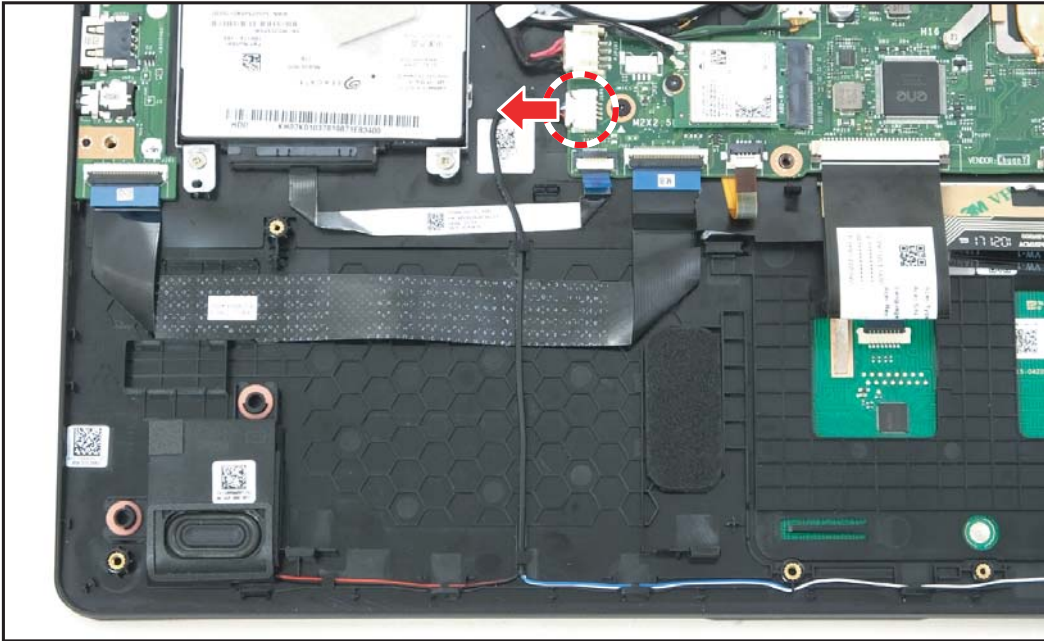


Figure 5-101. Disconnecting the Speaker Cable

4. Unroute the speaker cable from the guides on the upper case. When reaching the guide tabs (as marked in the illustration), make sure to release the cable first before continuing unrouting the speaker cable.

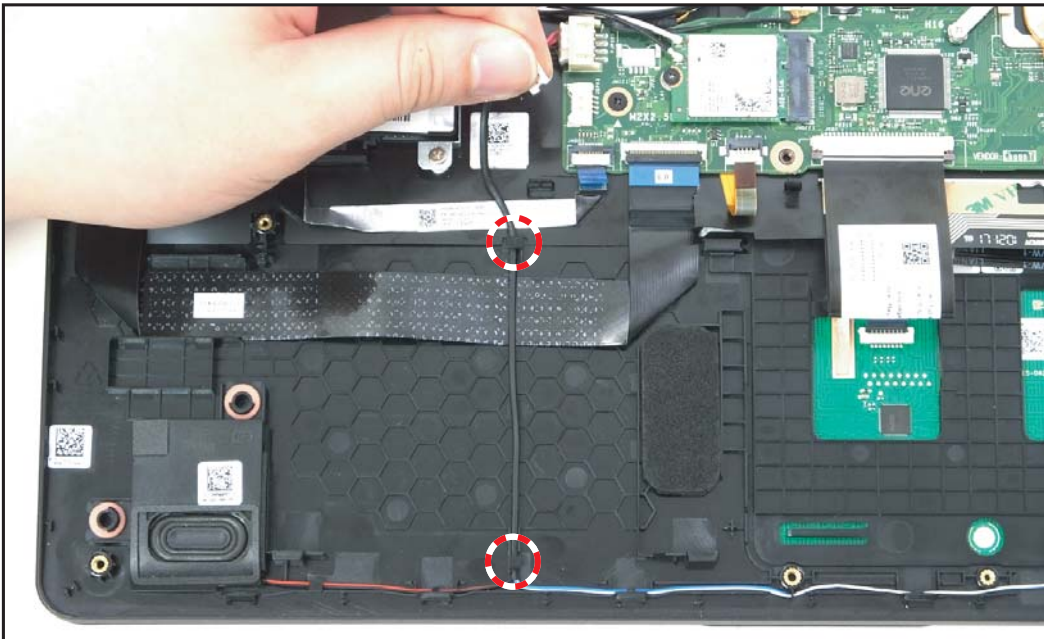


Figure 5-102. Unrouting the Speaker Cable

5. Continue unrouting the speaker cable from the guides on the bottom side of the upper case. Then remove the left and right speakers from the upper case.

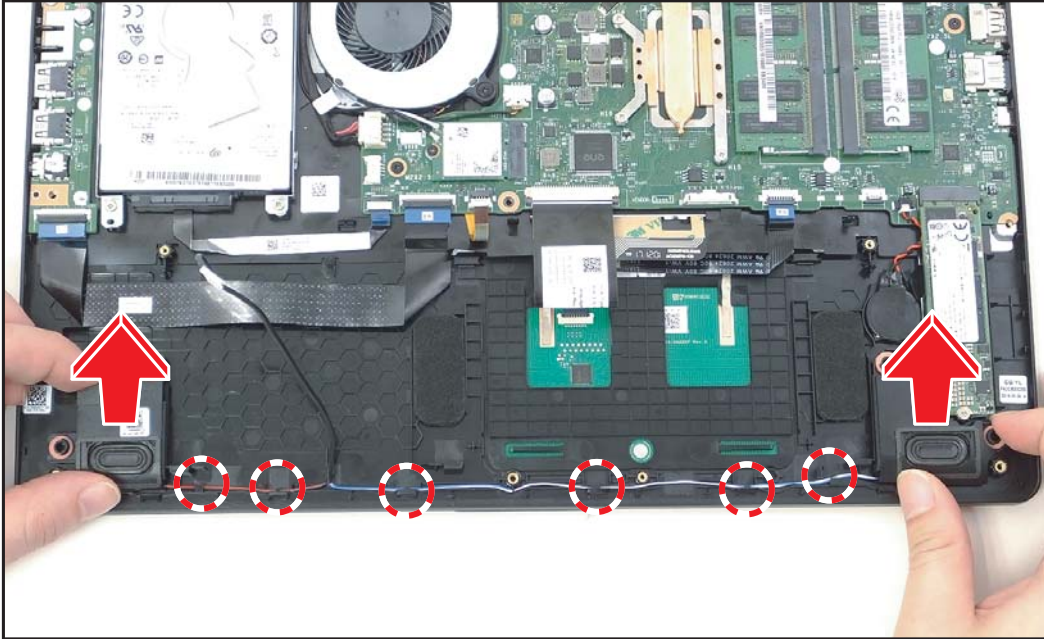


Figure 5-103. Removing the Speakers

Speaker Installation

1. Align and install the left and right speakers onto its respective slot on the upper case. Then route the speaker cable through the guides on the bottom side of the upper case.

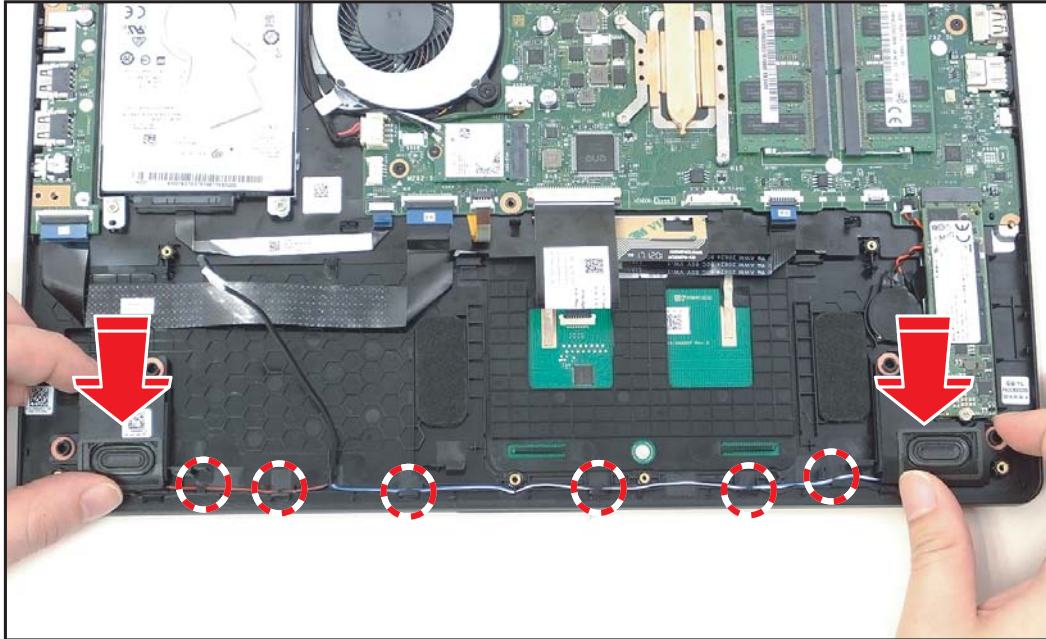


Figure 5-104. Installing the Speakers

2. Continue routing the speaker cable through the guides on the upper case. When reaching the guide tabs (as marked in the illustration), make sure to slide the cable into the respective tab to secure the speaker cable in place.

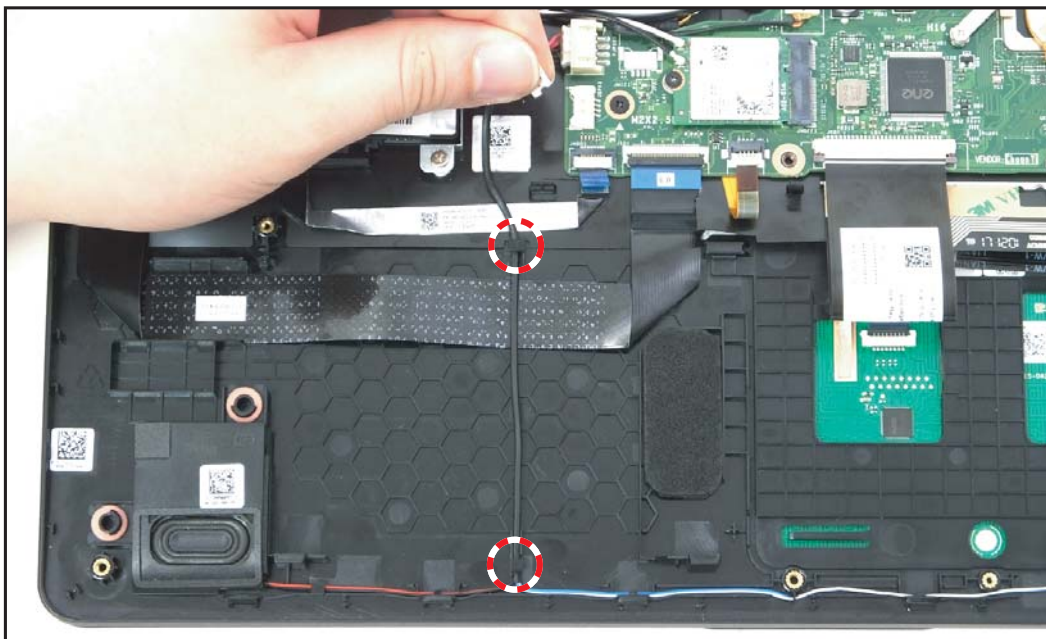


Figure 5-105. Routing the Speaker Cable

3. Connect the speaker cable to the mainboard connector.



Figure 5-106. Connecting the Speaker Cable

4. Slide the right side of the touchpad support bracket into the tab until it is fully engaged. Then place the touchpad support bracket into its slot.

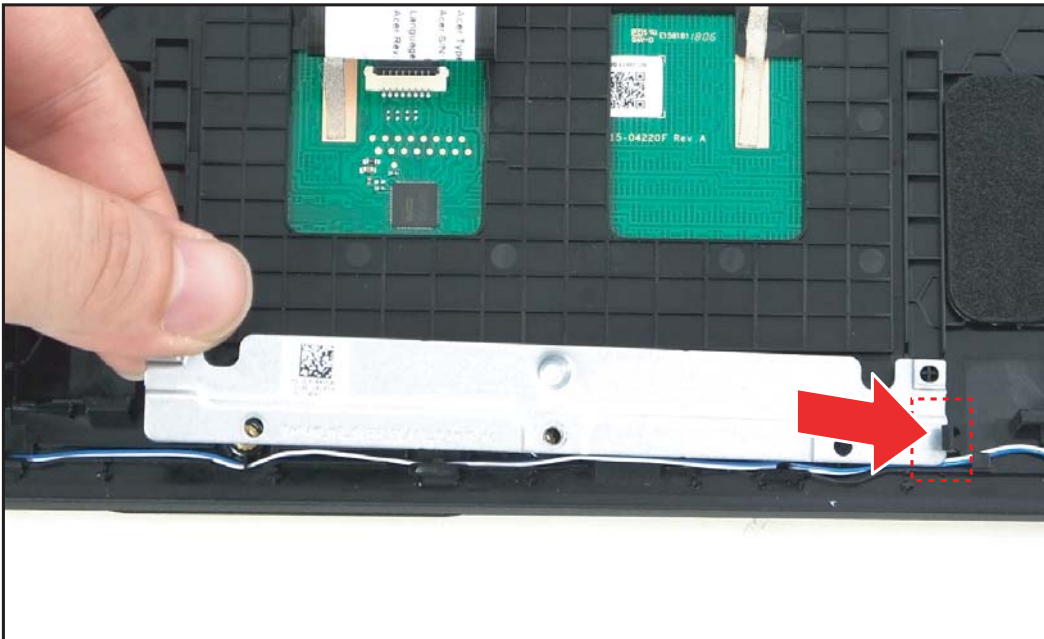


Figure 5-107. Installing the Touchpad Support Bracket

5. Attach the screw to secure the touchpad support bracket to the upper case.

⇒ **NOTE:** Screw torque force = 1.8~2.2kgf.cm

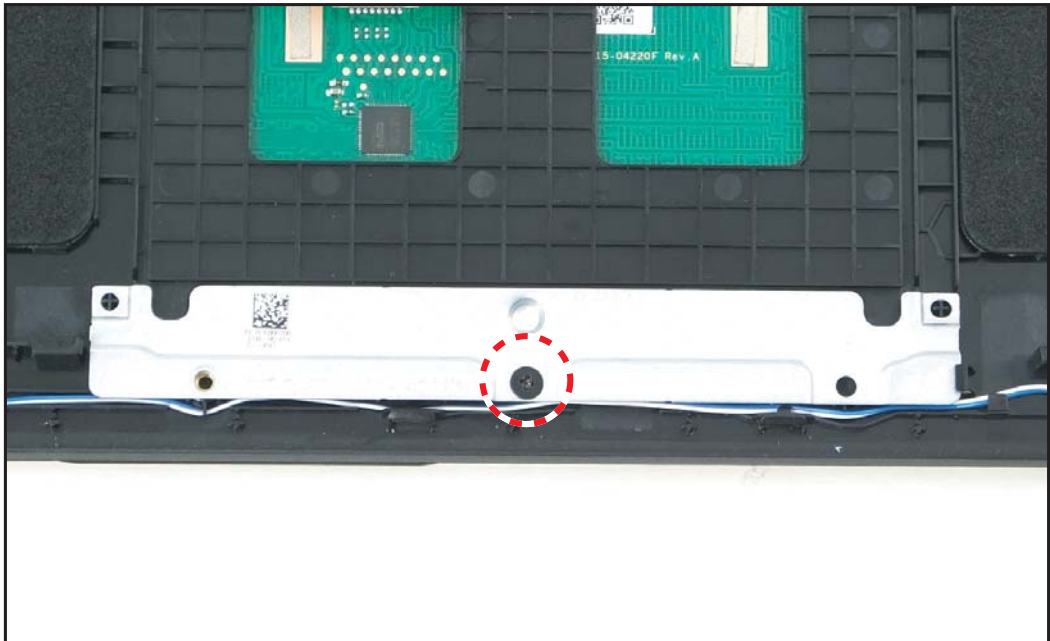


Figure 5-108. Securing the Screw

6. Install the battery (see [Battery Installation](#) on page 5-14).

Table 5-17. Touchpad Support Bracket Screw

Screw Name	Screw Type	Torque	Quantity
M 2.0 x 3.0		1.8~2.2kgf.cm	1

LCD Module Removal

Prerequisite:

※ [Battery Removal](#) on page 5-12

1. Disconnect the DC-IN cable from the mainboard connector. Then disconnect the WLAN antenna cables.

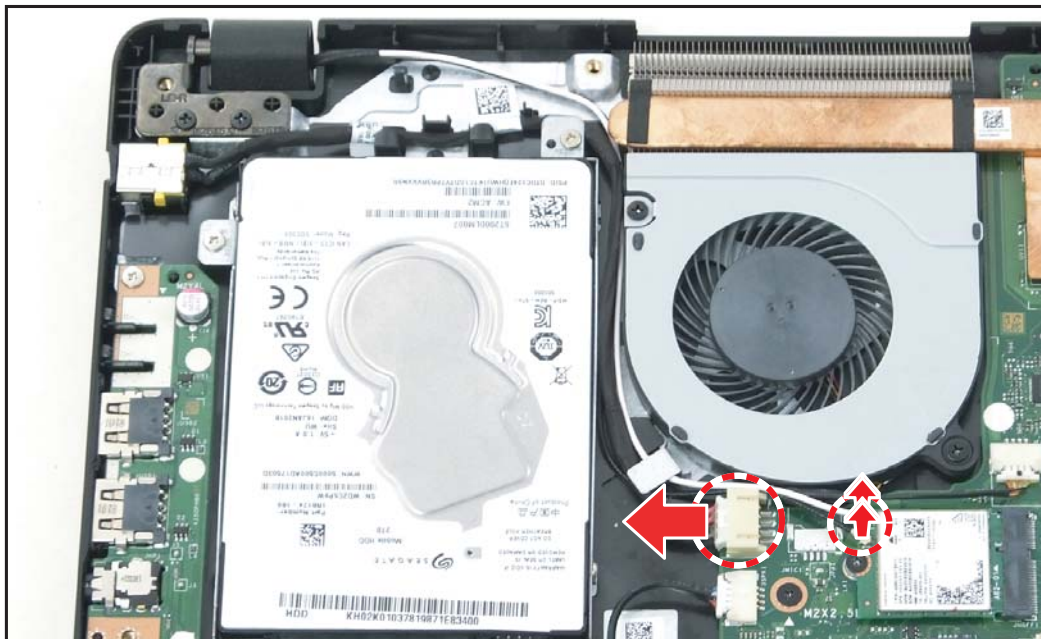


Figure 5-109. Disconnecting the Cables

2. Unroute the DC-IN cable from the guides on the upper case. When reaching the guide tabs (as marked in the illustration), make sure to release the cable first before continuing unrouting the DC-IN cable.

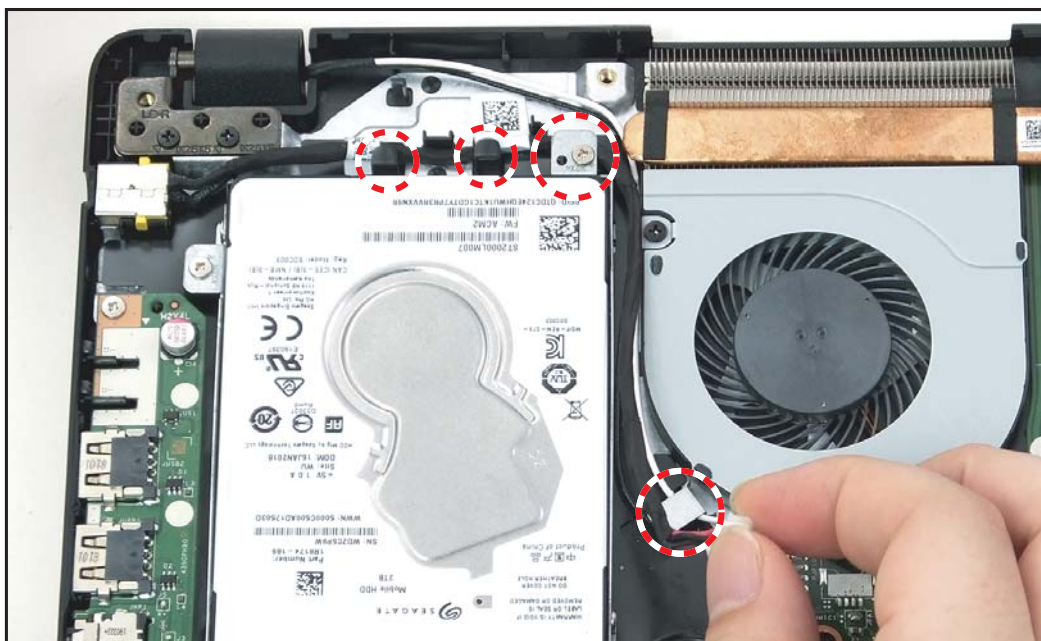


Figure 5-110. Unrouting the DC-IN Cable

3. Release the WLAN antenna cables from the guide tab (as marked in the illustration) first, and then carefully unroute the WLAN antenna cable from the guides on the upper case.

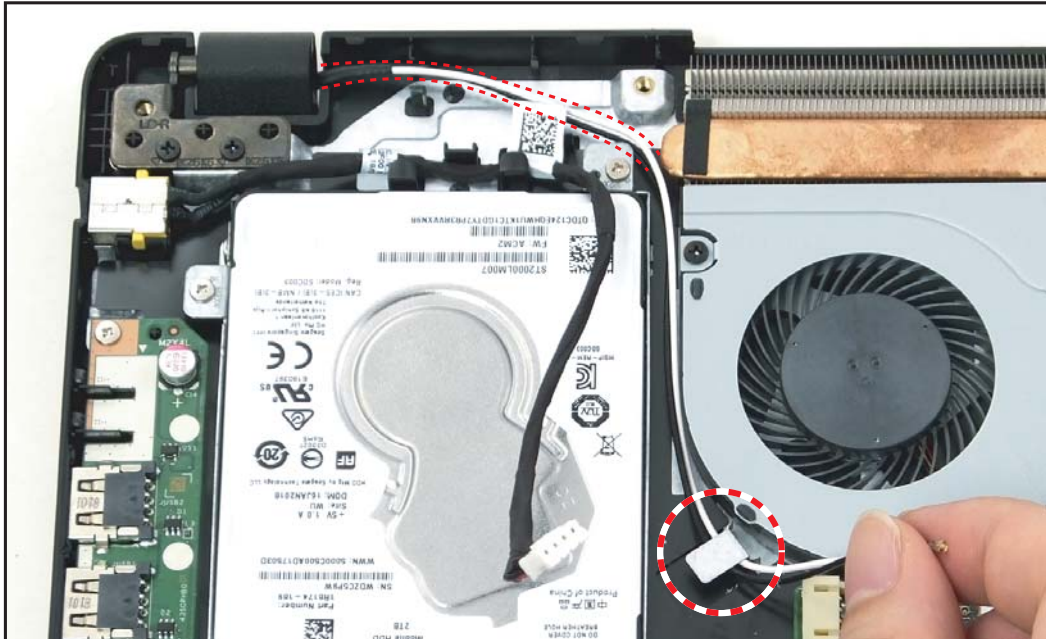


Figure 5-111. Unrouting the WLAN Antenna Cables

4. Disconnect the eDP cable from the mainboard connector.

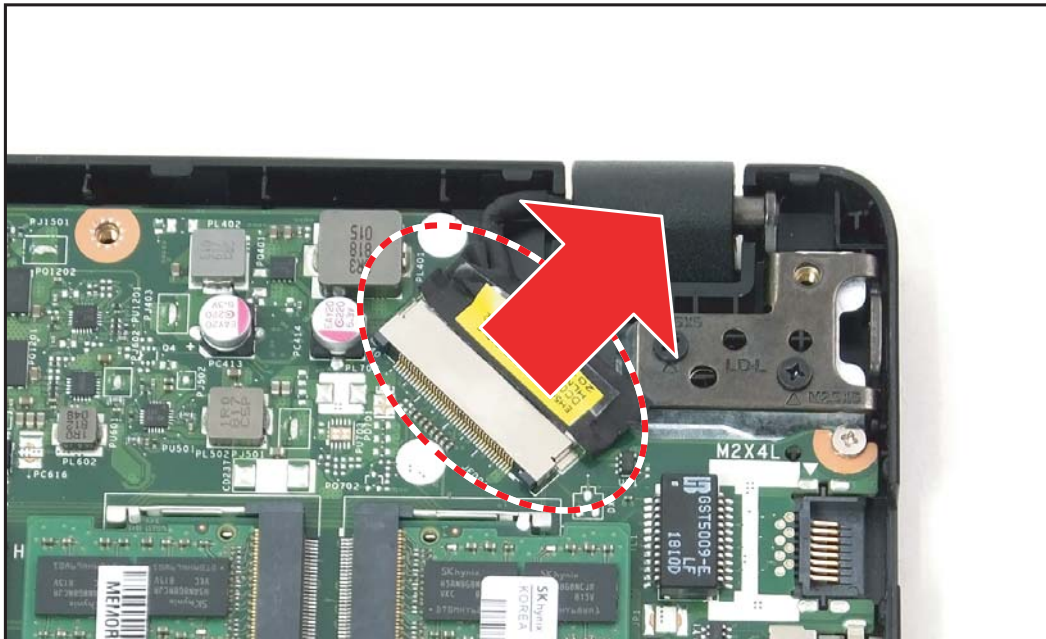


Figure 5-112. Disconnecting the eDP Cable

5. Open the lid in 90° and place the device on a raised surface. Then remove the four (4) screws securing the LCD panel bracket and LCD module to the upper case.



Figure 5-113. Removing the Screws

6. Lift to remove the LCD module from the upper case.

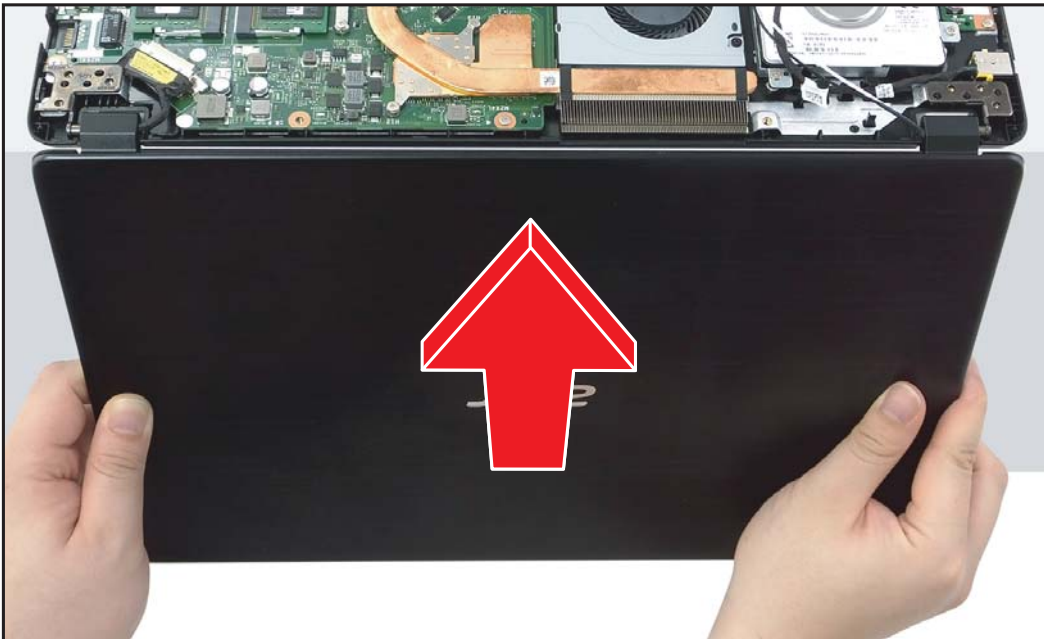


Figure 5-114. Removing the LCD Module

LCD Module Installation

1. Align and install the LCD module. Make sure the screw holes of LCD panel bracket are properly aligned.

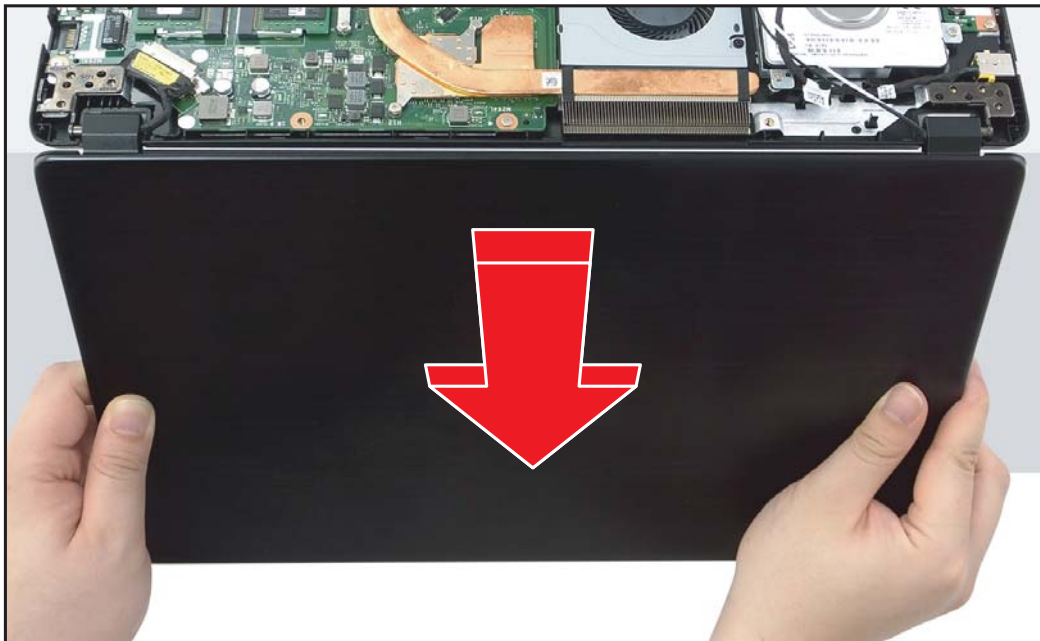


Figure 5-115. Installing the LCD Module

2. Attach the four (4) screws to secure the LCD panel bracket and LCD module to the upper case.

⇒ **NOTE:** Screw torque force = 2.55~3.0kgf.cm



Figure 5-116. Securing the Screws

3. Connect the eDP cable to the mainboard connector.

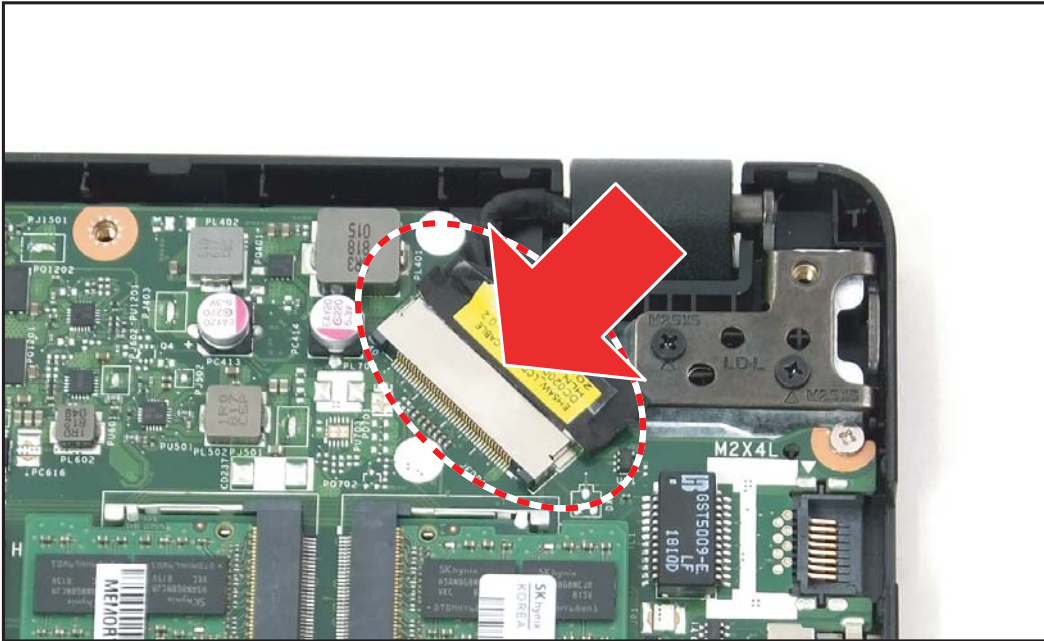


Figure 5-117. Connecting the eDP Cable

4. Route the WLAN antenna cables through the guides on the upper case. When reaching the guide tab (as marked in the illustration), make sure to slide the cables into the tab to secure the WLAN antenna cables in place.

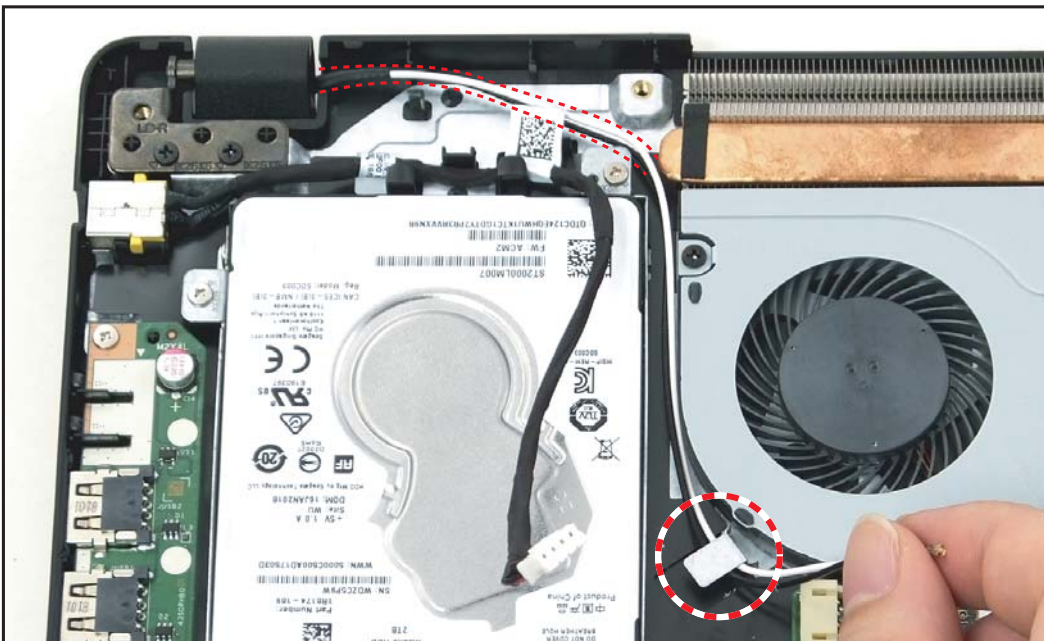


Figure 5-118. Routing the WLAN Antenna Cables

5. Route the DC-IN cable through the guides on the upper case. When reaching the guide tabs (as marked in the illustration), make sure to slide the cable into the respective tab to secure the DC-IN cable in place.

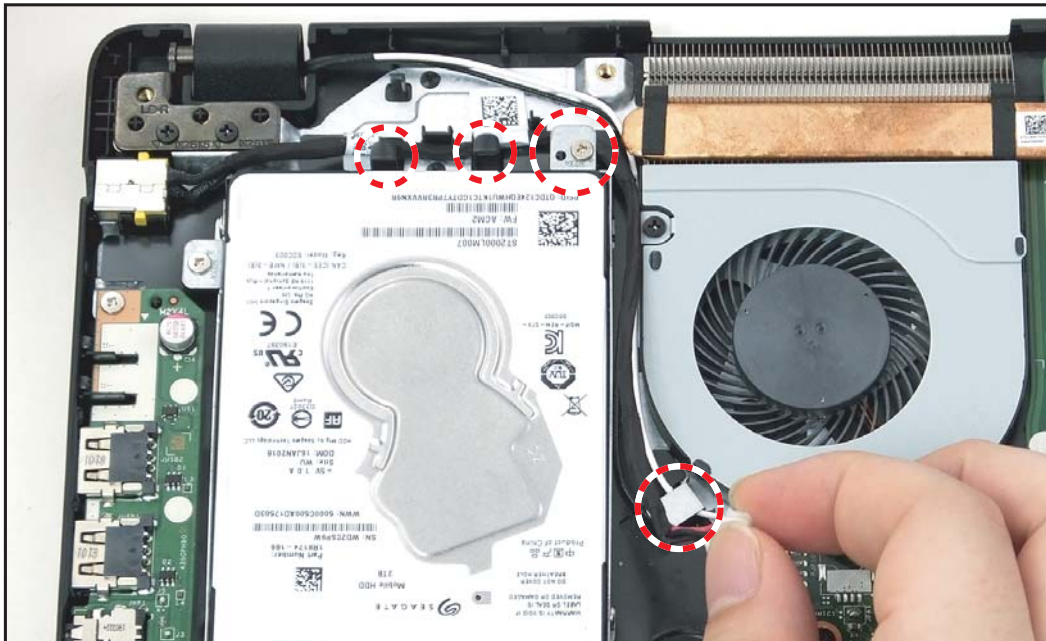


Figure 5-119. Routing the DC-IN Cable

6. Connect the DC-IN cable to the mainboard connector. Then connect the main antenna cable (black) to the connector closer to the screw and the auxiliary antenna cable (white) to the other connector on the WLAN module.



Figure 5-120. Connecting the Cables

7. Install the battery (see [Battery Installation](#) on page [5-14](#)).

Table 5-18. LCD Module Screws

Screw Name	Screw Type	Torque	Quantity
M 2.5 x 5.0		2.55~3.0kgf.cm	4

LCD Bezel Removal

Prerequisite:

※ [LCD Module Removal](#) on page 5-74

1. Pry the LCD bezel from the top side to release latches.



Figure 5-121. Removing the LCD Bezel (1 of 4)

2. Pry the LCD bezel from the left and right sides to release the latches.



Figure 5-122. Removing the LCD Bezel (2 of 4)

3. Pry the LCD bezel that covers on both sides of the hinges.



Figure 5-123. Removing the LCD Bezel (3 of 4)

4. Continue to pry the bottom side latches and remove the bezel.



Figure 5-124. Removing the LCD Bezel (4 of 4)

LCD Bezel Installation

1. Align and install the LCD bezel onto both sides of the hinges.



Figure 5-125. Installing the LCD Bezel (1 of 2)

2. Making sure the cables would not get caught, press the bottom side latches to install the LCD bezel. Then press to secure the left, right, and top sides of the LCD bezel latches.



Figure 5-126. Installing the LCD Bezel (2 of 2)

3. Install the LCD module (see [LCD Module Installation](#) on page [5-77](#)).

CMOS and Microphone Module Removal

Prerequisite:

※ [LCD Bezel Removal](#) on page 5-81

1. Pry to remove the CMOS and dual microphone module from its slot on the LCD cover.

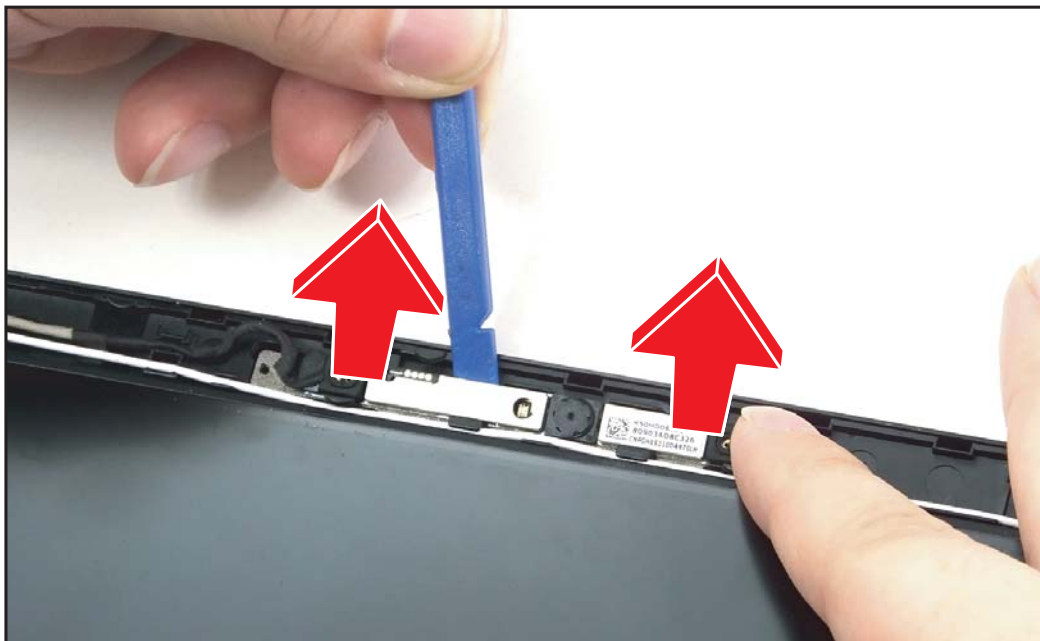


Figure 5-127. Removing the CMOS and Dual Microphone Module

2. Detach the mylar and disconnect the eDP cable from the CMOS and dual microphone module connector.

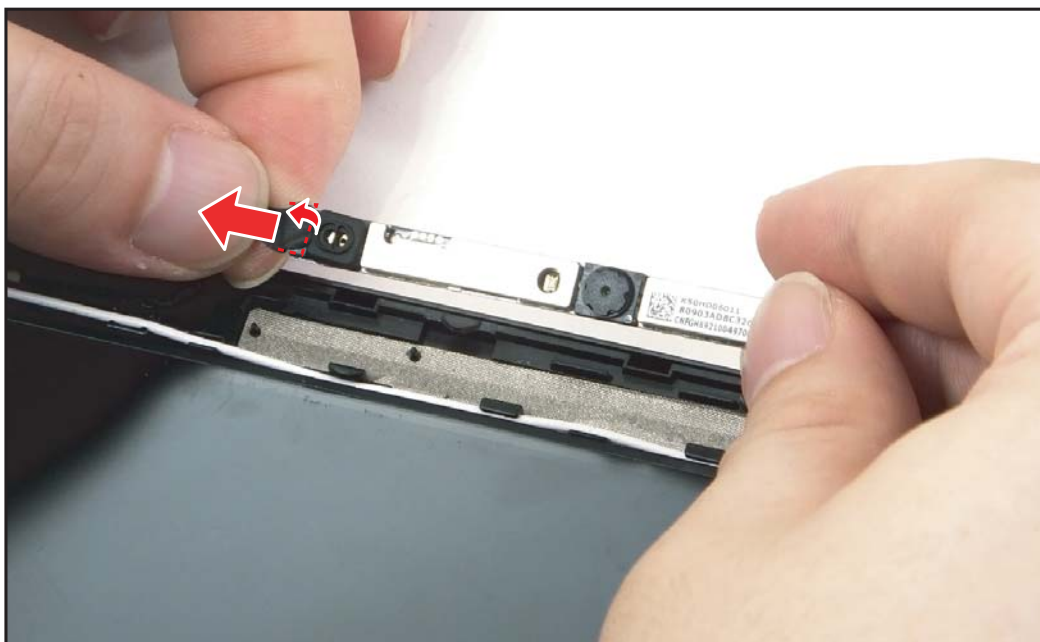


Figure 5-128. Disconnecting the eDP Cable

3. Carefully remove the two (2) microphone rubbers from the module.

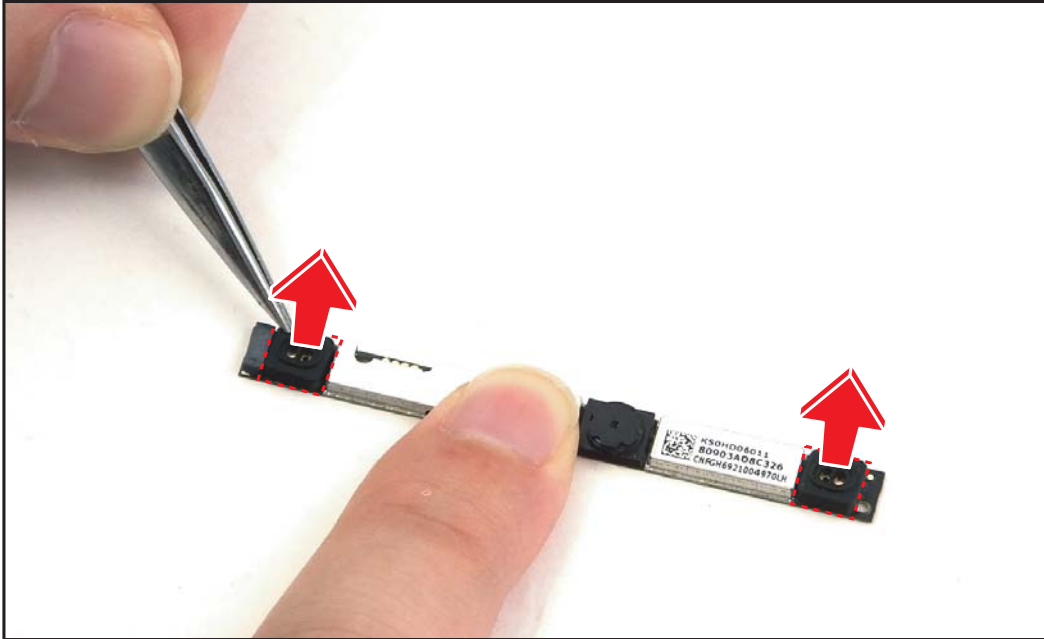


Figure 5-129. Removing the Microphone Rubbers

CMOS and Microphone Module Installation

1. Install the two (2) microphone rubbers onto its respective slots on the module.

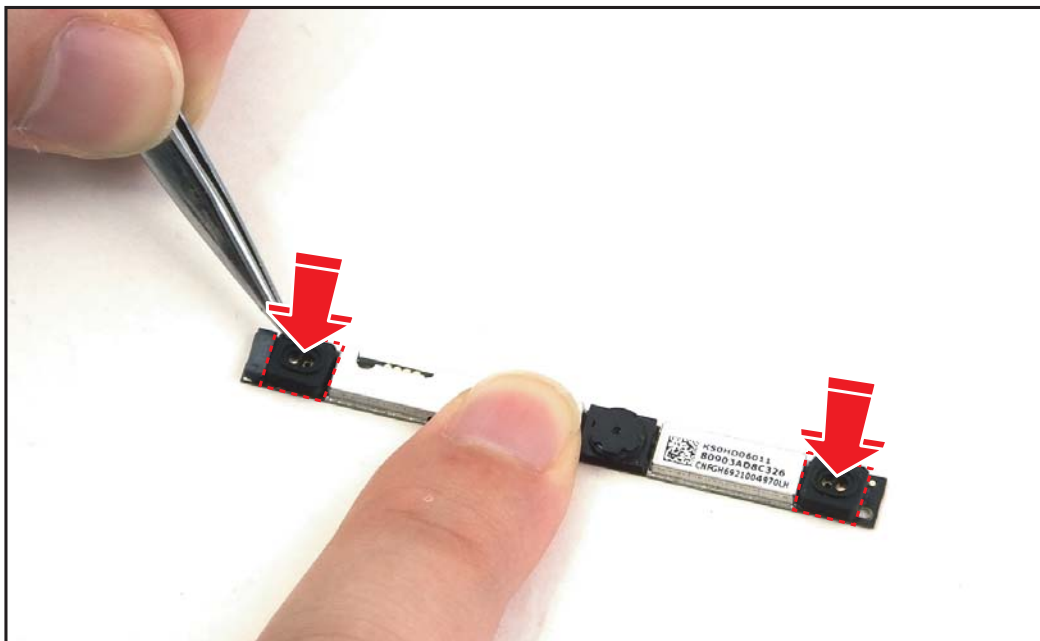


Figure 5-130. Installing the Microphone Rubbers

2. Connect the eDP cable to the CMOS and dual microphone module connector. Then attach the mylar to secure the cable connection.



Figure 5-131. Connecting the eDP Cable

3. Align and install the CMOS and dual microphone module into its slot on the LCD cover.

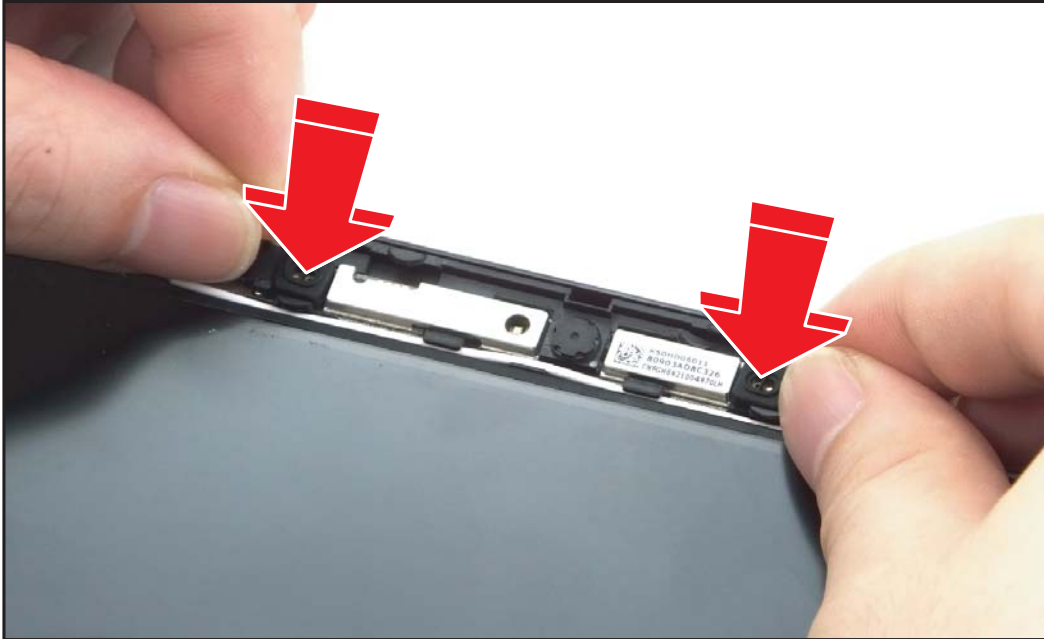


Figure 5-132. Installing the CMOS and Dual Microphone Module

4. Install the LCD bezel (see [LCD Bezel Installation](#) on page [5-83](#)).

LCD Panel Brackets Removal

Prerequisite:

※ [LCD Bezel Removal](#) on page [5-81](#)

1. Remove the six (6) screws securing the LCD panel brackets to the LCD cover.



Figure 5-133. Removing the Screws

2. Lift to remove the LCD panel brackets from the LCD cover.

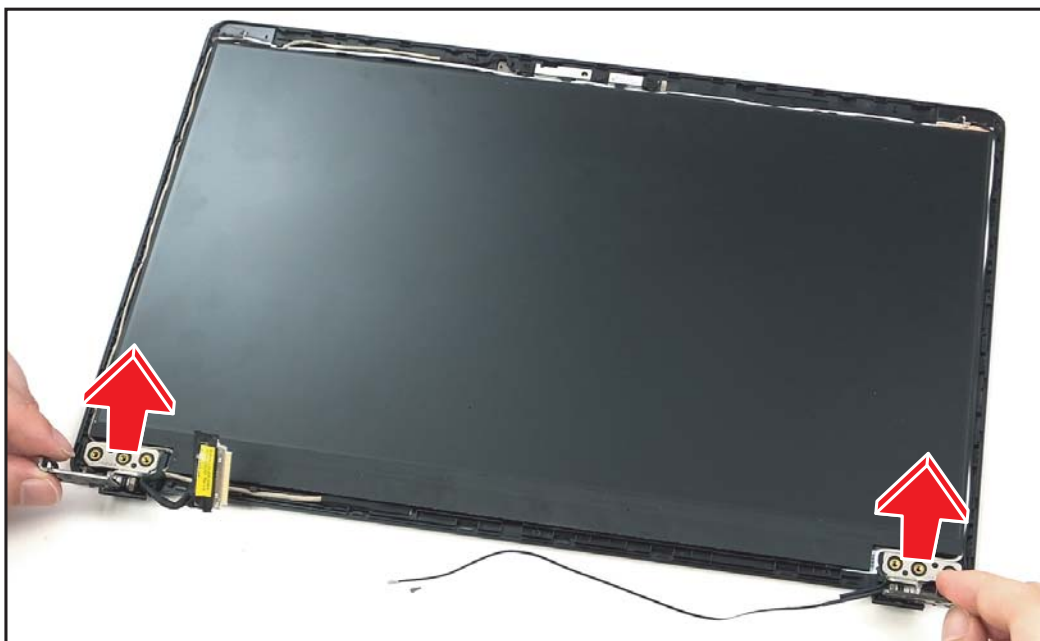


Figure 5-134. Removing the LCD Panel Brackets

LCD Panel Brackets Installation

1. Align and install the LCD panel brackets onto its respective slot on the LCD cover.

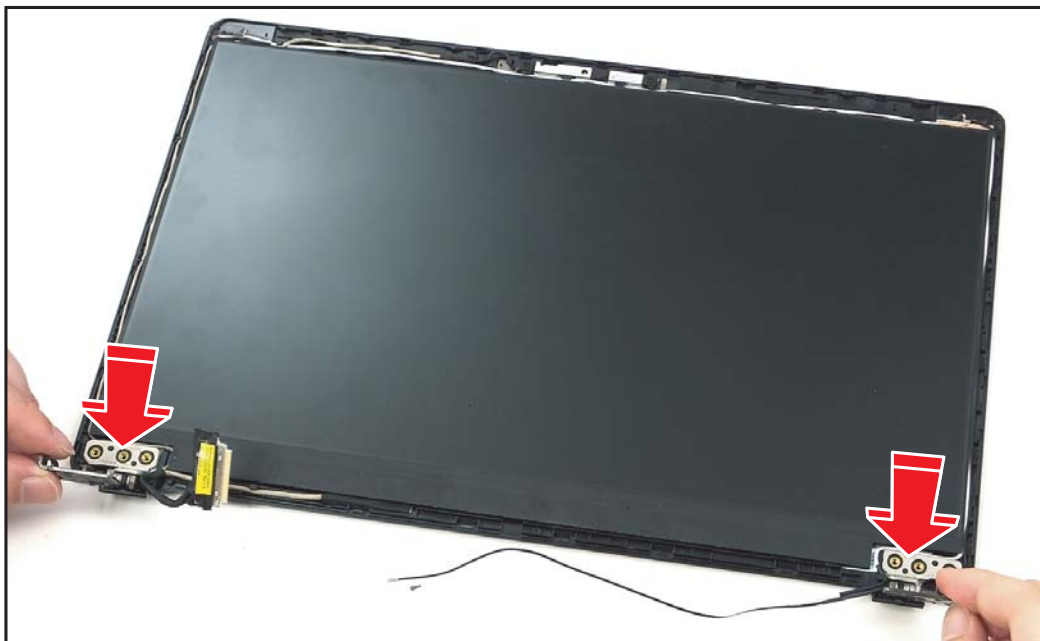


Figure 5-135. Installing the LCD Panel Brackets

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

⇒ **NOTE:** Screw torque force = 2.0~2.5kgf.cm



Figure 5-136. Securing the Screws

3. Install the LCD bezel (see [LCD Bezel Installation](#) on page [5-83](#)).

Table 5-19. LCD Panel Brackets Screws

Screw Name	Screw Type	Torque	Quantity
M 2.5 x 2.5		2.0~2.5kgf.cm	6

LCD Panel Removal

Prerequisite:

※ [LCD Panel Brackets Removal](#) on page 5-88

1. Unroute the main antenna cable from the guides on the bottom side first, and then following with the right side of the LCD cover.



Figure 5-137. Unrouting the Main Antenna Cable

2. Continue to unroute the auxiliary antenna cable from the guides on the bottom side first, and then following with the right side of the LCD cover..

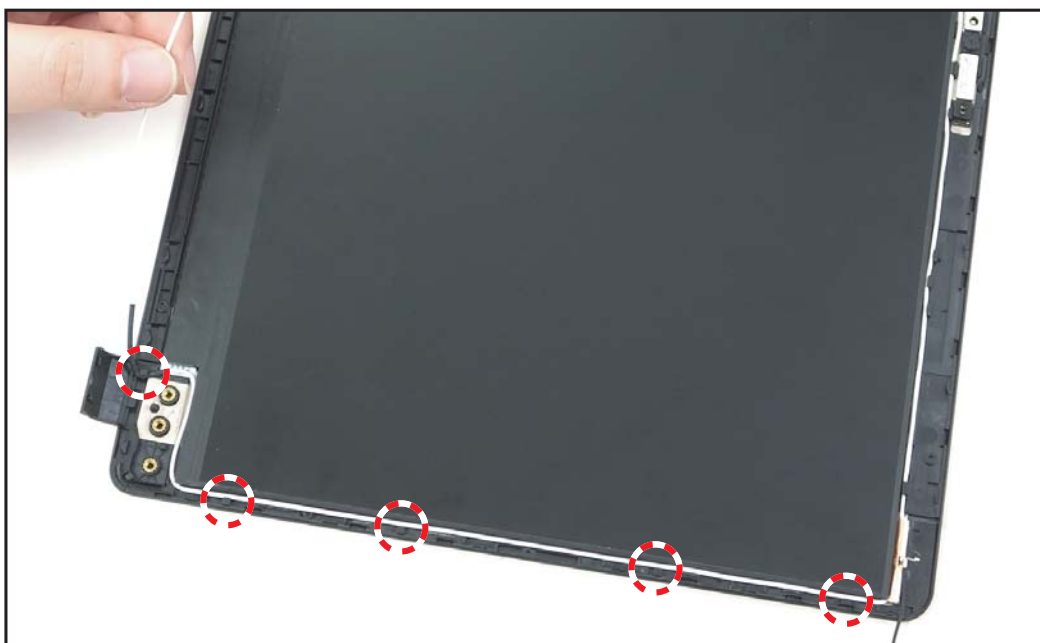


Figure 5-138. Unrouting the Auxiliary Antenna Cable

3. Pry to remove the CMOS and dual microphone module from its slot on the LCD cover.

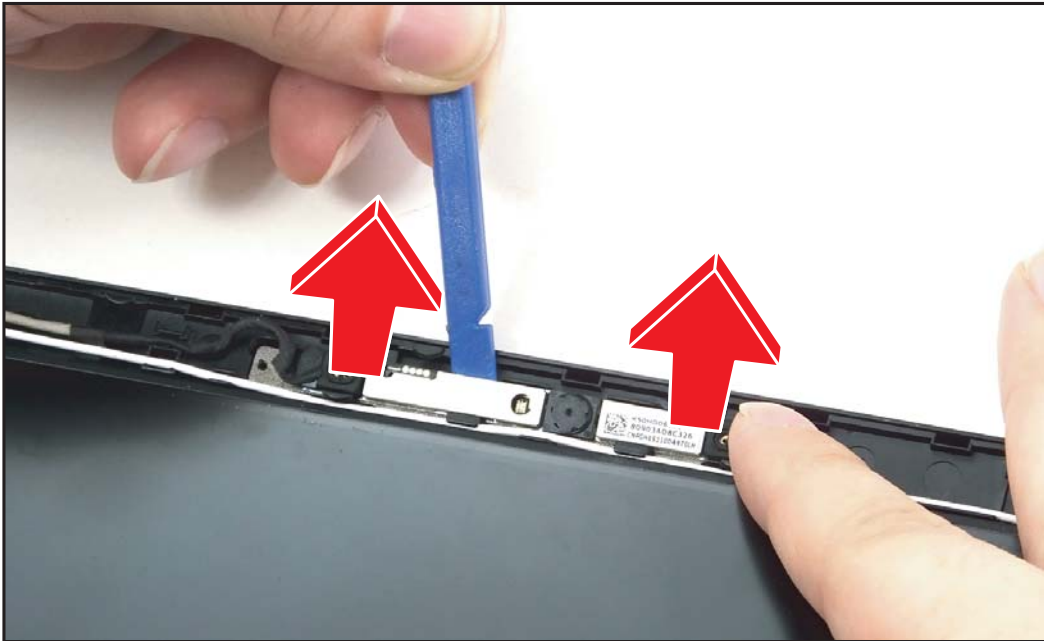


Figure 5-139. Removing the CMOS and Dual Microphone Module

4. Unroute the eDP cable from the guides on the top side first, and then following with the left and bottom sides of the LCD cover.

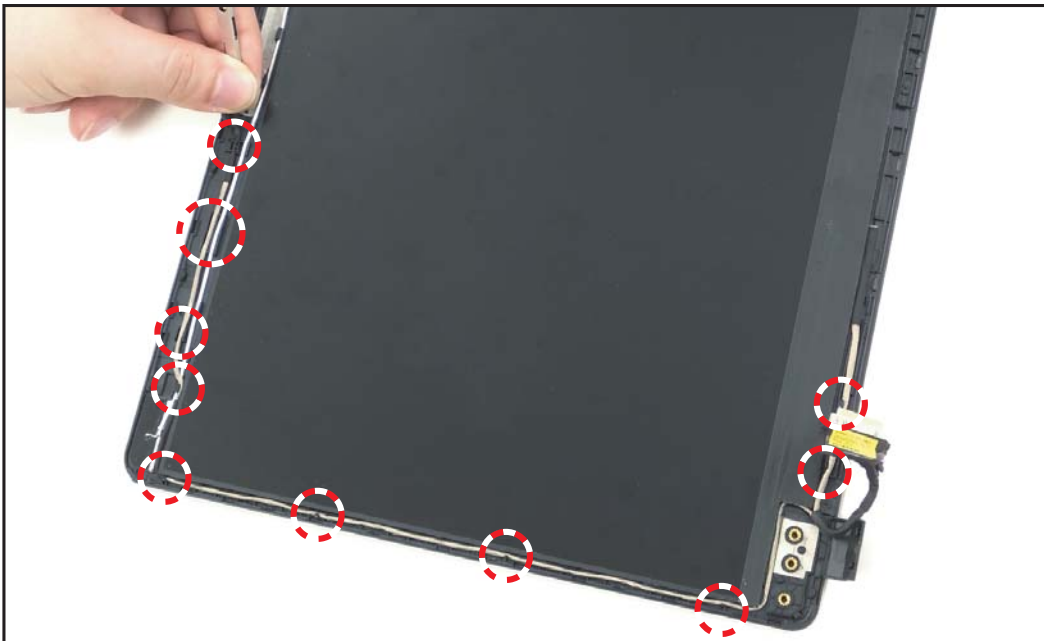


Figure 5-140. Unrouting the eDP Cable

5. Pry slightly to access the double-sided mounting tape underneath the LCD panel. Then pull to detach the double-sided mounting tape from the LCD cover. Repeat the same procedure to remove the double-sided mounting tape on another side of the LCD panel.



Figure 5-141. Detaching the Double-sided Mounting Tapes

6. Remove the LCD panel.



Figure 5-142. Removing the LCD Panel

7. Detach the mylar and disconnect one end of the eDP cable to the LCD panel connector.

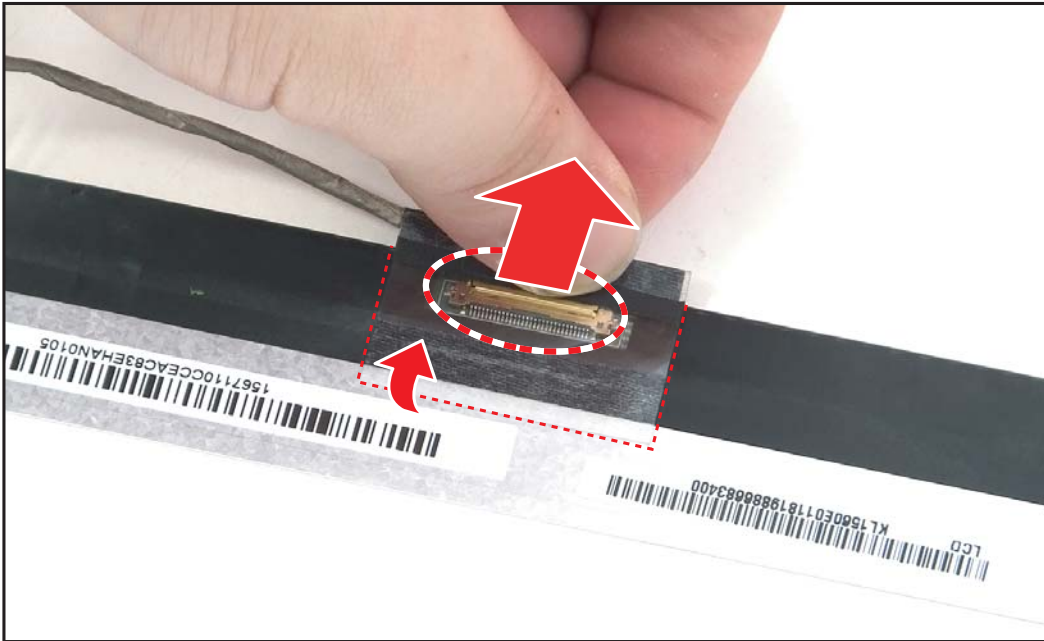


Figure 5-143. Disconnecting the eDP Cable (1 of 2)

8. Detach the mylar and disconnect the other end of the eDP cable from the CMOS and dual microphone module connector.

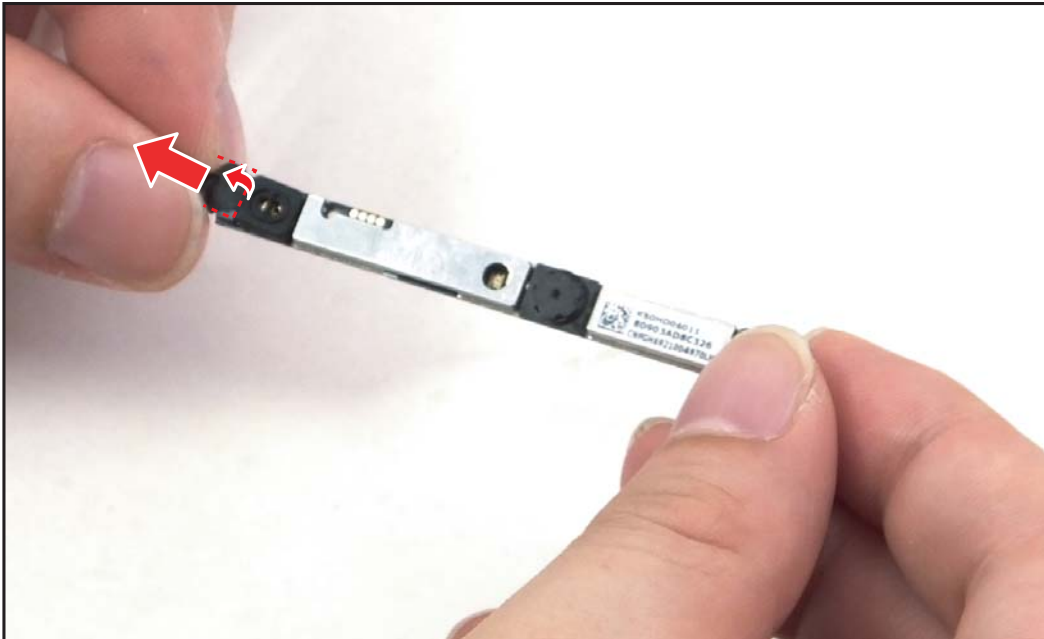


Figure 5-144. Disconnecting the eDP Cable (2 of 2)

LCD Panel Installation

1. Connect one end of the eDP cable to the CMOS and dual microphone module connector and attach the mylar to secure the cable connection.



Figure 5-145. Connecting the eDP Cable (1 of 2)

2. Connect the other end of the eDP cable to the LCD panel connector and attach the mylar to secure the cable connection.

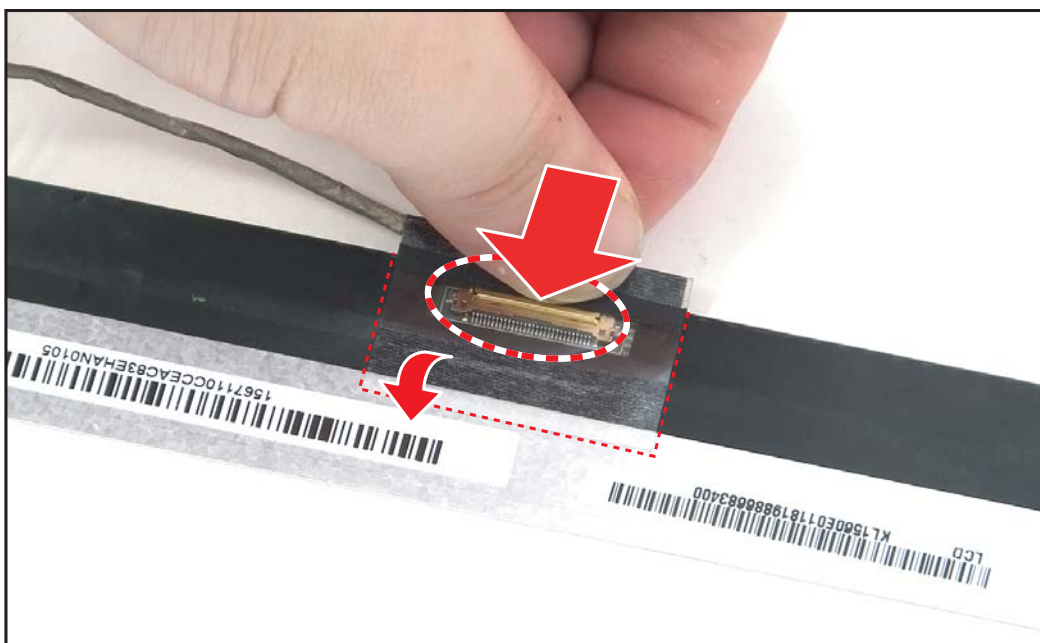


Figure 5-146. Connecting the eDP Cable (2 of 2)

3. Attach the double-sided mounting tapes on both sides of the LCD cover and press each tape for about 30 seconds. Then peel off the protective film from the double-sided mounting tapes.

⇒ NOTE:

Make sure to apply the double-sided mounting tapes onto the laser engraved plates as shown in the below illustration.

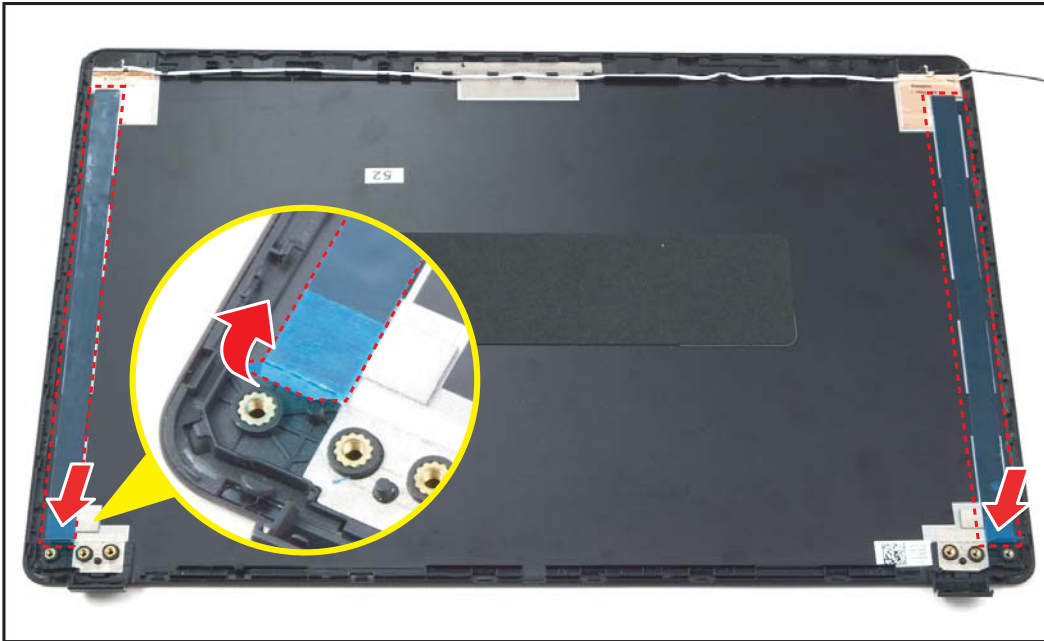


Figure 5-147. Attaching the Double-sided Mounting Tapes

4. Starting from the top left side, carefully place the LCD panel on the LCD cover. Then press the LCD panel down until it is firmly seated on the LCD cover.

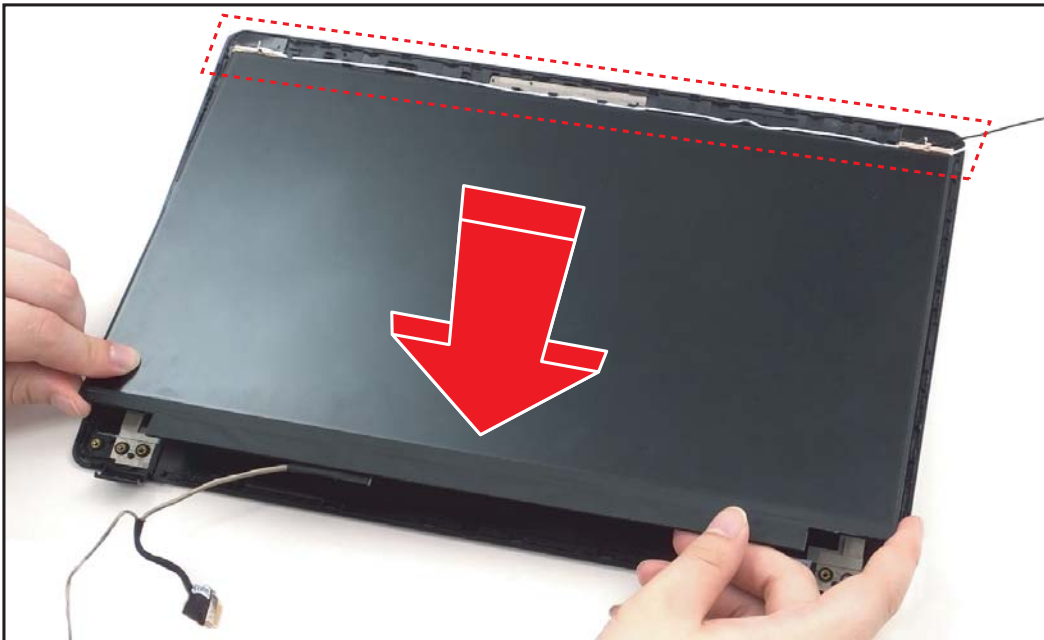


Figure 5-148. Installing the LCD Panel

5. Route eDP cable through the guides on the bottom side first, and then following with the left and top sides of the LCD cover.

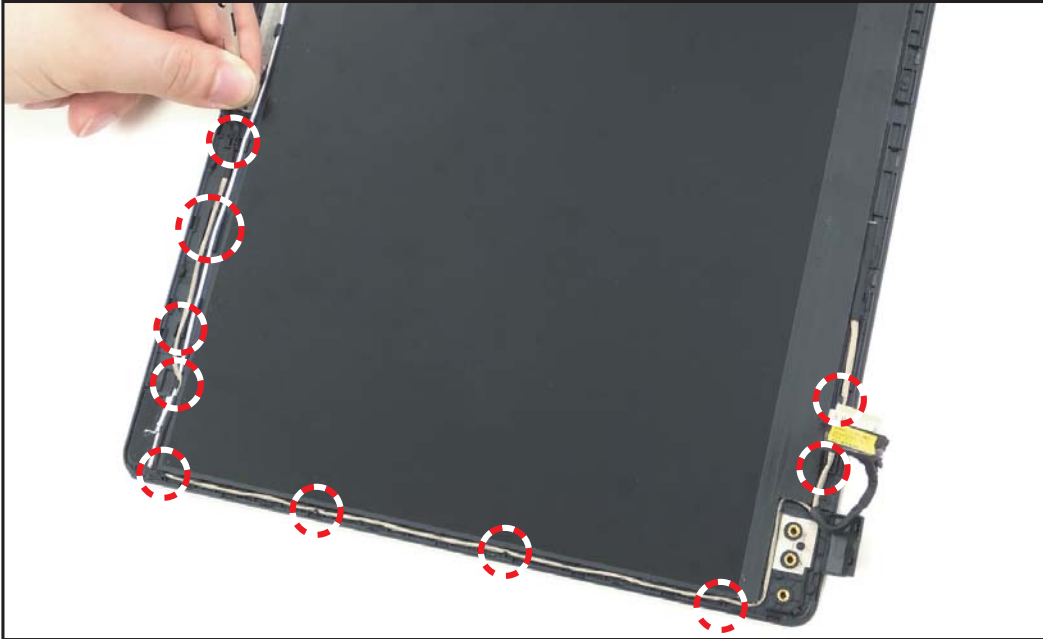


Figure 5-149. Routing the eDP Cable

6. Align and install the CMOS and dual microphone module into its slot on the LCD cover.



Figure 5-150. Installing the CMOS and Dual Microphone Module

7. Route the auxiliary antenna cable through the guides on the right side first, and then following with the bottom side of the LCD cover.

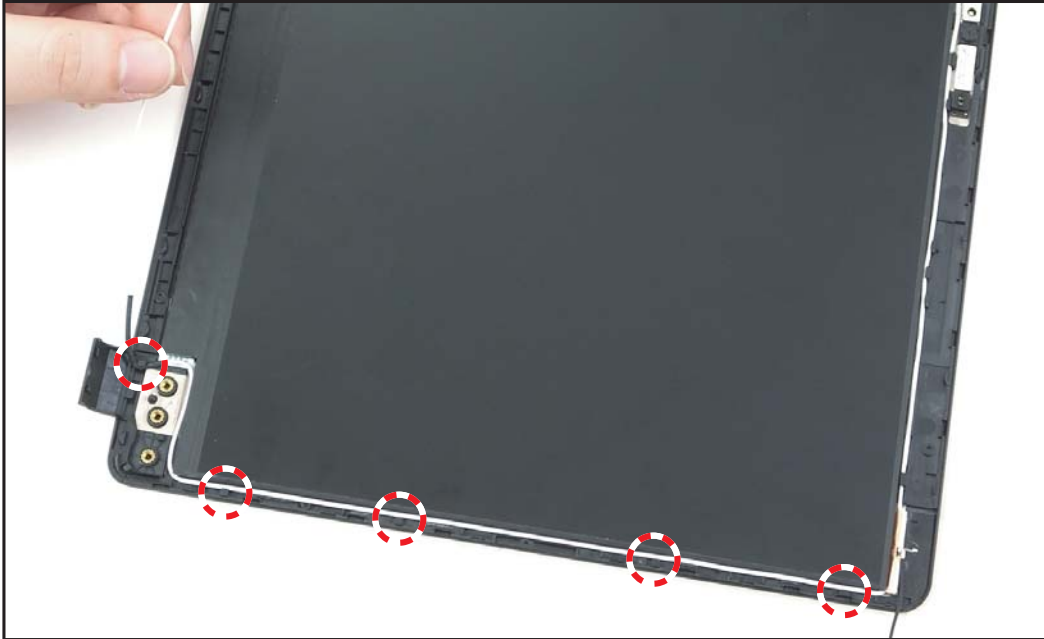


Figure 5-151. Routing the Auxiliary Antenna Cable

8. Continue to route the main antenna cable through the guides on the right side first, and then following with the bottom side of the LCD cover.

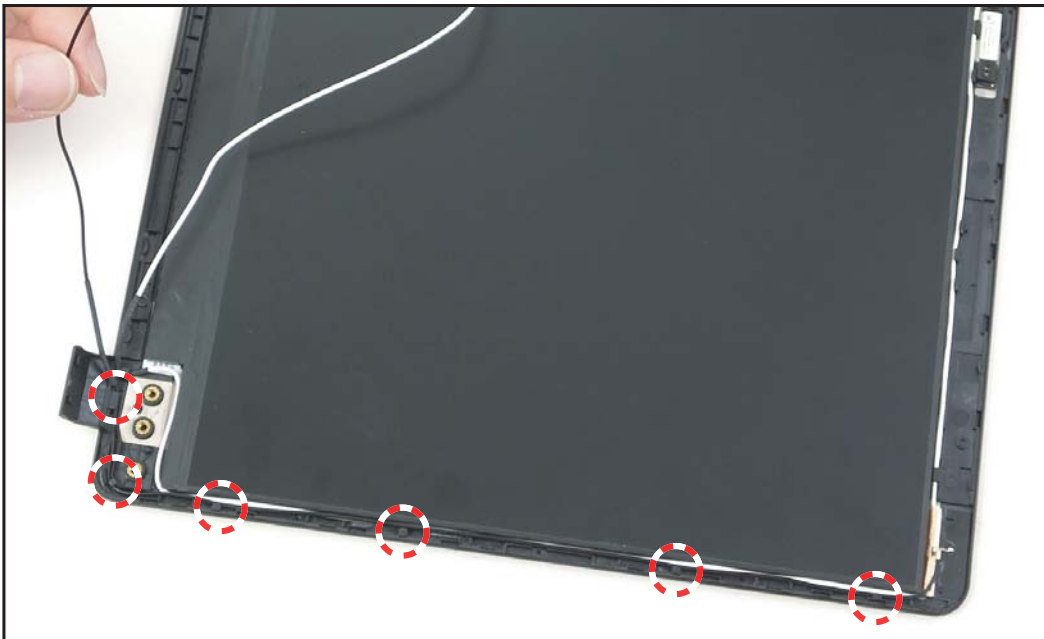


Figure 5-152. Routing the Main Antenna Cable

9. Install the LCD panel brackets (see [LCD Panel Brackets Installation](#) on page [5-89](#)).

WLAN Antenna (Main) Removal

Prerequisite:

※ [LCD Panel Removal](#) on page [5-91](#)

Detach the main antenna from the LCD cover.

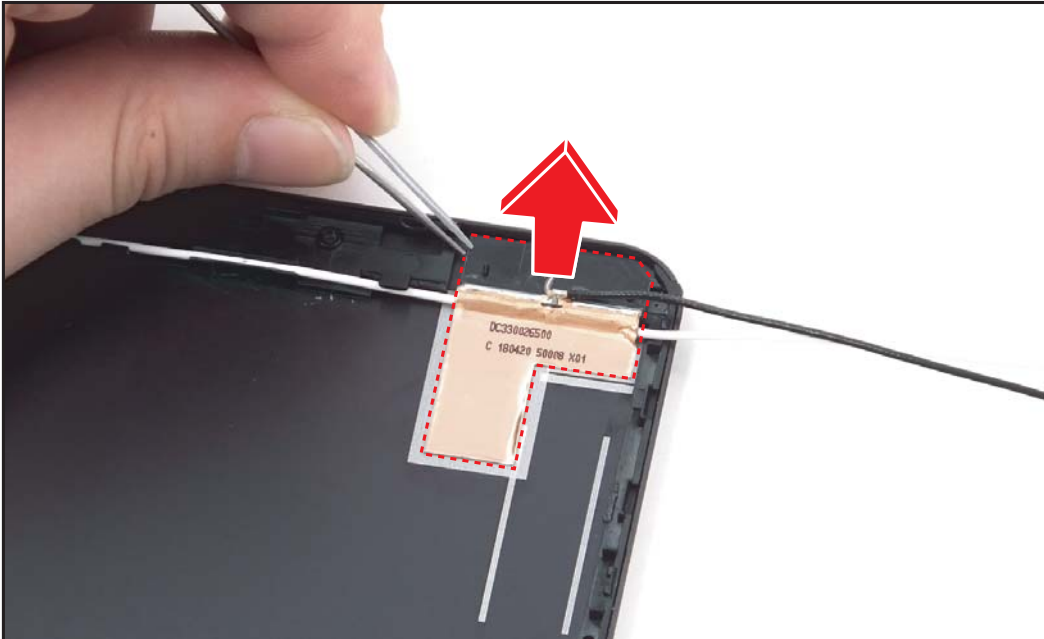


Figure 5-153. Detaching the Main Antenna

WLAN Antenna (Main) Installation

1. Attach the main antenna onto its slot on the LCD cover.

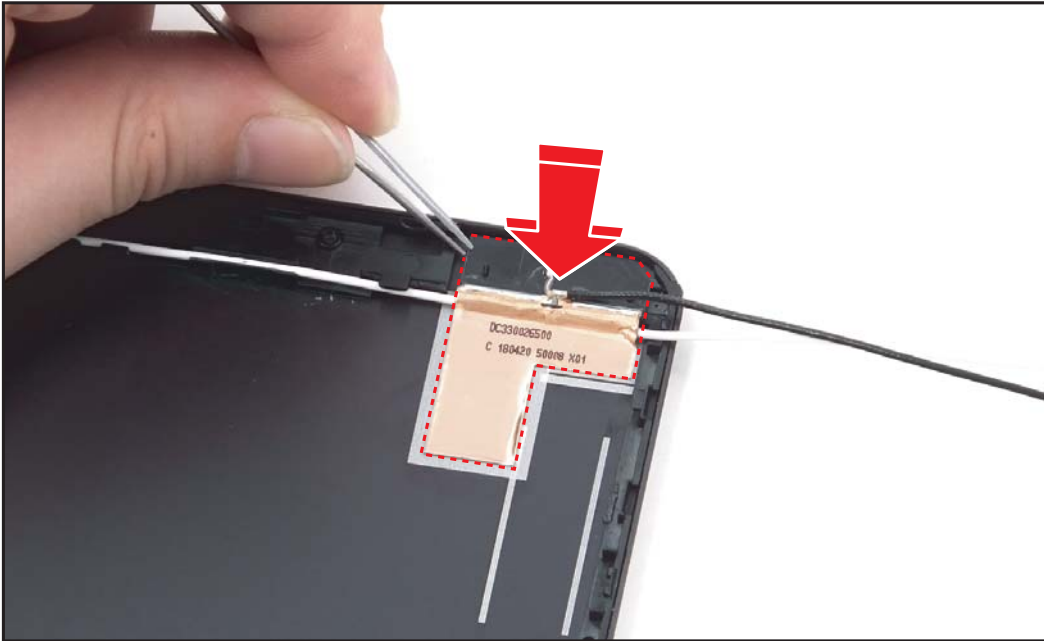


Figure 5-154. Attaching the Main Antenna

2. Install the LCD panel (see [LCD Panel Installation](#) on page [5-95](#)).

WLAN Antenna (Aux) Removal

Prerequisite:

※ [WLAN Antenna \(Main\) Removal](#) on page 5-99

1. Unroute the auxiliary antenna cable from the guides on the top side of the LCD cover.



Figure 5-155. Unrouting the Auxiliary Antenna Cable

2. Detach the auxiliary antenna from the LCD cover.

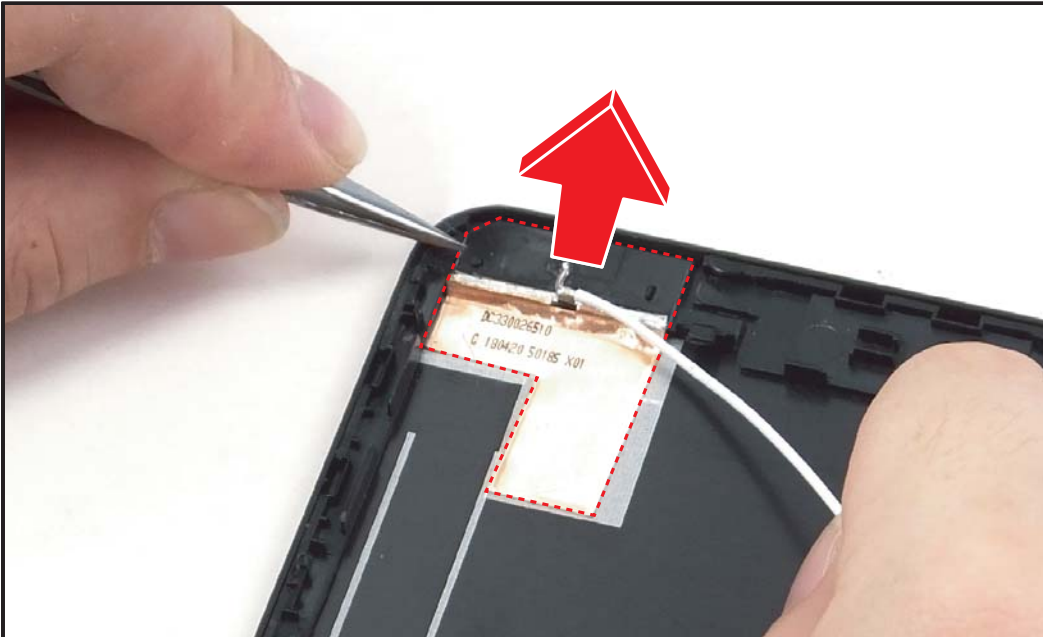


Figure 5-156. Detaching the Auxiliary Antenna

WLAN Antenna (Aux) Installation

1. Attach the auxiliary antenna onto its slot on the LCD cover.

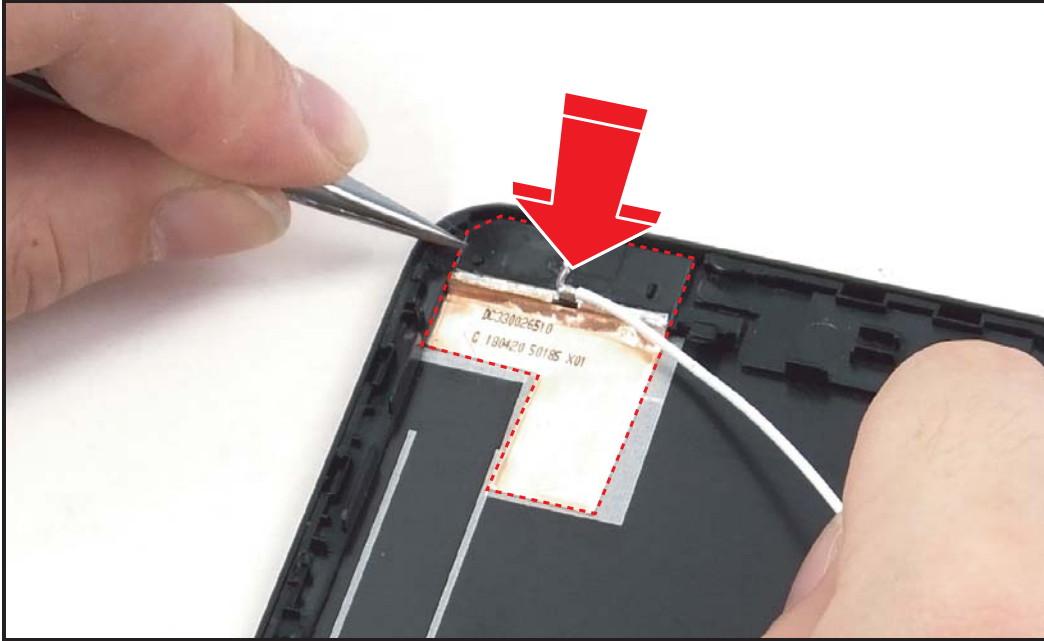


Figure 5-157. Attaching the Auxiliary Antenna

2. Route the auxiliary antenna cable through the guides on the top side of the LCD cover.



Figure 5-158. Routing the Auxiliary Antenna Cable

3. Attach the main antenna (see [WLAN Antenna \(Main\) Installation](#) on page [5-100](#)).

Field Replaceable Unit List

FRU (Field Replaceable Unit) List	6-2
Exploded Diagram	6-3
Main Assembly	6-3
Upper Cover Assembly	6-5
LCD Assembly	6-6
FRU List	6-8
Screw List	6-32

FRU (Field Replaceable Unit) List

This chapter provides the FRU (Field Replaceable Unit) listing in global configurations for the Aspire A515-52/A515-52G. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

⇒ NOTE:

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

⇒ NOTE:

To scrap or to return the defective parts, users should follow local government ordinances or regulations on proper disposal, or follow the rules set by the regional Acer office on how to return the defective parts.

Exploded Diagram

Main Assembly

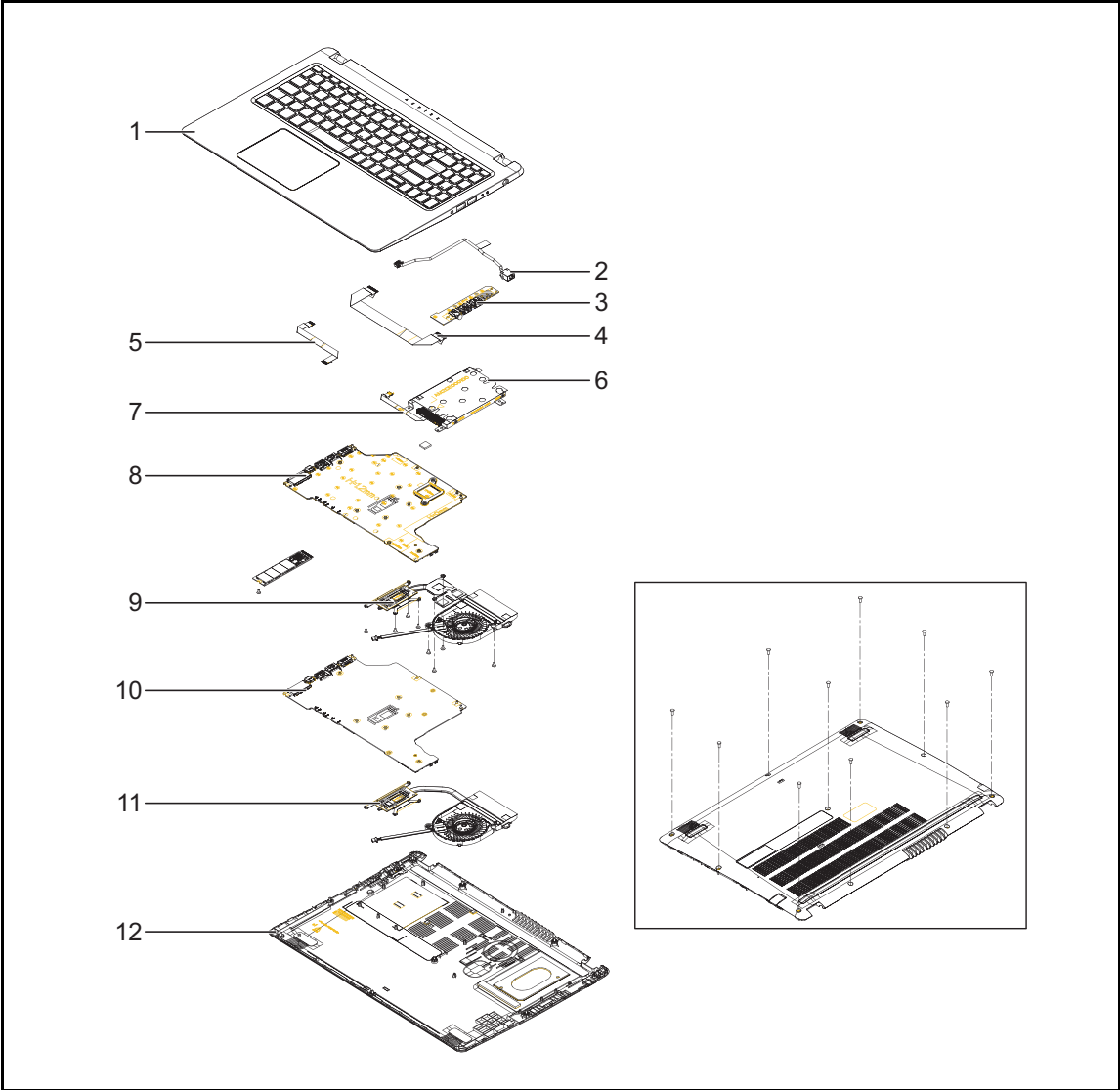


Figure 6-1. Main Assembly Exploded Diagram

Table 6-1. Main Assembly Exploded Diagram

No.	Description	P/N
1	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International White Backlit power icon 3-numeric,Media key(NK.I1513.0E4)	6B.H3EN2.001
2	DC-IN CABLE 65W	50.H14N2.002
3	IO BOARD	55.H14N2.001

Table 6-1. Main Assembly Exploded Diagram

No.	Description	P/N
4	IO BOARD FFC CABLE	50.H14N2.001
5	TP FFC CABLE	50.H14N2.004
6	HDD BRACKET	33.H14N2.002
7	HDD FFC CABLE	50.H14N2.003
8	Mainboard A515-52G Intel i3-8145U N16SGTRS_MX130 2G LF	NB.H1411.001
9	THERMAL MODULE W/O FAN - DIS	24.H14N2.001
10	Mainboard A515-52 Intel i3-8145U UMA LF	NB.H1611.001
11	THERMAL MODULE W/O FAN - UMA	24.H16N2.001
12	LOWER CASE ASSY - BLACK	60.H14N2.001

Upper Cover Assembly

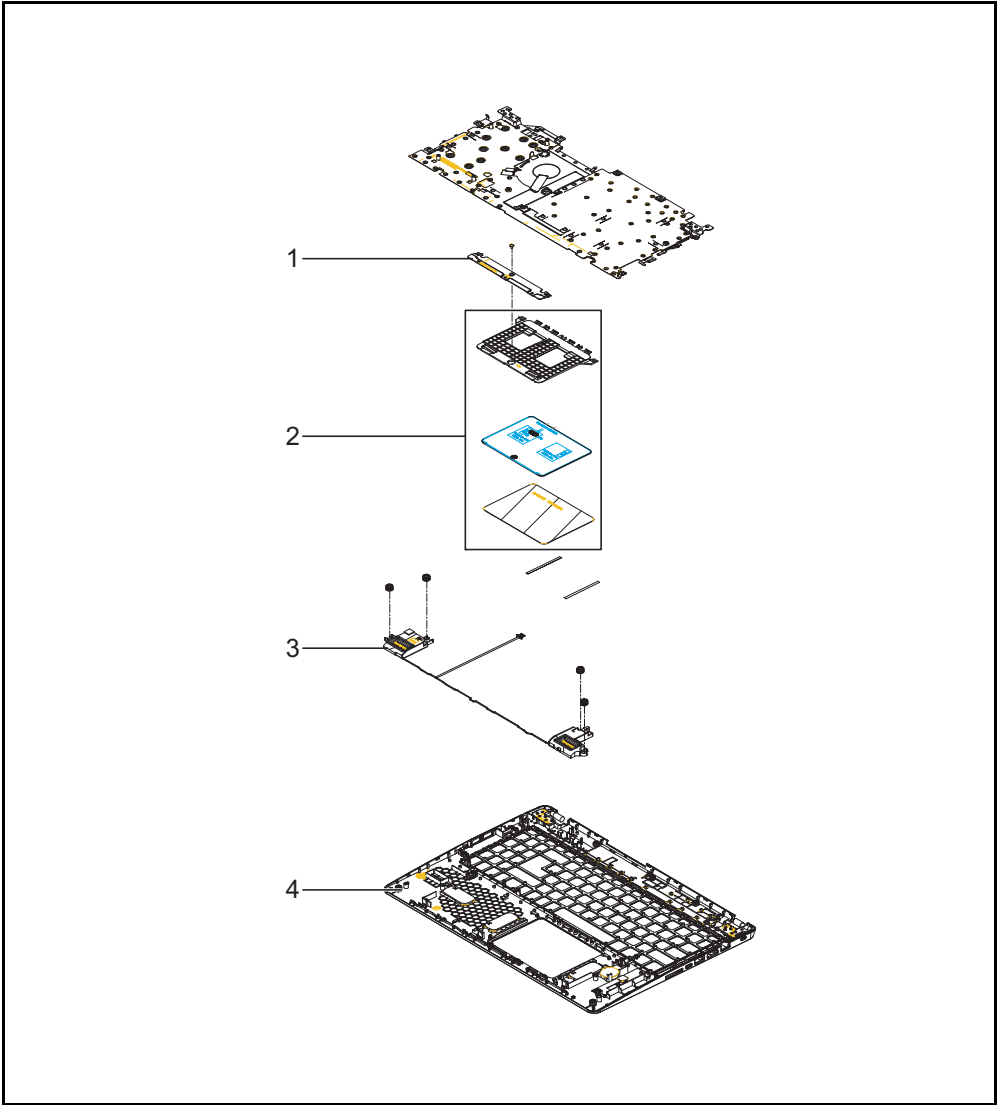


Figure 6-2. Upper Cover Assembly Exploded Diagram

Table 6-2. Upper Cover Assembly Exploded Diagram

No.	Description	P/N
	TOUCHPAD SUPPORT BRACKET	33.H14N2.001
	TOUCH PAD ASSY BLACK-ELANTECH	56.H14N2.001
	SPEAKER L+R	23.H14N2.002
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International White Backlit power icon 3-numeric,Media key(NK.I1513.0E4)	6B.H3EN2.001

LCD Assembly

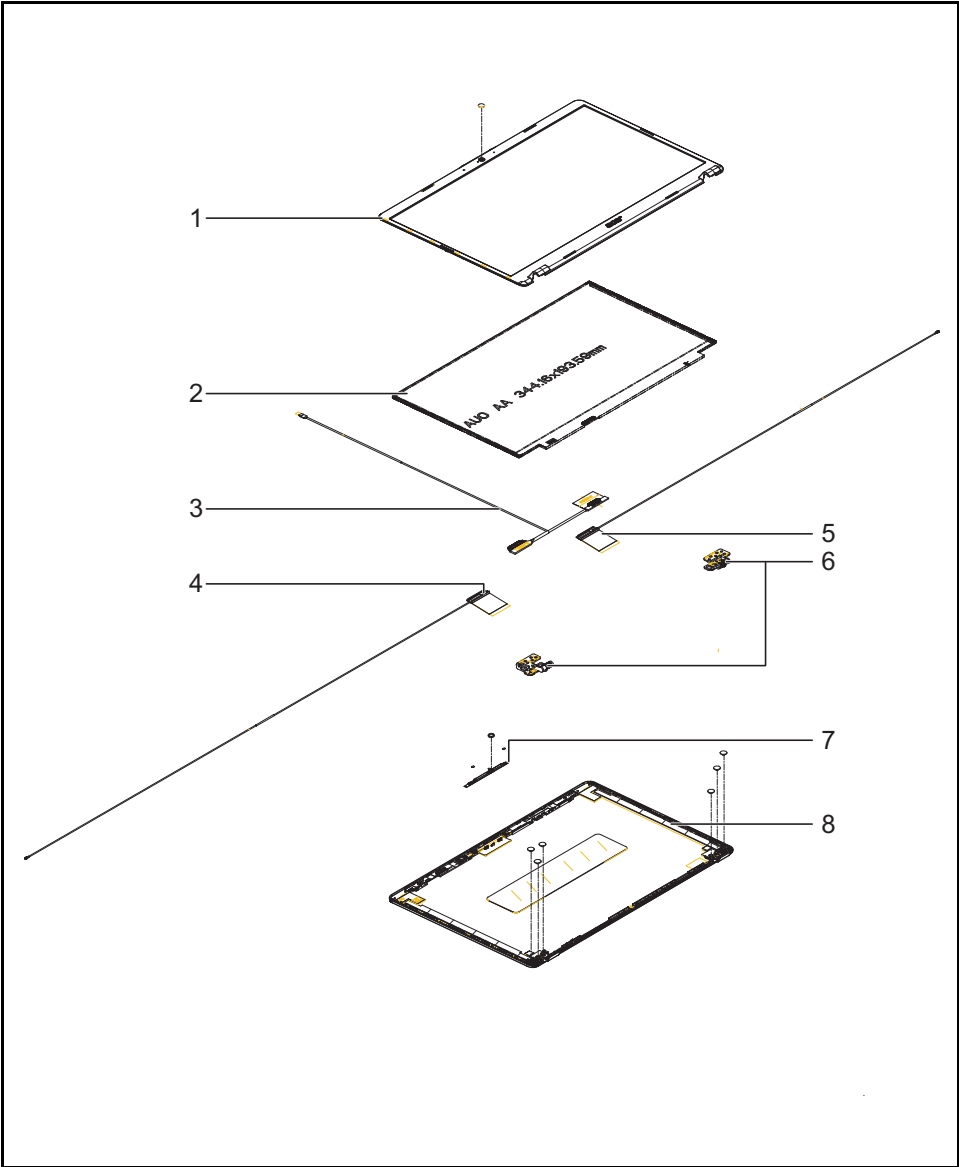


Figure 6-3. LCD Assembly Exploded Diagram

Table 6-3. LCD Assembly Exploded Diagram

No.	Description	P/N
1	LCD BEZEL ASSY - BLACK	60.H14N2.003
2	LCD Panel	N/A
3	LCD EDP CABLE	50.H14N2.007
4	ANTENNA - AUX	50.H14N2.006
5	ANTENNA - MAIN	50.H14N2.005
6	LCD HINGE BRACKET R&L	33.H14N2.003

Table 6-3. LCD Assembly Exploded Diagram

No.	Description	P/N
7	CMOS and Microphone Module	N/A
8	LCD COVER ASSY - BLACK	60.H14N2.002

FRU List

CATEGORY	Acer Description	Acer PN
BOARD		
	IO BOARD	55.H14N2.001
CABLE		
	IO BOARD FFC CABLE	50.H14N2.001
	DC-IN CABLE 65W	50.H14N2.002
	HDD FFC CABLE	50.H14N2.003
	TP FFC CABLE	50.H14N2.004
	ANTENNA - MAIN	50.H14N2.005
	ANTENNA - AUX	50.H14N2.006
	LCD EDP CABLE	50.H14N2.007
	POWER CORD 1M BLACK SOUTH AFRICA	27.Q28N2.001
	POWER CORD 1M BLACK AUSTRALIA	27.Q28N2.002
	POWER CORD 1M BLACK EU	27.Q28N2.003

CATEGORY	Acer Description	Acer PN
	POWER CORD 1M BLACK DENMARK	27.Q28N2.004
	POWER CORD 1M BLACK ISRAEL	27.Q28N2.005
	POWER CORD 1M BLACK ITALIAN	27.Q28N2.006
	POWER CORD 1M BLACK JAPAN	27.Q28N2.007
	POWER CORD 1M BLACK CHINA	27.Q28N2.008
	POWER CORD 1M BLACK INDIA	27.Q28N2.009
	POWER CORD 1M BLACK SWISS	27.Q28N2.010
	POWER CORD 1M BLACK UK	27.Q28N2.011
	POWER CORD 1M BLACK TWN	27.Q28N2.012
	POWER CORD 1M BLACK ARGENTINA	27.Q28N2.013
	POWER CORD 1M BLACK KOREA	27.Q28N2.014
	POWER CORD 1M BLACK US	27.Q28N2.015
	POWER CORD 1M BLACK BRAZIL	27.Q28N2.016
CASE/COVER/BACKET ASSEMBLY		
	TOUCHPAD SUPPORT BRACKET	33.H14N2.001
	LOWER CASE ASSY - BLACK	60.H14N2.001
	HDD BRACKET	33.H14N2.002
	LCD COVER ASSY - BLACK	60.H14N2.002
	LCD COVER ASSY - RED	60.H58N2.001
	LCD COVER ASSY - SILVER	60.H5HN2.001

CATEGORY	Acer Description	Acer PN
	LCD BEZEL ASSY - BLACK	60.H14N2.003
	LCD HINGE BRACKET R&L	33.H14N2.003
FAN		
	PLASTIC FAN	23.H14N2.001
HEATSINK		
	THERMAL MODULE W/O FAN - DIS	24.H14N2.001
	THERMAL MODULE W/O FAN - UMA	24.H16N2.001
KB ASSEMBLY		
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International White Backlit power icon 3-numeric,Media key(NK.I1513.0E4)	6B.H3EN2.001
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Greek White Backlit power icon 3- numeric,Media key(NK.I1513.0DY)	6B.H3EN2.002
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Arabic White Backlit power icon 3- numeric,Media key(NK.I1513.0DW)	6B.H3EN2.003

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Traditional Chinese White Backlit power icon 3-numeric,Media key(NK.I1513.0DX)	6B.H3EN2.004
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Russian White Backlit power icon 3- numeric,Media key(NK.I1513.0E0)	6B.H3EN2.005
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Hebrew White Backlit power icon 3-numeric,Media key(NK.I1513.0E5)	6B.H3EN2.006
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Thailand White Backlit power icon 3- numeric,Media key(NK.I1513.0E3)	6B.H3EN2.007
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Korean White Backlit power icon 3- numeric,Media key(NK.I1513.0DZ)	6B.H3EN2.008
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Ukrainian White Backlit power icon 3-numeric,Media key(NK.I1513.0E1)	6B.H3EN2.009
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Persian White Backlit power icon 3- numeric,Media key(NK.I1513.0E2)	6B.H3EN2.010
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Canadian French White Backlit power icon 3-numeric,Media key(NK.I1513.0GS)	6B.H3EN2.011
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Bulgaria White Backlit power icon 3-numeric,Media key(NK.I1513.0GT)	6B.H3EN2.012
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black UK White Backlit power icon 3- numeric,Media key(NK.I1513.0ER)	6B.H3EN2.013

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black German White Backlit power icon 3- numeric,Media key(NK.I1513.0EE)	6B.H3EN2.014
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Swiss/G White Backlit power icon 3- numeric,Media key(NK.I1513.0EP)	6B.H3EN2.015
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Belgium White Backlit power icon 3- numeric,Media key(NK.I1513.0E7)	6B.H3EN2.016
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Danish White Backlit power icon 3- numeric,Media key(NK.I1513.0EB)	6B.H3EN2.017
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Italian White Backlit power icon 3- numeric,Media key(NK.I1513.0EG)	6B.H3EN2.018
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black French White Backlit power icon 3- numeric,Media key(NK.I1513.0ED)	6B.H3EN2.019
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Hungarian White Backlit power icon 3-numeric,Media key(NK.I1513.0EF)	6B.H3EN2.020
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Norwegian White Backlit power icon 3-numeric,Media key(NK.I1513.0EJ)	6B.H3EN2.021
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Portuguese White Backlit power icon 3-numeric,Media key(NK.I1513.0EK)	6B.H3EN2.022
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Spanish White Backlit power icon 3- numeric,Media key(NK.I1513.0EM)	6B.H3EN2.023
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black US w/ Canadian French White Backlit power icon 3-numeric,Media key(NK.I1513.0ES)	6B.H3EN2.024

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Turkish White Backlit power icon 3- numeric,Media key(NK.I1513.0EQ)	6B.H3EN2.025
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Sweden White Backlit power icon 3- numeric,Media key(NK.I1513.0EN)	6B.H3EN2.026
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black FR/Arabic White Backlit power icon 3-numeric,Media key(NK.I1513.0EC)	6B.H3EN2.027
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Nordic White Backlit power icon 3- numeric,Media key(NK.I1513.0EH)	6B.H3EN2.028
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black SLO/CRO White Backlit power icon 3-numeric,Media key(NK.I1513.0EL)	6B.H3EN2.029
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black CZ/SK White Backlit power icon 3- numeric,Media key(NK.I1513.0EA)	6B.H3EN2.030
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Bulgaria White Backlit power icon 3- numeric,Media key(NK.I1513.0E9)	6B.H3EN2.031
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Brazilian Portuguese White Backlit power icon 3-numeric,Media key(NK.I1513.0E8)	6B.H3EN2.032
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black ALA-Spanish White Backlit power icon 3-numeric,Media key(NK.I1513.0E6)	6B.H3EN2.033
	UPPER CASE ASSY - BLACK W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 104KS Black Japanese White Backlit power icon 3-numeric,Media key(NK.I1513.0ET)	6B.H3EN2.034
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International White Backlit power icon 3-numeric,Media key(NK.I1513.0E4)	6B.H5AN2.001

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Greek White Backlit power icon 3- numeric,Media key(NK.I1513.0DY)	6B.H5AN2.002
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Arabic White Backlit power icon 3- numeric,Media key(NK.I1513.0DW)	6B.H5AN2.003
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Traditional Chinese White Backlit power icon 3-numeric,Media key(NK.I1513.0DX)	6B.H5AN2.004
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Russian White Backlit power icon 3- numeric,Media key(NK.I1513.0E0)	6B.H5AN2.005
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Hebrew White Backlit power icon 3-numeric,Media key(NK.I1513.0E5)	6B.H5AN2.006
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Thailand White Backlit power icon 3- numeric,Media key(NK.I1513.0E3)	6B.H5AN2.007
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Korean White Backlit power icon 3- numeric,Media key(NK.I1513.0DZ)	6B.H5AN2.008
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Ukrainian White Backlit power icon 3-numeric,Media key(NK.I1513.0E1)	6B.H5AN2.009
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Persian White Backlit power icon 3- numeric,Media key(NK.I1513.0E2)	6B.H5AN2.010
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Canadian French White Backlit power icon 3-numeric,Media key(NK.I1513.0GS)	6B.H5AN2.011

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Bulgaria White Backlit power icon 3-numeric,Media key(NK.I1513.0GT)	6B.H5AN2.012
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black UK White Backlit power icon 3- numeric,Media key(NK.I1513.0ER)	6B.H5AN2.013
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black German White Backlit power icon 3- numeric,Media key(NK.I1513.0EE)	6B.H5AN2.014
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Swiss/G White Backlit power icon 3- numeric,Media key(NK.I1513.0EP)	6B.H5AN2.015
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Belgium White Backlit power icon 3- numeric,Media key(NK.I1513.0E7)	6B.H5AN2.016
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Danish White Backlit power icon 3- numeric,Media key(NK.I1513.0EB)	6B.H5AN2.017
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Italian White Backlit power icon 3- numeric,Media key(NK.I1513.0EG)	6B.H5AN2.018
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black French White Backlit power icon 3- numeric,Media key(NK.I1513.0ED)	6B.H5AN2.019
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Hungarian White Backlit power icon 3-numeric,Media key(NK.I1513.0EF)	6B.H5AN2.020
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Norwegian White Backlit power icon 3-numeric,Media key(NK.I1513.0EJ)	6B.H5AN2.021
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Portuguese White Backlit power icon 3-numeric,Media key(NK.I1513.0EK)	6B.H5AN2.022

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Spanish White Backlit power icon 3- numeric,Media key(NK.I1513.0EM)	6B.H5AN2.023
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black US w/ Canadian French White Backlit power icon 3-numeric,Media key(NK.I1513.0ES)	6B.H5AN2.024
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Turkish White Backlit power icon 3- numeric,Media key(NK.I1513.0EQ)	6B.H5AN2.025
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Sweden White Backlit power icon 3- numeric,Media key(NK.I1513.0EN)	6B.H5AN2.026
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black FR/Arabic White Backlit power icon 3-numeric,Media key(NK.I1513.0EC)	6B.H5AN2.027
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Nordic White Backlit power icon 3- numeric,Media key(NK.I1513.0EH)	6B.H5AN2.028
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black SLO/CRO White Backlit power icon 3-numeric,Media key(NK.I1513.0EL)	6B.H5AN2.029
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black CZ/SK White Backlit power icon 3- numeric,Media key(NK.I1513.0EA)	6B.H5AN2.030
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Bulgaria White Backlit power icon 3- numeric,Media key(NK.I1513.0E9)	6B.H5AN2.031
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Brazilian Portuguese White Backlit power icon 3-numeric,Media key(NK.I1513.0E8)	6B.H5AN2.032
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black ALA-Spanish White Backlit power icon 3-numeric,Media key(NK.I1513.0E6)	6B.H5AN2.033

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 104KS Black Japanese White Backlit power icon 3-numeric,Media key(NK.I1513.0ET)	6B.H5AN2.034
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International White Backlit power icon 3-numeric,Media key(NK.I1513.0E4)	6B.H5KN2.001
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Greek White Backlit power icon 3- numeric,Media key(NK.I1513.0DY)	6B.H5KN2.002
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Arabic White Backlit power icon 3- numeric,Media key(NK.I1513.0DW)	6B.H5KN2.003
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Traditional Chinese White Backlit power icon 3-numeric,Media key(NK.I1513.0DX)	6B.H5KN2.004
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Russian White Backlit power icon 3- numeric,Media key(NK.I1513.0E0)	6B.H5KN2.005
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Hebrew White Backlit power icon 3-numeric,Media key(NK.I1513.0E5)	6B.H5KN2.006
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Thailand White Backlit power icon 3- numeric,Media key(NK.I1513.0E3)	6B.H5KN2.007
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Korean White Backlit power icon 3- numeric,Media key(NK.I1513.0DZ)	6B.H5KN2.008
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Ukrainian White Backlit power icon 3-numeric,Media key(NK.I1513.0E1)	6B.H5KN2.009
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black Persian White Backlit power icon 3- numeric,Media key(NK.I1513.0E2)	6B.H5KN2.010

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Canadian French White Backlit power icon 3-numeric,Media key(NK.I1513.0GS)	6B.H5KN2.011
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 100KS Black US International w/ Bulgaria White Backlit power icon 3-numeric,Media key(NK.I1513.0GT)	6B.H5KN2.012
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black UK White Backlit power icon 3- numeric,Media key(NK.I1513.0ER)	6B.H5KN2.013
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black German White Backlit power icon 3- numeric,Media key(NK.I1513.0EE)	6B.H5KN2.014
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Swiss/G White Backlit power icon 3- numeric,Media key(NK.I1513.0EP)	6B.H5KN2.015
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Belgium White Backlit power icon 3- numeric,Media key(NK.I1513.0E7)	6B.H5KN2.016
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Danish White Backlit power icon 3- numeric,Media key(NK.I1513.0EB)	6B.H5KN2.017
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Italian White Backlit power icon 3- numeric,Media key(NK.I1513.0EG)	6B.H5KN2.018
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black French White Backlit power icon 3- numeric,Media key(NK.I1513.0ED)	6B.H5KN2.019
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Hungarian White Backlit power icon 3-numeric,Media key(NK.I1513.0EF)	6B.H5KN2.020
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Norwegian White Backlit power icon 3-numeric,Media key(NK.I1513.0EJ)	6B.H5KN2.021

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Portuguese White Backlit power icon 3-numeric,Media key(NK.I1513.0EK)	6B.H5KN2.022
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Spanish White Backlit power icon 3- numeric,Media key(NK.I1513.0EM)	6B.H5KN2.023
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black US w/ Canadian French White Backlit power icon 3-numeric,Media key(NK.I1513.0ES)	6B.H5KN2.024
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Turkish White Backlit power icon 3- numeric,Media key(NK.I1513.0EQ)	6B.H5KN2.025
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Sweden White Backlit power icon 3- numeric,Media key(NK.I1513.0EN)	6B.H5KN2.026
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black FR/Arabic White Backlit power icon 3-numeric,Media key(NK.I1513.0EC)	6B.H5KN2.027
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Nordic White Backlit power icon 3- numeric,Media key(NK.I1513.0EH)	6B.H5KN2.028
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black SLO/CRO White Backlit power icon 3-numeric,Media key(NK.I1513.0EL)	6B.H5KN2.029
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black CZ/SK White Backlit power icon 3- numeric,Media key(NK.I1513.0EA)	6B.H5KN2.030
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Bulgaria White Backlit power icon 3- numeric,Media key(NK.I1513.0E9)	6B.H5KN2.031
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black Brazilian Portuguese White Backlit power icon 3-numeric,Media key(NK.I1513.0E8)	6B.H5KN2.032

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 101KS Black ALA-Spanish White Backlit power icon 3-numeric,Media key(NK.I1513.0E6)	6B.H5KN2.033
	UPPER CASE ASSY - SILVER W/Keyboard SV5P_A72BWL SV5P Internal 15 Standard 104KS Black Japanese White Backlit power icon 3-numeric,Media key(NK.I1513.0ET)	6B.H5KN2.034
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International Black, power icon, 3- numeric, Media key(NK.I1513.0F2/NK.I151S.055/ NK.I1517.0B3)	6B.H14N2.001
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Greek Black, power icon, 3-numeric, Media key(NK.I1513.0EW/NK.I151S.04Z/NK.I1517.0BV)	6B.H14N2.002
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Arabic Black, power icon, 3-numeric, Media key(NK.I1513.0EU/NK.I151S.04X/NK.I1517.0AX)	6B.H14N2.003
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Traditional Chinese Black, power icon, 3- numeric, Media key(NK.I1513.0EV/NK.I151S.04Y/ NK.I1517.0BU)	6B.H14N2.004
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Russian Black, power icon, 3-numeric, Media key(NK.I1513.0EY/NK.I151S.051/ NK.I1517.0AZ)	6B.H14N2.005
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Hebrew Black, power icon, 3-numeric, Media key(NK.I1513.0F3/ NK.I151S.056/NK.I1517.0B4)	6B.H14N2.006
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Thailand Black, power icon, 3-numeric, Media key(NK.I1513.0F1/NK.I151S.054/ NK.I1517.0B2)	6B.H14N2.007
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Korean Black, power icon, 3-numeric, Media key(NK.I1513.0EX/NK.I151S.050/NK.I1517.0AY)	6B.H14N2.008

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Ukrainian Black, power icon, 3-numeric, Media key(NK.I1513.0EZ/NK.I151S.052/ NK.I1517.0B0)	6B.H14N2.009
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Persian Black, power icon, 3-numeric, Media key(NK.I1513.0F0/NK.I151S.053/ NK.I1517.0B1)	6B.H14N2.010
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Canadian French Black, power icon, 3-numeric, Media key(NK.I1513.0GU/ NK.I151S.057/NK.I1517.0AR)	6B.H14N2.011
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Bulgaria Black, power icon, 3-numeric, Media key(NK.I1513.0GV/ NK.I151S.058/NK.I1517.0AS)	6B.H14N2.012
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black UK Black, power icon, 3-numeric, Media key(NK.I1513.0FP/NK.I151S.05U/NK.I1517.0BS)	6B.H14N2.013
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black German Black, power icon, 3-numeric, Media key(NK.I1513.0FC/NK.I151S.05H/ NK.I1517.0BF)	6B.H14N2.014
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Swiss/G Black, power icon, 3-numeric, Media key(NK.I1513.0FM/NK.I151S.05S/ NK.I1517.0BQ)	6B.H14N2.015
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Belgium Black, power icon, 3-numeric, Media key(NK.I1513.0F5/NK.I151S.05A/ NK.I1517.0B8)	6B.H14N2.016
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Danish Black, power icon, 3-numeric, Media key(NK.I1513.0F9/NK.I151S.05E/NK.I1517.0BC)	6B.H14N2.017
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Italian Black, power icon, 3-numeric, Media key(NK.I1513.0FE/NK.I151S.05K/NK.I1517.0BH)	6B.H14N2.018

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black French Black, power icon, 3-numeric, Media key(NK.I1513.0FB/NK.I151S.05G/NK.I1517.0BE)	6B.H14N2.019
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Hungarian Black, power icon, 3-numeric, Media key(NK.I1513.0FD/NK.I151S.05J/NK.I1517.0BG)	6B.H14N2.020
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Norwegian Black, power icon, 3-numeric, Media key(NK.I1513.0FG/NK.I151S.05M/NK.I1517.0BK)	6B.H14N2.021
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Portuguese Black, power icon, 3-numeric, Media key(NK.I1513.0FH/NK.I151S.05N/NK.I1517.0BL)	6B.H14N2.022
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Spanish Black, power icon, 3-numeric, Media key(NK.I1513.0FK/NK.I151S.05Q/NK.I1517.0BN)	6B.H14N2.023
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black US w/ Canadian French Black, power icon, 3-numeric, Media key(NK.I1513.0FQ/NK.I151S.05V/NK.I1517.0BT)	6B.H14N2.024
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Turkish Black, power icon, 3-numeric, Media key(NK.I1513.0FN/NK.I151S.05T/NK.I1517.0BR)	6B.H14N2.025
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Sweden Black, power icon, 3-numeric, Media key(NK.I1513.0FL/NK.I151S.05R/NK.I1517.0BP)	6B.H14N2.026
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black FR/Arabic Black, power icon, 3-numeric, Media key(NK.I1513.0FA/NK.I151S.05F/NK.I1517.0BD)	6B.H14N2.027
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Nordic Black, power icon, 3-numeric, Media key(NK.I1513.0FF/NK.I151S.05L/NK.I1517.0BJ)	6B.H14N2.028

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black SLO/CRO Black, power icon, 3-numeric, Media key(NK.I1513.0FJ/NK.I151S.05P/ NK.I1517.0BM)	6B.H14N2.029
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black CZ/SK Black, power icon, 3-numeric, Media key(NK.I1513.0F8/NK.I151S.05D/NK.I1517.0BB)	6B.H14N2.030
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Bulgaria Black, power icon, 3-numeric, Media key(NK.I1513.0F7/NK.I151S.05C/ NK.I1517.0BA)	6B.H14N2.031
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Brazilian Portuguese Black, power icon, 3- numeric, Media key(NK.I1513.0F6/NK.I151S.05B/ NK.I1517.0B9)	6B.H14N2.032
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black ALA-Spanish Black, power icon, 3-numeric, Media key(NK.I1513.0F4/NK.I151S.059/ NK.I1517.0B7)	6B.H14N2.033
	UPPER CASE ASSY - BLACK W/Keyboard SV5T_A72B SV5T Internal 15 Standard 104KS Black Japanese Black, power icon, 3-numeric, Media key(NK.I1513.0FR)	6B.H14N2.034
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International Black, power icon, 3- numeric, Media key(NK.I1513.0F2/NK.I151S.055/ NK.I1517.0B3)	6B.H58N2.001
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Greek Black, power icon, 3-numeric, Media key(NK.I1513.0EW/NK.I151S.04Z/NK.I1517.0BV)	6B.H58N2.002
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Arabic Black, power icon, 3-numeric, Media key(NK.I1513.0EU/NK.I151S.04X/NK.I1517.0AX)	6B.H58N2.003
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Traditional Chinese Black, power icon, 3- numeric, Media key(NK.I1513.0EV/NK.I151S.04Y/ NK.I1517.0BU)	6B.H58N2.004

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Russian Black, power icon, 3-numeric, Media key(NK.I1513.0EY/NK.I151S.051/ NK.I1517.0AZ)	6B.H58N2.005
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Hebrew Black, power icon, 3-numeric, Media key(NK.I1513.0F3/ NK.I151S.056/NK.I1517.0B4)	6B.H58N2.006
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Thailand Black, power icon, 3-numeric, Media key(NK.I1513.0F1/NK.I151S.054/ NK.I1517.0B2)	6B.H58N2.007
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Korean Black, power icon, 3-numeric, Media key(NK.I1513.0EX/NK.I151S.050/NK.I1517.0AY)	6B.H58N2.008
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Ukrainian Black, power icon, 3-numeric, Media key(NK.I1513.0EZ/NK.I151S.052/ NK.I1517.0B0)	6B.H58N2.009
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Persian Black, power icon, 3-numeric, Media key(NK.I1513.0F0/NK.I151S.053/ NK.I1517.0B1)	6B.H58N2.010
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Canadian French Black, power icon, 3-numeric, Media key(NK.I1513.0GU/ NK.I151S.057/NK.I1517.0AR)	6B.H58N2.011
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Bulgaria Black, power icon, 3-numeric, Media key(NK.I1513.0GV/ NK.I151S.058/NK.I1517.0AS)	6B.H58N2.012
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black UK Black, power icon, 3-numeric, Media key(NK.I1513.0FP/NK.I151S.05U/NK.I1517.0BS)	6B.H58N2.013

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black German Black, power icon, 3-numeric, Media key(NK.I1513.0FC/NK.I151S.05H/ NK.I1517.0BF)	6B.H58N2.014
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Swiss/G Black, power icon, 3-numeric, Media key(NK.I1513.0FM/NK.I151S.05S/ NK.I1517.0BQ)	6B.H58N2.015
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Belgium Black, power icon, 3-numeric, Media key(NK.I1513.0F5/NK.I151S.05A/ NK.I1517.0B8)	6B.H58N2.016
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Danish Black, power icon, 3-numeric, Media key(NK.I1513.0F9/NK.I151S.05E/NK.I1517.0BC)	6B.H58N2.017
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Italian Black, power icon, 3-numeric, Media key(NK.I1513.0FE/NK.I151S.05K/NK.I1517.0BH)	6B.H58N2.018
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black French Black, power icon, 3-numeric, Media key(NK.I1513.0FB/NK.I151S.05G/NK.I1517.0BE)	6B.H58N2.019
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Hungarian Black, power icon, 3-numeric, Media key(NK.I1513.0FD/NK.I151S.05J/ NK.I1517.0BG)	6B.H58N2.020
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Norwegian Black, power icon, 3-numeric, Media key(NK.I1513.0FG/NK.I151S.05M/ NK.I1517.0BK)	6B.H58N2.021
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Portuguese Black, power icon, 3-numeric, Media key(NK.I1513.0FH/NK.I151S.05N/ NK.I1517.0BL)	6B.H58N2.022
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Spanish Black, power icon, 3-numeric, Media key(NK.I1513.0FK/NK.I151S.05Q/ NK.I1517.0BN)	6B.H58N2.023

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black US w/ Canadian French Black, power icon, 3-numeric, Media key(NK.I1513.0FQ/ NK.I151S.05V/NK.I1517.0BT)	6B.H58N2.024
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Turkish Black, power icon, 3-numeric, Media key(NK.I1513.0FN/NK.I151S.05T/NK.I1517.0BR)	6B.H58N2.025
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Sweden Black, power icon, 3-numeric, Media key(NK.I1513.0FL/NK.I151S.05R/ NK.I1517.0BP)	6B.H58N2.026
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black FR/Arabic Black, power icon, 3-numeric, Media key(NK.I1513.0FA/NK.I151S.05F/ NK.I1517.0BD)	6B.H58N2.027
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Nordic Black, power icon, 3-numeric, Media key(NK.I1513.0FF/NK.I151S.05L/NK.I1517.0BJ)	6B.H58N2.028
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black SLO/CRO Black, power icon, 3-numeric, Media key(NK.I1513.0FJ/NK.I151S.05P/ NK.I1517.0BM)	6B.H58N2.029
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black CZ/SK Black, power icon, 3-numeric, Media key(NK.I1513.0F8/NK.I151S.05D/NK.I1517.0BB)	6B.H58N2.030
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Bulgaria Black, power icon, 3-numeric, Media key(NK.I1513.0F7/NK.I151S.05C/ NK.I1517.0BA)	6B.H58N2.031
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Brazilian Portuguese Black, power icon, 3- numeric, Media key(NK.I1513.0F6/NK.I151S.05B/ NK.I1517.0B9)	6B.H58N2.032
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black ALA-Spanish Black, power icon, 3-numeric, Media key(NK.I1513.0F4/NK.I151S.059/ NK.I1517.0B7)	6B.H58N2.033

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - RED W/Keyboard SV5T_A72B SV5T Internal 15 Standard 104KS Black Japanese Black, power icon, 3-numeric, Media key(NK.I1513.0FR)	6B.H58N2.034
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International Black, power icon, 3- numeric, Media key(NK.I1513.0F2/NK.I151S.055/ NK.I1517.0B3)	6B.H5HN2.001
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Greek Black, power icon, 3-numeric, Media key(NK.I1513.0EW/NK.I151S.04Z/NK.I1517.0BV)	6B.H5HN2.002
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Arabic Black, power icon, 3-numeric, Media key(NK.I1513.0EU/NK.I151S.04X/NK.I1517.0AX)	6B.H5HN2.003
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Traditional Chinese Black, power icon, 3- numeric, Media key(NK.I1513.0EV/NK.I151S.04Y/ NK.I1517.0BU)	6B.H5HN2.004
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Russian Black, power icon, 3-numeric, Media key(NK.I1513.0EY/NK.I151S.051/ NK.I1517.0AZ)	6B.H5HN2.005
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Hebrew Black, power icon, 3-numeric, Media key(NK.I1513.0F3/ NK.I151S.056/NK.I1517.0B4)	6B.H5HN2.006
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Thailand Black, power icon, 3-numeric, Media key(NK.I1513.0F1/NK.I151S.054/ NK.I1517.0B2)	6B.H5HN2.007
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Korean Black, power icon, 3-numeric, Media key(NK.I1513.0EX/NK.I151S.050/NK.I1517.0AY)	6B.H5HN2.008
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Ukrainian Black, power icon, 3-numeric, Media key(NK.I1513.0EZ/NK.I151S.052/ NK.I1517.0B0)	6B.H5HN2.009

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black Persian Black, power icon, 3-numeric, Media key(NK.I1513.0F0/NK.I151S.053/ NK.I1517.0B1)	6B.H5HN2.010
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Canadian French Black, power icon, 3-numeric, Media key(NK.I1513.0GU/ NK.I151S.057/NK.I1517.0AR)	6B.H5HN2.011
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 100KS Black US International w/ Bulgaria Black, power icon, 3-numeric, Media key(NK.I1513.0GV/ NK.I151S.058/NK.I1517.0AS)	6B.H5HN2.012
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black UK Black, power icon, 3-numeric, Media key(NK.I1513.0FP/NK.I151S.05U/NK.I1517.0BS)	6B.H5HN2.013
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black German Black, power icon, 3-numeric, Media key(NK.I1513.0FC/NK.I151S.05H/ NK.I1517.0BF)	6B.H5HN2.014
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Swiss/G Black, power icon, 3-numeric, Media key(NK.I1513.0FM/NK.I151S.05S/ NK.I1517.0BQ)	6B.H5HN2.015
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Belgium Black, power icon, 3-numeric, Media key(NK.I1513.0F5/NK.I151S.05A/ NK.I1517.0B8)	6B.H5HN2.016
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Danish Black, power icon, 3-numeric, Media key(NK.I1513.0F9/NK.I151S.05E/NK.I1517.0BC)	6B.H5HN2.017
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Italian Black, power icon, 3-numeric, Media key(NK.I1513.0FE/NK.I151S.05K/NK.I1517.0BH)	6B.H5HN2.018
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black French Black, power icon, 3-numeric, Media key(NK.I1513.0FB/NK.I151S.05G/NK.I1517.0BE)	6B.H5HN2.019

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Hungarian Black, power icon, 3-numeric, Media key(NK.I1513.0FD/NK.I151S.05J/ NK.I1517.0BG)	6B.H5HN2.020
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Norwegian Black, power icon, 3-numeric, Media key(NK.I1513.0FG/NK.I151S.05M/ NK.I1517.0BK)	6B.H5HN2.021
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Portuguese Black, power icon, 3-numeric, Media key(NK.I1513.0FH/NK.I151S.05N/ NK.I1517.0BL)	6B.H5HN2.022
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Spanish Black, power icon, 3-numeric, Media key(NK.I1513.0FK/NK.I151S.05Q/ NK.I1517.0BN)	6B.H5HN2.023
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black US w/ Canadian French Black, power icon, 3-numeric, Media key(NK.I1513.0FQ/ NK.I151S.05V/NK.I1517.0BT)	6B.H5HN2.024
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Turkish Black, power icon, 3-numeric, Media key(NK.I1513.0FN/NK.I151S.05T/NK.I1517.0BR)	6B.H5HN2.025
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Sweden Black, power icon, 3-numeric, Media key(NK.I1513.0FL/NK.I151S.05R/ NK.I1517.0BP)	6B.H5HN2.026
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black FR/Arabic Black, power icon, 3-numeric, Media key(NK.I1513.0FA/NK.I151S.05F/ NK.I1517.0BD)	6B.H5HN2.027
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Nordic Black, power icon, 3-numeric, Media key(NK.I1513.0FF/NK.I151S.05L/NK.I1517.0BJ)	6B.H5HN2.028

CATEGORY	Acer Description	Acer PN
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black SLO/CRO Black, power icon, 3-numeric, Media key(NK.I1513.0FJ/NK.I151S.05P/ NK.I1517.0BM)	6B.H5HN2.029
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black CZ/SK Black, power icon, 3-numeric, Media key(NK.I1513.0F8/NK.I151S.05D/NK.I1517.0BB)	6B.H5HN2.030
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Bulgaria Black, power icon, 3-numeric, Media key(NK.I1513.0F7/NK.I151S.05C/ NK.I1517.0BA)	6B.H5HN2.031
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black Brazilian Portuguese Black, power icon, 3- numeric, Media key(NK.I1513.0F6/NK.I151S.05B/ NK.I1517.0B9)	6B.H5HN2.032
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 101KS Black ALA-Spanish Black, power icon, 3-numeric, Media key(NK.I1513.0F4/NK.I151S.059/ NK.I1517.0B7)	6B.H5HN2.033
	UPPER CASE ASSY - SILVER W/Keyboard SV5T_A72B SV5T Internal 15 Standard 104KS Black Japanese Black, power icon, 3-numeric, Media key(NK.I1513.0FR)	6B.H5HN2.034
MAINBOARD		
	Mainboard A515-52 Intel i3-8145U UMA LF	NB.H1611.001
	Mainboard A515-52 Intel i5-8265U UMA LF	NB.H1611.002
	Mainboard A515-52 Intel i7-8565U UMA LF	NB.H1611.003
	Mainboard A515-52G Intel i3-8145U N16SGTRS_MX130 2G LF	NB.H1411.001
	Mainboard A515-52G Intel i5-8265U N16SGTRS_MX130 2G LF	NB.H1411.002
	Mainboard A515-52G Intel i7-8565U N16SGTRS_MX130 2G LF	NB.H1411.003
	Mainboard A515-52G Intel i3-8145U N17SG1 2G LF	NB.H1511.001
	Mainboard A515-52G Intel i5-8265U N17SG1 2G LF	NB.H1511.002

CATEGORY	Acer Description	Acer PN
 	Mainboard A515-52G Intel i7-8565U N17SG1 2G LF	NB.H1511.003
	Mainboard A515-52G Intel i3-8145U N16SGTRS_MX130 2G LF V6 VRAM	NB.H1411.004
	Mainboard A515-52G Intel i5-8265U N16SGTRS_MX130 2G LF V6 VRAM	NB.H1411.005
	Mainboard A515-52G Intel i7-8565U N16SGTRS_MX130 2G LF V6 VRAM	NB.H1411.006
POINT DEVICE		
	TOUCH PAD ASSY BLACK-ELANTECH	56.H14N2.001
	TOUCH PAD ASSY BLACK-SYNAPTICS	56.H14N2.002
	TOUCH PAD ASSY RED-ELANTECH	56.H58N2.001
	TOUCH PAD ASSY RED-SYNAPTICS	56.H58N2.002
	TOUCH PAD ASSY SILVER-ELANTECH	56.H5HN2.001
	TOUCH PAD ASSY SILVER-SYNAPTICS	56.H5HN2.002
SPEAKER		
	SPEAKER L+R	23.H14N2.002
MISCELLANEOUS		
	TOUCHPAD CONDUCTIVE TAPE	47.H14N2.002
	MIC RUBBER	47.H14N2.003
	LCD PANEL ADHESIVE	47.H14N2.004

Screw List

CATEGORY	Acer Description	Acer PN
SCREWS		
	SCREW 2D 3L K 4.5D ZK NL CR3 0.4T	86.GCHN2.009
	SCREW 2D 4.0L K 4.6D NI NL	86.VCBN2.002
	SCREW 2.5D 6L K 4.6D ZK NL	86.GD0N2.007
	SCREW 3.0D 3.0L K 4.9D NI	86.MXRN2.008
	SCREW 2.0D 2.5L K 5D 0.5T NI NL	86.H14N2.001
	SCREW 2.5D 2.5L K 8D 0.6T ZK NL	86.H14N2.002
	SCREW 2.5D 5.0L K 4.6D NI NL	86.H14N2.003

Test Compatible Components

Test Compatible Components	7-2
Microsoft® Windows® 10 Environment Test	7-2
Aspire A515-52/A515-52G	7-2

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® 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 Aspire A515-52/A515-52G Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft® Windows® 10 Environment Test

Aspire A515-52/A515-52G

Table 7-1. Aspire A515-52/A515-52G

Vendor	Type	Description	Part No.
A COVER			
10423762 PRIMETEK	Obsidian Black 15 AL ANO	PRIMETEK A cover Obsidian Black 15 AL ANO	NC.21011.0LP
ADAPTER			
60035715 DELTA- SINGAPORE	65W_5.5phy	Adapter DELTA 65W 19V 1.7x5.5x11 ADP-65VH FA LF Black with acer logo	KP.06501.010
60036752 LITE-ON SINGAPORE	65W_5.5phy	Adapter LITE-ON 65W_5.5phy 19V 1.7x5.5x11 PA-1650-86AL LF Black with acer logo	KP.06503.017
60016453 CHICONY POWER	65W_5.5phy	Adapter Chicony Power 65W_5.5phy 19V 1.7x5.5x11 A065R078L LF Black with acer logo	KP.0650H.012
AUDIO CODEC			
10000981 MISC	Non-AVAP Audio Codec	Non-AVAP Audio Codec WW	NC.21011.00V
B COVER			
10001012 COMPAL	Obsidian Black 15 PC+ABS Texture w/ Camera	Compal B cover Obsidian Black 15 PC+ABS Texture w/ Camera	NC.21011.0DZ
BATTERY			
60002162 SIMPLO	4CELL3.22	Battery SIMPLO AC14B Prismatic 4S1P SAMSUNG 4 cell 3320mAh Main COMMON w/ LEM+ship mode	KT.00407.006

Vendor	Type	Description	Part No.
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
60032811 LGC	4CELL3.22	Battery LGC AC14B (5.5mm) Prismatic 4S1P LGC 4 cell 3220mAh Main COMMON w/ LEM+ship mode	KT.0040G.011
C COVER			
10001012 COMPAL	Obsidian Black 15 PC+ABS Texture	Compal C cover Obsidian Black 15 PC+ABS Texture	NC.21011.0JP
CAMERA			
10001044 CHICONY	HD_Mic2_Unif ied	Camera CHICONY HD Camera CH_HM1061_SPA2087_AOET_ZTS6 031M Unified2 (add Mic*2)	KS.0HD06.011
10256402 CHICONY	HD_Mic2_Unif ied	Camera CHICONY HD Camera HD Camera CH_OV9734_RTS5846N_AOET_SPK 0493 Unified2 (add Mic*2)	KS.0HD06.012
10174742 TECH- FRONT(CQ)	HD_Mic2_Unif ied	Camera Tech-Front HD Camera TF_OV9728_RTS5838H_AOET_ZTS 6031M Unified2 (add Mic*2)	KS.0HD0Q.003
10174742 TECH- FRONT(CQ)	HD_Mic2_Unif ied	Camera Tech-Front HD Camera HD Camera TF_OV9734_SP2087L2_AOET_KMM 4030 Unified2 (add Mic*2)	KS.0HD0Q.004
CARD READER			
10000981 MISC	Non AVAP SD card reader	Non AVAP SD card reader	NC.21511.003
CPU			
10001067 INTEL	Ci38145U	CPU(BGA) Intel Core i3 i3-8145U BGA Whiskey Lake	KC.81401.U50
10001067 INTEL	Ci58265U	CPU(BGA) Intel Core i5 i5-8265U BGA W0 Whiskey Lake Whiskey Lake-U	KC.82001.U65
10001067 INTEL	Ci78565U	CPU(BGA) Intel Core i7 i7-8565U BGA W0 Whiskey Lake Whiskey Lake-U	KC.85001.U65
D COVER			
10001012 COMPAL	Obsidian Black 15 PC+ABS Texture	Compal D cover Obsidian Black 15 PC+ABS Texture	NC.21011.0E1

Vendor	Type	Description	Part No.
HDD			
60033000 KINGSTON	F80128S3	Flash Disk KINGSTON SSD NAND 128GB RBU-SNS8180DS3/128GJ LF+HF	KN.12807.028
60058983 SANDISK	F80128S3	Flash Disk SANDISK SSD NAND 128GB Sandisk BiCS3 64L 3DTLC X600 SD9SN8W-128G-1014 LF+HF	KN.1280D.008
60002045 SK HYNIX	F80128S3	Flash Disk HYNIX SSD NAND 128GB HFS128G39TND-N210A LF+HF	KN.1280G.003
60058983 SANDISK	F80256S3	Flash Disk SANDISK SSD NAND 256GB Sandisk BiCS3 64L 3DTLC X600 SD9SN8W-256G-1014 LF+HF	KN.2560D.009
60001922 TOSHIBA DIGI	N1000GB5.4K S71D	HDD TOSHIBA 2.5" 5400rpm 1000GB MQ04ABF100 , 1TB/P, acer code SATA III 128MB LF+HF F/W:JU001J	KH.01K04.016
60001994 WD	N1000GB5.4K S71D	HDD WD 2.5" 5400rpm 1000GB WD10SPZX-21Z10T0 , 7mmzh 1D , 1TB/P , MN1000S SATA III 128MB LF F/W: 02.01A02	KH.01K08.035
60001922 TOSHIBA DIGI	N500GB5.4KS _4K	HDD TOSHIBA 2.5" 5400rpm 500GB Aquarius-B,MQ01ABF050,500G/P, 7mmzh SATA III 8MB LF+HF F/ W:AM002J	KH.50004.015
60001994 WD	N500GB5.4KS _4K	HDD WD 2.5" 5400rpm 500GB WD5000LPCX-21VHAT0, MN500S-2, 7mmzh HDD, 500G/P SATA III 16MB LF F/W:01.01A01	KH.50008.050
SECONDARY HDD			
60001922 TOSHIBA DIGI	N1000GB5.4K S71D	HDD TOSHIBA 2.5" 5400rpm 1000GB MQ04ABF100 , 1TB/P, acer code SATA III 128MB LF+HF F/W:JU001J	KH.01K04.016
60001994 WD	N1000GB5.4K S71D	HDD WD 2.5" 5400rpm 1000GB WD10SPZX-21Z10T0 , 7mmzh 1D , 1TB/P , MN1000S SATA III 128MB LF F/W: 02.01A02	KH.01K08.035
60001922 TOSHIBA DIGI	N500GB5.4KS _4K	HDD TOSHIBA 2.5" 5400rpm 500GB Aquarius-B,MQ01ABF050,500G/P, 7mmzh SATA III 8MB LF+HF F/ W:AM002J	KH.50004.015
60001994 WD	N500GB5.4KS _4K	HDD WD 2.5" 5400rpm 500GB WD5000LPCX-21VHAT0, MN500S-2, 7mmzh HDD, 500G/P SATA III 16MB LF F/W:01.01A01	KH.50008.050

Vendor	Type	Description	Part No.
KEYBOARD			
10001044 CHICONY	SV5P_A72BWL	Phantom KB CHICONY SV5P_A72BWL SV5P Internal 15 Standard Black White Backlit (Z 3.6mm) power 3-numeric+Media key	NK.I1513.0DU
10001044 CHICONY	SV5T_A72B	Phantom KB CHICONY SV5T_A72B SV5T Internal 15 Standard Black (Z 3.35mm) power icon 3-numeric+Media key	NK.I1513.0DV
60004864 DARFON	SV5T_A72B	Phantom KB DARFON SV5T_A72B SV5T Internal 15 Standard Black (Z 3.35mm) power icon 3-numeric+Media key	NK.I1517.0AQ
60052236 SUNREX	SV5T_A72B	Phantom KB SUNREX SV5T_A72B SV5T Internal 15 Standard Black (Z 3.35mm) power icon 3-numeric+Media key	NK.I151S.04T
LAN			
PLM00014 ODM	Non AVAP Lan	None AVAP Lan	NA.22411.00B
LCD			
60031663 CMI STSP BRANCH	N15.6FHDSU PILB	LED LCD Panel CMI 15.6"W FHD None Glare N156HCA-EAB LF 250nit 25ms 700:1 (eDP, value IPS, narrow border, 3.2mm max)	KL.1560D.036
60038572 BOE(HK)	N15.6FHDSU PILB	LED LCD Panel BOE 15.6"W FHD None Glare NV156FHM-N48 LF 250nit 30ms 800:1 (eDP,value IPS, narrow border)	KL.1560E.011
60003316 AUO	N15.6FHDSU PLB	LED LCD Panel AUO 15.6"W FHD None Glare B156HTN06.1 LF 220nit 8ms 400:1 (eDP, narrow border, 3.2mm max, value)	KL.15605.050
60038572 BOE(HK)	N15.6FHDSU PLB	LED LCD Panel BOE 15.6"W FHD None Glare NT156FHM-N61 LF 220nit 10ms 500:1 (eDP, narrow border, 3.2mm max, value)	KL.1560E.015
60038572 BOE(HK)	N15.6HDSUP B	LED LCD Panel BOE 15.6"W WXGA None Glare NT156WHM-N44 V8.0 LF 220nit 12ms 400:1 (eDP,3.2mm Max, narrow border)	KL.1560E.014

Vendor	Type	Description	Part No.
MEMORY			
60024207 KINGSTON- FAR EAST	SO16GBIV	Memory KINGSTON SO-DIMM DDRIV 2666 16GB ACR26D4S9D8ME-16 LF+HF 1024*8	KN.16G07.028
60002045 SK HYNIX	SO2GBIV	Memory HYNIX SO-DIMM DDRIV 2400 2GB HMA425S6BJR6N-UH LF+HF 256*16	KN.2GB0G.055
60024207 KINGSTON- FAR EAST	SO4GBIV	Memory KINGSTON SO-DIMM DDRIV 2666 4GB ACR26D4S9S1ME- 4 LF+HF 512*16	KN.4GB07.036
60002045 SK HYNIX	SO4GBIV	Memory HYNIX SO-DIMM DDRIV 2666 4GB HMA851S6CJR6N-VK LF+HF 512*16 1Xnm, AL	KN.4GB0G.049
60024207 KINGSTON- FAR EAST	SO8GBIV	Memory KINGSTON SO-DIMM DDRIV 2666 8GB ACR26D4S9S8ME- 8 LF+HF 1024*8	KN.8GB07.042
60002045 SK HYNIX	SO8GBIV	Memory HYNIX SO-DIMM DDRIV 2666 8GB HMA81GS6CJR8N-VK LF+HF 1024*8 1Xnm, AL	KN.8GB0G.058
NB CHIPSET			
10000981 MISC	none NB Chipset	NB Chipset none NB Chipset without NB Chipset	KI.22600.054
PACKAGING			
60059923 SEN HSIN	2018-Brown Box	2018 Brown Box SY Rev 1.0	NC.25811.0G9
THERMAL			
10510922 CHONGQING CYUNSIANG HIGH-TECH CO.,LTD.	Y18- EA15_1S- WHLU-DIS_01 + Y17- 7070T65-P1	CSI Y18-EA15_1S-WHLU-DIS_01 + Y17-7070T65-P1	NC.26111.01R
10510922 CHONGQING CYUNSIANG HIGH-TECH CO.,LTD.	Y18- EA15_1S- WHLU-UMA- 01 + Y17- 7070T65-P1	CSI Y18-EA15_1S-WHLU-UMA-01 + Y17-7070T65-P1	NC.26111.01Q
TOUCHPAD			
60040547 SYNAPTICS	CP5WIP3M	Synaptics Touchpad CP5WIP3M PTP TM-P3393-001 105x76.7mm PCB (Moisture)	NC.24611.04F

Vendor	Type	Description	Part No.
60040786 ELANTECH	CP5WIP3M	Elantec Touchpad CP5WIP3M PTP SA577C-12A0 105x76.7mm PCB (Moisture)	NC.24611.04G
VGA CHIP			
60001915 NVIDIA	N16SGTRS	VGA Chip nVidia N16S-GTR-S-A2 GM108-670-A2 GB2b-64, 23*23mm, 28nm	KG.SGT0V.005
60001915 NVIDIA	N16SGTRS_M X130	VGA Chip nVidia MX130 Dummy	KG.SGT0V.014
60001915 NVIDIA	N17SG1	VGA Chip nVidia N17S-G1-A1 GP108-650-A1 GB2c-64, 23*23mm, 64 bit	KG.SG10V.001
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038
VRAM			
10000981 MISC	2G-GDDR5 (256*32*2)	VRAM GDDR5 5Gbps 2GB Dummy LF+HF Dummy	KN.2GB00.017
10000981 MISC	2G-GDDR5 (256*32*2) 7Gbps	VRAM GDDR5 2GB 2G-GDDR5 (256*32*2) 7Gbps LF+HF Dummy	KN.2GB00.026
60002045 SK HYNIX	VR8GbGV5	VRAM HYNIX GDDR5 5Gbps 8Gb H5GC8H24MJR-T2C LF+HF 1.35V/ 1.5V	KN.8GB0G.048
60002050 MICRON SG	VR8GbGV6	VRAM MICRON GDDR5 8Gb MT51J256M32HF-70:B LF+HF 7Gbps, Z11G	KN.8GB04.035
60002045 SK HYNIX	VR8GbGV6	VRAM HYNIX GDDR5 8Gb H5GC8H24MJR-R0C LF+HF 7Gbps	KN.8GB0G.050
60002045 SK HYNIX	VR8GbGV6	VRAM HYNIX GDDR5 8Gb H5GC8H24AJR-R0C LF+HF 7Gbps	KN.8GB0G.063
WIFI ANTENNA			
10000105 WNC	Slot antenna	WNC Slot antenna (WiFi Antenna)	NC.23511.00E
WIRELESS LAN			
10000105 WNC	1x1 AC+BT	Wireless LAN Bluetooth 1x1 AC Dummy	KE.11A0N.006
10001067 INTEL	INT9462.NGW G.NV	Wireless LAN Intel 802.11ac Bluetooth FM 9462.NGWG.NV JFP1 Diversity M.2 1X1AC MU-MIMO/80Mhz + BT5 2230	KE.11A0N.012

Vendor	Type	Description	Part No.
10001067 INTEL	INT9560.NGW G.NV	Wireless LAN Intel 802.11ac Bluetooth FM 9560.NGWG.NV JFP2 M.2 2x2AC MU-MIMO/160Mhz + BT5 2230 non- vPro	KE.11A0N.010

Online Support Information

Online Support Information	8-2
Introduction	8-2

Online Support Information

Introduction

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

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

Acer's Website offers convenient and valuable support resources.

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

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

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

Also contained on this website are:

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

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

