

TravelMate P259-M, TravelMate P259-MG

SERVICE GUIDE

Revision History

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

Date	Version	Chapter	Updates
07-18-2016	V 1.00		
08-09-2016	V 1.01	2	p.2-19 - WinFlash Utility, p. 2-22 - DOS Flash Utility, p.2-40 - SLIC Mapping Parameters, p.2-62 - Crisis Disk Recovery
08-17-2016	V 1.02	6	p.6-16 - Screw List
08-23-2016	V 1.03	1	p.1-21 - System Block Diagram

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

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Conventions

The following conventions are used in this manual:

⚠ WARNING:

Indicates a potential for personal injury.

⚠ CAUTION:

Indicates a potential loss of data or damage to equipment.

+ IMPORTANT:

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

The following typographical conventions are used in this document:

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

Example:

the *DR55 User's Guide*

/usr/local/bin/fd

the */TPH15spool_M* program

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

Example:

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

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

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

Example:

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

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

Example:

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

General Information

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

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

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

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Hardware Specifications and Configurations

Features

Below is a summary of the computer's features:

Operating System

- Windows 10 Pro 64-bit

CPU and Chipset

- **Intel® Core™ i7-6500U** processor (4 MB L3 cache, 2.5 GHz with Turbo Boost up to 3.1 GHz, DDR3L 1600 MHz, 15 W), supporting Intel® 64 architecture, Intel® Smart Cache
- **Intel® Core™ i5-6200U** dual-core processor (3 MB L3 cache, 2.3 GHz with Turbo Boost up to 2.8 GHz, DDR3L 1600 MHz, 15W), supporting Intel® 64 architecture, Intel® Smart Cache
- **Intel® Core™ i3-6100U** processor (3 MB L3 cache, 2.3 GHz, DDR3L 1600MHz, 15W), supporting Intel® 64 architecture, Intel® Smart Cache
- **Intel® Celeron® 3855U** processor (2 MB L3 cache, 1.6 GHz, DDR3L 1600MHz, 15W), supporting Intel® 64 architecture, Intel® Smart Cache

System Memory

Two DIMM slots support DDR3L SDRAM:

- Up to 16 GB of DDR3L 1600MHz system memory
- 32 GB maximum memory capacity (using two soDIMM modules)
- Supports dual-channel

Display

- 15.6" Full HD 1920 x 1080 resolution, high-brightness Acer ComfyView™ LED-backlit TFT LCD
 - 16:9 aspect ratio
 - Ultra-slim design
 - Wide viewing angle up to 170 degrees
 - Mercury-free, environment-friendly
- 15.6" Full HD 1366 x 768 resolution, high-brightness Acer ComfyView™ LED-backlit TFT LCD
 - 16:9 aspect ratio
 - Ultra-slim design
 - Wide viewing angle up to 170 degrees

- Mercury-free, environment-friendly

Audio

- Compatible with Cortana with Voice
- Certified for Skype for Business
- Acer TrueHarmony technology for lower distortion, wider frequency range, headphone-like audio and powerful sound
- Two 2W built-in stereo speakers
- Built-in digital microphone

Graphics

TravelMate P259-MG only:

- **nVIDIA® GeForce® 940MX** with 2 GB of dedicated GDDR5 VRAM, supporting NVIDIA® CUDA™, PhysX™, PureVideo® HD technology, HDMI® and Blu-Ray 3D™ support, Hardware Video Decode Acceleration, Microsoft® Direct X® 11.2/12, OpenGL® 4.4, OpenCL™ v1.1
- **nVIDIA® GeForce® 940MX** with 1 GB of dedicated GDDR5 VRAM, supporting NVIDIA® CUDA™, PhysX™, PureVideo® HD technology, HDMI® and Blu-Ray 3D™ support, Hardware Video Decode Acceleration, Microsoft® Direct X® 11.2/12, OpenGL® 4.4, OpenCL™ v1.1

TravelMate P259-M only:

- **Intel® Iris™ Graphics 550**, with 64 MB of eDRAM, supporting OpenGL® 4.4, OpenCL™ 2.0, Microsoft® DirectX® 12
- **Intel® HD Graphics 520**, supporting OpenGL® 4.4, OpenCL™ 2.0, Microsoft® DirectX® 12

Storage

Card reader:

- Supports Secure Digital™ (SD) Card v1.0 / v1.1 / v2.0 / v3.0 UHS-I
- Supports SDHC / SDXC /MSXC
- 32GB maximum capacity (for SDHC only) / 2TB maximum capacity (for SDXC & MSXC only)

Hard disk drive:

- 1st HDD: 500 GB / 1 TB / 2 TB 2.5-inch 5400 RPM
- 1 TB / 500 GB 2.5-inch 5400 RPM self-pinning solid state hybrid hard drive with 8 GB Flash memory

Solid state drive:

- 128 GB / 256 GB, SATA 6 GB/s

Optical Media Drive

8X DVD-Super Multi double-layer drive:

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

Webcam

Video Conferencing:

- HD webcam with:
 - 1280 x 720 resolution
 - 720p HD audio/video recording
 - High dynamic range imaging (HDR)

Wireless and Networking

WLAN:

- Intel® Dual Band Wireless-AC, 802.11 ac/a/b/g/n wireless LAN with Acer Nplify™, featuring 2x2 MIMO technology

WPAN:

- Bluetooth® 4.2

LAN:

- Gigabit Ethernet
- Wake-on-LAN ready

Security

Acer ProShield Security Manager including:

- Facial Recognition Login
- Data Protection: File Encryption & Decryption, Personal Secure Drive
- Data Remover: File Shredder
- Trusted Platform Module (TPM) solution
- BIOS user, supervisor, HDD passwords
- Kensington lock slot

Dimension and Weight

- Dimensions:
 - 381.6 (W) x 259 (D) x 23.9/30.2 (H) mm (15.02 x 10.2 x 0.94/1.19 inches)
- Weight:
 - 2.23 kg (4.92 lbs.) with 4-cell battery pack

- 2.39 kg (5.27 lbs.) with 6-cell battery pack

Power Adapter and Battery

Power adapter

- 3-pin 45 W AC adapter (TravelMate P259-M only):
 - 95 (W) x 38 (D) x 25.4 (H) mm (3.74 x 1.50 x 1.00 inches)
 - 150 g with 150 cm DC cable
- 3-pin 65 W AC adapter:
 - 95 (W) x 51 (D) x 25.4 (H) mm (3.74 x 2.00 x 1.00 inches)
 - 270 g with 180 cm DC cable
 - 108.0 (W) x 45.5 (D) x 30.5 (H) mm (4.25 x 1.79 x 1.20 inches)
 - 250 g with 150 cm DC cable

Battery

- 4-cell Li-ion battery pack (for models with HD Panel + HDD):
 - 41.4 Wh, 2800 mAh, 14.8 V
 - Up to 8 hours (based on MobileMark® 2014 test results)
 - Up to 4.5 hours (based on video playback test results)
 - Up to 7 hours (based on web browsing test results)
- 6-cell Li-ion battery pack (for models with HD Panel + HDD, TravelMate P259-MG only):
 - 62.2 Wh, 2800 mAh, 11.1 V
 - Up to 12 hours (based on MobileMark® 2014 test results)
 - Up to 4.5 hours (based on video playback test results)
 - Up to 12 hours (based on web browsing test results)

Input and Control

Keyboard

- 103-/104-/107-key Acer FineTip backlit keyboard with independent standard numeric keypad, international language support, power button
- 103-/104-/107-key Acer FineTip keyboard with independent standard numeric keypad, international language support, power button

TouchPad

- Multi-gesture touchpad, supporting two-finger scroll and pinch; gestures to open Cortana, Action Center, multitasking; application commands
 - Windows Hello Certification
 - Microsoft Precision Touchpad certification
- Multi-gesture touchpad, supporting two-finger scroll and pinch; gestures to open Cortana, Action Center, multitasking; application commands
 - Microsoft Precision Touchpad certification

Input and Output (I/O) Ports

- SD™ Card reader
- HDMI® port with HDCP support
- USB type-C™ port: USB 3.1 Gen 1 (up to 5Gbps)
- Ethernet (RJ-45) port
- External display (VGA) port
- 3.5mm headphone/speaker jack, supporting headsets with built-in microphone
- DC-in jack for AC adapter
- Two USB 3.0 ports (one with power-off USB charging feature)
- One USB 2.0 port

Environment

- Temperature:
 - Operating: 5 °C to 35 °C
 - Non-operating: -20 °C to 65 °C
- Humidity (non-condensing):
 - Operating: 20% to 80%
 - Non-operating: 20% to 80%

Windows Desktop Apps

In-House

- Acer Control Center
- Acer Portal
- abFiles
- Accessory Store
- Quick Access

Lifestyle

- Agoda
- Booking.com
- Yandex web link

Others

- Cyberlink®PowerDVD™

Productivity

- Office 2016

Search

- Firefox

Security

- Acer ProShield

- McAfee® Internet Security

Tools

- App Explorer
- Dashlane

Options and Accessories

- 3-pin 90 W AC adapter (TravelMate P259-MG only)
- 3-pin 65 W AC adapter
- 3-pin 45 W AC adapter (TravelMate P259-M only)

Warranty

- One-year International Travelers Warranty (ITW)

Notebook Tour



Figure 1-1. Opened Front View

Table 1-1. Opened Front View



#	Icon	Item	Description
1		Integrated webcam	Web camera for video communication.
2		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output (configuration may vary by model), and supports multi-touch functionality (for touchscreen model only).
3		Power button	Turns the computer on and off, and lights to show computer functions and states.
4		Keyboard	For entering data into your computer.
5		Microphone	Internal microphone for sound recording.
6		TouchPad	Touch-sensitive pointing device which functions like a computer mouse.





Figure 1-2. Closed Front View

Table 1-2. Closed FrontView

#	Icon	Item	Description
1		Card Reader	Accepts SD cards. Note: Push to remove/install the card. Only one card can operate at any given time.
2		LED Indicator	The indicators show the current computer status in different colors as described below.

Indicators

The system has several easy-to-read status indicators.

Icon	Function	Description & Behavior
	Power	Indicates the computer's power status. <ul style="list-style-type: none"> • Blue On: The power is on or the system is entering the hibernation mode. • Breeze Orange (1 sec on / 3 sec off): The system is in the stand-by mode. • N/A: The power is off or the system is in the hibernation mode.
	Battery	Indicates the computer's battery status. <ul style="list-style-type: none"> • Blue On: The battery is fully charged (with AC power connected). • Orange On: The battery is charging. • Breeze Orange (1 sec on / 3 sec off): The battery is at a low level. • Blinking Orange (1 sec on / 1 sec off): The battery is at a critical level (less than 3%) or in an abnormal situation. • N/A: Normal condition, the system is running on a battery.

Icon	Function	Description & Behavior
	Power button backlight	Blue On: System on Blue Off: System off
	ODD activity	ODD active: Green or Orange (depending on ODD module)
	Communication state	Wifi On: Blue or Orange Bluetooth: no LED indicator

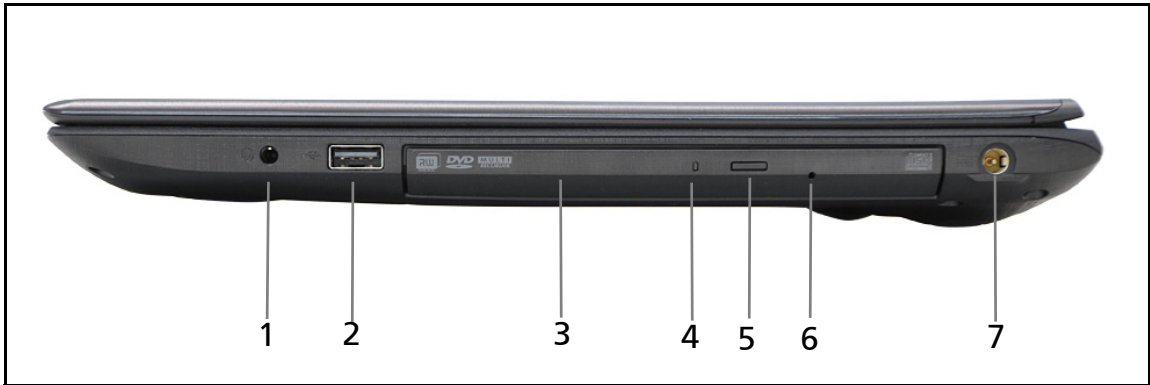





Figure 1-3. Right View

Table 1-3. Right View

#	Icon	Item	Description
1		Headphone/ Microphone jack	Connects to audio line-out devices and accepts input from external microphone (3.5 mm Standard TRRS / OMTP TRRS Type)
2		USB 2.0 port	Connects to USB 2.0 devices (e.g., USB mouse, USB camera)
3		Optical drive	Internal optical drive; accepts CDs, or DVDs.
4		Optical disk access indicator	Lights up when the optical drive is active.
5		Optical drive eject button	Ejects the optical disk from the drive.
6		Emergency eject hole	Ejects the optical drive tray when the computer is turned off. Note: Insert a paper clip to the emergency eject hole to eject the optical drive tray when the computer is off.
7		DC-in jack	Connects to an AC adapter.

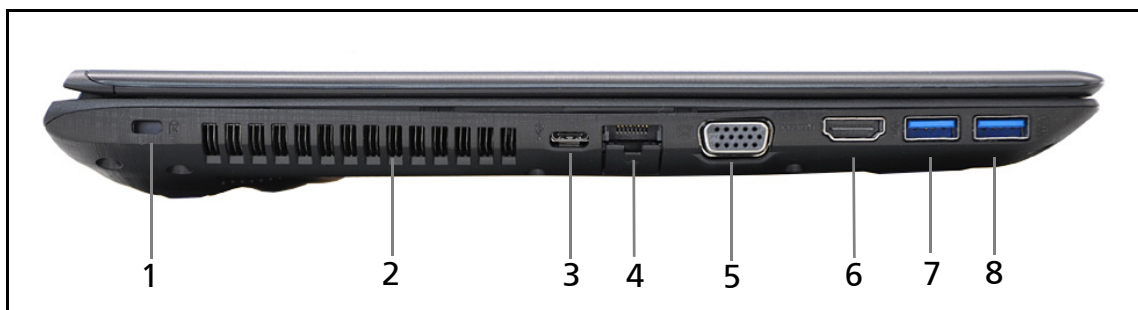


Figure 1-4. Left View

Table 1-4. Left View

#	Icon	Item	Description
1		Kensington lock slot 	Connects to a Kensington-compatible computer security lock. Note: Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.
2		Ventilation slot	Enable the computer to stay cool, even after prolonged use. Note: Do not cover or obstruct the opening of the fan.
3		USB Type-C port	Connects to USB 3.1 devices.
4		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000 based network.
5		External display (VGA) port	Connects to a display device (e.g., external monitor, LCD projector).
6	HDMI	HDMI port	Supports high-definition digital video connections.
7		USB 3.0 port	Connects to USB 3.0 devices (e.g., USB mouse, USB camera)
8		USB 3.0 port with power-off USB charging feature	Connects to USB devices (e.g., USB mouse, USB camera). Also charges devices when the computer is off.

⇒ NOTE:

When plugging a microphone or combined headset into the audio combo jack, check the below table to make sure the required connector type is correct or the microphone will not work.

Audio Connector Plug Configurations

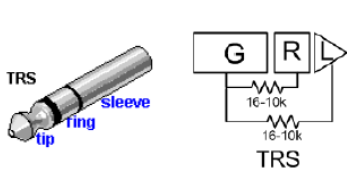
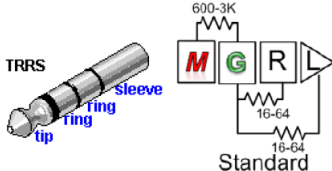
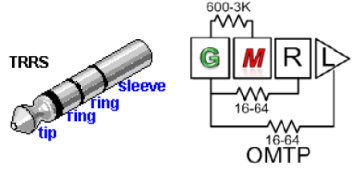
TRS Type (Headphone only)	Standard TRRS Type (Headphone/Mic Combo)	OMTP TRRS Type (Headphone/Mic Combo)
 <p>TRS</p>	 <p>Standard</p>	 <p>OMTP (Nokia, Motorola, SEMC)</p>
Support audio/headphone output only	Support audio/headphone output and microphone input	Support audio/headphone output and microphone input



Figure 1-5. Top View

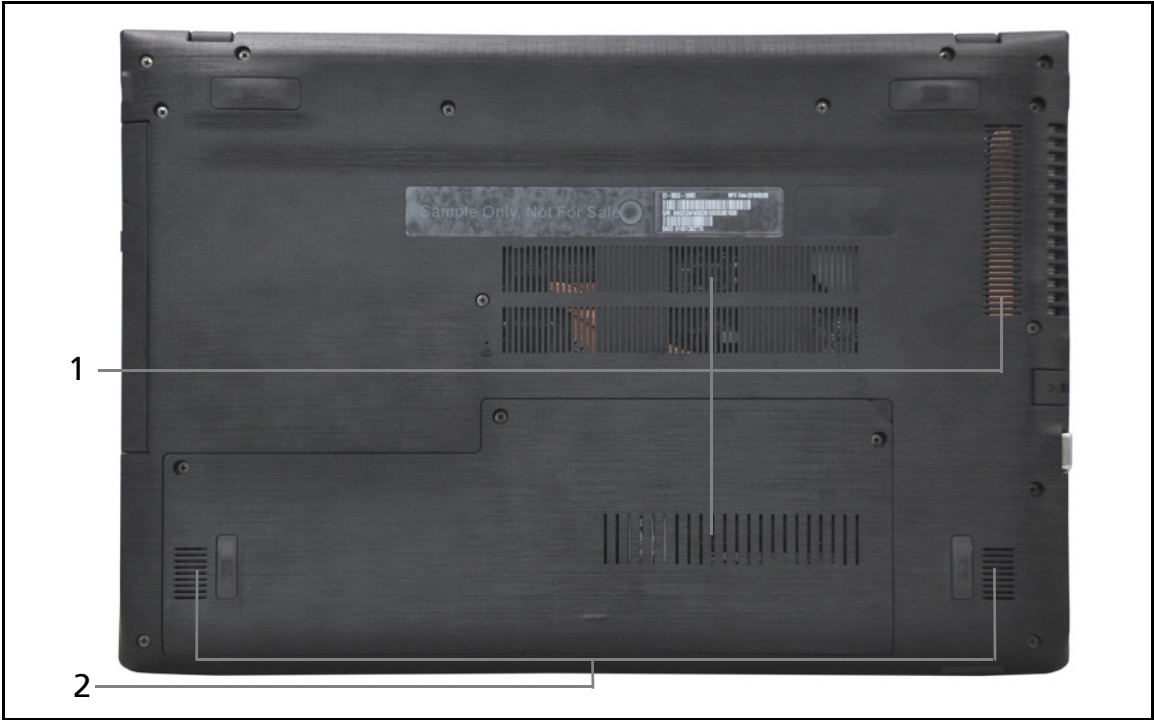


Figure 1-6. Base View

Table 1-5. Base View

#	Icon	Item	Description
1		Ventilation slot and cooling fan	Enable the computer to stay cool, even after prolonged use. Note: Do not cover or obstruct the opening of the fan.
2		Speakers	Emits audio from your computer.

TouchPad Basics

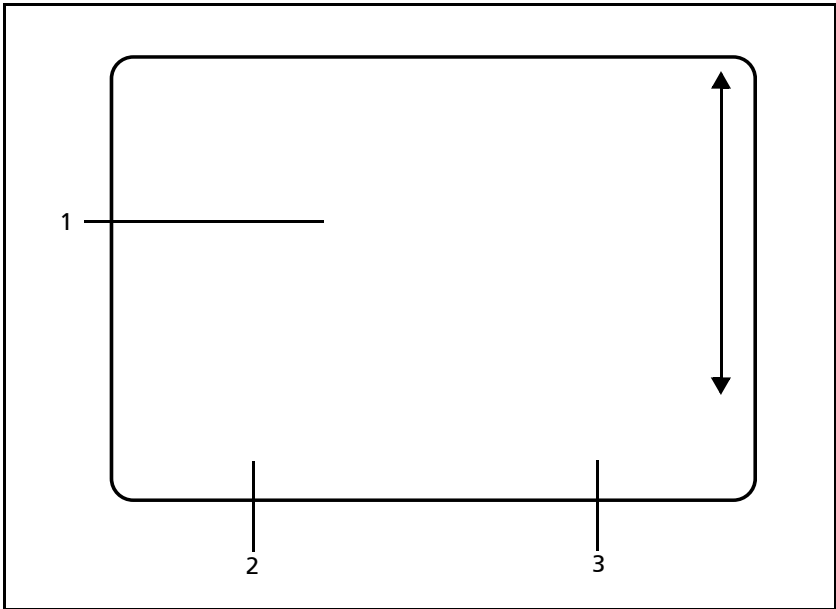


Figure 1-7. TouchPad

- Move your finger across the TouchPad (1) to move the cursor.
- Press the left (2) and right (3) buttons located beneath the TouchPad to perform selection and execution functions. These two buttons are the equivalent of the left and right buttons on a mouse.

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

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

Using the Keyboard

The computer has a close-to-full-sized keyboard and an embedded numeric keypad, separate cursor, windows key, lock, function and special keys.

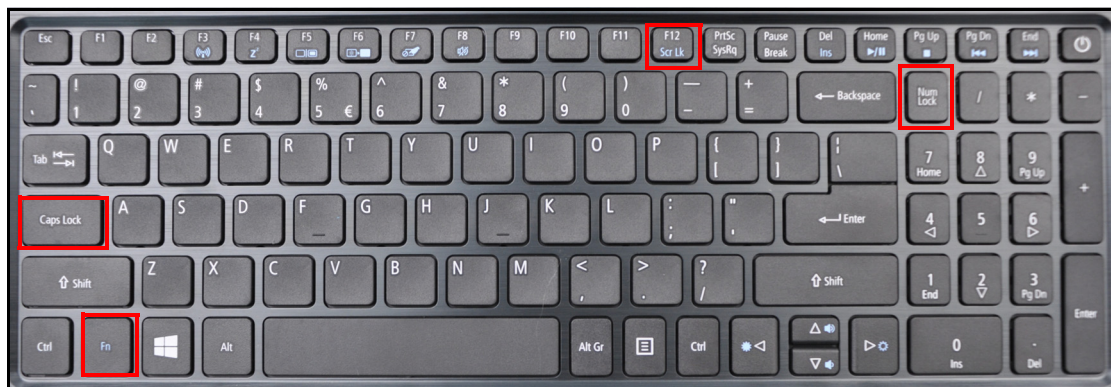


Figure 1-8. Keyboard Lock Keys

Lock Keys

The keyboard has three lock keys which can be toggled on and off.

Lock key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num Lock	<p>When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when doing a lot of numeric data entry.</p> <p>If an external keyboard/keypad is present:</p> <ul style="list-style-type: none">• When On, the system boots with external keyboard/keypad Num Lock status ON. The internal keyboard overlay numeric keys are disabled.• The key can be turned on/off via the internal keyboard <Fn>+<F11>, or the external keyboard/keypad. Num Lock affects the external keyboard/keypad only.• Shift state is not used for the cursor movement by the numeric keys.• The state of the Num Lock is not changed by the attachment/removal (hot plug) of the external keyboard/keypad.
Scroll Lock <Fn> + <F12>	When Scroll Lock is on, the screen moves one line up or down when the up or down arrow keys are pressed respectively. Scroll Lock does not work with some applications.



Embedded Numeric Keypad




















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

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

Windows Keys

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

-  Windows Logo key
-  Application key: This key has the same effect as clicking the right mouse button; it opens the application's context menu

Key	Description
Windows Logo key	<p>Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu. It can also be used with other keys to provide a variety of functions.</p> <p>Functions supported by Windows XP, Windows Vista, Windows 7:</p> <p><  >: Open or close the Start menu</p> <p><  > + <R>: Open the Run dialog box</p> <p><  > + <M>: Minimizes all windows</p> <p><SHIFT> + <  > + M: Undo minimize all windows</p> <p><  > + <F1>: Show the help window</p> <p><  > + <E>: Open Windows Explorer</p> <p><  > + <F>: Search for a file or folder</p> <p><CTRL> + <  > + <F>: Search for computers (if you are on a network)</p> <p><  > + <D>: Show the desktop</p> <p><  > + <L>: Lock your computer (if you are connected to a network domain), or switch users (if you're not connected to a network domain)</p> <p><  > + <TAB>: Cycle through programs on the taskbar</p> <p><CTRL> + <  > + <TAB>: Moves focus from Start menu, to the Quick Launch toolbar, to the system tray (use RIGHT ARROW or LEFT ARROW to move focus to items on the Quick Launch toolbar and the system tray)</p> <p><  > + <BREAK>: Display the System Properties dialog box</p> <p>Functions supported by Windows 8 only:</p> <p><  > + <TAB>: Open Switch List</p> <p><  > + <Enter>: Open Windows Narrator</p> <p><  > + <Q>: Open Global Search</p> <p><  > + <I>: Open Settings Menu</p> <p><  > + <Z>: Show or Hide an app bar</p> <p><  > + <C>: Show or Hide an the charms menu</p>

Hotkeys

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

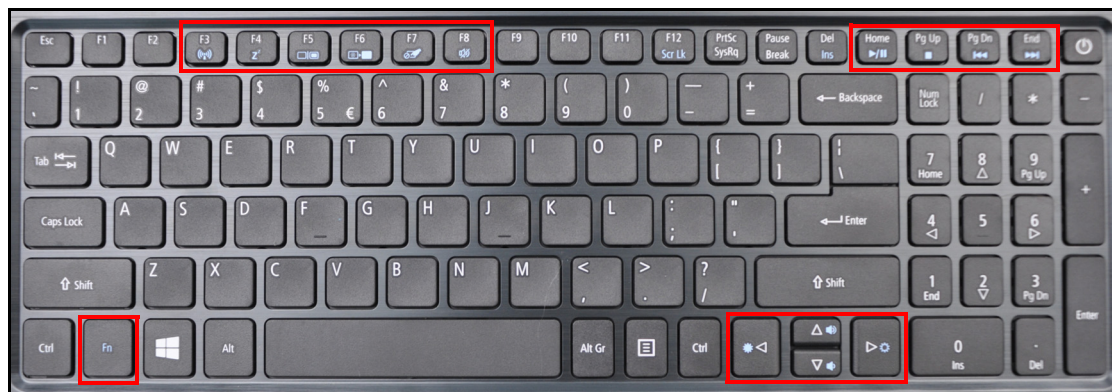
















Figure 1-9. Keyboard Hotkeys

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

Hot key	Icon	Function	Description
<Fn> + <F3>		Communication	Enables/disables the computer's communication devices (WIFI and Bluetooth).
<Fn> + <F4>		Sleep	Puts the computer in Sleep mode.
<Fn> + <F5>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<Fn> + <F6>		Screen blank	Turns the display screen backlight off to save power. Press any key to return.
<Fn> + <F7>		TouchPad toggle	Turns the internal TouchPad on and off.
<Fn> + <F8>		Speaker toggle	Turns the speakers on and off.
<Fn> + <left arrow>		Brightness up	Increases the screen brightness.
<Fn> + <right arrow>		Brightness down	Decreases the screen brightness.
<Fn> + <up arrow>		Volume up	Increases the sound volume.

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

System Block Diagram

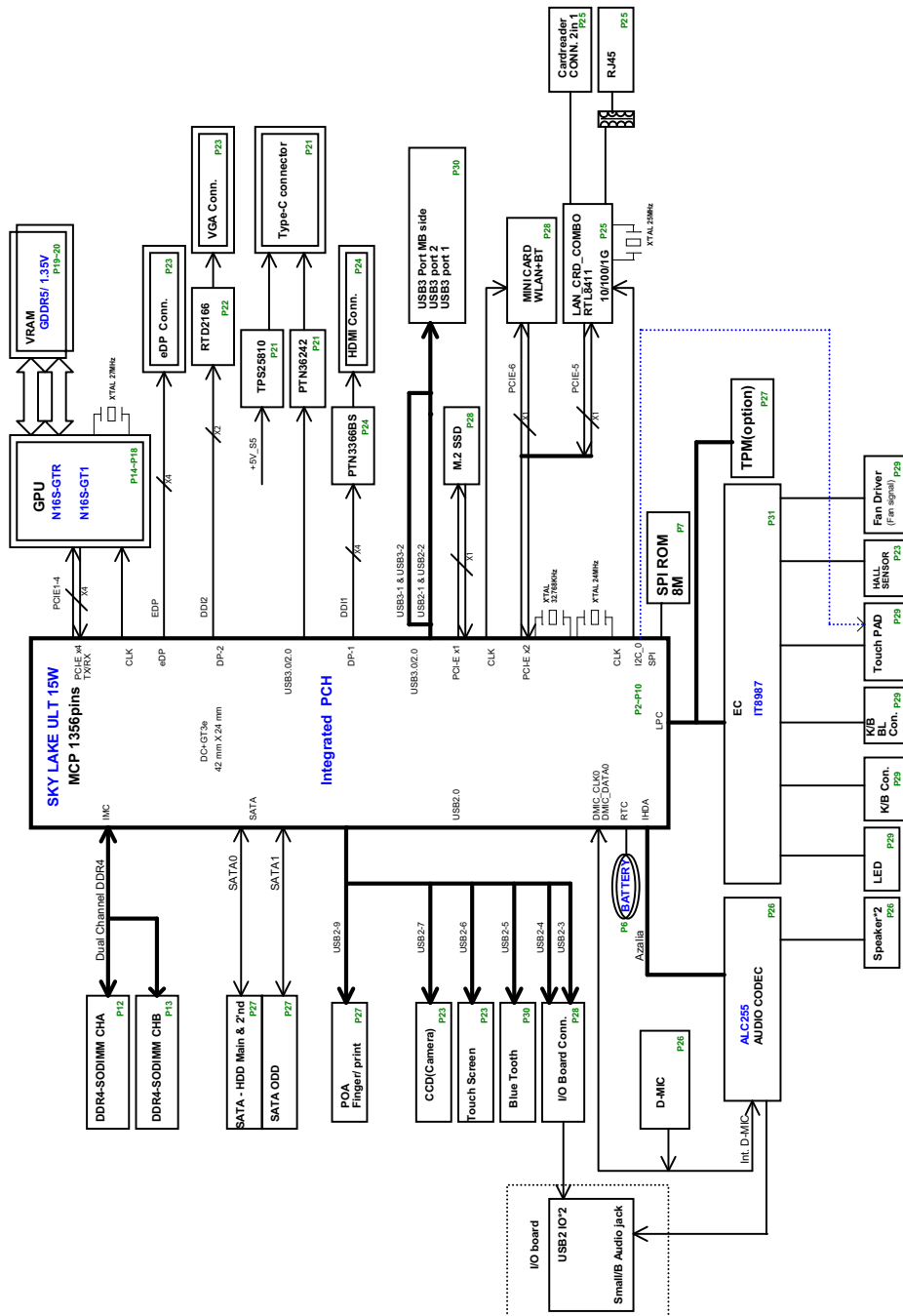


Figure 1-10. System Block Diagram

⇒ **NOTE:**
Supports SATA III (6 Gbps)

Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	259 mm	10.2 in.
Width	381.6 mm	15.02 in.
Height (front to rear)	23.9/30.2 mm	0.94/1.19 in.
Weight (equipped with battery)	2.23 kg (4-cell battery) 2.39 kg (6-cell battery)	4.92 lbs (4-cell battery) 5.27 lbs (6-cell battery)
Input power		
Operating voltage	19V	
Operating current	2.37A (45W); 3.42A (65W); 4.74A (90W)	
Temperature		
Operating	5 °C to 35 °C	41°F to 95°F
Nonoperating	-20°C to 65°C	-4°F to 149°F
Relative humidity		
Operating	20% to 80%	
Nonoperating	20%to 80%	
Maximum altitude (unpressurized)		
Operating	4,500m at 0°C	15,000ft at 32°F
Nonoperating	13,500m at -30°C	45,000ft at -22°F
Shock		
Operating	140 G, 2 ms, half-sine	
Nonoperating	220 G, 2 ms, half-sine	
Random vibration		
Operating	0.6G/5~500HZ/30 min per axis	
Nonoperating	1.5G/5~500HZ/30 min per axis	
⇒ NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.		

System Board Major Chips

Item	Specification
Core logic	Intel® Pentium®, Intel® Celeron®, Intel® Core™ i3-, i5-, and i7-series
VGA	Intel® Iris™ Graphics 550 for UMA (TravelMate P259-M only) Intel® HD Graphics 520 for UMA (TravelMate P259-M only) nVIDIA GeForce 940MX for Discrete (TravelMate P259-MG only)
LAN	RTL8411
USB	USB2.0x1, USB3.0x2 (Embedded in PCH port)
Super I/O controller	Embedded Controller IT8987
Bluetooth	<ul style="list-style-type: none">• Bluetooth 4.0 (with full support for BT 2.1+EDR)• WLAN/Bluetooth Combo Module
Wireless	<ul style="list-style-type: none">• Intel Wireless-AC 7265 (Stone Peak M.2) 802.11 a/b/g/n/ac
PCMCIA	N/A
Audio codec	Realtek ALC255
Card reader	RTL8411 LAN and Card Reader Combo Module
eSata	N/A

Processor

Item	Specification
CPU type	Intel® Skylake, Intel® Kaby Lake
CPU package	BGA1356 (42mm x 24mm x 1.27mm)
Core Logic	Two execution cores: <ul style="list-style-type: none">• A 64-KB (32-KB instruction and 32-KB data) first-level cache (L1) for each core• A 256-KB shared instruction/data second-level cache (L2) for each core• Up to 3-MB shared instruction/data third-level cache (L3), shared among all cores (4-MB shared cache for i7-series processor)
Chipset	Intel® Skylake PCH-LP, Intel® Kaby Lake PCH-LP

Processor Specifications

Item	CPU Speed (GHz)	Cores/Threads	DMI2 (GT/s)	Mfg Tech (nm)	Cache Size	Package	TDP (Watt)
Core i7-6500U	2.5 up to 3.1	2 / 4	8	14	4MB L3	BGA1356	15
Core i5-6200U	2.3 up to 2.8	2 / 4	8	14	3MB L3	BGA1356	15
Core i3-6100U	2.3	2 / 4	8	14	3MB L3	BGA1356	15
Core Celeron 3855U	2.3	2 / 4	TBD	14	3MB L3	BGA1356	15
Core i3-7100U	2.4	2 / 4	TBD	14	3MB L3	BGA1356	15
Core i5-7200U	2.5	2 / 4	TBD	14	3MB L3	BGA1356	15
Core i7-7500U	2.7	2 / 4	TBD	14	4MB L3	BGA1356	15

CPU Fan True Value Table

Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
Fan on = 35°C; Fan Off = 30°C	1500	22
Fan on = 47°C; Fan Off = 40°C	1800	25
Fan on = 55°C; Fan Off = 50°C	2000	28
Fan on = 65°C; Fan Off = 60°C	2400	31
Fan on = 75°C; Fan Off = 70°C	2600	34
Fan on = 85°C; Fan Off = 80°C	2900	37
Fan on = 90°C; Fan Off = 87°C	3200	40
<ul style="list-style-type: none"> Fan full speed: On =98°C (5V); Off=95°C OS Shut down: 100°C H/W Shut down: 100°C 		

GPU Fan True Value Table

Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
Fan on = 35°C; Fan Off = 30°C	1500	22
Fan on = 47°C; Fan Off = 40°C	1800	25
Fan on = 55°C; Fan Off = 50°C	2000	28
Fan on = 65°C; Fan Off = 60°C	2400	31
Fan on = 75°C; Fan Off = 70°C	2600	34

Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
Fan on = 85°C; Fan Off = 80°C	2900	37
Fan on = 90°C; Fan Off = 87°C	3200	40
<ul style="list-style-type: none"> Fan full speed: On =98°C (5V); Off=95°C OS Shut down: 100°C H/W Shut down: 100°C 		

System Memory

Item	Specification
Memory controller	Built-in at CPU
Memory size	DDR4 2133 2 GB (256 MB x 64), 4 GB (512 MB x 64), 8 GB (1 G x 64), and 16 GB (2 G x 64)
DIMM socket number	2 sockets
Supports memory size per socket	2 / 4 / 8 / 16 GB
Supports maximum memory size	32 GB
Supports DIMM type	<ul style="list-style-type: none"> SDRAM memory interface design
Supports DIMM Speed	1600 soDIMM 2133 soDIMM
Support DIMM voltage	1.05 V and 1.2V
Supports DIMM package	Standard JEDEC 260-pin

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	1.08
BIOS ROM type	W25Q64FVSSIQ
BIOS ROM size	16MB Flash Memory
Features	<ul style="list-style-type: none"> Insyde code base boot block non-shadow RAM support uEFI/Legacy

Keyboard

Item	Specification
Type	<ul style="list-style-type: none"> • DARFON LV5T_A51B • DARFON LV5P_A51BWL • DARFON LV5P_A51WWL • CHICONY LV5T_A51B • CHICONY LV5T_A51W • SUNREX LV5T_A51B • SUNREX LV5T_A51W
Total number of keypads	103/104/107 keys
Windows logo key	Win10
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	<ul style="list-style-type: none"> • Phantom key auto detect • Overlay numeric keypad • Support independent pgdn/pgup/home/end keys • Support cursor keys • Factory configurable different languages by OEM customer

USB Port

Item	Specification		
USB compliance level	USB 2.0-compliant	USB 3.0-compliant	Type-C USB-compliant
EHCI	2		
Number of USB port(s)	1	2	1
Location	Right side	Left side	Left side
Output Current	1.05A	2.0A	3.0A

HDMI Port

Item	Specification
Compliance level	HDMI 1.4b
Data throughput (Gbits/sec)	10.2
Number of HDMI port(s)	1
Location	1 left

Video Interface

Item	Specification			
Chipset	Intel HD (TravelMate P259-M only)	Intel Iris (TravelMate P259-M only)	N16S-GT1/N16G- GT (Discrete) (TravelMate P259-MG only)	N16S-GTR (Discrete) (TravelMate P259-MG only)
Package	UMA	UMA	GB4b-128 29x29mm (BGA 908 balls)	GB2b-128 23x23mm (BGA 908 balls) GB4b-128 29x29mm (BGA 908 balls)
Interface	UMA	UMA	PCI-E x4	PCI-E x4
Compatibility	Fully compliant with the electrical specifications of ANSI/TIA/EIA-644	Fully compliant with the electrical specifications of ANSI/TIA/EIA-644	Microsoft® DirectX® 11.2/12, OpenGL® 4.4, OpenCL™ 1.1	Microsoft® Direct X® 11.2/12, OpenGL® 4.4, OpenCL™ v1.1
Sampling rate	300/200 MHz	300/200 MHz	2000 MHz	1800 MHz

Battery

Item	Specification	
Vendor & Model	LGC AS16A PANASONIC AS16A SIMPLO AS16A	LGC AS16B PANASONIC AS16B
Battery Type	Lithium-Ion	
Pack capacity	2700mAh min. 2800mAh typ.	2700mAh min. 2800mAh typ.
Number of battery cell	4 cell	6 cell
Package configuration	4S1P	3S2P

45W AC Adapter (TravelMate P259-M only)

Item	Specification		
Vendor & Model	DELTA ADP-45HE BA DELTA ADP-45HE BD	Chicony Power A045R021L	LITE-ON PA-1450-26AL LITE-ON PA-1450-26AI
Normal Input voltage	100-240 Vac, 50-60 Hz (the adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)		
Input current	1.2 Amps max. at 90 Vac	N/A	1.2 Amps max. at 90 Vac
Inrush current	No damage at 264 Vac; meet fuse and bridge diode I^2t de-rating.	No damage at 264 Vac (Cold/Hot start); meet fuse and bridge diode I^2t de-rating.	<ul style="list-style-type: none"> • Shall be no damage and less than the ratings of its critical components for all conditions of line voltage. • Shall meet 22% fuse and 100% bridge diode I^2t.
Efficiency	<ul style="list-style-type: none"> • More than 87.73% of average efficiency load tested at 115 Vac. • More than 87.73% of average efficiency load tested at 230 Vac. 	<ul style="list-style-type: none"> • Meet DOE requirement. The adapter efficiency shall be more than 87.73%, that is the average value of 25%, 50%, 75% and 100% load with 115Vac/60Hz input voltage condition. • Meet Erp lot 7 requirement. The adapter efficiency shall be more than 86.2%, that is the average value of 25%, 50%, 75% and 100% load with 230Vac/60Hz input voltage condition. 	<ul style="list-style-type: none"> • Meet EPS requirement. • No Load Power Loss shall be less than 0.1 W at 115VAC and 230VAC. • More than 87.8% (average value of 25%, 50%, 75% and 100% load condition with both 115Vac and 230Vac).

65W AC Adapter

Item	Specification		
Vendor & Model	DELTA ADP-65VH FA	Chicony Power A065R078L Chicony Power A065R109L	LITE-ON PA-1650-86 AL
Normal Input voltage	100-240 Vac, 50-60 Hz (the adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)		
Input current	1.5 Amps max. at 100 Vac	1.7 A Max	1.7 Amps max. at 90 Vac
Inrush current	No damage; meet fuse and bridge diode diode P_t de-rating specified.	No damage at 264 Vac (Cold/Hot start); meet fuse and bridge diode P_t de-rating.	Shall be less than the ratings of its critical components for all conditions of line voltage.
Efficiency	<ul style="list-style-type: none"> Minimum 86% at normal input voltage. More than 88% of average efficiency of 25%, 50%, 75% and 100% load tested at 115Vac and 230Vac (warm up after 30 min). 	<ul style="list-style-type: none"> Meets DOE requirement: More than 88% (average value of 25%, 50%, 75% and 100% load with 115Vac/60Hz input voltage condition). Meets Erp lot 7 requirements. More than 87% (average value of 25%, 50%, 75% and 100% load condition with 230Vac). 	<ul style="list-style-type: none"> Meet EPS requirement. No Load Power Loss shall be less than 0.21 W at 115VAC and 230VAC. More than 87% (average value of 25%, 50%, 75% and 100% load condition with both 115Vac and 230Vac).

90W AC Adapter (TravelMate P259-MG only)

Item	Specification	
Vendor & Model	DELTA ADP-90MDHBA	LITE-ON PA-1900-32AW
Normal Input voltage	100-240 Vac, 50-60 Hz (the adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)	
Input current	1.5 Amps max. at 100 Vac	1.7 Amps max. at 90 Vac
Inrush current	No damage; meet fuse and bridge diode diode R_T de-rating specified.	Shall be less than the ratings of its critical components for all conditions of line voltage.
Efficiency	<ul style="list-style-type: none">• Minimum 86% at normal input voltage.• More than 88% of average efficiency of 25%, 50%, 75% and 100% load tested at 115Vac and 230Vac (warm up after 30 min).	<ul style="list-style-type: none">• Meet EPS requirement.• No Load Power Loss shall be less than 0.21 W at 115VAC and 230VAC.• More than 87% (average value of 25%, 50%, 75% and 100% load condition with both 115Vac and 230Vac).

Card Reader

Item	Specification
Chipset	RTL8411
Package	QFN 24P
Maximum supported size	32GB maximum capacity (for SDHC only) / 2TB maximum capacity (for SDXC & MSXC only)
Features	Secure Digital™ (SD) Card: <ul style="list-style-type: none">• Support SD specification v1.0 / v1.1 / v2.0 / SDHC (up to 32 GB)• Support SD specification v3.0 UHS-I: SDR25/SDR50/DDR50• Support 1.8V / 3.3V switch signal pads• Support SDXC (up to 2TB)

Hard Disk Drive (AVL components)

Item	Specification	
Vendor & Model Name	Seagate ST500LT012 TOSHIBA MQ01ABF050 MQ02ABF050H MQ01ACF050 WD WD5000LPCX WD5000LPLX	TOSHIBA MQ01ABD100 MQ02ABD100H WD WD10JPVX
Capacity (GB)	500	1000
Bytes per sector	512 (logical) / 4096 (physical)	
Data heads	2, 2, 4, 2	4
Drive Format		
Disks	1, 1, 2, 1	2
Spindle speed (RPM)	5400	
Performance Specifications		
Buffer size (Mbytes)	32, 8, N/A,16	16, 8, N/A, 8
Interface	SATA	
Fast data transfer rate (Gbits / sec, max)	6.0	
Media data transfer rate (Mbytes/sec max)	100, 100, 180, 147	100, 100, 180, 144
DC Power Requirements		
Voltage tolerance	5V ±5%	

Solid State Drive (SSD)

Item	Specification	
Vendor & Model Name	Liteon CV3-8D128 Toshiba THNSNK128GVN8 HYNIX HFS128G39TND	Liteon CV3-8D256 Toshiba THNSNK256GVN8 HYNIX HFS256G39TND

Item	Specification	
Capacity (GB)	128GB	256B
Features	<ul style="list-style-type: none"> • e-NAND system specification, compliant with V5.0 • Dual data rate: up to 400Mbyte/s @ 200MHz 	

DVD Super-Multi Drive

Item	Specification	
Vendor & Model name	HLDS GUE1N	
Performance Specification	With CD Diskette	With DVD Diskette
Transfer rate (Sustained max)	3600 kB/sec (24x)	10800 kb/sec (8x)
Buffer Memory	1 MB	
Interface	SATA	
Applicable disc format	DVD: <ul style="list-style-type: none">• DVD-ROM: 4.7GB (Single Layer) 8.5GB (Dual Layer)• DVD-R: 3.95GB (Ver. 1.0: read only) 4.7GB (Ver. 2.0 for Authoring: read only) 4.7GB (Ver. 2.1 for General: read & write)• DVD-R DL: 8.5GB (Ver. 3.0)• DVD-RW: 4.7GB (Ver. 1.2/ Rev 1.0, 2.0, 3.0)• DVD-RAM: 1.46GB/side, 4.7BG/side (Ver. 2.2)• DVD+R: 4.7GB (Ver. 1.3)• DVD+R DL: 8.5GB (Ver. 1.1)• DVD+RW: 4.7GB (Vol.1, Ver.1.3) CD: <ul style="list-style-type: none">• CD-ROM Mode-1 data disc• CD-ROM Mode-2 data disc• CD-ROM XA, CD-I, Photo-CD Multi- Session, Video CD, CD-Audio Disc• Mixed mode, CD-ROM disc (data and audio)• CD-Extra• CD-Text• CD-R• CD-RW	
Loading mechanism	Drawer type manual load / Electrical release	
Power Requirements		
Input Voltage	5 V +/- 5% (Operating)	

DVD Super-Multi Drive

Item	Specification	
Vendor & Model name	PLDS DA-8AESH DA-8A6SH	
Performance Specification	With CD Diskette	With DVD Diskette
Transfer rate (Sustained max)	3600 kB/sec (24x)	10800 kb/sec (8x)
Buffer Memory	0.5 MB	
Interface	SATA	
Applicable disc format	DVD: <ul style="list-style-type: none">• DVD-Video• DVD-Audio• DVD-ROM (4.7G/8.54G) single layer on single/double side (Read Only)• DVD-ROM dual layer (PTP/OTP) on single/double side, (Read Only)• DVD-RW• DVD+RW• DVD-R single/multi border(s) (4.7G for General)• DVD+R single/multi session(s)• DVD-R9 single/multi border(s)• DVD+R9 single/multi session(s)• DVD-RAM(4.7G) CD: <ul style="list-style-type: none">• CD-ROM• CD-R• CD-RW• CD-DA• CD-TEXT• CD ROM Mode-1• CD-ROM/XA Mode-2 Form-1 and Form-2• CD-I Ready• Video-CD (MPEG-1)• Photo-CD• Enhance CD• CD extra• UDF (fixed/variable Packet mode)	
Loading mechanism	Sled driving latch/eject mechanism	
Power Requirements		
Input Voltage	5 V +/- 5% (Operating)	

LCD 15.6" (non-touch)

Item	Specification	
Vendor & Model name	AUO B156XTN07.1	AUO B156HTN03.8
Screen Diagonal (mm)	394.9	
Active Area (mm)	344.23 (H) x 193.54 (V)	344.16 (H) x 193.59 (V)
Display resolution (pixels)	1366 x3 (RGB) x 768	1920 x3 (RGB) x 1080
Pixel Pitch (mm)	0.252 x 0.252	0.17925 x 0.17925
Typical White Luminance (cd/m ²) also called Brightness	220 typ. / 187 min. (5 points average)	200 typ. / 170 min. (5 points average)
Contrast Ratio	400 typ.	
Response Time (Optical Rise Time/Fall Time) msec	8 typ. / 16 max.	
Typical Power Consumption (Watt)	3.5 max. (include Logic and BLU Power)	3.7 Max. (Include Logic and BLU Power)
Weight (Without inverter)	380 max.	360 max.
Physical Size (mm)	359.5 (H) x 223.8 (V) x 3.2 (D)	359.0 (H) x 223.2 (V) x 3.2 (D)
Electrical Interface	1 Lane eDP	2 Lane eDP
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	40 min. / 45 typ. 40 min. / 45 typ. 10 min. / 15 typ. 30 min. / 35 typ.	40 min. / 45 typ. 40 min. / 45 typ. 10 min. / 15 typ. 30 min. / 35 typ.

LCD 15.6" (non-touch)

Item	Specification
Vendor & Model name	BOE NT156FHM-N41
Screen Diagonal (mm)	394.9
Active Area (mm)	344.16 (H) x 193.59 (V)
Display resolution (pixels)	1920 (H) x 1080 (V)
Pixel Pitch (mm)	0.17925 x 0.17925
Typical White Luminance (cd/m ²) also called Brightness	220 typ. / 187 min. (5 points average)
Contrast Ratio	500 typ.
Response Time (Optical Rise Time/Fall Time) msec	12 max.
Typical Power Consumption (Watt)	Total 3.4W (Max.)@cell 0.8W (Max.), BL 2.60W (Max.)
Weight (Without inverter)	370 max.
Physical Size (mm)	359.5 (H) x 206.5 (V) x 3.2 (D)
Electrical Interface	30 pins eDP
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	45 typ. 45 typ. 20 typ. 40 typ.

LCD 15.6" (non-touch)

Item	Specification
Vendor & Model name	InnoLux N156BGA-EA2
Screen Diagonal (mm)	394.9
Active Area (mm)	359.5 (H) x 217.2 (V)
Display resolution (pixels)	1366 x 3 (RGB) x 768
Pixel Pitch (mm)	0.252 x 0.252
Typical White Luminance (cd/m ²) also called Brightness	220 typ. / 187 min. (5 points average)
Contrast Ratio	350 min. / 500 typ.
Response Time (Optical Rise Time/Fall Time) msec	7 typ. / 12 max.
Typical Power Consumption (Watt)	Total 3.40W (Max.)@cell 0.85W (Max.), BL 2.55W (Max.)
Weight (Without inverter)	360 max.
Physical Size (mm)	359.5 (H) x 206.5 (V) x 3.0 (D)
Electrical Interface	30 pins eDP
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	40 min. / 45 typ. 40 min. / 45 typ. 15 min. / 20 typ. 40 min. / 45 typ.

LCD 15.6" (non-touch)

Item	Specification
Vendor & Model name	InnoLux N156HGE-EAB
Screen Diagonal (mm)	394.9
Active Area (mm)	344.16 (H) x 193.59 (V)
Display resolution (pixels)	19020 x 3 (RGB) x 1080
Pixel Pitch (mm)	0.17925 x 0.17925
Typical White Luminance (cd/m ²) also called Brightness	220 typ. / 187 min. (5 points average)
Contrast Ratio	350 min. / 500 typ.
Response Time (Optical Rise Time/Fall Time) msec	3 typ. / 7 max.
Typical Power Consumption (Watt)	Total 3.426W (Max.)@cell 0.858W (Max.), BL 2.568W (Max.)
Weight (Without inverter)	360 max.
Physical Size (mm)	359.5 (H) x 206.5 (V) x 3.02 (D)
Electrical Interface	30 pins eDP
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	80 min. / 85 typ. 80 min. / 85 typ. 15 min. / 20 typ. 30 min. / 35 typ.

LCD 15.6" (non-touch)

Item	Specification
Vendor & Model name	LG LP156WHU-TPF1
Screen Diagonal (mm)	394.9
Active Area (mm)	344.23 (H) x 193.53 (V)
Display resolution (pixels)	1366 x 3 (RGB) x 768
Pixel Pitch (mm)	0.252 x 0.252
Typical White Luminance (cd/m ²) also called Brightness	220 typ. / 187 min. (5 points average)
Contrast Ratio	300min. / 350 typ.
Response Time (Optical Rise Time/Fall Time) msec	16 typ. / 25 max.
Typical Power Consumption (Watt)	Total 3.04W (Max.)@cell 0.7W (Max.), BL 2.34W (Max.)
Weight (Without inverter)	370 max.
Physical Size (mm)	359.5 (H) x 217.2 (V) x 3.20 (D)
Electrical Interface	30 pins eDP
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	40 min. / 45 typ. 40 min. / 45 typ. 10 min. / 20 typ. 30 min. / 45 typ.

LCD Inverter (N/A)

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

Graphics Controller (UMA)

Item	Specification
VGA Chip	Intel® HD Graphics 520 / Iris Graphics 550 (TravelMate P259-M only)
Package	Built-in to the CPU
Feature	<ul style="list-style-type: none">• The Processor Graphics contains a refresh of the seventh generation graphics core enabling substantial gains in performance and lower power consumption.• Net Generation Intel Clear Video Technology HD Support is a collection of video playback and enhancement features that improve the end user's viewing experience<ul style="list-style-type: none">■ Encode/transcode HD content■ Superior image quality with sharper, more colorful images■ Playback of Blu-ray disc S3D content using HDMI (V.1.4 with 3D)■ Full AVC/VC1/MPEG2 HW Decode• Advanced Schedule 2.0, 1.0, XPDM Support• Windows® 10, Windows® 8.1, Windows® 8, Windows® 7, OSX, Linux® OS, Chrome® OS Support• Microsoft DirectX® 12, DirectX® 11.1, DirectX® 11, DirectX® 10.1, DirectX® 10, DirectX® 9 support• OpenCL™ 2.0 support• OpenGL® 4.4 support

Graphics Controller (Discrete)

Item	Specification
VGA Chip	NVIDIA® GeForce® 940MX (TravelMate P259-MG only)
Package	On-board GPU
Feature	<ul style="list-style-type: none"> • NVIDIA® Optimus™, PhysX™, CUDA™, PureVideo™ HD and PowerMizer™ SX technology • NVIDIA® GPU Boost™ 2.0 • NVIDIA® Verde™ Drivers • OpenEXR High Dynamic_Range (HDR) technology • Hardware Video Decode Acceleration • NVIDIA® 3D Vision™ support (requires NVIDIA 3D Vision glasses and a 3D Vision-Ready display) • NVIDIA® 3DTV Play™ support • HDMI® (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support • PCI Express 3.0 support • Dual-link DVI support, up to 2560x1600 resolution • Blu-ray movies, including "picture-in-picture", interactive games and menus support • Ultra-smooth playback of H.264, WMV/VC-1 and MPEG-4 HD and SD videos with minimal CPU usage • Supports Hardware Video Decode Acceleration, Microsoft® Direct X® 11.2/12, OpenGL® 4.4, OpenCL™ v1.1 • Up to 2560x1600 Digital resolution, up to 2048x1536 VGA resolution

Display Supported Resolution (LCD Supported Resolution)

Resolution	32 bits	Intel
1024 X 768p / 60Hz 16:9	Yes	Yes
1280 X 768p / 60Hz 16:9	Yes	Yes
1360 X 768p / 60Hz 16:9	Yes	Yes
1366 X 768p / 60Hz 16:9	Yes	Yes
1920 X 1080p / 60Hz 16:9	Yes (Full HD models only)	Yes (Full HD models only)

Display Supported Resolution (GPU Supported Resolution)

Resolution	32 bits	Intel
1024 X 768p / 60Hz 16:9	Yes	Yes
1280 X 768p / 60Hz 16:9	Yes	Yes
1360 X 768p / 60Hz 16:9	Yes	Yes
1366 X 768p / 60Hz 16:9	Yes	Yes
1920 X 1080p / 60Hz 16:9	Yes (Full HD models only)	Yes (Full HD models only)

LAN Interface

Item	Specification
LAN chipset	Realtek RTL8411
LAN connector type	RJ45
LAN connector location	RJ45 port at the rear
Features	<ul style="list-style-type: none">• Support 10/100/1000 Mbps Ethernet Controller• Support Microsoft WPD (Wake Packet Detection)• Fully compliant with IEEE 802.3, IEEE 802.3u and IEEE 802.3ab• 32-pin QFN Green package

Wireless + Bluetooth Module (ac/a/b/g/n)

Item	Specifications
Vendor & Model	Intel 7265.NGWWG.W D0 1x1 WLAN + BT 4.0LE
Chipset	Intel Wireless-AC 7265 Stone Peak
Form factor	M.2 (NGFF)
Frequency band	2.4 GHz
Protocols and data rates supported	BT: <ul style="list-style-type: none">• 1 Mbps, 2 Mbps, 3 Mbps for EDR Wi-Fi: <ul style="list-style-type: none">• 802.11a - 25-54 Mbps• 802.11b - 1-11 Mbps• 802.11g - 6-54 Mbps• 802.11n - MCS 0 to 7 for HT20 MHz and HT40 MHz• 802.11ac - 433-867 Mbps
Antennae	Yes. Both AUX and MAIN are routed in the display assembly.
Feature	<ul style="list-style-type: none">• Support for BT & WLAN Co-existence• RoHS Compliance• Low Halogen Compliance

Audio Interface

Item	Specification
Audio Controller	Realtek ALC255
Audio onboard or optional	On board
Mono or Stereo	Stereo
Resolution	Support 16/20/24-bit PCM
Compatibility	HD audio Interface

Item	Specification
Sampling rate	Sample rate up to 192Khz resolution VSR (Variable Sampling Rate)
Internal microphone	Yes
Internal speaker/quantity	Yes/2 channel speakers with 2W per channel output

Audio Codec and Amplifier

Item	Specification
Audio Controller	Realtek ALC255 High Definition Audio Codec
Features	<ul style="list-style-type: none"> • Meets Microsoft® WLP (Windows Logo Program) and Lync™ audio requirements for Windows system • 95 dB Signal-to-Noise Ratio (A-weighting) for DAC output • 88 dB Signal-to-Noise Ratio (A-weighting) for ADC output • 4-channel DAC supports 16/20/24-bit PCM format for independent two stereo channel or 2.1 audio playback • 4-channel ADC supports 16/20/24-bit PCM format for independent two stereo channel audio inputs • All DACs and ADCs support 44.1/48/96/192 kHz sample rate • S/PDIF-OUT support 16/20/24-bit format and 44.1/48/88.2/192 kHz rate • Support MONO line level output, stereo digital microphone input, and programmable boost gain and volume control • Analog port-E (LINE 2) support input and output re-tasking • Port-C (LINE 1) and port-F (MIC 2) are dedicated input with boost gain • Support external PCBEEP input and built-in digital BEEP generator • Software selectable 2.5/3.2/4.0 V VREFOUT as bias voltage for analog microphone input • Programmable +12/+24/+36 dB boost gain for analog microphone input • Built-in headphone amplifiers for port-E (LINE 2) and port-I (HP-OUT) (Port-I does not require DC blocking capacitors) • Two jack detection pins each designed to detect up to 4 jacks, and S/PDIF-OUT jack detection is supported • Support combo jack with stereo headphone output and mono microphone input on a 4-pole jack • 3 GPIOs for customized applications (pin shared with digital microphone interface and S/PDIF-OUT) • Support Anti-pop mode when analog power AVDD1 is on and DVDD, AVDD2 are off • Support PCBEEP pass-through to Class D output (port D) • Support 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 ? channel output • Intel low power ECN compliant, supports power status control, jack detection, and wake-up event in D3 mode • AGC (Auto Gain Control) function for Class D amplifier to get rid of sound broken when output high volume sound • Class D amplifier has 7 bands hardware equalizers and high pass filter to compensate frequency response and protect speaker • Short circuit and thermal overload protection for Class-D amplifier • Class D amplifier output with slew rate control to improve EMI performance • Built in a linear regulator with 60 dB PSRR to power analog circuitry • 48-pin MQFN "Green" package (6x6 mm dimension)

HD Camera

Item	Specification	
Vendor	Chicony	LITEON
Model	CNFFH2921004970LH	5SF121N2
Sensor Type	Himax 1061	OV9728
Feature	<ul style="list-style-type: none">• Automatic Exposure Control (AE), Automatic White Balance (AWB) and Automatic Gain Control (AGC)• Image Quality Control: Color saturation, hue, gamma, sharpness, brightness, contrast, and backlight compensation• Pixel Resolution: 1280 x 720 (HD)• Fix-Focusing (focusing distance: 50 cm)	

3G Card (not available in this model)

Item	Specification
Vendor	
Features	

VRAM

Item	Specification	
Vendor & Model name	MICRON MT51J256M32HF	SAMSUNG K4G80325FB
Memory size	8GB	8GB
Package size	96-ball FBGA (x16 Package)	170-ball FBGA (x16 Package)

System Power Management

Item	Specification
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.
Working (S0/S1)	Individual devices such as the CPU and hard disc may be power managed in this state.
Suspend to RAM (S3)	<ul style="list-style-type: none">• CPU set power down• VGA Suspend• PCMCIA Suspend• Audio Power Down• Hard Disk Power Down• CD-ROM Power Down• Super I/O Low Power mode
Save to Disk (S4)	Also called Hibernation Mode. System saves all system states and data onto the disc prior to power off the whole system.

System LED Indicator

Item	Specification
System power state	<ul style="list-style-type: none">• System on = Blue• Stand-by = Breeze mode Orange (1 sec on, 3 sec off)• Entering Hibernation = Blue• Hibernation Mode/System off = Blue and orange color off
Battery state	<ul style="list-style-type: none">• Fully charged = Blue• Battery charging = Orange• Battery low = Breeze mode Orange (1 sec on, 3 sec off)• Battery critical low = Blinking mode Orange (1 sec on, 1 sec off)• Abnormal situation = Blinking mode Orange• Using battery or not connected to AC power: N/A
Power button backlight	<ul style="list-style-type: none">• Blue color solid on: System on• Blue color off: System off
ODD activity state	ODD active = Green or Orange (depends on ODD module)
Communication state	<ul style="list-style-type: none">• Wi-Fi on: Blue or Orange• Bluetooth has no LED

System Interrupt Specification

Hardware IRQ	System Function
ISA00	System timer
ISA01	Standard PS/2 Keyboard

Hardware IRQ	System Function
ISA08	System CMOS/real time clock
ISA14	Motherboard resources
ISA54 - ISA81	Microsoft ACPI-Compliant System
ISA82	I2C HID Device
ISA82 - ISA511	Microsoft ACPI-Compliant System
PCI 16	High Definition Audio Controller
PCI 16	Intel(R) Serial IO I2C Host Controller - 9D60
PCI -11	Intel(R) Management Engine Interface
PCI -10	NVIDIA GeForce 940MX
PCI -9	Intel (R)USB 3.0 eXtensible Host Controller - 1.0(Microsoft)
PCI -8	Intel(R) HD Graphics 520
PIC -7	Realtek PCIe CardReader
PCI -6	Realtek PCIe GBE Family Controller
PCI -5	Standard SATA AHCI Controller
PCI -4	Mobile 6th Generation Intel(R) Processor Family I/O PCI Express Root Port #9 - 9D18
PCI -3	Mobile 6th Generation Intel(R) Processor Family I/O PCI Express Root Port #12 - 9D1B
PCI -2	Mobile 6th Generation Intel(R) Processor Family I/O PCI Express Root Port #1 - 9D10

System I/O Address Map

I/O address (hex)	System Function (shipping configuration)
0000 - 0CF7	PCI Express Root Complex
0020 - 0021	Programmable interrupt controller
0024 - 0025	Programmable interrupt controller
0028 - 0029	Programmable interrupt controller
002C - 002D	Programmable interrupt controller
002E - 002F	Motherboard resources
0030 - 0031	Programmable interrupt controller
0034 - 0035	Programmable interrupt controller
0038 - 0039	Programmable interrupt controller
003C - 003D	Programmable interrupt controller
0040 - 0043	System timer
004E - 004F	Motherboard resources

I/O address (hex)	System Function (shipping configuration)
0050 - 0053	System timer
0060 - 0060	Standard PS/2 Keyboard
0061 - 0061	Motherboard resources
0062 - 0062	Microsoft ACPI-Compliant Embedded Controller
0063 - 0063	Motherboard resources
0064 - 0064	Standard PS/2 Keyboard
0065 - 0065	Motherboard resources
0066 - 0066	Microsoft ACPI-Compliant Embedded Controller
0067 - 0067	Motherboard resources
0070 - 0070	Motherboard resources
0070 - 0077	System CMOS/real time clock
0080 - 0080	Motherboard resources
0092 - 0092	Motherboard resources
00A0 - 00A1	Programmable interrupt controller
00A4 - 00A5	Programmable interrupt controller
00A8 - 00A9	Programmable interrupt controller
00AC - 00AD	Programmable interrupt controller
00B0 - 00B1	Programmable interrupt controller
00B2 - 00B3	Motherboard resources
00B4 - 00B5	Programmable interrupt controller
00B8 - 00B9	Programmable interrupt controller
00BC - 00BD	Programmable interrupt controller
04D0 - 04D1	Programmable interrupt controller
0680 - 069F	Motherboard resources
0D00 - FFFF	PCI Express Root Complex
164E - 164F	Motherboard resources
1800 - 18FE	Motherboard resources
1854 - 1857	Motherboard resources
2000 - 20FE	Motherboard resources
3000 - 30FF	Realtek PCIe GBE Family Controller
3000 - 3FFF	Mobile 6th Generation Intel(R) Processor Family I/O PCI Express Root Port #12 - 9D1B
3000 - 403F	Intel Kabylake HD Graphics ULT GT1

I/O address (hex)	System Function (shipping configuration)
4000 - 4FFF	Mobile 6th Generation Intel(R) Processor Family I/O PCI Express Root Port #1 - 9D10
4F80 - 4FFF	NVIDIA GeForce 940MX
5000 - 503F	Intel Kabylake HD Graphics ULT GT2
5000 - 503F	Intel(R) HD Graphics 520
5040 - 505F	Mobile 6th Generation Intel(R) Processor Family I/O SMBUS - 9D23
5060 - 507F	Standard SATA AHCI Controller
5080 - 5087	Standard SATA AHCI Controller
5088 - 508B	Standard SATA AHCI Controller
FFFF - FFFF	Motherboard resources
FFFF - FFFF	Motherboard resources
FFFF - FFFF	Motherboard resources

Memory Address Map

Memory address (hex)	System Function (shipping configuration)
000A0000 - 000BFFFF	PCI Express Root Complex
000C0000 - 000C3FFF	PCI Express Root Complex
000C4000 - 000C7FFF	PCI Express Root Complex
000C8000 - 000CBFFF	PCI Express Root Complex
000CC000 - 000CFFFF	PCI Express Root Complex
000D0000 - 000D3FFF	PCI Express Root Complex
000D4000 - 000D7FFF	PCI Express Root Complex
000D8000 - 000DBFFF	PCI Express Root Complex
000DC000 - 000DFFFF	PCI Express Root Complex
000E0000 - 000E3FFF	PCI Express Root Complex
000E4000 - 000E7FFF	PCI Express Root Complex
000E8000 - 000EBFFF	PCI Express Root Complex
000EC000 - 000EFFFF	PCI Express Root Complex
80000000 - 8FFFFFFF	NVIDIA GeForce 940MX
90000000 - 9001FFFF	Motherboard resources
90000000 - DFFFFFFF	PCI Express Root Complex
80000000 - 92FFFFFF	Intel(R) HD Graphics 520
90000000 - 93FFFFFF	NVIDIA GeForce 940MX

Memory address (hex)	System Function (shipping configuration)
A0000000- AFFFFFFF	Intel(R) Kabylake HD Graphics ULT GT1
A0000000- AFFFFFFF	Intel(R) HD Graphics 520
A0000000- AFFFFFFF	NVIDIA GeForce 940MX
A0000000- B1FFFFFF	Mobile 6th Generation Intel(R) Processor Family I/O Express Root Port #1 - 9D10
B0000000- B0FFFFFF	Intel(R) Kabylake HD Graphics ULT GT1
B0000000- B1FFFFFF	NVIDIA GeForce 940MX
B1000000- B11FFFFF	Network Controller
B1000000- B11FFFFF	PCI Express Root Port
B2000000- B2FFFFFF	Intel(R) Kabylake HD Graphics ULT GT2
B3000000- B3FFFFFF	Mobile 6th Generation Intel(R) Processor Family I/O Express Root Port #1 - 9D10
B3000000- B3FFFFFF	NVIDIA GeForce 940MX
B4000000- B4003FFF	Realtek PCIe GBE Family Controller
B4000000- B40FFFFFFF	Mobile 6th Generation Intel(R) Processor Family I/O Express Root Port #1 - 9D1B
B4004000- B4004FFF	Realtek PCIe GBE Family Controller
B4005000- B4005FFF	Realtek PCIe CardReader
B4100000- B410FFFF	Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
B4110000- B411FFFF	High Definition Audio Controller
B4120000- B4123FFF	High Definition Audio Controller
B4124000- B4127FFF	Mobile 6th Generation Intel(R) Processor Family I/O PMC - 9D21
B4128000- B4129FFF	Standard SATA AHCI Controller
B412A000- B412AFFF	Mobile 6th Generation Intel(R) Processor Family I/O Thermal subsystem - 9D31
B412D000- B412D7FF	Standard SATA AHCI Controller
C0000000 - CFFFFFFF	Intel Kayblake HD Graphics ULT GT2
E0000000 - EFFFFFFF	Motherboard resources
FD000000 - FDABFFFF	Motherboard resources
FD000000 - FE7FFFFF	PCI Express Root Complex
FDAC0000 - FDACFFFF	Motherboard resources
FDAD0000 - FDADFFFF	Motherboard resources
FDAE0000 - FDAEFFFF	Motherboard resources
FDAF0000 - FDAFFFFF	Motherboard resources
FDB00000 - FDFFFFFF	Motherboard resources

Memory address (hex)	System Function (shipping configuration)
FE000000 - FE01FFFF	Motherboard resources
FE036000 - FE03BFFF	Motherboard resources
FE03D000 - FE3FFFFFFF	Motherboard resources
FE40E000 - FE40EFFF	Intel(R) Serial IO I2C Host Controller - 9D60
FE40F000 - FE40FFFF	Intel(R) Management Engine Interface
FE410000 - FE7FFFFFFF	Motherboard resources
FED00000 - FED003FF	High precision event timer
FED10000 - FED17FFF	Motherboard resources
FED18000 - FED18FFF	Motherboard resources
FED19000 - FED19FFF	Motherboard resources
FED20000 - FED3FFFF	Motherboard resources
FED40000 - FED44FFF	Trusted Platform Module 2.0
FED45000 - FED8FFFF	Motherboard resources
FED90000 - FED93FFF	Motherboard resources
FEE00000 - FEEFFFFFFF	Motherboard resources
FF000000 - FFFFFFFF	Legacy Drive
FF000000 - FFFFFFFF	Motherboard resources

CHAPTER 2

System Utilities

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System Utilities

BIOS Setup Utility

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

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

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

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

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

Navigating the BIOS Utility

Five menu options are:

- Information
- Main
- Security
- Boot
- Exit

To navigate through the following:

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

⇒ NOTE:

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

+ IMPORTANT:

Be careful when changing any settings in the BIOS. Incorrect settings can cause your PC to malfunction or crash. Please make sure all important data is backed up before changing anything in the BIOS.

⇒ NOTE:

System information is subject to specific models.

BIOS

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

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

Information

The Information tab shows a summary of computer hardware information.

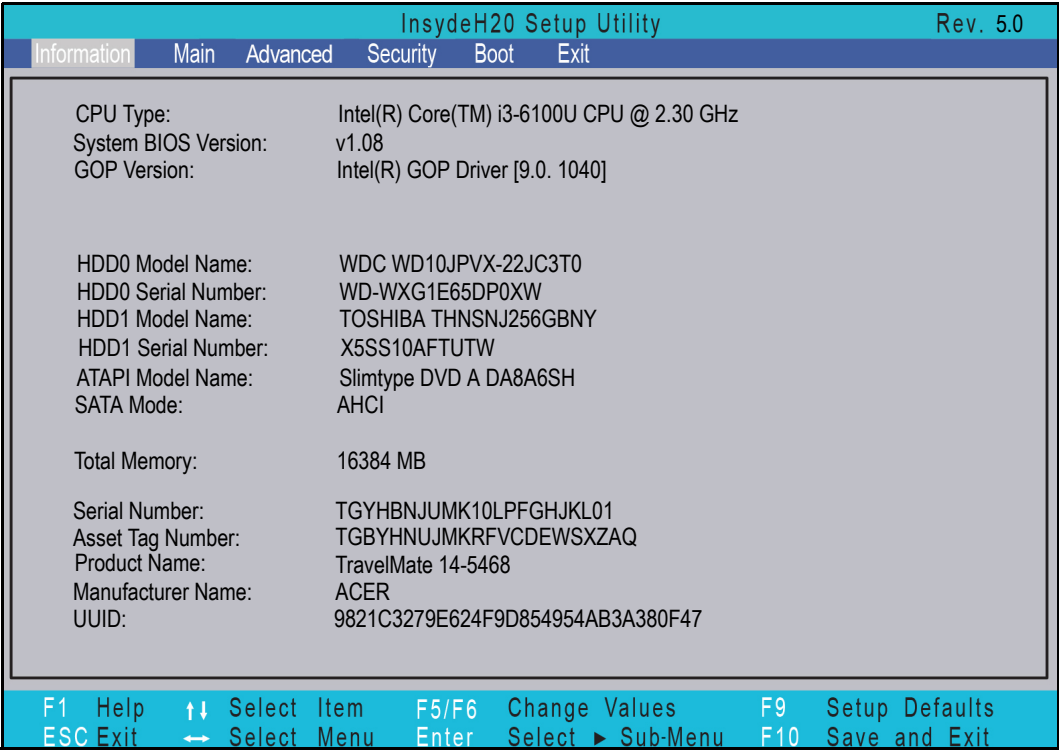


Figure 2-1. BIOS Information

Table 2-1 describes the parameters shown in [Figure 2-1](#).

Table 2-1. BIOS Information

Parameter	Description
CPU Type	CPU (central processing unit) type and speed of system
System BIOS Version	System BIOS Version
GOP Version	Graphics Output Protocol BIOS version
HDD0 Model Name	Model name of HDD (hard disk drive) installed on primary IDE master

Table 2-1. BIOS Information (Continued)

Parameter	Description
HDD0 Serial Number	Serial number of HDD installed on primary IDE master
HDD1 Model Name	Model name of HDD (hard disk drive) installed on secondary IDE master
HDD1 Serial Number	Serial number of HDD installed on secondary IDE master
ATAPI Model Name	Model name of optical device installed in system
SATA Mode	Sets the communication method of the SATA drive with the computer
Total Memory	Total memory available
Serial Number	Serial number of unit
Asset Tag Number	Asset tag number of system
Product Name	Product name of the system
Manufacturer Name	Manufacturer of system
UUID	Universally Unique Identifier

Main

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

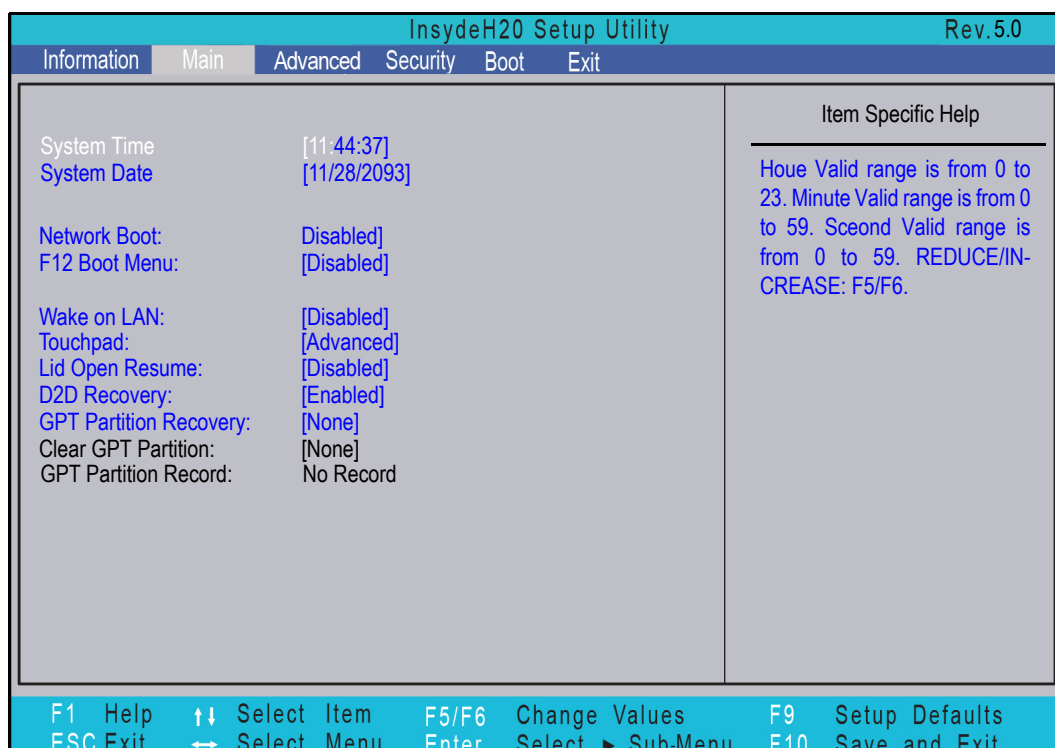


Figure 2-2. BIOS Main

Table 2-2 describes the parameters shown in [Figure 2-2](#).

Table 2-2. BIOS Main

Parameter	Description	Format/Option
System Time	BIOS system time in 24-hour format	Format: HH:MM:SS (hour:minute:second)
System Date	BIOS system date	Format MM/DD/YYYY (month/day/year)
Network Boot	Option to boot system from LAN (local area network)	Option: Enabled or Disabled
F12 Boot Menu	Option to use boot menu during POST	Option: Enabled or Disabled
Wake on LAN	Option to use Wake-on-LAN feature	Option: Enabled or Disabled

Table 2-2. BIOS Main (Continued)

Parameter	Description	Format/Option
Touchpad	Option to choose whether to use advanced or basic touchpad gestures/actions: ⇒ NOTE: You must ensure that the IC2 driver is installed before setting this item to advanced, otherwise the touchpad will not function.	Option: Advanced or Basic
Lid Open Resume	Option to resume the system when the notebook PC is opened	Option: Enabled or Disabled
D2D Recovery	Option to use D2D Recovery feature	Option: Enabled or Disabled
GPT Partition Recovery	<ul style="list-style-type: none"> • None:do nothing • Save: Choose to save current GPT partition • Restore: Restore the GPT partition previously saved • When end user chooses to save/restore GPT partition, pop up the confirm message again, then take action immediately • This option is automatically hidden if there is no GPT partition 	Option: [None]/[Save]/[Restore]
Clear GPT Partition	Option to erase GUID Partition	Default Option: None
GPT Partition Record	<ul style="list-style-type: none"> • Record of the saved GPT partition data. Show the date and time for the saved record • This option is automatically hidden if there is no GPT partition 	Option: [None]/[Save]/[Restore]

Advanced

The Advanced tab allows the user to enable or disable each feature, set the battery threshold, and enter the disk sanitizer tool.

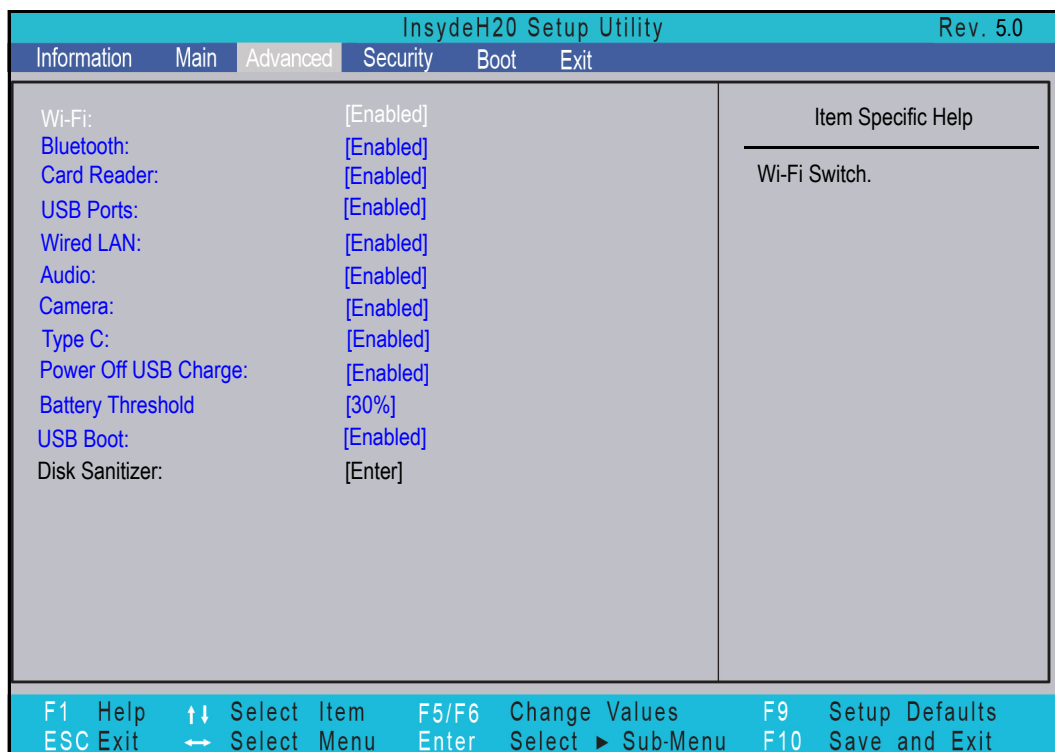


Figure 2-3. BIOS Advanced

Table 2-3 describes the parameters shown in [Figure 2-4](#).

Table 2-3. BIOS Advanced

Parameter	Description	Option
Wi-Fi	Option to switch the Wi-Fi connectivity on or off.	Disabled or Enabled
Bluetooth	Option to switch the Bluetooth connectivity on or off.	Disabled or Enabled
Card Reader	Option to enable or disable the multi-function card reader device.	Disabled or Enabled
USB Ports	Option to enable or disable the external USB ports for both USB 2.0 and USB 3.0, including USB Port in Port Replicator and Dock.	Disabled or Enabled
Wired LAN	Option to switch the external wired LAN connectivity on or off, including LAN Port in Port Replicator and Dock	Disabled or Enabled

Table 2-3. BIOS Advanced (Continued)

Parameter	Description	Option
Audio	Option to enable or disable the audio device, including Audio Port in Port Replicator and Dock.	Disabled or Enabled
Camera	Option to enable or disable the camera device.	Disabled or Enabled
Type C	Option to enable or disable the external USB Type-C ports, including USB Port in Port Replicator and Dock.	Disabled or Enabled
Power Off USB Charge	Option to enable or disable the USB charging function for mobile devices during power-off and sleep mode.	Disabled or Enabled
Battery Threshold	Option to set a computer battery capacity limit, below which the USB charging function stops. If the Power-off USB Charge is enabled, the system will disable the function when the DC mode battery capacity is below XX%. If the Power-off USB Charge is disabled, the battery threshold option is greyed out.	Format: [10%]/[20%] /[30%]
USB Boot	Option to enable or disable the feature of using a bootable USB drive. When USB Boot is disabled, under Boot priority order, USB boot device type is displayed but no device will be detected; no USB bootable devices will be shown in F12 Boot Manager.	Disabled or Enabled
Disk Sanitizer	Enter to permanently erase all data on the hard drive.	N/A

Security

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

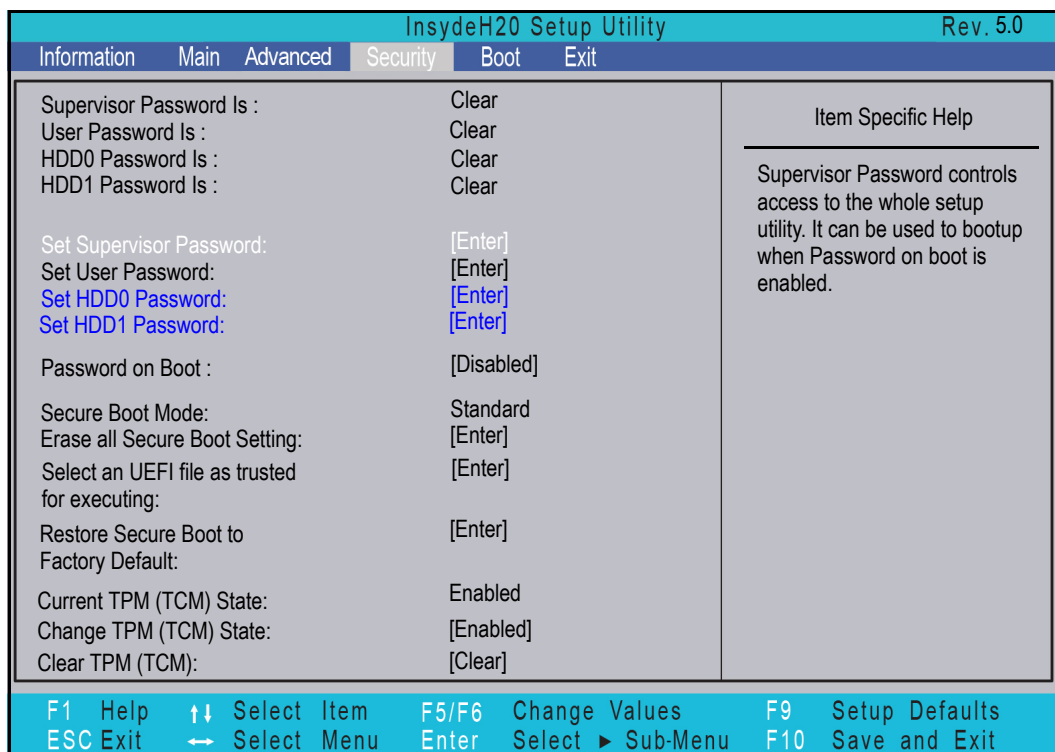


Figure 2-4. BIOS Security

Table 2-3 describes the parameters shown in [Figure 2-4](#).

Table 2-4. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Supervisor password setting	Clear or Set
User Password Is	User password setting	Clear or Set
HDD0 Password Is	Password setting of HDD installed on primary IDE master	Clear or Set
HDD1 Password Is	Password setting of HDD installed on secondary IDE master	Clear or Set
Set Supervisor Password	Option to set supervisor password	N/A
Set User Password	Option to set user password	N/A
Set HDD0 Password	Option to set password of HDD installed on primary IDE master	N/A

Table 2-4. BIOS Security (Continued)

Parameter	Description	Option
Set HDD1 Password	Option to set password of HDD installed on secondary IDE master	N/A
Password on Boot	Shows if password is required during system boot ⚠ CAUTION: If Password-on-Boot authentication is enabled, the BIOS password can only be cleared by initiating the Crisis Disk Recovery procedure.	Disabled or Enabled
Secure Boot Mode	Prevents unauthorized boot media and malicious software from loading during boot	Default option: Standard
Erase all Secure Boot setting	Erase current Secure Boot settings	N/A
Select an UEFI file as trusted for executing	Boot from an external UEFI file	N/A
Restore Secure Boot to Factory Default:	Restore settings to factory defaults	N/A
Current TPM (TCM) State	This field indicates current TPM State. Current TPM or TCM State description is according current TPM or TCM is connected. Current TPM State is displayed on BIOS Setup Utility no matter Supervisor / User Password is set or not and is grayed out item that can't be modified manually.	Disabled or Enabled
Change TPM (TCM) State	Change TPM State is displayed on BIOS Setup Utility no matter Supervisor / User Password is set or not. If Supervisor Password is not set, it should be a grayed out item. Default TPM state for UEFI Mode is set to [Enabled] and requires Supervisor Password to change the state. [Disabled]: BIOS don't initial TPM 2.0 device and hide the TPM 2.0 device in ACPI table, it makes no TPM device in Windows device manager. Change TPM state will support the items list in left.	Disabled or Enabled
Clear TPM (TCM)	Change TPM State is displayed on BIOS Setup Utility no matter Supervisor / User Password is set or not. If Supervisor Password is not set, it should be a grayed out item.	Clear or Set

⇒ **NOTE:**

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

Setting a Password

Perform the following to set user or supervisor passwords:

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

⇒ **NOTE:**

To change an existing password, refer to [Changing a Password](#).

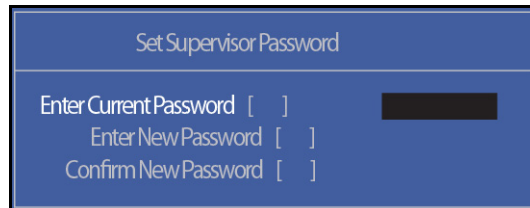


Figure 2-5. Set Supervisor Password

2. Type a new password in the `Enter New Password` field. Passwords are not case sensitive and the length must not exceed 12 alphanumeric characters (A-Z, a-z, 0-9). Retype the password in the `Confirm New Password` field.

+ **IMPORTANT:**

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

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

⇒ **NOTE:**

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

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

Removing a Password

Perform the following:

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

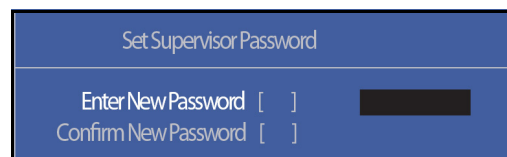


Figure 2-6. Set Supervisor Password

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

Changing a Password

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



Figure 2-7. Set Supervisor Password

2. Type current password in **Enter Current Password** field and press **Enter**.
3. Type new password in **Enter New Password** field. Retype new password in **Confirm New Password** field.
4. Press **Enter**. Computer sets **Supervisor Password** parameter to **Set**.

⇒ **NOTE:**

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

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

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



Figure 2-8. Setup Notice

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

If the password entered does not match the current password, the screen shows the **Setup Warning** dialog. (Figure 2-9)



Figure 2-9. Setup Warning: Invalid Password

If new password and confirm new password strings do not match, the Setup Warning dialog appears (Figure 2-10).



Figure 2-10. Setup Warning: Passwords Do Not Match

Boot

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

- Onboard hard disk drive0
- Onboard hard disk drive1
- DVD drive in the module bay
- USB floppy disk drive
- IPv4 network drive
- USB hard disk drive
- USB CD-ROM drive
- IPv6 network drive

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

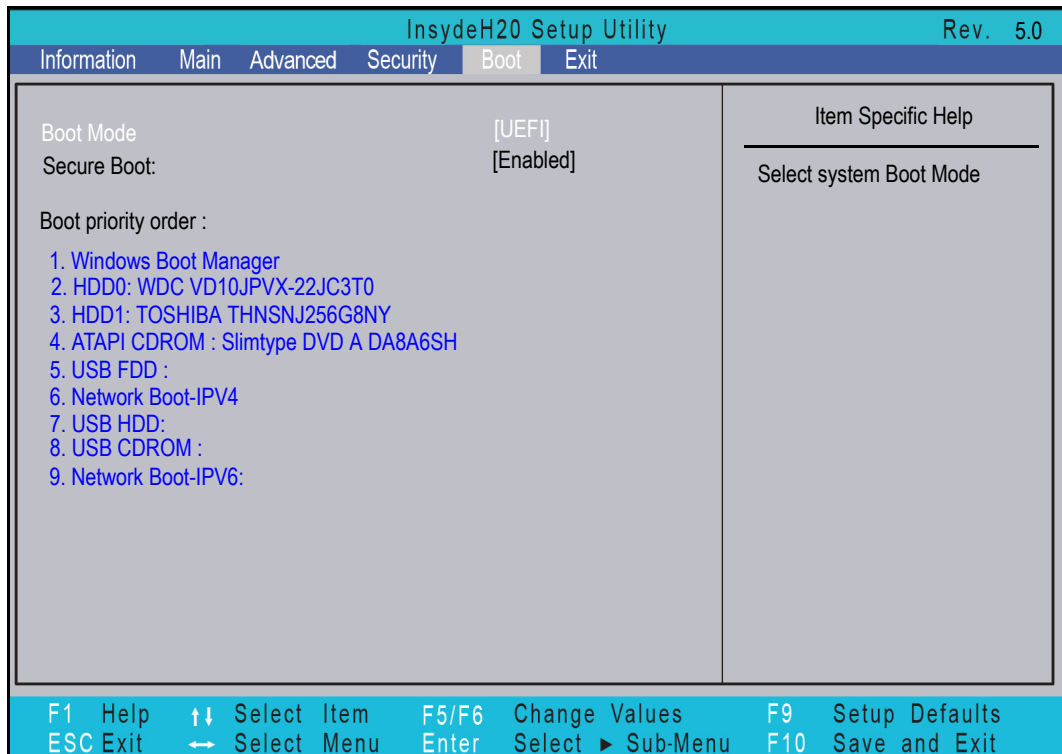


Figure 2-11. BIOS Boot

Exit

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

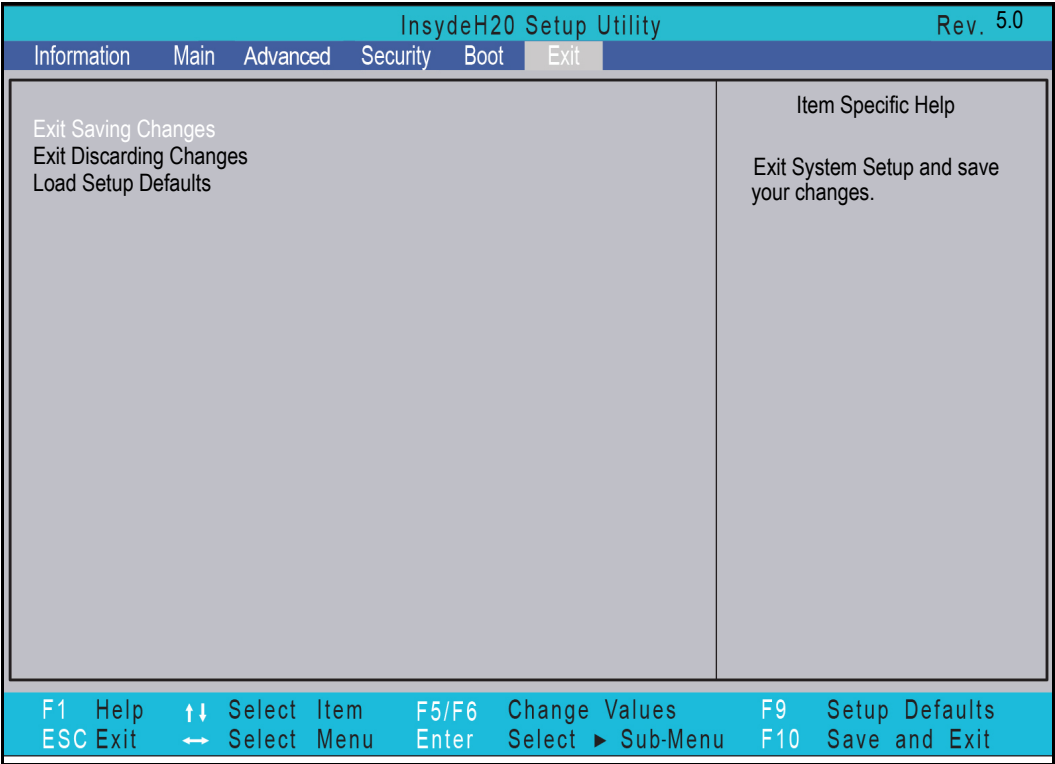


Figure 2-12. BIOS Exit

Table 2-4 describes the parameters in [Figure 2-12](#).

Table 2-5. Exit Parameters

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

BIOS Flash Utilities

BIOS Flash memory updates are required for the following conditions:

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

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

⇒ **NOTE:**

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

⇒ **NOTE:**

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

⇒ **NOTE:**

The AC power adapter must be connected to the system and the system battery charge must be above 30% when running Flash utility. If battery pack does not contain power to finish loading BIOS Flash, do not boot system.

Perform the following to run Flash.

1. Prepare a bootable USB HDD.
2. Copy *Flash Utility* to a bootable USB HDD.
3. Boot system from the bootable USB HDD.

⇒ **NOTE:**

Flash utility has auto execution function.

WinFlash Utility

Perform the following to run the *Flash Utility* in Windows mode to flash the BIOS:

1. Copy the WinFlash executable *ZAA_108.EXE* to desktop.
2. Plug in the AC power.

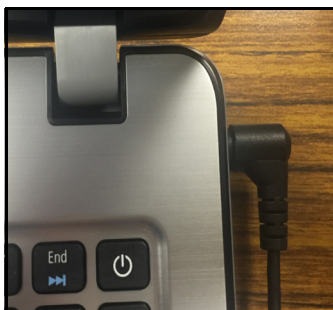


Figure 2-13. Connecting AC Power

⚠ CAUTION:

The AC power adapter must be connected to the system and the system battery charge must be above 30% when using WinFlash utility. If battery capacity is insufficient to finish loading BIOS Flash, do not boot system.

3. Right-click the *ZAA_108.EXE* and select `Run as administrator`.

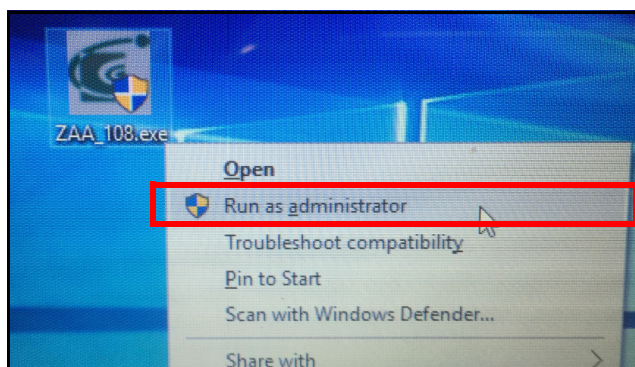


Figure 2-14. Run as Admin

4. The User Account Control dialog box appears. Click **Yes** to continue.

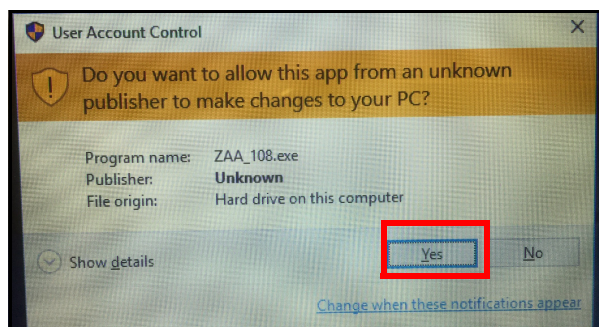
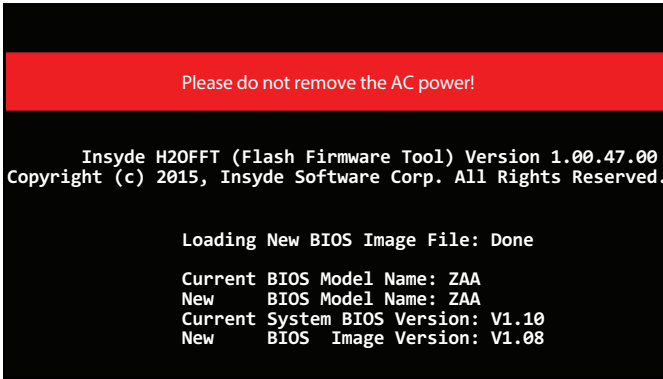


Figure 2-15. User Account Control

5. System will restart automatically and display the Flash BIOS Process as shown in Figure 2-16.



A black terminal window with white text. At the top, a red banner reads "Please do not remove the AC power!". Below it, the text reads: "Insyde H20FFT (Flash Firmware Tool) Version 1.00.47.00", "Copyright (c) 2015, Insyde Software Corp. All Rights Reserved.", "Loading New BIOS Image File: Done", "Current BIOS Model Name: ZAA", "New BIOS Model Name: ZAA", "Current System BIOS Version: V1.10", and "New BIOS Image Version: V1.08".

Figure 2-16. Flash Process

6. System will restart automatically when the Flash Process is finished.
7. When the Acer logo appears on the screen, press **F2** during the POST to enter the BIOS Setup Menu.



Figure 2-17. F2 Key Location

8. Ensure the System BIOS Version has been updated.

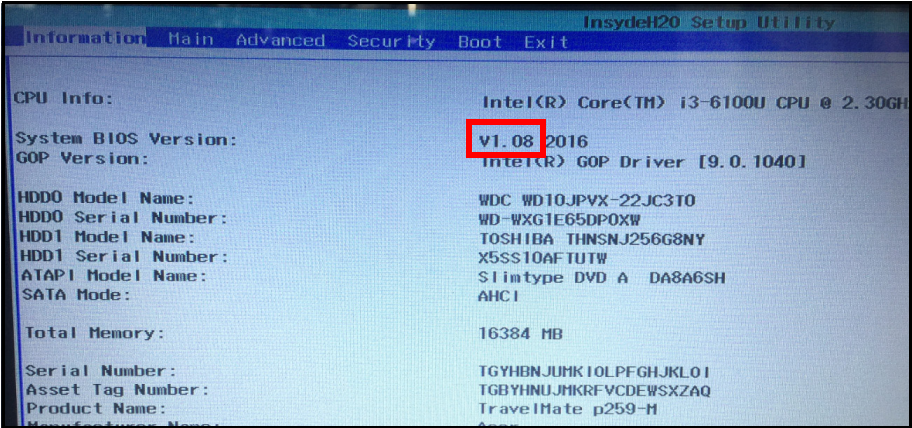


Figure 2-18. System BIOS Version

⇒ **NOTE:**

The system battery charge must be above 30% and the AC adapter connected, in order to flash the BIOS. If AC adapter is not connected, the following dialogs are shown. (Figure 2-19 and Figure 2-20)

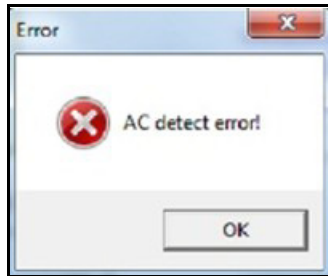


Figure 2-19. No AC Power Detected (1 or 2)

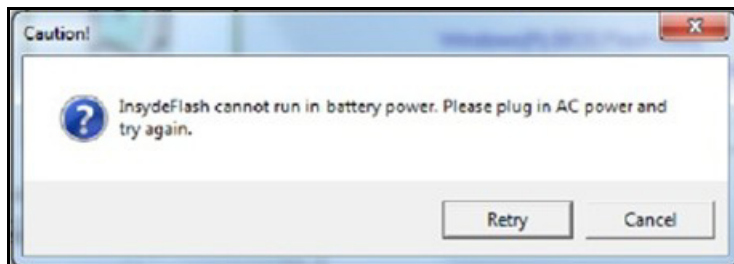


Figure 2-20. No AC Power Detected (2 of 2)

DOS Flash Utility

Perform the following to run the *Flash Utility* in DOS mode to flash the BIOS:

1. Prepare a bootable USB Flash Disk.
2. Plug in the AC power and ensure the battery charge is over 30%.

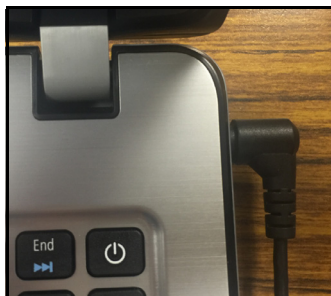


Figure 2-21. Connecting AC Power

⚠ CAUTION:

This feature is only functional when the AC power adapter is connected and the battery charge must be above 30%. It is recommended to have the AC adapter and Battery present when using Flash Utility in DOS mode.

⇒ NOTE:

If AC power is not connected, the following message is shown ([Figure 2-22](#)). Plug the AC power adapter to continue.



Figure 2-22. No AC Power Connect

3. Copy *ZAA_108.EXE* to the bootable USB Flash disk.
4. Insert the USB Flash Disk into the system and power on the system.

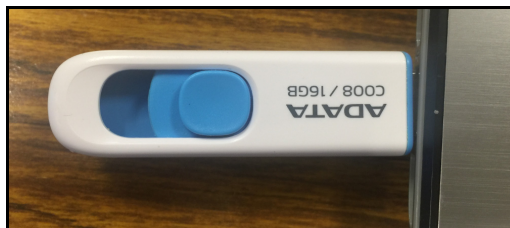


Figure 2-23. Bootable USB Flash Disk

- When the Acer logo appears on the screen, press **F2** to enter the BIOS Setup Menu.



Figure 2-24. F2 Key Location

- Under Main menu option, select "F12 Boot Menu" item and then press **Enter** to change the setting from Disabled to Enabled.

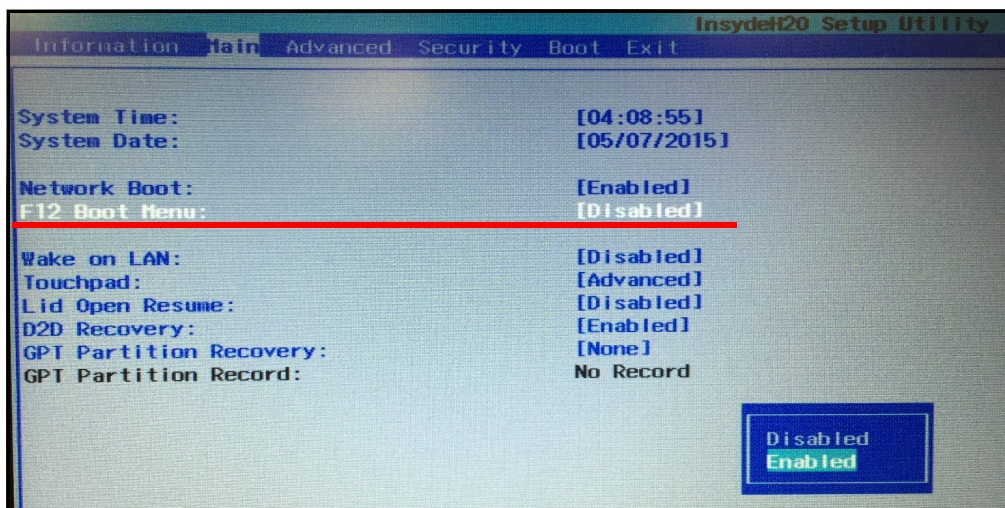


Figure 2-25. F12 Boot Menu Option

7. Move to **Boot** menu option and select "**Boot Mode**" item, then press **Enter** to change the setting from **UEFI** to **Legacy**.

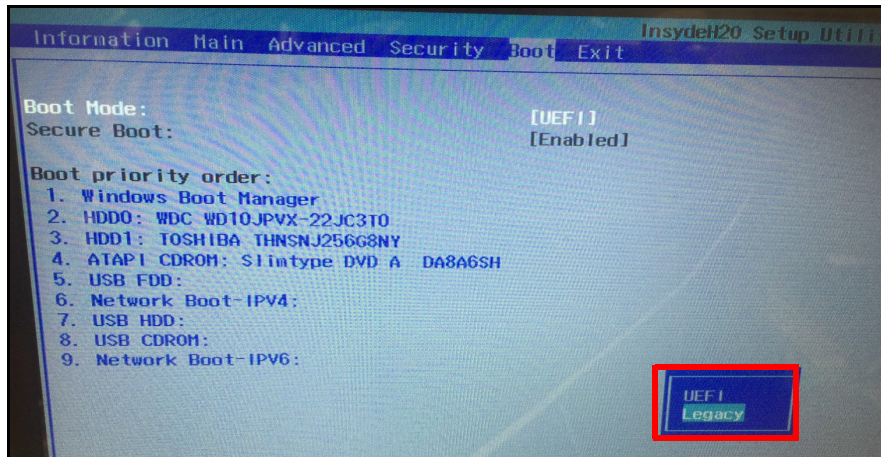


Figure 2-26. Legacy BIOS option

8. Press **Enter** to confirm the Legacy boot mode.

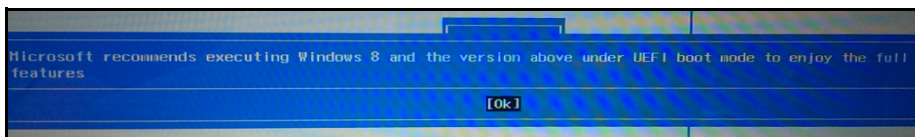


Figure 2-27. Legacy Boot Mode

9. Press **Enter** to confirm the change.

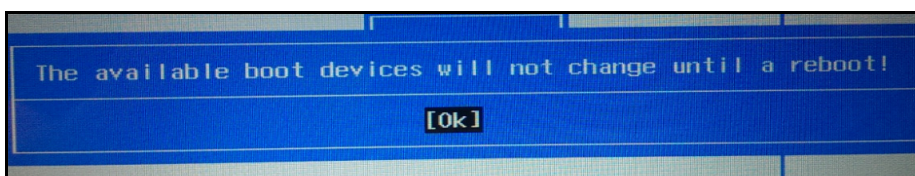


Figure 2-28. Confirming the Legacy Boot Mode

10. Press **F10** and confirm your selection to save the settings and exit the BIOS Menu (Figure 2-29). The system will restart automatically.

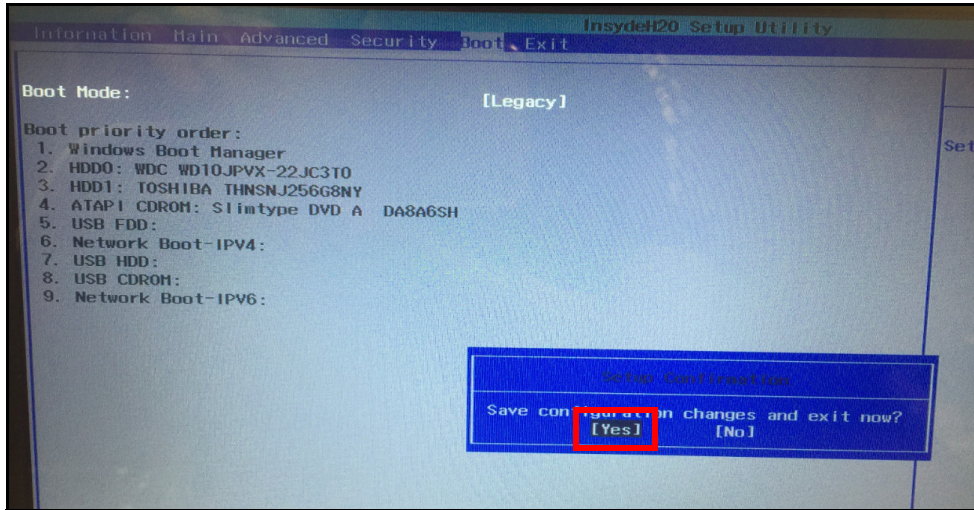


Figure 2-29. Save Configuration Changes and Exit

11. Press **F12** during the POST (power-on self-test) screen to enter the Boot Option Menu.



Figure 2-30. F12 Key Location

12. Select "USB HDD" and press **Enter** to enter DOS mode.

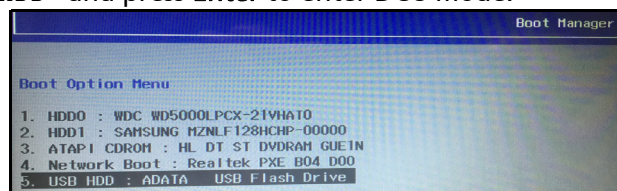


Figure 2-31. Boot Option Menu Option

13. Run **ZAA_108.EXE** under DOS mode to flash the BIOS from the USB Disk.

14. System will restart automatically and display the Flash BIOS Process as shown in Figure 2-32.

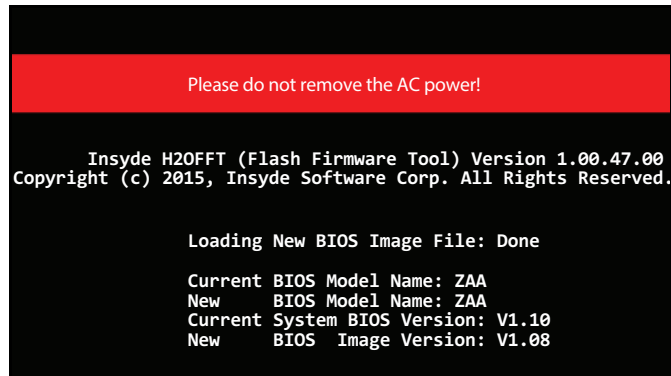


Figure 2-32. Flash BIOS Process

15. When the Flash BIOS Process is finished, the system will automatically restart.
16. Press **F2** when the POST screen is displayed to enter the BIOS Setup Menu.
17. Ensure the System BIOS Version is the same as the updated BIOS version.

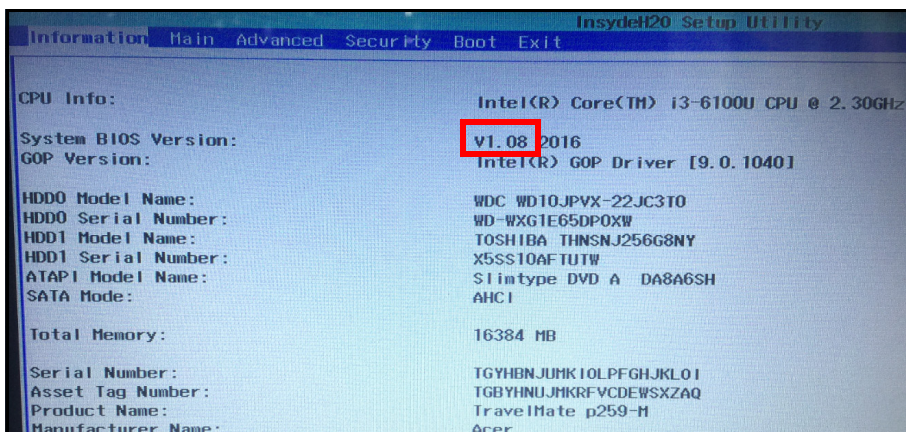


Figure 2-33. System BIOS Version

⚠ CAUTION:

The BIOS Boot menu item **Boot Mode** has to be set to **Legacy** mode before starting flash BIOS to activate the DOS Flash feature. The system will restart automatically when the DOS Flash process is finished. Then, user must change **Boot Mode** to **UEFI** mode and enter OS. (The default parameter of **Boot Mode** is set to **UEFI** mode.)

Clearing BIOS Passwords

This section provides details about removing Insyde BIOS password.

If the BIOS password is incorrectly entered three times, an error message is displayed on screen.

⇒ NOTE:

If user is unable to obtain correct password then it must be unlocked.

The BIOS password can only be removed by software utility.

Removing Insyde BIOS Passwords

The BIOS password can only be removed by using the Backdoor Key and Backdoor Password. To reset the BIOS password, perform the following three steps:

Step 1: Obtain Backdoor Key

To obtain the backdoor key, perform the following:

1. Shut down the system.
2. Press **Power** button and then Press **F2** during the POST screen to enter the BIOS Setup Menu.

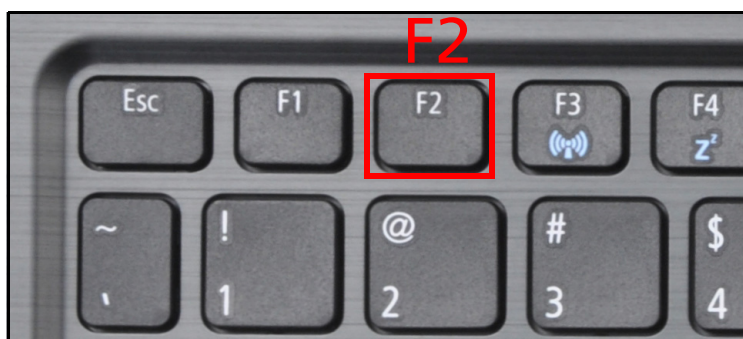


Figure 2-34. F2 Key Location

3. When the Enter Current Password dialog box appears, enter the wrong password three times.



Figure 2-35. Enter Current Password

4. The `Select Item` dialog box appears. Select `Enter Unlock Password` and press **Enter**.

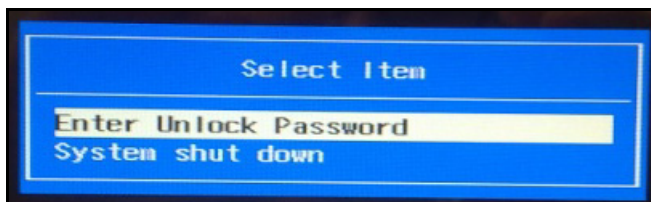


Figure 2-36. Enter Unlock Password

5. The system will generate a backdoor key (example here is 74821572). Keep this screen shot for reference on the system with the locked BIOS password.

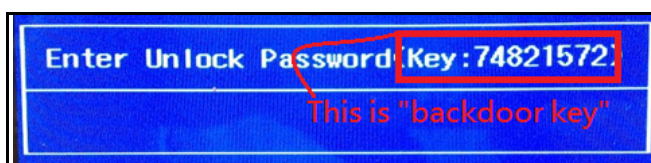


Figure 2-37. Backdoor Key

Step 2: Obtain Backdoor Password

To obtain the backdoor password, perform the following:

1. Prepare a bootable WINPE64 USB Flash Disk.
2. Copy the `UnlockHD_x64.EXE` file to the WINPE64 UFD.
3. To boot to WINPE, insert the WINPE64 UFD to another computer or laptop, refer to the Windows PE procedure in [Using DMI Tools](#).
4. In Windows PE, input `unlockhd_64 XXXXXXXX` (Where XXXXXXXX is the Backdoor key; example here is 74821572). The exe will generate a backdoor password (example here is 61789574).

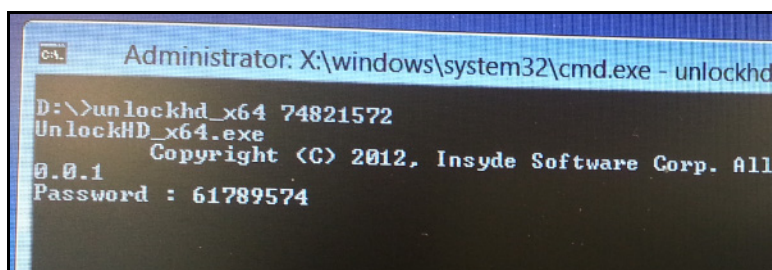


Figure 2-38. UnlockHD.EXE

Step 3: Remove BIOS Password

1. On the system with the locked supervisor password (refer to [Figure 2-37](#)), enter the generated backdoor password (example here is 61789574).

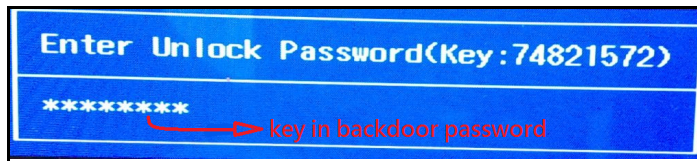


Figure 2-39. Backdoor Key

2. Press **Enter** after entering the backdoor password to enter the BIOS Setup Menu.
3. Under Security menu option, select "Set Supervisor Password" and press **Enter** to set the supervisor password.

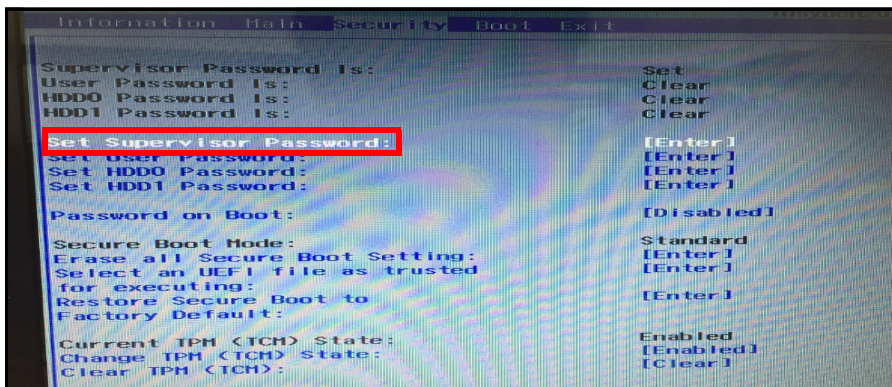


Figure 2-40. Set Supervisor Password

4. Input the backdoor password again (example here is 61789574) in the Enter current password field, then press **Enter** to apply next 3 fields to clear the supervisor password.

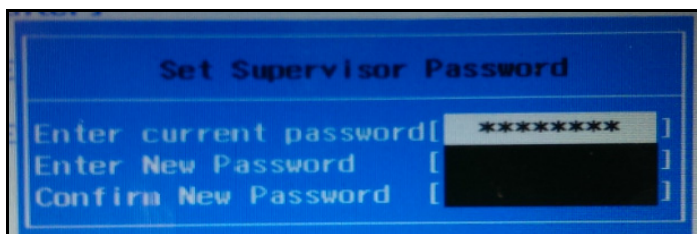


Figure 2-41. Enter Supervisor Password

5. The new setting has been changed and saved. Press **Enter**.

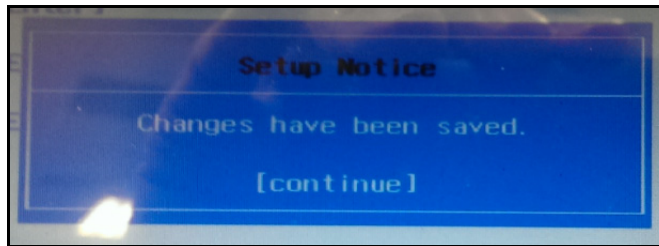


Figure 2-42. Set Password Success

6. Ensure the Supervisor Password Is option is set to Clear.

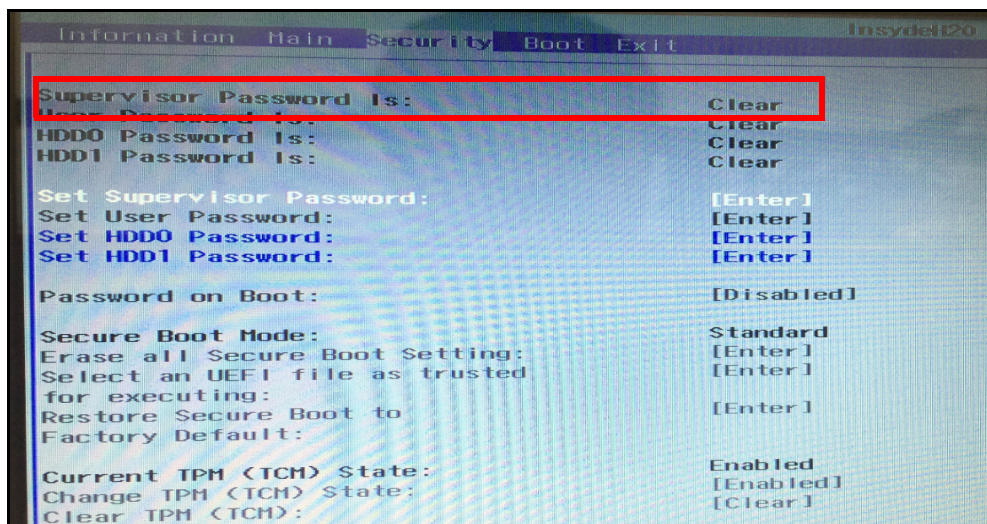


Figure 2-43. BIOS Password

⇒ NOTE:

The BIOS Password can be also cleared by initiating the Crisis Disk Recovery procedure.

Removing Insyde HDD Password

To reset the HDD password, perform the following:

1. Press **F2** during the POST screen to enter the BIOS Setup Menu.

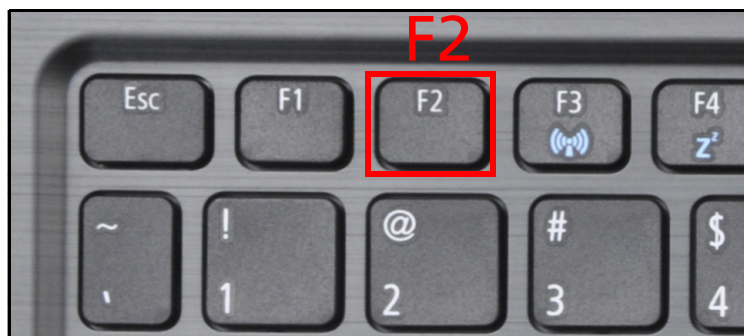


Figure 2-44. F2 Key Location

2. The `Harddisk Security` dialog box appears.

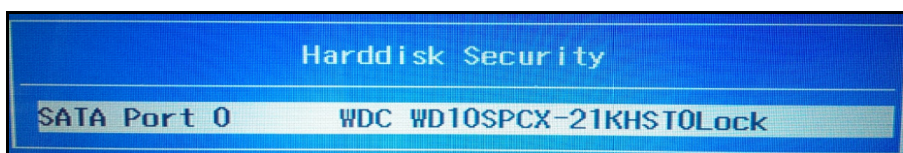


Figure 2-45. Harddisk Security

3. Press **Enter** to input the HDD password.

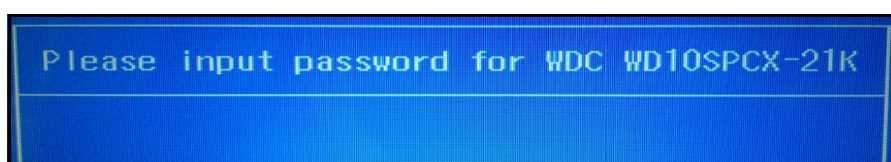


Figure 2-46. Enter HDD Password

4. When the user enters the wrong password, the system shows the `Password check Fail!!!` message.

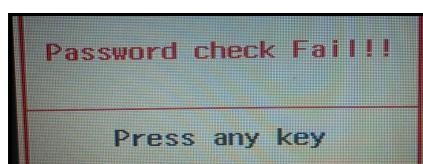


Figure 2-47. Password Check Fail

5. Press any key to continue and repeat Step 3 and Step 4 two more times.
6. When the user keys in the wrong password three times , the system shows the `Error Status` dialog. Press **Enter**.

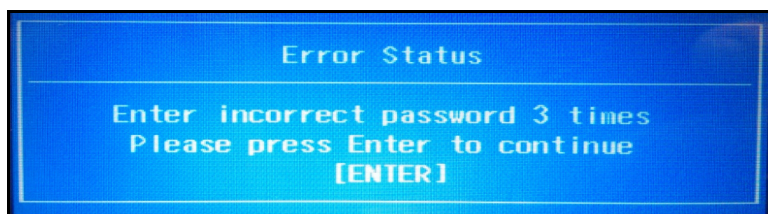


Figure 2-48. Error Status

7. The `Select Item` dialog box appears. Select `Enter Unlock Password` and press **Enter**.

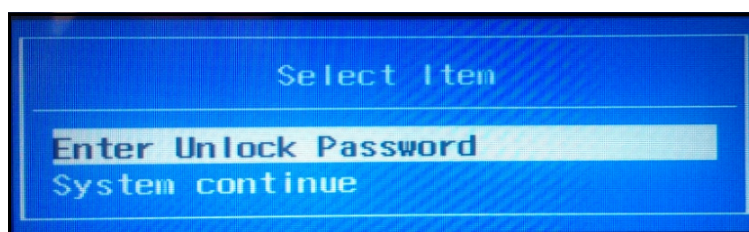


Figure 2-49. Enter Unlock Password

8. Press **Enter** to obtain a backdoor key. Record this backdoor key (example here is 68960818). Keep this screen shot for reference on the system with the locked HDD password.

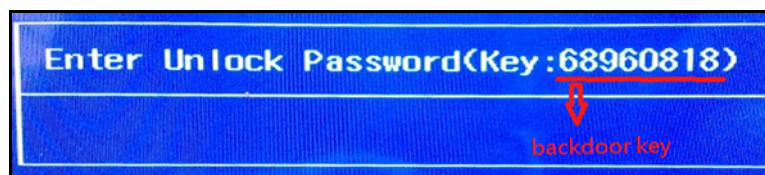
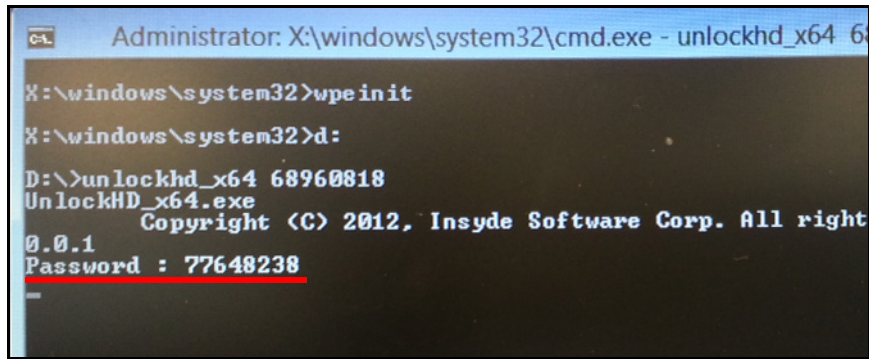


Figure 2-50. HDD Backdoor Key Window

For clearing the HDD password in Windows PE x64, follow these steps:

- a. Copy `UnlockHD_x64.exe` to your Windows PE disk.
- b. To boot to WinPE, refer to the Windows PE procedure in [Using DMI Tools](#).
- c. In Windows PE x64, enter `unlockHD_x64 XXXXXXXXX`, where XXXXXXXXX is the backdoor key (example here is 68960818). The exe will generate a backdoor password (example here is 77648238).



```
Administrator: X:\windows\system32\cmd.exe - unlockhd_x64 6
X:\windows\system32>wpeinit
X:\windows\system32>d:
D:\>unlockhd_x64 68960818
UnlockHD_x64.exe
Copyright (C) 2012, Insyde Software Corp. All right
0.0.1
Password : 77648238
```

Figure 2-51. Win PE Backdoor Password

9. On the system with the locked HDD password, enter the backdoor password (example here is 77648238) in the window showing the backdoor key (Figure 2-50).
10. Press **Enter** after entering the backdoor password. The system will automatically reboot to Windows.

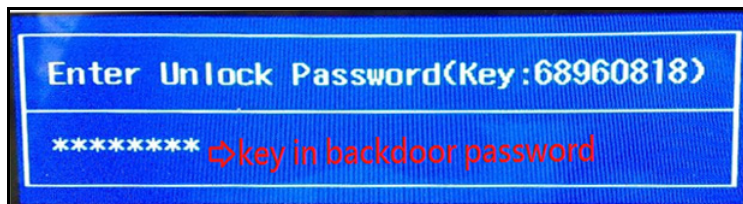


Figure 2-52. Enter Backdoor Password

11. The HDD password has been cleared.

Miscellaneous Tools

Using DMI Tools

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

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

There are two methods to update the DMI Pool Data as follows:

Method 1: DOS DMI Tools

To update the DMI Pool under DOS mode, perform the following:

1. Prepare a bootable USB Flash Disk.
2. Copy *DQDMI.exe* to the bootable USB Flash Disk.
3. Insert the USB Flash Disk and press **Power** button to turn on the system.

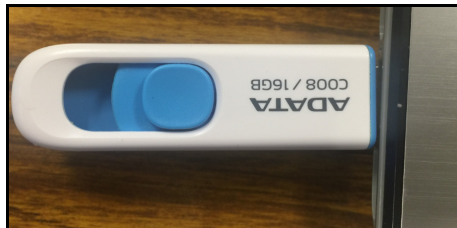


Figure 2-53. USB Flash Disk

4. Press **F2** during the POST screen to enter the BIOS Setup Menu.

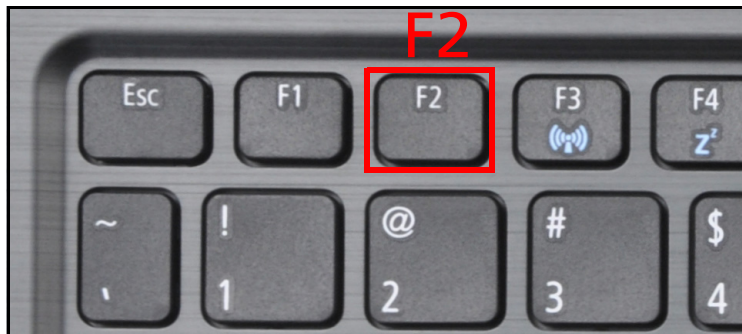


Figure 2-54. F2 Key Location

5. Under Main menu option, select "F12 Boot Menu" item and then press **Enter** to change the setting from Disabled to Enabled.

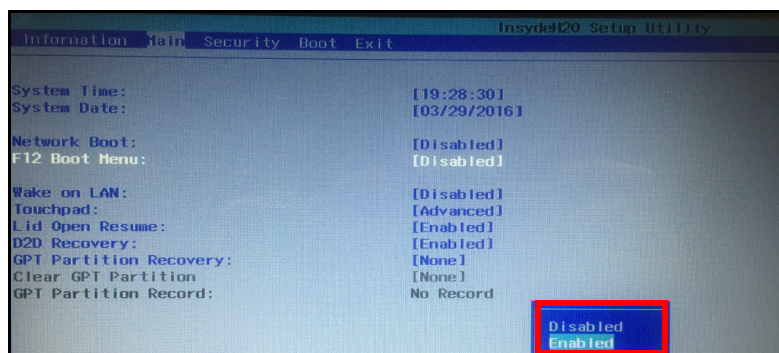


Figure 2-55. F12 Boot Menu Option

6. Move to Boot menu option and select "Boot Mode" item, then press **Enter** to change the setting from UEFI to Legacy.

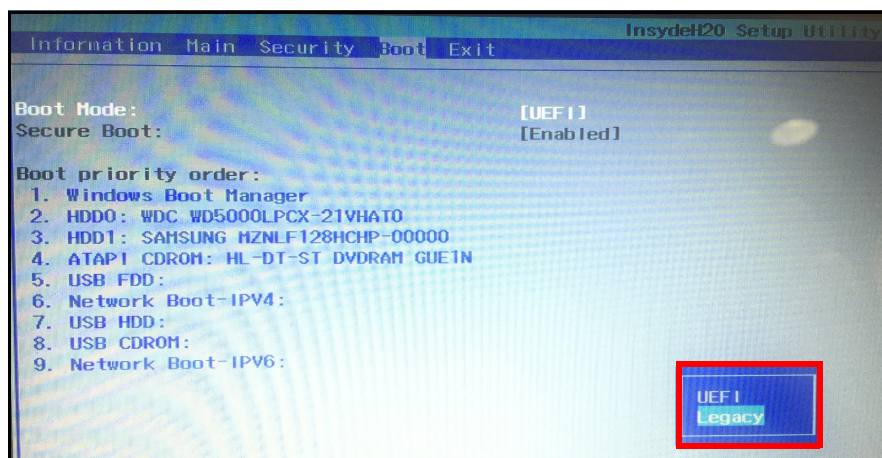


Figure 2-56. Legacy BIOS option

7. Press **Enter** to confirm the Legacy boot mode.

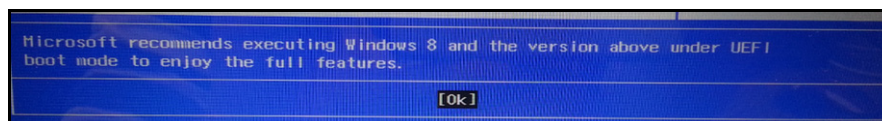


Figure 2-57. Legacy Boot Mode

8. Press **Enter** to confirm the change.

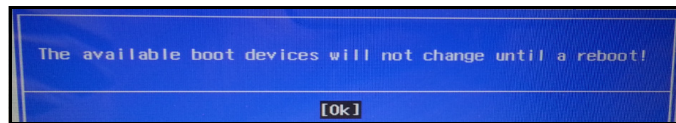


Figure 2-58. Confirming the Legacy Boot Mode

9. Press **F10** and confirm your selection to save the settings and exit the BIOS Menu (Figure 2-59). The system will restart automatically.

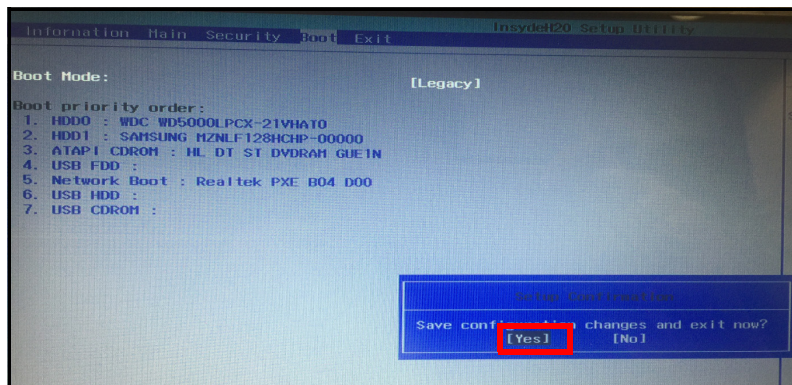


Figure 2-59. Save Configuration Changes and Exit

10. Press **F12** during the POST (power-on self-test) screen to enter the Boot Option Menu.



Figure 2-60. F12 Key Location

11. Select "USB HDD" and press *Enter* to enter DOS mode.

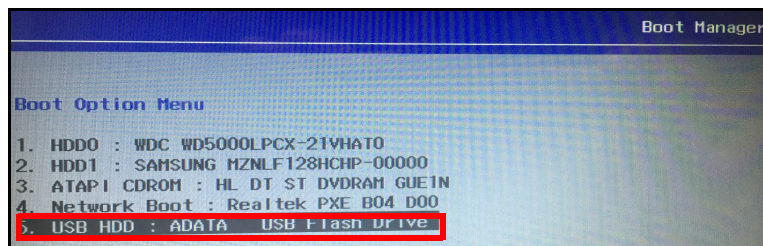


Figure 2-61. Boot Option Menu Option

12. Type *dqdm* and press *Enter*. To execute a specific function, input the command and the associated parameter.

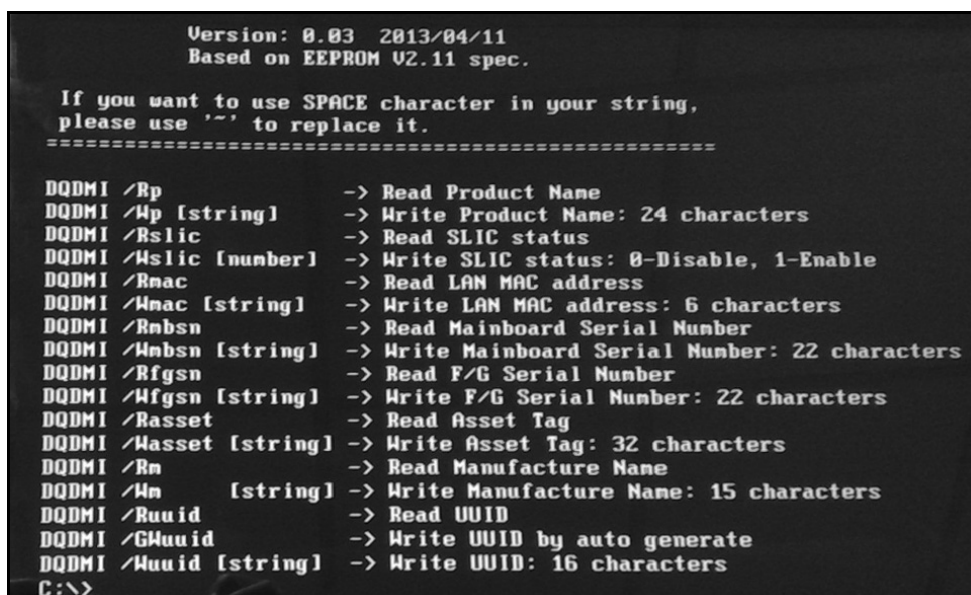


Figure 2-62. DMI Tools Main Menu Screen

Read/Write Product Name

- Execute **DQDMI /Rp** to read the product name.

```
C:\>DQDMI /Rp

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
P259-M
C:\>
```

Figure 2-63. Read Product Name

- Execute **DQDMI /Wp [string]** (the max string length is 24 characters) to modify the product name.

```
C:\>DQDMI /Wp P259-M

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
P259-M

EEPROM data is :
P259-M
C:\>
```

Figure 2-64. Write Product Name

Enable/Disable SLIC (Software Licensing Internal Code)

- Execute **DQDMI /Rslic** to read the SLC.

```

C:\>DQDMI /Rslic

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
SLIC Remove
C:\>

```

Figure 2-65. Read SLIC

- Execute **DQDMI /WSLIC 0** to disable the SLC (for non-windows OS).

```

C:\>DQDMI /wslic 0

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
0 - Remove SLIC

EEPROM data is :
SLIC Remove
C:\>

```

Figure 2-66. Disable SLIC

- Execute **DQDMI /Wslc 1** to enable the SLIC (for windows OS).

```
C:\>DQDMI /Wslc 1

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
1 - Restore SLIC

EEPROM data is :
SLIC Exist
C:\>
```

Figure 2-67. Enable SLIC

Table 2-6. SLIC Mapping Parameters

OS SKU	OA2.1 (SLIC)
Windows 7/XP	Enable
Windows 8 Standard	Disable
Windows 8 Professional	Enable
Non-Windows OS (Linpus)	Disable
Windows 10 Standard	Disable
Windows 10 Professional	Enable
Windows 10 with Family	Disable

Read/Write LAN MAC Address

- Execute **DQDMI /Rmac** to read the LAN MAC address.

```
C:\>DQDMI /Rmac

=====
          DQDMI - Quanta NB4 DMI tool for DOS
          Version: 0.03  2013/04/11
          Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
FFFFFFFFFFFF
C:\>
```

Figure 2-68. Read LAN MAC Address

- Execute **DQDMI /Wmac [string]** (the max string length is 6 characters) to write the LAN MAC address.

```
C:\>DQDMI /WMAC FFFFFFFFFF

=====
          DQDMI - Quanta NB4 DMI tool for DOS
          Version: 0.03  2013/04/11
          Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
FFFFFFFFFFFF

EEPROM data is :
FFFFFFFFFFFF
C:\>
```

Figure 2-69. Write LAN MAC Address

Read/Write Mainboard Serial Number

- Execute **DQDMI /Rmbn** to read the mainboard serial number.

```
C:\>DQDMI /RMBSN

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
NB13110033020003C7600
C:\>
```

Figure 2-70. Read Mainboard Serial Number

- Execute **DQDMI /Wmbn [string]** (the max string length is 22 characters) to write the mainboard serial number.

```
C:\>DQDMI /WMBSN 1234567890123456789012

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
1234567890123456789012

EEPROM data is :
1234567890123456789012
C:\>
```

Figure 2-71. Write Mainboard Serial Number

Read/Write F/G Serial Number

- Execute **DQDMI /Rfgsn** to read the F/G serial number.

```
C:\>DQDMI /RFGSN

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
N9L13WW0023020003C7600
C:\>
```

Figure 2-72. Read F/G Serial Number

- Execute **DQDMI /Wfgsn [string]** (the max string length is 22 characters) to write the F/G serial number.

```
C:\>DQDMI /WFGSN 1234567890123456789012

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
1234567890123456789012

EEPROM data is :
1234567890123456789012
C:\>
```

Figure 2-73. Write F/G Serial Number

Read/Write Asset Tag

- Execute **DQDMI /Rasset** to read the asset tag.

```
C:\>DQDMI /RASSET

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
12345678901234567890123456789012
C:\>
```

Figure 2-74. Read Asset Tag

- Execute **DQDMI /Wasset [string]** (the max string length is 32 characters) to write the asset tag.

```
C:\>DQDMI /Wasset 12345678901234567890123456789012

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
12345678901234567890123456789012

EEPROM data is :
12345678901234567890123456789012
C:\>
```

Figure 2-75. Write Asset Tag

Read/Write Manufacture Name

- Execute **DQDMI /Rm** to read the manufacture name.

```
C:\>DQDMI /RM

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03 2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
ACER
C:\>
```

Figure 2-76. Read Manufacture Name

- Execute **DQDMI /Wm [string]** (the max string length is 15 characters) to modify the manufacture name.

```
C:\>DQDMI /Wm Acer

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03 2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
Acer

EEPROM data is :
Acer
C:\>
```

Figure 2-77. Write Manufacture Name

Read/Write UUID

- Execute **DQDMI /RUUID** to read the UUID.

```
C:\>DQDMI /RUUID

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
4A9978281E5EA6635E0DFFFFFFFFFFFFF
C:\>
```

Figure 2-78. Read UUID

- Execute **DQDMI /Wuuid [string]** (the max string length is 16 characters) to write the UUID.

```
C:\>DQDMI /WUUID 12345678901234567890123456789012

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

Input data is :
12345678901234567890123456789012

EEPROM data is :
12345678901234567890123456789012
C:\>
```

Figure 2-79. Write UUID

- Execute **DQDMI /GWuuid** to write the UUID by auto generate

```
C:\>DQDMI /GWUUID

=====
      DQDMI - Quanta NB4 DMI tool for DOS
      Version: 0.03  2013/04/11
      Based on EEPROM V2.11 spec.

If you want to use SPACE character in your string,
please use '~' to replace it.
=====

EEPROM data is :
7A5F2234E15FC4A5C25DFFFFFFFFFFFF
C:\>
```

Figure 2-80. Write UUID by Auto-generate

13. Press and hold the **Power** button for 4 seconds to sync memory map data into EEPROM (System will turn off).

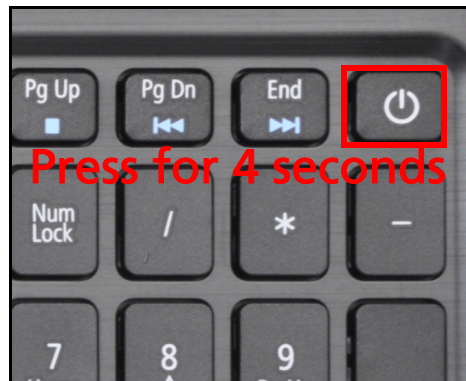


Figure 2-81. Save EEPROM Data

⇒ **NOTE:**

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

⚠ **CAUTION:**

Do not remove the AC power directly while updating the data, it may cause the EEPROM data corrupted or the loss of new EEPROM data.

Method 2: WINPE DMI Tools

To update the DMI Pool under Windows mode, perform the following:

1. Prepare a bootable WINPE x64 USB Flash Disk.
2. Copy *WQDMIx64.EXE* to the WINPE x64 USB Flash Disk. Rename the filename from *WQDMIx64.EXE* to *WQDMI.EXE*.
3. Insert the WINPE x64 USB Flash Disk and press **Power** button to turn on the system.



Figure 2-82. Power Key Location

4. Press **F2** during the POST screen to enter the BIOS Setup Menu.

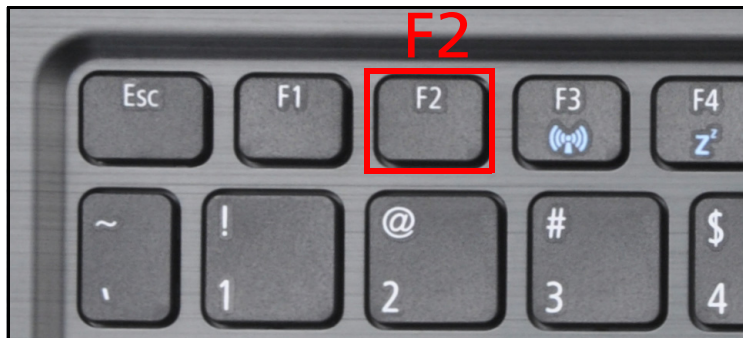


Figure 2-83. F2 Key Location

5. Under **Main menu** option, select "F12 Boot Menu" item and then press **Enter** to change the setting from **Disabled** to **Enabled**.

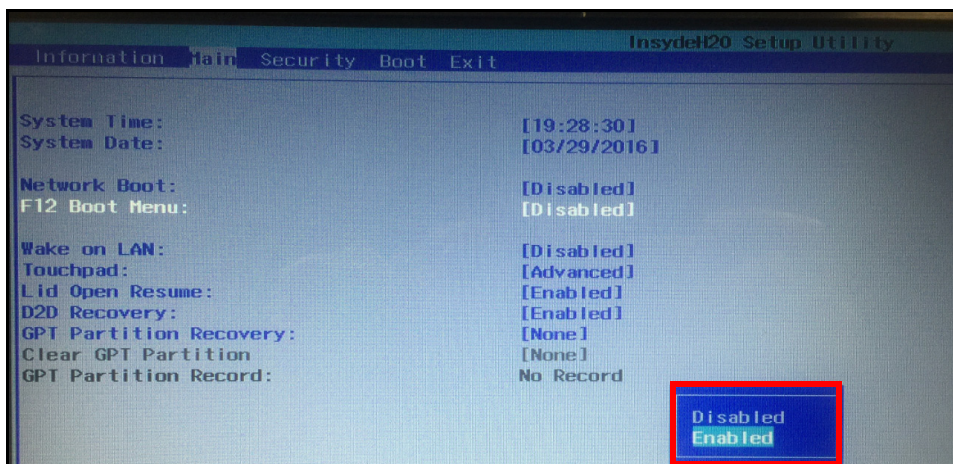


Figure 2-84. F12 Boot Menu Option

6. Press **F10** and confirm your selection to save the settings and exit the BIOS Menu (Figure 2-85). The system will restart automatically.

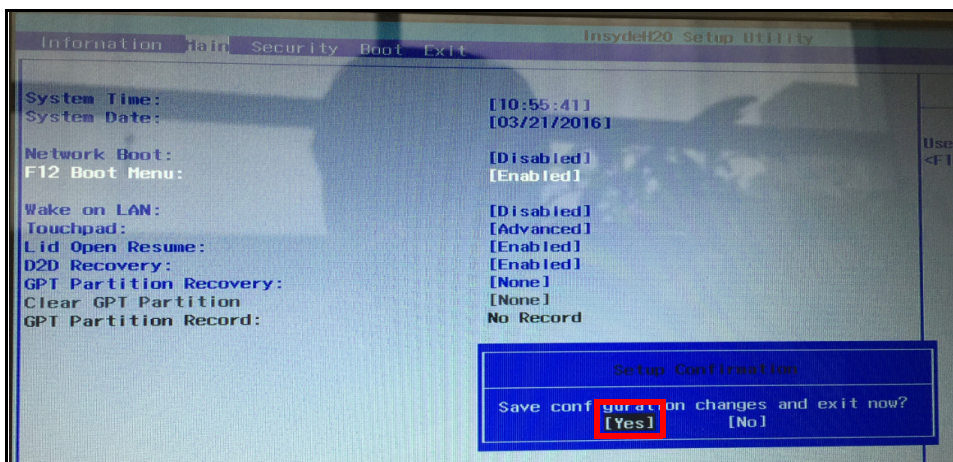


Figure 2-85. Save Configuration Changes and Exit

7. Press **F12** during the POST (power-on self-test) screen to enter the Boot Option Menu.



Figure 2-86. F12 Key Location

8. Select "USB HDD" and press **Enter** to enter WINPE x64 mode.

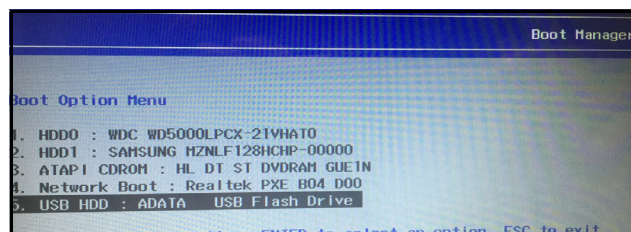


Figure 2-87. Boot Option Menu Option

9. Execute the following commands to switch to disk D.

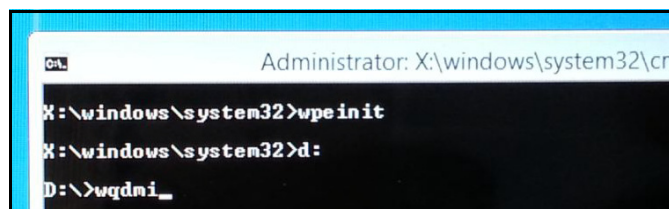


Figure 2-88. WINPE Mode

10. Type **wqdm** and press **Enter** (Figure 2-88). To execute a specific function, input the command and the associated parameter as shown in Figure 2-89.


```
D:\>wqdm1
=====
WQDMI - Quanta NB4 DMI tool for Windows
Version: 0.04 2015/01/21
Based on EEPROM U2.11 spec.

If you want to use SPACE character in your string,
just type the characters in " ".
For example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

WQDMI /Rp -> Read Product Name
WQDMI /Wp [string] -> Write Product Name: 24 characters
WQDMI /Rslic -> Read SLIC status
WQDMI /Wslic [number] -> Write SLIC status: 0-Disable, 1-Enable
WQDMI /Rmac -> Read LAN MAC address
WQDMI /Wmac [string] -> Write LAN MAC address: 6 characters
WQDMI /Rmbn -> Read Mainboard Serial Number
WQDMI /Wmbn [string] -> Write Mainboard Serial Number: 22 characters
WQDMI /Rfgsn -> Read F/G Serial Number
WQDMI /Wfgsn [string] -> Write F/G Serial Number: 22 characters
WQDMI /Rasset -> Read Asset Tag
WQDMI /Wasset [string] -> Write Asset Tag: 32 characters
WQDMI /Rm -> Read Manufacture Name
WQDMI /Wm [string] -> Write Manufacture Name: 15 characters
WQDMI /Ruuid -> Read UUID
WQDMI /GWuuid -> Write UUID by auto generate
WQDMI /Wuuid [string] -> Write UUID: 16 characters
```

Figure 2-89. DMI Tools Main Menu Screen

Read/Write Product Name

- Execute **WQDMI /Rp** to read the product name.

```
D:\>wqdmf /Rp
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
TravelMate P259-M
```

Figure 2-90. Read Product Name

- Execute **WQDMI /Wp [string]** (the max string length is 24 characters) to modify the product name.

```
D:\>wqdmf /Wp "TravelMate P259-M"
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
TravelMate P259-M

EEPROM data is :
TravelMate P259-M
```

Figure 2-91. Write Product Name

Enable/Disable SLIC (Software Licensing Internal Code)

- Execute **WQDMI /Rslc** to read the SLIC.

```
D:\>wqdmī /RSLIC
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
SLIC Remove
```

Figure 2-92. Read SLIC

Table 2-5 describes the enable/disable SLIC mapping parameters.

Table 2-7. SLIC Mapping Parameters

OS SKU	OA2.1 (SLIC)
Windows 7 / Windows XP	Enable
Windows 8 Standard	Disable
Windows 8 Professional	Enable
Non-Windows OS (Linpus)	Disable

- Execute **WQDMI /Wslc 0** to disable or remove the SLIC (for Win 8 Standard and non-Windows OS).

```
D:\>wqdmī /Wslc 0
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
0 - Remove SLIC

EEPROM data is :
SLIC Remove
```

Figure 2-93. Disable SLIC

- Execute **WQDMI /Wslc 1** to enable or restore the SLIC (for Win 7/XP and Win 8 Pro OS).

```
D:\>wqdmf /WSLIC 1
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
1 - Restore SLIC

EEPROM data is :
SLIC Exist
```

Figure 2-94. Enable SLIC

Read/Write LAN MAC Address

- Execute **WQDMI /Rmac** to read the LAN MAC address.

```
D:\>WQDMI /RMAC
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04 2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
2C600C373F71
```

Figure 2-95. Read LAN MAC Address

- Execute **WQDMI /Wmac [string]** (the max string length is 6 characters) to write the LAN MAC address.

```
D:\>WQDMI /WMAC 2C600C373F71
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04 2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
2C600C373F71

EEPROM data is :
2C600C373F71
```

Figure 2-96. Read LAN MAC Address

Read/Write Mainboard Serial Number

- Execute **WQDMI /Rmbn** to read the mainboard serial number.

```
D:\>WQDMI /RMBN
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
NBMVH11001452136D87600
```

Figure 2-97. Read Mainboard Serial Number

- Execute **WQDMI /Wmbn [string]** to write the mainboard serial number.

```
D:\>WQDMI /WMBN NBMVH11001452136D87600
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
NBMVH11001452136D87600

EEPROM data is :
NBMVH11001452136D87600
```

Figure 2-98. Write Mainboard Serial Number

Read/Write F/G Serial Number

- Execute **WQDMI /Rfgsn** to read the F/G serial number.

```
D:\>WQDMI /RFGSN
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
NBMVH11001452136D87600
```

Figure 2-99. Read F/G Serial Number

- Execute **WQDMI /Wfgsn [string]** to write the F/G serial number.

```
D:\>WQDMI /WFGSN NBMVH11001452136D87600
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
NBMVH11001452136D87600

EEPROM data is :
NBMVH11001452136D87600
```

Figure 2-100. Write F/G Serial Number

Read/Write Asset Tag

- Execute **WQDMI /Rasset** to read the asset tag.

```
D:\>WQDMI /RASSET
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
12345678901234567890123456789012
```

Figure 2-101. Read Asset Tag

- Execute **WQDMI /Wasset [string]** to write the asset tag.

```
D:\>WQDMI /WASSET 12345678901234567890123456789012
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
12345678901234567890123456789012

EEPROM data is :
12345678901234567890123456789012
```

Figure 2-102. Write Asset Tag

Read/Write Manufacture Name

- Execute **WQDMI /Rm** to read the manufacture name.

```
D:\>WQDMI /RM
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
Acer
```

Figure 2-103. Read Manufacture Name

- Execute **WQDMI /Wm [string]** to modify the manufacture name.

```
D:\>WQDMI /WM ACER
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
ACER

EEPROM data is :
ACER
```

Figure 2-104. Write Manufacture Name

Read/Write UUID

- Execute **WQDMI /Ruuid** to read the UUID.

```
D:\>WQDMI /RUUID
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
5D6A9C40BF11409D947E2C600C373F71
```

Figure 2-105. Read UUID

- Execute **WQDMI /Wuuid [string]** to write the UUID.

```
D:\>WQDMI /WUUUID 12345678901234567890
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

Input data is :
12345678901234567890

EEPROM data is :
12345678901234567890000000000000
```

Figure 2-106. Write UUID

- Execute **WQDMI /GWuuid** to write the UUID by auto generate.

```
D:\>WQDMI /GWUUID 12345678901234567890
=====
      WQDMI - Quanta NB4 DMI tool for Windows
      Version: 0.04  2015/01/21
      Based on EEPROM V2.11 spec.
If you want to use SPACE character in your string,
just type the characters in " ".
for example "ABC 123".
type "WQDMI /h" or "WQDMI" for help
=====

EEPROM data is :
EC0182B0469428E08E76969A930839E7

EEPROM data is :
EC0182B0469428E08E76969A930839E7
```

Figure 2-107. Write UUID by Auto-generate

11. At the command prompt, type **wpeutil shutdown** to sync memory map data into EEPROM (System will shutdown). Alternatively, turn off the system by pressing and holding the **Power** button for 4 seconds.

```
D:\> wpeutil shutdown
```

Figure 2-108. WQDMI Command Prompt

⇒ **NOTE:**

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

⚠ **CAUTION:**

Do not remove the AC power directly while updating the data (during shutdown process), it may cause the EEPROM data corrupted or the loss of new EEPROM data.

Crisis Disk Recovery

1. Prepare a bootable USB Flash Disk.

⇒ **NOTE:**

The USB flash disk must be in FAT32 or FAT16 format. The USB flash disk in either NTFS or exFAT format cannot be used.

1. Copy the *ZAA.FD* file to the USB flash disk root directory.

⇒ **NOTE:**

If the CPU is iX-7XXX, copy the *ZAA2.FD* file (8MB folder in KBL)

If the CPU is iX-6XXX, copy the *ZAA.FD* file (8MB folder in SKL)

If the CPU is iX-6XXX and fingerprint & PBA SKU, copy the *ZAA3.FD* file (16MB folder in SKL)

2. Power off the system and ensure the AC adapter is plugged into the system
3. Insert the USB Flash Disk into the system.USB Flash Disk
4. Press and hold the ***Fn*** + ***Esc*** keys, and then press the ***Power*** button.



Figure 2-109. Keyboard Key Location

5. When Power LED starts blinking and the LCD panel is dark, release the ***Fn*** + ***Esc*** keys and the ***Power*** button.

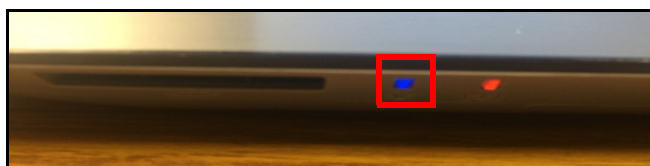


Figure 2-110. Crisis Recovery Proceeding

6. The system will enter crisis mode to flash the BIOS (The process takes about 3-5 minutes).
7. The Power LED will stop blinking and turn off when the Crisis Recovery Process is finished. Press the ***Power*** button to turn on the computer.



Figure 2-111. Crisis Recovery Finished

8. When the Acer logo appears on the screen, press **F2** during the POST (power-on self-test) screen to enter the BIOS.



Figure 2-112. Crisis Recovery Process

9. Ensure the System BIOS Version is the same as the crisis BIOS version .

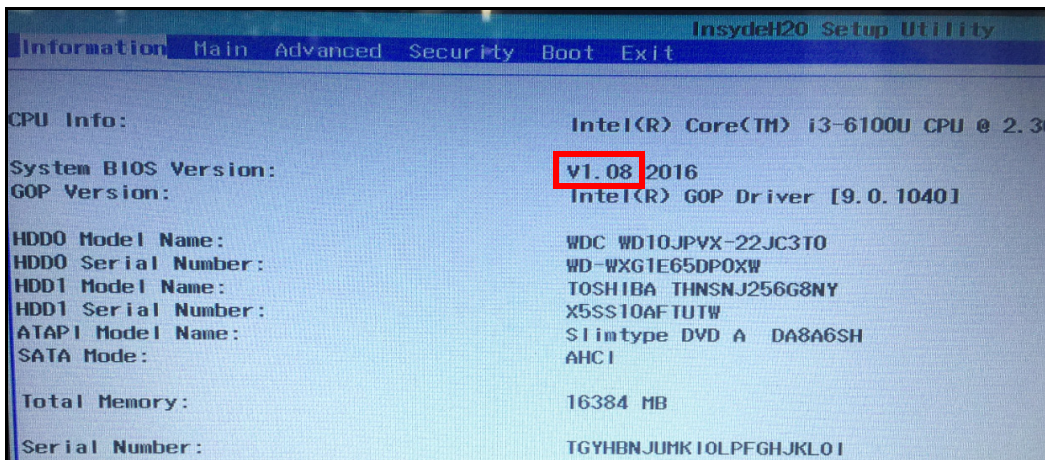


Figure 2-113. HDD password cleared

CHAPTER 3

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Machine Maintenance Procedures

Introduction

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

General Information

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

All prerequisites must be completed prior to starting maintenance.

Recommended Equipment

The following equipment are recommended to do the following maintenance procedures:

- Wrist grounding strap and conductive mat
- Philips screwdriver
- Plastic tweezers
- Flat plastic pry

Pre-disassembly Instructions

Do the following prior to starting any maintenance procedures:

1. Place the system on a stable work surface.
2. Remove AC adapter (A) from the system and peripherals (Figure 3-1).
3. Remove all cables from system.



Figure 3-1. AC Adapter Outlet

4. Remove the SD card from the SD card slot (B) (Figure 3-2).



Figure 3-2. SD Card Removal

⇒ NOTE:

Make sure the system is completely powered off.

Disassembly Process

The disassembly process is divided into the following sections:

- Main unit disassembly
- LCD module disassembly

The flowcharts provided in the succeeding disassembly sections illustrate the entire disassembly sequence. Observe the order of the sequence to avoid damage to any of the hardware components. For example, when removing the mainboard, remove first the battery, the ODD module, and the Base Cover in that order.

Table 3-1. Main Screw List

Size	Quantity	Acer Part No.
M2.5*3.5-I(BZN)(NYLOK)IRON	6	86.MSTN7.001
M2.0*3.0-I(BZN)(NYLOK)IRON	21 (Discrete) 19 (UMA)	86.GDEN7.001
M2.0*2.0- I(BNI)(NYLOK)IRON	5	86.G55N7.001
M2.5*7-I(BNI)(NYLOK)(D5,T0.8)IRON	22	86.MVHN7.002
M3*0.5+3.5I IRON	4	86.TDY07.003

Main Unit Disassembly Process

Main Unit Disassembly Flowchart

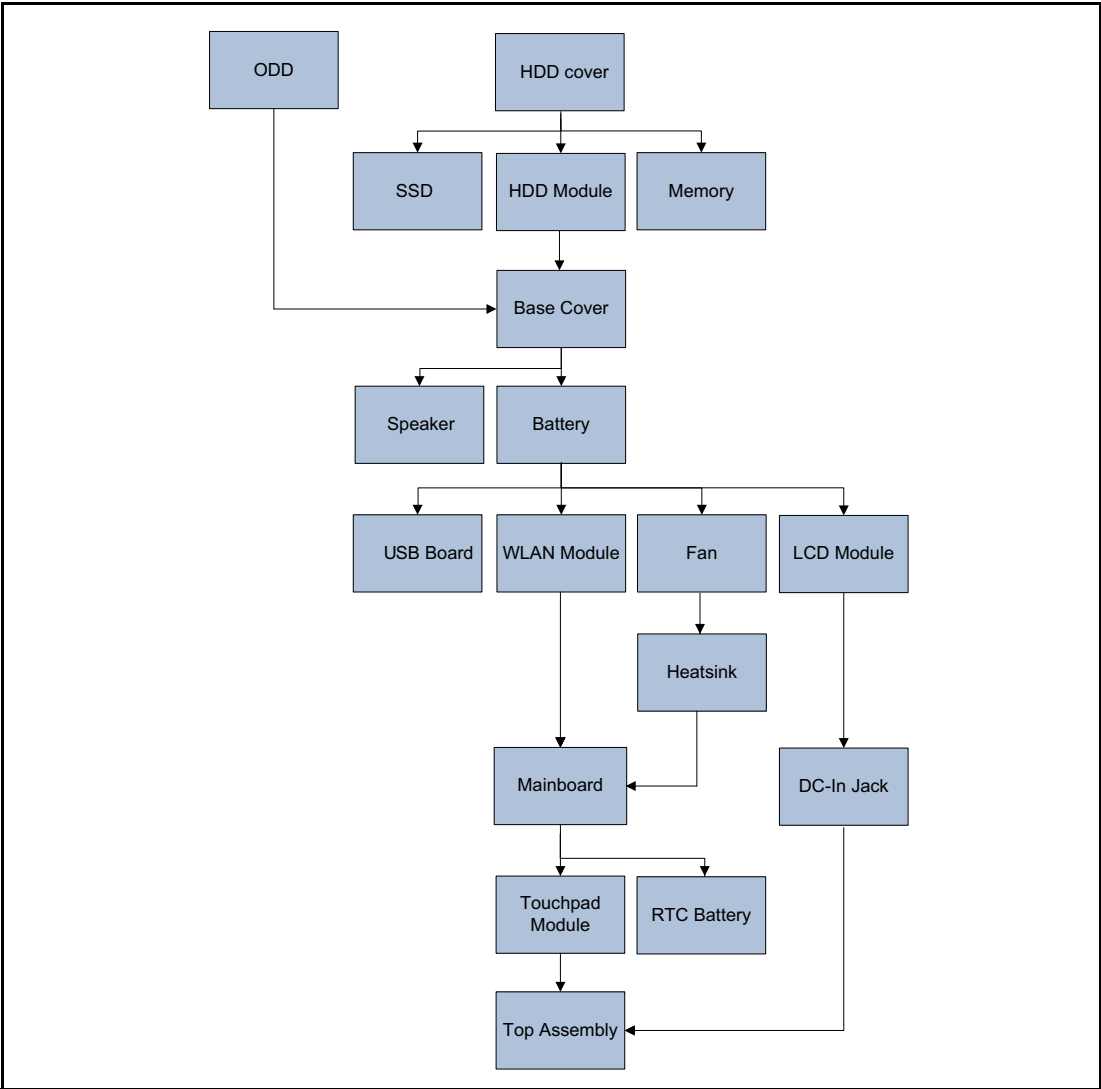


Table 3-2. Main Unit Screw List

Step	Size	Quantity	Acer Part No.
ODD Module Removal	M2.0 x 3.0	2	86.GDEN7.001
Base Cover Removal	M2.5 x 7.0	15	86.MVHN7.002
	M2.0 x 3.0	3	86.GDEN7.001
HDD Module Removal	M3.0 x 3.5	4	86.TDY07.003
WLAN Module Removal	M2.0 x 3.0	1	86.GDEN7.001
Heatsink Removal	M2.0 x 3.0	5 (Discrete) 3 (UMA)	86.GDEN7.001

Step	Size	Quantity	Acer Part No.
Fan Removal	M2.5 x 7.0	2	86.MVHN7.002
LCD Module Removal	M2.5 x 7.0	2	86.MVHN7.002
Mainboard Removal	M2.0 x 3.0	2	86.GDEN7.001
Touchpad Board Removal	M2.0 x 2.0	5	86.G55N7.001

⇒ **NOTE:**

The keyboard is included as part of the top assembly and can not be disassembled.
In the event that the keyboard is damaged, replace the entire top assembly.

ODD (Optical Disk Drive) Module Removal

1. Remove one (1) screw from the base cover (Figure 3-3).

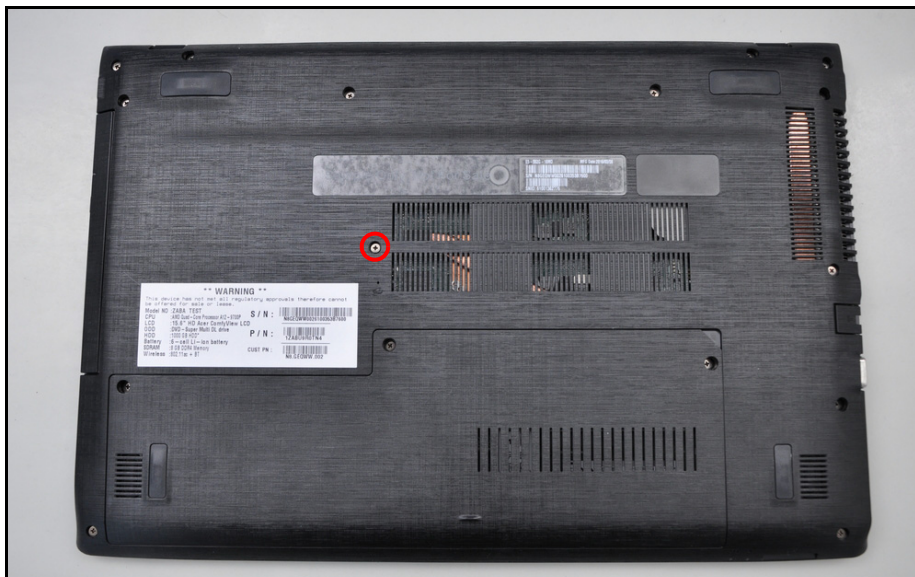


Figure 3-3. Optical Drive Screw Location

2. Slide the ODD module (A) out of the system (Figure 3-4).



Figure 3-4. ODD Module Removal

3. Remove the ODD bezel (B) from the ODD tray by first prying from the right side (C) of the ODD tray, and then prying from the left side (D) (Figure 3-5).

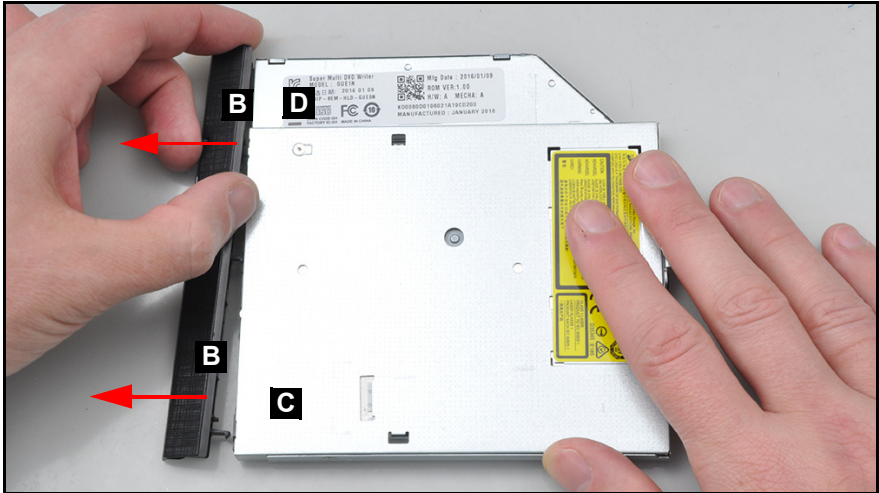


Figure 3-5. ODD Bezel Removal

4. Remove (2) screws from the ODD bracket (Figure 3-6).
5. Remove the ODD bracket (D) (Figure 3-6).

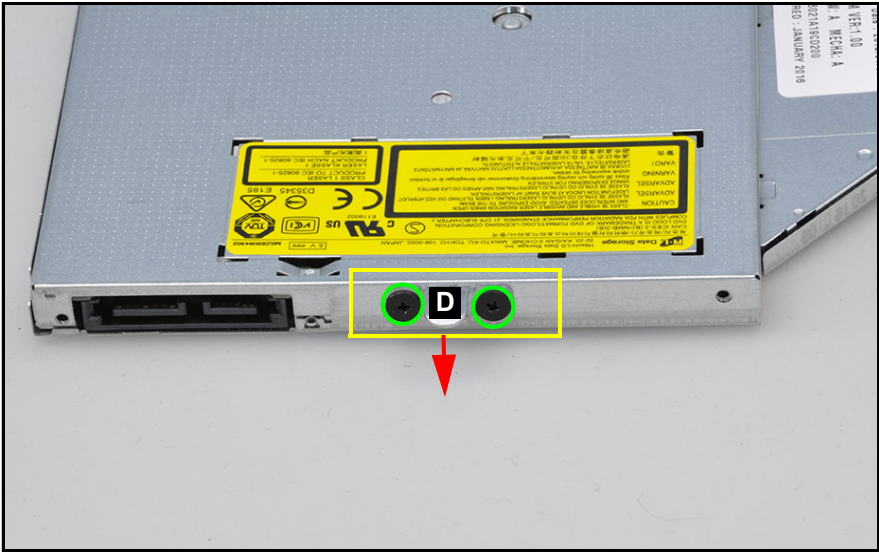




Figure 3-6. ODD Bracket Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0±0.15KGF/CM	1	

ID	Size	Torque	Quantity	Screw Type
Green Call out	M2.0*3.0	2.0±0.2KGF/CM	2	

HDD (Hard Disk Drive) Door Removal

Prerequisite:

1. Remove three (3) screws from the HDD door ([Figure 3-18](#)).

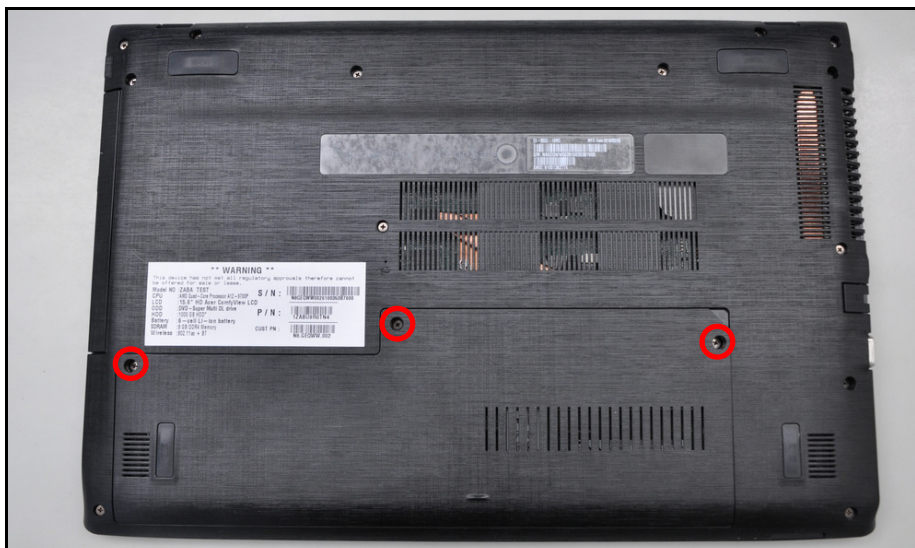


Figure 3-7. HDD Door Removal

2. Lift the right side of the HDD door (A) away from the system and remove the HDD door (A) ([Figure 3-8](#)).

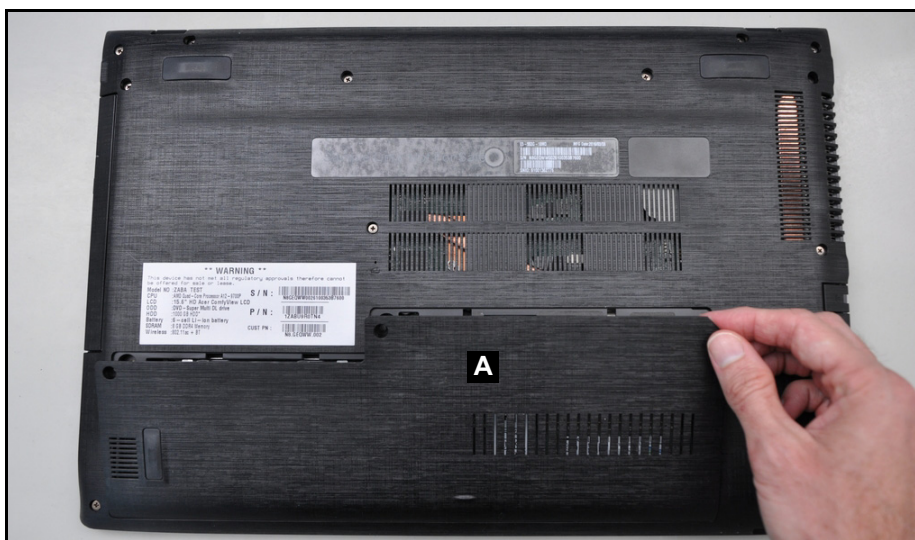



Figure 3-8. HDD Door Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0±0.15KGF/CM	3	

HDD (Hard Disk Drive) Module Removal

Prerequisite:

[HDD \(Hard Disk Drive\) Door Removal](#)

1. Find the HDD module (C) in the system ([Figure 3-9](#)).

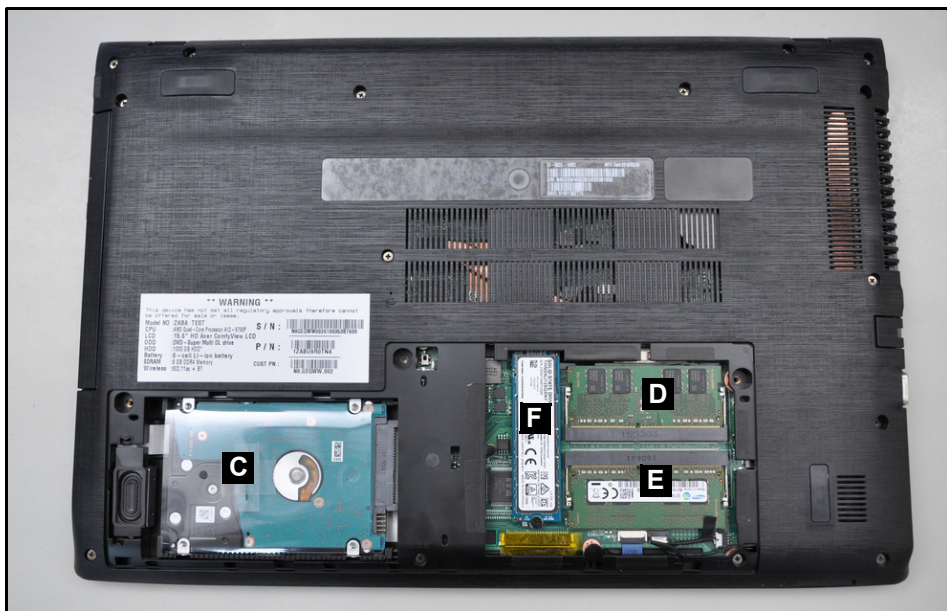


Figure 3-9. Component Locations

2. Grasp and remove the HDD module (C) from the mainboard connector (A) ([Figure 3-10](#)).

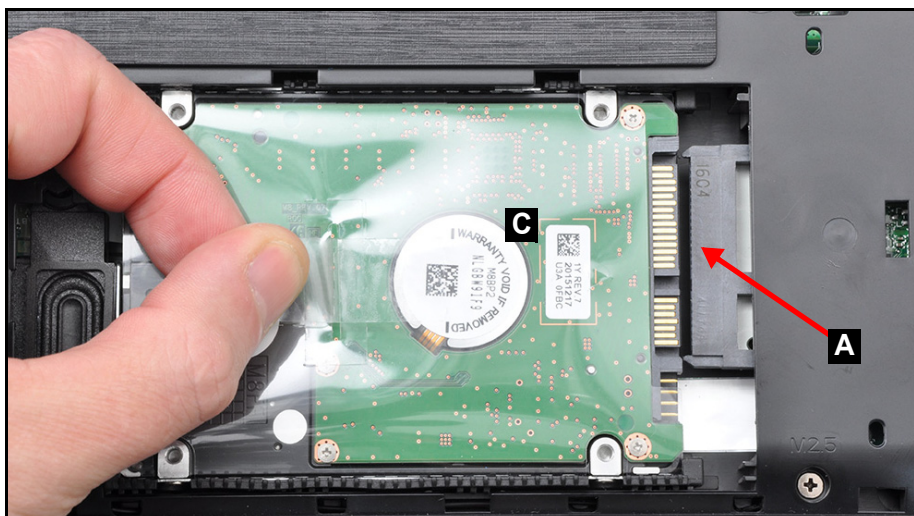


Figure 3-10. HDD Module Removal

3. Remove four (4) screws (B) from the HDD brackets (A) (Figure 3-11).

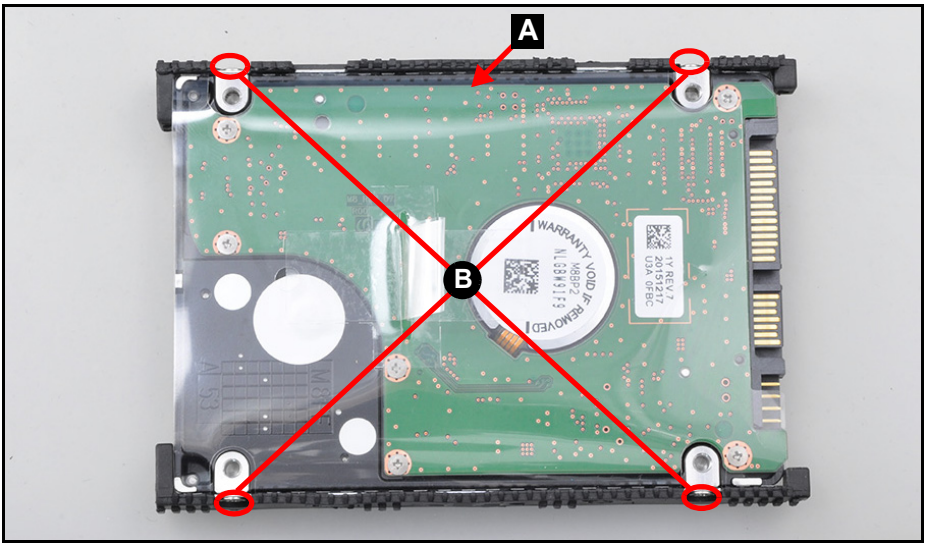


Figure 3-11. HDD Bracket with Mylar Removal

4. Grasp and remove the HDD brackets with mylar (D) (Figure 3-12).

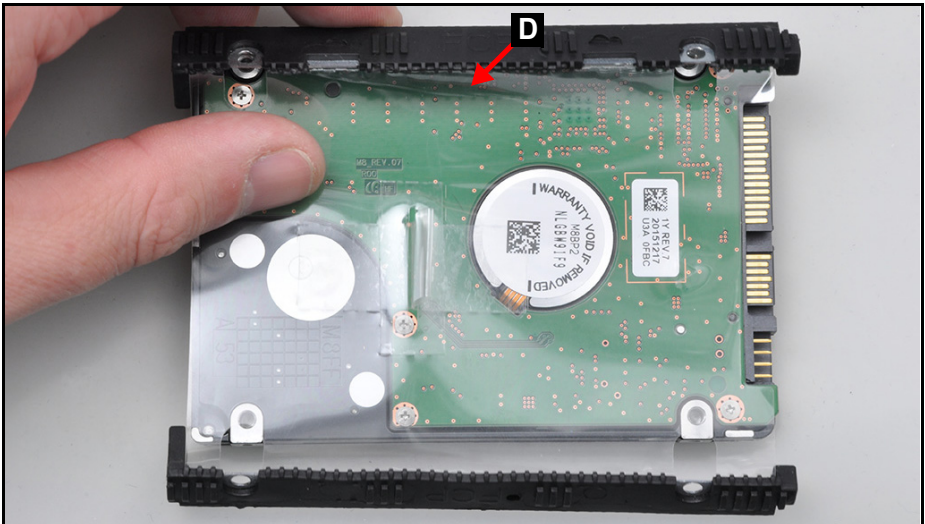



Figure 3-12. HDD Bracket with Mylar Removal

ID	Size	Torque	Quantity	Screw Type
B	M3.0*3.5	3.2±0.2KGF/CM	4	

DIMM (Dual In-line Memory Module) Removal

Prerequisite:

HDD (Hard Disk Drive) Door Removal

1. Find the DIMM (D) (E) in the system (refer to [Figure 3-9](#)).
2. Push the DIMM clips (A) outwards ([Figure 3-13](#)).

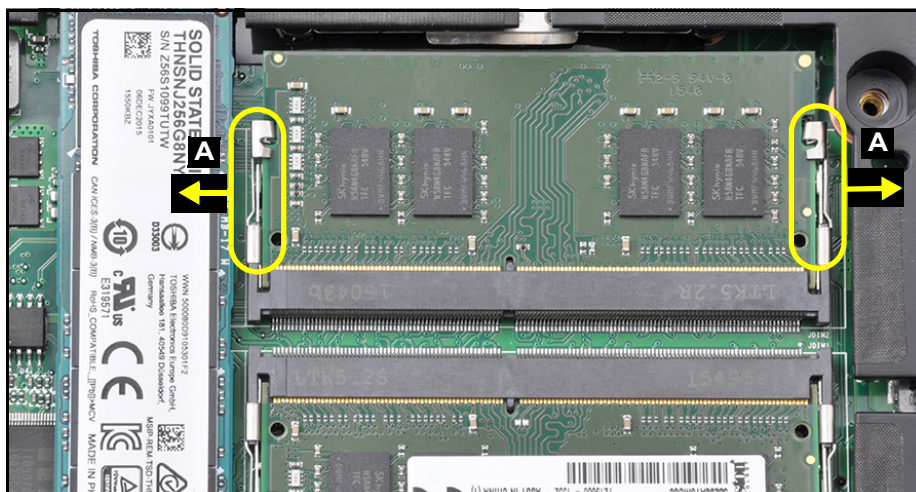


Figure 3-13. DIMM Removal

3. Remove the DIMM from the mainboard connector (B) ([Figure 3-14](#)).
4. Push the DIMM clips (C) outwards ([Figure 3-14](#)).

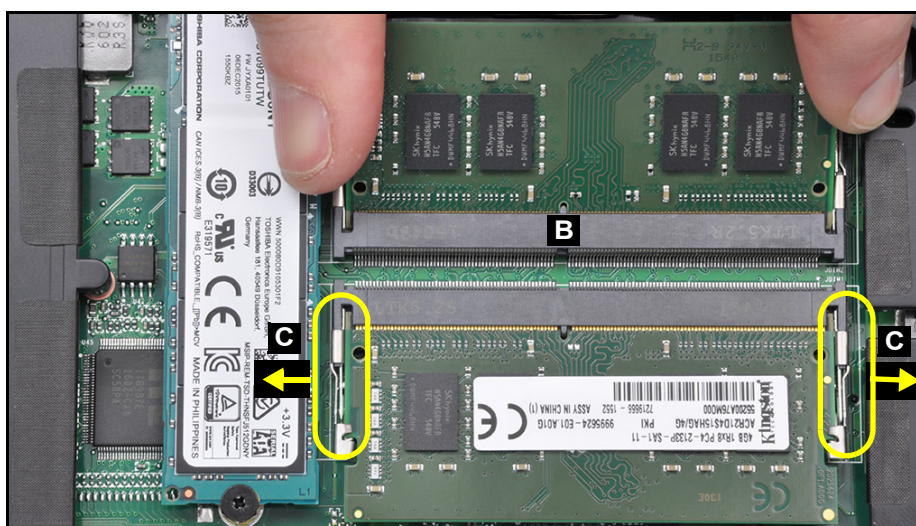


Figure 3-14. DIMM Removal

5. Remove the DIMM from the mainboard connector (F) (Figure 3-15).

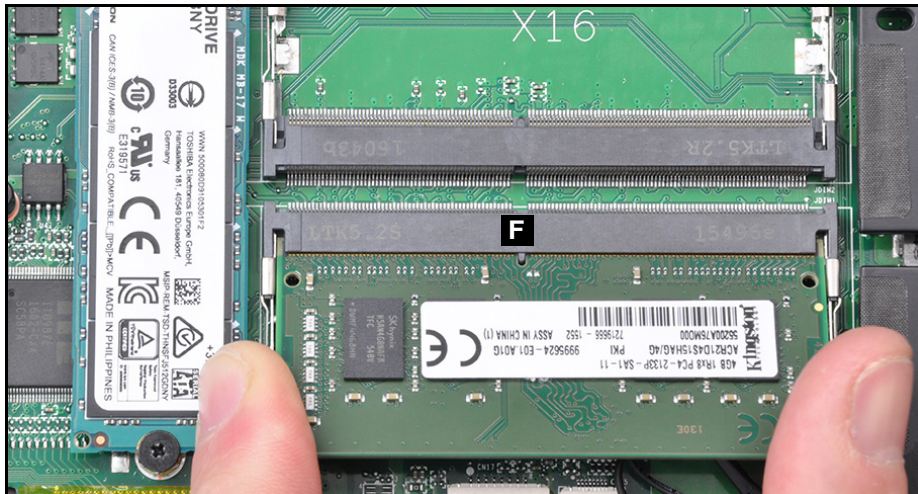


Figure 3-15. DIMM Removal

SSD (Solid State Drive) Module Removal

Prerequisite:

[HDD \(Hard Disk Drive\) Door Removal](#)

1. Find the SSD (F) in the system ([Figure 3-9](#)).
2. Remove one screw securing the SSD module in place ([Figure 3-16](#)).

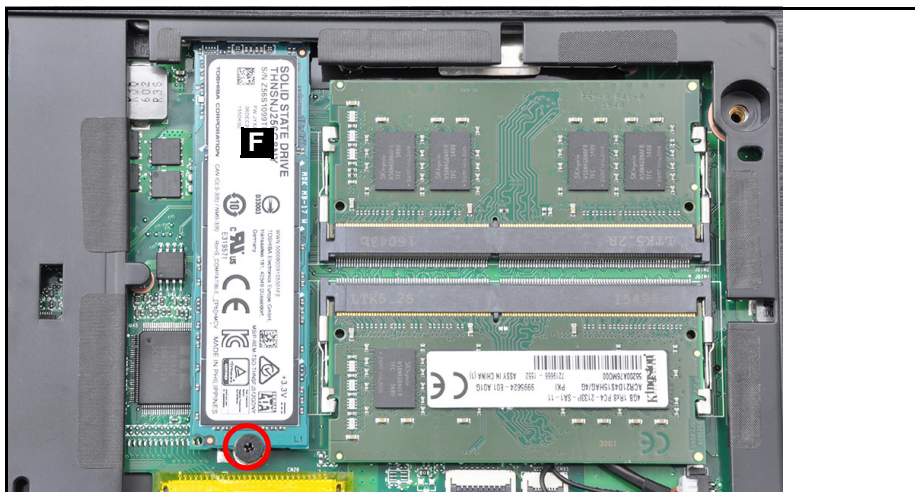


Figure 3-16. SSD Removal

3. Remove the SSD (F) from the mainboard connector (A) ([Figure 3-17](#)).

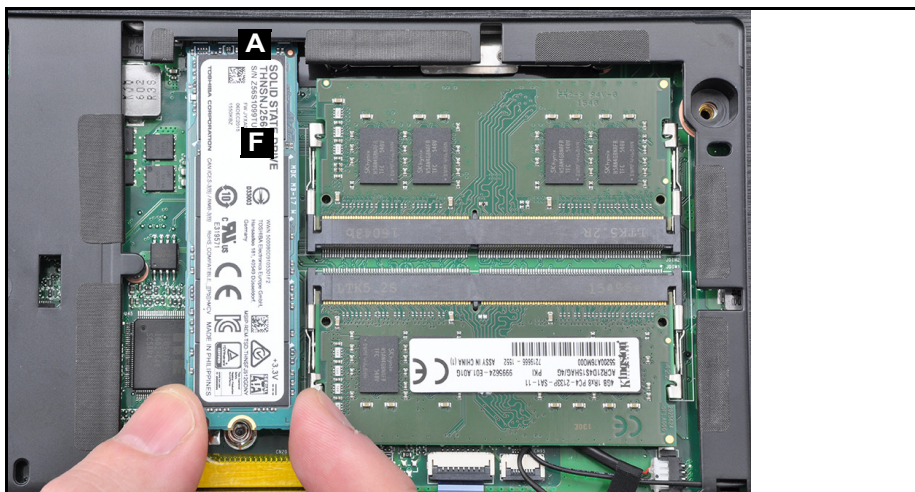



Figure 3-17. SSD Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*3.0	2.0±0.2KGF/CM	1	

Base Cover Removal

Prerequisite:

ODD (Optical Disk Drive) Module Removal
HDD (Hard Disk Drive) Module Removal

1. Disconnect the speaker cable (A) from the mainboard connector (Figure 3-18).
2. Remove seventeen (17) screws from the base cover (Figure 3-18).

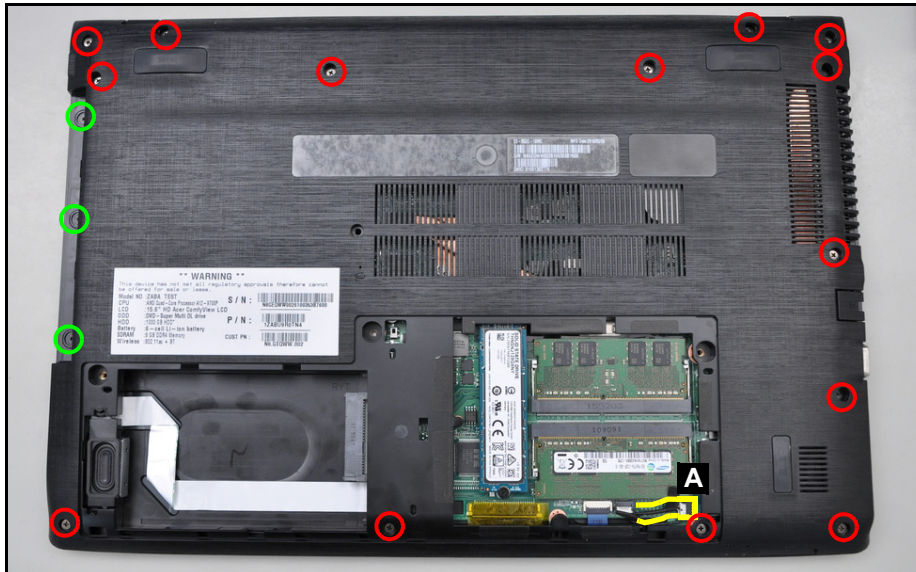


Figure 3-18. Base Cover Removal

3. Carefully pry up the base cover starting from the left corner of the system (Figure 3-19).





Figure 3-19. Base Cover Removal

4. Grasp and remove the base cover from the system (Figure 3-20).



Figure 3-20. Base Cover Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0±0.15KGF/CM	14	
Green Call out	M2.0*3.0	2.0±0.2KGF/CM	3	

Speaker Module Removal

Prerequisite:

Base Cover Removal

1. Place the base cover on a flat surface (Figure 3-21).
2. Remove the speaker cable (A) from the cable guides (Figure 3-21).

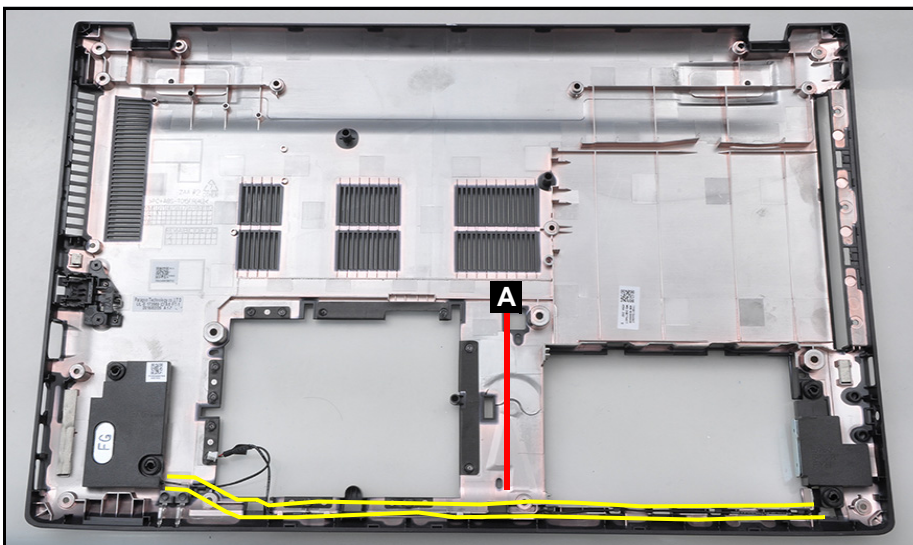


Figure 3-21. Speaker Module Removal

3. Carefully pry up the speaker module (B) and remove it (Figure 3-22).

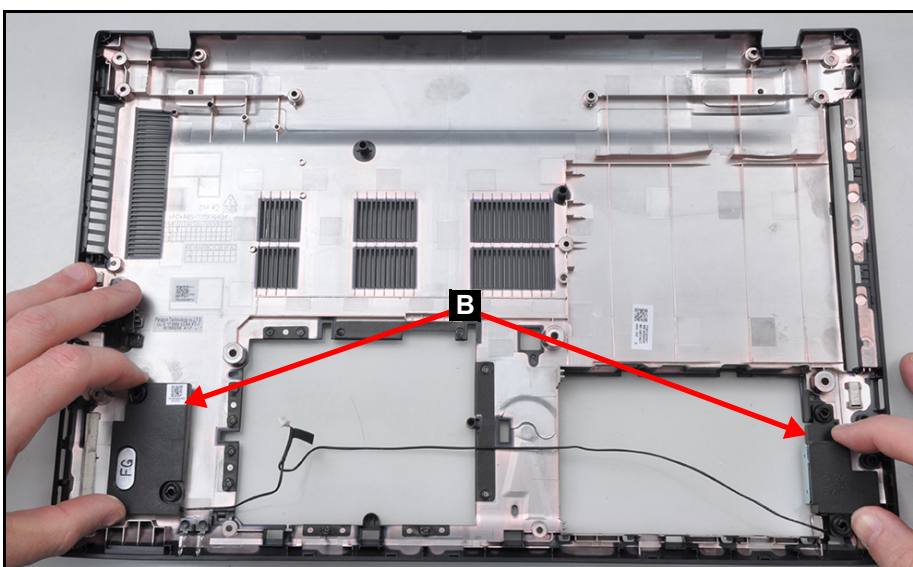


Figure 3-22. Speaker Module Removal

Battery Pack Removal

Prerequisite:

Base Cover Removal

1. Find the battery pack (A) in the system ([Figure 3-23](#)).
2. Disconnect the battery cable from the mainboard connector (B) ([Figure 3-23](#)).

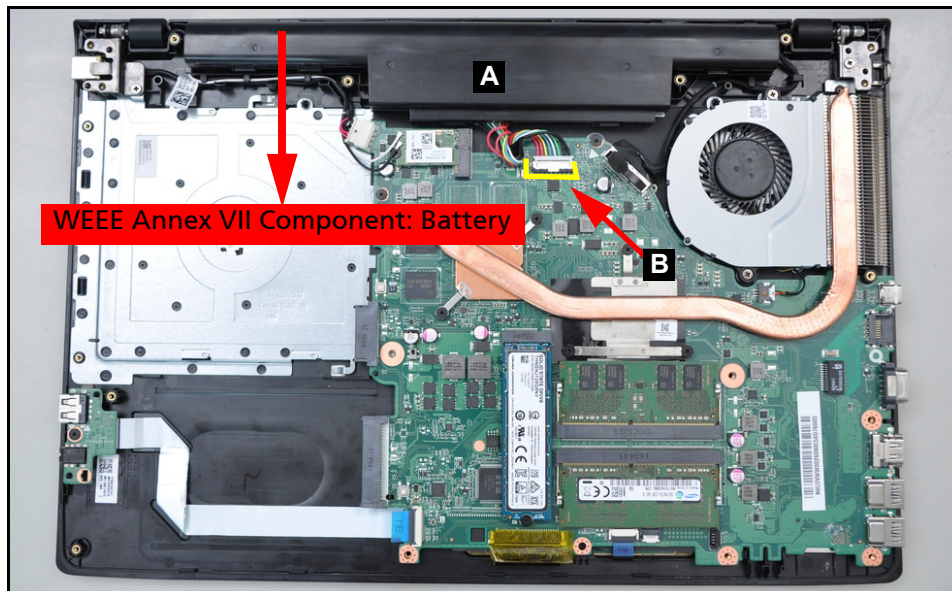


Figure 3-23. Battery Pack Removal

3. Remove the battery pack (A) from the system ([Figure 3-24](#)).

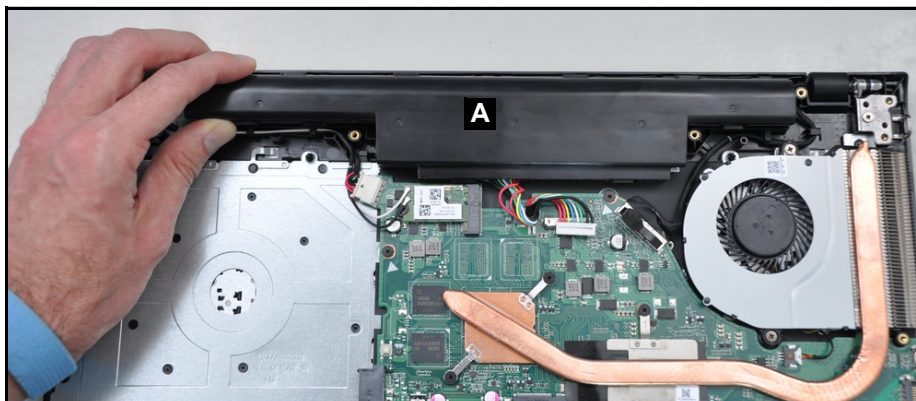


Figure 3-24. Battery Pack Removal

+ IMPORTANT:

Follow local regulations for battery disposal.

WLAN (Wireless Local Area Network) Module Removal

Prerequisite:

Battery Pack Removal

1. Find the WLAN module (A) on the top assembly (Figure 3-25).

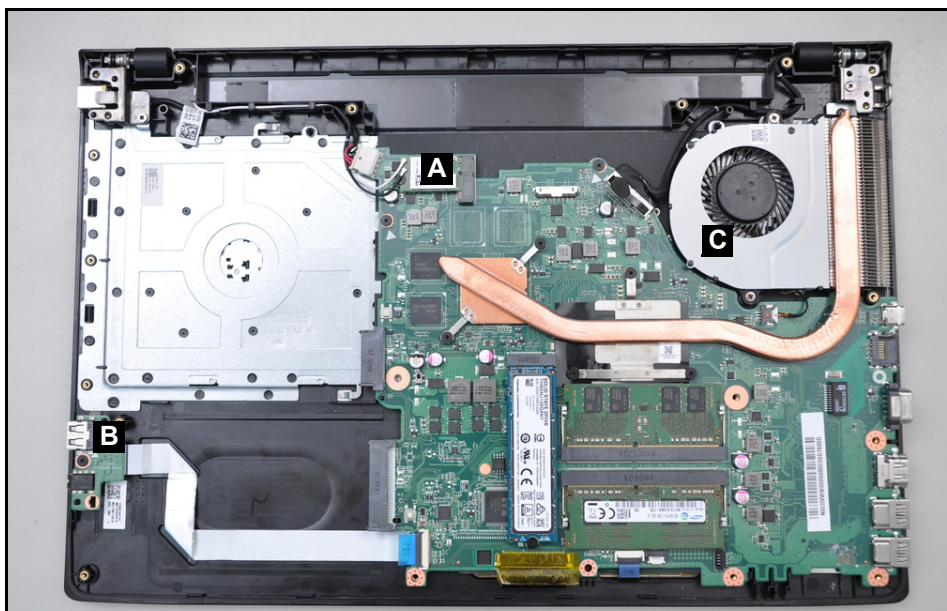


Figure 3-25. Component Locations

2. Disconnect WLAN antennas (A) connected to the WLAN card (Figure 3-26).
3. Remove one (1) screw (B) securing the WLAN module in place (Figure 3-26).

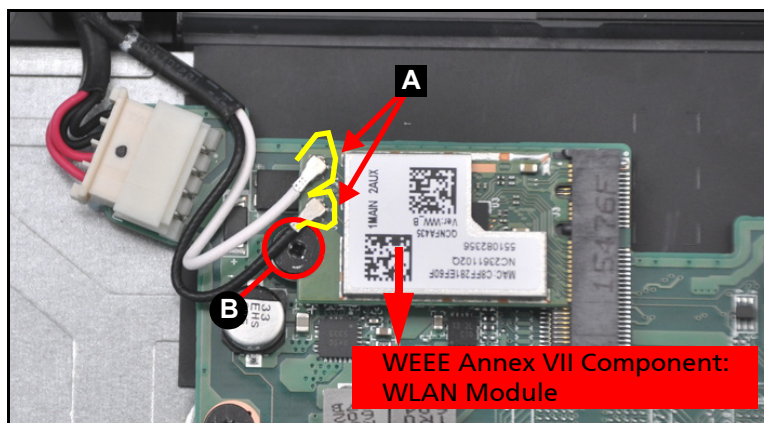


Figure 3-26. WLAN Module Removal

4. Remove the WLAN module (A) from the mainboard connector (C) (Figure 3-27).

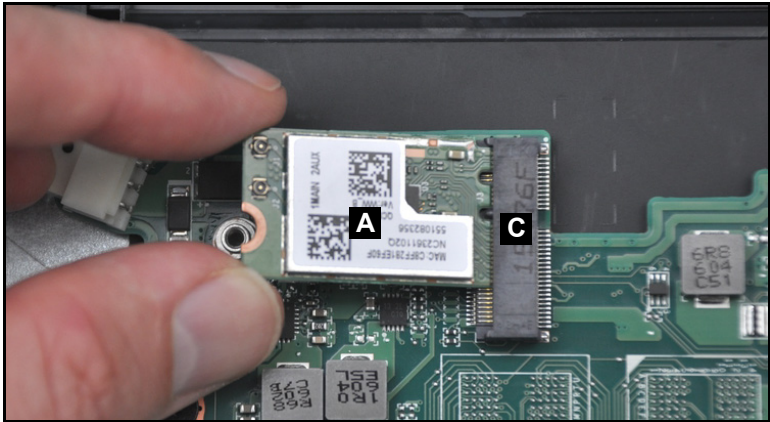



Figure 3-27. WLAN Module Removal

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.0	2.0±0.2KGF/CM	1	

I/O Board Removal

Prerequisite:

Battery Pack Removal

1. Find the I/O board (B) on the top assembly (Figure 3-25).
2. Disconnect the I/O board FFC (A) from the mainboard connector (C) (Figure 3-28).
3. Peel off the I/O board FFC (A) from its adhesives (Figure 3-28).
4. Remove one (1) screw (D) securing the I/O board (B) in place (Figure 3-28).

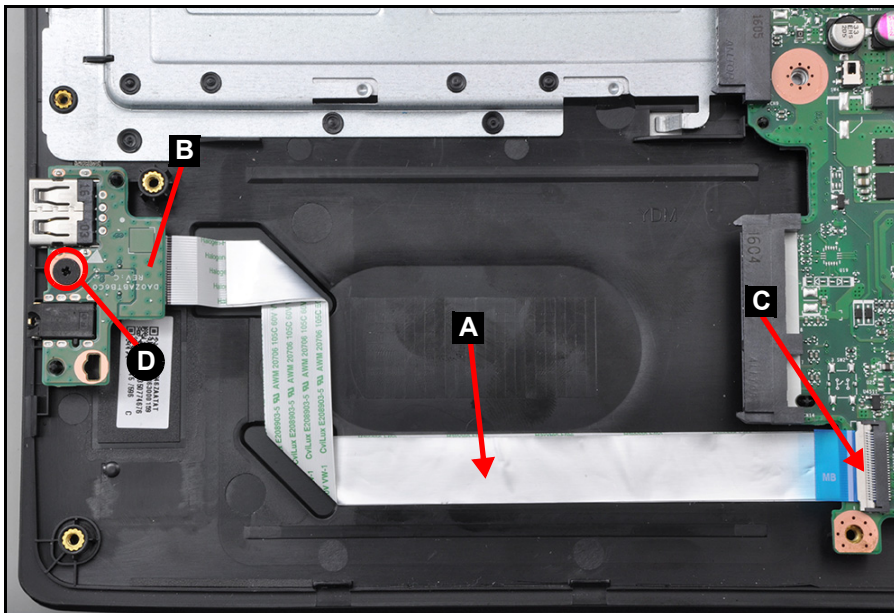


Figure 3-28. I/O Board Removal

5. Remove the I/O board (B) from the top assembly (Figure 3-29).

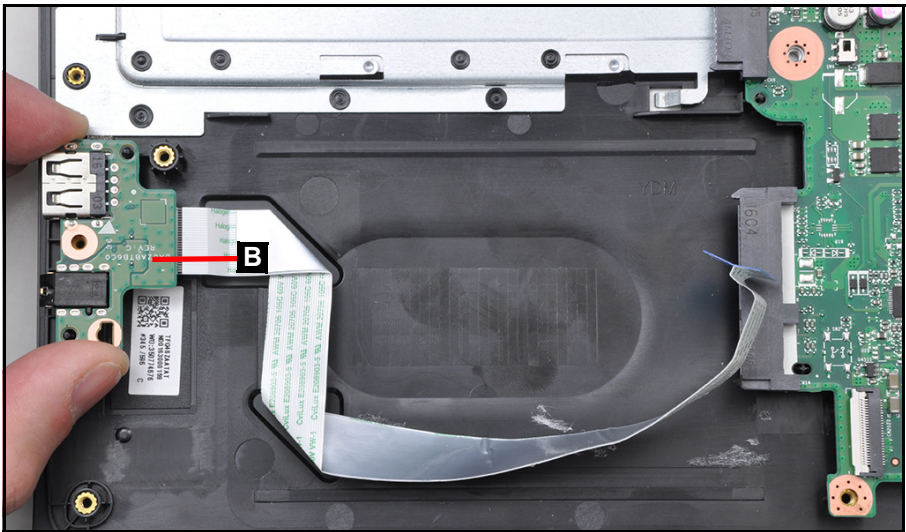


Figure 3-29. I/O Board Removal

6. Disconnect the I/O board FFC (A) from the the I/O board connector (E) (Figure 3-30).

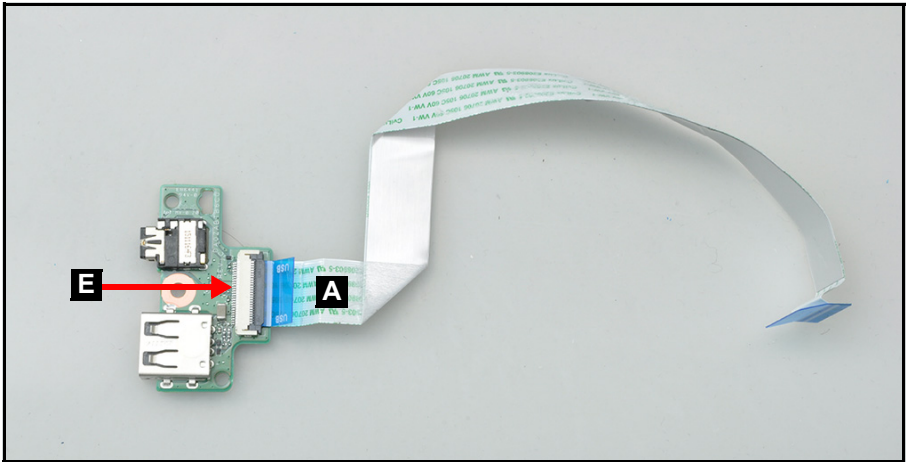



Figure 3-30. I/O Board Removal

⚠ CAUTION:
I/O board FFC (Flexible Flat Circuit) can be damaged if removed while the mainboard connector and the I/O board connector are locked.

ID	Size	Torque	Quantity	Screw Type
D	M2.0*3.0	2.0±0.2KGF/CM	1	

Fan Removal

Prerequisite:

Battery Pack Removal

1. Find the fan (C) on the top assembly (refer to [Figure 3-25](#)).
2. Disconnect the fan cable (D) from the mainboard connector (E) ([Figure 3-31](#)).
3. Remove two (2) screws (A) securing the fan in place ([Figure 3-31](#)).

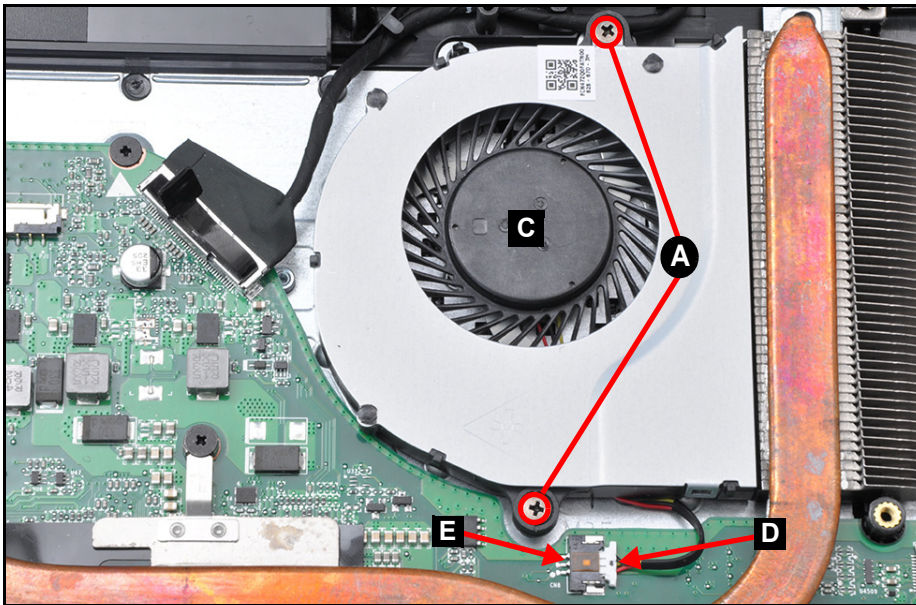



Figure 3-31. Fan Removal

4. Remove the fan (C) from the top assembly (refer to [Figure 3-32](#)).



Figure 3-32. Fan Removal

ID	Size	Torque	Quantity	Screw Type
A	M2.5*7.0	3.0±0.15KGF/CM	2	

Heatsink (Discrete) Removal

Prerequisite:

Fan Removal

1. Find the heatsink (A) on the mainboard (Figure 3-33).
2. Remove five (5) screws (B) in reverse numerical order from five (5) to one (1) securing the GPU and CPU heatsink in place (Figure 3-33).

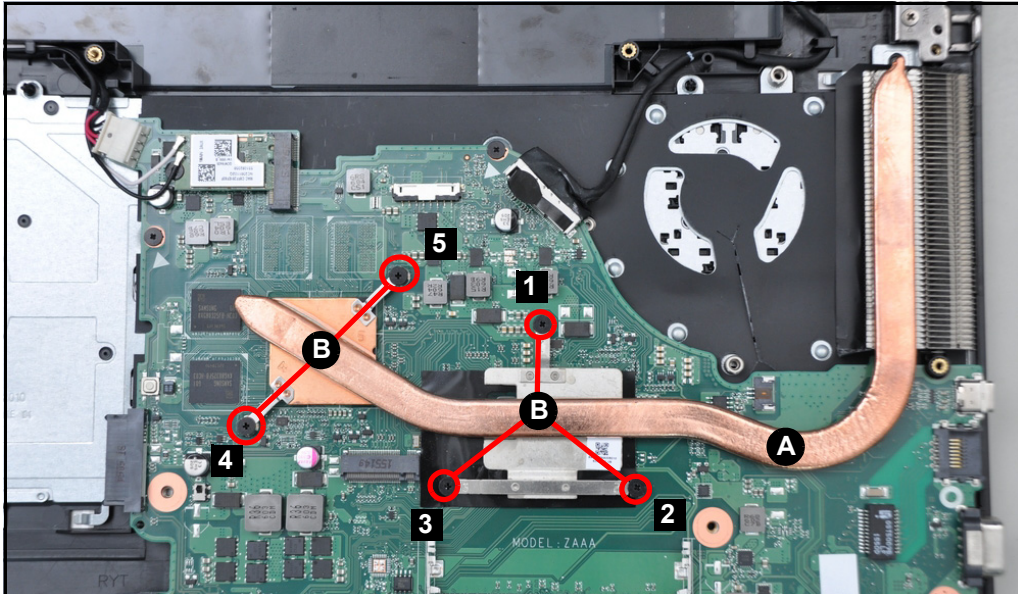


Figure 3-33. Heatsink (Discrete) Removal

3. Remove the heatsink (A) from the mainboard (Figure 3-34).

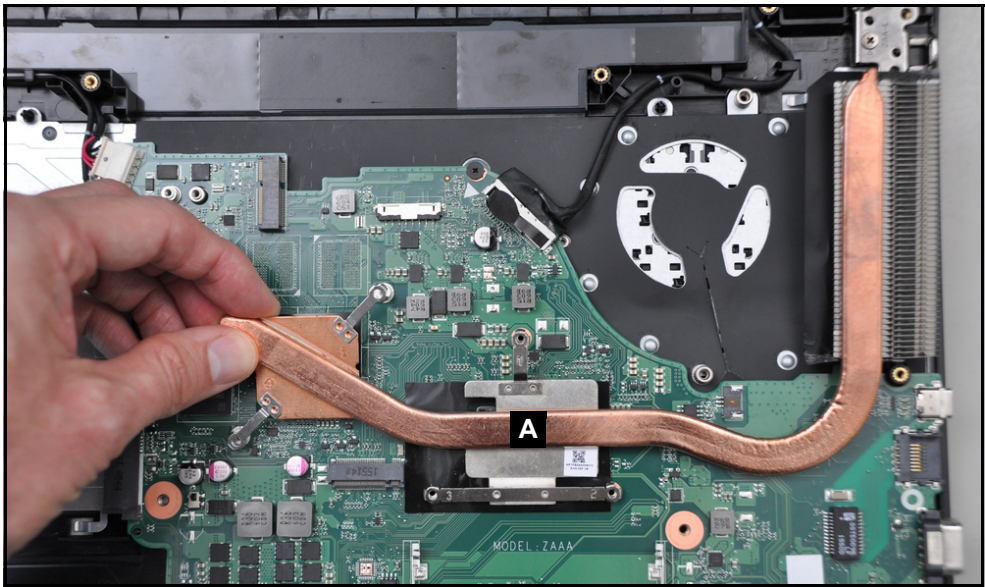



Figure 3-34. Heatsink (Discrete) Removal

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.0	2.0±0.2KGF/CM	5	

Heatsink (UMA) Removal

Prerequisite:

Fan Removal

1. Find the heatsink (A) on the mainboard (Figure 3-35).
2. Remove three (3) screws (B) in reverse numerical order from three (3) to one (1) securing the CPU heatsink in place (Figure 3-35).

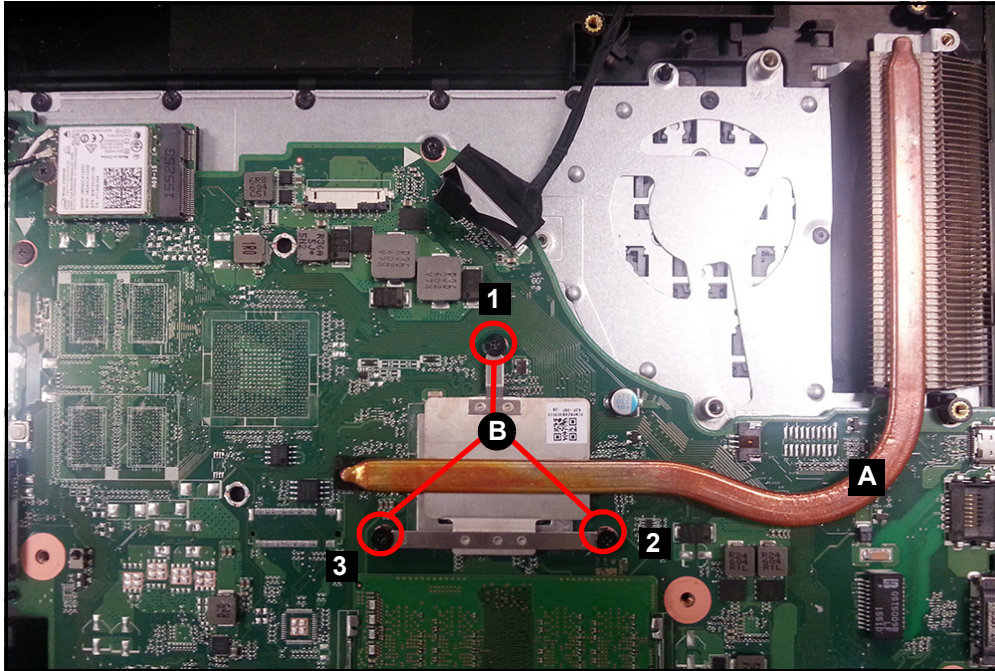


Figure 3-35. Heatsink (UMA) Removal

3. Remove the heatsink (A) from the mainboard (Figure 3-36).

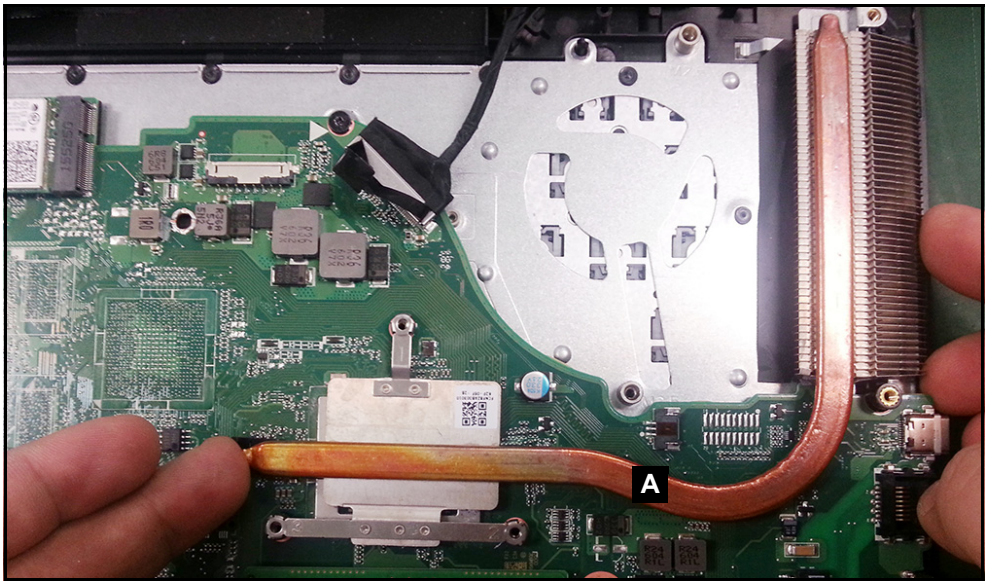



Figure 3-36. Heatsink (UMA) Removal

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.0	2.0±0.2KGF/CM	3	

Mainboard Removal

Prerequisite:

HDD (Hard Disk Drive) Module Removal,
DIMM (Dual In-line Memory Module) Removal,
SSD (Solid State Drive) Module Removal,
WLAN (Wireless Local Area Network) Module Removal,
and Heatsink (Discrete) Removal or Heatsink (UMA) Removal

1. Find the mainboard (A) on the top assembly ([Figure 3-37](#)).
2. Remove the keyboard connector tape (I) from the keyboard connector (J) ([Figure 3-37](#)).

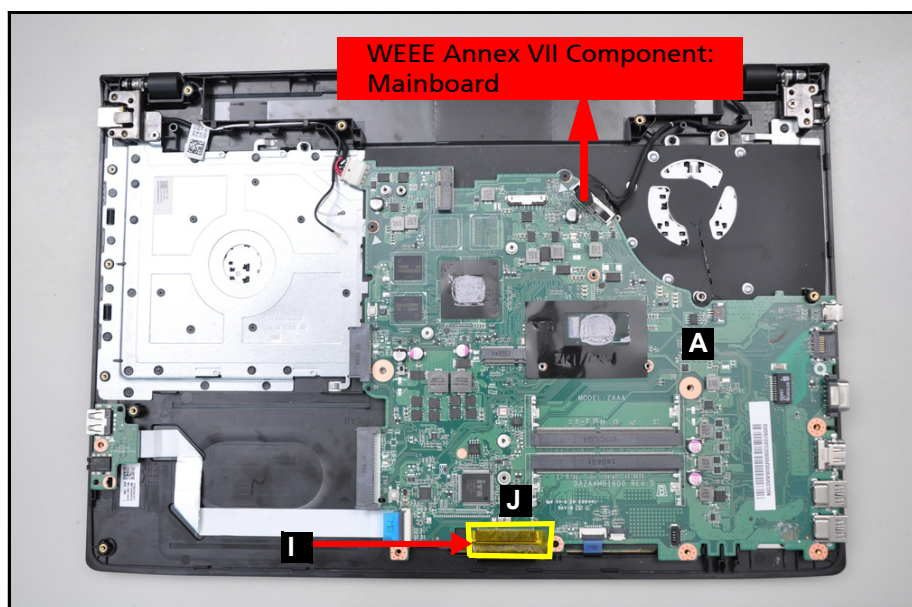


Figure 3-37. Mainboard Removal

3. Disconnect the eDP cable from the mainboard connector (C) (refer to [Figure 3-38](#)).
4. Disconnect the touchpad FPC from the mainboard connector (D) (refer to [Figure 3-38](#)).
5. Disconnect the keyboard FPC from the mainboard connector (E) (refer to [Figure 3-38](#)).
6. Disconnect the I/O board FFC from the mainboard connector (F) (refer to [Figure 3-38](#)).
7. Disconnect the DC-in cable from the mainboard connector (G) (refer to [Figure 3-38](#)).
8. Disconnect the keyboard backlight FPC from the mainboard connector (H) (for select models only) (refer to [Figure 3-38](#)).

9. Remove two (2) screws (B) securing the mainboard in place ([Figure 3-38](#)).

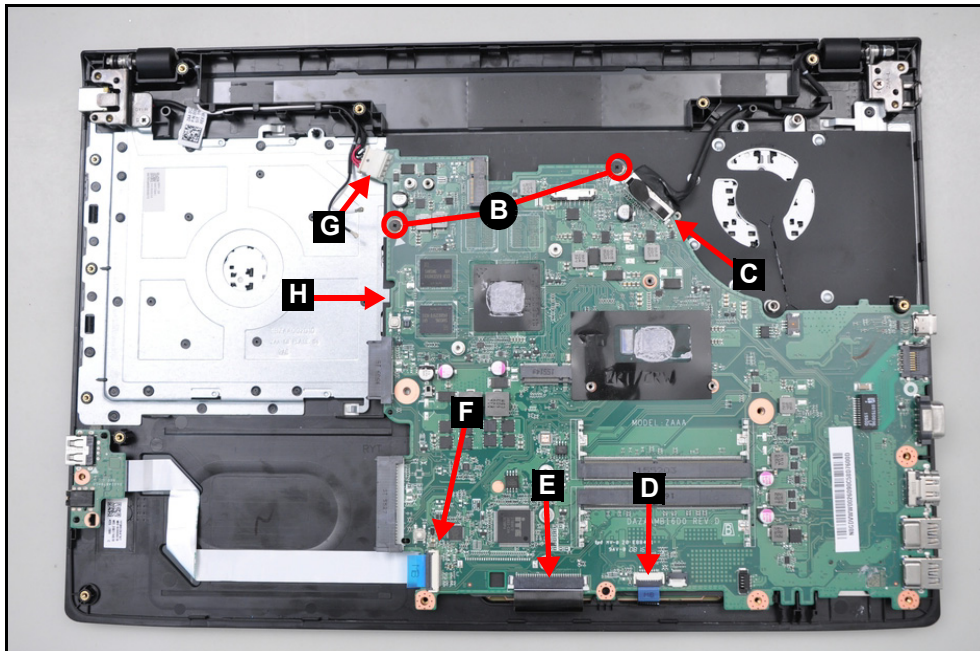


Figure 3-38. Mainboard Removal

10. Remove the mainboard from the top assembly ([Figure 3-39](#)).



Figure 3-39. Mainboard Removal

⚠ CAUTION:

Touchpad FPC (Flexible Printed Circuit), keyboard FPC, keyboard backlight FPC, and I/O board FFC (Flexible Flat Circuit), can be damaged if removed while the mainboard connectors are locked.

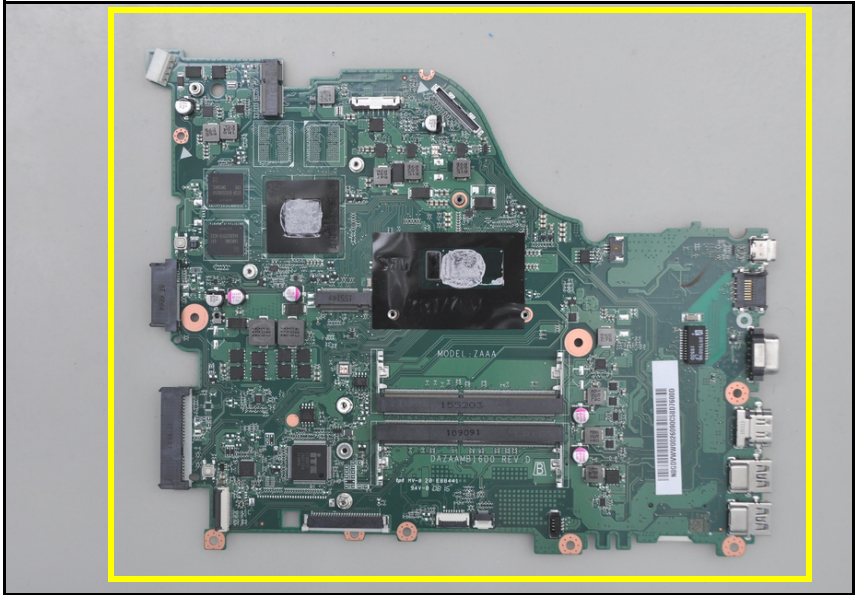



Figure 3-40. Mainboard

+ IMPORTANT:

Circuit boards >10 cm² have been highlighted with a yellow rectangle as shown in [Figure 3-40](#). Remove the circuit board and follow local regulations for disposal.

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.0	2.0±0.2KGF/CM	2	

RTC Battery Removal

Prerequisite:

Mainboard Removal

1. Find the RTC battery (A) on the mainboard ([Figure 3-41](#)).
2. Using a plastic tweezer, push the RTC battery through the gap (B) in the mainboard connector (C) to release the battery ([Figure 3-41](#)).
3. Remove the RTC battery (A) from the mainboard ([Figure 3-41](#)).

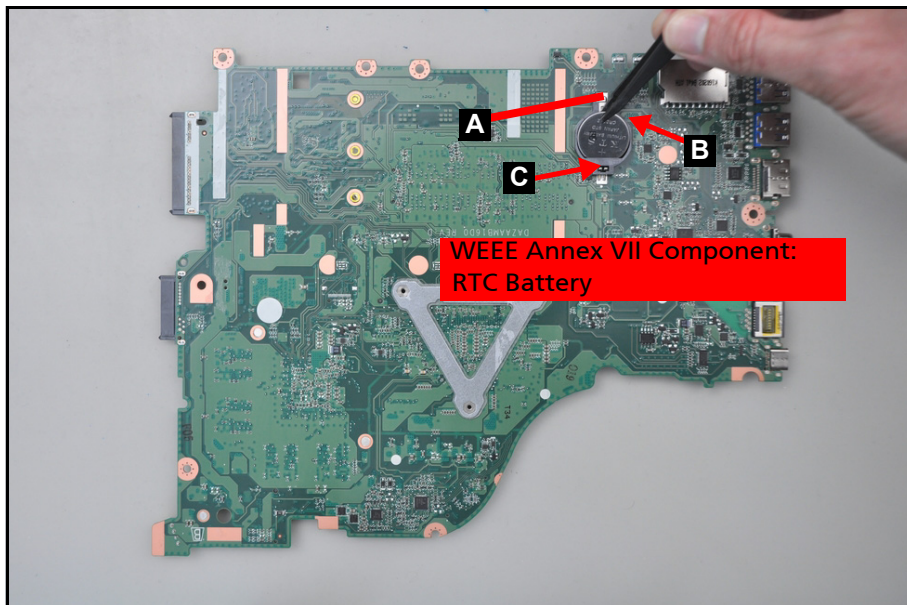


Figure 3-41. RTC Battery Removal

- + **IMPORTANT:**
Follow local regulations for battery disposal.

Touchpad Module Removal

Prerequisite:

Mainboard Removal

1. Peel back the keyboard mylar (A) to expose the touchpad module (Figure 3-43).

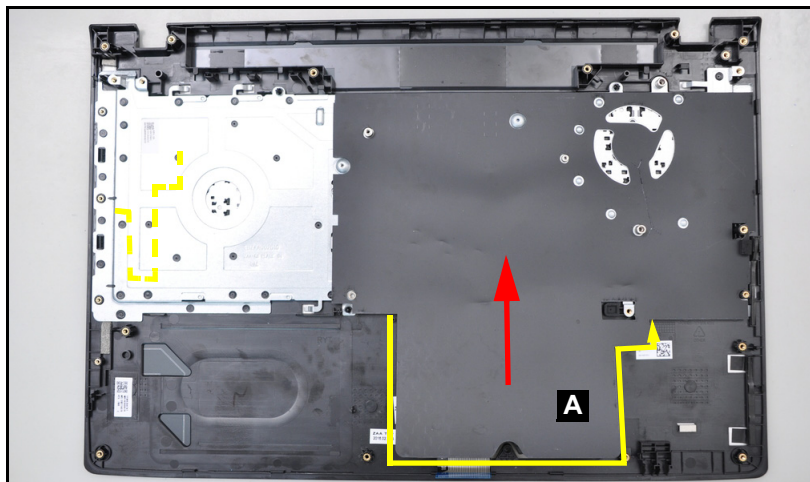


Figure 3-42. Touchpad Module Removal

2. Flip the keyboard FPC (C) away from the touchpad module (B) (Figure 3-43).

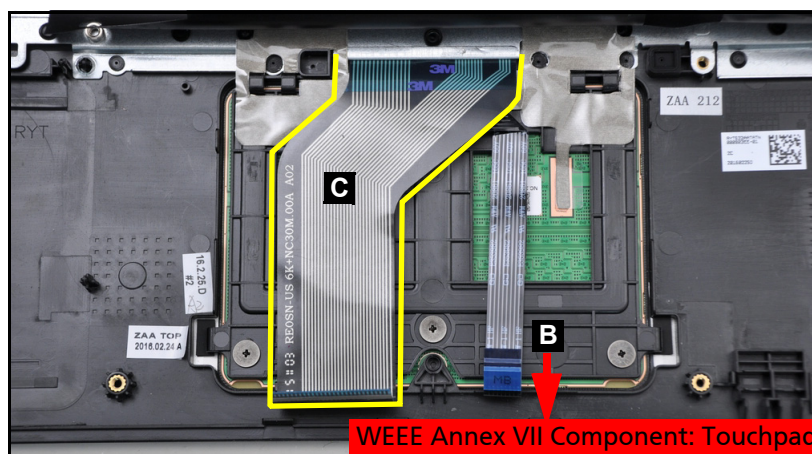


Figure 3-43. Touchpad Module Removal

3. Peel off and remove the touchpad conductive cloth (D) from the touchpad module and the top assembly (E) (Figure 3-45).

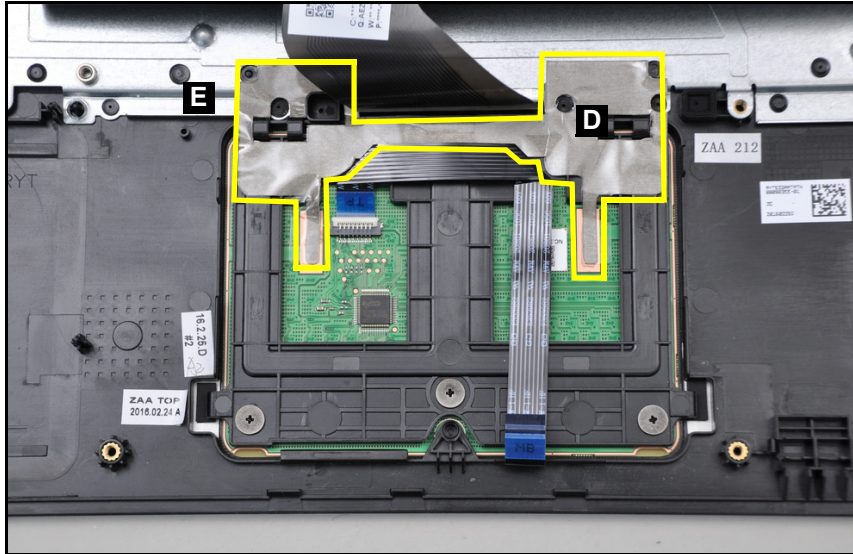


Figure 3-44. Touchpad Board Removal

4. Disconnect the touchpad FPC (F) from its connector (G) and remove the touchpad FPC (Figure 3-45).
5. Remove five (5) screws (H) securing the touchpad module in place (Figure 3-45).

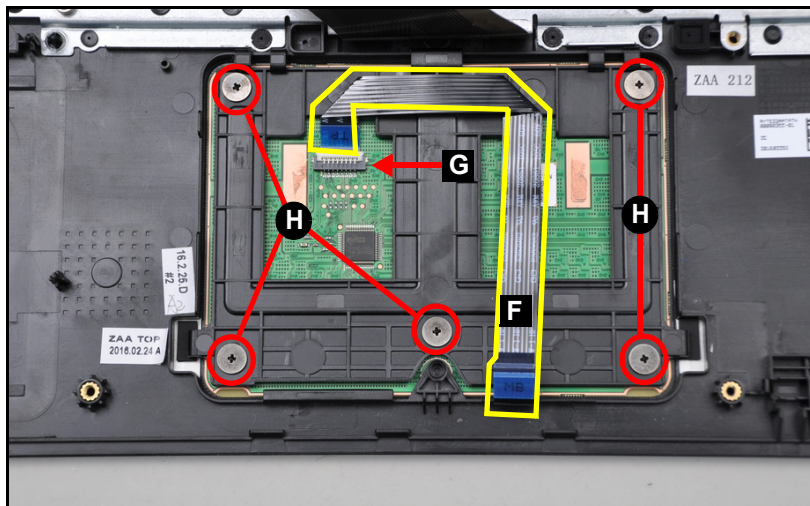


Figure 3-45. Touchpad Module Removal

⚠ CAUTION:

Touchpad FPCs (Flexible Printed Circuit) can be damaged if removed while the mainboard connector is locked.

6. Carefully open the top assembly with one hand, and remove the touchpad module (B) from the top assembly (Figure 3-46).

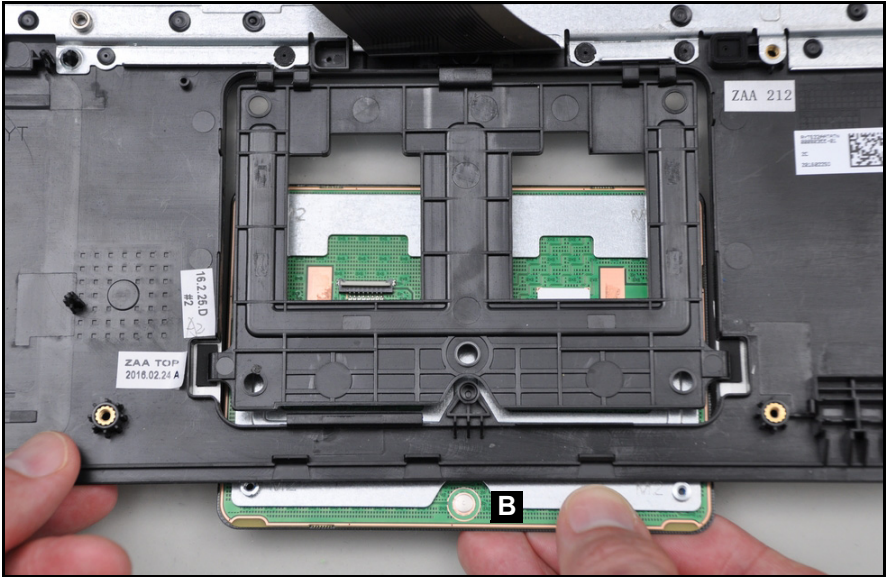



Figure 3-46. Touchpad Board Removal

ID	Size	Torque	Quantity	Screw Type
H	M2.0*2.0	3.0±0.2KGF/CM	5	

LCD Module Removal

Prerequisite:

Battery Pack Removal

1. Disconnect the DC-in cable from the mainboard connector (A) (Figure 3-47).
2. Disconnect the WLAN antennas from the connectors (B) (Figure 3-47).
3. Disconnect the eDP cable from the mainboard connector (C) (Figure 3-47).

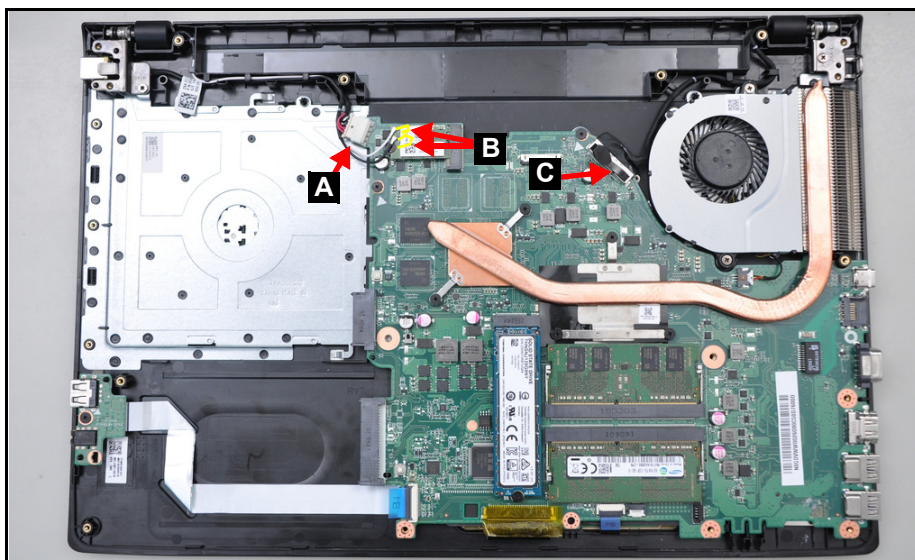


Figure 3-47. LCD Module Removal

4. Remove the DC-in cable (D) from the cable guides as shown in Figure 3-48.

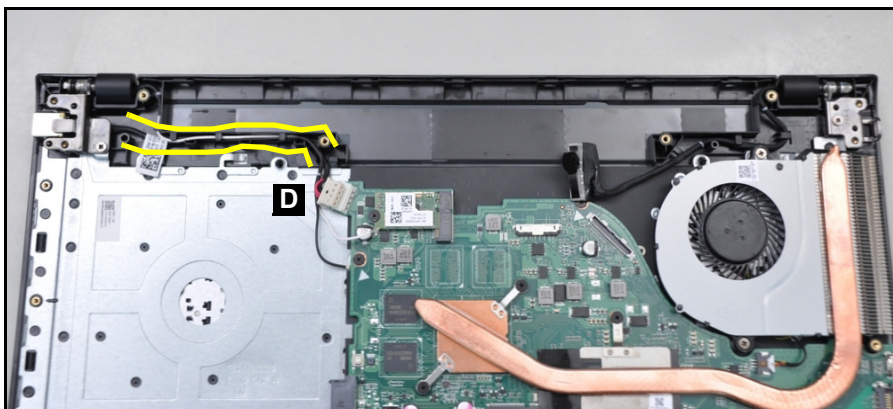


Figure 3-48. LCD Module Removal

5. Remove the WLAN antennas (E) from the cable guides as shown in [Figure 3-49](#).
6. Remove the eDP cable (F) from the cable guides as shown in [Figure 3-49](#).

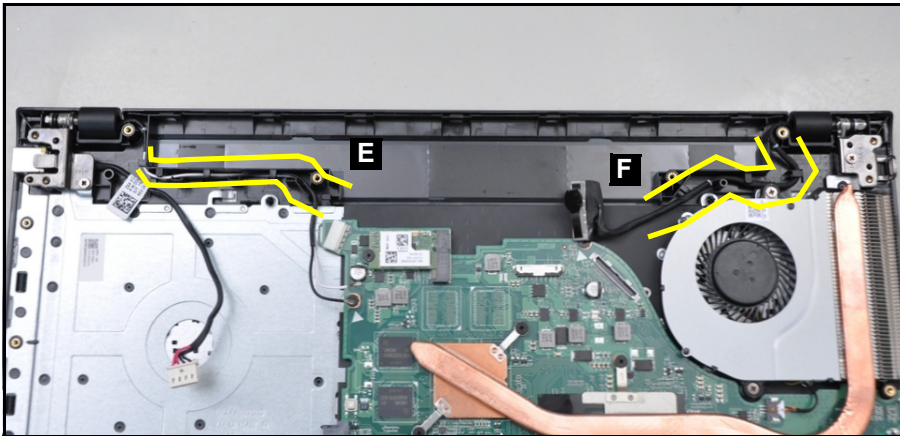


Figure 3-49. LCD Module Removal

7. Place the system on a flat surface and open the LCD module (G) as shown in [Figure 3-50](#).
8. Remove two (2) screws (H) securing the LCD module in place ([Figure 3-50](#)).

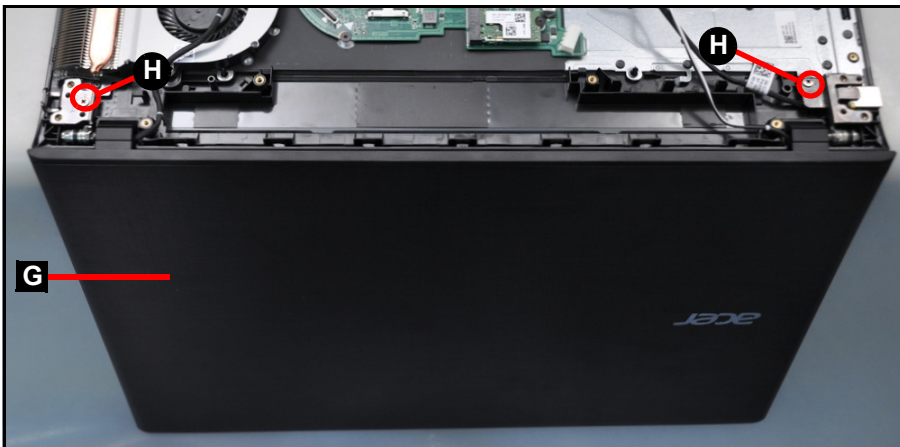


Figure 3-50. LCD Module Removal

9. Lift the LCD module (G) away from the top assembly (Figure 3-51).

⚠ CAUTION:

Make sure all cables and antennas are moved away from the device to avoid damage during removal.

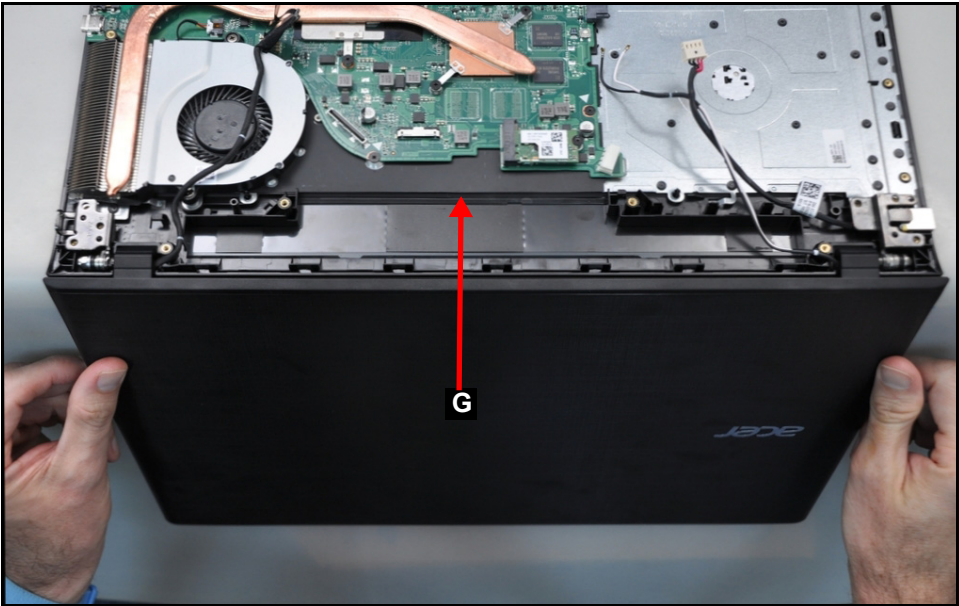



Figure 3-51. LCD Module Removal

ID	Size	Torque	Quantity	Screw Type
D	M2.5*7.0	3.0±0.15KGF/CM	2	

DC-in Jack Removal

Prerequisite:

LCD Module Removal

1. Remove the DC-in jack (A) from the top assembly ([Figure 3-52](#)).

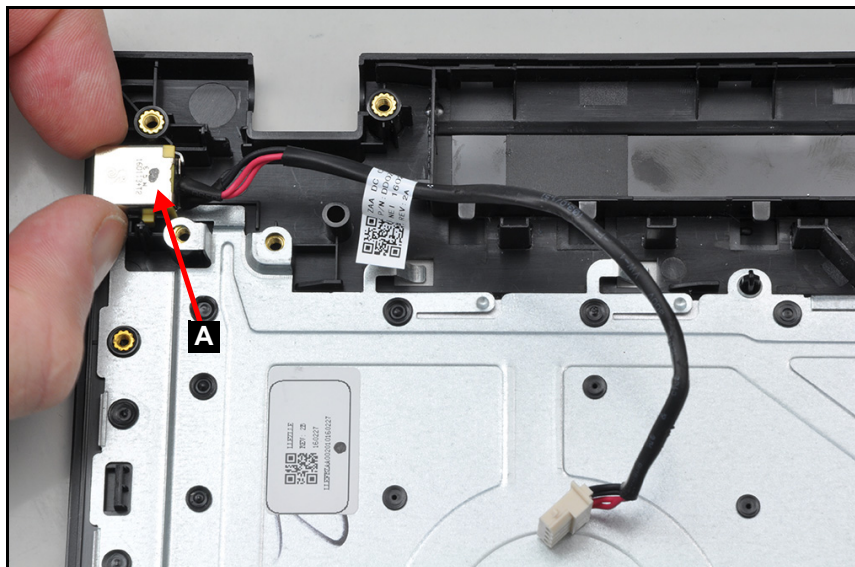


Figure 3-52. DC-in Jack Removal

Top Assembly Removal

Prerequisite:

[I/O Board Removal](#), [Touchpad Module Removal](#), and [LCD Module Removal](#)

⇒ NOTE:

The keyboard is included as part of the top assembly and can not be disassembled. In the event that the keyboard can no longer be used, replace the entire top assembly.



Figure 3-53. Top Assembly

LCD Module Disassembly Process

LCD Module Disassembly Flowchart

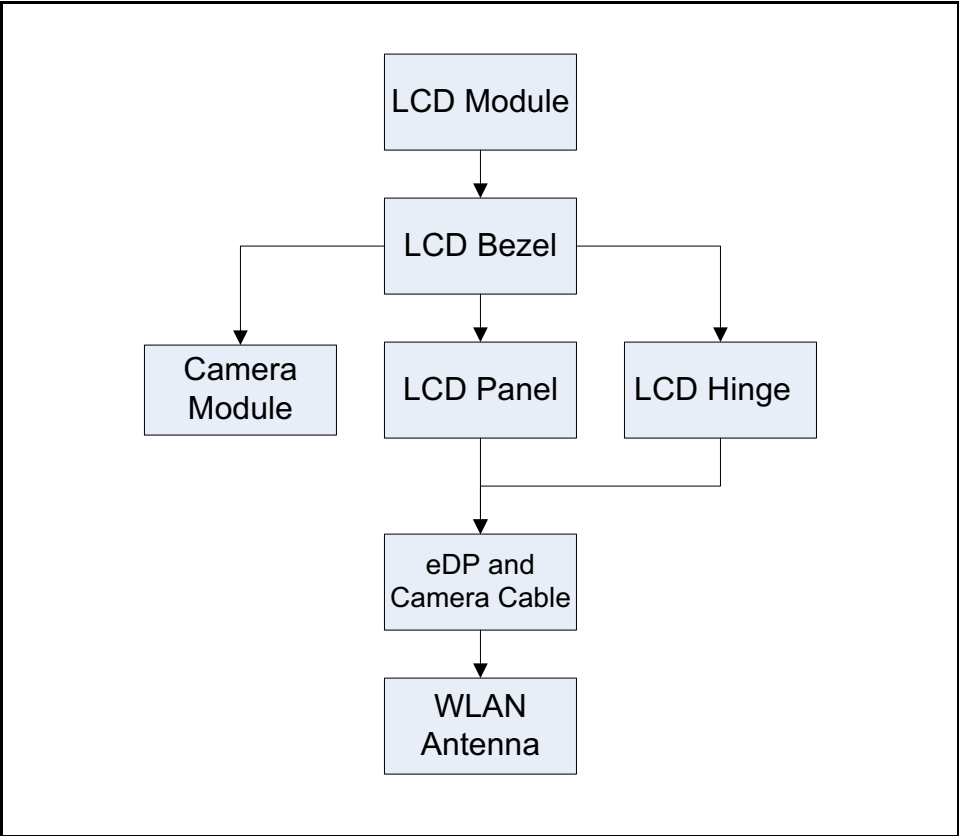


Table 3-3. LCD Module Screw List

Step	Size	Quantity	Acer Part No.
LCD Panel Removal	M2.0 x 3.0	4	86.GDEN7.001
LCD Hinge Removal	M2.5 x 3.5	6	86.MSTN7.001
LCD Hinge Removal	M2.0 x 3.0	2	86.GDEN7.001

LCD Bezel Removal

Prerequisite:

[LCD Module Removal](#)

1. Lift up the top edge of the bezel by releasing it from the latches ([Figure 3-54](#)).



Figure 3-54. LCD Bezel Removal

2. Continue along the left side of the bezel ([Figure 3-55](#)).



Figure 3-55. LCD Bezel Removal

3. Continue along the right side of the bezel until all the latches have been released ([Figure 3-56](#)).



Figure 3-56. LCD Bezel Removal

4. Lift and remove the bezel from LCD module ([Figure 3-57](#)).



Figure 3-57. LCD Bezel Removal

LCD Panel Removal

Prerequisite:

LCD Bezel Removal

1. Find the LCD panel (B) in the LCD cover (Figure 3-58).
2. Remove four (4) screws (C) securing the LCD panel in place (Figure 3-58).

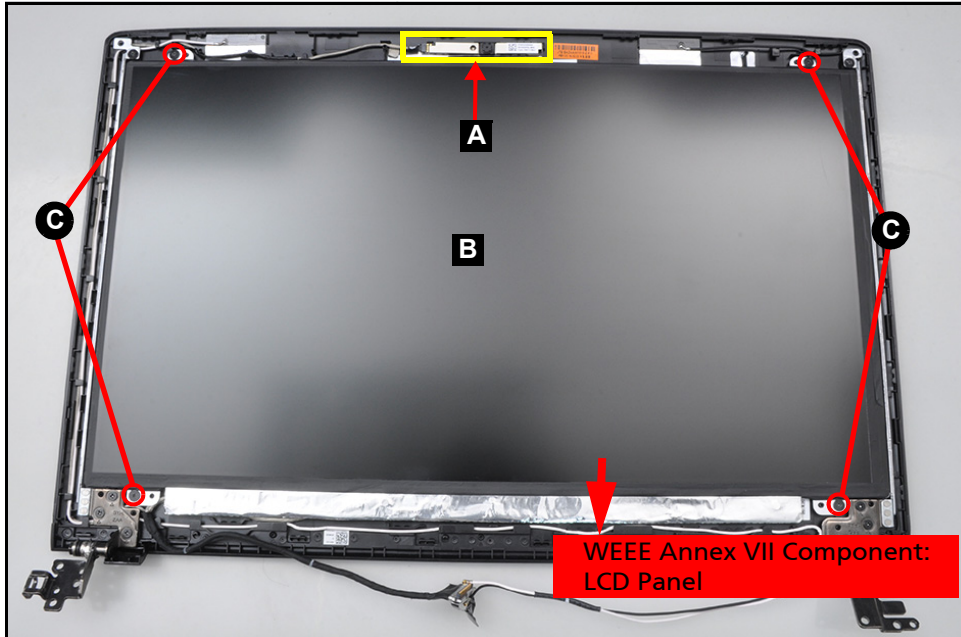


Figure 3-58. LCD Panel and Camera Location

3. Carefully turn the LCD panel over so that the display panel is face down on a flat surface (Figure 3-59).
4. Peel back the clear mylar tape (D) securing the eDP cable to the LCD panel (Figure 3-59).

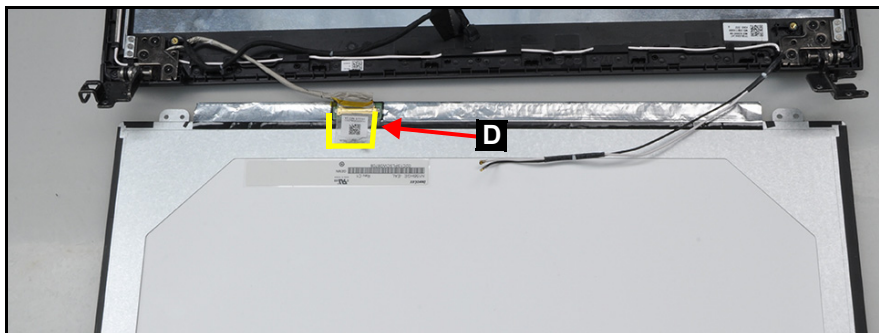


Figure 3-59. eDP Mylar Tape

5. Disconnect the eDP cable from the LCD panel connector (E) (Figure 3-60).

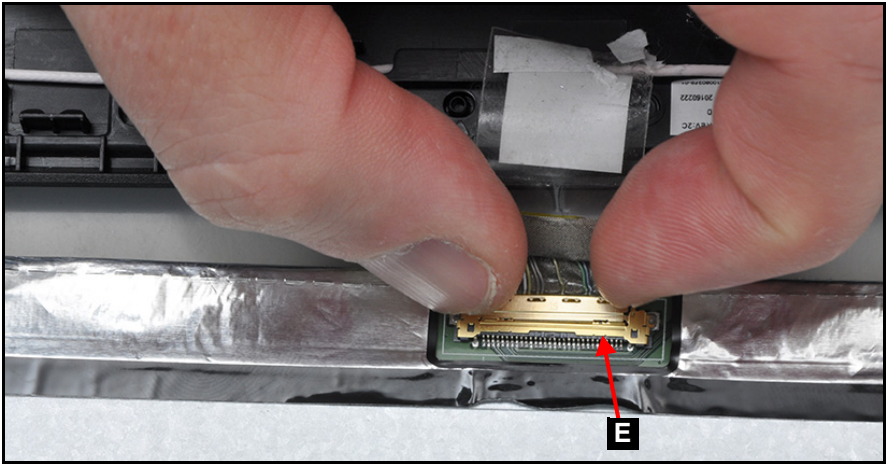



Figure 3-60. eDP Connector Location

6. Remove the LCD panel.

⚠ CAUTION:
Make sure the eDP and camera cable is moved away from the device to avoid damage during LCD Panel removal.

ID	Size	Torque	Quantity	Screw Type
C	M2.0*3.0	2.0±0.2KGF/CM	4	

Camera Module Removal

Prerequisite:

LCD Bezel Removal

1. Find the camera module (A) on the LCD cover. Refer to [Figure 3-58](#).
2. Disconnect the camera cable (B) from the connector (C) ([Figure 3-61](#)).

⇒ NOTE:

Use care not to damage the cable.

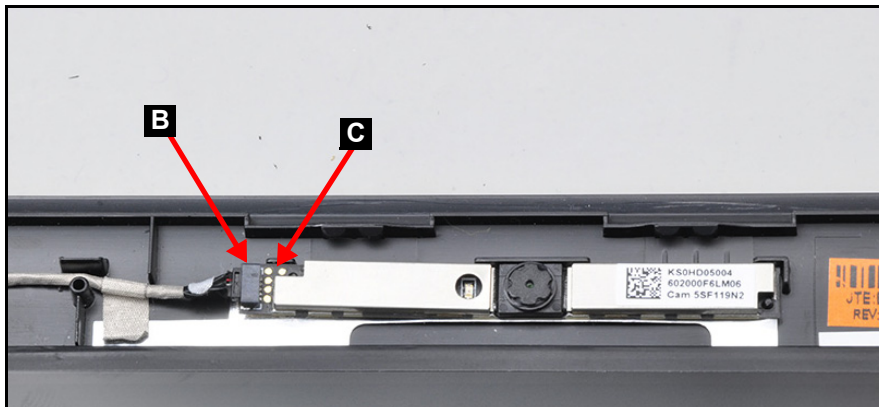


Figure 3-61. Camera Connector Location

3. Lift the camera module (A) from the adhesive and remove it ([Figure 3-62](#)).

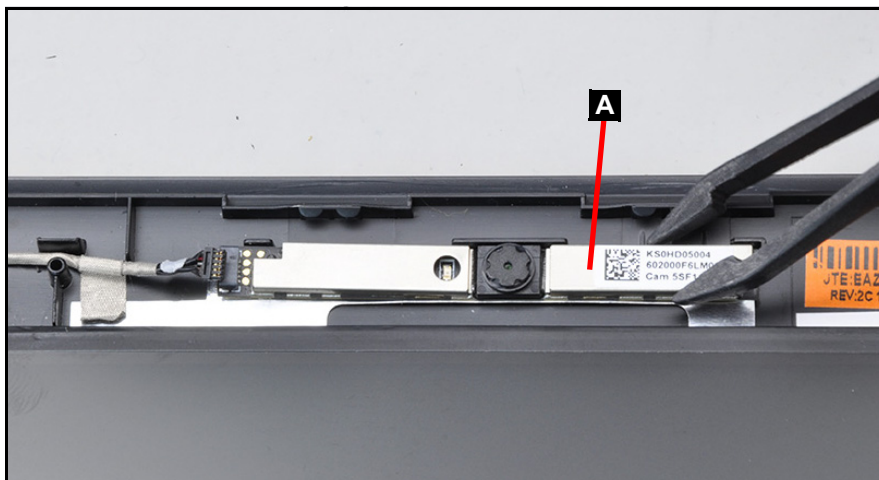


Figure 3-62. Camera Module Removal

LCD Hinge Removal

Prerequisite:

[LCD Bezel Removal](#)

1. Find the LCD hinges (A) on the LCD cover ([Figure 3-63](#)).
2. Remove eight (8) screws securing the LCD hinges in place ([Figure 3-63](#)).

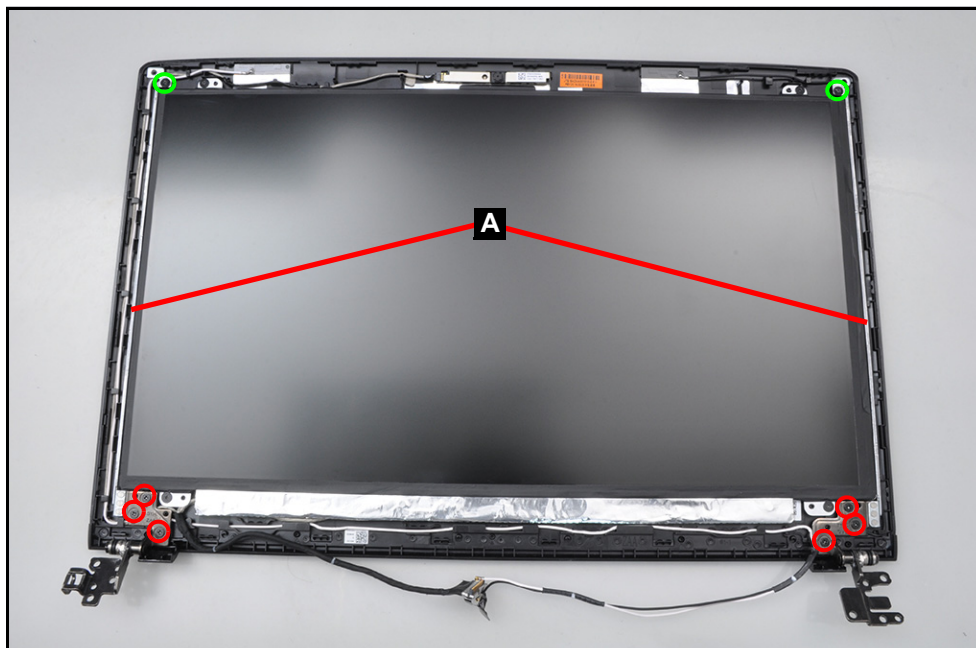




Figure 3-63. LCD Hinge Removal

3. Remove the LCD hinges from the LCD cover (Figure 3-64).



Figure 3-64. LCD Hinge Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*3.5	2.0±0.2KGF/CM	6	
Green Call out	M2.0*3.0	2.0±0.2KGF/CM	2	

eDP and Camera Cable Removal

Prerequisite:

[LCD Panel Removal](#) and [LCD Hinge Removal](#)

1. Disconnect the camera cable (B) from the connector (A) ([Figure 3-65](#)).

⇒ NOTE:

Use care not to damage the cable.

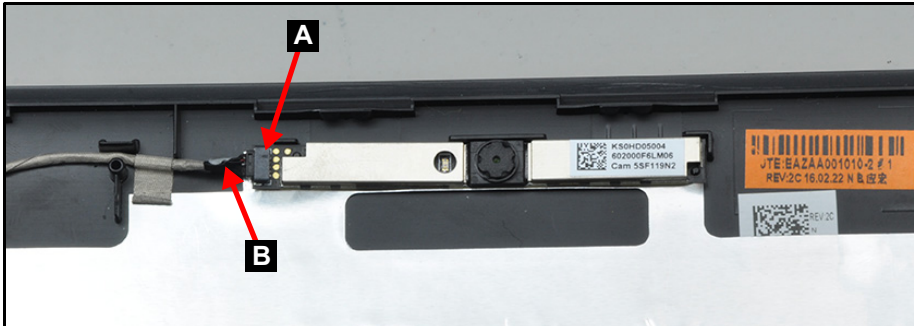


Figure 3-65. Camera Connector Location

2. Remove the eDP and camera cable from the cable guides and remove it from the LCD cover ([Figure 3-66](#)).

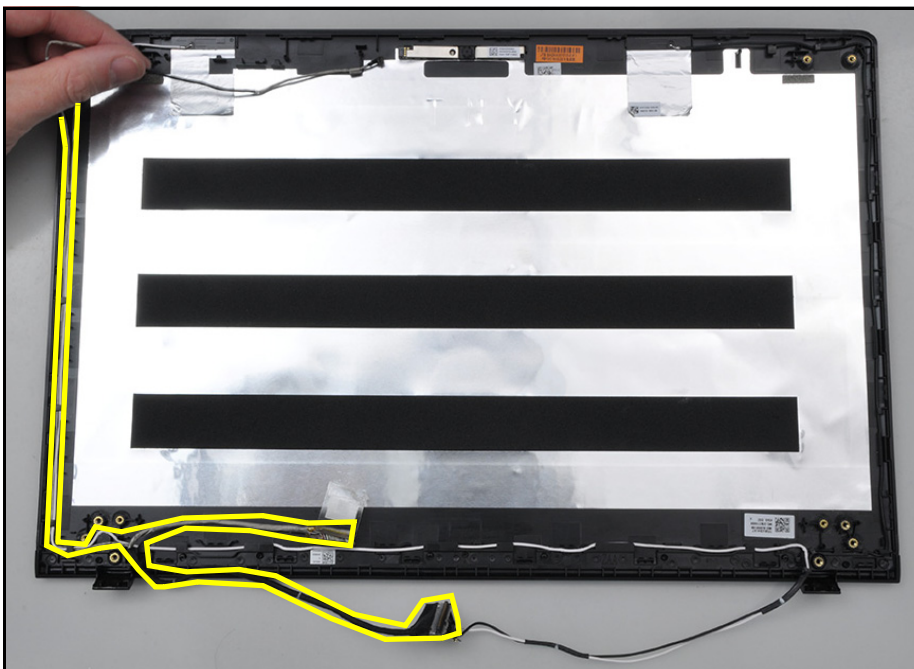


Figure 3-66. eDP and Camera Cable Removal

WLAN Antenna Removal

Prerequisite:

[eDP and Camera Cable Removal](#)

1. Unroute the antennas cables from the cable guides ([Figure 3-67](#)).

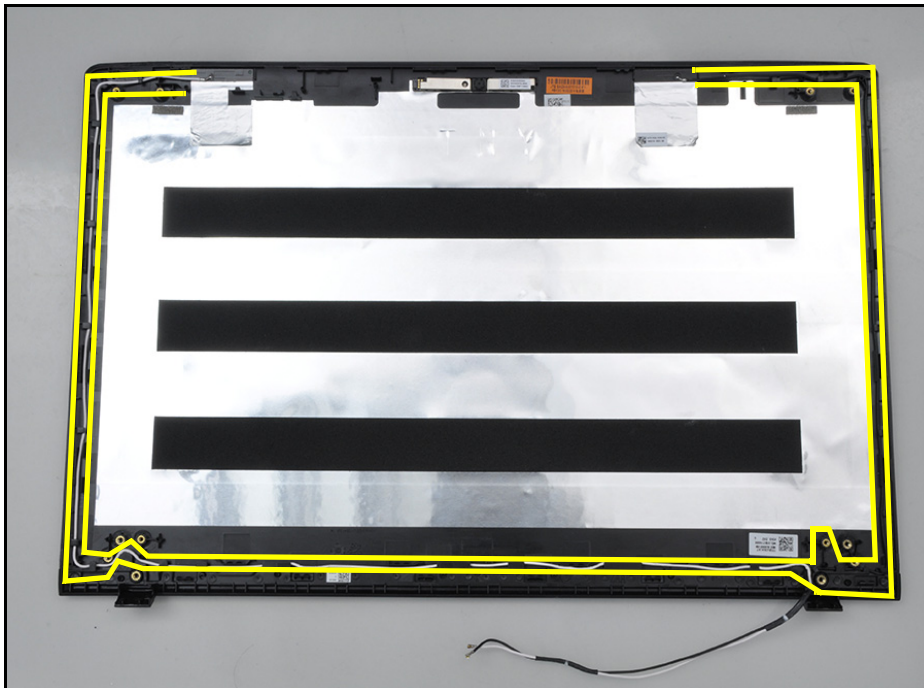


Figure 3-67. WLAN Antenna Removal

2. Gently peel back the grounding foil of the MAIN antenna (black-color) and the AUX antenna (white-color) ([Figure 3-68](#)).
3. Remove the MAIN antenna (black-color) and the AUX antenna (white-color) PCBs and their grounding foil from the LCD cover ([Figure 3-68](#)).

⚠ CAUTION:

Use care not to damage the antenna PCB circuit area when the grounding foil is removed.



Figure 3-68. WLAN Antenna Removal

4. Remove the WLAN antennas from the LCD cover ([Figure 3-69](#)).

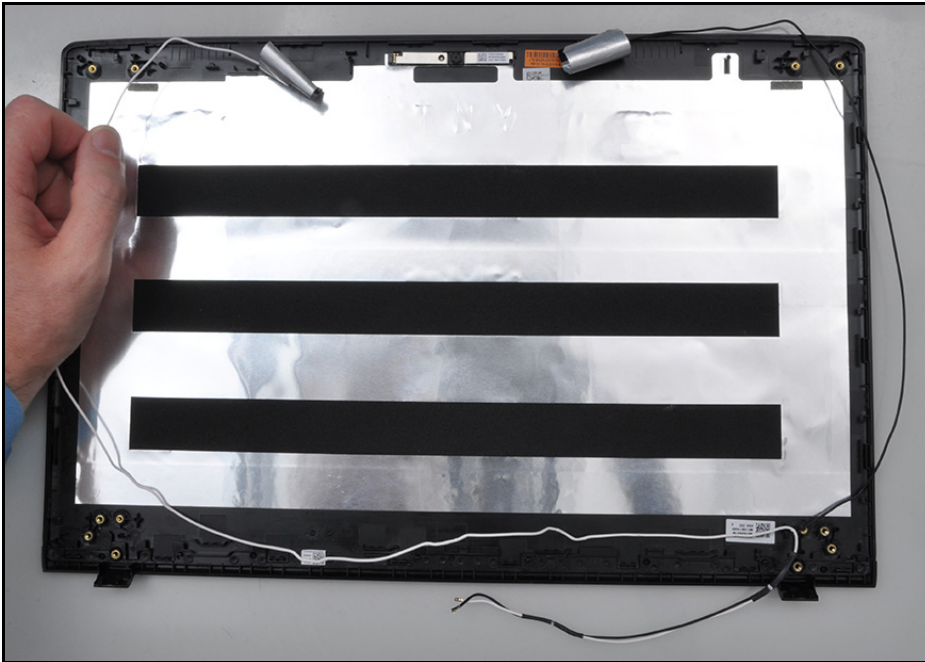


Figure 3-69. WLAN Antenna Removal

LCD Module Reassembly Process

Replacing the WLAN Antenna

1. Place the AUX antenna (white-color) to the left and the MAIN antenna (black) to the right on the LCD cover. Make sure that the edge of the antenna PCB is properly seated and placed onto its compartment highlighted by a green rectangle as shown in [Figure 3-70](#).
2. Adhere the MAIN antenna and AUX antenna grounding foils in place ([Figure 3-70](#)).



Figure 3-70. Replacing the WLAN Antenna

3. Route and secure the indicated portions of the MAIN antenna and AUX antenna ([Figure 3-71](#)).

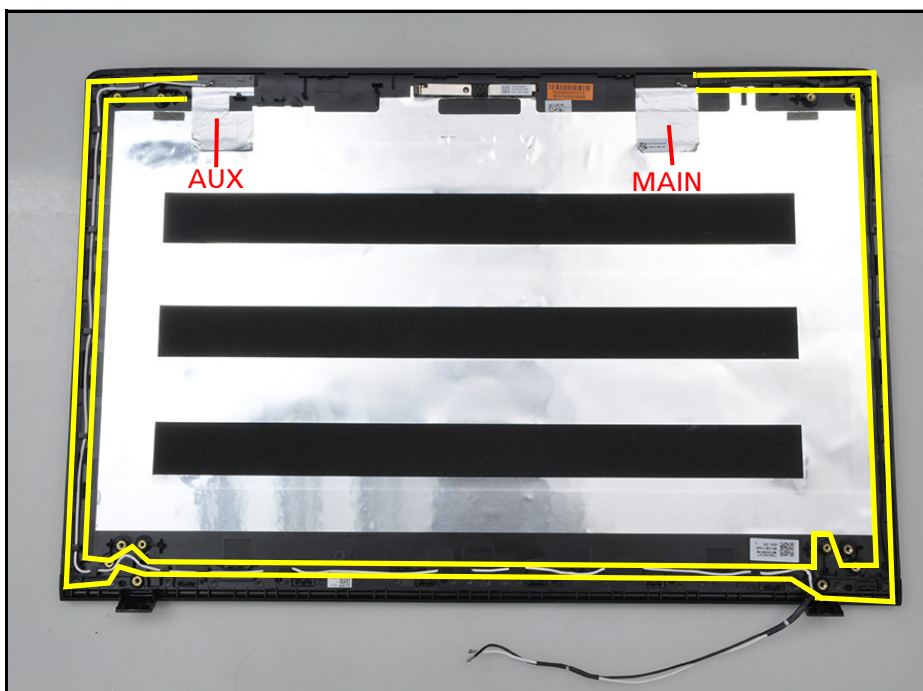


Figure 3-71. Replacing the WLAN Antenna

4. Route and secure the AUX antenna carefully to the indicated portion of cable guides on the bottom left portion of the LCD cover ([Figure 3-72](#)).

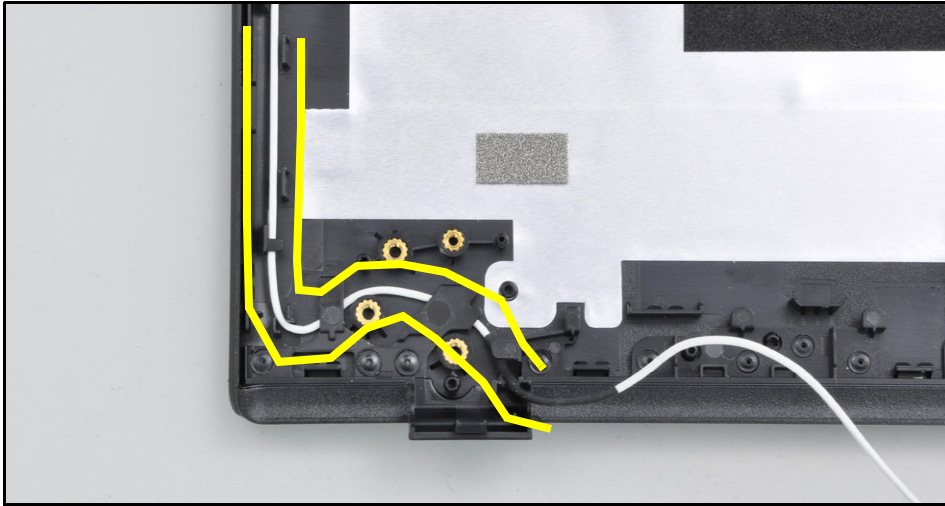


Figure 3-72. Replacing the WLAN Antenna

5. Route and secure the MAIN antenna carefully to the indicated portion of cable guides on the bottom right portion of the LCD cover ([Figure 3-73](#)).

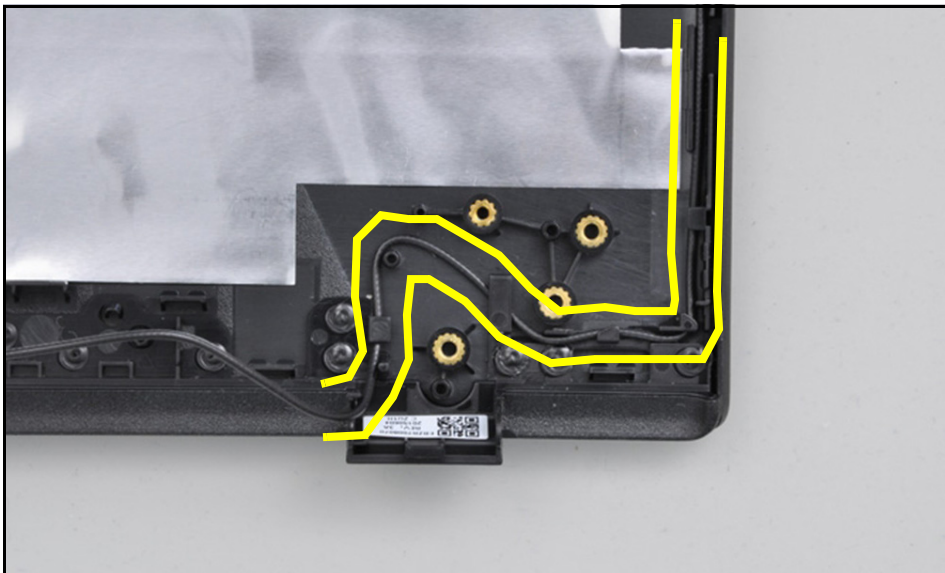


Figure 3-73. Replacing the WLAN Antenna

⚠ CAUTION:

Make sure the WLAN antennas are secured correctly along the guides to avoid damage when replacing the LCD hinges.

Replacing the eDP and Camera Cable

1. Place and secure the eDP and camera cable to the cable guides on the LCD cover (Figure 3-74).

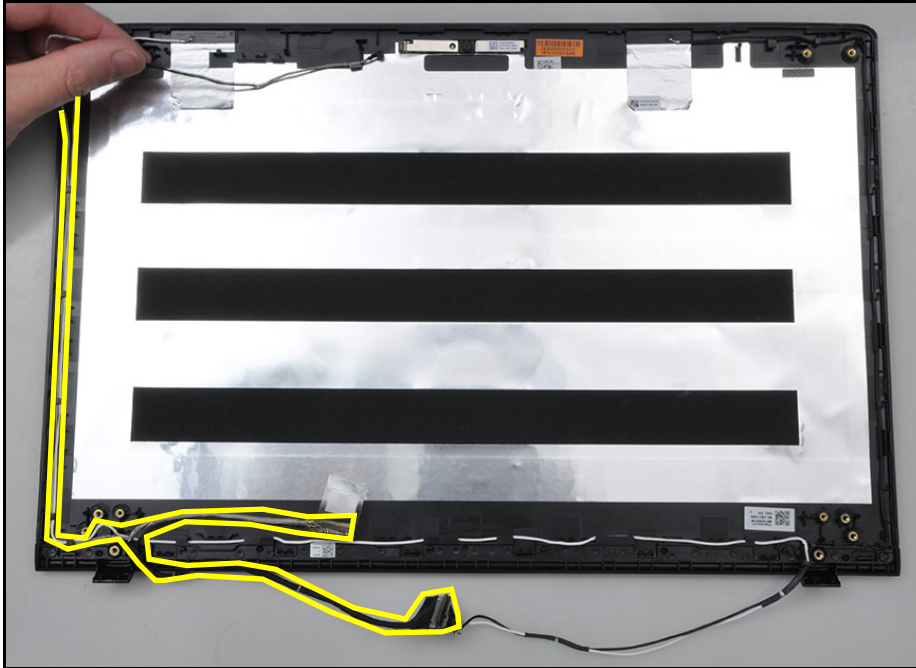


Figure 3-74. Replacing the eDP & Camera Cable

2. Route and secure the eDP camera cable carefully to the indicated portion of cable guides on the top left portion of the LCD cover ([Figure 3-75](#)).



Figure 3-75. Replacing the eDP & Camera Cable

3. Route and secure the eDP camera cable carefully to the indicated portion of cable guides on the bottom left portion of the LCD cover ([Figure 3-76](#)).

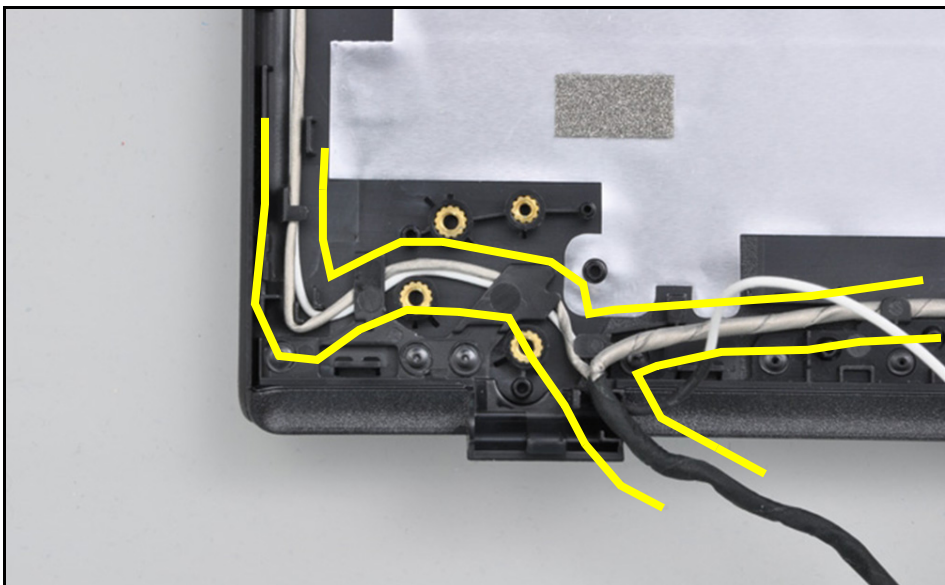


Figure 3-76. Replacing the eDP & Camera Cable

⇒ NOTE:

Use care not to damage the cable.

⚠ CAUTION:

Make sure the eDP and camera cable is secured currently along the guides to avoid damage when replacing the LCD hinges.

4. Connect the camera cable (B) to the camera connector (A) (Figure 3-77).

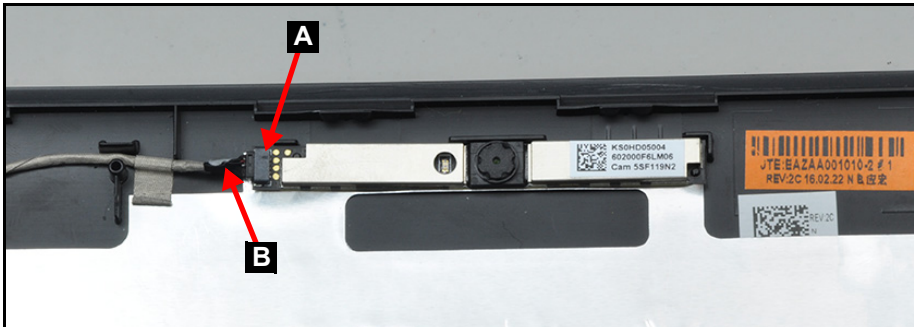


Figure 3-77. Camera Connector Location

Replacing the LCD Hinges

1. Place the left and right LCD hinges on the LCD cover ([Figure 3-78](#)).





Figure 3-78. Replacing the LCD Hinges

2. Install and secure eight (8) screws to the LCD hinges (Figure 3-79).



Figure 3-79. Replacing the LCD Hinges

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*3.5	2.0±0.2KGF/CM	6	
Green Call out	M2.0*3.0	2.0±0.2KGF/CM	2	

Replacing the LCD Panel

1. Place the LCD panel (A) on a flat surface with the back side facing up and aligned properly to the bottom of the LCD cover as shown in [Figure 3-81](#).
2. Connect the eDP cable to the LCD panel connector (B) ([Figure 3-80](#)).

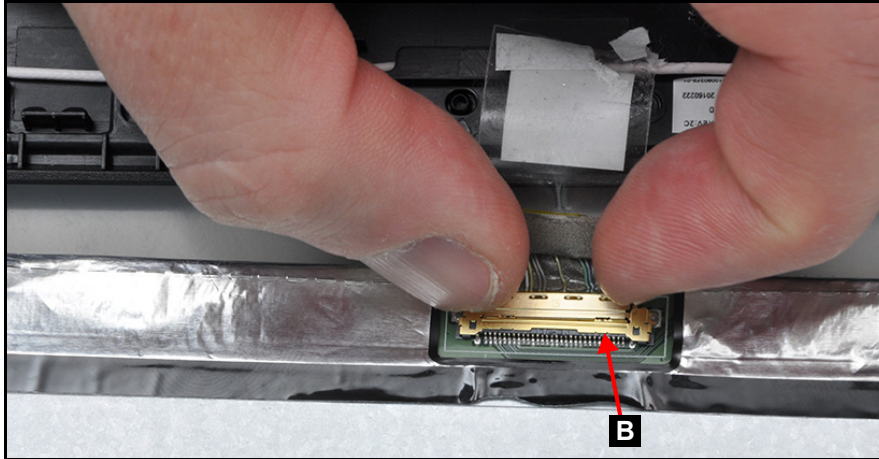


Figure 3-80. eDP Connector

3. Adhere the clear mylar tape (C) to secure the eDP cable to the LCD panel (A) ([Figure 3-81](#)).

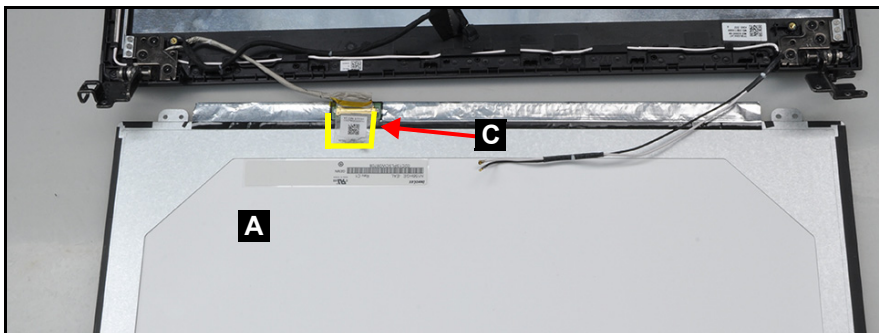



Figure 3-81. eDP Mylar Tape

4. Carefully place the LCD panel (B) on the LCD cover. Make sure that the bottom corners are properly aligned with the top edge of the LCD hinges (Figure 3-82).
5. Install and secure four (4) screws (D) securing to the LCD panel (Figure 3-82).



Figure 3-82. Replacing the LCD Panel

⚠ CAUTION:
Make sure the eDP and camera cable and WLAN antennas are moved away from the device to avoid damage during installation.

ID	Size	Torque	Quantity	Screw Type
D	M2.0*3.0	2.0±0.2KGF/CM	4	

Replacing the Camera Module

1. Place the camera module (A) to its compartment on the LCD cover and secure it in place with adhesives. Make sure that the aperture on the camera module is aligned with the stud (B) located on the LCD cover (Figure 3-83).
2. Connect the camera cable (C) to the camera connector (D) (Figure 3-83).

⇒ **NOTE:**

Use care not to damage the cable.

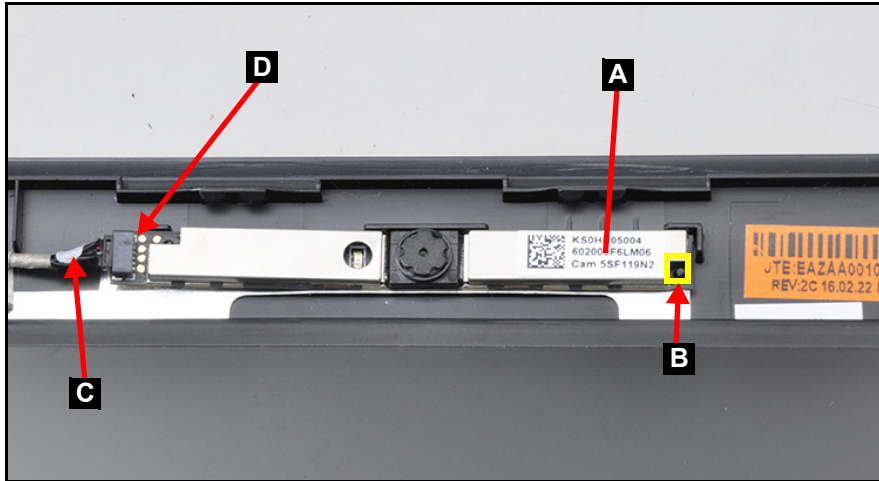


Figure 3-83. Replacing the Camera Module

Replacing the LCD Bezel

1. Place and align the LCD bezel with the LCD cover and press along the top edge of the LCD bezel to secure the latches to the LCD cover (Figure 3-84).



Figure 3-84. Replacing the LCD Bezel

2. Continue pressing downward along the sides of the LCD bezel to engage all the latches.
3. Press the two LCD hinge caps together to secure the latches to the LCD cover. Make sure all the latches are fully engaged.

⚠ CAUTION:

Use care not to damage all cables during LCD bezel installation.

Main Unit Reassembly Process

Replacing the Top Assembly

⇒ NOTE:

The keyboard is included as part of the top assembly and can not be disassembled. In the event that the keyboard can no longer be used, replace the entire top assembly.



Figure 3-85. Top Assembly

Replacing the DC-in Jack

1. Place the DC-in jack to its compartment on the top assembly ([Figure 3-86](#)).

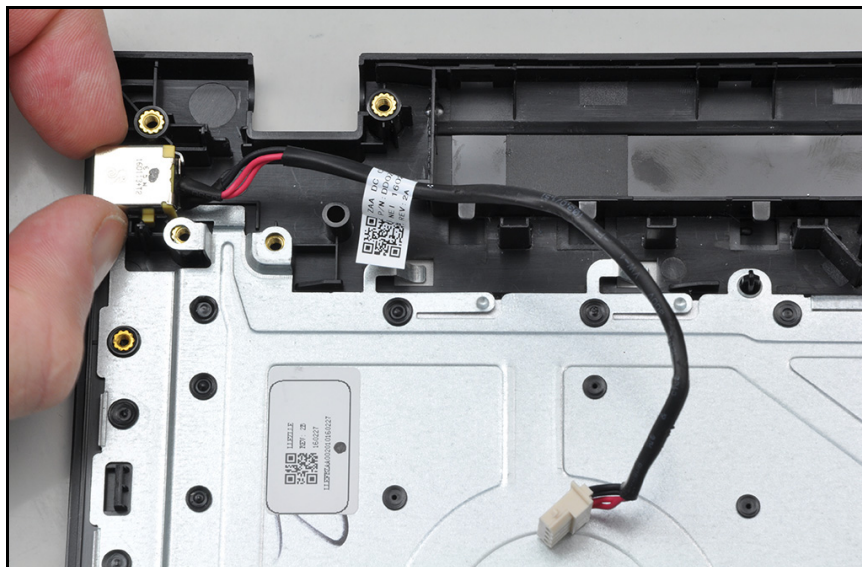


Figure 3-86. Replacing the DC-in Jack

Replacing the LCD Module

1. Place the LCD module on the top assembly as shown on [Figure 3-87](#). Make sure the LCD hinges are at a 90 degree angle to the LCD module and lie flat against the top assembly.
2. Install and secure two (2) screws (D) to the LCD module. Refer to [Figure 3-87](#).

⚠ CAUTION:

Make sure all cables and antennas are moved away from the device to avoid damage during installation.

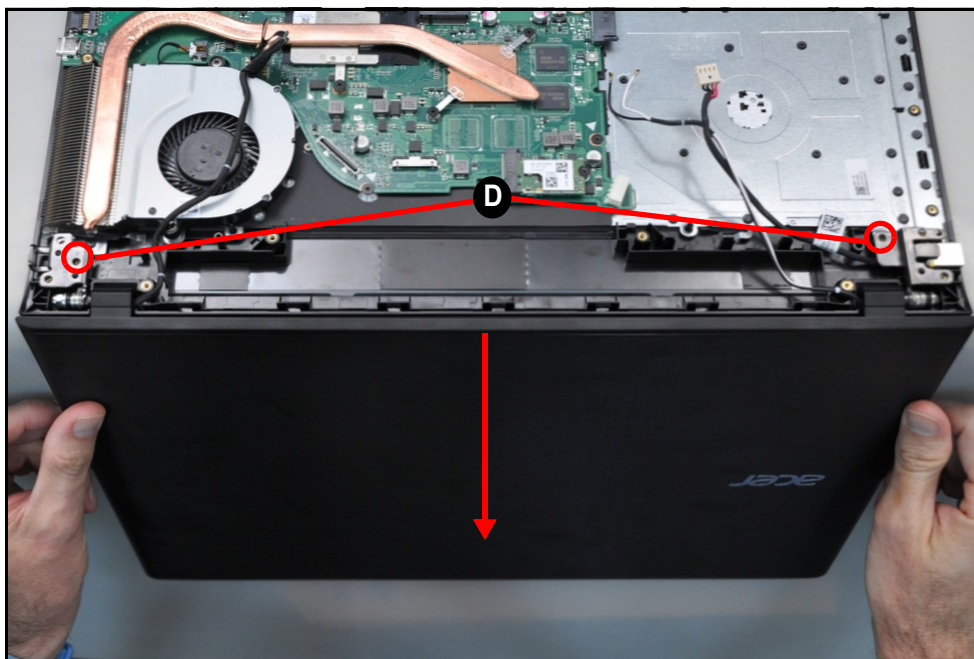


Figure 3-87. Replacing the LCD Module

3. Connect the eDP cable to the mainboard connector (A) and route it to the cable guides (Figure 3-88).
4. Route the WLAN antennas to the cable guides (Figure 3-88).
5. Connect the AUX antenna (white-color) to the WLAN AUX pin (Figure 3-88).
6. Connect the MAIN antenna (black-color) to the WLAN MAIN pin (Figure 3-88).
7. Route the DC-in cable to the cable guides and connect the DC-in cable to the mainboard connector (B) (Figure 3-88).

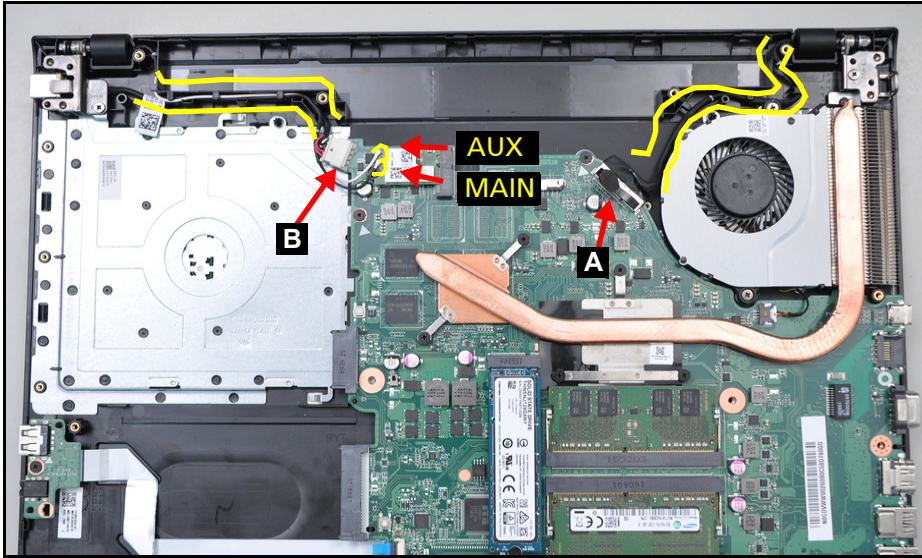



Figure 3-88. WLAN Antenna & eDP Cable Location

ID	Size	Torque	Quantity	Screw Type
D	M2.5*7.0	3.0±0.15KGF/CM	2	

Replacing the Touchpad Module

1. Carefully open the top assembly with one hand, and place the touchpad module (A) to its compartment on the top assembly (Figure 3-89).

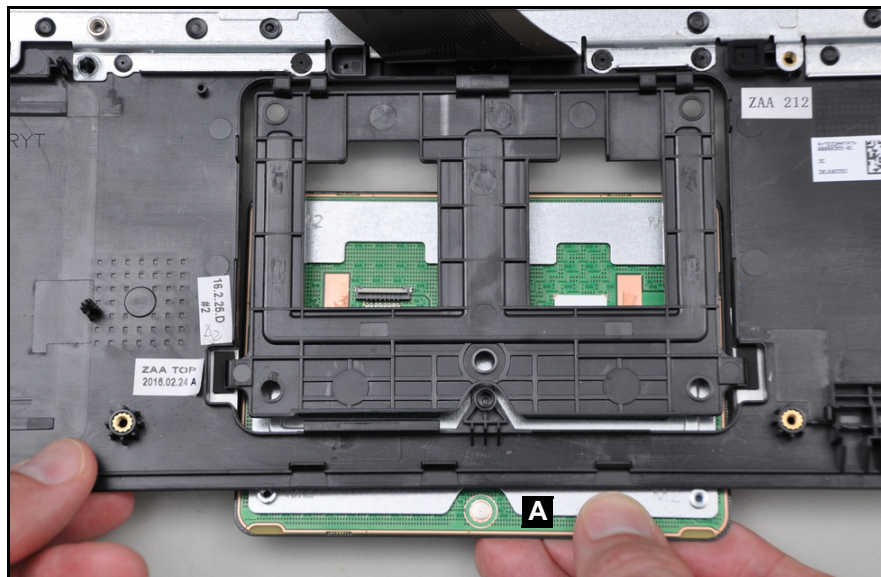


Figure 3-89. Replacing the Touchpad Module

2. Install and secure five (5) screws (B) to the touchpad module (A) (Figure 3-90).
3. Connect the touchpad FPC (C) to its connector (D) (Figure 3-90).

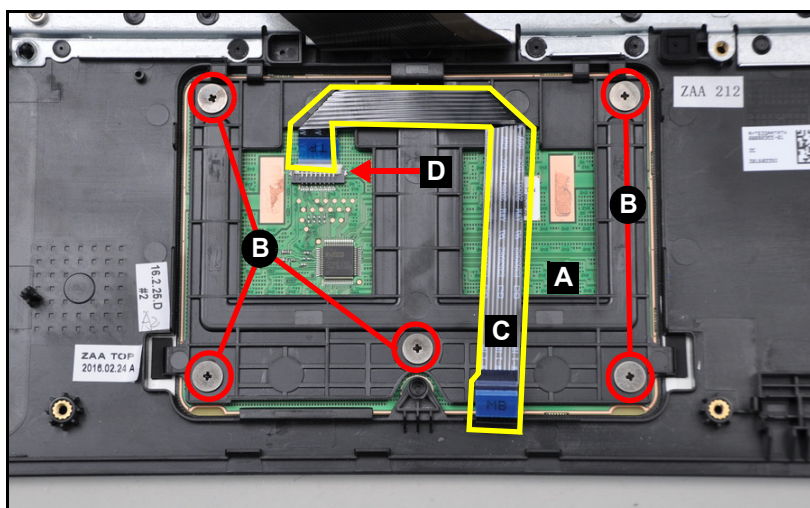


Figure 3-90. Replacing the Touchpad Module

4. Attach the touchpad conductive cloth (F) to the touchpad module (A) and top assembly (E) ([Figure 3-91](#)).

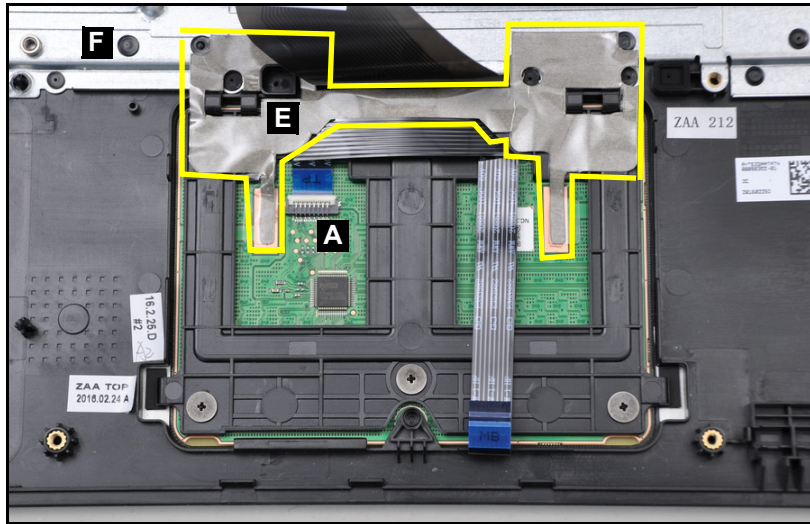


Figure 3-91. Replacing the Touchpad Module

5. Flip the keyboard FPC (G) over the touchpad module (A) ([Figure 3-92](#)).

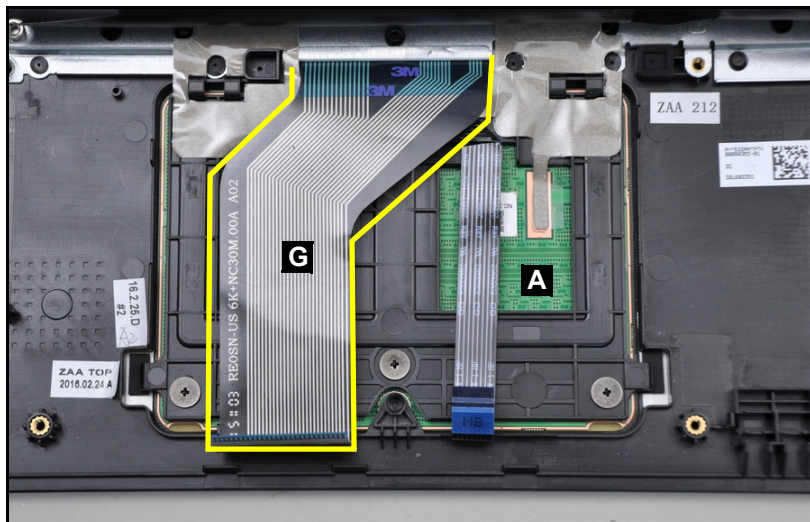


Figure 3-92. Replacing the Touchpad Module

6. Flip the keyboard mylar (H) over the touchpad module (Figure 3-92).

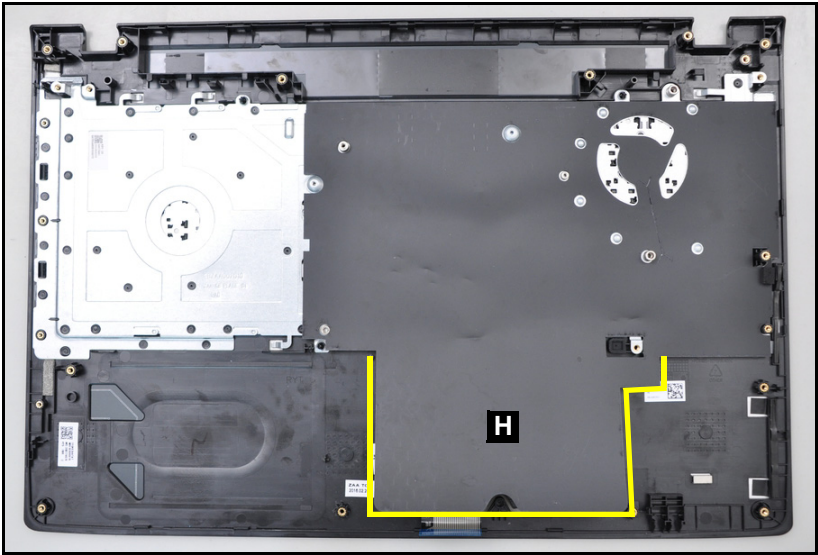


Figure 3-93. Replacing the Touchpad Module

ID	Size	Torque	Quantity	Screw Type
B	M2.0*2.0	3.0±0.2KGF/CM	5	

Replacing the RTC Battery

1. Place and secure the RTC battery (A) to its compartment on the mainboard. Make sure that the RTC battery (A) comes into contact with the mainboard connector (B) ([Figure 3-94](#)).

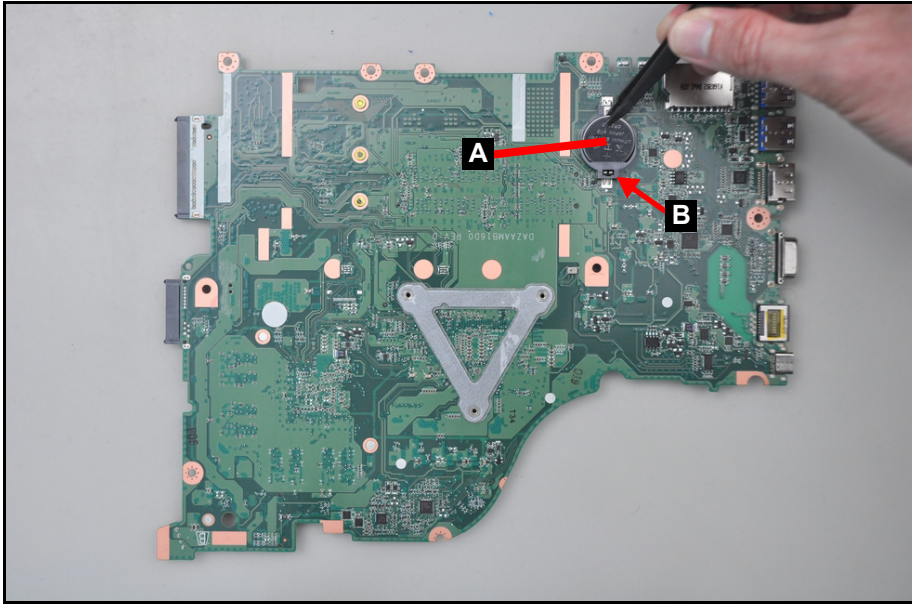


Figure 3-94. Replacing the RTC Battery

Replacing the Mainboard

1. Place the mainboard (A) onto the top assembly (Figure 3-95).

⚠ CAUTION:

Make sure all FFCs and FPCs are moved away from the mainboard during installation.

2. Install and secure two (2) screws (B) to the mainboard (Figure 3-95).
3. Connect the I/O board FFC to the mainboard connector (F) (Figure 3-95).
4. Connect the DC-in cable to the mainboard connector (G) (Figure 3-95).
5. Connect the touchpad FPC to the mainboard connector (D) (Figure 3-95).
6. Connect the keyboard FPC to the mainboard connector (E) (Figure 3-95).
7. Connect the keyboard backlight FPC to the mainboard connector (H) (for select models only) (Figure 3-95).
8. Connect the eDP cable to the mainboard connector (C) (Figure 3-95).

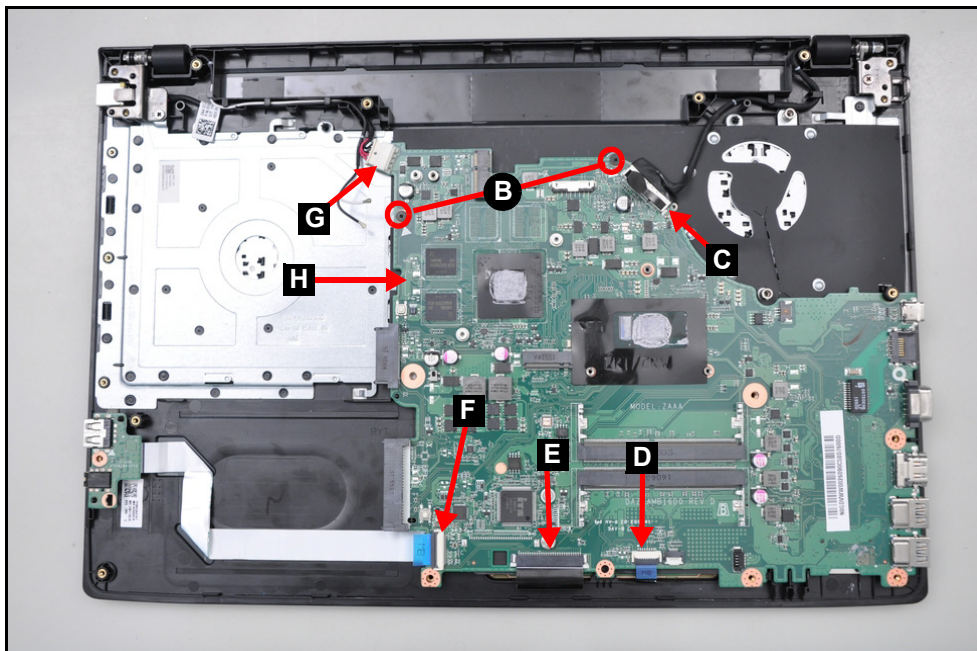


Figure 3-95. Replacing the Mainboard

9. Attach and secure the keyboard connector tape (I) to the keyboard connector (J) (Figure 3-96).

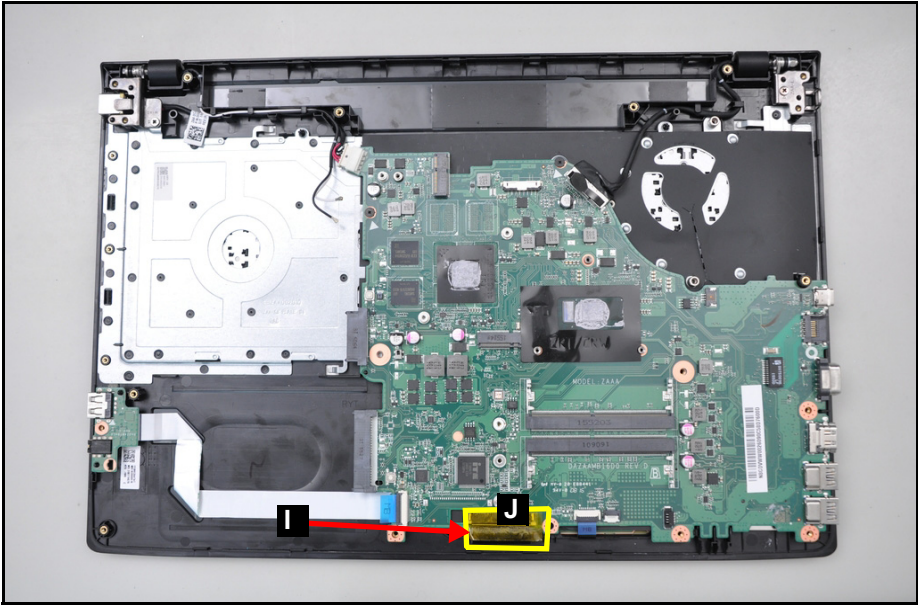



Figure 3-96. Replacing the Mainboard

⇒ **NOTE:**
Make sure that the touchpad, keyboard, and keyboard backlight FPCs, and the I/O board FPC, are firmly secured to the mainboard connectors.

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.0	2.0±0.2KGF/CM	2	

Replacing the Heatsink (UMA)

+ IMPORTANT:

Apply approved thermal grease and ensure all heat pads are in position before replacing the module.

⚠ CAUTION:

Use caution when applying thermal grease. Thermal grease may cause damage to the mainboard.

The following thermal grease types are approved for use:

- Silmore GP50
- Honeywell
- Jet Motor 7762

The following thermal pads are approved for use:

- Eapus XR-PE
1. Remove all traces of thermal grease from CPU (or GPU) using a lint-free cloth or cotton swab and Isopropyl Alcohol, Acetone, or other approved cleaning agent.
 2. Apply small amount of thermal grease to center of CPU.

⇒ NOTE:

Force used during installation of heatsink is sufficient to spread grease evenly over CPU top.

3. Place the heatsink (A) on the mainboard ([Figure 3-97](#)).
4. Install and secure three (3) screws (B) in numerical order from one (1) to three (3) to the mainboard ([Figure 3-97](#)). Ensure the heatsink is properly aligned and seated.

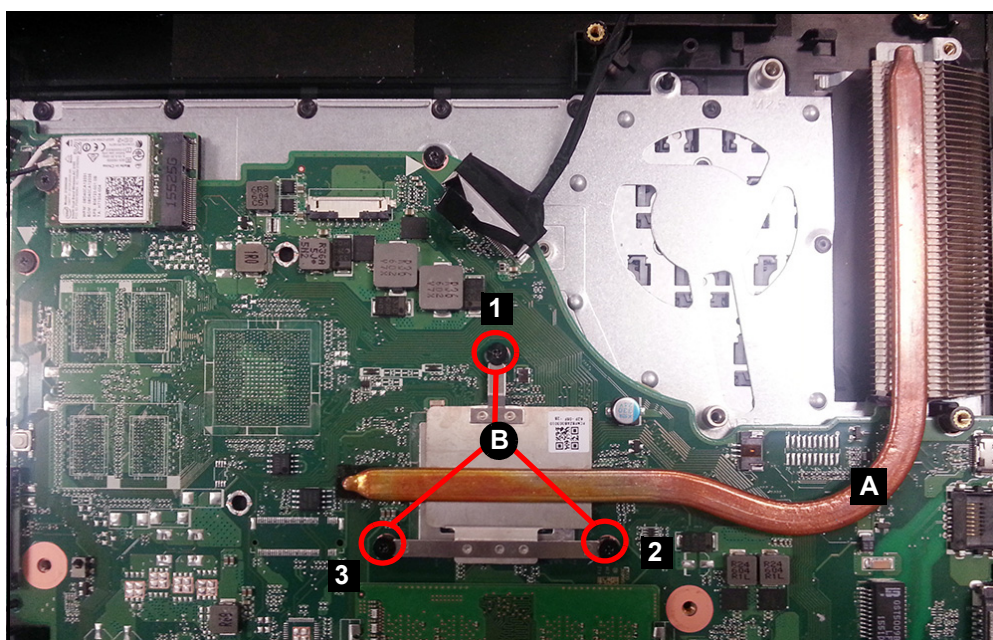



Figure 3-97. Replacing the Heatsink (UMA)

ID	Size	Torque	Quantity	Screw Type
A	M2.0*3.0	2.0±0.2KGF/CM	3	

Replacing the Heatsink (Discrete)

+ IMPORTANT:

Apply approved thermal grease and ensure all heat pads are in position before replacing the module.

⚠ CAUTION:

Use caution when applying thermal grease. Thermal grease may cause damage to the mainboard.

The following thermal grease types are approved for use:

- Silmore GP50
- Honeywell
- Jet Motor 7762

The following thermal pads are approved for use:

- Eapus XR-PE
1. Remove all traces of thermal grease from CPU (or GPU) using a lint-free cloth or cotton swab and Isopropyl Alcohol, Acetone, or other approved cleaning agent.
 2. Apply small amount of thermal grease to center of CPU.

⇒ NOTE:

Force used during installation of heatsink is sufficient to spread grease evenly over CPU top.

3. Place the heatsink (D) on the mainboard ([Figure 3-98](#)).
4. Install and secure five (5) screws (A) in numerical order from one (1) to five (5) to the mainboard ([Figure 3-98](#)). Ensure the heatsink is properly aligned and seated.

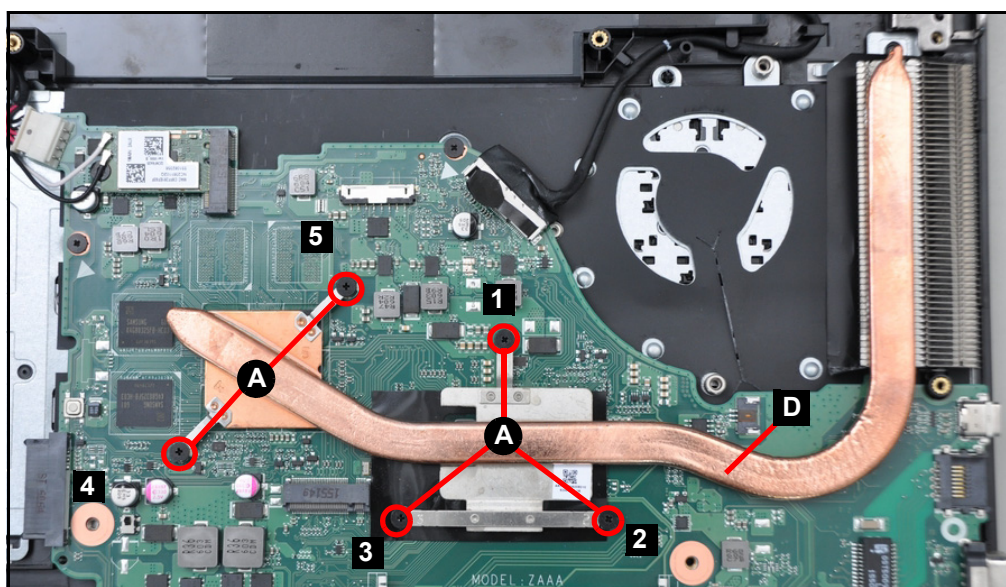



Figure 3-98. Replacing the Heatsink (Discrete)

ID	Size	Torque	Quantity	Screw Type
A	M2.0*3.0	2.0±0.2KGF/CM	5	

Replacing the Fan

- 1. Place the fan (H) next to the heatsink on the top assembly (Figure 3-99).
- 2. Install and secure two (2) screws (A) to the fan (Figure 3-99).
- 3. Connect the fan cable (B) to the mainboard connector (C) (Figure 3-99).

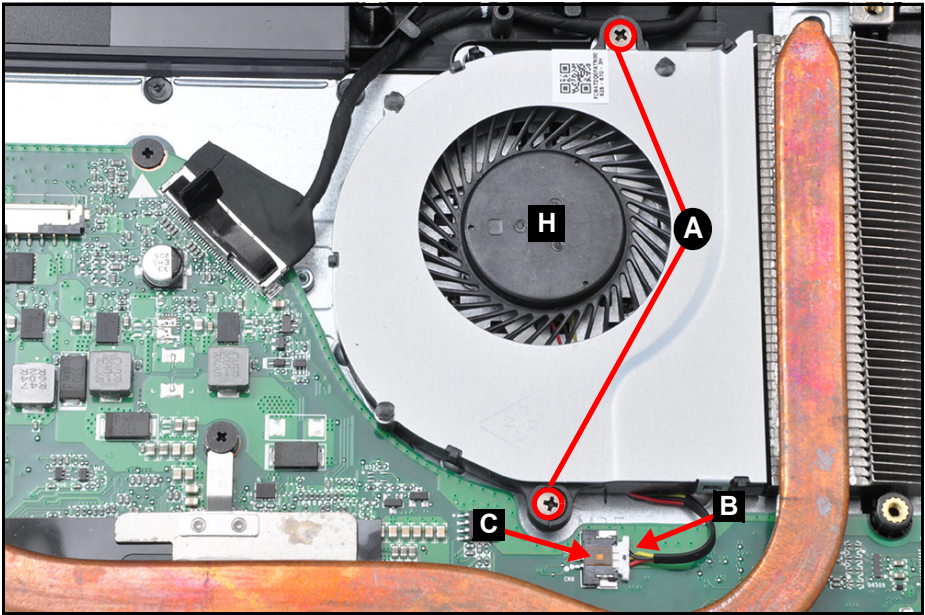



Figure 3-99. Replacing the Fan

ID	Size	Torque	Quantity	Screw Type
A	M2.5*7.0	3.0±0.15KGF/CM	2	

Replacing the I/O Board

1. Connect the I/O board FFC (B) to the the I/O board connector (C) ([Figure 3-100](#)).

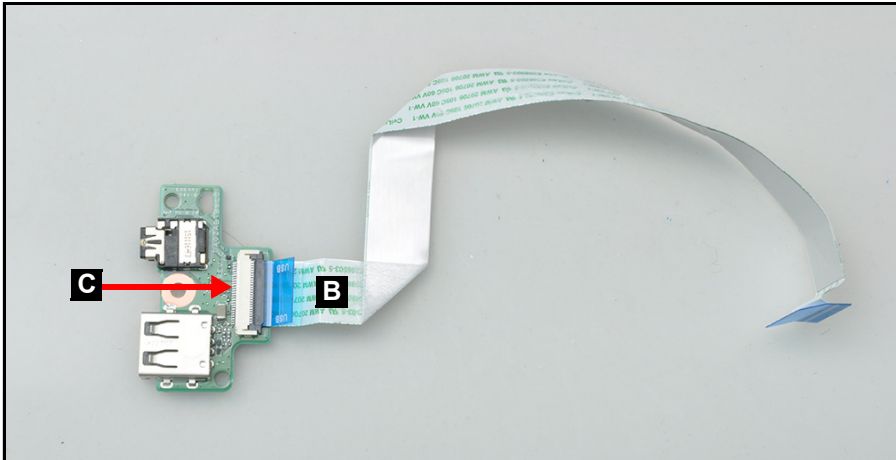


Figure 3-100. Replacing the I/O Board

2. Place the I/O board (A) to its compartment on the top assembly, making sure that the I/O board (A) is latched to the latch (D) ([Figure 3-101](#)).

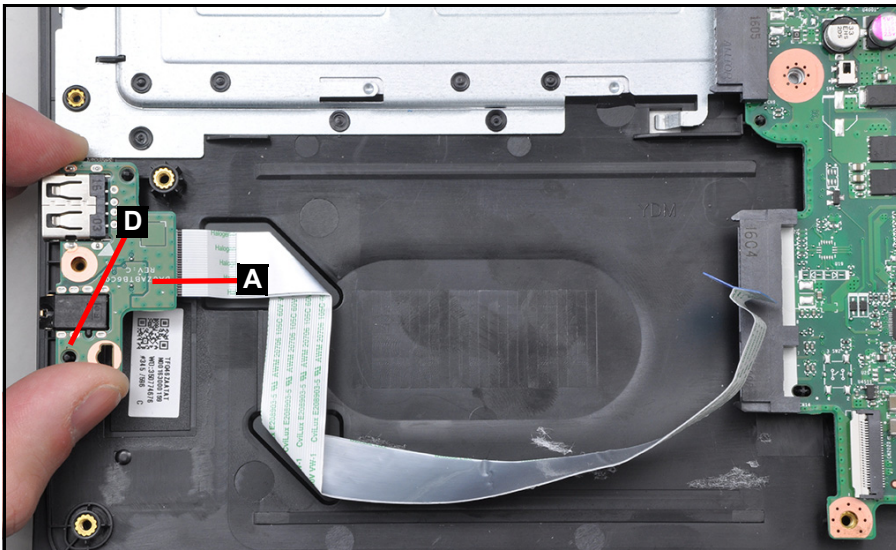



Figure 3-101. Replacing the I/O Board

-
- Figure 1 shows the back view of the laptop chassis. The LCD cable connector is labeled 'E' and is located on the left side of the chassis. The LCD cable is labeled 'F' and is located on the right side of the chassis. The cable is connected to the connector.

⇒ NOTE:

ID	Size	Torque	Quantity	Screw Type
E	M2.0*3.0	2.0±0.2KGF/CM	1	

Replacing the WLAN (Wireless Local Area Network) Module

1. Place and insert the WLAN module into the mainboard connector (A) (Figure 3-103).

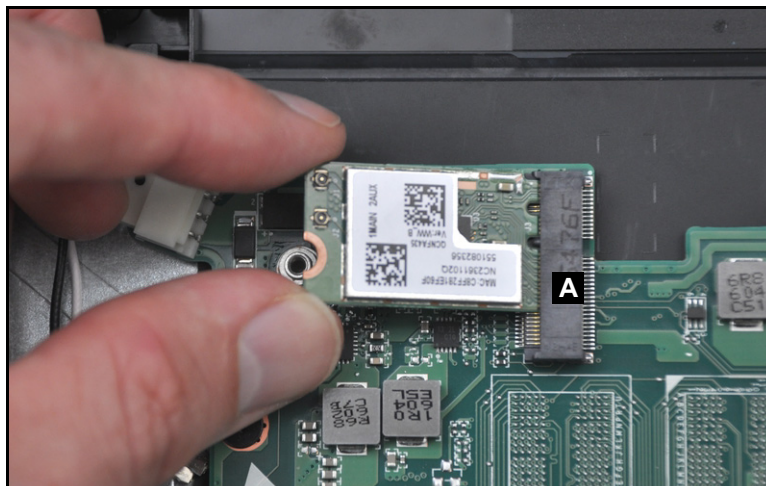


Figure 3-103. Replacing the WLAN Module

2. Install and secure one (1) screw (A) to the WLAN module (Figure 3-104).
3. Connect the AUX antenna (white-color) to the WLAN AUX pin (Figure 3-104).
4. Connect the MAIN antenna (black-color) to the WLAN MAIN pin (Figure 3-104).

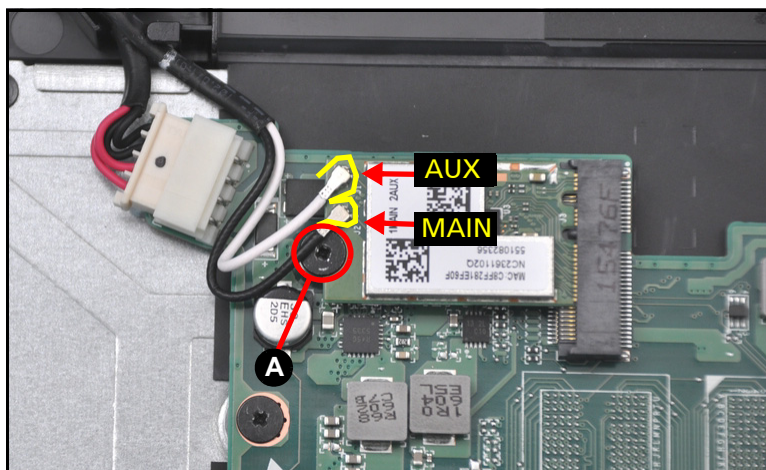



Figure 3-104. Replacing the WLAN Module

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.0	2.0±0.2KGF/CM	1	

Replacing the Battery Pack

1. Place the battery pack (A) to its compartment on the system ([Figure 3-105](#)).

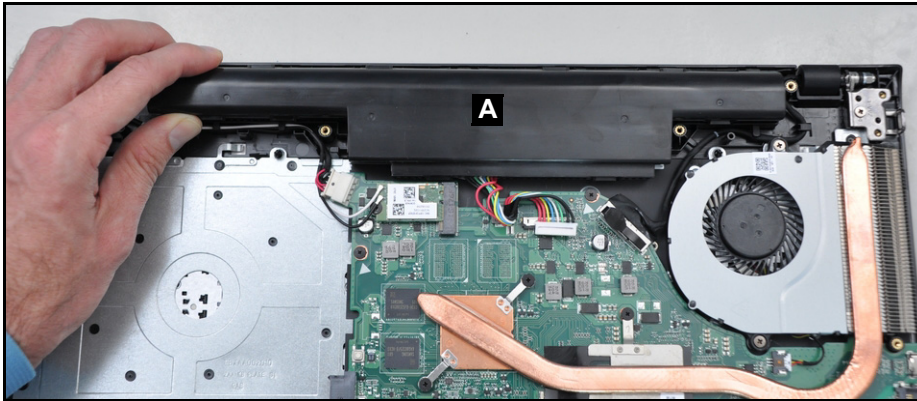


Figure 3-105. Replacing the Battery Pack

2. Connect the battery cable to the mainboard connector (B) ([Figure 3-106](#)).

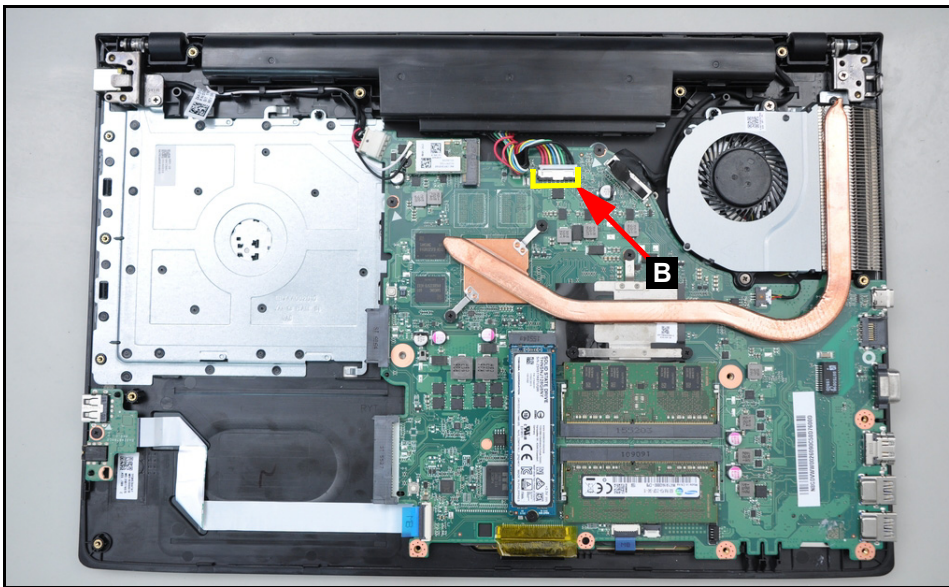


Figure 3-106. Replacing the Battery Pack

Replacing the Speaker Module

1. Place the speaker module (B) to its compartment on the base cover (Figure 3-107).

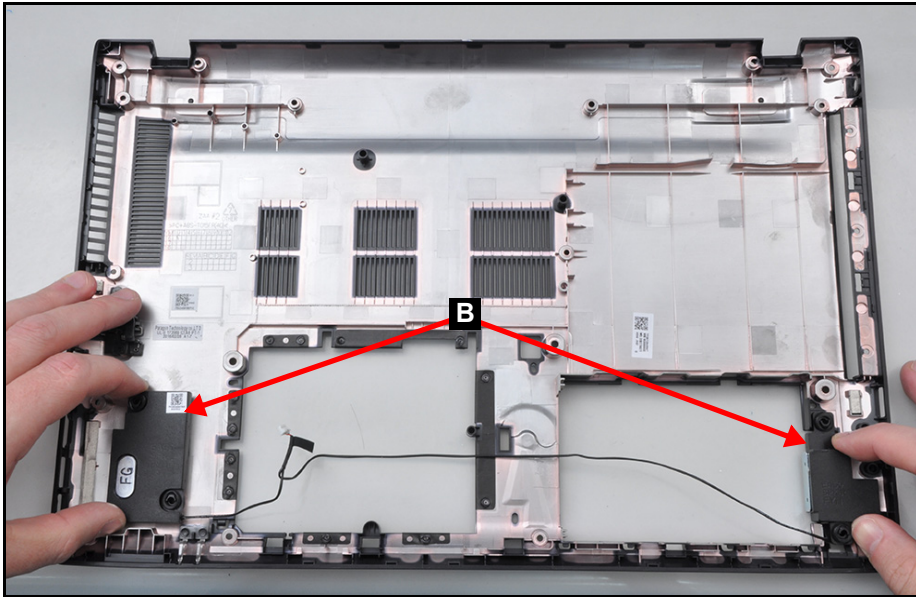


Figure 3-107. Replacing the Speaker Module

2. Route the speaker cable (A) along the cable guides (Figure 3-108).

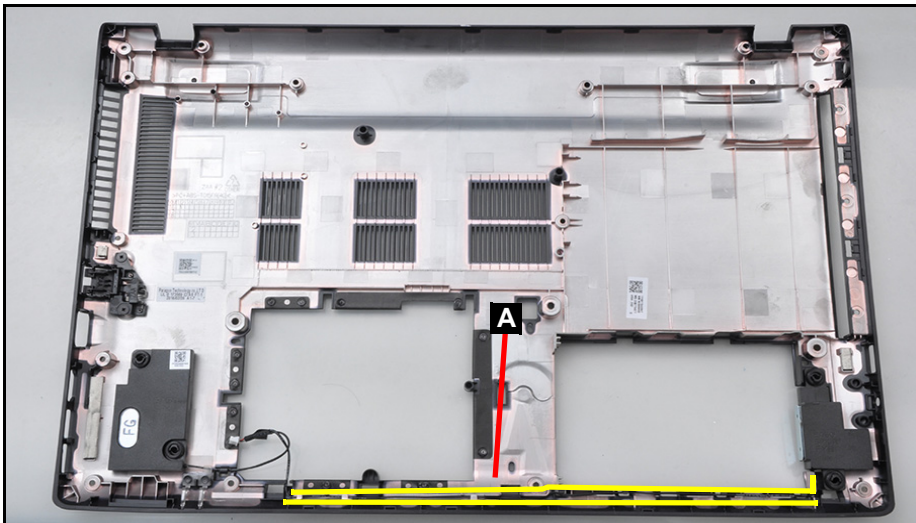


Figure 3-108. Replacing the Speaker Module

Replacing the Base Cover

1. Carefully place the base cover onto the top assembly and slide the base cover onto the top of the system in the indicated direction. Make sure that the edges of the base cover are aligned properly to those of the top assembly (Figure 3-109).



Figure 3-109. Replacing the Base Cover

2. Press downward on the system to engage the tabs. Make sure all the tabs are fully engaged ([Figure 3-110](#)).



Figure 3-110. Replacing the Base Cover

3. Install and secure seventeen (17) screws to the base cover ([Figure 3-111](#)).

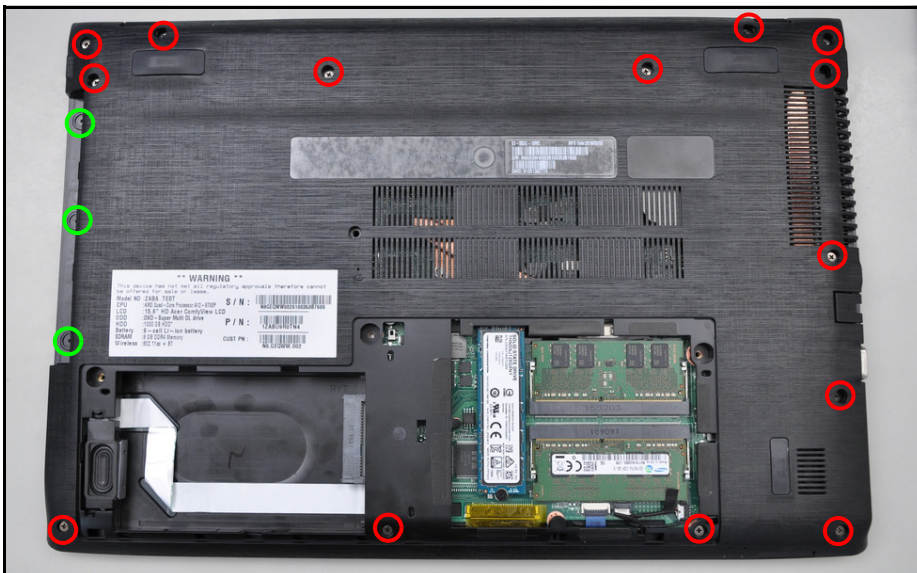


Figure 3-111. Replacing the Base Cover

4. Connect the speaker cable (A) to the mainboard connector (B) (Figure 3-112).

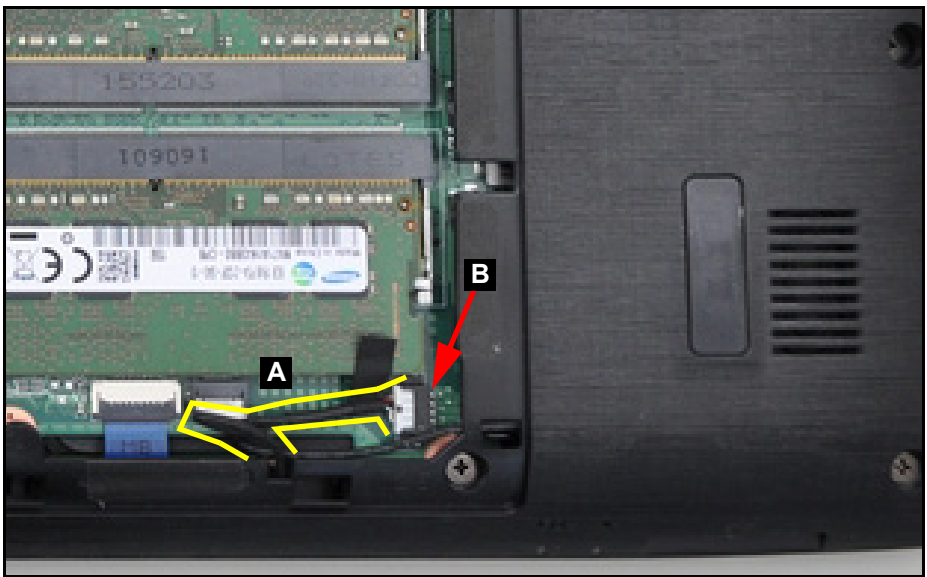




Figure 3-112. Replacing the Base Cover

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0±0.15KGF/CM	14	
Green Call out	M2.0*3.0	2.0±0.2KGF/CM	3	

Replacing the SSD (Solid State Drive)

- 1. Insert the SSD (F) to the mainboard connector (A) (Figure 3-17).

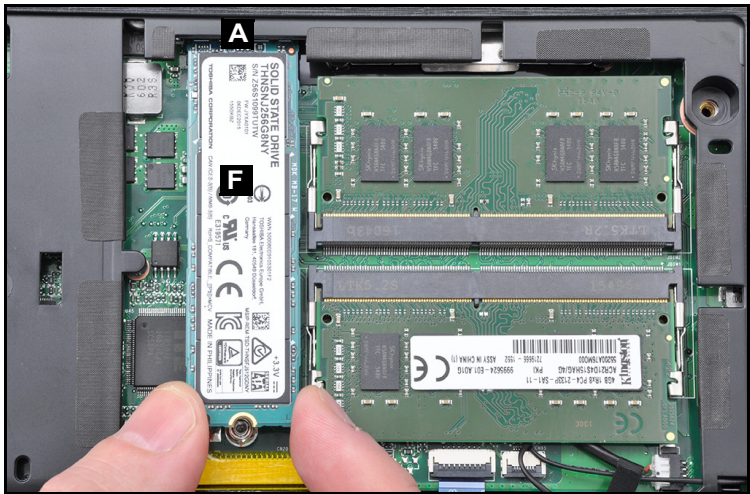


Figure 3-113. Replacing the SSD

- 2. Install and secure one screw securing the SSD module in place (Figure 3-16).

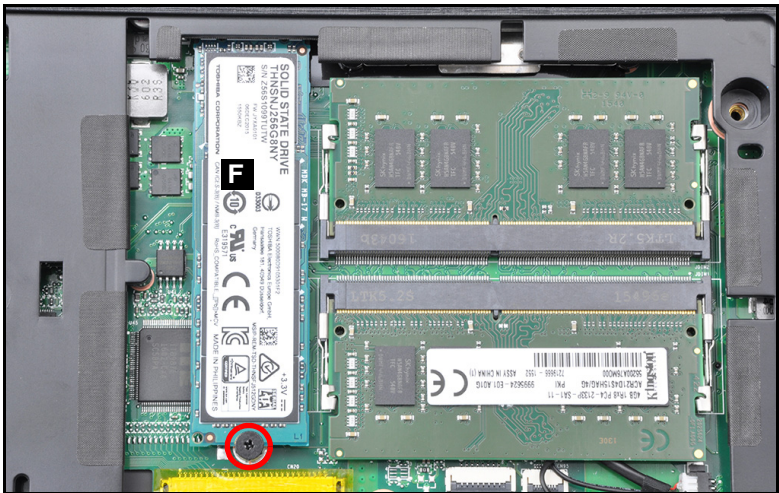


Figure 3-114. Replacing the SSD

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*3.0	2.0±0.2KGF/CM	1	

Replacing the DIMM (Dual In-line Memory Module)

1. Insert the DIMM (E) to the mainboard connector (F) (Figure 3-115).
2. Press down on the DIMM (E) until the module clips (C) lock into position as shown in Figure 3-115.
3. Insert the DIMM (D) to the mainboard connector (B) (Figure 3-115).
4. Press down on the DIMM (D) until the module clips (A) lock into position as shown in Figure 3-115.

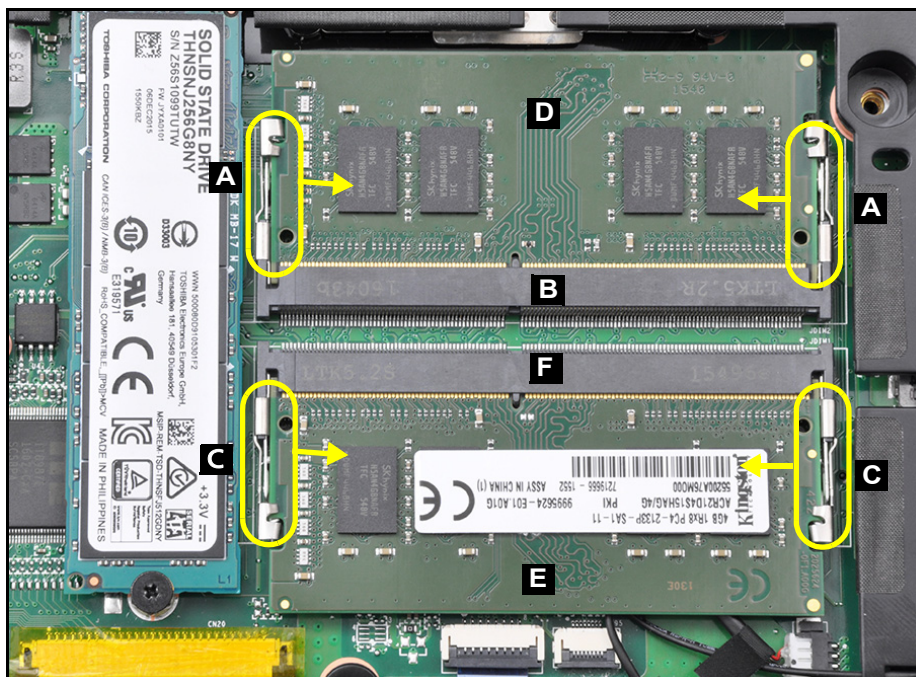


Figure 3-115. Replacing the DIMM

Replacing the HDD (Hard Disk Drive) Module

1. Place the HDD brackets with mylar (D) on top of the HDD (Figure 3-116).
2. Install and secure four (4) screws (B) to the HDD brackets (Figure 3-116).

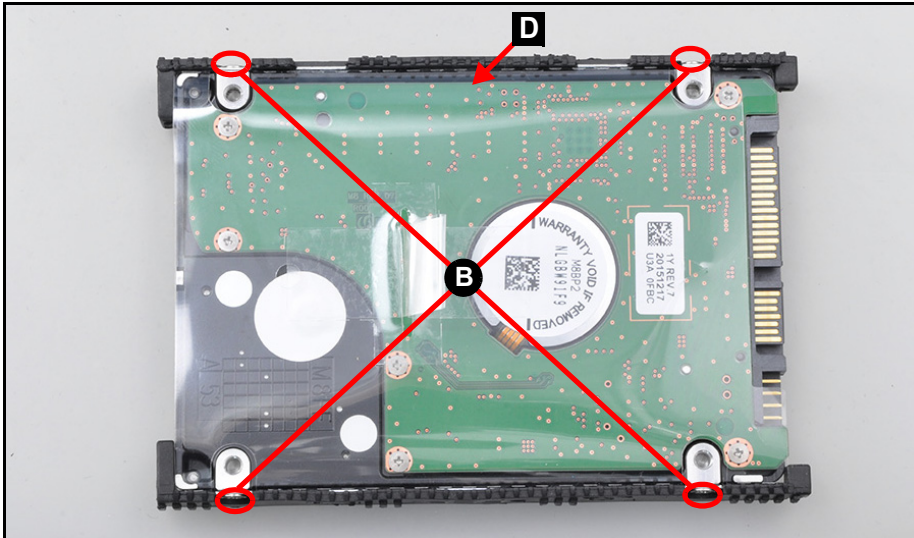


Figure 3-116. Replacing the HDD Brackets with Mylar

3. Push the HDD module (C) toward the mainboard to connect the HDD module (C) to the mainboard connector (A) as shown in Figure 3-117.

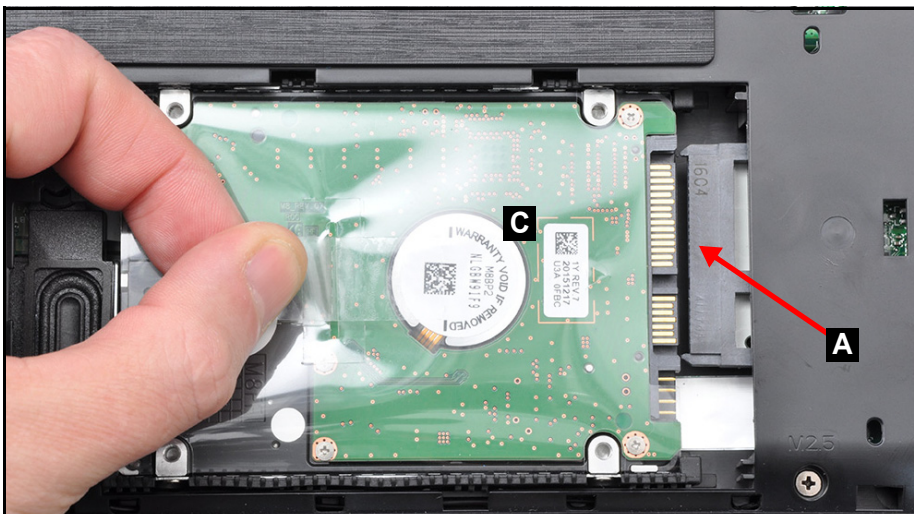



Figure 3-117. Replacing the HDD Module

ID	Size	Torque	Quantity	Screw Type
B	M3.0*3.5	3.2±0.2KGF/CM	4	

Replacing the HDD (Hard Disk Drive) Door

1. Place the HDD door (A) on the system ([Figure 3-8](#)).




Figure 3-118. Replacing the HDD Door

2. Install and secure three (3) screws to the HDD door ([Figure 3-18](#)).



Figure 3-119. Replacing the HDD Door

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0±0.15KGF/CM	3	

Replacing the ODD (Optical Disk Drive) Module

1. Attach ODD bracket (D) to the optical drive (Figure 3-120).
2. Secure two (2) screws to the ODD bracket (Figure 3-120).

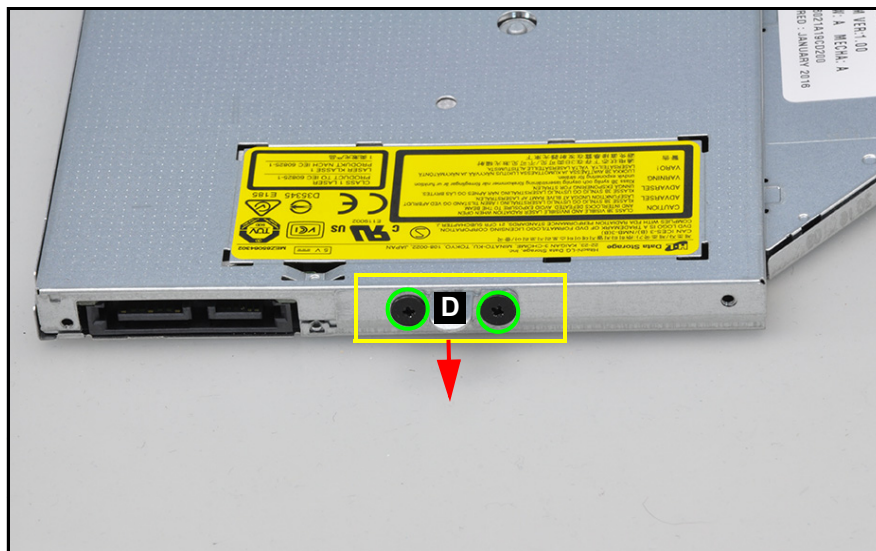


Figure 3-120. Replacing the ODD Bracket

3. Attach the ODD bezel (B) to the left side (D) of the ODD tray, and then attach it to the right side (C) (Figure 3-121).

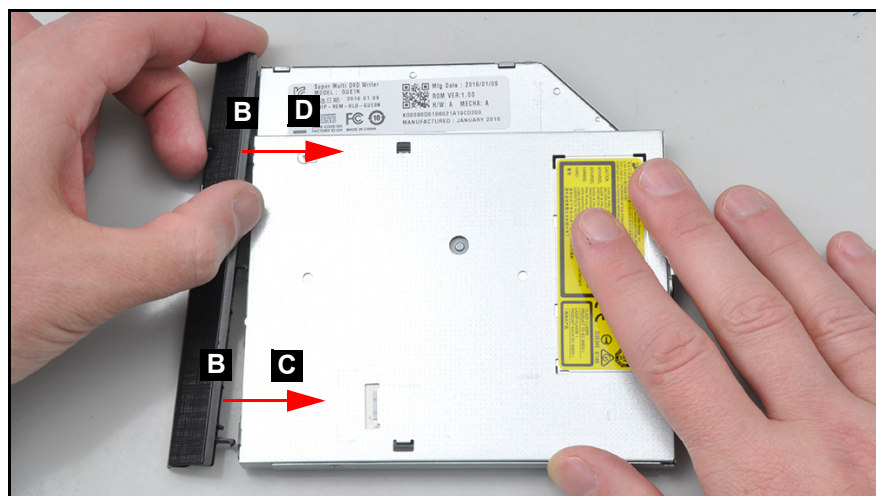


Figure 3-121. Replacing the ODD Module

- 4. Slide the ODD module (C) into the ODD bay (Figure 3-122).
- 5. Install and secure one (1) screw to the ODD module (Figure 3-122).

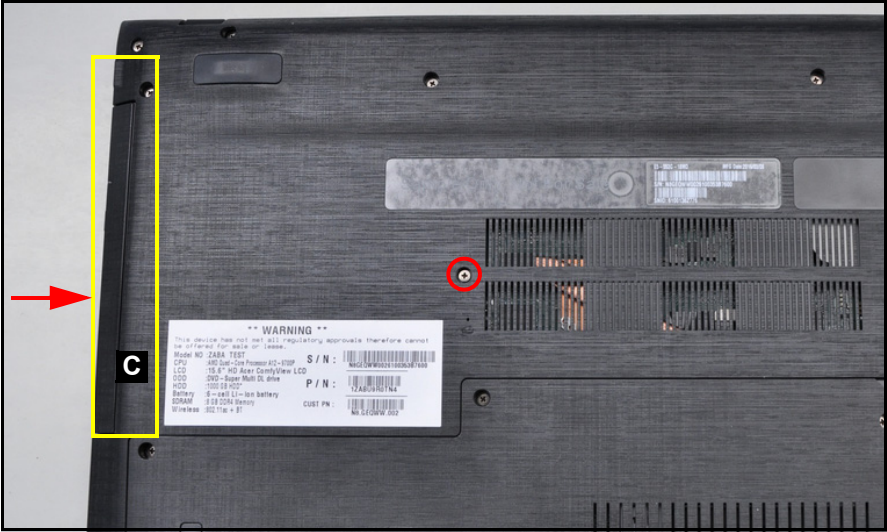




Figure 3-122. Replacing the ODD Module

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0±0.15KGF/CM	1	
Green Call out	M2.0*3.0	2.0±0.2KGF/CM	2	

CHAPTER 4

Troubleshooting

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Troubleshooting

Introduction

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

General Information

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

⇒ **NOTE:**

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

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

Table 4-1. Common Problems

Symptoms (Verified)
Power On Issues
No Display Issues
LCD Picture Failure
Internal Keyboard Failure
TouchPad Failure
Internal Speaker Failure
Audio and Card Reader Failure
Other Functions Failure
Intermittent Problems
Undetermined Problems

4. If the Issue is still not resolved, refer to [Online Support Information](#).

⇒ **NOTE:**

Do not replace non-defective FRU parts.

Power On Issues

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

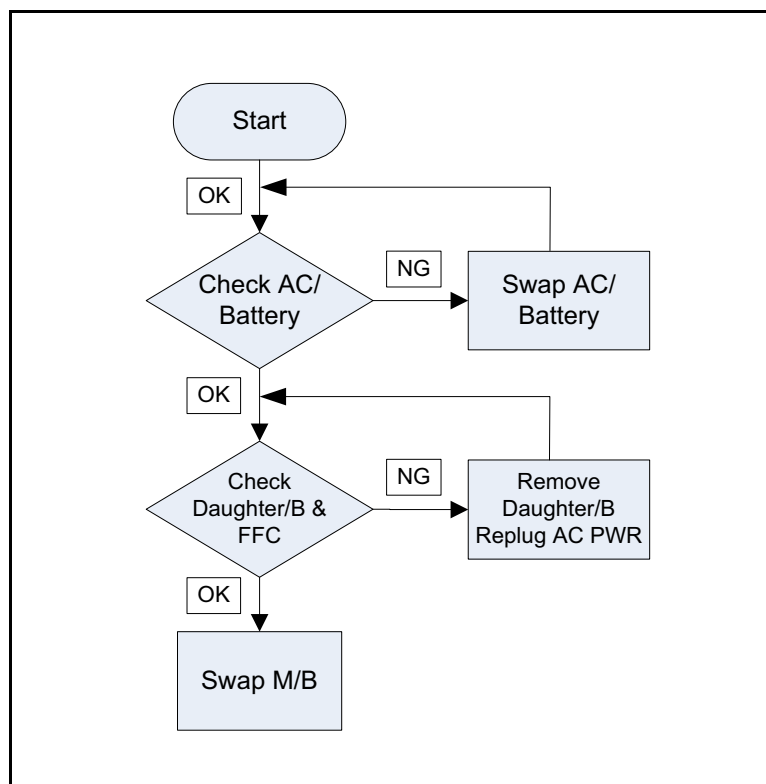


Figure 4-1. Power On Issue

Computer Shuts Down Intermittently

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

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

No Display Issues

If the Display does not work, perform the following:

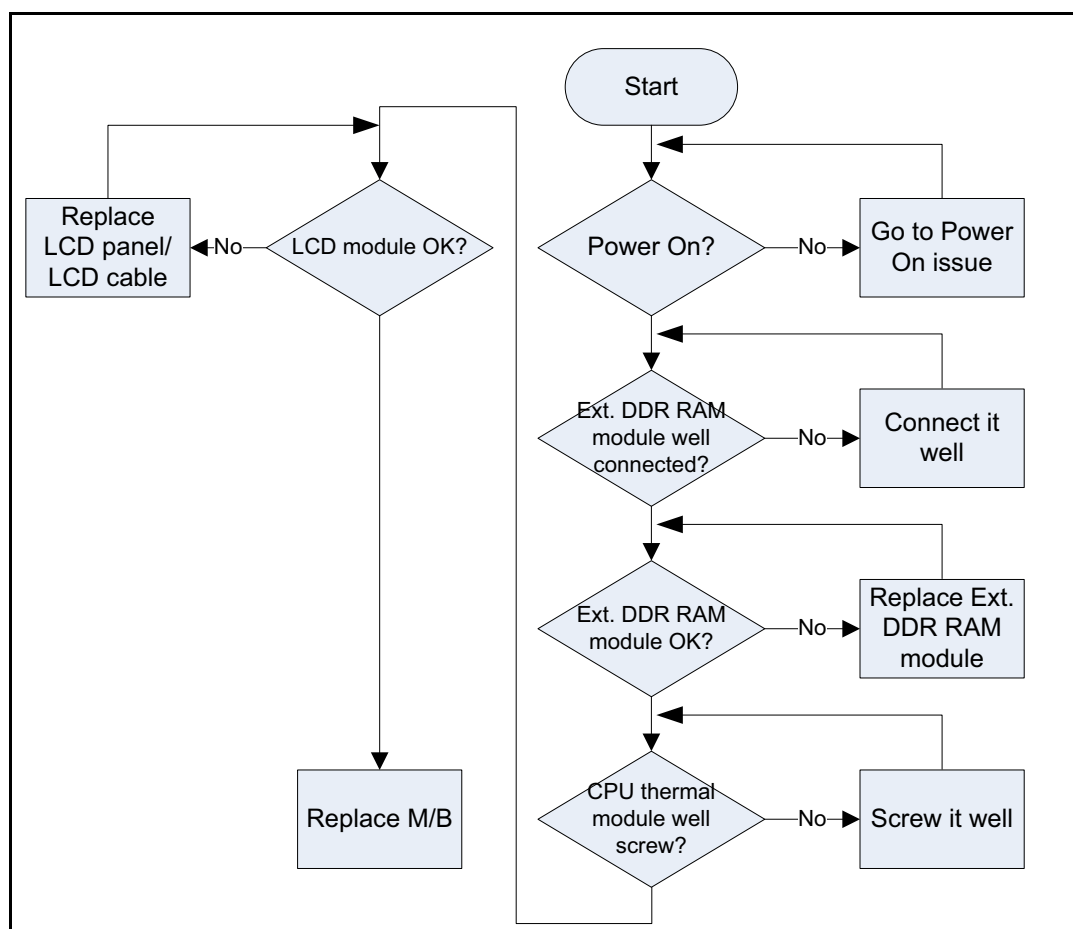


Figure 4-2. No Display Issue

No POST or Video

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

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

If no power, refer to [Power On Issues](#).

3. Drain stored power by removing the power cable and battery. Hold the power button for 10 seconds.
4. Connect the power and reboot the computer.

5. Connect an external monitor to the computer and switch between the internal display and the external display by pressing **Fn+F5**.
6. If the POST or video appears on the external display only, refer to [LCD Picture Failure](#).
7. Disconnect power and all external devices including port replicators or docking stations. Remove any memory cards and CD/DVD discs.
8. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
9. Reseat the memory modules.
10. Remove the drives (refer to [Disassembly Process](#)).
11. If the Issue is still not resolved, refer to [Online Support Information](#).

Abnormal Video

If the video appears abnormal, perform the following:

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

⇒ NOTE:

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

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

LCD Picture Failure

If the LCD fails, perform the following:

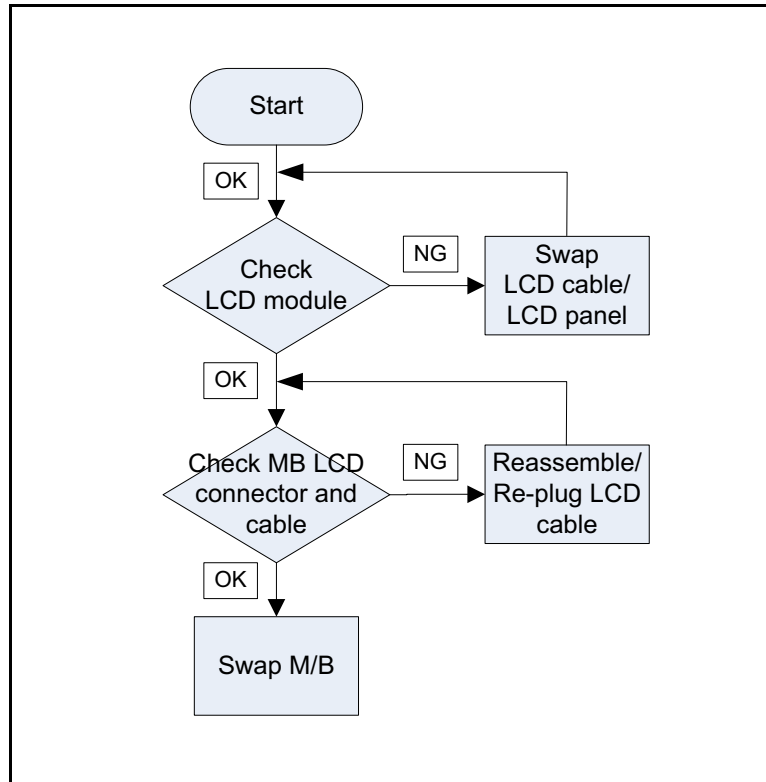


Figure 4-3. LCD Picture Failure

Internal Keyboard Failure

If the keyboard fails, perform the following:

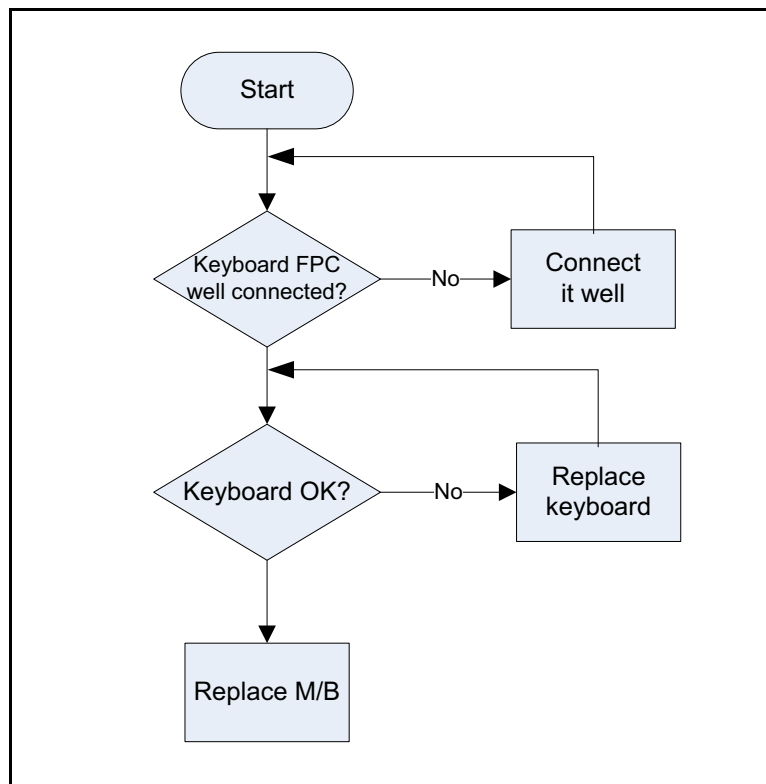


Figure 4-4. Internal Keyboard Failure

TouchPad Failure

If the touchpad fails, perform the following:

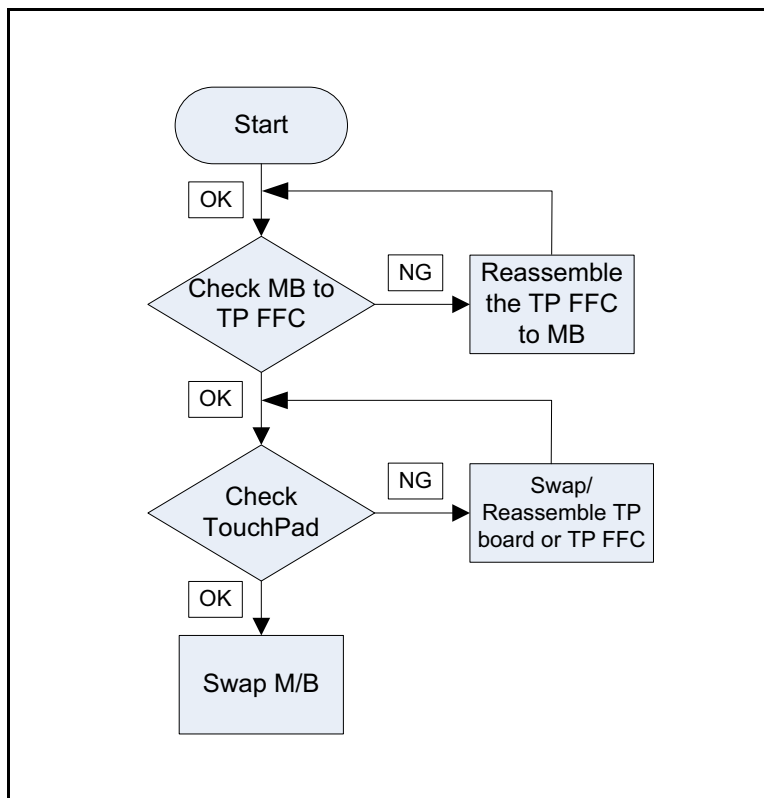


Figure 4-5. TouchPad Failure

Internal Speaker Failure

If the internal Speakers fail, perform the following:

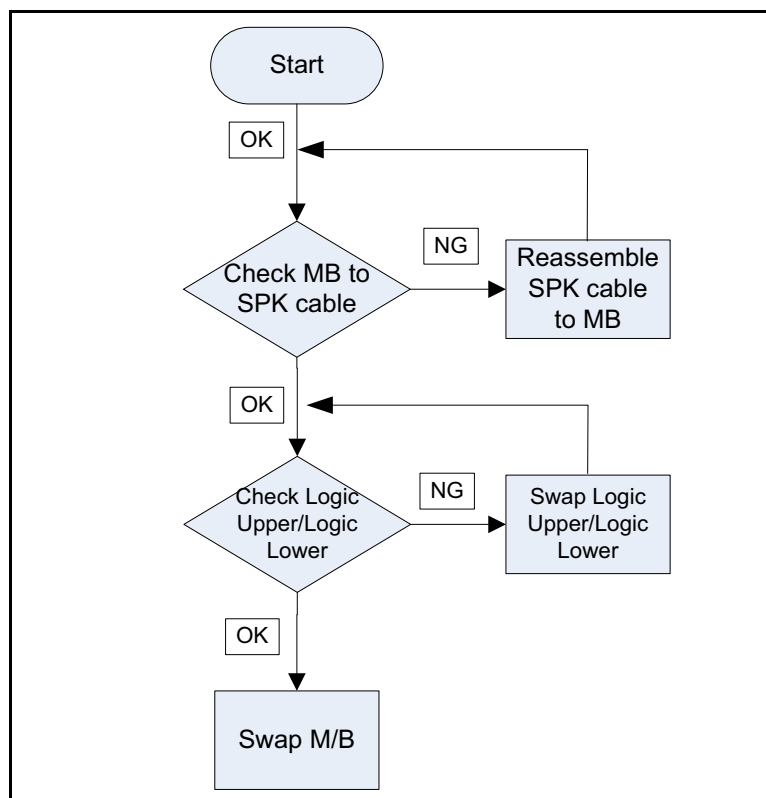


Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following, one at a time.

1. Boot the computer.
2. If updated recently, roll back the audio driver to the previous version. Remove and reinstall the audio driver.
3. 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.
4. Remove any recently installed hardware or software.
5. Restore system and file settings from a known good date using `System Restore`.
6. Reinstall the operating system.
7. If the issue is still not resolved, refer to [Online Support Information](#).

Audio and Card Reader Failure

If the audio and card reader fail, perform the following:

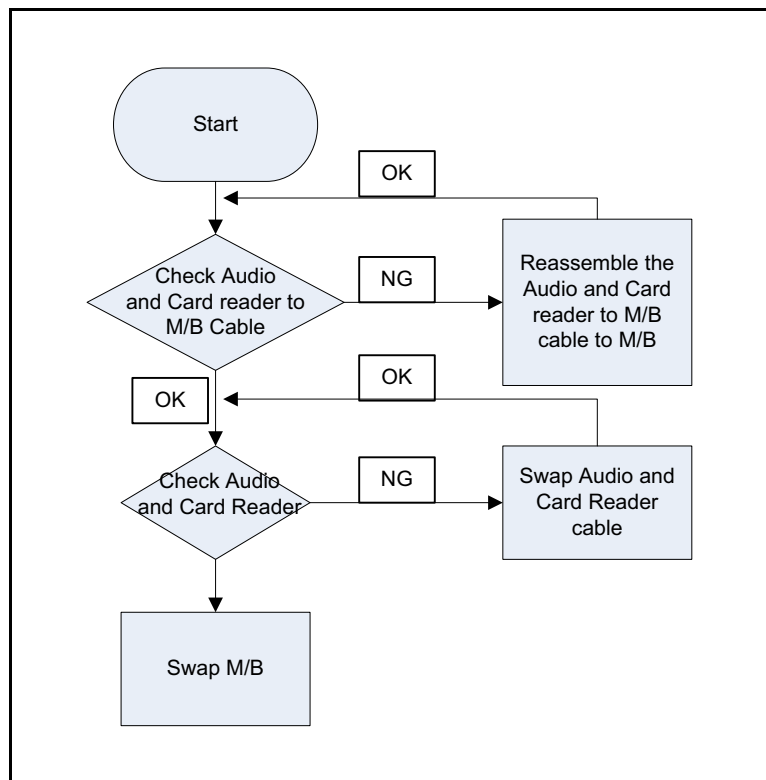


Figure 4-7. Audio and Card Reader Failure

Other Functions Failure

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

Intermittent Problems

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

When analyzing an intermittent problem, perform the following:

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

Undetermined Problems

The diagnostic problems 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.

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

⇒ **NOTE:**

Verify that all attached devices are supported by the computer.

⇒ **NOTE:**

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

1. Remove power from the computer.
2. Visually check components for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
 - Non-Acer devices
 - Printer, mouse, and other external devices
 - Battery pack
 - Hard disk drive
 - DIMM
 - BD/CD-ROM/Diskette drive Module
 - PC Cards
4. Apply power to the computer.
5. Determine if the problem has changed.
6. If the problem does not recur, connect the removed devices one at a time until failing FRU is found.
7. If the problem remains, replace the following FRUs:
 - 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_MSRINIT*	SEC	05	CPU Generic MSR initialization
SEC_CPU_SPEEDCFG*	SEC	06	Setup CPU speed
SEC_SETUP_CAR_OK	SEC	07	Cache as RAM test
SEC_FORCE_MAX_RATIO*	SEC	08	Tune CPU frequency ratio to maximum level
SEC_GO_TO_SECSTARTUP	SEC	09	Setup BIOS ROM cache

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

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

Table 4-4. PEI Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
PEI_SIO_INIT	PEI	70	Super I/O Initialization
PEI_CPU_REG_INIT	PEI	71	CPU Early Initialization
PEI_CPU_AP_INIT*	PEI	72	Multi-processor Early Initial
PEI_CPU_HT_RESET*	PEI	73	HyperTransport Initialization
PEI_PCIE_MMIO_INIT	PEI	74	PCIE MMIO BAR Initialization
PEI_NB_REG_INIT	PEI	75	North Bridge Early Initialization
PEI_SB_REG_INIT	PEI	76	South Bridge Early Initialization
PEI_PCIE_TRAINING*	PEI	77	PCIE Training
PEI_TPM_INIT	PEI	78	TPM Initialization
PEI_SMBUS_INIT	PEI	79	SMBUS Early Initialization
PEI_PROGRAM_CLOCK_GEN	PEI	7A	Clock Generator Initialization
PEI_IGD_EARLY_INITIAL*	PEI	7B	Internal Graphic device early Initialization
PEI_HECI_INIT*	PEI	7C	HECI Initialization
PEI_WATCHDOG_INIT*	PEI	7D	Watchdog timer Initialization
PEI_MEMORY_INIT	PEI	7E	Memory Initial for Normal boot.
PEI_MEMORY_INIT_FOR_CRISIS	PEI	7F	Memory Initial for Crisis Recovery
PEI_MEMORY_INSTALL	PEI	80	Simple Memory test
PEI_TXTPEI*	PEI	81	TXT function early Initialization
PEI_SWITCH_STACK	PEI	82	Start to use Memory
PEI_MEMORY_CALLBACK	PEI	83	Set cache for physical memory
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

Table 4-4. (Continued)PEI Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
PEI_RECOVERY_START_FLASH	PEI	88	Start Flash BIOS with Recovery image
PEI_ENTER_DXEIPL	PEI	89	Loading BIOS image to RAM
PEI_FINDING_DXE_CORE	PEI	8A	Loading DXE core
PEI_GO_TO_DXE_CORE	PEI	8B	Enter DXE core
* 3rd party relate functions – Platform dependence.			

Table 4-5. DXE Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
DXE_TCGDXE*	DXE	40	TPM initial in DXE
DXE_SB_SPI_INIT*	DXE	41	South bridge SPI initialization
DXE_CF9_RESET*	DXE	42	Setup Reset service
DXE_SB_SERIAL_GPIO_INIT*	DXE	43	South bridge Serial GPIO initialization
DXE_SMMACCESS*	DXE	44	Setup SMM ACCE SS service
DXE_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

Table 4-5. (Continued)DXE Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
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
DXE_HECIDRV_INIT*	DXE	60	HECIDRV Initialization
DXE_FLASH_PART_NONSUPPORT	DXE	62	Do not support flash part (which is defined in SpiDevice.c)
* 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

Table 4-6. (Continued)BDS Phase POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_CONNECT_USB_HC	BDS	19	USB host controller initialization
BDS_CONNECT_USB_BUS	BDS	1A	USB BUS driver initialization
BDS_CONNECT_USB_DEVICE	BDS	1B	USB device driver initialization
BDS_NO_CONSOLE_ACTION	BDS	1C	Console device initial fail
BDS_DISPLAY_LOGO_SYSTEM_INFO	BDS	1D	Display logo or system information
BDS_START_IDE_CONTROLLER	BDS	1E	IDE controller initialization
BDS_START_SATA_CONTROLLER	BDS	1F	SATA controller initialization
BDS_START_ISA_ACPI_CONTROLLER	BDS	20	SIO controller initialization
BDS_START_ISA_BUS	BDS	21	ISA BUS driver initialization
BDS_START_ISA_FDD	BDS	22	Floppy device initialization
BDS_START_ISA_SEIRAL	BDS	23	Serial device initialization
BDS_START_IDE_BUS	BDS	24	IDE device initialization
BDS_START_AHCI_BUS	BDS	25	AHCI device initialization
BDS_CONNECT_LEGACY_ROM	BDS	26	Dispatch option ROMs
BDS_ENUMERATE_ALL_BOOT_OPTION	BDS	27	Get boot device information
BDS_END_OF_BOOT_SELECTION	BDS	28	End of boot selection
BDS_ENTER_SETUP	BDS	29	Enter Setup Menu
BDS_ENTER_BOOT_MANAGER	BDS	2A	Enter Boot manager
BDS_BOOT_DEVICE_SELECT	BDS	2B	Try to boot system to OS
BDS_EFI64_SHADOW_ALL_LEGACY_ROM	BDS	2C	Shadow Misc Option ROM
BDS_ACPI_S3SAVE	BDS	2D	Save S3 resume required data in RAM
BDS_READY_TO_BOOT_EVENT	BDS	2E	Last Chipset initial before boot to OS
BDS_GO_LEGACY_BOOT	BDS	2F	Start to boot Legacy OS
BDS_GO_UEFI_BOOT	BDS	30	Start to boot UEFI OS
BDS_LEGACY16_PREPARE_TO_BOOT	BDS	31	Prepare to Boot to Legacy OS
BDS_EXIT_BOOT_SERVICES*	BDS	32	Send END of POST Message to ME via HECI
BDS_LEGACY_BOOT_EVENT	BDS	33	Last Chipset initial before boot to Legacy OS.

Table 4-6. (Continued)BDS Phase POST Code Table

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

Table 4-7. PostBDS 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

Table 4-8. (Continued)S3 Functions POST Code Table

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
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 wake up from S1
ASL_WAKEUP_S3	ASL	E3	System wake up from S3
ASL_WAKEUP_S4	ASL	E4	System wake up from S4

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. InsydeH2ODDT Debugger POST Code Table

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

CHAPTER 5

Jumper and Connector Locations

Mainboard Jumper and Connector Locations	5-3
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Jumper and Connector Locations

Mainboard Jumper and Connector Locations

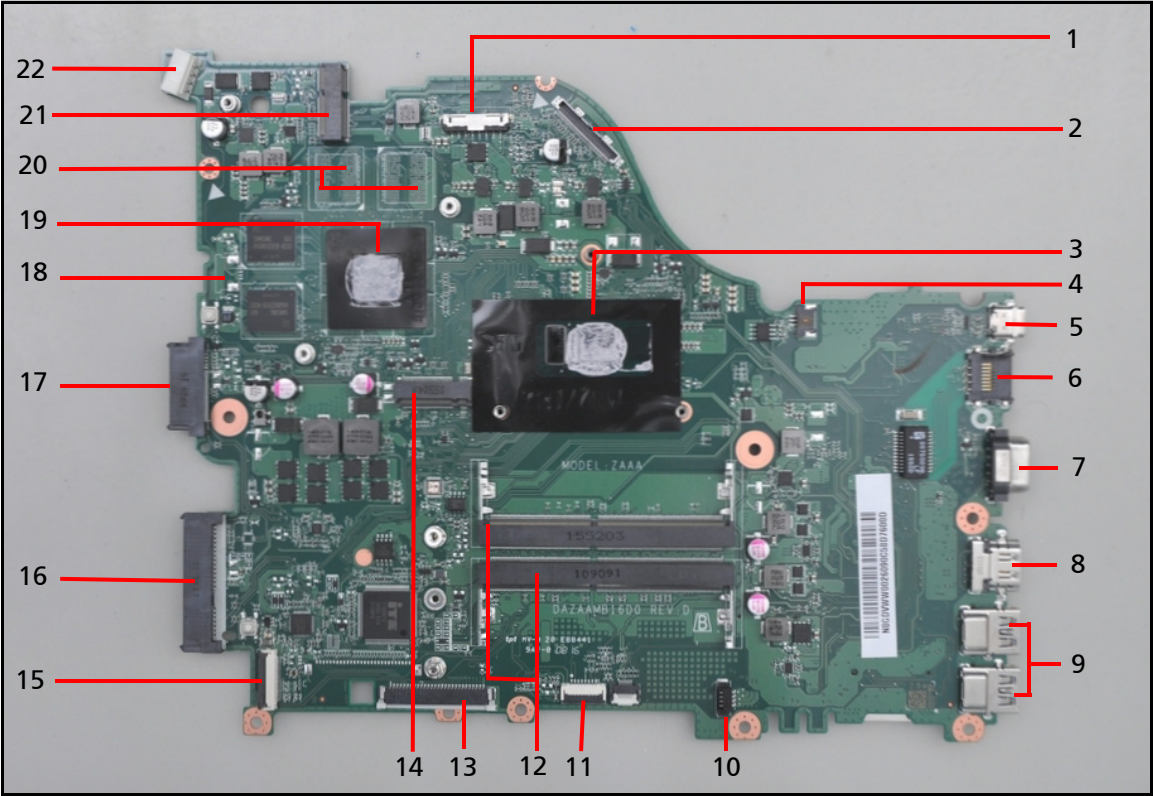


Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Description	Item	Description	Item	Description
1	Battery Connector	9	USB 3.0 Connectors	17	ODD Connector
2	eDP Connector	10	Speaker Connector	18	Keyboard Backlight Connector
3	CPU	11	TouchPad Connector	19	GPU
4	Fan Connector	12	DDR Connectors	20	VRAM
5	USB Type-C Connector	13	Keyboard Connector	21	WLAN Connector
6	LAN Connector (RJ-45)	14	SSD Connector	22	DC-in Connector
7	VGA Connector	15	I/O Board Connector		
8	HDMI Connector	16	HDD Connector		

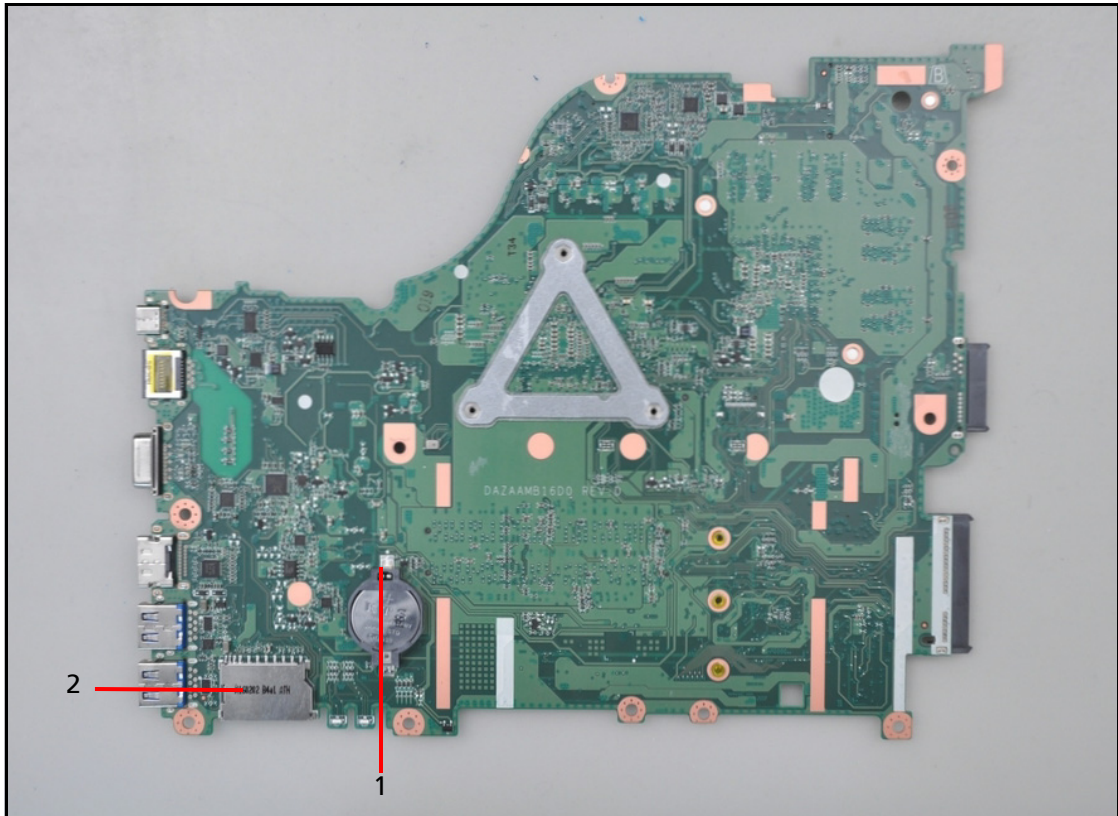


Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

Item	Description
1	RTC Battery Connector
2	Card Reader Connector

CHAPTER 6

FRU (Field Replaceable Unit) List

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FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the TravelMate P259-M, P259-MG. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

⇒ **NOTE:**

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

⇒ **NOTE:**

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

Exploded Diagrams

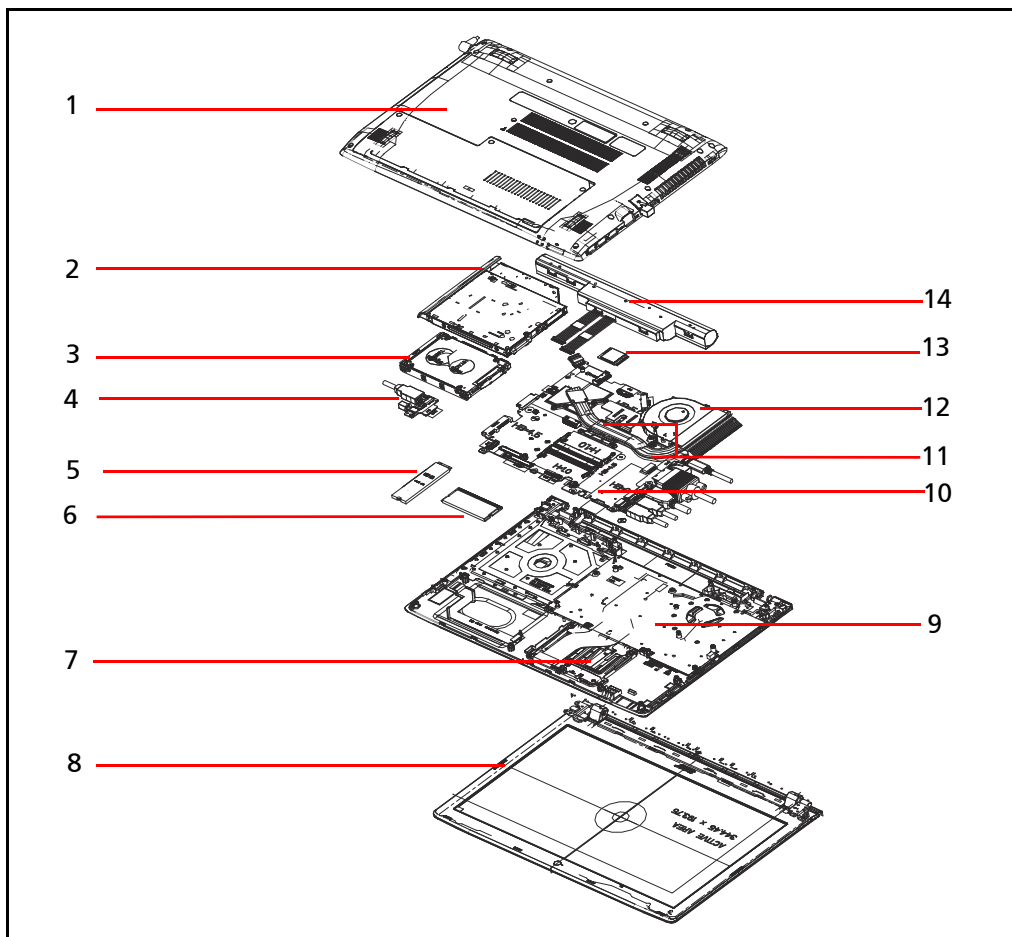


Figure 6-1. System Exploded Diagram

Table 6-1. System Exploded Diagram

No.	Description	Acer Part No.
1	Base Assembly (with Speaker Module)	60.GDZN7.003
2	ODD Module	KO.0080F.011
3	HDD Module	KH.50001.050
4	I/O Board	55.GDEN7.001
5	SSD Module	KN.2560G.022
6	DIMM Module	KN.2GB0G.047
7	Touchpad Module	56.GFJN7.002
8	LCD Module	KL.15608.029
9	Top Assembly (with Keyboard)	6B.GDZN7.012
10	Mainboard	NB.VDA11.001
11	Heatsink	60.GFNN7.001
12	Fan	23.GFHN7.001
13	WLAN Module	KI.STN01.008
14	Battery	KT.00405.001

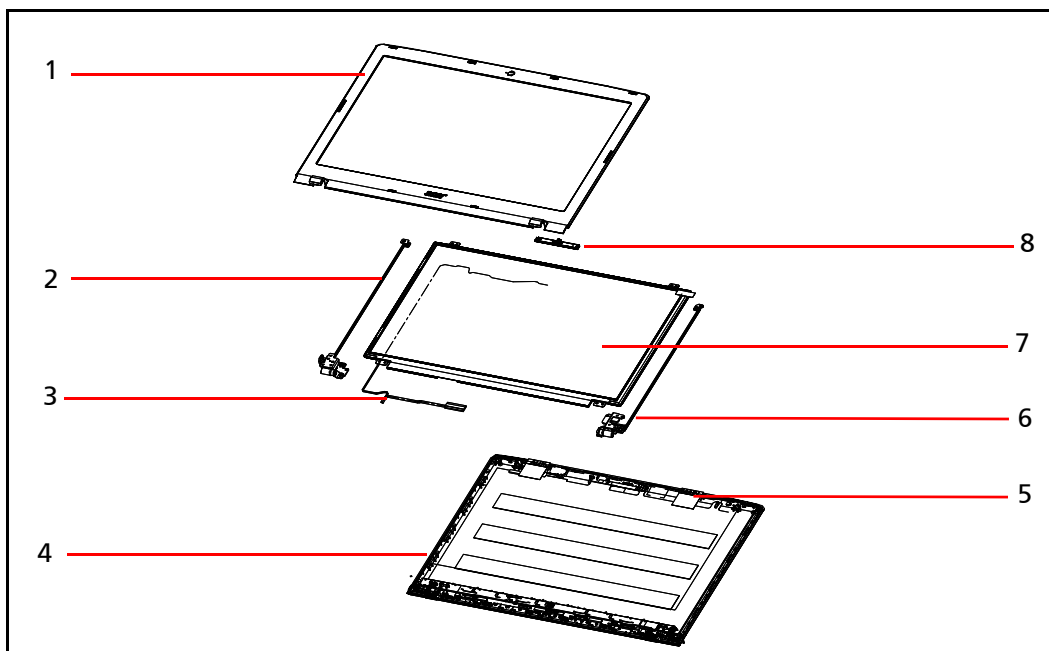


Figure 6-2. LCD Assembly Exploded Diagram

Table 6-2. LCD Assembly Exploded Diagram

No.	Description	Acer Part No.
1	LCD Bezel	60.GDZN7.002
2	LCD Hinge L	33.GDEN7.001
3	eDP and Camera Cable	50.GDEN7.001
4	LCD Cover	60.VDHN7.001
5	WLAN Antennas	50.GFHN7.006
6	LCD Hinge R	33.GDEN7.002
7	LCD Panel	KL.15605.031
8	Camera Module	KS.0HD05.001

FRU List

Table 6-3. FRU List



CATEGORY	DESCRIPTION	PART NO.
ADAPTER		
	Adapter DELTA 45W_5.5phy 19V 1.7x5.5x11 ADP-45HE BA LF Black with acer logo	KP.04501.010
	Adapter LITE-ON 45W 19V 1.7x5.5x11 PA-1450-26AL LF Black with acer logo	KP.04503.008
	Adapter Chicony Power 45W 19V 1.7x5.5x11 A045R021L-AC01-01 LF Black with acer logo	KP.0450H.010
	Adapter DELTA 45W_5.5phy INDIA 19V 1.7x5.5x11 ADP-45HE BD LF Black with acer logo	KP.04501.009
	Adapter LITE-ON 45W_5.5phy INDIA 19V 1.7x5.5x11 PA-1450-26Al LF INDIA with acer logo INDIA	KP.04503.006
	Adapter DELTA 65W 19V 1.7x5.5x11 ADP-65VH FA LF Black with acer logo	KP.06501.010
	Adapter LITE-ON 65W_5.5phy 19V 1.7x5.5x11 PA-1650-86AL LF Black with acer logo	KP.06503.017
	Adapter Chicony Power 65W_5.5phy 19V 1.7x5.5x11 A065R078L LF Black with acer logo	KP.0650H.012
	Adapter Chicony Power 65W_5.5phy INDIA 19V 1.7x5.5x11 A065R109L LF Black with acer logo	KP.0650H.011
	Adapter DELTA 90W 19V 1.7x5.5x11 ADP-90MD HBA LF Black	KP.09001.003
	Adapter LITE-ON 90W 19V 1.7x5.5x11 PA-1900-32AW LF Meet China 5km	KP.09003.009
BATTERY		
	Battery PANASONIC AS16A Li-Ion 4S1P PANASONIC 4 cell 2800mAh Main COMMON	KT.00405.001
	Battery LGC AS16A Li-Ion 4S1P LGC 4 cell 2800mAh Main COMMON	KT.0040G.007
	Battery PANASONIC AS16B Li-Ion 3S2P PANASONIC 6 cell 2800mAh Main COMMON	KT.00605.002
	Battery LGC AS16B Li-Ion 3S2P LGC 6 cell 2800mAh Main COMMON	KT.0060G.001
	Battery SIMPLO AS16A Li-Ion 4S1P SAMSUNG 4 cell 2800mAh Main COMMON	KT.00407.004

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
BOARD		
	Wireless LAN Intel WLAN 7265.NGWW.W D0 Stonepeak M.2 2X2 AC + BT 2230	KI.STN01.008
	USB BOARD ASSY	55.GDEN7.001
CABLE		
	POWER CORD 1M 125V JAP BLACK	27.NE307.001
	POWER CORD 1M 125V TAIWAN BLACK	27.NE307.002
	POWER CORD 1M 125V ARG BLACK	27.NE307.004
	POWER CORD 1M 125V AUS BLACK	27.NE307.005
	POWER CORD 1M 125V BRAZIL BLACK	27.NE307.006
	POWER CORD 1M 125V CHINA BLACK	27.NE307.007
	POWER CORD 1M 125V DENMARK BLACK	27.NE307.008
	POWER CORD 1M 125V INDIA BLACK	27.NE307.009
	POWER CORD 1M 125V ISRAEL BLACK	27.NE307.010
	POWER CORD 1M 125V ITL BLACK	27.NE307.011
	POWER CORD 1M 125V S.AFRICA BLACK	27.NE307.012
	POWER CORD 1M 125V SWISS BLACK	27.NE307.013
	POWER CORD 1M 125V EUR+KOR BLACK	27.NE307.015
	POWER CORD 1M 125V US BLACK	27.NE307.003
	POWER CORD 1M 125V UK BLACK	27.NE307.014
	POWER CORD 1M 125V KOR BLACK	27.MVSN7.001
	DC-IN CABLE ASSY 45W	50.GFHN7.001
	DC-IN CABLE ASSY 65W	50.GFHN7.002
	DC-IN CABLE ASSY 90W	50.GFHN7.003
	FFC CABLE TOUCHPAD TO MB	50.GFHN7.004
	FFC CABLE MB TO USB BOARD	50.GFHN7.005

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
	ANTENNA CABLE ASSY (MAIN BK+AUX WH)	50.GFHN7.006
	LCD CABLE ASSY FOR NON TOUCH	50.GDEN7.001
CASE/COVER/BRACKET ASSEMBLY		
 	UPPERCASE ASSY W/KB LV5T_A51B (ARAB-EN) BLACK NONBACKLIGHT	6B.GDZN7.001
	UPPERCASE ASSY W/KB LV5T_A51B (ARAB-FR) BLACK NONBACKLIGHT	6B.GDZN7.002
	UPPERCASE ASSY W/KB LV5T_A51B (BELGIUM) BLACK NONBACKLIGHT	6B.GDZN7.003
	UPPERCASE ASSY W/KB LV5T_A51B (BRAZILIAN PORTUGUESE) BLACK NONBACKLIGHT	6B.GDZN7.004
	UPPERCASE ASSY W/KB LV5T_A51B (BULGARIA) BLACK NONBACKLIGHT	6B.GDZN7.005
	UPPERCASE ASSY W/KB LV5T_A51B (SLO/CRO) BLACK NONBACKLIGHT	6B.GDZN7.006
	UPPERCASE ASSY W/KB LV5T_A51B (CZ/SK) BLACK NONBACKLIGHT	6B.GDZN7.007
	UPPERCASE ASSY W/KB LV5T_A51B (DANISH) BLACK NONBACKLIGHT	6B.GDZN7.008
	UPPERCASE ASSY W/KB LV5T_A51B (FRENCH) BLACK NONBACKLIGHT	6B.GDZN7.009
	UPPERCASE ASSY W/KB LV5T_A51B (GERMAN) BLACK NONBACKLIGHT	6B.GDZN7.010
	UPPERCASE ASSY W/KB LV5T_A51B (GREEK) BLACK NONBACKLIGHT	6B.GDZN7.011
	UPPERCASE ASSY W/KB LV5T_A51B (HEBREW) BLACK NONBACKLIGHT	6B.GDZN7.012
	UPPERCASE ASSY W/KB LV5T_A51B (HUNGARIAN) BLACK NONBACKLIGHT	6B.GDZN7.013
	UPPERCASE ASSY W/KB LV5T_A51B (ITALIAN) BLACK NONBACKLIGHT	6B.GDZN7.014
	UPPERCASE ASSY W/KB LV5T_A51B (JAPANESE) BLACK NONBACKLIGHT	6B.GDZN7.015

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
	UPPERCASE ASSY W/KB LV5T_A51B (KOREAN) BLACK NONBACKLIGHT	6B.GDZN7.016
	UPPERCASE ASSY W/KB LV5T_A51B (ALA SPANISH) BLACK NONBACKLIGHT	6B.GDZN7.017
	UPPERCASE ASSY W/KB LV5T_A51B (NORWEGIAN) BLACK NONBACKLIGHT	6B.GDZN7.018
	UPPERCASE ASSY W/KB LV5T_A51B (PORTUGUESE) BLACK NONBACKLIGHT	6B.GDZN7.019
	UPPERCASE ASSY W/KB LV5T_A51B (RUSSIAN) BLACK NONBACKLIGHT	6B.GDZN7.020
	UPPERCASE ASSY W/KB LV5T_A51B (NORDIC) BLACK NONBACKLIGHT	6B.GDZN7.021
	UPPERCASE ASSY W/KB LV5T_A51B (SPANISH) BLACK NONBACKLIGHT	6B.GDZN7.022
	UPPERCASE ASSY W/KB LV5T_A51B (SWEDEN) BLACK NONBACKLIGHT	6B.GDZN7.023
	UPPERCASE ASSY W/KB LV5T_A51B (SWISS/G) BLACK NONBACKLIGHT	6B.GDZN7.024
	UPPERCASE ASSY W/KB LV5T_A51B (TAIWAN) BLACK NONBACKLIGHT	6B.GDZN7.025
	UPPERCASE ASSY W/KB LV5T_A51B (THAILAND) BLACK NONBACKLIGHT	6B.GDZN7.026
	UPPERCASE ASSY W/KB LV5T_A51B (TURKISH) BLACK NONBACKLIGHT	6B.GDZN7.027
	UPPERCASE ASSY W/KB LV5T_A51B (US INTERNATIONAL) BLACK NONBACKLIGHT	6B.GDZN7.028
	UPPERCASE ASSY W/KB LV5T_A51B (UK) BLACK NONBACKLIGHT	6B.GDZN7.029
	UPPERCASE ASSY W/KB LV5T_A51B (US W/CAN-FRE) BLACK NONBACKLIGHT	6B.GDZN7.030
	UPPERCASE ASSY W/KB LV5P_A51BWL (ARAB-EN) BLACK BACKLIGHT	6B.GF2N7.001
	UPPERCASE ASSY W/KB LV5P_A51BWL (ARAB-FR) BLACK BACKLIGHT	6B.GF2N7.002
	UPPERCASE ASSY W/KB LV5P_A51BWL (BELGIUM) BLACK BACKLIGHT	6B.GF2N7.003
	UPPERCASE ASSY W/KB LV5P_A51BWL (BRAZILIAN PORTUGUESE) BLACK BACKLIGHT	6B.GF2N7.004
	UPPERCASE ASSY W/KB LV5P_A51BWL (BULGARIA) BLACK BACKLIGHT	6B.GF2N7.005

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
	UPPERCASE ASSY W/KB LV5P_A51BWL (SLO/CRO) BLACK BACKLIGHT	6B.GF2N7.006
	UPPERCASE ASSY W/KB LV5P_A51BWL (CZ/SK) BLACK BACKLIGHT	6B.GF2N7.007
	UPPERCASE ASSY W/KB LV5P_A51BWL (DANISH) BLACK BACKLIGHT	6B.GF2N7.008
	UPPERCASE ASSY W/KB LV5P_A51BWL (FRENCH) BLACK BACKLIGHT	6B.GF2N7.009
	UPPERCASE ASSY W/KB LV5P_A51BWL (GERMAN) BLACK BACKLIGHT	6B.GF2N7.010
	UPPERCASE ASSY W/KB LV5P_A51BWL (GREEK) BLACK BACKLIGHT	6B.GF2N7.011
	UPPERCASE ASSY W/KB LV5P_A51BWL (HEBREW) BLACK BACKLIGHT	6B.GF2N7.012
	UPPERCASE ASSY W/KB LV5P_A51BWL (HUNGARIAN) BLACK BACKLIGHT	6B.GF2N7.013
	UPPERCASE ASSY W/KB LV5P_A51BWL (ITALIAN) BLACK BACKLIGHT	6B.GF2N7.014
	UPPERCASE ASSY W/KB LV5P_A51BWL (JAPANESE) BLACK BACKLIGHT	6B.GF2N7.015
	UPPERCASE ASSY W/KB LV5P_A51BWL (KOREAN) BLACK BACKLIGHT	6B.GF2N7.016
	UPPERCASE ASSY W/KB LV5P_A51BWL (ALA SPANISH) BLACK BACKLIGHT	6B.GF2N7.017
	UPPERCASE ASSY W/KB LV5P_A51BWL (NORWEGIAN) BLACK BACKLIGHT	6B.GF2N7.018
	UPPERCASE ASSY W/KB LV5P_A51BWL (PORTUGUESE) BLACK BACKLIGHT	6B.GF2N7.019
	UPPERCASE ASSY W/KB LV5P_A51BWL (RUSSIAN) BLACK BACKLIGHT	6B.GF2N7.020
	UPPERCASE ASSY W/KB LV5P_A51BWL (NORDIC) BLACK BACKLIGHT	6B.GF2N7.021
	UPPERCASE ASSY W/KB LV5P_A51BWL (SPANISH) BLACK BACKLIGHT	6B.GF2N7.022
	UPPERCASE ASSY W/KB LV5P_A51BWL (SWEDEN) BLACK BACKLIGHT	6B.GF2N7.023
	UPPERCASE ASSY W/KB LV5P_A51BWL (SWISS/G) BLACK BACKLIGHT	6B.GF2N7.024
	UPPERCASE ASSY W/KB LV5P_A51BWL (TAIWAN) BLACK BACKLIGHT	6B.GF2N7.025

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
	UPPERCASE ASSY W/KB LV5P_A51BWL (THAILAND) BLACK BACKLIGHT	6B.GF2N7.026
	UPPERCASE ASSY W/KB LV5P_A51BWL (TURKISH) BLACK BACKLIGHT	6B.GF2N7.027
	UPPERCASE ASSY W/KB LV5P_A51BWL (US INTERNATIONAL) BLACK BACKLIGHT	6B.GF2N7.028
	UPPERCASE ASSY W/KB LV5P_A51BWL (UK) BLACK BACKLIGHT	6B.GF2N7.029
	UPPERCASE ASSY W/KB LV5P_A51BWL (US W/CAN-FRE) BLACK BACKLIGHT	6B.GF2N7.030
POINT DEVICE		
	TOUCHPAD MODULE CP5WIP1M W/MYLR/BKT BLACK ELANTECH	56.GFJN7.002
CASE/COVER/BRACKET ASSEMBLY		
	LOWERCASE SUB ASSY (BLACK)	60.GDZN7.003
	BASE DOOR ASSY BLACK	42.GDZN7.002
	ODD BEZEL W/BUTTON/LED (SUPER MULTI) BLACK	42.GDZN7.001
	ODD BRACKET	33.MLQN7.001

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
	DUMMY ODD TRAY	42.MQDN7.001
	DUMMY ODD BEZEL W/O BUTTON/LED BLACK	42.GGDN7.001
	HDD SUPPORT HOLDER ASSY	42.GDEN7.002
	LCD COVER ASSY W/O ANT DIAMOND BLACK	60.VDHN7.001
	LCD BEZEL ASSY BLACK (BLACK CAP)	60.GDZN7.002
	LCD HINGE W/BACKET L	33.GDEN7.001
	LCD HINGE W/BACKET R	33.GDEN7.002

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
DVD RW DRIVE		
	Super-Multi DRIVE PLDS Super-Multi DRIVE 9.0mm Tray 8X DA-8AESH LF+HF W/O bezel SATA	KO.0080F.011
	Super-Multi DRIVE HLDS Super-Multi DRIVE 9.0mm Tray 8X GUE1N LF+HF W/O bezel SATA	KO.0080D.019
HDD/HARD DISK DRIVE		
	"HDD SEAGATE 2.5"" 5400rpm 500GB ST500LT012, 1DG142-188, YarraR 500GB refresh SATA III 32MB LF+HF F/W:1001SDM1 500G/P, 7mmzh HDD"	KH.50001.050
	"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
	"HDD TOSHIBA 2.5"" 5400rpm 500GB Aquarius-B,MQ01ABF050,500G/P, 7mmzh SATA III 8MB LF+HF F/W:AM002J"	KH.50004.015
	"HDD WD 2.5"" 5400rpm 1000GB WD10JPVX-22JC3T0, ML500M, 500G/P SATA III 8MB LF F/W:01.01A01"	KH.01K08.024
	"HDD TOSHIBA 2.5"" 5400rpm 1000GB MQ01ABD100,Aquarius-B, 500G/P, acer code SATA III 8MB LF+HF F/W:AX1P5J"	KH.01K04.014
	"HDD TOSHIBA 2.5"" 5400rpm 1000GB MQ02ABD100H, SSHD 2.0, 500G/p, 9.5mmzh SATA III 64MB LF F/W:HKF05A"	KH.01K04.011
	"HDD TOSHIBA 2.5"" 5400rpm 500GB MQ02ABF050H, SSHD 2.0, 7mmzh, 500G/p SATA III LF F/W:HJF05A"	KH.50004.013
	Flash Disk HYNIX SSD NAND 256GB HFS256G39TND-N210A LF+HF	KN.2560G.022

Table 6-3. FRU List




CATEGORY	DESCRIPTION	PART NO.
Camera		
	Camera LITEON HD Camera LT_OV9728_RT55838H AOET Unified2	KS.0HD05.001
	Camera CHICONY HD Camera CH_HM1061_SPA2087 AOET Unified 2	KS.0HD06.004
	Camera LITEON HD Camera LT_OV9728_RT55838H AOET Unified2	KS.0HD05.001
	Camera CHICONY HD Camera CH_HM1061_SPA2087 AOET Unified 2	KS.0HD06.004
LCD		
 	"LED LCD Panel AUO 15.6'W FHD None Glare B156HTN03.8 H/W 1B LF 220nit 8ms 400:1 (eDP1.2/TN/3.2mm/Low cost) EC, H/W 1B"	KL.15605.031
	LED LCD Panel LG 15.6'W WXGA None Glare LP156WHU-TPF1 LF 220nit 16ms 500:1 (eDP/3.2mm Max)	KL.15608.029
	"LED LCD Panel AUO 15.6'W WXGA None Glare B156XTN07.1 7A LF 220nit 8ms 400:1 (eDP, 3.2mm Max)"	KL.15605.033
	"LED LCD Panel CMI 15.6'W WXGA None Glare N156BGA-EA2 LF 220nit 10ms 500:1 (eDP, 3.2mm Max)"	KL.1560D.021
	LED LCD Panel CMI 15.6'W FHD None Glare N156HGE-EAB LF 220nit 10ms 500:1 (eDP1.2) (TN) (3.2mm) (Low cost version)	KL.1560D.016
	"LED LCD Panel BOE 15.6'W FHD None Glare NT156FHM-N41 LF 220nit 10ms 500:1 (eDP, 3.2mm max)"	KL.1560E.006

Table 6-3. FRU List











CATEGORY	DESCRIPTION	PART NO.
MEMORY		
	Memory HYNIX SO-DIMM DDRIV 2133 2GB HMA425S6AFR6N-TF LF+HF 256*16 25nm	KN.2GB0G.047
	Memory KINGSTON SO-DIMM DDRIV 2133 4GB ACR21D4S15HAG/4G LF+HF 512*8	KN.4GB07.029
	Memory HYNIX SO-DIMM DDRIV 2133 4GB HMA451S6AFR8N-TF LF+HF 512*8 25nm Polaris	KN.4GB0G.036
	Memory SAMSUNG SO-DIMM DDRIV 2133 8GB M471A1K43BB0-CPB LF+HF 1024*8 20nm	KN.8GB0B.037
	Memory KINGSTON SO-DIMM DDRIV 2133 8GB ACR21D4S15HAG/8G LF+HF 512*8	KN.8GB07.030
	Memory HYNIX SO-DIMM DDRIV 2133 8GB HMA41GS6AFR8N-TF LF+HF 512*8 25nm Polaris	KN.8GB0G.037
	"Memory HYNIX SO-DIMM DDRIV 2133 16GB HMA82GS6MFR8N-TF LF+HF 1024*8 25nm, Polaris"	KN.16G0G.021
Mainboard		
	MAINBOARD UMA (1.6G) CM3855U W/MIC/RTC BTY/CR	NB.VDA11.001
	MAINBOARD (2.3G) Ci56200U N16SGT1 2G-GDDR5 (256*32*2) W/MIC/RTC BTY/CR	NB.VDH11.001
	MAINBOARD (2.3G) Ci36100U N16SGTR 2G-GDDR5 (256*32*2) W/MIC/RTC BTY/CR	NB.VDH11.002
FAN		
	THERMAL FAN (FOR UMA/DIS)	23.GFHN7.001
HEATSINK		
	HEATSINK MODULE 15W UMA	60.GFNN7.001
	HEATSINK MODULE 15W DIS N16S	60.GFHN7.001

Table 6-3. FRU List

CATEGORY	DESCRIPTION	PART NO.
SPEAKER		
	SPEAKER SET ASSY W/L+R	23.GDEN7.001
MISCELLANEOUS		
 LOWER CASE ASSY	BASE FRONT RUBBER BLACK	47.GFJN7.001
	BASE REAR RUBBER BLACK	47.GFJN7.002
	BASE SWITCH RUBBER	47.GDEN7.001
	BEZEL RUBBER SHORT BLACK	47.GDEN7.002
	BEZEL RUBBER LONG BLACK	47.GDEN7.003
 (LOCATED ON THE UPPER CASE AS	MICROPHONE RUBBER	47.GEUN7.001
	INS MYLAR KB PLATE	47.GEUN7.002
	TP CONDUCTIVE TAPE NEW	47.GEQN7.001
	MB KB KAPTON	47.MVLN7.001
	MB BACKLIGHT KAPTON	47.GEDN7.003
	BASE RJ45 DOOR COVER	47.GDEN7.007
	SPRING RJ45 HLCL SUS304	47.GDEN7.008
	BASE RJ45 DOOR BLACK	47.GDZN7.001

SCREW List

Table 6-4. Screw List

Category	Description	Acer Part No.
	SCREWM2.5*1.8-I(NINYLOK)D5T3.7STEEL	86.GDEN7.002
	SCREW M2.0*2.0- I(BNI)(NY)IRON	86.G55N7.001
	SCREW M2.0*3.0-I(BZN)(NYLOK)IRON	86.GDEN7.001
	SCREW M2.5*3.5-I(BZN)(NYLOK)	86.MSTN7.001
	SCREW M2.5*7-I(BNI)(NYLOK)	86.MVHN7.002
	SCREW M3*0.5+3.5I (HEAD=4.5x0.5)	86.TDY07.003

CHAPTER 7

Model Definition and Configuration

TravelMate P259-M	7-3
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Model Definition and Configuration

TravelMate P259-M

Table 7-1. RO, Description

Model	RO	Country	Acer Part No	Description
TMP259-M-C0VS	WW	WW	N8.VDAW W.003	TMP259-M-C0VS W10PR64T6TWW1 MC UMACKkLt_4U 3855/2*2G/1000G/M/4L2.8/FHDPL_a cB_HD_DBNI_ENGEH91
TMP259-M-C1RY	WW	WW	N9.VDAW W.001	TMP259-M-C1RY W10PR64T6TWW1 MC UMACKkLt_4U 3855/2*2G/1000G/M/4L2.8/FHDPL_a cB_HD_DBNI_MKTEH91
TMP259-M-73U7	EMEA	South Africa	NX.VDCEA. 002	TMP259-M-73U7 W7PR64GDT6TZA2 MC W10PRGD64 UMACKkt_4U 7650/1*4G/1000G/M/4L2.8/SUP_acB_ HD_DBNI_EH62SP1
TMP259-M-37MF	EMEA	Italy	NX.VDCET. 005	TMP259-M-37MF W7PR64GDT6TIT1 MC W10PRGD64 UMACKkt_4U 3610/1*4G/500G_L/M/4L2.8/SUP_acB_ HD_DBNI_IT42SP1
TMP259-M-38LK	EMEA	Serbia/Bosnia -Herzegovina	NX.VDCEX. 001	TMP259-M-38LK W10PR64T6TBA1 MC UMACKkt_4U 3610/1*4G/500G_L/M/4L2.8/FHDPL_ acB_HD_DBNI_A173
TMP259-M-311X	EMEA	Serbia/Bosnia -Herzegovina	NX.VDCEX. 003	TMP259-M-311X W10PR64T6TBA1 MC UMACKkt_4U 3610/1*4G/500G_L/M/6L2.8/SUP_acB_ HD_DBNI_A173

Table 7-2. CPU, LCD

Model	Country	Acer Part No	CPU	LCD
TMP259-M-C0VS	WW	N8.VDAWW.003	CM3855U	N15.6FHDSUPL
TMP259-M-C1RY	WW	N9.VDAWW.001	CM3855U	N15.6FHDSUPL
TMP259-M-73U7	South Africa	NX.VDCEA.002	Ci76500U	N15.6HDSUP
TMP259-M-37MF	Italy	NX.VDCET.005	Ci36100U	N15.6HDSUP
TMP259-M-38LK	Serbia/Bosnia -Herzegovina	NX.VDCEX.001	Ci36100U	N15.6FHDSUPL

Table 7-2. CPU, LCD

Model	Country	Acer Part No	CPU	LCD
TMP259-M-311X	Serbia/Bosnia-Herzegovina	NX.VDCEX.003	Ci36100U	N15.6HDSUP

Table 7-3. VGA Chip, VRAM

Model	Country	Acer Part No	VGA Chip	VRAM
TMP259-M-C0VS	WW	N8.VDAWW.003	UMA	N
TMP259-M-C1RY	WW	N9.VDAWW.001	UMA	N
TMP259-M-73U7	South Africa	NX.VDCEA.002	UMA	N
TMP259-M-37MF	Italy	NX.VDCET.005	UMA	N
TMP259-M-38LK	Serbia/Bosnia-Herzegovina	NX.VDCEX.001	UMA	N
TMP259-M-311X	Serbia/Bosnia-Herzegovina	NX.VDCEX.003	UMA	N

Table 7-4. Memory 1, Memory 2, HDD 1, HDD 2

Model	Country	Acer Part No	Memory 1	Memory 2	HDD 1 GB	HDD 2 GB
TMP259-M-C0VS	WW	N8.VDAWW.003	SO2GBIV	SO2GBIV	N1000GB5.4KS	N
TMP259-M-C1RY	WW	N9.VDAWW.001	SO2GBIV	SO2GBIV	N1000GB5.4KS	N
TMP259-M-73U7	South Africa	NX.VDCEA.002	SO4GBIV	N	N1000GB5.4KS	N
TMP259-M-37MF	Italy	NX.VDCET.005	SO4GBIV	N	N500GB5.4KS	N
TMP259-M-38LK	Serbia/Bosnia-Herzegovina	NX.VDCEX.001	SO4GBIV	N	N500GB5.4KS	N
TMP259-M-311X	Serbia/Bosnia-Herzegovina	NX.VDCEX.003	SO4GBIV	N	N500GB5.4KS	N

Table 7-5. ODD, Extra SW, Card Reader

Model	Country	Acer Part No	ODD	Extra SW1	Card Reader
TMP259-M-C0VS	WW	N8.VDAWW.003	NSM8XS9.0	McAfee	N
TMP259-M-C1RY	WW	N9.VDAWW.001	NSM8XS9.0	McAfee	N

Table 7-5. ODD, Extra SW, Card Reader

Model	Country	Acer Part No	ODD	Extra SW1	Card Reader
TMP259-M-73U7	South Africa	NX.VDCEA.002	NSM8XS9.0	McAfee	N
TMP259-M-37MF	Italy	NX.VDCET.005	NSM8XS9.0	McAfee	N
TMP259-M-38LK	Serbia/Bosnia-Herzegovina	NX.VDCEX.001	NSM8XS9.0	McAfee	N
TMP259-M-311X	Serbia/Bosnia-Herzegovina	NX.VDCEX.003	NSM8XS9.0	McAfee	N

Table 7-6. Wireless LAN

Model	Country	Acer Part No	Wireless LAN
TMP259-M-C0VS	WW	N8.VDAWW.003	INT7265NGWG_AC_w/BT
TMP259-M-C1RY	WW	N9.VDAWW.001	INT7265NGWG_AC_w/BT
TMP259-M-73U7	South Africa	NX.VDCEA.002	INT7265NGWG_AC_w/BT
TMP259-M-37MF	Italy	NX.VDCET.005	INT7265NGWG_AC_w/BT
TMP259-M-38LK	Serbia/Bosnia-Herzegovina	NX.VDCEX.001	INT7265NGWG_AC_w/BT
TMP259-M-311X	Serbia/Bosnia-Herzegovina	NX.VDCEX.003	INT7265NGWG_AC_w/BT

Table 7-7. Battery, Adapter, Camera

Model	Country	Acer Part No	Battery	Adapter	Camera
TMP259-M-C0VS	WW	N8.VDAWW.003	4CELL2.8	45W_5.5phy	HD_Unified
TMP259-M-C1RY	WW	N9.VDAWW.001	4CELL2.8	45W_5.5phy	HD_Unified
TMP259-M-73U7	South Africa	NX.VDCEA.002	4CELL2.8	45W_5.5phy	HD_Unified
TMP259-M-37MF	Italy	NX.VDCET.005	4CELL2.8	45W_5.5phy	HD_Unified
TMP259-M-38LK	Serbia/Bosnia-Herzegovina	NX.VDCEX.001	4CELL2.8	45W_5.5phy	HD_Unified
TMP259-M-311X	Serbia/Bosnia-Herzegovina	NX.VDCEX.003	6CELL2.8	45W_5.5phy	HD_Unified

TravelMate P259-MG

Table 7-8. RO, Description

Model	RO	Country	Acer Part No	Description
TMP259-MG-52TG	WW	WW	N8.VDJWW.001	TMP259-MG-52TG W10PR64T6TWW1 MC N16SGT12GBCFkkLt_4V5U 5620/1*8G/F256G+500G_L/M/6L2.8/S UP_acB_FP_HD_DBNI_ENGEH91
TMP259-MG-391P	WW	WW	N8.VDHWW.005	TMP259-MG-391P W10PR64T6TWW1 MC N16SGT12GBCkkt_4V5U 3610/1*4G/1000G_F8G/M/4L2.8/SUP_ acB_HD_DBNI_ENGEH91
TMP259-MG-398U	WW	WW	N8.VDHWW.002	TMP259-MG-398U W10PR64T6TWW1 MC N16SGT12GBCkk_4V5U 3610/1*4G/1000G/M/4L2.8/SUP_acB_ HD_DBNI_ENGEH91

Table 7-9. CPU, LCD

Model	Country	Acer Part No	CPU	LCD
TMP259-MG-52TG	WW	N8.VDJWW.001	Ci56200U	N15.6HDSUP
TMP259-MG-391P	WW	N8.VDHWW.005	Ci36100U	N15.6HDSUP
TMP259-MG-398U	WW	N8.VDHWW.002	Ci36100U	N15.6HDSUP

Table 7-10. VGA Chip, VRAM

Model	Country	Acer Part No	VGA Chip	VRAM
TMP259-MG-52TG	WW	N8.VDJWW.001	UMA	2G-GDDR5 (256*32*2)
TMP259-MG-391P	WW	N8.VDHWW.005	N16SGT1	2G-GDDR5 (256*32*2)
TMP259-MG-398U	WW	N8.VDHWW.002	N16SGT1	2G-GDDR5 (256*32*2)

Table 7-11. Memory 1, Memory 2, HDD 1, HDD 2

Model	Country	Acer Part No	Memory 1	Memory 2	HDD 1 GB	HDD 2 GB
TMP259-MG-52TG	WW	N8.VDJWW.001	SO8GBIV	N	F80256S3	N500GB5.4KS
TMP259-MG-391P	WW	N8.VDHWW.005	SO4GBIV	N	N1000GB5.4KS_8GSSHD	N

Table 7-11. Memory 1, Memory 2, HDD 1, HDD 2

Model	Country	Acer Part No	Memory 1	Memory 2	HDD 1 GB	HDD 2 GB
TMP259-MG-398U	WW	N8.VDHWW.002	504GBIV	N	N1000GB5.4KS	N

Table 7-12. ODD, Extra SW1, Card Reader

Model	Country	Acer Part No	ODD	Extra SW1	Card Reader
TMP259-MG-52TG	WW	N8.VDJWW.001	NSM8XS9.0	McAfee	N
TMP259-MG-391P	WW	N8.VDHWW.005	NSM8XS9.0	McAfee	N
TMP259-MG-398U	WW	N8.VDHWW.002	NSM8XS9.0	McAfee	N

Table 7-13. Wireless LAN

Model	Country	Acer Part No	Wireless LAN
TMP259-MG-52TG	WW	N8.VDJWW.001	INT7265NGWG_AC_w/BT
TMP259-MG-391P	WW	N8.VDHWW.005	INT7265NGWG_AC_w/BT
TMP259-MG-398U	WW	N8.VDHWW.002	INT7265NGWG_AC_w/BT

Table 7-14. Battery, Adapter, Camera

Model	Country	Acer Part No	Battery	Adapter	Camera
TMP259-MG-52TG	WW	N8.VDJWW.001	6CELL2.8	65W_5.5phy	HD_Unified
TMP259-MG-391P	WW	N8.VDHWW.005	4CELL2.8	65W_5.5phy	HD_Unified
TMP259-MG-398U	WW	N8.VDHWW.002	4CELL2.8	65W_5.5phy	HD_Unified

CHAPTER 8

Test Compatible Components

Microsoft® Windows® 8.1 Environment Test	8-4
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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® 8.1 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 TravelMate P259-M, P259-MG. Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft® Windows® 8.1 Environment Test

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
A cover			
10001028 QUANTA	Diamond Black 15 NCVM IMR	QUANTA A cover Diamond Black 15 NCVM IMR	NC.21011.09L
Adapter			
60035715 DELTA-SINGA PORE	45W_5.5phy	Adapter DELTA 45W_5.5phy 19V 1.7x5.5x11 ADP-45HE BA LF Black with acer logo	KP.04501.010
60036752 LITE-ON SINGAPORE	45W_5.5phy	Adapter LITE-ON 45W 19V 1.7x5.5x11 PA-1450-26AL LF Black with acer logo	KP.04503.008
60016453 CHICONY POWER	45W_5.5phy	Adapter Chicony Power 45W 19V 1.7x5.5x11 A045R021L-AC01-01 LF Black with acer logo	KP.0450H.010
60035715 DELTA-SINGA PORE	45W_5.5phy INDIA BLACK	Adapter DELTA 45W_5.5phy INDIA 19V 1.7x5.5x11 ADP-45HE BD LF Black with acer logo	KP.04501.009
60036752 LITE-ON SINGAPORE	45W_5.5phy INDIA BLACK	Adapter LITE-ON 45W_5.5phy INDIA 19V 1.7x5.5x11 PA-1450-26AI LF INDIA with acer logo INDIA	KP.04503.006
60035715 DELTA-SINGA PORE	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
60016453 CHICONY POWER	65W_5.5phy INDIA BLACK	Adapter Chicony Power 65W_5.5phy INDIA 19V 1.7x5.5x11 A065R109L LF Black with acer logo	KP.0650H.011
60035715 DELTA-SINGA PORE	90W	Adapter DELTA 90W 19V 1.7x5.5x11 ADP-90MD HBA LF Black	KP.09001.003
60036752 LITE-ON SINGAPORE	90W	Adapter LITE-ON 90W 19V 1.7x5.5x11 PA-1900-32AW LF Meet China 5km	KP.09003.009
Audio Codec			

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
10004786 REALTEK	Non-AVAP Audio Codec - Realtek ALC255(HDA)	Non-AVAP Audio Codec - Realtek ALC255(HDA)	NC.21011.02R
B cover			
10001028 QUANTA	Obsidian Black 15 PC+ABS Texture w/ Camera EH	QUANTA B cover Obsidian Black 15 PC+ABS Texture w/ Camera EH	NC.21011.04S
Battery			
60001535 PANASONIC	4CELL2.8	Battery PANASONIC AS16A Li-Ion 4S1P PANASONIC 4 cell 2800mAh Main COMMON	KT.00405.001
60002162 SIMPLO	4CELL2.8	Battery SIMPLO AS16A Li-Ion 4S1P SAMSUNG 4 cell 2800mAh Main COMMON	KT.00407.004
60032811 LGC	4CELL2.8	Battery LGC AS16A Li-Ion 4S1P LGC 4 cell 2800mAh Main COMMON	KT.0040G.007
60001535 PANASONIC	6CELL2.8	Battery PANASONIC AS16B Li-Ion 3S2P PANASONIC 6 cell 2800mAh Main COMMON	KT.00605.002
60032811 LGC	6CELL2.8	Battery LGC AS16B Li-Ion 3S2P LGC 6 cell 2800mAh Main COMMON	KT.0060G.001
C cover			
10409682 GOOD LINING	Obsidian Black 15 Al Anodize EH	MISC C cover Obsidian Black 15 Al Anodize EH	NC.21011.04T
Camera			
10001023 LITE-ON	HD_Unified	Camera LITEON HD Camera LT_OV9728_RT55838H AOET Unified2	KS.0HD05.001
10001044 CHICONY	HD_Unified	Camera CHICONY HD Camera CH_HM1061_SPA2087 AOET Unified 2	KS.0HD06.004
CPU			
10001067 INTEL	CM3855U	CPU(BGA) Intel Celeron 3855U Skylake	KC.38501.5UB
10001067 INTEL	Ci36100U	CPU(BGA) Intel Core i3 i3-6100U BGA Skylake SR2EU	KC.61001.U00
10001067 INTEL	Ci37100U	CPU(BGA) Intel Core i3 i3-7100U BGA Kaby Lake	KC.71001.U00

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
10001067 INTEL	Ci56200U	CPU(BGA) Intel Core i5 i5-6200U BGA Skylake SR2EY	KC.62001.U00
10001067 INTEL	Ci57200U	CPU(BGA) Intel Core i5 i5-7200U BGA Kaby Lake	KC.72001.U00
10001067 INTEL	Ci76500U	CPU(BGA) Intel Core i7 i7-6500U BGA Skylake SR2EZ	KC.65001.U00
10001067 INTEL	Ci77500U	CPU(BGA) Intel Core i7 i7-7500U BGA Kaby Lake	KC.75001.U00
D cover			
10001028 QUANTA	Obsidian Black 15 PC+ABS Texture EH BB	QUANTA D cover Obsidian Black 15 PC+ABS Texture EH BB	NC.21011.04V
HDD			
60001922 TOSHIBA DIGI	N500GB5.4KS_4K	HDD TOSHIBA 2.5" 7200rpm 500GB MQ01ACF050, Aquarius c slim,500G/P,7mmzh HDD SATA III 16MB LF F/W:AV001A	KH.50004.012
60001994 WD	N500GB5.4KS_4K	HDD WD 2.5" 7200rpm 500GB WD5000LPLX-21ZNTT0, MZ500S,500G/p SATA III 32MB LF+HF F/W:01.01A01	KH.50008.049
60002005 HGST SG	N1000GB5.4KS	"HDD HGST 2.5"" 5400rpm 1000GB Dummy P/N SATA 8MB LF F/W: Dummy p.n"	KH.01K07.005
60001994 WD	N1000GB5.4KS_4K	"HDD WD 2.5"" 5400rpm 1000GB WD10JPVX-22JC3T0, ML500M, 500G/P SATA III 8MB LF F/W:01.01A01"	KH.01K08.024
60001922 TOSHIBA DIGI	N1000GB5.4KS_4K_9.5	"HDD TOSHIBA 2.5"" 5400rpm 1000GB MQ01ABD100,Aquarius-B, 500G/P, acer code SATA III 8MB LF+HF F/W:AX1P5J"	KH.01K04.014
60001922 TOSHIBA DIGI	N1000GB5.4KS_8GSSHD	"HDD TOSHIBA 2.5"" 5400rpm 1000GB MQ02ABD100H, SSHD 2.0, 500G/p, 9.5mmzh SATA III 64MB LF F/W:HKF05A"	KH.01K04.011
60002005 HGST SG	N500GB5.4KS	"HDD HGST 2.5"" 5400rpm 500GB Dummy P.N for 500G SATA 8MB LF+HF F/W:"	KH.50007.015
60002036 SEAGATE	N500GB5.4KS_4K	"HDD SEAGATE 2.5"" 5400rpm 500GB ST500LT012, 1DG142-188, YarraR 500GB refresh SATA III 32MB LF+HF F/W:1001SDM1 500G/P, 7mmzh HDD"	KH.50001.050

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
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
60001922 TOSHIBA DIGI	N500GB5.4KS _8GSSHD	"HDD TOSHIBA 2.5"" 5400rpm 500GB MQ02ABF050H, SSHD 2.0, 7mmzh, 500G/p SATA III LF F/W:HJF05A"	KH.50004.013
Keyboard			
60004864 DARFON	LV5P_A51BW L	Phantom KB DARFON LV5P_A51BWL LV5P Internal 15 Standard Black Y2015 Acer Legend Fine Power+Dish White Backlit	NK.I1517.03N
10001044 CHICONY	LV5T_A51B	Phantom KB CHICONY LV5T_A51B LV5T Internal 15 Standard Black Y2015 Acer Legend Win 8 Fine Power+Dish	NK.I1513.01X
60004864 DARFON	LV5T_A51B	Phantom KB DARFON LV5T_A51B LV5T Internal 15 Standard Black Y2015 Acer Legend Win 8 Fine Power+Dish	NK.I1517.02S
60052236 SUNREX	LV5T_A51B	Phantom KB SUNREX LV5T_A51B LV5T Internal 15 Standard Black Y2015 Acer Legend Win 8 Fine Power+Dish	NK.I151S.01U
LAN			
10000981 MISC	Non AVAP Lan	None AVAP Lan	NA.22411.00B
LCD			
60003316 AUO	N15.6FHDSUP L	"LED LCD Panel AUO 15.6"W FHD None Glare B156HTN03.8 H/W 1B LF 220nit 8ms 400:1 (eDP1.2/TN/3.2mm/Low cost) EC, H/W 1B"	KL.15605.031
10001022 INNOLUX	N15.6FHDSUP L	LED LCD Panel CMI 15.6"W FHD None Glare N156HGE-EAB LF 220nit 10ms 500:1 (eDP1.2) (TN) (3.2mm) (Low cost version)	KL.1560D.016
60038572 BOE(HK)	N15.6FHDSUP L	"LED LCD Panel BOE 15.6"W FHD None Glare NT156FHM-N41 LF 220nit 10ms 500:1 (eDP, 3.2mm max)"	KL.1560E.006
60003316 AUO	N15.6HDSUP	"LED LCD Panel AUO 15.6"W WXGA None Glare B156XTN07.1 7A LF 220nit 8ms 400:1 (eDP, 3.2mm Max)"	KL.15605.033

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
60003089 LG	N15.6HDSUP	LED LCD Panel LG 15.6'W WXGA None Glare LP156WHU-TPF1 LF 220nit 16ms 500:1 (eDP/3.2mm Max)	KL.15608.029
60031663 CMI STSP BRANCH	N15.6HDSUP	"LED LCD Panel CMI 15.6'W WXGA None Glare N156BGA-EA2 LF 220nit 10ms 500:1 (eDP, 3.2mm Max)"	KL.1560D.021
MEMORY			
60002041 QIMONDA	SO16GBIV	Memory SO-DIMM DDRIV 2133 16GB Dummy LF+HF 1024*8	KN.16G00.001
60002045 SK HYNIX	SO16GBIV	"Memory HYNIX SO-DIMM DDRIV 2133 16GB HMA82GS6MFR8N-TF LF+HF 1024*8 25nm, Polaris"	KN.16G0G.021
60002041 QIMONDA	SO2GBIV	Memory SO-DIMM DDRIV 2133 2GB Dummy LF+HF 256*16	KN.2GB00.019
60002045 SK HYNIX	SO2GBIV	Memory HYNIX SO-DIMM DDRIV 2133 2GB HMA425S6AFR6N-TF LF+HF 256*16 25nm	KN.2GB0G.047
60002041 QIMONDA	SO4GBIV	Memory SO-DIMM DDRIV 2133 4GB Dummy LF+HF	KN.4GB00.013
60024207 KINGSTON-FAR EAST	SO4GBIV	Memory KINGSTON SO-DIMM DDRIV 2133 4GB ACR21D4S15HAG/4G LF+HF 512*8	KN.4GB07.029
60002045 SK HYNIX	SO4GBIV	Memory HYNIX SO-DIMM DDRIV 2133 4GB HMA451S6AFR8N-TF LF+HF 512*8 25nm Polaris	KN.4GB0G.036
60002041 QIMONDA	SO8GBIV	Memory SO-DIMM DDRIV 2133 8GB Dummy LF+HF	KN.8GB00.006
60024207 KINGSTON-FAR EAST	SO8GBIV	Memory KINGSTON SO-DIMM DDRIV 2133 8GB ACR21D4S15HAG/8G LF+HF 512*8	KN.8GB07.030
60002215 SAMSUNG	SO8GBIV	Memory SAMSUNG SO-DIMM DDRIV 2133 8GB M471A1K43BB0-CPB LF+HF 1024*8 20nm	KN.8GB0B.037
60002045 SK HYNIX	SO8GBIV	Memory HYNIX SO-DIMM DDRIV 2133 8GB HMA41GS6AFR8N-TF LF+HF 512*8 25nm Polaris	KN.8GB0G.037
NB Chipset			
10000981 MISC	none NB Chipset	NB Chipset none NB Chipset without NB Chipset	KI.22600.054
ODD			

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
60001944 LG HK	NSM8XS9.0	Super-Multi DRIVE HLDS Super-Multi DRIVE 9.0mm Tray 8X GUE1N LF+HF W/O bezel SATA	KO.0080D.019
60001929 PHILIPS & LITE-ON	NSM8XS9.0	Super-Multi DRIVE PLDS Super-Multi DRIVE 9.0mm Tray 8X DA-8AESH LF+HF W/O bezel SATA	KO.0080F.011
Packaging			
10001071 GOLDEN ARROW	2016-E-Brown	2016 Package WW E series Brown Rev 1.0	NC.25811.04G
Touchpad			
60040786 ELANTECH	CP5WIP1M	Elantec Touchpad CP5WIP1M PTP SA577C-1202 105x76.7mm PCB	NC.24611.02S
60040547 SYNAPTICS	CP5WIP1M	Synaptics Touchpad CP5WIP1M PTP TM-P3218-003 105x76.7mm PCB (add noise immunity)	NC.24611.039
TPM			
10000981 MISC	TPM 2.0 None AVAP	None AVAP TPM 2.0 None AVAP	NC.22911.00E
VGA Chip			
60001915 NVIDIA	N16SGT1	"VGA Chip nVidia N16S-GT1-KA-A2 GM107-710-KA-A2 GB4b-128,29*29mm,28nm"	KG.SGT0V.006
60001915 NVIDIA	N16SGT1	"VGA Chip nVidia N16S-GT1-KB-A2 GM107-710-KB-A2 GB4b-128,29*29mm,28nm"	KG.SGT0V.007
60001915 NVIDIA	N16SGTR	"VGA Chip nVidia N16S-GTR-B-A2 GM108-770-A2 GB4b-128, 29*29mm, 28nm"	KG.SGT0V.008
VRAM			
60002050 MICRON SG	VR8GbGV5	VRAM MICRON GDDR5 5Gbps 8Gb MT51J256M32HF-60:A LF+HF	KN.8GB04.007
60002215 SAMSUNG	VR8GbGV5	VRAM SAMSUNG GDDR5 5Gbps 8Gb K4G80325FB-HC03 LF+HF	KN.8GB0B.039
WiFi Antenna			
10000105 WNC	PIFA 0.6	WNC PIFA 0.6 WiFi Antenna	NC.23511.00C
Wireless LAN			

Table 1-1. Test Compatible Components

Vendor	Type	Description	Part No.
10001067 INTEL	INT7265NGW G_AC_w/BT	Wireless LAN Intel WLAN 7265.NGWG.W D0 Stonepeak M.2 2X2 AC + BT 2230	KI.STN01.008

CHAPTER 9

Online Support Information

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Online Support Information

Introduction

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

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

Acer's Website offers convenient and valuable support resources.

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

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

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

Also contained on this website are:

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

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

