

TravelMate
P215-54

SERVICE GUIDE

Revision History

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

Date	Version	Chapter	Updates
06-16-2022	V 1.00	All	

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

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Conventions

The following conventions are used in this manual:

⚠ WARNING:

Indicates a potential for personal injury.

⚠ CAUTION:

Indicates a potential loss of data or damage to equipment.

+ IMPORTANT:

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

The following typographical conventions are used in this document:

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

Example:

the DRS5 User's Guide

/usr/local/bin/fd

the /TPH15spool_M program

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

Example:

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

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

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

Example:

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

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

Example:

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

General Information

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 11 Pro (Acer recommends Windows 11 Pro for business)
- Windows 11 Home

CPU and Chipset

- Intel® Core™ i7-1265U processor (12 MB Smart Cache, 1.8 GHz Performance-core with Intel® Turbo Boost Technology 2.0 up to 4.8 GHz, Intel® vPro™ Eligibility), supporting hybrid core architecture with Performance-core and Efficient-core
- Intel® Core™ i7-1255U processor (12 MB Smart Cache, 1.7 GHz Performance-core with Intel® Turbo Boost Technology 2.0 up to 4.7 GHz), supporting hybrid core architecture with Performance-core and Efficient-core
- Intel® Core™ i5-1245U processor (12 MB Smart Cache, 1.6 GHz Performance-core with Intel® Turbo Boost Technology 2.0 up to 4.4 GHz, Intel® vPro™ Eligibility), supporting hybrid core architecture with Performance-core and Efficient-core
- Intel® Core™ i5-1235U processor (12 MB Smart Cache, 1.3 GHz Performance-core with Intel® Turbo Boost Technology 2.0 up to 4.4 GHz), supporting hybrid core architecture with Performance-core and Efficient-core
- Intel® Core™ i3-1215U processor (10 MB Smart Cache, 1.2 GHz Performance-core with Intel® Turbo Boost Technology 2.0 up to 4.4 GHz), supporting hybrid core architecture with Performance-core and Efficient-core

System Memory

Dual-channel DDR4 SDRAM support:

- Up to 16 GB of DDR4 system memory, upgradable to 32 GB using two soDIMM modules

Display

15.6" Full HD 1920 x 1080, high-brightness Acer ComfyView™ LED-backlit TFT LCD

- 16:9 aspect ratio
- Ultra-slim design
- Mercury free, environment friendly

15.6" display with IPS (In-Plane Switching) technology, Full HD 1920 x 1080, Acer ComfyView™ LED-backlit TFT LCD

- 16:9 aspect ratio, 45% NTSC color gamut
- Wide viewing angle up to 170 degrees
- Ultra-slim design
- Mercury free, environment friendly

Audio

- Acer Purified.Voice technology with AI noise reduction in dual built-in microphones. Features include far-field pickup, dynamic noise reduction through neural network, adaptive beam forming, and pre-defined personal and conference call modes
- Compatible with Cortana with Voice
- Acer TrueHarmony technology for lower distortion, wider frequency range, headphone-like audio and powerful sound

Graphics

Intel® Iris® Xe Graphics eligible, supporting:

- OpenGL® 4.6
- OpenCL™ 3.0
- Microsoft® DirectX® 12.1
- Intel® Quick Sync Video

Intel® UHD Graphics, supporting:

- OpenGL® 4.6
- OpenCL™ 3.0
- Microsoft® DirectX® 12.1
- Intel® Quick Sync Video

Storage

Solid state drive:

- 512 GB / 1 TB, PCIe Gen4, 16 Gb/s, NVMe
- 256 GB / 512 GB, PCIe Gen3 8 Gb/s up to 2 lanes, NVMe
- 128 GB, PCIe Gen3, 8 Gb/s, NVMe

Hard disk drive:

- Optional 2nd HDD 1 TB, 2.5-inch 5400 RPM
- Optional 2nd HDD 500 GB, 2.5-inch 5400 RPM

Card reader: Micro SD / Micro SDHC / Micro SDXC card reader

- Specifications:

Type	Model	Test Result
Micro SD	MicroSD Card Transcend 2G (QCMC)	Pass
	SiliconPower MicroSD 2G (QCMC)	Pass
	Ridata MicroSD 2G (QCMC)	Pass
Micro SDHC	Kingston Micro SDHC 16GB class10 (QCMC)	Pass
	SAMSUNG 32GB USH-I Class10 EVO (No Adapter)	Pass
	Transcend Micro SDHC 4GB class6 & Transcend Adapter	Pass
	SanDisk Ultra Micro SDHC 32G Class10 I & Sandisk Adapter speed up to 48MB/s 320X	Pass
	Toshiba Micro SDHC 32GB Class10 UHS-I30MB/s	Pass
	ADATA Micro SDHC 32GB class10 & Transcend Adapter	Pass
Micro SDXC	SanDisk 64G USH-I Class10 & Sandisk Adapter	Pass
	Kingston 64G class10 & Kingston Adapter(QCMC)	Pass
	ADATA 64G U1 I Class10 (No Adapter)	Pass
	Toshiba 128GB U3 C10 A1 V30 & Sandisk Adapter	Pass
	SAMSUNG 64GB USH-I Class10 EVO (No Adapter)	Pass

Webcam

UFC with:

- T-Type USB FHD camera + IR camera
- Compatible with Windows
- 1920 x 1080 resolution
- 1080p HD video at 60 fps with Temporal Noise Reduction
- Dual Mic (33 mm + 33 mm)
- 78 x 3.2 (5.2) x 3 mm

UFC with:

- USB 6 mm HD camera
- Compatible with Windows only
- 1280 x 1024 resolution
- 720p HD video at 30 fps with Temporal Noise Reduction
- Dual Mic (54 mm mic distance)
- 66 x 6.1 x 2.945 mm

Wireless and Networking

WWAN:

- LTE FDD:
B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/
B71
- LTE TDD: B34/B38/B39/B40/B41/B42/B43/B46/B48
- WCDMA/HSPA+: B1/B2/B3/B4/B5/B6/B8/B19
- Support up to LTE Cat.6
- LTE Data Rate: Maximum download 300 Mbps, upload 50 Mbps
- WCDMA Data Rate: Maximum download 384 kbps, upload 385 kbps
- DC-HSPA+: Maximum download 42 Mbps
- eSIM is included

WLAN:

- Intel® Wireless Wi-Fi 6 AX201
- 802.11a/b/g/n/ac/2+ax wireless LAN
- Dual Band (2.4 GHz and 5 GHz)
- 2x2 MU-MIMO technology
- Support Bluetooth® 5.2 and later
- Wi-Fi CNVi Interface

WPAN:

- Bluetooth® 5.1

Dimension and Weight

Dimensions:

- 359.7 (W) x 245.25 (D) x 20.7 (H) mm (14.16 x 9.66 x 0.81 inches)

Weight:

- 1.85 kg (4.08 lbs.) with 3-cell battery pack

Power Adapter and Battery

Power adapter

- 3-pin 45 W AC adaptor:
 - 95 (W) x 38 (D) x 25.4 (H) mm (3.74 x 1.5 x 1.0 inches)
 - 150 g with 150 cm DC cable
- USB Type-C 65 W PD AC adapter:
 - 108 (W) x 46 (D) x 29.5 (H) mm (4.25 x 1.81 x 1.16 inches)
 - 5 V / 3 A or 9 V / 3 A or 12 V / 3 A or 15 V / 3 A or 20 V / 3.25 A as output power
 - 250 g with 150 cm DC cable

Battery

- 50 Wh 4-cell/3-cell Li-ion battery
 - Supports Fast Charging technology (for models with HD Panel + SSD)
 - Battery life up to 8.5 hours (based on MobileMark[®] 2018 test results)
- 56 Wh 4-cell/3-cell Li-ion battery
 - Supports Fast Charging technology (for models with HD Panel + SSD)
 - Battery life up to 9 hours (based on MobileMark[®] 2018 test results)

Input and Control

Keyboard

- 80-/81-/84-key Acer keyboard layout with international language support including indicators of CapsLock and F4/Microphone mute
- 80-/81-/84-key Acer backlight keyboard layout with international language support including indicators of CapsLock and F4/Microphone mute

TouchPad

- Multi-gesture secure touchpad, supporting two-finger scroll; pinch; gestures to open Cortana, Action Center, multitasking; Fingerprint application commands
 - Windows Hello Certification
 - Microsoft Precision Touchpad certification
 - Microsoft SecureBio Certified
- Multi-gesture touchpad, supporting two-finger scroll; pinch; gestures to open Cortana, Action Center, multitasking; application commands
 - Microsoft Precision Touchpad certification
 - Moisture resistant
 - OceanGlass™ Touchpad

Input and Output (I/O) Ports

- Nano SIM slot (optional)
- NFC (Near Field Communication) (optional)
- Smart Card reader
- Ethernet (RJ-45) port
- DC-in jack for AC adapter
- HDMI® 2.0 port with HDCP support
- USB Type-C™ port, supporting:
 - USB 3.2 Gen 2 (up to 10 Gbps)
 - DisplayPort over USB-C
 - Thunderbolt™ 4
 - USB charging 5 V; 3 A
- Three USB 3.2 Gen1 ports with one featuring power-off USB charging
- 3.5 mm headphone/speaker jack, supporting headsets with built-in microphone
- microSD™ card reader

Windows Store Apps

Productivity

- Cyberlink® PhotoDirector 8
- Cyberlink® PowerDirector 14

Windows Desktop Apps

In-House

- Acer Configuration Manager
- Acer Control Center
- Acer Product Registration
- Quick Access

Lifestyle

- VeroSense for Acer TravelMate

Security

- Norton™ Internet Security L3
- PC Manager

Warranty

- One-year International Travelers Warranty (ITW)

Privacy Control

- Acer Bio-Protection fingerprint solution, featuring Pre-Boot Authentication (PBA), computer protection
- Discrete Trusted Platform Module (TPM) solution
- Acer ProShield Plus security manager includes:
 - Data Protection: File & Folder Encryption and Decryption, Personal Security Drive
 - Data Removal: File Shredding
 - Security Alert: Invalid Access Alert, Security Report
- BIOS user, supervisor, and HDD passwords
- Kensington lock slot

Environment

- Temperature:
 - Operating: 0°C to 40°C
 - Non-operating: -20°C to 60°C
- Humidity (non-condensing):
 - Operating: 80% R.H (at 40°C)
 - Non-operating: 20% R.H to 90% R.H

Notebook Tour

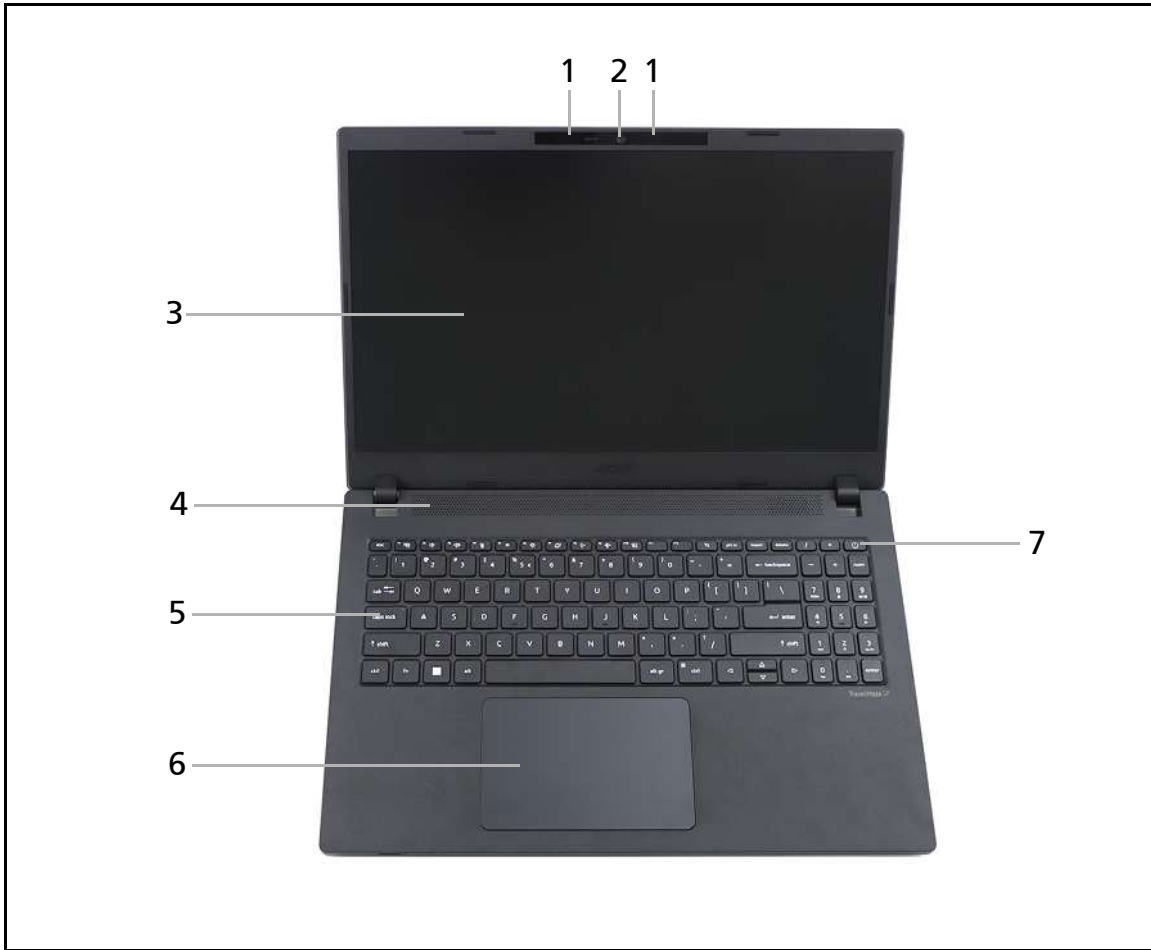



Figure 1-1. Opened Front View

Table 1-1. Opened Front View

#	Icon	Item	Description
1		Built-in microphones	Internal microphones for sound recording.
2		Integrated webcam	Web camera for video communication.
3		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).
4		Speakers	Emits audio from your computer.
5		Keyboard	For entering data into your computer.
6		TouchPad	Touch-sensitive pointing device which functions like a computer mouse.

Table 1-1. Opened Front View (Continued)




#	Icon	Item	Description
7		Power button	Turns the computer on and off.

- Color option and the type of display screen may depend on the model.



Figure 1-2. Front View

Table 1-2. Front View

#	Icon	Item	Description
1		MicroSD card reader	Accepts microSD cards. ⇒ NOTE: Push to remove/install the card. Only one card can operate at any given time.
2		Battery LED indicator	Indicates the computer's battery status. <ul style="list-style-type: none"> • Fully charged: Blue • Battery charging: Orange • Battery low (<=5%): Breeze mode Orange (1 sec. on, 3 sec. off) • Battery critical low (<=3%) or Abnormal situation: Blinking mode Orange (1 sec. on, 1 sec. off) • Using battery or not connected to AC power: N/A
3		Power LED indicator	Indicates the computer's power status. <ul style="list-style-type: none"> • System on: Blue • Standby: Breeze mode Orange (1 sec. on, 3 sec. off) • Entering Hibernation: Blue • Modern Standby/Hibernation/System off: Off

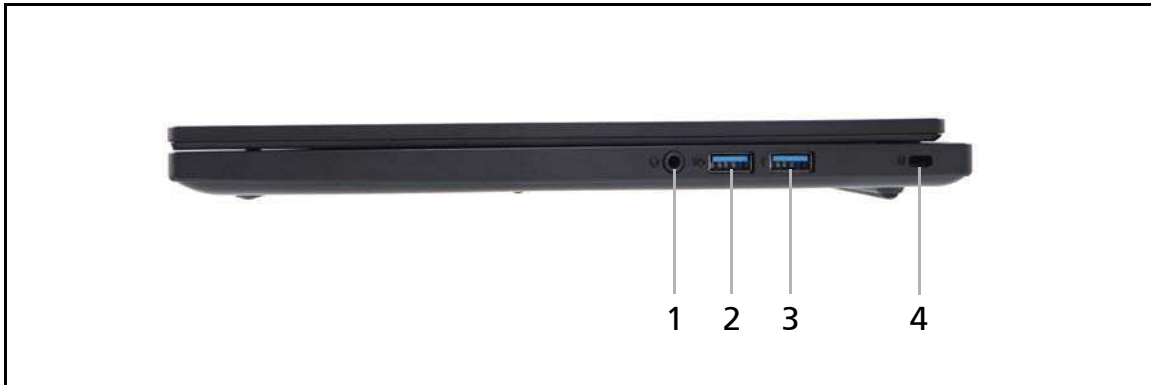




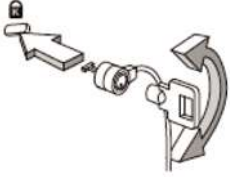


Figure 1-3. Right View

Table 1-3. Right View

#	Icon	Item	Description
1		Headphone/Microphone jack	Connects to audio line-out devices and accepts input from external microphone.
2		USB 3.2 port	Connect to USB devices (e.g., USB mouse, USB camera). Also charges devices when the computer is off.
3		USB 3.2 port	Connects to USB devices (e.g., USB mouse, USB camera).
4		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.

⇒ **NOTE:**

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

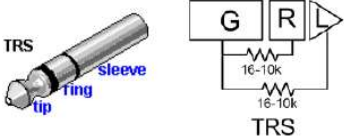
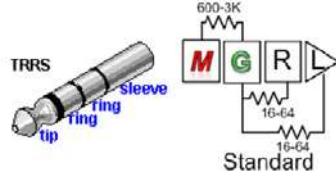
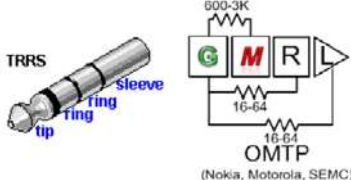
TRS Type (Headphone only)	Standard TRRS Type (Headphone/Mic Combo)	OMTP TRRS Type (Headphone/Mic Combo)
 <p>TRS</p>	 <p>Standard</p>	 <p>OMTP (Nokia, Motorola, SEMC)</p>
Support audio/headphone output only	Support audio/headphone output and microphone input	Support audio/headphone output only

Figure 1-4. Audio Connector Plug Configurations

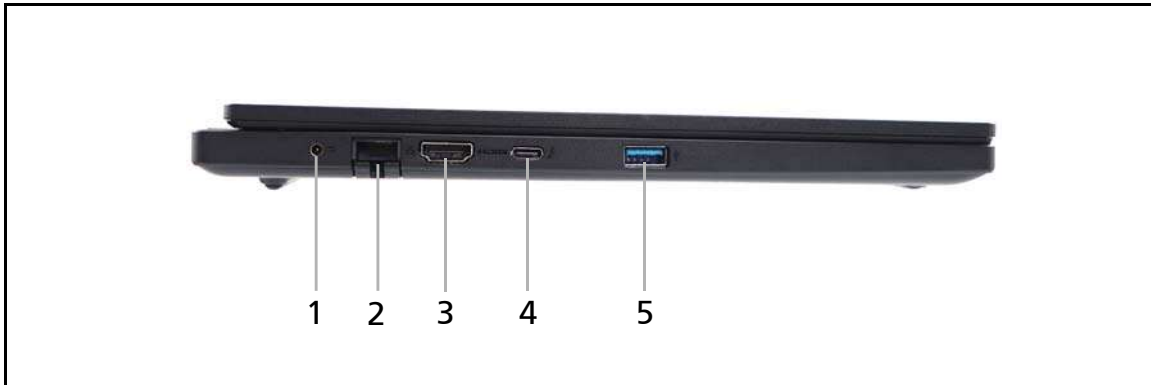


Figure 1-5. Left View

Table 1-4. Left View





#	Icon	Item	Description
1		DC-in jack	Connects to an AC adapter.
		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000 based network.
3	HDMI	HDMI port	Supports high-definition digital video connections.
4		USB Type-C™ ports	<ul style="list-style-type: none"> • Connects to USB devices with a USB Type-C connector. • Supports: <ul style="list-style-type: none"> ■ USB 3.2 Gen 2 (up to 10 Gbps) ■ DisplayPort over USB-C ■ Thunderbolt™ 4 ■ USB charging 5 V; 3 A <p>⇒ NOTE: USB Type-C™ port can only be used with products compliant with the USB Type-C™ cable and connector.</p>
5		USB 3.2 port	Connects to USB devices (e.g., USB mouse, USB camera).




Figure 1-6. Top View



Figure 1-7. Base View

Table 1-5. Base View

#	Icon	Item	Description
1		Battery reset pinhole	<p>Simulates removing and reinstalling the battery.</p> <p>⇒ NOTE: Insert a paperclip into the hole and press for four seconds.</p>

TouchPad Basics

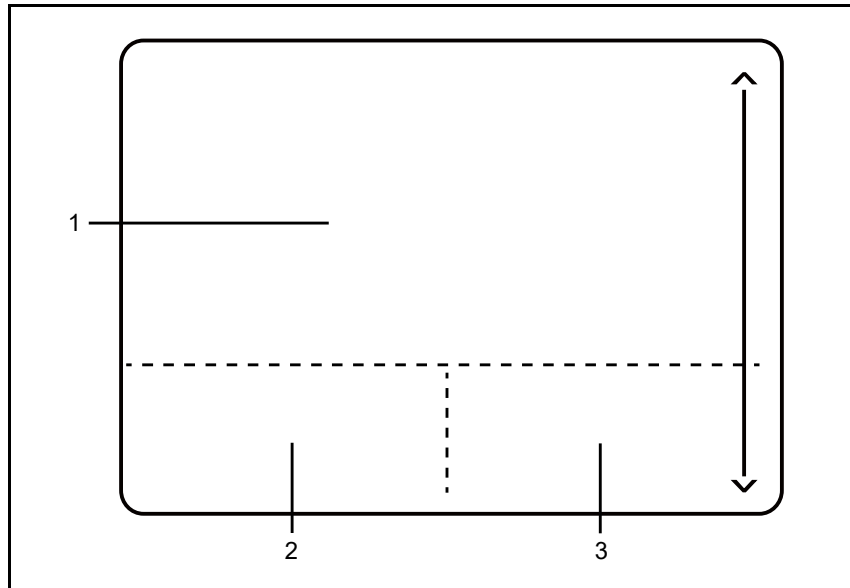


Figure 1-8. TouchPad

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

Function	Main TouchPad (1)	Left Button Area (2)	Right Button Area (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 1-9. Keyboard Lock Key

Lock Key

The keyboard has Caps Lock key which can be toggled on and off. When Caps Lock is on, all alphabetic characters typed are in uppercase.

Windows Keys

The keyboard has Windows Logo key that performs Windows-specific functions.

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> <ul style="list-style-type: none"> <  >: Open or close the Start menu <  > + <R>: Open the Run dialog box <  > + <M>: Minimize all windows <SHIFT> + <  > + M: Undo minimize all windows <  > + <F1>: Show the help window <  > + <E>: Open Windows Explorer <  > + <F>: Search for a file or folder <CTRL> + <  > + <F>: Search for computers (if you are on a network) <  > + <D>: Show the desktop <  > + <L>: Lock your computer (if you are connected to a network domain), or switch users (if you're not connected to a network domain) <  > + <TAB>: Cycle through programs on the taskbar <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) <  > + <BREAK>: Display the System Properties dialog box <p>Functions supported by Windows 8 only:</p> <ul style="list-style-type: none"> <  > + <TAB>: Open Switch List <  > + <Enter>: Open Windows Narrator <  > + <Q>: Open Global Search <  > + <I>: Open Settings Menu <  > + <Z>: Show or Hide an app bar <  > + <C>: Show or Hide an the charms menu

Hotkeys

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



Figure 1-10. 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> + <F1>		Volume mute	Turns off the sound temporarily.
<fn>+ <F2>		Volume down	Decreases the sound volume.
<fn> + <F3>		Volume up	Increases the sound volume.
<fn> + <F4>		Microphone off	Disables the microphone function.
<fn> + <F5>		Brightness down	Decreases the screen brightness.
<fn> + <F6>		Brightness up	Increases the screen brightness.
<fn> + <F7>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<fn> + <F8>		Log out	Locks the computer or switches users.
<fn> + <F9>		Airplane mode	Disables all wireless communications.
<fn> + <F10>		TouchPad toggle	Turns the internal TouchPad on and off.

System Block Diagram

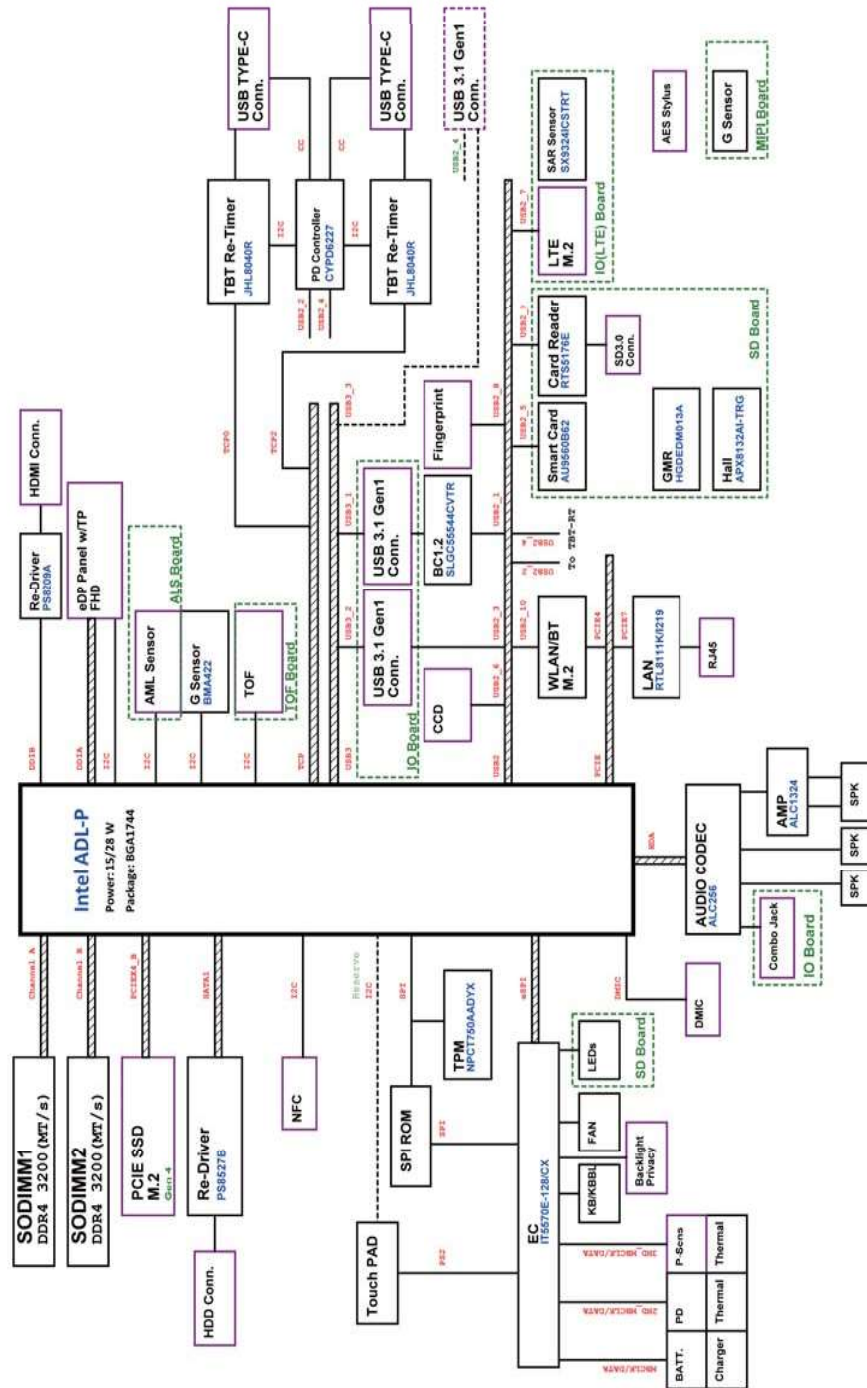


Figure 1-11. System Block Diagram

Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	359.7 mm	14.16 in.
Width	245.25 mm	9.66 in.
Height	20.7 mm	0.81 in.
Weight (3-cell battery pack)	1.85 kg	4.07 lbs.
Input power		
Operating voltage	19V	
Operating current	2.37A	
Temperature		
Operating	0°C to 40°C	32°F to 104°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity		
Operating	80% (at 40°C)	
Nonoperating	20% R.H to 90% R.H	
Maximum altitude (unpressurized)		
Operating	N/A	
Nonoperating	N/A	
Shock		
Operating	105G, 2 ms	
Nonoperating	220G, 2 ms	
Random vibration		
Operating	0.6 G-rms	
Nonoperating	1.66-rms (package vibration test)	
⇒ 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® Alder Lake Processor Family
VGA	<ul style="list-style-type: none"> • Intel® Iris® Xe Graphics eligible • Intel® UHD Graphics
LAN	Realtek RTL8111K-CG
USB	USB3.2 x3, USB Type-C x1
Super I/O controller	N/A
Bluetooth	Bluetooth 5.1
Wireless	<ul style="list-style-type: none"> • Intel® Wireless Wi-Fi 6 AX201 • 802.11a/b/g/n/acR2+ax wireless LAN • Dual Band (2.4 GHz and 5 GHz)
PCMCIA	N/A
Audio codec	Realtek ALC256M-CG (HDA)
Card reader	Realtek RTS5176E
eSata	N/A

Processor

Item	Specification
CPU type	Intel® Alder Lake Processor Family
CPU package	FCBGA1744
Core Logic	N/A
Chipset	<ul style="list-style-type: none"> • Intel® Core™ i7-1265U processor • Intel® Core™ i7-1255U processor • Intel® Core™ i5-1245U processor • Intel® Core™ i5-1235U processor • Intel® Core™ i3-1215U processor

Processor Specifications

Item	CPU Speed	Cores/Threads	Graphics Frequency	Mfg Tech	Cache Size	Package	TDP
i7-1265U	1.8 GHz (Up to 4.8 GHz)	10/12	Up to 1.25 GHz	Intel 7	12 MB	FCBGA1744	15 W
i7-1255U	1.7 GHz (Up to 4.7 GHz)	10/12	Up to 1.25 GHz	Intel 7	12 MB	FCBGA1744	15W
i5-1245U	1.6 GHz (Up to 4.4 GHz)	10/12	Up to 1.20 GHz	Intel 7	12 MB	FCBGA1744	15W
i5-1235U	1.3 GHz (Up to 4.4 GHz)	10/12	Up to 1.20 GHz	Intel 7	12 MB	FCBGA1744	15W
i3-1215U	1.2 GHz (Up to 4.4 GHz)	6/8	Up to 1.10 GHz	Intel 7	10 MB	FCBGA1744	15W

CPU Fan True Value Table (CPU Tj=100c)

Silent mode		
Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
43~44	2430	22
44~46	2700	25
46~48	3000	28
48~50	3300	31
50~52	3650	34

Balanced mode		
Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
40~42	2430	22
42~44	2700	25
44~46	3000	28
46~48	3300	31
48~52	3650	34
52~55	3990	37

Performance mode		
Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
38~40	2430	22
40~42	2700	25
42~44	3000	28
44~46	3300	31
46~48	3650	34
48~50	3990	37
50~52	4550	40

System Memory

Item	Specification
Memory controller	No built-in at CPU
Memory size	Up to 16 GB of DDR4 system memory, upgradable to 32 GB using two soDIMM modules
DIMM socket number	2 sockets
Supports memory size per socket	Up to 16 GB
Supports maximum memory size	32 GB
Supports DIMM type	SO-DIMM memory interface design
Supports DIMM Speed	3200 MHz
Support DIMM voltage	1.2V
Supports DIMM package	DDR4 260-pin SO-DIMM

BIOS

Item	Specification
BIOS vendor	Insyde
BIOS Version	1.01
BIOS ROM type	SPI ROM
BIOS ROM size	32MB Flash Memory
Features	<ul style="list-style-type: none"> • Insyde code base • boot block • non-shadow RAM support • uEFI

Keyboard

Item	Specification
Type	<ul style="list-style-type: none">Phantom KB CHICONY VP05P_B20BWLPhantom KB CHICONY VP05T_B20B
Total number of keypads	80-/81-/84-key Acer keyboard
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	Support international language with indicators of CapsLock and F4/Microphone mute

USB Port

Item	Specification	
USB compliance level	USB 3.2-compliant, one port featuring power-off USB charging	
xHCI	xHCI x1	
Number of USB port(s)	2	1
Location	Right side	Left side
Output Current	1.5A	1.0A

USB Type-C Port

Item	Specification
USB compliance level	USB 3.2 Gen 2 compliant (10 Gb/s)
Output Current of Power Bus	5V / 3.0 A max.
Power-off USB Charging Mode	Not supported
DisplayPort Version	DisplayPort over USB-C
Thunderbolt Version	Thunderbolt™ 4
Power Delivery for Charging	5V / 3A
Number of USB port(s)	1
Location	Left side

HDMI Port

Item	Specification
Compliance level	HDMI 2.0 port with HDCP support
Data throughput	Up to 16.7 million colors
Number of HDMI port(s)	1
Location	Left side

Video Interface

Item	Specification
Chipset	Intel Alder Lake
Package	FCBGA1744
Interface	Intel integrated Graphic
Sampling rate	System share

Battery

Item	Specification		
Vendor & Model	LG Chem. AP18C8K	COSMX AP20CBL	LG Chem. AP19B8M
Battery Type	Rechargeable Lithium Ion		
Pack capacity	4470mAh	4590mAh	4820mAh
Number of battery cell	3		
Package configuration	3S1P		

Item	Specification	
Vendor & Model	PANASONIC AP19B5L	SIMPLO AP18C7M
Battery Type	Rechargeable Lithium Ion	
Pack capacity	3550mAh	3634mAh
Number of battery cell	4	
Package configuration	4S1P	

AC Adapter

Item	Specification	
Vendor & Model	DELTA <ul style="list-style-type: none"> • ADP-45FE FD • ADP-45FE FBJ 	LITE-ON <ul style="list-style-type: none"> • PA-1450-26A3
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)	115-230 Vac, 50-60 Hz (The adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)
Input current	Less than 1.2A at input voltage 90Vac/47Hz and maximum load conditions	1.3A max. at 90 Vac and maximum load conditions
Inrush current	No damage at 264 Vac (Cold/Hot start); meet fuse and bridge diode I^2t de-rating.	<ul style="list-style-type: none"> • Should not damage fuse and rectifier diode. • The inrush current and I^2t shall be less than maximum rated value of components.
Efficiency	<ul style="list-style-type: none"> • More than 88.85% of average efficiency load tested at 115 Vac. • More than 88.85% of average efficiency load tested at 230 Vac. • Meet COC TIER 2. 	<ul style="list-style-type: none"> • More than 81.83% of average efficiency load tested at 5V output voltage condition. • More than 87.30% of average efficiency load tested at 9V output voltage condition. • More than 88.340% of average efficiency load tested at 12V output voltage condition. • More than 88.85% of average efficiency load tested at 15V/20V output voltage condition.

Item	Specification	
Vendor & Model	Chicony Power <ul style="list-style-type: none"> • A045R072P • A045R098P 	
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	2.37A at 90Vac/60Hz and maximum load conditions	
Inrush current	No damage at 264 Vac (Cold/Hot start); meet fuse and bridge diode I^2t de-rating.	
Efficiency	<ul style="list-style-type: none"> • Meet DoE Level VI and CoC tier 2 requirements. • The adapter efficiency shall be more than 88.85%, that is the average value of 25%, 50%, 75% and 100% load with 115Vac 60Hz/230Vac 50Hz input voltage condition. 	

Item	Specification	
Vendor & Model	LITE-ON • PA-1650-58AD	LITE-ON • PA-1650-50A3
Normal Input voltage	115-230 Vac, 50-60 Hz (The adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)	100-240 Vac, 50-60 Hz (The adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)
Input current	1.6A maximum at 90Vac and maximum load conditions	1.6A maximum at 90Vac and maximum load conditions
Inrush current	<ul style="list-style-type: none"> • Should not damage fuse and rectifier diode. • The inrush current and I^2t shall be less than maximum rated value of components. 	<ul style="list-style-type: none"> • Should not damage fuse and rectifier diode. • The inrush current and I^2t shall be less than maximum rated value of components.
Efficiency	<ul style="list-style-type: none"> • More than 81.83% of average efficiency load tested at 5V output voltage condition. • More than 87.30% of average efficiency load tested at 9V output voltage condition. • More than 88.30% of average efficiency load tested at 12V output voltage condition. • More than 88.85% of average efficiency load tested at 15V output voltage condition. • More than 89.00% of average efficiency load tested at 20V output voltage condition. 	Average Efficiency value of 25%, 50%, 75% and 100% load condition shall be more than 89% at the 115Vac/60Hz and 230Vac/50Hz.

Item	Specification	
Vendor & Model	DELTA <ul style="list-style-type: none"> • ADP-65DE BA • ADP-65DE BH 	Chicony Power <ul style="list-style-type: none"> • A065R178P
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)	100-240 Vac, 50-60 Hz (The adapter should operate from 90-264 Vac with an input frequency from 47-63 Hz)
Input current	Input current will be less than 1.7A at input voltage 90Vac/47Hz and maximum load condition	3.42A at 90Vac/60Hz and maximum load conditions
Inrush current	No damage at 264 Vac; meet fuse and bridge diode I ² t de-rating.	No damage at 264 Vac (Cold/Hot start); meet fuse and bridge diode I ² t de-rating.
Efficiency	<ul style="list-style-type: none"> • More than 89% of average efficiency load tested at 115 Vac. • More than 89% of average efficiency load tested at 230 Vac. • Meet COC TIER 2. 	<ul style="list-style-type: none"> • More than 89%, than is the average value of 25%, 50%, 75% and 100% load with 115Vac 60Hz/230Vac 50Hz input voltage condition. • Meet DoE Level VI and CoC tier 2 requirements.

Card Reader

Item	Specification
Chipset	Realtek RTS5176E
Package	QFN 24
Maximum supported size	2TB
Features	<ul style="list-style-type: none"> • Compliant with Universal Serial Bus Specification Revision 2.0 • Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0 • Support High-speed (480Mbps) and Full-speed (12Mbps) Data Transfer • 3.3V USB bus power operation • Support Control, Bulk IN / OUT data pipes • Compliant with SD Part 1 Physical Layer Specification Version 3.0 • Compliant with MultiMediaCard System Specification version 4.4 • Compliant with Memory Stick XC Duo Format Specification Version 1.00-00 • Compliant with Memory Stick XC-HG Duo Format Specification Version 1.00-00 • Compliant with Memory Stick XC Micro Format Specification Version 1.00-00 • Compliant with Memory Stick XC-HG Micro Format Specification Version 1.00-00 • Compliant with Memory Stick PRO-HG Duo Format Specification Version 1.03-00 • Compliant with Memory Stick HG Micro Format Specification Version 1.00-00 • Compliant with Memory Stick PRO Standard Format Specification Version 1.05-00 • Compliant with Memory Stick Standard Format Specification Version 1.43 • Support SD Jukebox application (CPRM function) • Support SD UHS50 mode • Support MSXC Power Class 0,1 and 2 • Support Memory Stick Pro MagicGate function • Support Memory Stick Pro MS Formatter function • Support hardware ECC (Error Correction Code) function • Support hardware CRC (Cyclic Redundancy Check) function • Programmable clock rate for flash memory card interfaces • On chip 3.3V to 1.8V regulator

Item	Specification
Features (continue)	<ul style="list-style-type: none"> • Support LPM L1 with remote-wake mechanism • On chip MOSFET with 400mA capability for direct power control of all types memory cards • Support Spread Spectrum Clock for SD/MMC and MS/MSPRO/HG/XC to reduce EMI effect • Provide H/W Auto-Delink power saving mode to reduce power consumption • XTAL free application or 48MHz OSC clock input

Hard Disk Drive (AVL components)

Item	Specification		
Vendor & Model Name	TOSHIBA MQ04ABF10	WD WD10SPZX-21Z10T0	TOSHIBA MQ01ABF050
Capacity (GB)	1TB		500GB
Bytes per sector	4096		
Data heads	2		
Drive Format			
Disks	1		
Spindle speed (RPM)	5400		
Performance Specifications			
Buffer size	128MB	130MB	8 MB
Interface	SATA		
Fast data transfer rate	6.0 Gbits/s		
Media data transfer rate	1733 Mbit/s (max.)	130 MB/s	1469.7 Mbit/s (max.)
DC Power Requirements			
Voltage tolerance	+5V ±5%		

Solid State Drive (AVL components)

Item	Specification	
Vendor & Model Name	MICRON MTFDKBA1T0TFK-1BC15ABYY	WD SDBPNHH-1T00-1014
Capacity	1024GB	
Performance Specifications		
Interface	PCIe Gen4 x4	PCIe Gen3 x4
Fast data transfer rate (Gbits / sec, max)	3000 MB/s	1950 MB/s
DC Power Requirements		
Voltage tolerance	3.3V (±5%)	

Item	Specification			
Vendor & Model Name	SAMSUNG MZVLQ512HBL U-00B00	HYNIX HFM512GD3JX 016N	MICRON MTFDKBA512T FK-1BC15ABYY	WD SDBPNHH-512G -1014
Capacity	512GB			
Performance Specifications				
Interface	PCIe Gen3 x4		PCIe Gen4 x4	PCIe Gen3 x4
Fast data transfer rate (Gbits / sec, max)	1800 MB/s	3000 MB/s	3000 MB/s	1750 MB/s
DC Power Requirements				
Voltage tolerance	3.3V (±5%)			

Item	Specification	
Vendor & Model Name	WD SDBPNPZ-256G-1114	HYNIX HFM256GD3JX016N
Capacity	256GB	
Performance Specifications		
Interface	PCIe Gen3 x4	
Fast data transfer rate (Gbits / sec, max)	950 MB/s	2000 MB/s
DC Power Requirements		
Voltage tolerance	3.3V (±5%)	

Item	Specification	
Vendor & Model Name	KINGSTON OM8PDP3128B-AA1	HYNIX HFM256GD3JX016N
Capacity	128GB	
Performance Specifications		
Interface	PCIe Gen3 x4	
Fast data transfer rate (Gbits / sec, max)	530 MB/s	900 MB/s
DC Power Requirements		
Voltage tolerance	3.3V (±5%)	

LCD 15.6"

Item	Specification		
Vendor & Model name	AUO B156HAN02.1	LG Display LP156WFH-SPD5	INNOLUX N156HCA-EAB
Screen Diagonal (mm)	394.9		
Active Area (mm)	344.16 (H) x 193.59 (V)		
Display resolution (pixels)	1920 x 3(RGB) x 1080	1920 x 1080	1920 x R.G.B. x 1080
Pixel Pitch (mm)	0.17925 x 0.17925		
Typical White Luminance (cd/m ²) also called Brightness	250 (typ.)		
Contrast Ratio	700 (typ.)	700 (typ.)	1000 (typ.)
Response Time (Optical Rise Time/Fall Time) msec	25 (typ.) / 35 (max.)	25 (typ.) / 35 (max.)	11 (typ.) / 14 (max.)
Typical Power Consumption	4.05W (max.)	3.5W (typ.)	4.158W (max.)
Weight (Without inverter)	360 g (max.)	360 g (max.)	365g (max.)
Physical Size (mm)	350.96 (W) x 216.65 (H) x 3.2 (D) (max.)	350.66 (W) x 215.55 (H) x 3.2 (D) (max.)	350.96 (W) x 205.55 (H) x 3.2 (D) (max.)
Electrical Interface	eDP1.2	eDP1.3 w/o PSR	eDP1.2
Viewing Angle (degree)			
Horizontal (Right)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	80 (min.) / 89 (typ.)
CR = 10 (Left)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	80 (min.) / 89 (typ.)
Vertical (Upper)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	80 (min.) / 89 (typ.)
CR= 10 (Lower)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	80 (min.) / 89 (typ.)

Item	Specification		
Vendor & Model name	BOE NV156FHM-N48	HKC MB156CS01-6	WISTRON A156FI
Screen Diagonal (mm)	394.9		
Active Area (mm)	344.16 (H) x 193.59 (V)		
Display resolution (pixels)	1920 x 1080		
Pixel Pitch (mm)	0.17925 x 0.17925		
Typical White Luminance (cd/m ²) also called Brightness	250 (typ.)		
Contrast Ratio	800 (typ.)	600 (typ.)	1200 (typ.)
Response Time (Optical Rise Time/Fall Time) msec	30 (typ.) / 35 (max.)	25 (typ.) / 30 (max.)	25 (typ.) / 30 (max.)
Typical Power Consumption	3.73W (max.)	4.0W (max.)	TBD
Weight (Without inverter)	360g (max.)	370g (max.)	TBD
Physical Size (mm)	350.66 (W) x 205.25 (H, w/o PCB) x 3.0 (D) (max.)	350.66 (W) x 205.25 (H) x 3.2 (D) (max.)	350.96 (W) x 205.55 (H, w/o PCB) x 3.2 (D) (max.)
Electrical Interface	eDP1.2		
Viewing Angle (degree)			
Horizontal (Right)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	85 (typ.)
CR = 10 (Left)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	85 (typ.)
Vertical (Upper)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	85 (typ.)
CR = 10 (Lower)	80 (min.) / 85 (typ.)	80 (min.) / 85 (typ.)	85 (typ.)

Item	Specification		
Vendor & Model name	AUO B156HTN06.1	INNOLUX N156HGA-EA3	BOE NT156FHM-N61
Screen Diagonal (mm)	394.9		
Active Area (mm)	344.16 (H) x 193.59 (V)	344.26 (H) x 193.69 (V)	344.16 (H) x 193.59 (V)
Display resolution (pixels)	1920 x 3(RGB) x 1080	1920 x R.G.B. x 1080	1920 x 1080
Pixel Pitch (mm)	0.17925 x 0.17925		
Typical White Luminance (cd/m ²) also called Brightness	220 (typ.)		
Contrast Ratio	400 (typ.)	500 (typ.)	500 (typ.)
Response Time (Optical Rise Time/Fall Time) msec	8 (typ.) / 16 (max.)	3 (typ.) / 8 (max.)	12 (typ.) / 16 (max.)
Typical Power Consumption	3.4W (max.)	3.45W (max.)	3.12W (max.)
Weight (Without inverter)	360g (max.)		
Physical Size (mm)	350.96 (W) x 216.65 (H) x 3.2 (D) (max.)	305.96 (W) x 216.75 (H) x 3.2 (D) (max.)	350.96 (W) x 216.75 (H, w PCB) x 3.2 (D) (max.)
Electrical Interface	eDP1.2		
Viewing Angle (degree)			
Horizontal (Right)	40 (min.) / 45 (typ.)	40 (min.) / 45 (typ.)	45 (typ.)
CR = 10 (Left)	40 (min.) / 45 (typ.)	40 (min.) / 45 (typ.)	45 (typ.)
Vertical (Upper)	10 (min.) / 15 (typ.)	15 (min.) / 20 (typ.)	20 (typ.)
CR= 10 (Lower)	30 (min.) / 35 (typ.)	40 (min.) / 45 (typ.)	40 (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

Item	Specification	
VGA Chip	Intel® Iris® Xe Graphics eligible	Intel® UHD Graphics
Package	Built-in to the CPU	
Feature	Supports: <ul style="list-style-type: none">• OpenGL® 4.6• OpenCL™ 3.0• Microsoft® DirectX® 12.1• Intel® Quick Sync Video	

Display Supported Resolution (LCD Supported Resolution)

Resolution	Specification
eDP	<ul style="list-style-type: none">• Version 1.2• Version 1.3 (for LG Panel)

LAN Interface

Item	Specification
LAN chipset	Realtek RTL8111K-CG
LAN connector type	RJ45
LAN connector location	Left side
Features	<ul style="list-style-type: none">• Fully complies with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab• Supports Full Duplex flow control (IEEE 802.3x)• Supports IEEE 802.1P Layer 2 Priority Encoding• Supports IEEE 802.1Q VLAN tagging• Supports IEEE 802.3az-2010 (EEE)

Wireless + Bluetooth Module

Item	Specifications
Vendor & Model	Intel® Wireless Wi-Fi 6 AX201
Chipset	Harrison Peak 2
Form factor	<ul style="list-style-type: none"> • M.2 2230 • M.2 1216-soldered down module
Frequency band	2.4/5 GHz
Protocols and data rates supported	BT: <ul style="list-style-type: none"> • Bluetooth 5.2 Wi-Fi: <ul style="list-style-type: none"> • 802.11a/b/g/n/acR2+ax (Pre-Standard) wireless LAN • 2x2 MU-MIMO technology (up to 160Mhz channel support)
Antenna	Yes. Both AUX and MAIN are routed in the top assembly.
Feature	<ul style="list-style-type: none"> • MIMO TX/TX and Rx/Rx Concurrency • Support Windows 10, Linux, Chrome

Audio Interface

Item	Specification
Audio Controller	Realtek ALC256M-CG (HDA)
Audio onboard or optional	On board
Mono or Stereo	Stereo
Resolution	<ul style="list-style-type: none"> • 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
Compatibility	HD audio Interface
Sampling rate	<ul style="list-style-type: none"> • All DACs support 44.1k/48k/96k/192kHz sample rate • All ADCs support 44.1k/48k/96k/192kHz sample 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 ALC256M-CG (HDA)
Features	<ul style="list-style-type: none"> • Meets Microsoft® WLP (Windows Logo Program) and Lync™ audio requirements for Windows systems • 97dB Signal-to-Noise Ratio (A-weighting) for DAC output • 90dB Signal-to-Noise Ratio (A-weighting) for ADC input • Supports two stereo digital microphone inputs, and programmable boost gain and volume control • Built-in headphone amplifiers for port-I (HP-OUT) • Headphone amplifier for port-I does not require DC blocking capacitors • Supports combo jack with stereo headphone output and mono microphone input on a 4-pole jack • Supports Headset Push-Button Control for combo jack • Supports Line-In pass-through to speaker out (Sleep & Music mode) • Enhanced power management features for normal operation and standby mode • Class-D amplifier has seven band hardware equalizers and high pass filter to compensate for frequency response and protect the speaker • AGC (Auto Gain Control) function for Class-D amplifier removes distortion when outputting high volume sound • Class-D amplifier output with slew rate control to improve EMI performance

FHD Camera

Item	Specification
Vendor	Chicony
Model	CKFLF30
Sensor Type	1/6" CMOS
Feature	<ul style="list-style-type: none"> • Automatic image control: Automatic Exposure Control, Automatic White Balance Control, and Automatic Gain Control. • Image Quality Control: Color Saturation, Hue, Gamma, Sharpness, Brightness, Contrast, and Backlight Compensation. • Resolution Support for Still/Motion Image: 1920x1080, 1280x720, 640x480, and 640x360

HD Camera

Item	Specification	
Vendor	Chicony	Tech-Front
Model	CNFLH34	YHVC
Sensor Type	1/9" CMOS	1/9" HD CMOS
Feature	<ul style="list-style-type: none"> • Automatic image control: Automatic Exposure Control, Automatic White Balance Control, and Automatic Gain Control. • Image Quality Control: Color Saturation, Hue, Gamma, Sharpness, Brightness, Contrast, and Backlight Compensation. • Resolution Support for Still/Motion Image: 1280x720, 640x480, and 640x360. 	<ul style="list-style-type: none"> • Automatic image control: Automatic Exposure Control, Automatic White Balance Control, and Automatic Gain Control. • Image Quality Control: Brightness, Contrast, Hue, Saturation, Sharpness, Gamma, Backlight Compensation, and Low Light Compensation. • Resolution Support for Still/Motion Image: 1280x720 (YUV/MJPEG), 640x480 (YUV/MJPEG), and 640x360 (YUV/MJPEG).

Item	Specification	
Vendor	Chicony	Tech-Front
Model	CNFKH79	YHJS-1
Sensor Type	1/9" CMOS	1/9" HD CMOS
Feature	<ul style="list-style-type: none"> • Automatic image control: Automatic Exposure Control, Automatic White Balance Control, and Automatic Gain Control. • Image Quality Control: Color Saturation, Hue, Gamma, Sharpness, Brightness, Contrast, and Backlight Compensation (HDR). • Resolution Support for Still/Motion Image: 1280x720, 640x480, and 640x360. 	<ul style="list-style-type: none"> • Automatic image control: Automatic Exposure Control, Automatic White Balance Control, and Automatic Gain Control. • Image Quality Control: Brightness, Contrast, Hue, Saturation, Sharpness, Gamma, and Backlight Compensation. • Resolution Support for Still/Motion Image: 1280x720, 640x480, and 640x360.

0.3M VGA Camera (N/A)

Item	Specification
Vendor	
Model	
Sensor Type	
Feature	

4G Card

Item	Specification
Vendor	Quectel LTE EM060K-GL
LTE Features	<ul style="list-style-type: none"> • Support up to CA Cat 6 • Support 1.4MHz to 40MHz (2×CA) RF bandwidth • Support MIMO in DL direction • FDD: Max 300Mbps (DL)/50Mbps (UL)

VRAM

Item	Specification			
Vendor & Model name	MICRON MT61K256M32JE -14:A	SAMSUNG K4Z80325BC-HC1 4	SK HYNIX H56C8H24AIR-S2 C	SK HYNIX H56G32CS4DX00 5
Memory size	8Gb GDDR6			
Interface	GDDR6 SGRAM			

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 • Audio Power Down • Hard Disk 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 • Standby: Breeze mode Orange (1 sec. on, 3 sec. off) • Entering Hibernation: Blue • Modern Standby/Hibernation/System off: Off
Battery state	<ul style="list-style-type: none"> • Fully charged: Blue • Battery charging: Orange • Battery low ($\leq 5\%$): Breeze mode Orange (1 sec. on, 3 sec. off) • Battery critical low ($\leq 3\%$) or Abnormal situation: Blinking mode Orange (1 sec. on, 1 sec. off) • Using battery or not connected to AC power: N/A
Power button backlight	Power button has no LED
Communication state	<ul style="list-style-type: none"> • Wi-Fi has no LED • Bluetooth has no LED

System DMA Specification (N/A)

Legacy Mode	Power Management

System Interrupt Specification

Hardware IRQ	System Function
ISA00	System timer
ISA01	Standard PS/2 Keyboard
ISA08	System CMOS/real time clock
ISA14	Intel(R) Serial IO GPIO Host Controller - INTC1055
ISA55 - ISA204	Microsoft ACPI-Compliant System
ISA256 - ISA511	Microsoft ACPI-Compliant System
ISA1024	NxpNfcClientDriver
ISA1025	I2C HID Device
PCI 16	Intel(R) Innovation Platform Framework Processor Participant
PCI 18	Intel(R) Serial IO I2C Host Controller - 51D8
PCI 19	Intel(R) Serial IO I2C Host Controller - 51D9
PCI 27	Intel(R) Serial IO I2C Host Controller - 51E8
PCI 40	Intel(R) Serial IO I2C Host Controller - 51E9
PCI -49	PCI Express Root Port
PCI -48	Intel(R) Management Engine Interface #1
PCI -47	Realtek PCIe GbE Family Controller #2
PCI -46	Intel® Smart Sound Technology BUS
PCI -45	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
PCI -44	Intel(R) GNA Scoring Accelerator module
PCI -43	Intel(R) Iris(R) Xe Graphics
PCI -42 - PCI -27	USB4(TM) Host Router (Microsoft)
PCI -26	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
PCI -25 - PCI -23	Intel(R) Wi-Fi 6 AX201 160MHz
PCI -22 - PCI -4	Intel RST VMD Controller 467F
PCI -3	Intel(R) PEG60 - 464D
PCI -2	Intel(R) PCI Express Root Port #7 - 51BE

System I/O Address Map

I/O address (hex)	System Function (shipping configuration)
00000000 - 00000CF7	PCI Express Root Complex
00000020 - 00000021	Programmable interrupt controller
00000024 - 00000025	Programmable interrupt controller
00000028 - 00000029	Programmable interrupt controller
0000002C - 0000002D	Programmable interrupt controller
0000002E - 0000002F	Motherboard resources
00000030 - 00000031	Programmable interrupt controller
00000034 - 00000035	Programmable interrupt controller
00000038 - 00000039	Programmable interrupt controller
0000003C - 0000003D	Programmable interrupt controller
00000040 - 00000043	System timer
0000004E - 0000004F	Motherboard resources
00000050 - 00000053	System timer
00000060 - 00000060	Standard PS/2 Keyboard
00000061 - 00000061	Motherboard resources
00000062 - 00000062	Microsoft ACPI-Compliant Embedded Controller
00000063 - 00000063	Motherboard resources
00000064 - 00000064	Standard PS/2 Keyboard
00000065 - 00000065	Motherboard resources
00000066 - 00000066	Microsoft ACPI-Compliant Embedded Controller
00000067 - 00000067	Motherboard resources
00000070 - 00000070	Motherboard resources
00000070 - 00000077	System CMOS/real time clock
00000080 - 00000080	Motherboard resources
00000092 - 00000092	Motherboard resources
000000A0 - 000000A1	Programmable interrupt controller
000000A4 - 000000A5	Programmable interrupt controller
000000A8 - 000000A9	Programmable interrupt controller
000000AC - 000000AD	Programmable interrupt controller
000000B0 - 000000B1	Programmable interrupt controller
000000B2 - 000000B3	Motherboard resources
000000B4 - 000000B5	Programmable interrupt controller

I/O address (hex)	System Function (shipping configuration)
000000B8 - 000000B9	Programmable interrupt controller
000000BC - 000000BD	Programmable interrupt controller
000004D0 - 000004D1	Programmable interrupt controller
00000680 - 0000069F	Motherboard resources
00000D00 - 00000FFF	PCI Express Root Complex
0000164E - 0000164F	Motherboard resources
00001854 - 00001857	Motherboard resources
00002000 - 000020FE	Motherboard resources
00003000 - 00003FFF	Intel(R) PCI Express Root Port #7 - 51BE
00003F00 - 00003FFF	Realtek PCIe GbE Family Controller #2
00004000 - 0000403F	Intel(R) Iris(R) Xe Graphics
0000EFA0 - 0000EFBF	Intel(R) SMBus - 51A3

Large Memory Address Map (N/A)

Memory address (hex)	System Function (shipping configuration)

Memory Address Map

Memory address (hex)	System Function (shipping configuration)
000A0000 - 000BFFFF	PCI Express Root Complex
35985000 - 35985FFF	UCM-UCSI ACPI Device
42800000 - BFFFFFFF	PCI Express Root Complex
44000000 - 539FFFFFFF	PCI Express Root Port
53A00000 - 53AFFFFFFF	Intel(R) PCI Express Root Port #7 - 51BE
53AFB000 - 53AFBFFF	Realtek PCIe GbE Family Controller #2
53AFC000 - 53AFFFFFFF	Realtek PCIe GbE Family Controller #2
53800000 - 53B0FFFF	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
54000000 - 55FFFFFFF	Intel RST VMD Controller 467F
54000000 - 639FFFFFFF	PCI Express Root Port
63A00000 - 63AFFFFFFF	Intel(R) PCI Express Root Port #7 - 51BE
63B00000 - 63B0FFFF	Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
64000000 - 65FFFFFFF	Intel RST VMD Controller 467F
C0000000 - CFFFFFFF	Motherboard resources

Memory address (hex)	System Function (shipping configuration)
FD690000 - FD69FFFF	Intel(R) Serial IO GPIO Host Controller - INTC1055
FD6A0000 - FD6AFFFF	Intel(R) Serial IO GPIO Host Controller - INTC1055
FD6D0000 - FD6DFFFF	Intel(R) Serial IO GPIO Host Controller - INTC1055
FD6E0000 - FD6EFFFF	Intel(R) Serial IO GPIO Host Controller - INTC1055
FE010000 - FE010FFF	Intel(R) SPI (flash) Controller - 51A4
FED00000 - FED003FF	High precision event timer
FED20000 - FED7FFFF	Motherboard resources
FED40000 - FED44FFF	Trusted Platform Module 2.0
FED45000 - FED8FFFF	Motherboard resources
FED90000 - FED93FFF	Motherboard resources
FEDA0000 - FEDA0FFF	Motherboard resources
FEDA1000 - FEDA1FFF	Motherboard resources
FEDC0000 - FEDC7FFF	Motherboard resources
FEE00000 - FEEFFFFFFF	Motherboard resources
4000000000 - 400FFFFFFF	Intel(R) Iris(R) Xe Graphics
6000000000 - 6024FFFFFFF	PCI Express Root Port
6025000000 - 6025FFFFFFF	Intel(R) Iris(R) Xe Graphics
6026000000 - 6027FFFFFFF	Intel RST VMD Controller 467F
6028100000 - 60281FFFFFFF	Intel RST VMD Controller 467F
6028200000 - 602823FFFFF	USB4(TM) Host Router (Microsoft)
6028240000 - 602825FFFFF	Intel(R) Innovation Platform Framework Processor Participant
6028240000 - 602827FFFFF	USB4(TM) Host Router (Microsoft)
6028260000 - 602826FFFFF	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
6028270000 - 6028277FFF	Intel(R) Platform Monitoring Technology Driver
602827C000 - 602827FFFFF	Intel(R) Wi-Fi 6 AX201 160MHz
6028280000 - 6028283FFF	Intel(R) Shared SRAM - 51EF
6028280000 - 602829FFFFF	Intel(R) Innovation Platform Framework Processor Participant
6028284000 - 60282840FFF	Intel(R) SMBus - 51A3
6028288000 - 6028288FFF	Intel(R) Shared SRAM - 51EF
602828B000 - 602828BFFF	USB4(TM) Host Router (Microsoft)
602828C000 - 602828CFFF	Intel(R) GNA Scoring Accelerator module
60282A0000 - 60282AFFFFF	Intel(R) Integrated Sensor Solution
60282A0000 - 60282AFFFFF	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)

Memory address (hex)	System Function (shipping configuration)
60282B0000 - 60282B7FFF	Intel(R) Platform Monitoring Technology Driver
60282BC000 - 60282BFFFF	Intel(R) Wi-Fi 6E AX211 160MHz
60282C0000 - 60282C3FFF	Intel(R) Shared SRAM - 51EF
60282C4000 - 60282C40FF	Intel(R) SMBus - 51A3
60282C8000 - 60282C8FFF	Intel(R) Shared SRAM - 51EF
60282CB000 - 60282CBFFF	USB4(TM) Host Router (Microsoft)
60282CC000 - 60282CCFFF	USB4(TM) Host Router (Microsoft)
60282CD000 - 60282CDFFF	Intel(R) GNA Scoring Accelerator module
60300000000 - 6054FFFFFFF	PCI Express Root Port
7FFFEF7000 - 7FFFEF7FFF	Intel(R) Serial IO I2C Host Controller - 51E8
7FFFEF8000 - 7FFFEF8FFF	Intel(R) Serial IO I2C Host Controller - 51D9
7FFFEF9000 - 7FFFEF9FFF	Intel(R) Serial IO I2C Host Controller - 51D8
7FFFEFA000 - 7FFFEFAFFF	Intel(R) Serial IO I2C Host Controller - 51E9
7FFFEFB000 - 7FFFEFBFFF	Intel(R) Management Engine Interface #1
7FFFEFC000 - 7FFFEFFFFF	Intel® Smart Sound Technology BUS
7FFFF00000 - 7FFFFFFFFF	Intel® Smart Sound Technology BUS

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

Six menu options are:

- Information
- Main
- Advanced
- Security
- Boot
- Exit

To navigate on the non-touchscreen models 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

To navigate on the touchscreen panel models through the following:

- Menu - click or tab on the option with the fingertip
- Item - scroll through the screen by moving one finger in a vertical direction or swiping two fingers up-and-down
- Change parameter value - use the on-screen keyboard or tab on the option.

⇒ NOTE:

Parameter values can be changed if enclosed in square brackets open the DIMM door open the DIMM door[]. 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.

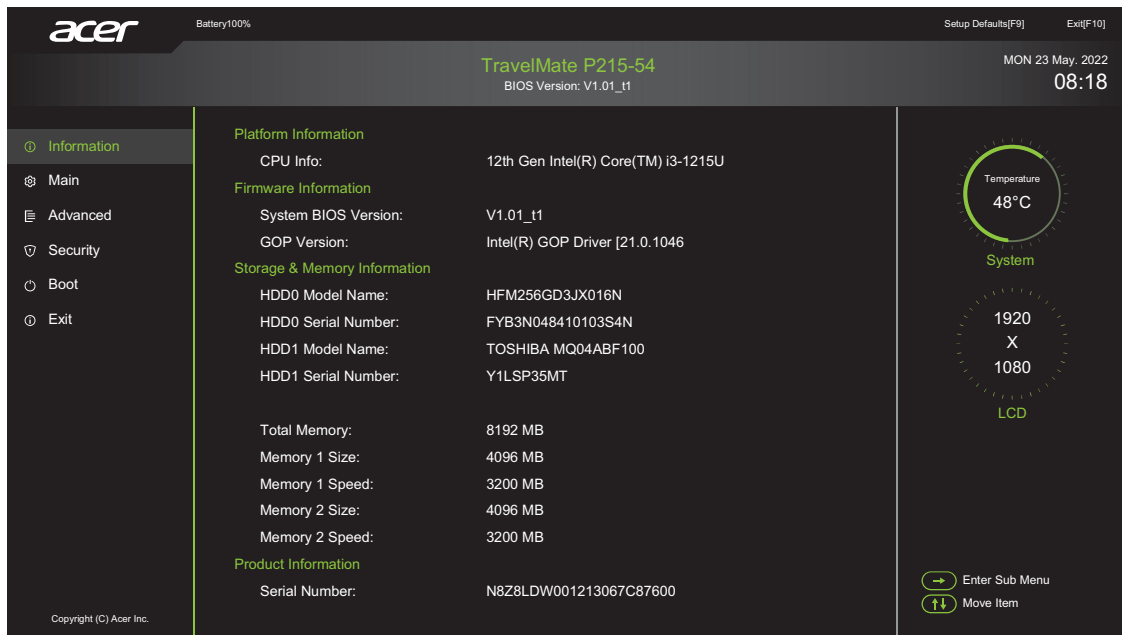


Figure 2-1. BIOS Information

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

Table 2-1. BIOS Information

Parameter	Description
CPU Info	CPU (central processing unit) type and speed of system
System BIOS Version	System BIOS version
GOP Version	GOP (graphics output protocol) firmware version of system
HDD Model Name	Model name of HDD (hard disk drive) installed on primary IDE master
HDD Serial Number	Serial number of HDD installed on primary IDE master
Total Memory	Total memory installed

Table 2-1. BIOS Information (Continued)

Parameter	Description
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.

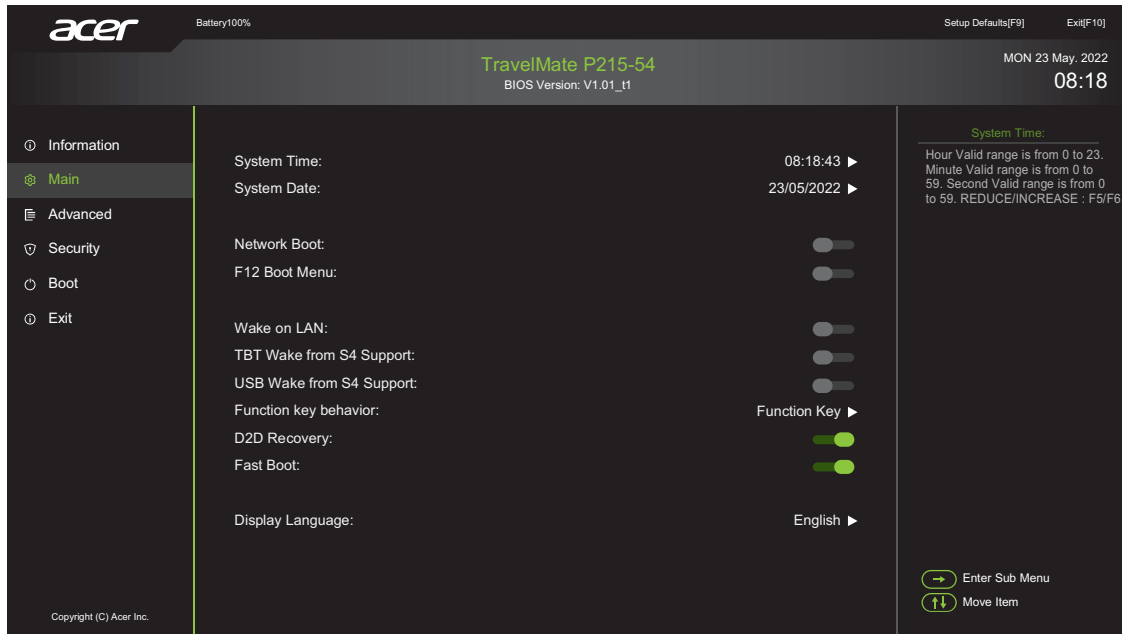


Figure 2-2. BIOS Main

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
TBT Wake from S4 Support	Option to enable/disable support TBT wake from S4	Option: Enabled or Disabled
USB Wake from S4 Support	Option to enable/disable support USB wake from S4	Option: Enabled or Disabled
Function key behavior	Option to specify the <i>F1</i> to <i>F12</i> key behavior	Option: Function Key or Media Key

Table 2-2. BIOS Main (Continued)

Parameter	Description	Format/Option
D2D Recovery	Option to use D2D Recovery feature	Option: Enabled or Disabled
Fast Boot	Option to enable/disable Fast boot	Option: Enabled or Disabled
Display Language	Option to set the display language	

Advanced

The Advanced tab allows users to set VTX/VTD function switch configurations and other advanced settings.



Figure 2-3. BIOS Advanced

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

Table 2-3. BIOS Advanced

Parameter	Description	Option
Intel VTX	Option to use Intel VTX function switch	Enabled or Disabled
Intel VTD	Option to use Intel VTD function switch	Enabled or Disabled
Power on system by RTC Alarm	Option to enable/disable the RTC wake from S3/S4/S5 function	Enabled or Disabled
Device Configuration	Option to enable/disable the device or function	
BIOS Update	Option to update BIOS via USB storage	
Lock BIOS Version	Option to enable/disable the Lock BIOS Version function. If the setting is set to Enabled, the system cannot update/rollback the BIOS, and the BIOS version is fixed.	Enabled or Disabled

Table 2-3. BIOS Advanced (Continued)

Parameter	Description	Option
Rollback BIOS Version	Option to enable/disable the Rollback Old BIOS Version function. If the setting is set to Supported, the system can rollback the BIOS to its older version.	Supported or Unsupported
Export BIOS Settings to USB Storage	Option to save the current BIOS settings to the USB storage. To perform this action: The system will display the available USB storage for users to save the settings file. Users will also have options either to go up or enter the directory. If Yes is selected, the system will save the current BIOS settings as a file, and exit the dialog box.	
Import BIOS Setting from USB Storage	Option to restore the BIOS settings from the USB storage. Only profile with same project name can be imported. Otherwise, a warning message will appear on the screen. To perform this action: The system will display the available USB storage for users to select the settings file location. Once selected, it displays all files in the device and allow users to choose the intended file (only supported file can be loaded), and users will have options either to go up or enter the directory. If Yes is selected, the system will load the file into BIOS, then exit the dialog box.	
MAC Address Pass Through	Option to enable/disable the MAC address pass through function. If the setting is set to Enabled, it will clone system MAC address to Dock.	
Wake On LAN from Dock	Option to enable/disable the WOL from Dock function. If the setting is set to Enabled, it will allow the WOL event triggered from Dock to wake the system.	Enabled or Disabled
System Health Indicator	When an abnormality is detected, the system health indicator will flash the indicator to immediately notify the user and remind the user to properly check the system.	

Security

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

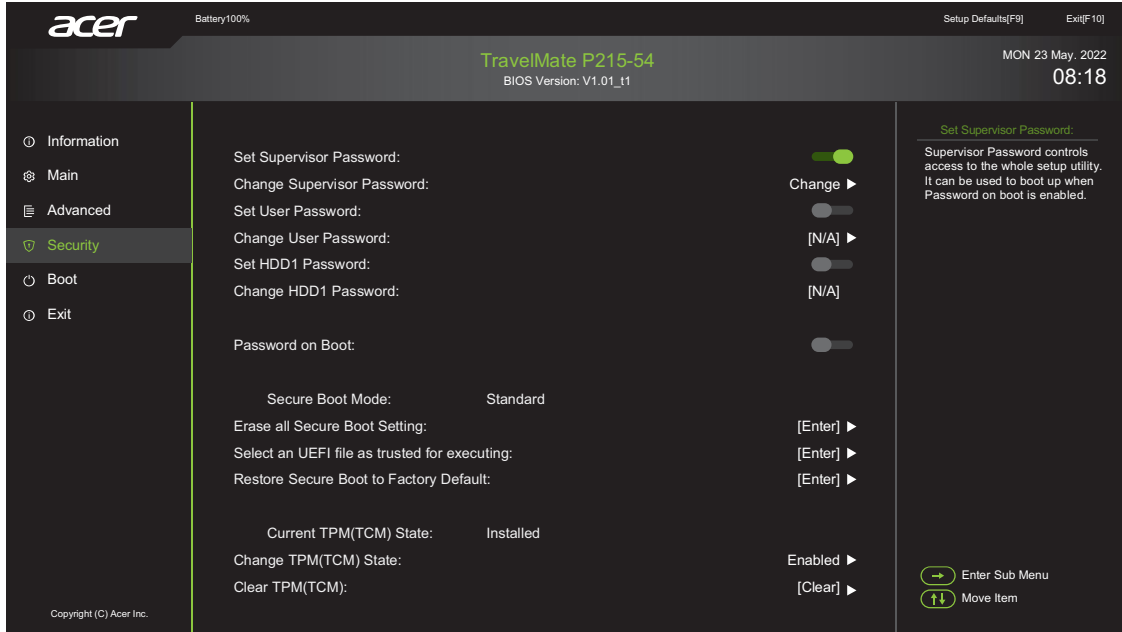


Figure 2-4. BIOS Security

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

Table 2-4. BIOS Security

Parameter	Description	Option
Set Supervisor Password	Option to set supervisor password	Disabled or Enabled
Change Supervisor Password	Change supervisor password	N/A
Set User Password	Option to set user password	Disabled or Enabled
Change User Password	Change user password	N/A
Set HDD1 Password	Option to set HDD password	Disabled or Enabled
Change HDD1 Password	Change HDD password	N/A

Table 2-4. BIOS Security (Continued)

Parameter	Description	Option
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. Refer to Crisis Disk Recovery .	Disabled or Enabled
Secure Boot Mode	Display the current Secure Boot Mode status. <ul style="list-style-type: none"> • Standard: Default Option. No manual change has been done to secure boot setting or users have previous restored security boot to factory default. • Custom: Contents of the Secure Boot signature database has been modified with "Erase All Secure Boot Setting" or "Select an UEFI File as Trusted Executing". 	Standard or Custom
Erase all Secure Boot Setting	Option to erase all secure boot setting	N/A
Select an UEFI file as trusted for executing	Option to select an UEFI file as trusted for executing	N/A
Restore Secure Boot to Factory Default	Option to restore secure boot to factory default	N/A
Current TPM (TCM) State	Display the TPM status	N/A
Change TPM (TCM) State	Option to use the TPM function	Disabled or Enabled
Clear TPM (TCM)	Remove all TPM context associated with a specific owner	N/A

⇒ 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 \uparrow and \downarrow 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 \uparrow and \downarrow 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:

- Windows Boot Manager
- Onboard hard disk drive
- USB diskette 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 sort the order.

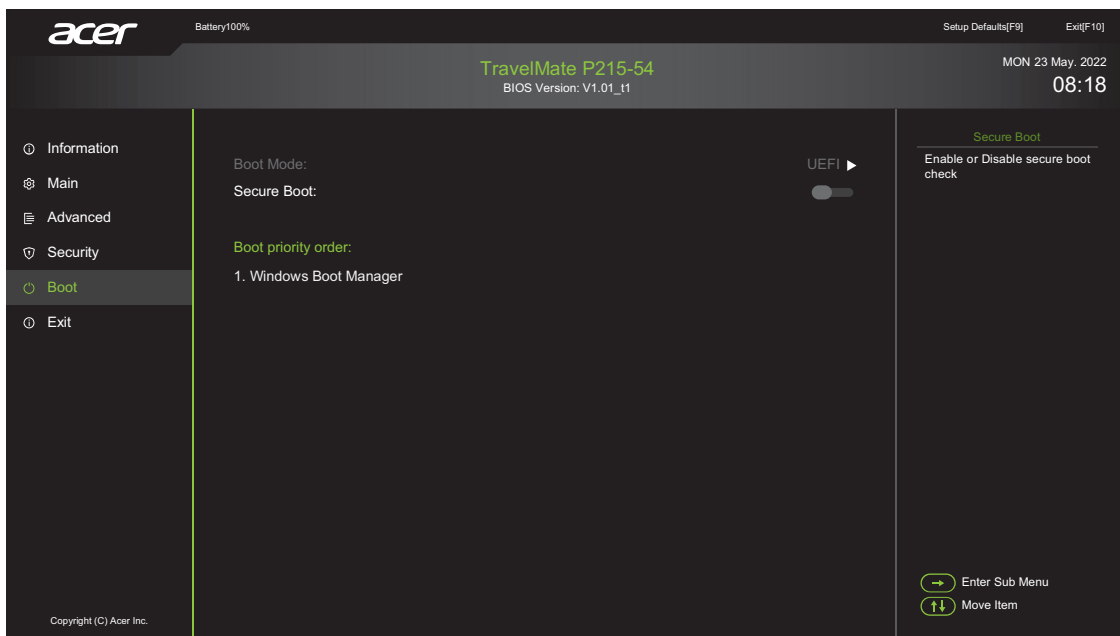


Figure 2-11. BIOS Boot

Exit

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



Figure 2-12. BIOS Exit

Table 2-5 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.
Save & shutdown	Save the changes and shutdown the system.
Load Factory Setup Defaults	Load setup default values for all setup items.
Save Settings to User Setup Defaults	Save the current settings as the user-defined default settings.
Load User Setup Defaults	Load the user-defined default settings.

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, DPMI) 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

Flash BIOS in Windows Environment

⇒ **NOTE:**

For example: BIOS 1.01

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

1. Copy the WinFlash executable *Z8L_101.exe* to desktop.
2. Plug in the 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 pack does not contain power to finish loading BIOS Flash, do not boot the system.

3. Right-click the *Z8L_101.exe* and select Run as administrator.

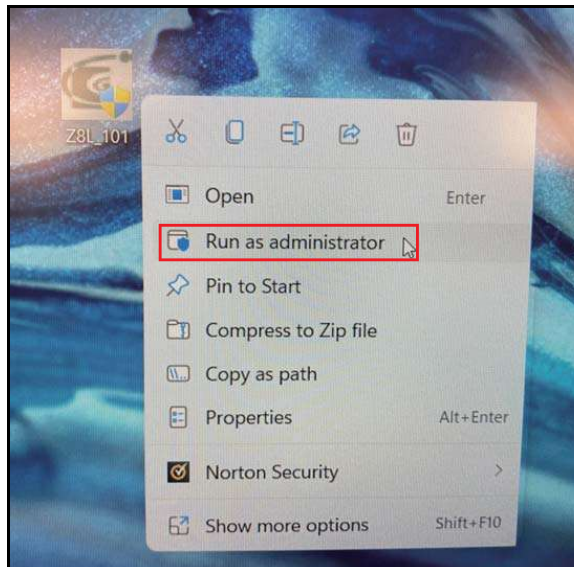


Figure 2-13. Run as Administrator

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

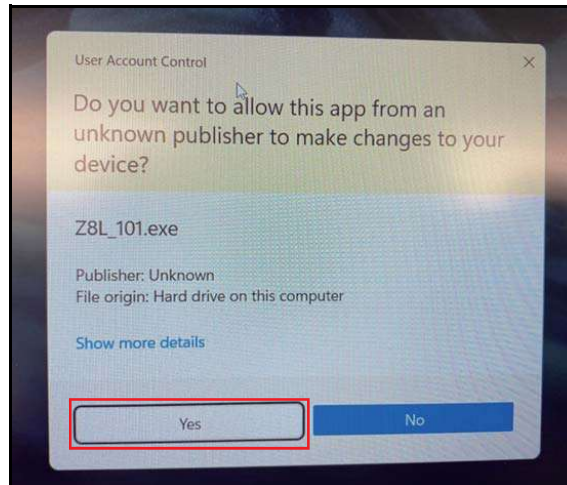


Figure 2-14. User Account Control

5. The system will restart automatically and display the Flash BIOS Process as shown in [Figure 2-15](#).



Figure 2-15. Flash Process

6. When the Flash Process is finished, the system will restart automatically.
7. When the Acer logo appears on the screen, press **F2** during the POST to enter the BIOS Setup Menu. Ensure that the System BIOS Version has been updated.

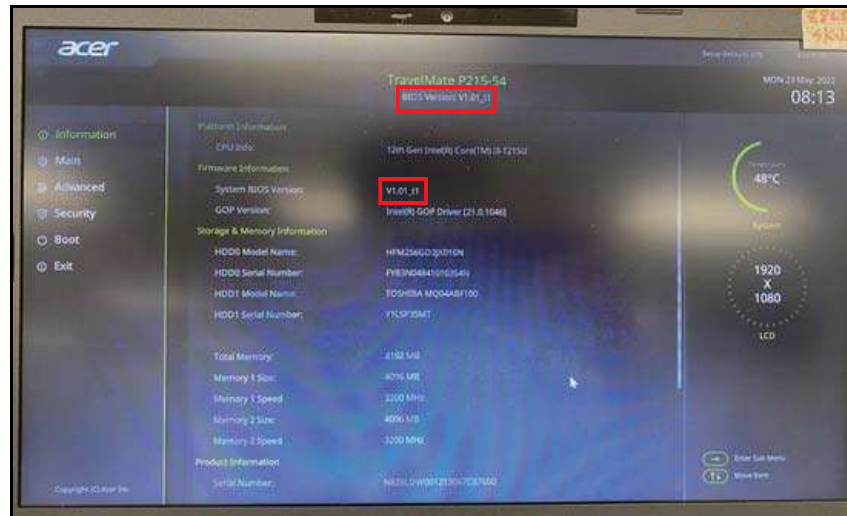


Figure 2-16. System BIOS Version

⇒ **NOTE:**

The system battery charge must be above 30% and the AC adapter is connected in order to flash the BIOS.

Flash BIOS in Shell Environment

⇒ NOTE:

For example: BIOS 1.01

Perform the following to run the *Flash Utility* in Windows (Shell environment) mode to flash the BIOS:

1. Copy the WinFlash executable *Z8L_101.efi* to shell bootable USB disk.
2. Plug in the 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 pack does not contain power to finish loading BIOS Flash, do not boot the system.

3. Boot from the Shell USB disk.
4. Type **Z8L_101.efi** and press *Enter* to start flashing the BIOS.

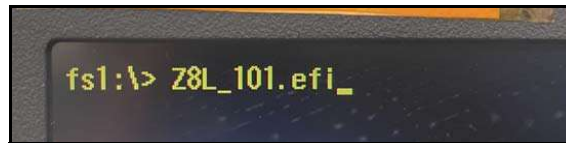


Figure 2-17. Execute Command

- The system will restart automatically and display the Flash BIOS Process as shown in Figure 2-18.



Figure 2-18. Flash Process

- When the Flash Process is finished, the system will restart automatically.
- When the Acer logo appears on the screen, press **F2** during the POST (power-on self-test) screen to enter the BIOS. Ensure that the System BIOS Version is the same as the updated BIOS version.

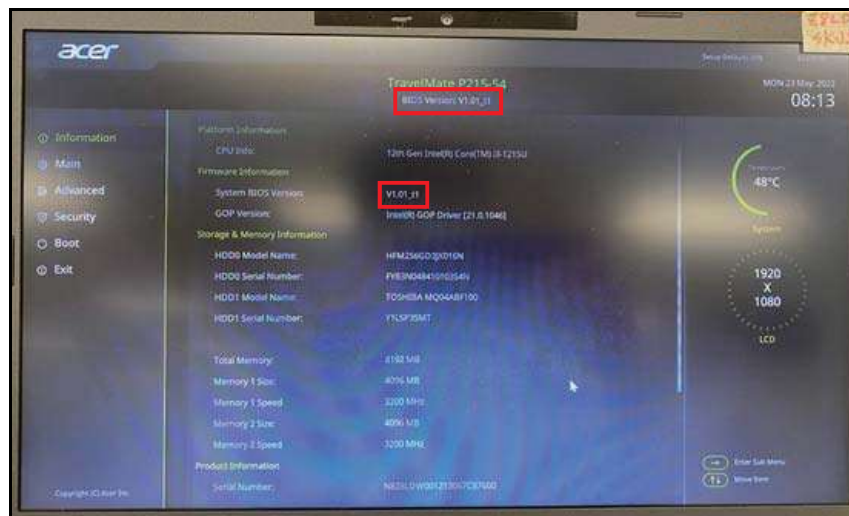


Figure 2-19. BIOS Version

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.).

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

1. Prepare a bootable WINPE USB Flash Disk.
2. Rename the file name from *WQDMIx64_v06* to *WQDMI.exe*.
3. Copy *WQDMI.exe* to the WINPE x64 USB Flash Disk.

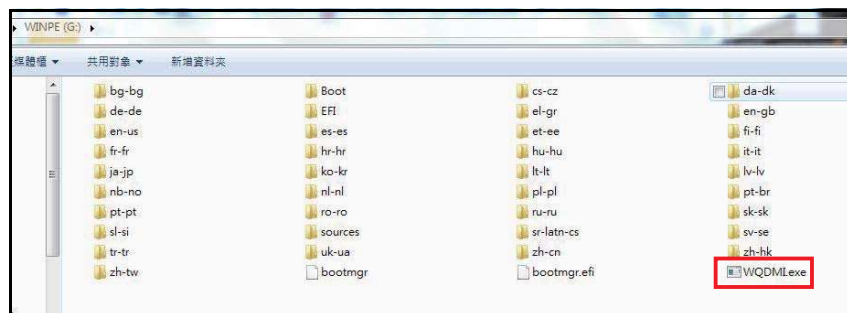


Figure 2-20. Copy the File

4. Insert the WINPE x64 USB Flash Disk and press the **Power** button to turn on the system.
5. Press **F2** during the POST screen to enter the BIOS Setup Menu.

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

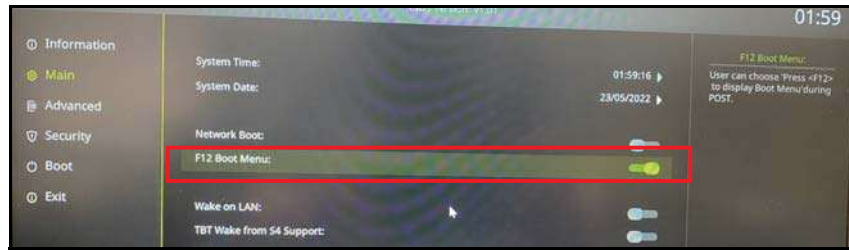


Figure 2-21. F12 Boot Menu Option

- Press **F10** and select "SAVE & EXIT" to save the settings and exit the BIOS Menu (Figure 2-22). The system will restart automatically.

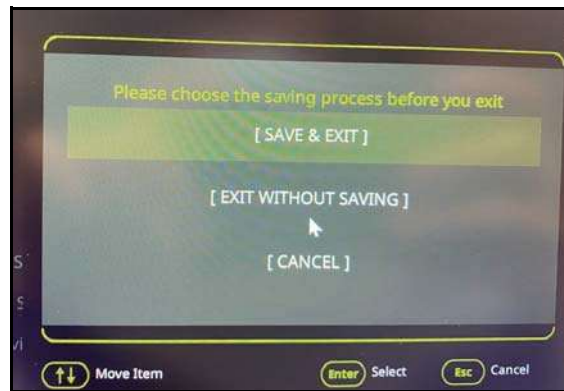


Figure 2-22. Save Configuration Changes and Exit

8. Press **F12** during the POST (power-on self-test) screen to enter the Boot Option Menu.
9. Select **"USB bootable device"** and press **Enter** to enter WINPE x64 mode.

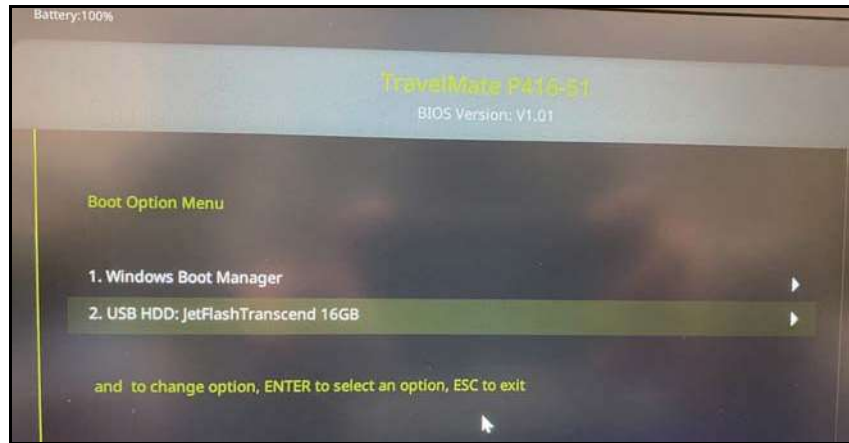


Figure 2-23. Boot Option Menu Option

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

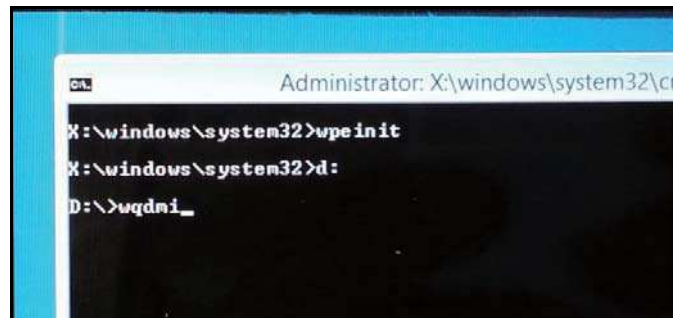


Figure 2-24. WINPE Mode

11. Type `wqdm` and press **Enter** (Figure 2-24). To execute a specific function, input the command and the associated parameter as shown in Figure 2-25.

```
D:\>wqdmx64.exe
=====
WQDMx64 - Quanta NB4 DMI tool for Windows x64
Version: v06   2018/11/22
Based on EEPROM 3.04 spec.
=====
WQDMx64 -Rp          -> Write Product Name: 32 characters
WQDMx64 -Wp [string] -> Write Product Name: 32 characters
WQDMx64 -Rslc       -> Read SLIC
WQDMx64 -Wslc [number] -> Write SLIC: 0-Disable, 1-Enable
WQDMx64 -Rrg       -> Read Shipping Region
WQDMx64 -Wrg [number] -> Write Shipping Region: 0-Worldwide, 1-China, 2-Indonesia, 3-US, 4-Egypt
WQDMx64 -Rmac      -> Read LAN MAC address
WQDMx64 -Wmac [string] -> Write LAN MAC address: 6 characters
WQDMx64 -Rmbsn     -> Read Mainboard Serial Number
WQDMx64 -Wmbsn [string] -> Write Mainboard Serial Number: 22 characters
WQDMx64 -Rfgsn    -> Read F/G Serial Number
WQDMx64 -Wfgsn [string] -> Write F/G Serial Number: 22 characters
WQDMx64 -Rasset   -> Read Asset Tag
WQDMx64 -Wasset [string] -> Write Asset Tag: 22 characters
WQDMx64 -Rm       -> Read Manufacture Name
WQDMx64 -Wm [number] -> Write Manufacture Name: 0-Acer, 1-Packard Bell, 2-Gateway, 3-eMachines
WQDMx64 -Ruuid    -> Read UUID
WQDMx64 -Wuuid   -> Write UUID by auto generate
WQDMx64 -Wuuid [string] -> Write UUID: 16 characters
WQDMx64 -Rmktm   -> Read Marketing Name
WQDMx64 -Wmktm [string] -> Write Marketing Name: 30 characters
```

Figure 2-25. DMI Tools Main Menu Screen

Read/Write Product Name

- Execute **WQDMI -rp** to read the product name.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -rp
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Product Name: 32 characters
EEPROM Data is :
Aspire A515-54G
```

Figure 2-26. Read Product Name

- Execute **WQDMI -wp [string]** to write the product name.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -wp "Aspire A515-54G"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Product Name: 32 characters
Input Data is:
Aspire A515-54G
EEPROM Data is :
Aspire A515-54G
```

Figure 2-27. Write Product Name

Enable/Disable SLIC (Software Licensing Internal Code)

- Execute **WQDMI -RSLIC** to read the SLIC.

```
D:\WQDMIx64_v06>WQDMI.exe -RSLIC
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read SLIC
EEPROM Data is :
1 - SLIC Exist
```

Figure 2-28. Read SLIC

Table 2-5 describes the SLIC mapping parameters.

Table 2-6. 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
Windows 10 Standard	Disable
Windows 10 Pro	Enable
Windows 10 with family	Disable

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

```
D:\WQDMIx64_v06>WQDMI.exe -WSLIC 0
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write SLIC: 0-Disable, 1-Enable
Input Data is:
0 - SLIC Remove
EEPROM Data is :
0 - SLIC Remove
```

Figure 2-29. Disable SLIC

- Execute **WQDMI -WSLIC 1** to enable or restore the SLIC (for Windows 7/XP and Windows 8/10 Professional OS).

```
D:\WQDMIx64_v06>WQDMI.exe -WSLIC 1
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write SLIC: 0-Disable, 1-Enable
Input Data is:
1 - SLIC Exist
EEPROM Data is :
1 - SLIC Exist
```

Figure 2-30. Enable SLIC

Read/Write Shipping Region

- Execute **WQDMI -rrg** to read the shipping region.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -rrg
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read Shipping Region
EEPROM Data is :
0 - Ship to WorldWide
```

Figure 2-31. Read Shipping Region

- Execute **WQDMI -wrg [STRING]** to write the shipping region.
0-Worldwide, 1-China, 2-Indonesia, 3-US, 4-Egypt

```
E:\WQDMIx64_v06>
E:\WQDMIx64_v06>WQDMIx64_v06.exe -wrg 0
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Shipping Region: 0-Worldwide, 1-China, 2-Indonesia, 3-US, 4-Egypt
Input Data is :
0 - Ship to WorldWide
EEPROM Data is :
0 - Ship to WorldWide
```

Figure 2-32. Write Shipping Region

Read/Write LAN MAC Address

- Execute **WQDMI -rmac** to read the LAN MAC address.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -rmac
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read LAN MAC address

EEPROM Data is :
D8C497D614DC
```

Figure 2-33. Read LAN MAC Address

- Execute **WQDMI -wmac [STRING]** to write the LAN MAC address.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -wmac "D8C497D614DC"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write LAN MAC address: 6 characters

Input Data is:
D8C497D614DC

EEPROM Data is :
D8C497D614DC
```

Figure 2-34. Write LAN MAC Address

Read/Write Mainboard Serial Number

- Execute **WQDMI -RMBSN** to read the mainboard serial number.

```
D:\WQDMIx64_v06>WQDMI.exe -RMBSN
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read Mainboard Serial Number
EEPROM Data is :
NBH9811004903073237600
```

Figure 2-35. Read Mainboard Serial Number

- Execute **WQDMI -WMBSN [STRING]** to write the mainboard serial number.

```
D:\WQDMIx64_v06>WQDMI.exe -WMBSN "NBH9811004903073237600"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Mainboard Serial Number: 22 characters
Input Data is:
NBH9811004903073237600
EEPROM Data is :
NBH9811004903073237600
```

Figure 2-36. Write Mainboard Serial Number

Read/Write F/G Serial Number

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

```
D:\WQDMIx64_v06>WQDMI.exe -RFGSN
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read F/G Serial Number
EEPROM Data is :
N8ZDDL005903073237600
```

Figure 2-37. Read F/G Serial Number

- Execute **WQDMI -WFGSN [STRING]** to write the F/G serial number.

```
D:\WQDMIx64_v06>WQDMI.exe -WFGSN "N8ZDDL005903073237600"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write F/G Serial Number: 22 characters
Input Data is:
N8ZDDL005903073237600
EEPROM Data is :
N8ZDDL005903073237600
```

Figure 2-38. Write F/G Serial Number

Read/Write Asset Tag

- Execute **WQDMI -RASSET** to read the asset tag.

```
D:\WQDMIx64_v06>WQDMI.exe -RASSET
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read Asset Tag
EEPROM Data is :
1234567890123456789012
```

Figure 2-39. Read Asset Tag

- Execute **WQDMI -WASSET [STRING]** to write the asset tag.

```
D:\WQDMIx64_v06>WQDMI.exe -WASSET "1234567890123456789012"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Asset Tag: 22 characters
Input Data is:
1234567890123456789012
EEPROM Data is :
1234567890123456789012
```

Figure 2-40. Write Asset Tag

Read/Write Manufacture Name

- Execute **WQDMI -RM** to read the manufacture name.

```
D:\WQDMIx64_v06>WQDMI.exe -RM
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read Manufacture Name
EEPROM Data is :
0 - Acer
```

Figure 2-41. Read Manufacture Name

- Execute **WQDMI -WM [STRING]** to write the manufacture name.
0-Acer, 1-Packard Bell, 2-Gateway, 3-eMachines

```
D:\WQDMIx64_v06>WQDMI.exe -WM 0
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Manufacture Name: 0-Acer, 1-Packard Bell, 2-Gateway, 3-eMachines
Input Data is:
0 - Acer
EEPROM Data is :
0 - Acer
```

Figure 2-42. Write Manufacture Name

Read/Write UUID

- Execute **WQDMI -RUUID** to read the UUID.

```
D:\WQDMIx64_v06>WQDMI.exe -RUUID
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read UUID
EEPROM Data is :
26935408435C4E7AB2D6000FF004166
```

Figure 2-43. Read UUID

- Execute **WQDMI -WUUID [STRING]** to write the UUID.

```
D:\WQDMIx64_v06>WQDMI.exe -WUUID "A76BCC52B2EC9F111041FFFFFFFFFFFF"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write UUID: 16 characters
Input Data is:
A76BCC52B2EC9F111041FFFFFFFFFFFF
EEPROM Data is :
A76BCC52B2EC9F111041FFFFFFFFFFFF
```

Figure 2-44. Write UUID

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

```
D:\WQDMIx64_v06>WQDMI.exe -GWUUID
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write UUID by auto generate
Input Data is:
A76BCC52B2EC9F111041FFFFFFFFFFFF
EEPROM Data is :
A76BCC52B2EC9F111041FFFFFFFFFFFF
```

Figure 2-45. Write UUID by Auto-generate

Read/Write Marketing Name

- Execute `WQDMI -rmktn` to read the marketing name.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -rmktn
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Read Marketing Name
EEPROM Data is :
Aspire 5
```

Figure 2-46. Read Marketing Name

- Execute `WQDMI -wmktn [STRING]` to write the marketing name.

```
E:\WQDMIx64_v06>WQDMIx64_v06.exe -wmktn "Aspire 5"
=====
WQDMIx64 - Quanta NB4 DMI tool for Windows x64
Version: v06 2018/11/22
Based on EEPROM 3.04 spec.
=====
Write Marketing Name: 30 characters
Input Data is:
Aspire 5
EEPROM Data is :
Aspire 5
```

Figure 2-47. Write Marketing Name

Save Data to EEPROM

- Click **Shift** + "Shut down" at the same time to turn off the system.

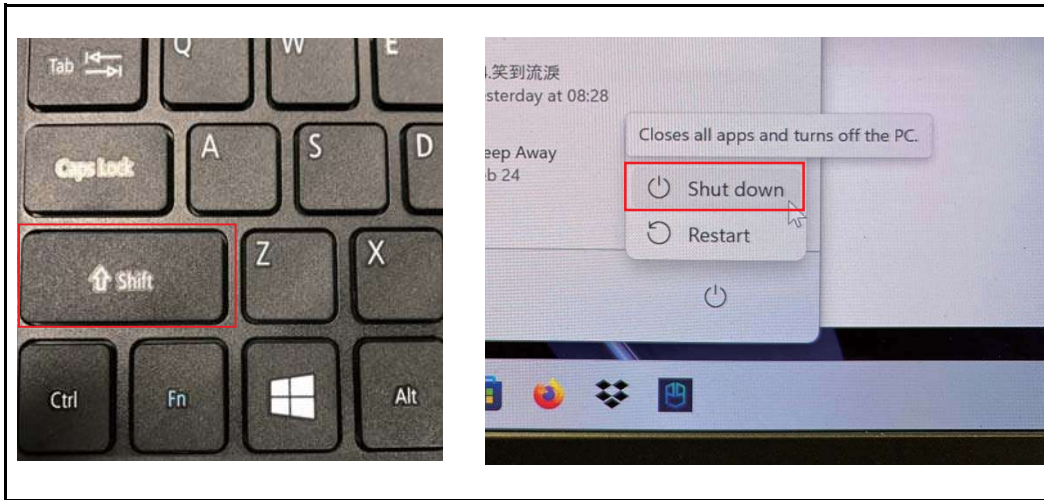


Figure 2-48. Shutdown

⇒ **NOTE:**

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

⚠ **CAUTION:**

Do not remove the AC/DC 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.
2. Copy the *Z8L.fd* file to the USB flash disk root directory.
3. Power off the system and ensure the AC adapter is plugged into the system.
4. Insert the USB Flash Disk into the system.
5. Press and hold the ***Fn + Esc*** keys, and then press the ***Power*** button.



Figure 2-49. Keyboard Keys Location

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



Figure 2-50. Crisis Recovery Proceeding

7. The system will enter crisis mode to flash the BIOS. The process takes about 3-5 minutes.

- 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 2-51. Crisis Recovery Finished

- When the Acer logo appears on the screen, press **F2** during the POST (power-on self-test) screen to enter the BIOS. Ensure that the System BIOS Version is the same as the crisis BIOS version.

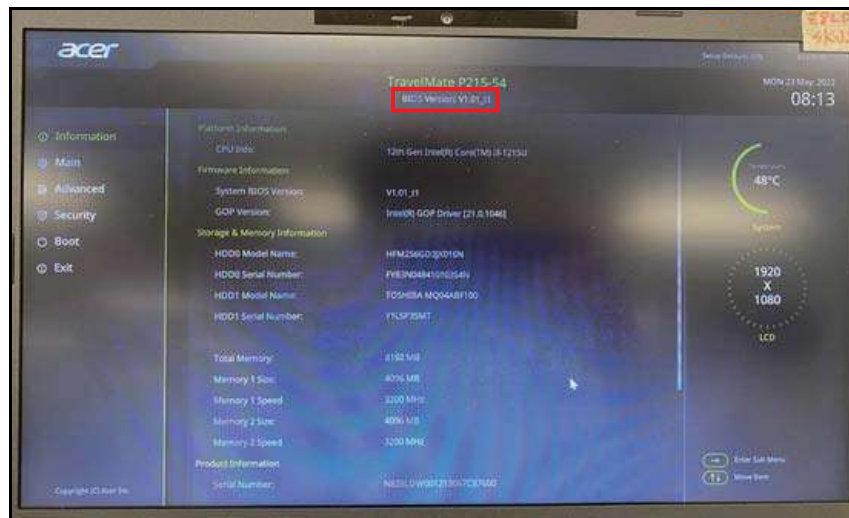


Figure 2-52. BIOS Version

CHAPTER 3

Machine Maintenance Procedures

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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 the 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 microSD card from the microSD card slot (B) (Figure 3-2).



Figure 3-2. microSD 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 heatsink, remove first the base cover and battery in that order.

Table 3-1. Main Screw List

Size	Quantity	Acer Part No.
SCREW M2.0*2.0-I(NI,NYLOK)STL	2	86.VSYN7.002
SCREW M2*3.5-IBNINYLOKD4.5	11	86.VVRN7.001
SCREW M2.5*2.5-I(BNI)(NYLOK)T=0.6	8	86.SHXN7.003
SCREW M3*0.5+3.5I	4	86.TDY07.003
SCREW M2.0*2.0- I(BNI)(NY)IRON	12	86.G55N7.001
SCREW W/WASHER KIT	13	86.VLLN7.003
SCREW M2.5*5.0-I(BNI)(NYLOK) IRON	6	86.HX4N7.001

Main Unit Disassembly Process

Main Unit Disassembly Flowchart

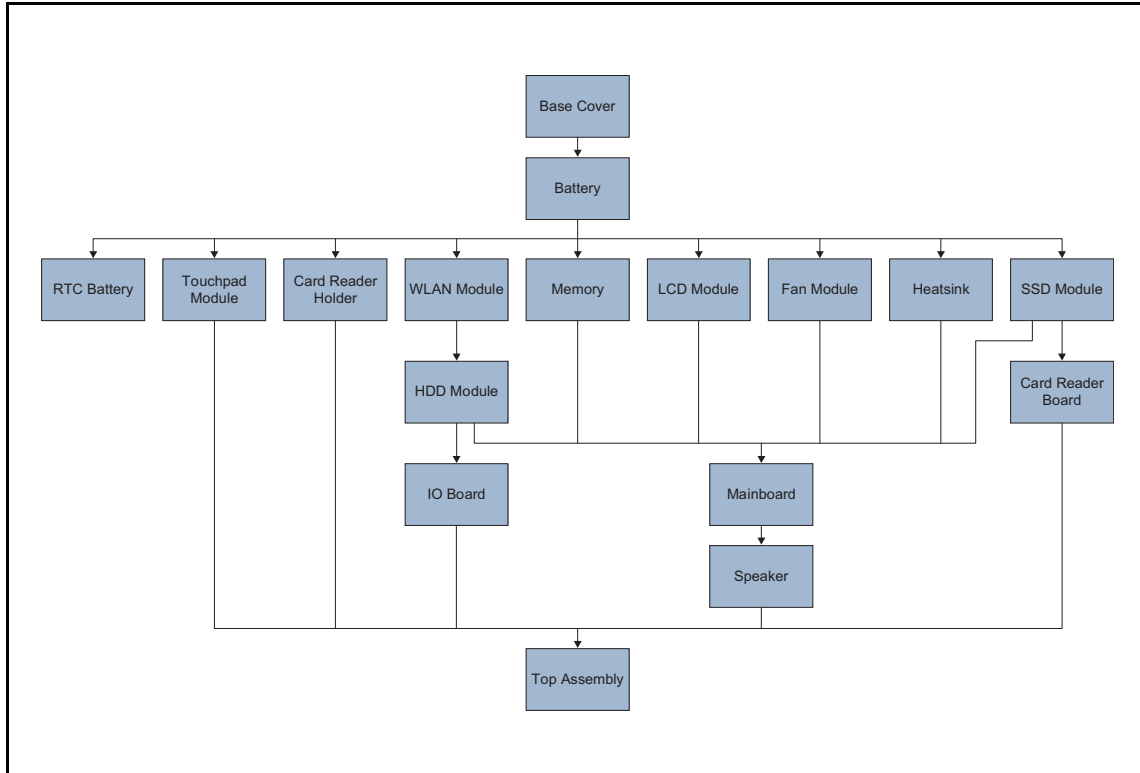


Figure 3-3. Main Unit Disassembly Flowchart

Table 3-2. Main Unit Screw List

Step	Size	Quantity	Acer Part No.
Base Cover Removal	M2.5*7.0	13	86.VLLN7.003
Touchpad Module Removal	M2.0*2.0	3	86.G55N7.001
Smart Card Reader Holder Removal	M2.0*2.0	3	86.G55N7.001
WLAN Module Removal	M2.0*2.0	1	86.VSYN7.002
LCD Module Removal	M2.5*5.0	6	86.HX4N7.001
Fan Removal	M2.0*3.5	2	86.VVRN7.001
Heatsink Removal	M2.0*3.5	4	86.VVRN7.001
SSD Module Removal	M2.0*2.0	1	86.VSYN7.002
HDD Module Removal	M2.0*3.5	5	86.VVRN7.001
	M3.0*3.5	4	86.TDY07.003
Mainboard Removal	M2.0*2.0	2	86.G55N7.001

Step	Size	Quantity	Acer Part No.
Card Reader Board Removal	M2.0*2.0	3	86.G55N7.001
IO Board Removal	M2.0*2.0	1	86.G55N7.001

⇒ **NOTE:**

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

Base Cover Removal

1. Remove thirteen (13) screws from the base cover ([Figure 3-4](#)).



Figure 3-4. Base Cover Removal

2. Carefully pry up the base cover starting from the upper side to release the latches ([Figure 3-5](#)).



Figure 3-5. Base Cover Removal

3. Continue prying the bottom side to release the latches (Figure 3-6).
4. Carefully lift the base cover to release the remaining latches. Then remove the base cover from the system (Figure 3-6).

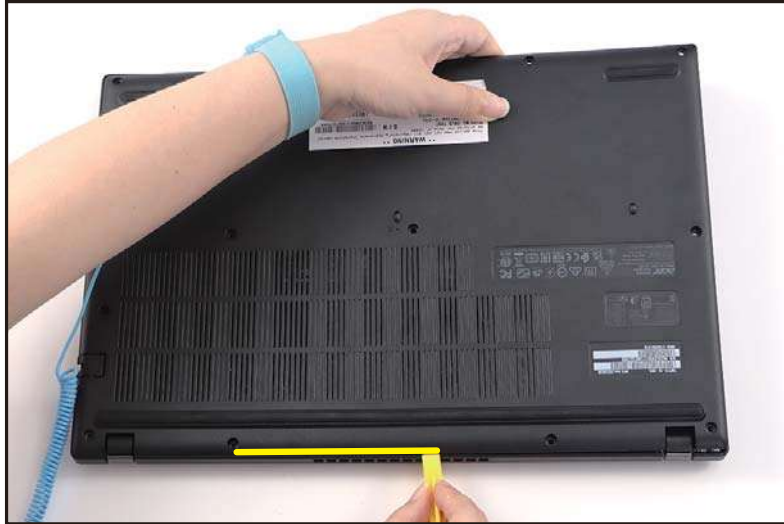



Figure 3-6. Base Cover Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0+15%KGF/CM	13	

Battery Pack Removal

Prerequisite:

Base Cover Removal

1. Find the battery pack (A) in the system (Figure 3-7).
2. Detach the tape (B) securing the battery cable connection (Figure 3-7).
3. Detach the transparent mylar (C) securing the cables (Figure 3-7).

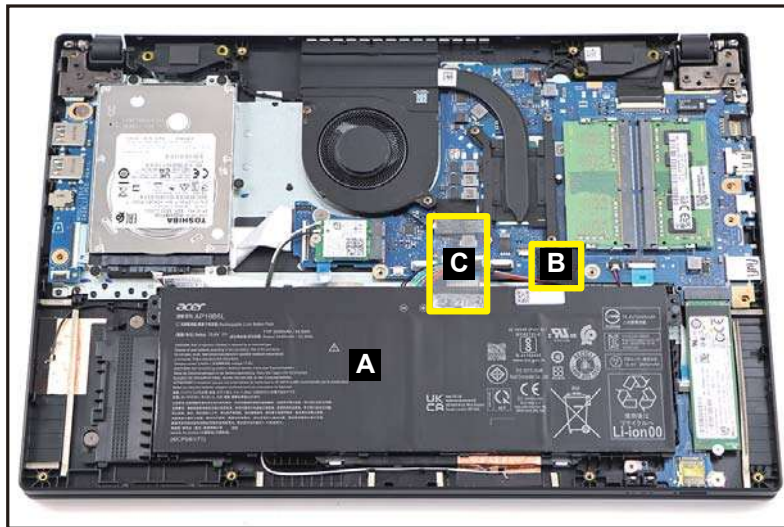


Figure 3-7. Battery Pack Removal

4. Disconnect the battery cable from the mainboard connector (D) (Figure 3-8).



Figure 3-8. Battery Pack Removal

5. Remove the battery pack from the system (Figure 3-9).

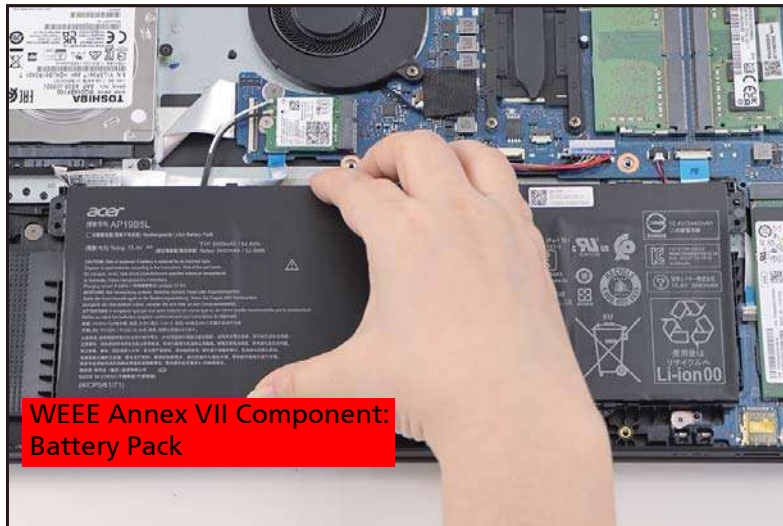


Figure 3-9. Battery Pack Removal

+ **IMPORTANT:**

Follow local regulations for battery disposal.

RTC Battery Removal

Prerequisite:

Battery Pack Removal

1. Disconnect the RTC battery cable from the mainboard connector (A) (Figure 3-10).
2. Unroute the RTC battery cable from the cable guides as shown in Figure 3-10.
3. Using plastic tweezers, carefully pry to detach the adhesive tape underneath the RTC battery (B). Then remove the RTC battery (Figure 3-10).

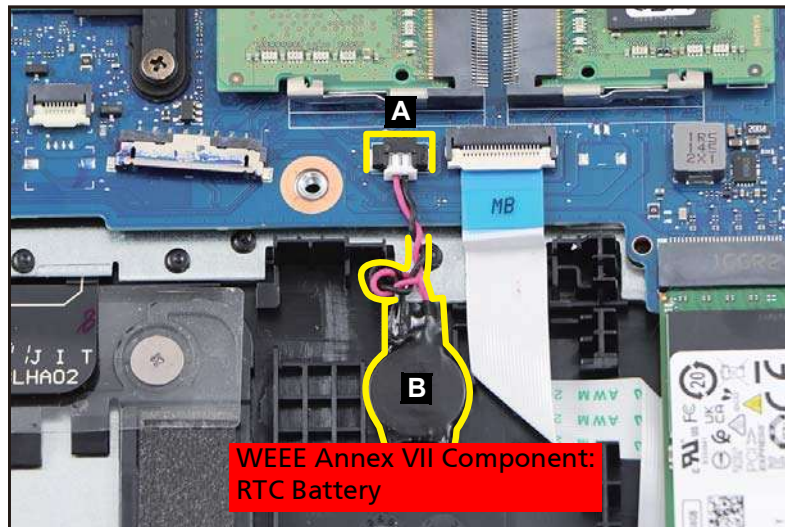


Figure 3-10. RTC Battery Removal

+ **IMPORTANT:**

Follow local regulations for battery disposal.

Touchpad Module Removal

Prerequisite:

Battery Pack Removal

1. Disconnect one end of the touchpad FFC from the touchpad module connector (A) (Figure 3-11).
2. Disconnect the other end of the touchpad FFC from the mainboard connector (B) (Figure 3-11).

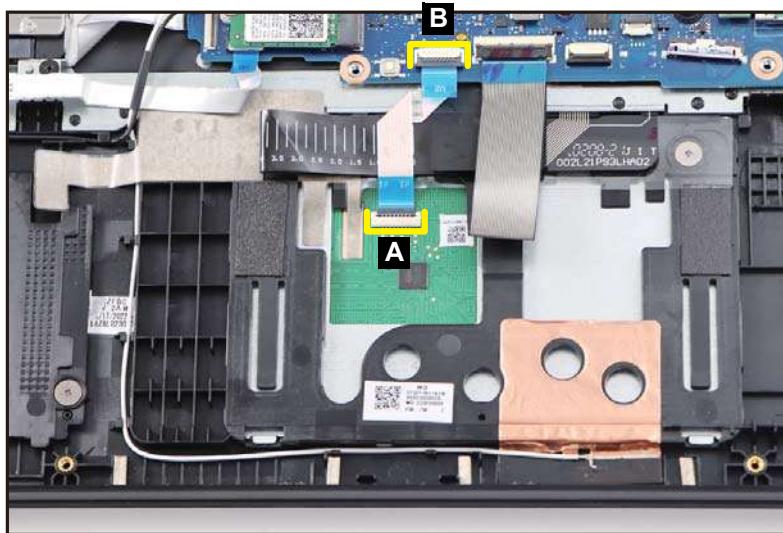


Figure 3-11. Touchpad Module Removal

⚠ CAUTION:

Touchpad FFC (Flexible Flat Circuit) can be damaged if removed while the touchpad module and mainboard connectors are locked.

3. Lift slightly the mylar. Then detach the conductive tape (C) from the touchpad module and top assembly (Figure 3-12).

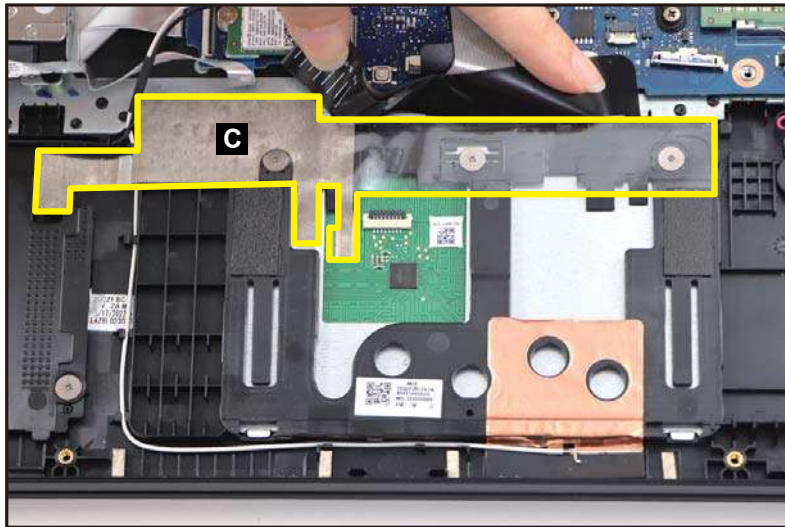


Figure 3-12. Touchpad Module Removal

4. Remove three (3) screws securing the touchpad module (Figure 3-13).

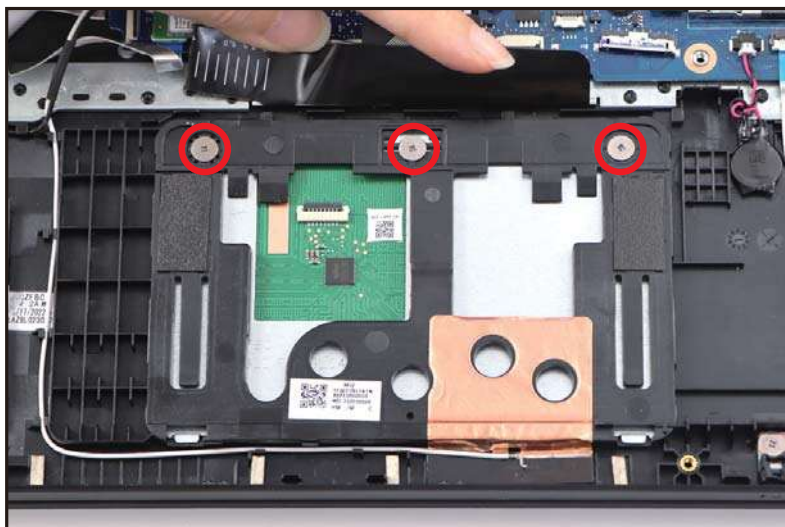


Figure 3-13. Touchpad Module Removal

5. Using the screwdriver, push the guide pins (D) firmly to release them from the top assembly (Figure 3-14).
6. Slide the touchpad module slightly to disengage it from the bottom latches (E), and then remove the touchpad module (F) from the top assembly (Figure 3-14).

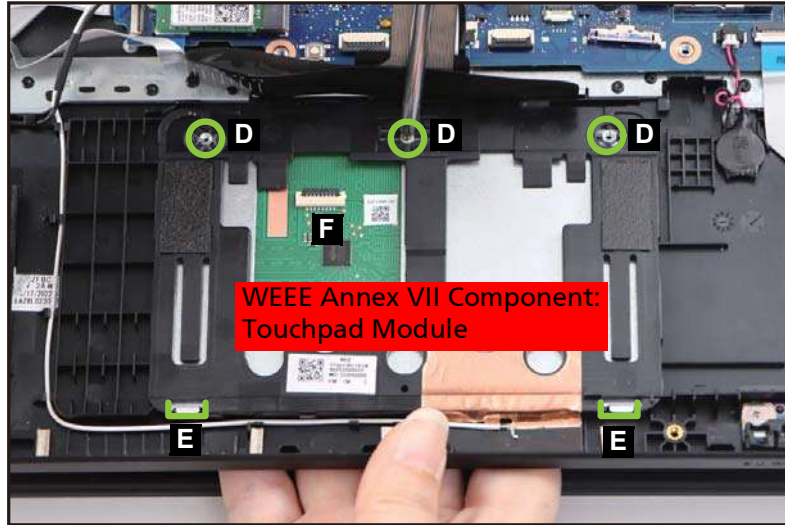



Figure 3-14. Touchpad Module Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	3	

Smart Card Reader Holder Removal

Prerequisite:

Battery Pack Removal

1. Remove three (3) screws securing the smart card reader holder ([Figure 3-15](#)).

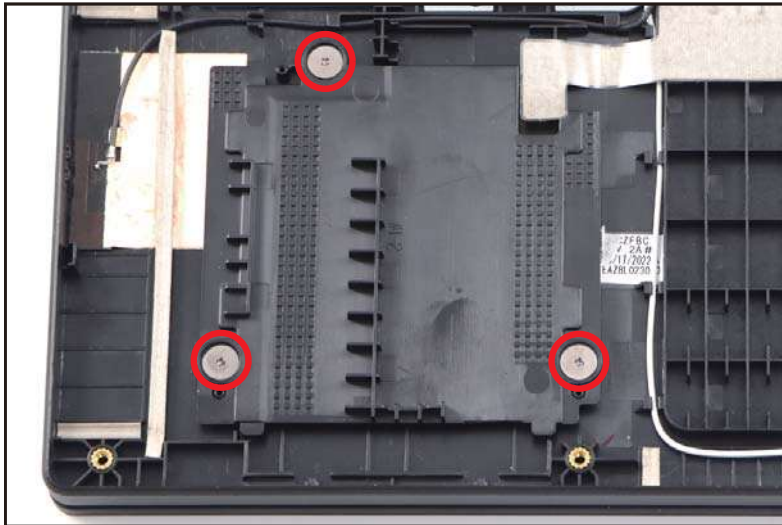


Figure 3-15. Smart Card Reader Holder Removal

2. Release the card reader holder (A) from the guide pins (B) and the upper tab slot highlighted by the green line as shown in [Figure 3-16](#). Then remove the holder.

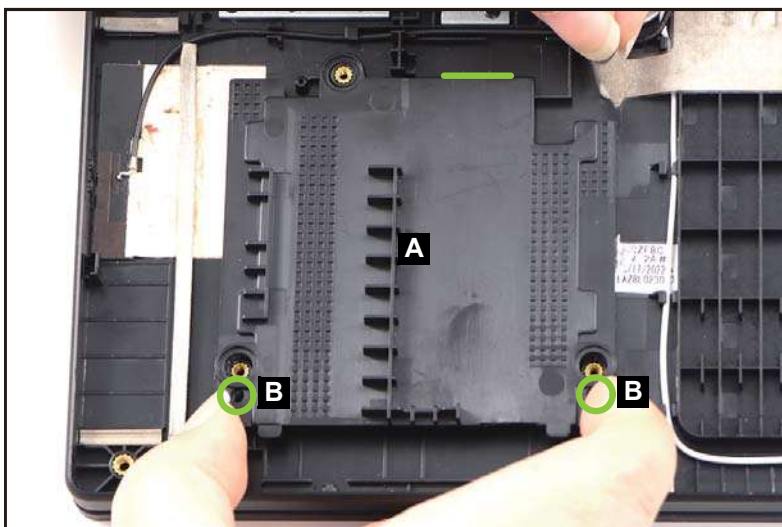



Figure 3-16. Smart Card Reader Holder Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	3	

WLAN Module Removal

Prerequisite:

[Battery Pack Removal](#)

1. Find the WLAN module (A) on the top assembly ([Figure 3-17](#)).



Figure 3-17. WLAN Module Location

2. Disconnect the WLAN antennas cables from the WLAN module connectors (B) ([Figure 3-18](#)).
3. Remove one (1) screw securing the WLAN module ([Figure 3-18](#)).




Figure 3-18. WLAN Module Removal

4. Disconnect the WLAN module from the mainboard connector (C) (Figure 3-19). Then remove the WLAN module.



Figure 3-19. WLAN Module Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	1	

DIMM Modules Removal

Prerequisite:

Battery Pack Removal

1. Push the DIMM module clips (A) outwards (Figure 3-20).

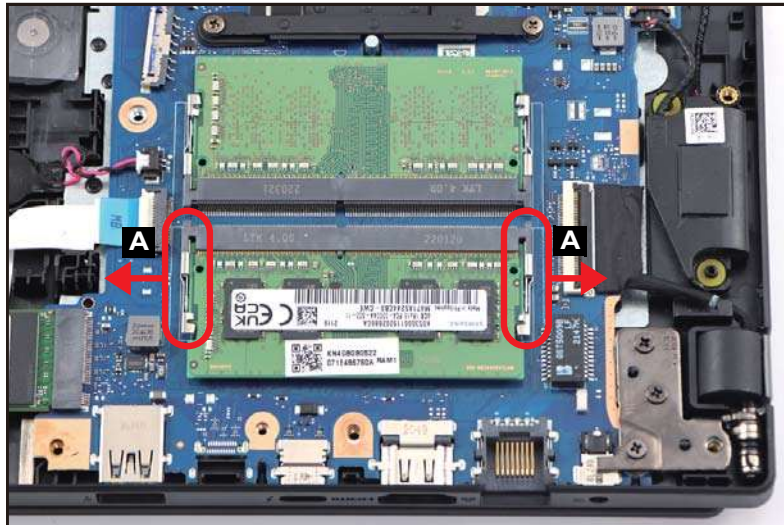


Figure 3-20. DIMM Modules Removal

2. Disconnect the DIMM module (B) from the mainboard connector (C) (Figure 3-21). Then remove the DIMM module.



Figure 3-21. DIMM Modules Removal

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

LCD Module Removal

Prerequisite:

[Battery Pack Removal](#)

⇒ NOTE:

The LCD cable includes the LCD panel cable and the camera cable.

1. Disconnect the LCD cable from the mainboard connector (A) ([Figure 3-22](#)).
2. Unroute the LCD cable from the cable guides as shown in [Figure 3-22](#).

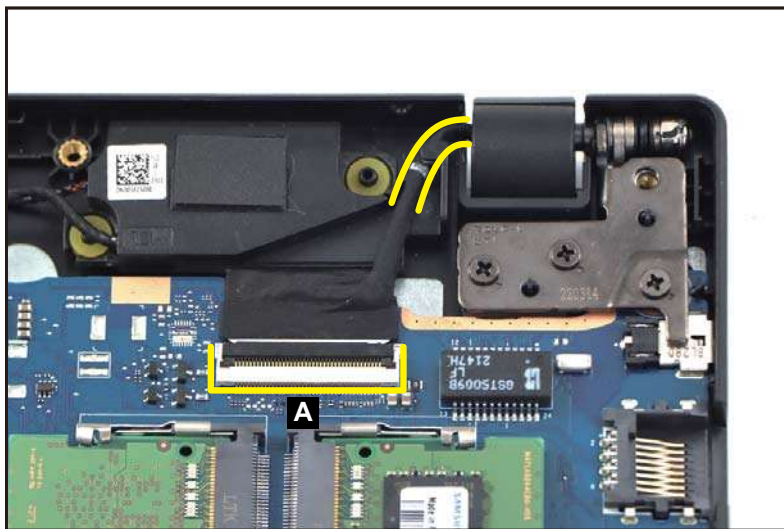


Figure 3-22. LCD Module Removal

3. Remove six (6) screws securing the LCD hinges (Figure 3-23).



Figure 3-23. LCD Module Removal

4. Lift the top assembly until it is fully open (Figure 3-24).

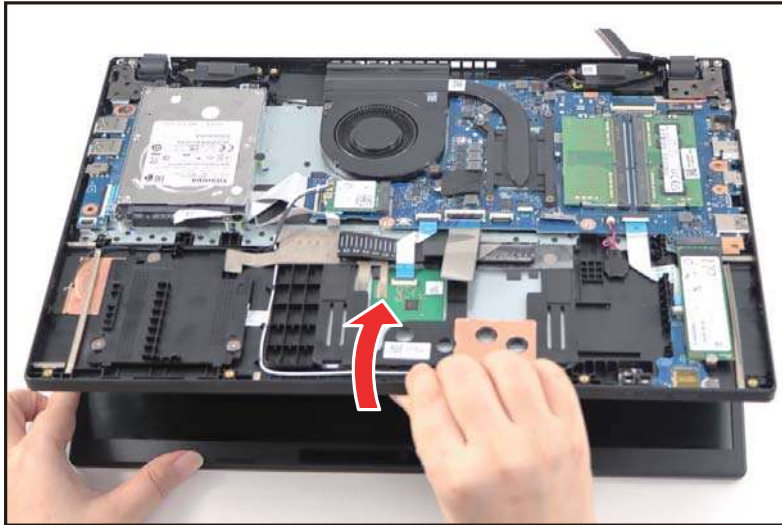


Figure 3-24. LCD Module Removal

5. Close the top assembly and lift both LCD hinges until they are fully extended (Figure 3-25).



Figure 3-25. LCD Module Removal

6. Open the top assembly again, and then push it backwards to remove the top assembly away from the LCD module (Figure 3-26).

⚠ CAUTION:

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

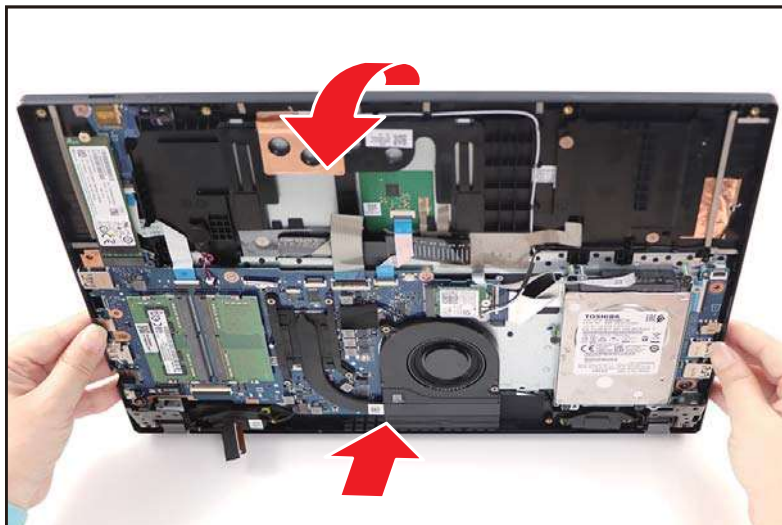



Figure 3-26. LCD Module Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*5.0	3.0±15%KGF/CM	6	

Fan Removal

Prerequisite:

[Battery Pack Removal](#)

1. Find the fan (A) on the top assembly. Then detach the tape (B) securing the fan cable (Figure 3-27).

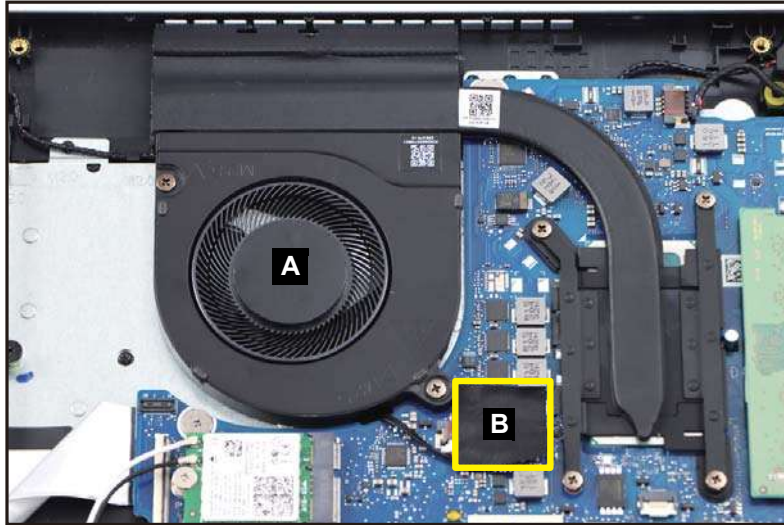


Figure 3-27. Fan Removal

2. Disconnect the fan cable from the mainboard connector (C) (Figure 3-28).
3. Remove two (2) screws securing the fan in place (Figure 3-28).

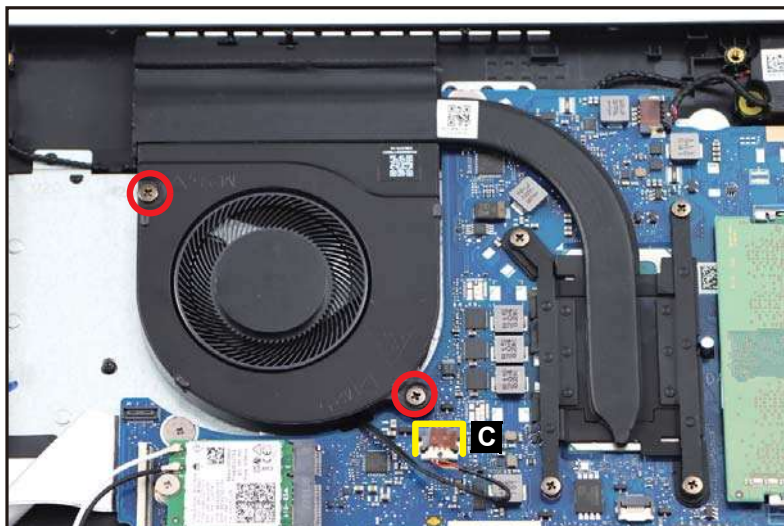



Figure 3-28. Fan Removal

4. Remove the fan from the top assembly (Figure 3-29).



Figure 3-29. Fan Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*3.5	2.0+10%KGF/CM	2	

Heatsink Removal

Prerequisite:

[Battery Pack Removal](#)

1. Remove four (4) screws securing the CPU heatsink in place ([Figure 3-30](#)).

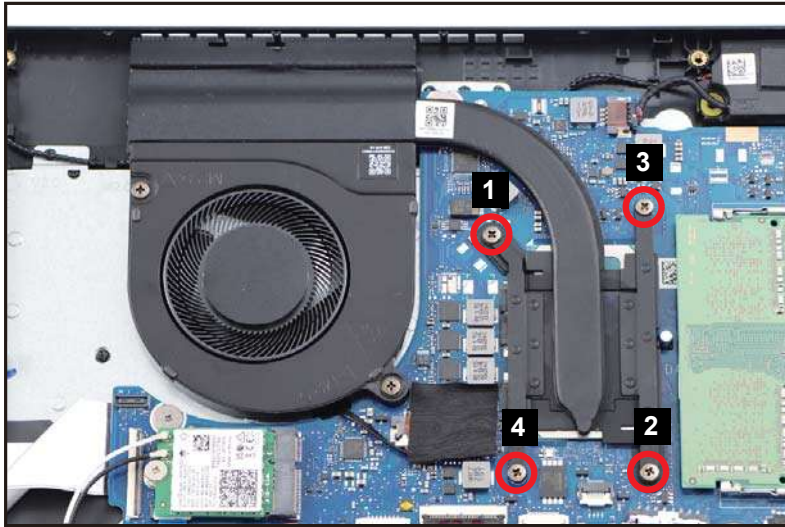


Figure 3-30. Heatsink Removal

2. Lift to release the heatsink (A) from the upper tabs (B). Then remove the heatsink from the mainboard and top assembly ([Figure 3-31](#)).

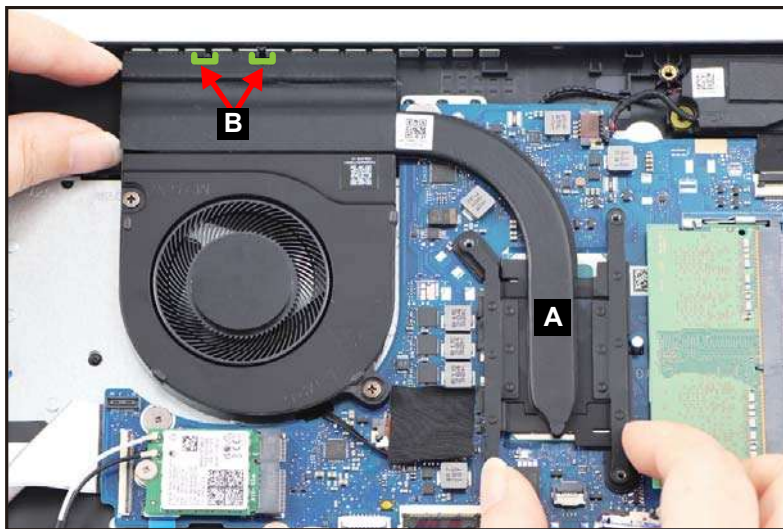



Figure 3-31. Heatsink Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*3.5	2.0+10%KGF/CM	4	

SSD Module Removal

Prerequisite:

Battery Pack Removal

1. Remove one (1) screw securing the SSD module (Figure 3-32).




Figure 3-32. SSD Module Removal

2. Disconnect the SSD module (A) from the mainboard connector (B) (Figure 3-33). Then remove the SSD module.



Figure 3-33. SSD Module Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	1	

HDD Module Removal

Prerequisite:

[WLAN Module Removal](#)

1. Disconnect the HDD cable from the mainboard connector (A) ([Figure 3-34](#)).
2. Remove five (5) screws (B) securing the HDD bracket ([Figure 3-34](#)).

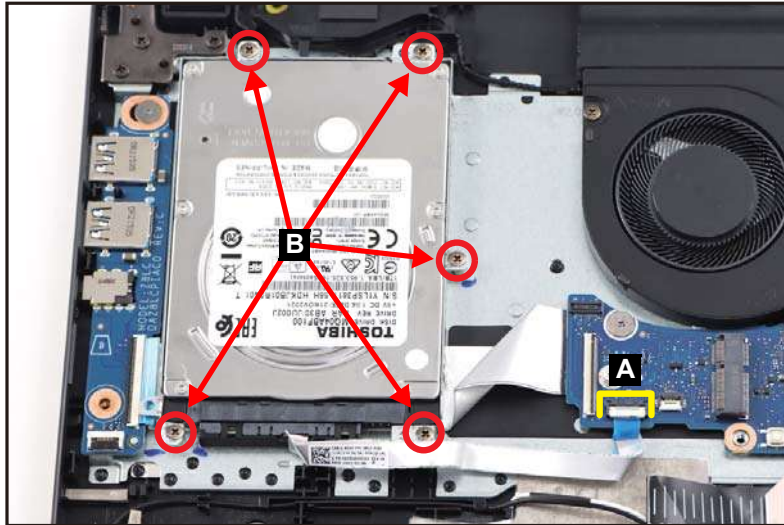


Figure 3-34. HDD Module Removal

3. Remove the HDD module assembly (C) from its compartment ([Figure 3-35](#)).



Figure 3-35. HDD Module Removal

4. Disconnect the HDD cable from the HDD module connector (D) (Figure 3-36).

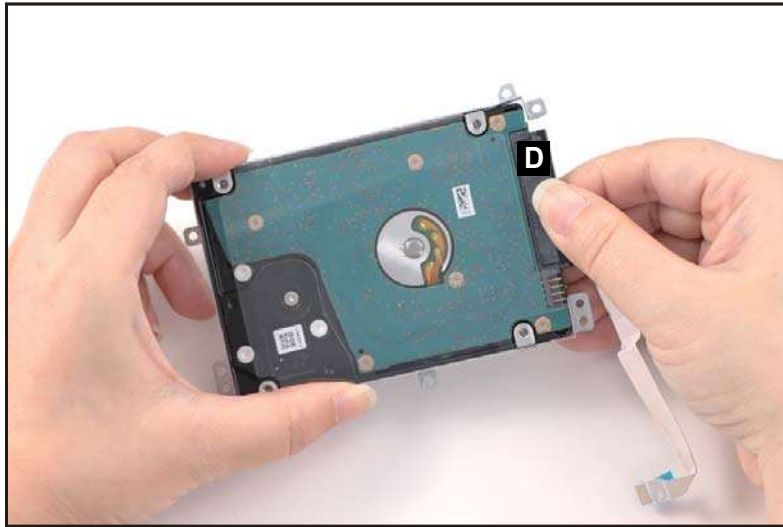


Figure 3-36. HDD Module Removal

5. Remove four (4) screws (E) from the HDD bracket (Figure 3-37).

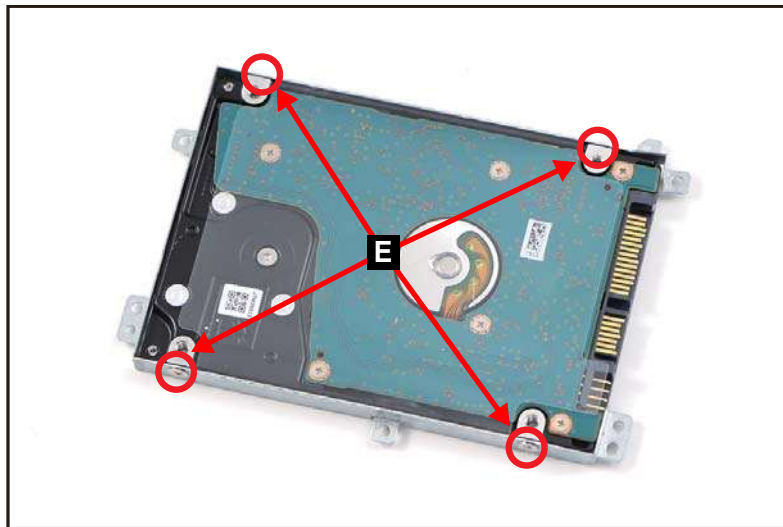




Figure 3-37. HDD Module Removal

6. Remove the HDD module from its bracket.

ID	Size	Torque	Quantity	Screw Type
B	M2.0*3.5	2.0+10%KGF/CM	5	
E	M3.0*3.5	3.0±15%KGF/CM	4	

Mainboard Removal

Prerequisite:

[DIMM Modules Removal](#), [LCD Module Removal](#), [Fan Removal](#), [Heatsink Removal](#), [SSD Module Removal](#), and [HDD Module Removal](#)

1. Disconnect the DB FFC from the IO board connector (A) ([Figure 3-38](#)).
2. Disconnect the touchpad FFC from the mainboard connector (B) ([Figure 3-38](#)).
3. Disconnect the keyboard FPC from the mainboard connector (C) ([Figure 3-38](#)).
4. Disconnect the keyboard backlight FPC from the mainboard connector (D) ([Figure 3-38](#)) (optional).
5. Pry to detach the adhesive tape underneath the RTC battery. Then remove the RTC battery (E) ([Figure 3-38](#)).
6. Disconnect the card reader board FFC from the mainboard connector (F) ([Figure 3-38](#)).
7. Disconnect the speaker cable from the mainboard connector (G) ([Figure 3-38](#)).

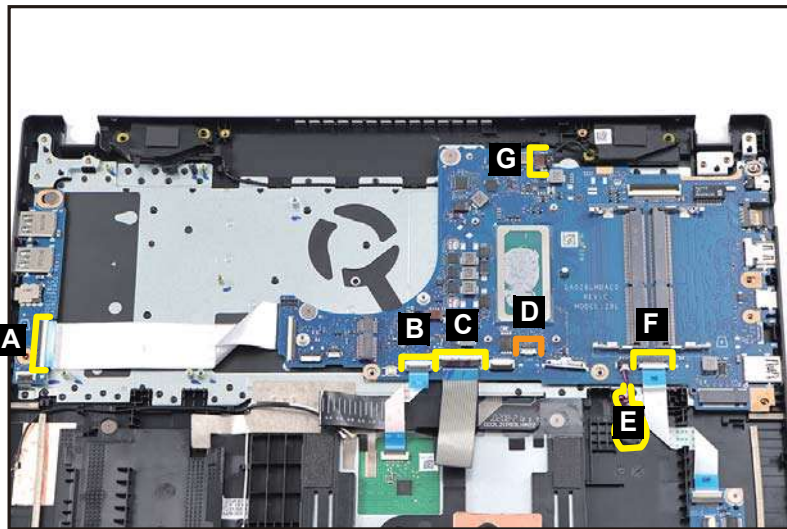


Figure 3-38. Mainboard Removal

⚠ CAUTION:

DB FFC (Flexible Flat Circuit), touchpad FFC, card reader board FFC, keyboard FPC (Flexible Printed Circuit), and keyboard backlight FPC, can be damaged if removed while the IO board and mainboard connectors are locked.

8. Remove two (2) screws securing the mainboard (Figure 3-39).

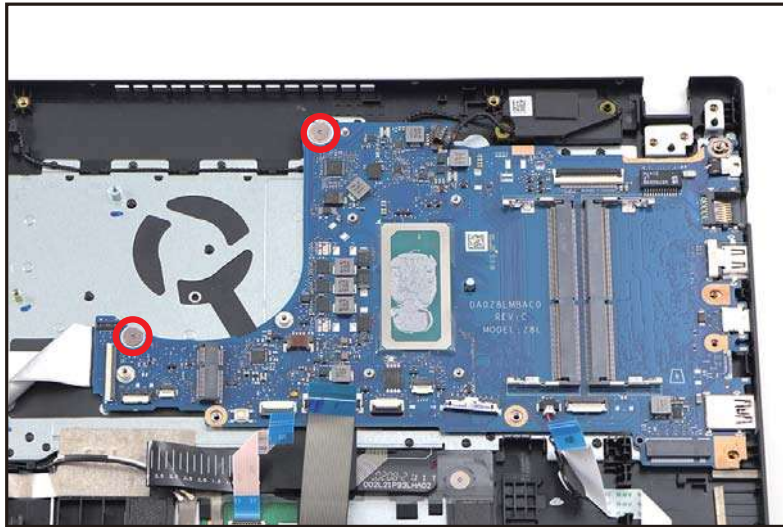


Figure 3-39. Mainboard Removal

9. Release the mainboard (H) from the I/O connectors slots and guide pins (I) on the top assembly (Figure 3-40). Then remove the mainboard.

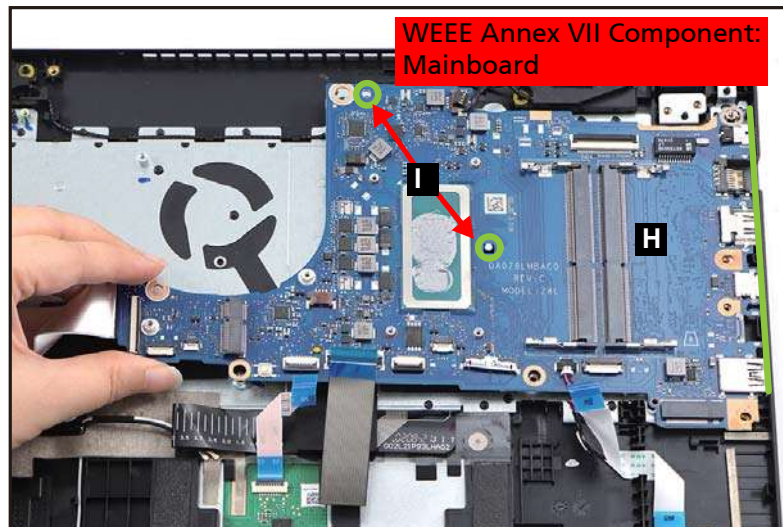


Figure 3-40. Mainboard Removal

10. Flip the mainboard and disconnect the DB FFC from the mainboard connector (J) (Figure 3-41). Then remove the FFC.

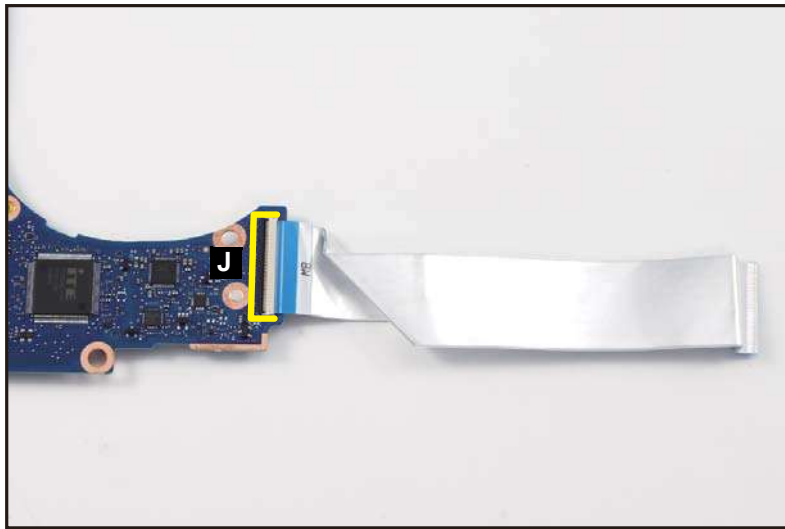


Figure 3-41. Mainboard Removal

⚠ CAUTION:

DB FFC (Flexible Flat Circuit) can be damaged if removed while the mainboard connector is locked.

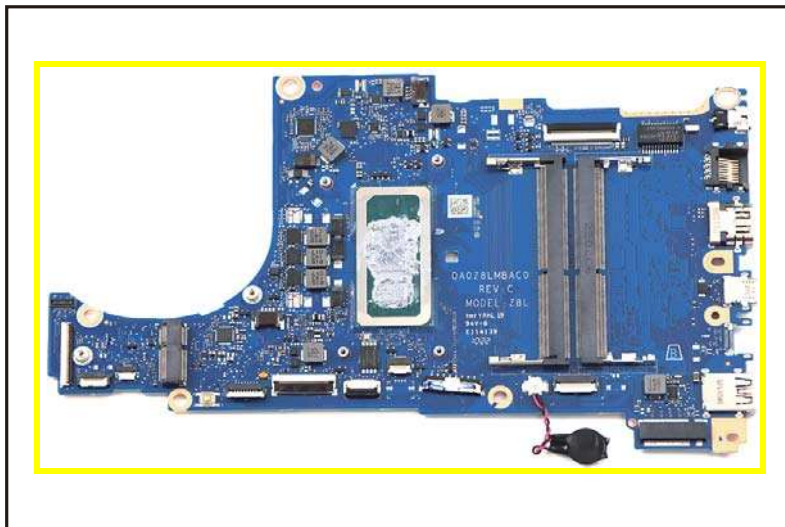



Figure 3-42. Mainboard

+ IMPORTANT:

Circuit boards >10 cm² have been highlighted with a yellow rectangle as shown in Figure 3-42. Remove the circuit board and follow local regulations for disposal.

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	2	

Card Reader Board Removal

Prerequisite:

[SSD Module Removal](#)

1. Detach the sponge (A) from the card reader board ([Figure 3-43](#)).

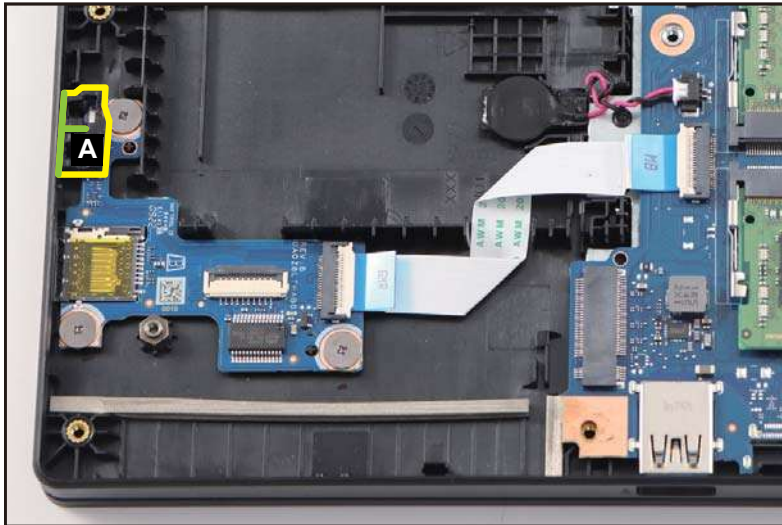


Figure 3-43. Card Reader Board Removal

2. Disconnect one end of the card reader board FFC from the card reader board connector (B). Then disconnect the other end of the FFC from the mainboard connector (C) ([Figure 3-44](#)).

3. Remove three (3) screws securing the card reader board (Figure 3-44).

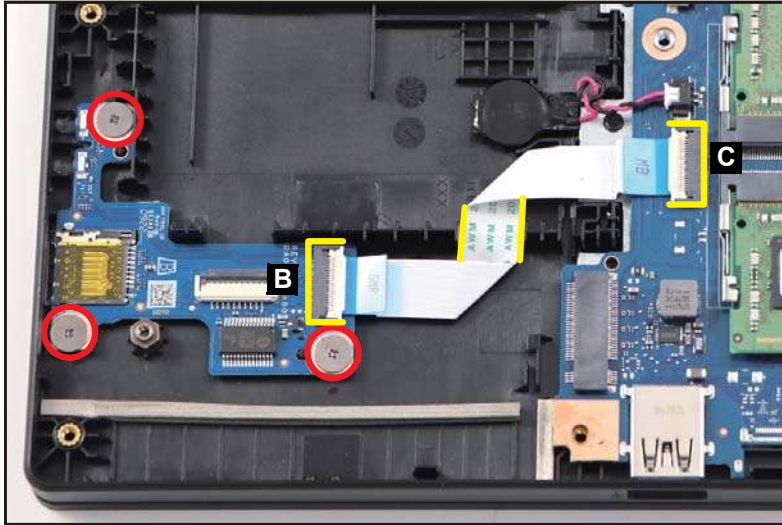


Figure 3-44. Card Reader Board Removal

⚠ CAUTION:

Card reader board FFC (Flexible Flat Circuit) can be damaged if removed while the card reader board and mainboard connectors are locked. When removing the card reader board FFC, carefully lift the portion of FFC (highlighted by the yellow lines) to detach it from the adhesive tape underneath as shown in Figure 3-44.

4. Release the card reader board (D) from the card reader slot and guide pins (E) (Figure 3-45). Then remove the board from the top assembly.

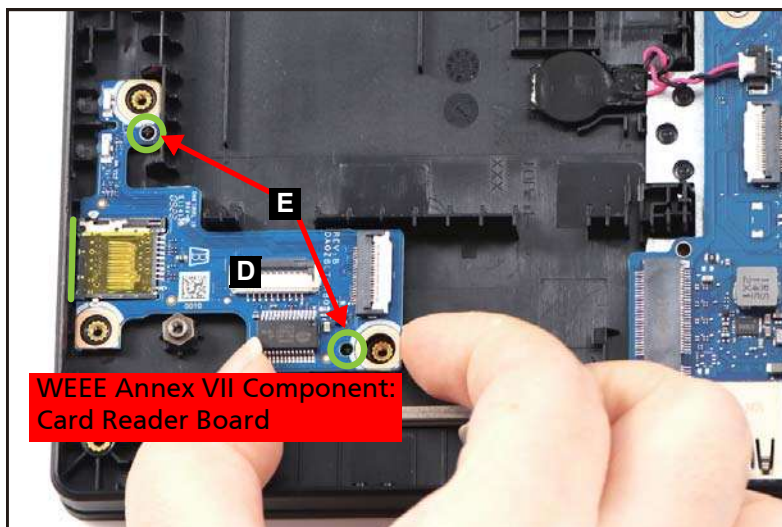



Figure 3-45. Card Reader Board Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	3	

IO Board Removal

Prerequisite:

[HDD Module Removal](#)

1. Disconnect the DB FFC from the IO board connector (A) ([Figure 3-46](#)).
2. Remove one (1) screw securing the IO board ([Figure 3-46](#)).

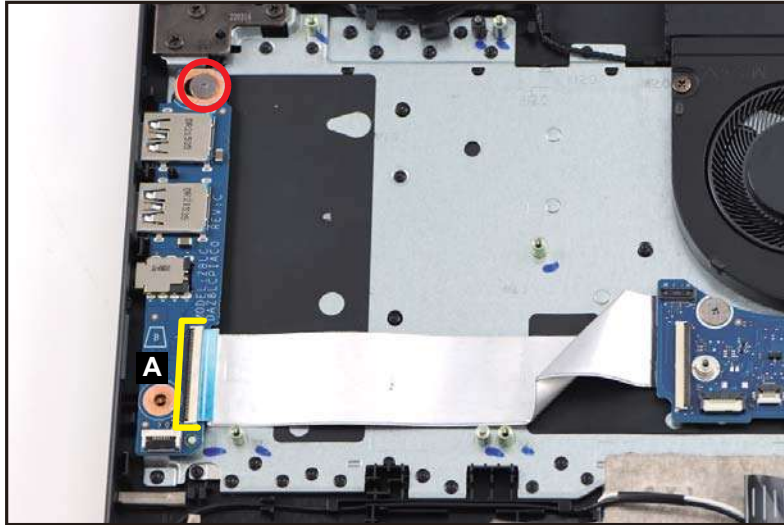


Figure 3-46. IO Board Removal

⚠ CAUTION:

DB FFC (Flexible Flat Circuit) can be damaged if removed while the IO board connector is locked.

3. Release the IO board (B) from the I/O connectors slots and guide pin (C) on the top assembly (Figure 3-47). Then remove the IO board.

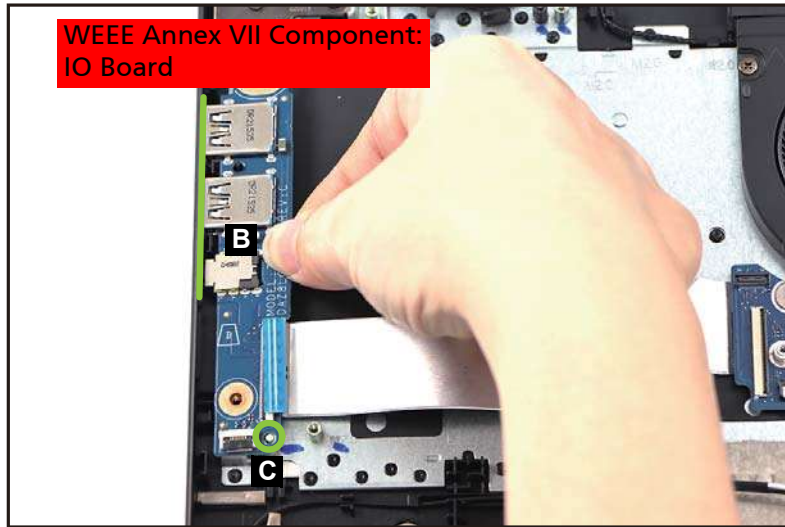



Figure 3-47. IO Board Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	1	

Speaker Module Removal

Prerequisite:

[Mainboard Removal](#)

1. Release the left speaker (A) from the guide pins (B). Then unrout the speaker cable from the cable guides as shown in [Figure 3-48](#).

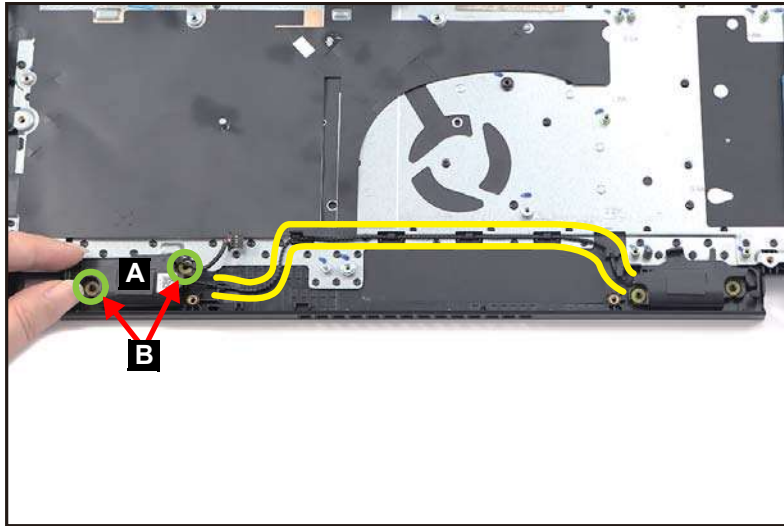


Figure 3-48. Speaker Module Removal

2. Release the right speaker (C) from the guide pins (D) ([Figure 3-49](#)). Then remove the speakers from the top assembly.

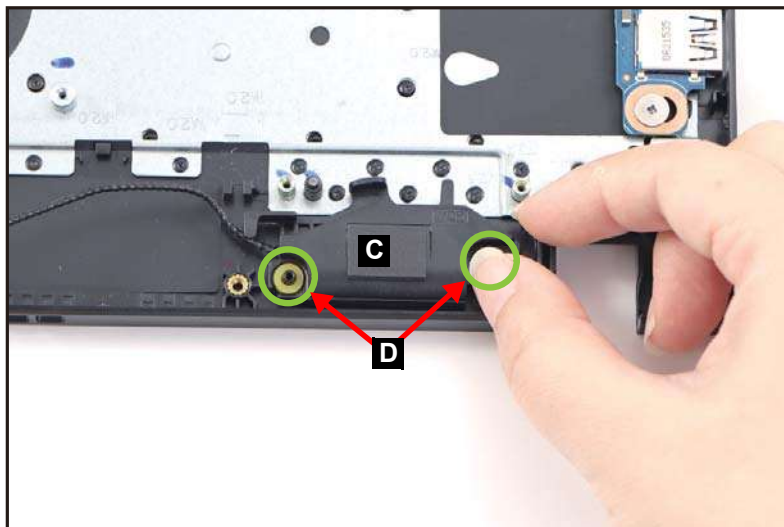


Figure 3-49. Speaker Module Removal

Top Assembly Removal

Prerequisite:

[Touchpad Module Removal](#), [Smart Card Reader Holder Removal](#), [Card Reader Board Removal](#), [IO Board Removal](#), and [Speaker Module Removal](#)

⇒ NOTE:

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



Figure 3-50. Top Assembly

LCD Module Disassembly Process

LCD Module Disassembly Flowchart

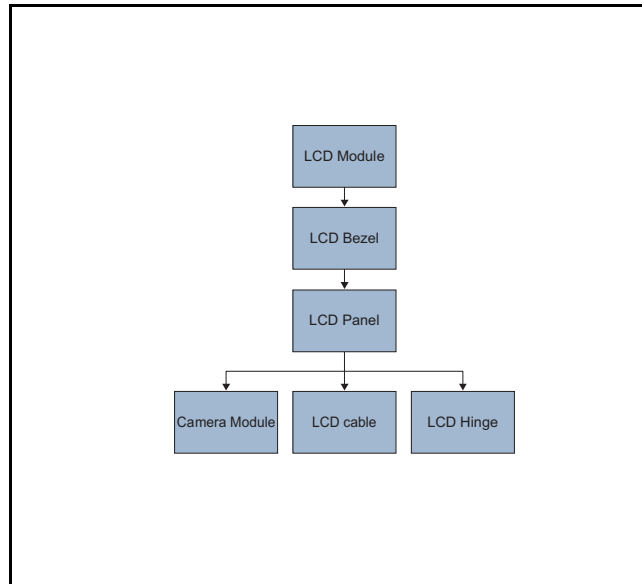


Figure 3-51. LCD Module Disassembly Process

Table 3-3. LCD Module Screw List

Step	Size	Quantity	Acer Part No.
LCD Hinges Removal	M2.5*2.5	8	86.SHXN7.003

LCD Bezel Removal

Prerequisite:

[LCD Module Removal](#)

1. Flatten the LCD hinges as shown in [Figure 3-52](#).



Figure 3-52. LCD Bezel Removal

2. Pry the LCD bezel from the upper side to release the latches ([Figure 3-53](#)).



Figure 3-53. LCD Bezel Removal

3. Continue prying along the right side of the bezel ([Figure 3-54](#)).



Figure 3-54. LCD Bezel Removal

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



Figure 3-55. LCD Bezel Removal

5. Continue prying along the bottom side of the bezel until all the latches have been released (Figure 3-56). Then lift and remove the bezel from LCD module.



Figure 3-56. LCD Bezel Removal

LCD Panel Removal

Prerequisite:

[LCD Bezel Removal](#)

⇒ NOTE:

The LCD cable includes the LCD panel cable and the camera cable.

1. Unroute the LCD cable (A) from the bottom side of the cable guides on the LCD cover as shown in [Figure 3-57](#).

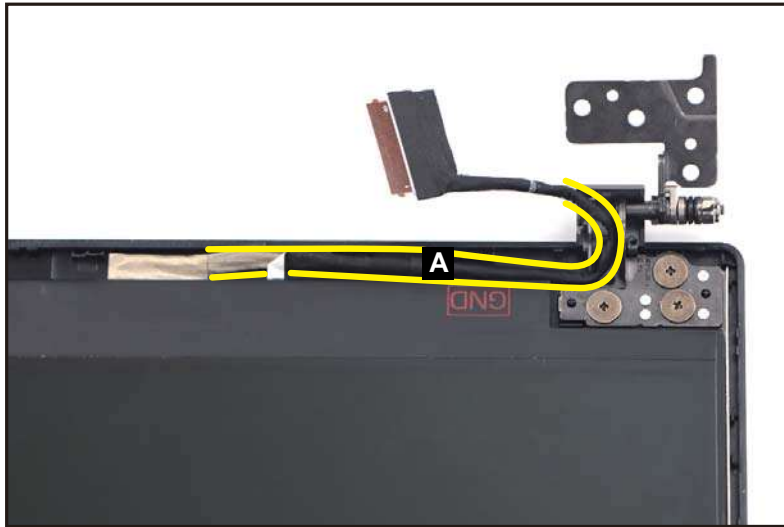


Figure 3-57. LCD Panel Removal

2. Pry slightly to access the double-sided mounting tape (B) underneath the LCD panel (C). Then pull to detach the double-sided mounting tape. Repeat the same procedure to remove the double-sided mounting tape on another side of the LCD panel (Figure 3-58).

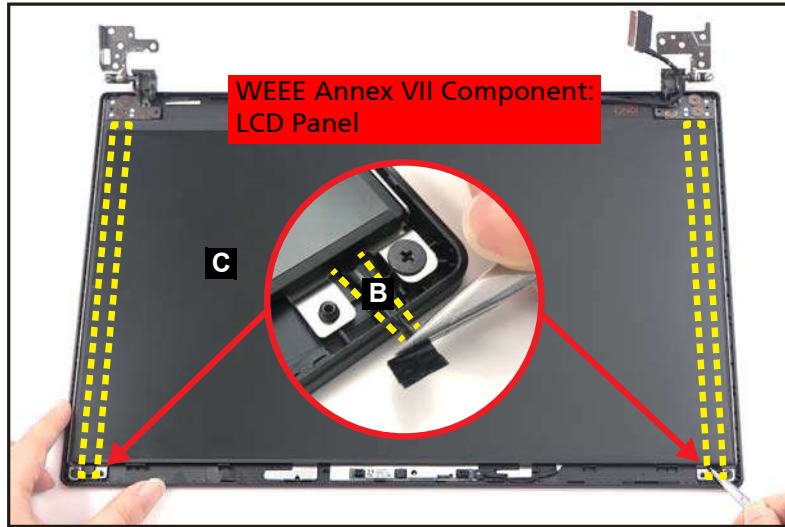


Figure 3-58. LCD Panel Removal

3. Carefully turn the LCD panel over so that the display panel is facing down on a flat surface. Then detach the mylar tape (D) securing the LCD cable to the LCD panel (Figure 3-59).

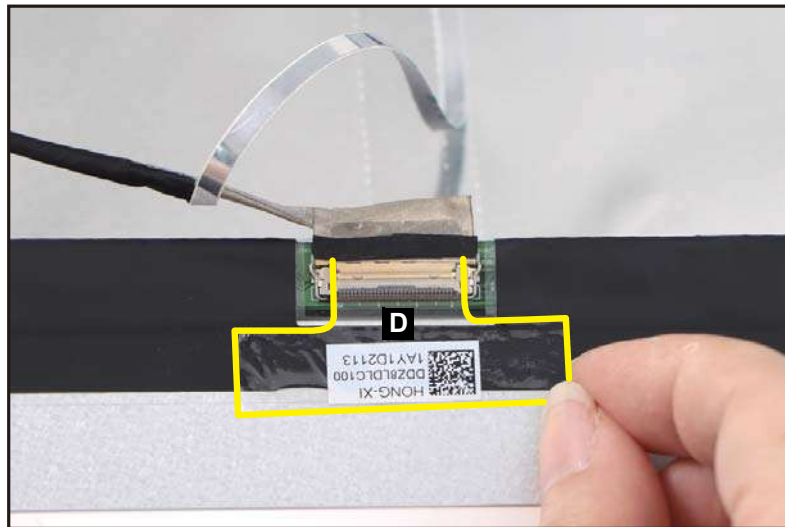


Figure 3-59. LCD Panel Removal

4. Lift the latch (E) securing the LCD cable (Figure 3-60).

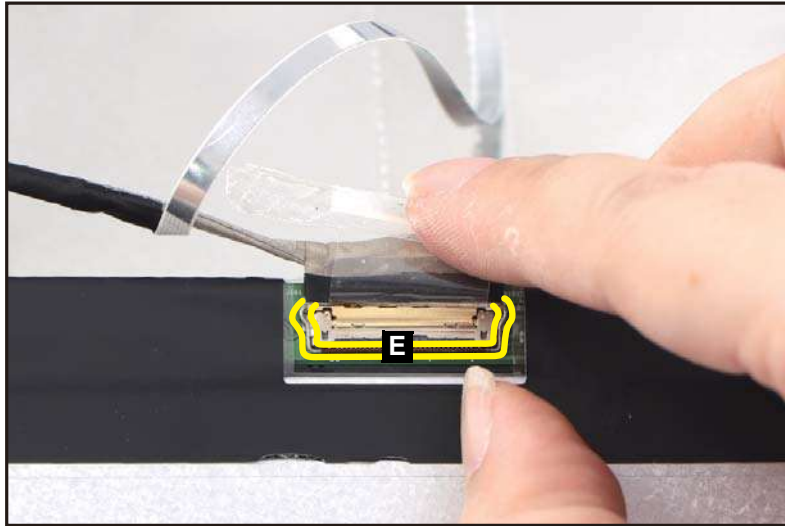


Figure 3-60. LCD Panel Removal

5. Disconnect the LCD cable from the LCD panel connector (F) (Figure 3-61). Then remove the LCD panel.

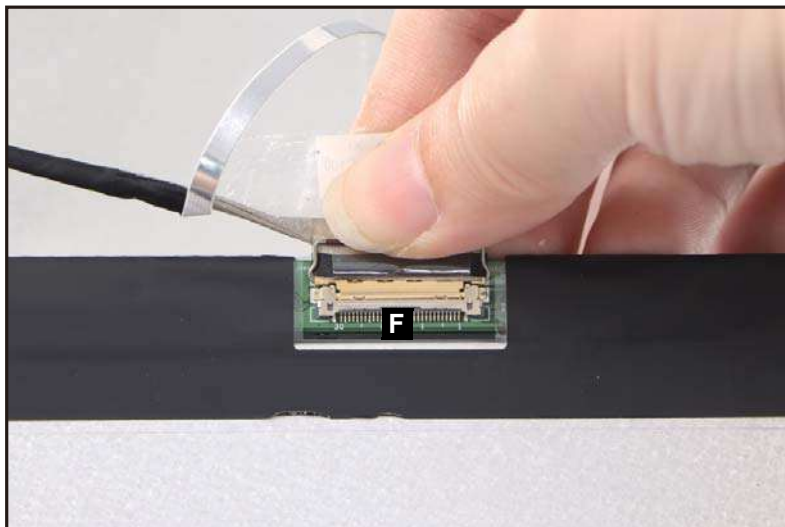


Figure 3-61. LCD Panel Removal

⚠ CAUTION:

Make sure the LCD cable is moved away from the device to avoid damage during LCD Panel removal.

Camera Module Removal

Prerequisite:

[LCD Panel Removal](#)

⇒ NOTE:

The LCD cable includes the LCD panel cable and the camera cable.

1. Find the camera module (A) on the LCD cover (Figure 3-62).

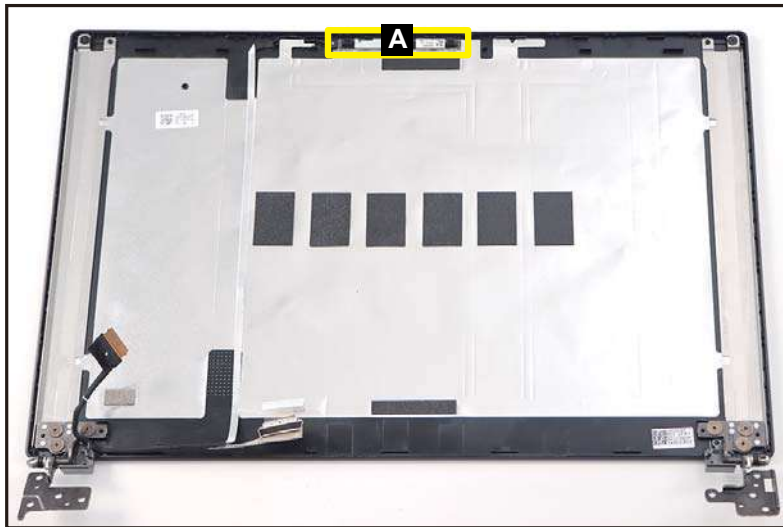


Figure 3-62. Camera Module Location

2. Disconnect the LCD cable from the camera module connector (B) (Figure 3-63).

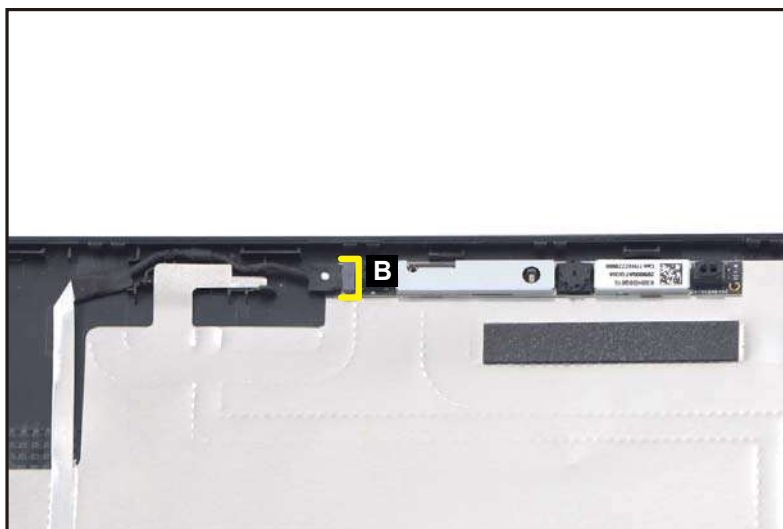


Figure 3-63. Camera Module Removal

3. Release the camera module from the guide pins (C) (Figure 3-64). Then remove the camera module.

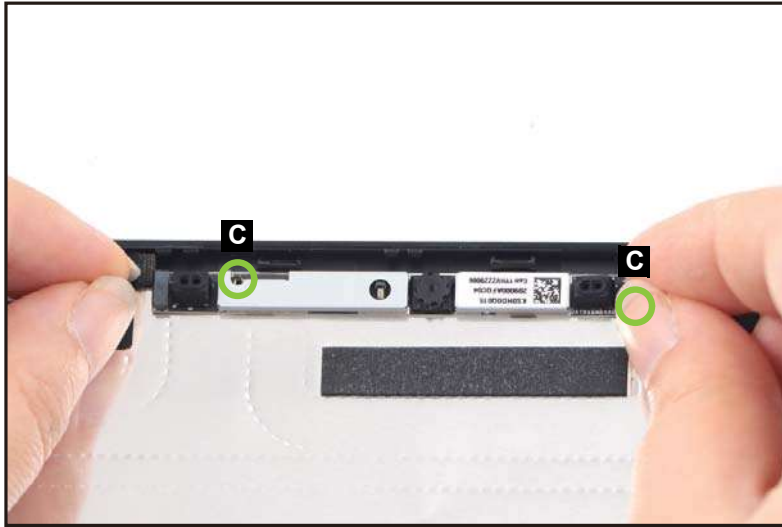


Figure 3-64. Camera Module Removal

4. Carefully detach the microphone rubbers (D) from the camera module (Figure 3-65).



Figure 3-65. Camera Module Removal

LCD Cable Removal

Prerequisite:

[LCD Panel Removal](#)

⇒ NOTE:

The LCD cable includes the LCD panel cable and the camera cable.

1. Unroute the LCD cable (A) from the cable guides on the LCD cover ([Figure 3-66](#)).

+ IMPORTANT:

While unrouting the LCD cable, carefully lift the portion of cable (highlighted by the yellow lines) to detach it from the adhesive tape underneath as shown in [Figure 3-66](#).

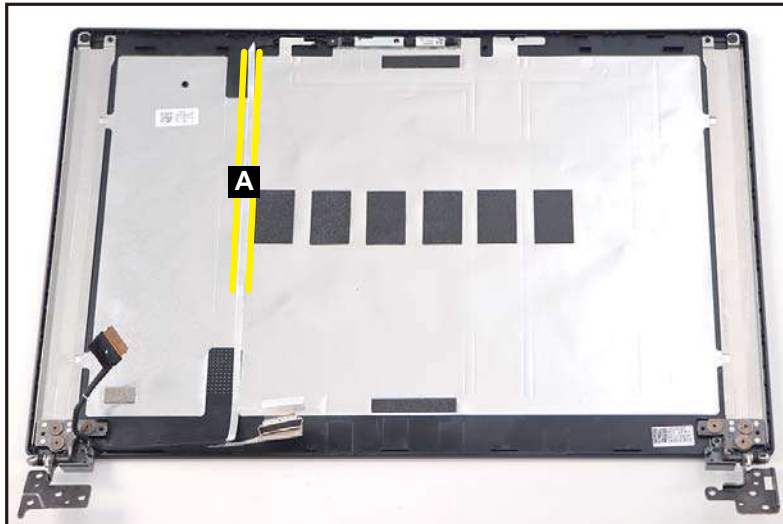


Figure 3-66. LCD Cable Removal

2. Continue to unroute the LCD cable from the cable guides as shown in [Figure 3-67](#).
3. Disconnect the LCD cable from the camera module connector (B) ([Figure 3-67](#)).

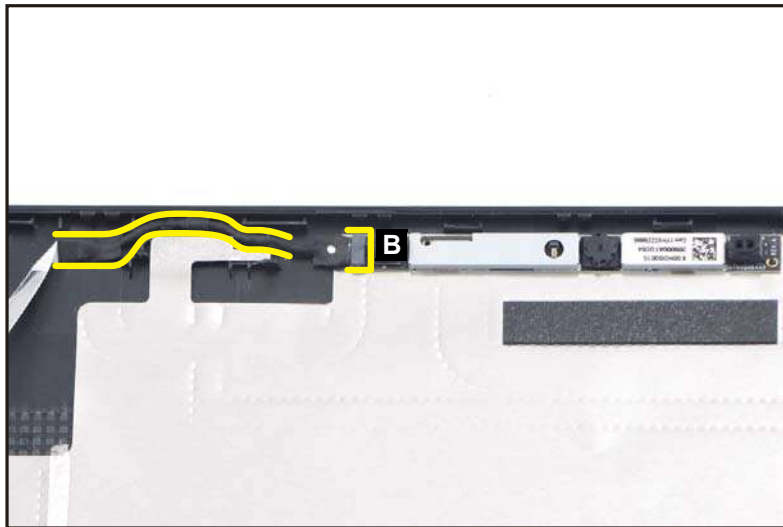


Figure 3-67. LCD Cable Removal

LCD Hinges Removal

Prerequisite:

[LCD Panel Removal](#)

1. Remove eight (8) screws securing the LCD hinges ([Figure 3-68](#)).

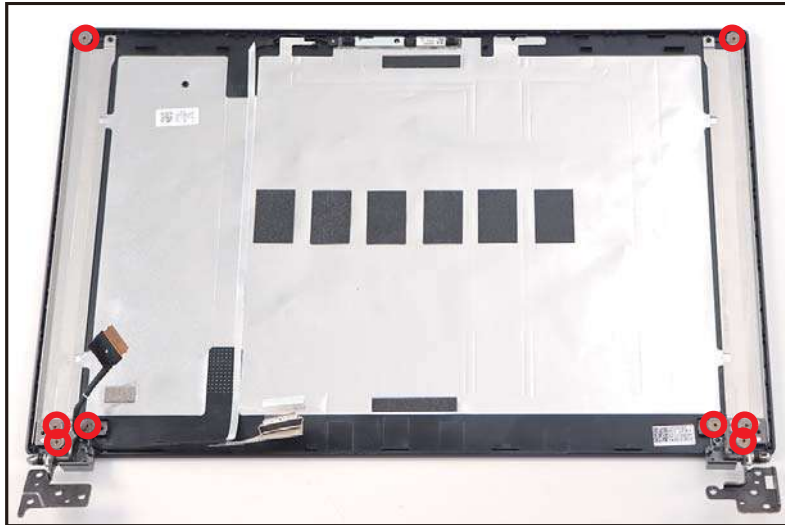


Figure 3-68. LCD Hinges Removal

2. Remove the LCD hinges (A) from the LCD cover ([Figure 3-69](#)).

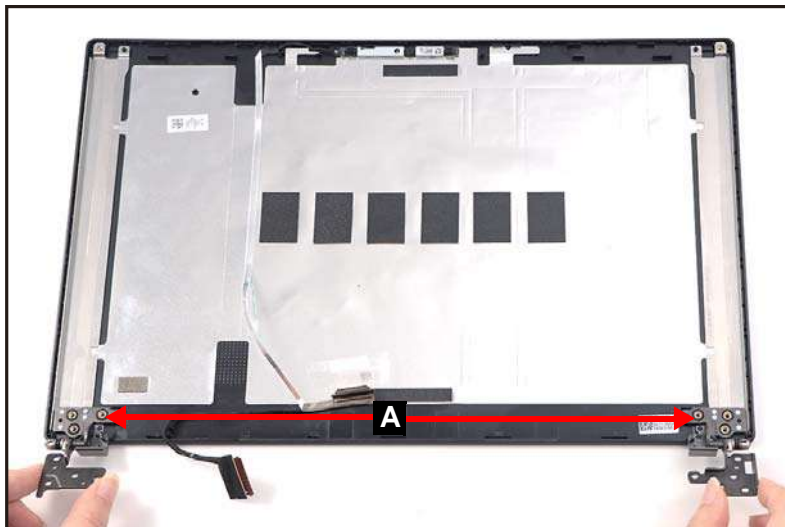



Figure 3-69. LCD Hinges Removal

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*2.5	3.0±15%KGF/CM	8	

LCD Module Reassembly Process

Replacing the LCD Hinges

1. By aligning with the guide pins (A), place the LCD hinges (B) on the LCD cover (Figure 3-70).

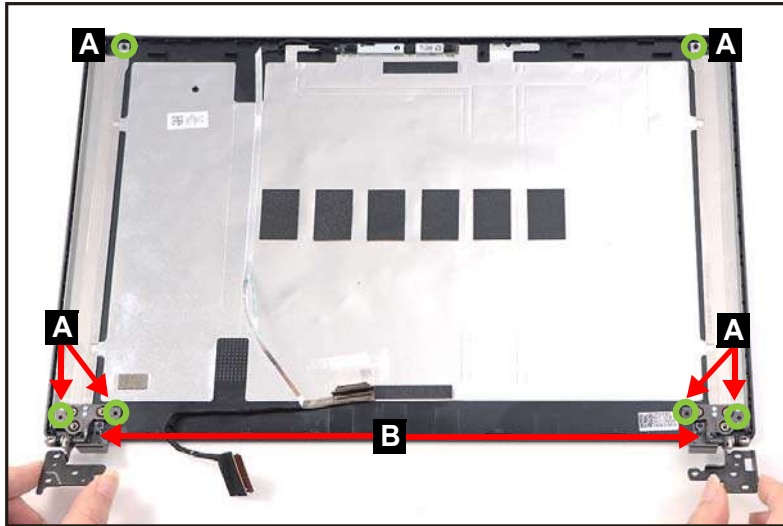


Figure 3-70. Replacing the LCD Hinges

2. Install and secure eight (8) screws to the LCD hinges (Figure 3-71).

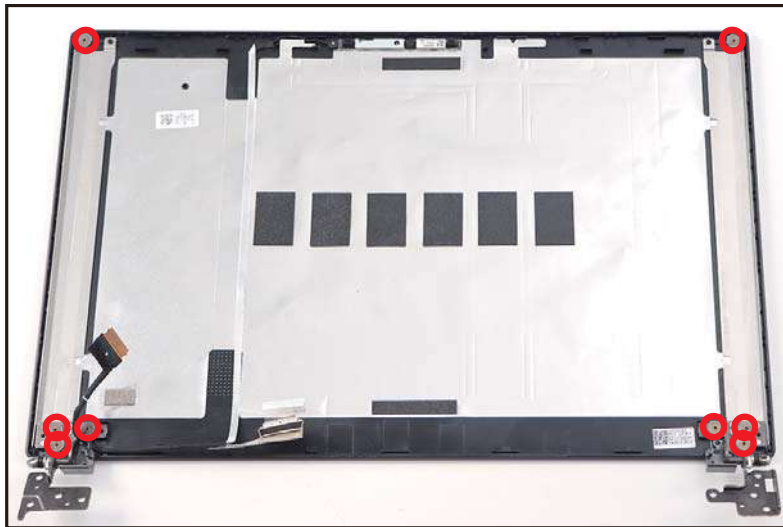



Figure 3-71. Replacing the LCD Hinges

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*2.5	3.0±15%KGF/CM	8	

Replacing the LCD Cable

⇒ **NOTE:**

The LCD cable includes the LCD panel cable and the camera cable.

1. Connect the LCD cable (A) to the camera module connector (B) (Figure 3-72).
2. Route the LCD cable through the cable guides as shown in Figure 3-72.

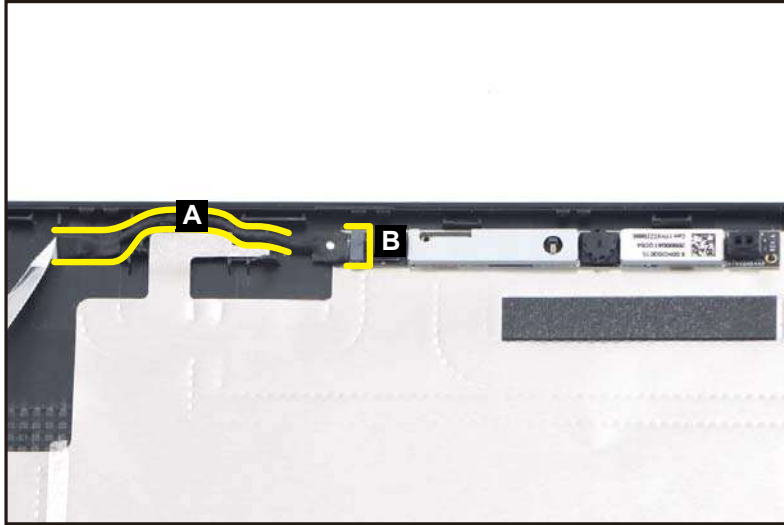


Figure 3-72. Replacing the LCD Cable

3. Continue to route the LCD cable through the cable guides on the LCD cover as shown in [Figure 3-73](#). If necessary, press and straighten the cable to ensure its underneath adhesive is properly attached to the LCD cover.

+ **IMPORTANT:**

Make sure the LCD cable is properly placed onto its designated cable routing path highlighted by the yellow and green lines as shown in [Figure 3-73](#).

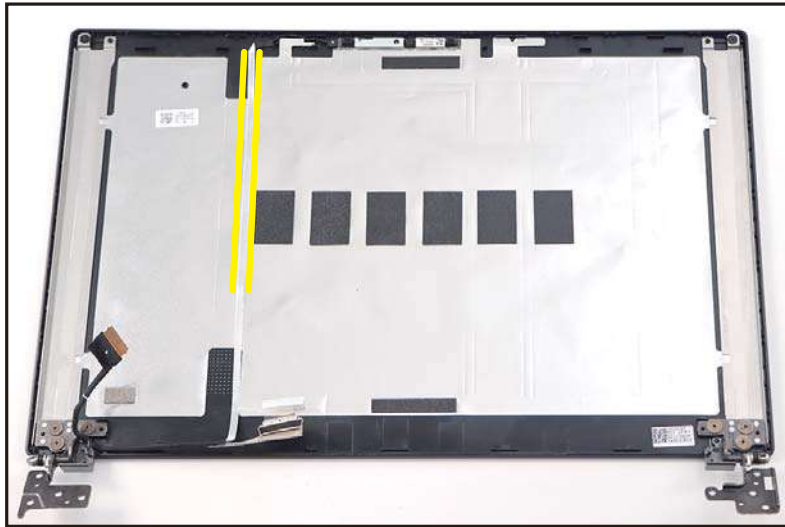


Figure 3-73. Replacing the LCD Cable

Replacing the Camera Module

⇒ **NOTE:**

The LCD cable includes the LCD panel cable and the camera cable.

1. Install the microphone rubbers (A) onto their respective slots on the camera module (Figure 3-74).



Figure 3-74. Replacing the Camera Module

2. Align and install the camera module (B) to its compartment on the LCD cover (Figure 3-75).

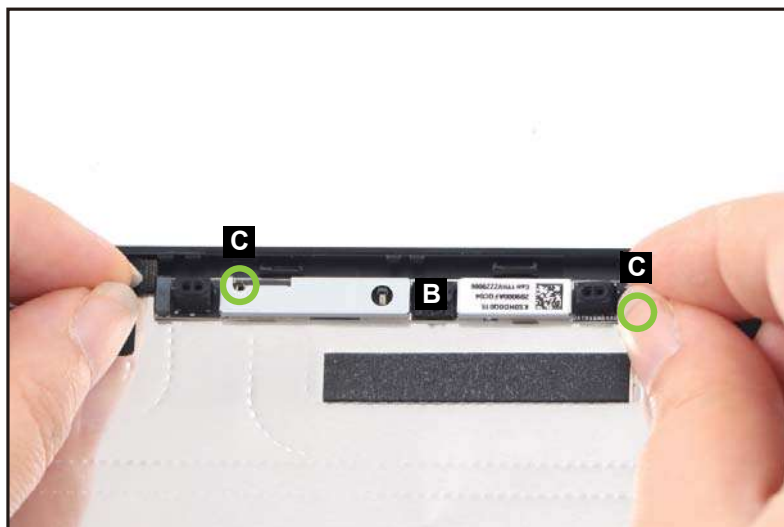


Figure 3-75. Replacing the Camera Module

+ **IMPORTANT:**

When installing the camera module, make sure it is properly aligned with the guide pins (C) and placed onto its designated location as shown in [Figure 3-75](#).

3. Connect the LCD cable to the camera module connector (D) ([Figure 3-76](#)).



Figure 3-76. Replacing the Camera Module

Replacing the LCD Panel

1. Adhere the double-sided adhesive mounting tapes (A) on both sides of the LCD hinges and press each tape for about 30 seconds. Then peel off the protective film from the double-sided adhesive mounting tapes (Figure 3-77).

⇒ **NOTE:**

Before applying the new double-sided adhesive mounting tapes, make sure to clean the surface properly with the rubbing alcohol. Then attach the adhesive mounting tapes onto the designated slots as shown in the below illustration (Figure 3-77).

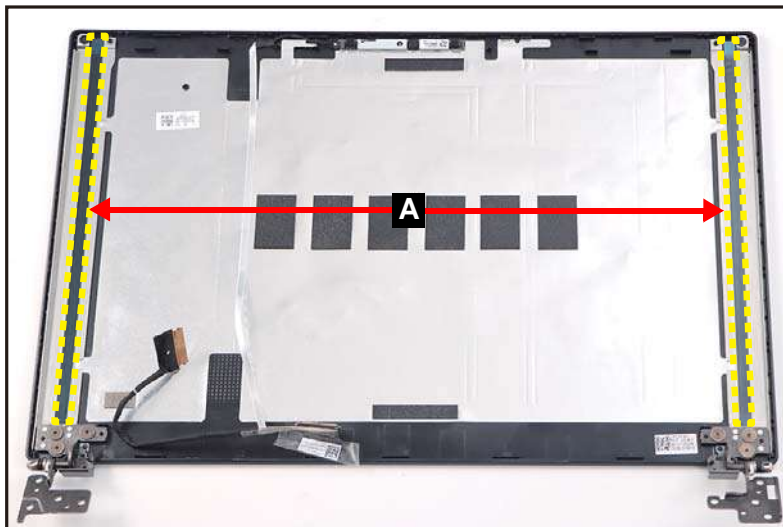


Figure 3-77. Replacing the LCD Panel

2. Place the LCD panel on a flat surface with the back side facing up and aligned properly to the bottom of the LCD cover. Then connect the LCD cable to the LCD panel connector (B) (Figure 3-78).

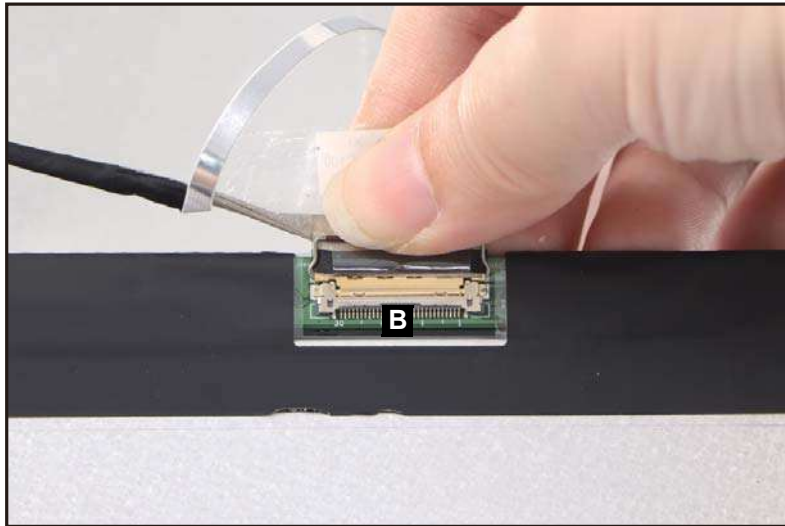


Figure 3-78. Replacing the LCD Panel

3. Push the latch (C) down to secure the LCD cable in place (Figure 3-79).

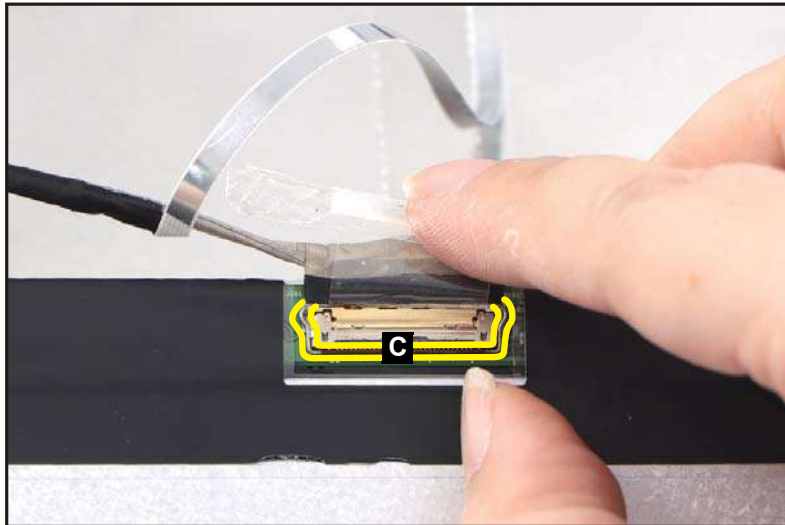


Figure 3-79. Replacing the LCD Panel

4. Adhere the mylar tape (D) to secure the LCD cable to the LCD panel (Figure 3-80).

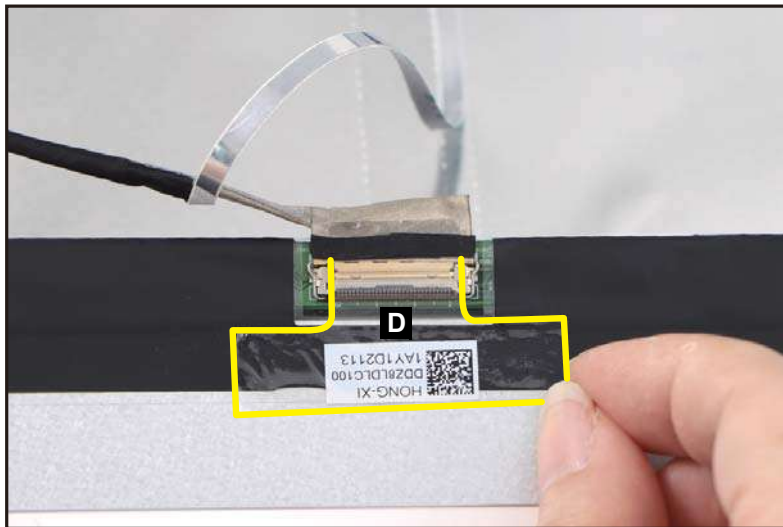


Figure 3-80. Replacing the LCD Panel

5. Place four (4) 0.5mm LCD alignment mylars (E) on the upper sides of the LCD cover as shown in Figure 3-81.
6. Starting from the upper side, carefully place the LCD panel (F) on the LCD cover. Then press the LCD panel down until it is firmly seated on the LCD cover (Figure 3-81).

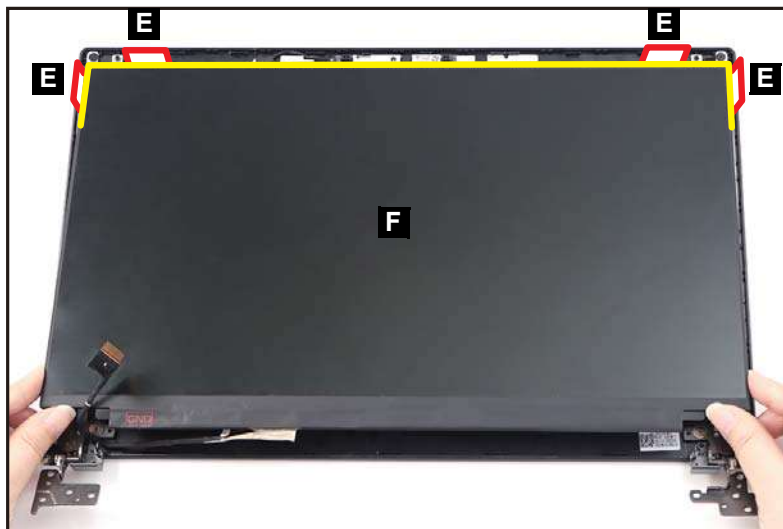


Figure 3-81. Replacing the LCD Panel

7. Remove the LCD alignment mylars from the LCD cover.

8. Route the LCD cable (G) through the cable guides on the bottom side of the LCD cover as shown in [Figure 3-82](#).

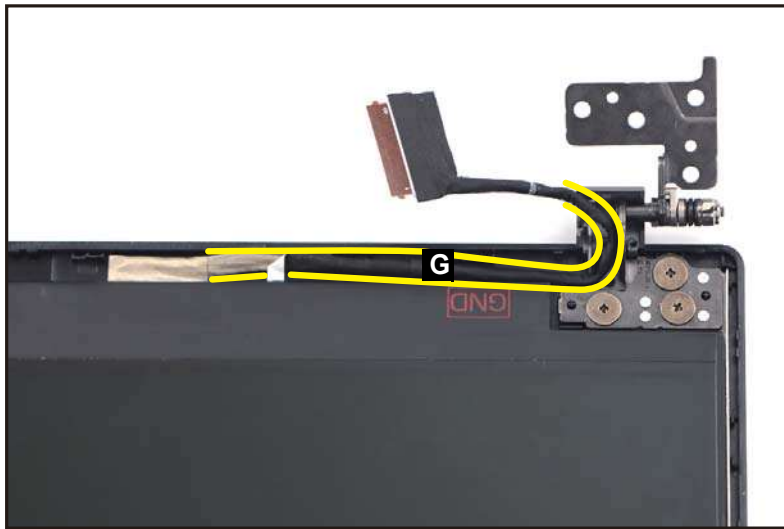


Figure 3-82. Replacing the LCD Panel

Replacing the LCD Bezel

1. Install the bezel cap onto its slot on the bottom side of the LCD cover, and then press the cap firmly to secure the latches to the LCD cover (Figure 3-83).



Figure 3-83. Replacing the LCD Bezel

2. Start pressing along the bottom side (A) of the LCD bezel to secure the latches to the LCD cover (Figure 3-84).
3. Continue pressing upward along the left and right sides (B) of the LCD bezel to engage the latches (Figure 3-84).
4. Finally, press along the upper side (C) of the LCD bezel to fully secure the bezel to the LCD cover (Figure 3-84).

⇒ **NOTE:**

When pressing on the latches, make sure to follow the direction of the arrows (Figure 3-84).

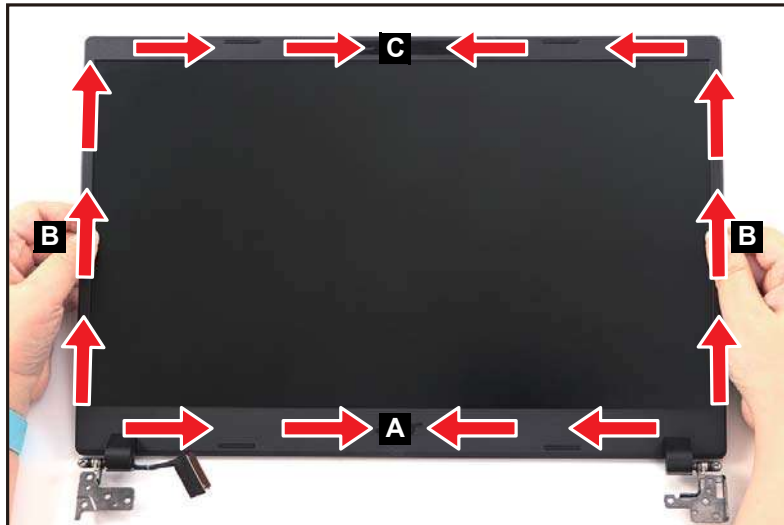


Figure 3-84. Replacing the LCD Bezel

⚠ **CAUTION:**

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

5. Fold the LCD hinges upright as shown in Figure 3-85.



Figure 3-85. Replacing the LCD Bezel

Main Unit Reassembly Process

Replacing the Top Assembly

⇒ **NOTE:**

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



Figure 3-86. Top Assembly

Replacing the Speaker Module

1. By aligning with the guide pins (A), install the right speaker (B) onto its compartment on the top assembly (Figure 3-87).

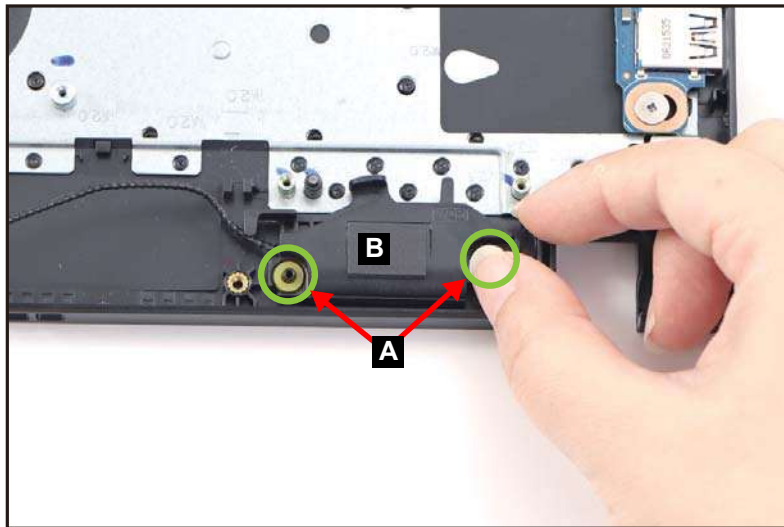


Figure 3-87. Replacing the Speaker Module

2. Route the speaker cable through the cable guides on the top assembly (Figure 3-88).
3. By aligning with the guide pins (C), install the left speaker (D) onto its compartment (Figure 3-88).

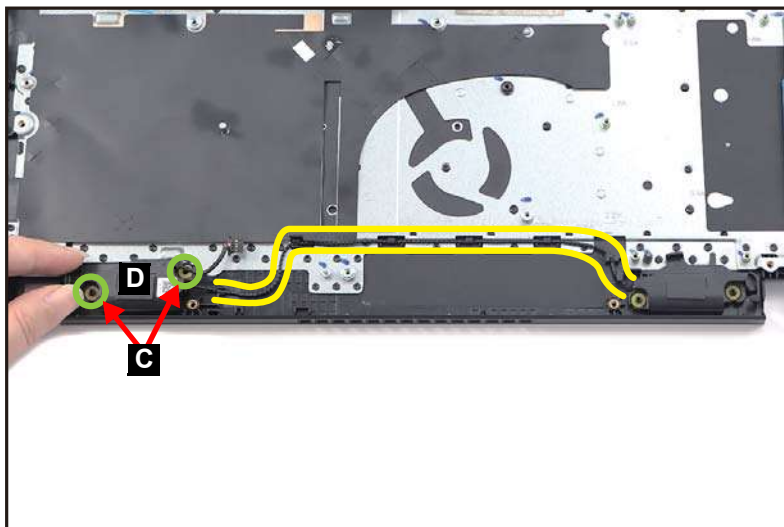


Figure 3-88. Replacing the Speaker Module

Replacing the IO Board

1. Align and slide the I/O connectors slots on the IO board (A) into its slot on the top assembly. Then place the IO board onto its compartment until it is fully seated and secured to the guide pin (B) (Figure 3-89).

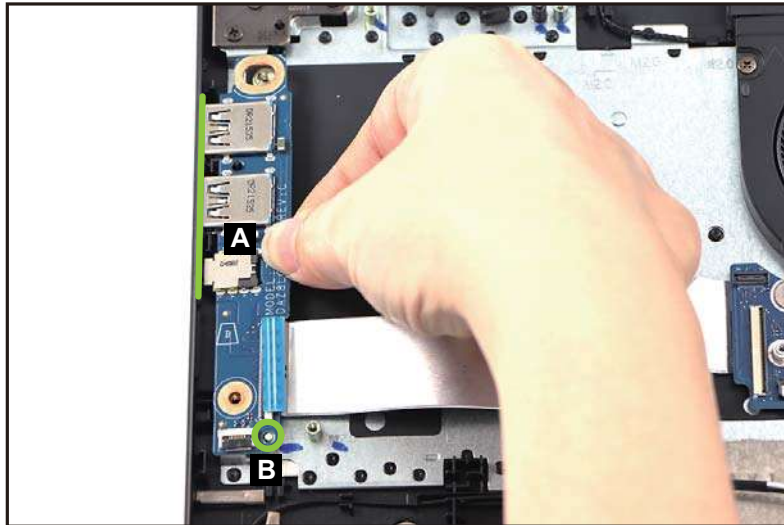


Figure 3-89. Replacing the IO Board

2. Install and secure one (1) screw to the IO board (Figure 3-90).
3. Connect the DB FFC to the IO board connector (C) (Figure 3-90).

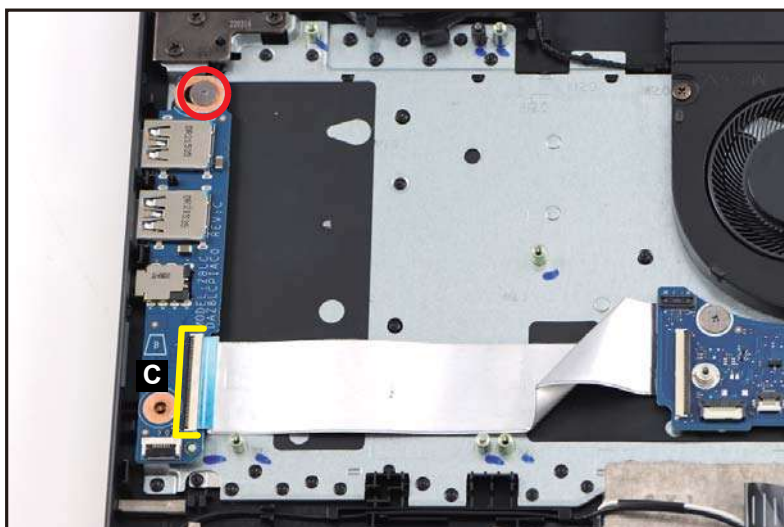



Figure 3-90. Replacing the IO Board

⇒ **NOTE:**

Make sure that the DB FFC is firmly secured to the IO board connector.

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	1	

Replacing the Card Reader Board

1. Align and slide the card reader slot on the card reader board (A) into its slot on the top assembly. Then place the card reader board onto its compartment until it is fully seated and secured to the guide pins (B) (Figure 3-91).

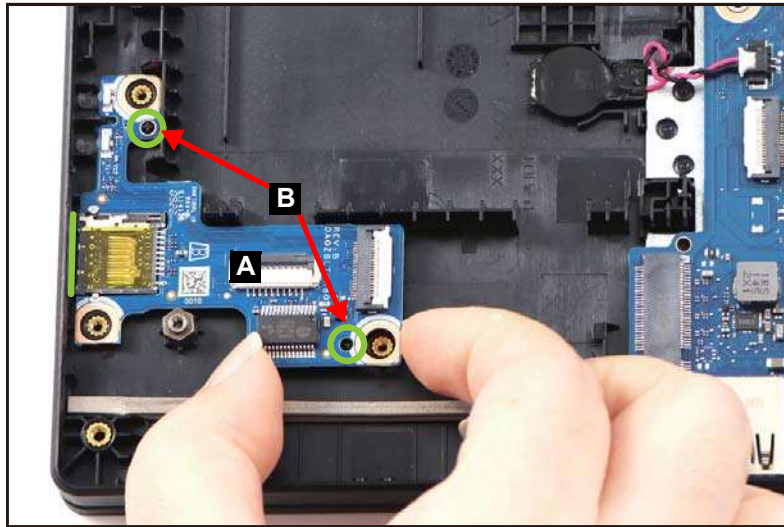


Figure 3-91. Replacing the Card Reader Board

2. Install and secure three (3) screws to the card reader board (Figure 3-92).
3. Connect one end of the card reader board FFC to the card reader board connector (C) (Figure 3-92).

4. Connect the other end of the card reader board FFC to the mainboard connector (D). Then press the portion of FFC (highlighted by the yellow lines) to ensure the adhesive tape underneath is properly attached (Figure 3-92).

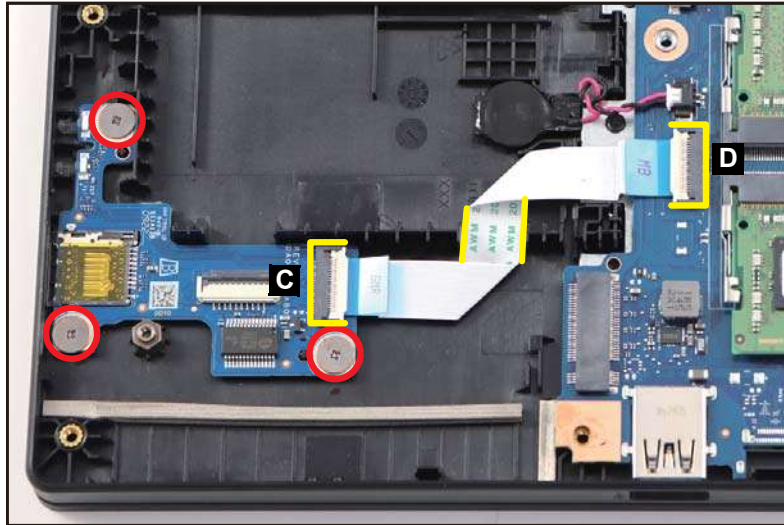


Figure 3-92. Replacing the Card Reader Board

⇒ **NOTE:**

Make sure that the card reader board FFC are firmly secured to the card reader board and mainboard connectors.

5. Attach the sponge (E) onto its slot on the card reader board (Figure 3-93).

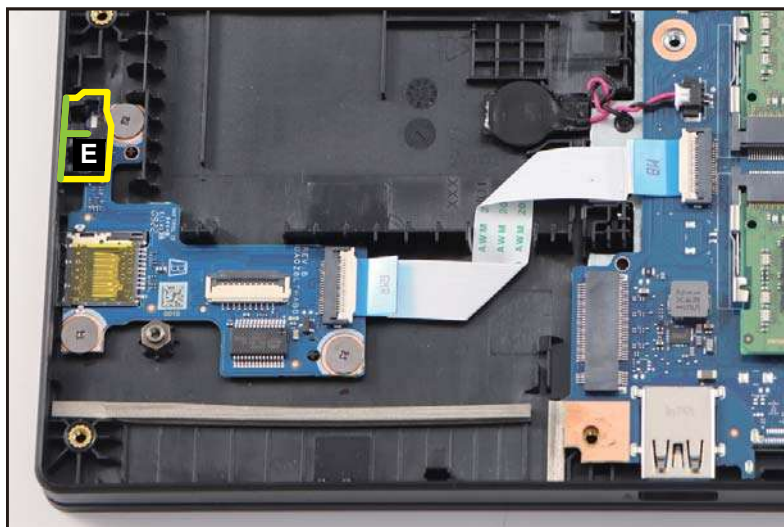



Figure 3-93. Replacing the Card Reader Board

+ **IMPORTANT:**

When attaching the sponge, make sure it is properly aligned and placed onto its slot highlighted by the yellow and green lines as shown in [Figure 3-93](#).

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	3	

Replacing the Mainboard

1. Connect the DB FFC to the mainboard connector (A) (Figure 3-94).

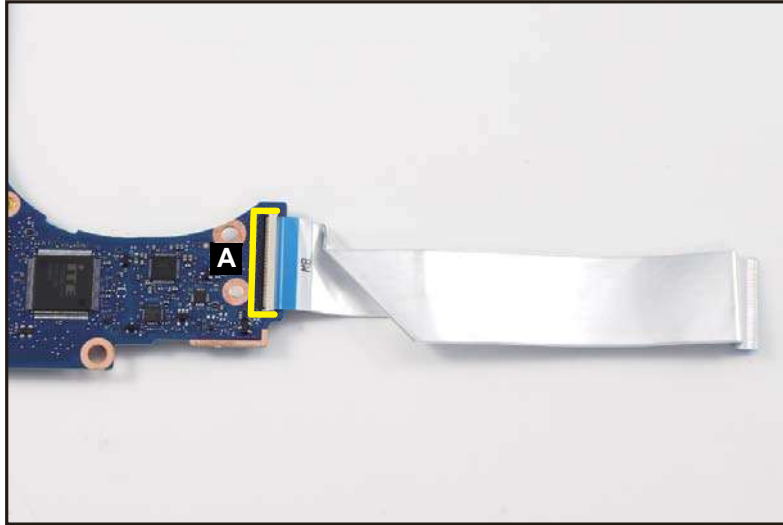


Figure 3-94. Replacing the Mainboard

2. Align and slide the I/O connectors on the mainboard (B) into their slots on the top assembly. Then place the mainboard onto its compartment until it is fully seated and secured to the guide pins (C) (Figure 3-95).

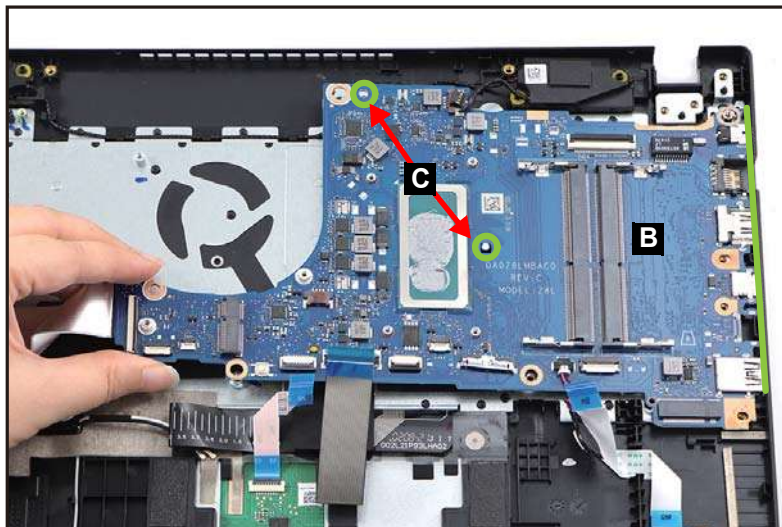


Figure 3-95. Replacing the Mainboard

⚠ CAUTION:

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

3. Install and secure two (2) screws to the mainboard ([Figure 3-96](#)).

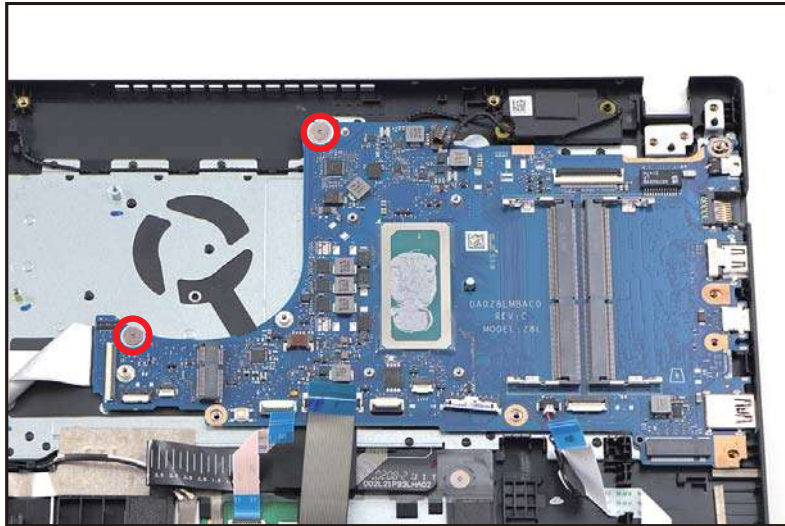


Figure 3-96. Replacing the Mainboard

4. Connect the DB FFC to the IO board connector (D) ([Figure 3-97](#)).
5. Connect the touchpad FFC to the mainboard connector (E) ([Figure 3-97](#)).
6. Connect the keyboard FPC to the mainboard connector (F) ([Figure 3-97](#)).
7. Connect the keyboard backlight FPC to the mainboard connector (G) ([Figure 3-97](#)) (optional).
8. Install the RTC battery (H) onto its slot on the top assembly ([Figure 3-97](#)).
9. Connect the card reader board FFC to the mainboard connector (I) ([Figure 3-97](#)).

10. Connect the speaker cable to the mainboard connector (J) (Figure 3-97).

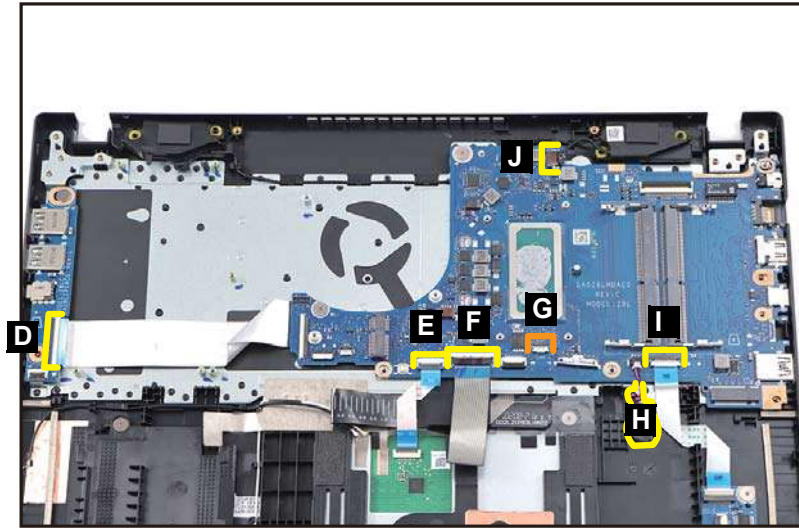



Figure 3-97. Replacing the Mainboard

⇒ NOTE:

Make sure that the DB FFC, touchpad FFC, card reader board FFC, keyboard FPC, and keyboard backlight FPC, are firmly secured to the IO board and mainboard connectors.

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	2	

Replacing the HDD Module

1. Install the HDD module (A) into its bracket (Figure 3-98).

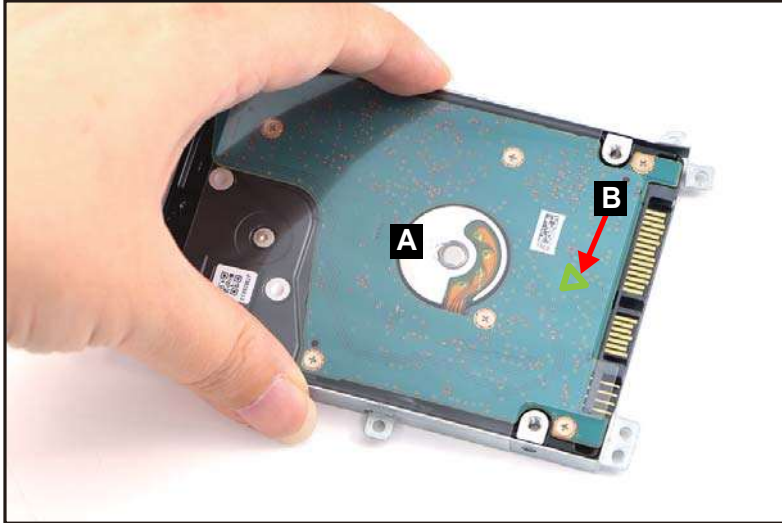


Figure 3-98. Replacing the HDD Module

+ **IMPORTANT:**

When installing the HDD module, make sure the marked arrow (B) is facing the correct direction shown in Figure 3-98.

2. Install and secure four (4) screws (C) to the HDD bracket (Figure 3-99).

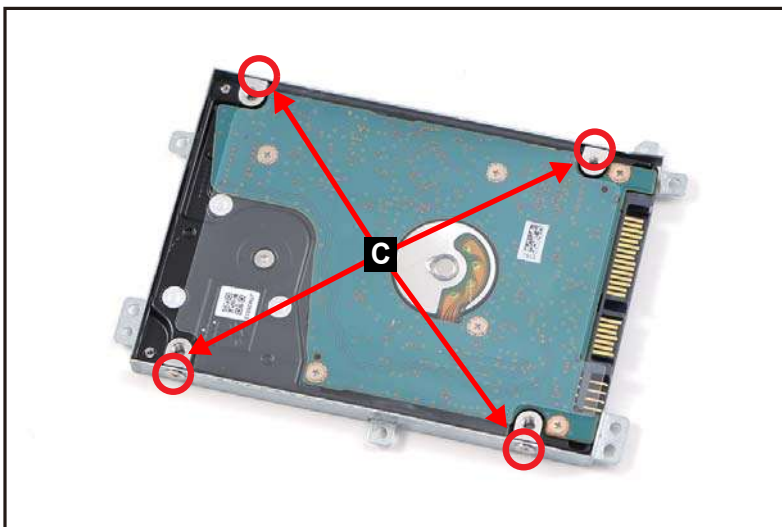


Figure 3-99. Replacing the HDD Module

3. Connect the HDD FFC to the HDD module connector (D) (Figure 3-100).

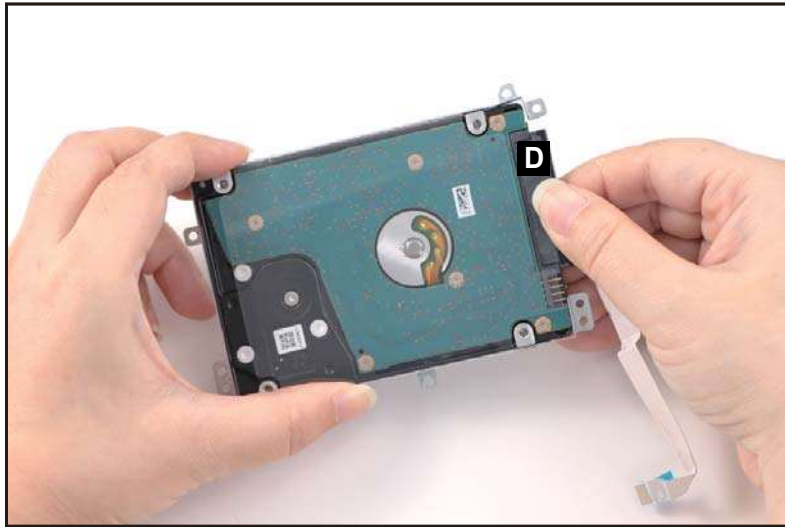


Figure 3-100. Replacing the HDD Module

4. Install the HDD module assembly (E) onto its compartment. Make sure the guide pins (F) and HDD bracket screw holes are properly aligned (Figure 3-101).



Figure 3-101. Replacing the HDD Module

5. Install and secure five (5) screws (G) to the HDD bracket (Figure 3-102).
6. Connect the HDD cable to the mainboard connector (H) (Figure 3-102).

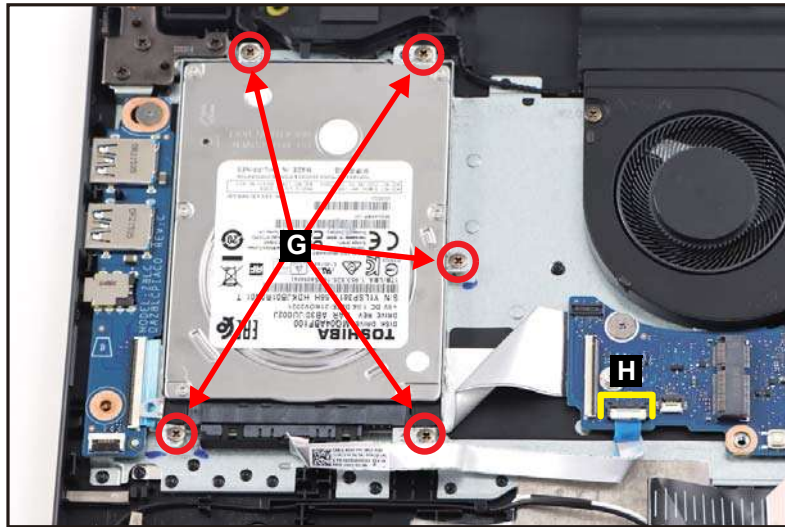




Figure 3-102. Replacing the HDD Module

ID	Size	Torque	Quantity	Screw Type
C	M3.0*3.5	3.0±15%KGF/CM	4	
G	M2.0*3.5	2.0+10%KGF/CM	5	

Replacing the SSD Module

1. Connect the SSD module (A) to the mainboard connector (B) (Figure 3-103).




Figure 3-103. Replacing the SSD Module

2. Install and secure one (1) screw to the SSD module (Figure 3-104).



Figure 3-104. Replacing the SSD Module

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	1	

Replacing the Heatsink

+ **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. By aligning with the upper tabs (A), place the heatsink (B) on the mainboard and top assembly (Figure 3-105).

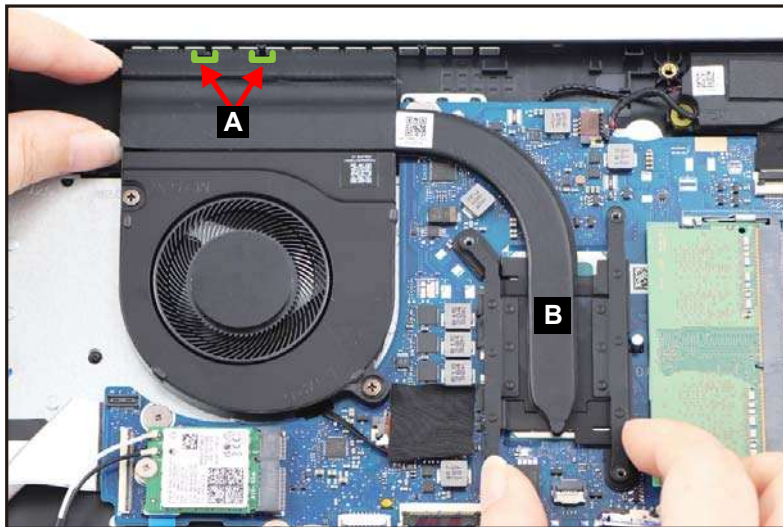


Figure 3-105. Replacing the Heatsink

4. Install and secure four (4) screws to the heatsink (Figure 3-106). Ensure the heatsink is properly aligned and seated.

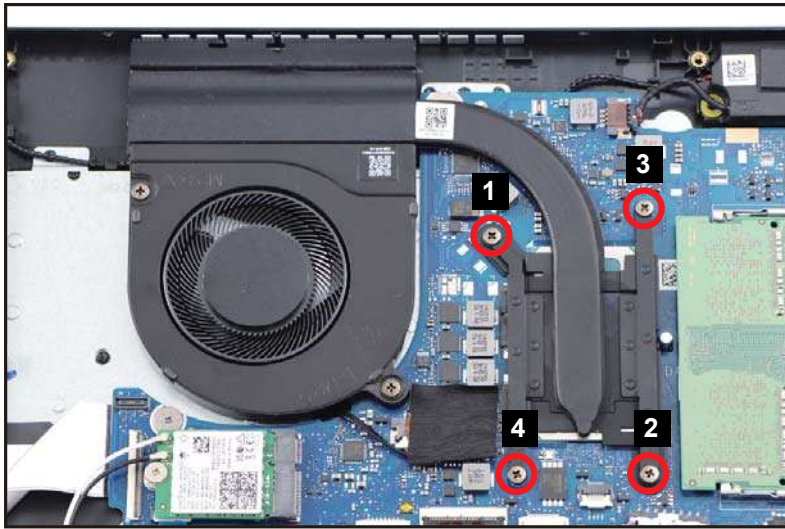



Figure 3-106. Replacing the Heatsink

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*3.5	2.0+10%KGF/CM	4	

Replacing the Fan

1. Place the fan (A) onto its compartment until it is fully seated ([Figure 3-107](#)).



Figure 3-107. Replacing the Fan

2. Install and secure two (2) screws to the fan ([Figure 3-108](#)).
3. Connect the fan cable to the mainboard connector (B) ([Figure 3-108](#)).

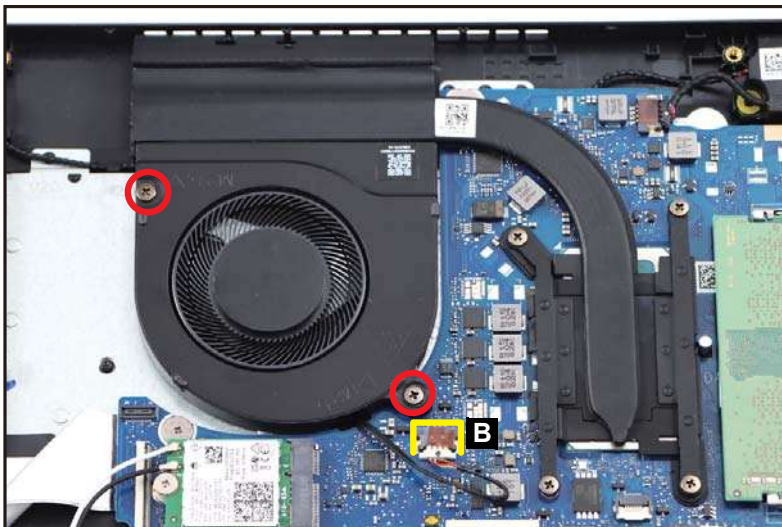


Figure 3-108. Replacing the Fan

4. Attach the tape (C) to secure the fan cable connection (Figure 3-109).

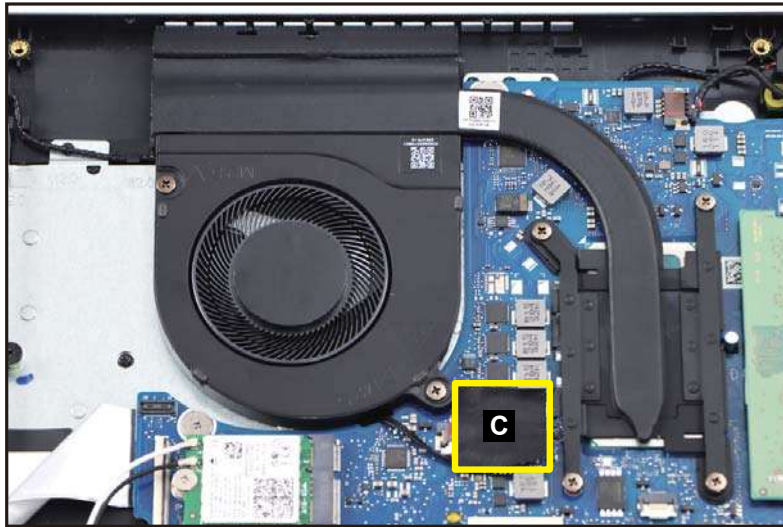



Figure 3-109. Replacing the Fan

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*3.5	2.0+10%KGF/CM	2	

Replacing the LCD Module

⇒ **NOTE:**

The LCD cable includes the LCD panel cable and the camera cable.

1. By holding the top assembly upright, align the top assembly with the LCD hinges slots on the LCD module as shown in [Figure 3-110](#).

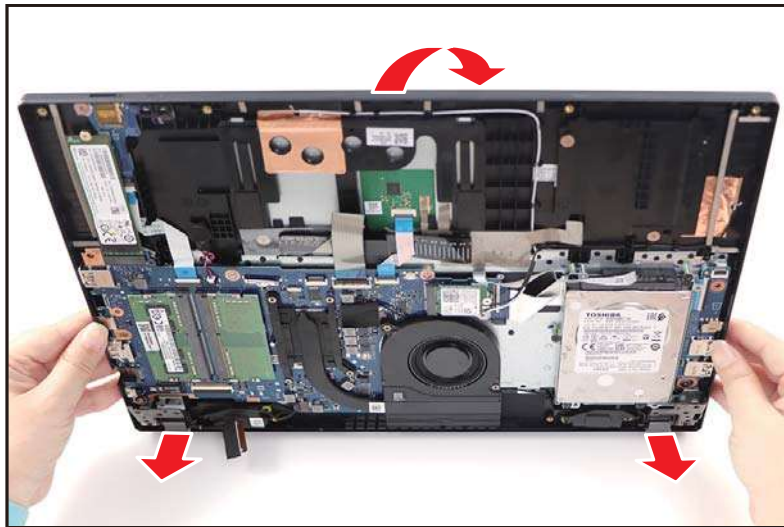


Figure 3-110. Replacing the LCD Module

2. Close the top assembly. Then close both LCD hinges until they are fully seated in place ([Figure 3-111](#)).



Figure 3-111. Replacing the LCD Module

3. Install and secure six (6) screws to the LCD hinges (Figure 3-112).



Figure 3-112. Replacing the LCD Module

4. Route the LCD cable through the cable guides. Then connect the cable to the mainboard connector (A) (Figure 3-113).

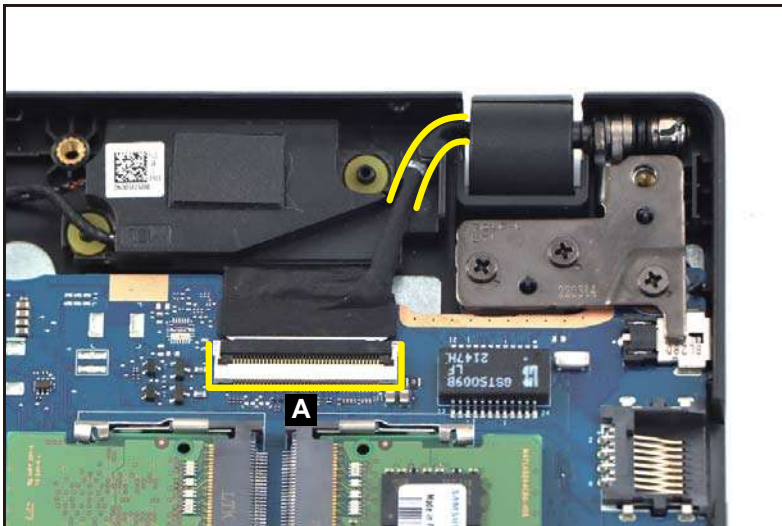



Figure 3-113. Replacing the LCD Module

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*5.0	3.0±15%KGF/CM	6	

Replacing the DIMM Modules

1. Connect the DIMM module (A) to the mainboard connector (B) (Figure 3-114).



Figure 3-114. Replacing the DIMM Modules

2. Press down on the DIMM module until the module clips (C) lock into position as shown in Figure 3-115.

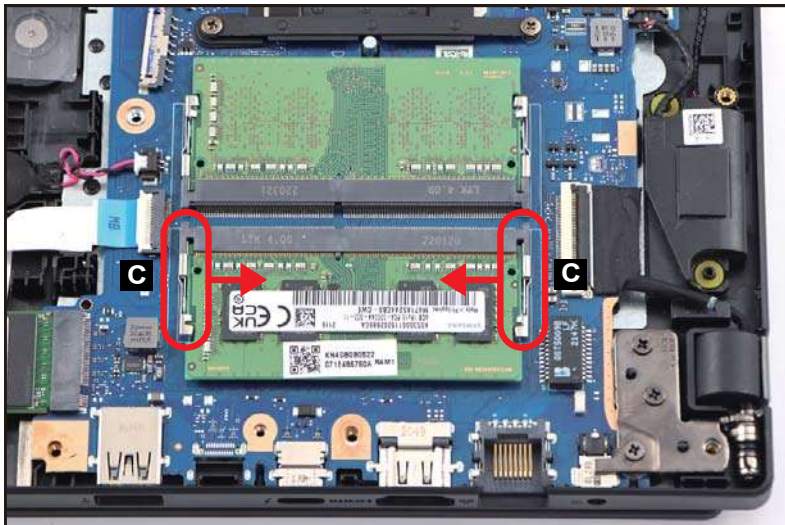


Figure 3-115. Replacing the DIMM Modules

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

Replacing the WLAN Module

1. Connect the WLAN module (A) into the mainboard connector (B) (Figure 3-116).

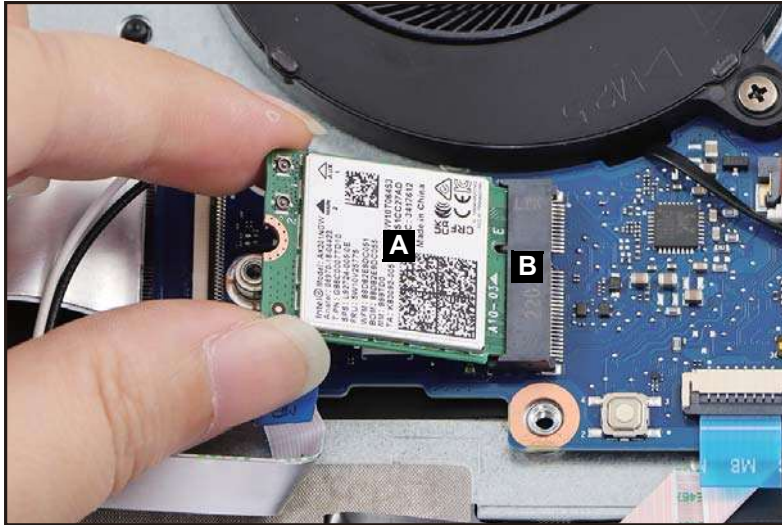


Figure 3-116. Replacing the WLAN Module

2. Install and secure one (1) screw to the WLAN module (Figure 3-117).
3. Connect the AUX antenna cable (white-color) to the WLAN AUX pin (Figure 3-117).
4. Connect the MAIN antenna cable (black-color) to the WLAN MAIN pin (Figure 3-117).

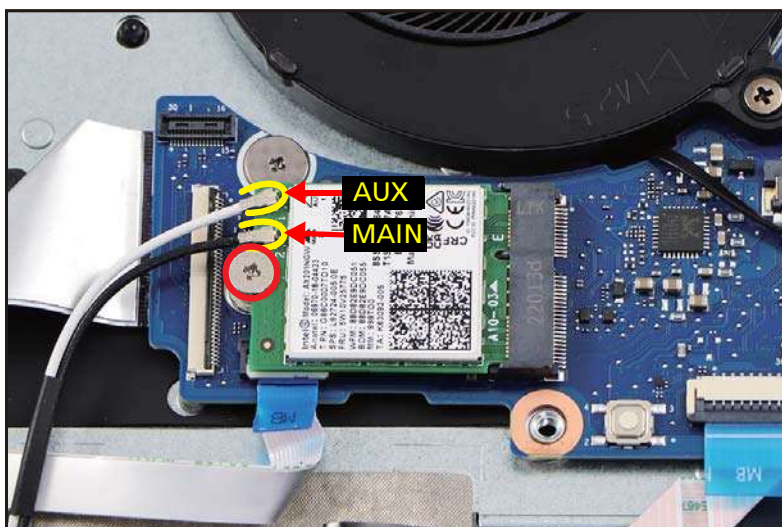



Figure 3-117. Replacing the WLAN Module

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	1	

Replacing the Smart Card Reader Holder

1. Align and slide the upper side of the smart card reader holder (A) into the upper tab slot (highlighted by the green line) on the top assembly. Then place the holder onto its compartment until it is fully seated and secured to the guide pins (B) (Figure 3-118).

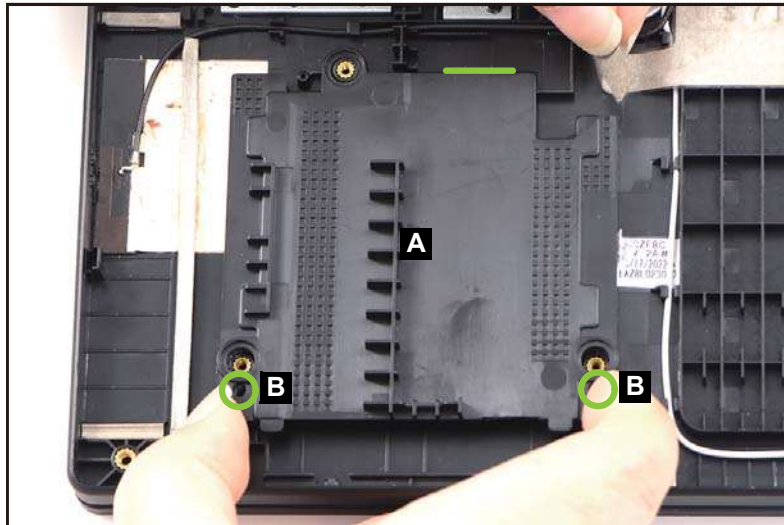


Figure 3-118. Replacing the Smart Card Reader Holder

2. Install and secure three (3) screws to the smart card reader holder (Figure 3-119).

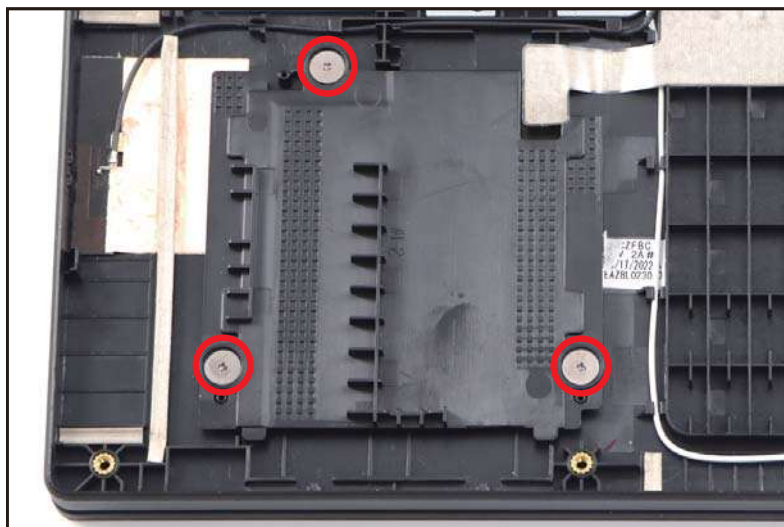



Figure 3-119. Replacing the Smart Card Reader Holder

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	3	

Replacing the Touchpad Module

1. Slightly lift the mylar and slide the touchpad module (A) into the bottom latches (B) until those are fully engaged (Figure 3-120).
2. Ensure that the touchpad module is properly aligned with the guide pins (C), push the touchpad module firmly onto its slot until it is fully seated in place (Figure 3-120).

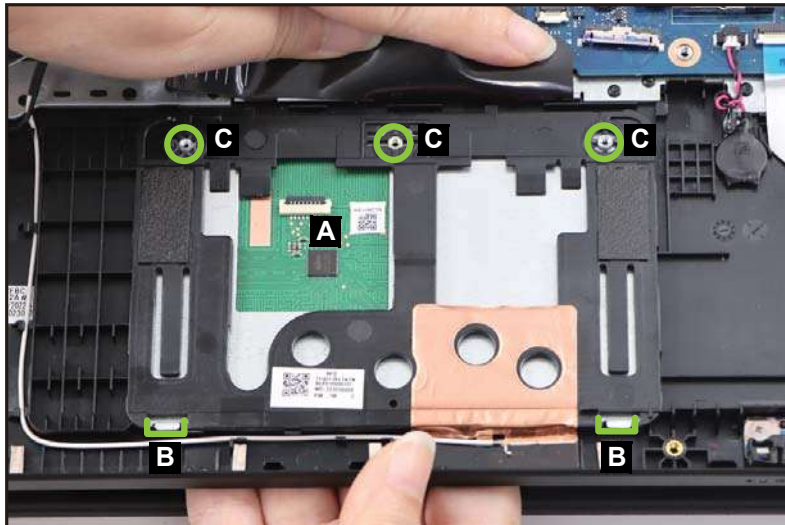


Figure 3-120. Replacing the Touchpad Module

3. Install and secure three (3) screws to the touchpad module (Figure 3-121).

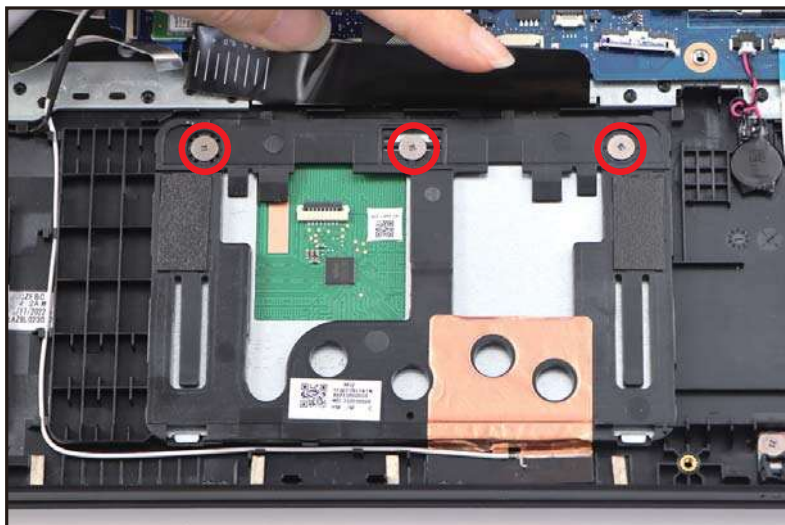


Figure 3-121. Replacing the Touchpad Module

4. Attach the touchpad conductive tape (D) onto the touchpad module and top assembly. Make sure the conductive tape is properly aligned and placed onto its slot highlighted by the yellow and green lines as shown in [Figure 3-122](#).

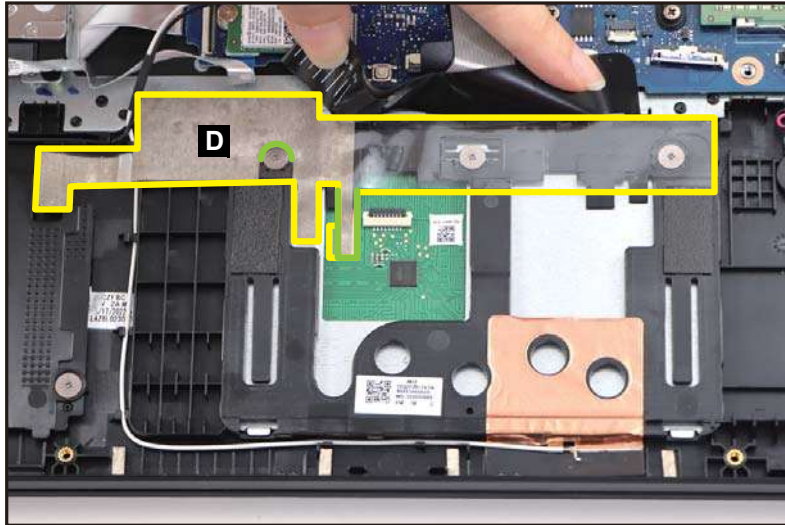


Figure 3-122. Replacing the Touchpad Module

5. Connect one end of the touchpad FFC to the mainboard connector (E). Then connect the other end of the FFC to the touchpad module connector (F) ([Figure 3-123](#)).

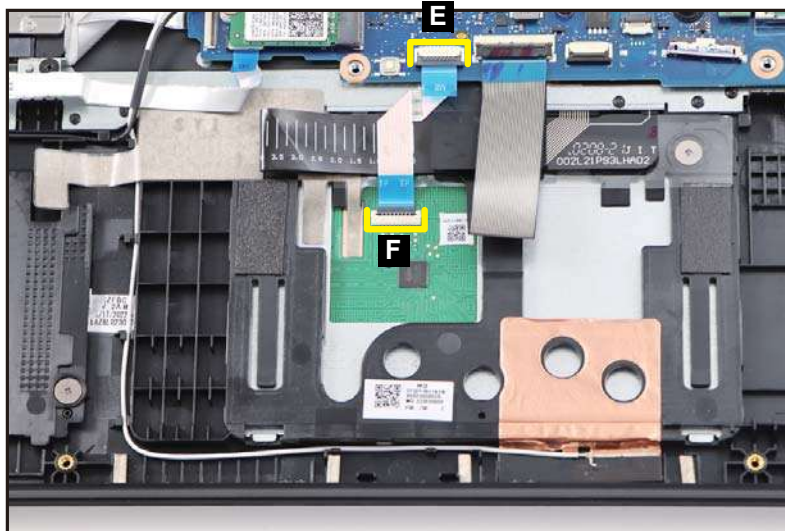



Figure 3-123. Replacing the Touchpad Module

⇒ NOTE:

Make sure that the touchpad FFC is firmly secured to the mainboard and touchpad module connectors.

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.0*2.0	2.0+10%KGF/CM	3	

Replacing the RTC Battery

1. Align and install the RTC battery (A) onto its slot on the top assembly (Figure 3-124).
2. Route the RTC battery cable through the cable guides as shown in Figure 3-124.
3. Connect the RTC battery cable to the mainboard connector (B) (Figure 3-124).

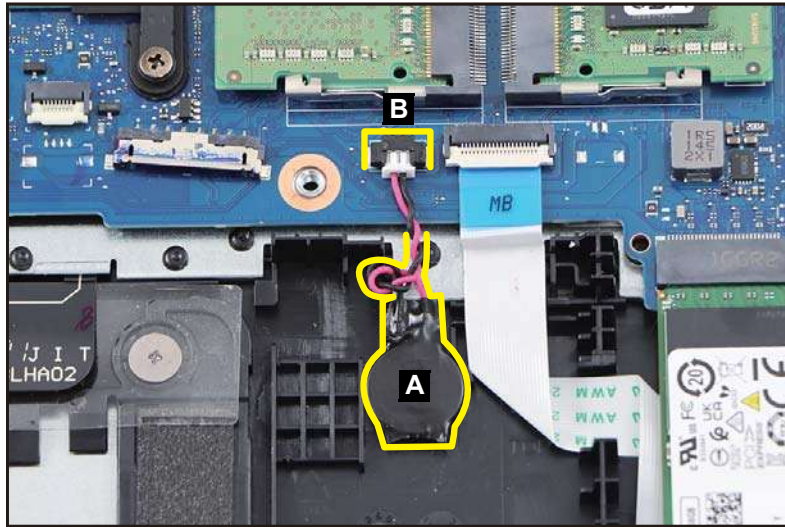


Figure 3-124. Replacing the RTC Battery

Replacing the Battery Pack

1. By aligning with the guide tabs (highlighted by the green lines), place the battery pack (A) to its compartment on the system (Figure 3-125).



Figure 3-125. Replacing the Battery Pack

2. Connect the battery cable to the mainboard connector (B) (Figure 3-126).

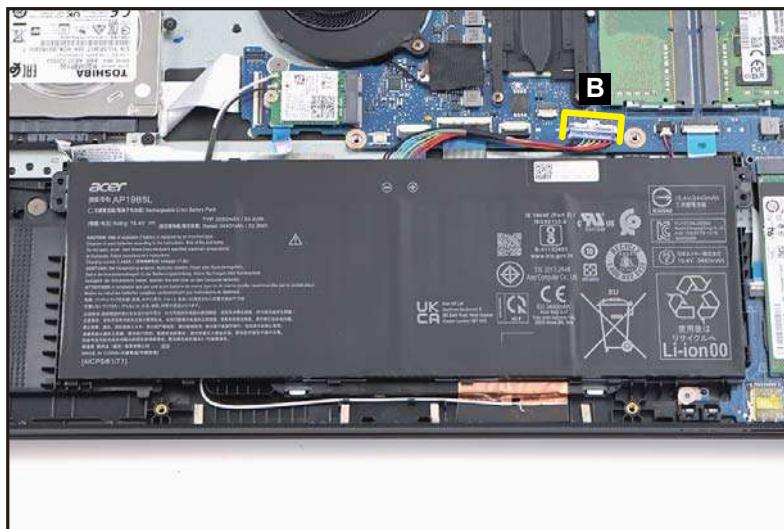


Figure 3-126. Replacing the Battery Pack

3. Attach the tape (C) to secure the battery cable connection (Figure 3-127).
4. Attach the transparent mylar (D) to secure the cables in place (Figure 3-127).

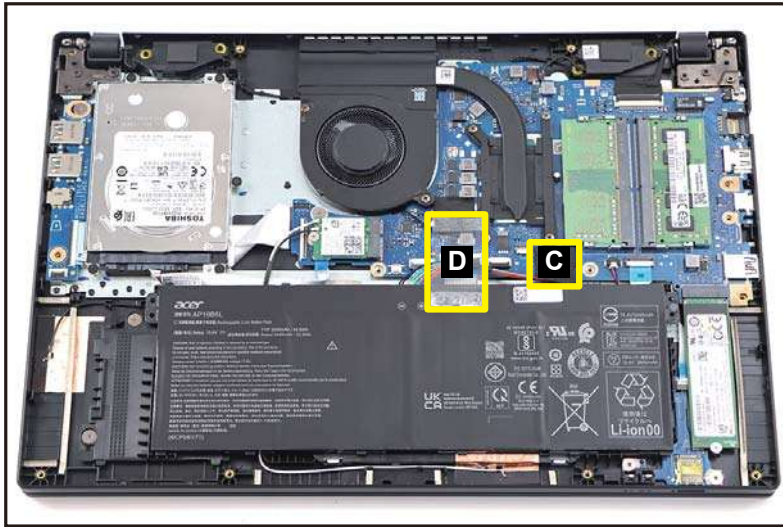


Figure 3-127. Replacing the Battery Pack

Replacing the Base Cover

⇒ **NOTE:**

Before installing the base cover, make sure the HDD module sponge is properly attached onto its slot as shown in [Figure 3-128](#).

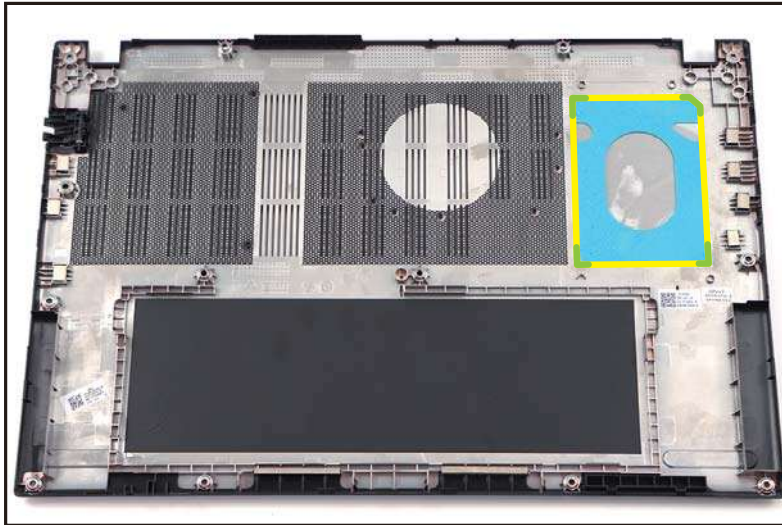


Figure 3-128. HDD Module Sponge Location

1. Carefully place the base cover onto the top assembly. Make sure that the edges of the base cover are aligned properly to those of the top assembly ([Figure 3-129](#)).



Figure 3-129. Replacing the Base Cover

2. Press downward on the system to engage the tabs. Make sure all the tabs are fully engaged (Figure 3-130).




Figure 3-130. Replacing the Base Cover

3. Install and secure thirteen (13) screws to the base cover (Figure 3-131).



Figure 3-131. Replacing the Base Cover

ID	Size	Torque	Quantity	Screw Type
Red Call out	M2.5*7.0	3.0+15%KGF/CM	13	

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
Touch Pad Failure
Internal Speaker Failure
Audio Codec 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:

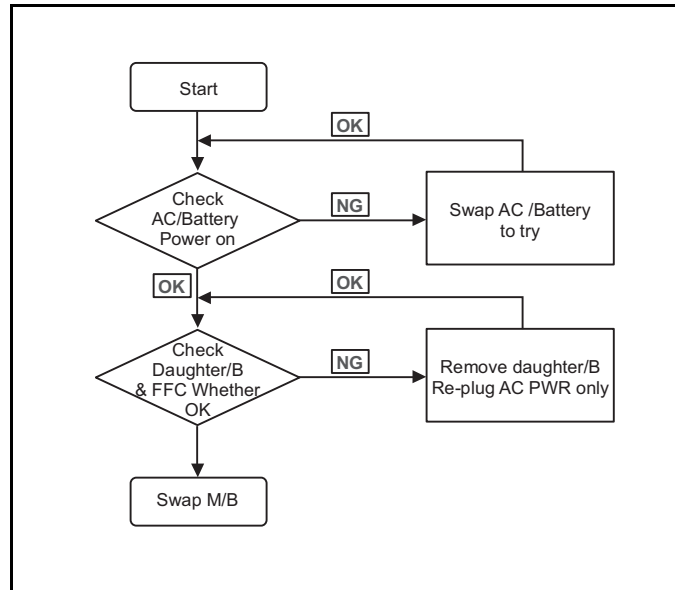


Figure 4-1. Power On Issue

Computer Shuts Down Intermittently

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

1. Make sure the power cable is properly connected to the computer and the electrical outlet.
2. Remove all extension cables between the computer and the outlet.
3. Remove all surge protectors between the computer and the electrical outlet. Plug the computer directly into a known serviceable electrical outlet.
4. Disconnect the power and open the casing to check the thermal 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:

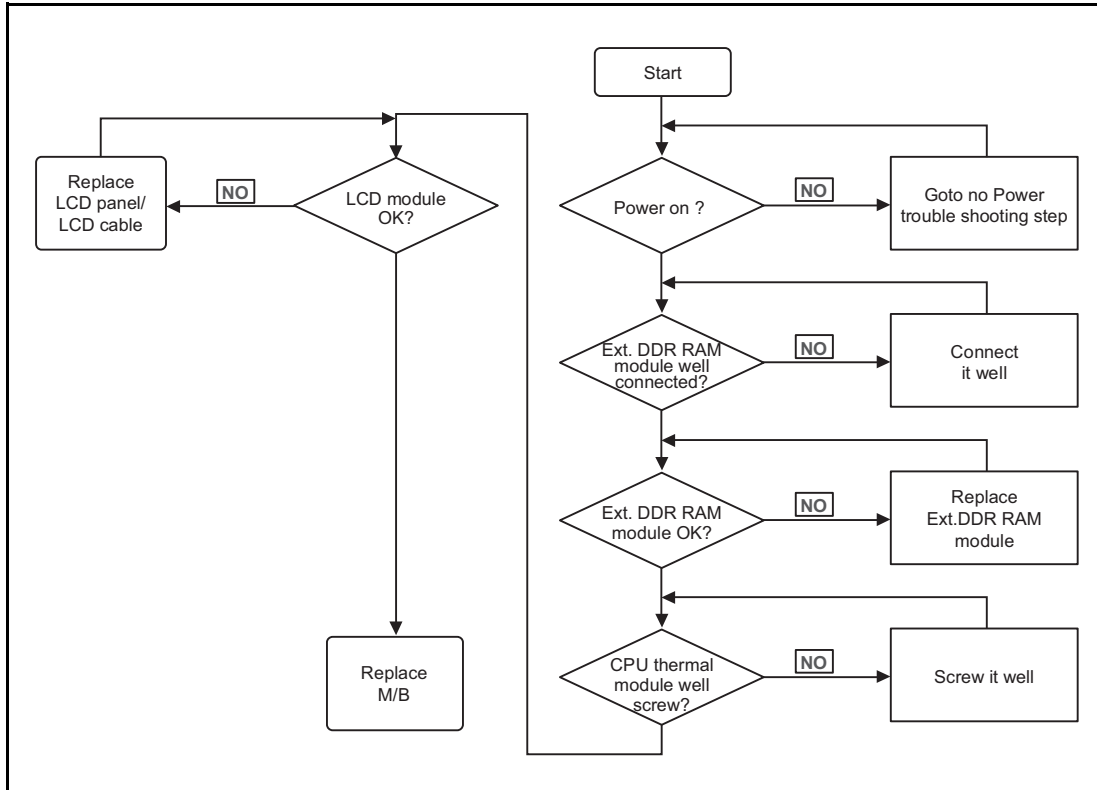


Figure 4-2. No Display Issue

No POST or Video

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

1. Make sure that internal display is selected. Then switch between the internal display and the external display. 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.
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.

⇒ 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:

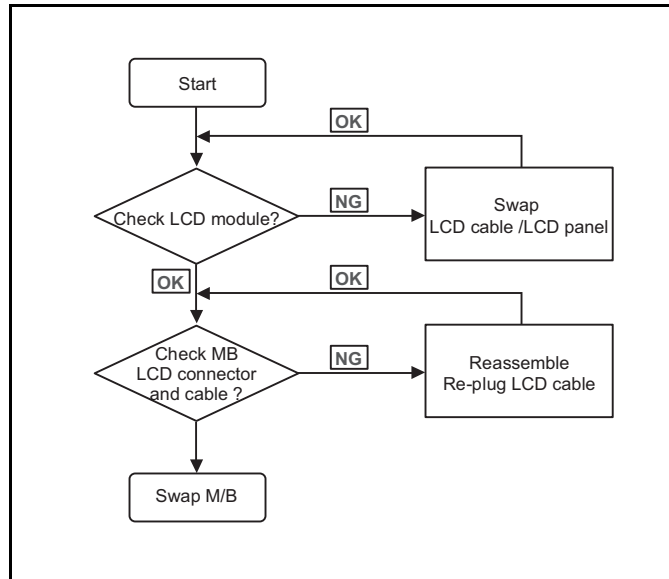


Figure 4-3. LCD Failure

Internal Keyboard Failure

If the internal keyboard fails, perform the following:

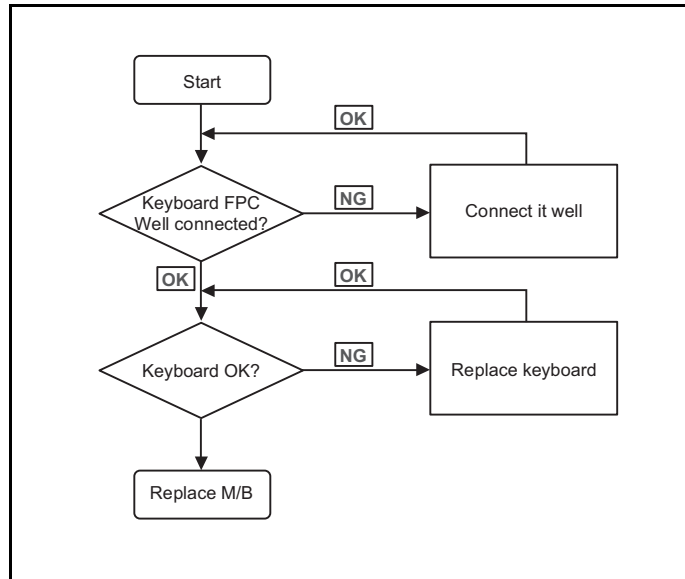


Figure 4-4. Internal Keyboard Failure

Touch Pad Failure

If the touch pad fails, perform the following:

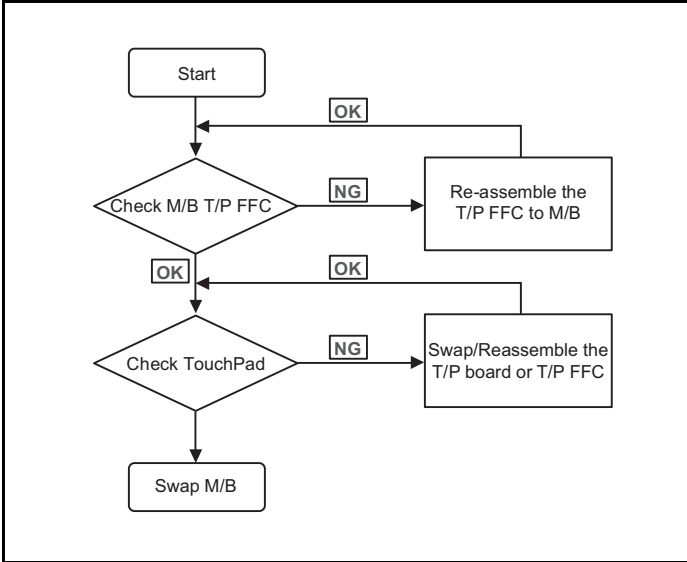


Figure 4-5. Touch Pad Failure

Internal Speaker Failure

If the internal speakers fail, perform the following:

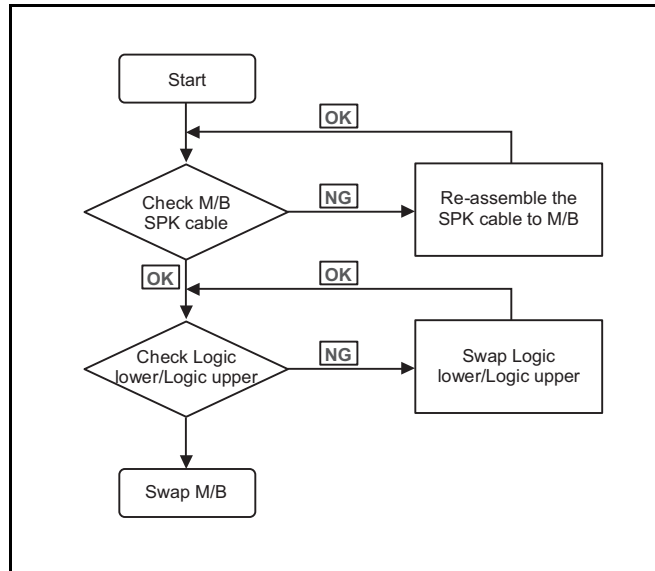


Figure 4-6. Internal Speaker Failure

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 Codec Failure

If the audio codec fails, perform the following:

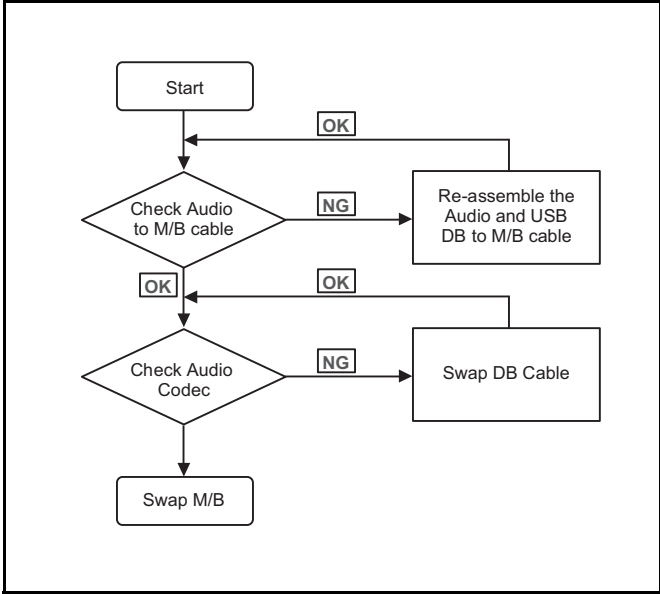


Figure 4-7. Audio Codec Failure

Other Functions Failure

1. Check if the drives are functioning correctly.
2. Check if the external modules are functioning correctly.
3. Change the 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_PCIO_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

Jumper and Connector Locations

Mainboard Jumper and Connector Locations

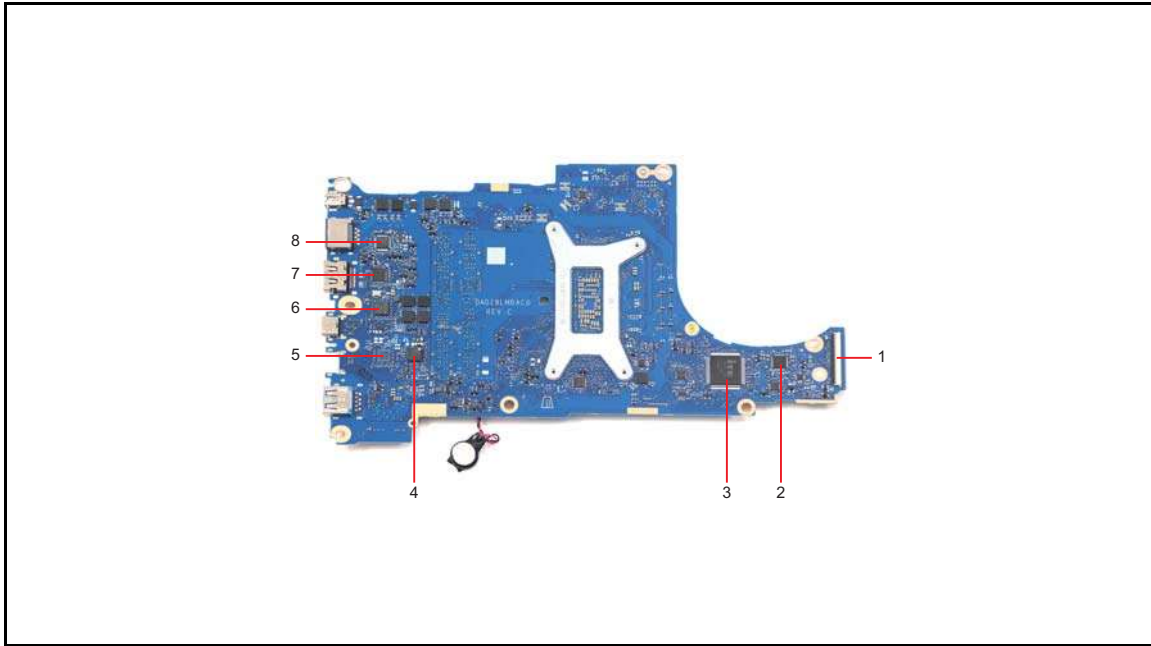


Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Description	Item	Description
1	DB Connector	5	BBR
2	Codec	6	BBR
3	EC	7	HDMI redriver
4	PD	8	LAN

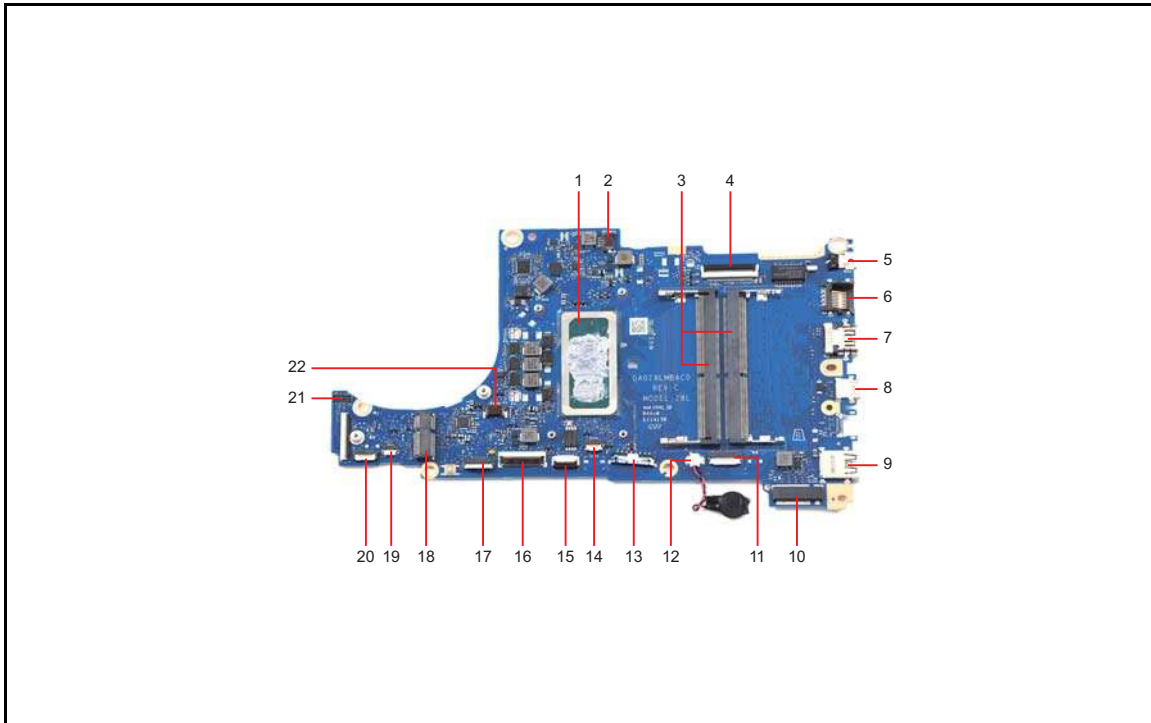


Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

Item	Description	Item	Description
1	CPU	12	RTC Battery Connector
2	Speaker Connector	13	Battery Connector
3	DDR4 SO-DIMM	14	Keyboard Backlight Connector
4	LCD Connector	15	NFC Connector
5	DC-IN Jack	16	Keyboard Connector
6	LAN Connector	17	Touchpad Connector
7	HDMI Connector	18	WLAN Module Connector
8	USB Type-C Connector	19	P-Sensor Connector
9	USB Type-A Connector	20	HDD Connector
10	SSD Connector	21	LTE Connector
11	Card Reader Connector	22	Fan Connector

CHAPTER 6

FRU (Field Replaceable Unit) List

Exploded Diagrams 6-4
FRU List 6-8
Screw List 6-16

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the TravelMate P215-54. 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

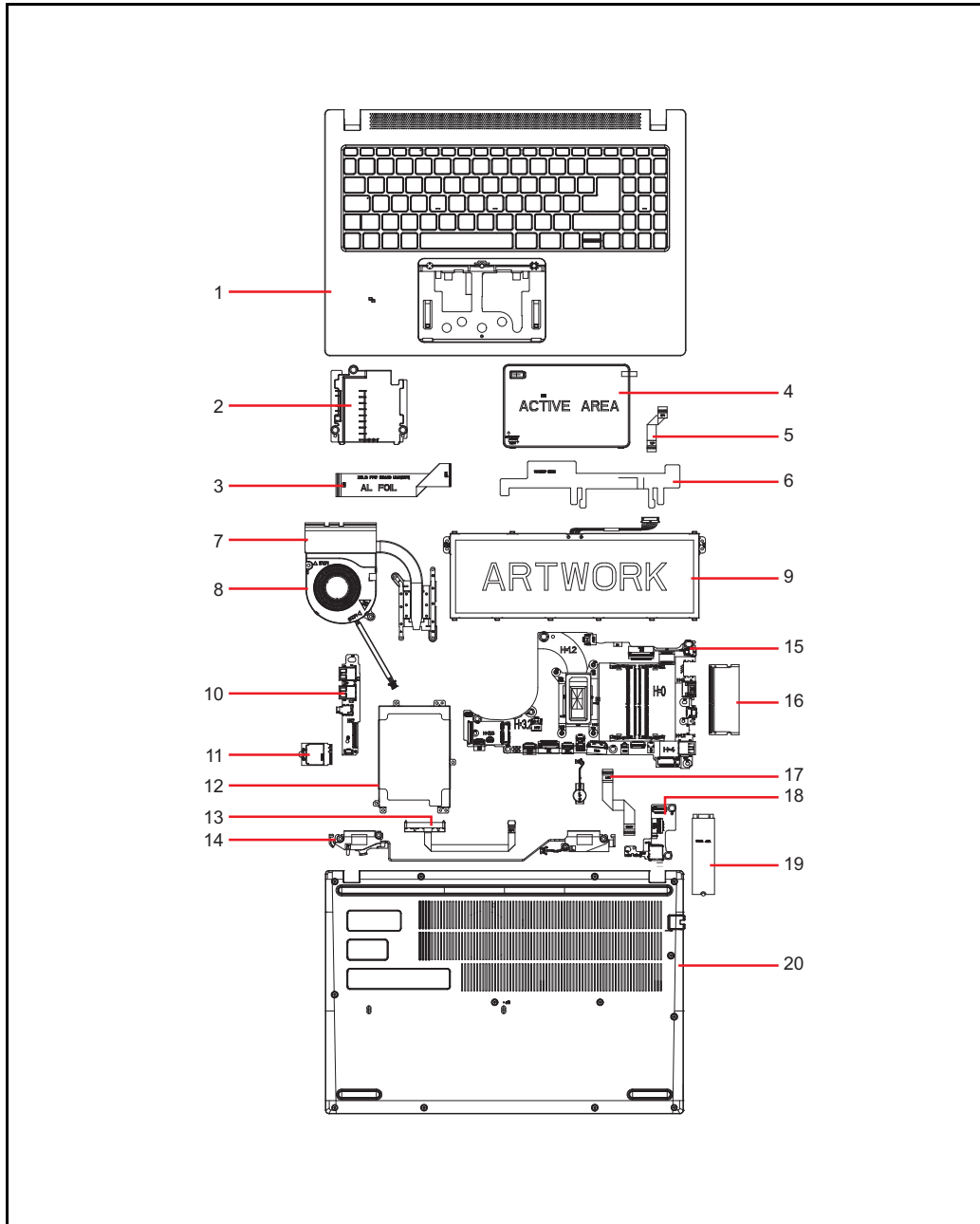


Figure 6-1. System Exploded Diagram

Table 6-1. System Exploded Diagram

No.	Description	Acer Part No.
1	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Arabic NK.I1513.2A2	6B.VVRN7.001

Table 6-1. System Exploded Diagram (Continued)

No.	Description	Acer Part No.
2	SMART CARD HOLDER	42.VVUN7.001
3	CABLE FOR I/O BOARD	50.VVRN7.001
4	TOUCH PAD W/MYLARY/BKT/ADH NC.24611.075	56.VVAN7.001
5	CABLE FFC FOR TP-MB	50.VVRN7.004
6	COND FABRIC W/MYLAR ASSY TP	47.VVRN7.002
7	HEAT SINK 15W UMA	24.VVRN7.001
8	FAN	23.VVRN7.001
9	Battery PANASONIC Typ.55Wh 3550mAh 4S1P AP19B5L 248x84.4x5.5(mm) AP19B 15.4V 70W Polymer	KT.00405.010
10	I/O BOARD	55.VVRN7.001
11	Wireless LAN Intel 802.11ax (Wi-Fi 6) Bluetooth AX201.NGWW.NVW WiFi 6 AX Intel 2x2 M.2 2230 CNVi 2x2 HrP2 M.2+BT 5.2 No vPro NewOTP SKU	KE.11X0N.014
12	HDD BRACKET	33.VVRN7.001
13	CABLE FOR HDD	50.VVRN7.002
14	SPEAKER R&L	23.VVRN7.002
15	Mainboard TMP214-54 Y Ci51235U UMA dTPM	NB.VV911.006
16	Memory SAMSUNG SO-DIMM DDRIV 3200 4GB M471A5244CB0-CWE LF+HF 512*16 18nm C-die	KN.4GB0B.052
17	CABLE FOR CARDREADER BOARD	50.VVRN7.003
18	CARDREADER BOARD	55.VVRN7.002
19	Flash Disk HYNIX SSD NAND 256GB M.2 2280 BC711 HFM256GD3JX016N LF+HF	KN.2560G.030
20	LOWER CASE ASSY W/HDD SPONGE	60.VVRN7.001

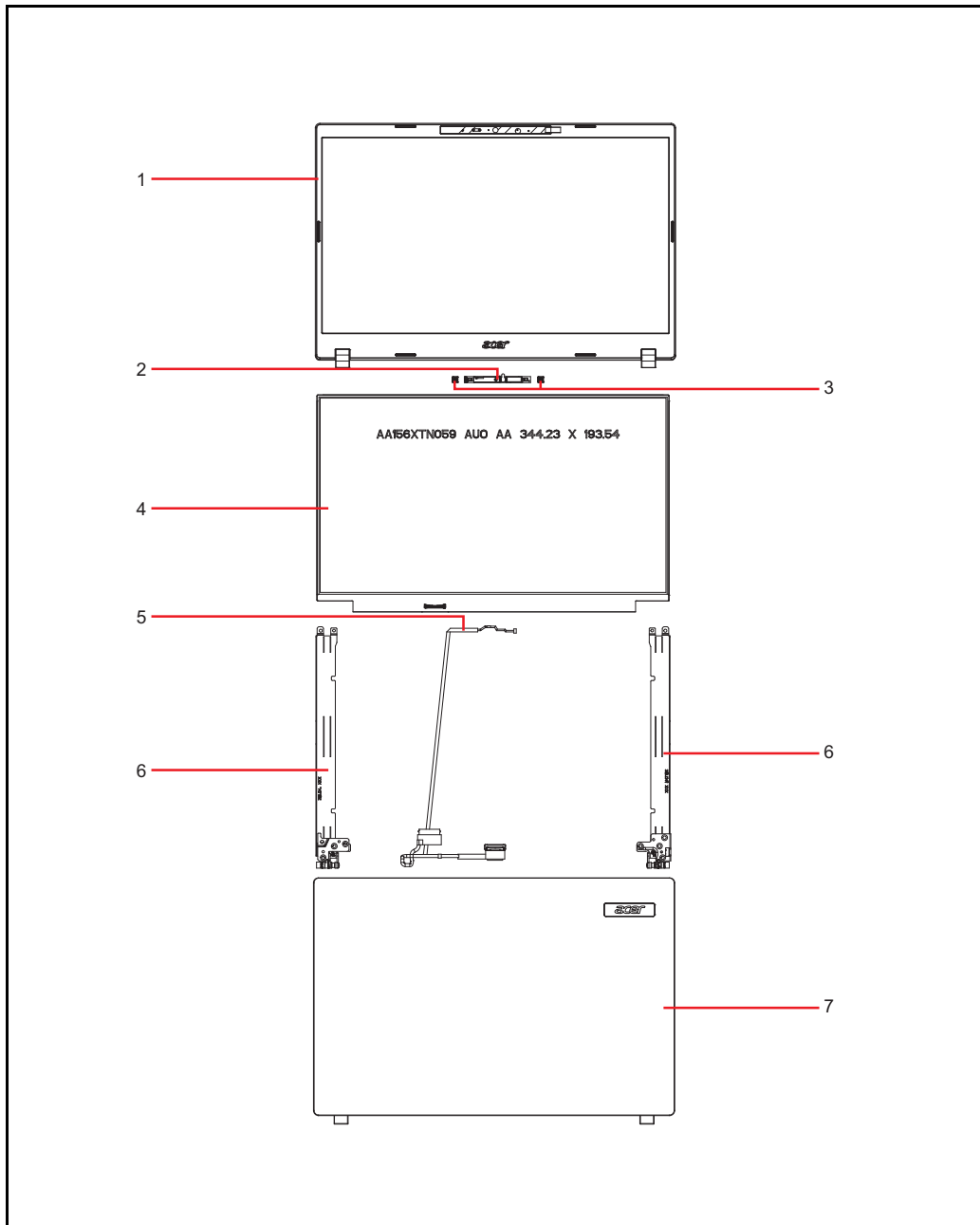


Figure 6-2. LCD Assembly Exploded Diagram

Table 6-2. LCD Assembly Exploded Diagram

No.	Description	Acer Part No.
1	LCD BEZEL ASSY	60.VVRN7.003
2	Camera Tech-Front HD Camera YHVB OV9734 SPCA2112N3 1L3B059C1 KMM4030102664DZ6 TNR Solution (54 Mic Dist.)	KS.0HD0Q.015
3	RUBBER SI MIC	47.VVRN7.005

Table 6-2. LCD Assembly Exploded Diagram (Continued)

No.	Description	Acer Part No.
4	LED LCD Panel CMI 15.6"W FHD None Glare N156HCA-EAB C2 LF 250nit 25ms 700:1 (eDP, value IPS, narrow border, 3.2mm max)	KL.1560D.042
5	LCD CABLE	50.VVRN7.005
6	HINGE L	33.VVRN7.002
	HINGE R	33.VVRN7.003
7	LCD COVER ASSY W/CAP	60.VVRN7.002

FRU List

Table 6-3. FRU List

Category	Description	Acer Part No.
ADAPTER		
	Adapter LITE-ON PA-1450-26A3 45W 3PHY (1.1x3.0x7.7) Brick 19V/2.37A Black	KP.04503.011
	Adapter Chicony Power A045R072P 45W 3PHY (1.1x3.0x7.7) Brick 19V/2.37A Black	KP.0450H.013
BATTERY		
	Battery PANASONIC Typ.55Wh 3550mAh 4S1P AP19B5L 248x84.4x5.5(mm) AP19B 15.4V 70W Polymer	KT.00405.010
	Battery SIMPLO Typ.56Wh 3634mAh 4S1P AP18C7M 248x84.4x5.5(mm) AP18C 15.4V 60W Polymer	KT.00407.008
BOARD		
	Wireless LAN Intel 802.11ax (Wi-Fi 6) Bluetooth AX201.NGWW.NVW WiFi 6 AX Intel 2x2 M.2 2230 CNVi 2x2 HrP2 M.2+BT 5.2 No vPro NewOTP SKU	KE.11X0N.014
	I/O BOARD	55.VVRN7.001
	CARDREADER BOARD	55.VVRN7.002
CABLE		
	CABLE FOR I/O BOARD	50.VVRN7.001

Table 6-3. FRU List (Continued)




Category	Description	Acer Part No.
	CABLE FOR HDD	50.VVRN7.002
	CABLE FOR CARDREADER BOARD	50.VVRN7.003
	CABLE FFC FOR TP-MB	50.VVRN7.004
	LCD CABLE	50.VVRN7.005
CAMERA		
	Camera Tech-Front HD Camera YHVB OV9734 SPCA2112N3 1L3B059C1 KMM4030102664DZ6 TNR Solution (54 Mic Dist.)	KS.0HD0Q.015
CASE/COVER/BRACKET ASSEMBLY		
	LOWER CASE ASSY W/HDD SPONGE	60.VVRN7.001
	HDD BRACKET	33.VVRN7.001

Table 6-3. FRU List (Continued)

Category	Description	Acer Part No.
	LCD COVER ASSY W/CAP	60.VVRN7.002
	LCD BEZEL ASSY	60.VVRN7.003
	HINGE L	33.VVRN7.002
	HINGE R	33.VVRN7.003
	SMART CARD HOLDER	42.VVUN7.001
FAN SINK/SPEAKER/EARPHONE/RTC		
	FAN	23.VVRN7.001
	HEAT SINK 15W UMA	24.VVRN7.001
	SPEAKER R&L	23.VVRN7.002
HDD/HARD DISK DRIVE		
	Flash Disk HYNIX SSD NAND 256GB M.2 2280 BC711 HFM256GD3JX016N LF+HF	KN.2560G.030
	Flash Disk SAMSUNG SSD NAND 512GB M.2 2280 PM991a MZVLQ512HBLU-00B00 FW# FXM7301Q LF+HF	KN.5120B.041

Table 6-3. FRU List (Continued)



Category	Description	Acer Part No.
	HDD TOSHIBA 2.5" 5400rpm 1000GB MQ04ABF100 , 1TB/P, acer code SATA III 128MB LF+HF F/W:JU002J	KH.01K04.017
KB ASSEMBLY		
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Arabic NK.I1513.2A2	6B.VVRN7.001
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black FR/Arabic NK.I1513.2AJ	6B.VVRN7.002
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Belgium NK.I1513.2AF	6B.VVRN7.003
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Brazilian Portuguese NK.I1513.2AG	6B.VVRN7.004
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black US International w/ Bulgaria NK.I1513.2AD	6B.VVRN7.005
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black US International w/ Canadian French NK.I1513.2AC	6B.VVRN7.006
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black SLO/CRO NK.I1513.2AR	6B.VVRN7.007
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black CZ/SK NK.I1513.2AH	6B.VVRN7.008
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Danish NK.I1513.2AI	6B.VVRN7.009
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black French NK.I1513.2AK	6B.VVRN7.010
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black German NK.I1513.2AL	6B.VVRN7.011

Table 6-3. FRU List (Continued)


Category	Description	Acer Part No.
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Greek NK.I1513.2A4	6B.VVRN7.012
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black US International w/ Hebrew NK.I1513.2AB	6B.VVRN7.013
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Hungarian NK.I1513.2AM	6B.VVRN7.014
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Persian NK.I1513.2A8	6B.VVRN7.015
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Italian NK.I1513.2AN	6B.VVRN7.016
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 103KS Black Japanese NK.I1513.2AX	6B.VVRN7.017
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Korean NK.I1513.2A5	6B.VVRN7.018
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black ALA-Spanish NK.I1513.2AE	6B.VVRN7.019
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Norwegian NK.I1513.2AP	6B.VVRN7.020
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Portuguese NK.I1513.2AQ	6B.VVRN7.021
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Russian NK.I1513.2A6	6B.VVRN7.022
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Nordic NK.I1513.2AO	6B.VVRN7.023
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Spanish NK.I1513.2AS	6B.VVRN7.024
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Sweden NK.I1513.2AT	6B.VVRN7.025

Table 6-3. FRU List (Continued)




Category	Description	Acer Part No.
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Swiss/G NK.I1513.2AU	6B.VVRN7.026
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Thailand NK.I1513.2A9	6B.VVRN7.027
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black Turkish NK.I1513.2AV	6B.VVRN7.028
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Traditional Chinese NK.I1513.2A3	6B.VVRN7.029
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black US International NK.I1513.2AA	6B.VVRN7.030
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 100KS Black UK NK.I1513.2AW	6B.VVRN7.031
	UPPER CASE ASSY W/ BL Keyboard VP05P_B20BWL VP05P Internal 15 Standard 99KS Black Ukrainian NK.I1513.2A7	6B.VVRN7.032
	LCD	
	LED LCD Panel CMI 15.6"W FHD None Glare N156HCA-EAB C2 LF 250nit 25ms 700:1 (eDP, value IPS, narrow border, 3.2mm max)	KL.1560D.042
	LED LCD Panel AUO 15.6"W FHD None Glare B156HTN06.1 H/W 7A LF 220nit 8ms 400:1 (eDP, narrow border, 3.2mm max, value)	KL.15605.070
MAINBOARD		
	Mainboard TMP214-54 Y Ci51235U UMA dTPM	NB.VV911.006

Table 6-3. FRU List (Continued)












Category	Description	Acer Part No.
MEMORY		
	Memory SAMSUNG SO-DIMM DDRIV 3200 4GB M471A5244CB0-CWE LF+HF 512*16 18nm C-die	KN.4GB0B.052
	Memory SAMSUNG SO-DIMM DDRIV 3200 8GB M471A1K43EB1-CWE LF+HF 1024*8 1znm E-die	KN.8GB0B.067
POWER CORD		
	POWER CORD 1M 125V JAP BLACK	27.NE307.001
	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 TAIWAN BLACK	27.NE307.002	
TOUCHPAD		
	TOUCH PAD W/MYLARY/BKT/ADH NC.24611.075	56.VVAN7.001
	TOUCH PAD FOR FP W/MYLARY/BKT/ADH NC.24611.07U	56.VVRN7.001
MISCELLANEOUS		
	LCD ADHESIVE TAPE W/MYLAR	47.VVRN7.001

Table 6-3. FRU List (Continued)

Category	Description	Acer Part No.
	COND FABRIC W/MYLAR ASSY TP	47.VVRN7.002
	CELLULAR W/MYLAR ASSY NFC	47.VVRN7.003
	SPONGE TOP LENS	47.VVRN7.004
	RUBBER SI MIC	47.VVRN7.005
	ACETATE TAPE FOR BATTERY(21*21mm)	47.HKKN7.001
	INSULATOR MYLAR ON BATTERY CABLE	47.HUVN7.002
	MB BACKLIGHT KAPTON	47.GEDN7.003
	ACETATE TAPE FFC	47.VV9N7.004
	INS MYLAR FOR LCD PANEL	47.HKCN7.001

Screw List

Table 6-4. Screw List

Category	Description	Acer Part No.
	SCREW M2.0*2.0-I(NI,NYLOK)STL	86.VSYN7.002
	SCREW M2*3.5-IBNINYLOKD4.5	86.VVRN7.001
	SCREW M2.5*2.5-I(BNI)(NYLOK)T=0.6	86.SHXN7.003
	SCREW M3*0.5+3.5I	86.TDY07.003
	SCREW M2.0*2.0- I(BNI)(NY)IRON	86.G55N7.001
	SCREW W/WASHER KIT	86.VLLN7.003
	SCREW M2.5*5.0-I(BNI)(NYLOK) IRON	86.HX4N7.001

CHAPTER 7

Model Definition and Configuration

TravelMate P215-54.....7-3

Model Definition and Configuration

TravelMate P215-54

Table 7-1. RO, Description

Model	RO	Country	Acer Part No	Description
TMP215-54-34DV	EMEA	Poland	NX.VVREP.001	TMP215-54-34DV WNPRC64TPL1 UMACSFkkLt_4U 31215U/1*8G/256G/50Wh/R/5FP B_AX201_FP_HD TNR_HDD kit_BXB_PLD2 6T
TMP215-54-359X	EMEA	Poland	NX.VVREP.002	TMP215-54-359X WNPRC64TPL1 UMACSFkkLt_4U 31215U/1*8G/512G/50Wh/R/5FP B_AX201_FP_HD TNR_HDD kit_BXB_PLD2 6T
TMP215-54-599B	EMEA	Poland	NX.VVREP.003	TMP215-54-599B WNPRC64TPL1 UMACSFkkLt_4U 51235U/1*8G/512G/50Wh/R/5FP B_AX201_FP_HD TNR_HDD kit_BXB_PLD2 6T
TMP215-54-36DD	EMEA	Poland	NX.VVREP.004	TMP215-54-36DD WNPRC64EDUWWTPL1 UMACSFkkLt_4U 31215U/1*8G/256G/50Wh/R/5FP B_AX201_FP_HD TNR_HDD kit_BXB_PLD2 6T
TMP215-54-517M	AAP	Singapore	NX.VVRSG.003	TMP215-54-517M WNPRC64TSG1 UMACSFkkLt_4U 51235U/1*8G/256G/50Wh/R/5FP B_AX201_FP_HD TNR_HDD kit_BXB_EHB1 6T
TMP215-54-51G6	AAP	Singapore	NX.VVRSG.004	TMP215-54-51G6 WNPRC64TSG1 UMACSFkkLt_4U 51235U/1*16G/256G/50Wh/R/5FP PB_AX201_FP_HD TNR_HDD kit_BXB_EHB1 6T

Table 7-1. RO, Description (Continued)

Model	RO	Country	Acer Part No	Description
TMP215-54-7243	AAP	Singapore	NX.VVRSG.002	TMP215-54-7243 WNPRC64TSG1 UMACSFkkLt_4U 71255U/1*8G/F512G/50Wh/R/5F PB_AX201_FP_HD TNR_HDD kit_BXB_EHB1 6T
TMP215-54-747B	AAP	Singapore	NX.VVRSG.001	TMP215-54-747B WNPRC64TSG1 UMACSFkkLt_4U 71255U/1*16G/F512G/50Wh/R/5 FPB_AX201_FP_HD TNR_HDD kit_BXB_EHB1 6T
TMP215-54-55BE	AAP	Singapore	NX.VVRSG.006	TMP215-54-55BE WNPRC64TSG1 UMACSFkkLt_4U 51235U/1*16G/F512G/50Wh/R/5 FPB_AX201_FP_HD TNR_HDD kit_BXB_EHB1 6T
TMP215-54-58ZP	AAP	Singapore	NX.VVRSG.005	TMP215-54-58ZP WNPRC64TSG1 UMACSFkkLt_4U 51235U/1*8G/F512G/50Wh/R/5F PB_AX201_FP_HD TNR_HDD kit_BXB_EHB1 6T
TMP215-54-5739	TWN	GCTWN	NX.VVRTA.001	TMP215-54-5739 WNPRC64TTW1 UMACSFkkLt_4U 51235U/1*8G/F512G/50Wh/R/F HDPLB_AX201_FP_HD TNR_HDD kit_BXB_TC61 6T
TMP215-54-7547	TWN	GCTWN	NX.VVRTA.002	TMP215-54-7547 WNPRC64TTW1 UMACSFkkLt_4U 71255U/1*8G/F512G/50Wh/R/F HDPLB_AX201_FP_HD TNR_HDD kit_BXB_TC61 6T

Table 7-2. CPU, LCD, VGA Chip

Model	Country	Acer Part No	CPU	LCD	VGA Chip
TMP215-54-34DV	Poland	NX.VVREP.001	Ci31215U	N15.6FHDSU PILB	UMA
TMP215-54-359X	Poland	NX.VVREP.002	Ci31215U	N15.6FHDSU PILB	UMA
TMP215-54-599B	Poland	NX.VVREP.003	Ci51235U	N15.6FHDSU PILB	UMA
TMP215-54-36DD	Poland	NX.VVREP.004	Ci31215U	N15.6FHDSU PILB	UMA
TMP215-54-517M	Singapore	NX.VVRSG.003	Ci51235U	N15.6FHDSU PILB	UMA
TMP215-54-51G6	Singapore	NX.VVRSG.004	Ci51235U	N15.6FHDSU PILB	UMA
TMP215-54-7243	Singapore	NX.VVRSG.002	Ci71255U	N15.6FHDSU PILB	UMA
TMP215-54-747B	Singapore	NX.VVRSG.001	Ci71255U	N15.6FHDSU PILB	UMA
TMP215-54-55BE	Singapore	NX.VVRSG.006	Ci51235U	N15.6FHDSU PILB	UMA
TMP215-54-58ZP	Singapore	NX.VVRSG.005	Ci51235U	N15.6FHDSU PILB	UMA
TMP215-54-5739	GCTWN	NX.VVRTA.001	Ci51235U	N15.6FHDSU PLB	UMA
TMP215-54-7547	GCTWN	NX.VVRTA.002	Ci71255U	N15.6FHDSU PLB	UMA

Table 7-3. Memory, HDD, Card Reader

Model	Country	Acer Part No	Memory	HDD	Card Reader
TMP215-54-34DV	Poland	NX.VVREP.001	SO8GBIV	F80256PM	MicroSD
TMP215-54-359X	Poland	NX.VVREP.002	SO8GBIV	F80512PM	MicroSD
TMP215-54-599B	Poland	NX.VVREP.003	SO8GBIV	F80512PM	MicroSD
TMP215-54-36DD	Poland	NX.VVREP.004	SO8GBIV	F80256PM	MicroSD
TMP215-54-517M	Singapore	NX.VVRSG.003	SO8GBIV	F80256PM	MicroSD
TMP215-54-51G6	Singapore	NX.VVRSG.004	SO16GBIV	F80256PM	MicroSD
TMP215-54-7243	Singapore	NX.VVRSG.002	SO8GBIV	F80512PM4	MicroSD
TMP215-54-747B	Singapore	NX.VVRSG.001	SO16GBIV	F80512PM4	MicroSD
TMP215-54-55BE	Singapore	NX.VVRSG.006	SO16GBIV	F80512PM4	MicroSD

Table 7-3. Memory, HDD, Card Reader (Continued)

Model	Country	Acer Part No	Memory	HDD	Card Reader
TMP215-54-58ZP	Singapore	NX.VVRSG.005	SO8GBIV	F80512PM4	MicroSD
TMP215-54-5739	GCTWN	NX.VVRTA.001	SO8GBIV	F80512PM4	MicroSD
TMP215-54-7547	GCTWN	NX.VVRTA.002	SO8GBIV	F80512PM4	MicroSD

Table 7-4. Wireless LAN, Camera

Model	Country	Acer Part No	Wireless LAN	Camera
TMP215-54-34DV	Poland	NX.VVREP.001	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-359X	Poland	NX.VVREP.002	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-599B	Poland	NX.VVREP.003	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-36DD	Poland	NX.VVREP.004	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-517M	Singapore	NX.VVRSG.003	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-51G6	Singapore	NX.VVRSG.004	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-7243	Singapore	NX.VVRSG.002	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-747B	Singapore	NX.VVRSG.001	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-55BE	Singapore	NX.VVRSG.006	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-58ZP	Singapore	NX.VVRSG.005	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-5739	GCTWN	NX.VVRTA.001	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR
TMP215-54-7547	GCTWN	NX.VVRTA.002	INTAX201.NGWG.NV W_AX_w/BT 5.0 2230	HD_Mic2_Unified TNR

Table 7-5. Finger Print, NB Chipset

Model	Country	Acer Part No	Finger Print	NB Chipset
TMP215-54-34DV	Poland	NX.VVREP.001	FP on Touchpad	none NB Chipset
TMP215-54-359X	Poland	NX.VVREP.002	FP on Touchpad	none NB Chipset
TMP215-54-599B	Poland	NX.VVREP.003	FP on Touchpad	none NB Chipset
TMP215-54-36DD	Poland	NX.VVREP.004	FP on Touchpad	none NB Chipset
TMP215-54-517M	Singapore	NX.VVRSG.003	FP on Touchpad	none NB Chipset
TMP215-54-51G6	Singapore	NX.VVRSG.004	FP on Touchpad	none NB Chipset
TMP215-54-7243	Singapore	NX.VVRSG.002	FP on Touchpad	none NB Chipset
TMP215-54-747B	Singapore	NX.VVRSG.001	FP on Touchpad	none NB Chipset
TMP215-54-55BE	Singapore	NX.VVRSG.006	FP on Touchpad	none NB Chipset
TMP215-54-58ZP	Singapore	NX.VVRSG.005	FP on Touchpad	none NB Chipset
TMP215-54-5739	GCTWN	NX.VVRTA.001	FP on Touchpad	none NB Chipset
TMP215-54-7547	GCTWN	NX.VVRTA.002	FP on Touchpad	none NB Chipset

Table 7-6. Battery, Adapter

Model	Country	Acer Part No	Battery	Adapter
TMP215-54-34DV	Poland	NX.VVREP.001	50Wh_150300	45W_3phy
TMP215-54-359X	Poland	NX.VVREP.002	50Wh_150300	45W_3phy
TMP215-54-599B	Poland	NX.VVREP.003	50Wh_150300	45W_3phy
TMP215-54-36DD	Poland	NX.VVREP.004	50Wh_150300	45W_3phy
TMP215-54-517M	Singapore	NX.VVRSG.003	50Wh_150300	45W_3phy
TMP215-54-51G6	Singapore	NX.VVRSG.004	50Wh_150300	45W_3phy
TMP215-54-7243	Singapore	NX.VVRSG.002	50Wh_150300	45W_3phy
TMP215-54-747B	Singapore	NX.VVRSG.001	50Wh_150300	45W_3phy
TMP215-54-55BE	Singapore	NX.VVRSG.006	50Wh_150300	45W_3phy
TMP215-54-58ZP	Singapore	NX.VVRSG.005	50Wh_150300	45W_3phy
TMP215-54-5739	GCTWN	NX.VVRTA.001	50Wh_150300	45W_3phy
TMP215-54-7547	GCTWN	NX.VVRTA.002	50Wh_150300	45W_3phy

CHAPTER 8

Test Compatible Components

Microsoft® Windows® 10 Home Environment Test. 8-4

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® 10 Home 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 P215-54. Compatibility Test Report released by the Acer Mobile System Testing Department.

Microsoft® Windows® 10 Home Environment Test

Table 8-1. Test Compatible Components

Vendor	Type	Description	Part No.
A Cover			
10001028 QUANTA	Shale Black 15 PC+ABS Texture	Quanta A cover Shale Black 15 PC+ABS Texture	NC.21011.0WG
Accessory			
10423762 PRIMETEK	PRIMETEK Sim Card Ejector with Packing	PRIMETEK PRIMETEK Sim Card Ejector with Packing	NC.23811.0AK
10001028 QUANTA	Timpani&BassDru m HDD upgrade kit	Trumpet&Trombone HDD upgrade kit	NC.23811.0AM
Adapter			
60035715 DELTA-SINGAPO RE	45W_3phy	Adapter DELTA ADP-45FE FD 45W 3PHY (1.1x3.0x7.7) Brick 19V/2.37A Black	KP.04501.017
60036752 LITE-ON SINGAPORE	45W_3phy	Adapter LITE-ON PA-1450-26A3 45W 3PHY (1.1x3.0x7.7) Brick 19V/2.37A Black	KP.04503.011
60016453 CHICONY POWER	45W_3phy	Adapter Chicony Power A045R072P 45W 3PHY (1.1x3.0x7.7) Brick 19V/2.37A Black	KP.0450H.013
60016453 CHICONY POWER	45W_3phy INDIA BLACK	Adapter Chicony Power A045R098P 45W 1.1x3.0x7.7 Brick 19V/2.37A Black	KP.0450H.019
60035715 DELTA-SINGAPO RE	45W_3phy_TCO9. 0	Adapter DELTA ADP-45FE FBJ 45W 1.1x3.0x7.7 Brick 19V/2.37A Black ,TCO9.0	KP.04501.029
60035715 DELTA-SINGAPO RE	65W_3phy	Adapter DELTA ADP-65DE BA 65W 3PHY (1.1x3.0x7.7) Brick 19V/3.42A Black	KP.06501.012
60036752 LITE-ON SINGAPORE	65W_3phy	Adapter LITE-ON PA-1650-50A3 65W 3PHY (1.1x3.0x7.7) Brick 19V/3.42A Black	KP.06503.018
60016453 CHICONY POWER	65W_3phy	Adapter Chicony Power A065R178P 65W 3PHY (1.1x3.0x7.7) Brick 19V/3.42A Black	KP.0650H.013

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
60035715 DELTA-SINGAPORE	65W_3phy INDIA BLACK	Adapter DELTA ADP-65DE BH 65W 3PHY (1.1x3.0x7.7) Brick 19V/3.42A Black	KP.06501.015
60036752 LITE-ON SINGAPORE	65W PD Type C	Adapter LITE-ON PA-1650-58AD 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_2 0V/5A Black Meet CoC-Tier2 & IEC 62368	KP.06503.020
Audio Codec			
10004786 REALTEK	Realtek ALC256M-CG (HDA)_G4 -Q	Realtek ALC256M-CG (HDA)_G4 -Q	NC.21011.15K
B Cover			
10001028 QUANTA	Shale Black 15 PC+ABS Texture w/ Camera	QUANTA B cover Shale Black 15 PC+ABS Texture w/ Camera	NC.21011.0DV
Battery			
60070657 LG ENERGY	3CELL4.2	Battery LGES Typ.50Wh 4470mAh 3S1P AP18C8K 248x84.4x5.5(mm) AP18C 11.25V 65W Polymer	KT.0030G.020
60069689 COSMX BATTERY	3CELL4.59	Battery CosMx Typ.53Wh 3S1P AP20CBL 248x84.4x5.5(mm) AP20C 11.55V 65W Li-Ion	KT.0030B.002
60070657 LG ENERGY	3CELL4.82	Battery LGES Typ.56Wh 4820mAh 3S1P AP19B8M 248x84.4x5.5(mm) AP19B 11.61V 65W Polymer	KT.0030G.024
60001535 PANASONIC	4CELL3.55	Battery PANASONIC Typ.55Wh 3550mAh 4S1P AP19B5L 248x84.4x5.5(mm) AP19B 15.4V 70W Polymer	KT.00405.010
60002162 SIMPLO	4CELL3.63	Battery SIMPLO Typ.56Wh 3634mAh 4S1P AP18C7M 248x84.4x5.5(mm) AP18C 15.4V 60W Polymer	KT.00407.008
10000981 MISC (END USER)	50Wh_150300	Battery 50Wh_150300 Dummy	KT.DUM00.033
10000981 MISC (END USER)	56Wh_150300	Battery 56Wh_150300 Dummy	KT.DUM00.005
10000981 MISC (END USER)	56Wh_150302	Battery 56Wh_150302 Dummy	KT.DUM00.036

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
C Cover			
10001028 QUANTA	Shale Black 15 PC+ABS Texture	Quanta C cover Shale Black 15 PC+ABS Texture	NC.21011.0WH
Camera			
10256402 CHICONY	FHDF_U_W_M2R 1_3.2T01TN	Camera CHICONY FHD FF CKFLF30 OV2744 SPCA2120N 1L4C066F1 (w/BG) ZTS6735 USB IR (TNR)	KS.FHD06.008
10256402 CHICONY	HDFF_U_W_M2R0 _3.2T01TN	Camera CHICONY HD Camera CNFLH34 GC1009 RTS5855 1L3B059F2(BG) ZTS6735 TNR	KS.0HD06.032
10174742 TECH-FRONT(CQ)	HDFF_U_W_M2R0 _3.2T01TN	Camera Tech-Front HD Camera YHVC OV9734 SPCA2112N 1L3B059F1(BG) ZTS6735 TNR	KS.0HD0Q.018
10256402 CHICONY	HD_Mic2_Unified	Camera CHICONY HD Camera CNFKH79 OV9734 RTS5846NR DS-31041H ZTS6031M (add Mic*2)	KS.0HD06.025
10174742 TECH-FRONT(CQ)	HD_Mic2_Unified	Camera Tech-Front HD Camera HD Camera TF_OV9734_SP2087L2_AOET_K MM4030 Unified2 (add Mic*2)	KS.0HD0Q.004
Card Reader			
10000981 MISC	MicroSD	Card Reader MicroSD	NC.21511.001
CPU			
10001067 INTEL	Ci31215U	CPU(BGA) Intel Core i3 i3-1215U BGA 15W Alder Lake 282P 64EU	KC.12001.U15
10001067 INTEL	Ci51235U	CPU(BGA) Intel Core i5 i5-1235U BGA 15W Alder Lake 282P 80EU	KC.12001.U35
10001067 INTEL	Ci51245U	CPU(BGA) Intel Core i5 i5-1245U BGA 15W Alder Lake 282P 80EU vPRO	KC.12001.U45
10001067 INTEL	Ci71255U	CPU(BGA) Intel Core i7 i7-1255U BGA 15W Alder Lake 282P 96EU	KC.12001.U55
10001067 INTEL	Ci71265U	CPU(BGA) Intel Core i7 i7-1265U BGA 15W Alder Lake 282P 96EU vPRO	KC.12001.U65
D Cover			
10001028 QUANTA	Shale Black 15 PC+ABS Texture BB	QUANTA D cover Shale Black 15 PC+ABS Texture BB	NC.21011.0DX

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
Digital Mic			
10000981 MISC (END USER)	Digital Mic	Dual Digital Mic (Built on Camera Module)	NC.26711.001
Finger Print			
10000981 MISC	FP on Touchpad	MISC FP on Touchpad	NC.22011.001
HDD			
60002050 MICRON SG	F801024PM4	Flash Disk MICRON SSD NAND 1024GB Micron 2450 1024GB MTFDKBA1T0TFK-1BC15ABYY LF+HF	KN.01K04.005
60070114 WDSG	F801024PM4	Flash Disk WD SSD NAND 1024GB SN735 SDBPNHH-1T00-1014 LF+HF	KN.01K0D.007
60040600 KINGSTON	F80128PM	Flash Disk KINGSTON SSD NAND 128GB OM8PDP3128B-AA1 LF+HF	KN.12807.034
60002045 SK HYNIX	F80128PM	Flash Disk HYNIX SSD NAND 128GB M.2 2280 BC711 HFM128GD3JX016N LF+HF	KN.1280G.007
60070114 WDSG	F80256PM	Flash Disk WD SSD NAND 256GB BiCS4 SN530 SDBPNPZ-256G-1114 LF+HF	KN.2560D.017
60002045 SK HYNIX	F80256PM	Flash Disk HYNIX SSD NAND 256GB M.2 2280 BC711 HFM256GD3JX016N LF+HF	KN.2560G.030
60002215 SAMSUNG	F80512PM	Flash Disk SAMSUNG SSD NAND 512GB M.2 2280 PM991a MZVLQ512HBLU-00B00 FW# FXM7301Q LF+HF	KN.5120B.041
60002045 SK HYNIX	F80512PM	Flash Disk HYNIX SSD NAND 512GB M.2 2280 BC711 HFM512GD3JX016N LF+HF	KN.5120G.034
60002050 MICRON SG	F80512PM4	Flash Disk MICRON SSD NAND 512GB Micron 2450 512GB MTFDKBA512TFK-1BC15ABYY LF+HF	KN.51204.038
60070114 WDSG	F80512PM4	Flash Disk WD SSD NAND 512GB SN735 SDBPNHH-512G-1014 LF+HF	KN.5120D.051

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
60001922 TOSHIBA DIGI	N1000GB5.4KS71 D	HDD TOSHIBA 2.5" 5400rpm 1000GB MQ04ABF100 , 1TB/P, acer code SATA III 128MB LF+HF F/W:JU002J	KH.01K04.017
60070114 WDSG	N1000GB5.4KS71 D	HDD WD 2.5" 5400rpm 1000GB WD10SPZX-21Z10T0 , 7mmzh 1D , 1TB/P , MN1000S SATA III 128MB LF F/W: 02.01A02	KH.01K08.035
60001922 TOSHIBA DIGI	N500GB5.4KS_4K	HDD TOSHIBA 2.5" 5400rpm 500GB Aquarius-B,MQ01ABF050,500G/ P, 7mmzh SATA III 8MB LF+HF F/W:AM002J	KH.50004.015
HDD 2			
60001922 TOSHIBA DIGI	N1000GB5.4KS71 D	HDD TOSHIBA 2.5" 5400rpm 1000GB MQ04ABF100 , 1TB/P, acer code SATA III 128MB LF+HF F/W:JU002J	KH.01K04.017
60070114 WDSG	N1000GB5.4KS71 D	HDD WD 2.5" 5400rpm 1000GB WD10SPZX-21Z10T0 , 7mmzh 1D , 1TB/P , MN1000S SATA III 128MB LF F/W: 02.01A02	KH.01K08.035
60001922 TOSHIBA DIGI	N500GB5.4KS_4K	HDD TOSHIBA 2.5" 5400rpm 500GB Aquarius-B,MQ01ABF050,500G/ P, 7mmzh SATA III 8MB LF+HF F/W:AM002J	KH.50004.015
Keyboard			
10001044 CHICONY	VP05P_B20BWL	Phantom KB CHICONY VP05P_B20BWL VP05P Internal 15 Standard Black Commercial legend White BLU 8-pin, travel 1.55mm	NK.I1513.2A0
10001044 CHICONY	VP05T_B20B	Phantom KB CHICONY VP05T_B20B VP05T Internal 15 Standard Black Commercial legend, texture, travel1.55mm (T:3.5mm)	NK.I1513.2A1
LAN			
PLM00014 ODM	Non AVAP Lan	None AVAP Lan	NA.22411.00B

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
LCD			
60003316 AUO	N15.6FHDSUPILB	LED LCD Panel AUO 15.6"W FHD None Glare B156HAN02.1 H/W:BA LF 250nit 25ms 700:1 (eDP, value IPS, narrow border)	KL.15605.071
60003089 LG	N15.6FHDSUPILB	LED LCD Panel LPL 15.6"W FHD None Glare LP156WFH-SPD5 LF 250nit 25ms 700:1 (eDP, Value IPS,narrow, 3.2mm max)	KL.15608.049
60031663 CMI STSP BRANCH	N15.6FHDSUPILB	LED LCD Panel CMI 15.6"W FHD None Glare N156HCA-EAB C2 LF 250nit 25ms 700:1 (eDP, value IPS, narrow border, 3.2mm max)	KL.1560D.042
60038572 BOE(HK)	N15.6FHDSUPILB	LED LCD Panel BOE 15.6"W FHD None Glare NV156FHM-N48 V8.2 LF 250nit 30ms 800:1 (eDP,value IPS, narrow border)	KL.1560E.033
60071097 HKC	N15.6FHDSUPILB	LED LCD Panel HKC 15.6"W FHD None Glare MB156CS01-6 Ver 1.0 LF 250nit 25ms 600:1 (eDP, value IPS, narrow)	KL.1560H.009
60051063 WIH(TAIZHOU)	N15.6FHDSUPILB	LED LCD Panel WISTRON 15.6"W FHD None Glare A156FI LF 250nit 25ms 1200:1 (eDP, value IPS, narrow)	KL.1560W.003
60003316 AUO	N15.6FHDSUPLB	LED LCD Panel AUO 15.6"W FHD None Glare B156HTN06.1 H/W 7A LF 220nit 8ms 400:1 (eDP, narrow border, 3.2mm max, value)	KL.15605.070
10001022 INNOLUX	N15.6FHDSUPLB	LED LCD Panel CMI 15.6"W FHD None Glare N156HGA-EA3 C1 LF 220nit 10ms 500:1 (eDP, narrow border, 3.2mm max, value)	KL.1560D.035
60038572 BOE(HK)	N15.6FHDSUPLB	LED LCD Panel BOE 15.6"W FHD None Glare NT156FHM-N61 V8.0 LF 220nit 10ms 500:1 (eDP, narrow border, 3.2mm max, value)	KL.1560E.015
Memory			
10000981 MISC (END USER)	SO16GBIV	Memory SO-DIMM DDRIV 16GB Dummy LF+HF Dummy	KN.16G00.002

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
60064207 MICRON SEMICONDUCTO R ASIA OPERATIONS PTE	SO16GBIV	Memory MICRON SO-DIMM DDRIV 3200 16GB MTA8ATF2G64HZ-3G2F1 LF+HF Z42B:F, 1nm	KN.16G04.020
60002045 SK HYNIX	SO16GBIV	Memory HYNIX SO-DIMM DDRIV 3200 16GB HMAA2GS6CJR8N-XN LF+HF 1024*16 RG C-die	KN.16G0G.036
10000981 MISC (END USER)	SO4GBIV	Memory SO-DIMM DDRIV 4GB Dummy LF+HF Dummy	KN.4GB00.019
60024207 KINGSTON-FAR EAST	SO4GBIV	Memory KINGSTON SO-DIMM DDRIV 3200 4GB ACR32D4S2S1KC-4 LF+HF NA-C	KN.4GB07.046
60002215 SAMSUNG	SO4GBIV	Memory SAMSUNG SO-DIMM DDRIV 3200 4GB M471A5244CB0-CWE LF+HF 512*16 18nm C-die	KN.4GB0B.052
60002045 SK HYNIX	SO4GBIV	Memory HYNIX SO-DIMM DDRIV 3200 4GB HMA851S6DJR6N-XN LF+HF 512*16 DA	KN.4GB0G.054
10000981 MISC (END USER)	SO8GBIV	Memory SO-DIMM DDRIV 8GB Dummy LF+HF Dummy	KN.8GB00.010
60002215 SAMSUNG	SO8GBIV	Memory SAMSUNG SO-DIMM DDRIV 3200 8GB M471A1K43EB1-CWE LF+HF 1024*8 1znm E-die	KN.8GB0B.067
60002045 SK HYNIX	SO8GBIV	Memory HYNIX SO-DIMM DDRIV 3200 8GB HMAA1GS6CJR6N-XN LF+HF 1024*16 RG C-die	KN.8GB0G.073
NB Chipset			
10000981 MISC	none NB Chipset	NB Chipset none NB Chipset without NB Chipset	KI.22600.054
NFC			
10000981 MISC	Non AVAP of NFC	Non AVAP of NFC	NC.NFC11.003
Packaging			
10001071 GOLDEN ARROW	2022-Brown Box-Green	2022 Brown PZ+Pulp Molded+AD Sleeve GA Rev 1.0	NC.25811.15H

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
10001071 GOLDEN ARROW	2022-Brown Box-Single U-Green	2022 Brown PZ+Pulp Molded+Single U+AD Sleeve GA Rev 1.0	NC.25811.15I
Speaker			
10000981 MISC (END USER)	Speaker	Stereo Speaker	NC.24211.002
Speaker Amplifier			
10004786 REALTEK	AVAP Speaker Amplifier - Realtek ALC1324-CG	AVAP Speaker Amplifier - Realtek ALC1324-CG (Dump_Stereo)	NC.26611.005
Thermal			
10590616 HOMEMING	Y22-Trombone_A DLU-UMA-auto-0 1 + 1P7070T65	HOMEMING Y22-Trombone_ADLU-UMA-aut o-01 + 1P7070T65	NC.26111.09C
Touchpad			
60040547 SYNAPTICS	CP7WIP1M	Synaptics Touchpad CP7WIP1M PTP TM-P3454-001 125x81.6mm PCB (Moisture+MSB)	NC.24611.04T
60040786 ELANTECH	CP7WIP1M	Elantec Touchpad CP7WIP1M PTP SC582C-1200 125x81.6mm PCB (Moisture+MSB)	NC.24611.075
60040786 ELANTECH	SP7WIP2M	Elantec Touchpad SP7WIP2M Securepad PBA+SecureBio FC6830-2200 PTP, IC Black, Mylar Black	NC.24611.07Q
60040547 SYNAPTICS	SP7WIP2M	Synaptics Touchpad SP7WIP2M Securepad PBA+SecureBio TM-P3807-001 PTP, IC Black, Mylar Black	NC.24611.07U
Touchpad Surface			
10923599 KUNSHAN SANKAI	Green Mylar	Sankai Touchpad surface Green Mylar, Glass-Like and Ocean bound PET	NC.26911.001
TPM			
PLM00014 ODM	TPM 2.0 None AVAP	None AVAP TPM 2.0 None AVAP	NC.22911.00E
USB Controller			
10001067 INTEL	TBT2C_JHL8040	TBT IC Intel None JHL8040R Tray	KI.TJ001.840
10001067 INTEL	TBT2C_JHL8040	TBT IC Intel None JHL8040R T&R	KI.TJR01.840

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
VGA Chip			
60001915 NVIDIA	GN18-S5 (MX550)	VGA Chip nVidia GN18-S5-A1 (MX550),TU117-670-A1,64-bit GDDR6, GB3B-64,23mx23mm	KG.8S50V.001
10001067 INTEL	UMA	UMA (Intel)	KI.23200.038
VRAM			
10000981 MISC (END USER)	2G-GDDR6(2C*25 6*16*2)	VRAM Graphic GDDR6 2GB 2G-GDDR6(2C*256*16*2) LF Dummy	KN.2GB00.033
16081942 MICRON	VR8GbGVI14	VRAM MICRON Graphic GDDR6 8Gb MT61K256M32JE-14:A LF add 1.2V support	KN.8GB04.046
60002215 SAMSUNG	VR8GbGVI14	VRAM SAMSUNG Graphic GDDR6 8Gb K4Z80325BC-HC14 LF add 1.2V support	KN.8GB0B.064
60002045 SK HYNIX	VR8GbGVI14	VRAM HYNIX Graphic GDDR6 8Gb H56C8H24AIR-S2C LF 1.2v support	KN.8GB0G.067
60002045 SK HYNIX	VR8GbGVI14	VRAM HYNIX Graphic GDDR6 8Gb H56G32CS4DX005 LF C die	KN.8GB0G.078
WiFi Antenna			
10000105 WNC	PIFA 2017	WNC PIFA WiFi Antenna	NC.23511.00L
Wireless LAN			
10001067 INTEL	INTAX201.NGWG. NVW_AX_w/BT 5.0 2230	Wireless LAN Intel 802.11ax (Wi-Fi 6) Bluetooth AX201.NGWG.NVW WiFi 6 AX Intel 2x2 M.2 2230 CNVi 2x2 HrP2 M.2+BT 5.2 No vPro NewOTP SKU	KE.11X0N.014
10001067 INTEL	INTAX201.NGWG. W_AX_w/BT 2230	Wireless LAN Intel 802.11ax (Wi-Fi 6) Bluetooth AX201.NGWG.W WiFi 6 AX Intel 2x2 M.2 2230 CNVi 2x2 HrP2 M.2+BT 5.0 2230 vPro NewOTP SKU	KE.11X0N.015
WWAN			
60002003 JET ONE TECHNOLOGY CO., LTD.	EM060K-GL	LTE Quectel LTE EM060K-GL Quectel LTE Cat.6 EM060K-GL	KI.LTE0Q.008

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	Part No.
WWAN Antenna			
10000105 WNC	4GLTE WWAN 240	WNC 4GLTE WWAN Antenna 240 (PCB)	NC.26511.004

CHAPTER 9

Online Support Information

Introduction 9-3

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.