

Predator
PH16-71

LIFECYCLE EXTENSION GUIDE

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Self-Repair

This chapter highlights the limited self-repair capabilities of the product.

Prior performing self-repair, familiarize yourself with the Safety Guidelines and Recommended Equipment sections first as described in the chapter "[Disassembly Procedures](#)".

Depending on model, the following key components are eligible for self-repair (if applicable);

- Battery pack
- HDD / SSD module
- DIMM module(s)
- WLAN module
- LTE module

If a particular key component is listed and thus would be eligible for self-repair, but is not described in the "[Disassembly Procedures](#)" section, then this component is either not present on the respective model, or it is present but embedded on the motherboard and therefore not eligible for self-repair.

⇒ **NOTE:**

Do not attempt to replace other components than those listed above.

⇒ **NOTE:**

For replacement parts, always use only Acer certified components in order to safeguard quality, optimum system performance, stability and reliability of the product.

⇒ **NOTE:**

Any damage to the product that occur during self-repair, or which has occurred as a result of a careless or unsuccessful self-repair attempt, is not covered by the standard product warranty.

System BIOS & Driver Updates

Visit <http://www.acer.com/support> to discover the available system BIOS and Drivers for this product. After selecting the desired country/language, either enter the model name or product serial number, or select the product from the list of suggested models in order to get access to product-specific software and documentation.

To update the system BIOS:

- Download the desired system BIOS version from the website
- Unzip the downloaded file to your computer
- Double-click the extracted file in order to initiate the update process
- The update process itself is fully automated and its progress is visualized by means of a progress indicator
- A visual notification is shown when the update is complete

⇒ **NOTE:**





Upgrading the system BIOS incorrectly, or intermittence of the system BIOS update process could harm the product.

⇒ **NOTE:**

System BIOS upgrades or downgrades, if not performed by an Acer Service Center or authorized Service Partner, are at own risk.

To update Drivers:

Run Windows Update in order to get the latest drivers from Acer:

- Select the Start  button
- Go to **Settings**  > **Update & Security**  > **Windows Update** 
- Available Drivers will automatically be listed on the screen. Press **Download** to start the download of the respective driver
- Installation of the driver will start automatically once the download is completed

Software Recovery

This product has embedded software recovery tools which can be used to either perform a partial or full software recovery, but also to create a Factory Default recovery media.

For more information about the software recovery options, how to perform a software recovery or creating a Factory Default recovery media, please refer to the chapter "Recovery" which is available in the User Manual of the product.

⇒ **NOTE:**

In the event of not being able to create a Factory Default recovery media, it is possible to obtain a copy of the recovery media through Acer Customer Service (<http://www.acer.com/support>)

This is not a free of charge service.

Disassembly Procedures

Safety Guidelines

This chapter contains step by step procedures on how to remove and de-install components from the computer. Use the following safety guidelines to ensure your personal safety. Each procedure included in this chapter assumes that you are preparing your computer for recycling and disposal. **By performing any of these procedures you acknowledge that any remaining warranty applicable to your computer will be voided. Before you start any of the procedures in this chapter, make sure to read the following safety guidelines and the respective instructions within the chapter.**

CAUTION!

- Turn off your computer and disconnect all power sources before opening the computer cover or panels.
- To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.
- Take off any metal objects on your arms or fingers such as bracelets, rings or watches and make sure your hands are completely dry. Even if your unit is unplugged, there may still be some remaining electric charge.
- If a component does not come out easily, do not forcefully remove it. Instead, check that you are removing it correctly and that no wires or other parts are in the way.
- When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable.

Recommended Equipment

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

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

WEEE Annex VII Component

These components are classified as requiring selective treatment:

- Battery pack
- SSD modules
- DIMM modules
- WLAN module
- RTC battery
- USB board
- Mainboard
- Touchpad module
- LCD panel

Pre-disassembly Instructions

Do the following prior to starting any maintenance procedures:

1. Place the system on a stable work surface.
2. Remove the power adapter (A) from the system and peripherals (Figure 1-1).
3. Remove all cables from system.
4. Remove two (2) thermal deco (B) from their respective slots (Figure 1-1).

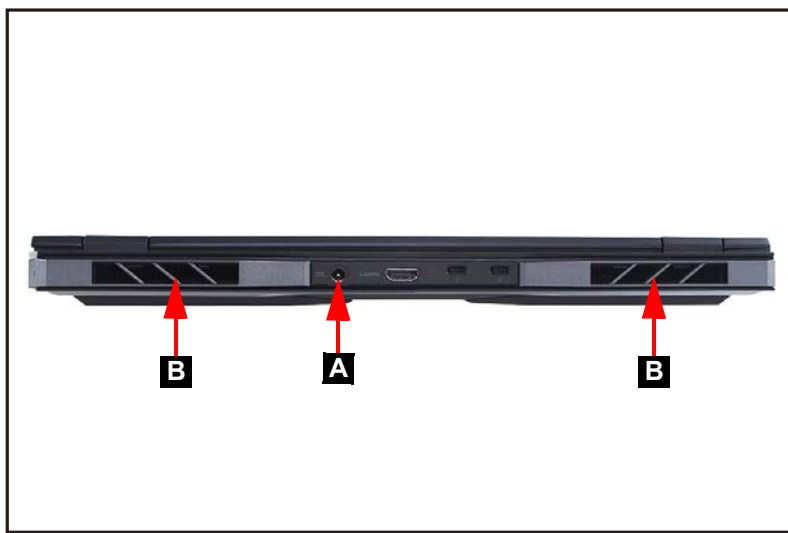


Figure 1-1. AC Adapter Outlet and Thermal Deco Removal

5. Remove the microSD card from the microSD card slot (C) (Figure 1-2).

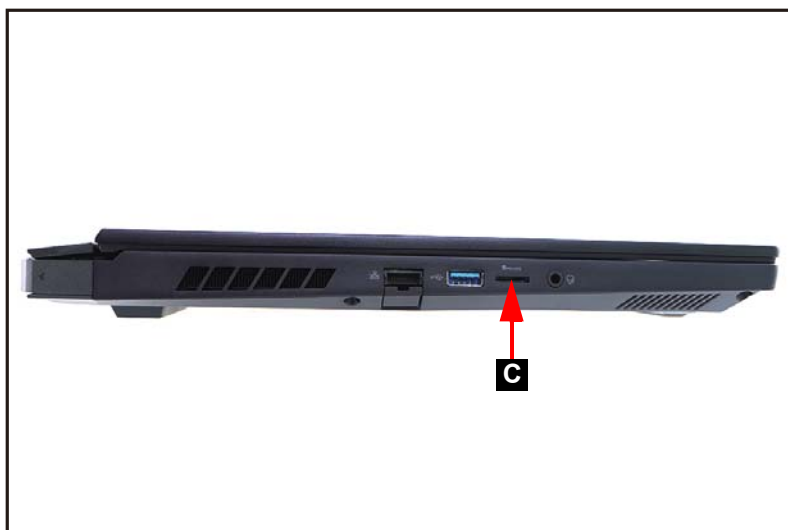


Figure 1-2. MicroSD Card Removal

⇒ **NOTE:**

Make sure the system is completely powered off.

Base Cover Removal

1. Remove ten (10) screws from the base cover (Figure 1-3).



Figure 1-3. Base Cover Removal

2. Carefully pry up the base cover from the upper side to release the latches as shown in Figure 1-4.



Figure 1-4. Base Cover Removal

3. Continue to release the remaining latches on the left, right, and bottom sides. Then remove the base cover from the system (Figure 1-5).



Figure 1-5. Base Cover Removal

Battery Pack Removal

Prerequisite:

Base Cover Removal

1. Find the battery pack (A) in the system (Figure 1-6).
2. Detach the tape (B) securing the battery cable to the mainboard connector (Figure 1-6).

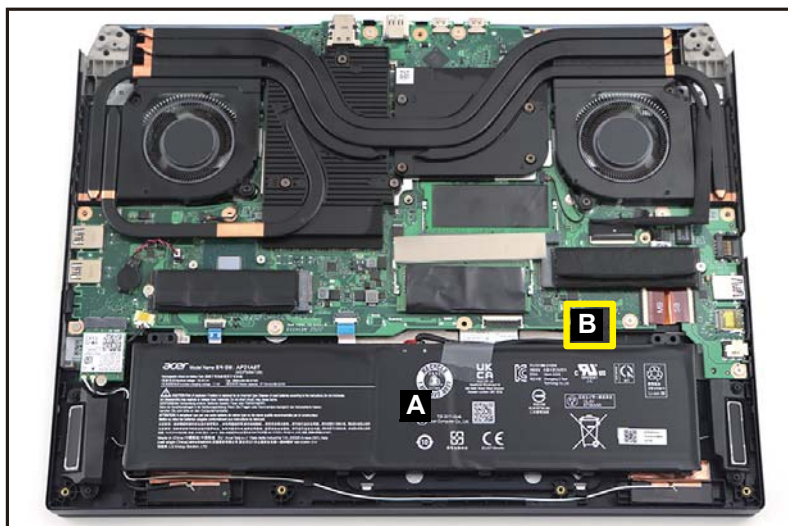


Figure 1-6. Battery Pack Removal

3. Disconnect the battery cable from the mainboard connector (C) (Figure 1-7).



Figure 1-7. Battery Pack Removal

4. Lift the battery pack to release it from the compartment studs (highlighted with the green lines) (Figure 1-8). Then remove the battery pack from the system.



Figure 1-8. Battery Pack Removal

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

SSD Modules Removal

Prerequisite:

Battery Pack Removal

1. Find the SSD modules (A) on the top assembly (Figure 1-9).

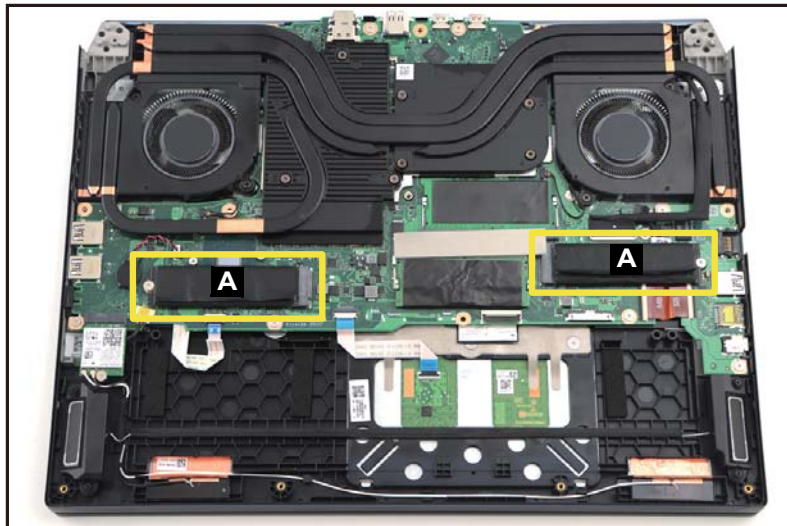


Figure 1-9. SSD Modules Location

2. Remove one (1) screw securing the SSD module (Figure 1-10).



Figure 1-10. SSD Module Removal

3. Disconnect the SSD module from the mainboard connector (B) (Figure 1-11). Then remove the SSD module.

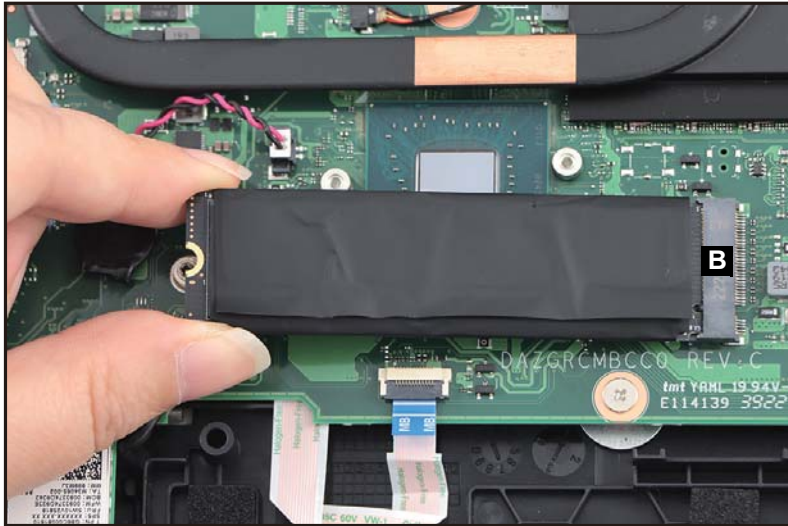


Figure 1-11. SSD Module Removal

4. Repeat steps 2~3 to remove another SSD module.
5. By holding the upper edge of the copper foil with mylar (C), unfold and detach it from the SSD module as shown in Figure 1-12 and Figure 1-13 but DO NOT remove yet!

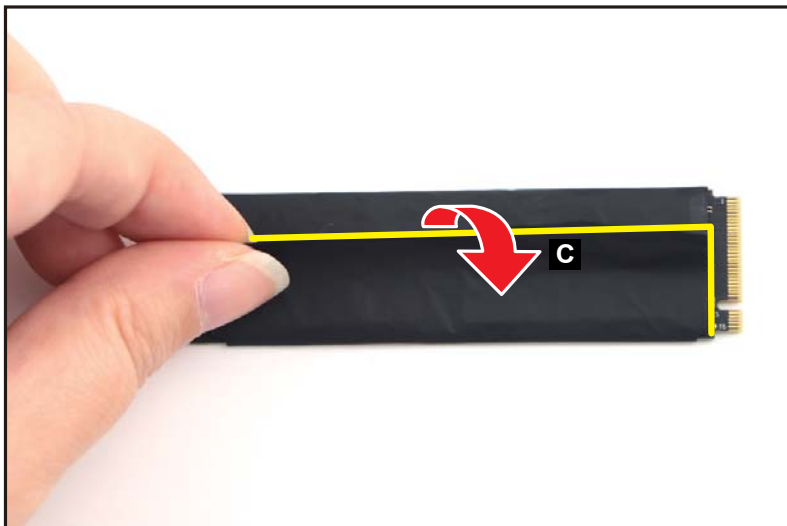


Figure 1-12. SSD Module Removal



Figure 1-13. SSD Module Removal

6. Detach the SSD module from the adhesive graphite strip (marked with yellow dashed line) as shown in [Figure 1-14](#).

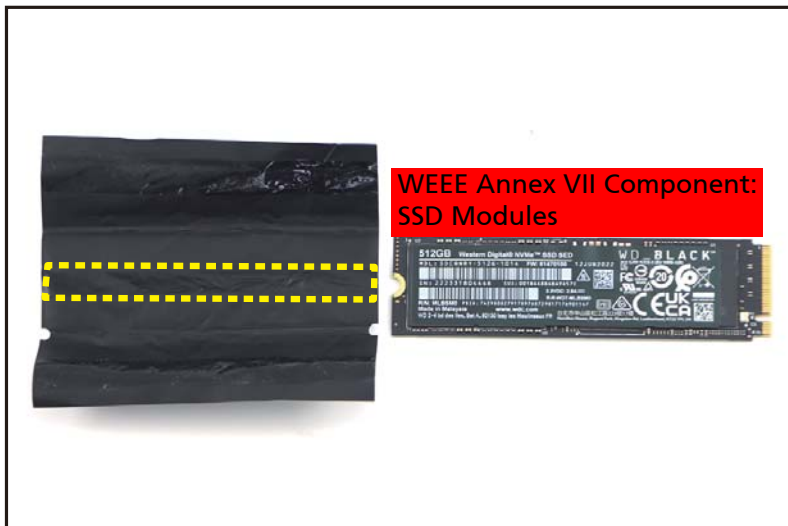


Figure 1-14. SSD Module Removal

7. Repeat steps 5~6 to remove the copper foil with mylar from another SSD module.

DIMM Modules Removal

Prerequisite:

Battery Pack Removal

1. Find the DIMM modules (A) in the system (Figure 1-15).
2. Push the DIMM module clips (B) outwards (Figure 1-15).

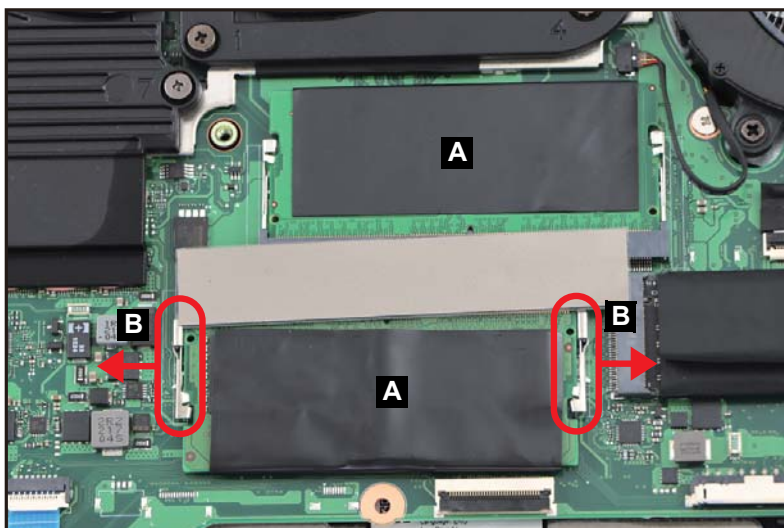


Figure 1-15. DIMM Module Removal

3. Disconnect the DIMM module from the mainboard connector (C) (Figure 1-16). Then remove the DIMM module.

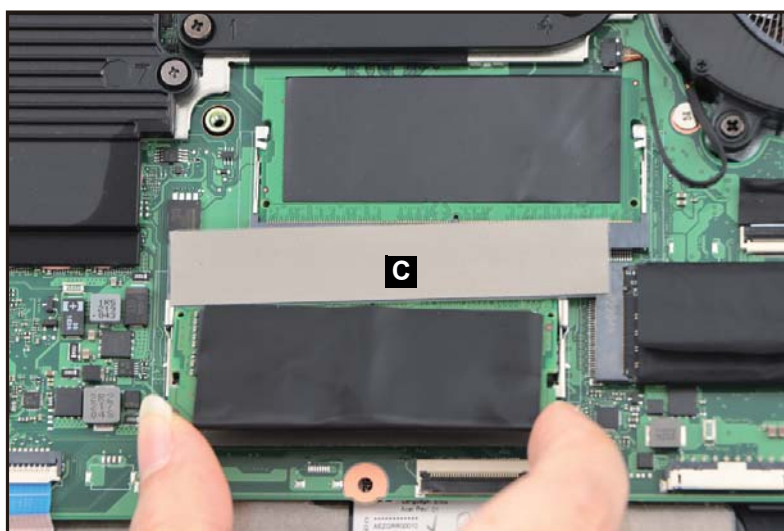


Figure 1-16. DIMM Module Removal

4. Repeat steps 2~3 to remove another DIMM module.
5. Peel off the composite foil with thermal pad (D) from the DIMM module (Figure 1-17).

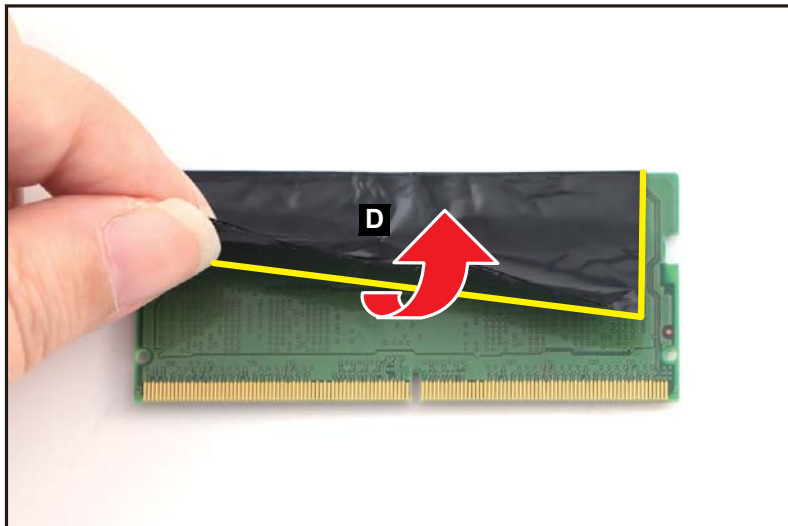


Figure 1-17. DIMM Module Removal

6. Detach the DIMM module from the adhesive graphite strip (marked with yellow dashed line) as shown in Figure 1-18.



Figure 1-18. DIMM Module Removal

7. Repeat steps 5~6 to remove the composite foil with thermal pad from another DIMM module.

WLAN Module Removal

Prerequisite:

Battery Pack Removal

1. Find the WLAN module (A) on the top assembly (Figure 1-19).



Figure 1-19. WLAN Module Location

2. Disconnect the WLAN antennas cables from the WLAN module connectors (B) (Figure 1-20).
3. Remove one (1) screw securing the WLAN module (Figure 1-20).



Figure 1-20. WLAN Module Removal

4. Disconnect the WLAN module from the mainboard connector (C) (Figure 1-21). Then remove the WLAN module.



Figure 1-21. WLAN Module Removal

RTC Battery Removal

Prerequisite:

Battery Pack Removal

1. Disconnect the RTC battery cable from the mainboard connector (A) (Figure 1-22).
2. Using plastic tweezers, carefully pry to detach the adhesive tape underneath the RTC battery (B) (Figure 1-22). Then remove the RTC battery.

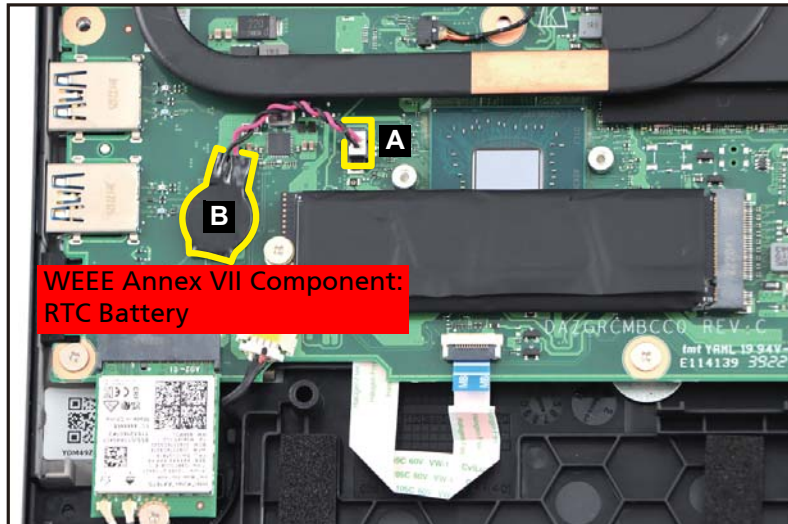


Figure 1-22. RTC Battery Removal

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

USB Board Removal

Prerequisite:

[SSD Modules Removal](#)

1. Disconnect the eDP cable from the mainboard connector (A) ([Figure 1-23](#)).

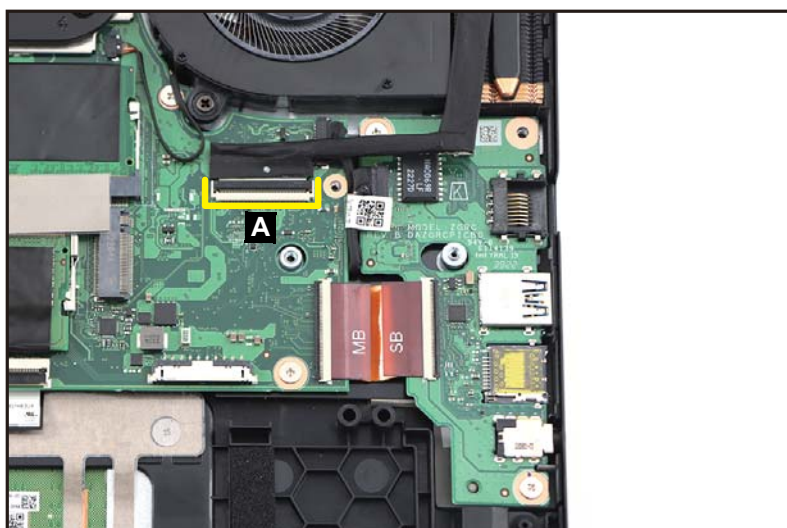


Figure 1-23. USB Board Removal

2. Disconnect the USB power cable (B) from the mainboard and USB board connectors. Then carefully unrout the cable from the gap between the mainboard and USB board ([Figure 1-24](#)). Then remove the IO power cable.
3. Disconnect the USB board FPC (C) from the mainboard and USB board connectors ([Figure 1-24](#)). Then remove the FPC.

4. Remove two (2) screws securing the USB board (Figure 1-24).

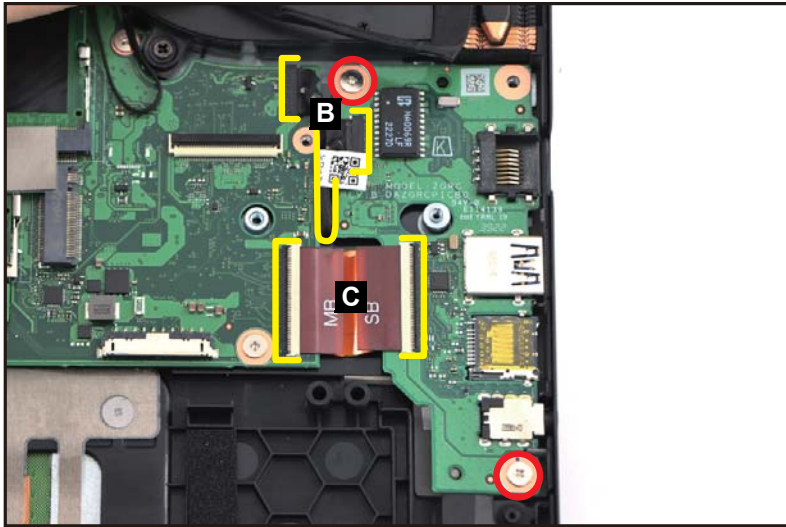


Figure 1-24. USB Board Removal

⚠ CAUTION:

USB board FPC (Flexible Printed Circuit) can be damaged if removed while the mainboard and USB board connectors are locked.

5. Release the USB board (D) from the I/O port slots and guide pins (E) on the top assembly (Figure 1-25). Then remove the USB board.

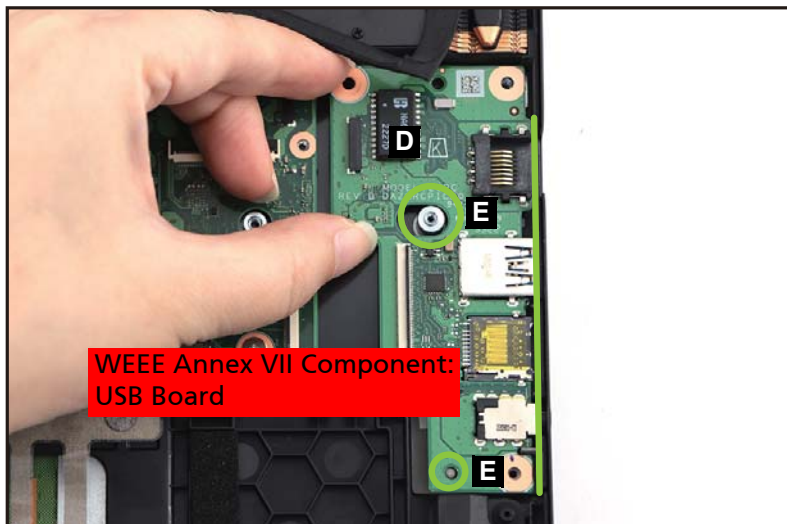


Figure 1-25. USB Board Removal

Mainboard Removal

Prerequisite:

Ensure that the **SSD Modules, DIMM Modules, Light Bar, WLAN Module, Right Fan, and Left Fan** have been disassembled prior removing the mainboard.

1. Disconnect the speaker cable from the mainboard connector (A) (Figure 1-26).
2. Disconnect the keyboard FFC from the mainboard connector (B) (Figure 1-26).
3. Disconnect the touchpad FFC from the mainboard connector (C) (Figure 1-26).
4. Disconnect the USB board FPC from the mainboard connector (D) (Figure 1-26).
5. Disconnect the USB power cable from the mainboard connector (E) (Figure 1-26).

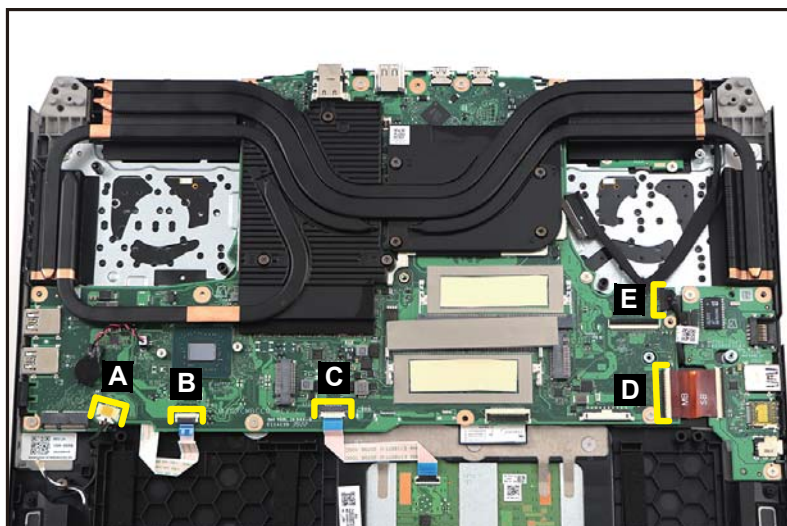


Figure 1-26. Mainboard Removal

⚠ CAUTION:

Keyboard FFC (Flexible Flat Circuit), touchpad FFC, and USB board FPC (Flexible Printed Circuit), can be damaged if removed while the mainboard connectors are locked.

6. Remove six (6) screws securing the mainboard (Figure 1-27).

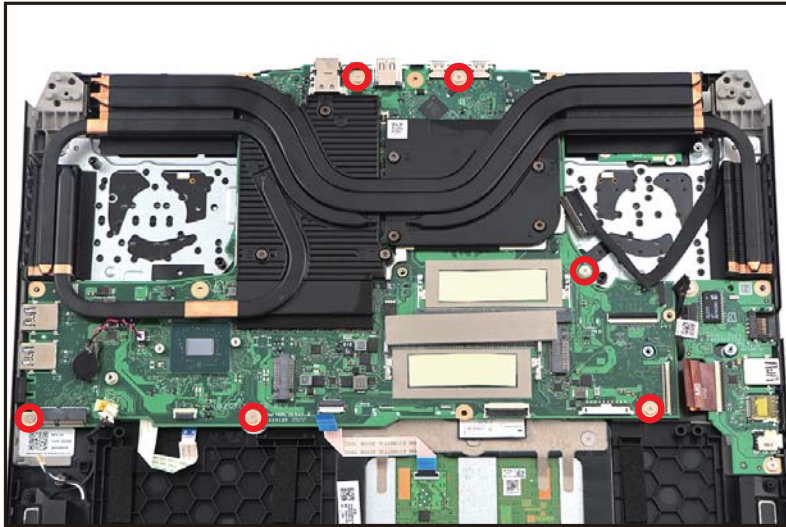


Figure 1-27. Mainboard Removal

7. Lift to release the mainboard with the heatsink (F) from the guide pins (G) on the top assembly but DO NOT remove yet! (Figure 1-28).

+ **IMPORTANT:**

Make sure to remove the mainboard with the heatsink vertically upwards.

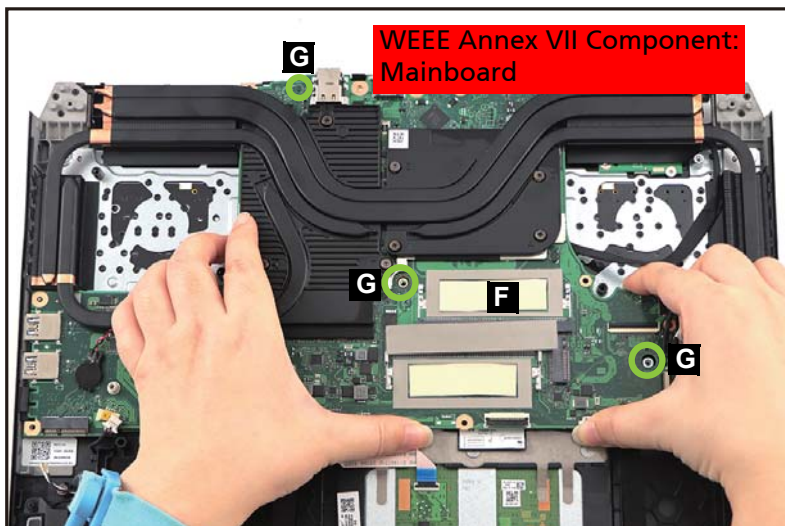


Figure 1-28. Mainboard Removal

- Place aside the mainboard with the heatsink so that you can access the turbo key board (H). Then remove two (2) screws securing the turbo key board (Figure 1-29).

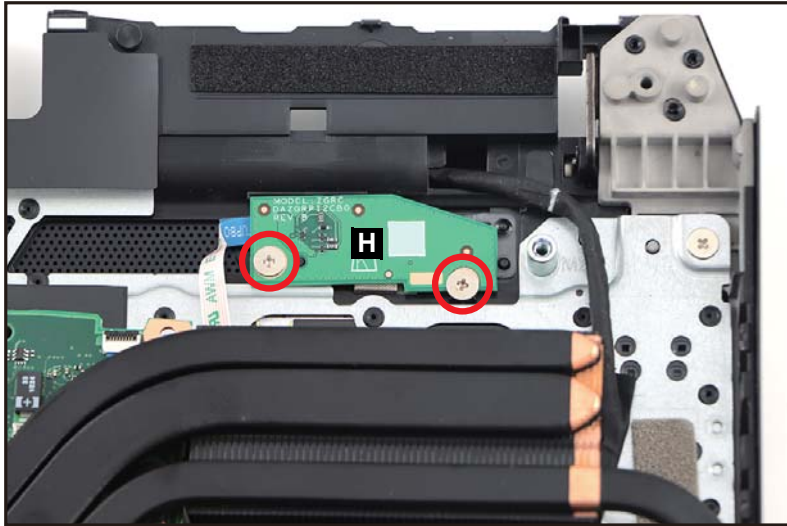


Figure 1-29. Mainboard Removal

- Release the turbo key board from the compartment stud (highlighted with the green line) and guide pin (I) on the top assembly (Figure 1-30). Then remove the turbo key board and the mainboard with the heatsink.

+ **IMPORTANT:**

When moving the mainboard with the heatsink, make sure to hold it vertically and carefully place it onto a stable surface.

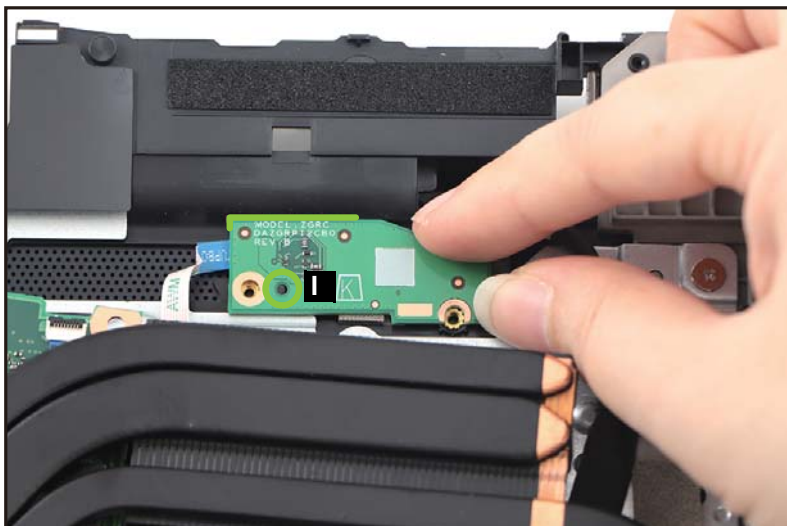


Figure 1-30. Mainboard Removal

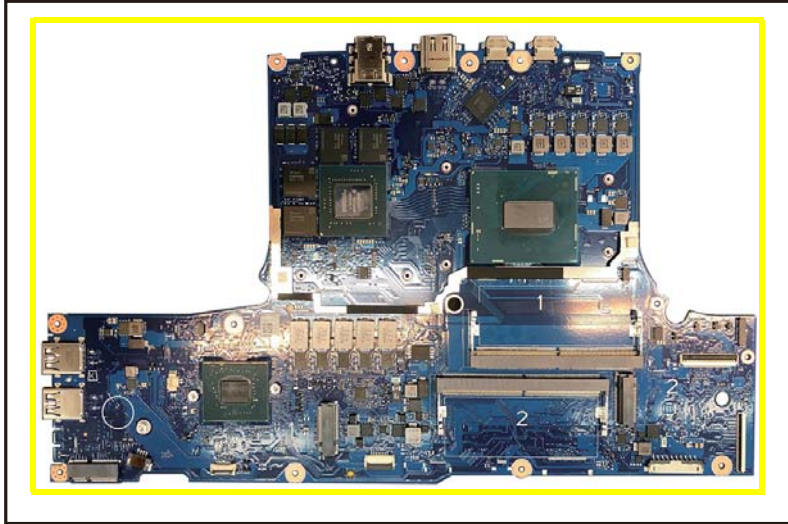


Figure 1-31. Mainboard

+ IMPORTANT:

Circuit boards >10 cm² have been highlighted with a yellow rectangle as shown in [Figure 1-31](#). Remove the circuit board and follow local regulations for disposal.

Touchpad Module Removal

Prerequisite:

[Mainboard Removal](#)

1. Disconnect the touchpad FFC from the touchpad module connector (A) ([Figure 1-32](#)).

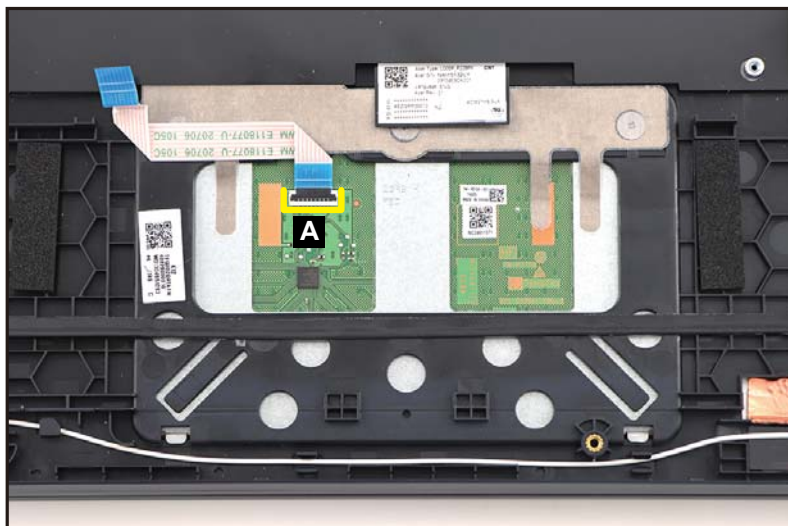


Figure 1-32. Touchpad Module Removal

⚠ CAUTION:

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

2. Slightly detach and lift the mylar. Then detach the conductive tape (B) from the touchpad module and top assembly (Figure 1-33).

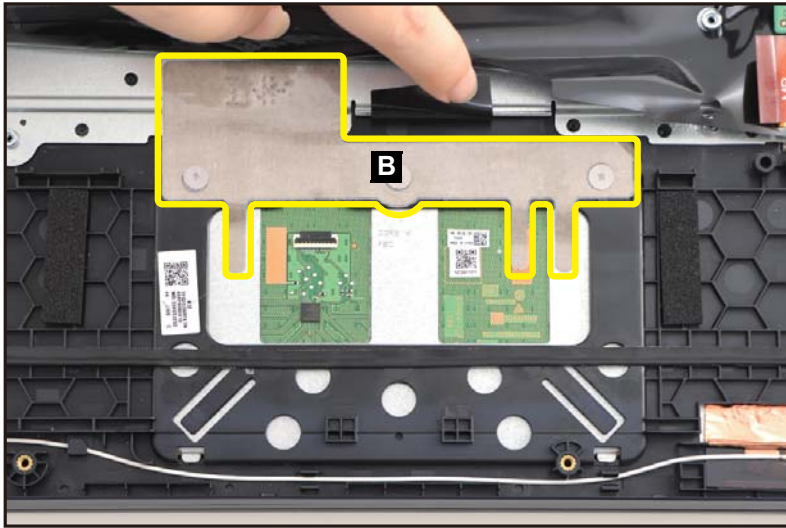


Figure 1-33. Touchpad Module Removal

3. Remove three (3) screws securing the touchpad module (Figure 1-34).

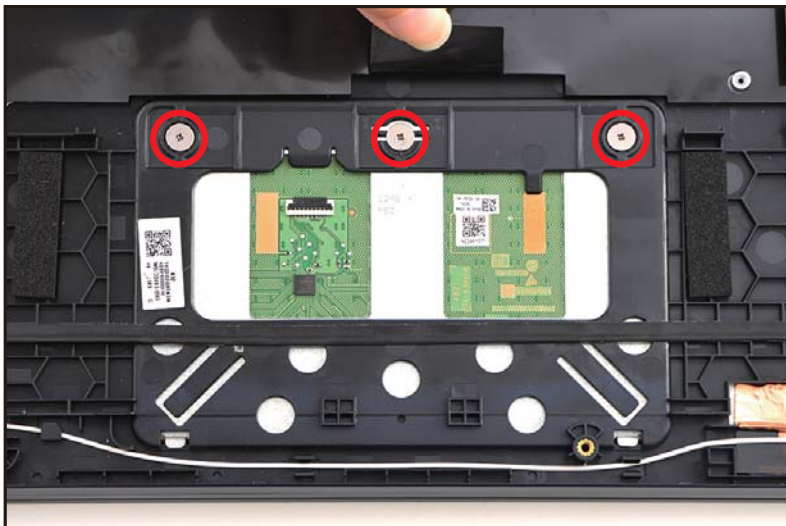


Figure 1-34. Touchpad Module Removal

4. Using the screwdriver, push the guide pin (C) firmly to release it from the top assembly (Figure 1-35).
5. Slide the touchpad module slightly to disengage it from the bottom latches (D), and then remove the touchpad module (E) from the top assembly (Figure 1-35).

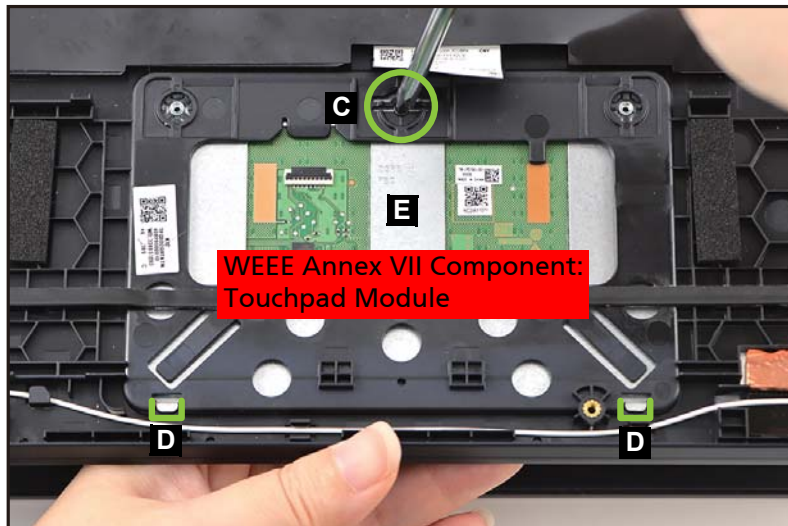


Figure 1-35. Touchpad Module Removal

LCD Module Removal

Prerequisite:

[Mainboard Removal](#)

1. Unroute the eDP cable from the cable guides as shown in [Figure 1-36](#).

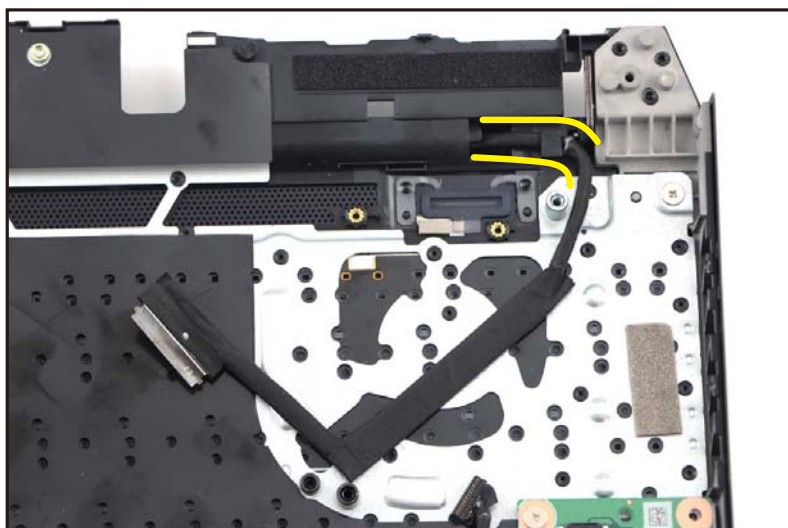


Figure 1-36. LCD Module Removal

2. Flip the notebook. Then remove six (6) screws securing the LCD hinges ([Figure 1-37](#)).



Figure 1-37. LCD Module Removal

3. Lift the LCD module (A) to release it from the guide pins (B) but DO NOT remove yet! (Figure 1-38).



Figure 1-38. LCD Module Removal

4. Unroute the eDP cable from the opening on the top assembly and LCD hinge as shown in Figure 1-39. Then remove the LCD module away from the top assembly.

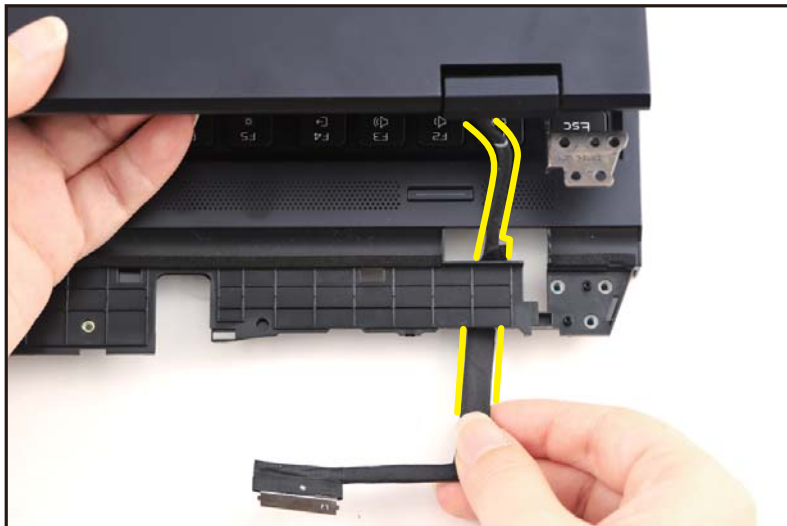


Figure 1-39. LCD Module Removal

LCD Bezel Removal

Prerequisite:

[LCD Module Removal](#)

1. Pry the LCD bezel from the upper side to release the latches ([Figure 1-40](#)).



Figure 1-40. LCD Bezel Removal

2. Continue prying along the right side of the bezel ([Figure 1-41](#)).

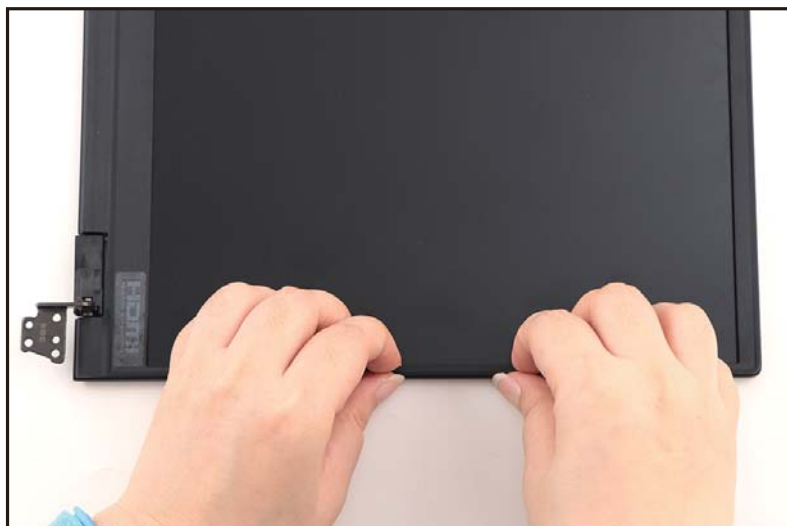


Figure 1-41. LCD Bezel Removal

3. Continue prying along the left side of the bezel (Figure 1-42).



Figure 1-42. LCD Bezel Removal

4. Continue prying along the bottom side of the bezel until all the latches have been released (Figure 1-43). Then remove the LCD bezel.



Figure 1-43. LCD Bezel Removal

LCD Panel Removal

Prerequisite:

[LCD Bezel Removal](#)

⇒ NOTE:

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

1. Unroute and detach the eDP cable from the cable guides on LCD cover as shown in [Figure 1-45](#).



Figure 1-44. LCD Panel Removal

2. Pry slightly to access the double-sided mounting tape (A) underneath the LCD panel (B). 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 1-45).

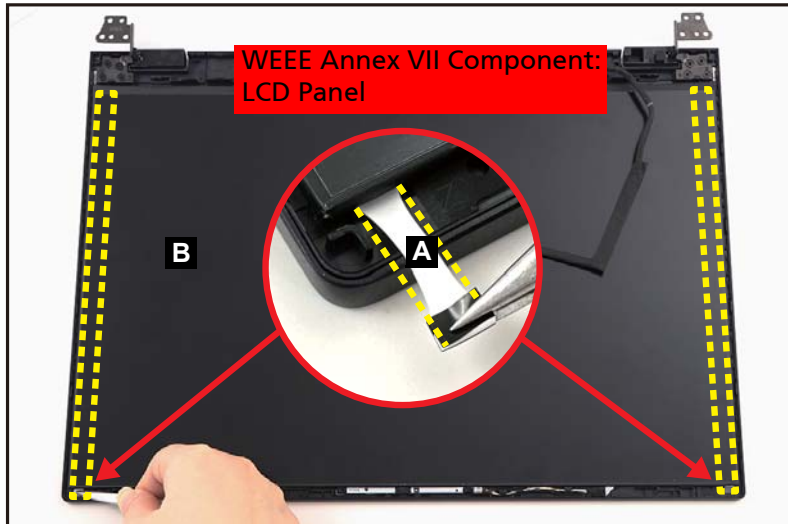


Figure 1-45. LCD Panel Removal

3. Carefully turn the LCD panel over so that the display panel is facing down on a flat surface. Then detach the mylar tape (C) securing the eDP cable to the LCD panel (Figure 1-46).



Figure 1-46. LCD Panel Removal

4. Lift the latch (D) securing the eDP cable (Figure 1-47).

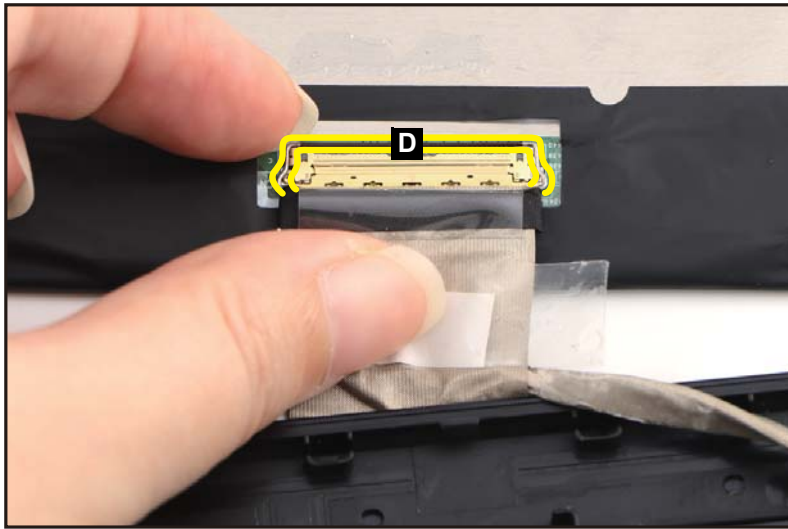


Figure 1-47. LCD Panel Removal

5. Disconnect the eDP cable from the LCD panel connector (E) (Figure 1-48). Then remove the LCD panel.



Figure 1-48. LCD Panel Removal

Top Assembly Removal (Keyboard Removal)

Prerequisite:

Ensure that the **Speakers, USB Board, Touchpad Module, Keyboard FFC,** and **LCD Module** have been disassembled prior removing the top assembly.

⇒ NOTE:

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



Figure 1-49. Top Assembly (Keyboard)

Electronic Boards Diagrams

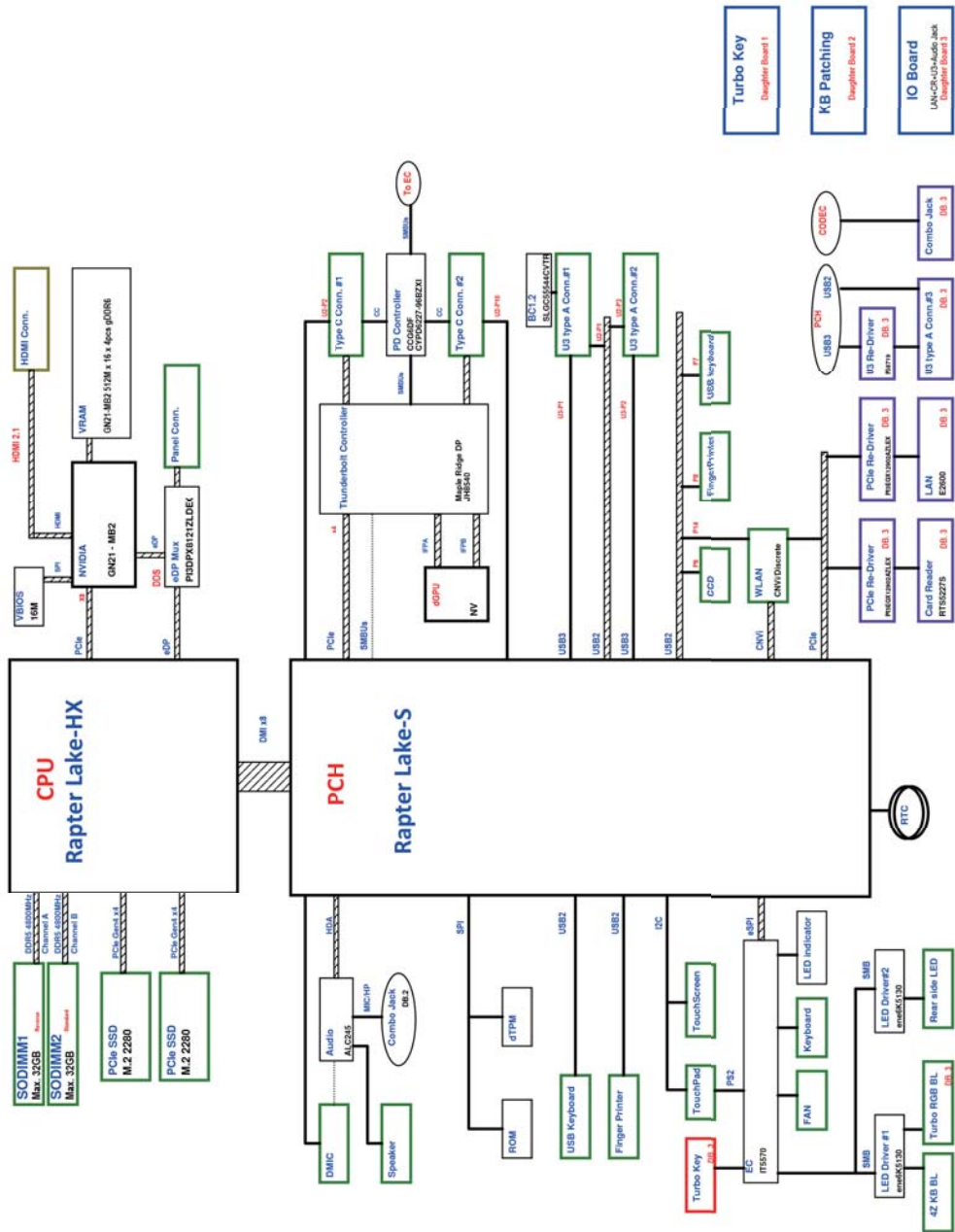


Figure 1-50. System Block Diagram (ZGRB)

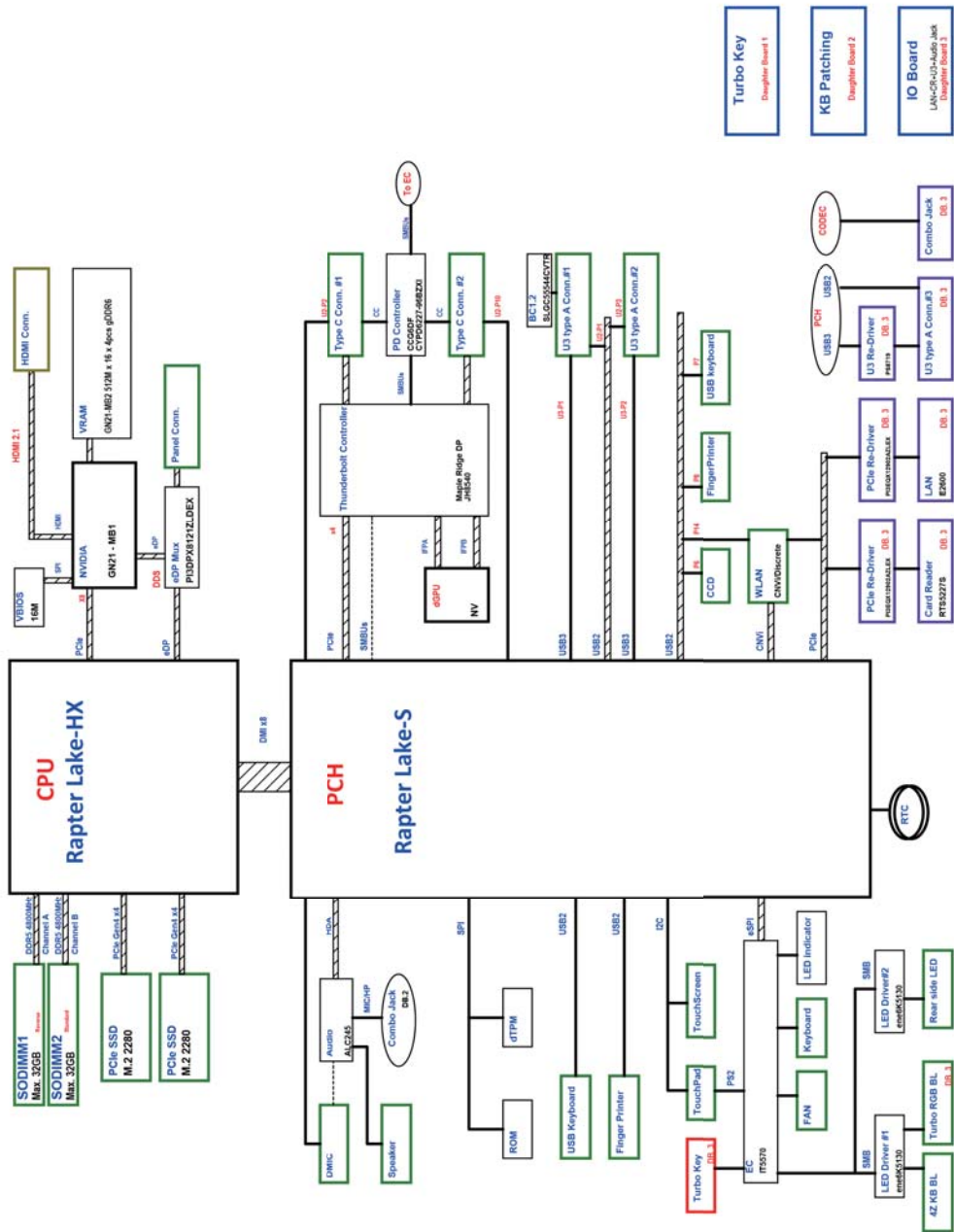


Figure 1-51. System Block Diagram (ZGRC)

Troubleshooting

This chapter shows you how to deal with common system problems. Read it before calling a technician if a problem occurs. Solutions to more serious problems require opening up the computer. Do not attempt to open the computer yourself; contact your dealer or authorized service center for assistance.

Troubleshooting tips

This computer incorporates an advanced design that delivers on-screen error message reports to help you solve problems.

If the system reports an error message or an error symptom occurs, see “Error messages” below. If the problem cannot be resolved, contact your dealer.

Error messages

If you receive an error message, note the message and take the corrective action. The following table lists the error messages in the alphabetical order together with the recommended course of action.

Table 1-1. Error Messages

Error Messages	Corrective Action
CMOS battery bad	Contact your dealer or an authorized service center.
CMOS checksum error	Contact your dealer or an authorized service center.
Disk boot failure	Insert a system (bootable) disk, then press Enter to reboot.
Equipment configuration error	Press F2 (during POST) to enter BIOS utility, then press Exit in the BIOS utility to reboot.
Hard disk 0 error	Contact your dealer or an authorized service center.
Hard disk 0 extended type error	Contact your dealer or an authorized service center.
I/O parity error	Contact your dealer or an authorized service center.
Keyboard error or no keyboard connected	Contact your dealer or an authorized service center.
Keyboard interface error	Contact your dealer or an authorized service center.
Memory size mismatch	Press F2 (during POST) to enter BIOS utility, then press Exit in the BIOS utility to reboot.

If you still encounter problems after going through the corrective measures, please contact your dealer or an authorized service center for assistance.

FRU (Field Replaceable Unit) List

Please contact your local service center to find out how to obtain the part or replace your device.

Exploded Diagrams

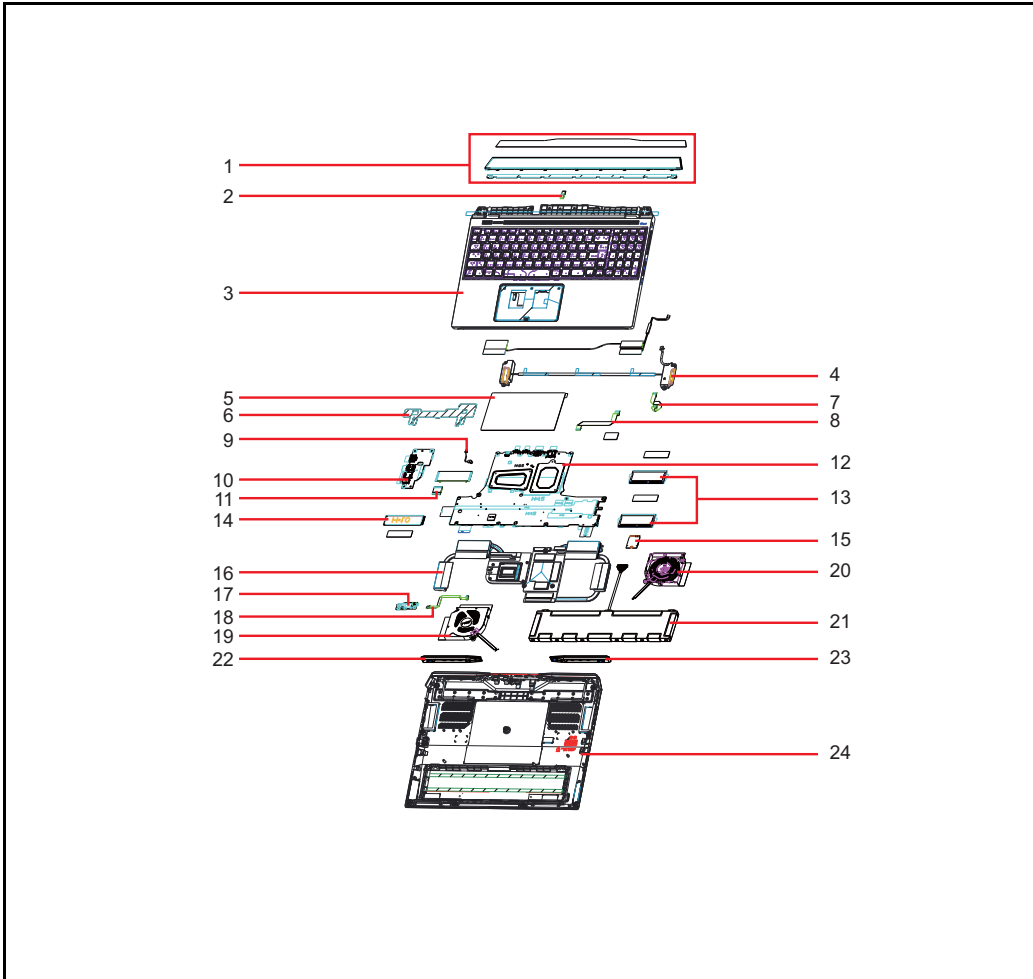


Figure 1-52. System Exploded Diagram

Table 1-2. System Exploded Diagram

No.	Description
1	Light Bar
2	Light Bar FFC
3	Top Assembly
4	Speakers
5	Touchpad Module
6	Conductive Tape
7	Keyboard FFC
8	Touchpad FFC

Table 1-2. System Exploded Diagram (Continued)

No.	Description
9	USB Power Cable
10	USB Board
11	USB Board FPC
12	Mainboard
13	DIMM Modules
14	SSD Module
15	WLAN Module
16	Heatsink
17	Turbo Key Board
18	Turbo Key Board FFC
19	GPU Fan
20	CPU Fan
21	Battery Pack
22	Right Thermal Deco
23	Left Thermal Deco
24	Base Cover

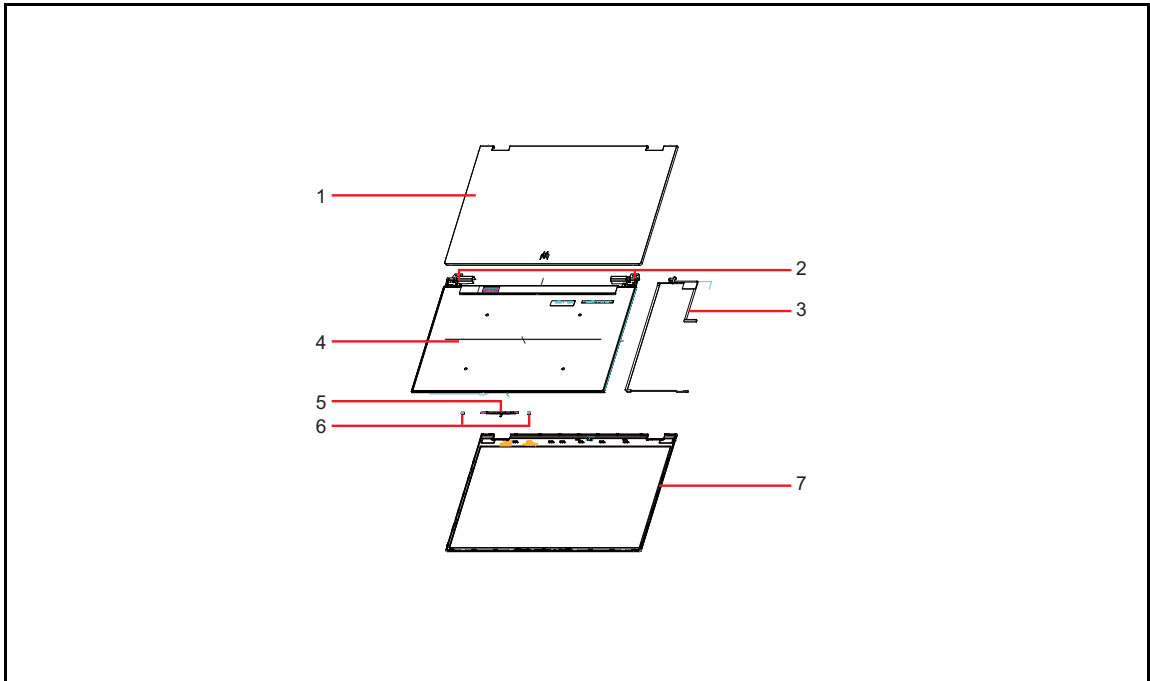


Figure 1-53. LCD Assembly Exploded Diagram

Table 1-3. LCD Assembly Exploded Diagram

No.	Description
1	LCD Cover
2	LCD Hinge L
	LCD Hinge R
3	eDP Cable
4	LCD Panel
5	Camera Module
6	Microphone Rubbers
7	LCD Bezel

Software Update







Updating your software

Please visit <http://go.acer.com/?id=17883>

Personal Data Removal

Removing your personal data

There are three options to choose from:

- Option 1: Select **Start**  > **Settings**  > **Update & Security**  > **Recovery**. Under **Reset this PC**, select **Get started**. Open **Recovery settings**.
- Option 2: Restart your PC to get to the sign-in screen, then press and hold down the **Shift key** while you select the **Power**  icon > **Restart** in the lower-right corner of the screen. After your computer restarts, select **Troubleshoot** > **Reset this PC**.
- Option 3: Select **Start** , then press and hold down the **Shift key** while you select the **Power**  icon > **Restart** to restart your computer into Recovery Mode. After your computer restarts, select **Troubleshoot** > **Reset this PC**.