Acer Chromebook
CBE794-1 / CBE794-1T

Kanix_MTU

LIFECYCLE EXTENSION GUIDE

Self-Repair 1-1
Disassembly Procedures 1-2
Electronic Boards Diagrams 1-36
Troubleshooting 1-37
Exploded Diagrams 1-47
FRU List 1-50
Software Update 1-60
Factory Reset your Chromebook 1-61
Shimless RMA 1-62

Self-Repair

This chapter offers limited customer self-repair capabilities.

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

Due to the complexity of circuit boards, electronic components which are embedded to the motherboard or daughterboard(s) are strongly not advised to self-repair.

NOTE:

Before handling components, wear anti-static gloves to avoid damaging them due to static electricity.

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.

Disassembly Procedures

Safety Guidelines

This chapter contains step by step procedures on how to remove and de-install components from the computer. Use these 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 if any damage is done to the unit or components during the repair. 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 module
- Touchpad module
- USB board
- Mainboard
- 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 from the USB Type-C port (A or B) as shown in Figure 1-1.
3. Remove all cables from system.

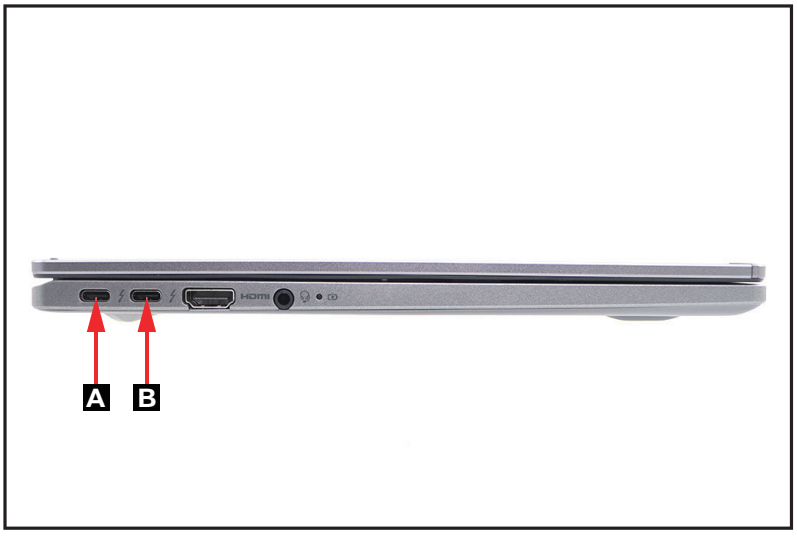


Figure 1-1. AC Adapter Outlet

NOTE:

Make sure the system is completely powered off.

Base Cover Removal

1. Remove eleven (11) screws from the base cover (Figure 1-2).



Figure 1-2. Base Cover Removal

2. Carefully pry up the base cover starting from the edges (as shown in Figure 1-3) to release the latches.



Figure 1-3. Base Cover Removal

3. Continue releasing the remaining latches. Then remove the base cover (Figure 1-4).

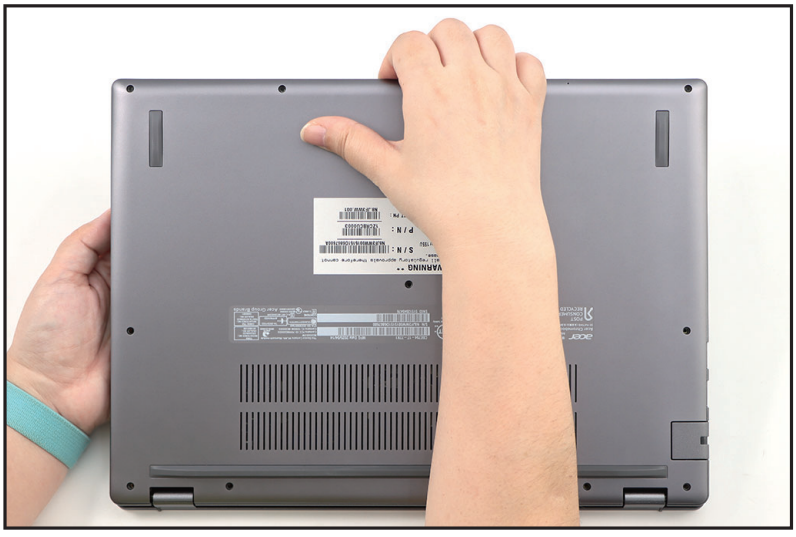


Figure 1-4. Base Cover Removal

Battery Pack Removal

Prerequisite:

Base Cover Removal

1. Find the battery pack (A) on the top assembly (Figure 1-5).
2. Release the mylar tab (B) from the battery cable connector (Figure 1-5).

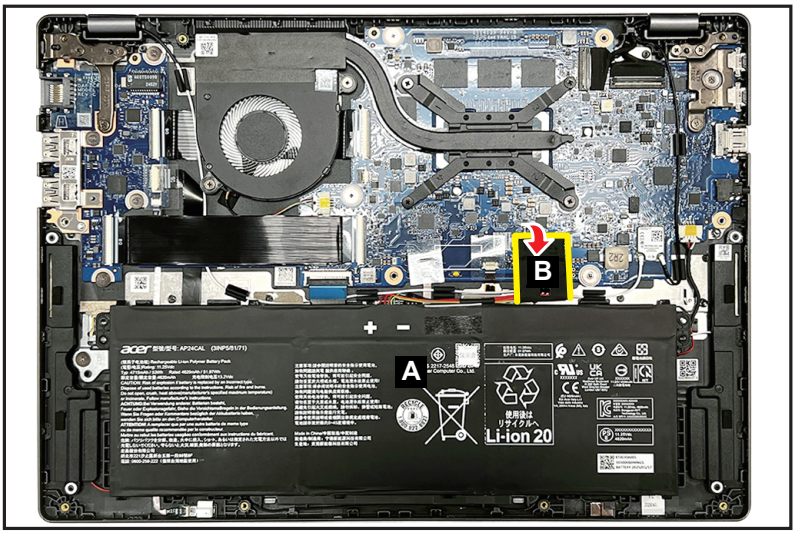


Figure 1-5. Battery Pack Removal

3. Disconnect the battery cable from the mainboard connector (C) (Figure 1-6).

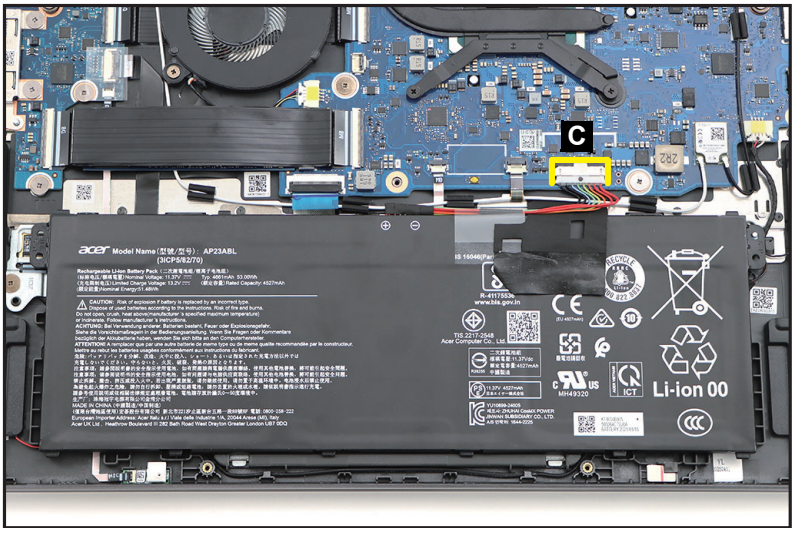


Figure 1-6. Battery Pack Removal

4. Lift to release the battery pack from its compartment edges (marked with green lines) and from the guide pin (marked with green circle). Then remove the battery pack from the top assembly (Figure 1-7).

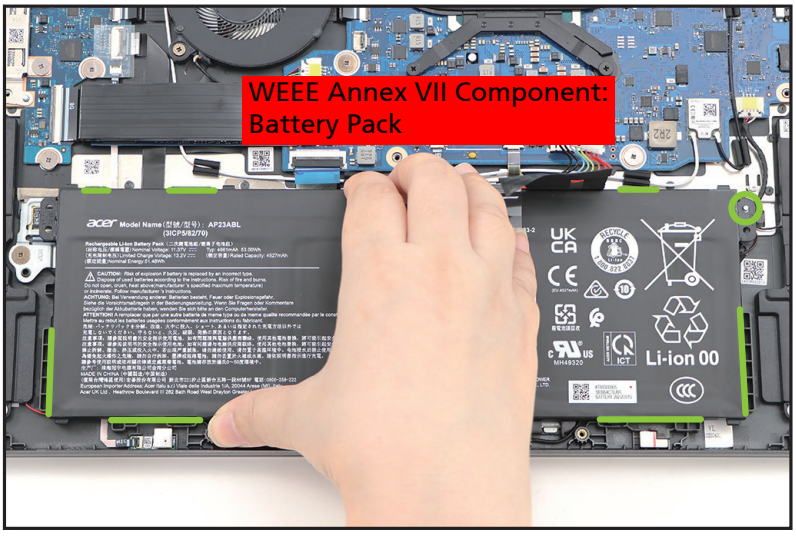


Figure 1-7. Battery Pack Removal

IMPORTANT:

Follow local regulations for battery disposal.

SSD Module Removal

Prerequisite:

Battery Pack Removal

1. Disconnect the USB board FFC (low speed) (A) from the USB board and mainboard connectors. Then remove the USB FFC (Figure 1-8).

⚠ CAUTION:

USB board FFC can be damaged if disconnected while the mainboard and USB board connectors are locked.

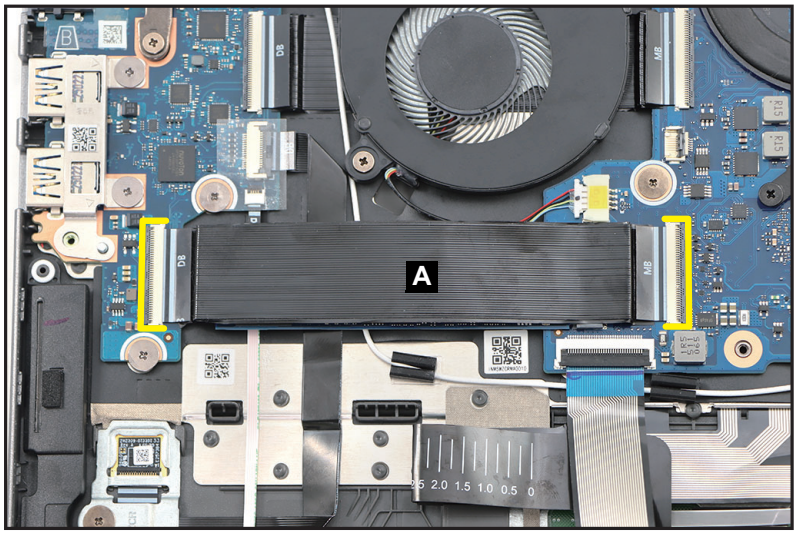


Figure 1-8. SSD Module Removal

2. Remove one (1) screw securing the SSD module in place (Figure 1-9).

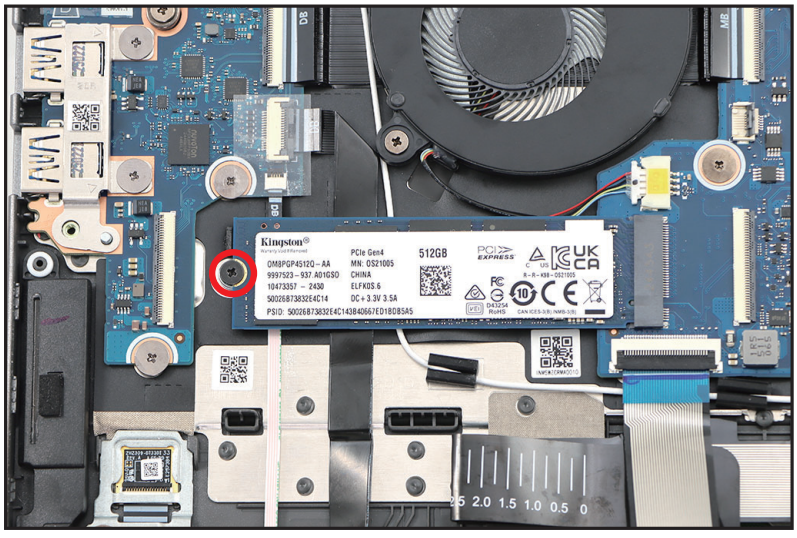


Figure 1-9. SSD Module Removal

3. Disconnect the SSD module from the mainboard connector (B) (Figure 1-10).

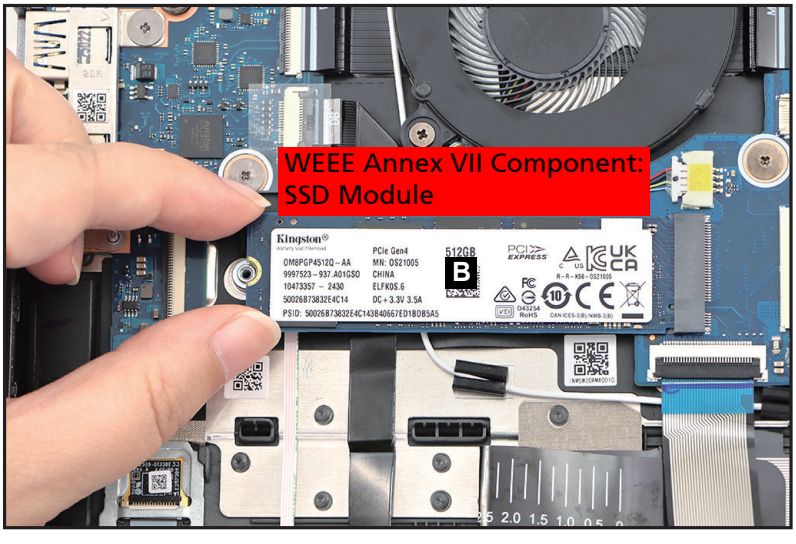


Figure 1-10. SSD Module Removal

Touchpad Module Removal

Prerequisite:

Battery Pack Removal

1. Release the portion of the aux antenna cable (white) from the cable guides on the top assembly as shown with yellow lines in Figure 1-11.

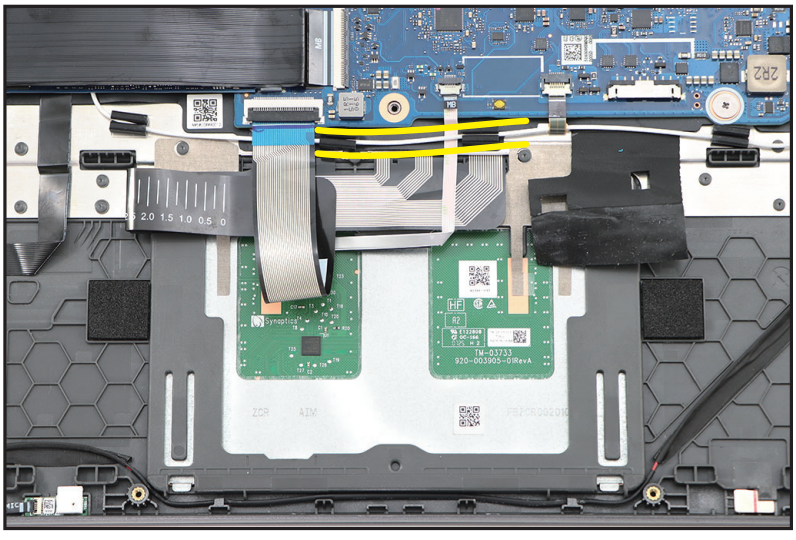


Figure 1-11. Touchpad Module Removal

2. Disconnect the touchpad module FFC (B) from the touchpad and mainboard connectors (Figure 1-12).

⚠ CAUTION:

Touchpad module FFC can be damaged if removed while the touchpad module and mainboard connectors are locked.

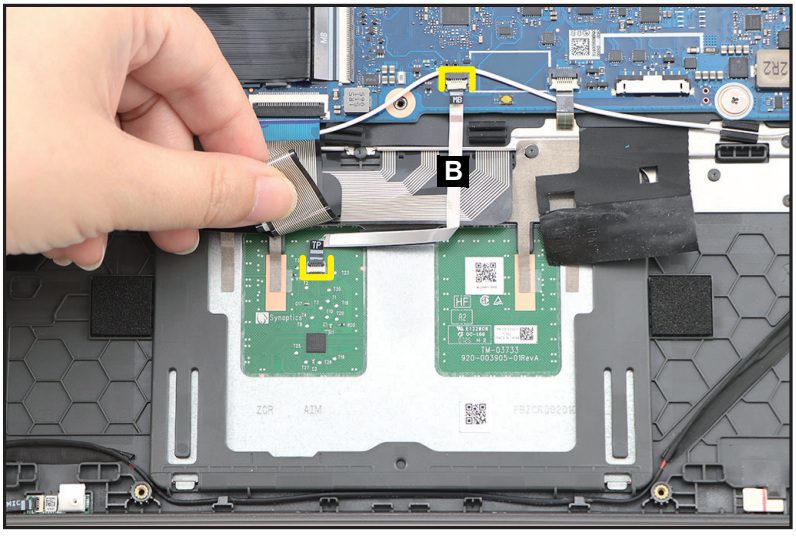


Figure 1-12. Touchpad Module Removal

3. Detach the conductive tape (C) from the touchpad module and top assembly (Figure 1-13).

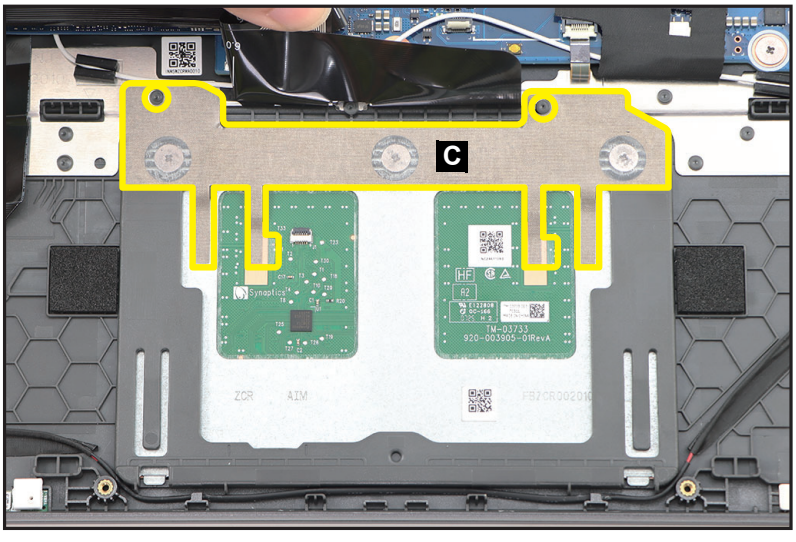


Figure 1-13. Touchpad Module Removal

4. Remove three (3) screws securing the touchpad module (Figure 1-14).

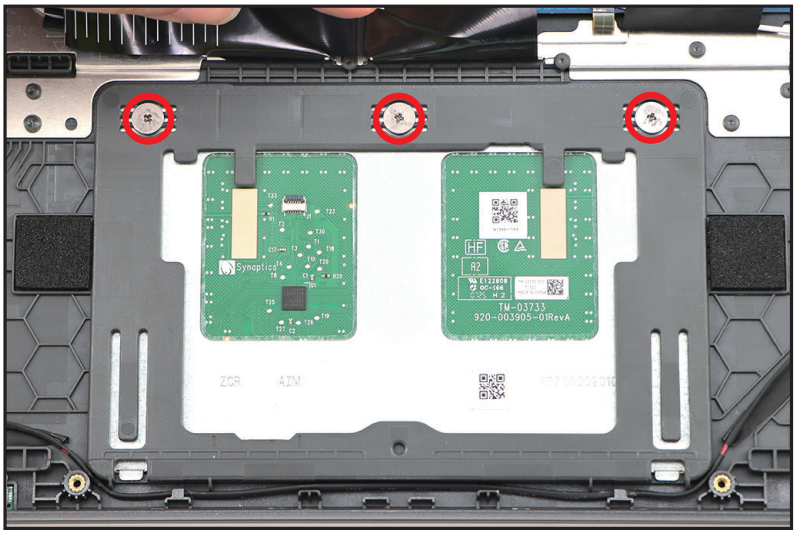


Figure 1-14. Touchpad Module Removal

5. Push the screw sleeves (marked with the green circles) firmly to release them from the top assembly (Figure 1-15).
6. Slide the touchpad module slightly to disengage it from the bottom latches (marked with green lines), and then remove the touchpad module from the top assembly (Figure 1-15).



Figure 1-15. Touchpad Module Removal

LCD Module Removal

Prerequisite:

SSD Module Removal

1. Disconnect the keyboard FPC from the mainboard connector (A) (Figure 1-16).
2. Disconnect the keyboard backlight FFC from the mainboard connector (B) (Figure 1-16).
3. Disconnect the LCD cable from the mainboard connectors (C&D). Then unroute the LCD cable from the cable guide (Figure 1-16).

⚠ CAUTION:

Keyboard FPC, keyboard backlight FFC, and LCD cable can be damaged if disconnected from the mainboard connectors while the connectors are locked (Figure 1-16).

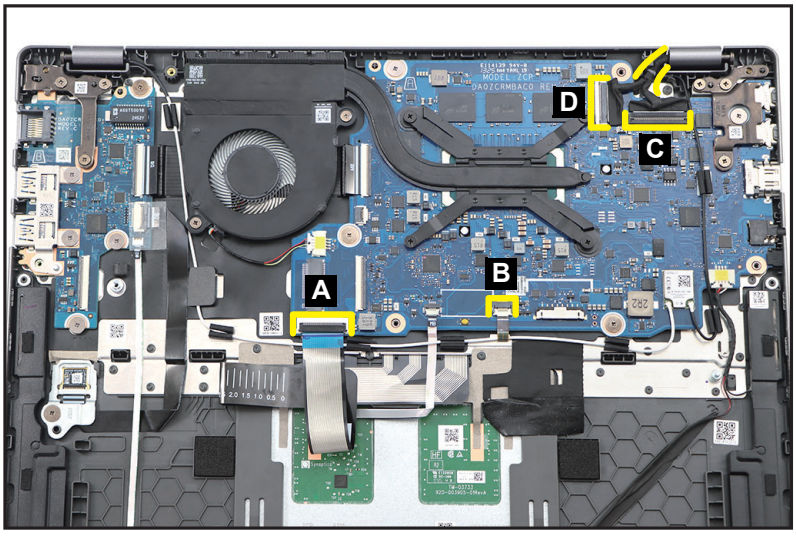


Figure 1-16. LCD Module Removal

4. Disconnect the WLAN antenna cables from the WLAN module connectors (E). Then, detach the tape (F) from the aux antenna cable (white) and unroute the antenna cables from the cable guides on the top assembly and mainboard (Figure 1-17).

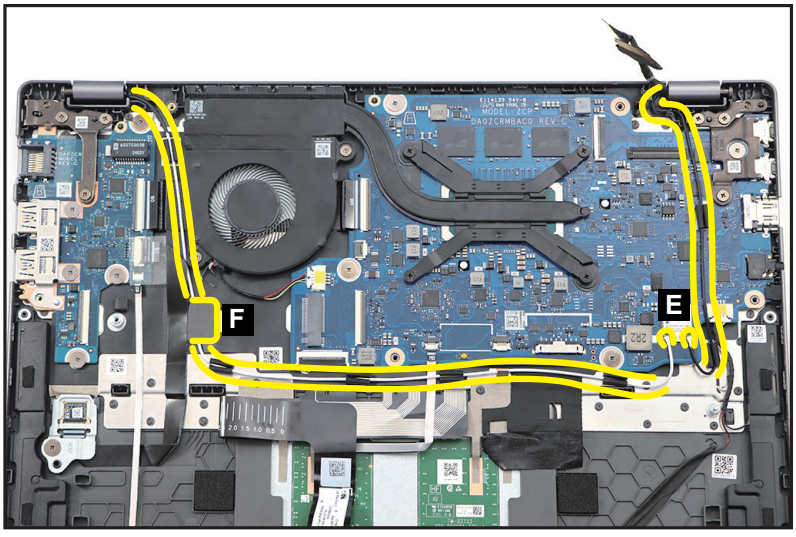


Figure 1-17. LCD Module Removal

5. Remove six (6) screws securing the LCD hinges in place (Figure 1-18).

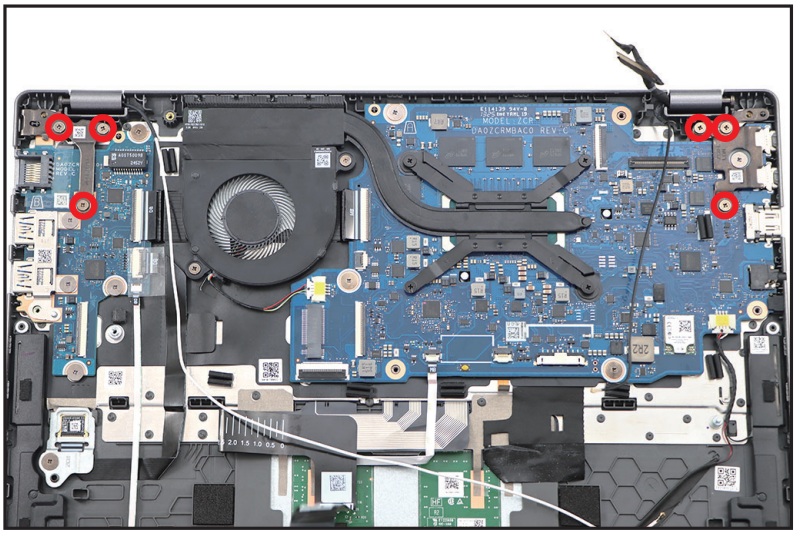


Figure 1-18. LCD Module Removal

6. Lift the top assembly until it is fully open (Figure 1-19).

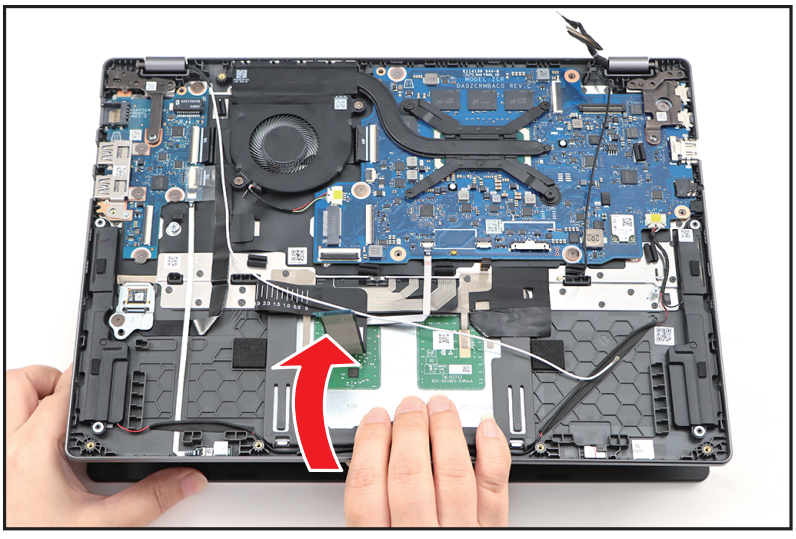


Figure 1-19. LCD Module Removal

7. Lift both LCD hinges until they are fully extended (Figure 1-20).

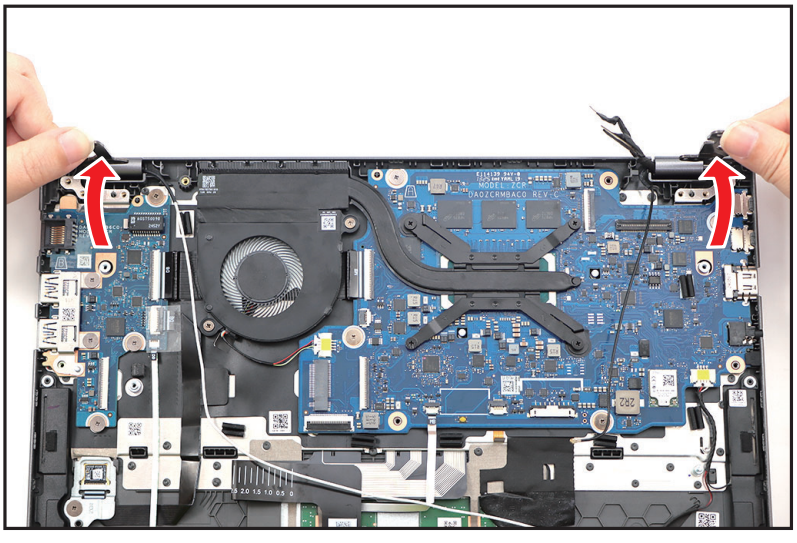


Figure 1-20. LCD Module Removal

8. Open the top assembly. Then remove the top assembly away from the LCD module (G) (Figure 1-21).

⚠ CAUTION:

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



Figure 1-21. LCD Module Removal

USB Board Removal

Prerequisite:

Ensure that the **Fan Module** and **SSD Module** have been disassembled prior removing the USB board.

1. Remove three (3) screws securing the left LCD hinge in place (Figure 1-22).

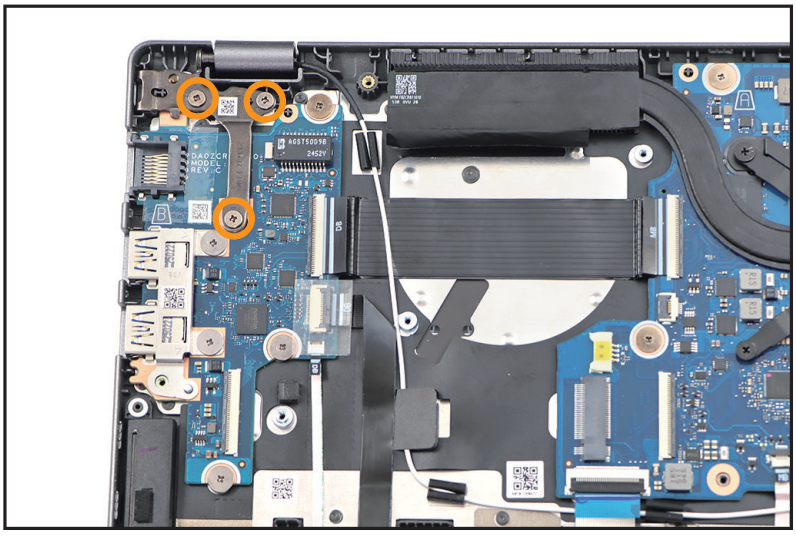


Figure 1-22. USB Board Removal

2. Lift the top assembly until it is fully open (Figure 1-23).

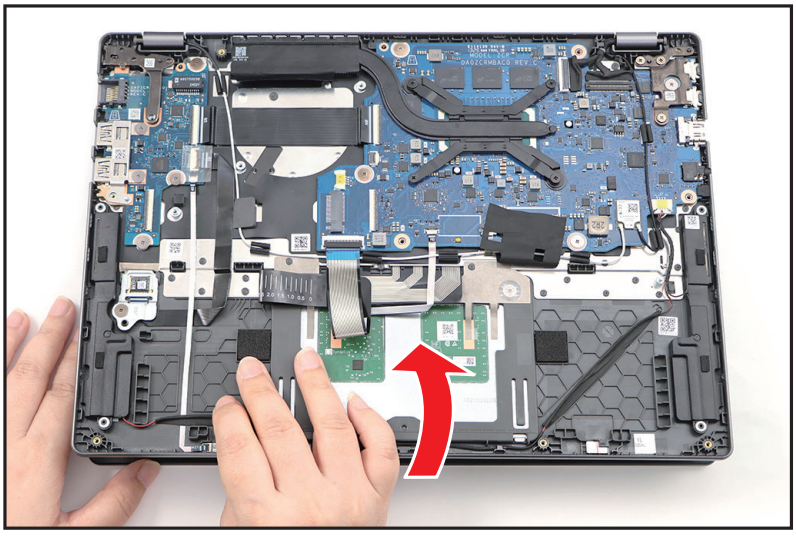


Figure 1-23. USB Board Removal

3. Close the top assembly and lift the left LCD hinge until it is fully extended (Figure 1-24).

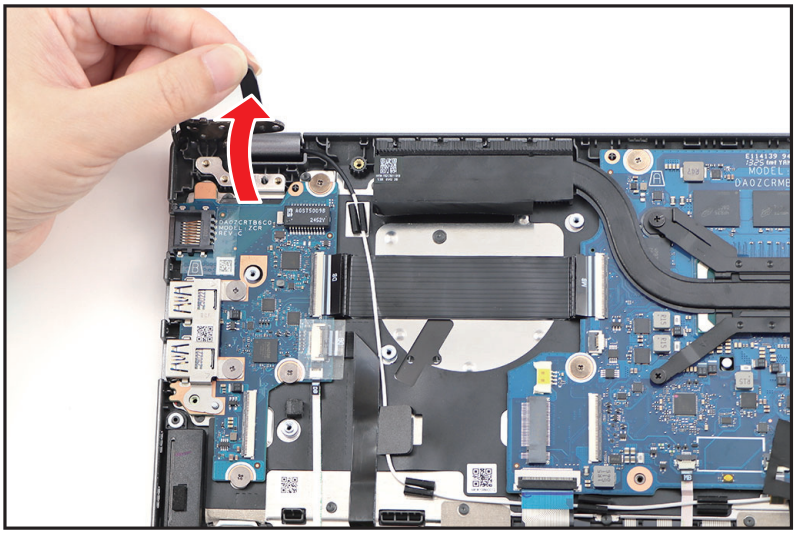


Figure 1-24. USB Board Removal

4. Detach the mylar tape (A) from the microphone board FFC (Figure 1-25).
5. Detach the tape (B) from the aux antenna cable (white) and unroute the antenna cable from the cable guides on the top assembly (Figure 1-25).

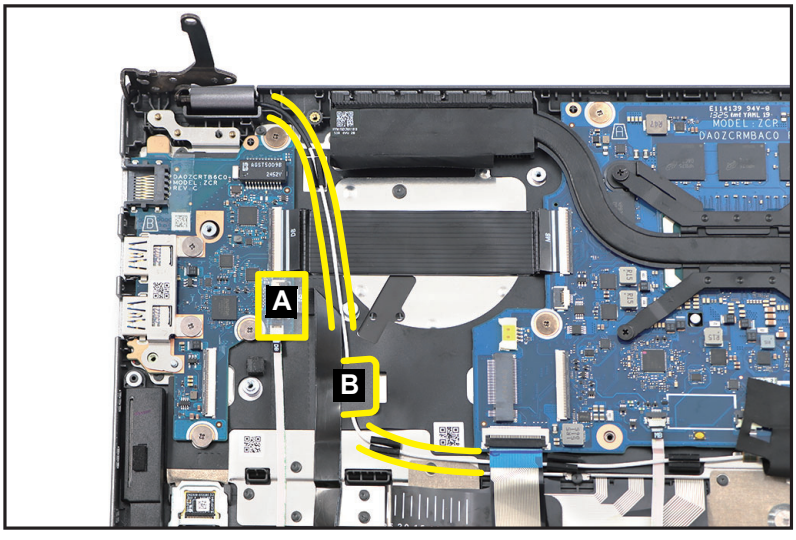


Figure 1-25. USB Board Removal

6. Disconnect the USB board FFC (high speed) (C) from the mainboard and USB board connectors (Figure 1-26).
7. Disconnect the fingerprint FFC from the USB board connector (D) (Figure 1-26).
8. Disconnect the microphone board FFC from the USB board connector (E) (Figure 1-26).

⚠ CAUTION:

USB board FFC, fingerprint board FFC, and microphone board FFC can be damaged if disconnected while the mainboard and/or USB board connectors are locked.

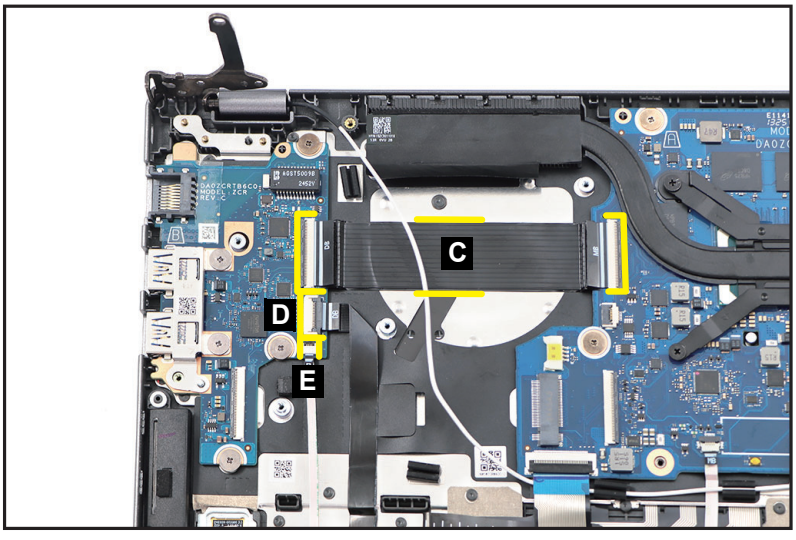


Figure 1-26. USB Board Removal

9. Remove five (5) screws securing the USB board and I/O bracket (Figure 1-27).

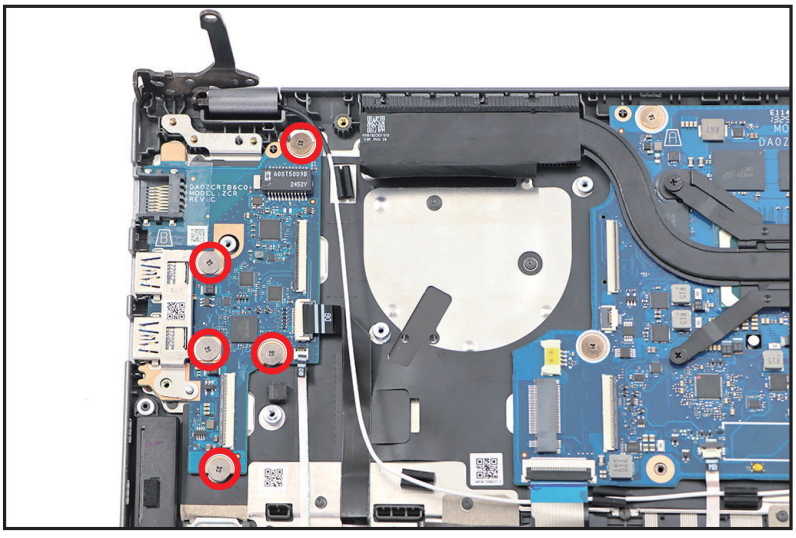


Figure 1-27. USB Board Removal

10. Release the I/O bracket (F) from the guide pin (marked with the green circle) and remove it from the top assembly (Figure 1-28).

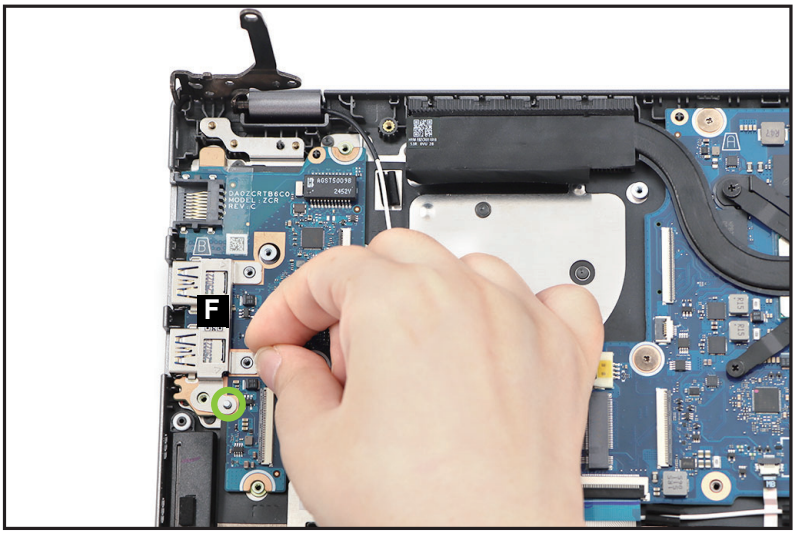


Figure 1-28. USB Board Removal

11. Release the USB board (G) from the I/O port slots (marked with the green line) and guide pins (marked with the green circles) on the top assembly (Figure 1-29). Then remove the USB board.

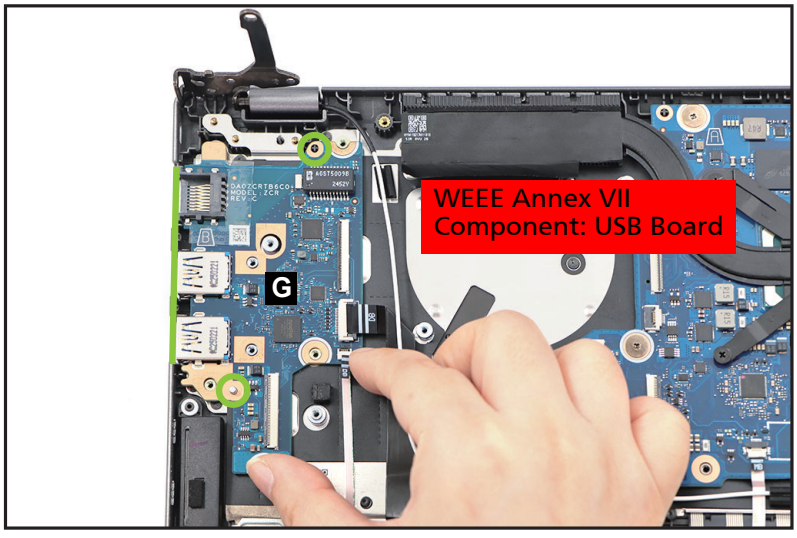


Figure 1-29. USB Board Removal

Mainboard Removal

Prerequisite:

Ensure that the **SSD Module**, **Fan Module**, and **Heatsink** have been disassembled prior removing the mainboard.

1. Remove three (3) screws securing the right LCD hinge in place (Figure 1-30).

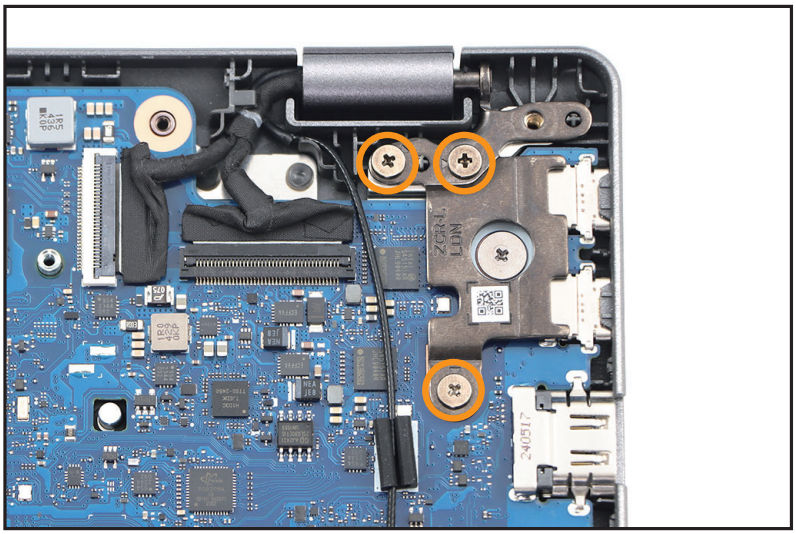


Figure 1-30. Mainboard Removal

2. Lift the top assembly until it is fully open (Figure 1-31).

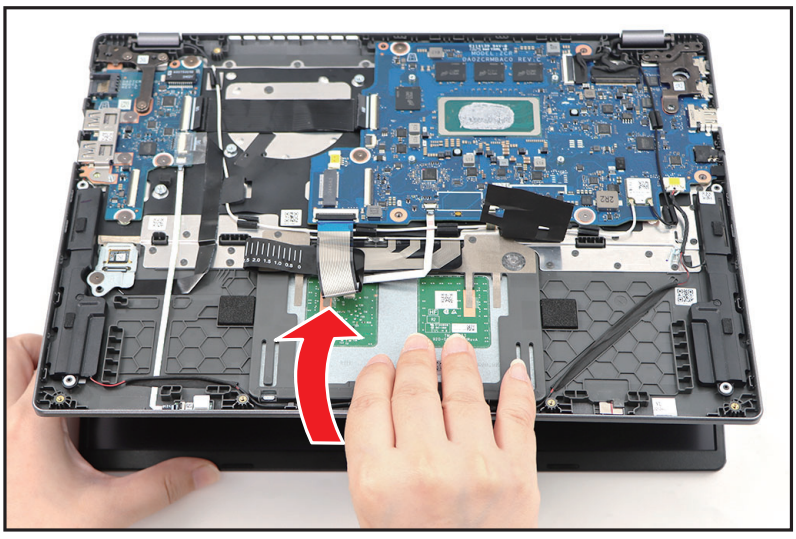


Figure 1-31. Mainboard Removal

3. Close the top assembly and lift the right LCD hinge until it is fully extended (Figure 1-32).

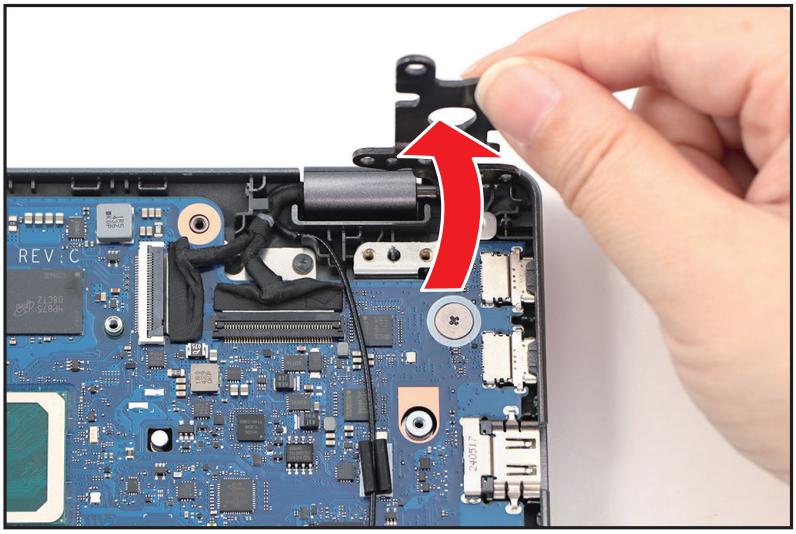


Figure 1-32. Mainboard Removal

4. Disconnect the keyboard FPC from the mainboard connector (A) (Figure 1-33).
5. Disconnect the microphone FFC from the mainboard connector (B) (Figure 1-33).
6. Disconnect the keyboard backlight FFC from the mainboard connector (C) (Figure 1-33).
7. Disconnect the speaker cable from the mainboard connector (D) (Figure 1-33).
8. Disconnect the LCD cable from the mainboard connectors (E&F) and unroute the cable from the cable guide (Figure 1-33).

⚠ CAUTION:

FFCs FPC, and LCD cable can be damaged if removed while the mainboard connectors are locked.

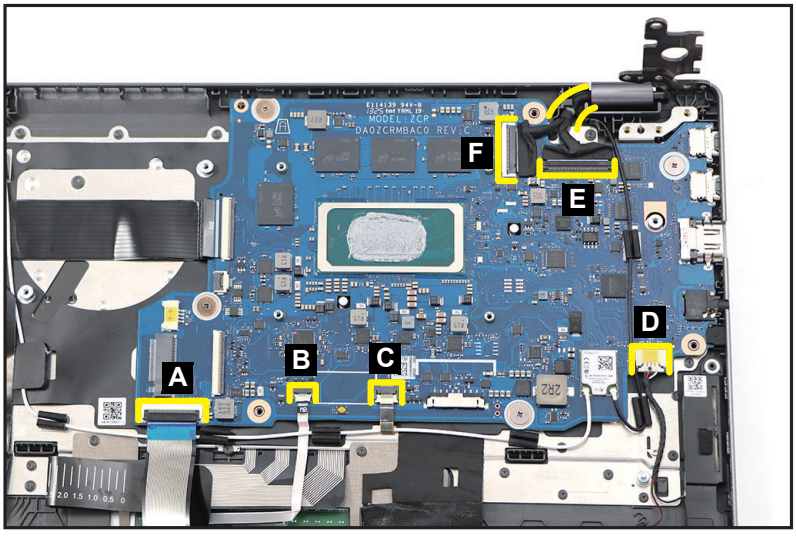


Figure 1-33. Mainboard Removal

9. Disconnect the antenna cables from the WLAN module connectors (G) and unroute the main antenna cable (black) from the cable guides on the mainboard and top assembly (Figure 1-34).

10. Remove the rubber tab (H) (Figure 1-34).

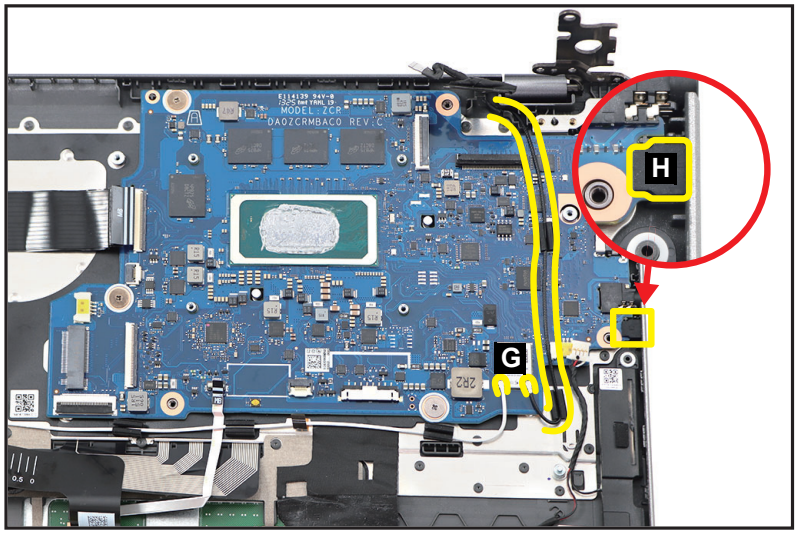


Figure 1-34. Mainboard Removal

11. Remove four (4) screws securing the mainboard in place (Figure 1-35).

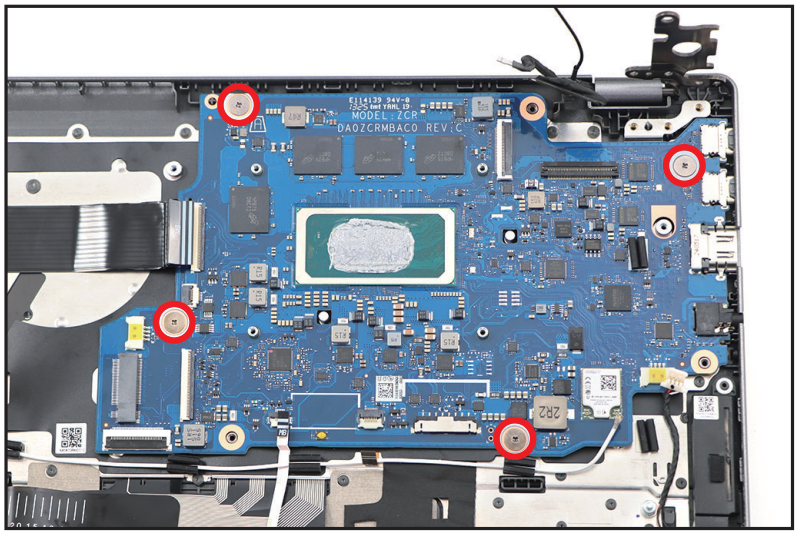


Figure 1-35. Mainboard Removal

12. Release the mainboard (I) from the I/O ports slots (marked with the green lines) and guide pins (marked with the green circles) on the top assembly (Figure 1-36). Then remove the mainboard.

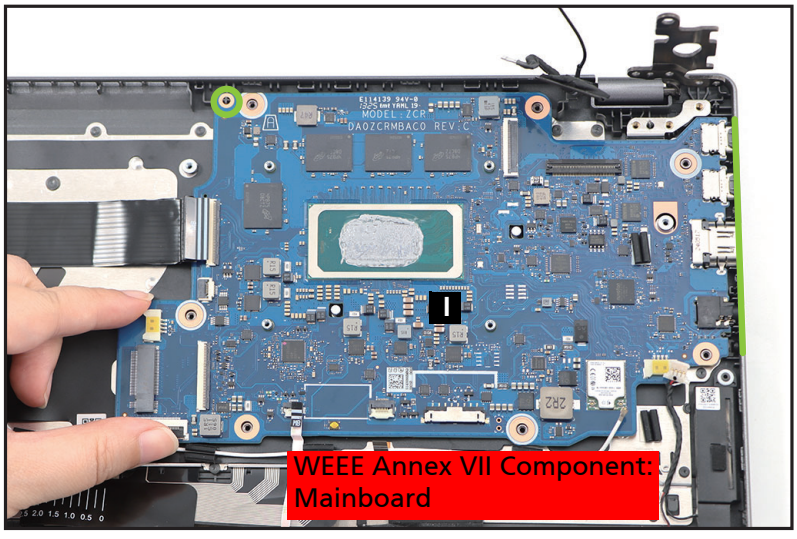


Figure 1-36. Mainboard Removal

13. Remove the thermal pad (J) from the top assembly (Figure 1-37).

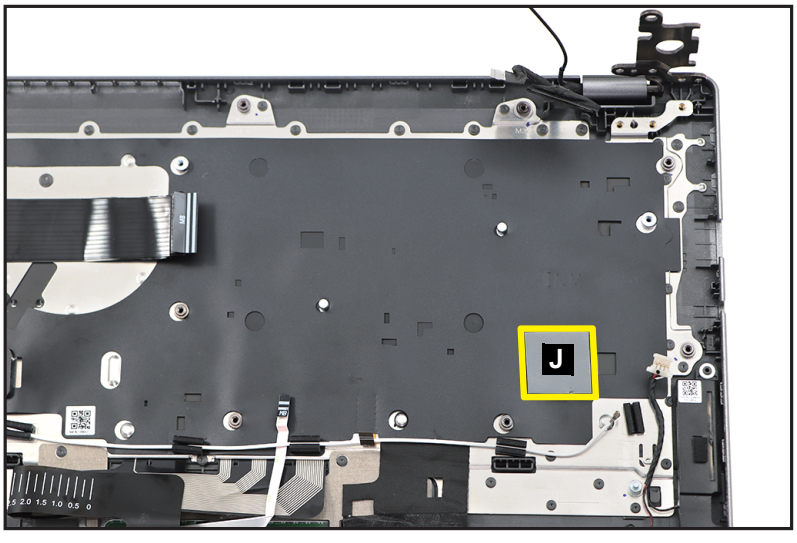


Figure 1-37. Mainboard Removal

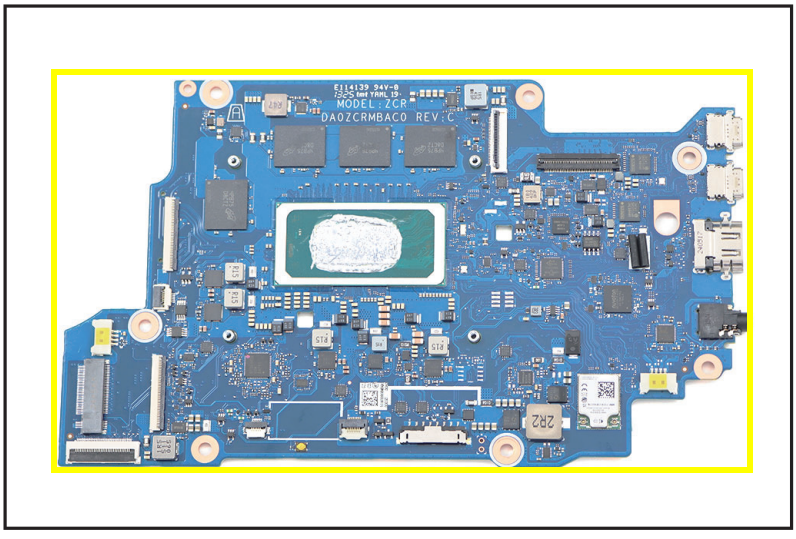


Figure 1-38. Mainboard

+ **IMPORTANT:**

  Circuit boards >10 cm² have been highlighted with a yellow rectangle as shown in Figure 1-38. Remove the circuit board and follow local regulations for disposal.

LCD Bezel Removal

Prerequisite:

LCD Module Removal

1. Pry the LCD bezel from the upper side to release latches (Figure 1-39).



Figure 1-39. LCD Bezel Removal

2. Continue prying along the left and right sides of the bezel (Figure 1-40).



Figure 1-40. LCD Bezel Removal

3. Continue prying the bottom left side of the LCD bezel near the bezel cap (Figure 1-41).



Figure 1-41. LCD Bezel Removal

4. There is a tape behind the lower edge of the LCD bezel. Use a pry tool to slowly detach the LCD bezel away from the LCD panel as shown in Figure 1-42. While detaching the LCD bezel, ensure to follow the direction from left to right as shown in Figure 1-43. Then, remove the LCD bezel from the LCD cover.

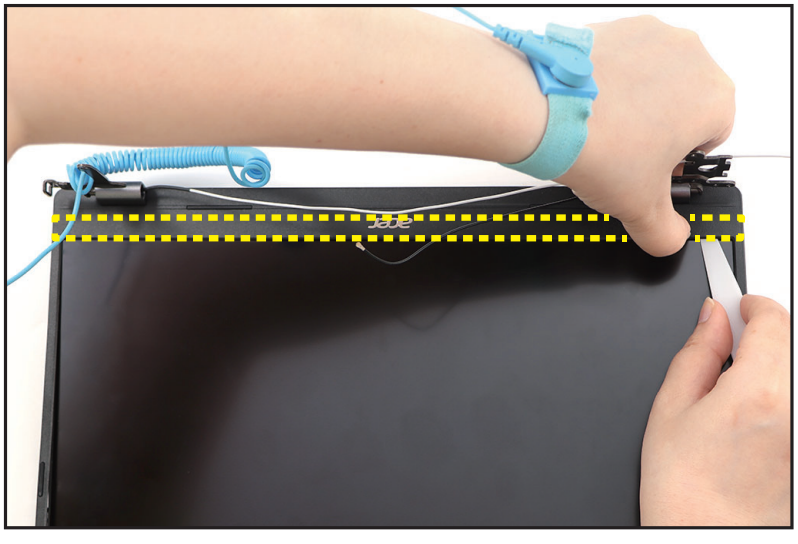


Figure 1-42. LCD Bezel Removal

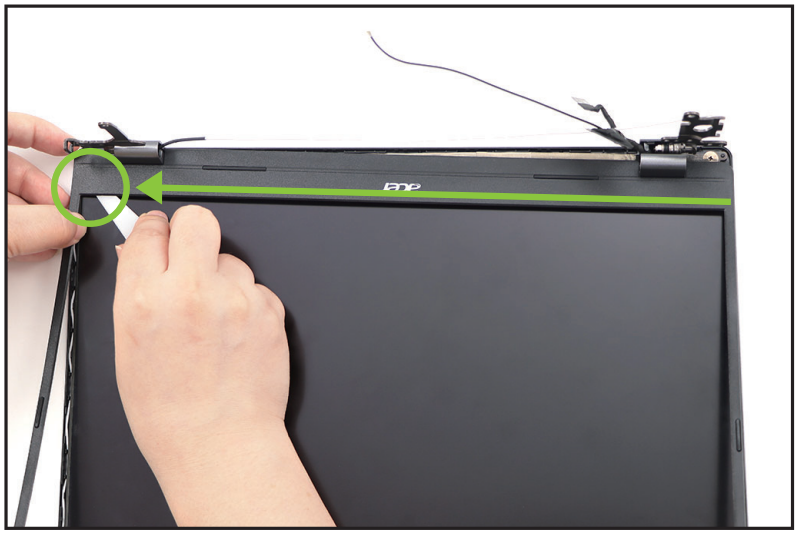


Figure 1-43. LCD Bezel Removal

LCD Panel Removal

Prerequisite:

LCD Bezel Removal

1. Release the LCD cable from the LCD hinge and from the bottom cable guides on the LCD cover (Figure 1-44).

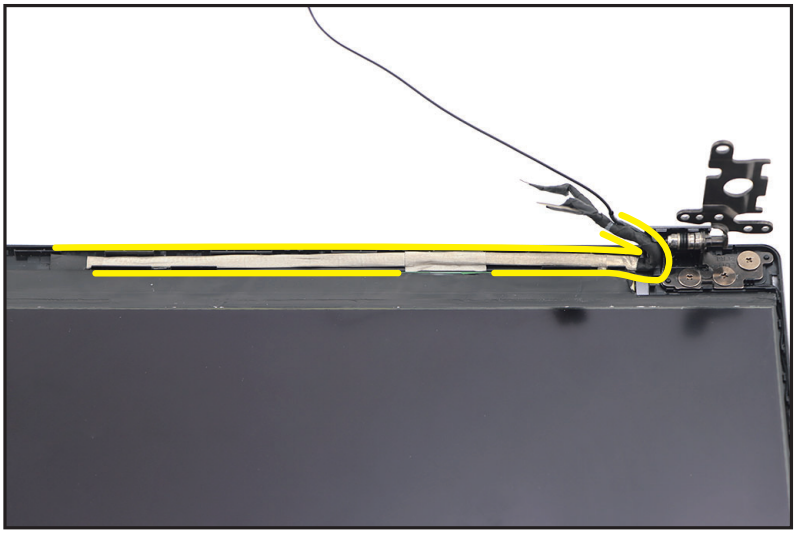


Figure 1-44. LCD Panel Removal

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 from the LCD cover. Repeat the same procedure to remove the double-sided mounting tape on another side of the LCD panel (Figure 1-45).

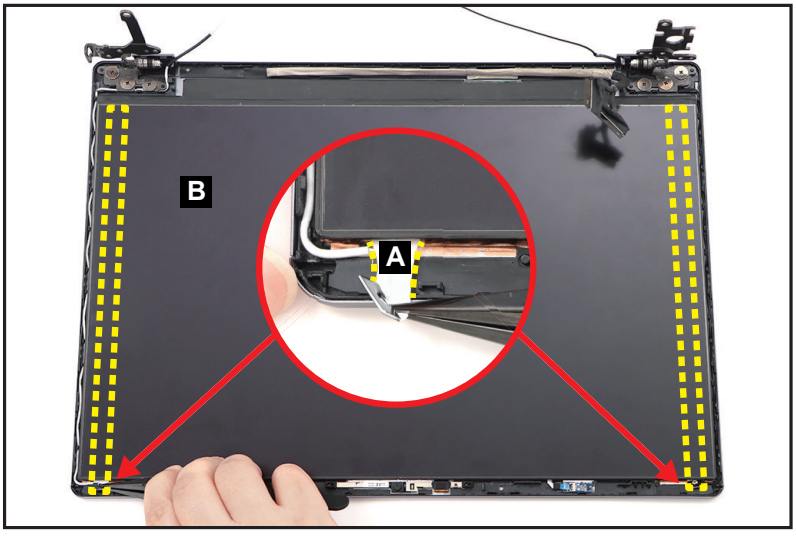


Figure 1-45. LCD Panel Removal

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

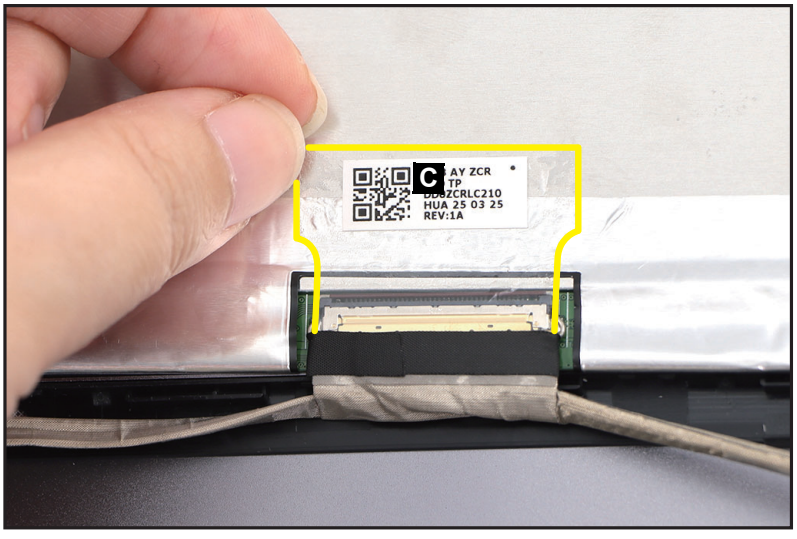


Figure 1-46. LCD Panel Removal

5. Release the LCD cable latch (D) (Figure 1-47).

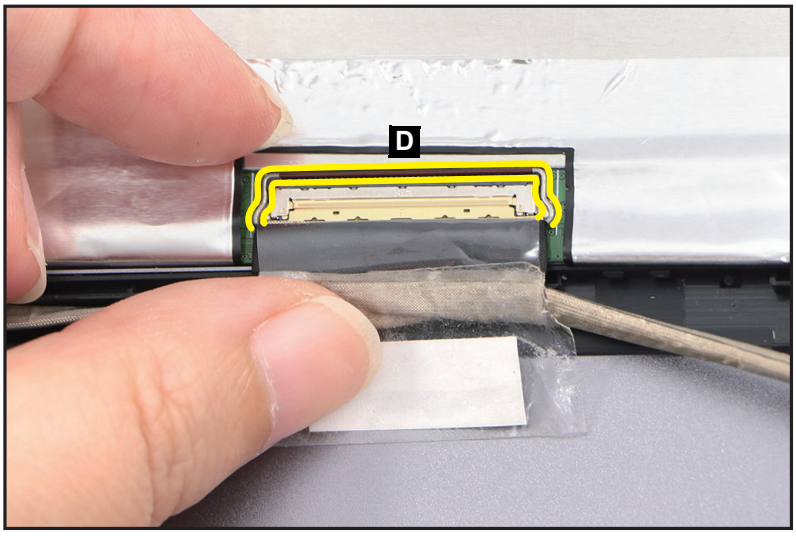


Figure 1-47. LCD Panel Removal

6. Disconnect the LCD cable from the LCD panel connector (E) (Figure 1-48).

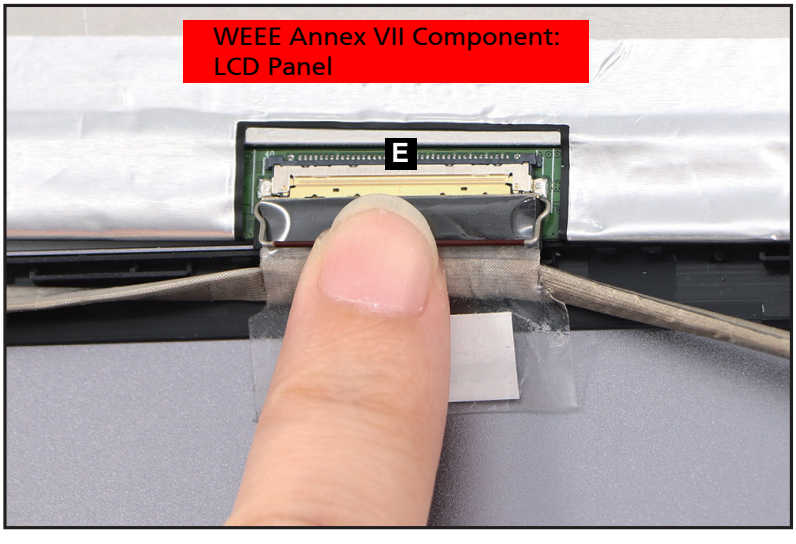


Figure 1-48. LCD Panel Removal

7. Remove the LCD panel.

⚠ CAUTION:

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

Top Assembly Removal (Keyboard Removal)

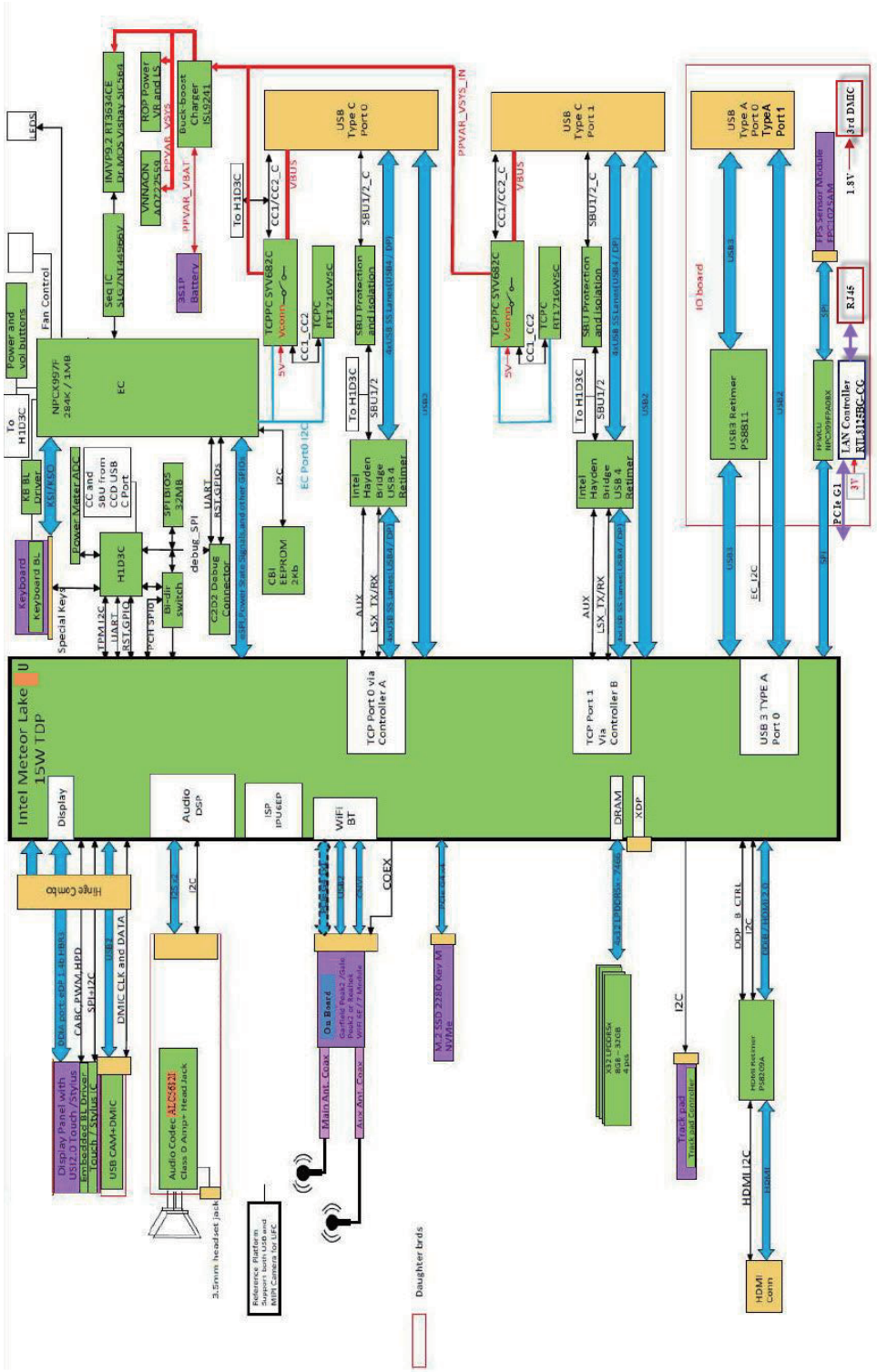
Prerequisite:

Ensure that the **3rd Microphone Board**, **Fingerprint**, **LCD Module**, **USB Board**, and **Mainboard** have been disassembled prior removing the top assembly.



Figure 1-49. Top Assembly (Keyboard)

Electronic Boards Diagrams



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. **By performing any of these procedures you acknowledge that any remaining warranty applicable to your computer will be voided if any damage is done to the unit or components during the repair.**

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 1-1* with the verified symptom to determine the solution.

Table 1-1. 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, please contact Acer local service.

NOTE:

Do not replace non-defective FRU parts.

Power On Issues

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

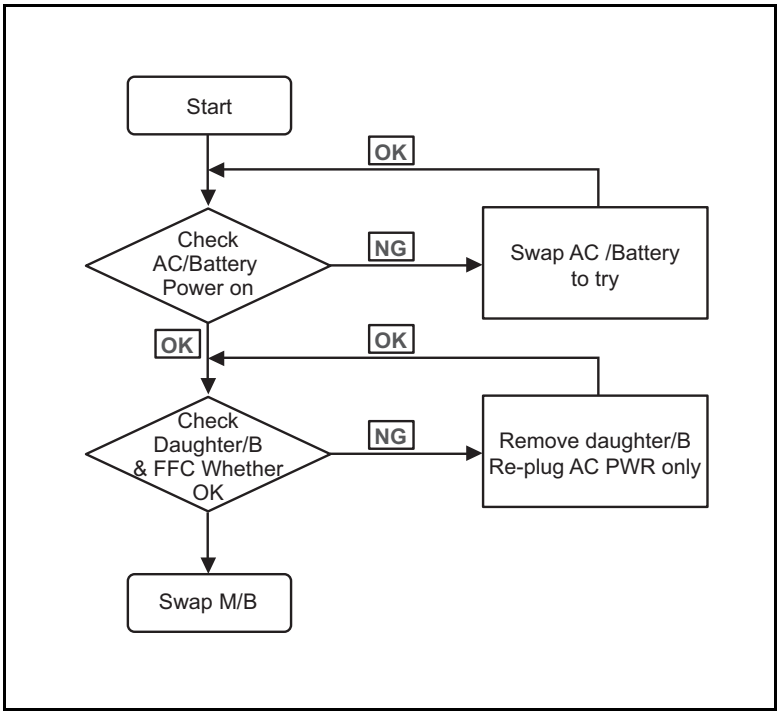


Figure 1-50. Power On Issue

Computer Shuts Down Intermittently

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

1. Makes sure the power cable is properly connected to the computer and the electrical outlet.
2. Remove all extension cables between the computer and the outlet.
3. Remove all surge protectors between the computer and the electrical outlet. Plug the computer directly into a known serviceable electrical outlet.
4. Remove all external and non-essential hardware connected to the computer that are not necessary to boot the computer to the failure point.
5. Remove any recently installed software.
6. If the Issue is still not resolved, please contact Acer local service.

No Display Issues

If the Display does not work, perform the following:

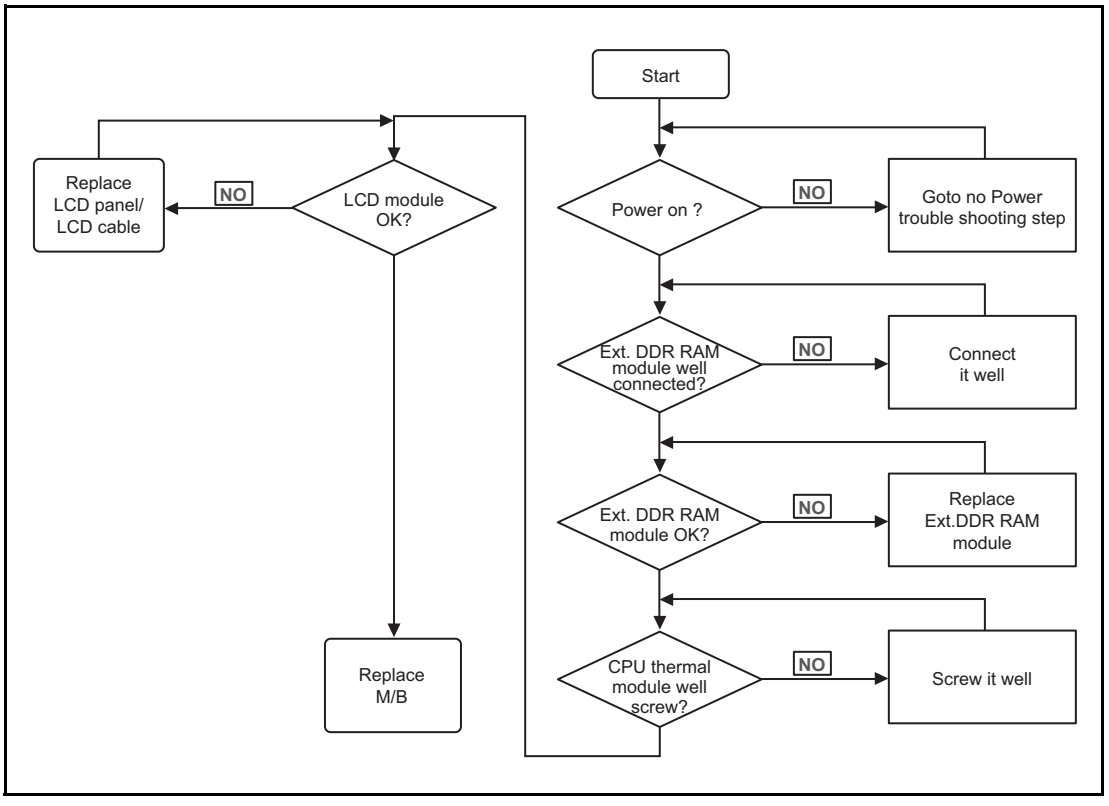


Figure 1-51. No Display Issue

No POST or Video

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

1. Make sure that internal display is selected. Reference product pages for specific model procedures on how to switch between the internal display and the external display.
2. Make sure the computer has been turned on.

If no power, refer to *Power On Issues*.

3. Turn off the Chromebook. Remove the power cable, and then plug it back in. Then perform the hard reset.
4. Connect an external monitor to the computer and switch between the internal display and the external display.

NOTE:

If you've connected an external monitor, the screen will only appear on the external monitor. If you've connected a projector, the screen will be displayed on both your Chromebook and via the projector.

5. If the POST or video appears on the external display only, refer to *LCD Picture Failure*.

6. Disconnect power and all external devices including port replicators or docking stations. Remove any memory cards.
7. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
8. If the Issue is still not resolved, please contact Acer local service.

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 Procedures*.
   - If extensive pixel damage is present (different colored spots in the same locations on the screen), the LCD is faulty and should be replaced. Refer to *Disassembly Procedures*.

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 Procedures*.
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 the Chromebook display resolution is not normal, click the status area where your account picture appears.
   - Click `Settings` > `Display Settings`.
   - Click on the `Resolution` drop-down menu to choose the desired resolution.
   - Check the display again. Readjust if necessary.
4. Roll back the video driver to the previous version if updated.
5. Remove and reinstall the video driver.
6. Run the Diagnostic test and follow the on-screen prompts.
7. If the Issue is still not resolved, please contact Acer local service.

LCD Picture Failure

If the LCD fails, perform the following:

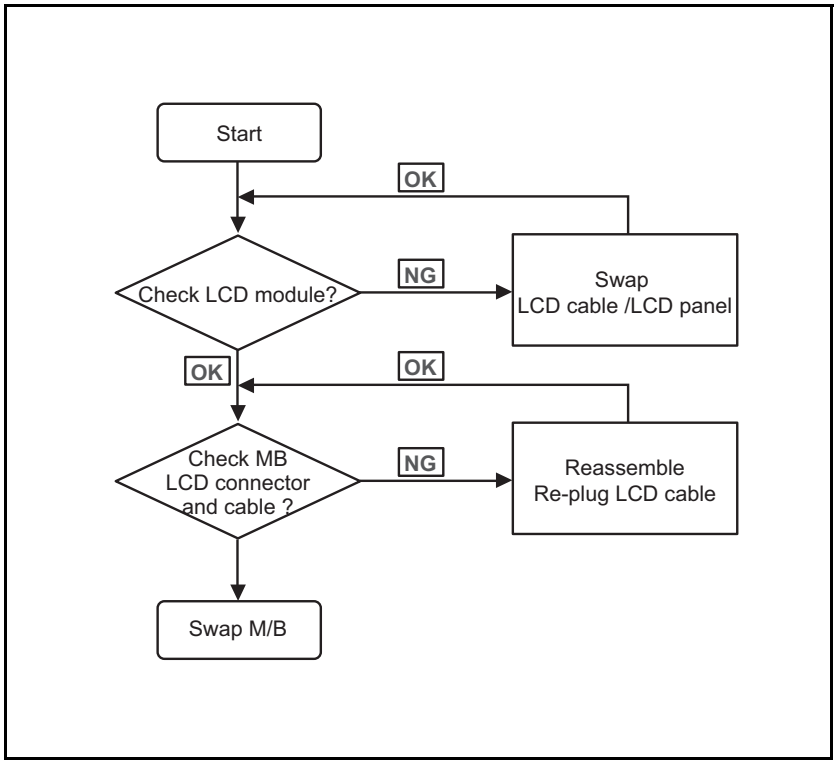


Figure 1-52. LCD Failure

Internal Keyboard Failure

If the internal keyboard fails, perform the following:

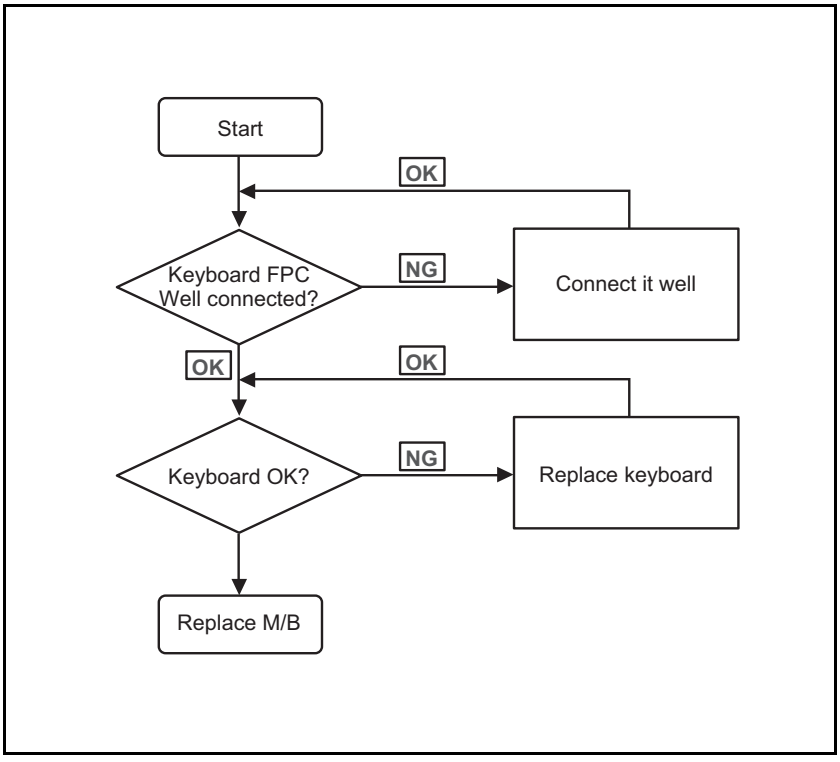


Figure 1-53. Internal Keyboard Failure

Touch Pad Failure

If the touch pad fails, perform the following:

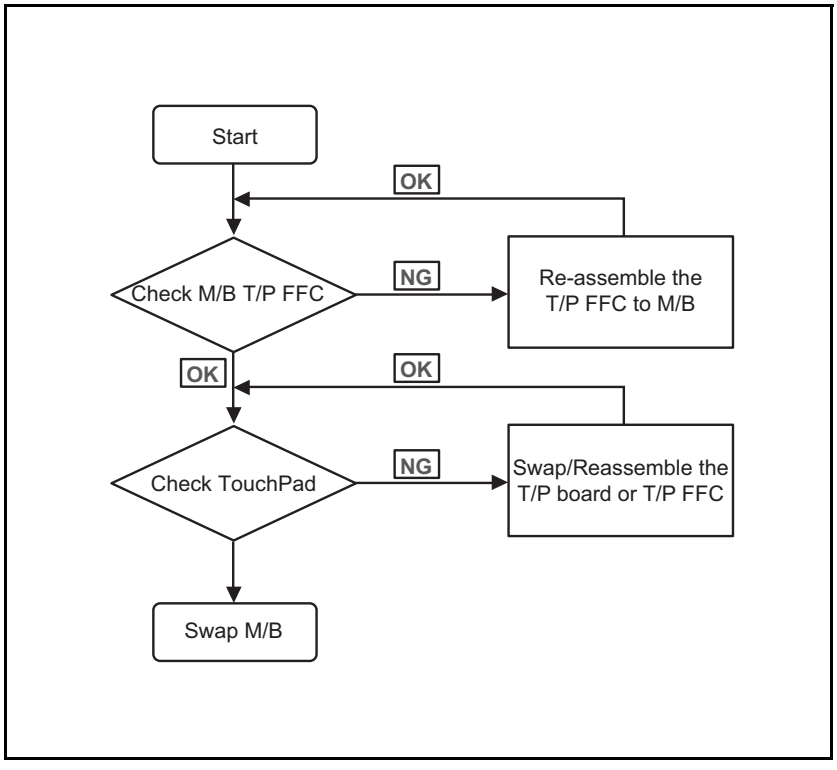


Figure 1-54. Touch Pad Failure

Internal Speaker Failure

If internal speakers fail, perform the following:

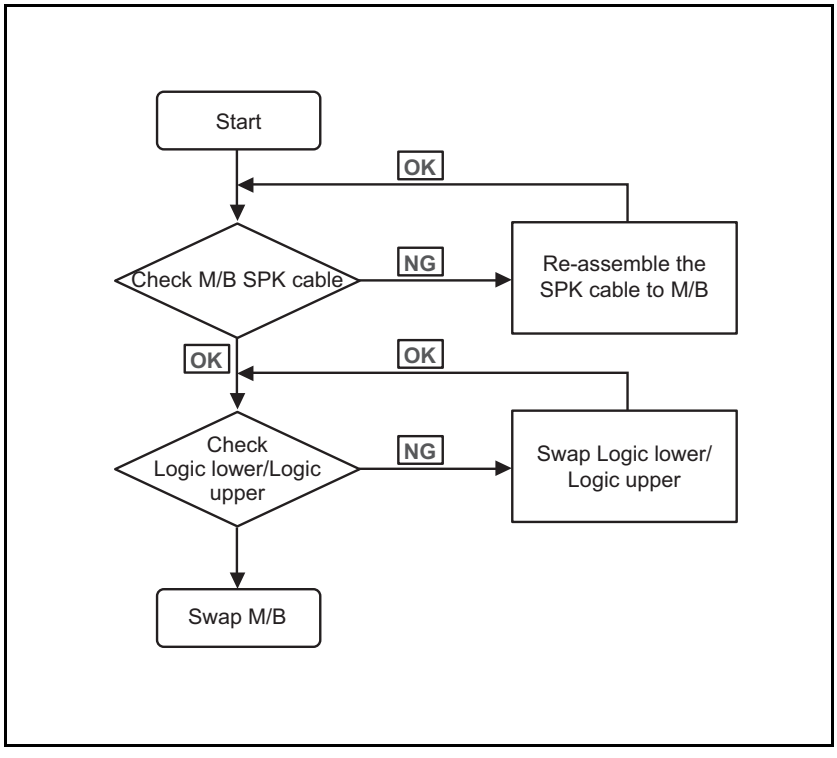


Figure 1-55. Internal Speaker Failure

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 status area of 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. Factory reset your Chromebook:

NOTE:

Make sure to back up all the files on Google Drive or an external hard drive.

- Sign out of the Chromebook and press and hold *Ctrl* + *Alt* + *Shift* + *R*.

- Click `Restart` to restart the Chromebook, and then follow the on-screen instructions.
- Check if the problem is fixed once you set up the Chromebook.

6. Restore system and file settings from a known good date using *Chromebook Recovery Utility*.
7. Reinstall the operating system.
8. If the issue is still not resolved, please contact Acer local service.

Audio Codec Failure

If the audio codec fails, perform the following:

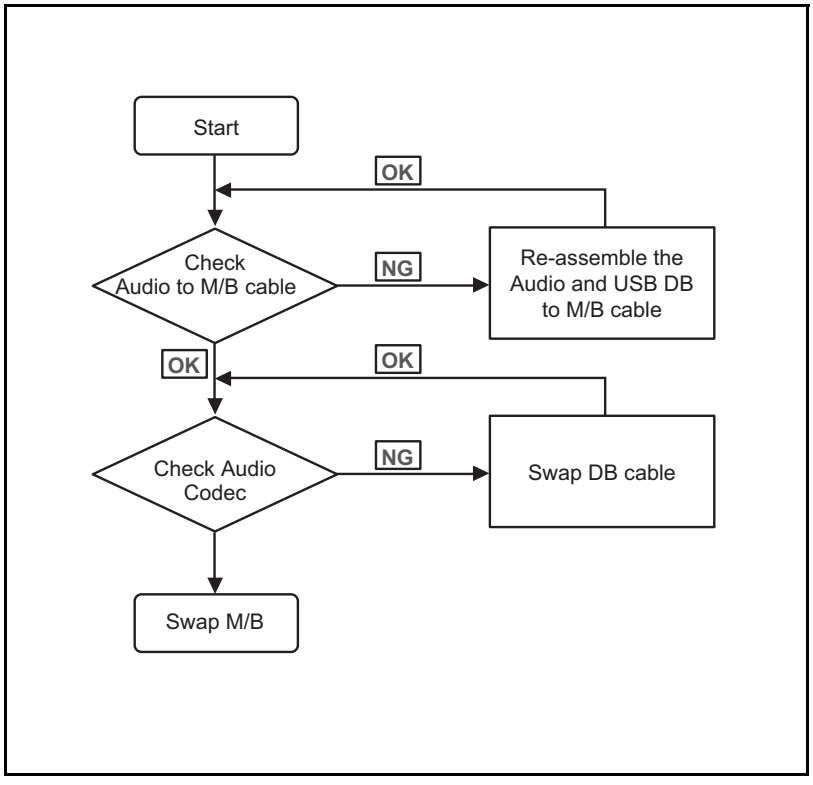


Figure 1-56. Audio Codec Failure

Other Functions Failure

1. Check if the drives are functioning correctly.
2. Check if the test fixtures are functioning correctly.
3. Change the mainboard to check if the 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

Exploded Diagrams

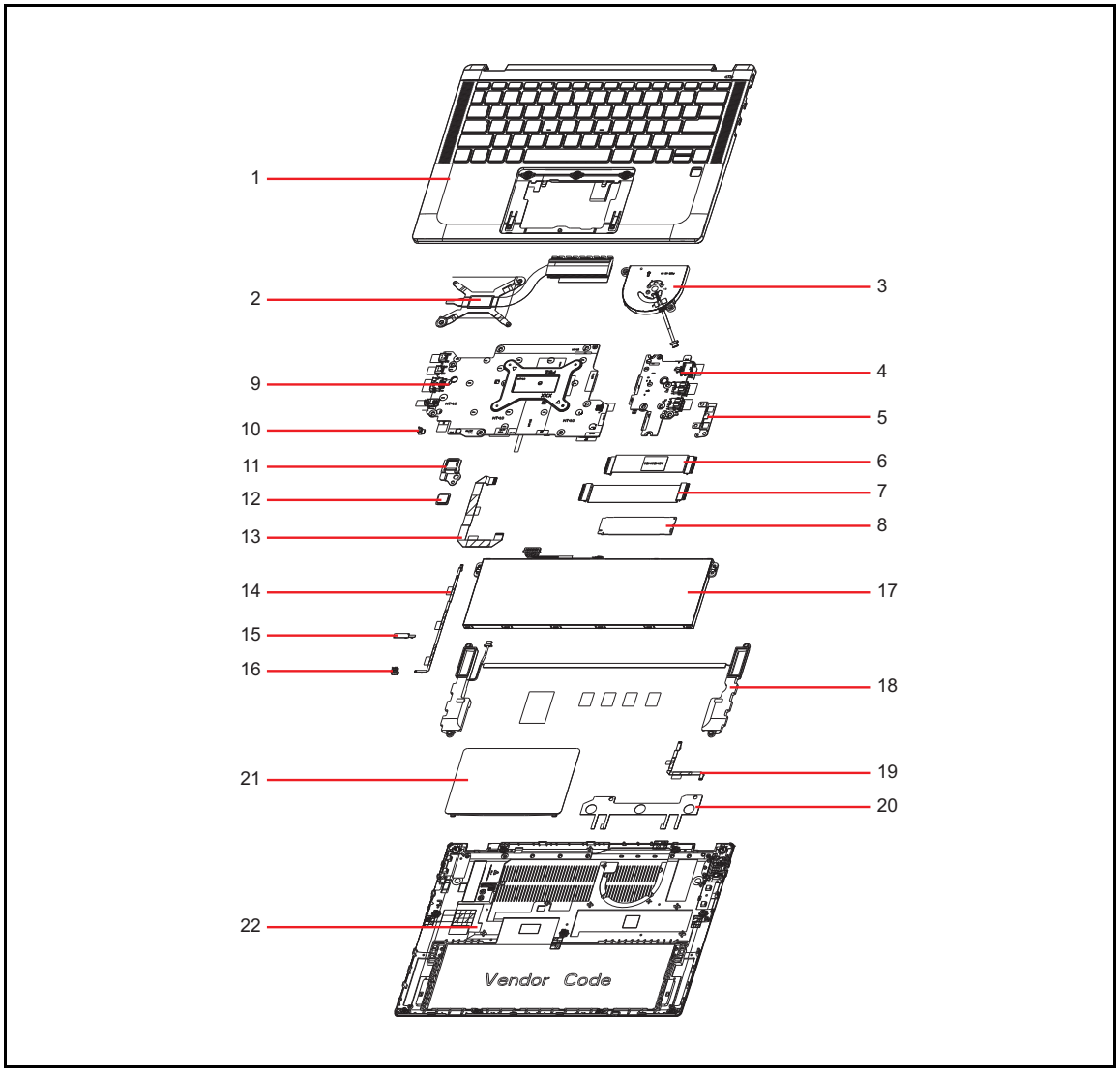


Figure 1-57. System Exploded Diagram

Table 1-2. System Exploded Diagram

No.	Description
1	KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Arabic (NK.I1313.3JP, NK.I1317.0ZM)
2	THERMAL MODULE UMA 15W
3	FAN
4	BOARD IO W/ INS MYLAR
5	BRACKET IO BOARD

Table 1-2. System Exploded Diagram (Continued)

No.	Description
6	FFC CABLE IO BOARD LOW SPEED
7	FFC CABLE IO BOARD HIGH SPEED
8	Flash Disk KINGSTON SSD NAND 256GB OM8PGP4256Q-AA LF+HF
9	Mainboard CBE794-1T CU5115U 16GB UMA Intel Wi-Fi 7 BE200.D2WG_w/BT RTL8125BG-CG w/ backlit KB w/ FP
10	RUBBER LED POWER
11	BRACKET FINGERPRINT
12	FINGER PRINT MODULE ASSY
13	FFC CABLE FINGERPRINT
14	FFC CABLE 3RD MIC
15	MICROPHONE
16	RUBBER 3RD MIC
17	Battery LGES Typ.53Wh 4700mAh 3S1P AP23A8L 248x84.4x5.5(mm) AP23A 11.28V 70W Li-Ion
18	SPEAKER R + L KIT
19	FFC CABLE TOUCHPAD
20	CONDUCTIVE FABRIC W/ INS MYLAR TOUCHPAD
21	TOUCHPAD ASSY GRAY Synaptics NC.24611.093
22	LOWER CASE ASSY AL GRAY W/ FOOT

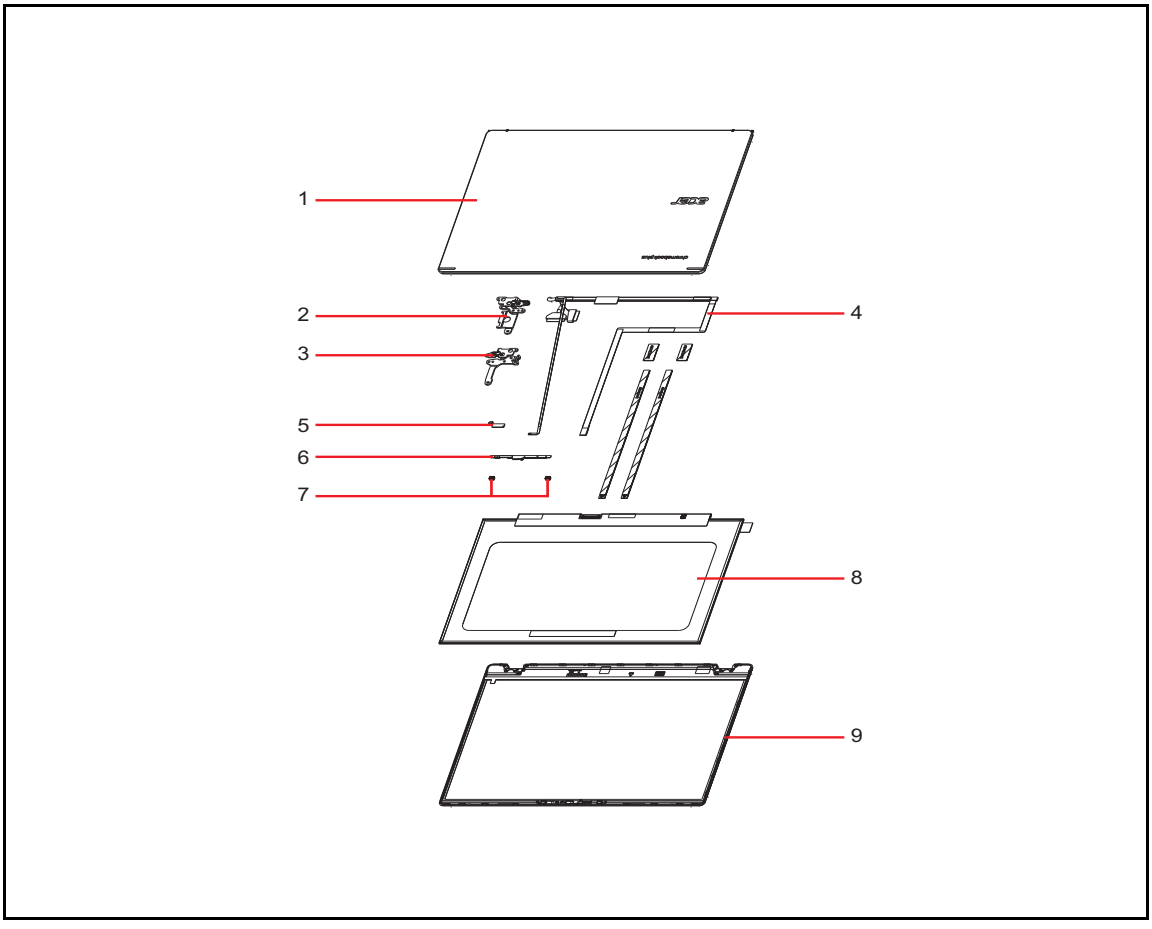


Figure 1-58. LCD Assembly Exploded Diagram

Table 1-3. LCD Assembly Exploded Diagram

No.	Description
1	LCD COVER ASSY AL GRAY
2	LCD HINGE L
3	LCD HINGE R
4	LCD EDP CABLE
5	BOARD HALL SENSOR
6	Camera CHICONY QHD FF CJFM514-2 HI-556W DS-41091C (BG) ZTS6735 MIPI 3.2T TNR for Chromebook
7	RUBBER CCD
8	LED Touch Panel INNOLUX 14" WUXGA IPS None Glare N140JCN-GQ1 C2 400nit sRGB 100% 60Hz 30ms 1500:1 (Narrow, 2.4t/3.0t flat, on-cell touch)
9	LCD BEZEL ASSY BLACK

FRU List

This list is for reference only, please contact Acer local service to order the correct replacement part and availability.

Table 1-4. FRU List

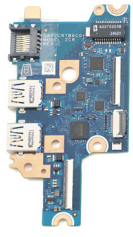
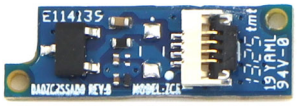
Category	Pictures	Description
ADAPTER		Adapter Chicony Power A065RP99P 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black TCO9.0, PCR 50%, with LOGO
		Adapter LITE-ON PA-1650-58AA 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black TCO9.0, PCR 50%, with LOGO
		Adapter DELTA ADP-65KE DA 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black TCO9.0, PCR 50%, with LOGO
BATTERY		Battery LGES Typ.53Wh 4700mAh 3S1P AP23A8L 248x84.4x5.5(mm) AP23A 11.28V 70W Li-Ion
		Battery CosMx Typ.53Wh 4661mAh 3S1P AP23ABL 248x84.4x5.5(mm) AP23A 11.37V 65W Li-Ion TI BQ40Z555 FW5.12
		AceBattery ATL Typ.53Wh 4700mAh 3S1P AP24CAL 248x84.4x5.5(mm) AP24C 11.25V 70W Li-Ion FW5.09
BOARD		BOARD IO W/ INS MYLAR
		BOARD HALL SENSOR
		FINGER PRINT MODULE ASSY

Table 1-4. FRU List (Continued)

Category	Pictures	Description
CABLE		FFC CABLE IO BOARD LOW SPEED
		FFC CABLE IO BOARD HIGH SPEED
		FFC CABLE TOUCHPAD
		FFC CABLE FINGERPRINT
		FFC CABLE 3RD MIC
		LCD EDP CABLE LCD EDP CABLE TOUCH LCD
CAMERA		Camera CHICONY QHD FF CJFM514-2 HI-556W DS-41091C (BG) ZTS6735 MIPI 3.2T TNR for Chromebook

Table 1-4. FRU List (Continued)

Category	Pictures	Description
FAN		FAN
HDD		Flash Disk KINGSTON SSD NAND 256GB OM8PGP4256Q-AA LF+HF
		Flash Disk KINGSTON SSD NAND 512GB OM8PGP4512Q-AA LF+HF
		Flash Disk MICRON SSD NAND 512GB Micron 2500 QLC 512GB MTFDKBA512QGN-1BN15ABYY LF+HF
		Flash Disk APACER SSD NAND 256GB 3D TLC AP2JPB4480E-O301 LF+HF
KEYBOARD ASSEMBLY		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Arabic (NK.I1313.3JP, NK.I1317.0ZM)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL FR/Arabic (NK.I1313.3K6, NK.I1317.104)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Belgium (NK.I1313.3K2, NK.I1317.100)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Brazilian Portuguese (NK.I1313.3K3, NK.I1317.101)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL US International w/ Bulgaria (NK.I1313.3K0, NK.I1317.0ZY)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL US International w/ Canadian French (NK.I1313.3JZ, NK.I1317.0ZX)

Table 1-4. FRU List (Continued)

Category	Pictures	Description
KEYBOARD ASSEMBLY		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL SLO/CRO (NK.I1313.3KE, NK.I1317.10C)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL CZ/SK (NK.I1313.3K4, NK.I1317.102)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Danish (NK.I1313.3K5, NK.I1317.103)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL French (NK.I1313.3K7, NK.I1317.105)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL German (NK.I1313.3K8, NK.I1317.106)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Greek (NK.I1313.3JR, NK.I1317.0ZP)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL US International w/ Hebrew (NK.I1313.3JY, NK.I1317.0ZW)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Hungarian (NK.I1313.3K9, NK.I1317.107)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Persian (NK.I1313.3JV, NK.I1317.0ZT)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Italian (NK.I1313.3KA, NK.I1317.108)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Japanese (NK.I1313.3KL)

Table 1-4. FRU List (Continued)

Category	Pictures	Description
KEYBOARD ASSEMBLY		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Korean (NK.I1313.3JS, NK.I1317.0ZQ)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL ALA-Spanish (NK.I1313.3K1, NK.I1317.0ZZ)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Norwegian (NK.I1313.3KC, NK.I1317.10A)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Portuguese (NK.I1313.3KD, NK.I1317.10B)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Russian (NK.I1313.3JT, NK.I1317.0ZR)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Nordic (NK.I1313.3KB, NK.I1317.109)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Spanish (NK.I1313.3KF, NK.I1317.10D)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Sweden (NK.I1313.3KG, NK.I1317.10E)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Swiss/G (NK.I1313.3KH, NK.I1317.10F)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Thailand (NK.I1313.3JW, NK.I1317.0ZU)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Turkish (NK.I1313.3KJ, NK.I1317.10G)

Table 1-4. FRU List (Continued)

Category	Pictures	Description
KEYBOARD ASSEMBLY		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Traditional Chinese (NK.I1313.3JQ, NK.I1317.0ZN)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL US International (NK.I1313.3JX, NK.I1317.0ZV)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL UK (NK.I1313.3KK, NK.I1317.10H)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL Ukrainian (NK.I1313.3JU, NK.I1317.0ZS)
		KEYBOARD MODULE ASSY W/ GRAY UPPER CASE BL KEYBOARD VP03P_C30EWL US (NK.I1313.3KM, NK.I1317.10K)
LCD		LED Touch Panel INNOLUX 14" WUXGA IPS None Glare N140JCN-GQ1 C2 400nit sRGB 100% 60Hz 30ms 1500:1 (Narrow, 2.4t/3.0t flat, on-cell touch)
		LED LCD Panel AUO 14" WUXGA IPS None Glare B140UAN06.1 (0A)350nit sRGB 100% 120Hz 20ms 1200:1 (Narrow, Flat 2.4)
		LED LCD Panel AUO 14" WQXGA+ IPS None Glare B140QAN08.M H/W 0A 400nit sRGB 100% 120Hz 25ms 1200:1 (140g, Narrow 1.85/2.15t(flat), LRR2.5/PSR)
LCD BEZEL		LCD BEZEL ASSY BLACK

Table 1-4. FRU List (Continued)

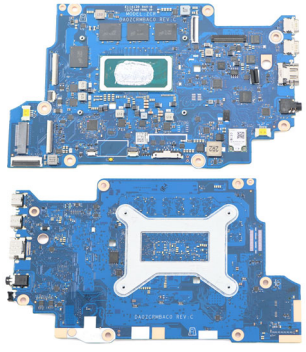
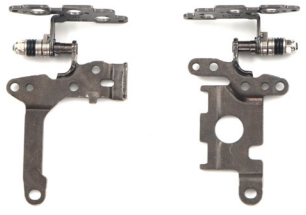
Category	Pictures	Description
LCD COVER		LCD COVER ASSY AL GRAY
LOWER CASE		LOWER CASE ASSY AL GRAY W/ FOOT
MAINBOARD		Mainboard CBE794-1T CU5115U 16GB UMA Intel Wi-Fi 7 BE200.D2WG_w/BT RTL8125BG-CG w/ backlit KB w/ FP
		Mainboard CBE794-1 CU5125U 16GB UMA Intel Wi-Fi 7 BE200.D2WG_w/BT RTL8125BG-CG w/ backlit KB w/ FP in QMB_TH
		Mainboard CBE794-1 CU7155U 16GB UMA Intel Wi-Fi 7 BE200.D2WG_w/BT RTL8125BG-CG w/ backlit KB w/ FP in QMB_TH
METAL		LCD HINGE L
		LCD HINGE R
		BRACKET FINGERPRINT
		BRACKET IO BOARD

Table 1-4. FRU List (Continued)

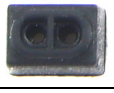
Category	Pictures	Description
MISCELLANEOUS		LCD ADHESIVE TAPE W/ MYLAR
		ADHESIVE TAPE FOR LCD BEZEL 306.6*4.5*0.2mm
		INSULATOR MYLAR ON BATTERY CABLE
		CONDUCTIVE FABRIC W/ INS MYLAR TOUCHPAD
		RUBBER 3RD MIC
		RUBBER LED POWER
		RUBBER CCD
		THERMAL PAD WIFI-7 MODULE TOP
		THERMAL PAD WIFI-7 MODULE

Table 1-4. FRU List (Continued)

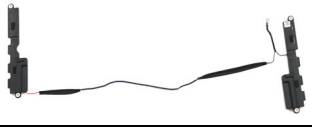
Category	Pictures	Description
MISCELLANEOUS		MYLAR FFC COONECTOR
		LCD ALIGNMENT MYLAR 10*8*0.5MM
POWER CORD		POWER CORD 1M 125V JAP BLACK
		POWER CORD 1M 125V ARG BLACK
		POWER CORD 1M 125V AUS BLACK
		POWER CORD 1M 125V BRAZIL BLACK
		POWER CORD 1M 125V CHINA BLACK
		POWER CORD 1M 125V DENMARK BLACK
		POWER CORD 1M 125V INDIA BLACK
		POWER CORD 1M 125V ISRAEL BLACK
		POWER CORD 1M 125V ITL BLACK
		POWER CORD 1M 125V S.AFRICA BLACK
		POWER CORD 1M 125V SWISS BLACK
		POWER CORD 1M 125V EUR+KOR BLACK
		POWER CORD 1M 125V US BLACK
		POWER CORD 1M 125V UK BLACK
		POWER CORD 1M 125V TAIWAN BLACK
SPEAKER/ MICROPHONE		SPEAKER R + L KIT
		MICROPHONE
THERMAL		THERMAL MODULE UMA 15W

Table 1-4. FRU List (Continued)

Category	Pictures	Description
TOUCHPAD		TOUCHPAD ASSY GRAY Synaptics NC.24611.093
		TOUCHPAD ASSY GRAY PIXART NC.24611.0AT
SCREWS		SCREW M2.0*1.8-I STEEL
		SCREW M2*6-I, NYLOY
		SCREW M2.0*4.0-IBNINYLOKD5.0T0.8)STL
		SCREW M2*2.5-IBZNNYLOKD5,T0.5STEEL
		SCREW M2.0*3.0-I(BZN)(NYLOK)IRON
		SCREW M2.0*2.0- I(BNI)(NY)IRON
		SCREW M2.5*2.5-I(BNI)(NYLOK)T=0.6

Software Update

1. Turn on your Chromebook.
2. Connect your Chromebook to Wi-Fi.
3. At the bottom right, select the time.
4. Select **Settings** .
5. At the bottom of the left panel, select **About Chrome OS**.
6. Under "Google Chrome OS", you'll find which version of the Chrome operating system your Chromebook uses.
7. Select **Check for updates**.
8. If your Chromebook finds a software update, it will start to download automatically.

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 Google Help (https://support.google.com/chromebook/answer/1080595?hl=en)

This is not a free of charge service.

Factory Reset your Chromebook

1. Sign out of your Chromebook.
2. Press and hold **Ctrl + Alt + Shift + r**.
3. Select **Restart**.
4. In the box that appears, select **Powerwash** > **Continue**.
5. Follow the steps that appear and sign in with your Google Account.

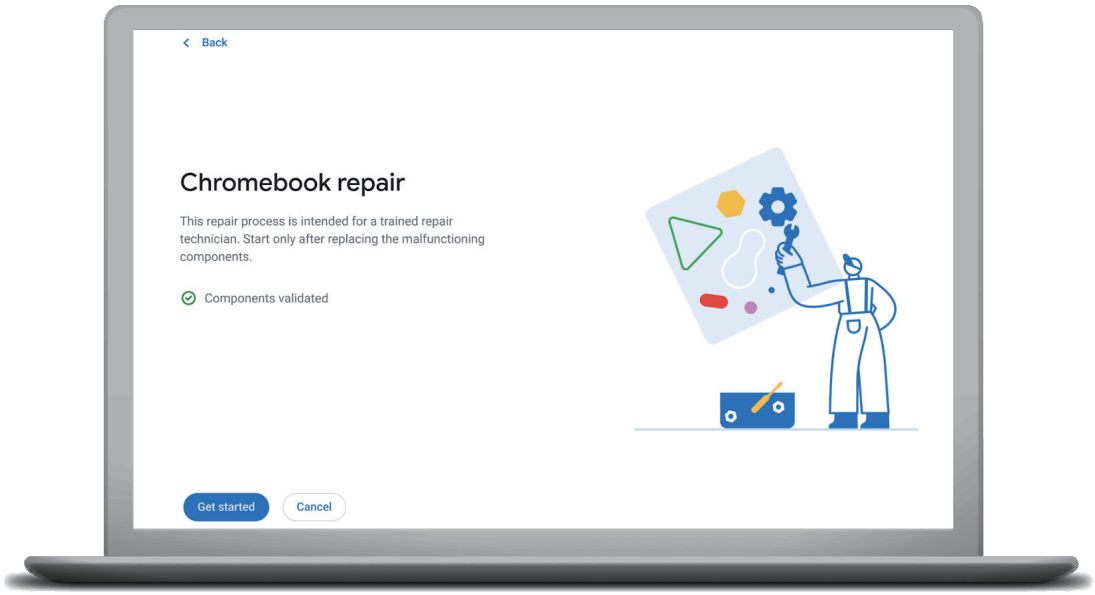
NOTE:

The account you sign in with after you reset your Chromebook will be the owner account.

Shimless RMA

Getting Started

Shimless RMA provides a user-friendly repair flow that is built right into ChromeOS. These customized paths will result in quicker repairs.



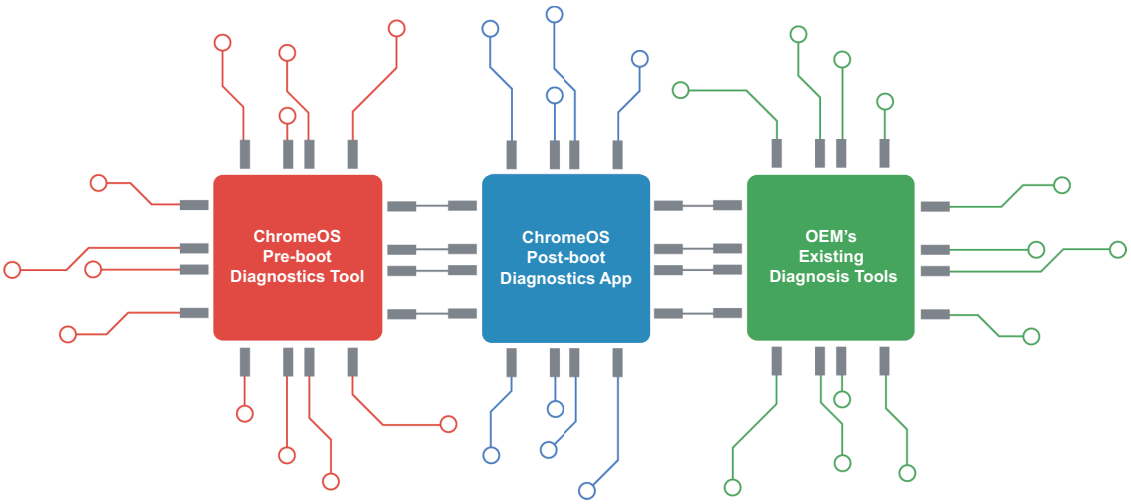
Before we get started, let's review the equipment you may need:

- Make sure you have any necessary tools to complete the repair or open the device.
- RSU setup to disable the hardware write protection. This includes a RSU-enabled security key, QR code scanner, and a secondary device on Wi-Fi.
- Make sure the Chromebook you are servicing is up to date (M107 or higher). If the device requires an update, it can be completed over Wi-Fi, Ethernet, or manually using a Recovery USB.
- ChromeOS Recovery USB or SD card.

Launching the Repair Flow

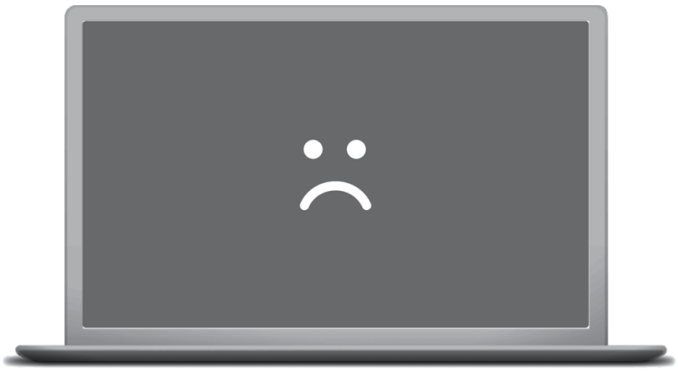
Before starting the Shimless workflow, make sure you have already replaced the malfunctioning components.

If you are not sure what components need to be replaced, you can use the Chromebook Diagnostic Tool or any internal OEM diagnostics.



Step 1: Replace Malfunctioning Components

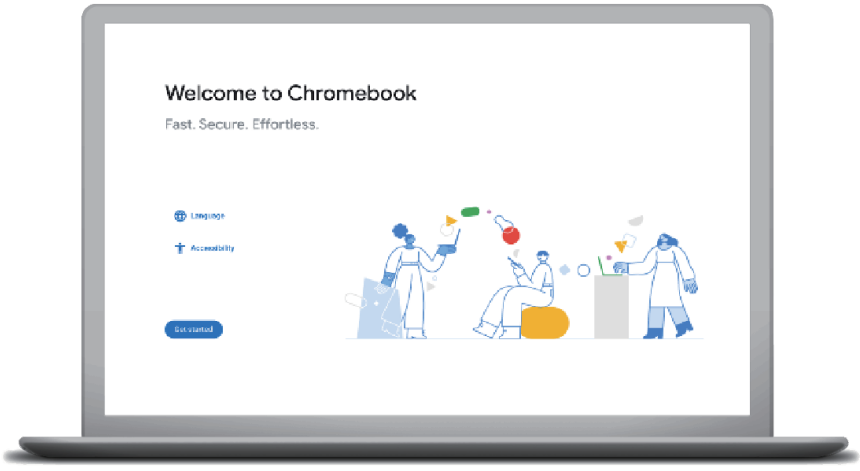
Any broken parts should be replaced **before** launching the repair flow.



Step 2: Boot into ChromeOS

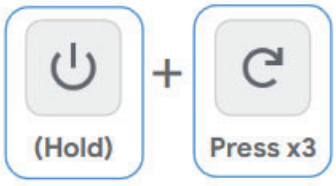
You don't need to login to initiate the Shimless RMA process.

If the message “ChromeOS is missing or damaged” appears on screen, you may need to use a Recovery USB to restore the OS first.

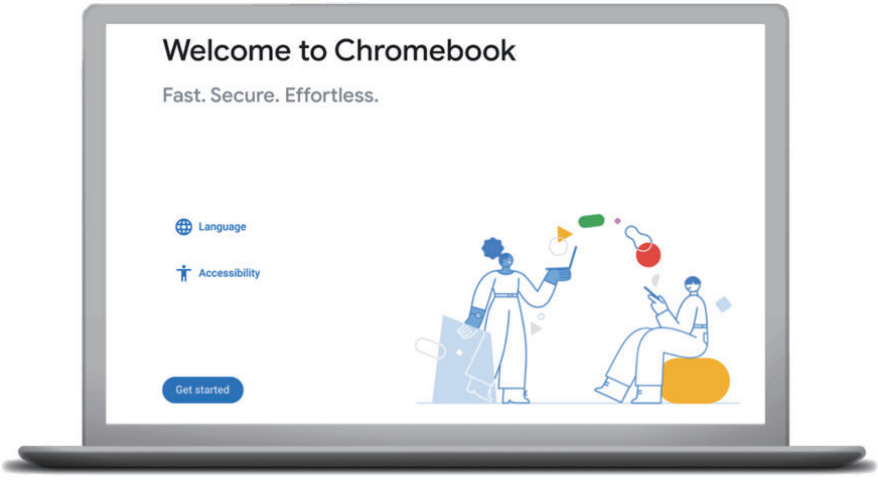


Step 3: Initiate the Shimless RMA Flow

To initiate the Repair Flow, we will need to use the new Shimless RMA Key combination. While **holding down the power button, press the Refresh button 3 times**. For best results, the Key Combination must be completed **within 3 seconds**.



The device will then initiate the Shimless repair flow. The Chromebook will then validate the installed components. This may take up to 10 seconds.



Step 4: Components Validation

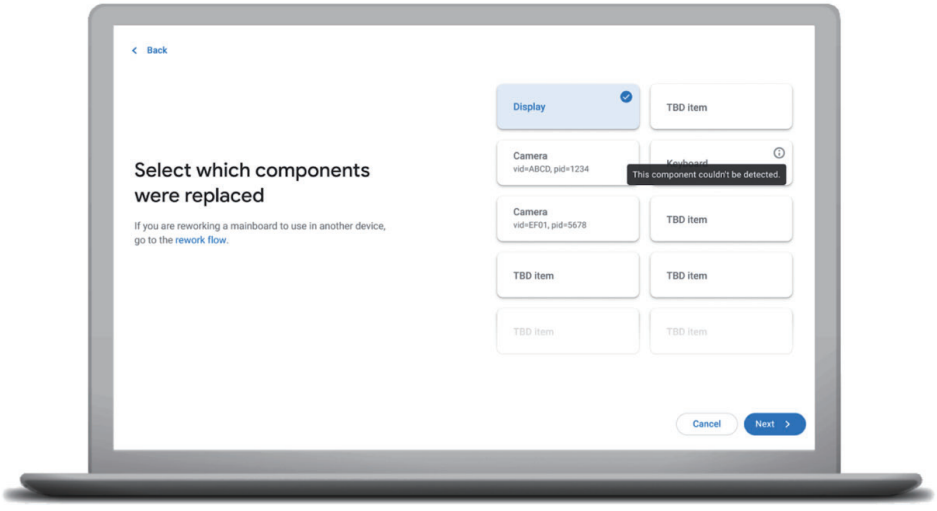
Once your components are validated, the screen will update with a message letting you know that the device is ready to start the repair flow.



Step 5: Replaced Component(s)

Select all the components that were replaced. Remember that you can scroll down to choose more than one component if it applies.

All the selections available correspond to the current Chromebook you are servicing.

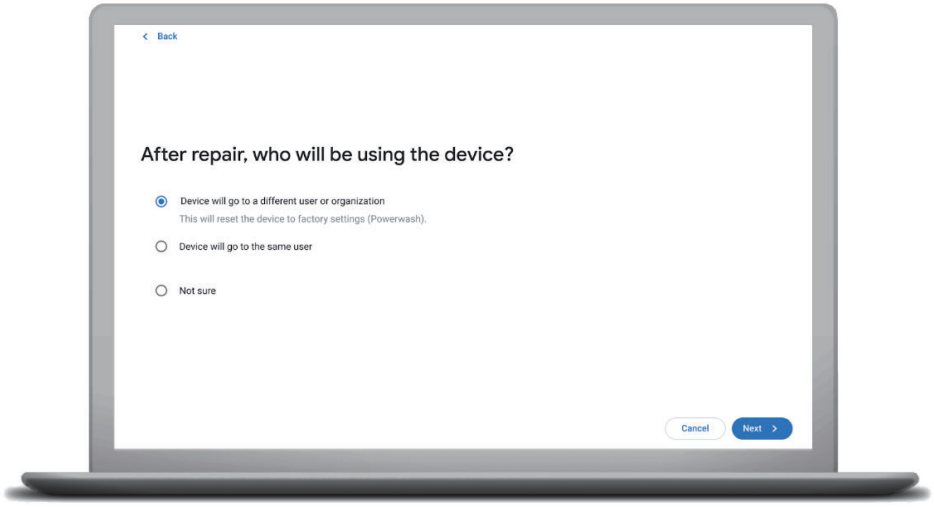


NOTE:

If the Main Logic Board (MLB) is being reworked, you will select the option to go directly to MLB rework flow.

Step 6: Who Will Be Using the Device?

After completing the repair, you will select whether the device is going to a new school, organization, enterprise or the existing one.



NOTE:

Same or Different User does not necessarily mean the same or another human being. A User can mean a company, school, or individual consumer.

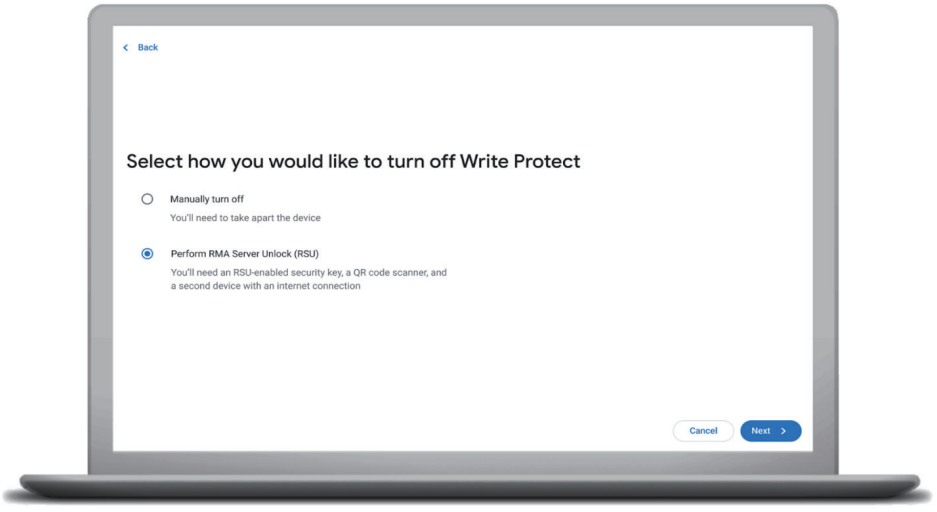
The repair flow **may differ** depending on where the device is being sent and the components replaced during the repair. Make sure to **mark your choices accurately**.

Disable Write Protect (Different User)

Next, you will indicate how to disable Write Protect.

To utilize RSU (RMA Server Unlock), you will need to: scan a QR code using a hand-held scanner, a computer with the Chrome web browser installed, and an RSU-enabled security key in order to disable Write Protect.

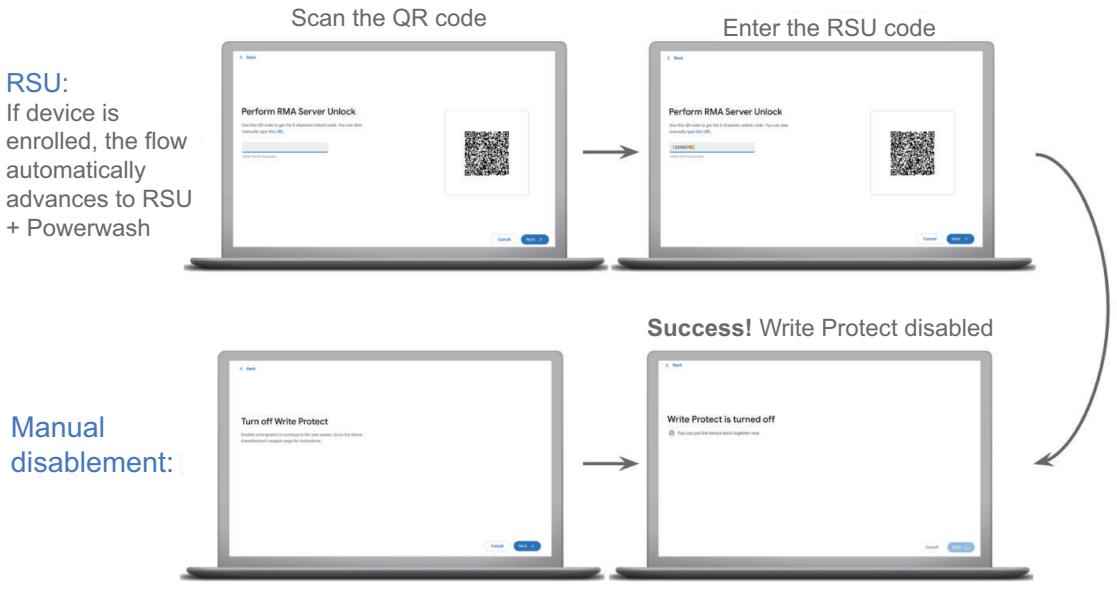
- If the device is **unenrolled**, you can choose to disable Write Protect with RSU or the manual disablement option.
- If the device is **enrolled**, you will only be able to choose the RSU option.



NOTE:

Not all repairs require turning off the Write Protect. In these cases, you will be prompted to the final step.

Once the Write Protect is disabled, you will not be able to **exit out of the repair flow** until you have completed the process.



NOTE:

The manual disconnect method may vary depending on device. Refer to the device manufacturer's support page for the instructions.

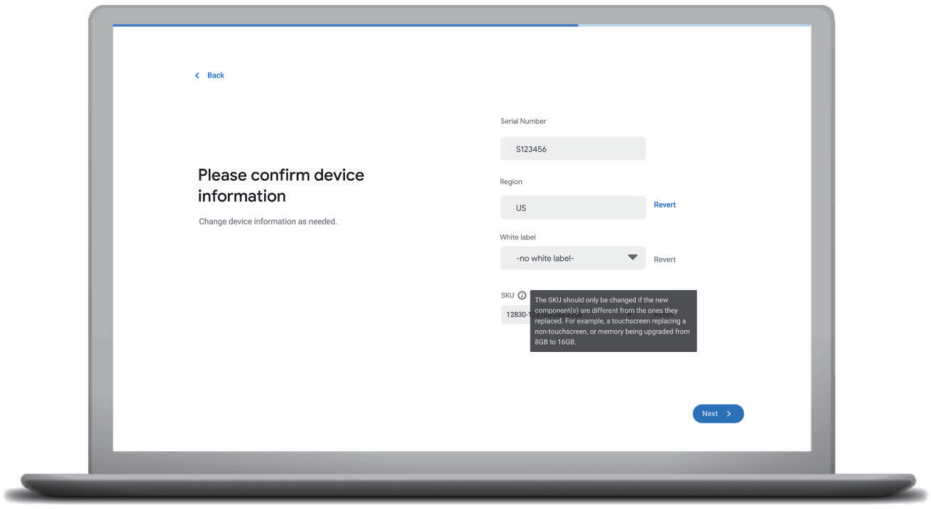
Install Firmware Image

You will need to insert a USB thumbdrive or an SD Card that contains the Chromebook Recovery Utility image to recover the firmware.

If the device does not support the RO firmware verification, you MUST reimage the firmware using a Recovery USB thumbdrive.

Confirm Basic Information

During this step, you will be able to change any basic information about the device if necessary.



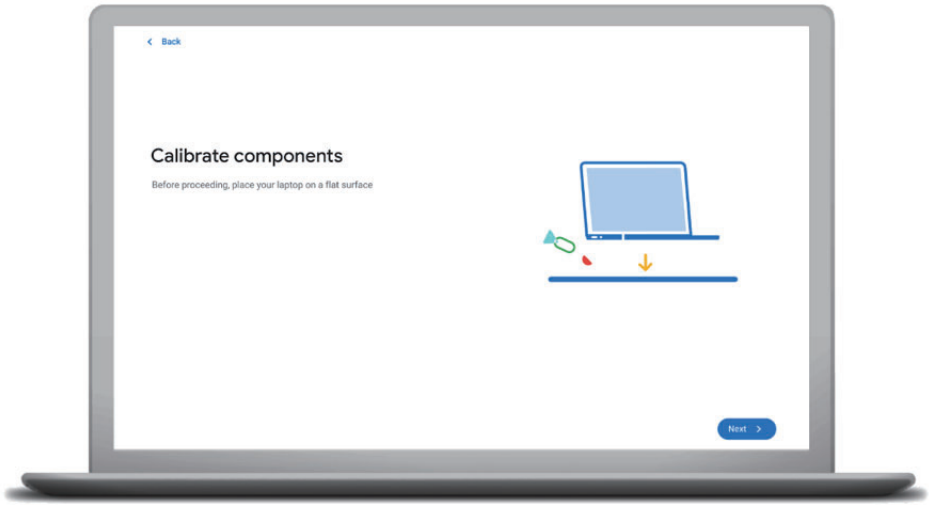
Provisioning the Device

At this stage, a variety of silent provisions will be happening in the background during the repair flow:

- Fingerprint sensor (if present) is reset.
- Registration code (if present) is cleared.
- Device stable secret is regenerated.
- FW_CONFIG is updated if the SKU changed.
- SSFC is updated if the replaced component(s) are second source.
- Replaced component(s) are silently calibrated if needed (eg. speakers).

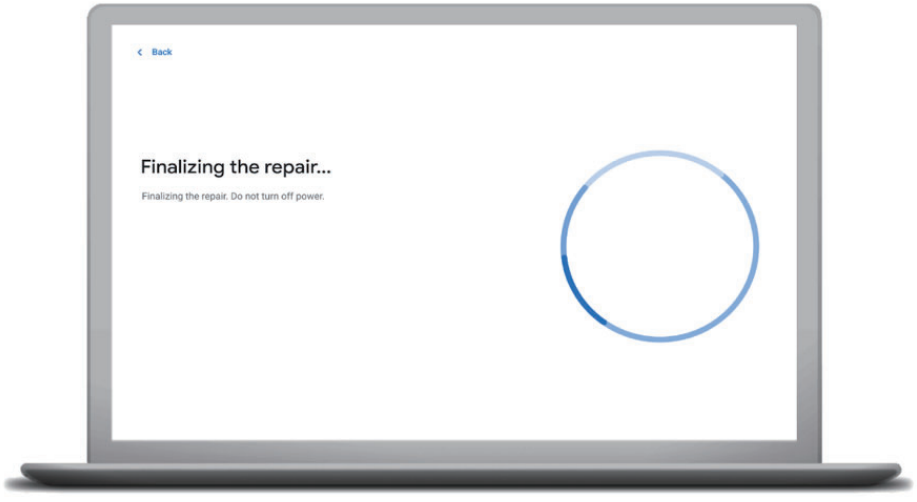
Calibrate Components

Some components, such as the accelerometer, will require you to take certain steps to calibrate.



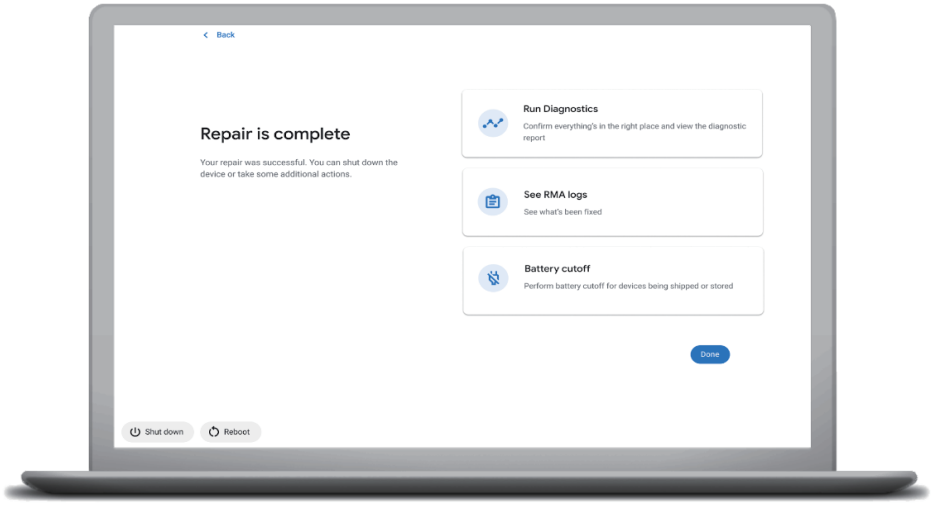
Finalizing the Repair

Once you see this screen, you're almost to the finish line of the RMA process.



Repair is Complete

Once the repair is complete, you can shut down the device or take additional actions, like running diagnostics, viewing RMA logs, etc.



NOTE:

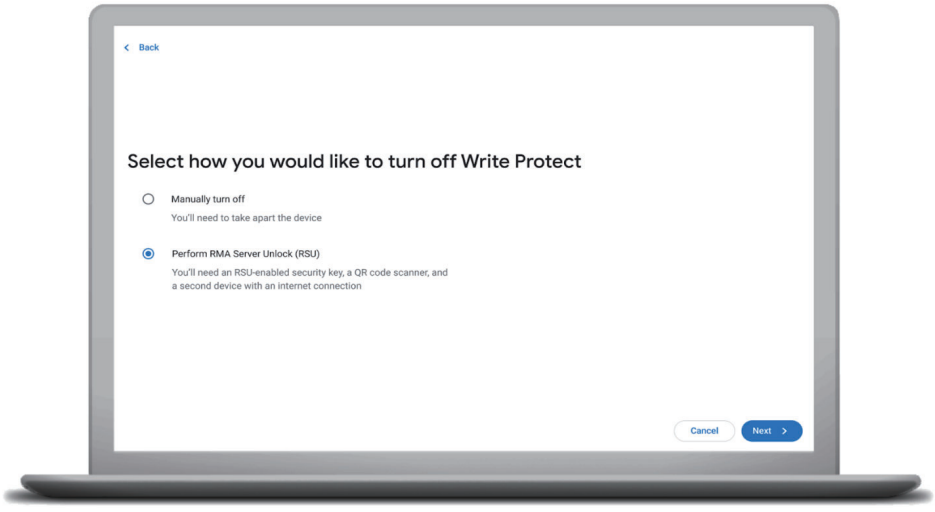
If you choose not to download the RMA logs at this screen, you may not be able to go back to get them later.

Disable Write Protect (Same User)

The first thing you will need to do is indicate how to disable Write Protect.

To utilize RSU (RMA Server Unlock), you will need to: scan a QR code using a hand-held scanner, a computer with the Chrome web browser installed, and an RSU-enabled security key in order to disable Write Protect.

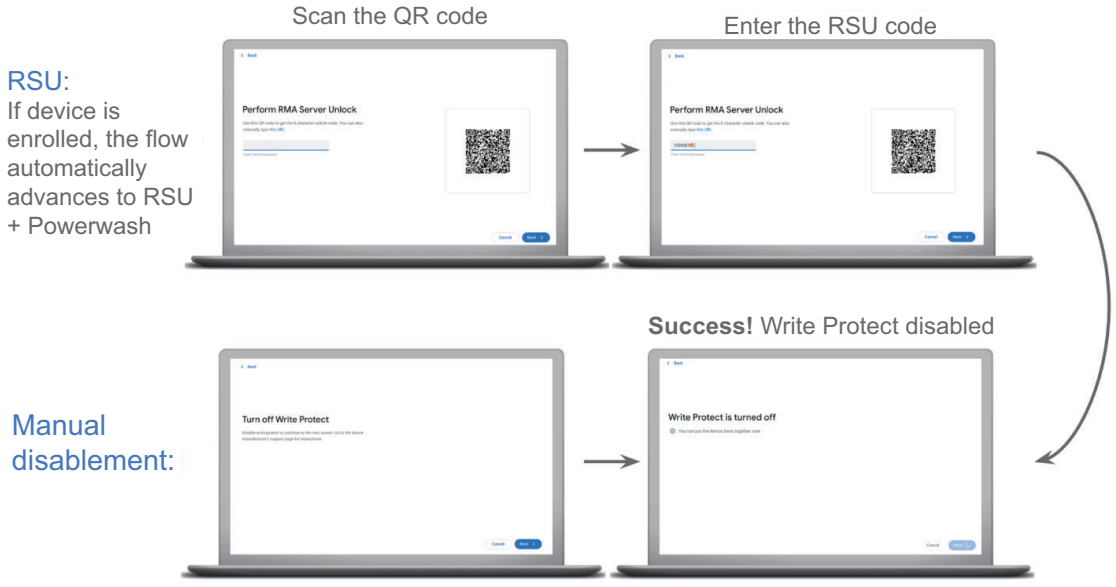
- If the device is **unenrolled**, you can choose to disable Write Protect with RSU or the less secure manual disablement option.
- If the device is **enrolled**, you will have the option to disable the Write Protect using RSU or the less secure manual disablement option. Please **refer to your internal OEM guidelines on which path to take**.



NOTE:

Not all repairs require turning off the Write Protect. In these cases, you will be prompted to the final step.

Once the Write Protect is disabled, you will not be able to **exit out of the repair flow** until you have completed the process.



NOTE:

The manual disconnect method may vary depending on device. Refer to the device manufacturer's support page for the instructions.

NOTE:

If the QR Code appears on the screen, please contact your Chromebook Administrator at school or business for further assistance.

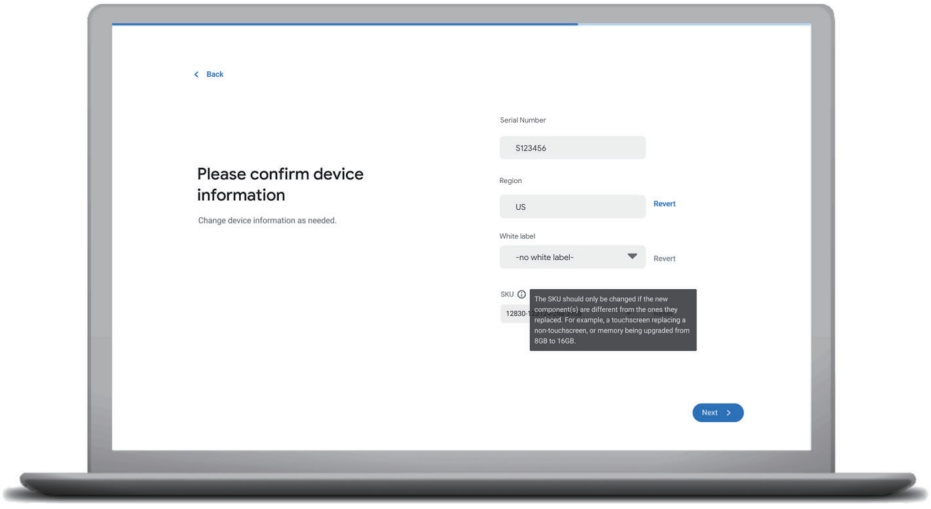
Install Firmware Image

You will need to insert a USB thumbdrive or an SD Card that contains the Chromebook Recovery Utility image to recover the firmware.

If the device does not support the RO firmware verification, you MUST reimage the firmware using a Recovery USB thumbdrive.

Confirm Basic Information

During this step, you will be able to change any basic information about the device if necessary.



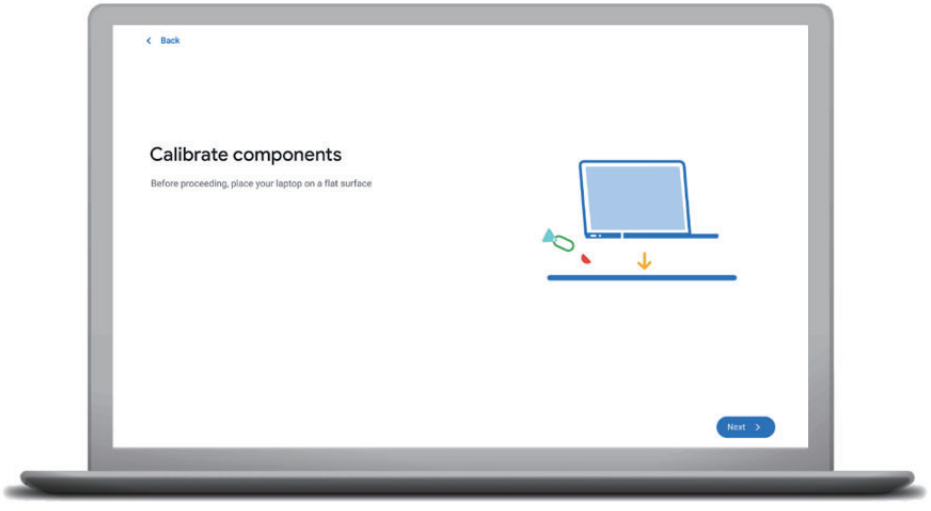
Provisioning the Device

Similar to the Different User process, the device is silently provisioned. However, the following steps will be skipped:

- Fingerprint is NOT reset.
- Registration code is NOT cleared.
- Device stable secret is NOT regenerated.

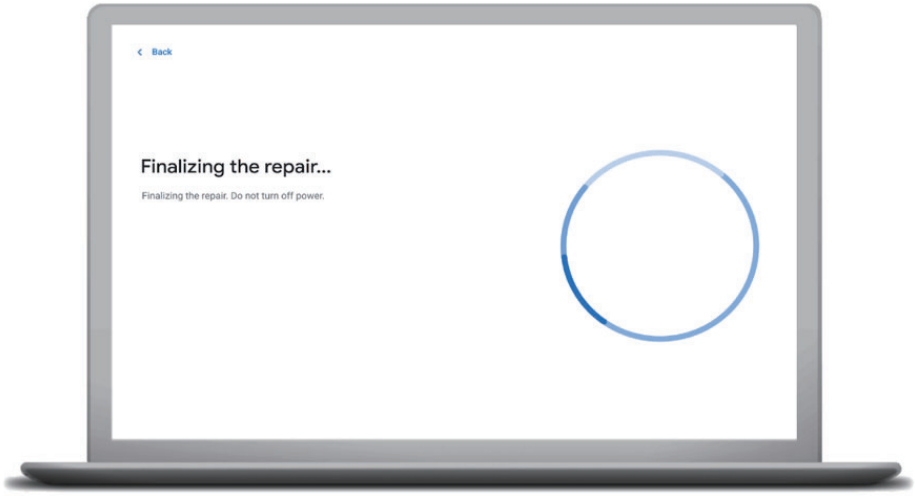
Calibrate Components

Some components, such as the accelerometer, will require you to take certain steps to calibrate.



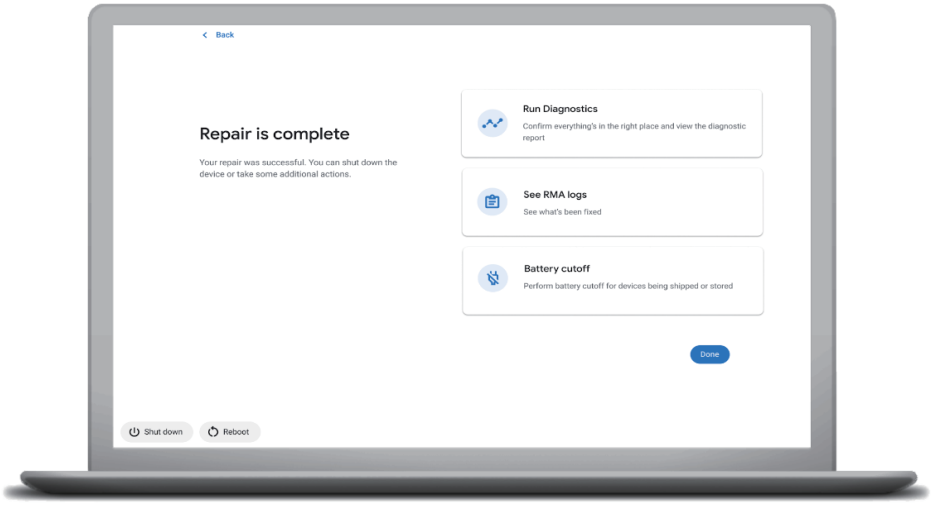
Finalizing the Repair

Once you see this screen, you're almost to the finish line of the RMA process.



Repair is Complete

Once the repair is complete, you can shut down the device or take additional actions, like running diagnostics, viewing RMA logs, etc.



NOTE:

If you choose not to download the RMA logs at this screen, you may not be able to go back to get them later.