

Acer Chromebook  
CP714-1H/CP714-1HN/CPE794-1N  
Karis\_MTU

# LIFECYCLE EXTENSION GUIDE

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# Self-Repair

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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.

## Software Recovery

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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.

# Disassembly Procedures

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## Safety Guidelines

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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

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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:

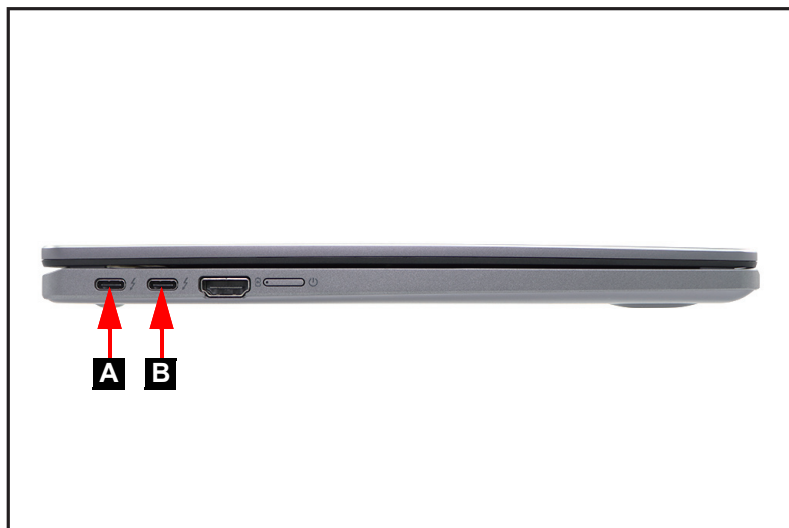
- Battery pack
- SSD module
- WLAN module
- USB board
- Touchpad module
- Mainboard
- LCD panel

# Pre-disassembly Instructions

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Do the following prior to starting any maintenance procedures:

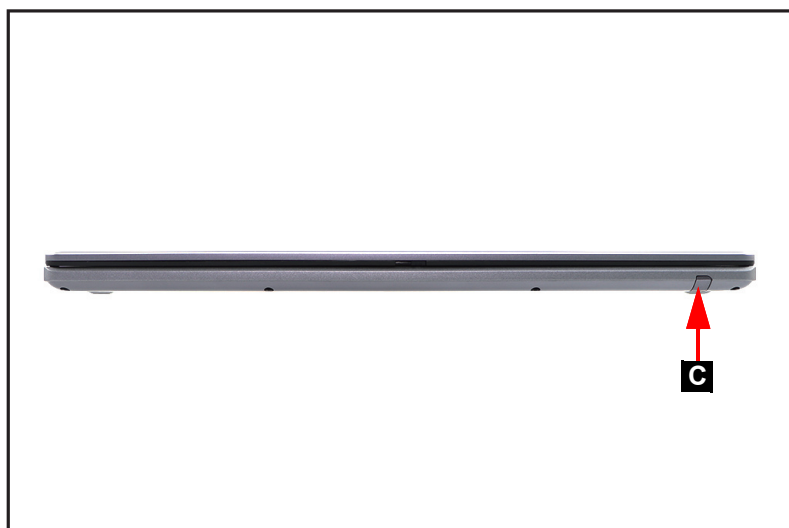
1. Place the system on a stable work surface.
2. Remove the AC adapter from the USB Type-C port (A or B) as shown in [Figure 1-1](#) and [Figure 1-2](#).



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**Figure 1-1. AC Adapter Outlet**

3. Remove the stylus from the stylus slot (C) ([Figure 1-2](#)).



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**Figure 1-2. Stylus Removal**

4. Remove all cables from the system.

**⇒ NOTE:**

Make sure the system is completely powered off.

# Base Cover Removal

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1. Remove nine (9) screws from the base cover ([Figure 1-3](#)).



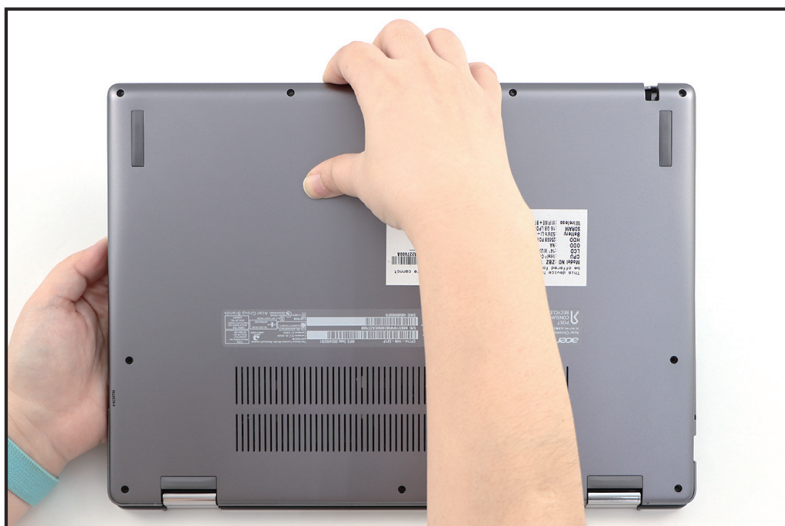
**Figure 1-3. Base Cover Removal**

2. Carefully pry up the base cover from the bottom edges to release the latches as shown in [Figure 1-4](#).



**Figure 1-4. Base Cover Removal**

3. Continue to release the remaining latches. Then remove the base cover from the system (Figure 1-5).



**Figure 1-5. Base Cover Removal**

# Battery Pack Removal

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## Prerequisite:

### Base Cover Removal

1. Detach the tape (A) securing the battery cable connection (Figure 1-6).

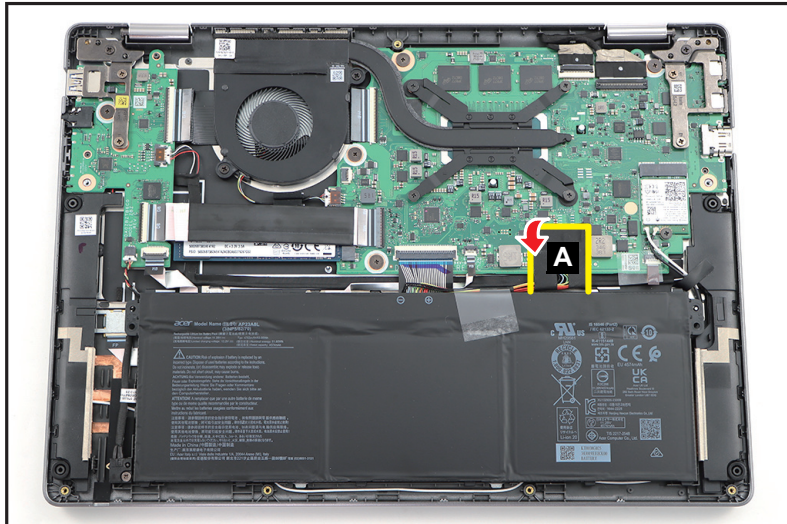


Figure 1-6. Battery Pack Removal

2. Disconnect the battery cable from the mainboard connector (B) (Figure 1-7).

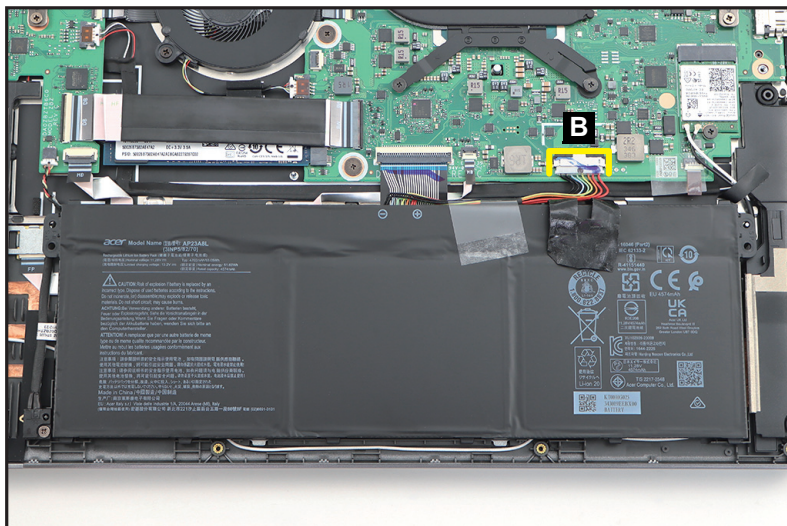


Figure 1-7. Battery Pack Removal

3. Lift to release the battery pack (C) from the guide pin (D) and compartment studs (highlighted with the green lines) (Figure 1-8). Then remove the battery pack.

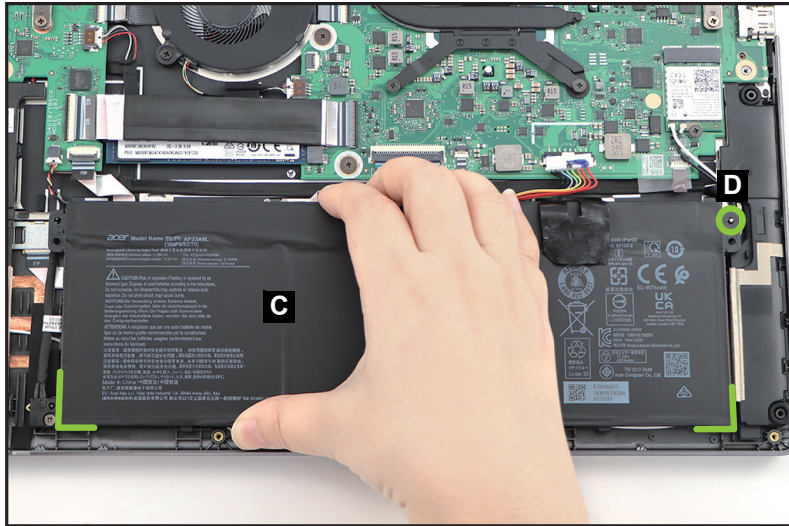


Figure 1-8. Battery Pack Removal

4. Detach the mylar (E) securing the battery cable in place (Figure 1-9).

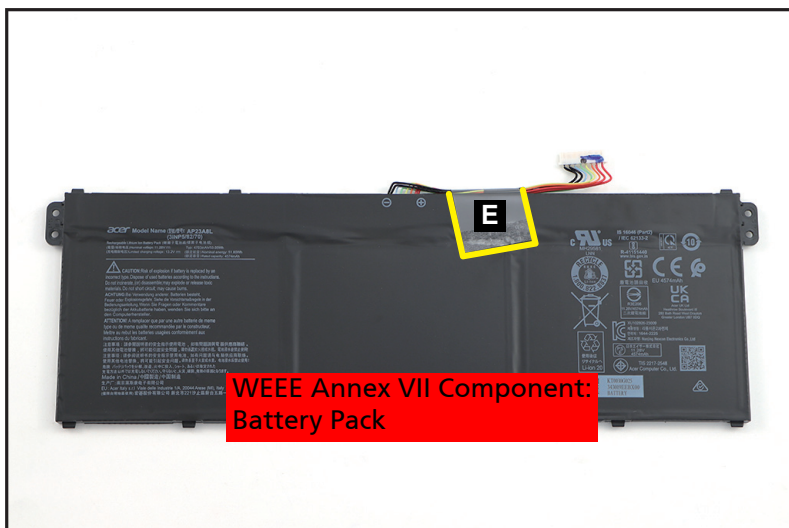


Figure 1-9. Battery Pack Removal

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

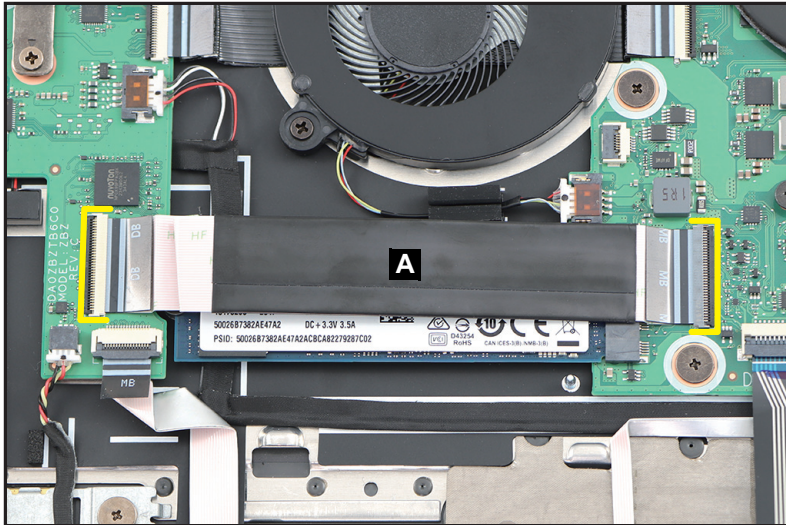
# SSD Module Removal

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## Prerequisite:

### Battery Pack Removal

1. Disconnect the 34-pin USB board FPC (A) from the USB board and mainboard connectors (Figure 1-10).



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Figure 1-10. SSD Module Removal

### **⚠ CAUTION:**

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

2. Remove one (1) screw securing the SSD module (B) (Figure 1-11).

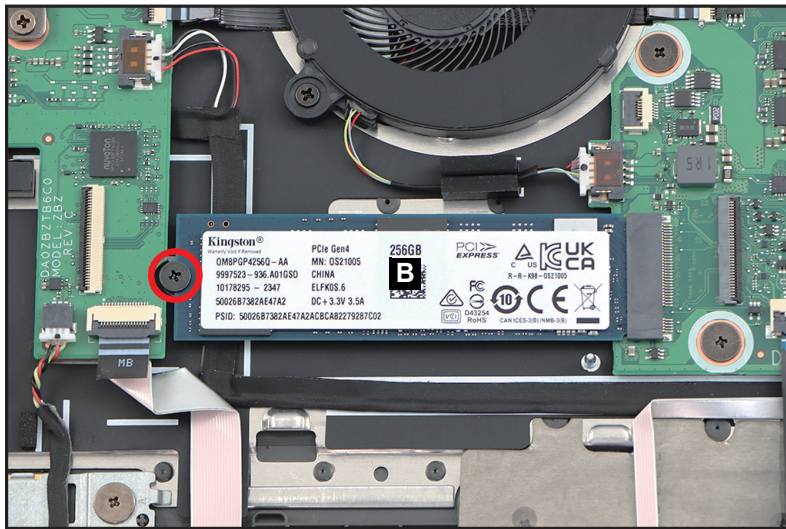


Figure 1-11. SSD Module Removal

3. Disconnect the SSD module from the mainboard connector (B) (Figure 1-12). Then remove the SSD module.

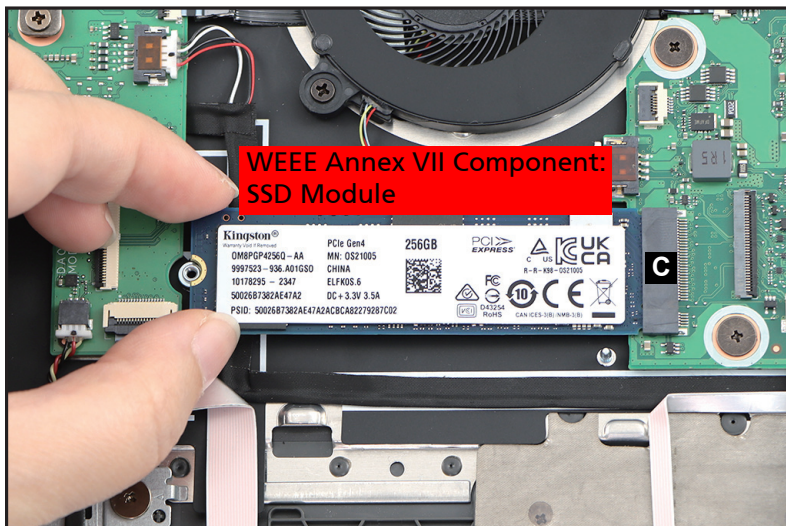


Figure 1-12. SSD Module Removal

# WLAN Module Removal

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## Prerequisite:

### Battery Pack Removal

1. Find the WLAN module (A) on the top assembly (Figure 1-13).

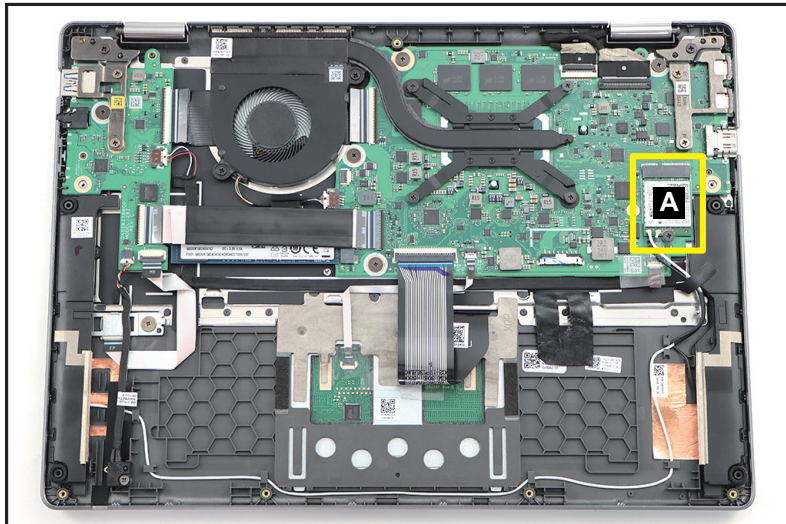


Figure 1-13. WLAN Module Location

2. Disconnect the WLAN antennas cables from the WLAN module connectors (B) (Figure 1-14).
3. Remove one (1) screw securing the WLAN module (Figure 1-14).

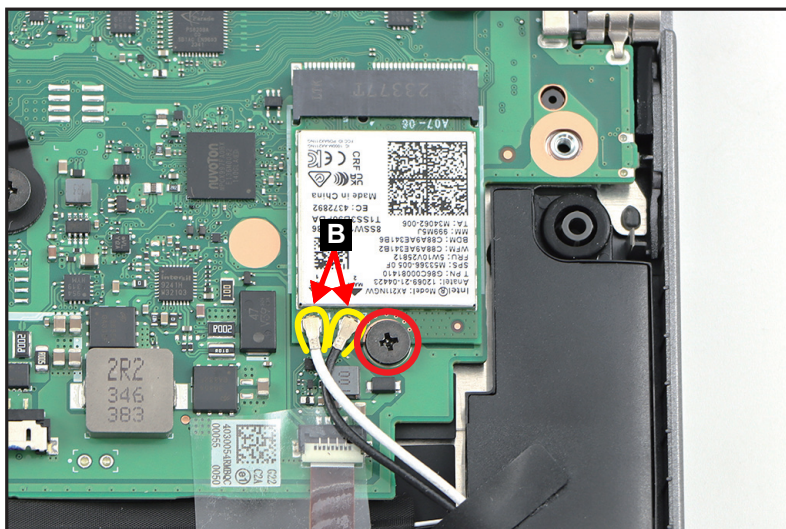


Figure 1-14. WLAN Module Removal



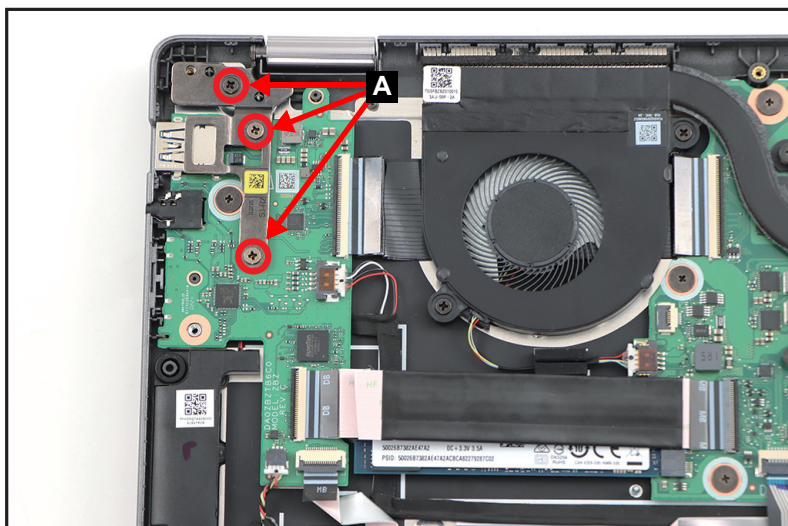
# USB Board Removal

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## Prerequisite:

### Battery Pack Removal

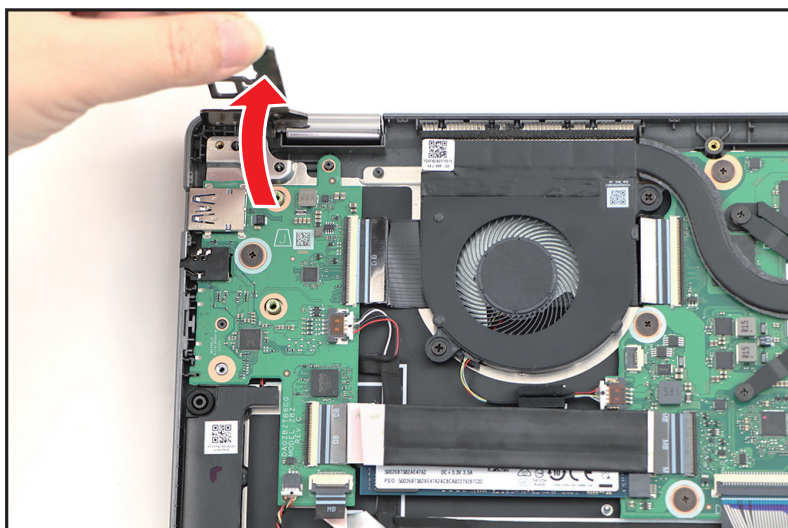
1. Remove three (3) screws (A) securing the LCD hinge (Figure 1-16).



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Figure 1-16. USB Board Removal

2. Lift the LCD hinge until it is fully extended (Figure 1-17).



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Figure 1-17. USB Board Removal

3. Disconnect the 50-pin USB board FPC from the USB board connector (B) (Figure 1-18).
4. Disconnect the speaker cable from the USB board connector (C) (Figure 1-18).
5. Disconnect the 34-pin USB board FPC (D) from the USB board and mainboard connectors (Figure 1-18). Then remove the FPC.
6. Disconnect the stylus charger cable from the USB board connector (E) (Figure 1-18).
7. Disconnect the fingerprint FFC from the USB board connector (F) (Figure 1-18).
8. Remove one (1) screw (G) securing the USB board (Figure 1-17).

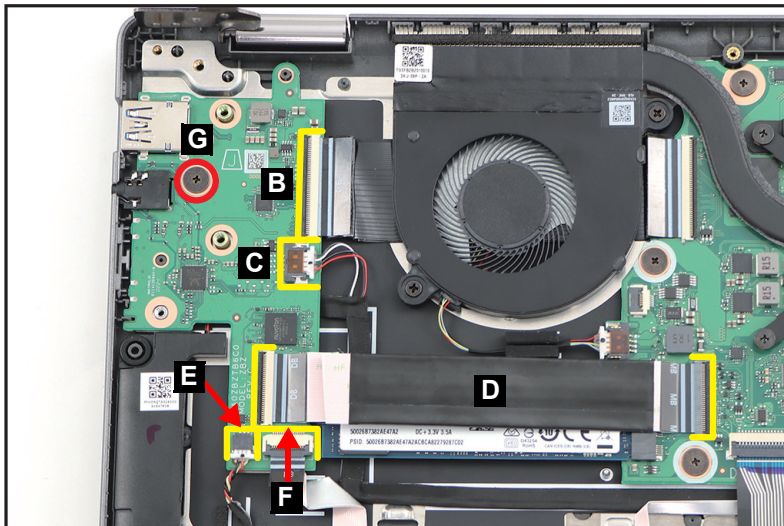


Figure 1-18. USB Board Removal

**⚠ CAUTION:**

USB board FPCs (Flexible Printed Circuit) and fingerprint FFC (Flexible Flat Circuit) can be damaged if removed while the USB board and/or mainboard connectors are locked.

9. Release the USB board (H) from the I/O port slots and guide pins (I) on the top assembly (Figure 1-19). Then remove the USB board.

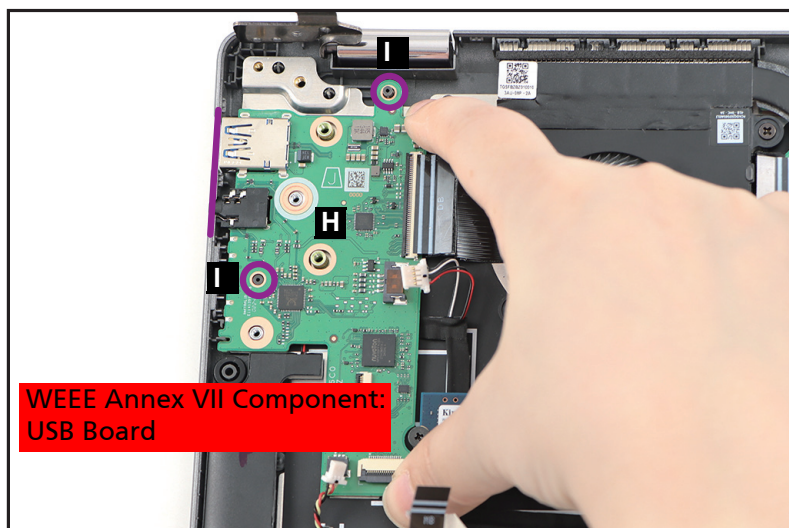


Figure 1-19. USB Board Removal

# Touchpad Module Removal

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## Prerequisite:

### Battery Pack Removal

1. Disconnect the keyboard FPC from the mainboard connector (A) (Figure 1-20).
2. Detach the mylar (B) securing the touchpad FFC connection (Figure 1-20).

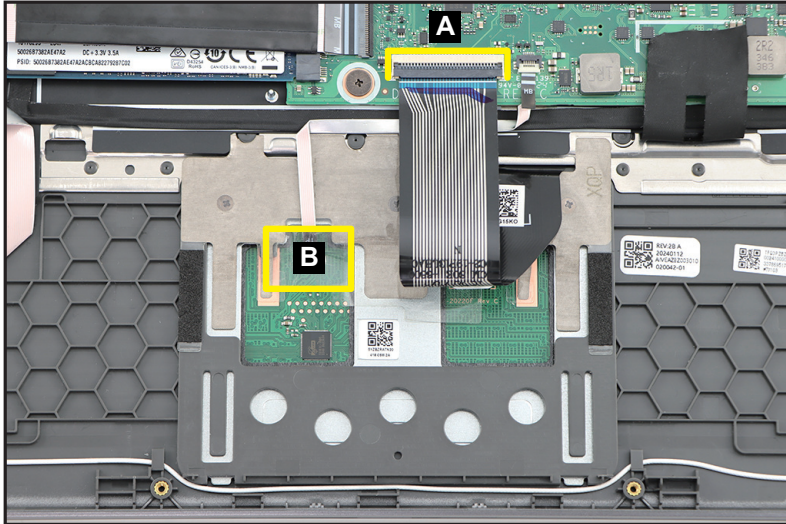


Figure 1-20. Touchpad Module Removal

### **⚠ CAUTION:**

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

3. Disconnect the touchpad FFC (C) from the touchpad module and mainboard connectors. Carefully detach the middle portion (highlighted with the yellow lines) of the FFC from its underneath adhesive (Figure 1-21). Remove the touchpad FFC.

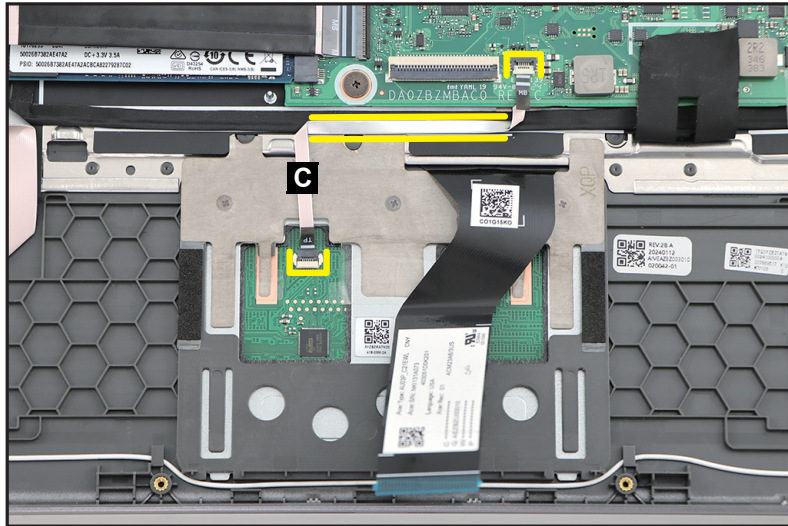


Figure 1-21. Touchpad Module Removal

**⚠ CAUTION:**

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

4. Lift and hold the keyboard FPC. Then detach the conductive tape (D) from the touchpad module and top assembly (Figure 1-22).

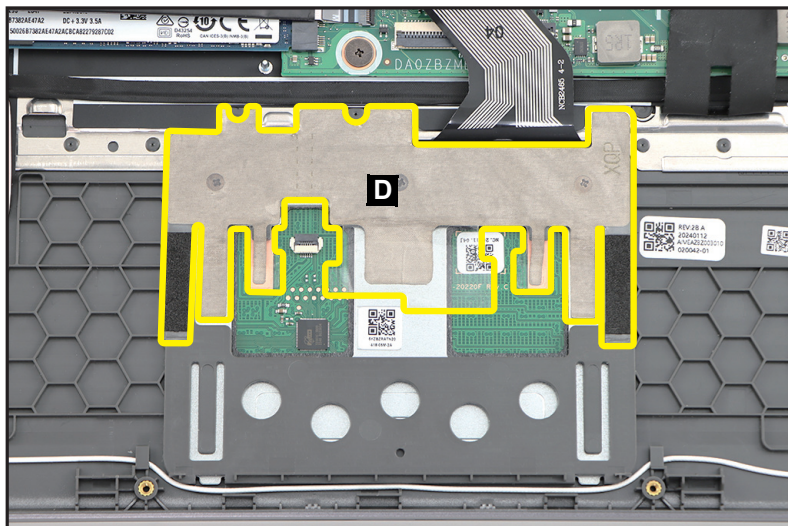


Figure 1-22. Touchpad Module Removal

5. Remove three (3) screws securing the touchpad module (Figure 1-23).

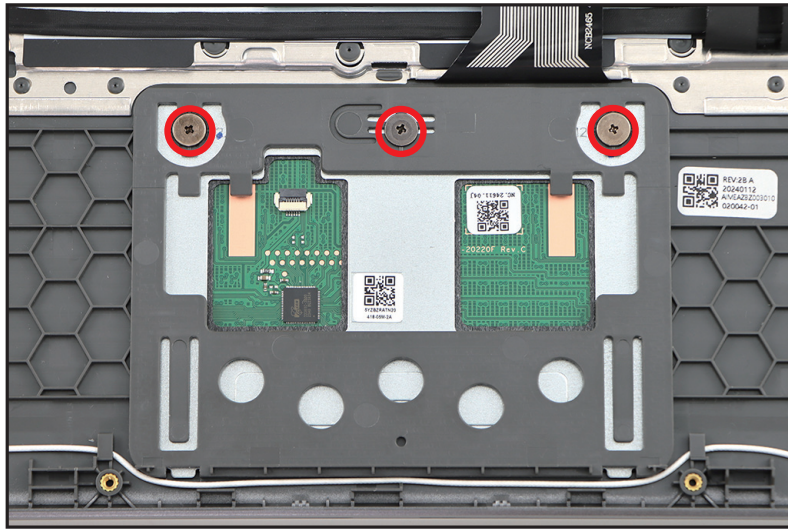


Figure 1-23. Touchpad Module Removal

6. Push the touchpad module (E) slightly to release it from its compartment. Then slide the touchpad module upward to disengage it from the bottom latches (F) (Figure 1-24). Remove the touchpad module.

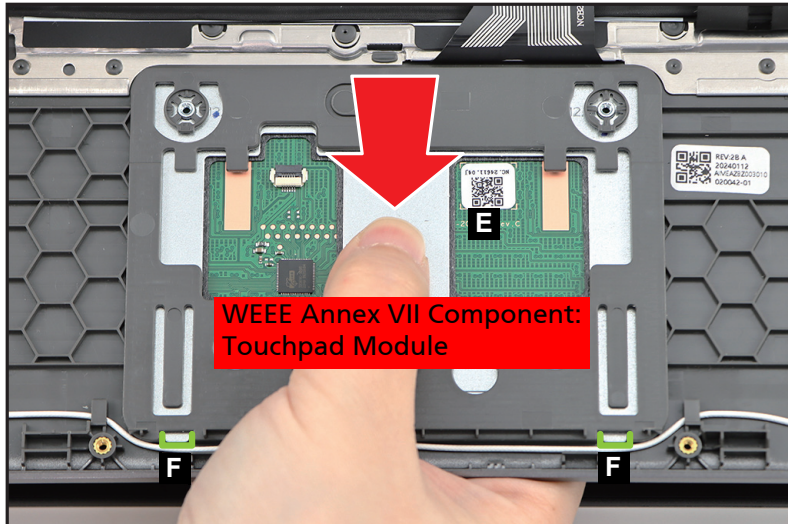


Figure 1-24. Touchpad Module Removal

# LCD Module Removal

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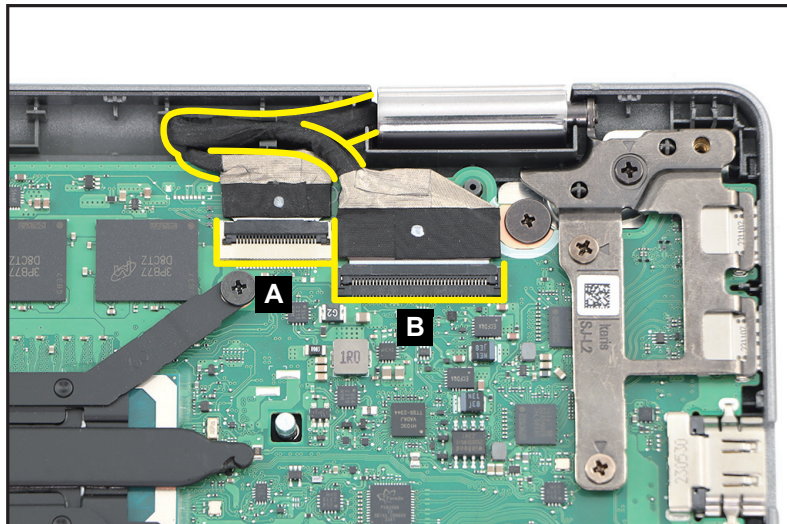
## Prerequisite:

[Battery Pack Removal](#)

### ⇒ NOTE:

Please take note that the LCD cable includes the LCD cable, MIPI camera cable, and G-sensor board cable.

1. Disconnect the LCD cable (MIPI camera cable) from the mainboard connector (A) ([Figure 1-25](#)).
2. Disconnect another LCD cable from the mainboard connector (B). Then unrout the cables from the cable guides ([Figure 1-25](#)).



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Figure 1-25. LCD Module Removal

3. Remove six (6) screws securing the LCD hinges (Figure 1-26).

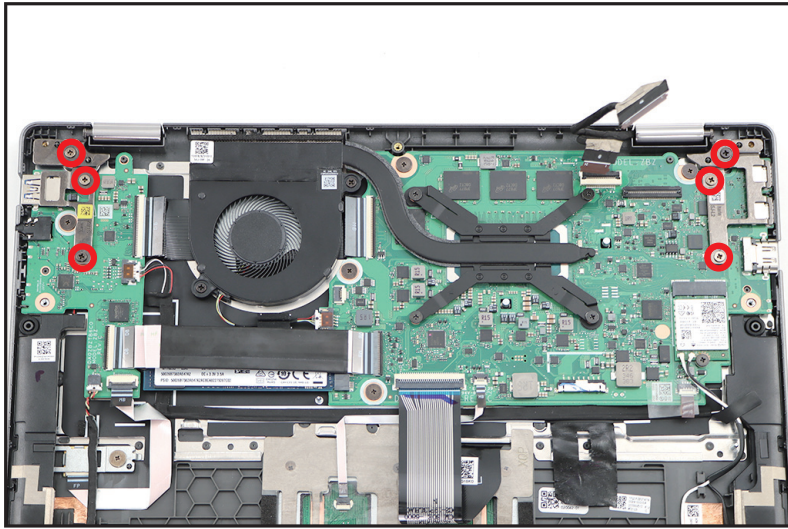


Figure 1-26. LCD Module Removal

4. Lift both LCD hinges until they are fully extended (Figure 1-27).

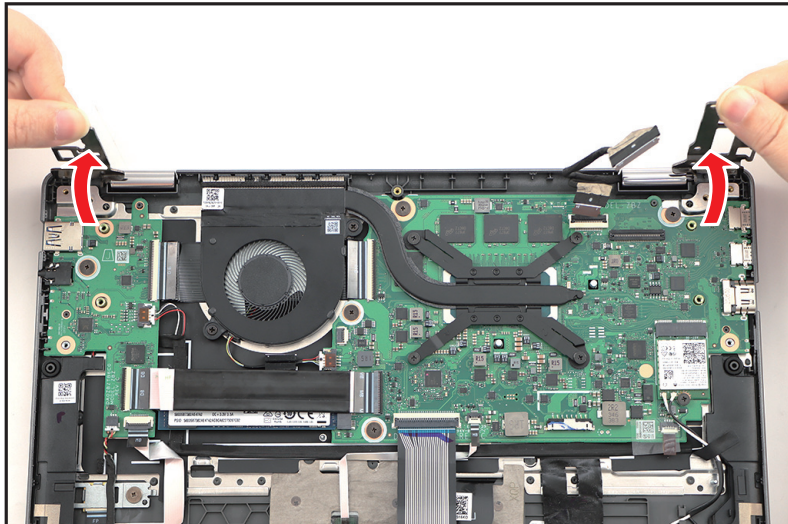


Figure 1-27. LCD Module Removal

5. Open the top assembly. Then remove the top assembly away from the LCD module (C) (Figure 1-28).

**⚠ CAUTION:**

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



Figure 1-28. LCD Module Removal

# Mainboard Removal

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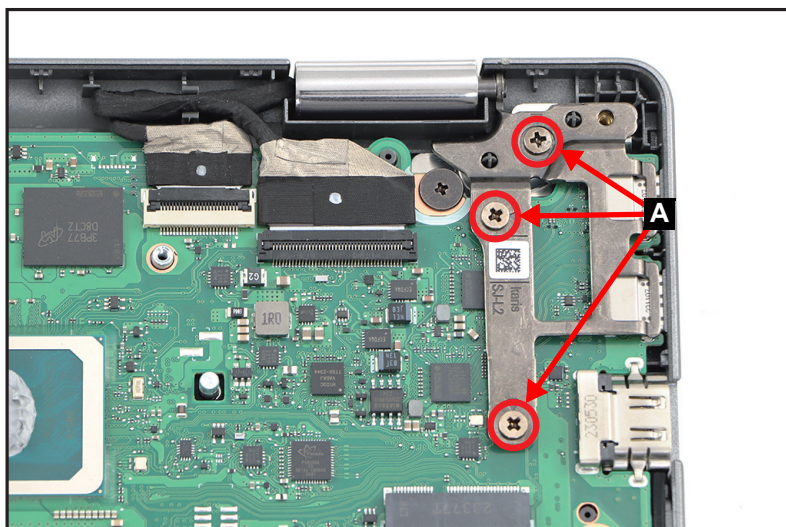
## Prerequisite:

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

### ⇒ NOTE:

Please take note that the LCD cable includes the LCD cable, MIPI camera cable, and G-sensor board cable.

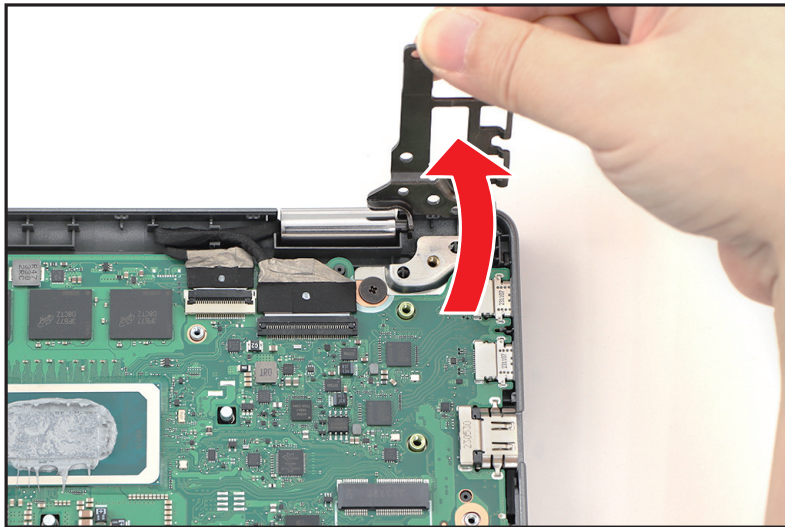
1. Remove three (3) screws (A) securing the LCD hinge (Figure 1-29).



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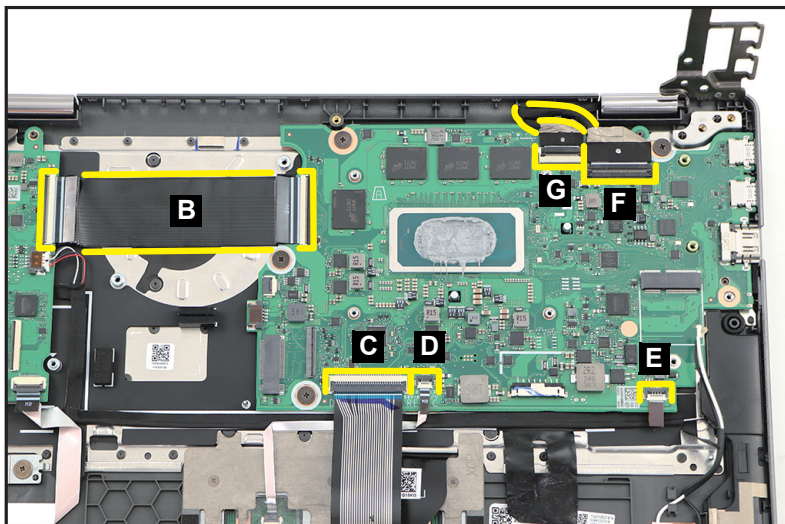
Figure 1-29. Mainboard Removal

2. Lift the LCD hinge until it is fully extended ([Figure 1-30](#)).



**Figure 1-30. Mainboard Removal**

3. Disconnect the 50-pin USB board FPC (B) from the USB board and mainboard connectors. Then carefully detach the FPC from its underneath adhesive (highlighted with the yellow lines) as shown in [Figure 1-31](#). Remove the USB board FPC.
4. Disconnect the keyboard FPC from the mainboard connector (C) ([Figure 1-31](#)).
5. Disconnect the touchpad FFC from the mainboard connector (D) ([Figure 1-31](#)).
6. Disconnect the keyboard backlight FPC from the mainboard connector (E) ([Figure 1-31](#)).
7. Disconnect the LCD cable from the mainboard connector (F) ([Figure 1-31](#)).
8. Disconnect another LCD cable (MIPI camera cable) from the mainboard connector (G). Then unroute the LCD cables from the cable guides ([Figure 1-31](#)).

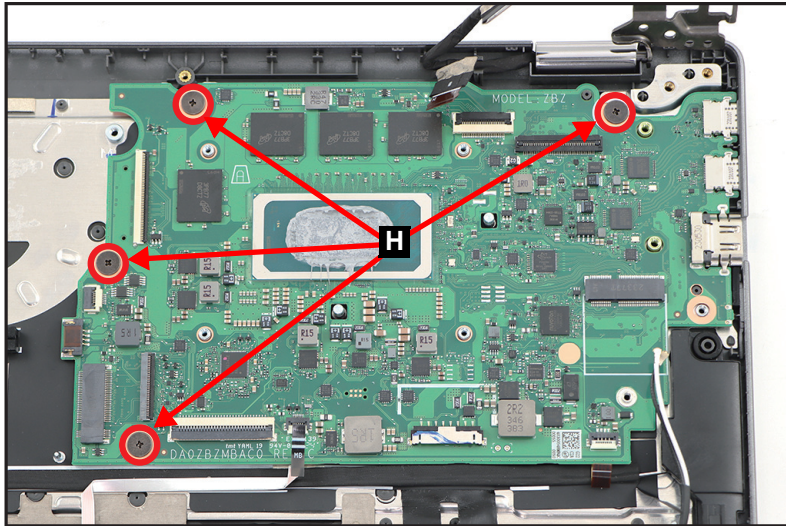


**Figure 1-31. Mainboard Removal**

**⚠ CAUTION:**

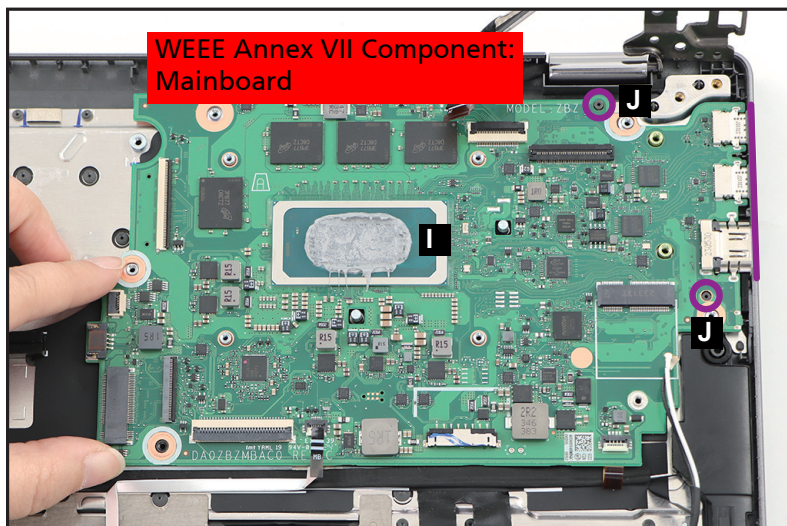
Touchpad FFC (Flexible Flat Circuit), 50-pin USB board FPC (Flexible Printed Circuit), keyboard FPC, and keyboard backlight FPC, can be damaged if removed while the mainboard and USB board connectors are locked.

9. Remove four (4) screws (H) securing the mainboard (Figure 1-32).

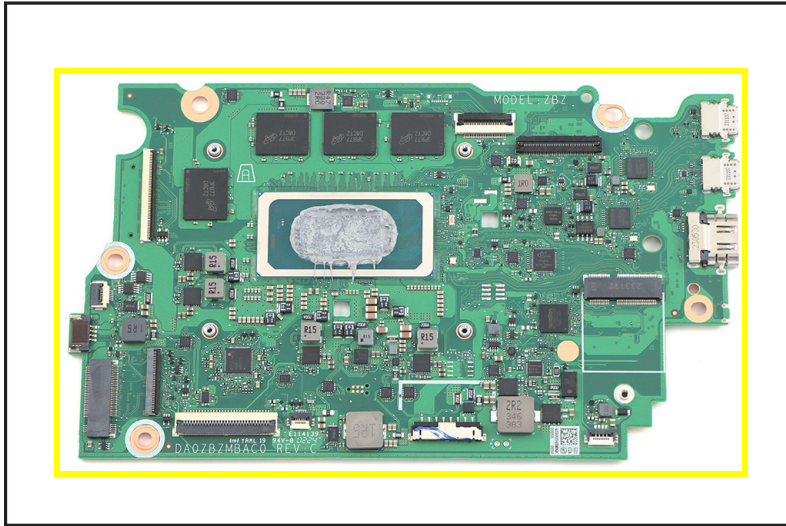


**Figure 1-32. Mainboard Removal**

10. Release the mainboard (I) from the I/O ports slots and guide pins (J) on the top assembly. Then remove the mainboard (Figure 1-33).



**Figure 1-33. Mainboard Removal**



**Figure 1-34. Mainboard**

+ **IMPORTANT:**

Circuit boards >10 cm<sup>2</sup> have been highlighted with a yellow rectangle as shown in [Figure 1-34](#). Remove the circuit board and follow local regulations for disposal.

# LCD Panel Removal

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## Prerequisite:

### [LCD Module Removal](#)

1. Pry the LCD panel from the upper side to release the latches. Then continue prying along the left side of the LCD panel ([Figure 1-35](#)).



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**Figure 1-35. LCD Panel Removal**

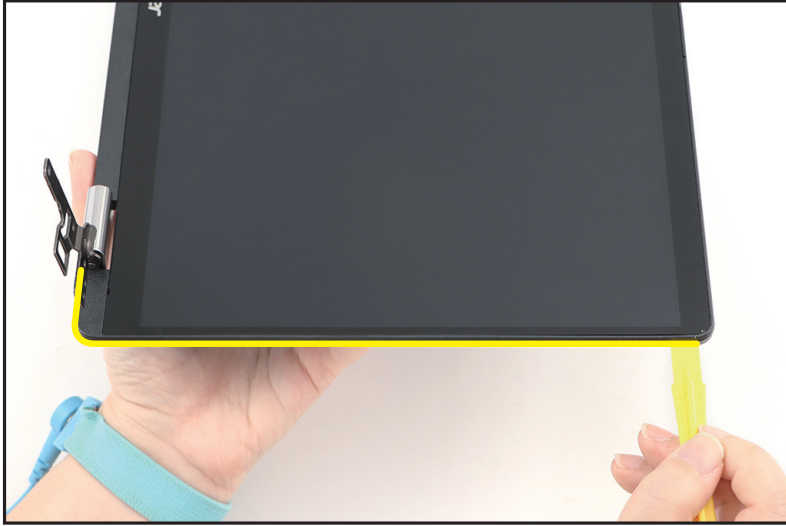
2. Continue prying along the left side and bottom-left side of the LCD panel as shown in [Figure 1-36](#).



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**Figure 1-36. LCD Panel Removal**

3. Continue prying along the right side and bottom-right side of the LCD panel as shown in [Figure 1-37](#).



---

**Figure 1-37. LCD Panel Removal**

4. Continue prying the remaining latches on the bottom side of the LCD panel ([Figure 1-38](#)).



---

**Figure 1-38. LCD Panel Removal**

5. Release the LCD cable (A) from the hinge cap. Then carefully remove the LCD panel (B) from the LCD cover (Figure 1-39).

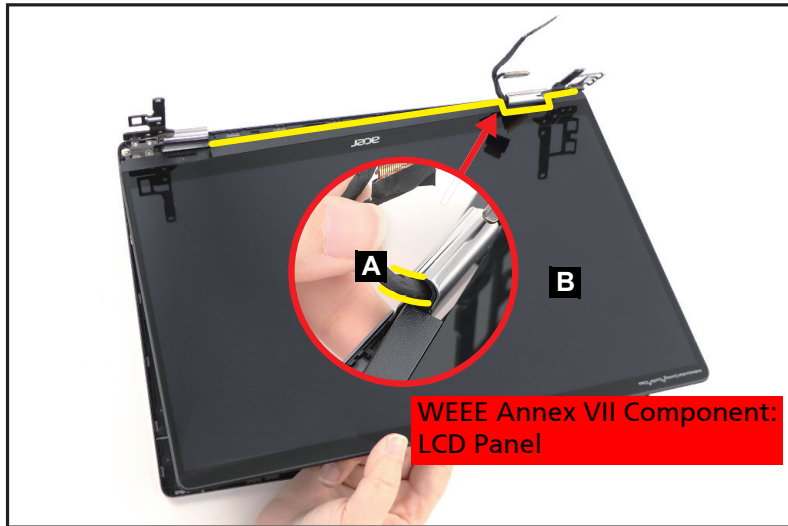


Figure 1-39. LCD Panel Removal

# Top Assembly Removal (Keyboard Removal)

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## Prerequisite:

Ensure that the **Stylus Charger Cable**, **Touchpad Module**, **LCD Module**, **Fingerprint Module**, and **Speakers** have been disassembled prior removing the top assembly.

## ⇒ NOTE:

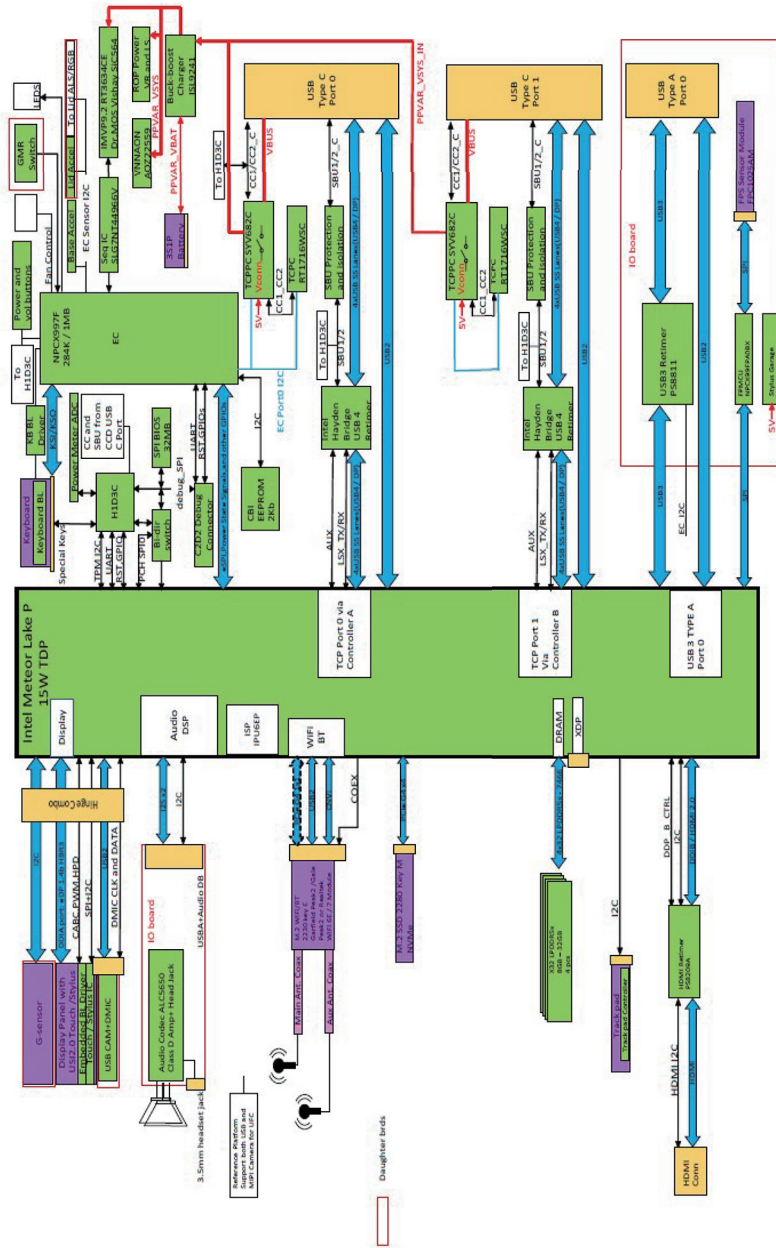
The keyboard is included as part of the top assembly and can not be disassembled. In the event that the keyboard is damaged, replace the entire top assembly.



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**Figure 1-40. Top Assembly (Keyboard)**

# Electronic Boards Diagrams



# Troubleshooting

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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.

## Introduction

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

## General Information

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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
Internal FingerPrint Failure
Other Functions Failure
Intermittent Problems
Undetermined Problems

4. If the Issue is still not resolved, please contact Acer local service.

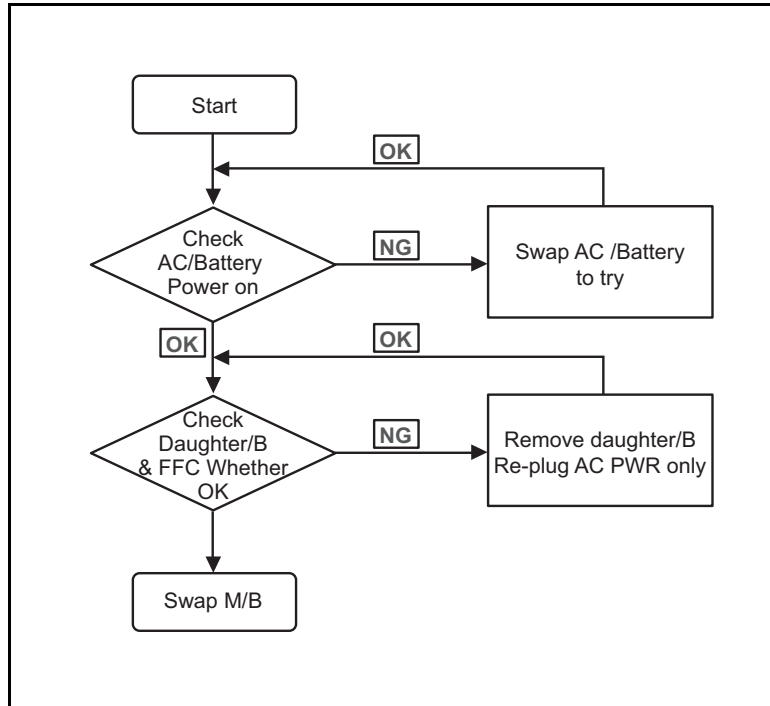
⇒ **NOTE:**

Do not replace non-defective FRU parts.

## Power On Issues

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



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**Figure 1-41. Power On Issue**

### Computer Shuts Down Intermittently

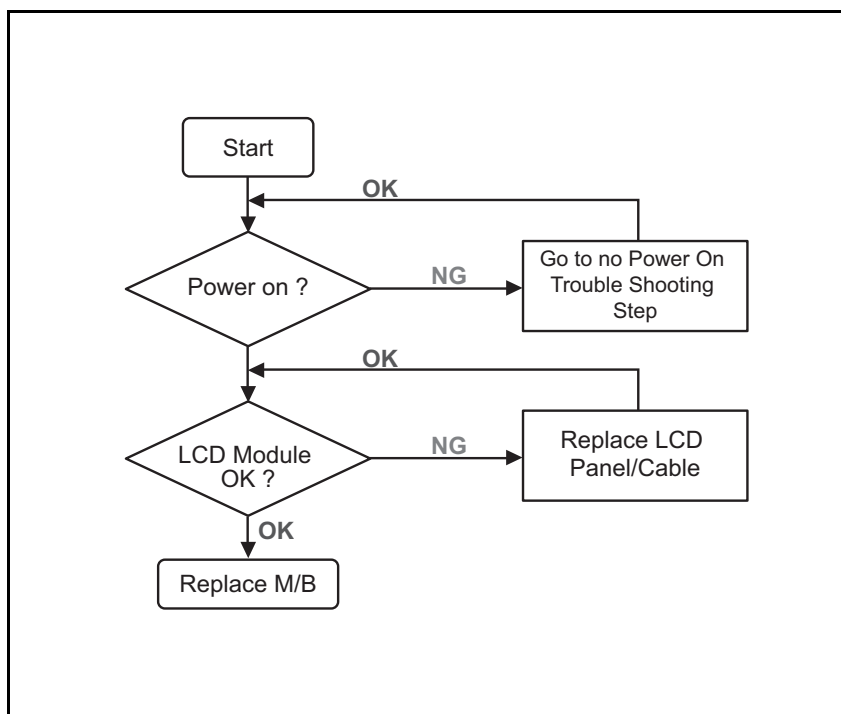
If the system powers off at intervals, perform the following.

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. 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

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If the Display does not work, perform the following:



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**Figure 1-42. 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:

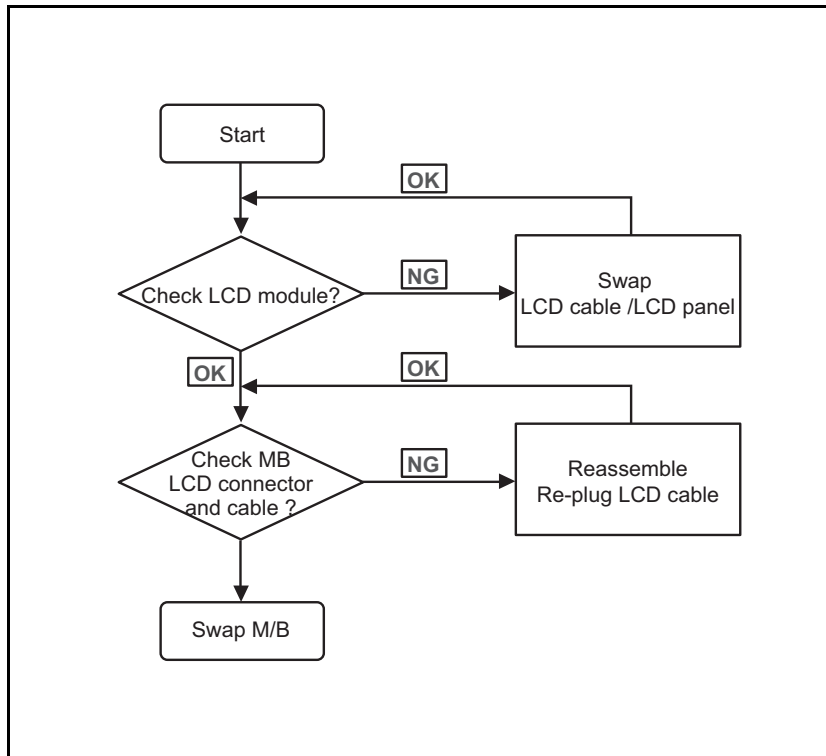
Make sure that the computer is not running on battery alone as this may reduce display brightness.

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:



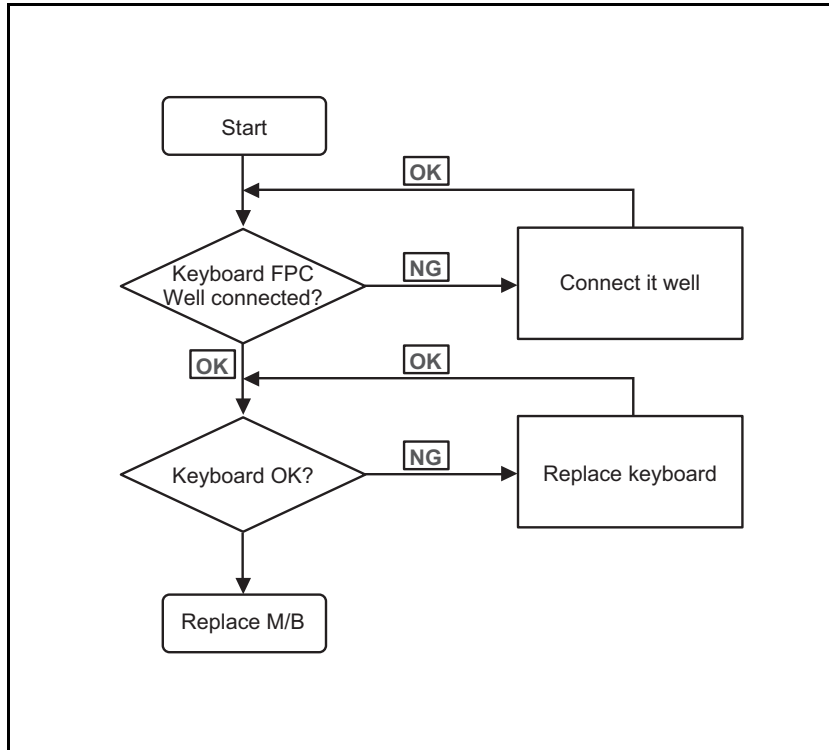
---

**Figure 1-43. LCD Failure**

# Internal Keyboard Failure

---

If the internal keyboard fails, perform the following:



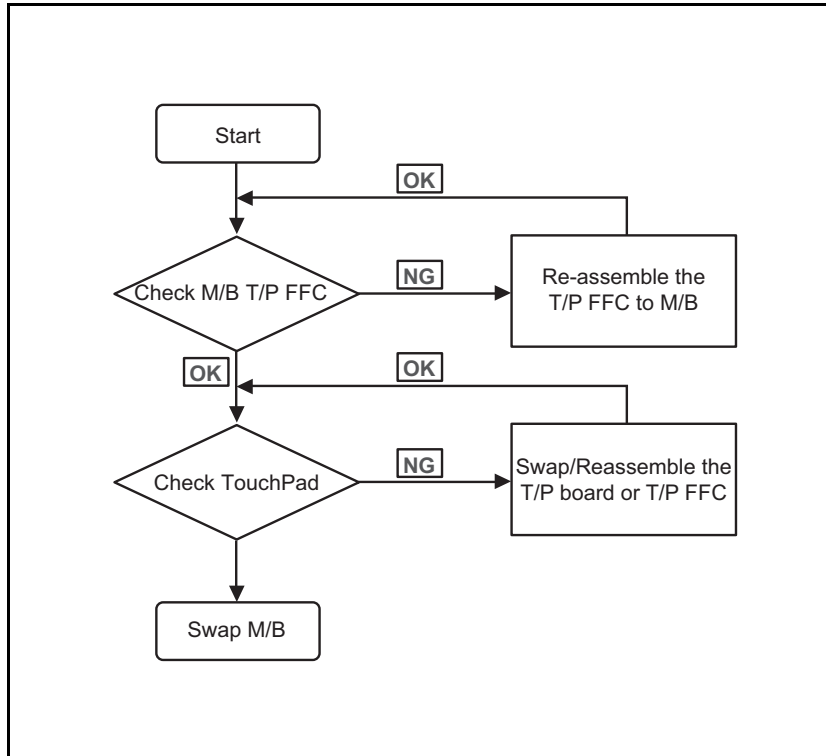
---

**Figure 1-44. Internal Keyboard Failure**

# Touch Pad Failure

---

If the touch pad fails, perform the following:



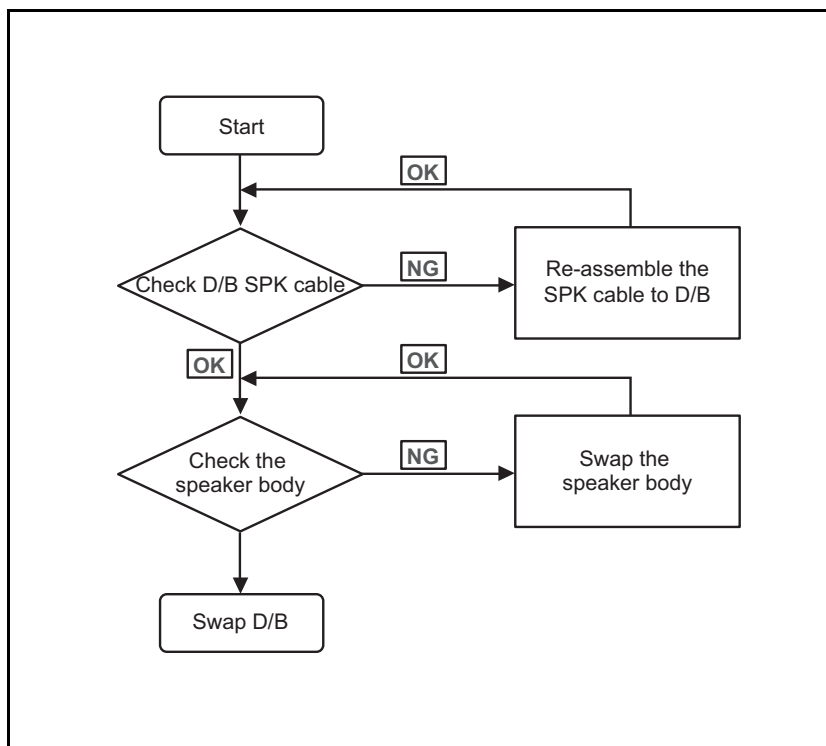
---

**Figure 1-45. Touch Pad Failure**

# Internal Speaker Failure

---

If internal speakers fail, perform the following:



---

**Figure 1-46. 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 or , or 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

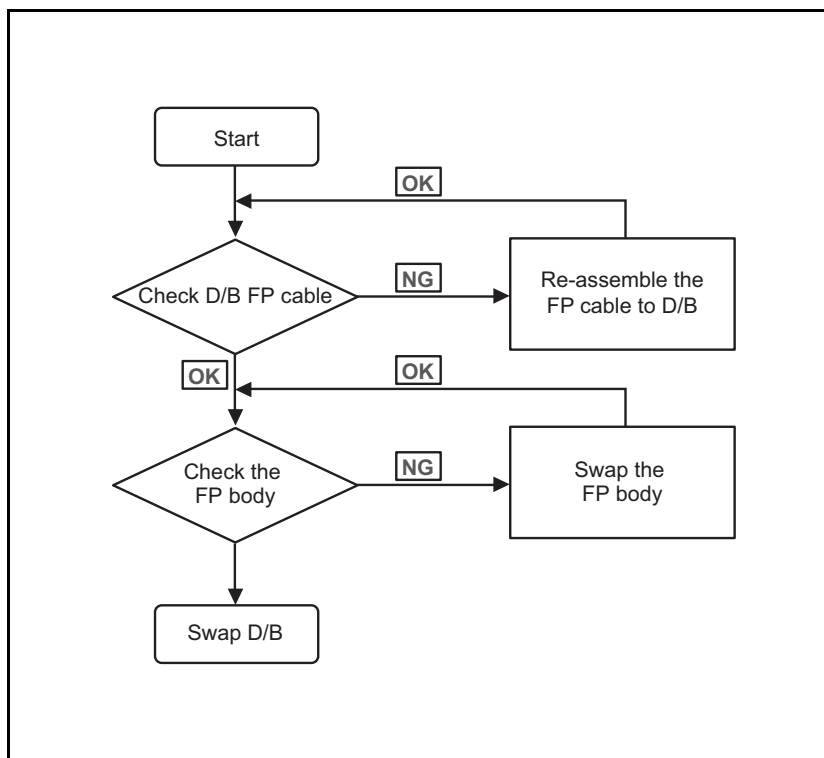
instructions.

- 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.

# Internal FingerPrint Failure

---

If the internal fingerprint fails, perform the following:



---

**Figure 1-47. Internal FingerPrint 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 or daughter board 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:**

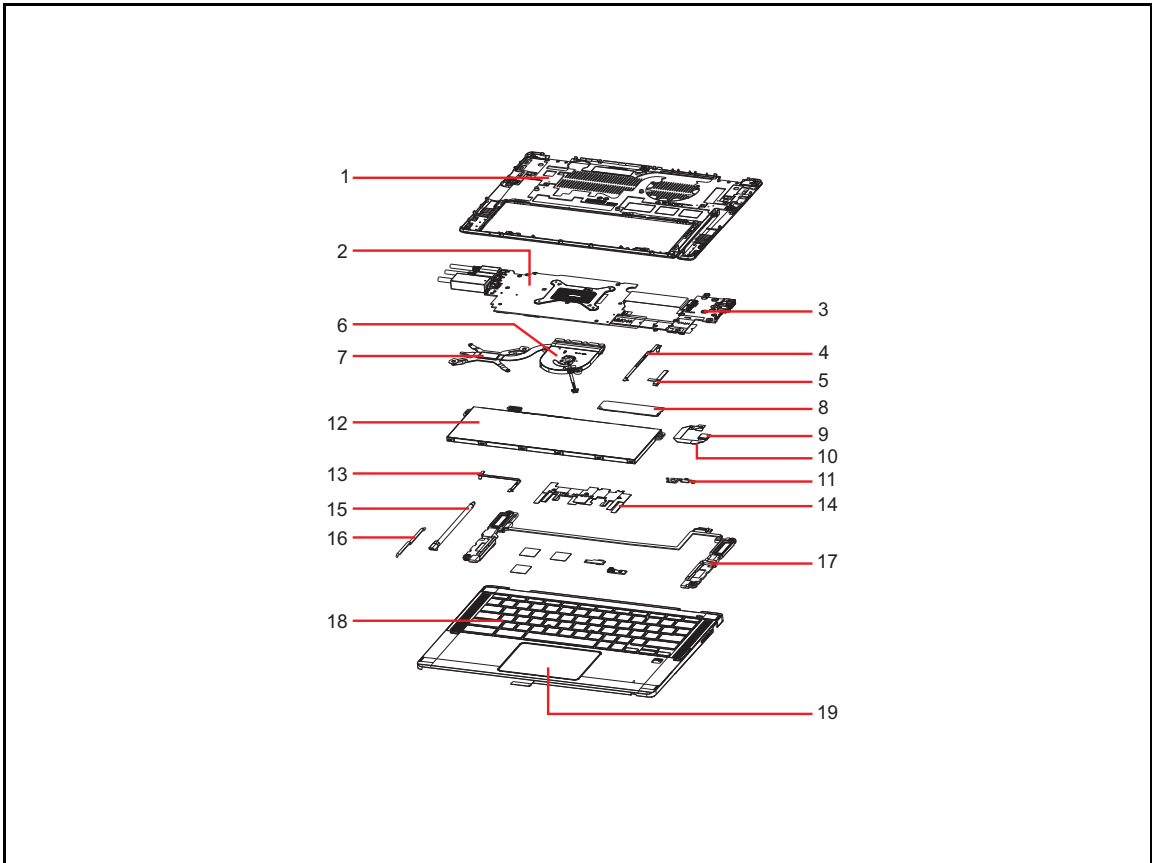
Verify that all attached devices are supported by the computer.

⇒ **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 1-48. System Exploded Diagram**

**Table 1-2. System Exploded Diagram**

No.	Description
1	LOWER CASE STYLUS SKU
2	Mainboard CP714-1H CU5115U 8GB UMA
3	BOARD FINGERPRINT SKU
4	CABLE USB BOARD LOW SPEED
5	CABLE USB BOARD HIGH SPEED
6	FAN
7	HEAT SINK
8	Flash Disk KINGSTON SSD NAND 256GB OM8PGP4256Q-AA LF+HF
9	BOARD FINGER PRINT MODULE
10	CABLE FINGERPRINT

**Table 1-2. System Exploded Diagram (Continued)**

No.	Description
11	METAL BRACKET FINGERPRINT
12	Battery CosMx Typ.53Wh 4590mAh 3S1P AP20CBL 248x84.4x5.5(mm) AP20C 11.55V 65W Li-Ion TI BQ40Z555 FW5.09
13	CABLE TOUCHPAD
14	TAPE COND FABRIC W/MYLAR,SPONGE
15	Acer Active Stylus Pen ESP-233-01B-6 USI 1.0
16	CABLE STYLUS CHARGER
17	SPEAKER R+L
18	KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Arabic NK.I131A.06V
19	TOUCHPAD MODULE NC.24611.09P

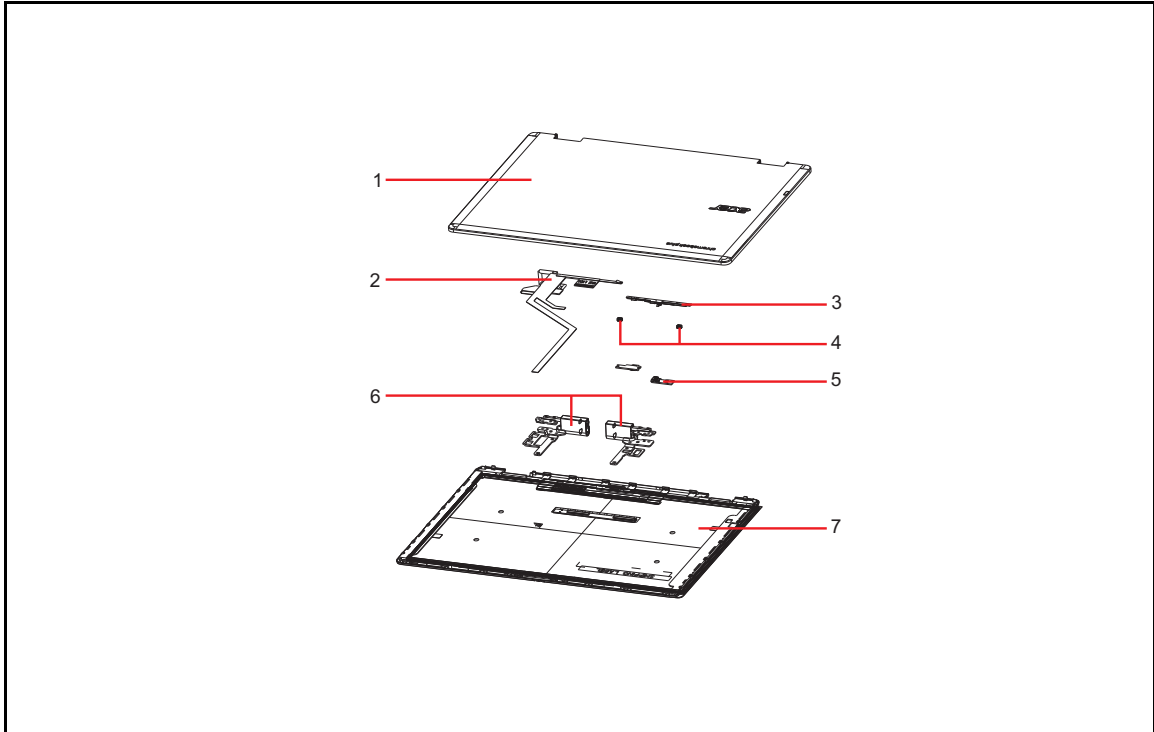


Figure 1-49. LCD Assembly Exploded Diagram







Table 1-3. LCD Assembly Exploded Diagram

No.	Description
1	LCD COVER SILVER
2	CABLE LCD
3	Camera CHICONY QHD FF CJFM514-2 HI-556W DS-41091C (BG) ZTS6735 MIPI 3.2T TNR for Chromebook
4	RUBBER SI W/FABRIC MESH
5	BOARD G-SENSOR
6	HINGE R W/CAP SILVER
	HINGE L W/CAP SILVER
7	LCD MODULE W/ BEZEL Panel HENGHAO 14" WUXGA IPS Glare HD-L140WA04-F5PA/B140UAN02.2 KL.1400H.044










# 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 LITE-ON 65W 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Type C PA-1650-58AD LF Black Meet CoC-Tier2 & IEC 62368
		Adapter DELTA 65W 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Type C ADP-65KE BB LF Meet CoC Tier2 & IEC-62368-1 2nd version
		Adapter Chicony Power 65W PD Type C 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black
BATTERY		Battery CosMx Typ.53Wh 4590mAh 3S1P AP20CBL 248x84.4x5.5(mm) AP20C 11.55V 65W Li-Ion TI BQ40Z555 FW5.09
		Battery LGES Typ.53Wh 4700mAh 3S1P AP23A8L 248x84.4x5.5(mm) AP23A 11.28V 70W Li-Ion
BOARD		BOARD FINGERPRINT SKU
		BOARD N-FINGERPRINT SKU
		BOARD G-SENSOR
		BOARD FINGER PRINT MODULE


**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
CABLE		CABLE STYLUS CHARGER
		CABLE USB BOARD HIGH SPEED
		CABLE USB BOARD LOW SPEED
		CABLE FINGERPRINT
		CABLE TOUCHPAD
		CABLE LCD
CAMERA		Camera CHICONY QHD FF CJFM514-2 HI-556W DS-41091C (BG) ZTS6735 MIPI 3.2T TNR for Chromebook
FAN		FAN
HDD		Flash Disk KINGSTON SSD NAND 256GB OM8PGP4256Q-AA LF+HF
		Flash Disk WD SSD NAND 256GB SN740 SDDQNQD-256G-1014 LF+HF
		Flash Disk WD SSD NAND 512GB SN740 SDDQNQD-512G-1014 LF+HF


**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
KB ASSEMBLY		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Arabic NK.I131A.06V
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Belgium NK.I131A.078
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Brazilian Portuguese NK.I131A.079
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US International w/ Bulgaria NK.I131A.076
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL SLO/CRO NK.I131A.07L
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL CZ/SK NK.I131A.07A
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL French NK.I131A.07D
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL German NK.I131A.07E
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US International w/ Hebrew NK.I131A.075
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Italian NK.I131A.07G
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 78KS AU03P_C21EWL Japanese NK.I131A.07S
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL ALA-Spanish NK.I131A.077
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Portuguese NK.I131A.07K
KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Russian NK.I131A.06Z		


**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
KB ASSEMBLY		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Nordic NK.I131A.07H
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Spanish NK.I131A.07M
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Swiss/G NK.I131A.07P
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Thailand NK.I131A.070
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Turkish NK.I131A.07Q
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Traditional Chinese NK.I131A.071
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US International NK.I131A.074
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL UK NK.I131A.07R
		KEYBOARD ASSY FP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US NK.I131A.073
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Arabic NK.I131A.06V
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Belgium NK.I131A.078
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Brazilian Portuguese NK.I131A.079
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US International w/ Bulgaria NK.I131A.076
KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL SLO/CRO NK.I131A.07L		


**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
KB ASSEMBLY		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL CZ/SK NK.I131A.07A
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL French NK.I131A.07D
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL German NK.I131A.07E
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US International w/ Hebrew NK.I131A.075
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Italian NK.I131A.07G
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 78KS AU03P_C21EWL Japanese NK.I131A.07S
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL ALA-Spanish NK.I131A.077
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Portuguese NK.I131A.07K
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Russian NK.I131A.06Z
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Nordic NK.I131A.07H
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Spanish NK.I131A.07M
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Swiss/G NK.I131A.07P
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Thailand NK.I131A.070
KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL Turkish NK.I131A.07Q		

**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
KB ASSEMBLY		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL Traditional Chinese NK.I131A.071
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US International NK.I131A.074
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 75KS AU03P_C21EWL UK NK.I131A.07R
		KEYBOARD ASSY NFP BL Stylus W/ UPPER CASE 74KS AU03P_C21EWL US NK.I131A.073
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL Arabic NK.I131A.06V
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Belgium NK.I131A.078
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Brazilian Portuguese NK.I131A.079
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL US International w/ Bulgaria NK.I131A.076
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL SLO/CRO NK.I131A.07L
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL CZ/SK NK.I131A.07A
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL French NK.I131A.07D
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL German NK.I131A.07E
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL US International w/ Hebrew NK.I131A.075
KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Italian NK.I131A.07G		







**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
KB ASSEMBLY		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 78KS AU03P_C21EWL Japanese NK.I131A.07S
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL ALA-Spanish NK.I131A.077
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Portuguese NK.I131A.07K
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL Russian NK.I131A.06Z
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Nordic NK.I131A.07H
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Spanish NK.I131A.07M
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Swiss/G NK.I131A.07P
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL Thailand NK.I131A.070
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL Turkish NK.I131A.07Q
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL Traditional Chinese NK.I131A.071
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL US International NK.I131A.074
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 75KS AU03P_C21EWL UK NK.I131A.07R
		KEYBOARD ASSY NFP BL N-stylus W/ UPPER CASE 74KS AU03P_C21EWL US NK.I131A.073









**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
LCD COVER		LCD COVER Gold CAP
		LCD COVER SILVER
LCD MODULE		LCD MODULE W/ BEZEL Panel HENGHAO 14" WUXGA IPS Glare HD-L140WA04-F5PA/B140UAN02.2 KL.1400H.044
LOWER CASE		LOWER CASE STYLUS SKU
		LOWER CASE N-STYLUS SKU
MAINBOARD		Mainboard CP714-1H CU5115U 8GB UMA
		Mainboard CP714-1HN CU7165U 16GB UMA w/ stylus








**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
METAL		HINGE R Gold CAP
		HINGE L Gold CAP
		HINGE R W/CAP SILVER
		HINGE L W/CAP SILVER
		METAL BRACKET FINGERPRINT
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
STYLUS		Acer Active Stylus Pen ESP-233-01B-6 US1 1.0

**Table 1-4. FRU List (Continued)**


Category	Pictures	Description
THERMAL		HEAT SINK
TOUCHPAD		TOUCHPAD MODULE Non STYLUS/FP/NK.I131A.073
		TOUCHPAD MODULE NC.24611.09P
WIRELESS LAN		Wireless LAN Intel Wi-Fi 6E BT5.3 AX211.NGWG.NV Intel 2x2 M.2 2230 CNVi GFP2 No vPro
		Wireless LAN Intel Wi-Fi 6E BT5.2 AX211.NGWG Intel 2x2 M.2 2230 CNVi GFP2 vPro
MISCELLANEOUS		TAPE COND FABRIC W/MYLAR,SPONGE
		RUBBER SI W/FABRIC MESH
		MYLAR FFC COONECTOR
		INSULATOR MYLAR ON BATTERY CABLE

**Table 1-4. FRU List (Continued)**

Category	Pictures	Description
SCREW		SCREW M2*5.0-I(BNI,NYLOK)IRON
		SCREW M2.5*4.0-I(NYLOK)IRON
		SCREW M2-0.4*2-I(BNI)(NYLOK)(7,0.6)IRON
		SCREW M2.0*3.0-I(BZN)(NYLOK)IRON
		SCREW M2.0*3.5-I(NI)(NYLOK)IRON
		SCREW M2*6-I, NYLOY
		SCREW M2.0*2.0-I(NI,NYLOK)STL

# 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.

# 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.

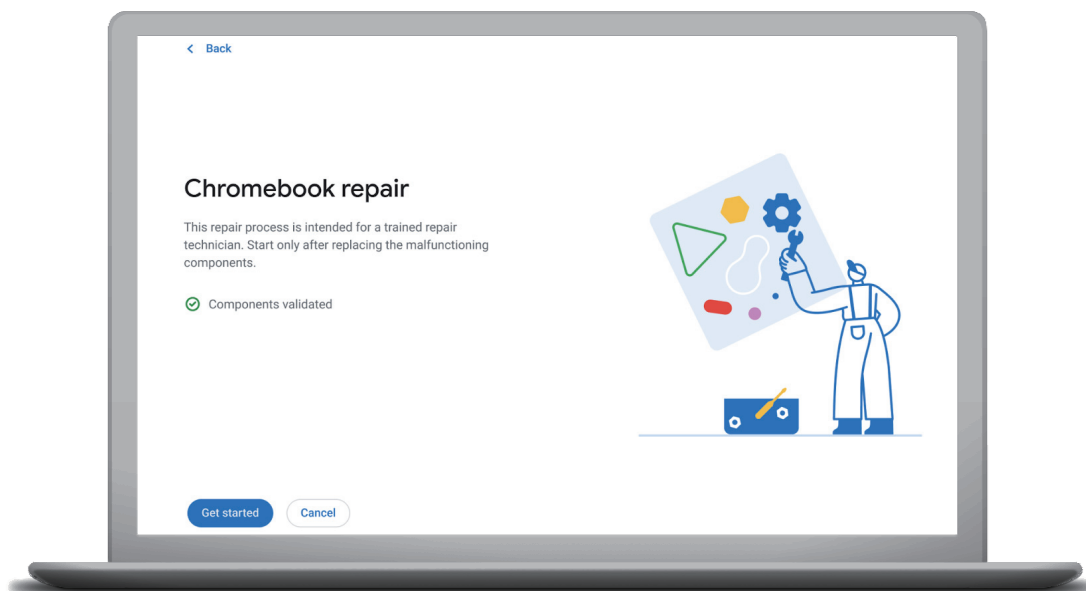
# Shimless RMA

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## Getting Started

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



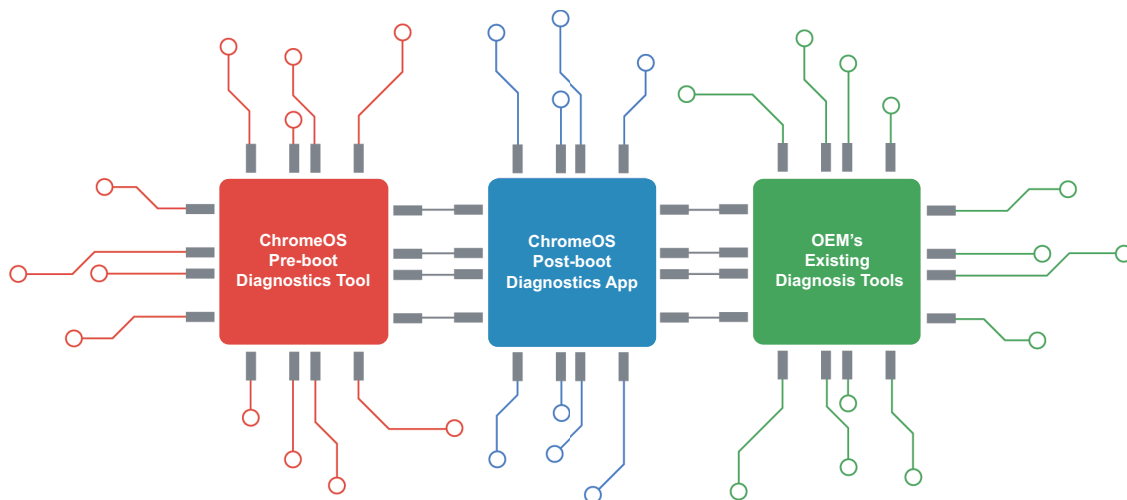
**Before we get started, let's review the equipment you may need:**

- 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

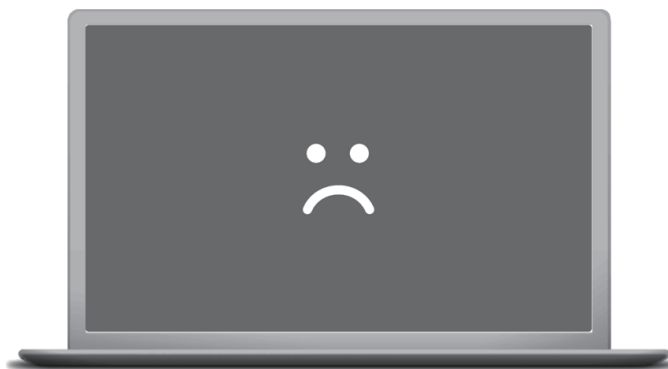
Before starting the Shimless workflow, make sure you have already replaced the malfunctioning components.

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

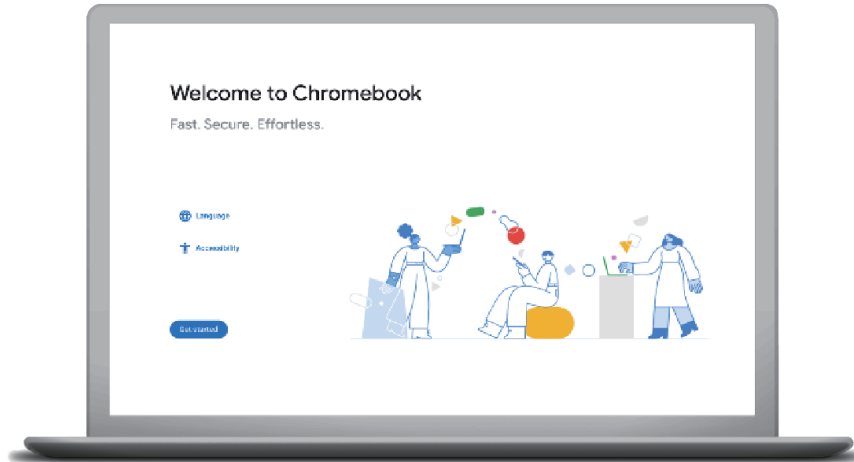
Any broken parts should be replaced **before** launching the repair flow.



## 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

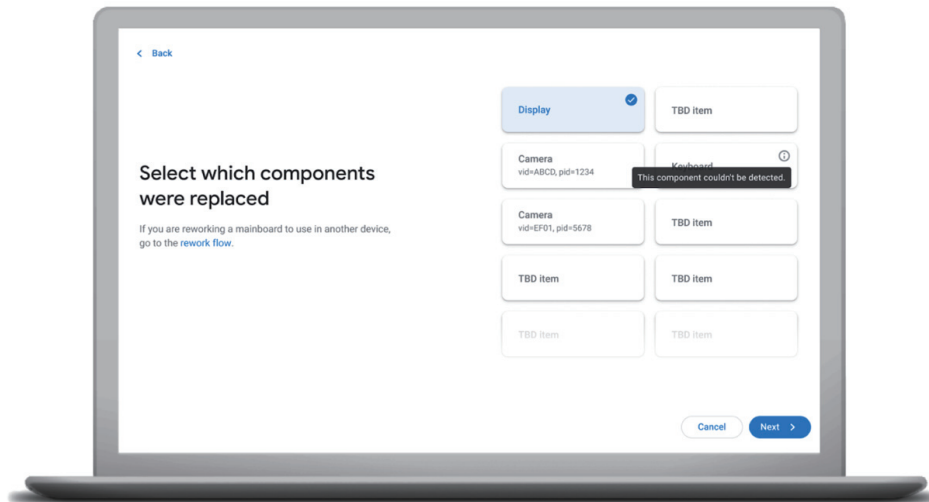
Once your components are validated, the screen will update with a message letting you know that the device is ready to start the repair flow.



#### 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.

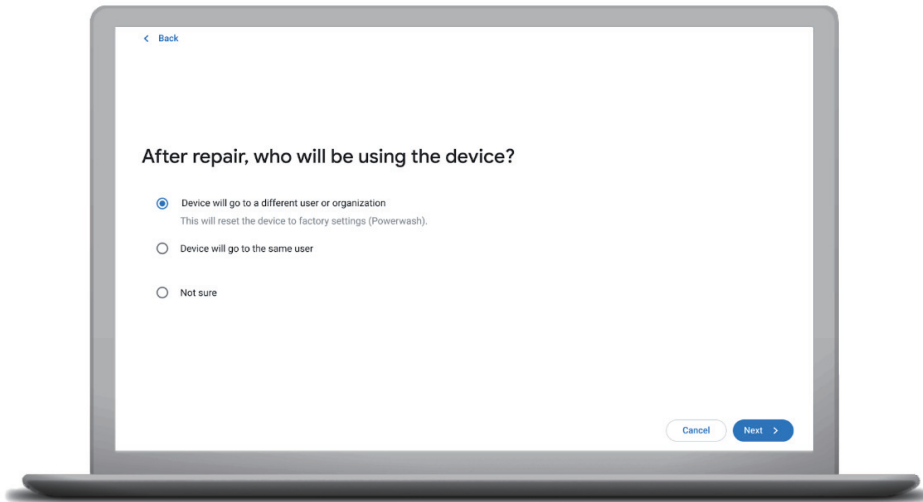


#### ⇒ NOTE:

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.

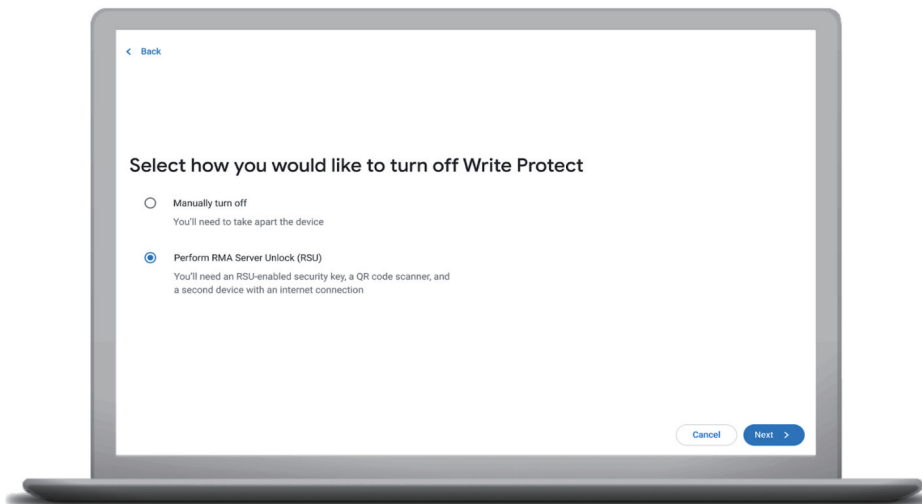
The repair flow **may differ** depending on where the device is being sent and the components replaced during the repair. Make sure to **mark your choices accurately**.

## 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.

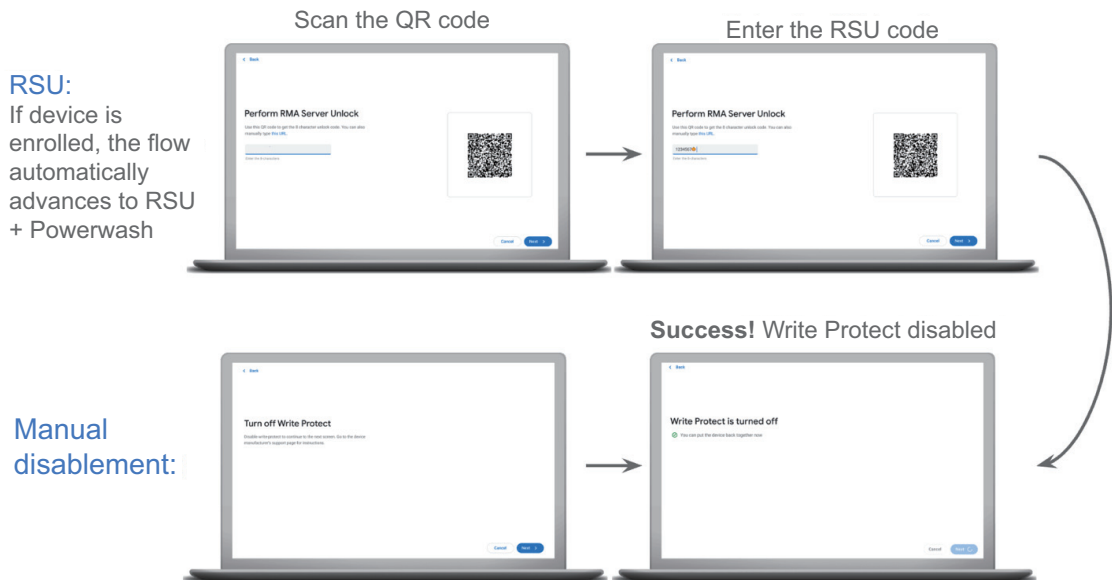
- If the device is **unenrolled**, you can choose to disable Write Protect with RSU or the manual disablement option.
- If the device is **enrolled**, you will only be able to choose the RSU option.



### ⇒ 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.

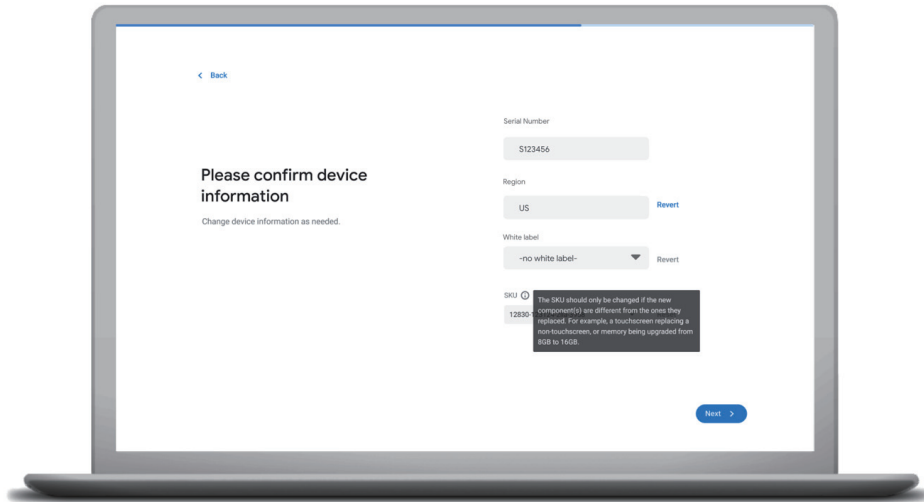
### Install Firmware Image

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.



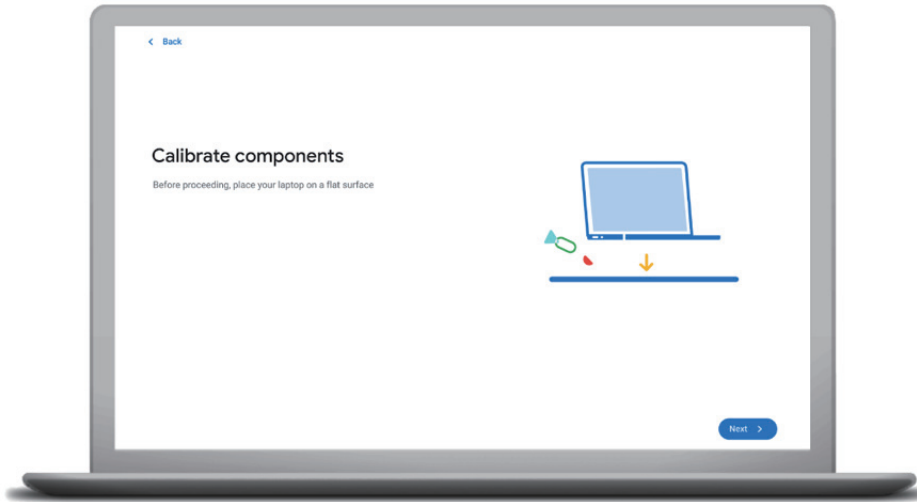
## Provisioning the Device

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).

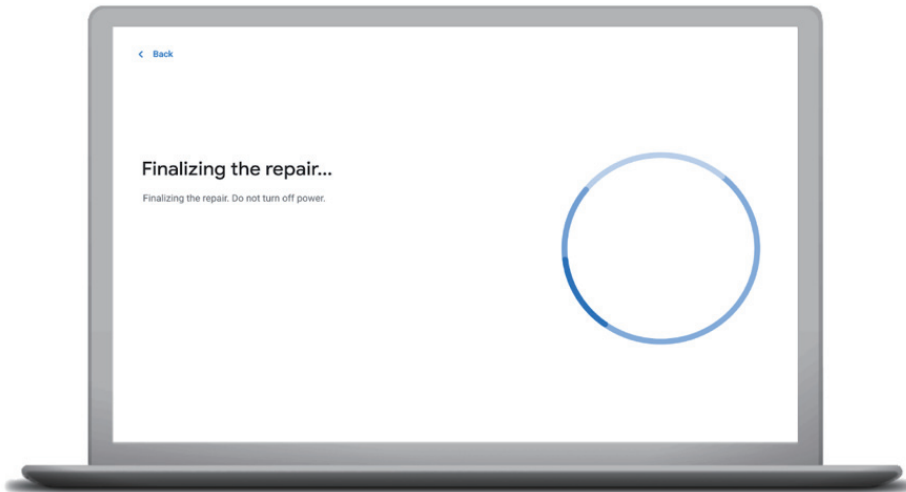
## Calibrate Components

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



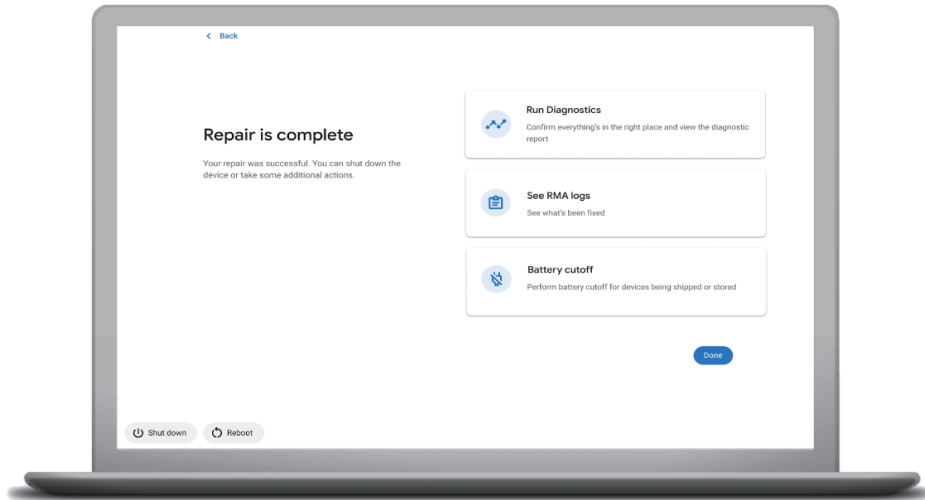
## Finalizing the Repair

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:

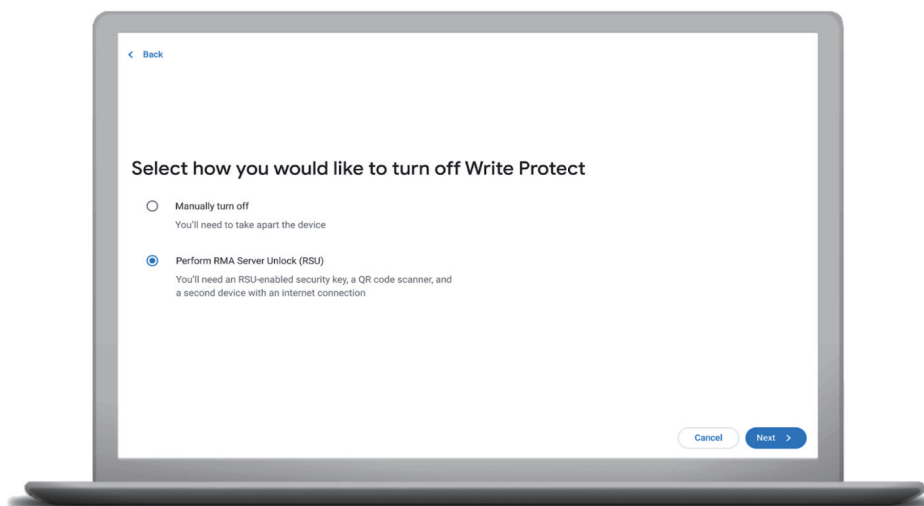
If you choose not to download the RMA logs at this screen, you may not be able to go back to get them later.

## 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.

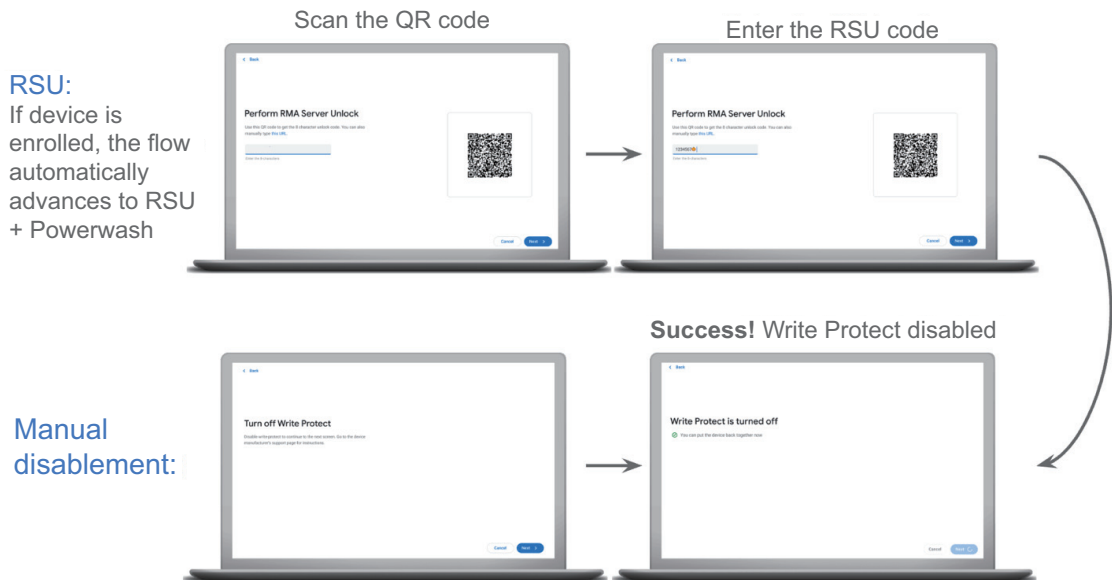
- If the device is **unenrolled**, you can choose to disable Write Protect with RSU or the less secure manual disablement option.
- If the device is **enrolled**, you will have the option to disable the Write Protect using RSU or the less secure manual disablement option. Please **refer to your internal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

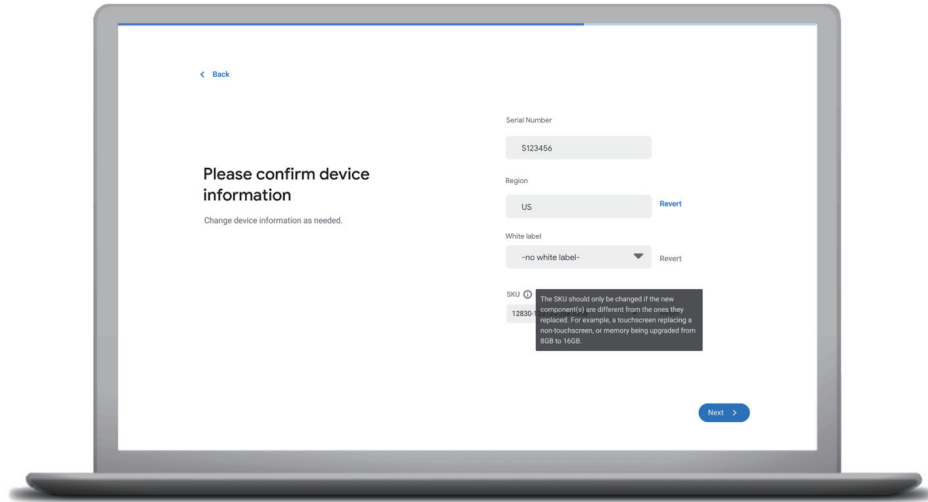
## Install Firmware Image

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.



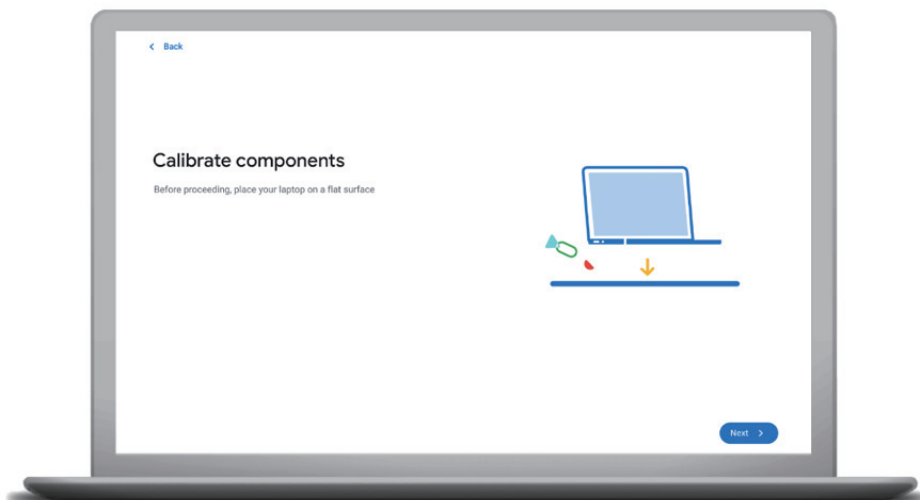
## Provisioning the Device

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.

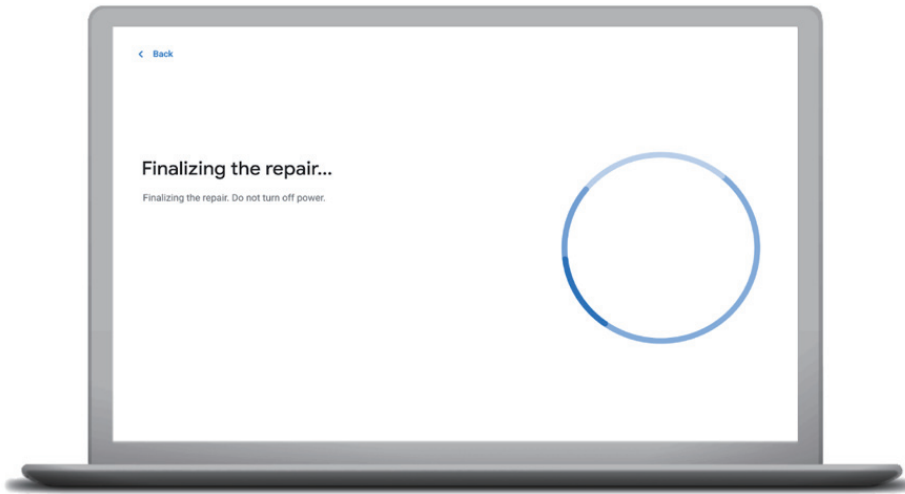
## Calibrate Components

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



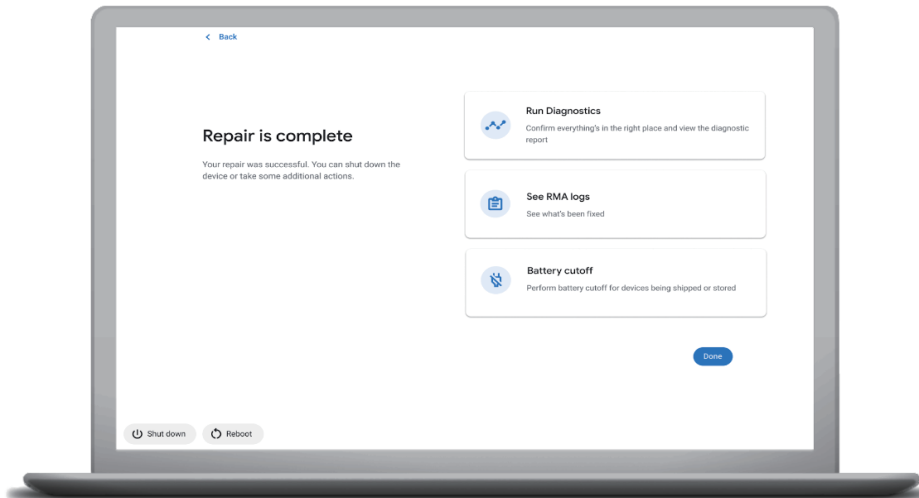
## Finalizing the Repair

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.