

Acer Chromebook
CP314-2HN
Crasswell_ADN

LIFECYCLE EXTENSION GUIDE

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Self-Repair

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

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

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

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

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) 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 ten (10) 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).

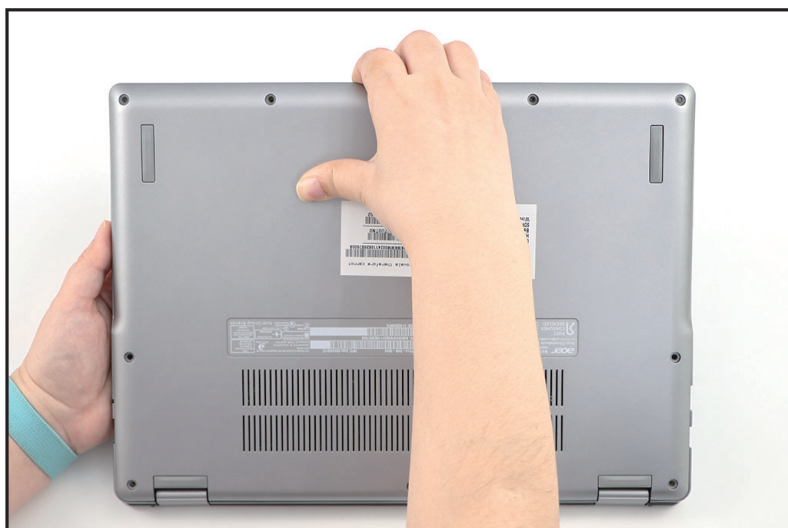


Figure 1-4. Base Cover Removal

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

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

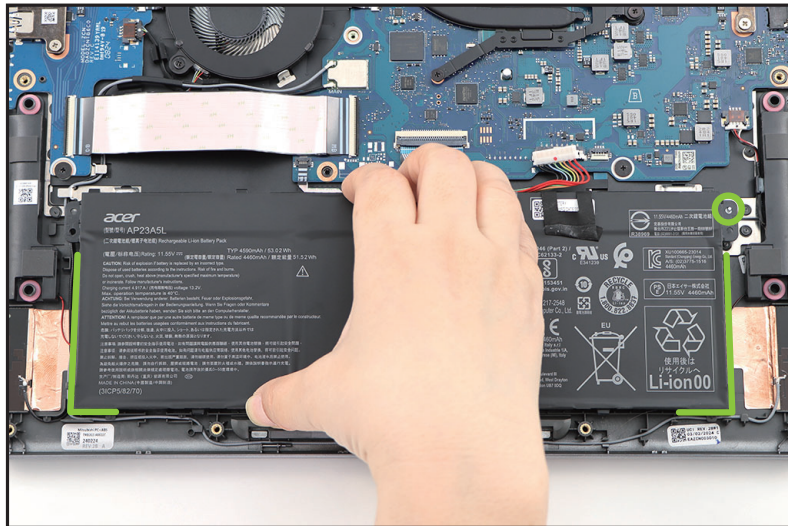


Figure 1-7. Battery Pack Removal

- Detach the mylar (D) from the battery cable (Figure 1-8).



Figure 1-8. Battery Pack Removal

+ **IMPORTANT:**

Follow local regulations for battery disposal.

SSD Module Removal

Prerequisite:

Battery Pack Removal

1. Locate the SSD module on the top assembly (underneath the USB FFC) (Figure 1-9).

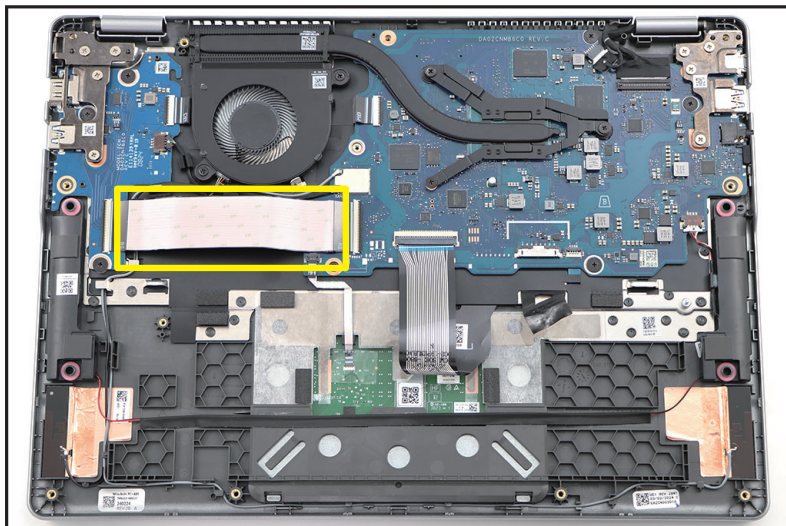


Figure 1-9. SSD Module Location

2. Disconnect the USB FFC (high speed) (A) from the USB board and mainboard connectors. Then remove the USB FFC (Figure 1-10).

⚠ CAUTION:

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

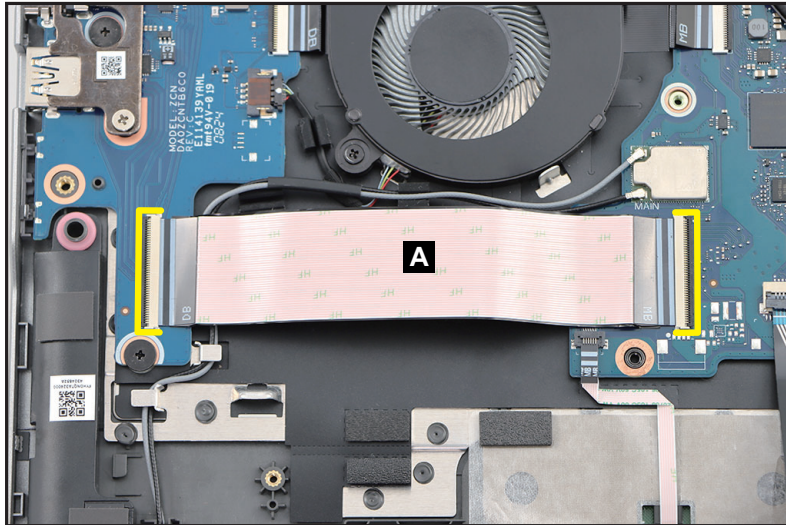


Figure 1-10. SSD Module Removal

3. Remove one (1) screw securing the SSD module in place (Figure 1-11).



Figure 1-11. SSD Module Removal

2. Remove eight (8) screws securing the LCD hinges in place (Figure 1-14).

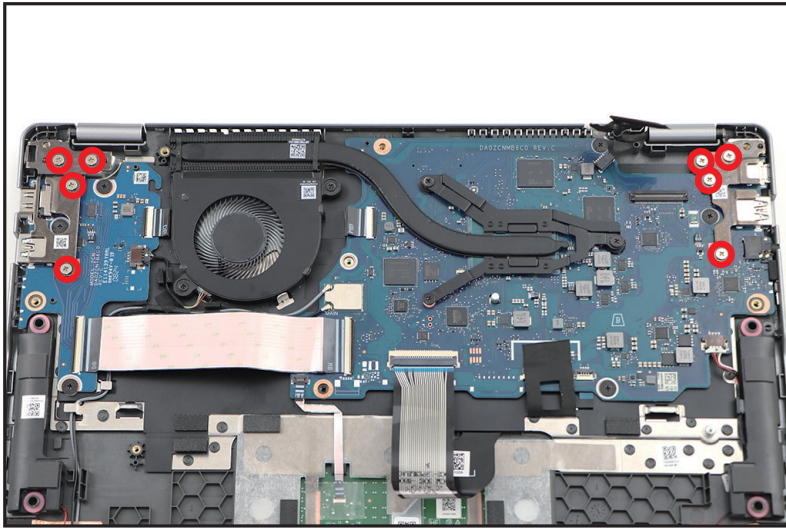


Figure 1-14. LCD Module Removal

3. Lift the top assembly until it is fully open (Figure 1-15).

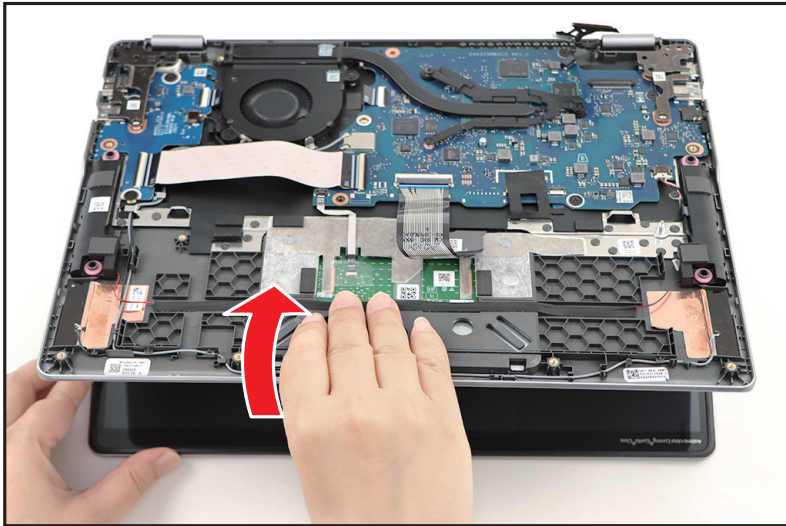


Figure 1-15. LCD Module Removal

4. Lift both LCD hinges until they are fully extended (Figure 1-16).

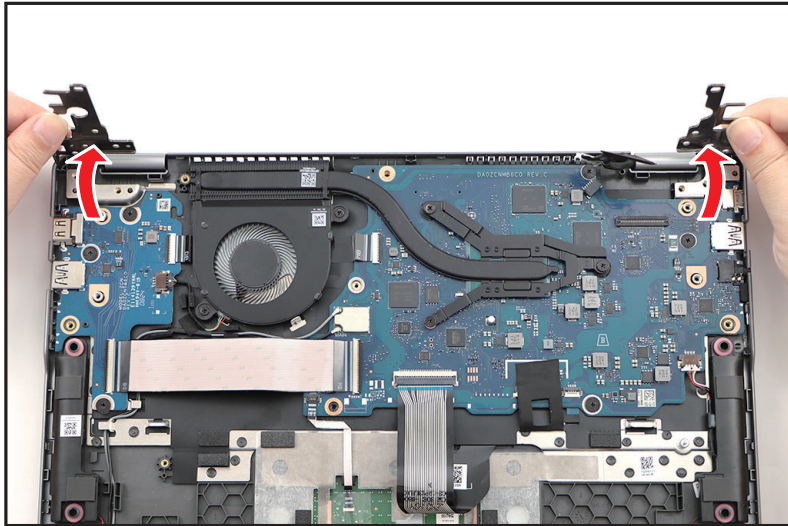


Figure 1-16. LCD Module Removal

5. Open the top assembly. Then remove the top assembly away from the LCD module (C) (Figure 1-17).

⚠ CAUTION:

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

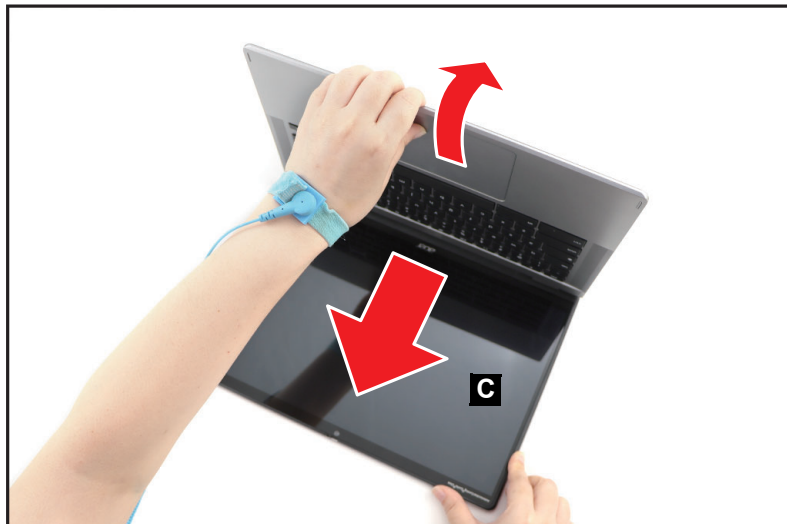


Figure 1-17. LCD Module Removal

Touchpad Module Removal

Prerequisite:

Battery Pack Removal

1. Detach the mylar tape (A) from the touchpad module FFC connector (Figure 1-18).

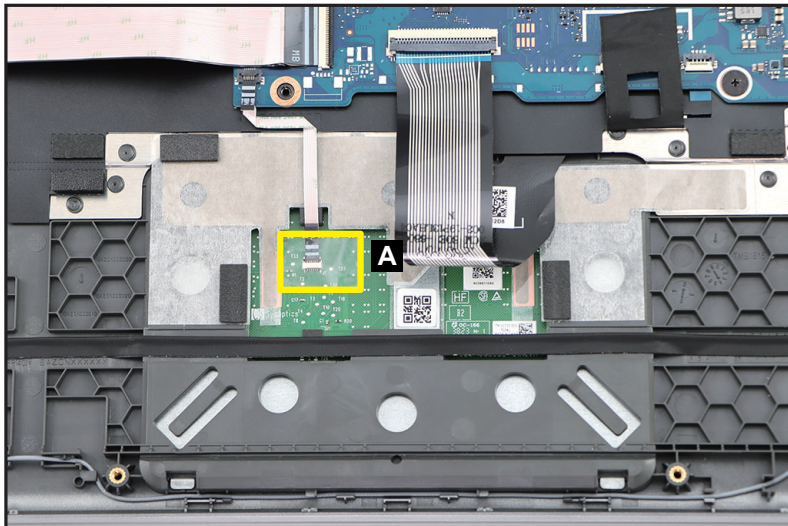


Figure 1-18. Touchpad Module Removal

2. Disconnect the touchpad module FFC (B) from the touchpad and mainboard connectors (Figure 1-19).

⚠ CAUTION:

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

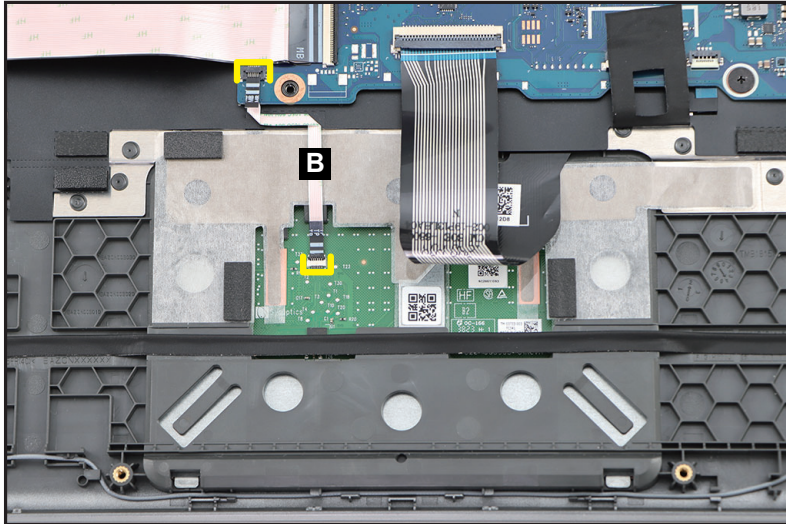


Figure 1-19. Touchpad Module Removal

3. Detach the conductive tape (C) from the touchpad module and top assembly (Figure 1-20).

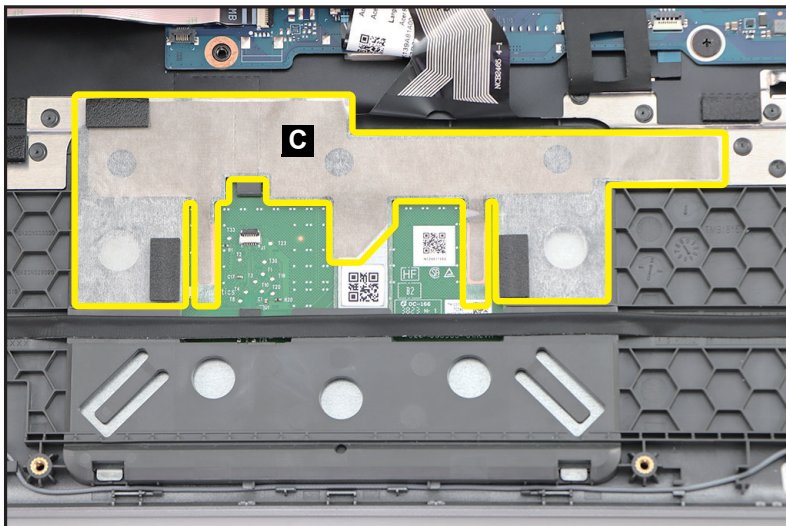


Figure 1-20. Touchpad Module Removal

4. Remove three (3) screws securing the touchpad module (Figure 1-21).

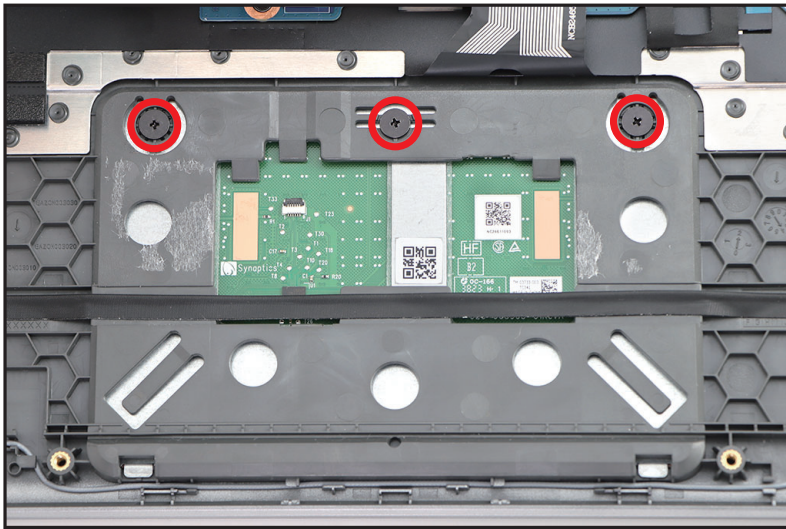


Figure 1-21. Touchpad Module Removal

5. Using the screwdriver, push the screw sleeves (marked with green circles) firmly to release them from the top assembly (Figure 1-22).
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 1-22).



Figure 1-22. Touchpad Module Removal

USB Board Removal

Prerequisite:

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

1. Disconnect the USB board FFC (low speed) (A) from the USB board and mainboard connectors. Then carefully detach the portion of the FFC from its underneath adhesive and remove it from the top assembly ([Figure 1-23](#)).
2. Disconnect the USB board FFC (high speed) (B) from the USB board and mainboard connectors. Then remove it from the top assembly ([Figure 1-23](#)).
3. Remove three (3) screws securing the USB board in place ([Figure 1-23](#)).

⚠ CAUTION:

USB board FFCs can be damaged if removed while the USB board and mainboard connectors are locked.

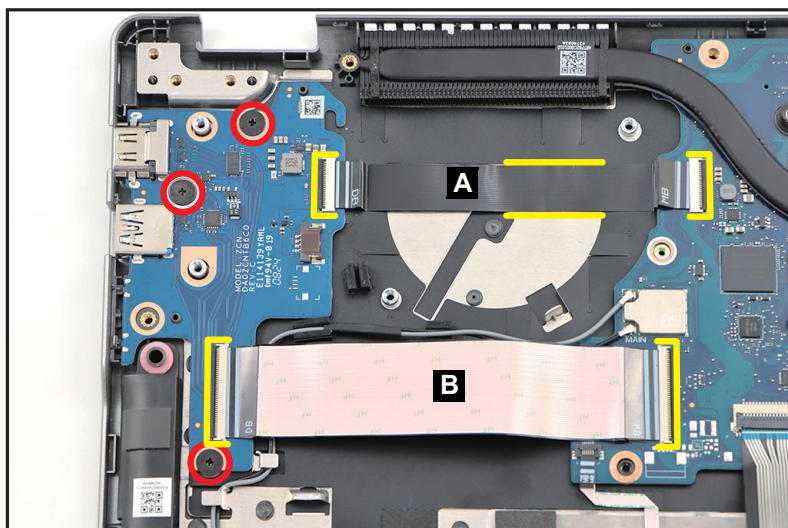


Figure 1-23. USB Board Removal

4. Release the USB board (C) from the I/O ports slots (marked with green line) and guides (marked with green circles) on the top assembly (Figure 1-24). Then remove the USB board.



Figure 1-24. USB Board Removal

Mainboard Removal

Prerequisite:

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

1. Disconnect the USB board FFC (low speed) from the mainboard connector (A) (Figure 1-25).
2. Disconnect the WLAN antennas cables from the WLAN module connectors (B) (Figure 1-25).
3. Disconnect the USB board FFC (high speed) from the mainboard connector (C) (Figure 1-25).
4. Disconnect the touchpad module FFC from the mainboard connector (D) (Figure 1-25).
5. Disconnect the keyboard FPC from the mainboard connector (E) (Figure 1-25).
6. Disconnect the speaker cable from the mainboard connector (F) (Figure 1-25).

⚠ CAUTION:

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

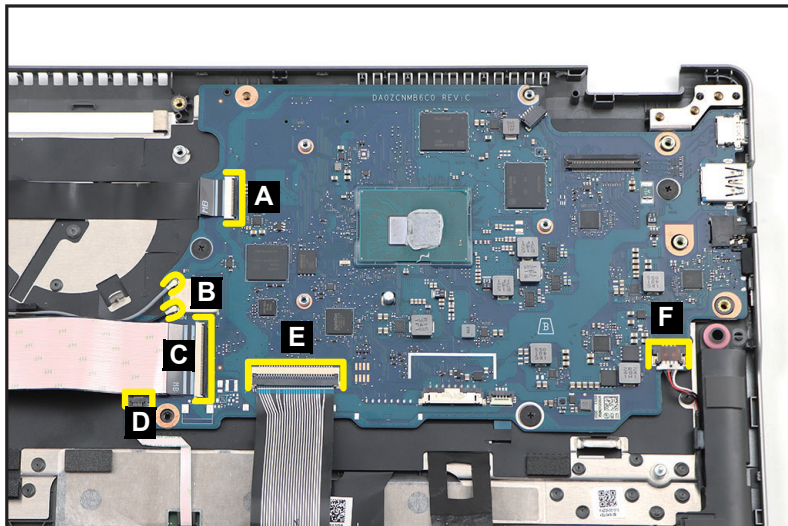


Figure 1-25. Mainboard Removal

7. Remove three (3) screws securing the mainboard in place (Figure 1-26).

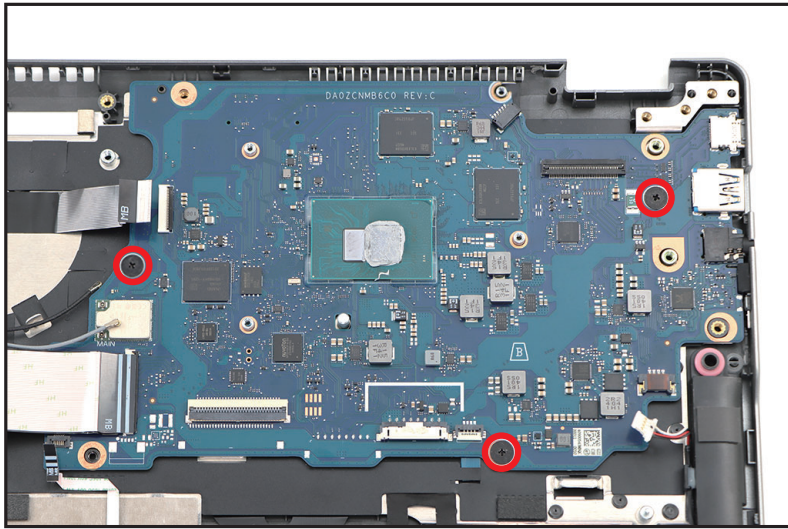


Figure 1-26. Mainboard Removal

8. Release the mainboard (G) from the I/O ports slots (marked with green lines and rectangle) and guides (marked with green circles) on the top assembly (Figure 1-27). Then remove the mainboard.

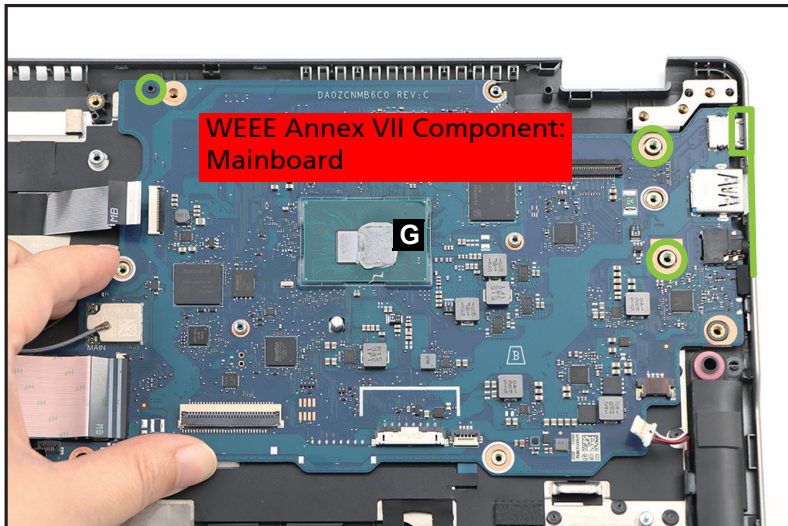


Figure 1-27. Mainboard Removal

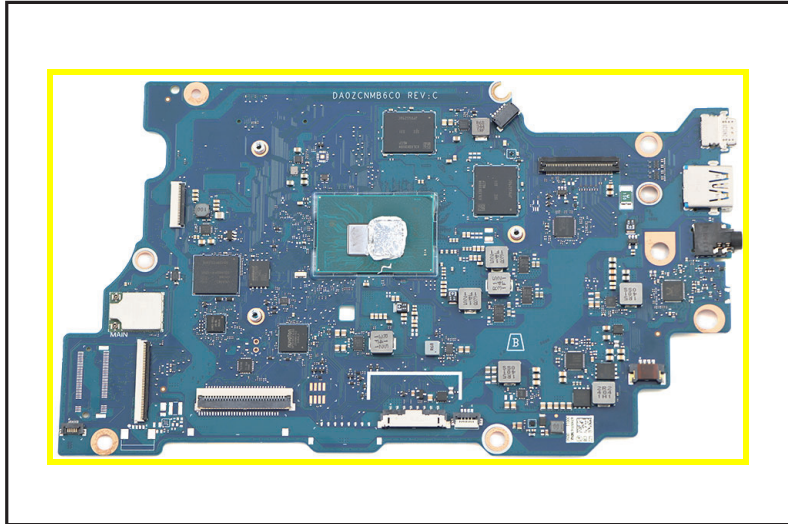


Figure 1-28. Mainboard

+ **IMPORTANT:**

Circuit boards $>10 \text{ cm}^2$ have been highlighted with a yellow rectangle as shown in [Figure 1-28](#). Remove the circuit board and follow local regulations for disposal.

LCD Panel Removal

Prerequisite:

[LCD Module Removal](#)

1. Pry the LCD panel from the upper side to release the latches ([Figure 1-29](#)).



Figure 1-29. LCD Panel Removal

2. Continue prying the latches on the right side of the LCD panel as shown in [Figure 1-30](#).



Figure 1-30. LCD Panel Removal

3. Continue prying the latches on the left side of the LCD panel as shown in [Figure 1-31](#).



Figure 1-31. LCD Panel Removal

4. Continue prying the remaining latches on the bottom side of the LCD panel as shown in [Figure 1-32](#).

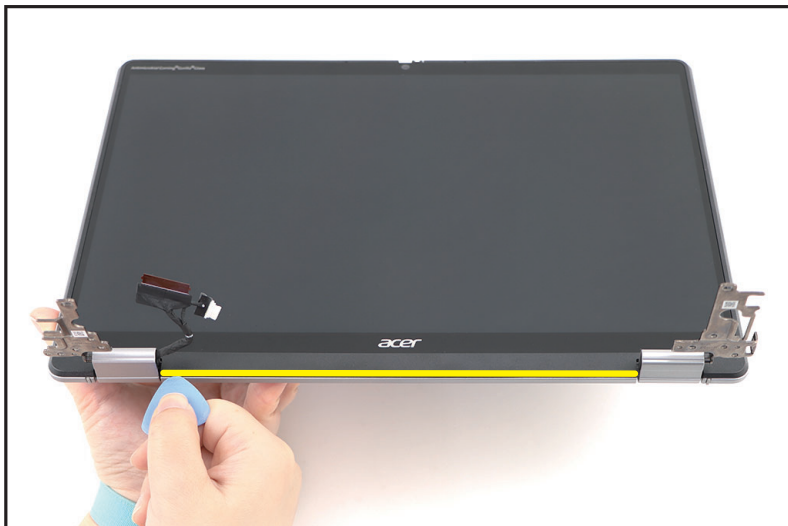


Figure 1-32. LCD Panel Removal

5. Release the LCD cable from the left hinge cap (Figure 1-33).



Figure 1-33. LCD Panel Removal

Top Assembly Removal

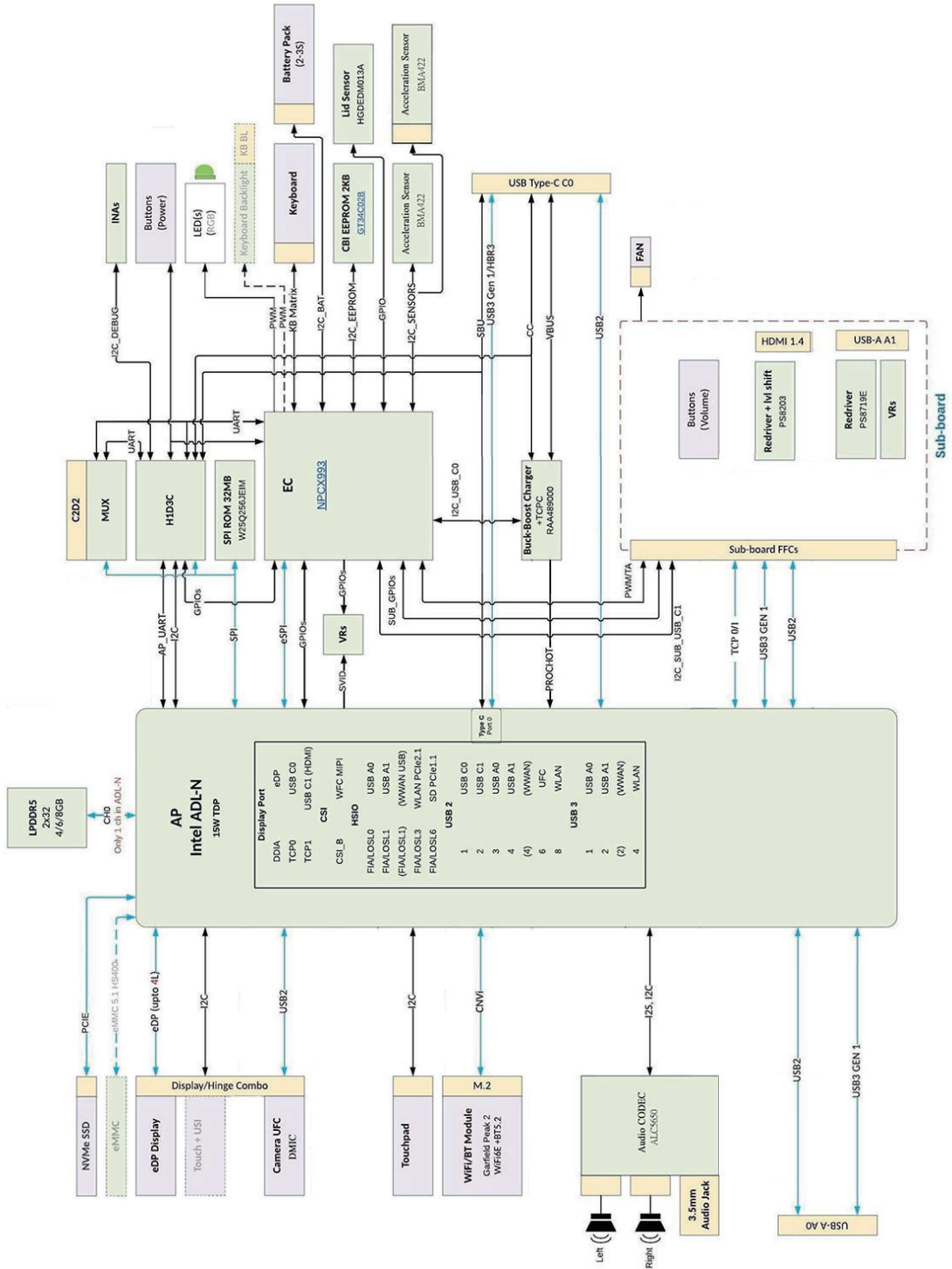
Prerequisite:

Ensure that the **Mainboard, USB Board, Speaker Module, and Touchpad Module** have been disassembled prior removing the top assembly.



Figure 1-34. Top Assembly

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. Do not attempt to open the computer yourself; contact your dealer or authorized service center for assistance.

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, refer to [Online Support Information](#).

⇒ **NOTE:**

Do not replace non-defective FRU parts.

Power On Issues

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

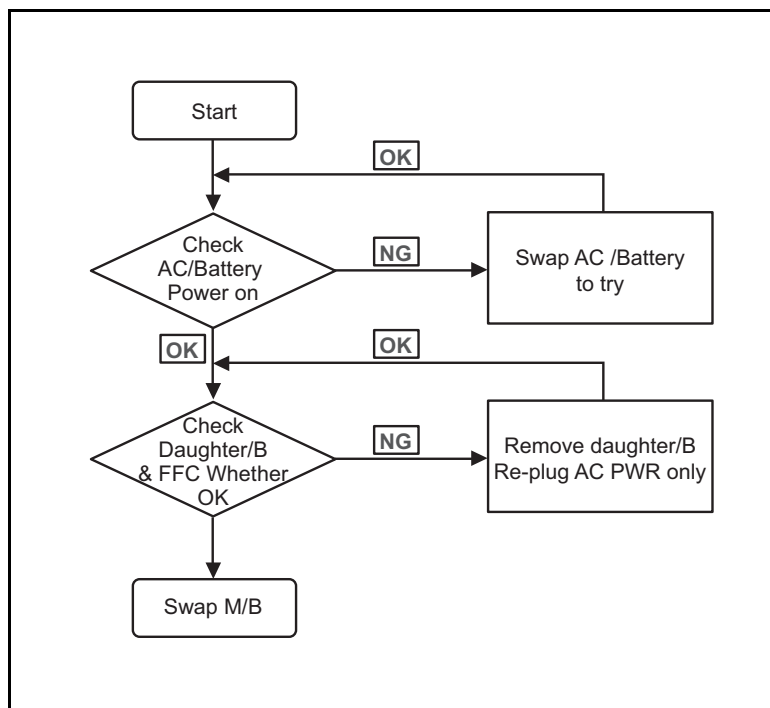


Figure 1-35. Power On Issue

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, refer to [Online Support Information](#).

No Display Issues

If the Display does not work, perform the following:

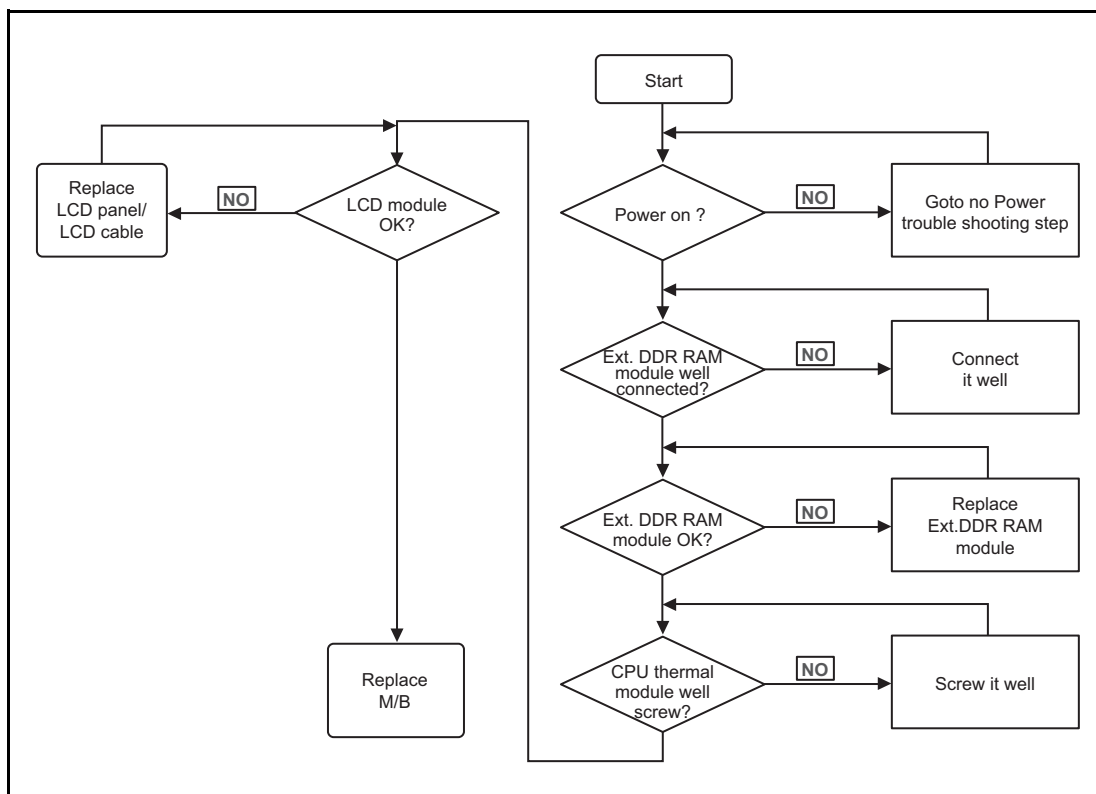


Figure 1-36. No Display Issue

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, refer to [Online Support Information](#).

Abnormal Video

If the video appears abnormal, perform the following:

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

⇒ NOTE:

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

2. Adjust the brightness to its highest level. Refer to the User Manual for instructions on adjusting the settings. If the display is too dim at the highest brightness setting, the LCD is faulty and should be replaced. Refer to [Disassembly Process](#).
3. Check the display resolution is correctly configured:
 - Minimize or close all Windows.
 - If display size is only abnormal in an application, check the view settings and control/mouse wheel zoom feature in the application.
 - If 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.
7. If the Issue is still not resolved, please contact Acer local service.

LCD Picture Failure

If the LCD fails, perform the following:

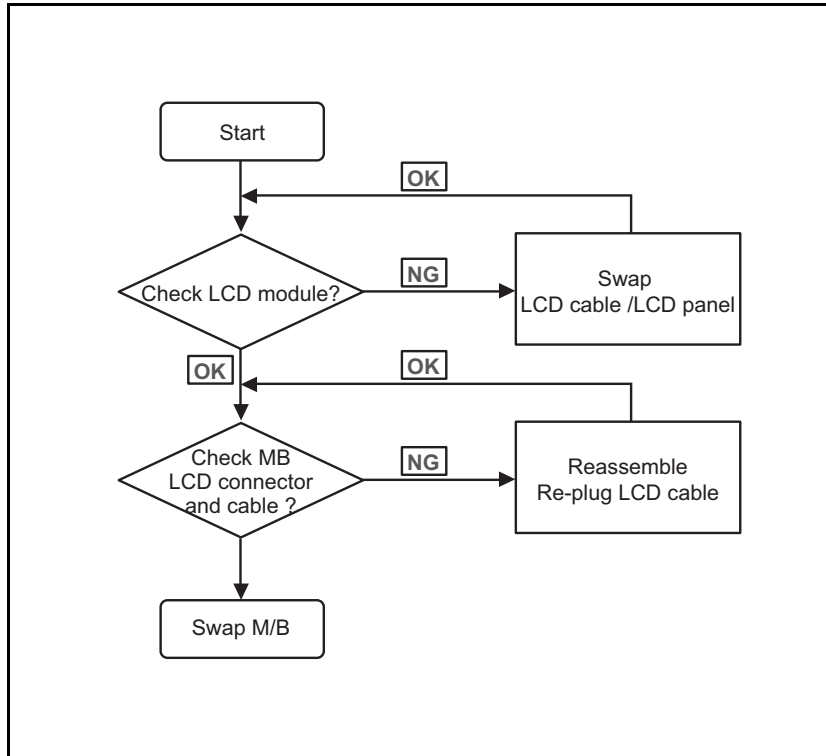


Figure 1-37. LCD Failure

Internal Keyboard Failure

If the internal keyboard fails, perform the following:

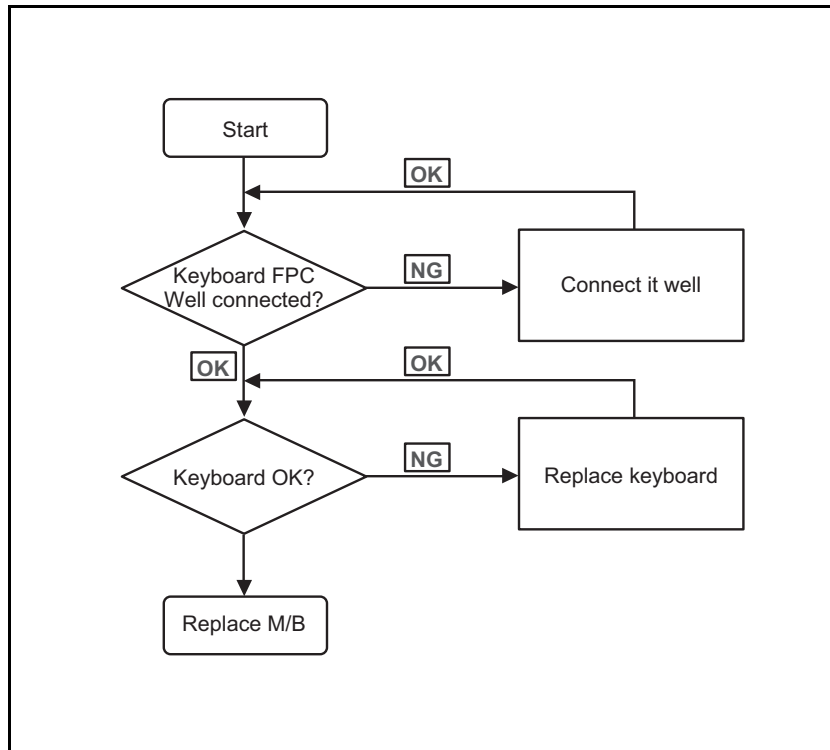


Figure 1-38. Internal Keyboard Failure

Touch Pad Failure

If the touch pad fails, perform the following:

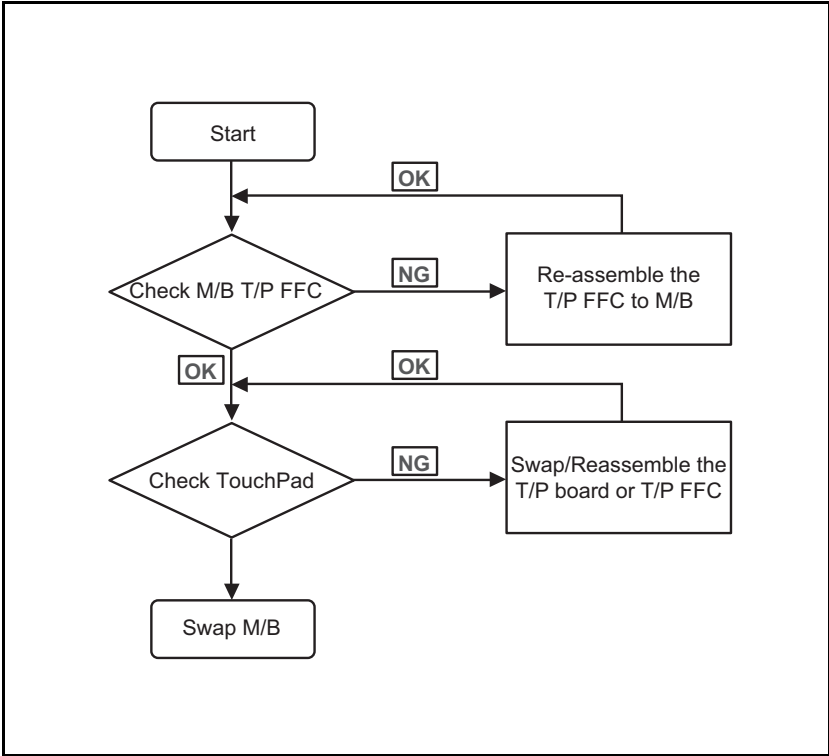


Figure 1-39. Touch Pad Failure

Internal Speaker Failure

If the internal speaker fails, perform the following:

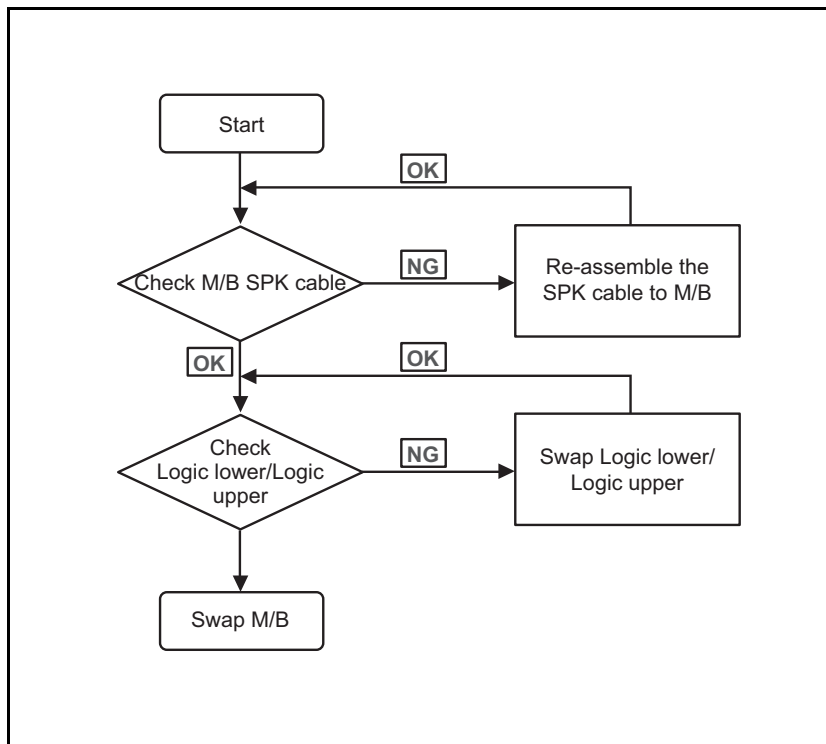


Figure 1-40. Internal Speaker Failure

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.

Audio Codec Failure

If the audio codec fails, perform the following:

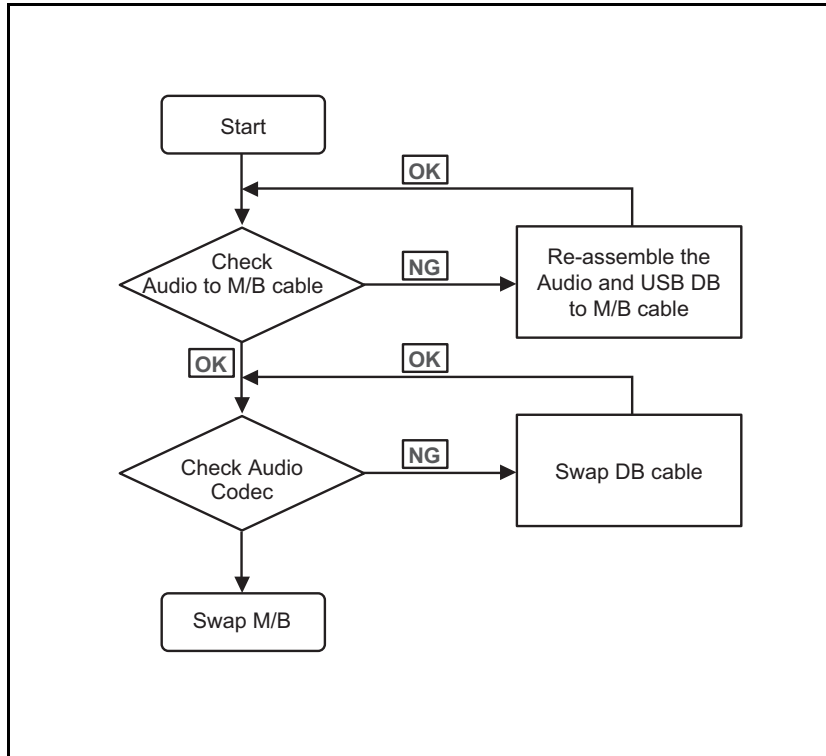


Figure 1-41. Audio Codec Failure

Other Functions Failure

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

Intermittent Problems

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

When analyzing an intermittent problem, perform the following:

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

Undetermined Problems

The diagnostic problems do not identify which adapter or device failed, which installed devices are incorrect, whether a short circuit is suspected, or whether the system is inoperative.

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

⇒ **NOTE:**

Verify that all attached devices are supported by the computer.

⇒ **NOTE:**

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

1. Remove power from the computer.
2. Visually check components for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
 - Non-Acer devices
 - Printer, mouse, and other external devices
 - Battery pack
 - Hard disk drive
 - DIMM
 - BD/CD-ROM/Diskette drive Module
 - PC Cards
4. Apply power to the computer.
5. Determine if the problem has changed.
6. If the problem does not recur, connect the removed devices one at a time until failing FRU is found.
7. If the problem remains, replace the following FRUs:
 - System board
 - LCD assembly

Exploded Diagrams

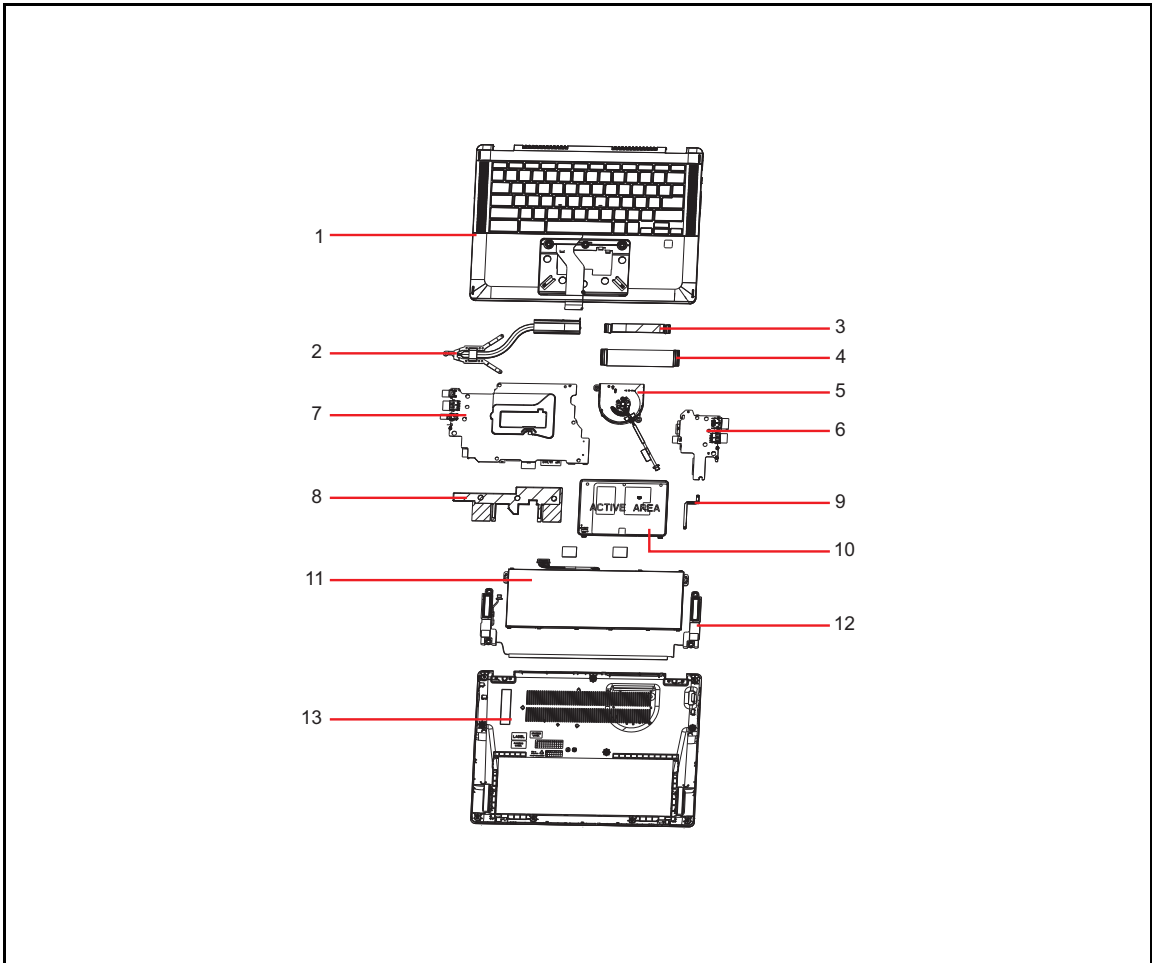


Figure 1-42. System Exploded Diagram

Table 1-2. System Exploded Diagram

No.	Description
1	KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B US NK.I131A.065
2	HEATSINK 15W CPU
3	CABLE USB LOW SPEED
4	CABLE USB HIGH SPEED
5	FAN
6	BOARD USB
7	Mainboard CP314-2HN Intel N305 8GB eMMC128GB UMA Intel AX211
8	TAPE COND FABRIC W/MYLAR,SPONGE ASSY TP
9	CABLE TOUCHPAD

Table 1-2. System Exploded Diagram (Continued)

No.	Description
10	TOUCHPAD MODULE NC.24611.093
11	Battery LGES Typ.53Wh 4700mAh 3S1P AP23A8L 248x84.4x5.5(mm) AP23A 11.28V 70W Li-Ion
12	SPEAKER R+L
13	LOWER CASE

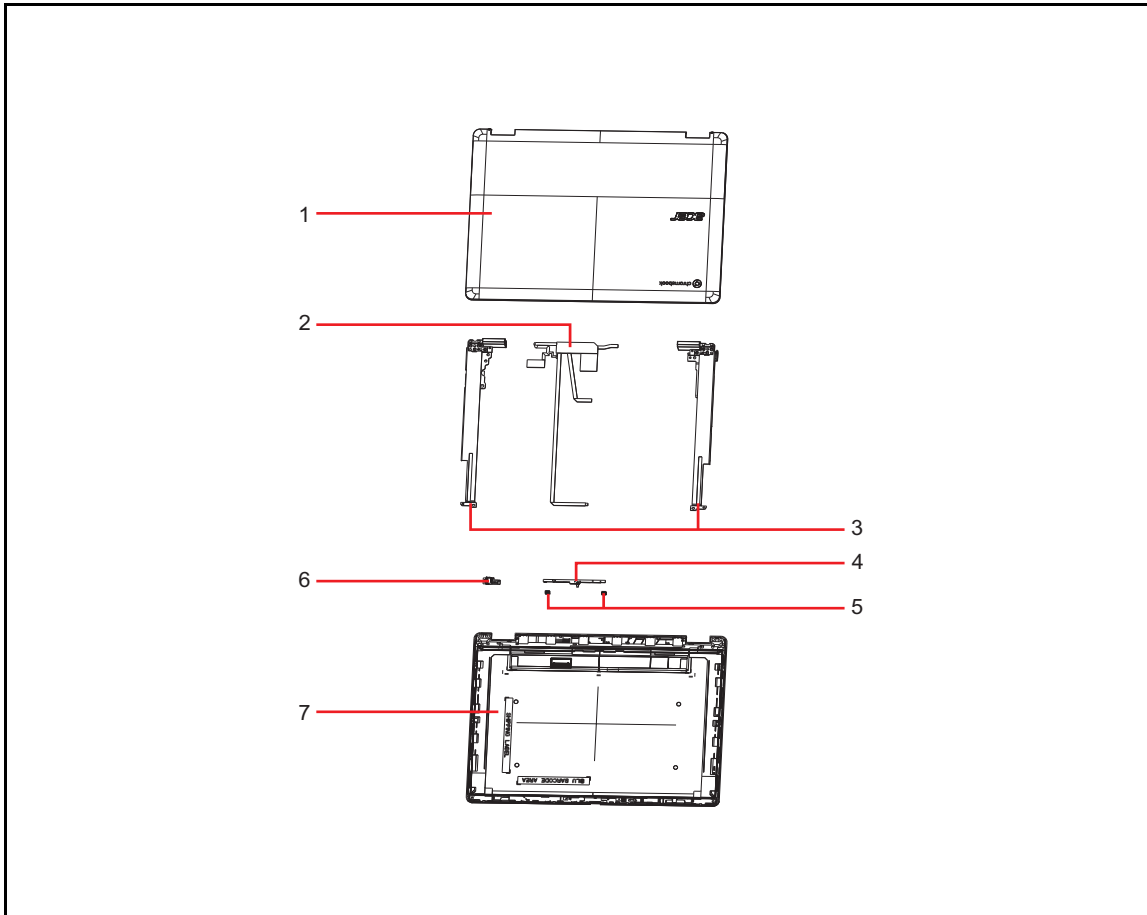


Figure 1-43. LCD Assembly Exploded Diagram

Table 1-3. LCD Assembly Exploded Diagram

No.	Description
1	LCD COVER
2	CABLE LCD N14WUXGAGSUPILB3/TP1U6AM
3	HINGE L HINGE R
4	Camera CHICONY HD Camera C7FMH12-1 GC1009 RTS5855 1L3B059G1(BG) ZTS6234A TNR for Chrome (ROI)
5	RUBBER SI W/FABRIC MESH ASSY MIC
6	BOARD G-SENSOR
7	LED Touch Panel HENGHAO 14" WUXGA IPS Glare HD-L140WM02-F5PA/ B140UAN04.6 H/W 1A 250nit NTSC 45% 60Hz 25ms 800:1 (OFM/AM GG3 0.55t/Elan 7B18U/HID-I2C)

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



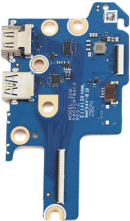

Category	Picture	Description
ADAPTER		Adapter LITE-ON PA-1650-58AD 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black Meet CoC-Tier2 & IEC 62368
		Adapter DELTA ADP-65KE BB 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black
		Adapter Chicony Power 65W PD Type C 65W Type C Brick 5V/3A_9V/3A_12V/3A_15V/3A_20V_3.25A Black
BATTERY		Battery LGES Typ.53Wh 4700mAh 3S1P AP23A8L 248x84.4x5.5(mm) AP23A 11.28V 70W Li-Ion
		Battery SIMPLO Typ.53Wh 4700mAh 3S1P AP23A7L 248x84.4x5.5(mm) AP23A 11.25V 70W Li-Ion TI BQ40Z555 FW5.09
		Battery PANASONIC Typ.53Wh 4590mAh 3S1P AP23A5L 248x84.4x5.5(mm) AP23A 11.55V 70W Polymer
BOARD		BOARD USB
		BOARD G-SENSOR

Table 1-4. FRU List (Continued)


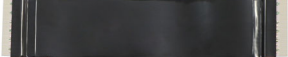





Category	Picture	Description
CABLE		CABLE USB LOW SPEED
		CABLE USB HIGH SPEED
		CABLE TOUCHPAD
		CABLE LCD N14WUXGAGSUPILB3/TP1U6AM
CAMERA		Camera CHICONY HD Camera C7FMH12-1 GC1009 RTS5855 1L3B059G1(BG) ZTS6234A TNR for Chrome (ROI)
		Camera Tech-Front FHD Camera YHVA-5 OV2740(COB) RTS5856W 1L4C066F2(BG) ZTS6735 USB for Chrome V1.1 w/ TNR (ROI) R
		Camera Tech-Front HD Camera YHVC-2 OV9734 SPCA2112N 1L3B059F1(BG) ZTS6234A TNR for Chrome (ROI)
FAN		FAN
HDD		Flash Disk KINGSTON SSD NAND 128GB OM8PGP4128Q-AA LF+HF
		Flash Disk WD SSD NAND 256GB SN740 SDDQNQD-256G-1014 LF+HF

Table 1-4. FRU List (Continued)


Category	Picture	Description
KEYBOARD ASSEMBLY		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B US NK.I131A.065
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B Traditional Chinese NK.I131A.063
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B Thailand NK.I131A.062
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B US International w/ Bulgaria NK.I131A.068
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B Russian NK.I131A.061
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B Arabic NK.I131A.05X
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B US International NK.I131A.066
		KEYBOARD ASSY NBL W/ UPPER CASE 74KS AU03T_C21B US International w/ Hebrew NK.I131A.067
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B SLO/CRO NK.I131A.06N
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B CZ/SK NK.I131A.06C
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Brazilian Portuguese NK.I131A.06B
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Turkish NK.I131A.06S
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Belgium NK.I131A.06A
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B UK NK.I131A.06T
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B French NK.I131A.06F
KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B German NK.I131A.06G		
KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Italian NK.I131A.06J		
KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B ALA-Spanish NK.I131A.069		

Table 1-4. FRU List (Continued)





Category	Picture	Description
KEYBOARD ASSEMBLY		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Spanish NK.I131A.06P
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Swiss/G NK.I131A.06R
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Portuguese NK.I131A.06M
		KEYBOARD ASSY NBL W/ UPPER CASE 75KS AU03T_C21B Nordic NK.I131A.06K
		KEYBOARD ASSY NBL W/ UPPER CASE 78KS AU03T_C21B Japanese NK.I131A.06U
LCD		LED Touch Panel HENGHAO 14" WUXGA IPS Glare HD-L140WM02-F5PA/ B140UAN04.6 H/W 1A 250nit NTSC 45% 60Hz 25ms 800:1 (OFM/AM GG3 0.55t/Elan 7B18U/HID-I2C)
		LED Touch Panel GIS 14" WUXGA IPS Glare AN1400110001/ N140JCA-EEK C2 250nit NTSC 45% 60Hz 25ms 800:1 (GF2/AM GG3 0.55t/ILI2901/HID-I2C)
LCD COVER		LCD COVER
LCD MODULE		LCD MODULE W/ BEZEL Panel HENGHAO 14" WUXGA IPS Glare HD-L140WM02-F5PA/ B140UAN04.6 KL.1400H.054
		LCD MODULE W/ BEZEL Panel GIS 14" WUXGA IPS Glare AN1400110001/ N140JCA-EEK C2 KL.1400G.011
LOWER CASE		LOWER CASE

Table 1-4. FRU List (Continued)

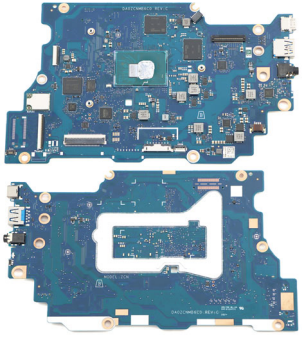




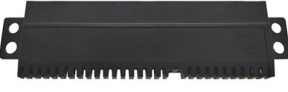











Category	Picture	Description
MAINBOARD		Mainboard CP314-2HN Intel N305 8GB eMMC128GB UMA Intel AX211
METAL		HINGE L
		HINGE R
MISCELLANEOUS		TAPE COND FABRIC W/MYLAR,SPONGE ASSY TP
		RUBBER SI W/FABRIC MESH ASSY MIC
		MYLAR FFC COONECTOR
PLASTICS		HEATSINK HOLDER
POWER CORD		POWER CORD 1M 125V JAP BLACK
		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

Table 1-4. FRU List (Continued)

Category	Picture	Description
POWER CORD		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
THERMAL		HEATSINK 15W CPU
		HEATSINK 6W CPU
TOUCHPAD		TOUCHPAD MODULE NC.24611.093
		TOUCHPAD MODULE NC.24611.06M
SCREWS		SCREW M2.0*2.5-IBZNNYLOKD7.0 IRON
		SCREW M2.0*3.0-I(BZN)(NYLOK)IRON
		SCREW M2.5*4.0-I(BZN)(NYLOK)T=0.5
		SCREW M2.5*5.0-I(NINYLOKD5.0T0.8)STL
		SCREW M2.5*7-I(NI)(NYLOK)(D5,T0.8)

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.

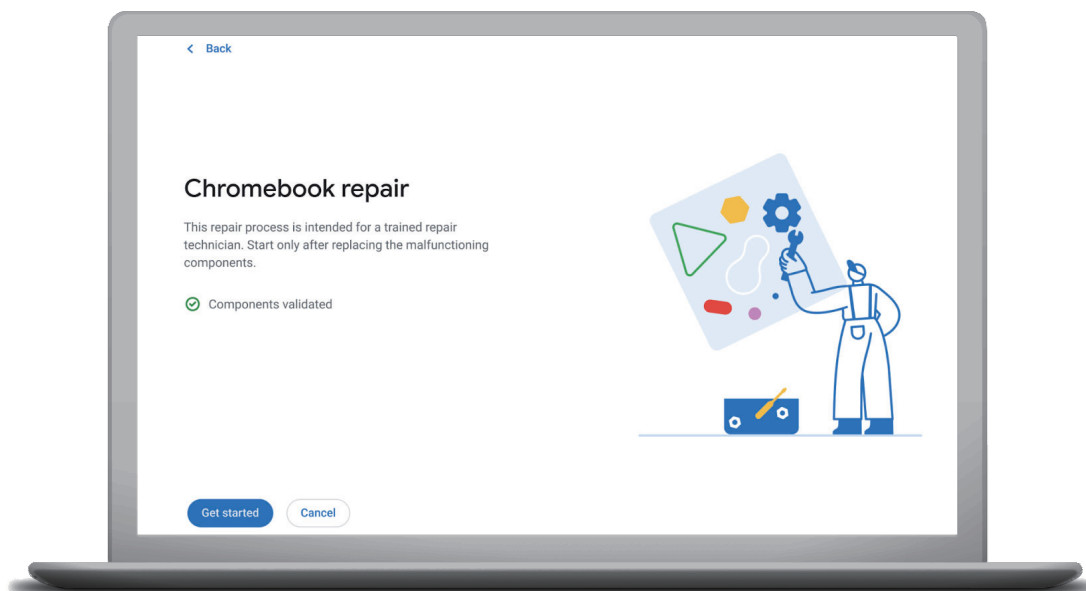
⇒ **NOTE:**

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

Shimless RMA

Getting Started

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



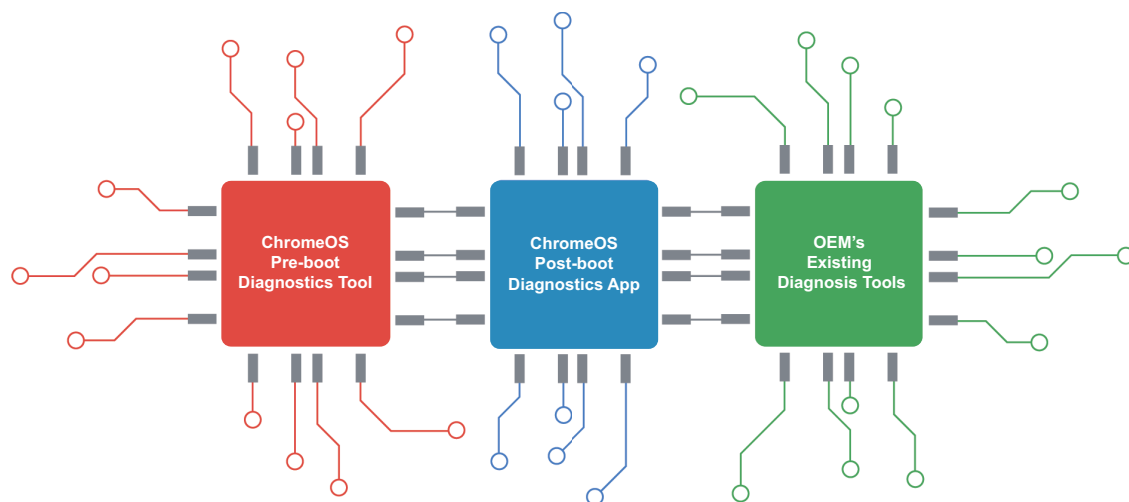
Before we get started, let's review the equipment you may need:

- 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

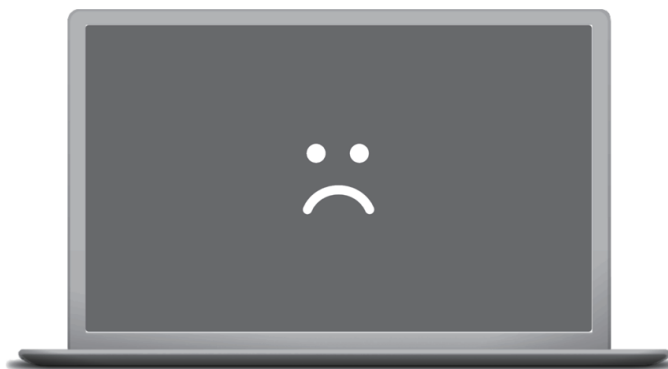
Before starting the Shimless workflow, make sure you have already replaced the malfunctioning components.

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

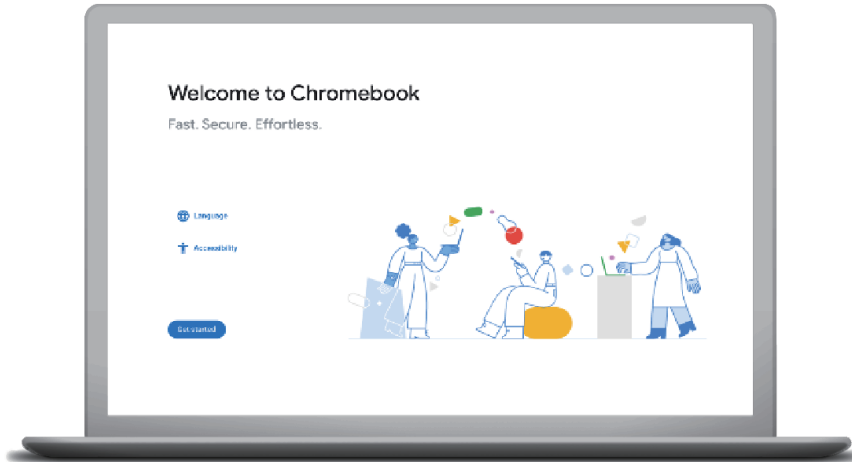
Any broken parts should be replaced **before** launching the repair flow.



Step 2: Boot into ChromeOS

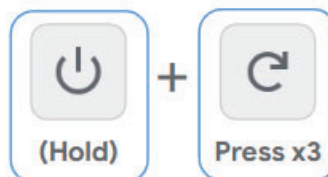
You don't need to login to initiate the Shimless RMA process.

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

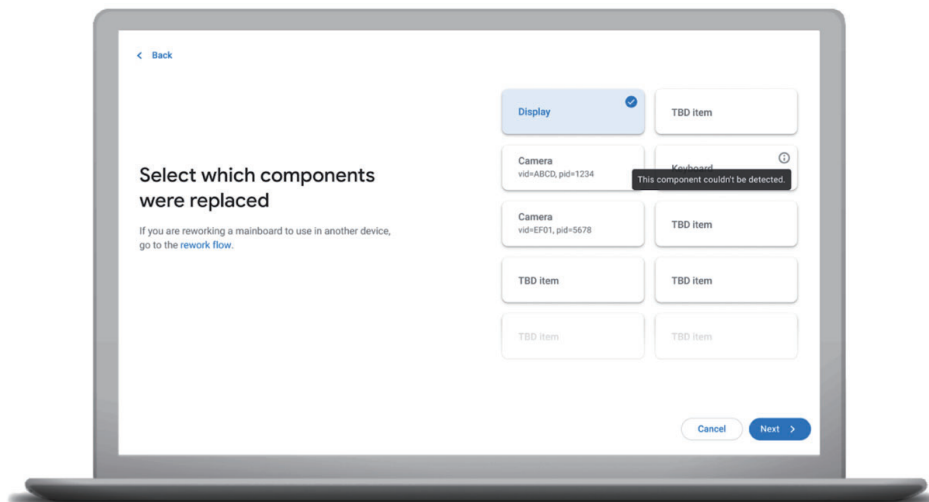
Once your components are validated, the screen will update with a message letting you know that the device is ready to start the repair flow.



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.

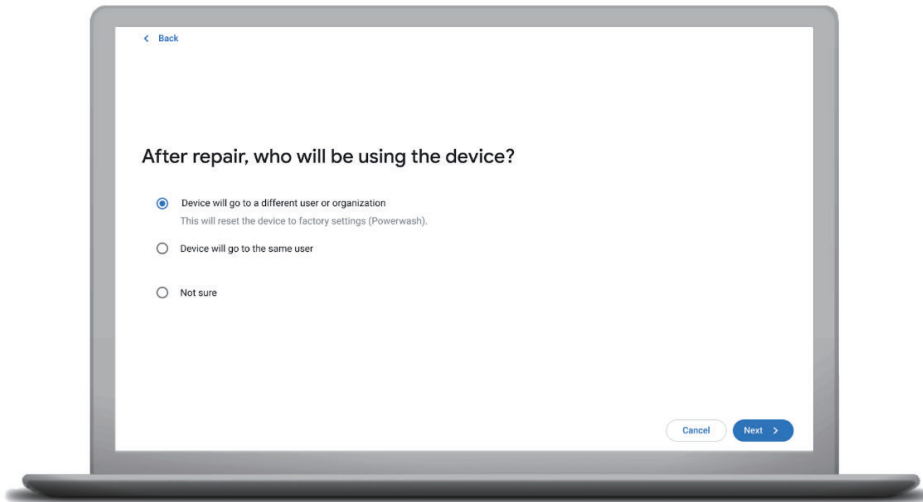


⇒ NOTE:

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.

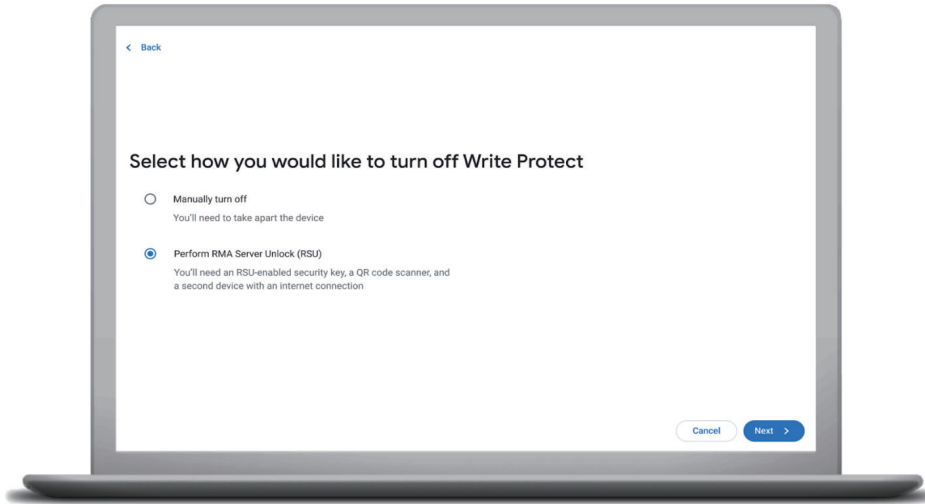
The repair flow **may differ** depending on where the device is being sent and the components replaced during the repair. Make sure to **mark your choices accurately**.

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.

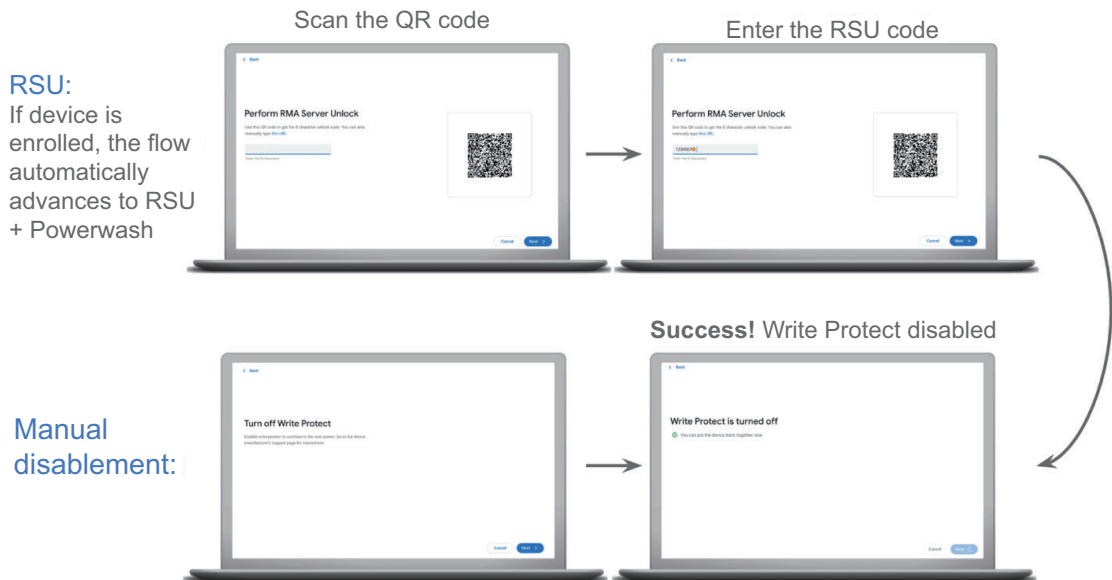
- If the device is **unenrolled**, you can choose to disable Write Protect with RSU or the manual disablement option.
- If the device is **enrolled**, you will only be able to choose the RSU option.



⇒ 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.

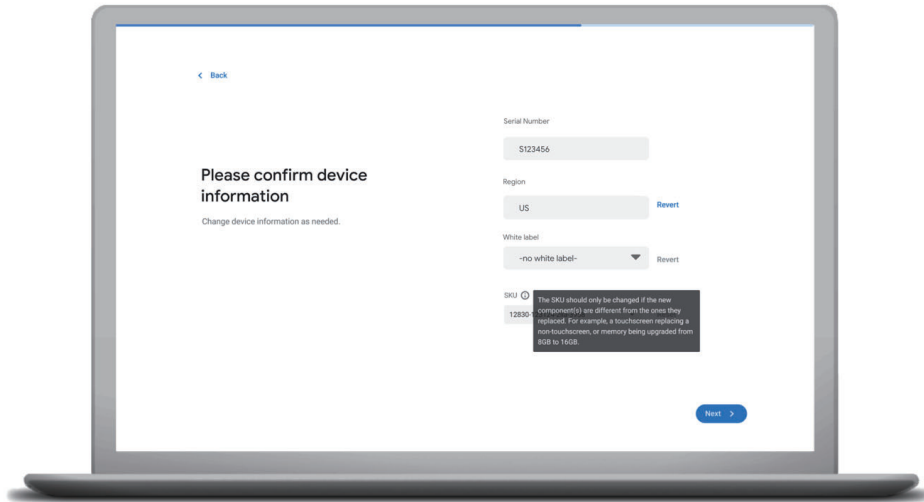
Install Firmware Image

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.



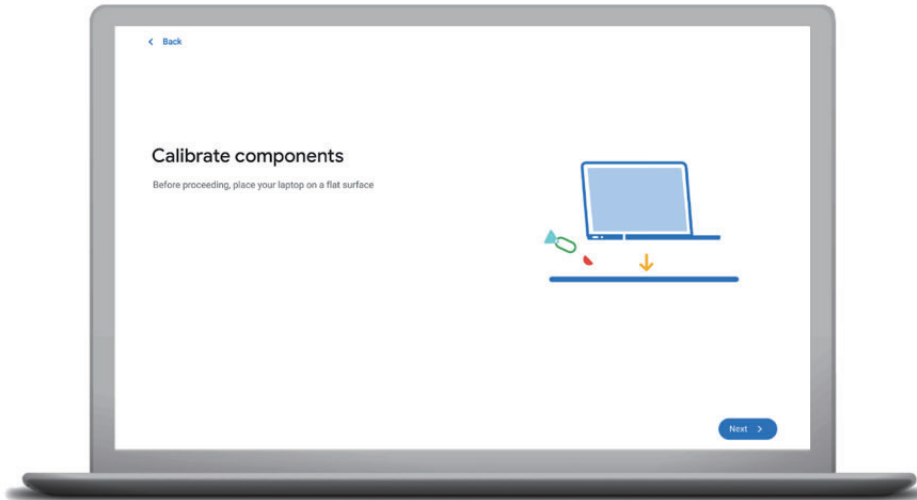
Provisioning the Device

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).

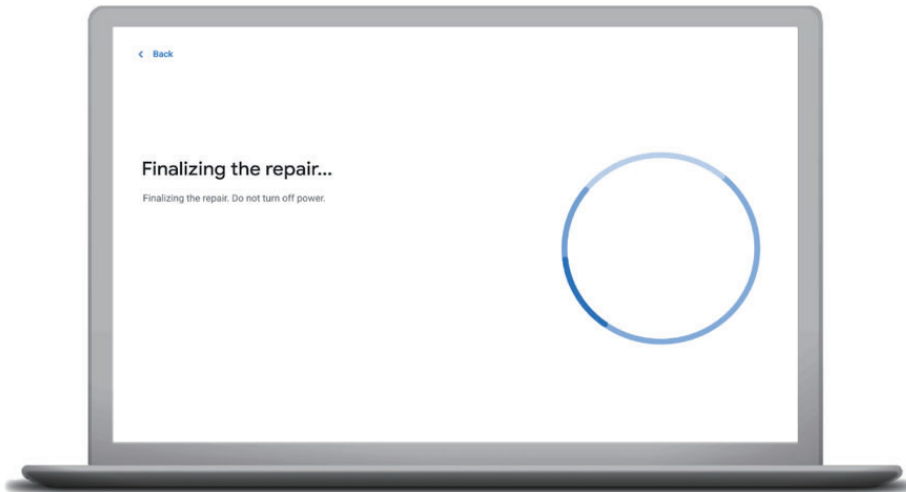
Calibrate Components

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



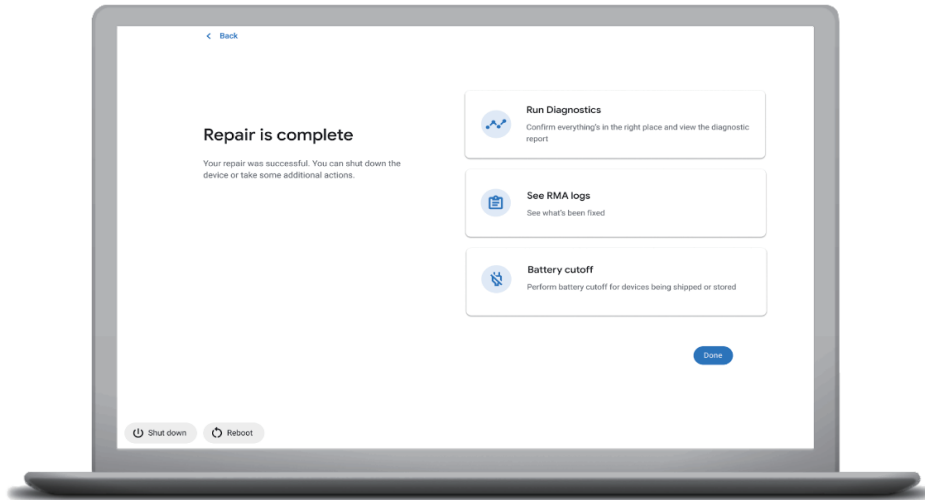
Finalizing the Repair

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:

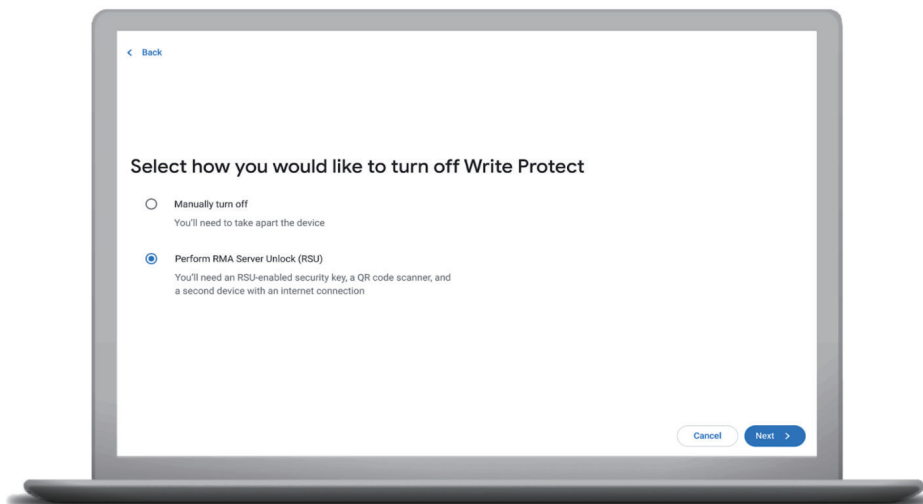
If you choose not to download the RMA logs at this screen, you may not be able to go back to get them later.

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.

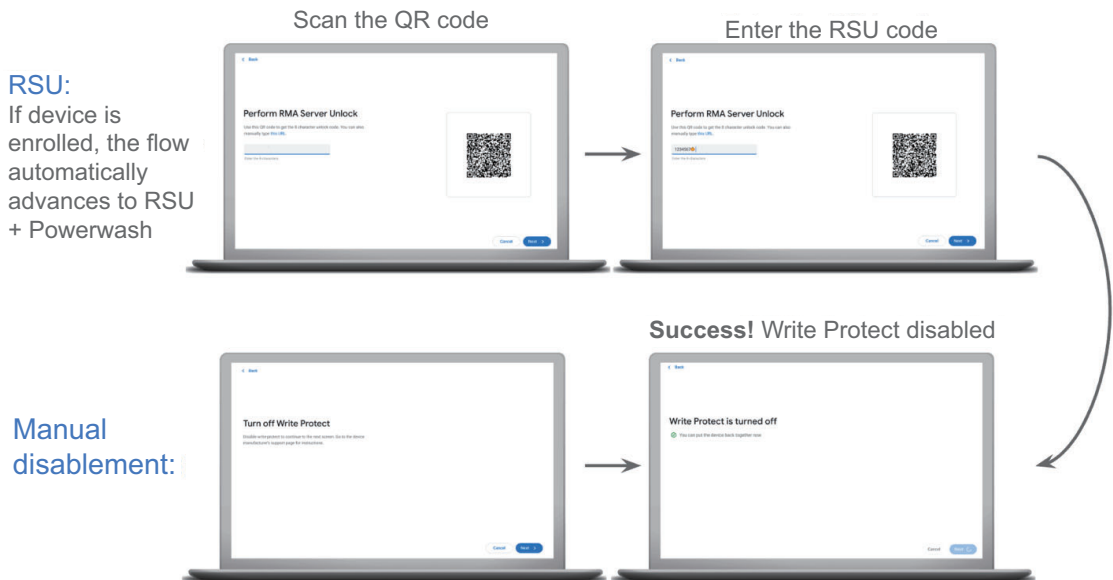
- If the device is **unenrolled**, you can choose to disable Write Protect with RSU or the less secure manual disablement option.
- If the device is **enrolled**, you will have the option to disable the Write Protect using RSU or the less secure manual disablement option. Please **refer to your internal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

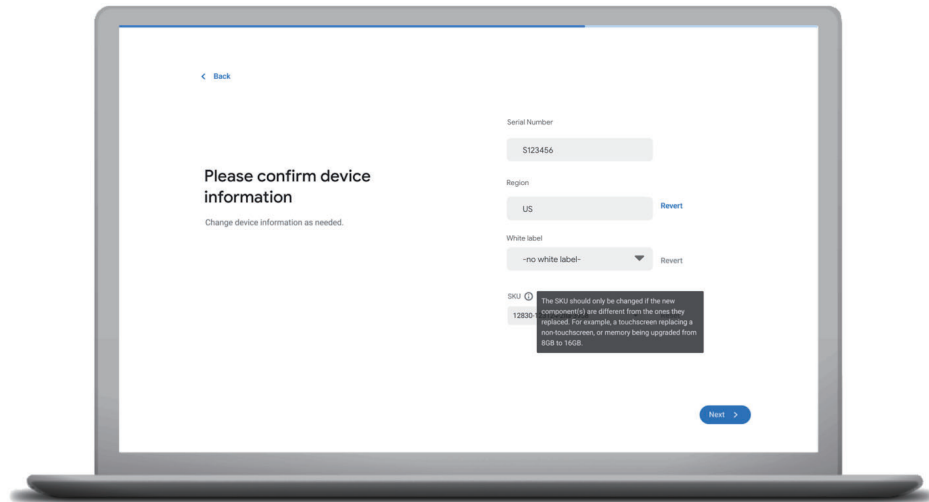
Install Firmware Image

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.



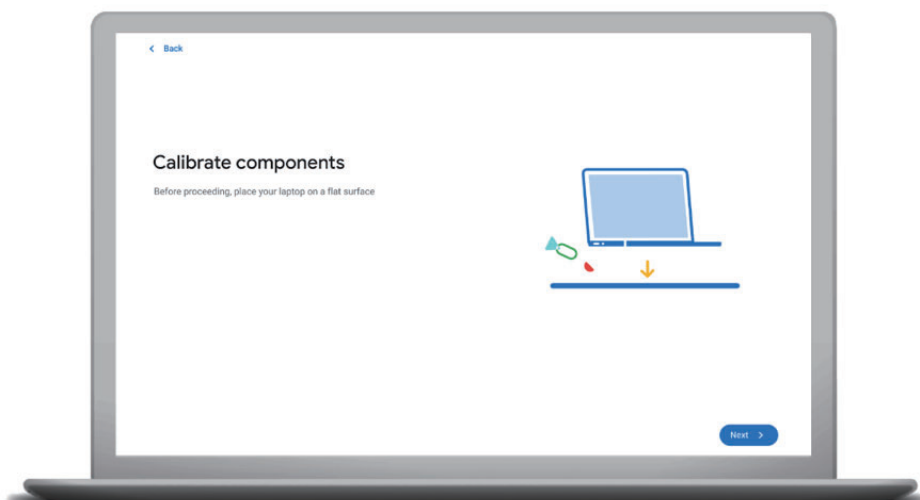
Provisioning the Device

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.

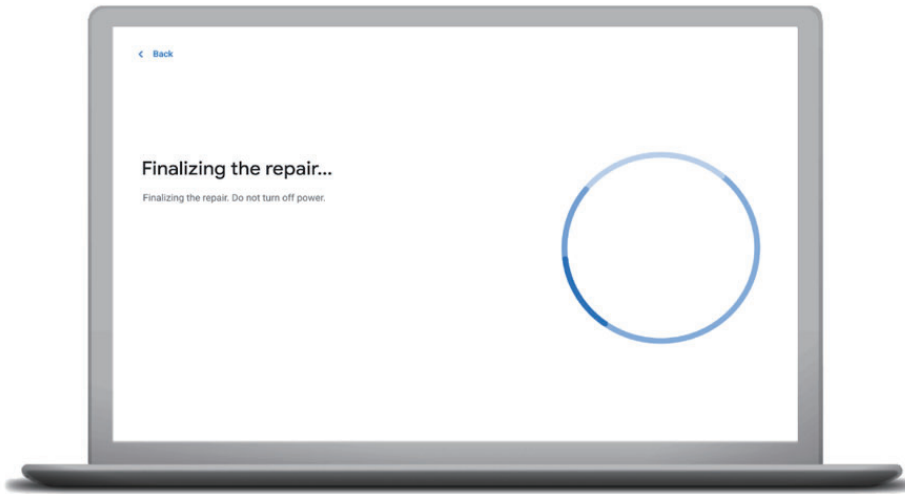
Calibrate Components

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



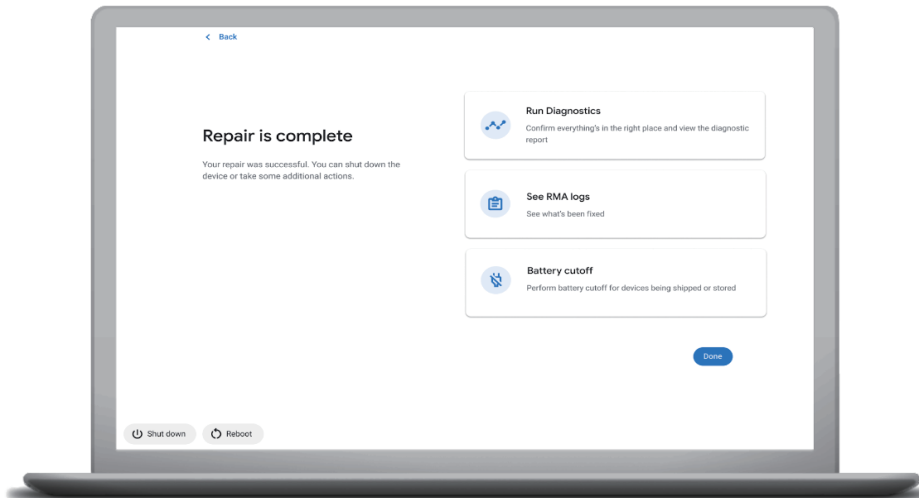
Finalizing the Repair

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.