



# Surface Laptop SE Service Guide



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## Introduction

This Service Guide (Guide) provides instructions for repairing Microsoft Surface devices using genuine Microsoft parts. It is intended for technically inclined individuals with the knowledge, experience, and specialized tools required to repair Microsoft devices.

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- ✍ **IMPORTANT:** Read this Guide in its entirety before starting any repairs. If at any point you are unsure or uncomfortable about performing the repairs, as detailed in this Guide, **DO NOT** proceed. Contact [Microsoft](#) for additional support options.

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  - ⚠ **WARNING:** Failure to follow the instructions in this Guide; use of non-Microsoft (non-genuine), incompatible, or modified replacement parts; and/or failure to use proper tools could result in serious personal injury, death, and/or damage to the product or other property.
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## Device Identity Information

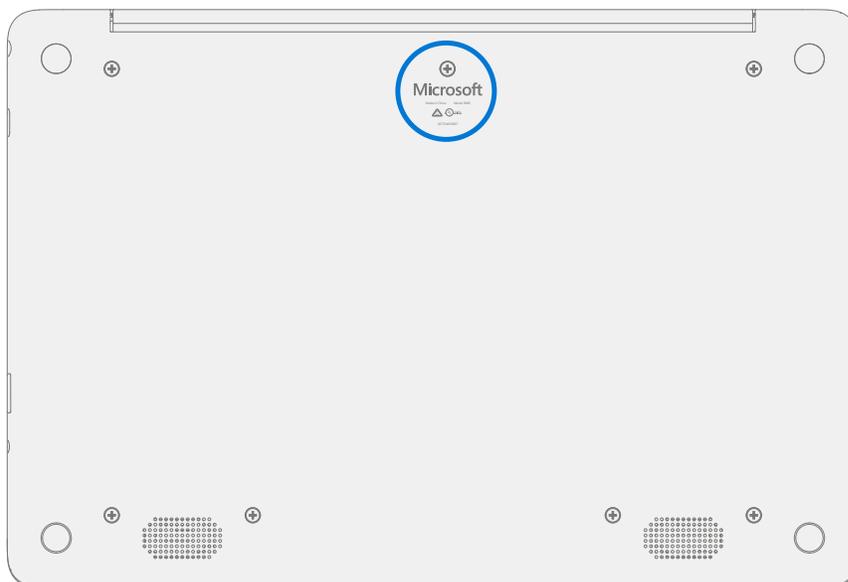
### Surface Laptop Models

2016 – Surface Laptop SE

Surface Support – Laptop: [Link](#)

Surface Laptop Technical Specifications:  
[Surface Laptop SE](#)

The model and serial number for Surface Laptops are on the bottom center closest to the display hinge point.



## Glossary of Terms

The following terms are used throughout this guide.

- **feet** or **foot** – Non-Skid Foot Pads
- **C-cover** – Keyboard Trackpad Assembly
- **Motherboard (PCBA)** – Printed circuit board with the primary processor, memory, and other integrated components.
- **AB-cover** – Display Assembly or AB-Cover Display Assembly
- **BMR** – Bare Metal Recovery refers to the clean imaging process.
- **Back cover** or **chassis** or **D-chassis** or **D-bucket** – Device bottom case
- **SDT** – Surface Diagnostic Toolkit
- **ESD** – Electro-Static Discharge
- **FPC** – Flexible Printed Circuits connections.
- **FRU** – Field Replaceable Units are sub-system components such as the C-cover, AB-cover, and rSSD sold or made available by Microsoft, available to ASP Partners.
- **Commercial Spares/CRU** – Customer Replaceable Units are sub-system components such as the C-cover, AB-cover, and rSSD sold or made available by Microsoft, available to commercial customers for repair by a skilled technician.
- **IPA** – Isopropyl alcohol which should be used to clean adhesive from device as detailed within process steps. Use 70% IPA in all cases.



## General Information, Precautions, Warnings

-  This symbol identifies important safety and health information in this guide.
-  This symbol identifies important information in this guide.
-  This symbol identifies important cautions in this guide.

## Service Tools

### Microsoft Recommended Service Tools

- ESD-safe battery cover

### Microsoft Provided Software Tools / References:

- Surface Diagnostic Toolkit Configuration Files
- How To: [Update Surface device firmware and OS](#)
- How To: [Surface Tools Video](#)
- Download: [Surface drivers and firmware](#)
- Download: [Surface Data Eraser](#)
- Download: [Surface Imaging Tools](#)

### Standard Service Tools:

- Anti-static wrist strap (1 MOhm resistance)
- ESD-safe benchtop
- USB Thumb drive
- Spudger tool
- Plastic opening tool
- Phillips driver PH0
- Torx T6 driver
- 2 Small suction cups
- Isopropyl Alcohol Dispenser bottle (use 70% IPA)
- Cleaning swabs
- ESD-safe tweezers
- Lint free cleaning cloths

The tools identified on this list can be purchased from many different commercial sources, including but not limited to Amazon.com; iFixit; Chemdex, and other vendors. Refer to the ASP Guidebook for Microsoft tools.



## General Safety Precaution

 Always observe the following, general safety precautions:

- Opening and/or repairing any electronic device can present a risk of electric shock, fire, serious personal injury, death, damage to the device or other property, and/or other hazards. Exercise caution when undertaking the repair activities described in this Guide. The repair activities identified in this Guide should only be undertaken by technically inclined individuals with the knowledge, experience, and specialized tools required to repair Microsoft devices.
- Improper use or handling of devices or their batteries may result in fire or explosion. Only open the enclosure on a device as outlined in this Guide.
- Do not heat, puncture, mutilate, or dispose of devices or their batteries in fire. Do not leave or charge devices in direct sunlight or expose devices or their batteries to temperatures outside the recommended operating range of 0°C to 60°C/32°F to 140°F for an extended period. Doing so can result in battery failure, electric shock, fire, serious personal injury, death, and/or damage to the device or other property.
- We recommend wearing protective eyewear and gloves when disassembling/re-assembling a device.

For additional product safety information relevant to Microsoft Surface devices, see [aka.ms/surface-safety](https://aka.ms/surface-safety) or the Surface app. To open the Surface app, select the Start button, enter Surface into the search box, then select the Surface app.



## Repair-Specific Precautions and Warnings

- For Autopilot managed Surface Products refer to the following guidelines posted [here](#).

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 **WARNING:** Before opening a device, ensure it is powered off and disconnected from its power source. Disconnect the device charger or power cord from mains power.

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- For devices with rechargeable lithium-ion batteries that power on, fully discharge the battery before beginning repair. To expedite the battery discharge process:
  - Disconnect the charger from the device.
  - Increase display brightness to the highest level.
  - Turn on wi-fi and Bluetooth.
  - Open the Camera app in Windows.
  - Play music or video files from a local drive or streaming service.

Operate the device in this mode until the battery is fully discharged and the device powers off.

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 **WARNING:** For Surface devices where the battery is affixed to the back cover, place the back cover with the battery in a location where it will be protected from possible punctures, impacts, crushing, or drops during the repair process. Refer to the [Battery Safety](#) section in this guide for more information.

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- Ensure your work surface is level/flat and covered with ESD-safe, soft, non-marring material.
- We recommend wearing protective eyewear as a safety precaution when disassembling/re-assembling a device.
- Clean your work surface regularly to remove debris and abrasive particles.
- Review and follow the general guidelines and ESD compliance steps in this Guide prior to beginning work. Refer to the [Prior to Device Disassembly](#) section in this Guide for more information.
- Before opening a device, always wear an anti-static wrist strap and confirm your work area is properly grounded to protect vulnerable electronics from electrostatic discharge (ESD).
- Parts removed from a device during the repair process should be stored in ESD-safe bags and packaged for return or recycling in the same packaging that the new replacement part came in.
- If battery damage (e.g., leaking, expansion, folds or other) is discovered during device repair or if the battery is impacted or damaged during replacement, DO NOT proceed. Refer to the ASP Guidebook or contact Microsoft directly for proper device disposition.
- As you remove each subassembly from the device, place the subassembly (and all accompanying screws) away from the work area to prevent damage to the device or to the subassembly.
- During all activities (excluding feet-only replacement) check to ensure that no loose articles are on the back cover or remain inside the device before reassembling it.

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 **IMPORTANT:** Remove rSSD (removable Solid-State Drive) whenever C-cover is removed from device. rSSD removal disconnects the battery from all device logical components for safety purposes. Refer to [Procedure-Removal \(rSSD\)](#) section for details.

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 **IMPORTANT:** Whenever the rSSD has been removed, powering on the device requires that the rSSD and C-cover are installed. Refer to [Procedure - Installation \(rSSD\)](#) section for details.

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- Review the [General Safety Precautions](#) and [Battery Safety](#) Sections of this Guide before beginning work. Refer to the “Prior to Device Disassembly” section of the Guide for additional details.
- Check to make sure that general guidelines and ESD compliance steps are followed prior to starting activities. Refer to Prior to Device Disassembly section on ([page 17](#)) for details.



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 **IMPORTANT:** The serial number for this device model is located on its original cover. To keep track of the device's serial number, please record it using waterproof ink (Location Link) on a sticker or label and apply the sticker or label to an easily accessible area on the device exterior. The serial number cannot be added permanently to a replacement part. Microsoft may have provided a label for this use in the replacement part's packaging.

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## Battery Safety

- This device contains a built-in, lithium-ion rechargeable battery. Battery safety is a significant concern when repairing a device.
- For optimum compatibility, performance, and product safety, we recommend using genuine Microsoft replacement parts. Use of non-Microsoft (non-genuine), incompatible, reused, or modified batteries; improper battery installation; improper handling or storage of batteries; and/or failure to follow the instructions in this Guide could cause battery overheating, expansion, venting, leaking, or a thermal event which could result in fire, serious personal injury, death, data loss, or damage to the device or other property damage.
- Before beginning device repair, ensure your workspace is free of flammable debris or materials, has adequate ventilation, and that you have a fire suppressant device (example: fire blanket, container of sand, Class B fire extinguisher) within easy reach or you are within 20 feet of a fireproof enclosure. Fireproof enclosures should be kept free of combustible or flammable materials.
- Use personal protective equipment (PPE) when handling damaged, venting, or hot battery packs.
- Use the following best practices when handling batteries:
  - Always fully discharge batteries by running an application such as video playback with the device unplugged. If the device does not function while unplugged, you may leave out this step.
  - Do not puncture, impact, strike, bend, or crush the battery or a device containing a battery.
  - Keep your workspace clear of debris, extra tools, and sharp objects.
  - Exercise caution when using sharp tools near the battery to avoid impacting or poking the battery.
  - Don't leave loose screws or small parts inside the device.
  - Avoid using tools that conduct electricity.
  - Do not drop or throw a lithium-ion battery.
  - Do not expose the battery to excessive heat, sunlight, or temperatures outside the battery's normal operating range (0°C to 60°C)/(32°F to 140°F).
  - Ensure you handle, recycle, and/or dispose of used or damaged batteries in accordance with local laws and regulations. Follow Handling Used, Damaged or Defective Li-ion Batteries below.
- If device repair cannot be completed immediately and the device needs to be stored temporarily before restarting the repair:
  - Select a storage location and process that follows the battery safety precautions in this Guide.
  - Avoid exposing the device to environmental conditions and objects that could damage the battery pack.
  - Reinspect the battery pack as outlined in this Guide prior to restarting repair and installing the new battery pack.



## Lithium-Ion Battery Inspection

Upon device opening, we recommend that you visually inspect the battery for signs of damage. Factors to consider when inspecting the battery include, but are not limited to:

- Evidence of leaking or venting
- Visible signs of physical or mechanical damage, such as:
  - Expansion or swelling. In expanded or swollen batteries, the soft pouch encasing the cell pulls away from the inner material and appears baggy, loose, or puffy
  - Discoloration of the battery casing
  - Odor, smell, or visible corrosion. Leaked battery electrolyte smells like nail polish remover (acetone)
  - Dents along the battery cell edges or on the top surface
  - Surface scratches that have exposed the aluminum beneath the black coating layer on the battery
  - Loose or damaged wires
  - Known misuse or abuse

Any battery exhibiting the signs listed above must be replaced. Consult the [Battery Replacement](#) section of this document for battery replacement instructions.

### Handling Used, Damaged, or Defective Lithium-Ion Batteries:

- DO NOT dispose of used lithium-ion batteries, whether damaged or not, in household or commercial garbage or recycling bins.

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**⚠ WARNING:** DO NOT SHIP DAMAGED OR DEFECTIVE BATTERIES ALONE OR INSIDE DEVICES. Damaged or defective batteries and devices containing damaged or defective batteries require special packaging and handling. Prior to transport:

- Follow all instructions provided by your local e-waste recycling or household hazardous waste collection provider.
  - Place the device or battery in an individual, non-metallic inner packaging, such as a zip-to-close plastic bag, that completely encloses the device or battery.
  - Surround the inner packaging with non-combustible, electrically non-conductive, absorbent cushioning material.
  - Each damaged battery or device containing a damaged battery should be packed individually in its own carton and that carton should be clearly marked as containing a damaged battery.
- 

For more information on industry practices concerning damaged, defective, or recalled batteries, please see [PHMSA Lithium-Battery-Recycling-Safety-Advisory](#).

Undamaged, used lithium batteries can be sent to e-waste recycling or household hazardous waste collection points for processing. Please see <https://www.microsoft.com/en-us/legal/compliance/recycling> for more information.

### Report Battery Thermal Events to Microsoft

A thermal event is a rapid chemical chain reaction that can occur inside a battery cell. During a thermal event, the energy stored inside the battery is released suddenly, resulting in heating and/or smoke and, in some instances, fire or flame. A battery thermal event can be triggered by physical damage to the battery (including during replacement/repair), improper storage, or exposure to temperatures outside of the battery's operating range.



Act immediately if you see any of the following symptoms of a battery thermal event:

- Smoke, soot, sparks, or flame emitted by the battery or from a device containing a battery.
- The battery pouch suddenly expands in size.
- A popping or hissing noise from the battery or a device containing a battery.

### **Actions to take:**

- **DO NOT use water. Immediately smother** the battery or device with clean, dry sand, a fire blanket, or an appropriate (Class B) fire extinguisher. If using sand, dump the sand all at once until the device is completely covered.
- **Contact** local fire authorities if further assistance is needed.
- **Exit** the work area and ventilate it until it is clear of smoke.
- **Wait** at least 2 hours before attempting to touch the device.
- **Dispose** of the damaged battery or device in accordance with local environmental or e-waste laws and guidelines.

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 **WARNING:** DO NOT SHIP DAMAGED OR DEFECTIVE BATTERIES ALONE OR INSIDE DEVICES. Damaged batteries and devices containing damaged batteries require special packaging and handling. See [Handling Used, Damaged, or Defective Lithium-Ion Batteries](#) in this Guide for additional information.

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### **Stop Repair and Contact Microsoft**

If any Microsoft device visually exhibits any of the following symptoms, cease all further repair efforts and contact Microsoft Surface Customer Support to report and obtain next steps:

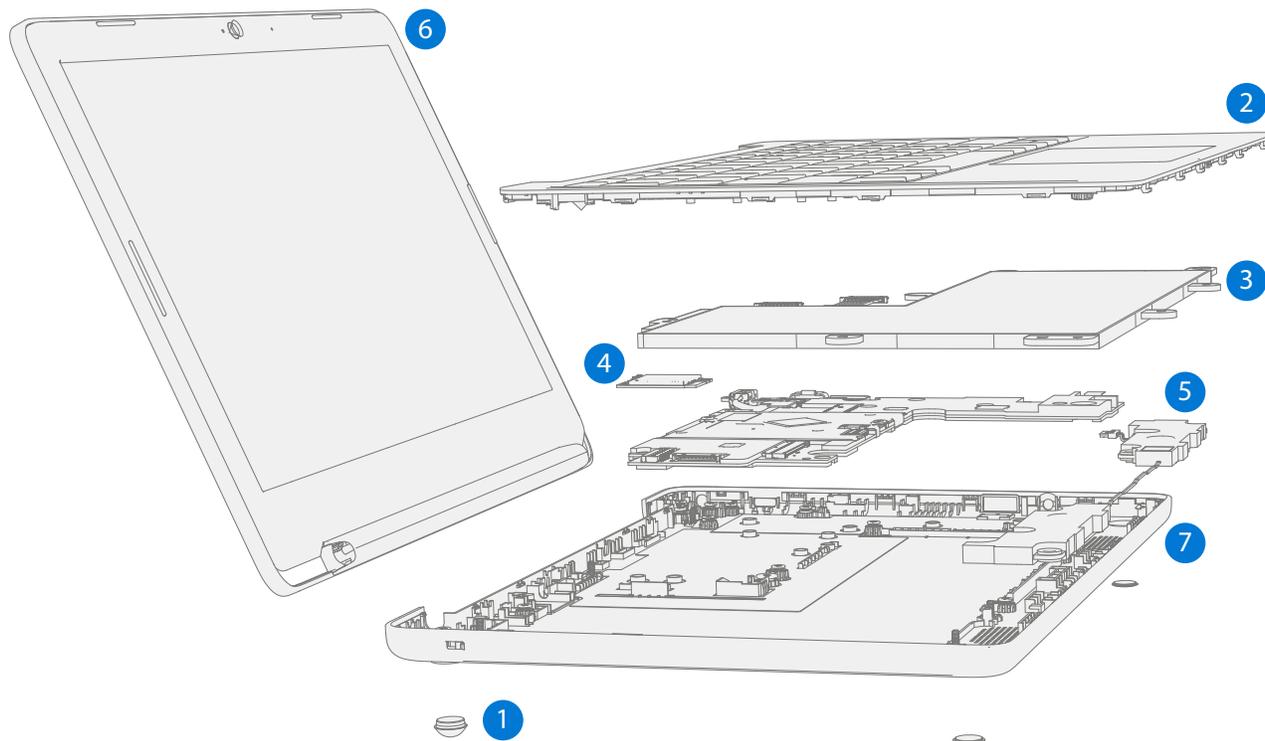
- Any burned or melted components, traces, or plastic parts on the outside of the device, or which otherwise exhibits heat damage, including charring seen in charging and other ports.
- Any burned or melted components, traces, or plastic parts on the inside of the device, or which otherwise exhibits heat damage.
- Any accessories exhibiting melting or heat damage that are included with the Microsoft device, such as power supplies, keyboards, mice, cables, charging connectors, etc.
- Any devices that exhibit a case that has separated apart or opened for reasons other than impact damage from dropping, evidence of tampering, or separation caused by a malfunctioning battery.
- Any other finding that may constitute a safety hazard to the user, such as sharp edges on plastics.

Microsoft Surface Customer Support will ask you to provide the following information:

- The model and serial number of the affected Microsoft Surface device and/or accessory(ies).
- A brief description of the damage found.
- Clear photographs depicting the symptoms observed.



## Illustrated Service Parts List



**IMPORTANT:** Note service part availability is segmented into two groups. FRUs are parts available for repair activity through an Authorized Service Provider under specific contract with Microsoft. CRUs/ Spares are parts available for repair activity by a skilled technician.

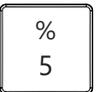
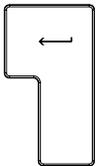
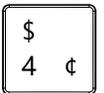
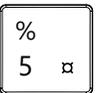
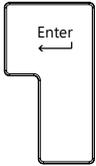
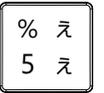
### Models

Item	Component	ASP / FRU Part No.	CRU Part No.	2016
(1)	<b>Non-Skid Feet</b>	ILH-00001	IL8-00001	X
(2)	<b>C-Cover Keyboard Assembly (includes touch pad)</b>			
	C-Cover US/Canada 104 – English, US	ILA-00001	IL2-00001	X
	C-Cover Canada 105 – Canadian, Bilingual	ILA-00002	IL2-00002	X
	C-Cover Japan 109	ILA-00003	IL2-00003	X
	C-Cover UK/Ireland 105 – English, UK	ILA-00004	IL2-00004	X
	C-Cover Austria/Germany 105 – German	ILA-00005	IL2-00005	X
	C-Cover Belgium 105 – Belgium AZERTY	ILA-00006	IL2-00006	X
	C-Cover France 105 – French, European	ILA-00007	IL2-00007	X
	C-Cover Switzerland, Luxembourg 105 – Switzerland / Luxembourg	ILA-00008	IL2-00008	X
	C-Cover Netherlands 104 – International English, European	ILA-00009	IL2-00009	X
	C-Cover Italy 105	ILA-00010	IL2-00010	X



**Models**

Item	Component	ASP / FRU Part No.	CRU Part No.	2016
<b>(2) C-Cover Keyboard Assembly (includes touch pad)</b>				
C-Cover Portugal 105 – Portuguese, European		ILA-00011	IL2-00011	X
C-Cover Spain 105 – Spanish, European		ILA-00012	IL2-00012	X
C-Cover Denmark, Finland, Norway, Sweden 105 – All Nordic		ILA-00013	IL2-00013	X
<b>(3)</b>	<b>Battery</b>	ILB-00001	IL3-00001	X
<b>(4)</b>	<b>WiFi Module</b>	ILF-00001	IL6-00001	X
<b>(5)</b>	<b>Speakers</b>	ILD-00001	IL5-00001	X
<b>(6)</b>	<b>AB-Cover Display Assembly</b>	IL9-00001	IL1-00001	X
<b>(7)</b>	<b>D-Bucket (Base Bucket)</b>	ILG-00001	IL7-00001	X
<b>(8) Motherboard (PCBA) (NOTE: PCBA replacement must be same as original)</b>				
2 core CPU / 4GB RAM / 64GB Storage, US / Canada		ILC-00001	IL4-00001	X
4 core CPU / 8GB RAM / 128GB Storage, US / Canada		ILC-00002	IL4-00002	X
2 core CPU / 4GB RAM / 64GB Storage, UK		ILC-00003	IL4-00003	X
4 core CPU / 8GB RAM / 128GB Storage, UK		ILC-00004	IL4-00004	X
2 core CPU / 4GB RAM / 64GB Storage, Japan		ILC-00005	IL4-00005	X
4 core CPU / 8GB RAM / 128GB Storage, Japan		ILC-00006	IL4-00006	X
2 core/ 4GB RAM / 64GB Storage, Australia / New Zealand		ILC-00007	IL4-00007	X
4 core/ 8GB RAM / 128GB Storage, Australia / New Zealand		ILC-00008	IL4-00008	X
<b>(9)</b>	<b>Power Port</b>	TBL-00001	TBM-00001	X
<b>External Power Supply (not pictured)</b>				
PSU US/Canada			CBU-00017	X
PSU United Kingdom			CBU-00018	X
PSU Japan			CBU-00019	X
PSU Australia / New Zealand			CBU-00020	X

<b>C-Cover Keyboard Assembly Localization</b>		
<b>Description</b>	<b>Enter Key</b>	<b>"4,5,6" Keys</b>
104 English, US		  
105 Canadian, Bilingual		  
109 Japan		  



105 Austria/Germany				
105 Belgium AZERTY				
105 Nordic Denmark, Finland, Norway, Sweden				
105 French				
105 English, UK Ireland				
105 Italy				
105 Switzerland, Luxembourg				
104 English, International Netherlands				
105 Portuguese				
105 Spanish, European				



## Service Diagnostics/Troubleshooting Overview

- For general Surface support, visit [www.support.microsoft.com](http://www.support.microsoft.com)
- To troubleshoot device feature/function problems or learn more about Surface Laptops visit [aka.ms/SurfaceLaptopHelp](http://aka.ms/SurfaceLaptopHelp)
- If you'd like to learn more about Windows, visit [aka.ms/WindowsHelp](http://aka.ms/WindowsHelp)
- To learn more about the accessibility features of the Surface Laptop, go to the online user guide at [aka.ms/Windows-Accessibility](http://aka.ms/Windows-Accessibility)

### Software Tools:

- Surface Diagnostic Toolkit Configuration Files
- How To: [Update Surface device firmware and OS](#)
- How To: [Surface Tools Video](#)
- Download: [Surface drivers and firmware](#)
- Download: [Surface Data Eraser](#)
- Download: [Surface Imaging Tools](#)

### Hardware Troubleshooting Approach

The following approach should be taken when troubleshooting Surface devices:

1. Update device to latest OS/FW versions using the SDT tool – Refer to Software Tools section above for details on SDT.

---

 **IMPORTANT:** Device updates are required as a prerequisite to all hardware repairs.

---

2. Verify any suspected hardware failures after the device is running the latest OS/FW version by running SDT.
  - a. Run SDT and verify if condition persists or if resolved with the updating to the latest software – Refer to Software Tools section above for details on SDT.
    - i. If problem persists then replace suspected hardware FRU related to the problem by following the detailed replacement procedures covered within this service guide.
3. SDT must be run following all hardware repairs where a FRU was replaced to further verify that problem was resolved by the repair action taken.



# Component Removal and Replacement Procedures

## Prior to Device Disassembly

- Read this Guide in its entirety before starting any repairs. Pay special attention to the [Repair-Specific Precautions and Warnings](#) and the [Battery Safety](#) sections of the Guide.

## Battery Warning

 **WARNING:** Please note that the battery bears the following warning label. Please heed the information provided on the label.



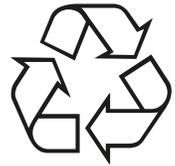
This component cannot be easily replaced by user

- Risk of fire or burning – contact Microsoft for assistance
- Do not separate, detach, or remove the battery from its frame
- Do not modify battery, its wiring, or connectors
- Do not replace, short circuit, bend, crush, or puncture battery
- Do not dispose of battery in fire or expose to high temperatures (+140°F/60°C)
- For more information: [aka.ms/surface-safety](http://aka.ms/surface-safety)

Rechargeable Lithium-Ion Polymer Battery  
Model name: 916QA145H  
35Wh 7.6V □ 4613mAh(NOM), 4473mAh(Rated)  
SMP, Made in China (Cell origin CosMX China)



Microsoft Japan Co., Ltd.



Li-ion 00



# Non-Skid Feet Replacement Process

## Preliminary Requirements

 **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

---

## Required Tools and Components

- **Tools:**
  - Plastic tool / spudger
  - Isopropyl Alcohol Dispenser Bottle (use only 70% IPA)
  - Cleaning swabs
- **Components:**
  - Feet FRU

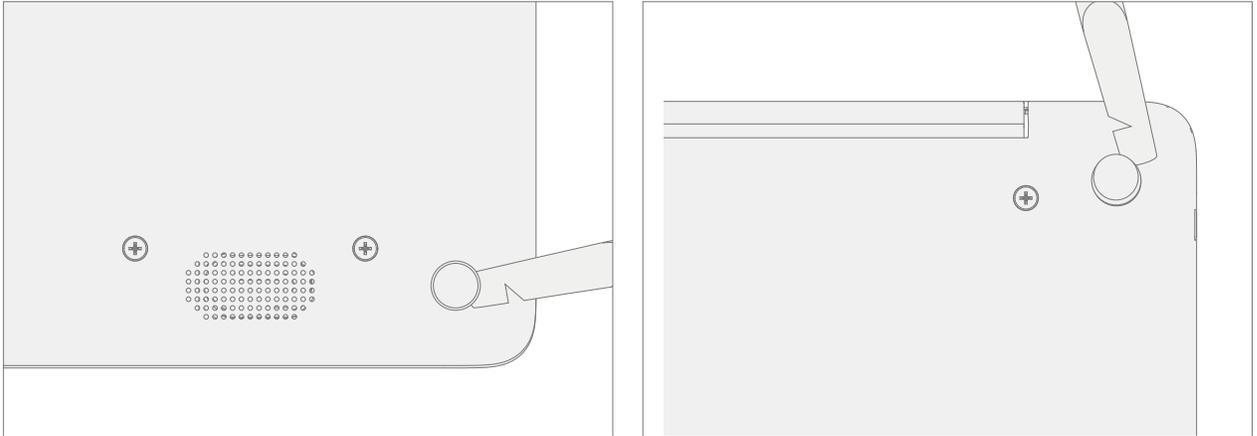
## Prerequisite Steps:

- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening the device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – To prevent scratches, flip device over onto a clean surface free of debris with the device bottom facing up for access to the feet for removal.



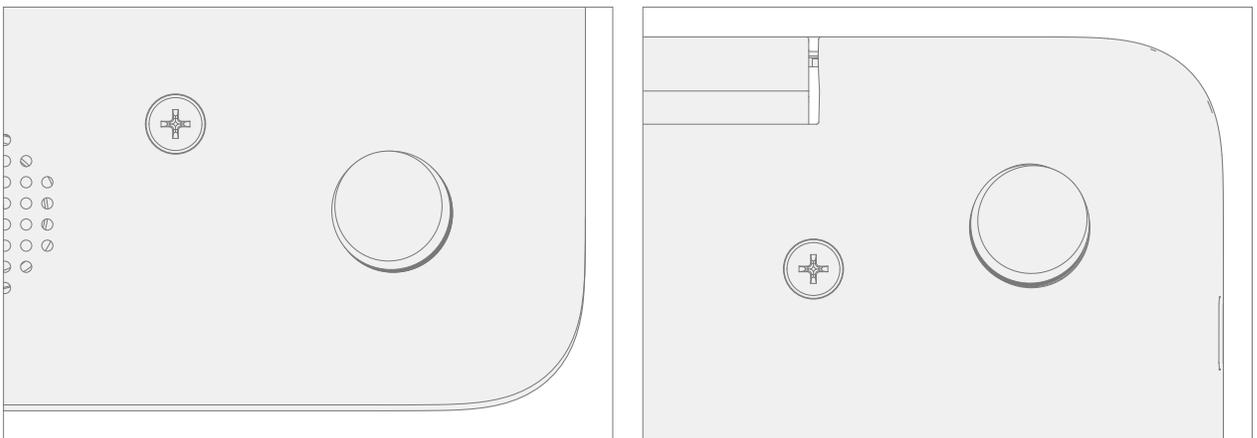
## Procedure – Removal (Non-Skid Feet)

1. **Feet removal** – Use plastic tool / spudger to lift one edge of each foot. Ensure all adhesive tape remnants and glue residue are removed. Clean the D-Bucket foot recesses with 70% Isopropyl Alcohol.



## Procedure – Installation (Non-Skid Feet)

1. **Prepare new foot and press into place** – To install each foot, remove protective sheet to expose adhesive on foot. Press foot into D-Bucket recess. Repeat for each foot. Note the back feet are larger.



2. **Inspect for anomalies** – Inspect each foot to ensure no cosmetic damage or gaps between the foot and the D-bucket foot recesses exist.

# C-Cover Keyboard Assembly Replacement Processes

## Preliminary Requirements

 **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

## Required Tools and Components

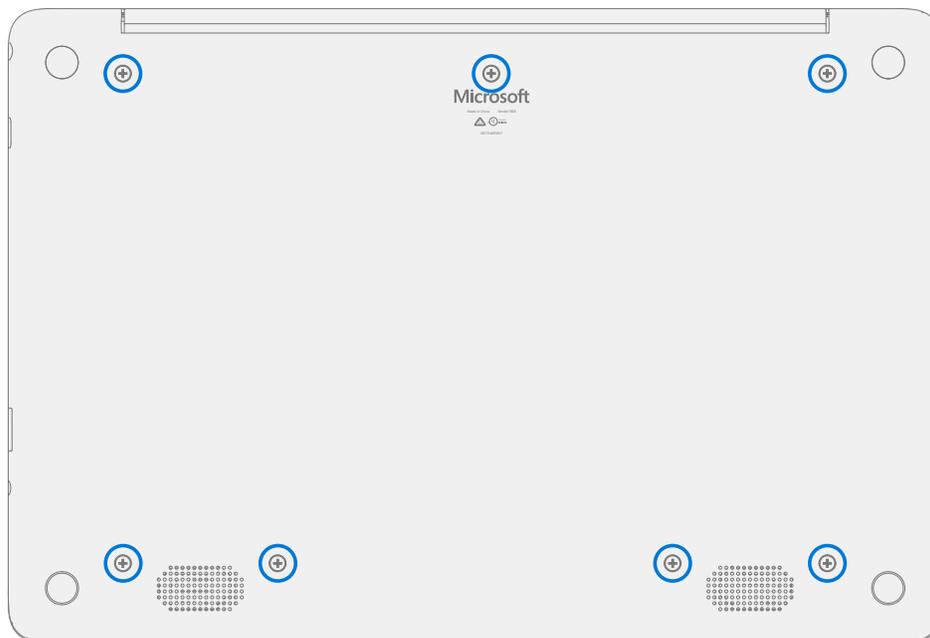
- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - Torx T6 driver
  - Anti-static wrist strap (1M Ohm resistance)
- **Components:**
  - C-Cover Keyboard Assembly (Refer to [Illustrated Service Parts List](#))
  - C-Cover Screws (MM200651030) Qty. 7

## Prerequisite Steps:

- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.

## Procedure – Removal (C-Cover)

1. **Remove C-Cover screws** – Using a Torx T6 driver remove the 7 screws from the D-Bucket.

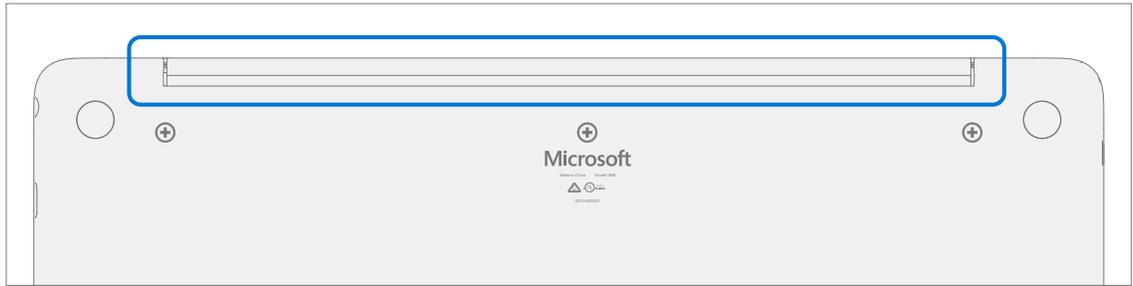


**!** **CAUTION:** All 7 screws must be removed before starting C-Cover removal.

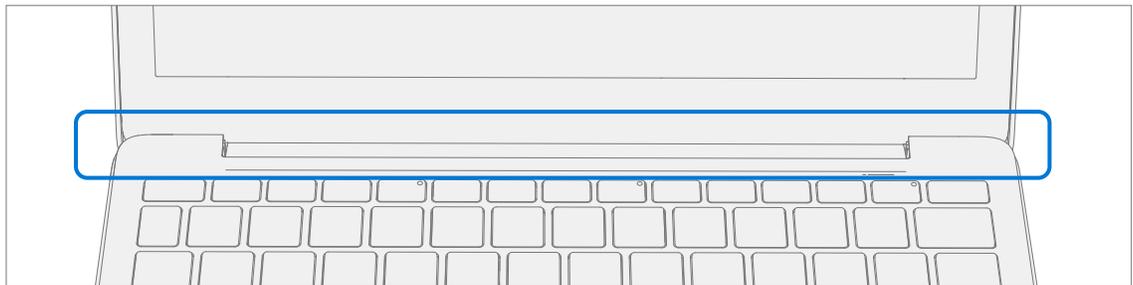


2. **Separate C-Cover from device** – Separation is a multistep process.

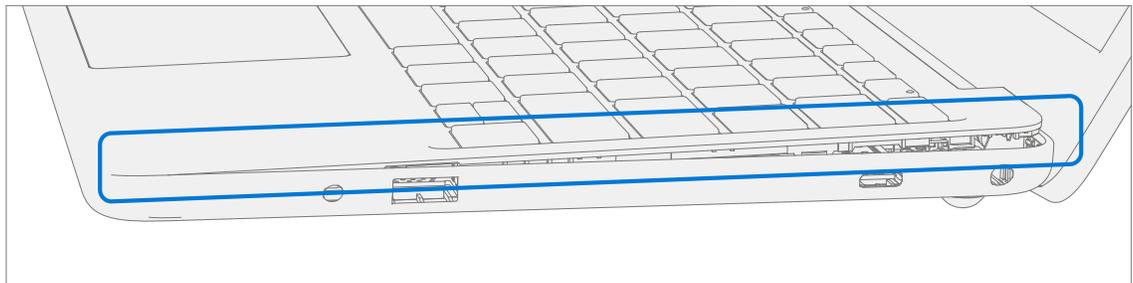
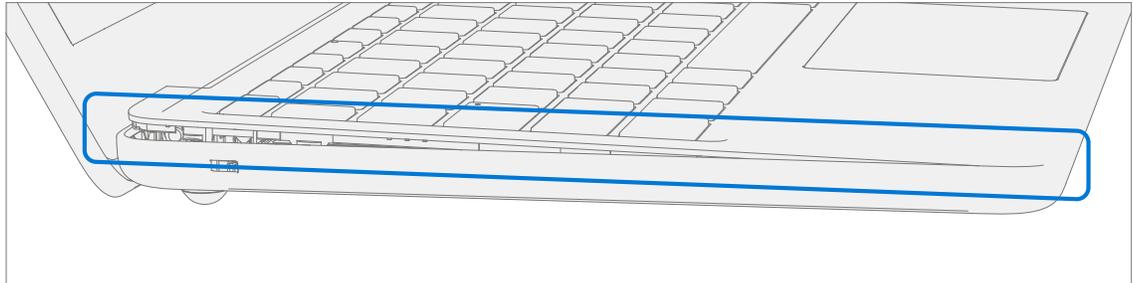
- a. Using your fingers or a plastic tool / spudger release the D-Bucket snaps along the back edge between the display hinges.



- b. Place the device topside up and open the display. Using your fingers or a plastic tool / spudger release the C-Cover snaps along the edge below the display.

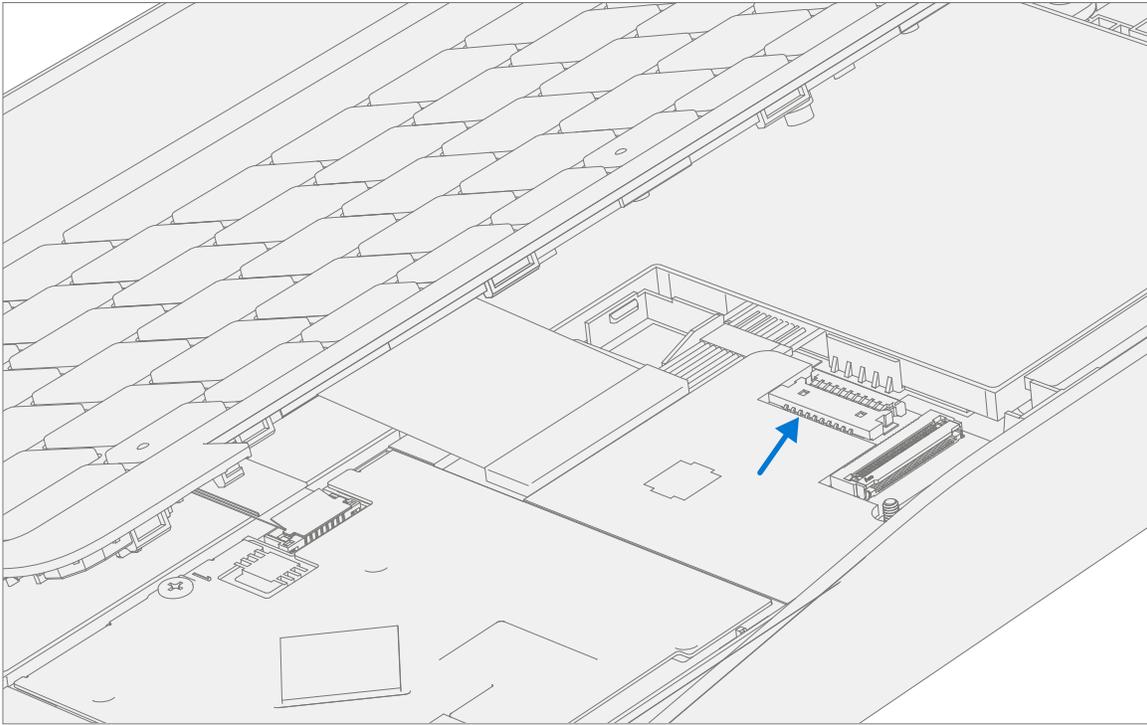


- c. Using your fingers or a plastic tool / spudger release the C-Cover snaps along the left and right sides.

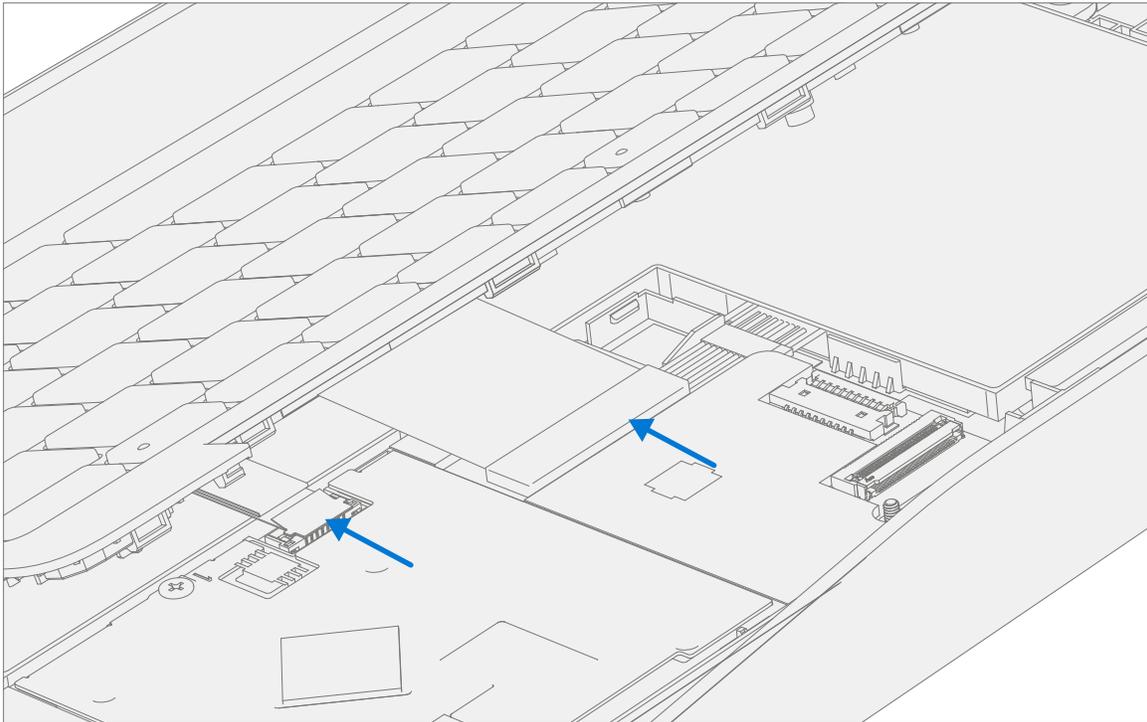


3. **Disconnect Battery Cable** – Holding the C-Cover at an angle use a plastic tool / spudger to disconnect the battery cable from the PCBA.

! **CAUTION:** Do not pull the C-cover apart beyond **45-degrees** otherwise damage to C-cover FPC could occur.



4. **Disconnect C-Cover FPCs** – Holding the C-Cover at an angle use a plastic tool / spudger to disconnect the FPC's from the PCBA.



## Procedure – Installation (C-Cover)

### 1. Pre-installation Device Inspection

⚠ **WARNING:** Verify the battery's condition, refer to the M1153910 in Device Battery Inspection process for details. Devices exhibiting battery issues as outlined in the Battery Inspection Process require battery replacement.

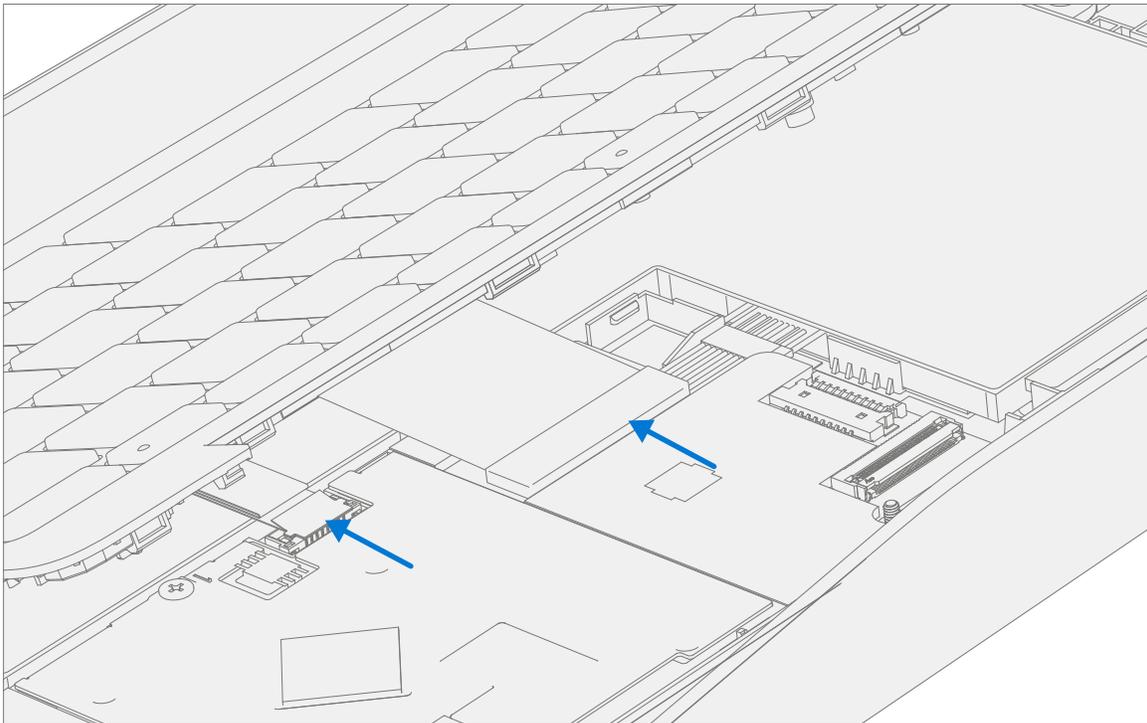
⚠ **WARNING:** Verify the condition of LDI (Liquid Damage Indicators) on the Audio Jack and PCBA. Any color other than white indicates liquids have entered the device. The LDI on the Audio Jack is viewable from the outside of the device. The LDI on the PCBA is along the top edge of the heatsink. Devices exhibiting LDI require whole unit replacement.

2. **Check for unexpected items within device** – Check C-Cover (both sides) and device enclosure for any loose articles that may be present inadvertently on the C-Cover or within the device enclosure areas.

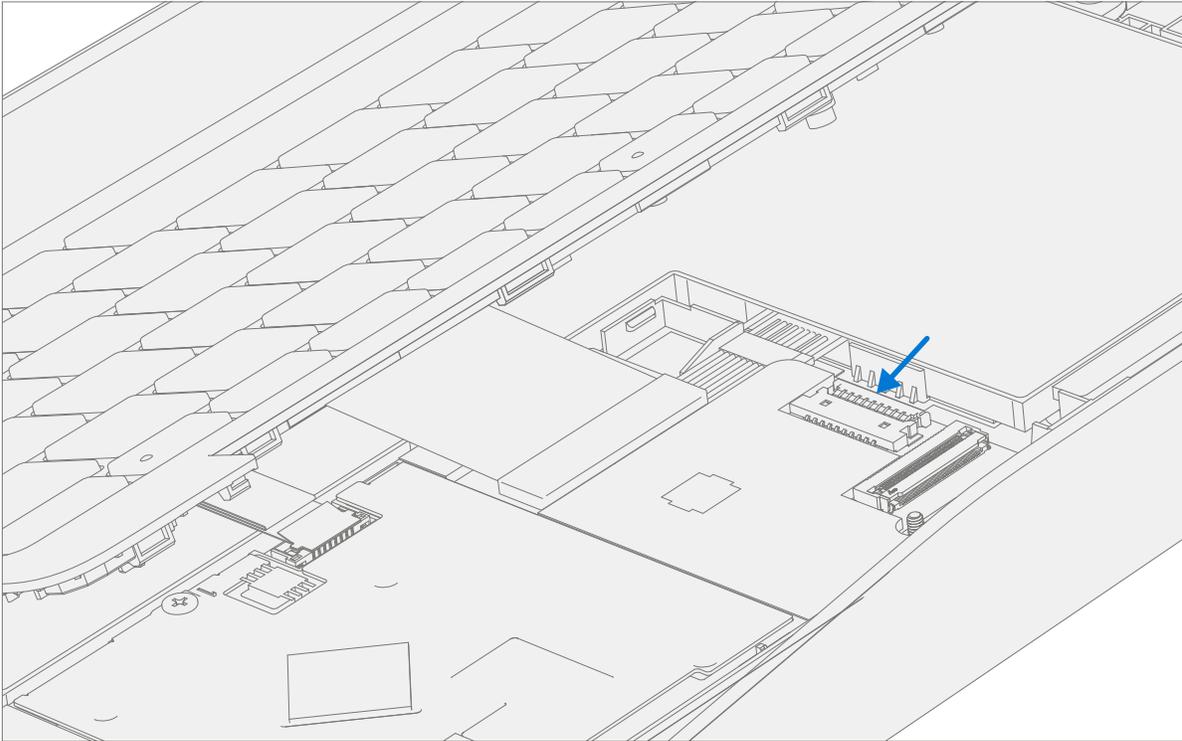
a. Carefully inspect the area around battery specifically for any foreign objects.

3. **Connect C-Cover FPC's** – Hover the C-Cover over the device while assembling the C-Cover FPC's to the PCBA.

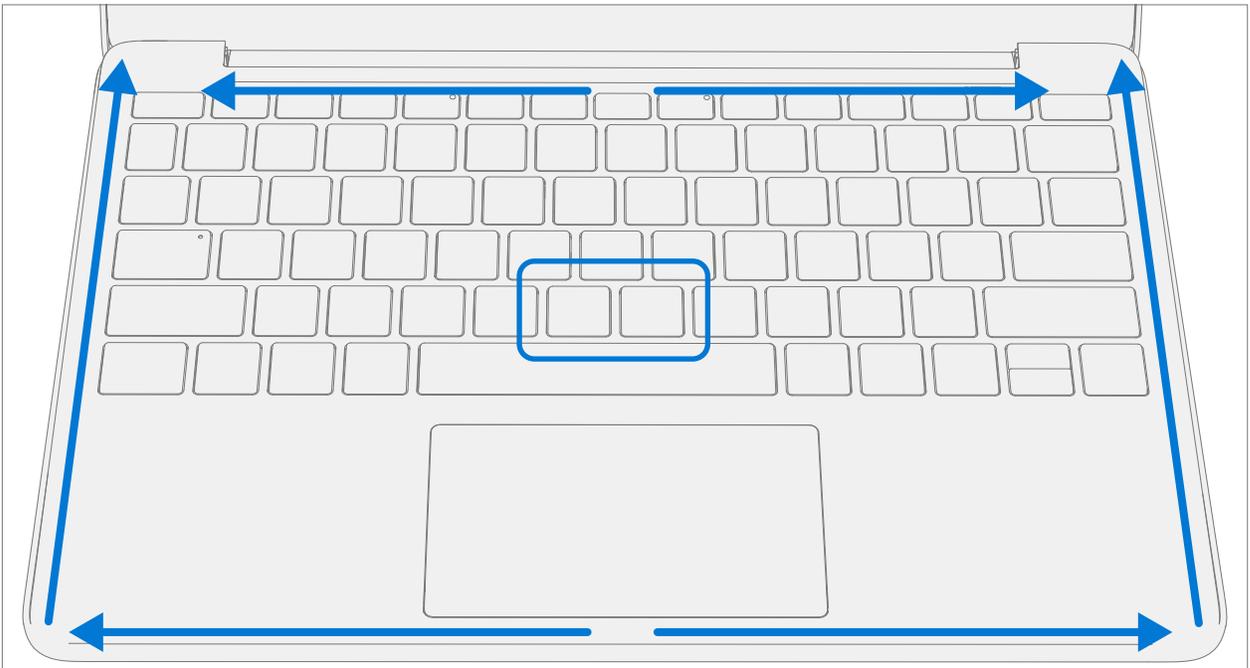
! **CAUTION:** Be sure that FPC bends fall in place properly as pre-bent and no folds or creases are created during re-assembly of C-Cover.



4. **Connect Battery Cable** – Holding the C-Cover at an angle connect the battery cable to the PCBA.

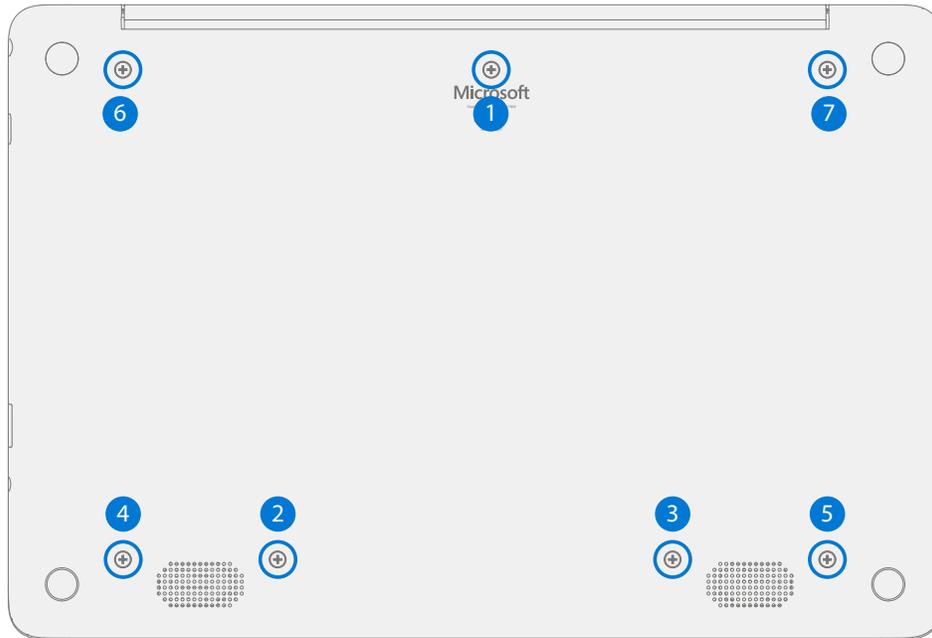


5. **Align the C-Cover** – Properly align the C-Cover to the device using the front edge. Place the C-cover back onto the device. Press down along the outside edges to engage snaps. Press down on the center of the keyboard to engage the keyboard hook.



6. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.

7. **Install new C-Cover screws** – Power off device, close display, and place it upside down. Using a Torx T6 driver install 7 new MM20065I030 screws into the D-Bucket. Follow the installation order pictured below. Turn all screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



# Power Port Replacement Processes

## Preliminary Requirements

 **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

---

## Required Tools and Components

- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Small suction cups
  - Anti-static wrist strap (1M Ohm resistance)
  
- **Components:**
  - Battery ([Refer to Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7
  - Power Port Screws (MS20025I070) Qty. 3

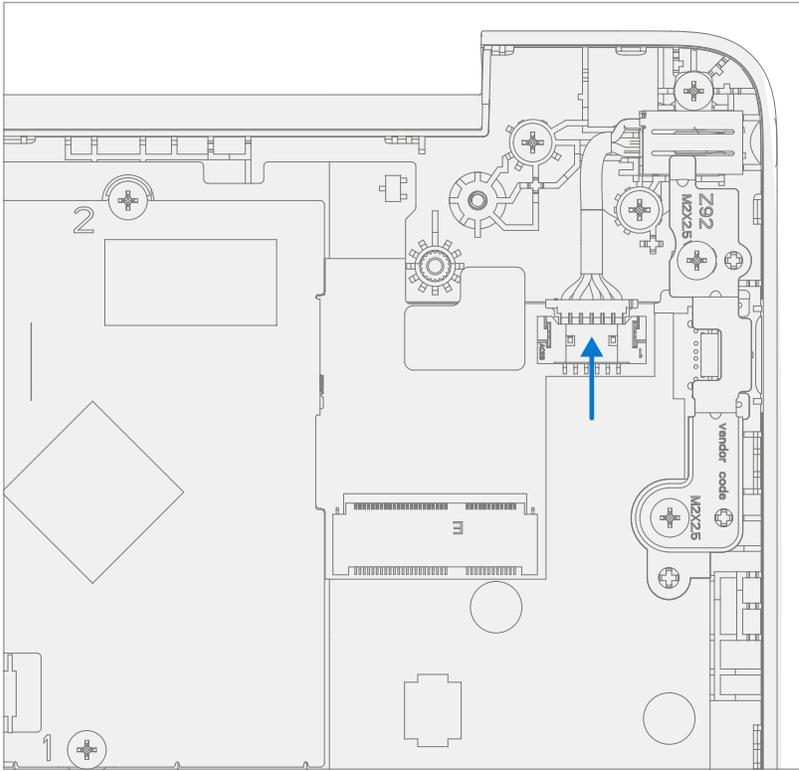
## Prerequisite Steps:

- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).

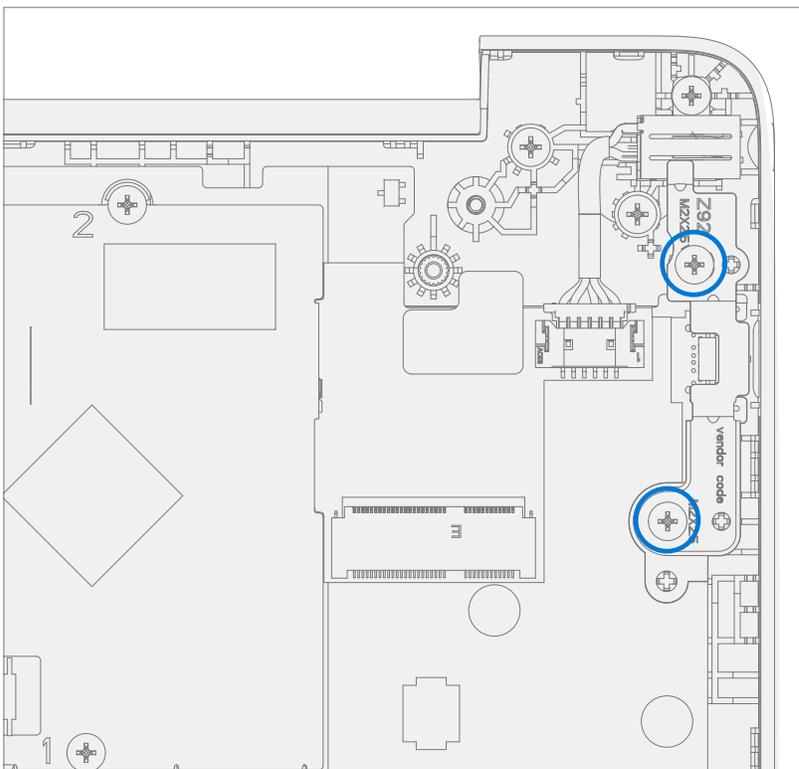


## Procedure – Removal (Power Port)

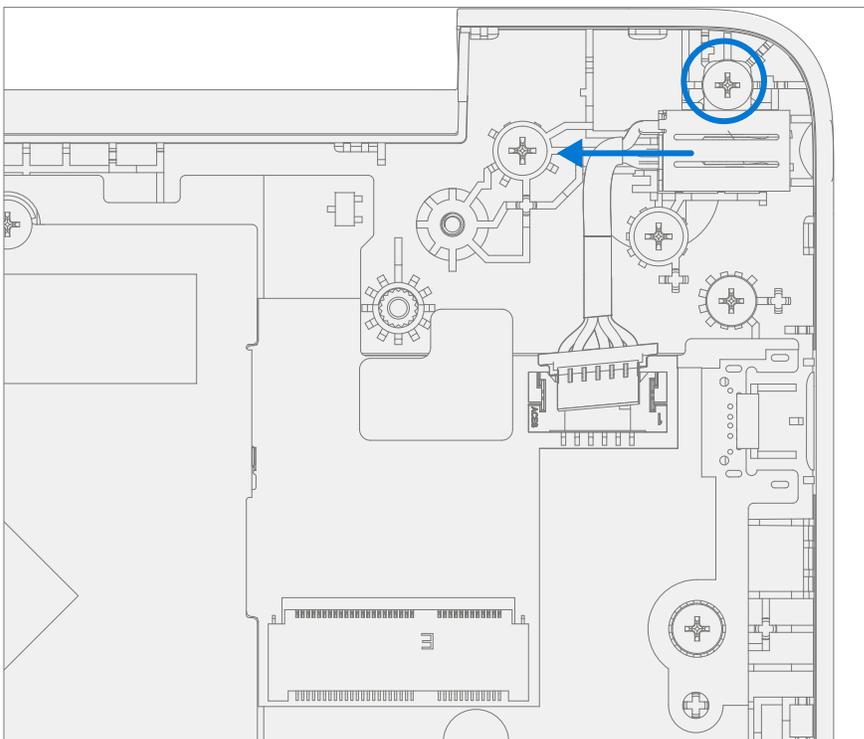
1. **Disconnect DC Power Cable** – Using a plastic tool / spudger to disconnect the DC power cable from the PCBA.



2. **Remove USB Bracket** – Using a PH0 driver remove the two screws from the USB bracket. Remove the bracket from the D-Bucket.

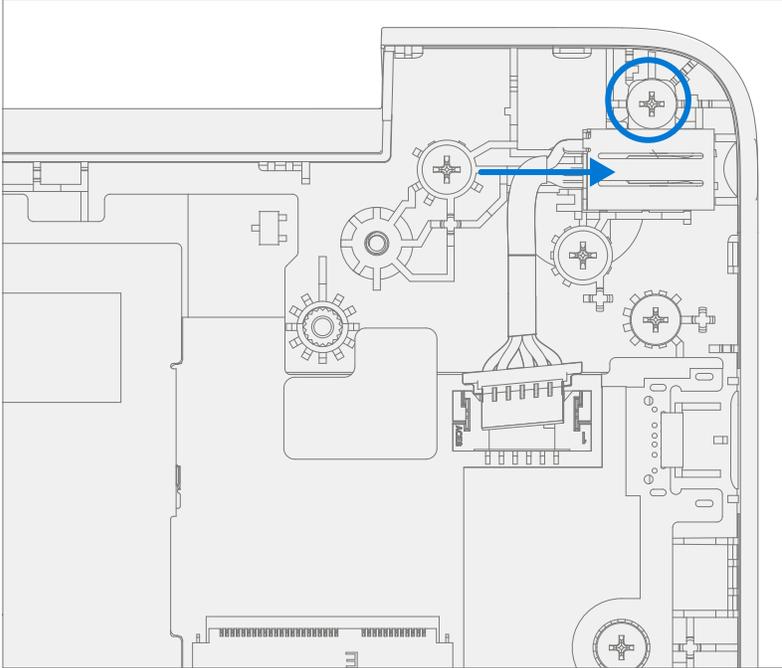


3. **Remove DC Power Port** – Using a PH0 driver remove the screw from the DC power port. Remove the DC power port from the D-Bucket.

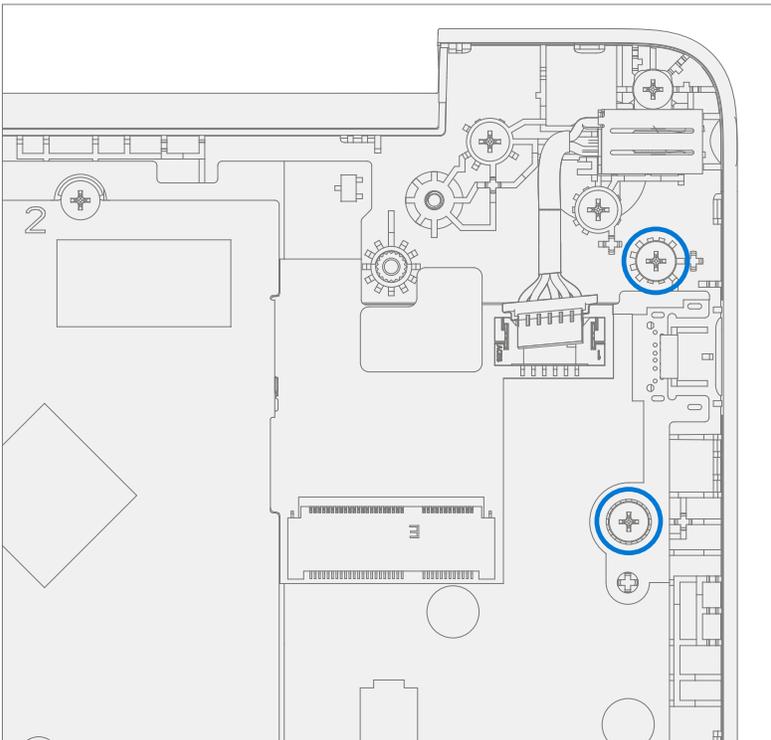


## Procedure – Installation (Power Port)

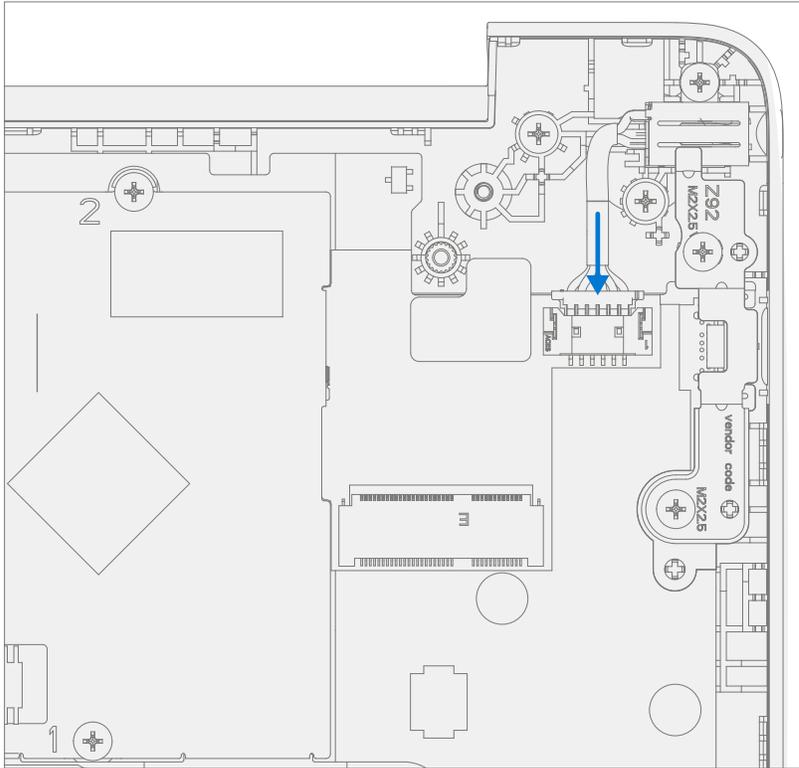
1. **Install DC Power Port** – Place the new DC power port into the D-Bucket. Ensure the port is aligned with the hole in the D-Bucket. Using a PH0 driver install a new MS20025I070 screw into the DC power port. Turn the screw until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



2. **Install USB Bracket** – Place the USB bracket into the D-Bucket. Using a PH0 driver install two new MS20025I070 screws into the USB bracket. Turn all the screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



3. **Connect DC Power Cable** – Connect the DC power cable to the PCBA



4. **Install C-cover** – Follow steps for Procedure – Installation (C-Cover Keyboard) on [page 23](#). Leaving C-Cover screws uninstalled.
5. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.
6. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on [page 25](#).



# Battery Replacement Processes

## Preliminary Requirements

 **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

---

## Required Tools and Components

- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Small suction cups
  - Anti-static wrist strap (1M Ohm resistance)
  
- **Components:**
  - Battery (Refer to [Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7
  - Battery Screws (MS20025I070) Qty. 8

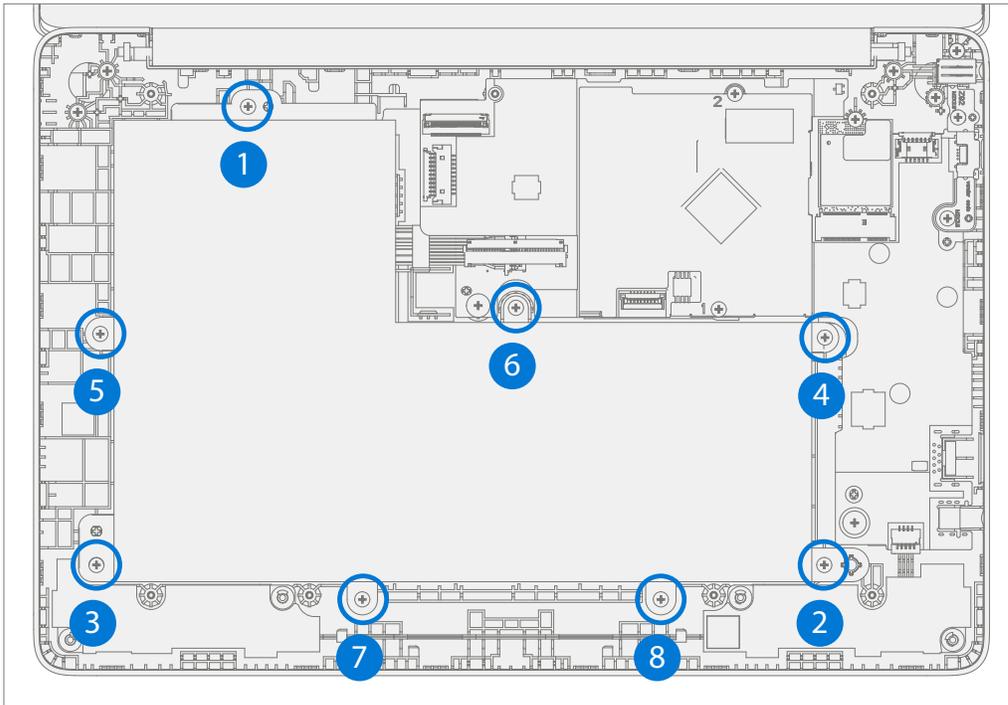
## Prerequisite Steps:

- **Battery Status Check** – Connect power supply, boot device, connect the USB Thumb drive with SDT, and run SDT Battery tests. It is recommended batteries showing any of the following should be replaced:
  - PF Status of Non Functional
  - Wear value of 70% or less
  - Cycle Count equal to or greater than a 1000
  - Delta Voltage at or above 100 mV with state of charge 50% or greater
- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).



## Procedure – Removal (Battery)

1. **Remove Battery screws** – Using a PH0 driver remove the 8 screws from the Battery frame.



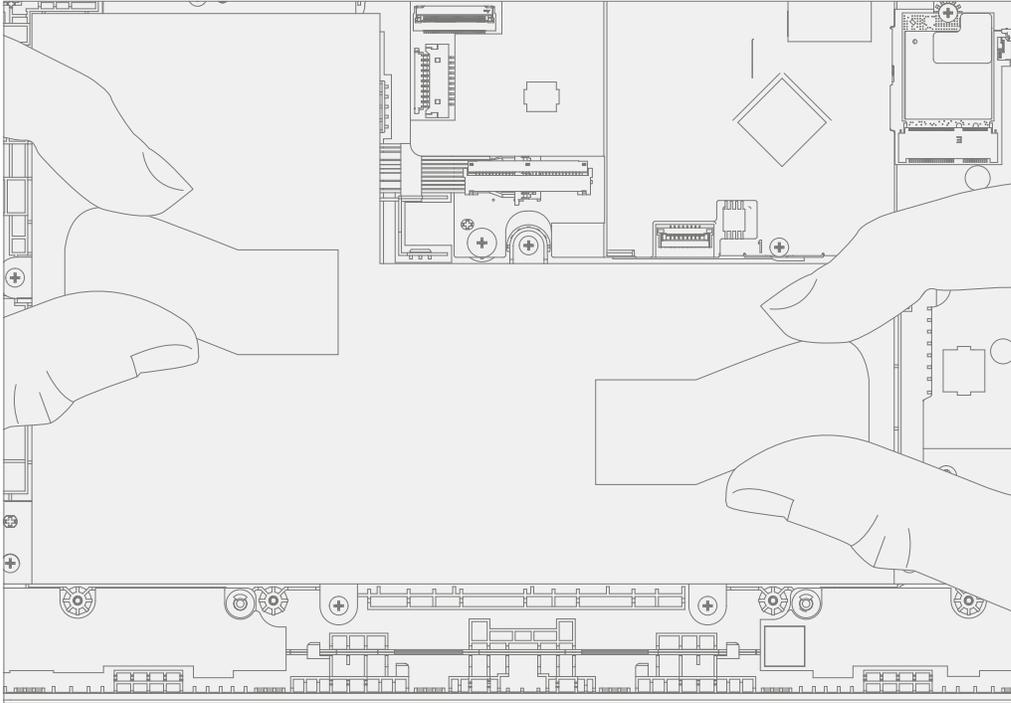
2. **Remove Battery from device** – Carefully remove the battery from the device using two small suction cups.

## Procedure – Installation (Battery)

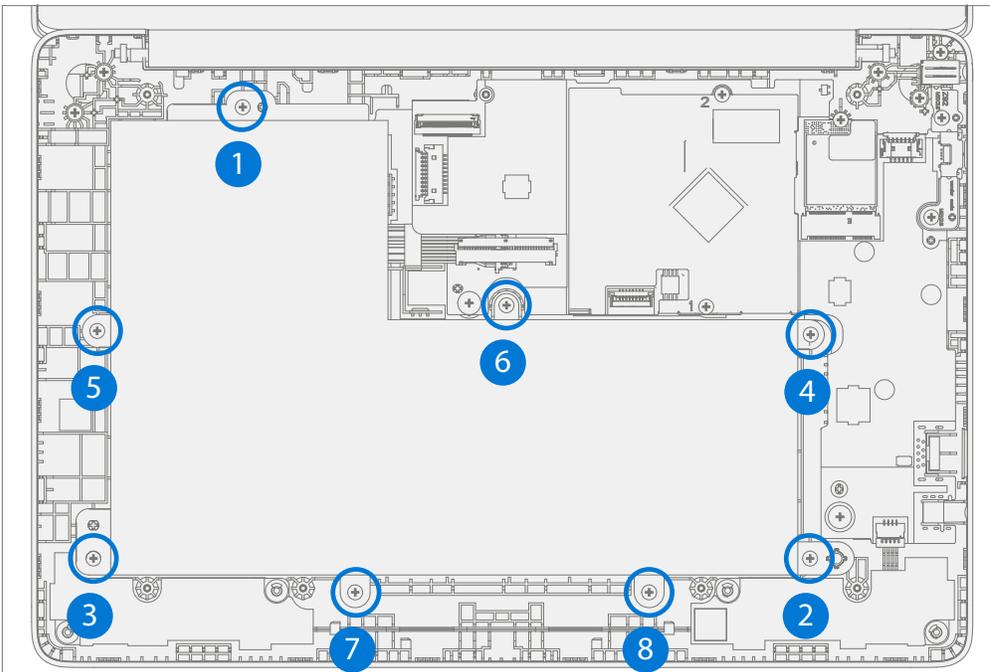
1. **Pre-installation Device Inspection** – Check D-bucket (both sides) and device enclosure for any loose articles that may be present.
  - a. Check for and remove any foreign objects that the magnets may have attracted.
  - b. Verify all removed screws are accounted for and have not been misplaced in the device.
  - c. Loose screws should never be stored on the C-Cover or in the D-Bucket.



2. **Install New Battery into device** – Using the loops carefully install the new battery into the device.



3. **Install New Battery Screws** – Using a PH0 driver install 8 new MS200251070 screws into the battery frame. Follow the installation order pictured below. Turn all screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened. Carefully remove the liner with handling loops.



4. **Install C-cover** – Follow steps for Procedure – Installation (C-Cover Keyboard) on [\(page 23\)](#). Leaving C-Cover screws uninstalled.
5. **New Battery Charging** – New batteries are shipped and stored at low states of charge in compliance with shipping regulations. They should be charged to at least 50%. This step will take between 20 minutes and 1 hour and is needed to validate full functionality of the new battery. Carefully place device right-side up. Open device, connect the power supply, and power it on.



6. **New Battery Authentication** – New batteries require authentication. After charging the new battery to at least 50%, connect the SDT Configuration Files USB drive. Run the SDT battery repair validation to ensure all features and functions operate as expected. Power off at completion of tests. Remove SDT Configuration Files USB drive and power supply. If no further repairs are required proceed to final steps.
7. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on [page 25](#).



# WiFi Module Replacement Processes

## Preliminary Requirements

-  **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

## Required Tools and Components

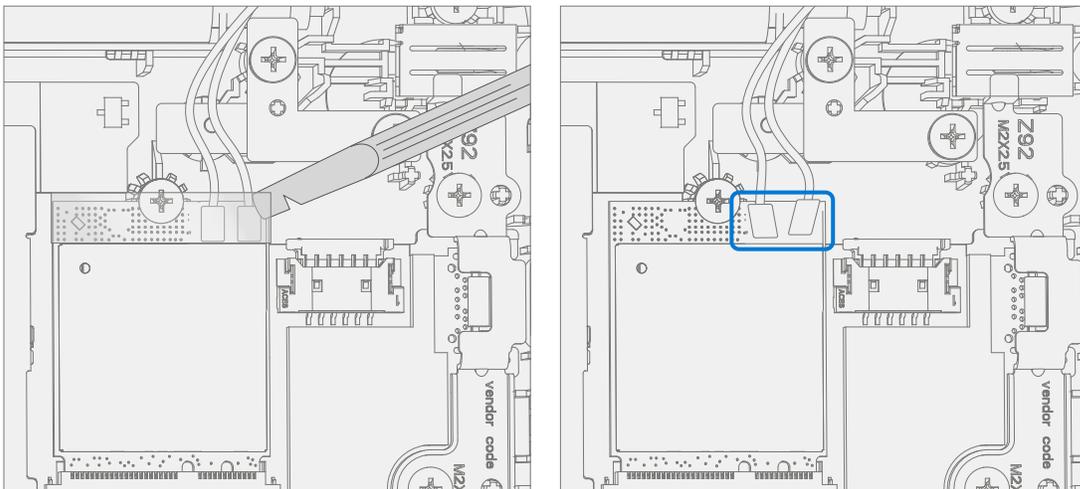
- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Anti-static wrist strap (1M Ohm resistance)
- **Components:**
  - WiFi Module (Refer to [Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7
  - WiFi Module Screw (MS20025I070) Qty. 1

## Prerequisite Steps:

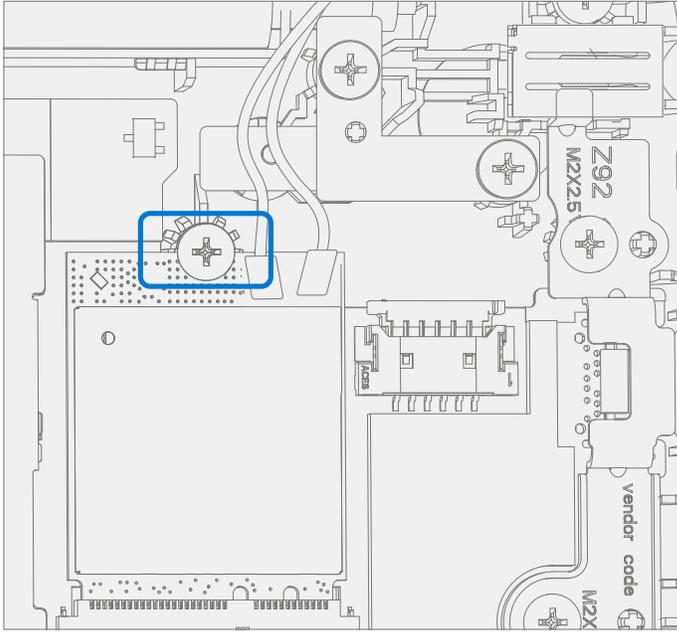
- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).

## Procedure – Removal (WiFi Module)

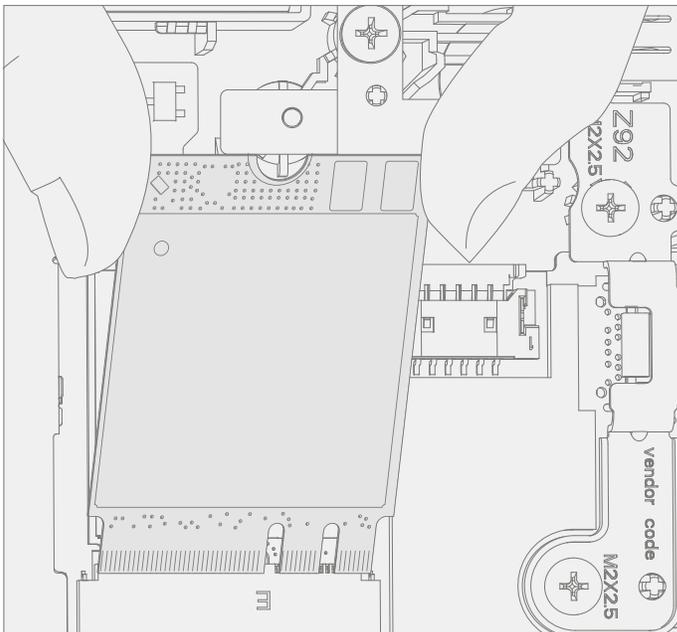
1. **Disconnect Antenna Cables** – Using a plastic tool / spudger remove the mylar cover from the WiFi Module. Disconnect the two antenna cables from the WiFi Module.



2. **Remove WiFi Module screw** – Using a PH0 driver remove the screw from the WiFi Module.

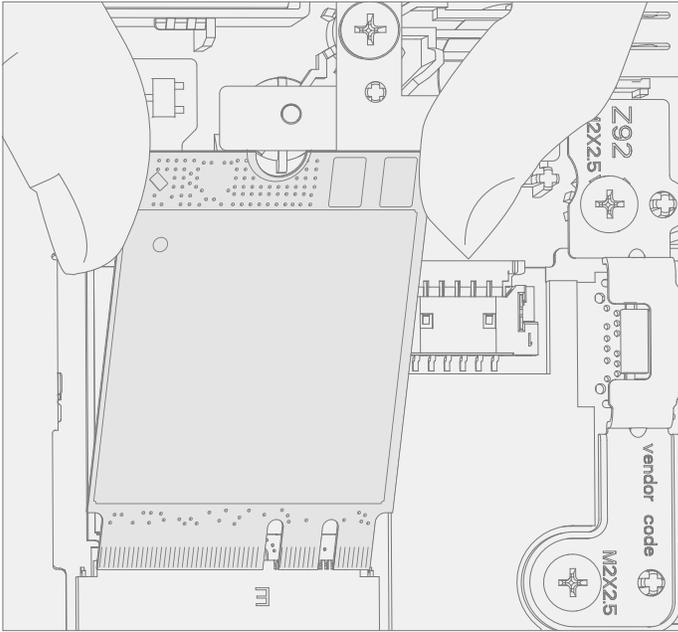


3. **Remove WiFi Module** – Pull the WiFi Module out of the PCBA connector.

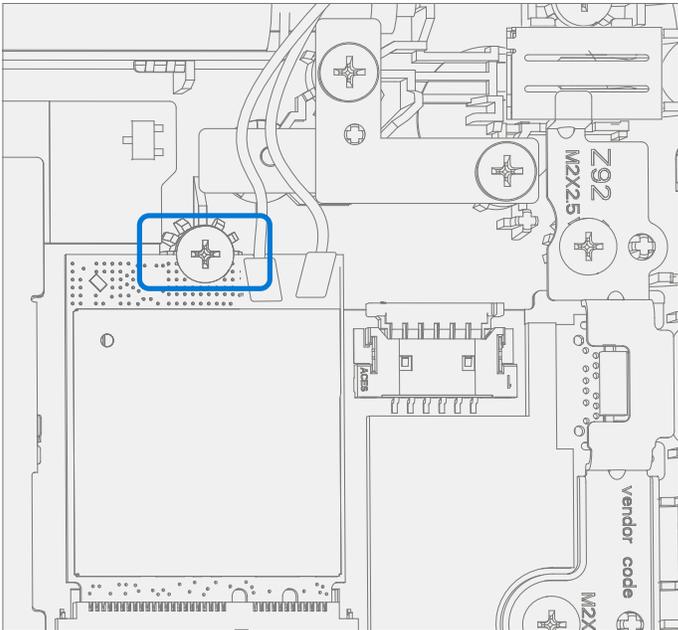


## Procedure – Installation (WiFi Module)

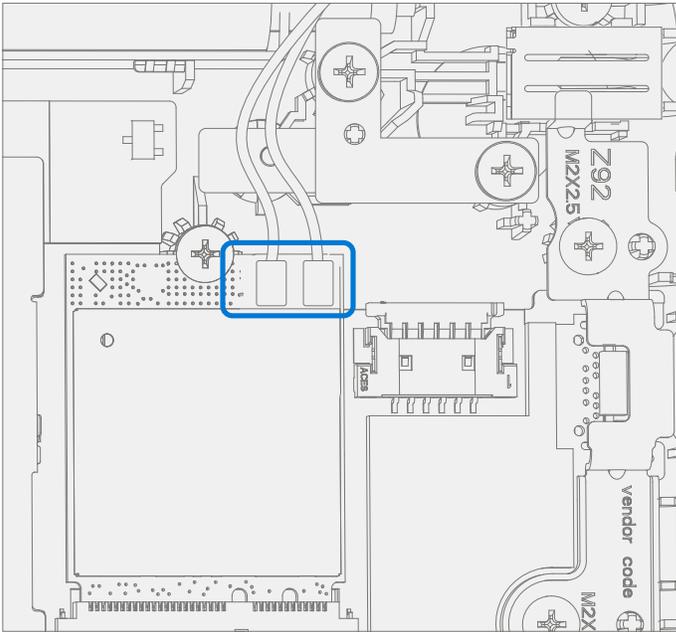
1. **Install New WiFi Module** – Install the WiFi Module into the PCBA connector.



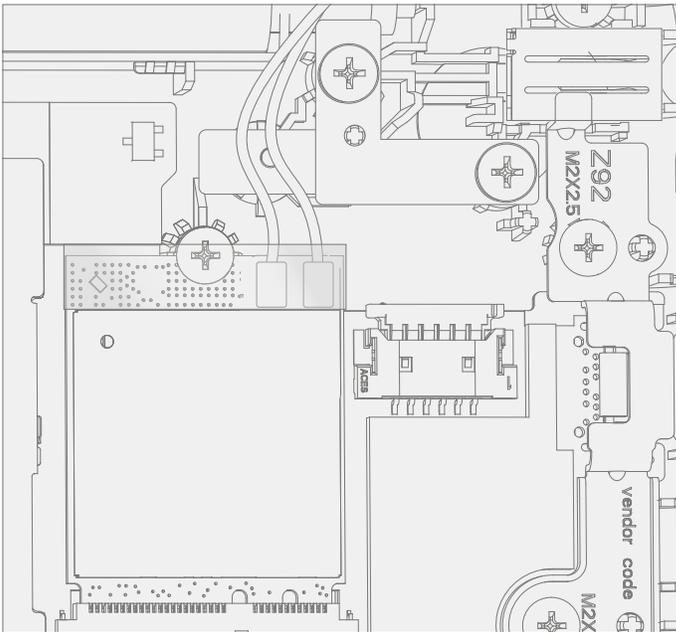
2. **Install New WiFi Module screw** – Using a PH0 driver install a new MS20025I070 screw onto the WiFi Module. Turn the screw until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



3. **Connect Antenna Cables** – Connect the antenna cables onto the WiFi Module as pictured below. Ensure the white cable is installed on the right side connector and the black cable is installed on the left side connector.



4. **Install Antenna Cable Mylar** – Install a new mylar cover onto the WiFi Module as pictured below.



5. **Install C-cover – Follow steps for Procedure** – Installation (C-Cover Keyboard) on [page 23](#). Leaving C-Cover screws uninstalled.
6. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.
7. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on [page 25](#).



# Motherboard (PCBA) Replacement Process

## Preliminary Requirements

 **IMPORTANT:** Be sure to follow all special (bolded) notes, cautions, and warnings in each process section.

---

## Required Tools and Components

- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Anti-static wrist strap (1M Ohm resistance)
  
- **Components:**
  - Motherboard (PCBA) ([Refer to Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7
  - USB Bracket / WiFi Module Screws (MS20025I070) Qty. 3
  - PCBA Screws (MS20015I220) Qty. 2

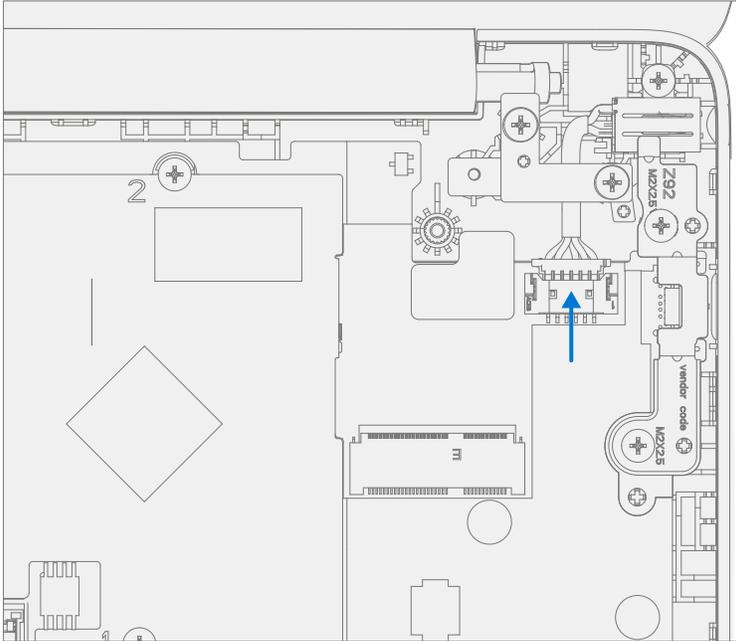
## Prerequisite Steps:

- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).
- **Remove WiFi Module** – Follow steps for Procedure – Removal (WiFi Module) on ([page 35](#)).

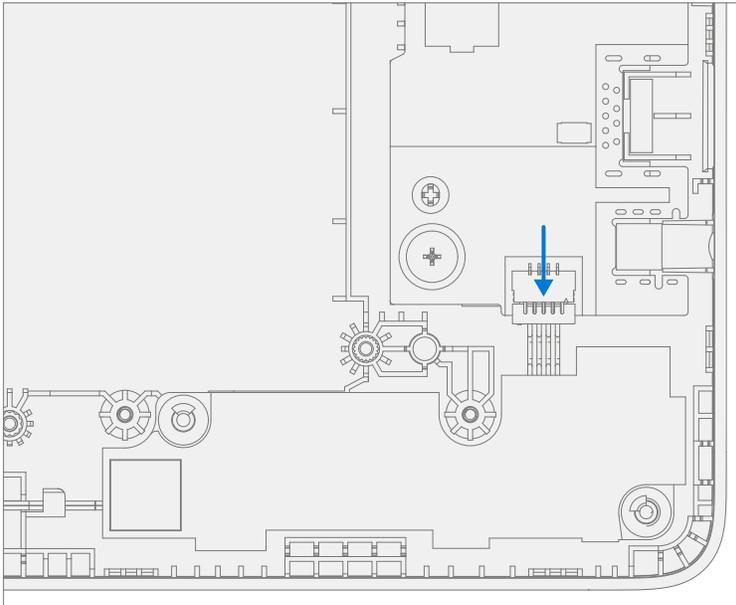


## Procedure – Removal (Motherboard PCBA)

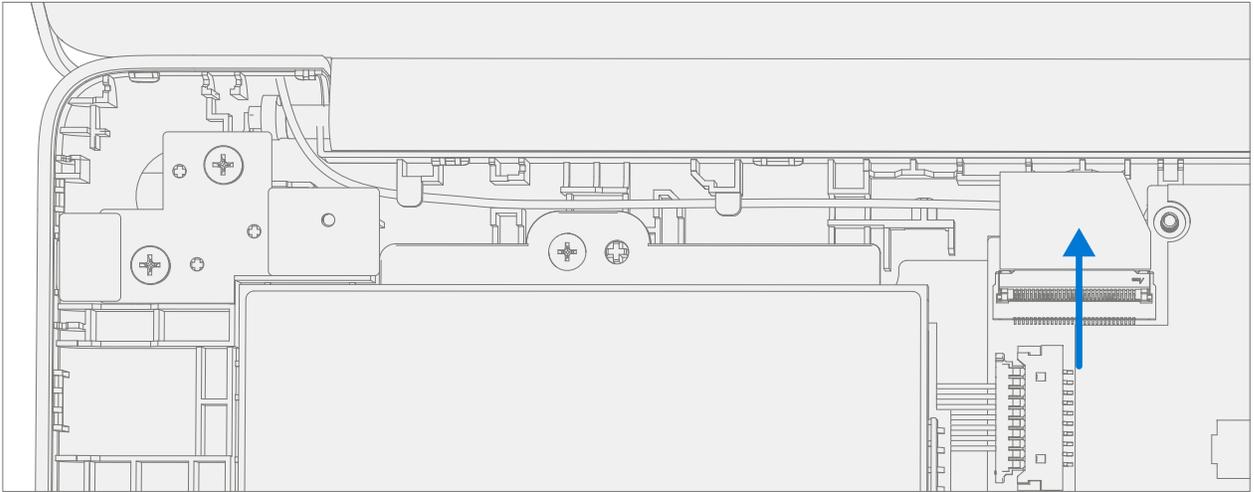
1. **Disconnect DC Power Cable** – Using a plastic tool / spudger to disconnect the DC power cable from the PCBA.



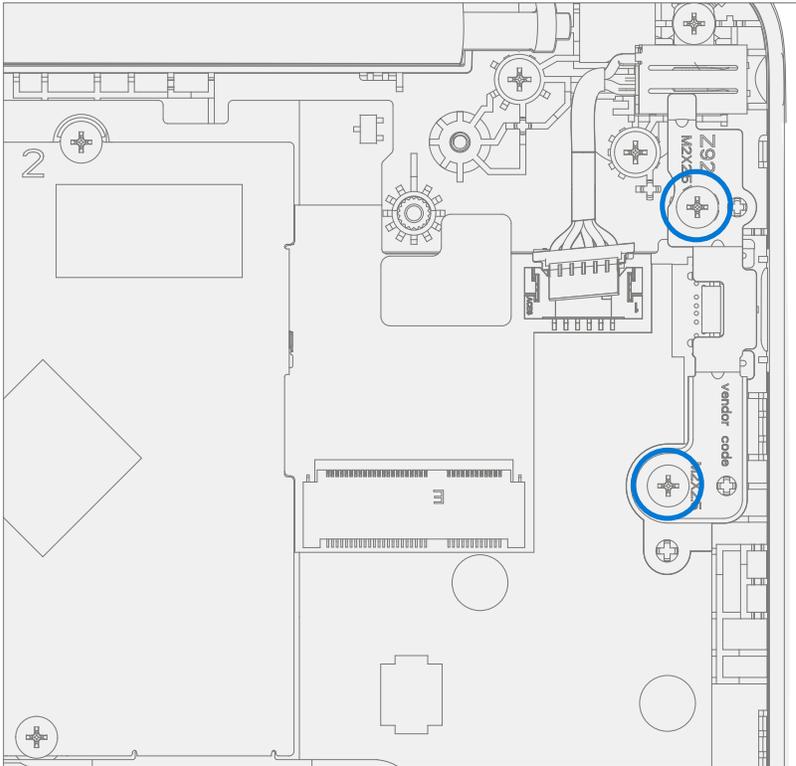
2. **Disconnect Speaker Cable** – Using a plastic tool / spudger disconnect the speaker cable from the PCBA.



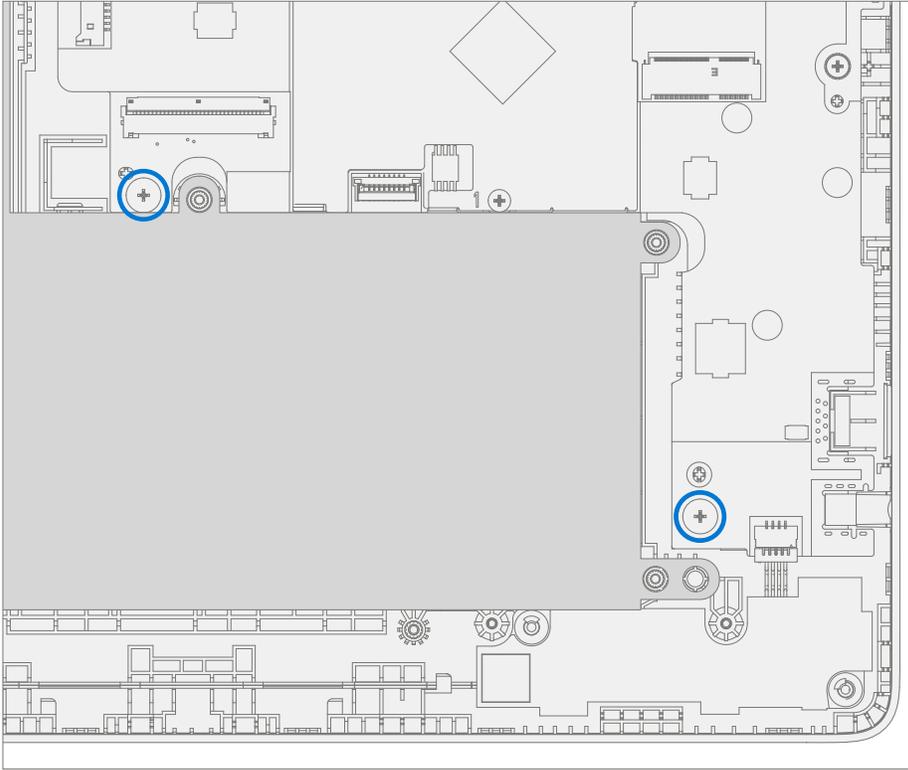
3. **Disconnect AB-Cover Cable** – Using a plastic tool / spudger unlock the AB-Cover cable connector. Remove AB-Cover cable from the PCBA.



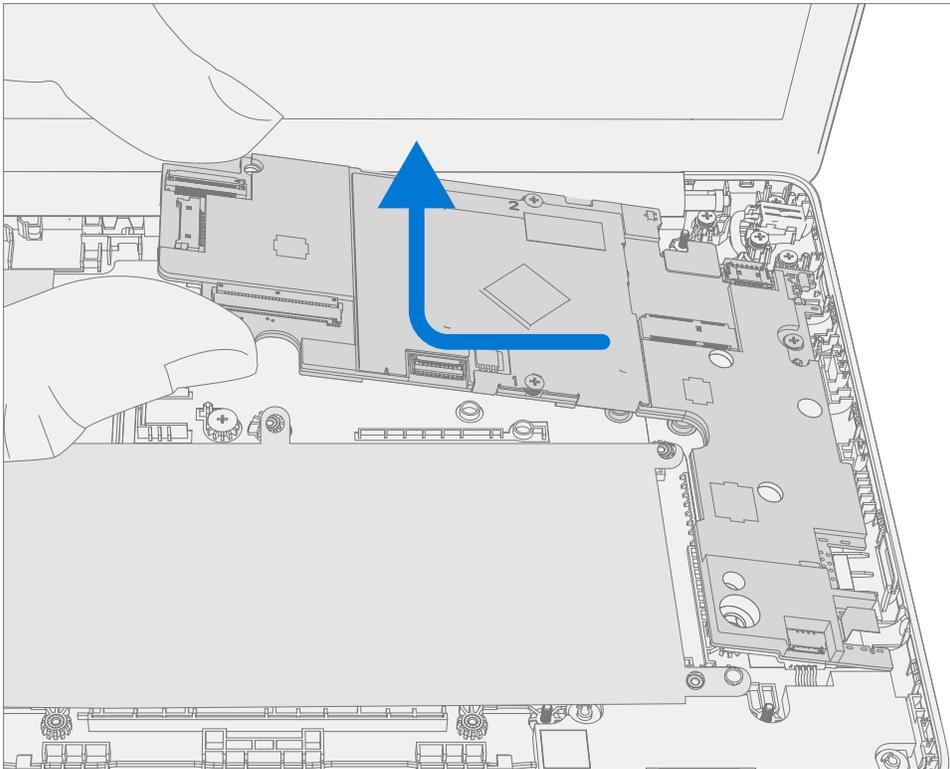
4. **Remove USB Bracket** – Using a PH0 driver remove the two screws from the USB bracket. Remove the bracket from the D-Bucket.



5. **Remove PCBA screws** – Using a PH0 driver remove the two screws from the PCBA.



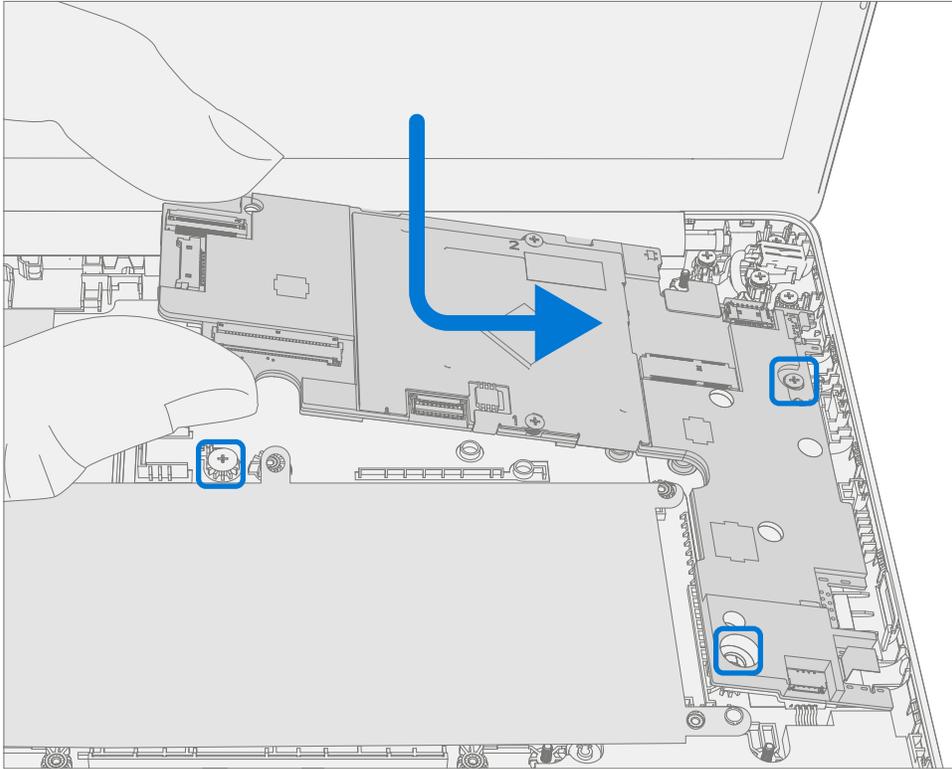
6. **Remove PCBA** – Remove PCBA from the D-Bucket.



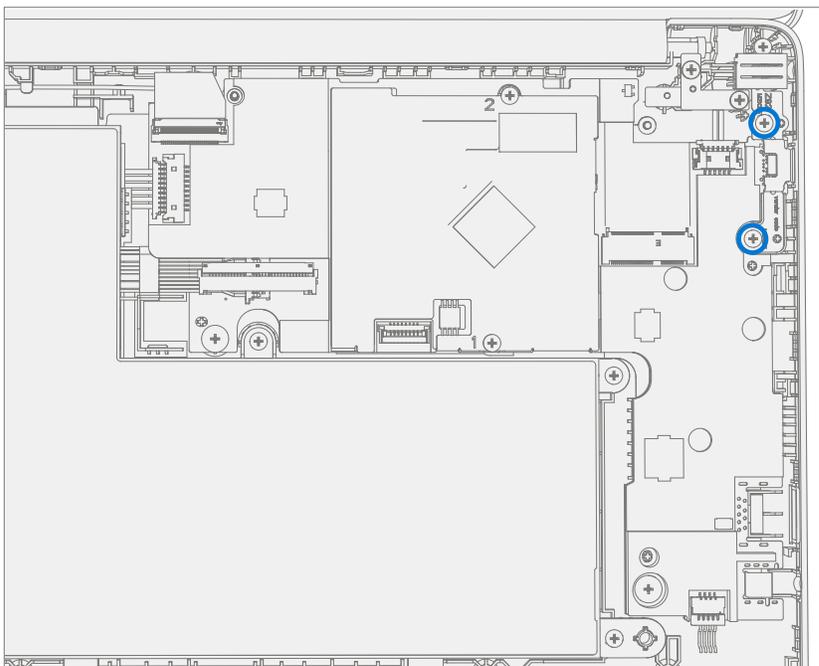
## Procedure – Installation (Motherboard PCBA)

 **IMPORTANT:** Only a Microsoft PCBA of like configuration should be replaced in the device.

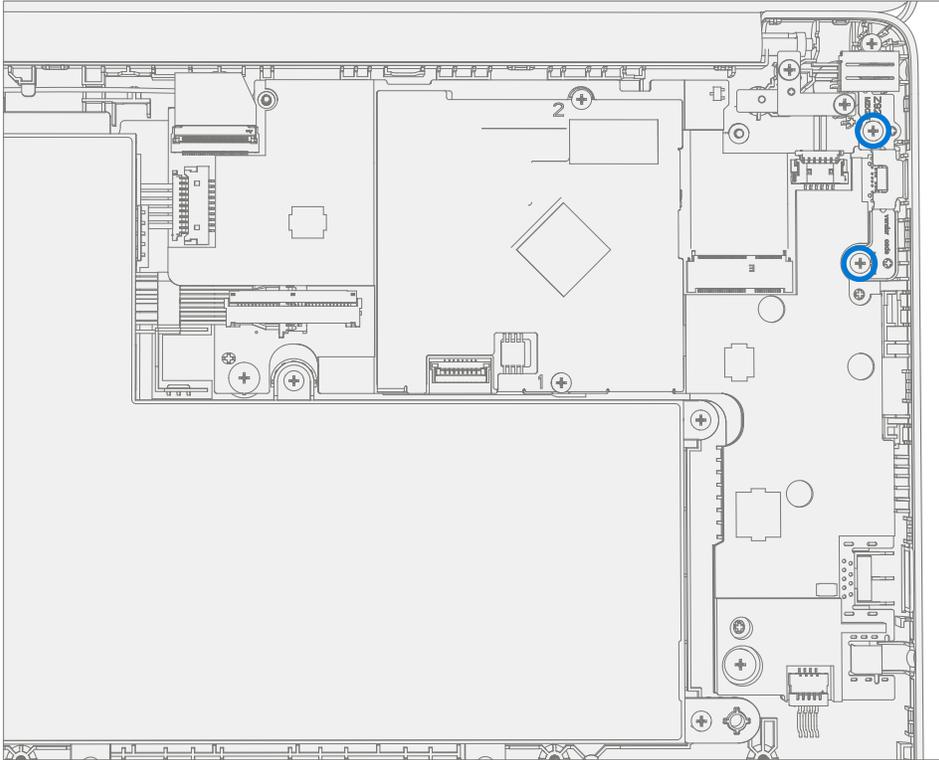
1. **Install PCBA** – Align PCBA into the D-Bucket. Ensure USB and audio ports are aligned to the holes in the D-Bucket. The PCBA should be centered on the locating posts as pictured below.



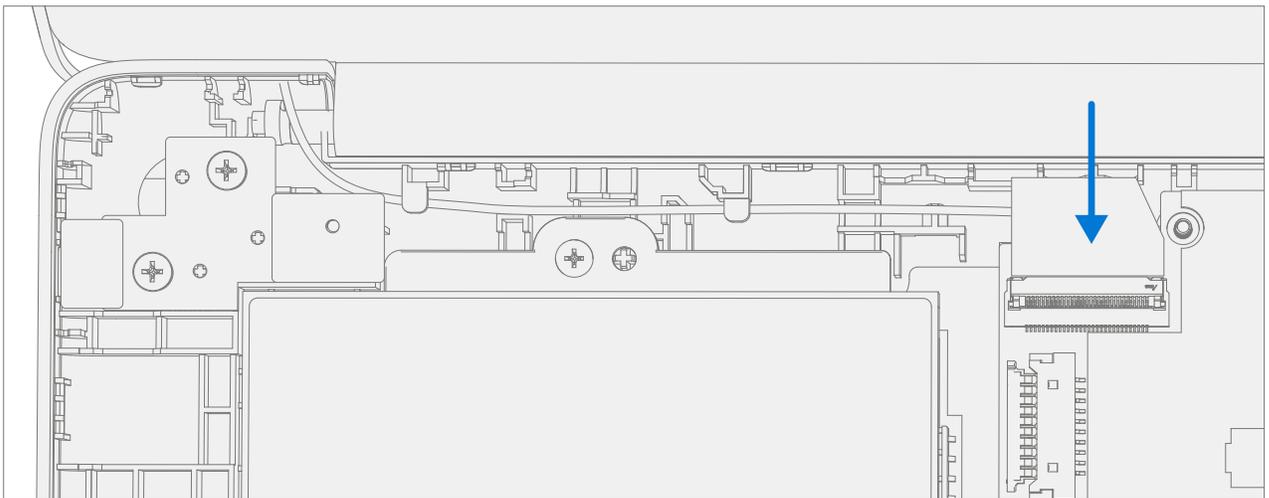
2. **Install New PCBA screws** – Verify the battery, display, antenna, power, and speaker cables are not captured under the PCBA. Using a PH0 driver install two new MS20015I220 screws into the PCBA. Turn all the screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



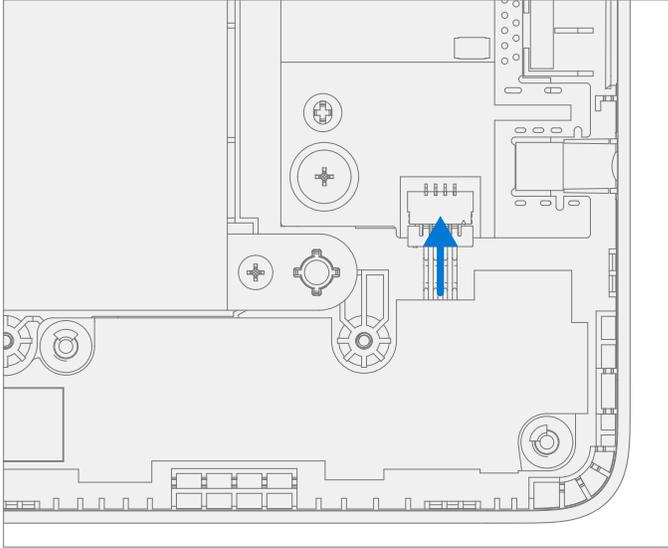
3. **Install USB Bracket** – Place the previously removed USB bracket into D-Bucket. Using a PH0 driver install two new MS200251070 screws into the USB bracket. Turn all the screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



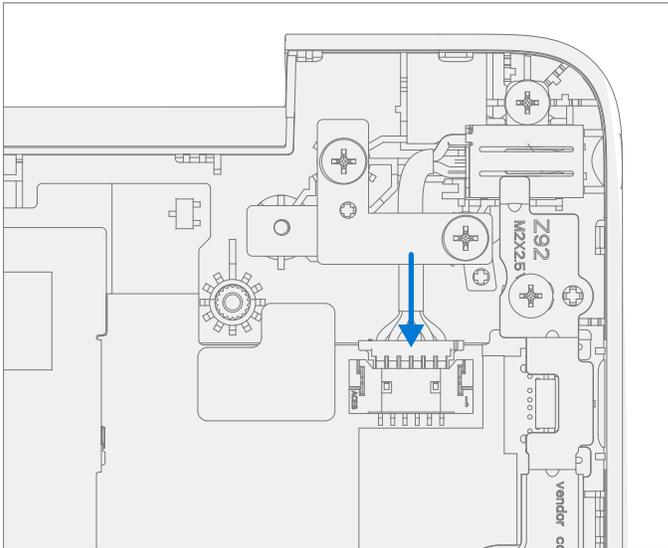
4. **Connect AB-Cover Cable** – Connect the AB-Cover cable into the PCBA. Ensure the cable is fully seated and locked in the connector.



5. **Connect Speaker Cable** – Connect the speaker cable onto the PCBA.



6. **Connect DC Power Cable** – Connect the DC power cable into the PCBA.



7. **Install WiFi Module** – Install WiFi Module as detailed Procedure – Installation (WiFi Module) on [\(page 37\)](#).
8. **Install C-cover** – Install C-Cover as detailed in Procedure – Installation (C-Cover) on [\(page 23\)](#). Leave C-Cover screws uninstalled.
9. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.
10. **Battery Authentication** – Authenticate new battery as detailed in Procedure – Installation (Battery), step 6 on [\(page 34\)](#).
11. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on [\(page 25\)](#).

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 **IMPORTANT:** To get hardware hash for enrolment into Intune follow instructions outlined [here](#)

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# Speaker Replacement Processes

## Preliminary Requirements

 **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

## Required Tools and Components

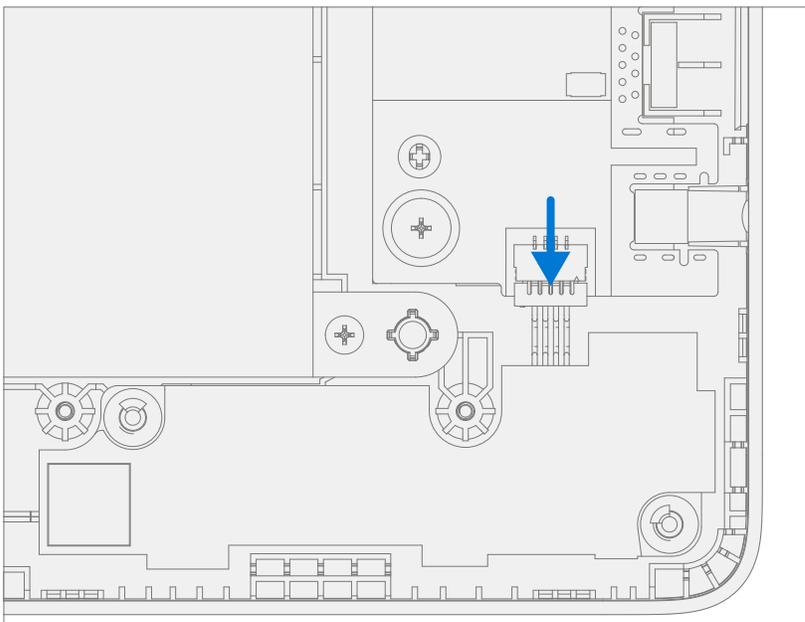
- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Anti-static wrist strap (1M Ohm resistance)
- **Components:**
  - Speaker Assembly (Refer to [Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7

## Prerequisite Steps:

- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).

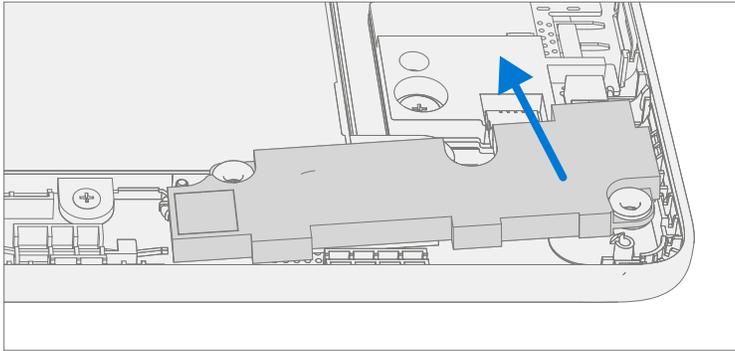
## Procedure – Removal (Speakers)

1. **Disconnect Speaker Cable** – Using a plastic tool / spudger disconnect the speaker cable from the PCBA.

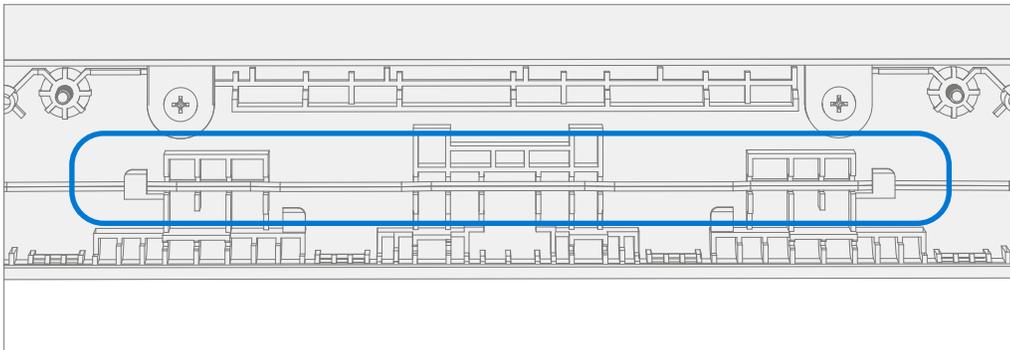


2. **Remove Speakers from device** – Separation is a multistep process.

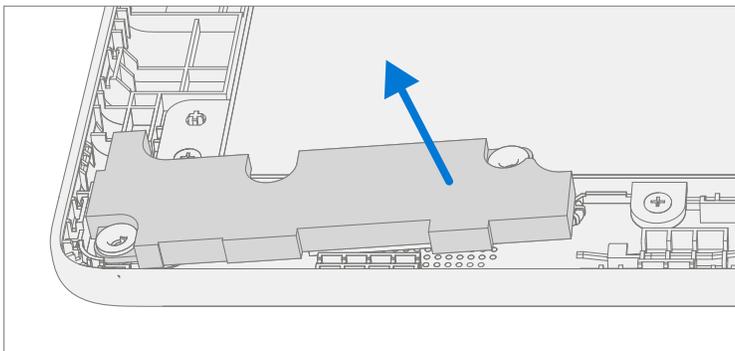
- a. Lift the right speaker from the two D-Bucket posts.



- b. Unhook and release speaker cable from the D-Bucket.

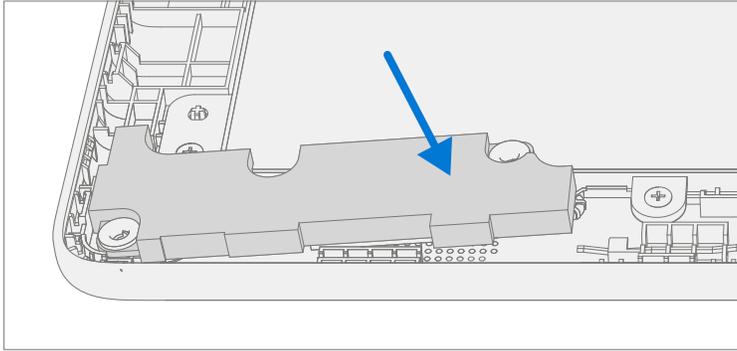


- c. Lift the left speaker from the two D-Bucket posts.

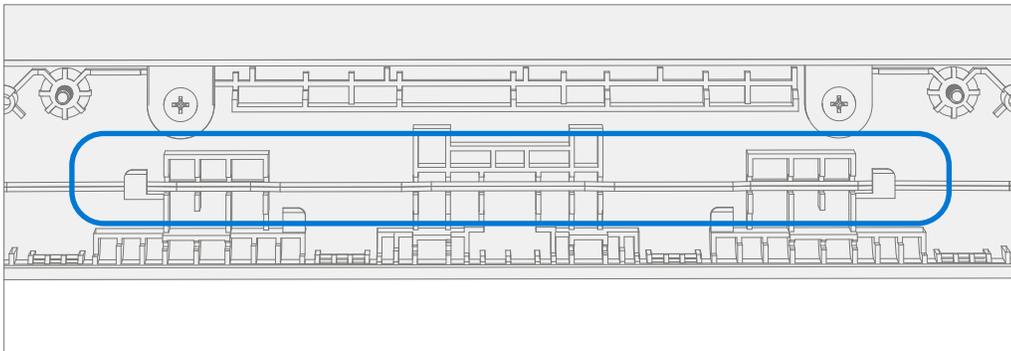


## Procedure – Installation (Speakers)

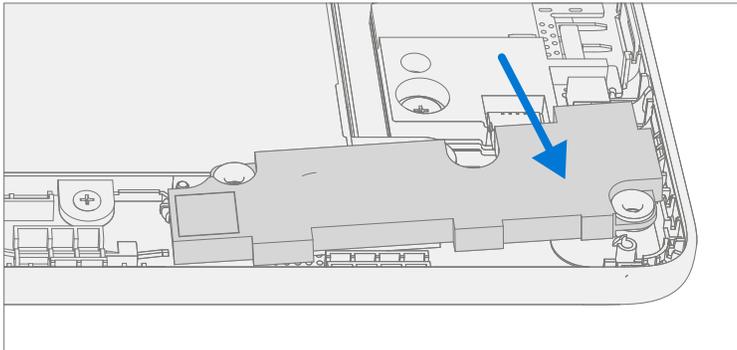
1. **Install Speakers into device** – Installation is a multistep process.
  - a. Install the left speaker onto the two D-Bucket posts.



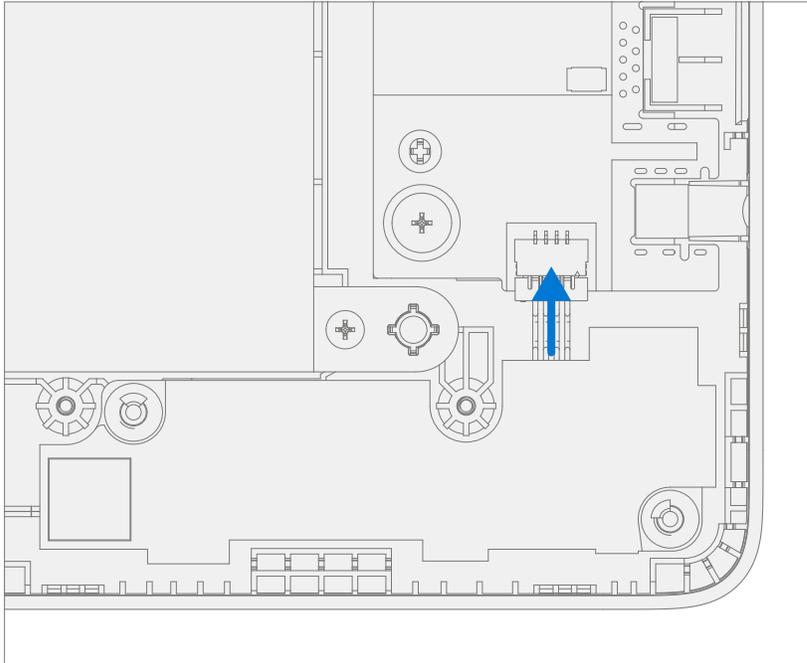
- b. Route and hook the speaker cable onto the D-Bucket.



- c. Install the right speaker onto the two D-Bucket posts.



2. **Connect Speaker Cable** – Connect the speaker cable onto the PCBA.



3. **Install C-cover** – Follow steps for Procedure – Installation (C-Cover Keyboard) on [page 23](#). Leaving C-Cover screws uninstalled.
4. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.
5. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on [page 25](#).



# AB-Cover Display Assembly Replacement Processes

## Preliminary Requirements

- ✎ **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

## Required Tools and Components

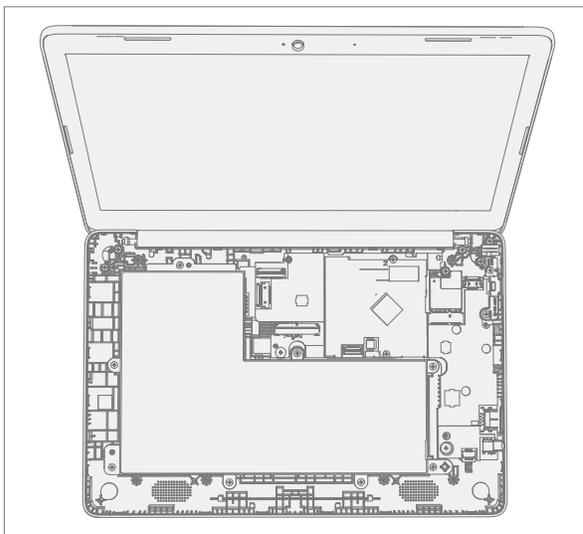
- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Anti-static wrist strap (1M Ohm resistance)
- **Components:**
  - AB-Cover Display Assembly (Refer to [Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7
  - AB-Cover Hinges (MS25040I060) Qty. 4

## Prerequisite Steps:

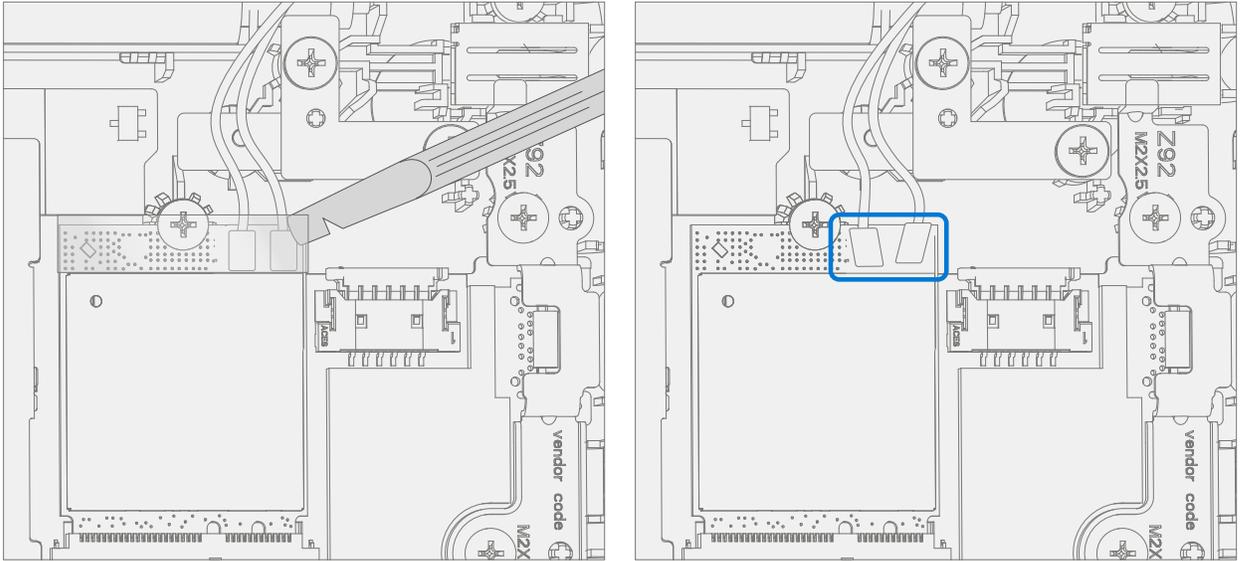
- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).

## Procedure – Removal (AB-Cover Display Assembly)

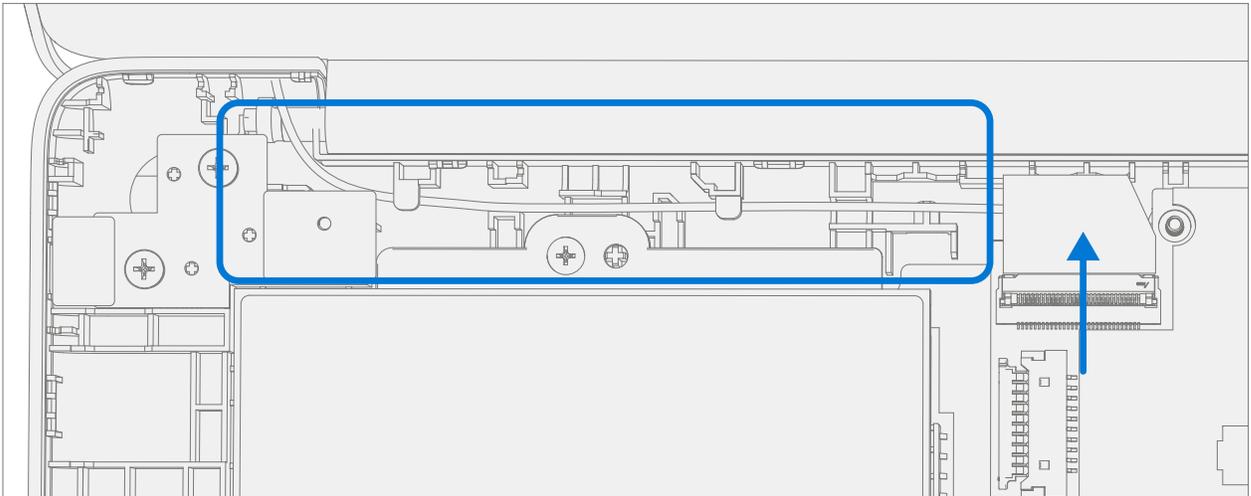
1. **Position AB-Cover** – Set AB-Cover to 90-degrees.



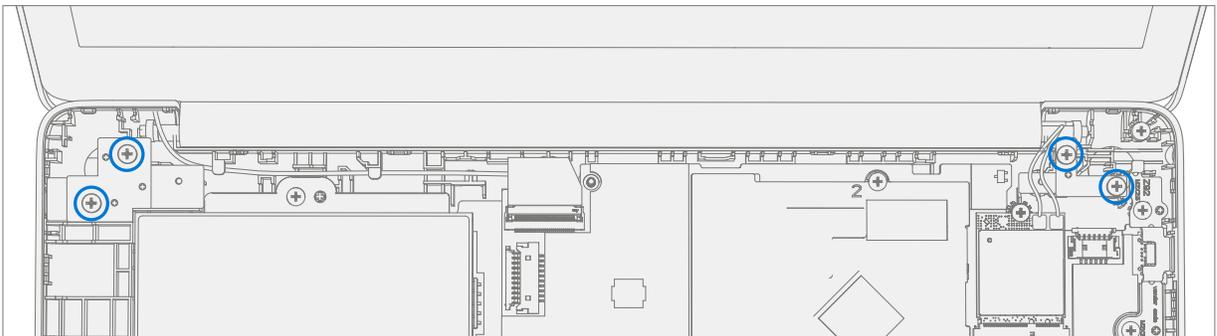
2. **Disconnect Antenna Cables** – Using a plastic tool / spudger remove the mylar cover from the WiFi Module. Disconnect the two antenna cables from the WiFi Module.



3. **Disconnect AB-Cover Cable** – Using a plastic tool / spudger unlock the AB-Cover cable connector. Remove AB-Cover cable from the PCBA. Carefully remove cable from the D-Bucket channels and hooks.

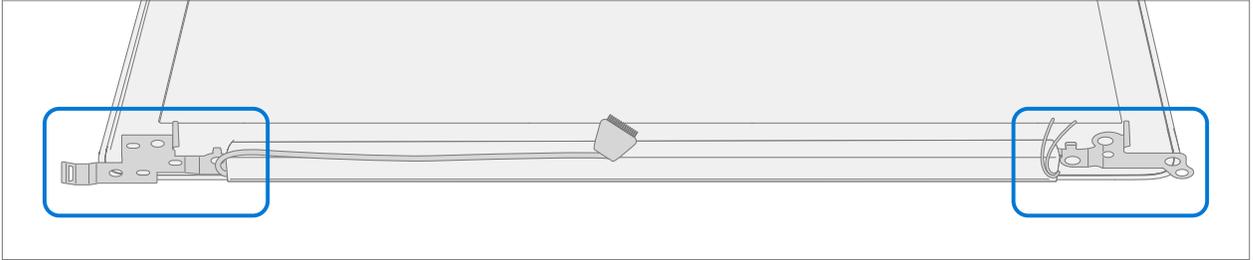


4. **Remove AB-Cover hinge screws** – Using a PH0 driver remove the two screws from the right AB-Cover hinge. While holding the AB-Cover with one hand remove the two screws from the left AB-Cover hinge. Remove the AB-Cover Display Assembly from the D-Bucket.

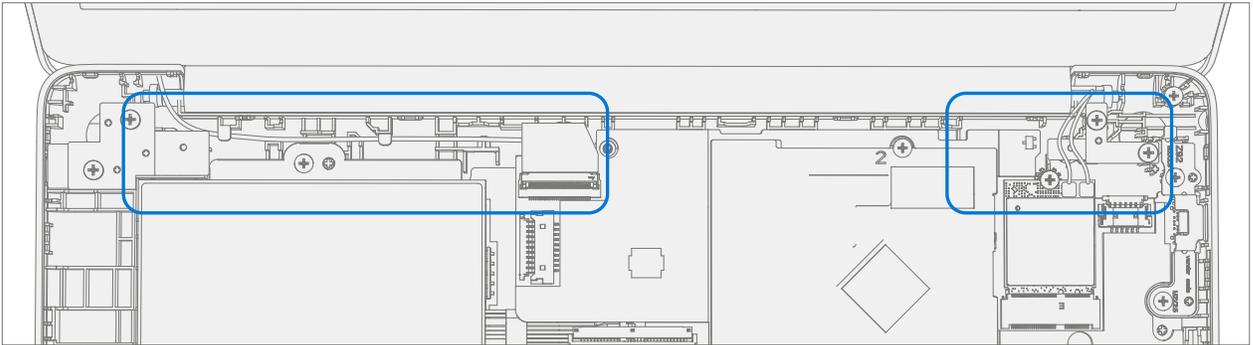


## Procedure – Installation (AB-Cover Display Assembly)

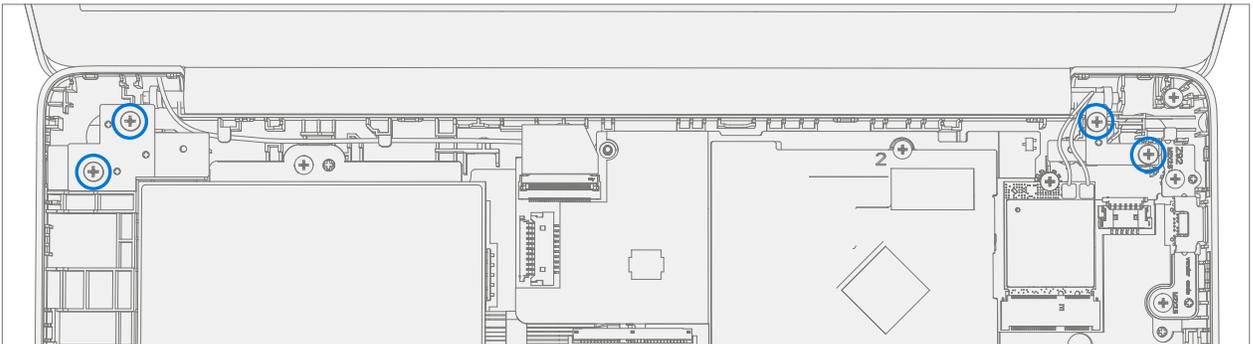
1. **Position New AB-Cover hinges** – Set AB-Cover hinges to 90-degrees.



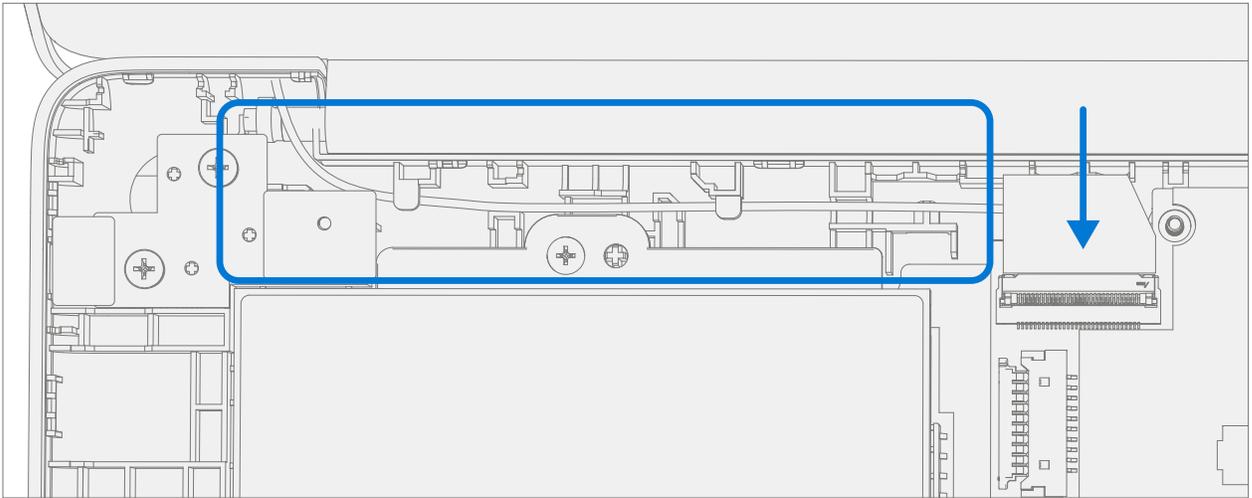
2. **Install New AB-Cover Display Assembly** – Align AB-Cover hinges into the D-Bucket. Ensure display and antenna cables are routed as pictured below.



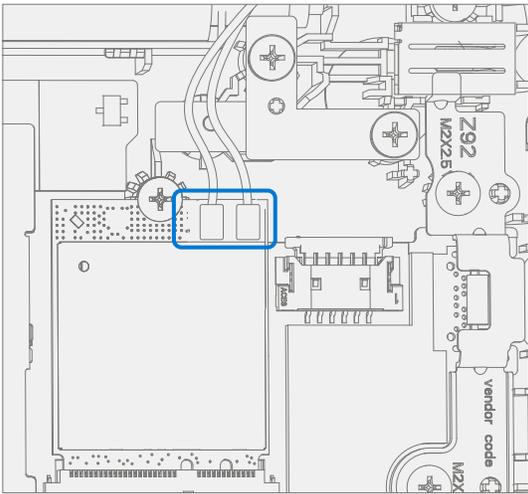
3. **Install New AB-Cover hinge screws** – Using a PH0 driver install two new MS250401060 screws into the left hinge. Install two new MS250401060 screws into the right hinge. Turn all the screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



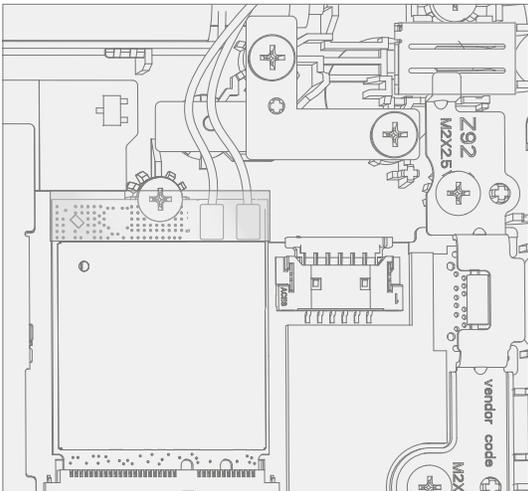
4. **Connect AB-Cover Cable** – Carefully route the cable into the D-Bucket channels and hooks. Connect the AB-Cover cable into the PCBA. Ensure the cable is fully seated and locked in the connector.



5. **Connect Antenna Cables** – Connect the antenna cables onto the WiFi Module as pictured below. Ensure the white cable is installed on the right side connector and the black cable is installed on the left side connector.



6. **Install Antenna Cable Mylar** – Install a new mylar cover onto the WiFi Module as pictured below.



7. **Install C-cover** – Follow steps for Procedure – Installation (C-Cover Keyboard) on ([page 23](#)). Leaving C-Cover screws uninstalled.
8. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.
9. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on [page 25](#).



# D-Bucket Replacement Process

## Preliminary Requirements

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 **IMPORTANT:** Be sure to follow all special (bolded) notes of caution within each process section.

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## Required Tools and Components

- **Tools:**
  - USB Thumb drive with Surface Diagnostic Toolkit Configuration Files
  - Plastic Opening tool / Spudger
  - PH0 driver
  - Torx T6 driver
  - Anti-static wrist strap (1M Ohm resistance)
- **Components:**
  - D-Bucket (Refer to [Illustrated Service Parts List](#))
  - C-Cover Screws (MM20065I030) Qty. 7
  - USB Bracket / WiFi Module / DC Power Port / Battery Screws (MS20025I070) Qty. 12
  - PCBA Screws (MS20015I220) Qty. 2
  - AB-Cover Hinges (MS25040I060) Qty. 4

## Prerequisite Steps:

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 **IMPORTANT:** The serial number for this device model is located on its original cover. To keep track of the device's serial number, please record it using waterproof ink (Location Link) on a sticker or label and apply the sticker or label to an easily accessible area on the device exterior. The serial number cannot be added permanently to a replacement part. Microsoft may have provided a label for this use in the replacement part's packaging.

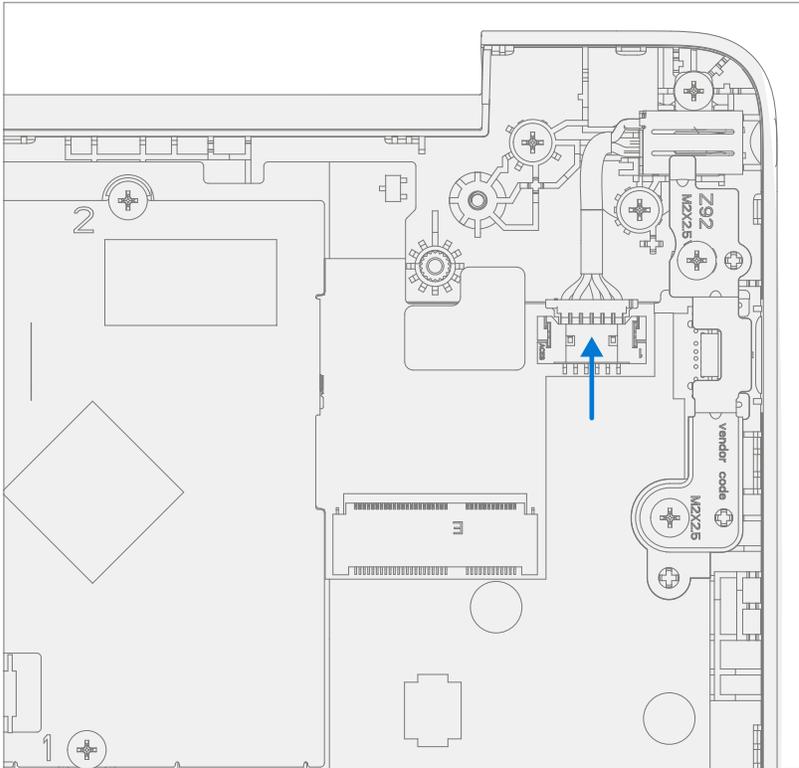
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- **Power off device** – Ensure device is powered off and disconnected from a power supply.
- **General Safety** – Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device. Refer to Prior to Device Disassembly section ([page 17](#)) for details.
- **Position device** – Place device onto a clean surface free of debris with the bottom facing up.
- **Remove C-cover** – Follow steps for Procedure – Removal (C-cover Keyboard) on ([page 20](#)).
- **Remove Power Port** – Follow steps for Procedure – Removal (Power Port) on ([page 27](#)).
- **Remove Battery** – Follow steps for Procedure – Removal (Battery) on ([page 32](#)).
- **Remove WiFi Module** – Follow steps for Procedure – Removal (WiFi Module) on ([page 35](#)).
- **Remove Motherboard** - Follow steps for Procedure – Removal (Motherboard PCBA) on ([page 40](#)).
- **Remove Speakers** – Follow steps for Procedure – Removal (Speakers) on ([page 46](#)).
- **Remove AB-Cover** - Follow steps for Procedure – Removal (AB-Cover Display Assembly) on ([page 50](#)).

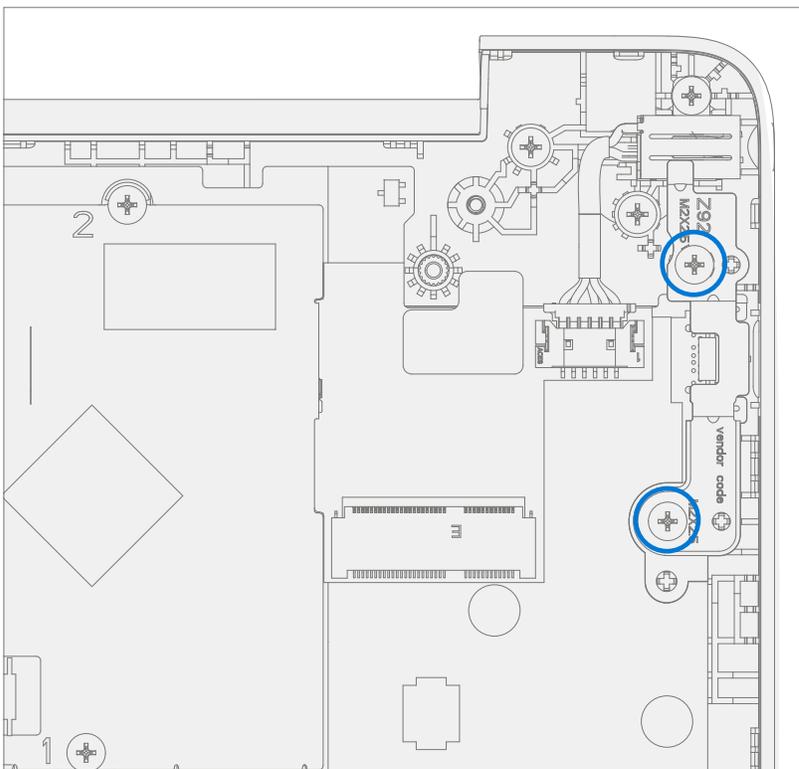


## Procedure – Removal (D-Bucket)

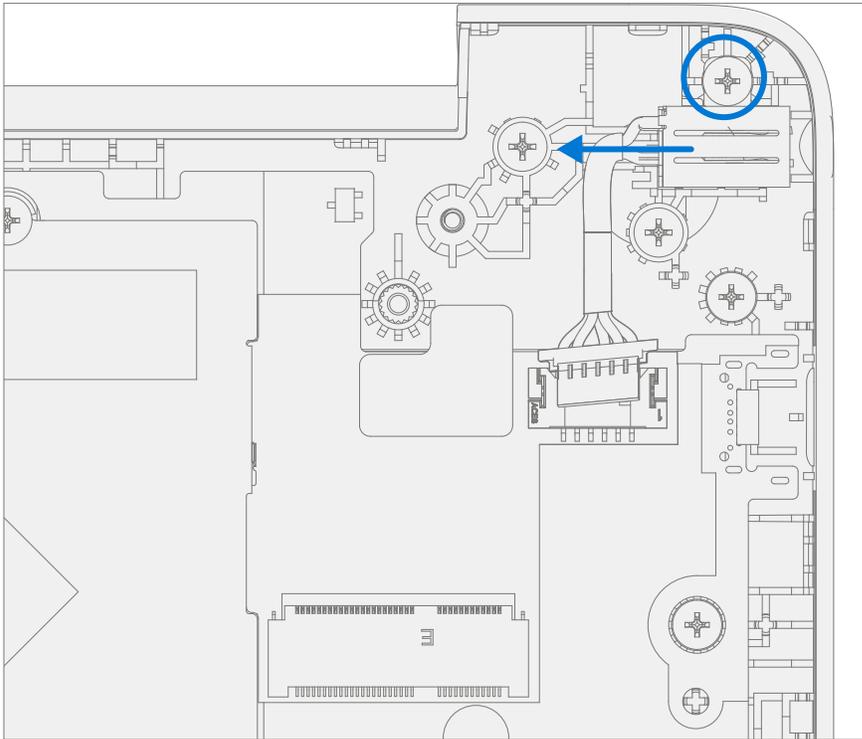
1. **Disconnect DC Power Cable** – Using a plastic tool / spudger to disconnect the DC power cable from the PCBA.



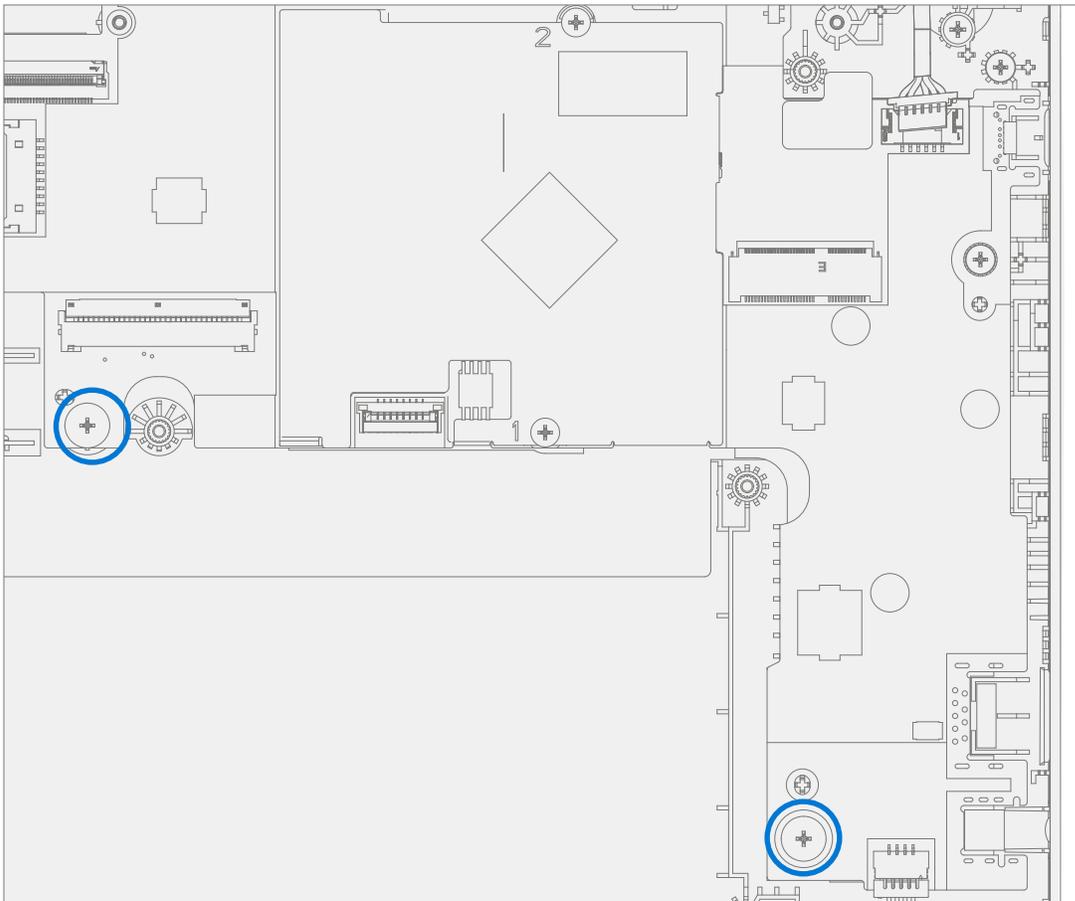
2. **Remove USB Bracket** – Using a PH0 driver remove the two screws from the USB bracket. Remove the bracket from the D-Bucket.



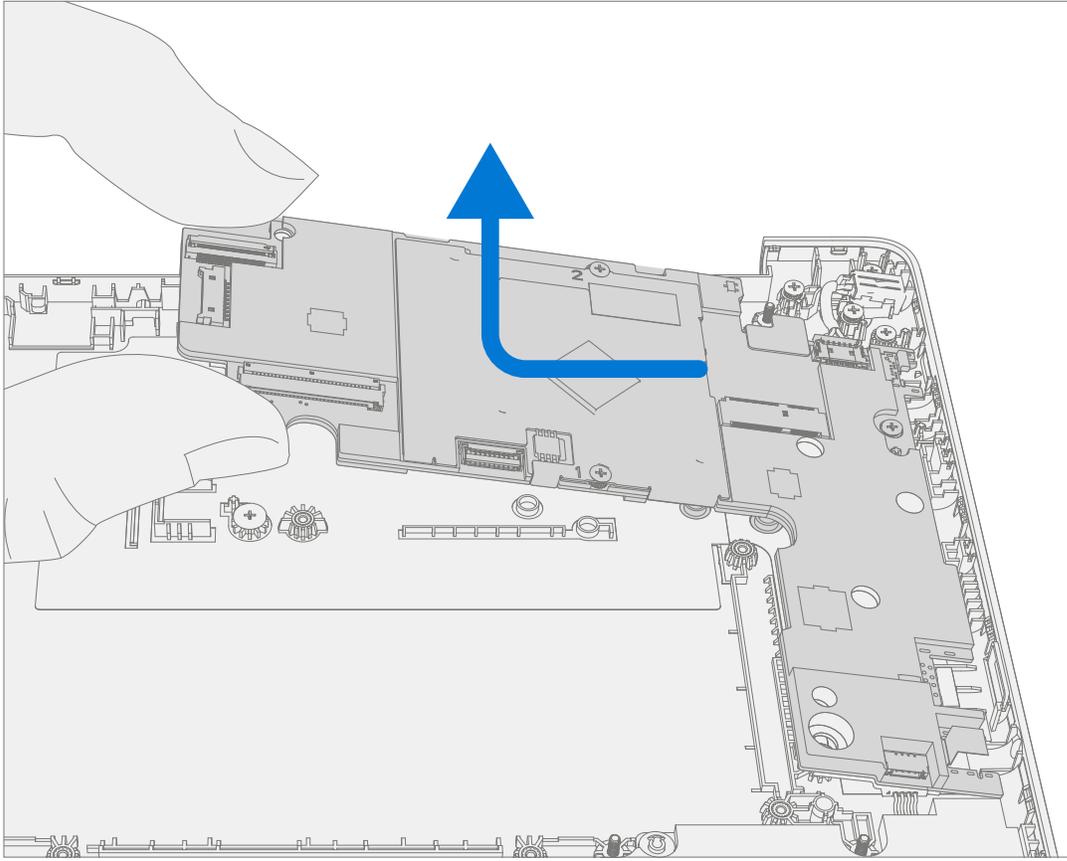
3. **Remove DC Power Port** – Using a PH0 driver remove the screw from the DC power port. Remove the DC power port from the D-Bucket.



4. **Remove PCBA screws** – Using a PH0 driver remove the two screws from the PCBA.

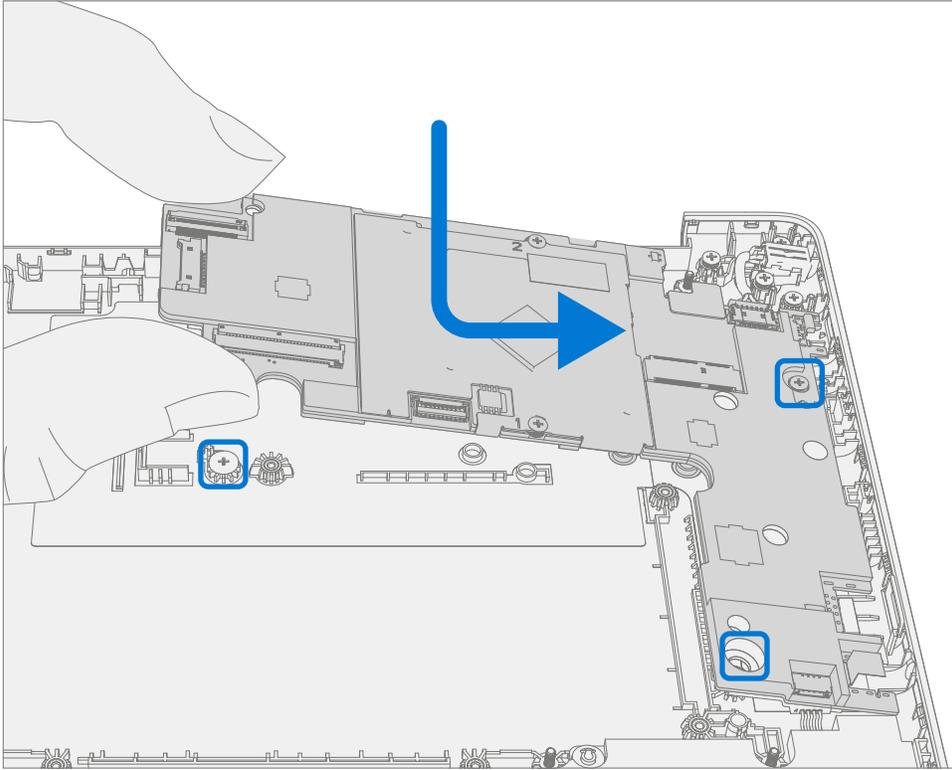


5. **Remove PCBA** – Remove PCBA from the D-Bucket.

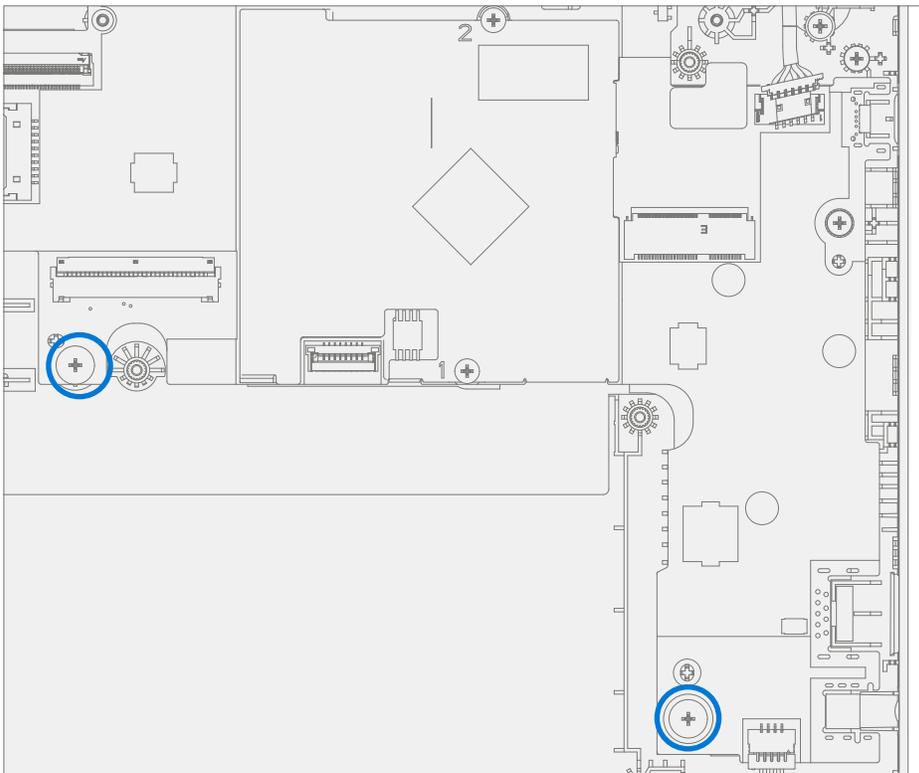


## Procedure – Installation (New D-Bucket)

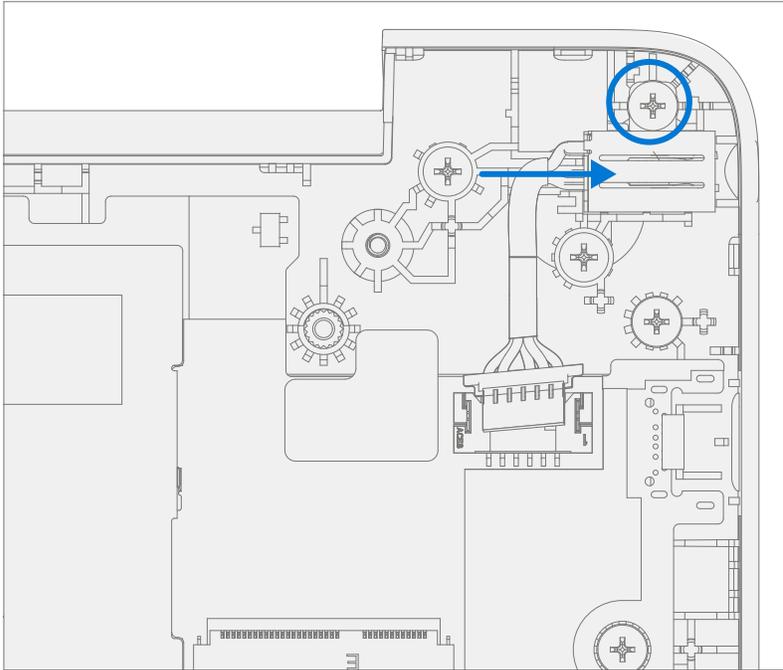
1. **Install PCBA** – Align PCBA into the D-Bucket. Ensure USB and audio ports are aligned to the holes in the D-Bucket. The PCBA should be centered on the locating posts as pictured below.



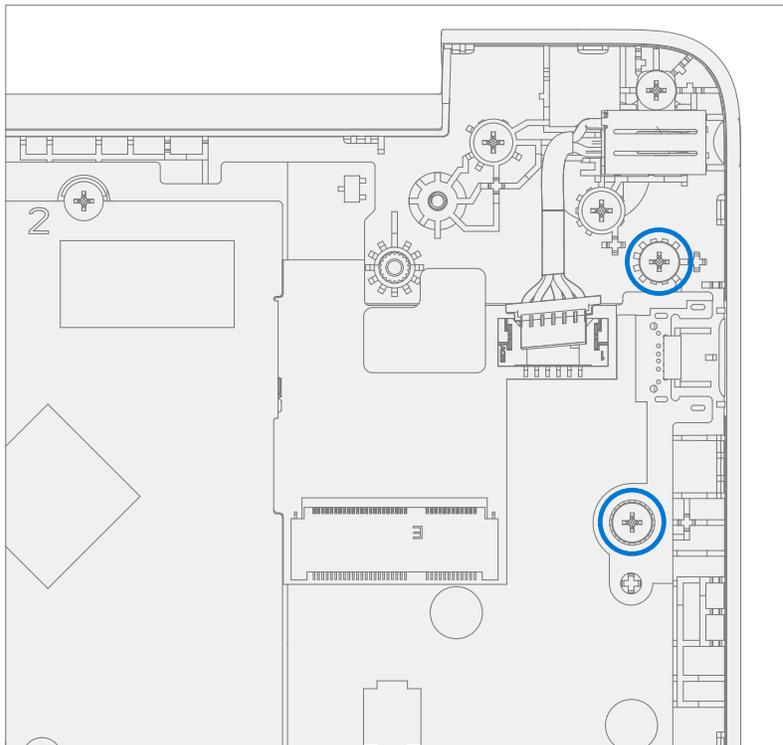
2. **Install New PCBA screws** – Using a PH0 driver install two new MS20015I220 screws into the PCBA. Turn all the screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



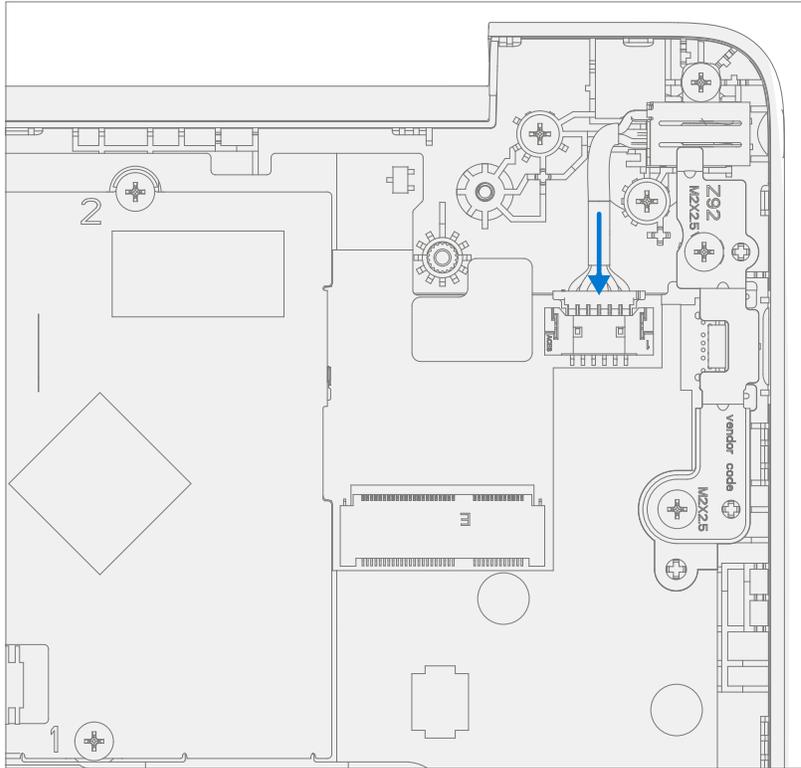
3. **Install DC Power Port** – Place the DC power port removed from the old D-Bucket into the new D-Bucket. Ensure the port is aligned with the hole in the D-Bucket. Using a PH0 driver install a new MS20025I070 screw into the DC power port. Turn the screw until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



4. **Install USB Bracket** – Place the USB bracket removed from the old D-Bucket into the new D-Bucket. Using a PH0 driver install two new MS20025I070 screws into the USB bracket. Turn all the screws until just snug and seated, and then turn another 45-degrees (1/8 turn) or until fully fastened.



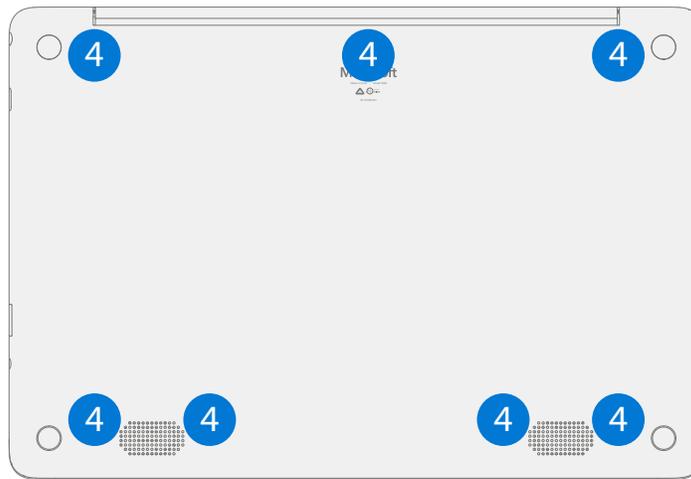
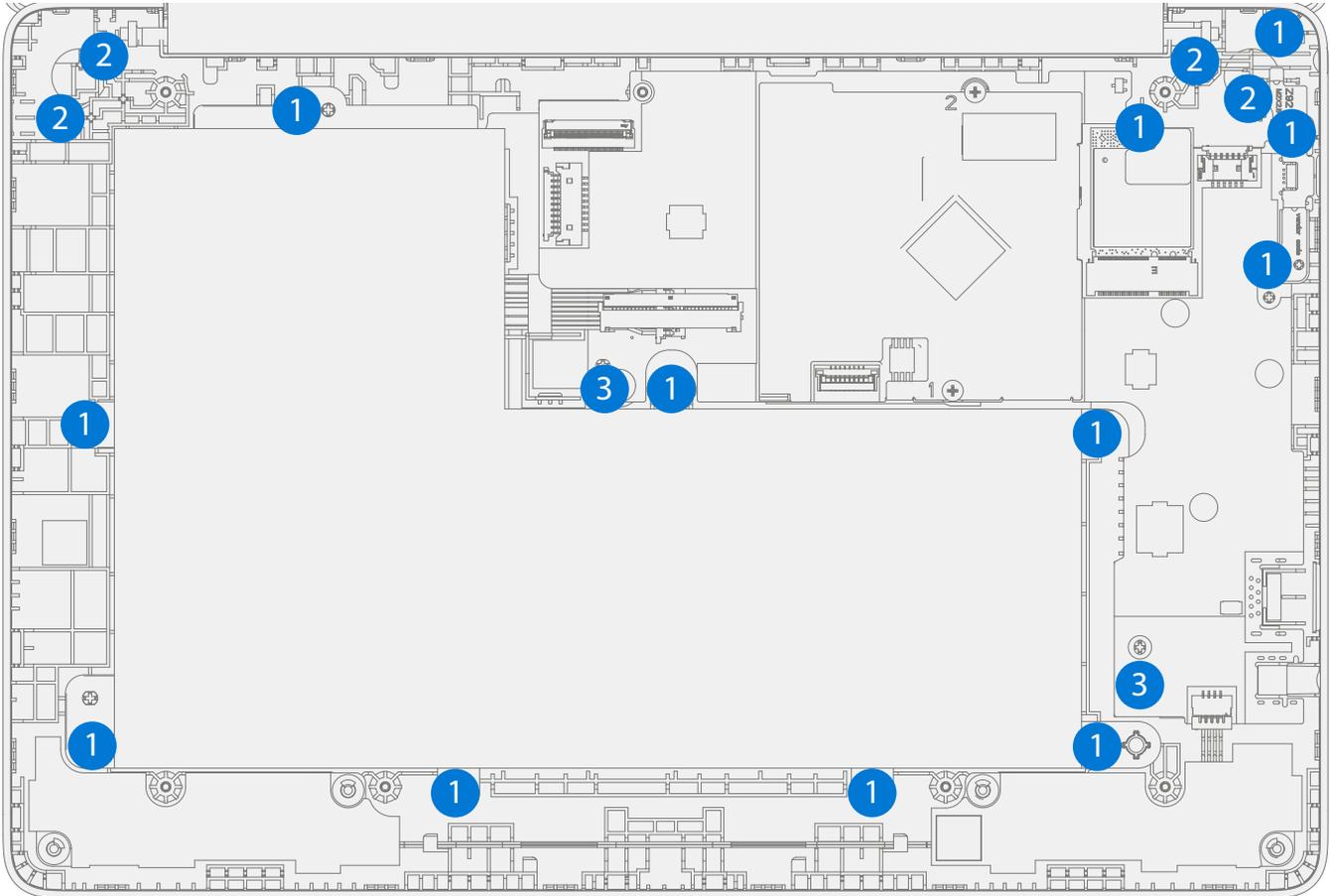
5. **Connect DC Power Cable** – Connect the DC power cable into the PCBA.



6. **Install WiFi Module** – Follow steps for Procedure – Installation (WiFi Module) on (page 37).
7. **Install Speakers** – Follow steps for Procedure – Installation (Speakers) on (page 48).
8. **Install Battery** – Follow steps for Procedure – Installation (Battery) on (page 32).
9. **Install AB-Cover** – Follow steps for Procedure – Installation (AB-Cover Display Assembly) on (page 49).
10. **Install C-cover** – Follow steps for Procedure – Installation (C-Cover Keyboard) on (page 23). Leaving C-Cover screws uninstalled.
11. **Run SDT** – Power on device and connect USB drive with SDT Configuration Files. Run SDT to ensure all device features and functions operate as expected. If no further repairs are required proceed to final steps.
12. **Install new C-Cover screws** – Install new MM20065I030 Screws as detailed on (page 25).



## Illustrated Screw List



Item	Component	Part No.
(1)	SCREW M2.0*2.5-I (BUWZN) (NYLON PATCH) IRON	MS20025I070
(2)	SCREW M2.5*4.0-I (BUWZN) (NYLON PATCH) IRON	MS25040I060
(3)	SCREW M2*1.5-I (NI) (NYLOK) IRON	MS20015I220
(4)	SCREW M2.0*6.5-I (MATT ZN, NY, D4.5T0.8) STL	MM20065I030



## Environmental Compliance Requirements

All waste electrical and electronic equipment (WEEE), waste electronic components, waste batteries, and electronic waste residuals must be managed according to applicable laws and regulations. and H09117, "Conformance Standards for Environmentally Sound Management of Waste Electrical and Electronic Equipment (WEEE)," which is available at this link: <https://www.microsoft.com/en-pk/download/details.aspx?id=11691> In case of questions, please contact AskECT@microsoft.com

