



Microsoft Surface Hub

# Surface Hub 2S 50" Service Guide



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## Glossary of Terms

The following terms are used throughout this manual:

- **rSSD** – Removable Solid-State Drive
- **BMR** – Bare Metal Recovery refers to the clean imaging process.
- **ESD** – Electro-Static Discharge
- **FRU** – Field Replaceable Unit
- **IPA** – Isopropyl alcohol
- **PSA** – Pressure Sensitive Adhesive
- **PSU** – Power Supply Unit
- **RnR** – Repair and Refurbish
- **VB** – Video Board
- **FRU** – Field Replaceable Units are sub-system components such as the rSSD door, and rSSD.



## General Information, Precautions, Warnings

 This symbol identifies important safety and health information in this manual.

### Service Tools and Jigs

#### Microsoft Recommended Service Jigs

- PE Foam Blocks  
36in x 8in x 1.5in (914mm x 203mm x 38mm) Density 2.2 PCF

#### Standard Service Tools:

- Anti-static wrist strap (1 MOhm resistance)
- Soft ESD safe mat
- Phillips #1 bit and driver
- Torx T10 bit and driver
- Torx T6 bit and driver
- Torx T4 bit and driver
- 8mm hex key/Allen wrench
- Cutting pliers/wire snips
- Microfiber Cloth
- Gloves

The tools identified on this list can be purchased from many different commercial sources.





## General Safety Precautions

Always observe the following general safety precautions:

- Opening and/or repairing any device can present electric shock, device damage, fire, and/or personal injury risks and other hazards. Exercise caution when undertaking these activities as described in this manual. Only qualified IT technicians to whom Microsoft has provided this manual should attempt to remove the rSSD. Only Microsoft-authorized service providers should undertake repair activities.
- Always select and use the appropriate AC power supply for a device. We recommend you use genuine Microsoft power supply units and AC power cords. A genuine Microsoft power supply unit is provided with every device.
- Use only AC power provided by a standard (mains) wall outlet. Do not use non-standard power sources, such as generators or inverters, even if the voltage and frequency appear acceptable.

For additional product safety information, including information about

- Hearing conservation
- Heat related concerns
- Choking hazard/small parts
- Interference with medical devices
- Broken glass
- Photosensitive seizures
- Musculoskeletal disorders

See [aka.ms/surface-safety](https://aka.ms/surface-safety).



## Repair-Specific Precautions and Warnings

- The processes outlined in this document apply to devices which have been determined to have a malfunctioning component. Replacement will be completed by end consumers, IT professionals, authorized repair technicians and in Microsoft-managed repair facilities.

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**⚠ WARNING:** The device is heavy; follow proper team handling guidelines. This document does NOT include processes/required tools for removing the device from wall mounts or stands.

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- Any fastener removed in the course of completing a repair action must be replaced with a new fastener provided in the FRU kit.

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**⚠ WARNING:** To reduce the risk of electrical shock or damage to the device, ensure that it is turned off and all cables attached to the device are disconnected.

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- Prior to performing any maintenance work on device ensure that proper Electro-Static Discharge (ESD) wrist-straps are donned appropriately by the technician. The work area must be properly grounded to ensure electrostatic discharge (ESD) safe environment.
- Use caution when handling the device to prevent scratching or otherwise damaging the glass or material finish. Only a microfiber cloth shall be used to clean the device.
- 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 and to the subassembly.
- Technicians must wear gloves when handling device.
- We recommend wearing protective eyewear as a safety precaution when disassembling/re-assembling a device.



## Safety Policies/Procedures

Microsoft's field product safety program team is referred to as the Rapid Response Team (RRT). All device issues that may be safety related should be managed per the following instructions.

As a quick guide, any Microsoft Surface device that visually exhibits any of the following symptoms shall be immediately removed from the replacement process and delivered to your Variance Manager or IT Support Professional for notification to Microsoft RRT:

- 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 customer abuse (e.g., impact damage from dropping, evidence of tampering, separation caused by a malfunctioning battery).
- Any other finding that may constitute a safety hazard to the user, such as sharp edges on plastics.

The Variance Manager or IT Support Professional must send an email to RRT with pictures showing the damage within 24 hours of device receipt. Refer to the ASP Guidebook for the RRT email address.

Your email should include:

- The model and serial number of the affected Microsoft Surface device and/or accessory(ies).
- The SR (Service Request) Number that the device was received under (Note as N/A if no SR exists).
- A brief description of the damage found.
- Clear photographs depicting the symptoms observed.

The Variance Manager or IT Support Specialist must await instructions from Microsoft Product Safety RRT for the affected unit before continuing with activities or returning the device to the end user.



## Service Diagnostics/Troubleshooting Overview


- For general Surface support, visit [support.microsoft.com](https://support.microsoft.com)
- To troubleshoot device feature/function problems or learn more about Surface Hub 2S 50, visit [aka.ms/SurfaceHubHelp](https://aka.ms/SurfaceHubHelp)  
[docs.microsoft.com/en-us/surface-hub/](https://docs.microsoft.com/en-us/surface-hub/)

### Software Tools:

- How To: [Update Surface Hub firmware and OS](#)
- How To: [Reimage Surface Hub v2S 50](#)
- Download: [Surface Imaging Tools](#)
- Download: [Surface Hub Diagnostic Test \(SDT\)](#)

### Hardware Troubleshooting Approach

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 **IMPORTANT:** Be sure that devices meet all pre-repair qualifications related to safety and policy prior to repair. See ASP Guidebook for details or check with your Microsoft account manager.

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The following approach should be taken when troubleshooting Surface devices:

1. Update device to latest OS/FW versions – Refer to Software Tools section above for details.

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

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## Component Removal and Replacement Procedures

### Prior to Device Disassembly:

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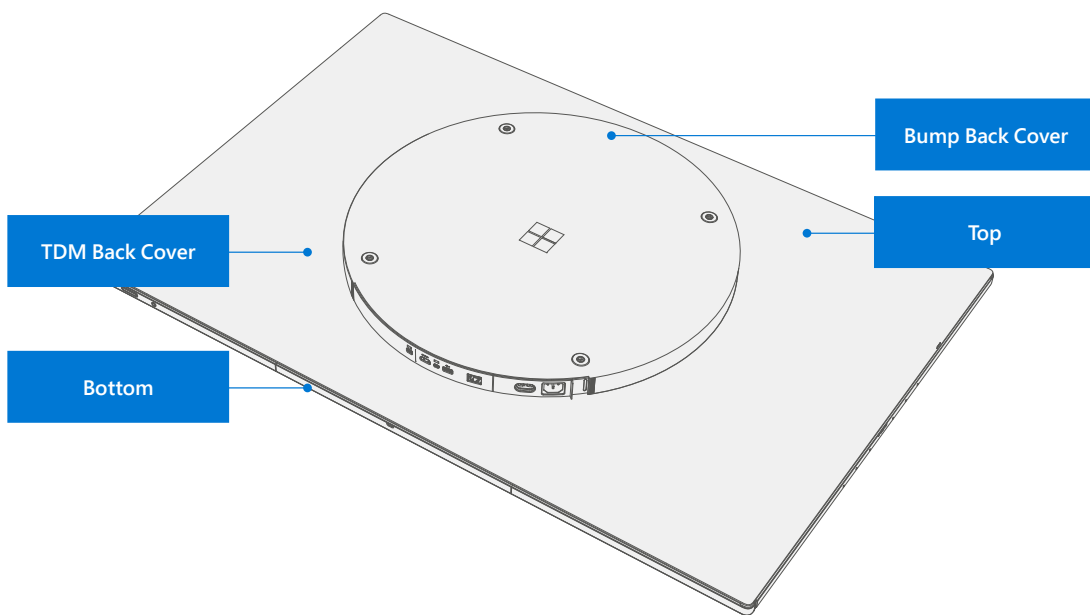
 **WARNING:** Before opening the device, always ensure device is powered off and disconnected from a power supply.

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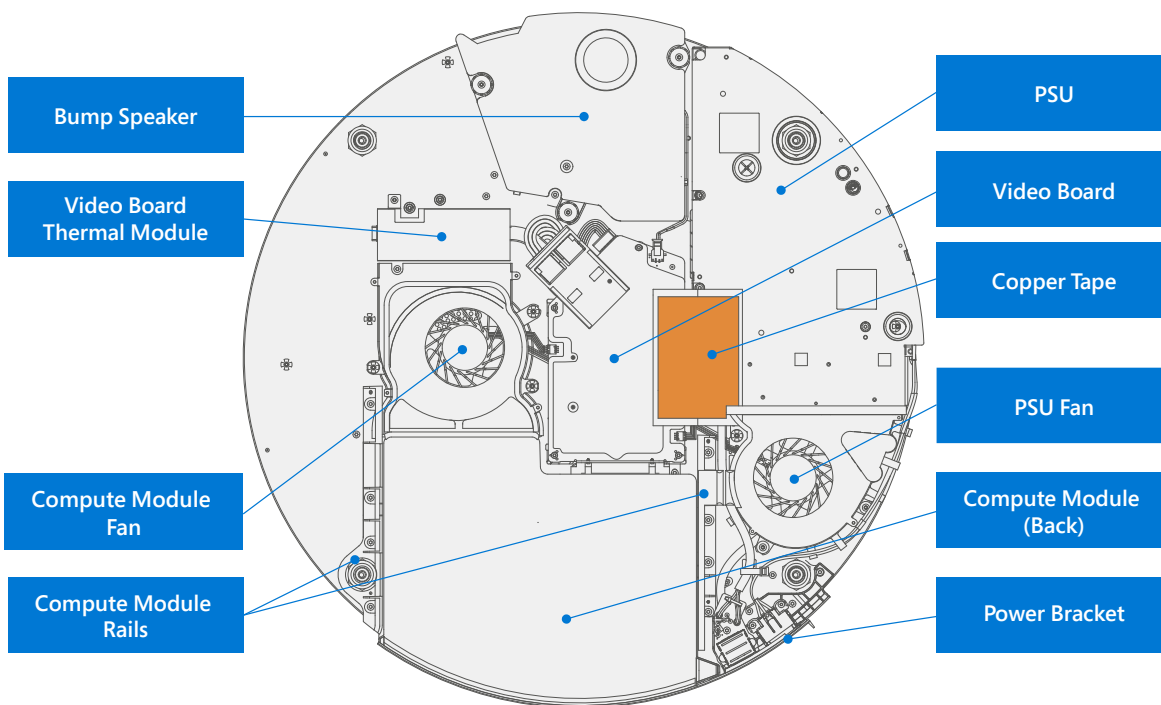
- Check to make sure that general guidelines and ESD compliance steps are followed prior to opening device.
- FRUs removed from a device under repair during the repair process should be stored in ESD-safe bags and packaged for return in the same packaging and order that the new replacement part came in.



# Device Overview / Illustrated Service Parts List



**Device Overview**



**Bump Overview**



<b>Component</b>	<b>FRU Part Number</b>	
Compute Module (Multiple Options)	NXY-00011	SURFACE HUB 2 COMPUTE US/CA FRU
	RQY-00005	SURFACE HUB 2 COMPUTE US/CA/MX POTW FRU
	NXY-00012	SURFACE HUB 2 COMPUTE WEURO FRU
	NXY-00016	SURFACE HUB 2 COMPUTE ANZ/MY/SG/TH/IN A FRU
	NXY-00017	SURFACE HUB 2 COMPUTE ANZ/MY/SG/TH/IN B FRU
	NXY-00018	SURFACE HUB 2 COMPUTE JAPAN FRU
	NXY-00019	SURFACE HUB 2 COMPUTE HONG KONG FRU
	NXY-00033	SURFACE HUB 2 COMPUTE QATAR/UAE FRU
SSD	NXY-00023	SURFACE HUB 2S 50 COMPUTE SSD FRU
Bump Cover (Multiple Options)	NXY-00030	SURFACE HUB 2S 50 COMPUTE BUMP COVER FRU
	RQX-00001	SURFACE HUB 2S 50 COMPUTE BUMP COVER POTW FRU
Compute Module Fan	NXY-00027	SURFACE HUB 2S 50 COMPUTE FAN FRU
PSU Fan	NXY-00026	SURFACE HUB 2S 50 COMPUTE PSU FAN FRU
Bump Speaker	NXY-00025	SURFACE HUB 2S 50 COMPUTE LFT/REAR BUMP SPKR FRU
Nano-Pitch Cable Holder	8ZY-00001	SURFACE HUB 2S 50 Nano-Pitch Cable Holder (Also supplied with the Video Board NXY-00024 FRU)
Video Board (Multiple Options)	NXY-00024	SURFACE HUB 2S 50 COMPUTE VIDEO BOARD PCBA FRU
	RRG-00001	SURFACE HUB 2S 50 COMPUTE VIDEO BOARD PCBA NA/MX POTW FRU
PSU	NXY-00035	SURFACE HUB 2S 50 COMPUTE WW PSU LED DRIVER FRU



# 1 Compute Module Replacement Process

## 1.1 Compute Module Overview

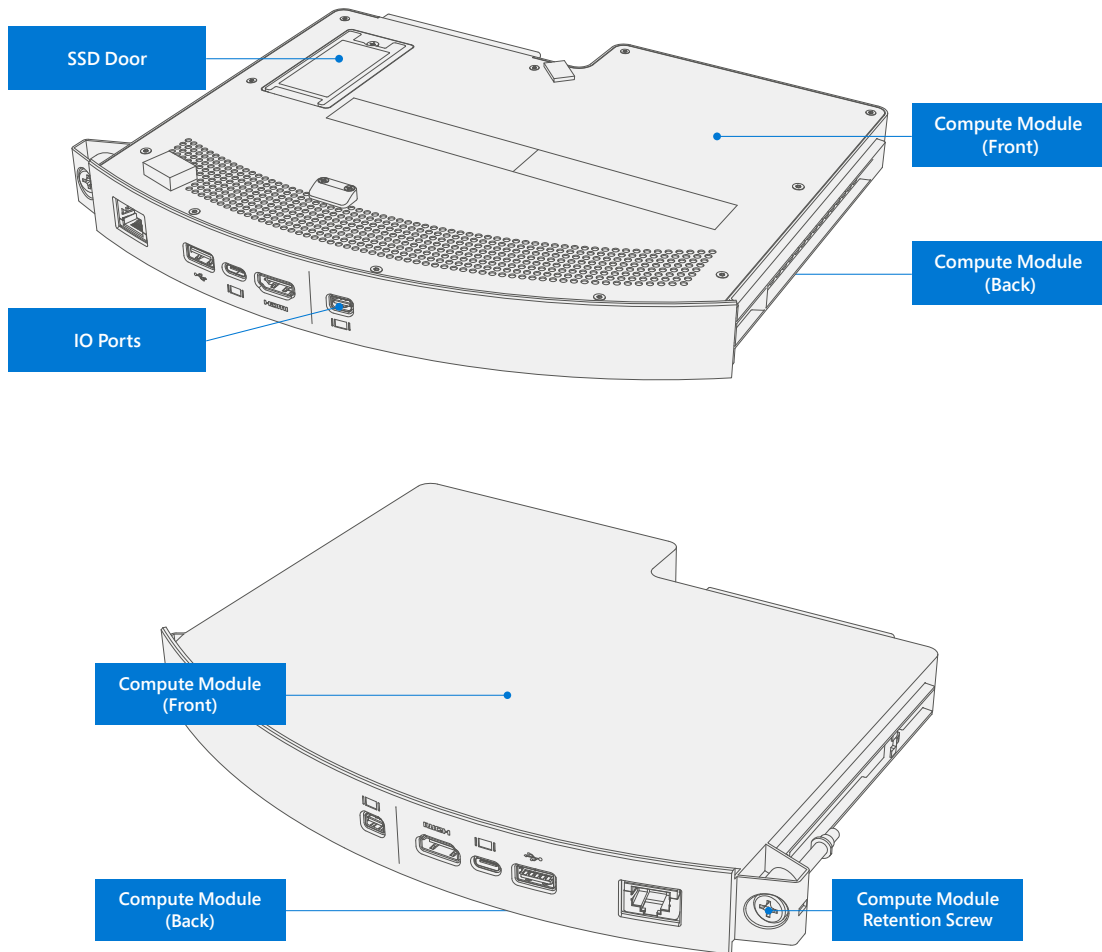


Figure 1-1 Compute Module Overview

## 1.2 Precautions

Remove Compute Module slowly and gently from bump to avoid scratching back panel of device.



## 1.3 Required Tools and Components

- **Tools**

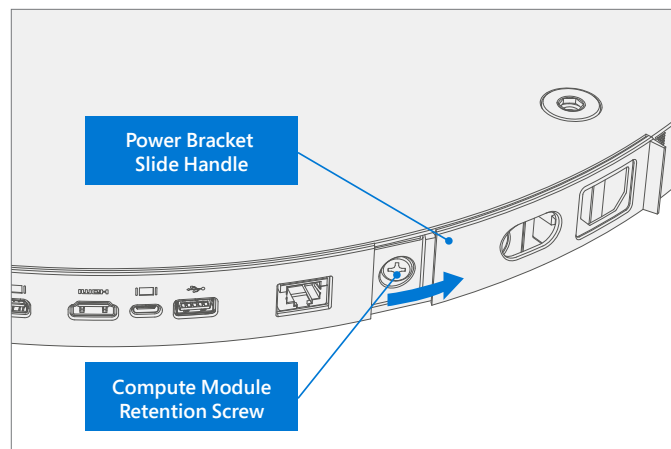
- Phillips #1 bit and driver
- Microfiber Cloth

- **Components**

- Compute Module Assembly (multiple options)
- NXY-00011 SURFACE HUB 2 COMPUTE US/CA FRU
- RQY-00005 SURFACE HUB 2 COMPUTE US/CA/MX POTW FRU
- NXY-00012 SURFACE HUB 2 COMPUTE WEURO FRU
- NXY-00016 SURFACE HUB 2 COMPUTE ANZ/MY/SG/TH/IN A FRU
- NXY-00017 SURFACE HUB 2 COMPUTE ANZ/MY/SG/TH/IN B FRU
- NXY-00018 SURFACE HUB 2 COMPUTE JAPAN FRU
- NXY-00019 SURFACE HUB 2 COMPUTE HONG KONG FRU
- NXY-00033 SURFACE HUB 2 COMPUTE QATAR/UAE FRU

## 1.4 Remove Compute Module

1. Power off device using the power button on the bottom of the device (near the volume rocker).
2. Unplug all cables from all ports (power and data).
3. Slide the power bracket slide handle open to reveal compute module retention screw (Figure 1-2).

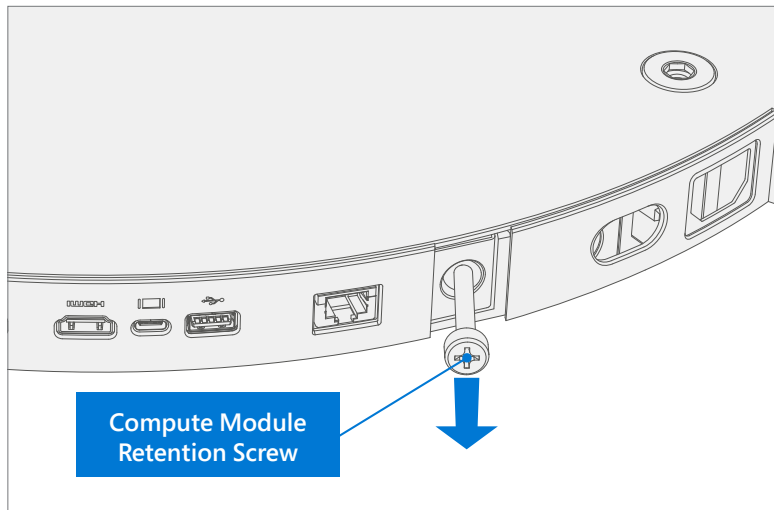


**Figure 1-2 Opening Power Bracket Slide Handle**



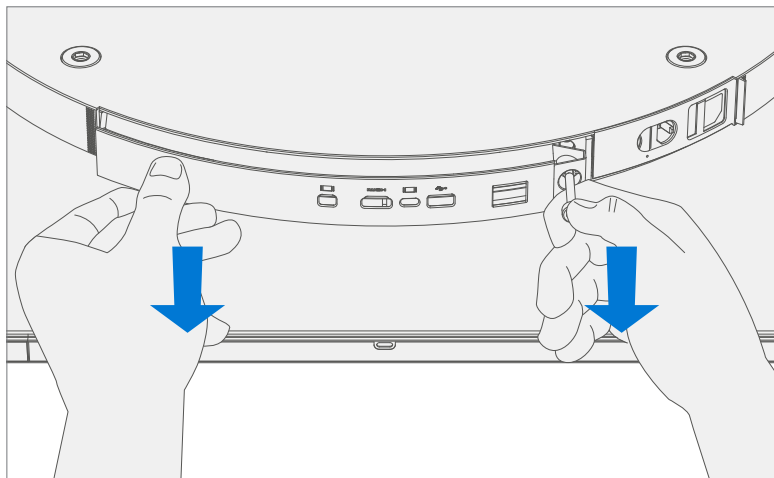


4. Use **Philips #1 bit and driver** to loosen the compute retention screw completely.
  - a. The screw is spring loaded and captive in the compute module.
  - b. If screw does not spring out, lightly pull with fingers to release the screw (Figure 1-3).



**Figure 1-3 Compute Module Retention Screw**

5. Pull Compute Module from Bump Cover (Figure 1-4). Pull with equal force from the compute module retention screw and the opposite side of the compute module. Lightly push fingers underneath the compute module to access the lip of the compute module.

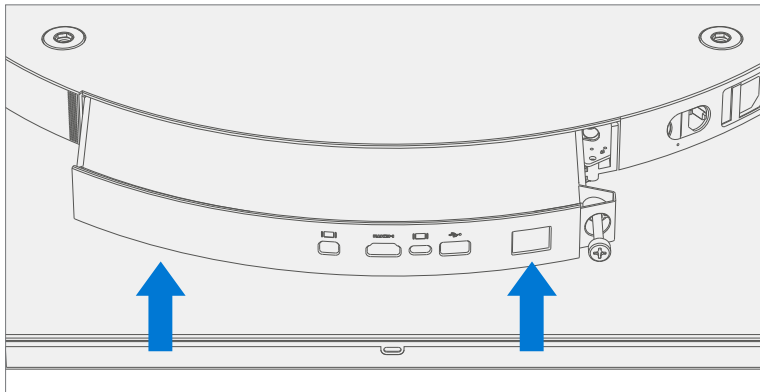


**Figure 1-4 Removing Compute Module**



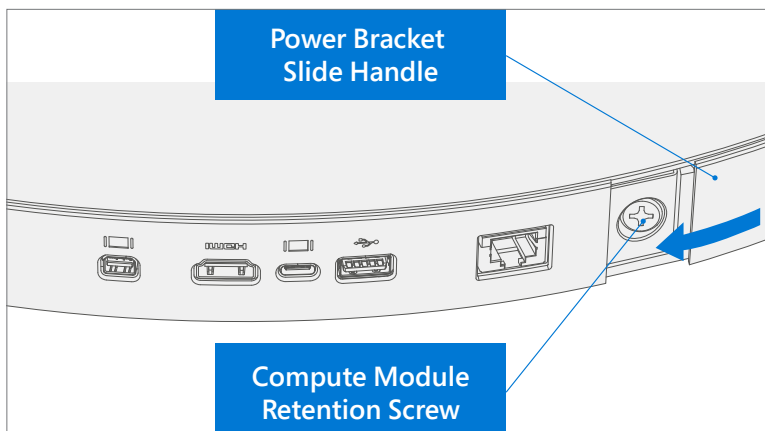
## 1.5 Install Compute Module

1. Align the new **Compute Module Assembly** with the compute module slot with the plastic surface toward the back of the device--rails will help align (Figure 1-5).
  - a. Compute module will only slide into bump in correct orientation. Do not use excessive force to push compute module into slot.
2. Push the compute module into the slot with moderate force--the compute module should slide smoothly without significant resistance.
  - a. Push the computer module into the slot until it audibly clicks into place.



**Figure 1-5 Inserting Compute Module**

3. Use the **Philips #1 bit and driver** to tighten the compute module retention screw until tight, then another 1/8th turn.
4. Slide the power bracket slide handle closed to cover compute module retention screw (Figure 1-6).



**Figure 1-6 Closing Power Bracket Slide Handle**

5. Reconnect all cables.
  - a. After installing a new compute module or SSD, navigate through device setup to resume normal device function.
6. Wipe down device with the **microfiber cloth** to remove fingerprints.



## 2 SSD Replacement Process

### 2.1 SSD Overview

As much as possible, refrain from touching the SSD on the main printed circuit surface. Touch and hold the SSD from the three outer edges when possible (Figure 2-1).

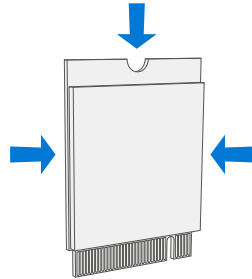


Figure 2-1 SSD Overview

### 2.2 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Microfiber Cloth
- **Components**
  - NXY-00023 SURFACE HUB 2S 50 COMPUTE SSD FRU  
(FRU includes a new SSD screw and door)

### 2.3 Remove SSD

1. Follow instructions in section 1.4 to remove the compute module from the device.
2. Lay the compute module with the front (metal) facing up to access the SSD door (Figure 2-2).

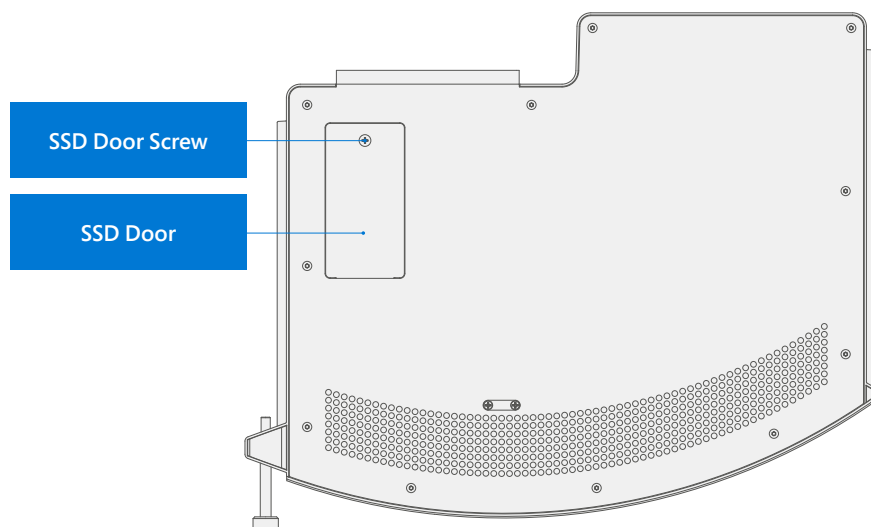
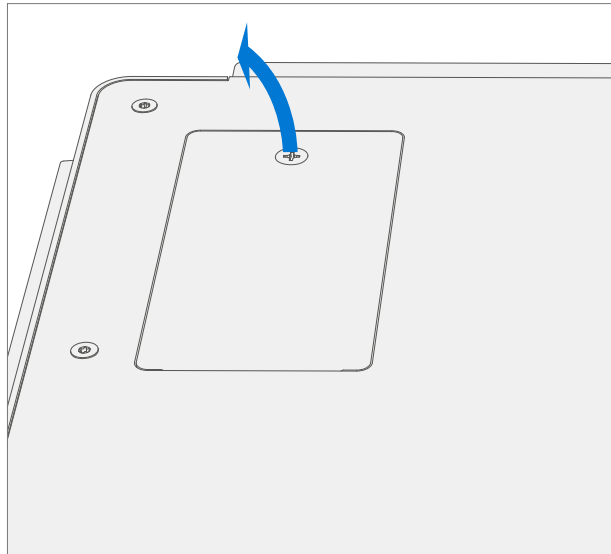


Figure 2-2 SSD Door Overview

3. Use a **Phillips #1 bit and driver** to loosen SSD door screw completely. The screw is captive in the SSD door.

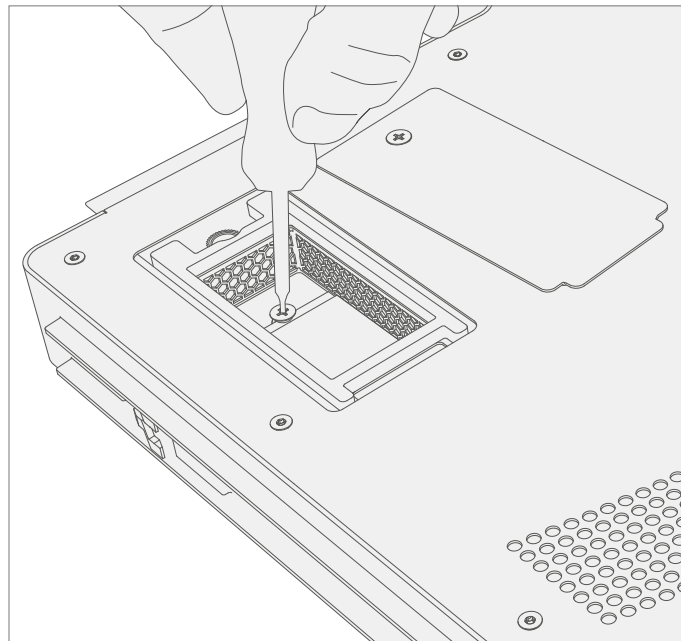


- Using fingers, carefully lift the SSD door up and set aside. Do not drop the SSD door into the SSD bay (Figure 2-3).



**Figure 2-3 Open SSD Door**

- Using **Phillips #1 bit and driver**, remove the SSD retention screw. The SSD will rest at approximately 30 degrees in its M.2 slot (Figure 2-4).



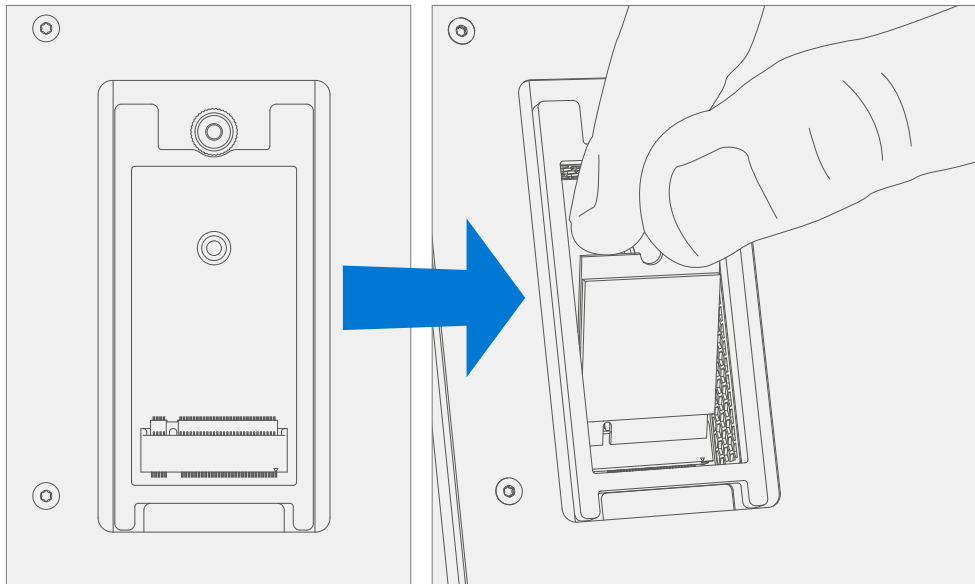
**Figure 2-4 Remove SSD Retention Screw**

- Use fingers to remove the SSD from the M.2 slot. Touch only the sides of the printed circuit board as much as possible.



## 2.4 Install SSD

1. Holding the new **SSD (NXY-00023)** from the sides of the printed circuit board when possible, insert the SSD into the M.2 slot at approximately 30 degrees (Figure 2-5).



**Figure 2-5 Installing Compute Module SSD**

2. With the new **SSD Retention Screw** already placed on the **Phillips #1 bit and driver**, push the SSD flat against the bottom surface of the SSD bay.
3. Thread the SSD retentions screw until there is resistance—be careful not to overtighten.
4. Using fingers, carefully place the **SSD Door Assembly** over the SSD bay.
5. Use the **Phillips #1 bit and driver** to thread the SSD door screw. Thread until tight, then another 1/8<sup>th</sup> turn.
6. Follow instructions in section 1.5 to replace the compute module in the device.



### 3. Bump Cover Replacement

#### 3.1 Bump Cover Overview

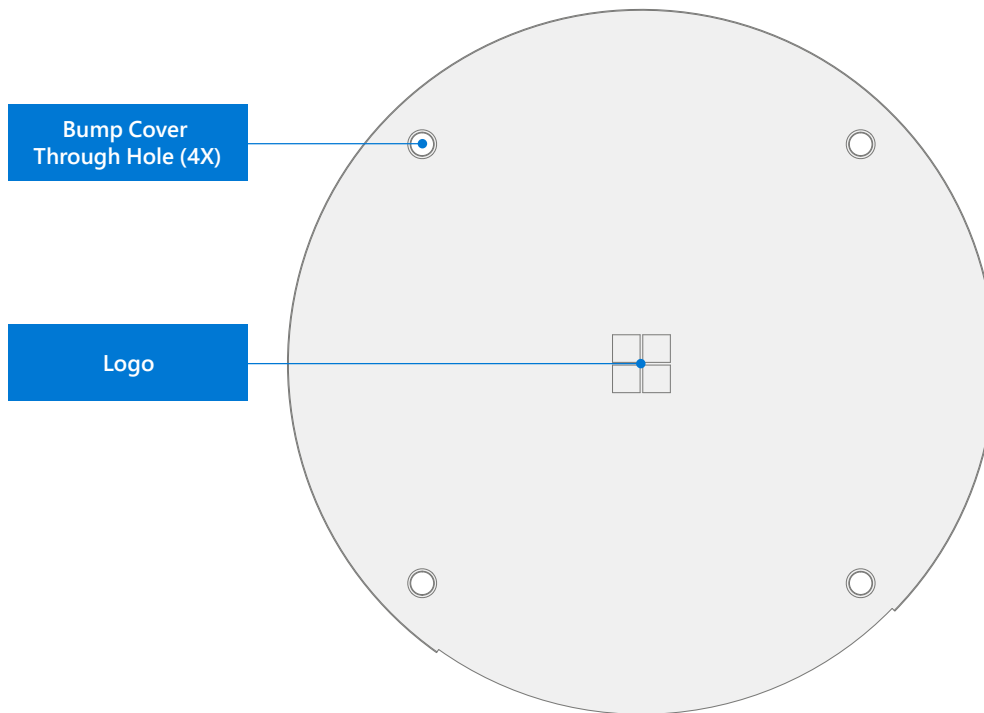


Figure 3-1 Bump Cover Overview

#### 3.2 Required Tools

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - 8mm hex key/Allen wrench
  - PE Foam Blocks
  - Microfiber cloth
- **Components**
  - Bump Cover (multiple options)
  - NXY-00030 SURFACE HUB 2S 50 COMPUTE BUMP COVER FRU
  - RQX-00001 SURFACE HUB 2S 50 COMPUTE BUMP COVER POTW FRU
    - (FRU includes four new Bump cover T-nuts)
    - (FRU includes five new Bump Cover Snaps)
    - (FRU includes four new Bump cover snaps with washer)



### 3.3 Remove Bump Cover

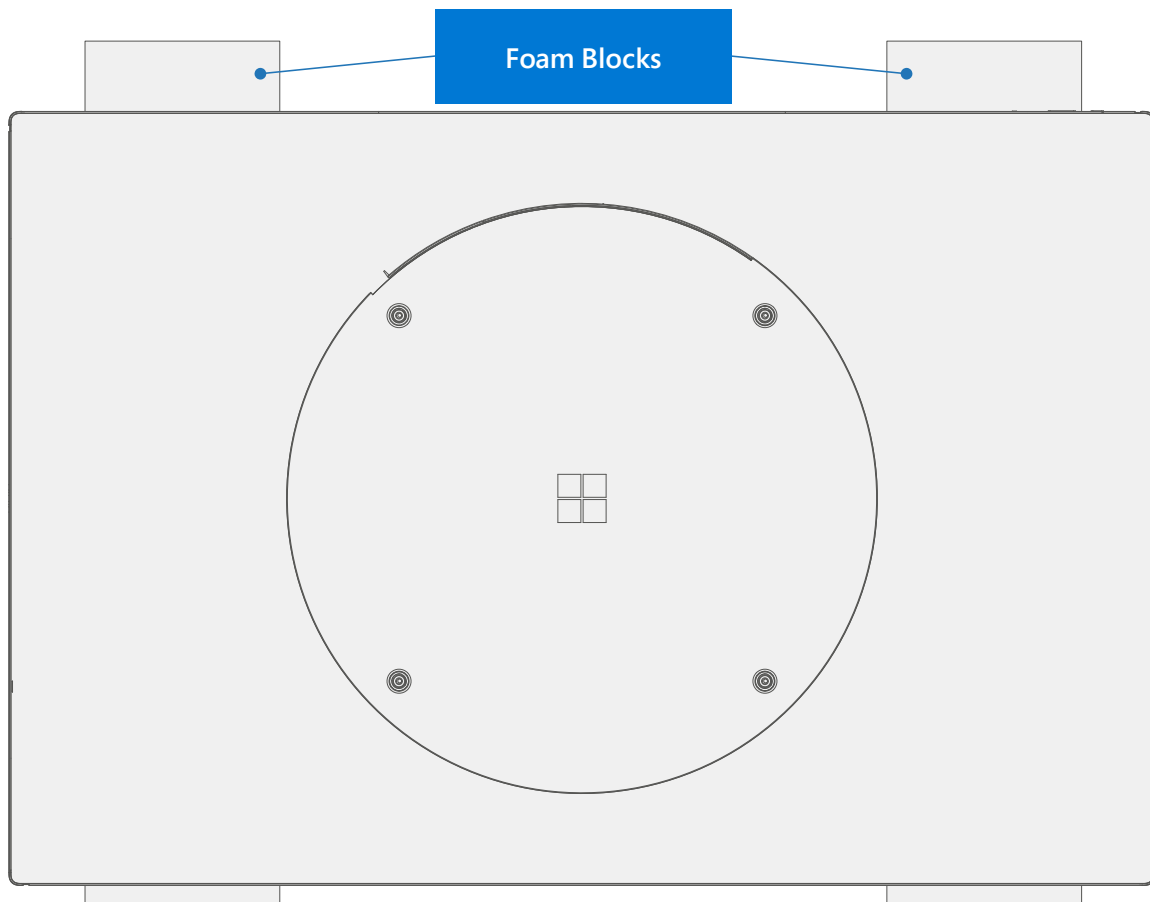
1. Remove device from stand/wall mount.

---

**⚠ WARNING:** This device is heavy. Two people are required, one on each side, when lifting this device to prevent injury or damage to property or this device.

---

2. Lay device flat (display down) on a secure, stable surface. Lay device over **foam blocks** such that the outer edge of the foam is approximately 50mm inside the outer edge of the device (Figure 3-2).

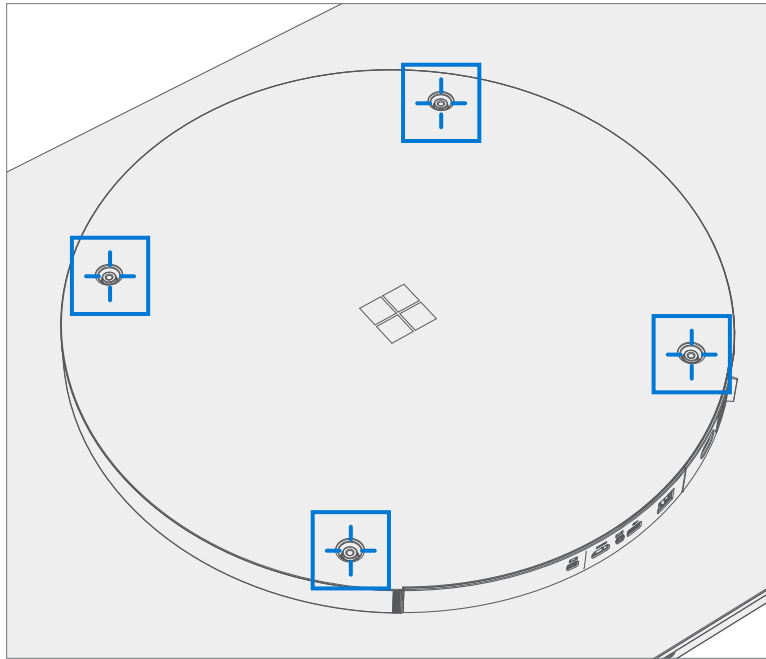


**Figure 3-2 Foam Block Placement Example**

Follow instructions in section 1.4 to remove the compute module from the device. Set the compute module aside in a safe location.

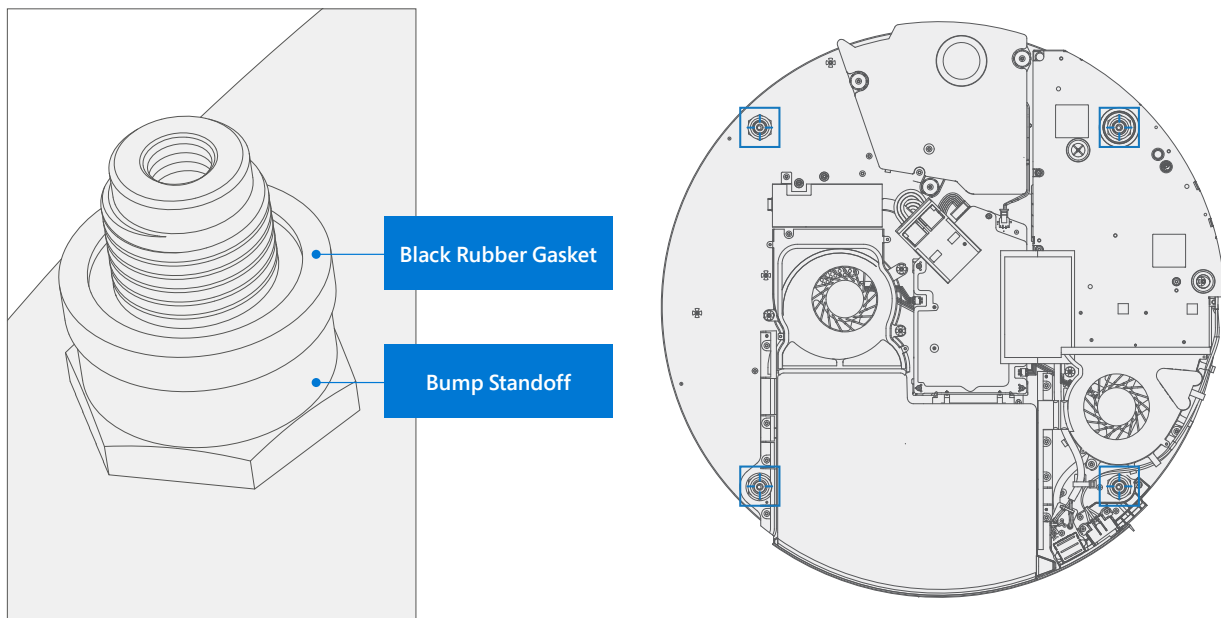


3. Remove mounting hardware from the 4 T-Nuts. Using the **8mm hex key**, remove the 4 bump cover T-nuts (Figure 3-3).



**Figure 3-3 Bump Cover Hex Nut Locations**

4. Using four fingers on each side, pull bump cover off by pulling lightly on left side then right side. Bump cover will audibly pop out of the bump cover snaps.
5. Verify black rubber gaskets remain attached to standoffs inside bump. If the rubber gasket is not present, check the area and the inside of the bump cover. Ensure all 4 rubber gaskets are fully seated on the bump standoffs before continuing (Figure 3-4).

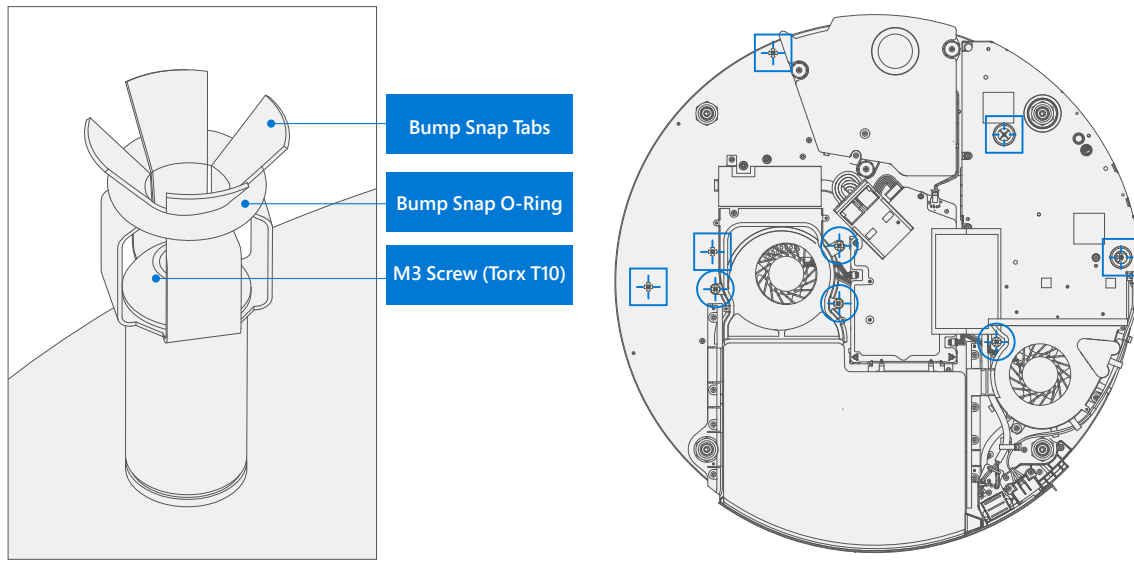


**Figure 3-4 Bump Cover Standoff Overview**





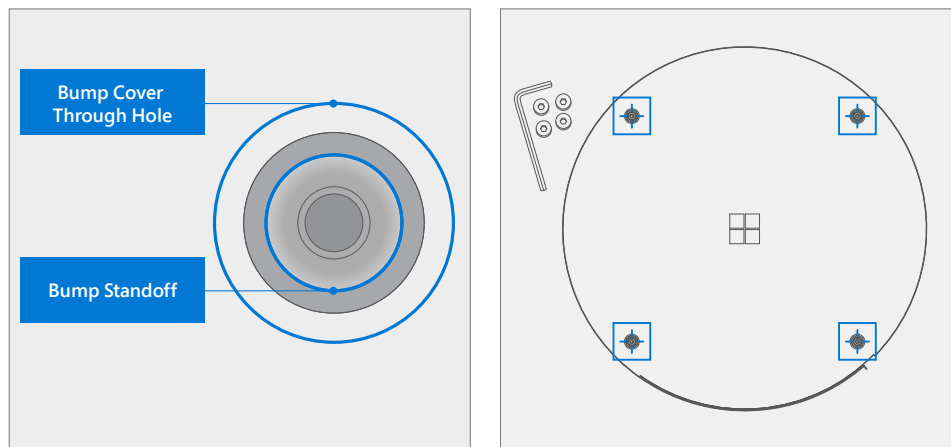
6. Inspect all 9 bump snaps for broken tabs (Figure 3-5). Each snap should have 4 tabs and 1 O-ring. If any metal tabs are broken, remove from the device and dispose of them. Tabs left in the device threaten damage to major electrical components.



**Figure 3-5 Bump Cover Snap Overview**

### 3.4 Install Bump Cover

1. If replacing the bump cover with a new bump cover, the kit will include replacement snaps. Replace any broken snaps with new snaps from the kit. If not replacing bump cover with a new bump cover, skip this step.
  - a. Use the **Torx T10 bit and driver** to remove the snap screw (screw is retained in snap assembly).
  - b. If the broken snap is outlined in circles in Figure 3-5, replace with **bump cover snaps with washer**. If the broken snap is outlined in squares in Figure 3-5 replace with **bump cover snaps**.
2. Using hands, align the bump cover such that the 4 bump cover through holes are concentric with the 4 bump standoff threaded bosses (Figure 3-6).



**Figure 3-6 Bump Cover Alignment**



3. Place hands flat on the back of the bump cover and push down until bump cover audibly snaps into place. Push down across the entire back surface of the bump cover to ensure all 9 snaps engage.
4. Begin to thread all 4 **bump cover T-nuts** into back of bump cover using fingers until snug.
5. Using the **8mm hex key** tighten all 4 **bump cover T-nuts** into back of bump cover until flange fully seats in bump cover recess. Install mounting hardware on the 4 T-Nuts.
6. Follow instructions in section 1.5 to replace the compute module in the device.
7. Replace device on stand/wall mount. Two people required to lift device – one on each side.
8. Wipe down device with the **microfiber cloth** to remove fingerprints.

## 4 Compute Module Fan Replacement Process

### 4.1 Compute Module Fan Overview

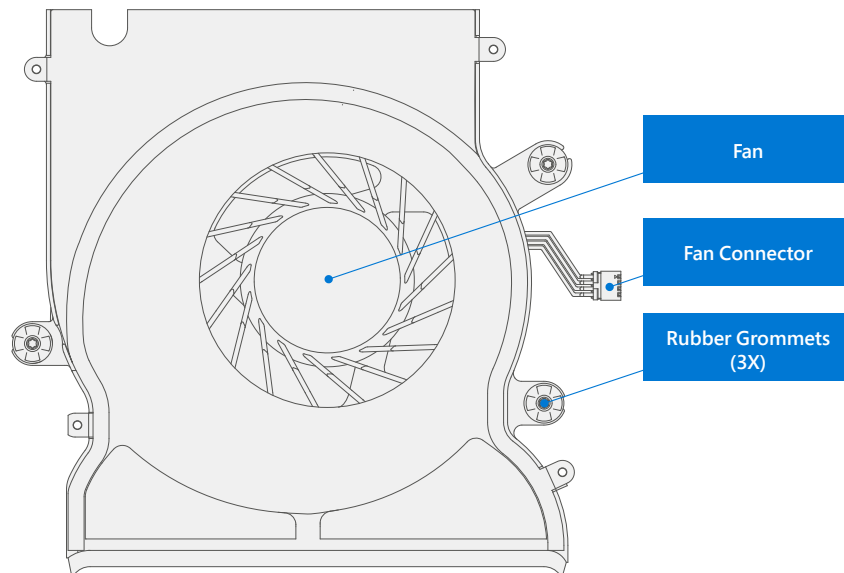


Figure 4-1 Compute Module Fan Overview

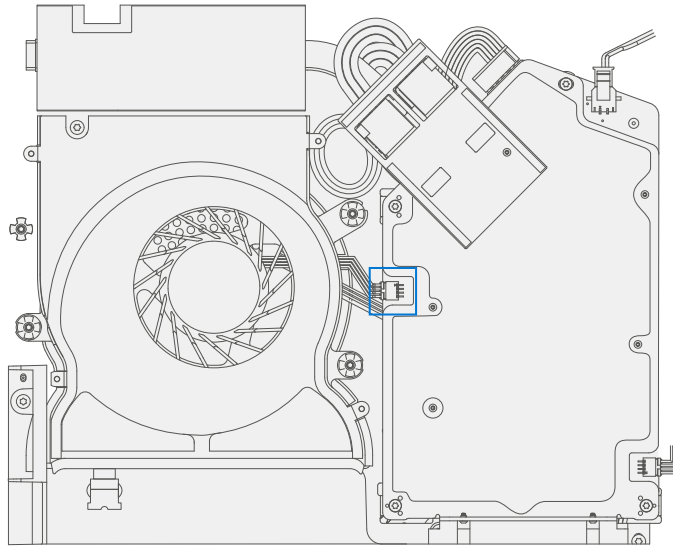
### 4.2 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - 8mm hex key/Allen wrench
  - PE Foam blocks
  - Microfiber cloth
- **Components**
  - NXY-00027      SURFACE HUB 2S 50 COMPUTE FAN FRU  
(FRU includes three new Bump cover snaps with washer)



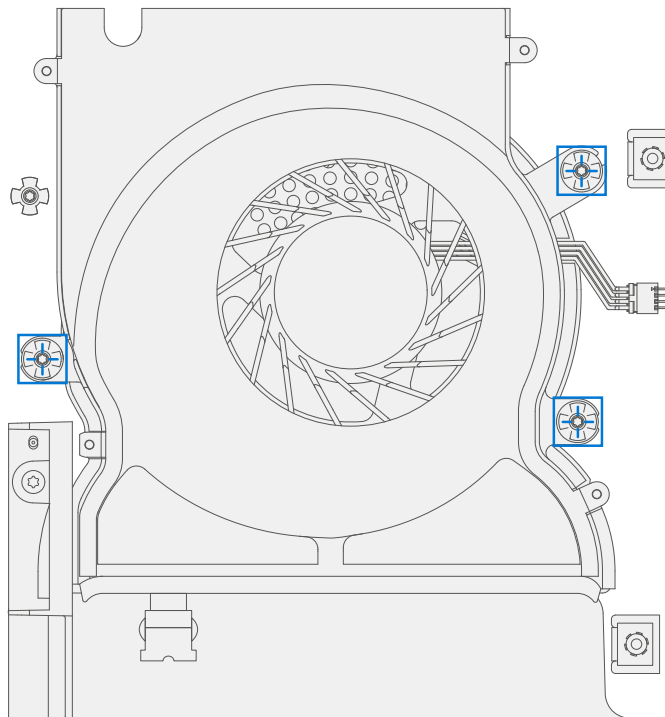
### 4.3 Remove Compute Module Fan

1. Follow instructions in section 3.3 to remove device from the stand/wall mount, remove compute module, and remove bump cover.
2. Using fingers, unplug white Compute Fan connector from left side of VB (Figure 4-2).



**Figure 4-2 Compute Module Fan to Video Board Connection**

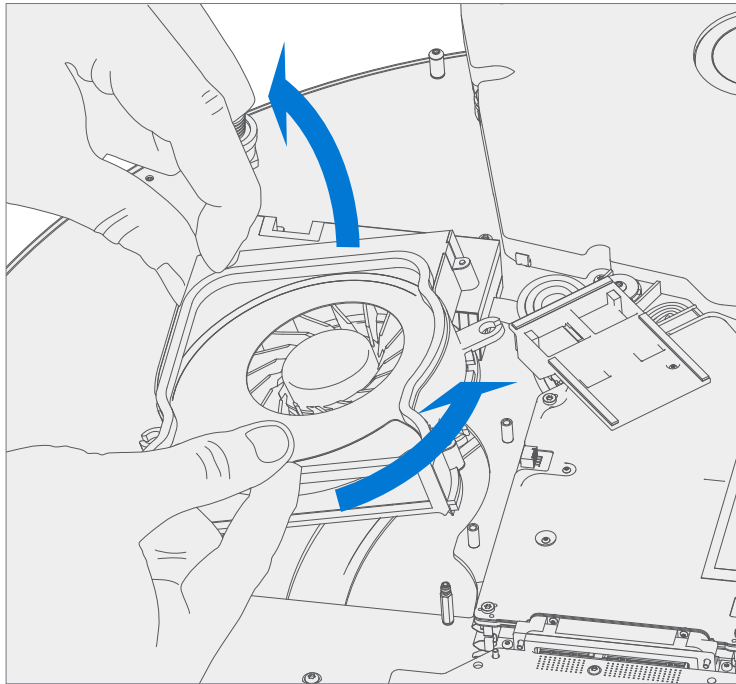
3. Use the **Torx T10 bit and driver** to remove the 3 bump cover snaps which secure the compute fan (Figure 4-3).



**Figure 4-3 Compute Module Fan Mounting Screws Locations**



4. Lift the compute fan out of the bump cover (Figure 4-4).
  - a. First lift the right side of the compute fan (nearest VB),
  - b. Rotate the compute fan counterclockwise to clear the left compute module rail.
  - c. Carefully lift the compute fan directly up and out of the device.



**Figure 4-4 Remove Compute Fan**

#### **4.4 Install Compute Module Fan**

1. Manually place the **compute module fan FRU (NXY-00027)**.
  - a. Lower the left side (farthest from VB) of the compute module fan and align the left rubber grommet with the threaded standoffs.
  - b. Rotate the fan clockwise to align the two rubber grommets on the right side of the fan with the threaded standoffs.
  - c. Firmly push the fan directly down (into the device) until the fan rests at the bottom of the threaded offsets.
2. Use the **Torx T10 bit and driver** to thread the 3 **bump cover snaps with washer** which secure the compute fan (Figure 4-3). Fasten until tight, then another 1/8<sup>th</sup> turn.
3. Using fingers, plug white compute fan connector into left side of VB (Figure 4-2).
4. Follow instructions in section 3.4 to replace the compute module, bump cover, and mount the device.



## 5. PSU Fan Replacement Process

### 5.1 PSU Fan Overview

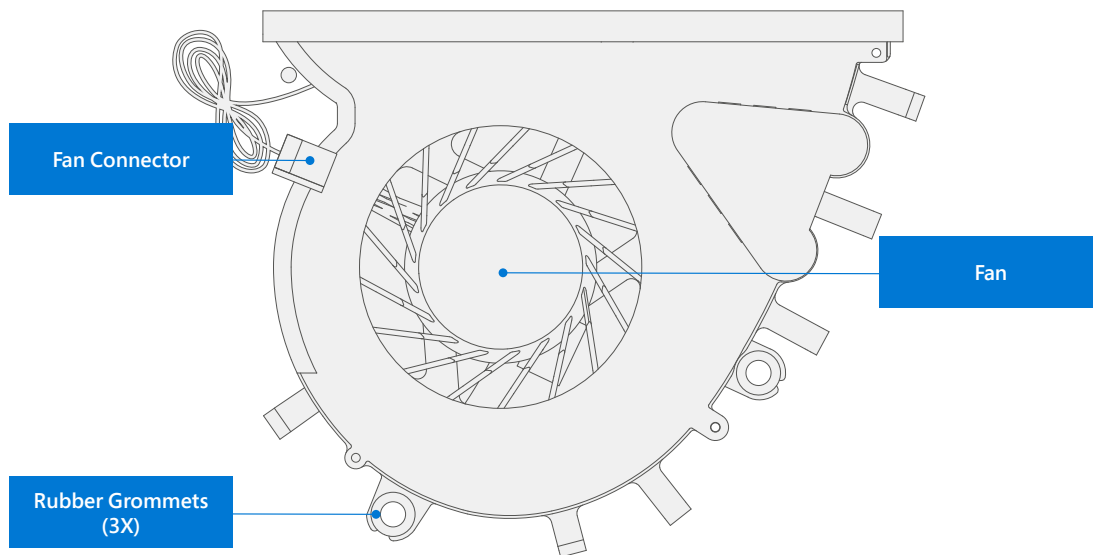


Figure 5-1 PSU Fan Overview

### 5.2 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - 8mm hex key/Allen wrench
  - PR Foam Blocks
  - Cutting pliers/wire snips for plastic zip-tie (knife not acceptable)
  - Microfiber cloth
- **Components**
  - NXY-00026 SURFACE HUB 2S 50 COMPUTE PSU FAN FRU  
(FRU includes a new Bump cover snaps with washer)  
(FRU includes two new Screw/washer assembly)  
(FRU includes a new Power cable zip-tie)



### 5.3 Remove PSU Fan

1. Follow instructions in section 3.3 to remove device from the stand/wall mount, remove compute module, and remove bump cover.
2. Using fingers, unplug white PSU Fan connector from right side of VB (Figure 5-2).

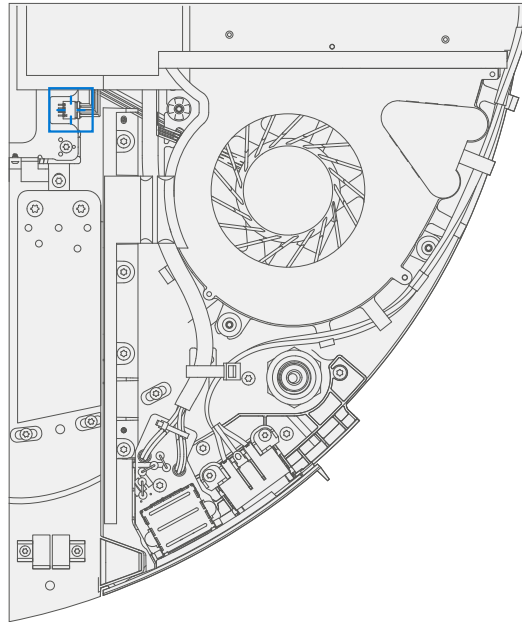


Figure 5-2 PSU Fan to Video Board Connection

3. Use the **cutting pliers/wire snips** to cut the power cable zip tie.

**⚠ WARNING:** Be careful not to damage the wires' insulation (see location in Figure 5-3).

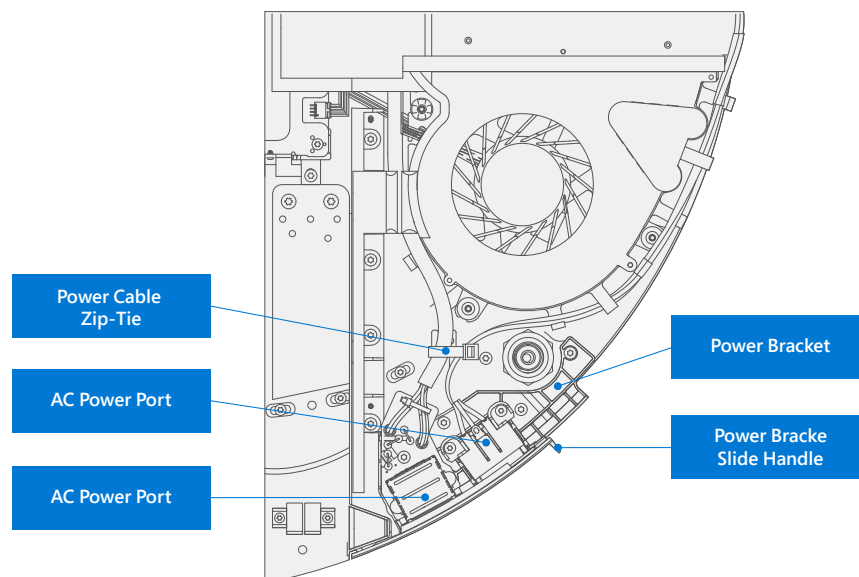
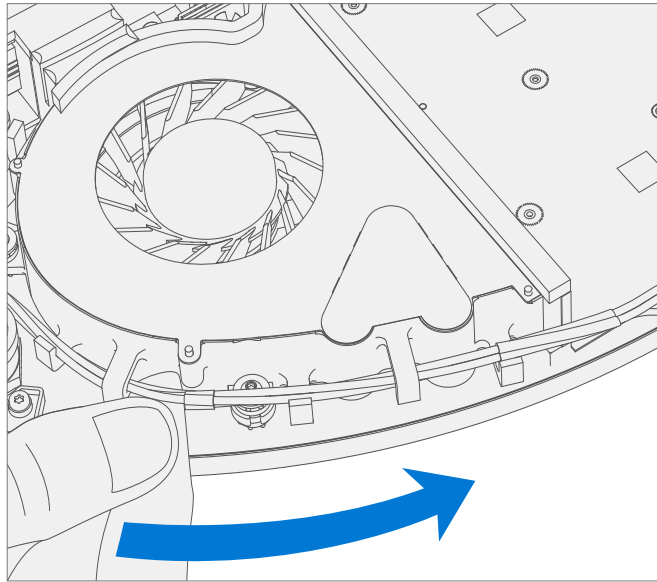


Figure 5-3 Power Bracket Area Overview

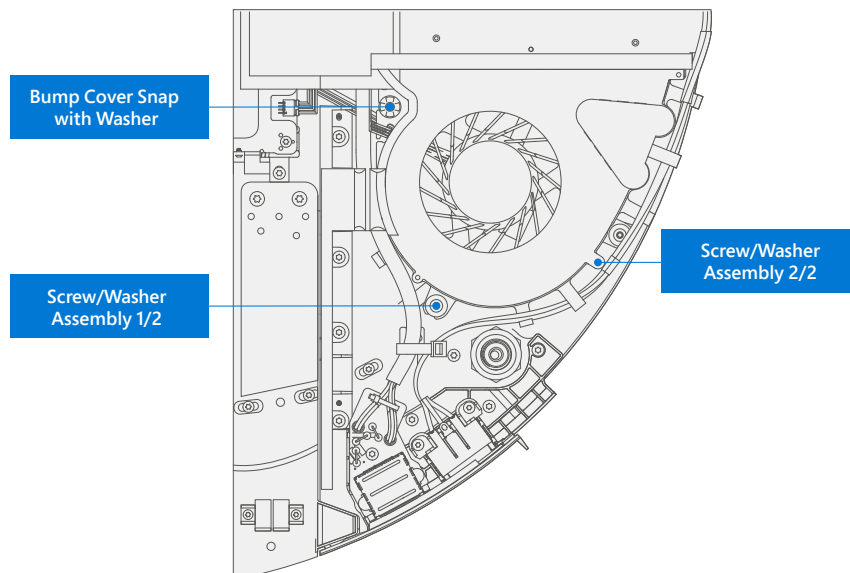


- Beginning from the bottom of the fan and working around to the right, use fingers to gently remove the AC power cable from the integrated cable routing hooks (Figure 5-4).



**Figure 5-4 AC Power Cable Routing Hooks**

- Using fingers, remove the DC power cable from the cable routing hook on the left side of the PSU fan. Pull the DC power cable up and above the foam on the left side of the PSU fan (shown in Figure 5-6).
- Feed the white PSU fan connector (from step 2) under the DC power cable such that the fan and the white connector are on the same side of the DC power cable.
- Use the Torx T10 bit and driver to completely remove the 2 screw/washer assemblies and the 1 bump cover snap with washer (see locations in Figure 5-5).



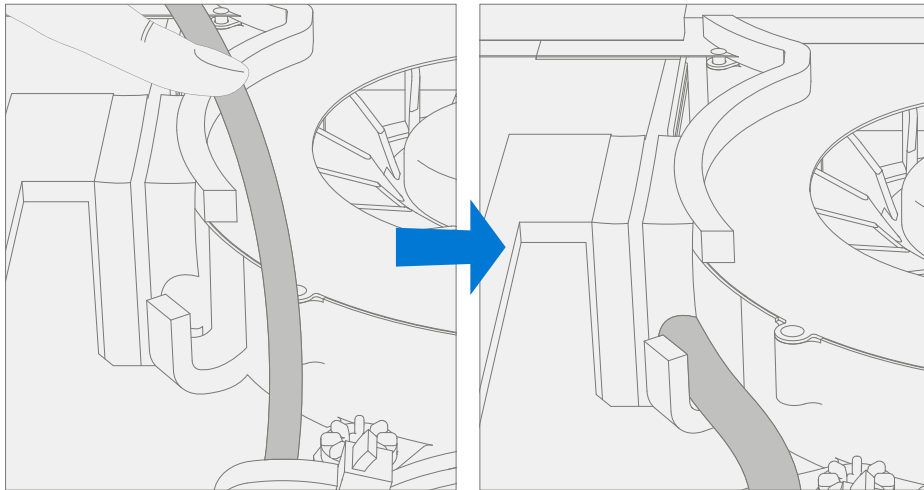
**Figure 5-5 PSU Fan Mounting Screws**

- Slowly lift PSU fan directly up and out of the device. Ensure that the AC and DC power cable do not catch on the fan.



## 5.4 Install PSU Fan

1. Manually place the **PSU fan (NXY-00026)** onto three threaded standoffs.
  - a. Begin by lowering the right side of the fan (farthest from VB) under the AC power cables and aligning the right rubber grommet with the threaded standoff.
  - b. Lower the left side (nearest VB) of the fan into the device and align the remaining two rubber grommets with the threaded standoffs. Ensure the fan cable and DC power cable are not caught under the fan.
  - c. Firmly push the fan directly down (into the device) until the fan rests at the bottom of the threaded offsets.
2. Use the **Torx T10 bit and driver** to install the 2 **screw/washer assembly** and the 1 **bump cover snaps with washer** (see locations in Figure 5-5).
3. Feed the white PSU fan connector under the DC power cable such that the fan and the white connector are on opposite sides of the DC power cable.
4. Plug in white PSU Fan connector to the right side of VB (see location in Figure 5-2).
5. Beginning from the upper right side of the fan and working around to the bottom, use fingers to route the AC power cable through the integrated cable routing hooks (see routing in Figure 5-4).
6. Route the DC power cable through the cable routing hook on the left side of the PSU fan and the semi-circular cutout in the foam (Figure 5-6).



**Figure 5-6 DC Power Cable Management**

7. Install **power cable zip-tie** to secure the AC and DC power cables to the metal plate as shown in Figure 5-3.

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**⚠ WARNING:** To reduce the risk of shock or injury, inspect the AC and DC power cables for any damage or missing insulation. PSU must be replaced if any damage is found.

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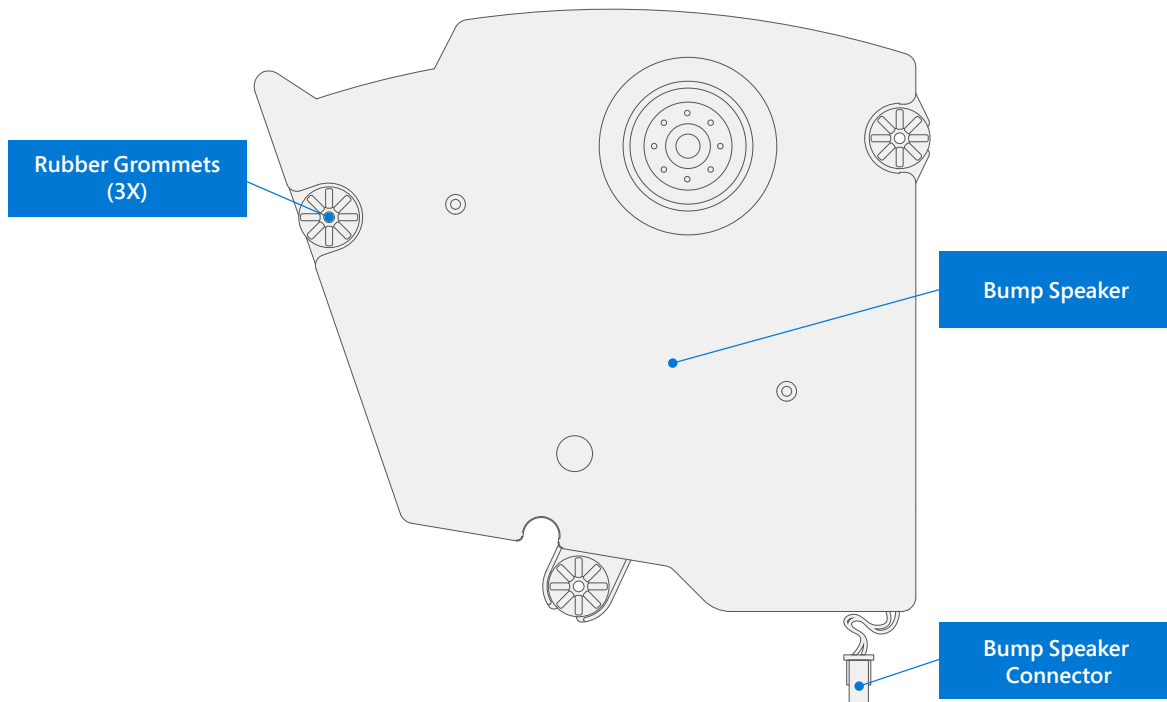
8. Follow instructions in section 3.4 to replace the compute module, bump cover, and mount the device.





## 6. Bump Speaker Replacement Process

### 6.1 Bump Speaker Overview



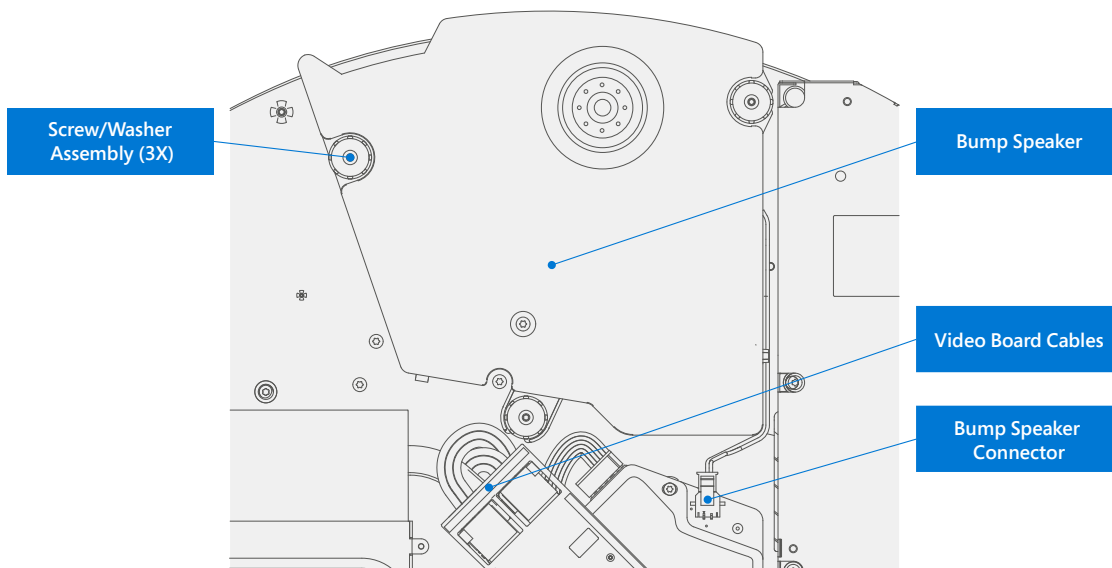
### 6.2 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - 8mm hex key/Allen wrench
  - PR Foam Blocks
  - Microfiber cloth
- **Components**
  - NXY-00025 SURFACE HUB 2S 50 COMPUTE LFT/REAR BUMP SPKR FRU  
(FRU includes three new Screw/washer assembly)



### 6.3 Remove Bump Speaker

1. Follow instructions in section 3.3 to remove device from the stand/wall mount, remove compute module, and remove bump cover.
2. Use fingers to unplug bump speaker cable from VB (blue and white cable—see location in Figure 6-1).



**Figure 6-1 Bump Speaker Area Overview**

3. Use the **Torx T10 bit and driver** to completely remove the 3 screw/washer assemblies. If necessary, gently move VB cables out of the way to access the screw nearest VB.
4. Slowly lift Bump Speaker direct up and out of the device. Ensure VB cables to not catch on the bump speaker.

### 6.4 Install Bump Speaker

1. Manually place the **Bump Speaker (NXY-00025)** onto three threaded standoffs.
  - a. Begin by lowering the bottom side of the speaker (nearest VB) under VB cables and aligning the right rubber grommet with the threaded standoff.
  - b. Lower the top side (farthest from VB) of the speaker into the device and align the remaining two rubber grommets with the threaded standoffs.
  - c. Firmly push the fan directly down (into the device) until the speaker rests at the bottom of the threaded offsets.
2. Use the **Torx T10 bit and driver** to install the 3 **Screw/washer assembly**.
3. Use fingers to plug the bump speaker connector (white/blue cable) into VB (see location in Figure 6-1).
4. Follow instructions in section 3.4 to replace the compute module, bump cover, and mount the device.



## 7. Nano-Pitch Cable Holder Replacement Process

### 7.1 Video Board Overview

Note: Video Board/PSU Foil not shown in Figure 7-1.

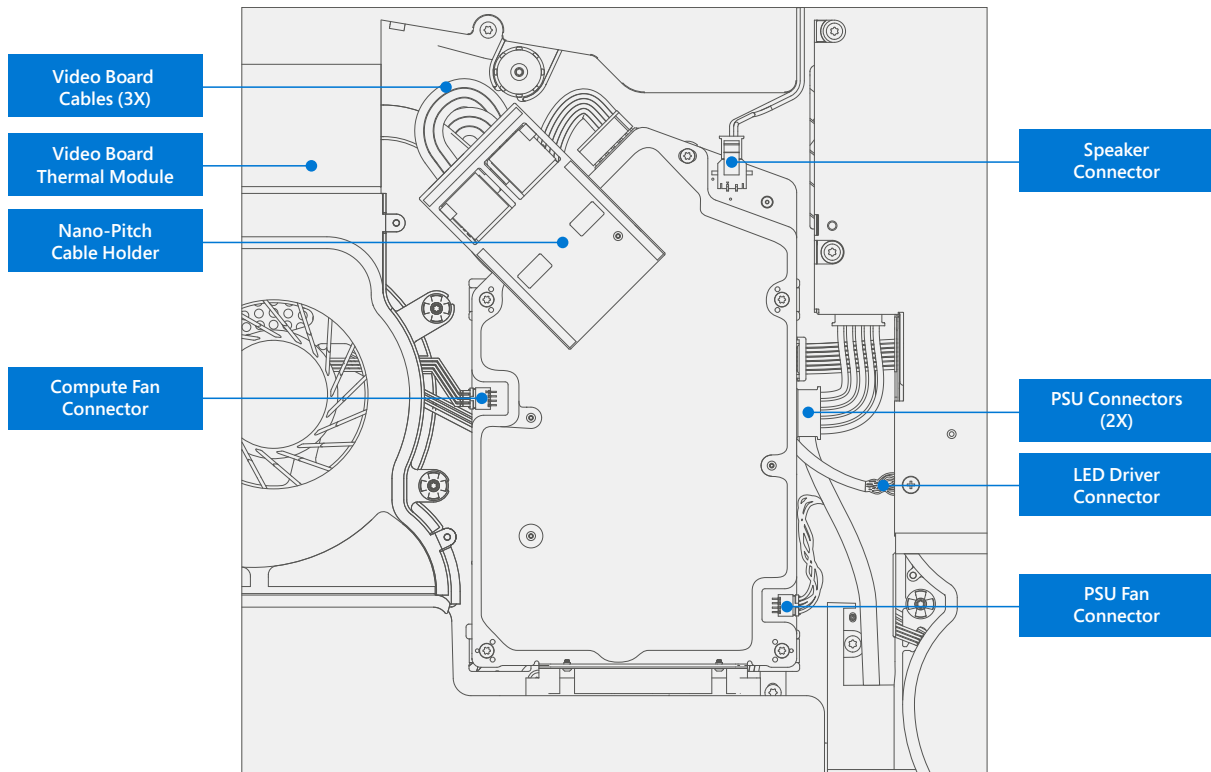


Figure 7-1 Video Board Area Overview

### 7.2 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - Torx T4 bit and driver
  - 8mm hex key/Allen wrench
  - PR Foam Blocks
  - Microfiber cloth
- **Components**
  - 8ZY-00001 SURFACE HUB 2S 50 Nano-Pitch Cable Holder (FRU includes Nano-pitch cable holder screw)



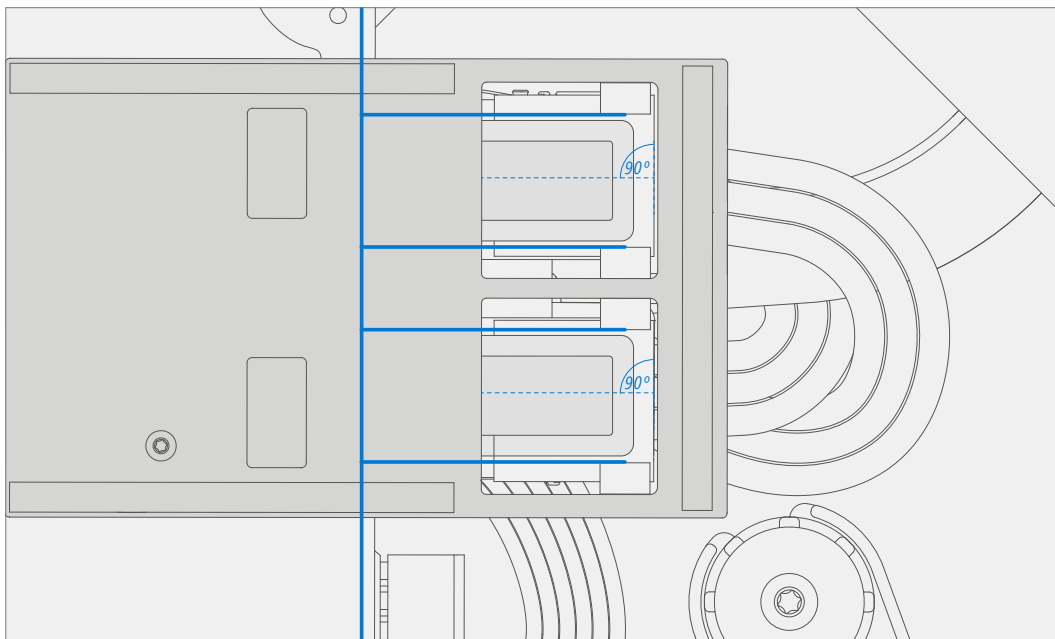
### 7.3 Nano-Pitch Connector Inspection

Follow instructions in section 3.3 to remove device from the stand/wall mount, remove compute module, and remove bump cover.

1. Table 1 to evaluate the pass-through cables. Use Figure 7-2 and Figure 7-3 as reference images.
  - a. If both connectors meet all "Pass" criteria, proceed to section 8.2 step 0. **Full video board replacement is required.**
  - b. See Figure 8-1 for the simple troubleshooting flow.

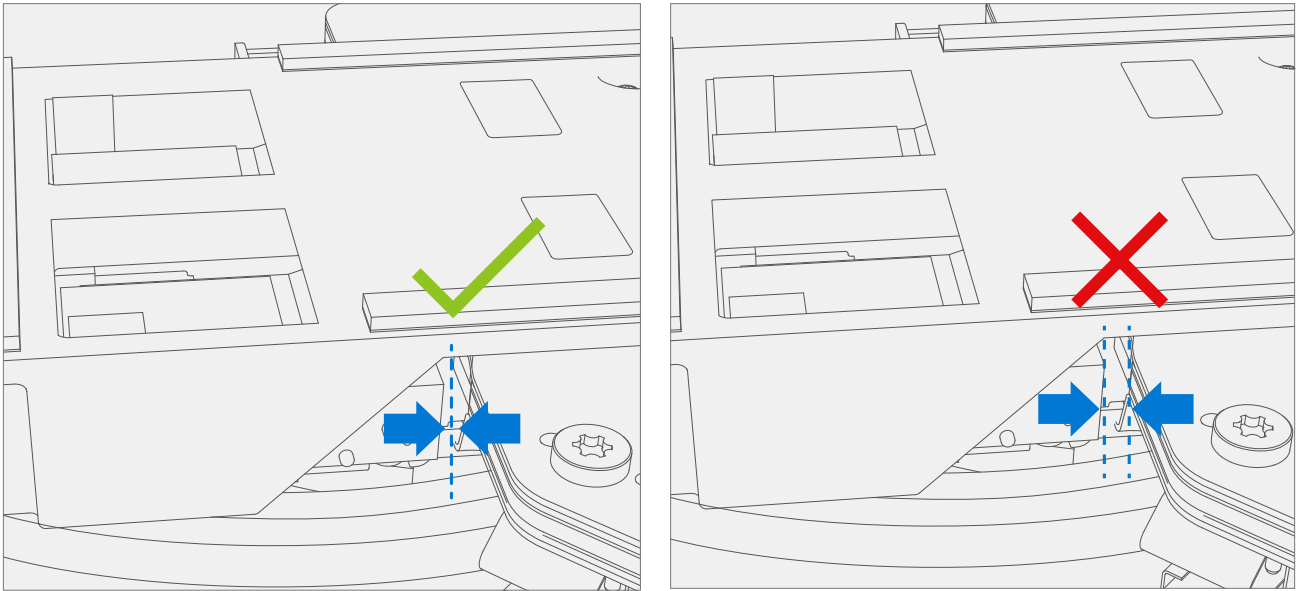
Inspection Item	Pass	Attempt to Reseat Connectors	Stop Repair, Order Exchange Device
<b>Connectors Perpendicular to Edge of Video Board (Top View Figure 7-2)</b>	Edges of both connectors are parallel to each other and perpendicular to the edge of the video board.	Edges of connectors not parallel to each other or not perpendicular to the edge of the video board.	One or both connectors physically warped/bent.
<b>Nano-Pitch Connectors Fully Seated in Video Board (Side View Figure 7-3)</b>	Both connectors fully seated in Video Board.	One or both connectors not fully seated in Video Board.	One or both connectors physically warped/bent.

**Table 1 Nano-Pitch Connector Inspection Criteria**



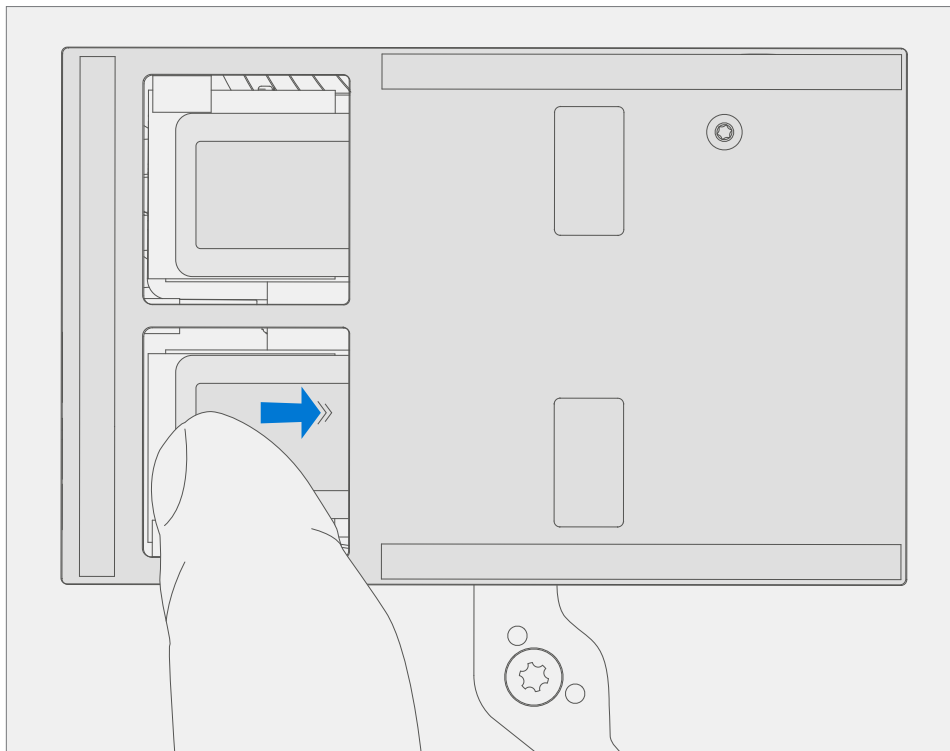
**Figure 7-2 Nano-Pitch Connectors Perpendicular to Edge of Video Board**





**Figure 7-3 Nano-Pitch Connectors Fully Seated in Video Board**

2. If any connectors meet the "Attempt to Reseat Connectors" criteria, use fingertips to reseat the connectors by pushing on the back of the connectors through the windows in the nano-pitch cable holder (Figure 7-4).



**Figure 7-4 Reseat Nano-Pitch Connectors**

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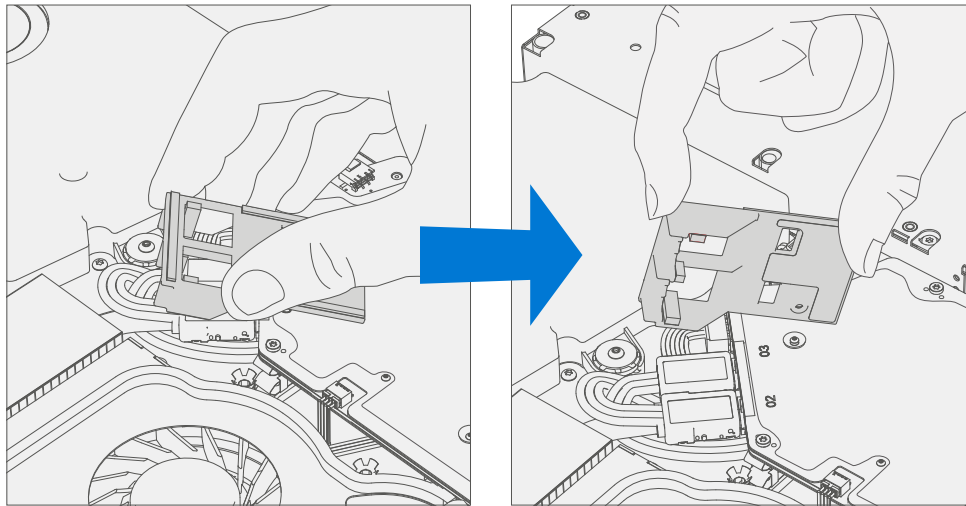
**⚠ WARNING:** To reduce the risk of shock or injury, do not touch any exposed internal components while the device is connected to AC power.

---

3. After reseating connectors, follow the instructions in section 1.5 to reinstall the compute module with the device still face down on the foams, without reinstalling the Bump Cover. Plug the device in using the AC power cable and attempt to power the device on.
  - a. If reseating the connectors resolves the issue, **video board replacement is not necessary**. Power off the device, unplug the AC power cable and remove the compute module by following instructions in section 1.4. Proceed to section 7.4.

## 7.4 Remove Nano-Pitch Cable Holder

1. Use the **Torx T4 bit and driver** to completely remove the nano-pitch cable holder screw (single screw holding nano-pitch cable holder—see Figure 7-1 for location).
2. Using fingers, peel the nano-pitch cable holder off VB shield. Moderate force is required to break the adhesive (Figure 7-5).



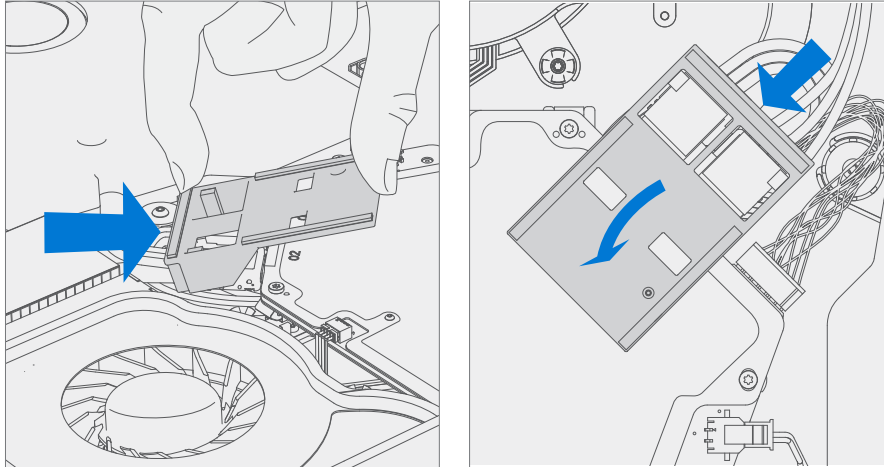
**Figure 7-5 Peel Off Nano-Pitch Cable Holder**

3. Use fingers to ensure all adhesive is removed from the video board enclosure. Do not wipe with IPA.



## 7.5 Install Nano-Pitch Cable Holder

1. Using fingers, peel the protective paper/plastic sheet off the **Nano-Pitch Cable Holder**. Align the holder with the back of the nano-pitch connectors and lightly push into VB—this will ensure the connectors are fully seated when the cable holder is secured in place. Maintaining this pressure, angle the nano-pitch cable holder down onto VB and secure it in place with the adhesive (Figure 8-15). Align the thru hole in the nano-pitch cable holder with the matching feature on the Video Board.



**Figure 7-6 Install Nano-Pitch Cable Holder**

2. Use the **Torx T4 bit and driver** to thread the **Nano-Pitch Cable Holder Screw**. Be careful not to overtighten.
3. Follow instructions in section 3.4 to replace the compute module, bump cover, and mount the device.



## 8 Video Board Replacement Process

### 8.1 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - Torx T6 bit and driver
  - Torx T4 bit and driver
  - 8mm hex key/Allen wrench
  - PR Foam Blocks
  - Microfiber cloth
- **Components**
  - Video Board Assembly (multiple options)
  - NXY-00024 SURFACE HUB 2S 50 COMPUTE VIDEO BOARD PCBA FRU
  - RRG-00001 SURFACE HUB 2S 50 COMPUTE VIDEO BOARD PCBA NA/MX POTW FRU
  - (FRU includes a new Nano-Pitch Cable Holder)
  - (FRU includes new Copper Tape)
  - (FRU includes a new Nano-pitch cable holder screw)
  - (FRU includes five new Video Board Screws)
  - (FRU includes a new Video Board Thermal Module Screw)

### 8.2 Remove Video Board

1. Follow instructions in section 7.3 to complete the inspection of the nano-pitch connectors. The results of this inspection will determine if a complete video board replacement is required. See Figure 8-1 for the simple troubleshooting flow.

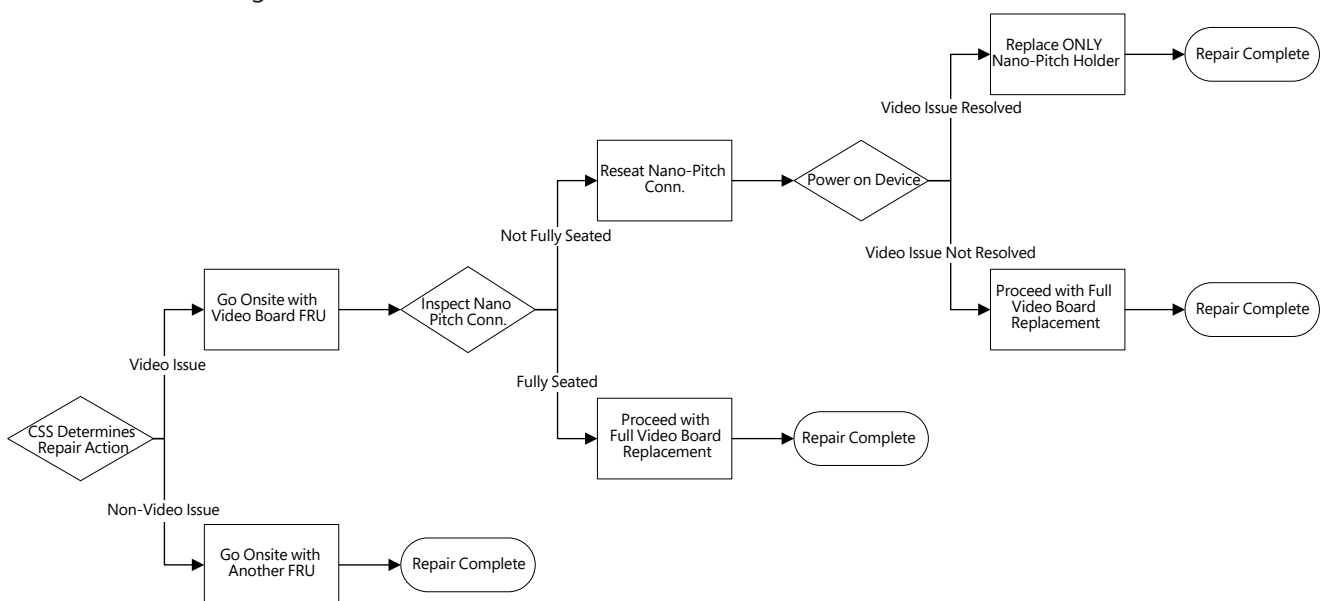
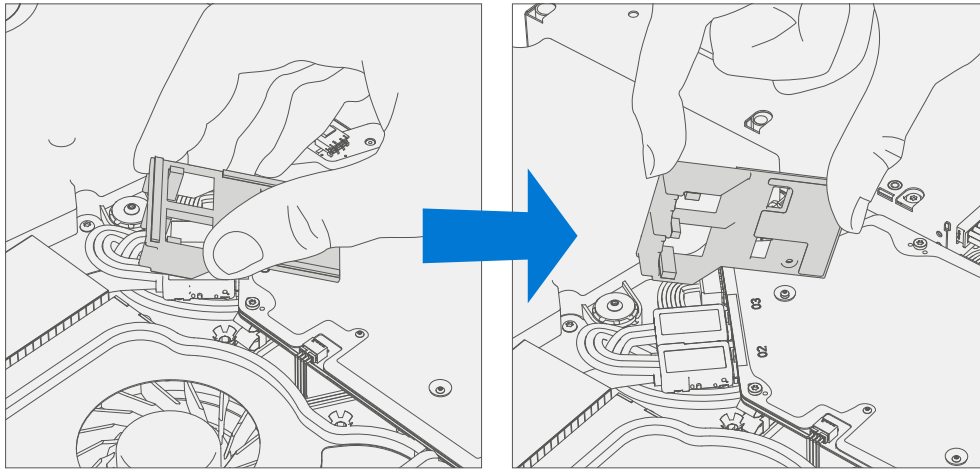


Figure 8-1 Nano-Pitch Connector Troubleshooting Flow



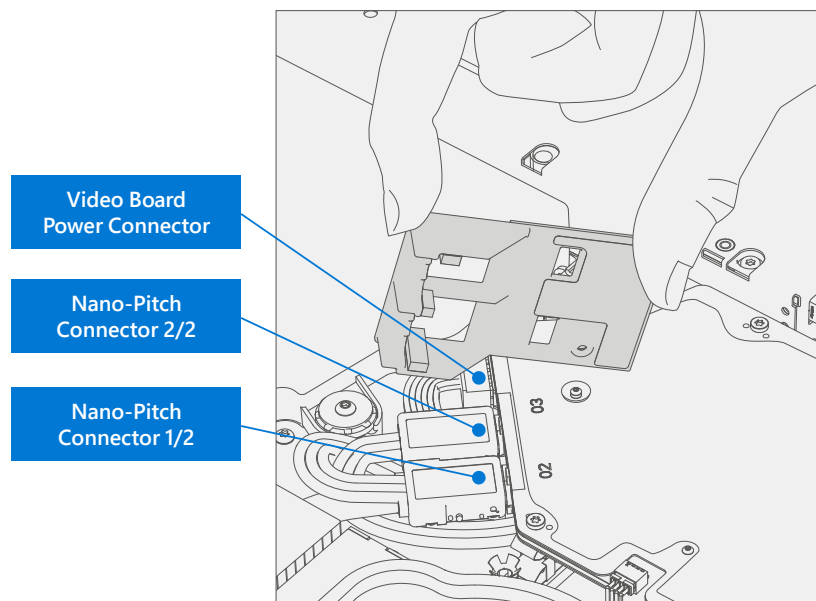


2. Use the **Torx T4 bit and driver** to completely remove the nano-pitch cable holder screw (single screw holding nano-pitch cable holder—see Figure 7-1 for location).
3. Using fingers, peel the nano-pitch cable holder off VB shield. Moderate force is required to break the adhesive (Figure 7-5).



**Figure 8-2 Peel Off Nano-Pitch Cable Holder**

4. Using fingers, peel the copper tape completely off the PSU and VB. The copper foil may tear, ensure the entire foil is removed (see location in Figure 9-1).
5. Using fingers, unplug the white PSU fan connector from right side of VB (Figure 5-2).
6. Using fingers, unplug the white compute fan connector from left side of VB (Figure 4-2).
7. Using fingers, unplug the black speaker connector from top side of VB (see Figure 7-1 for location).
8. Use fingers to remove the two nano-pitch connectors from VB (Figure 8-3).

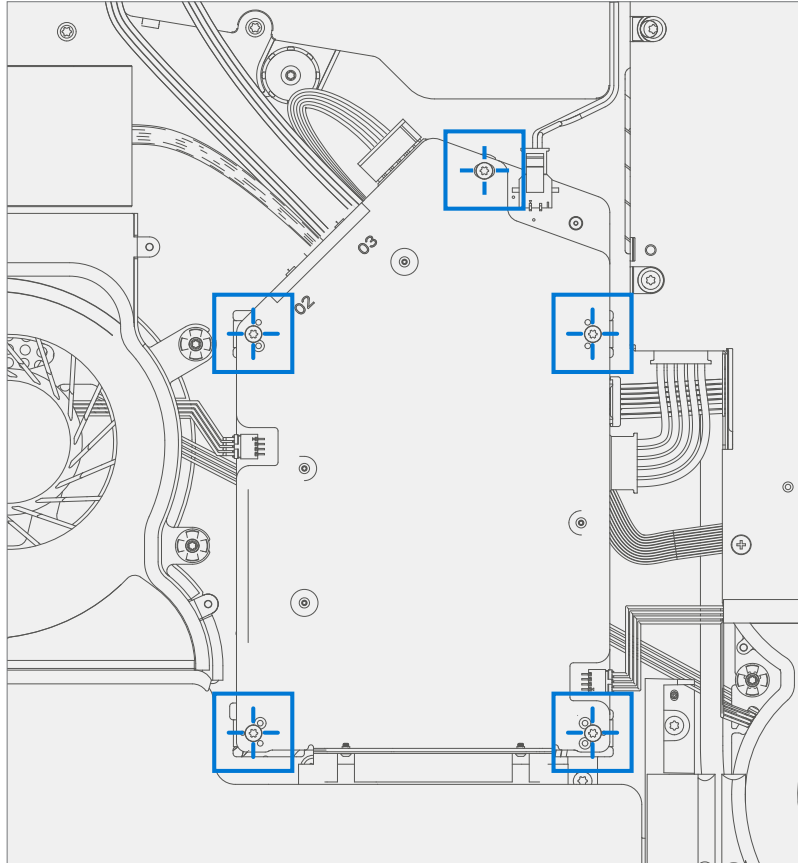


**Figure 8-3 Video Board Nano-Pitch and Power Connectors**

9. Use fingers to remove VB power connector from VB (Figure 8-3).

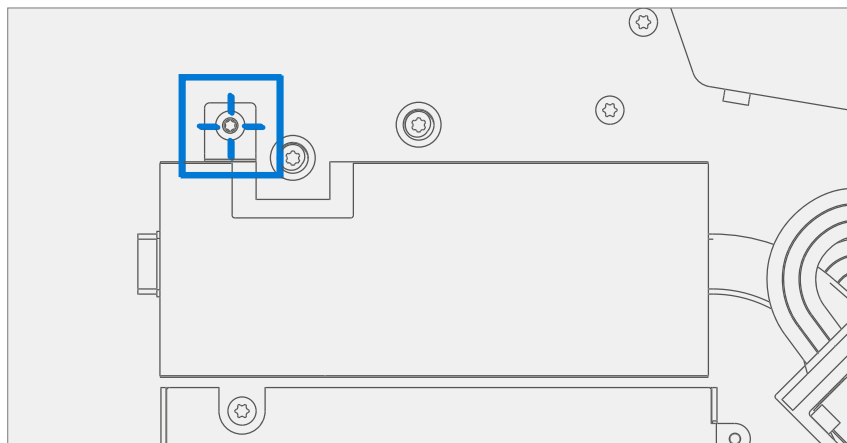


10. Use the **Torx T6 bit and driver** to remove the 5 VB screws (Figure 8-4).



**Figure 8-4 Video Board Mounting Screw Locations**

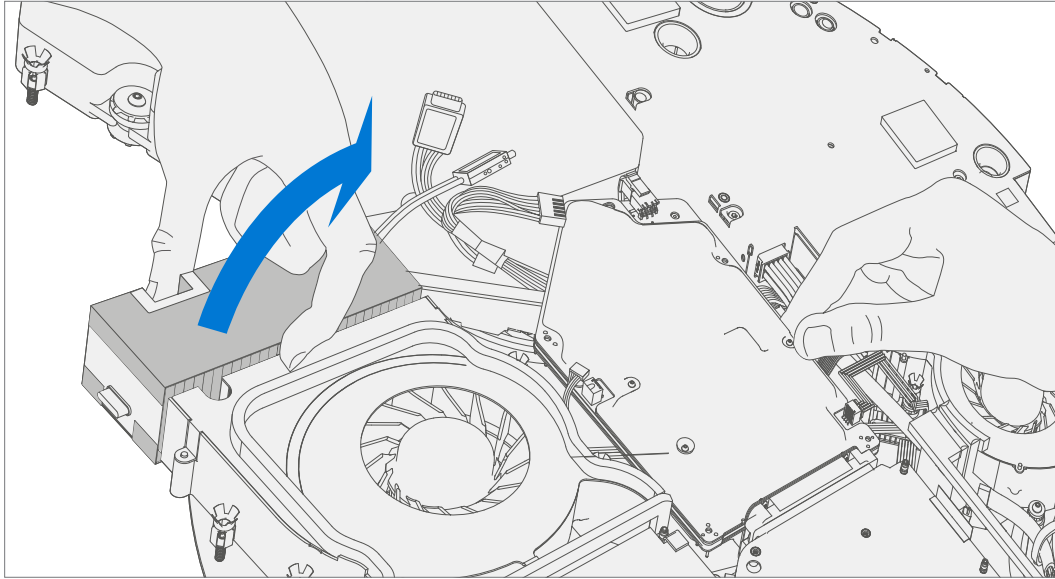
11. Use the **Torx T10 bit and driver** to remove the 1 VB thermal module screw (Figure 8-5).



**Figure 8-5 Video Board Thermal Module Retention Screw Location**



12. Carefully flip VB toward the PSU so that VB thermal module is pointed up (Figure 8-6).



**Figure 8-6 Flip Video Board Assembly**

13. Continue to hold VB upright while using fingers to unplug the large black and white PSU connectors (see Figure 7-1 for location). Use fingers to release the latch on the bottom of each of the PSU connectors and pull out of VB. These connectors will require substantial force to remove.
14. Gently lift VB and thermal module assembly directly up and out of the device while ensuring cables to not catch on VB.



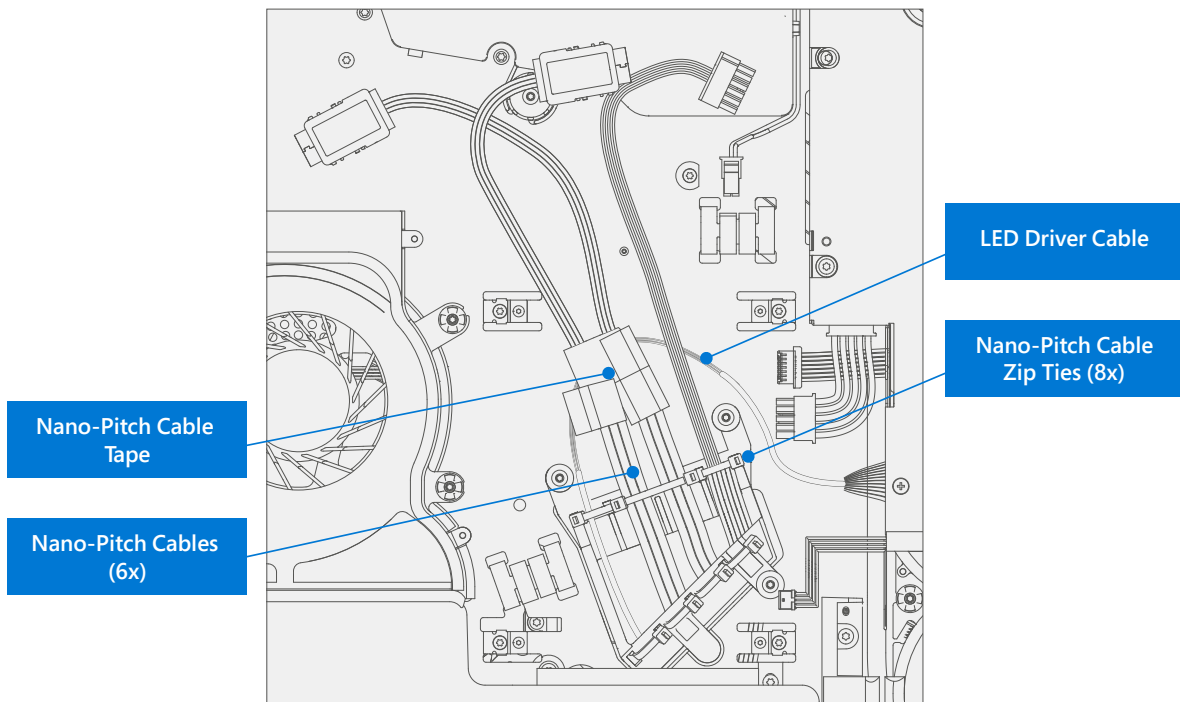
### 8.3 Install Video Board

1. Inspect VB pass through cables and ensure proper routing. Use Table 2 Pass Through Cable Inspection to evaluate the pass-through cables. Use Figure 8-7 as a reference image.

Inspection Item	Pass	Make Note but Complete Repair	Stop Repair, Order Exchange Device
<b>Nano-Pitch Cable Tape is Undisturbed</b>	Tape present. No distortion in the tape.	Tape present. Distortion in the tape.	Tape missing.
<b>Nano-Pitch Cables Run Parallel To Each Other</b>	Cables run parallel, no bunched-up areas.	Cables do not run parallel, attempt to lay cables parallel.	Cables to not run parallel. Unable to lay cables parallel (permanent deformation).
<b>LED Driver Cable Routed Under Nano-Pitch Cables Between the Tape and the Zip-Ties</b>	LED driver cable routed under nano-pitch cables between the tape and the zip-ties.	LED driver cable not routed under nano-pitch cables between the tape and the zip-ties.	
<b>Black Marker Marks on Nano-Pitch Cables Align with Zip Ties</b>	Edge of black marker marks on nano-pitch cables align with edge of zip ties (+/-2mm).	Edge of black marker marks on nano-pitch cables align with edge of zip ties (+/-5mm).	Edge of black marker marks on nano-pitch cables are 5mm or more away from edge of zip ties.
<b>Sheathing/Insulation</b>	No sheathing/insulation wear.	Nano-pitch cable sheathing shows signs of wear but no observable holes.	Observable holes in nano-pitch cable sheathing or insulation. Observable holes in LED driver cable insulation.

**Table 2 Pass Through Cable Inspection Criteria**



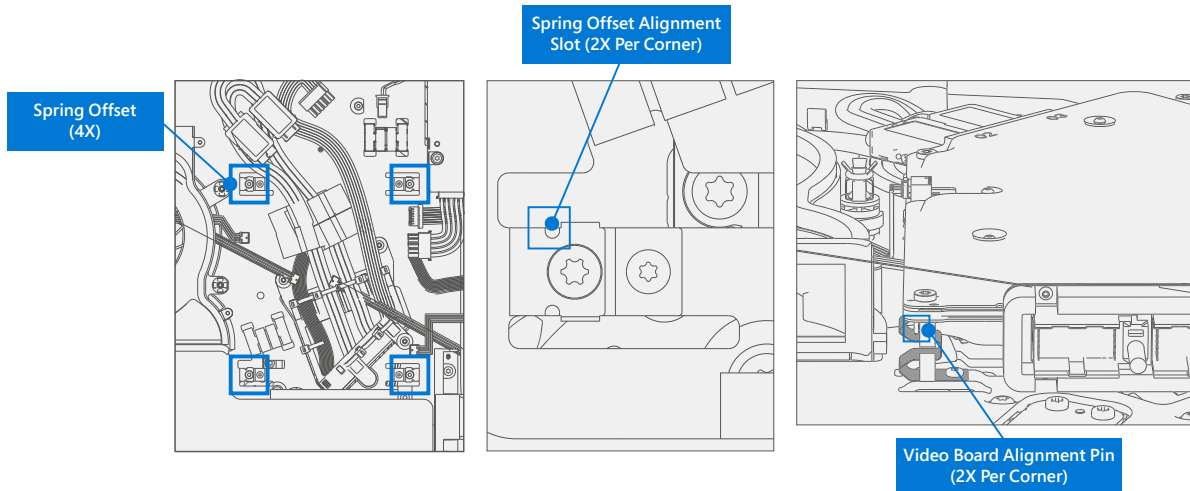


**Figure 8-7 Pass Through Cable Inspection Reference Image**

2. Lower the **Video Board Assembly (NXY-00024)** into the device at an angle with the thermal module pointed upward (same position as section 8.2 step 0).
3. Use fingers to connect the two PSU connectors to the right side of VB (see Figure 7-1 for location). Connectors will require substantial force to insert.
4. Lightly lower the VB into place—do not align VB yet.

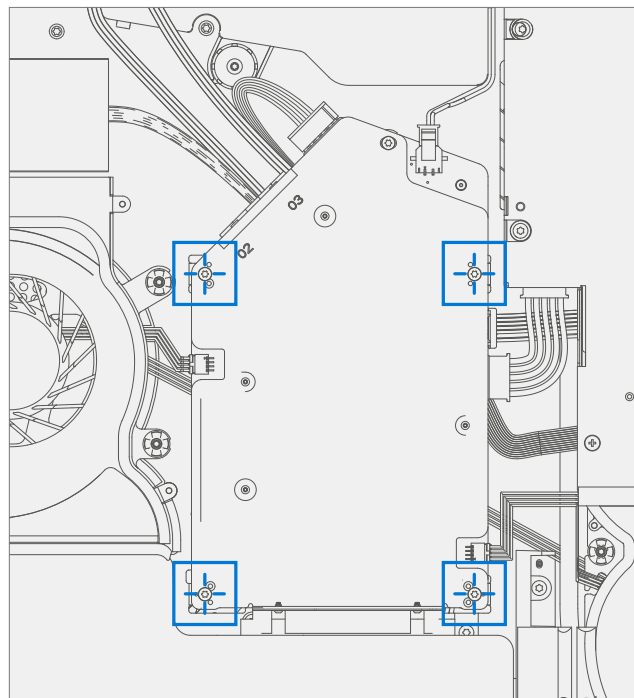


5. Use fingers to connect the black VB power connector to the top side of VB (see Figure 8-3 for location). Connector will require moderate force to fully seat.
6. Manually align VB using the 8 alignment pins (2 per corner) on bottom of VB. Use fingers to align two pins on each corner with spring offsets alignment slots (Figure 8-8). The top surface of the spring offset will sit flush against the bottom of VB enclosure once properly seated.



**Figure 8-8 Video Board Alignment Pins**

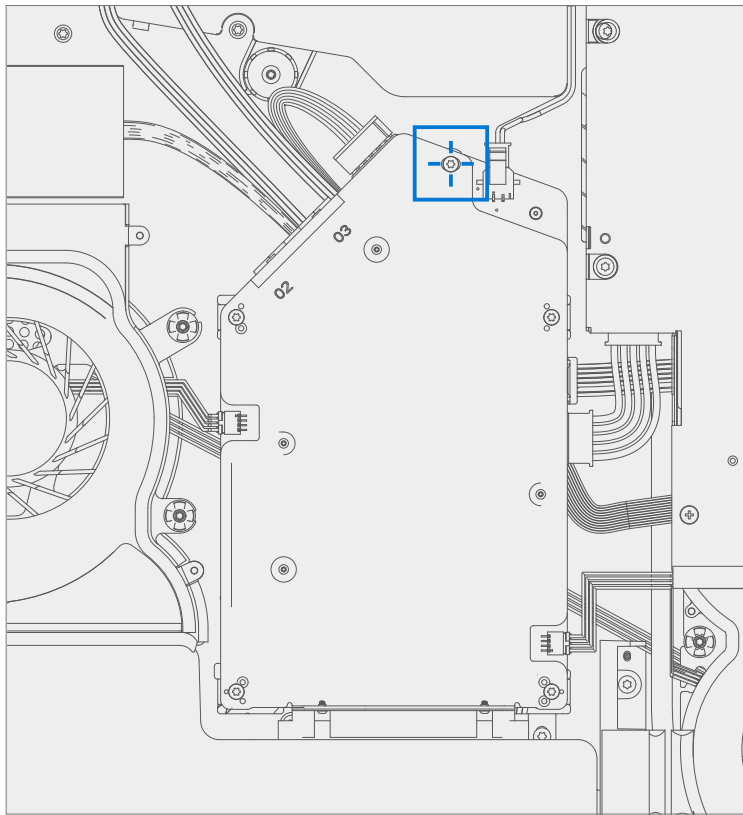
7. Use the **Torx T6 bit and driver** to thread the 4 **Video Board Screws** into the spring offsets. Thread until tight, then another 1/8<sup>th</sup> turn. (Figure 8-9)



**Figure 8-9 Video Board Mounting Screws (1/2)**

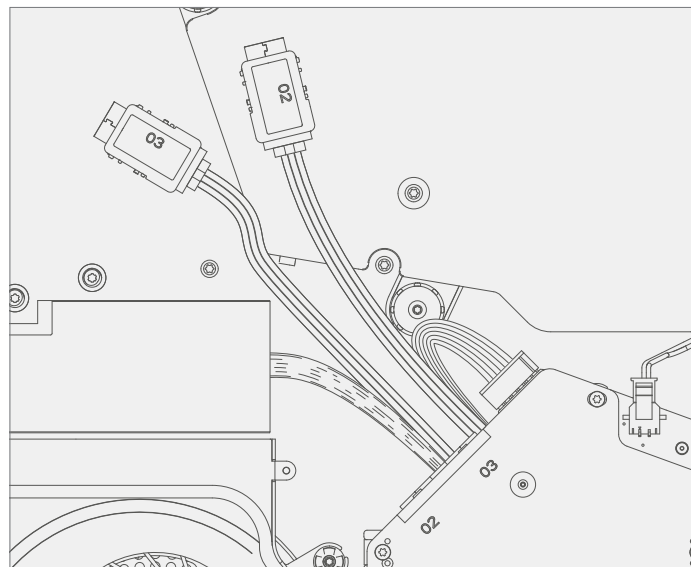


8. Use the **Torx T10 bit and driver** to thread the 1 **Video Board Thermal Module Screw**. Thread until tight. (Figure 8-5)
9. Use the **Torx T6 bit and driver** to thread the final **Video Board Screw**. Thread until tight, then another 1/8<sup>th</sup> turn. (Figure 8-10).



**Figure 8-10 Video Board Mounting Screws (2/2)**

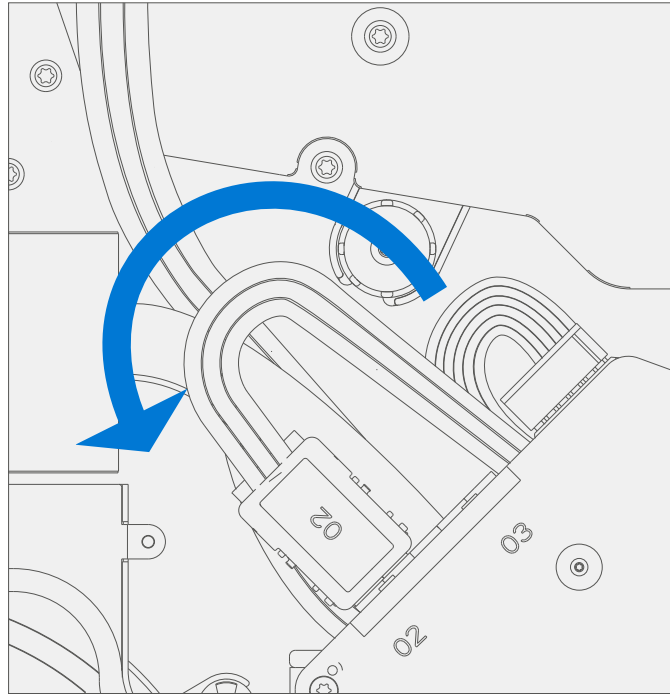
10. To ensure proper routing of the nano-pitch cables, carefully pull both cables straight out away from VB (Figure 8-11).



**Figure 8-11 Straighten Nano-Pitch Cables**

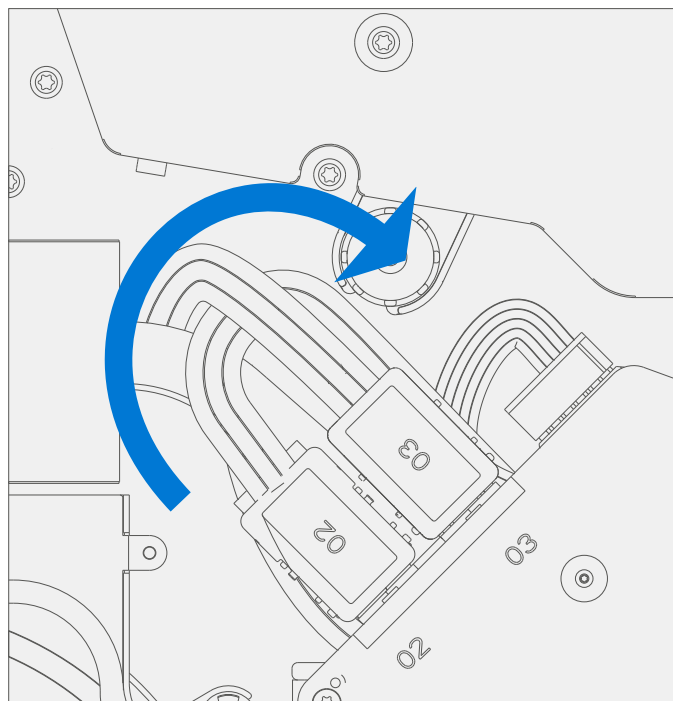


11. Route the pink '02' connector as shown, ensuring that the cables do not fold or bunch up (Figure 8-12).



**Figure 8-12 Pink Nano-Pitch Cable Routing**

12. Route the green '03' connector as shown, ensuring that the cables do not fold or bunch up (Figure 8-12).

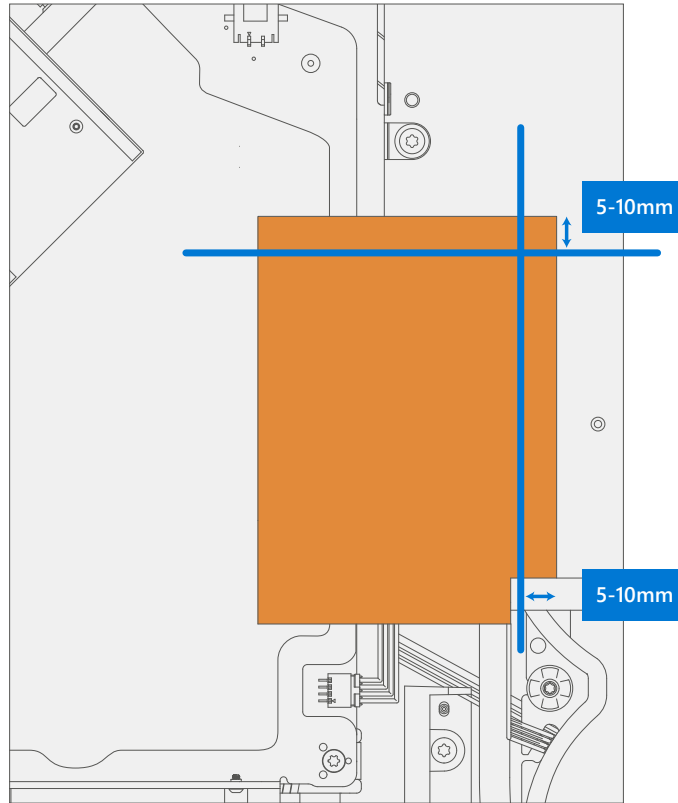


**Figure 8-13 Green Nano-Pitch Cable Routing**



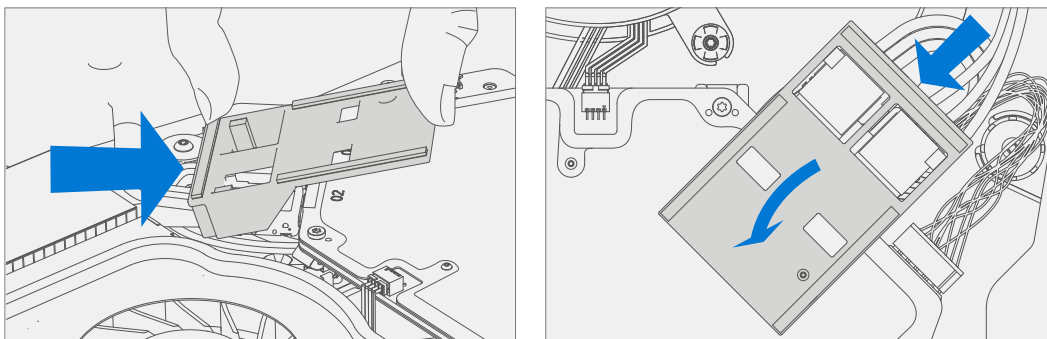


13. Use fingers to connect the PSU fan connector, compute fan connector, and bump speaker connector to VB (see Figure 7-1 for locations).
14. Using fingers, peel the protective paper sheet off the **Copper Tape** and apply the copper to the gap between the PSU and VB. Ensure the edge of the copper tape overlaps 5-10mm with the PSU on the top (nearest the speaker) and right (opposite VB) sides (Figure 8-14).



**Figure 8-14 Video Board/PSU Copper Foil Placement**

15. Using fingers, peel the protective paper/plastic sheet off the **Nano-Pitch Cable Holder**. Align the holder with the back of the nano-pitch connectors and lightly push into VB—this will ensure the connectors are fully seated when the cable holder is secured in place. Maintaining this pressure, angle the nano-pitch cable holder down onto VB and secure it in place with the adhesive (Figure 8-15). Align the thru hole in the nano-pitch cable holder with the matching feature on the Video Board.



**Figure 8-15 Install Nano-Pitch Cable Holder**



16. Use the **Torx T4 bit and driver** to thread the **Nano-Pitch Cable Holder Screw**. Be careful not to overtighten.
17. Follow instructions in section 3.4 to replace the compute module, bump cover, and mount the device.

## 9 PSU Replacement Process

### 9.1 PSU Overview

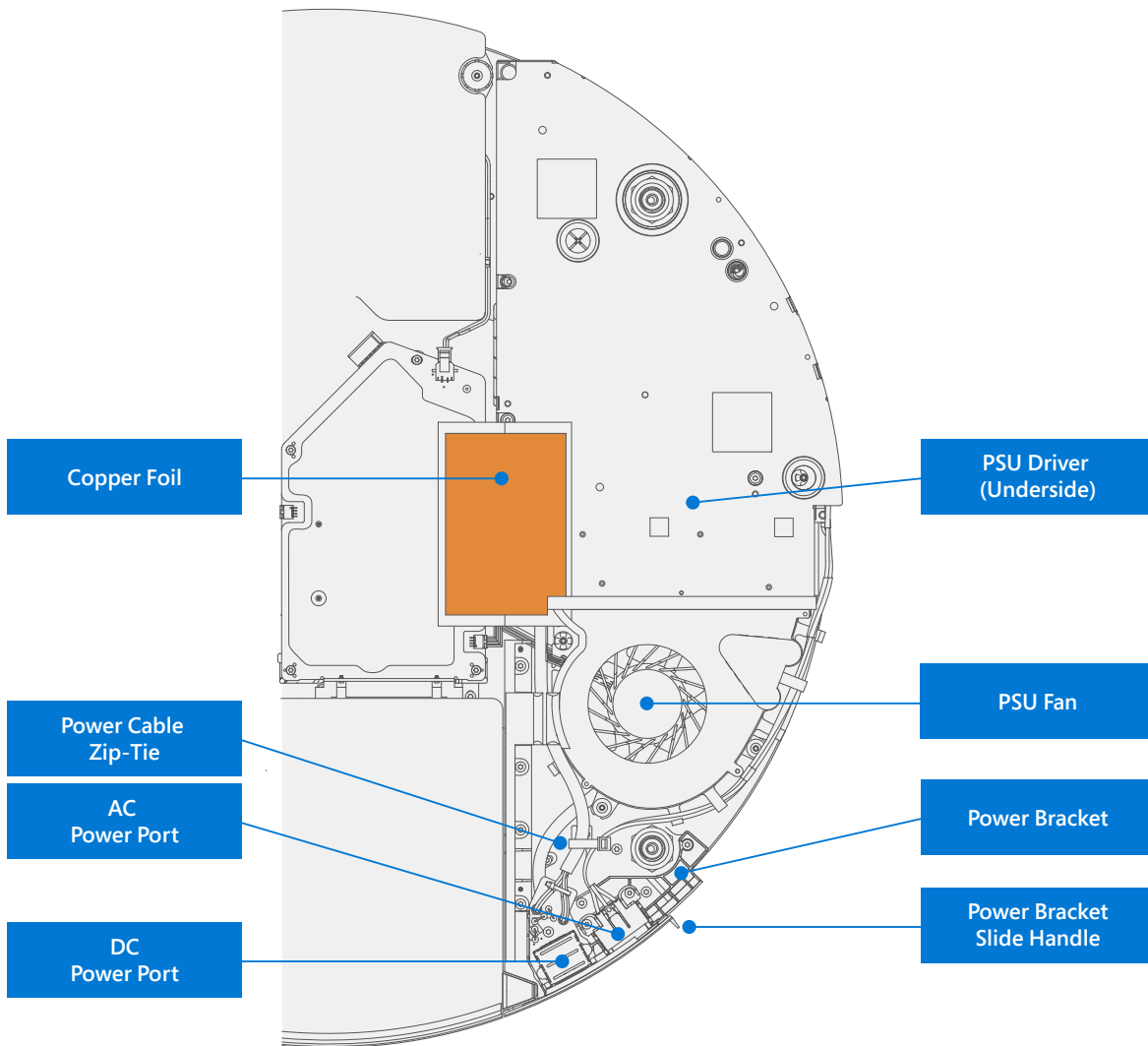


Figure 9-1 PSU Overview



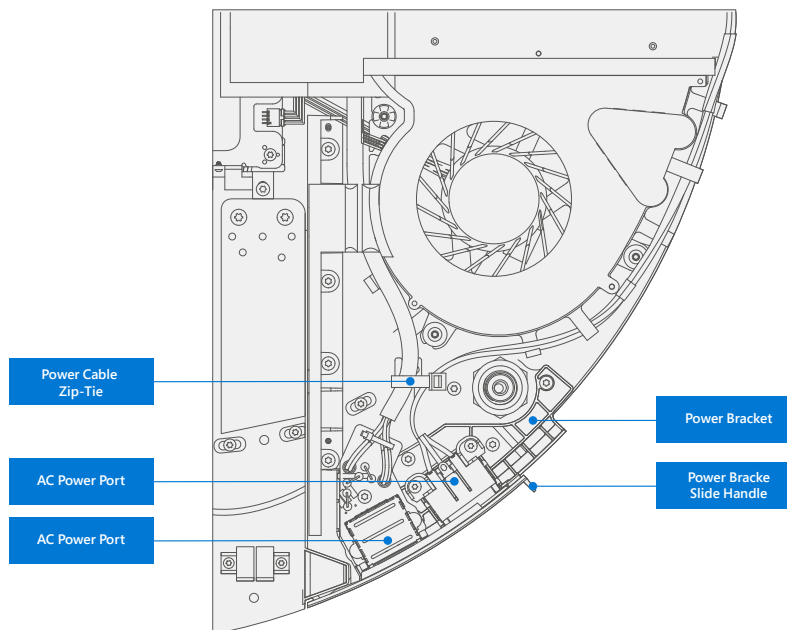
## 9.2 Required Tools and Components

- **Tools**
  - Phillips #1 bit and driver
  - Torx T10 bit and driver
  - 8mm hex key/Allen wrench
  - Cutting pliers/wire snips for plastic zip-tie (knife not acceptable)
  - PR Foam Blocks
  - Microfiber cloth
- **Components**
  - NXY-00035      SURFACE HUB 2S 50 COMPUTE WW PSU LED DRIVER FRU  
(Meets EU efficiency requirements)  
  
(FRU includes new Copper Tape)  
(FRU includes eight new PSU/Power Bracket Screws)  
(FRU includes four new AC/DC Power Connector Screws)  
(FRU includes a new Power cable zip-tie)

## 9.3 Remove PSU

1. Follow instructions in section 3.3 to remove device from the stand/wall mount, remove compute module, and remove bump cover.
2. Use the **cutting pliers/wire snips** to cut the power cable zip tie.

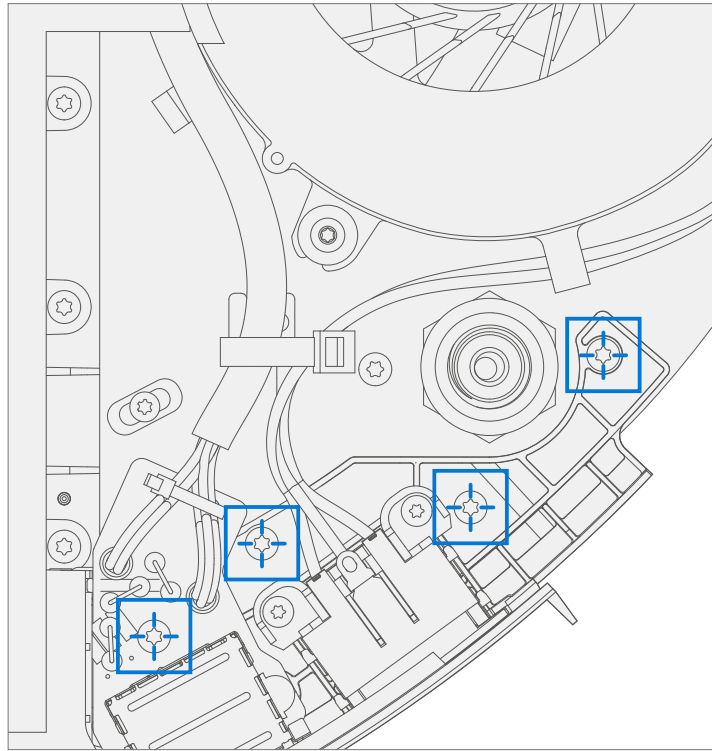
**⚠ WARNING:** Be careful not to damage the wires' insulation (see [Figure 9-2](#) for location).



**Figure 9-2 Power Bracket Area**



- Using the **Torx T10 bit and driver**, completely remove the 4 power bracket mounting screws: 3 on the power bracket plastic, 1 on the DC power connector PCB (see Figure 9-3 for locations).

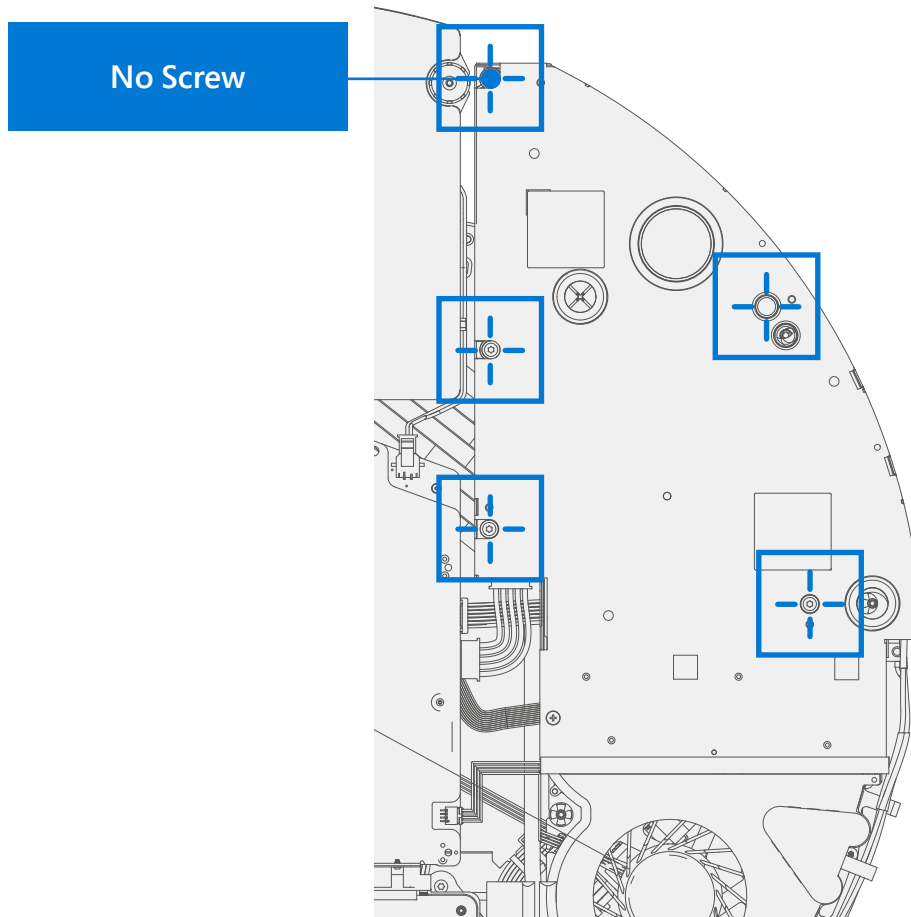


**Figure 9-3 Power Bracket Retention Screws Locations**

- Beginning from the bottom of the fan and working around to the right, use fingers to gently remove the AC power cable from the integrated cable routing hooks (Figure 5-4).
- Using fingers, remove the DC power cable from the cable routing hook on the left side of the PSU fan. Pull the DC power cable up and above the foam on the left side of the PSU fan (Figure 5-6).
- Using fingers, peel the copper tape completely off the PSU and VB. The copper foil may tear, ensure the entire foil is removed (see location in Figure 9-1).

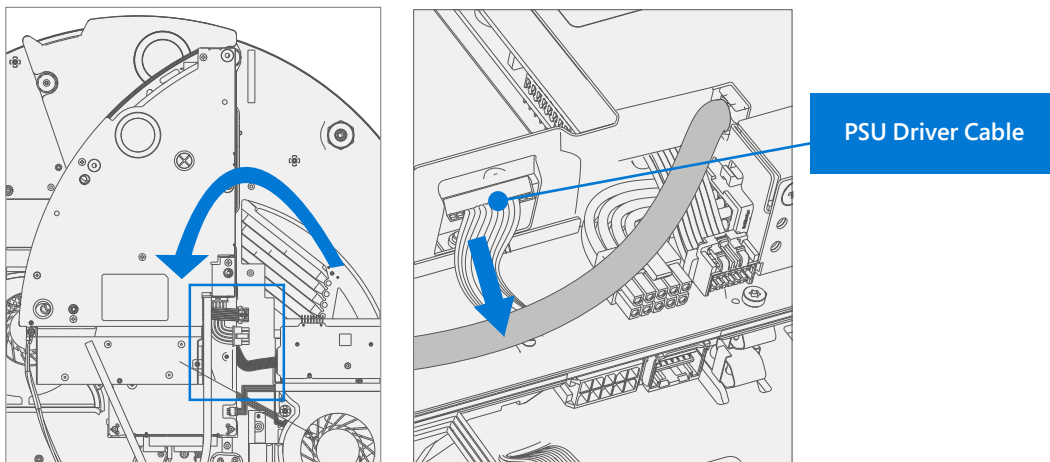


- Using the **Torx T10 bit and driver**, completely remove the 4 PSU mounting screws (see location in Figure 9-4).



**Figure 9-4 PSU Retention Screws Locations**

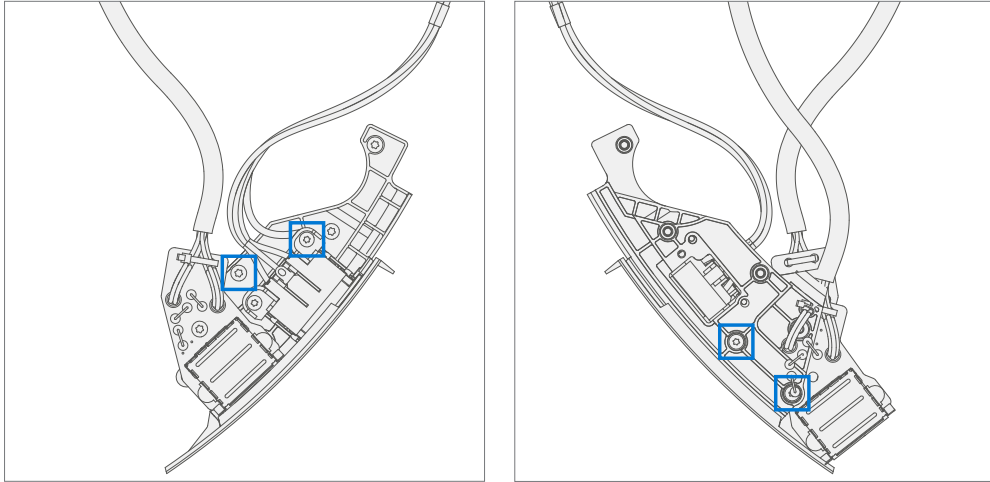
- Carefully lift PSU and flip PSU into bump cover to access the underside of the PSU—hold the PSU with one hand while releasing the connector from the LED driver board (Figure 9-5).



**Figure 9-5 LED Driver Cable**

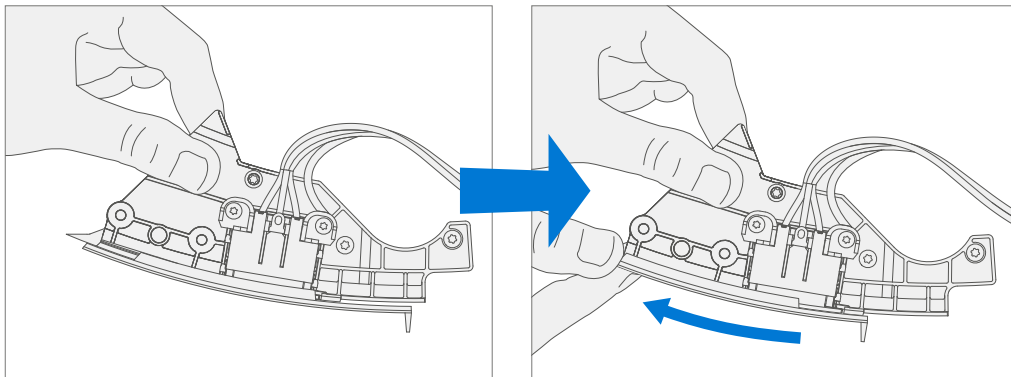


9. Use fingers to release the latch on the bottom of each of the 2 PSU connectors and pull out of VB. These connectors will require substantial force to remove.
10. Pull PSU out of bump slowly, ensuring all connections are released.
11. Set PSU aside on a stable surface.
12. Using the **Torx T10 bit and driver**, completely remove the 2 DC power connector retaining screws and the 2 AC power connector retaining screws (see Figure 9-6 for locations).



**Figure 9-6 AC Connector and DC Connector Retaining Screws Locations**

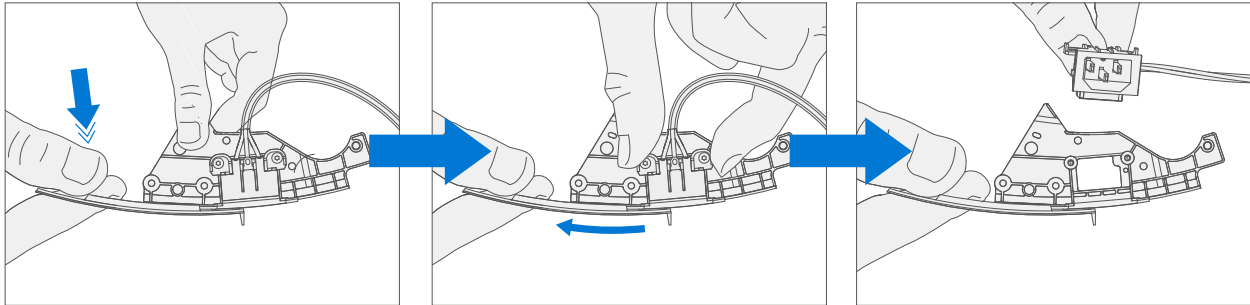
13. Gently remove the DC power connector from the power bracket and set aside.
14. Pull the power bracket slide handle away from the serial number (exposing the AC power port) until the slide handle hits a stop (Figure 9-7).



**Figure 9-7 Pull Power Bracket Handle Away from SN**



- Using your thumb, apply moderate force on the inside of the power bracket slide handle while continuing to pull away from the serial number. The slide handle will deflect slightly away from the power bracket and overcome the retaining boss, slipping into another position. The AC power connector is now free from the power bracket (Figure 9-8).

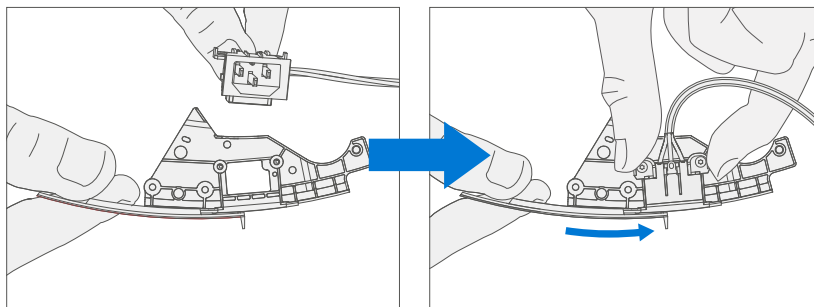


**Figure 9-8 Continue to Pull Power Bracket Handle Away from SN**

- Set the power bracket aside as it will be reassembled into the device.

#### 9.4 Install PSU

- Slide the new PSU AC power connector into the old power bracket. Once in place, slide the power bracket slide handle back into place to secure the AC power connector (Figure 9-9).



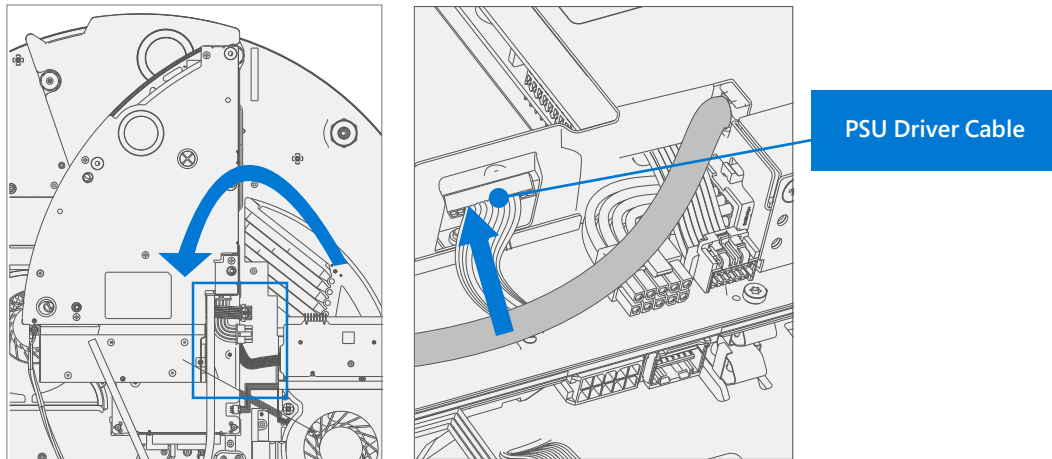
**Figure 9-9 Install AC Power Connector into Power Bracket**

- Using the **Torx T10 bit and driver**, thread the 2 **AC Power Connector Screws** (see Figure 9-6 for locations). Tighten the screws until the bottom of the screw head contacts the power bracket plastic then stop.
- Place the new DC power connector in the old power bracket and use the **Torx T10 bit and driver**, thread the 2 **DC Power Connector Screws** (see Figure 9-6 for locations). Tighten the screws until the bottom of the screw head contacts the power bracket plastic then stop.



4. Carefully place the PSU (flipped) into the device access the underside of the PSU.
5. Use fingers to connect the two PSU connectors to the right side of VB (see Figure 7-1 for location). Connectors will require substantial force to insert.


**Use fingers to connect the LED Driver cable (Figure 9-10)**



**Figure 9-10 Flip PSU to Access Connectors**

6. Carefully lift PSU and flip PSU into position, aligning the PSU with the threaded standoffs.
7. Using the **Torx T10 bit and driver**, thread the 4 **PSU Screws** until tight.


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 **IMPORTANT:** Ensure top PSU screw is not installed. See Figure 9-4.

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8. Using the **Torx T10 bit and driver**, thread the 4 **Power Bracket Screws** until tight.
9. Beginning from the upper right side of the fan and working around to the bottom, use fingers to route the AC power cable through the integrated cable routing hooks (see routing in Figure 5-4).
10. Route the DC power cable through the cable routing hook on the left side of the PSU fan and the semi-circular cutout in the foam (Figure 5-6).
11. Install **Power Cable Zip-Tie** to secure the AC and DC power cables to the metal plate as shown in Figure 5-3.

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 **WARNING:** To reduce the risk of shock or injury, inspect the AC and DC power cables for any damage or missing insulation. PSU must be replaced if any damage is found.

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12. Follow instructions in section 3.4 to replace the compute module, bump cover, and mount the device.

## Environmental Compliance Requirements

All waste materials, including waste electrical and electronic equipment (WEEE) and batteries, must be managed according to applicable laws and regulations and Microsoft standards and requirements, including [H09117](#). In case of questions, please contact [AskECT@microsoft.com](mailto:AskECT@microsoft.com)

