



# Azure Edge and Platform Specification

## Azure Stack Edge Pro2 Service Manual Model DB040 / DB040-W

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## Approvals

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# 1. Introduction

## Specifications of Screwdriver and Safety Product



### Read Safety and Compliance Information

Read all the safety and compliance information made available by Microsoft prior to using this equipment. Failure to follow instructions could result in fire, electric shock, or other injuries, or damage to your properties. Request a copy of the Safety and Compliance Guide at [SSC\\_Compliance@microsoft.com](mailto:SSC_Compliance@microsoft.com)

When we need to replace the failure commodities, we have to wear anti-static wrist strap (Figure 1) and anti-cut gloves (Figure 2) to protect the product and user's hand. There are three types of screwdriver we used: T10 and T30. When we need to tighten T20 and T30 screws, the torque needs to limit, so we have to use the torque limiting driver (Figure 3).

Screw type	Where used	Torque (Unit: Kgf-cm)
T10	Thumbscrews	6.00 +/-0.5
T30	Remote Heat Sink	13.3 +/- 1.3



Figure 1 Anti-static wrist strap



Figure 2 Anti-cutting gloves



Figure 3 Torque limiting driver

## Screw List

Part	Screw Specification	Torque
Chassis	Ear Bracket: M3 Ear Module: 6-32 SSD Cage: 6-32 PCIe Cage: 6-32 Top Cover: T10H	Ear Bracket: 6kgf-cm +/-10% Ear Module: 9kgf-cm +/-10% SSD Cage: 9kgf-cm +/-10% PCIe Cage: 7kgf-cm +/-10% Top Cover: 6kgf-cm +/-10%
PCBA	MB: M3 SATA BP: M3 2U Riser: M3 FIO: M3	MB: 6kgf-cm +/-10% SATA BP: 6kgf-cm +/-10% 2U Riser: 6kgf-cm +/-10% FIO: 6kgf-cm +/-10%
Thumbscrew	PDB: T10H PCIe Cage: M3	PDB: 6kgf-cm +/-10% PCIe Cage: 6kgf-cm +/-10%
CPU Heat Sink	T30H	13.8kgf-cm +/-10%
Intrusion Switch	M2	3kgf-cm +/-10%
4056 Fan Guard	M4	4kgf-cm +/-10%

# System Overview

## System Specification

Item	Description
Board Form-Factor	86mm (H) x 440mm (W) x 350mm (D) / 3.38" (H) x 17.3" (W) x 13.8" (D)
Processor	Intel Xeon Cascade Lake 6209U w/ backward capability with Skylake-SP (TDP 125W)
Memory	6x DDR4-2400/2666 ECC DIMMs Slots, 4 DIMMs per socket, 1 DPC RDIMM 16GB/32GB/64GB
PCH	Intel C622 (LBG-10/1G)
BMC	Aspeed AST2500 with dedicate RJ45 network port
Storage	Up to 6x 2.5" SATA SSDs (Hot Swappable) Up to 1x NVMe M.2 (on MB)
Expansion Slots	Up to 1x CX6 NIC card (on x16 slot) Up to 1x Wi-Fi card (on x8 slot) Up to 2x T4 cards (on x8 slot)
Security	TPM v2.0 module header
Fan	Up to 3x 8038 Fan Up to 2x 4056 Fan
Rear I/O ports	1x RJ45 for IPMI MGMT 2x RJ45 for 10Gb 2x External USB3.0 ports BMC Heartbeat LED 1x VGA port
Rear Button	Recessed button UID button w/ LED
Front Panel Header	Power button w/ LED Reset button UID button w/ LED

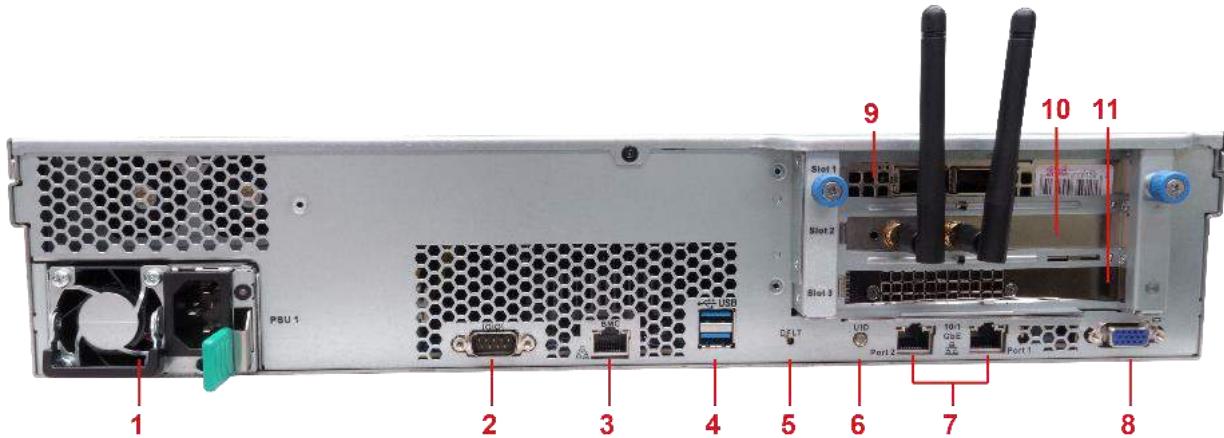
## Front Panel

The illustration below shows the system front panel.



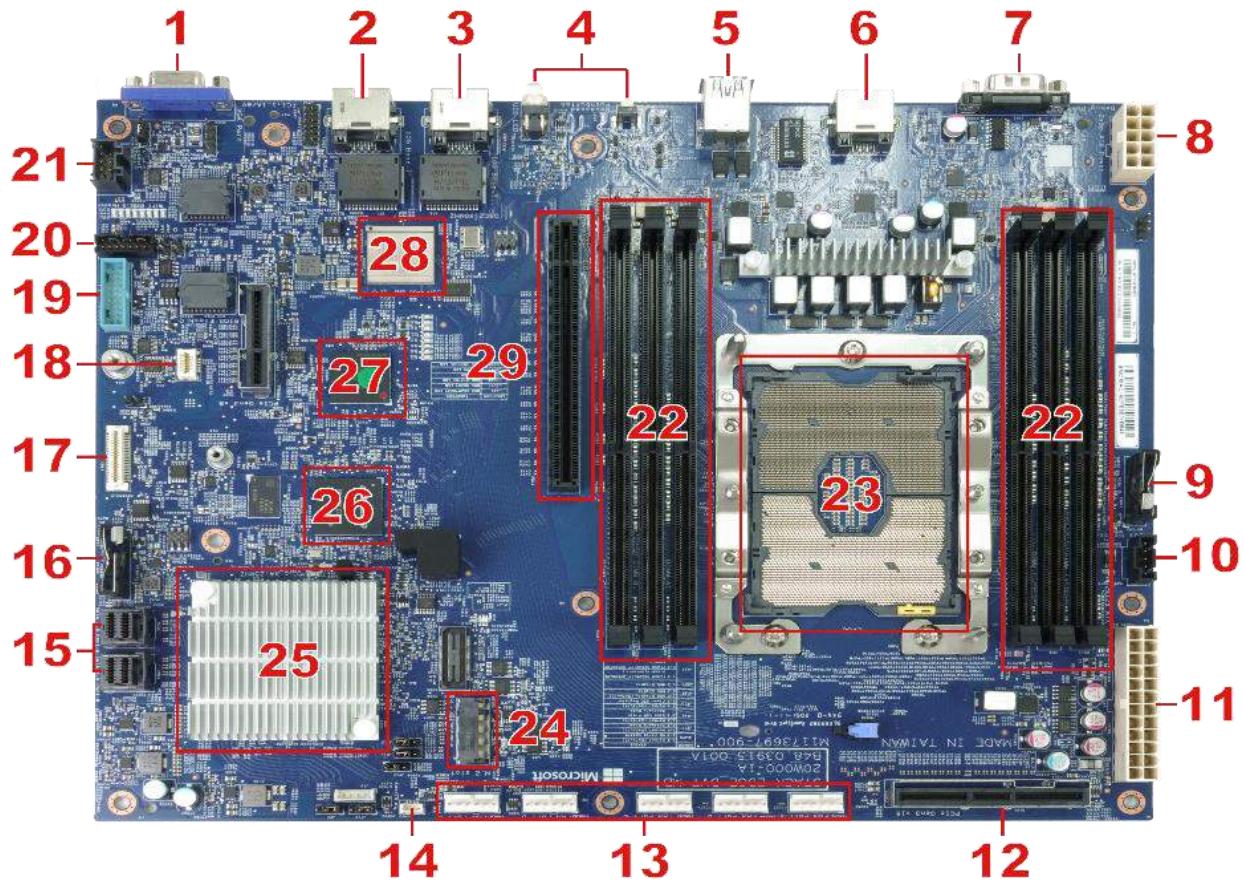
Item	Component
1	Power, UID and Reset Buttons (respectively from top to bottom)
2	Left Ear Module
3	SSD Tray Module
4	Right Ear Module

## Rear Panel



Item	Component
1	PSU
2	RS-232 Debug Port
3	BMC RJ-45 Port
4	USB 3.0 Dual Ports
5	Recessed Default Setting Button
6	UID Button / LED
7	RJ-45 Ports
8	D-Sub VGA Port
9	NIC Card
10	Wi-Fi Card
11	T4 Card

## Mainboard Components

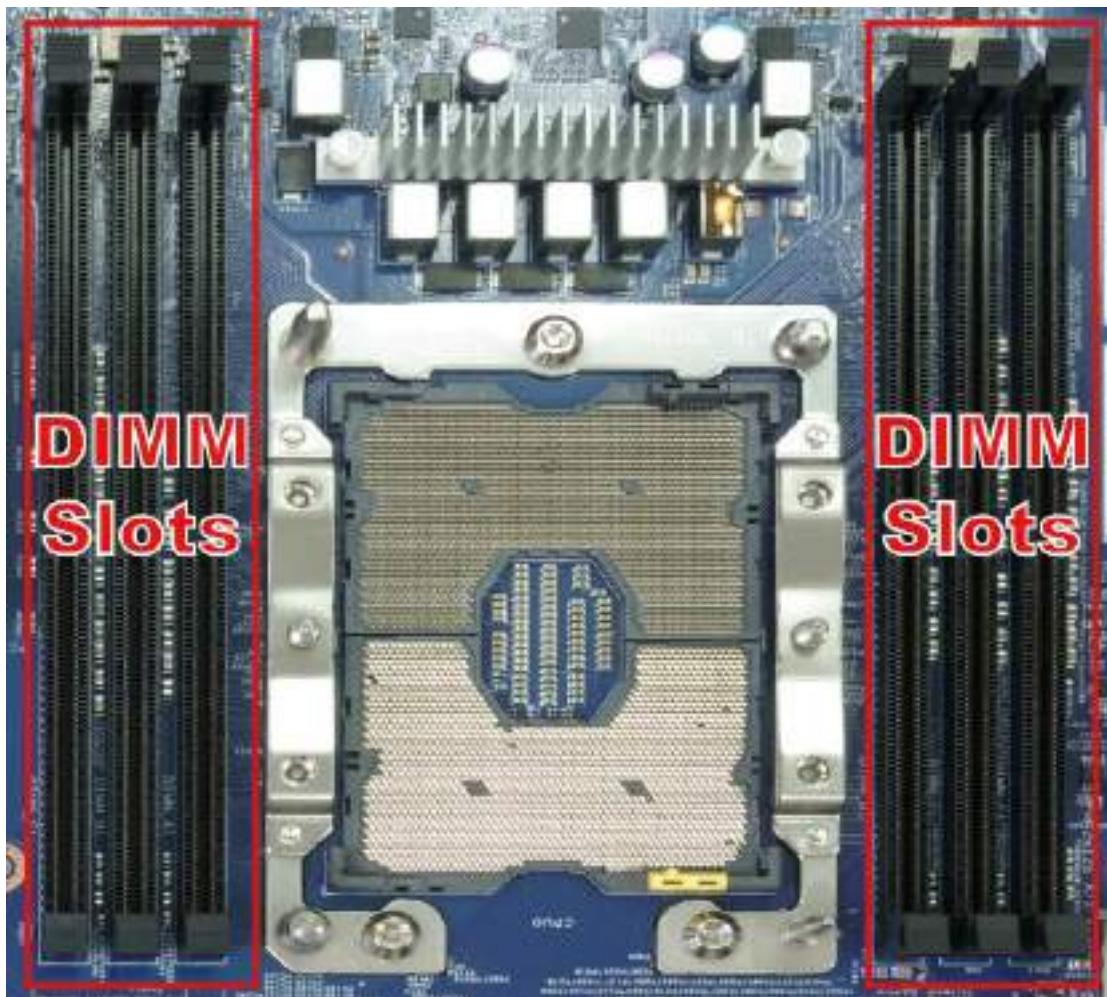


No.	Component	No.	Component
1	D-Sub VGA Port	16	RTC Battery Holder
2	10Gb RJ-45 Port	17	Cerberus Connector
3	10Gb RJ-45 Port	18	TPM 2.0 Connector
4	UID Button/LED & Recessed Default Setting Button	19	FIO Header
5	USB 3.0 Dual Ports	20	Serial Debug Header
6	BMC RJ-45 Port	21	Wi-Fi USB Header
7	RS-232 Debug Port	22	DIMM Slots
8	10-pin Power Port	23	Heat Sink / CPU Module Holder
9	Intrusion Power Holder	24	M.2 Interface Port

10	PSU Management Header	25	PCH
11	24-pin Power Port	26	BMC
12	PCIe x16 Riser Port	27	CPLD
13	Fan Ports	28	PHY
14	Intrusion Header	29	PCIe x16 Riser Interface Slot
15	SATA Ports		

## Memory Slot Identification and Population Rules

### Memory Placement



### General Population Requirements

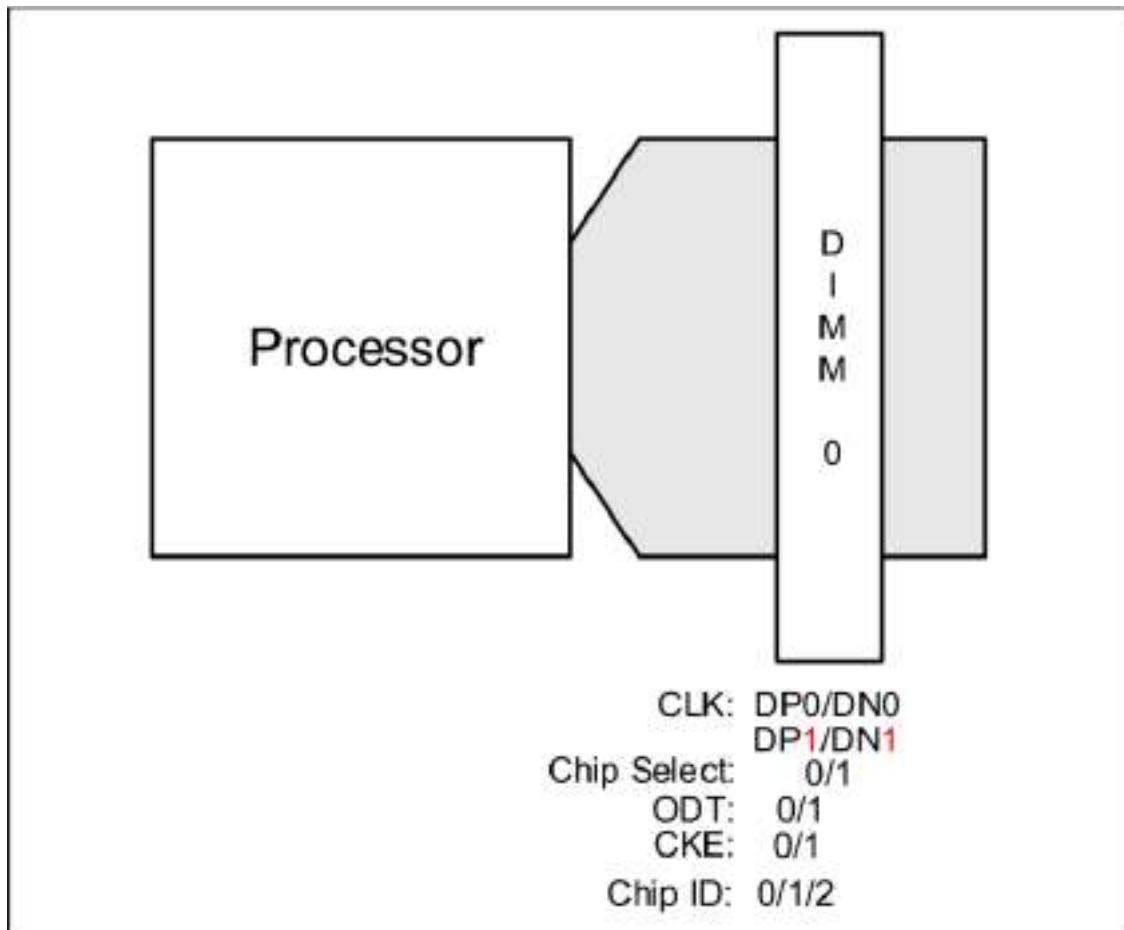
#### DIMM Mixing Rules

- All DIMMs must be either all DDR4 RDIMMs.
- x4 and x8 DIMMs can be mixed in the same channel.
- Mixing of DDR4 operating frequencies is not validated within a socket or across sockets by Intel. If DIMMs with different frequencies are mixed in the same channel, all DIMMs will run at the common lowest frequency.

## One Slot per Channel DIMM Population Requirements

The Intel MRC will check for correct DIMM placement and addressing.

Intel strongly recommends all designs follow the DIMM ordering, clock, and control signal routing documented in the following figure. This addressing must be maintained to be compliant with the reference BIOS code supplied by Intel.



## Memory Support

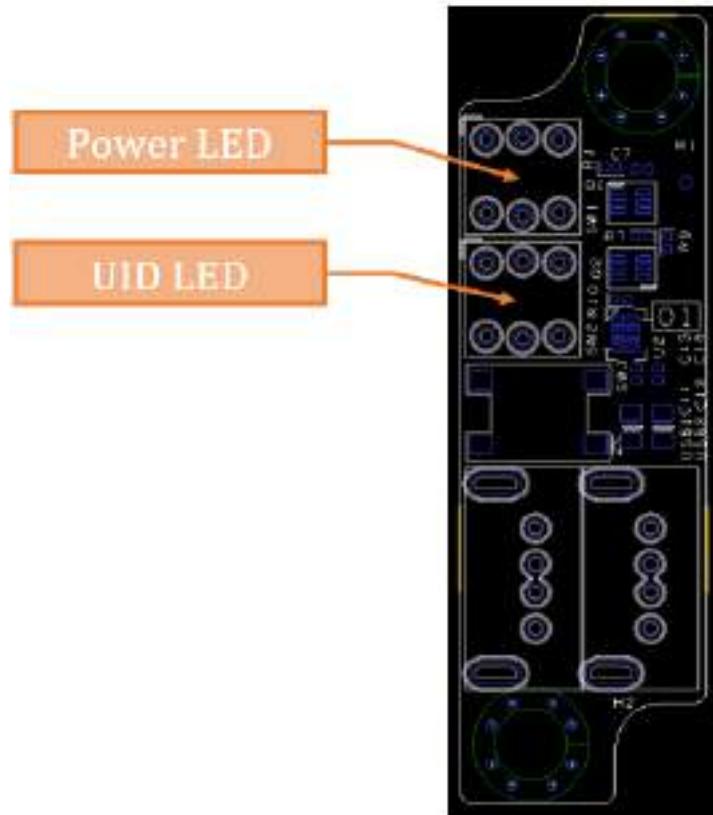
Type	Ranks Per DIMM and Data Width	DIMM Capacity (GB)		Speed (MT/s); Voltage (V)	
		DRAM Density			
		4Gb	8Gb		
RDIMM	SRx4	8GB	16GB	2666	
RDIMM	SRx8	4GB	8GB		
RDIMM	DRx8	8GB	16GB		
RDIMM	DRx4	16GB	32GB		



## Installation Options

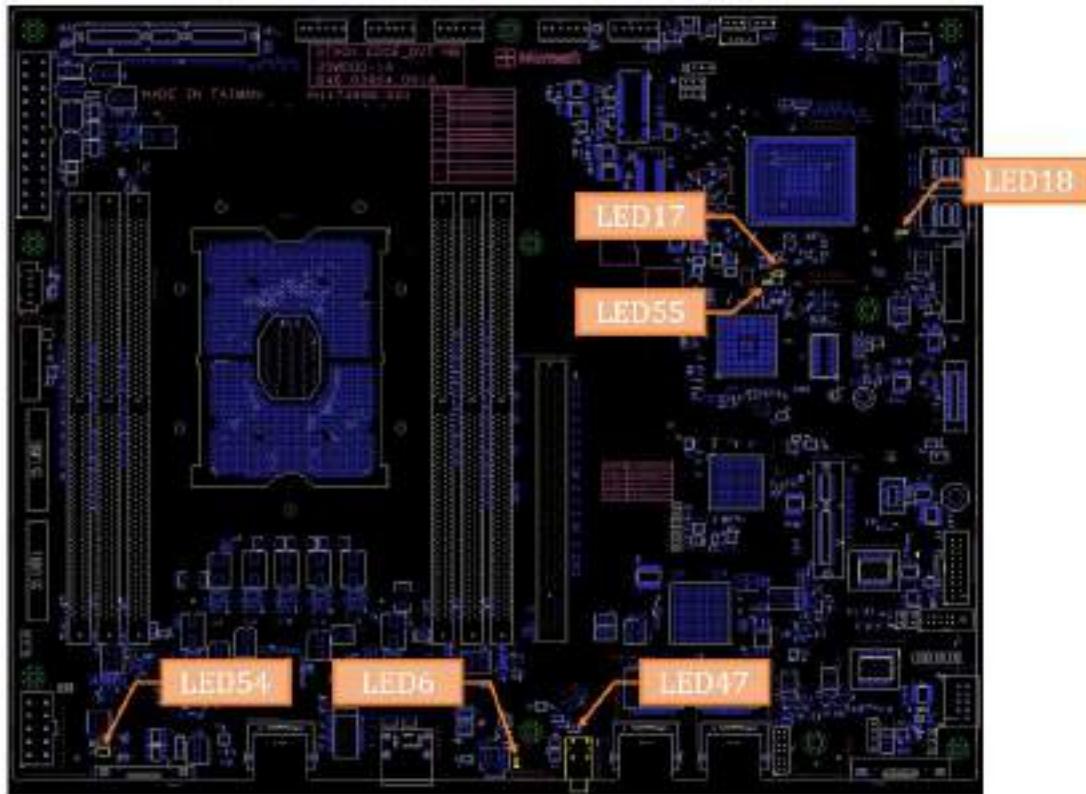
## LED Location and Post Code Definitions

### Front Panel LED Behavior



LED	Color	Status	Description
Power LED	GREEN	OFF	System power OFF (S5) or AC OFF (G3)
		ON	System power ON (S0)
UID LED	BLUE	OFF	Server ID request OFF
		ON	Server ID request

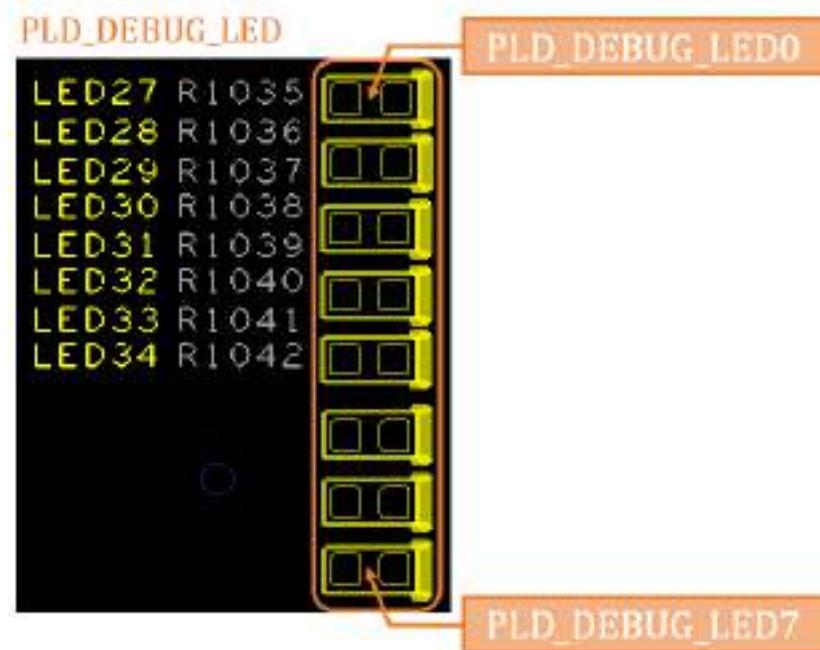
## Board LED Behavior



LED	Color	Location	Status	Description
BMC HEARTBEAT LED	GREEN	LED6	ON or OFF	BMC error
			BLINK	BMC is alive and properly configured
POWER STATUS LED	GREEN	LED17	OFF	AC OFF
	AMBER	LED55	OFF	
	GREEN	LED17	ON	S0
	AMBER	LED55	OFF	
	GREEN	LED17	OFF	S5
	AMBER	LED55	ON	
HDD STATUS LED	GREEN	LED18	OFF	No activity
			BLINK	Indicates during PCH SATA command activity

UID LED	BLUE	LED47	OFF	Server ID request OFF
			ON	Server ID request
CATERR LED	RED	LED54	OFF	Normal
			ON	Indicates that a CPU catastrophic error has occurred

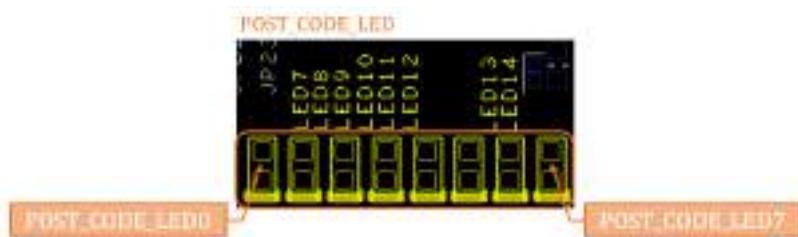
## CPLD LED Behavior



State	State Name	PLD_DEBUG
STBY Power State	STBY	0000_0000
	BMC_1V15	0000_0001
	PCH_AUX	0000_0010
Normal Power On	OFF	0000_0011
	PS	0000_0100
	P5V	0000_0101
	P3V3	0000_0110
	PVPP	0000_0111
	PVDDQ	0000_1000
	PVTT	0000_1001
	PVCCIO	0000_1010
	PVCCIN	0000_1011
	PVCCSA	0000_1100
	PCH_PWROK	0000_1101
	CPU_PWRGD	0000_1110
	SYS_PWROK	0000_1111
	RESET	0001_0000
	ON	1111_1111
Normal Power Off	PVCCIN_OFF	0001_0010
	PVCCIO_OFF	0001_0011

	PS_OFF	0001_0100
	PVDDQ_OFF	0001_0101
	PVPP_OFF	0001_0110
	P5V_OFF	0001_0111
	P3V3_OFF	0001_1000
	CLKS_OFF	0001_1001
	FINISH_OFF	0001_1010

## Post Code LED Behavior



## RJ-45 LAN LED Behavior

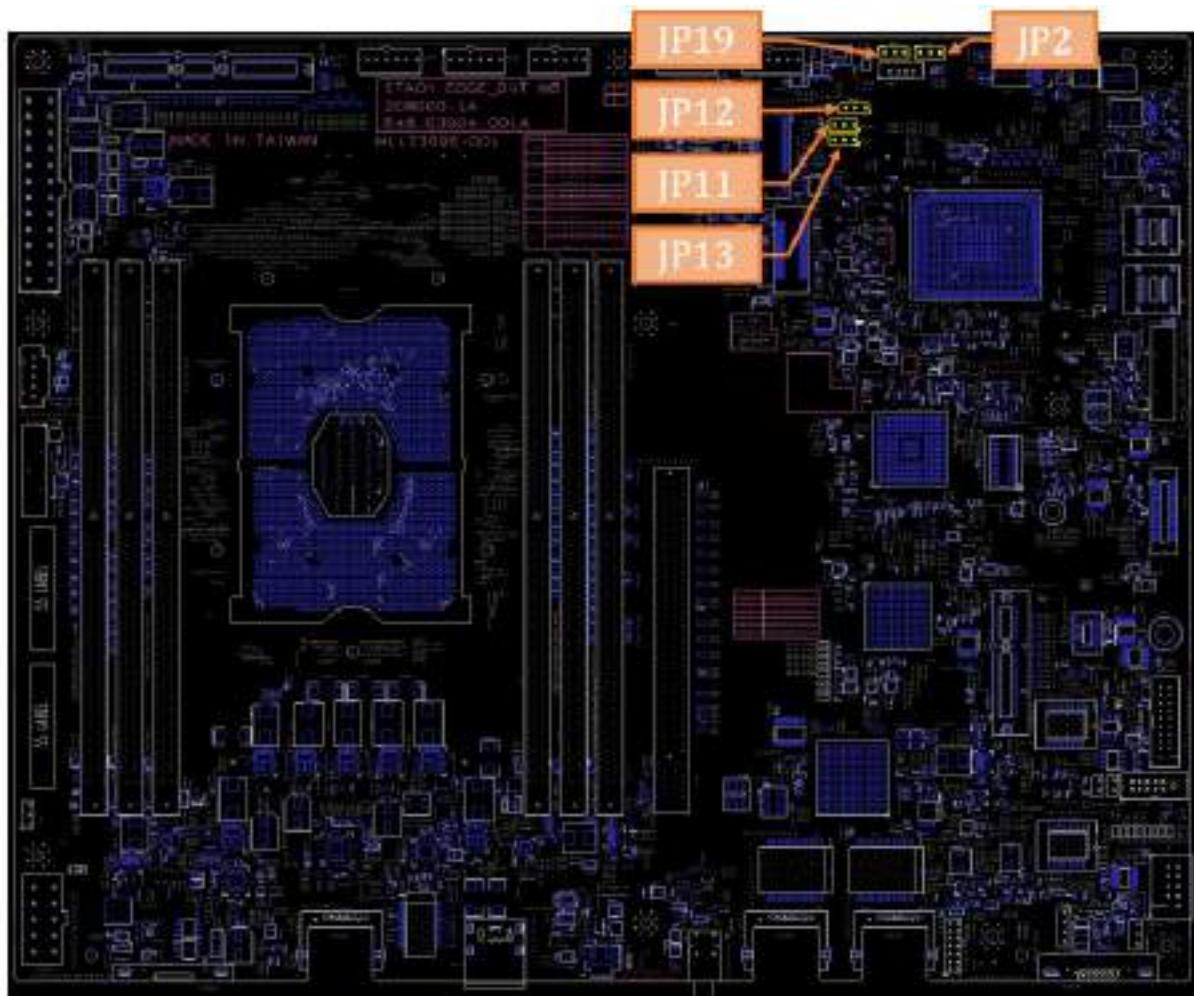
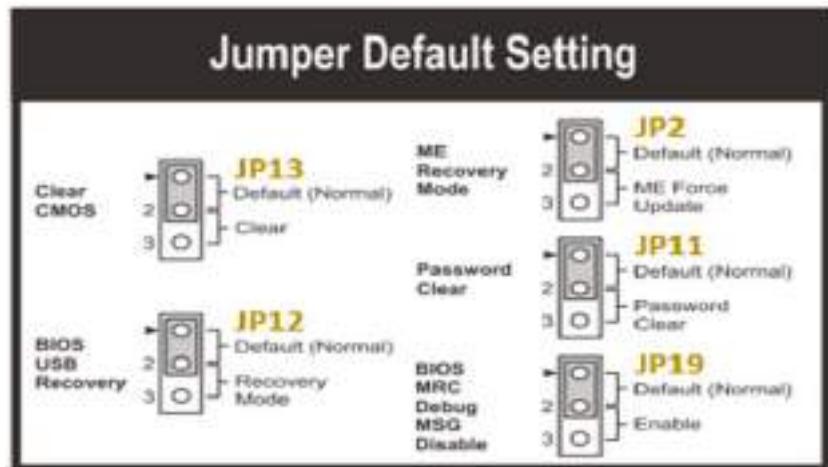
### RJ1

Left	Status	Description
YELLOW	OFF	Plug out
YELLOW	ON	Plug in
YELLOW	BLINK	Traffic
Right	Status	Speed
GREEN/AMBER	OFF	10M
AMBER	ON	100M
GREEN	ON	1G

### RJ2 / RJ3

Left	Status	Description
YELLOW	OFF	Plug out
YELLOW	ON	Plug in
YELLOW	BLINK	Traffic
Right	Status	Speed
GREEN/AMBER	OFF	100M
AMBER	ON	1G
GREEN	ON	10G

## Jumper Location and Definitions



## 2. Servicing the System

When servicing the system, it is recommended that you use torque limiting drivers and follow the designated torque for the parts outlined in the table below.



Figure 4 Torque limiting driver

Part	Screw Specification	Torque
Chassis	Ear Bracket: M3 Ear Module: 6-32 SSD Cage: 6-32 PCIe Cage: 6-32 Top Cover: T10H	Ear Bracket: 6kgf-cm +/-10% Ear Module: 9kgf-cm +/-10% SSD Cage: 9kgf-cm +/-10% PCIe Cage: 7kgf-cm +/-10% Top Cover: 6kgf-cm +/-10%
PCBA	MB: M3 SATA BP: M3 2U Riser: M3 FIO: M3	MB: 6kgf-cm +/-10% SATA BP: 6kgf-cm +/-10% 2U Riser: 6kgf-cm +/-10% FIO: 6kgf-cm +/-10%
Thumbscrew	PDB: T10H PCIe Cage: M3	PDB: 6kgf-cm +/-10% PCIe Cage: 6kgf-cm +/-10%
CPU Heat Sink	T30H	13.8kgf-cm +/-10%
Intrusion Switch	M2	3kgf-cm +/-10%
4056 Fan Guard	M4	4kgf-cm +/-10%

## TOP Cover

### Remove Top Cover

1: Loosen and remove the T10 screw securing the top cover to the chassis.



Figure 5 Remove Top Cover Screw

2: Press the thumb pads on the top cover (1), slide the cover (2) towards the rear of the chassis.



Figure 6 Press Thumppads and Slide Top Cover

3: Lift to remove the top cover



Figure 7 Remove Top Cover

## Install Top Cover

1: Lower the top cover onto the chassis.



Figure 8 Lower the Top Cover

2: Slide the top cover (1) towards the front of the chassis, insert and tighten the screw (2).



Figure 9 Slide Top Cover and Secure with Screw

## Bezel Filter Replacement

### Remove Bezel

1: Unlock the bezel slide lock by turning the key to the unlocked position.

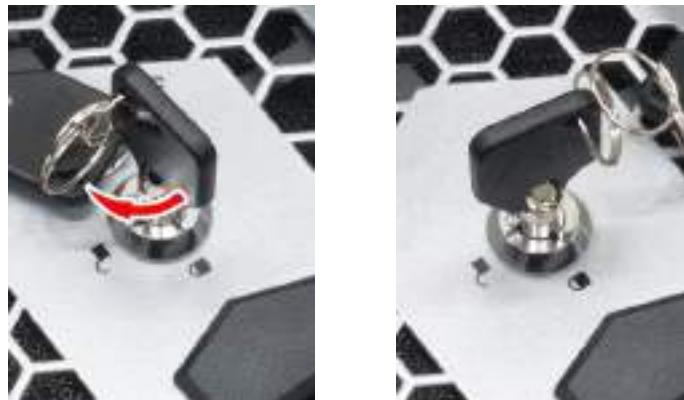


Figure 10 Unlocking Bezel Slide Lock

2: Slide the slide lock towards the right (1) to unlock the bezel and pull the bezel outward (2).



Figure 11 Unlock Slide Lock and Pull Bezel Out

3: Pull the bezel completely out of the right ear module to remove it from the chassis.



Figure 12 Remove Bezel

## Remove Filter

1: Loosen to remove the screws securing the filter bracket to the bezel.



Figure 13 Remove Filter Bracket Screws

2: Loosen the thumbscrews also securing the bracket to the bezel.



Figure 14 Loosen Thumbscrews

3: Lift to remove the bracket.

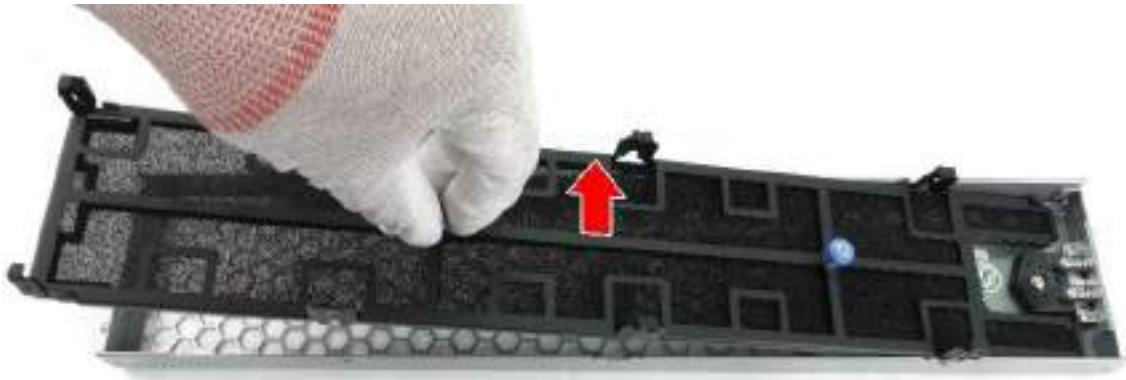


Figure 15 Lift Bracket

4: Detach the upper and lower parts of the bracket.



Figure 16 Detach Upper and Lower Bracket Parts

5: Remove the filter.

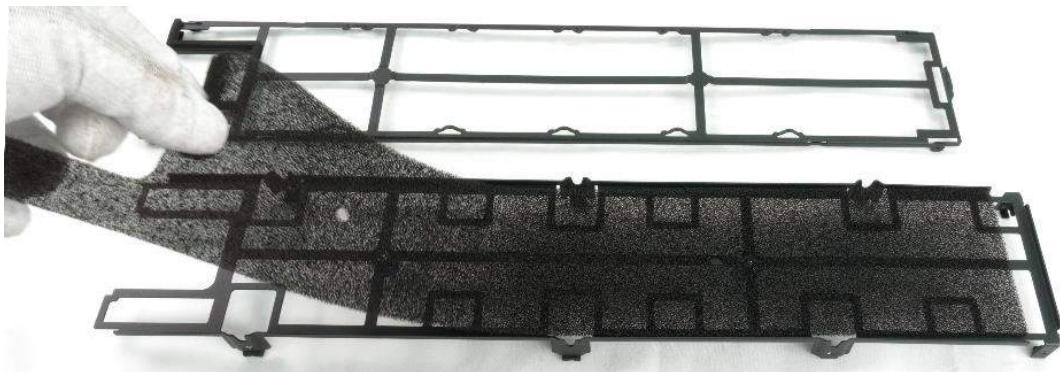


Figure 17 Remove Filter

## Install Filter

1: Place the filter into the bracket.



Figure 18 Place Filter into Bracket

2: Attach the upper and lower parts of the bracket.



Figure 19 Attach Upper and Lower Bracket Parts

3: Lower to install the bracket into bezel.

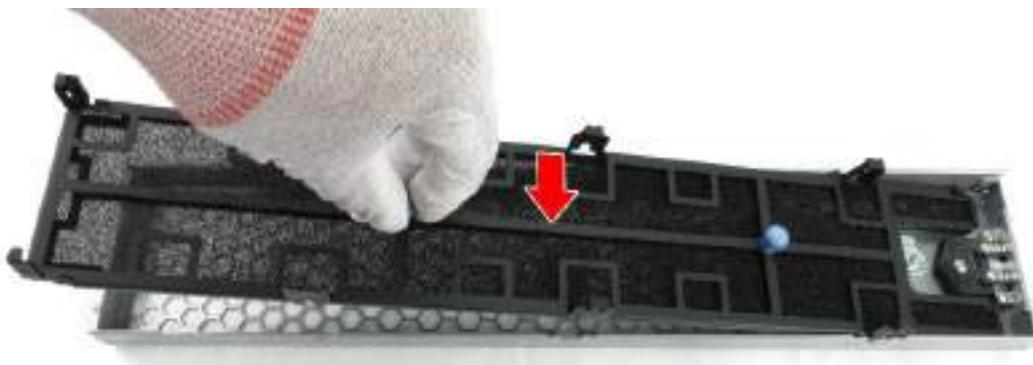


Figure 20 Install Bracket into Bezel

4: Tighten the thumbscrews to secure the bracket to the bezel.



Figure 21 Tighten Thumbscrews

5: Insert and tighten the screws to further secure the bracket to the bezel.



Figure 22 Insert and Tighten Screws

## Install Bezel

1: Attach the bezel (1) to the right ear module, slide the slide lock (2) and push the bezel into the chassis (3).



Figure 23 Install Bezel

2: Lock the bezel slide lock by turning the key to the locked position.



Figure 24 Lock Bezel Slide Lock

## Front SSD

When the bezel is removed, you can see the SSD trays in the SSD cage on the right. Follow the instructions below to replace the SSD trays and replace the SSDs.

### Remove SSD Tray

1: Press the release button to release the front lever of the SSD tray.



Figure 25 Press SSD Tray Release Button

2: Pull to remove the SSD tray.



Figure 26 Pull to Remove SSD Tray

3: Repeat for the SSD trays you wish to remove.

## Remove SSD

Pull the side walls of SSD tray (1) to loosen the SSD and push the SSD out of the tray (2).



Figure 27 Remove SSD

## Install SSD

Slide the SSD into the SSD tray (1), pull the side walls of SSD tray (2) and push the SSD into the tray (3).



Figure 28 Install SSD

## Install SSD Tray

- 1: Push the SSD tray to the end while not closing the front lever.
- 2: When the tray reaches the end, close the front lever.



Figure 29 Install SSD Tray

- 3: Repeat for other SSD trays.

## Front SSD Cage

When the SSD trays are removed, follow the instructions below to replace it.

### Remove SSD Cage

1: Disconnect the SATA connectors from the SATA BP board.

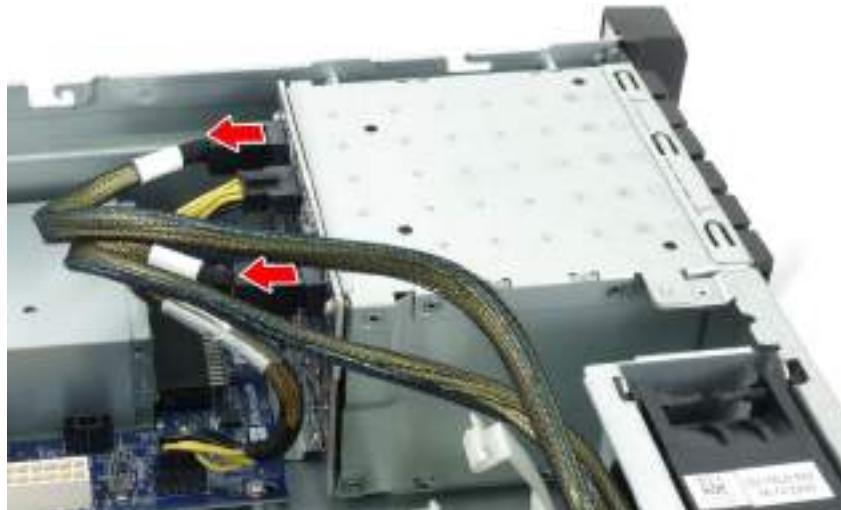


Figure 30 Disconnect SATA Connectors

2: Disconnect the BPD connectors from the SATA BP board and the PDB by pressing the connector holder button (1) and pull to remove the connector (2).

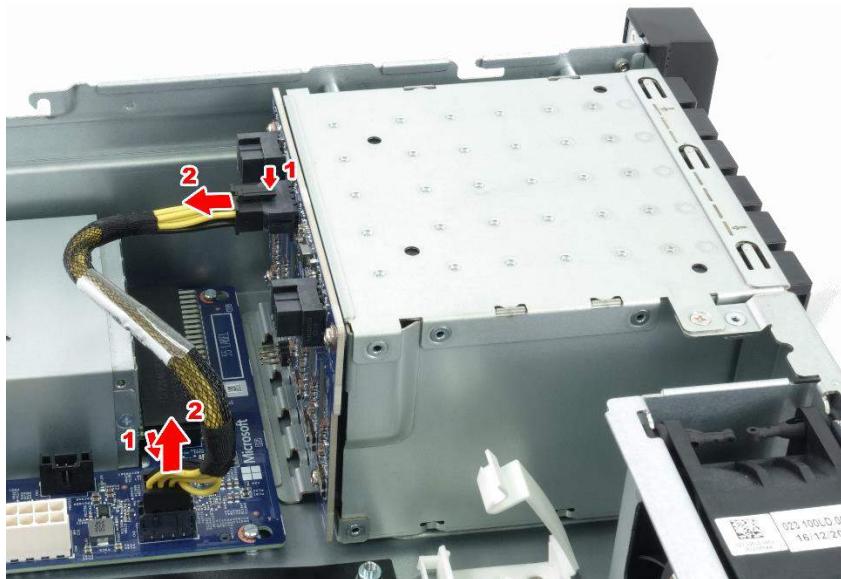


Figure 31 Disconnect BPD Connectors

3: Loosen and remove the screws securing the SSD cage to the chassis.



Figure 32 Loosen and Remove SSD Cage Screws

4: Slide the SSD cage outward.



Figure 33 Slide SSD Cage Outward

5: Lift to remove the SSD cage.

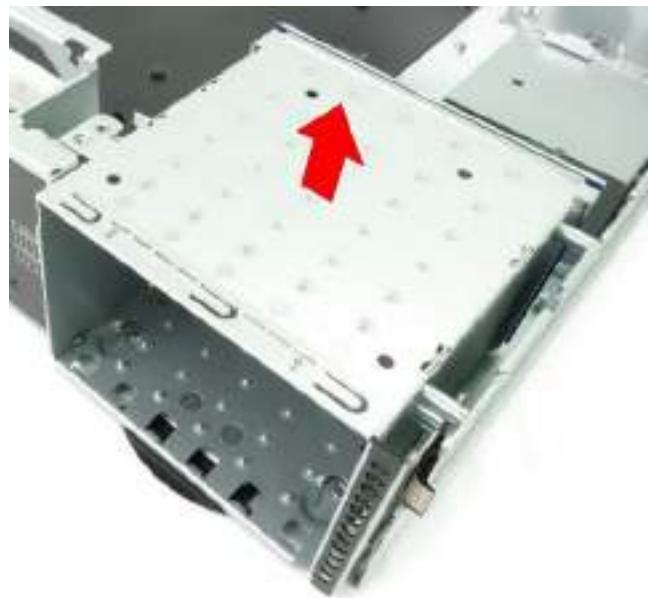


Figure 34 Remove SSD Cage

## Install SSD Cage

Make sure the SATA BP board is attached to the SSD cage (see page 44)

1: Lower the SSD cage (1) onto the chassis and slide it (2) towards the rear of the chassis. Make sure the standoffs are engaged.

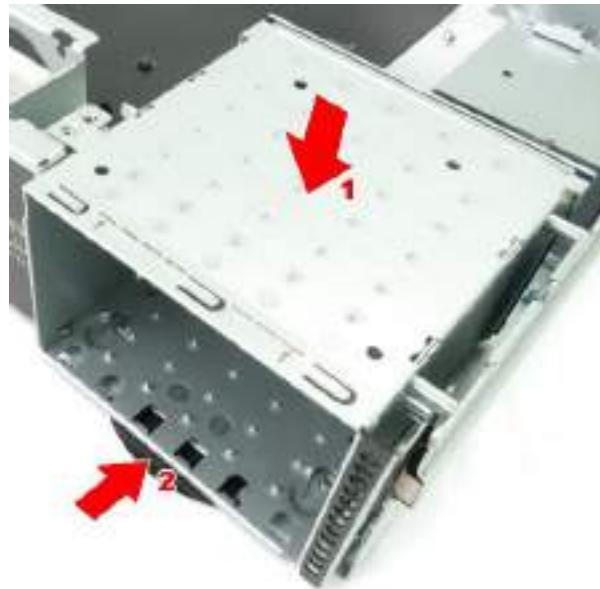


Figure 35 Attach SSD Cage to Chassis

2: Attach and tighten the screws to secure the SSD cage to the chassis.



Figure 36 Secure SSD Cage

3: Connect the BPD connectors to the SATA BP board and the PDB.

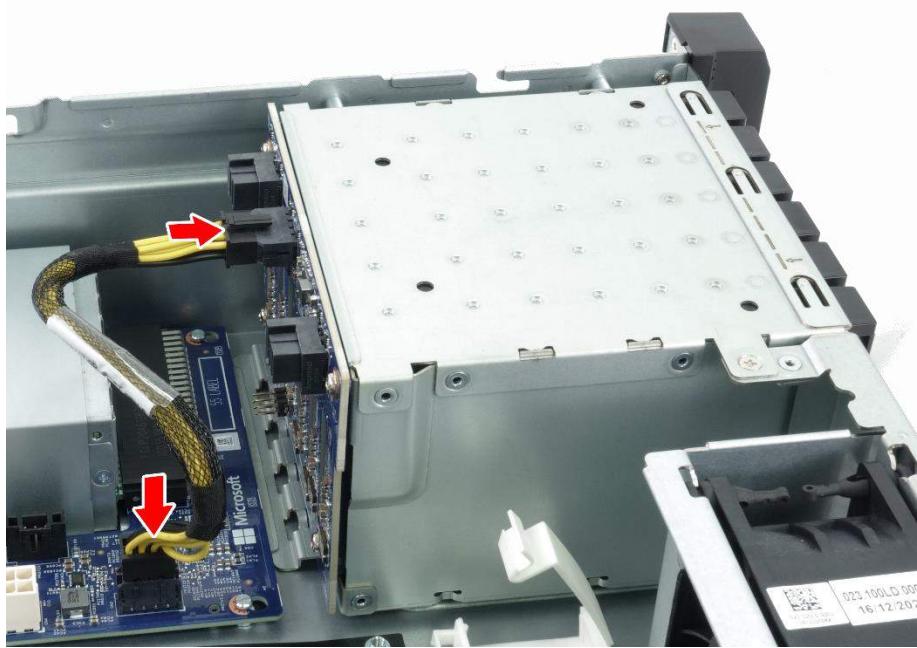


Figure 37 Connect BPD Connectors

4: Connect the SATA connectors to the SATA BP board.

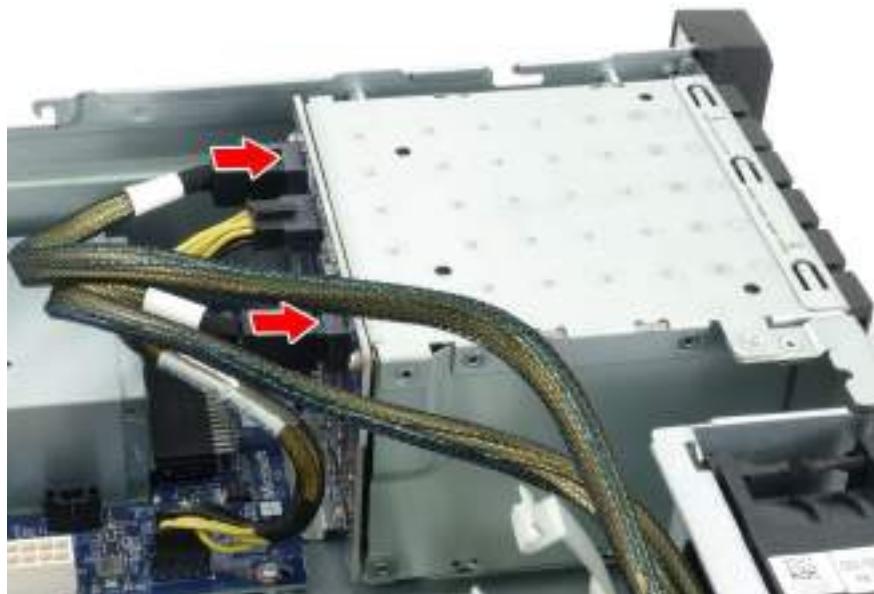


Figure 38 Connect SATA Connectors

## SATA BP Board

When the SSD cage is removed and the connectors are removed, follow the instructions below to replace it.

### Remove SATA BP Board

1: Loosen and remove the screws securing the SATA BP board to the SSD cage.



Figure 39 Remove SATA BP Board Screws

2: Pull to remove the SATA BP board.

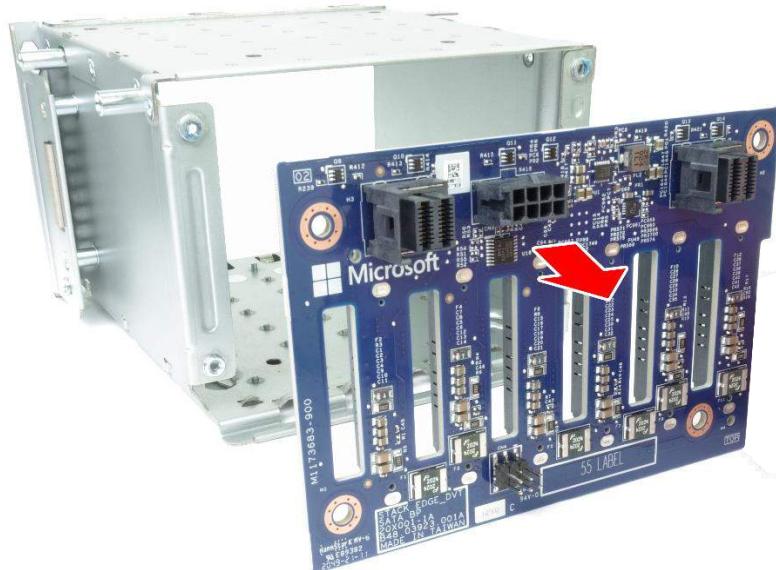


Figure 40 Remove SATA BP Board

## Install SATA BP Board

1: Align and push the SATA BP board against the SSD cage.

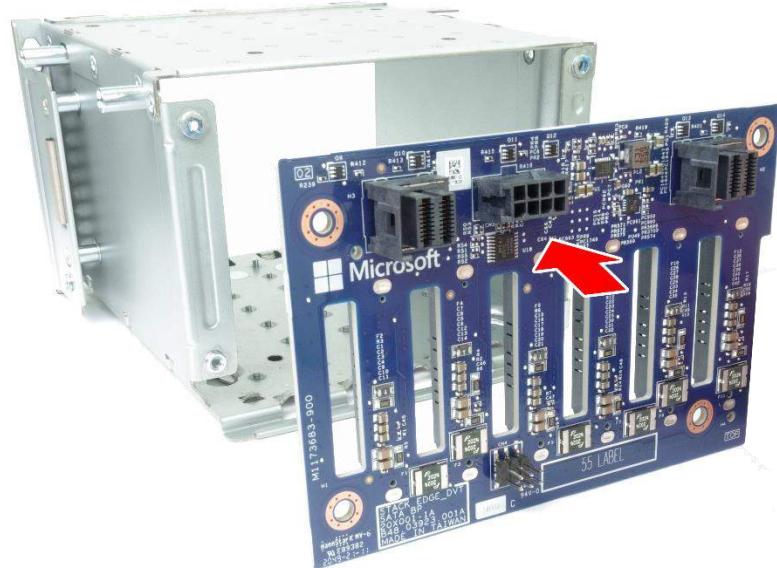


Figure 41 Align SATA BP Board

2: Insert and tighten the screws to secure the SATA BP board.



Figure 42 Insert and Tighten SATA BP Board Screws

## Power Supply Unit (PSU)

The power supply unit (PSU) is at the rear of the system.

### Remove PSU

1: Push the lock lever to release the PSU.



Figure 43 Release PSU

2: Pull out the PSU.



Figure 44 Remove PSU

## Install PSU

Insert the PSU and push until it is firmly latched into the chassis.



Figure 45 Install PSU

## Air Ducts

When the top cover is removed, you can see the air ducts.

### Remove Air Ducts

Lift to remove the air ducts.

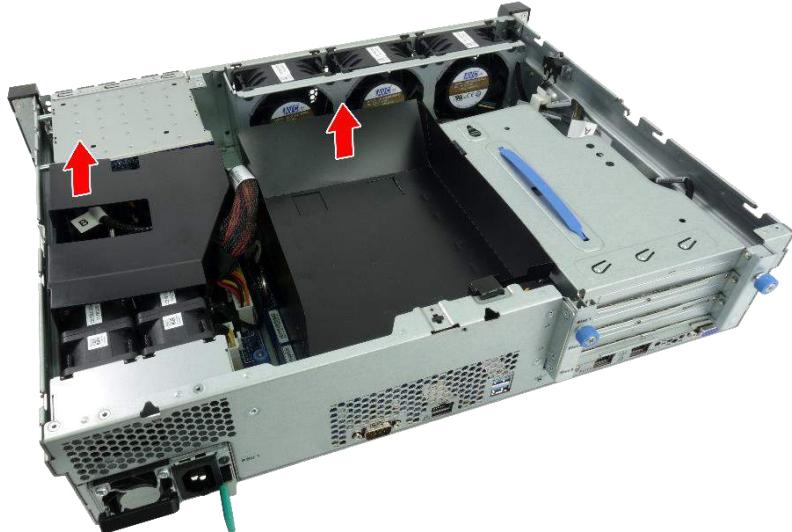


Figure 46 Lift Air Ducts

### Install Air Ducts

Lower and insert the air ducts into their designated positions.

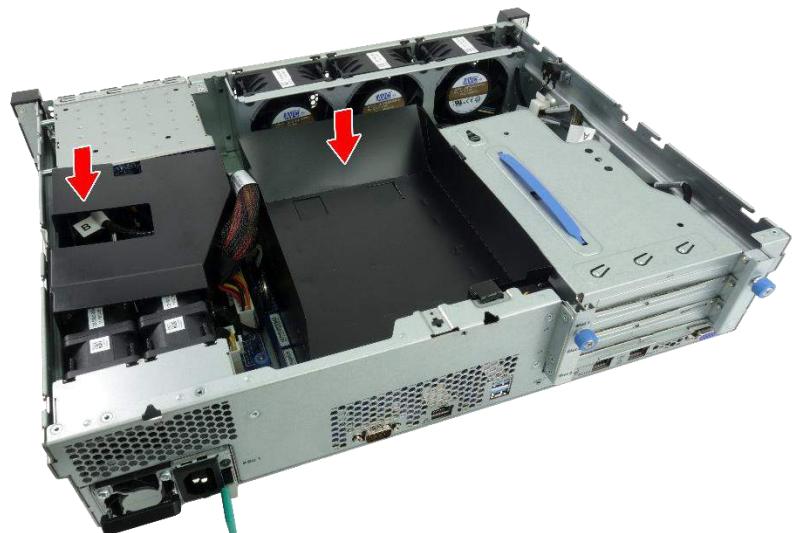


Figure 47 Insert Air Ducts

## DIMMs

When the air ducts are removed, you can see the DIMMs. Follow the instructions below to replace them.

### Remove DIMMs

1: Open the locking clips (1) securing the memory module and carefully pull the DIMM upward (2) to remove it from the mainboard.

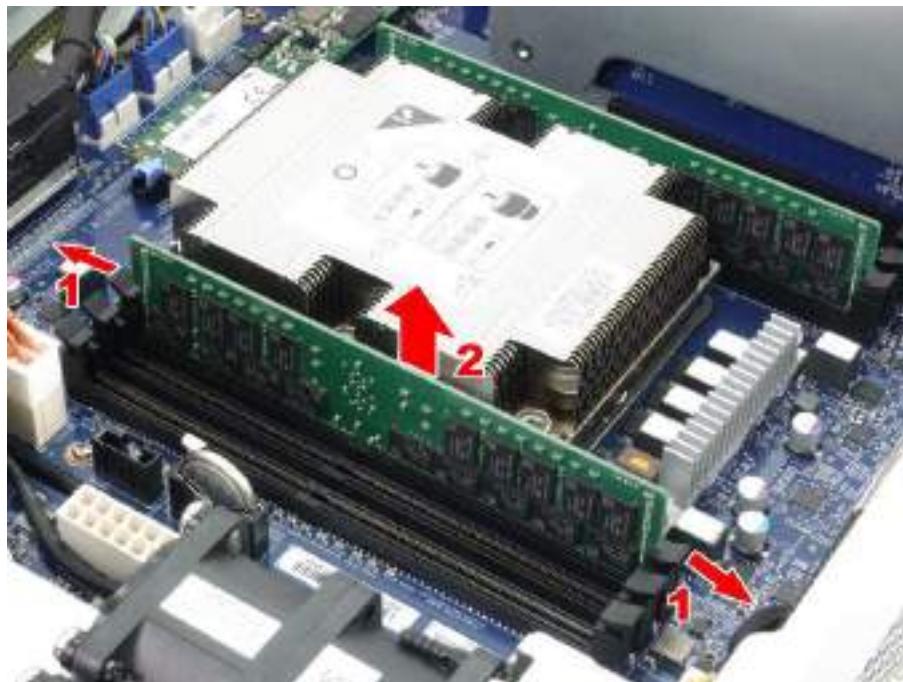


Figure 48 Open Locking Clips and Pull DIMM Upward

2: Repeat the steps above to remove all the DIMMs.

## Installing DIMMs

1: Carefully Insert and push the DIMM into the DIMM slot (1) on the mainboard. The locking clips will lock into place when inserted properly (2).

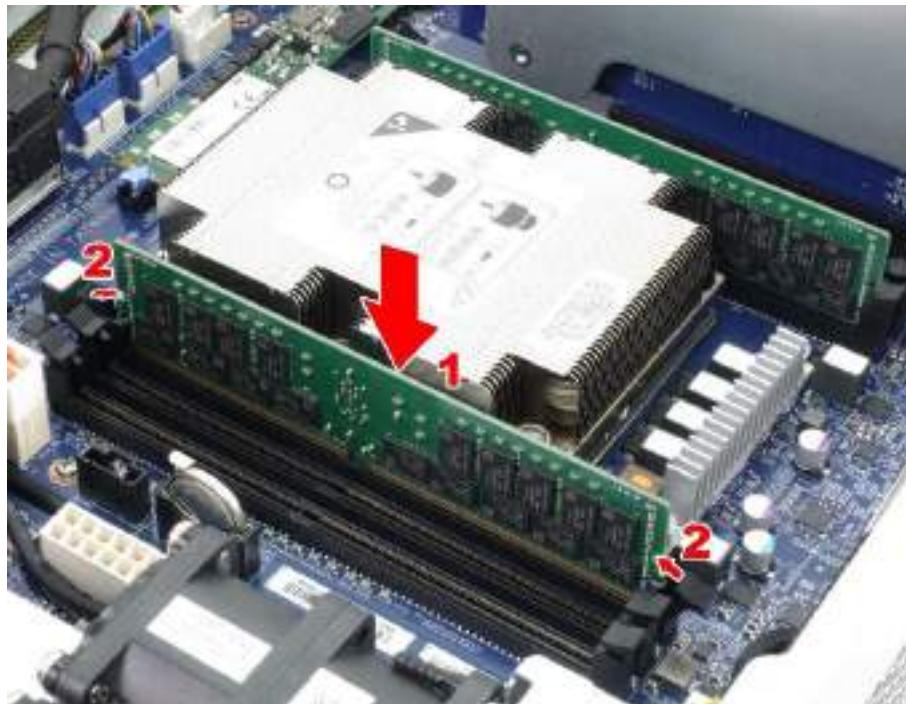


Figure 49 Insert DIMM

2: Repeat the steps above to remove all the DIMMs.

## Processor Heat Sink Module (PHM)

The processor heat sink module (PHM) refers to the subassembly where the heat sink and processor are clipped together prior to installation.

This allows for a more robust installation by providing better alignment features and keeping fingers away from the socket contact field. The other benefit of this style of socket loading is that it minimizes the board space used by the retention mechanism.

When the air ducts are removed, you can see the PHM. Follow the instructions below to replace it.

### Remove PHM

1: Loosen all the heat sink captive nuts securing the PHM to the system.

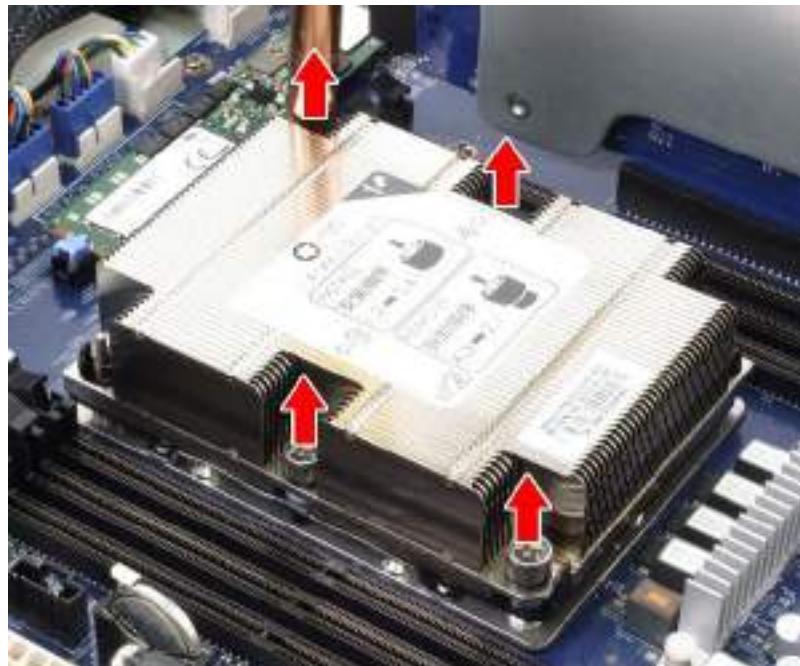


Figure 50 Loosen Heat Sink Captive Nuts

2: Lift to remove the PHM.

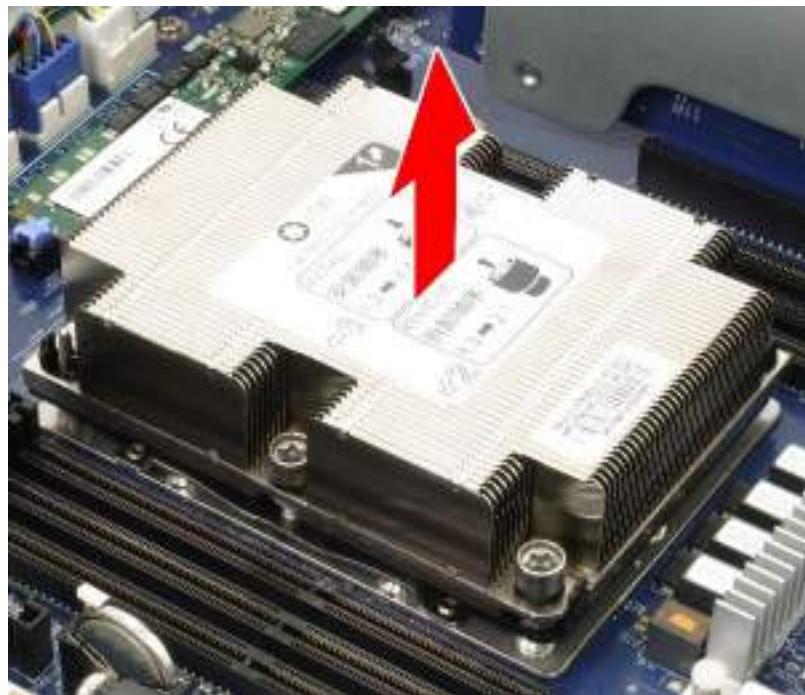


Figure 51 Lift PHM

## Install PHM

1: Lower to place the PHM into its designated position.

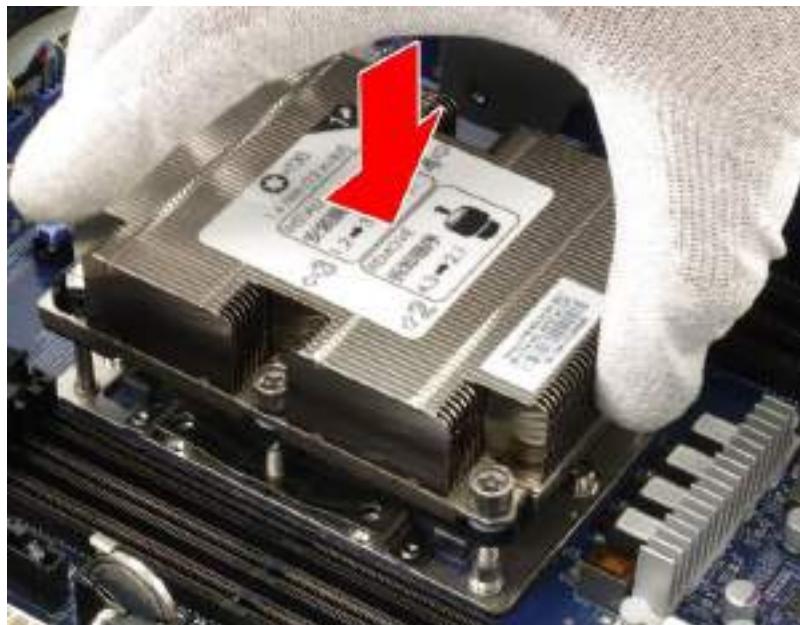


Figure 52 Lower PHM

2: Tighten all the heat sink captive nuts to secure the PHM.

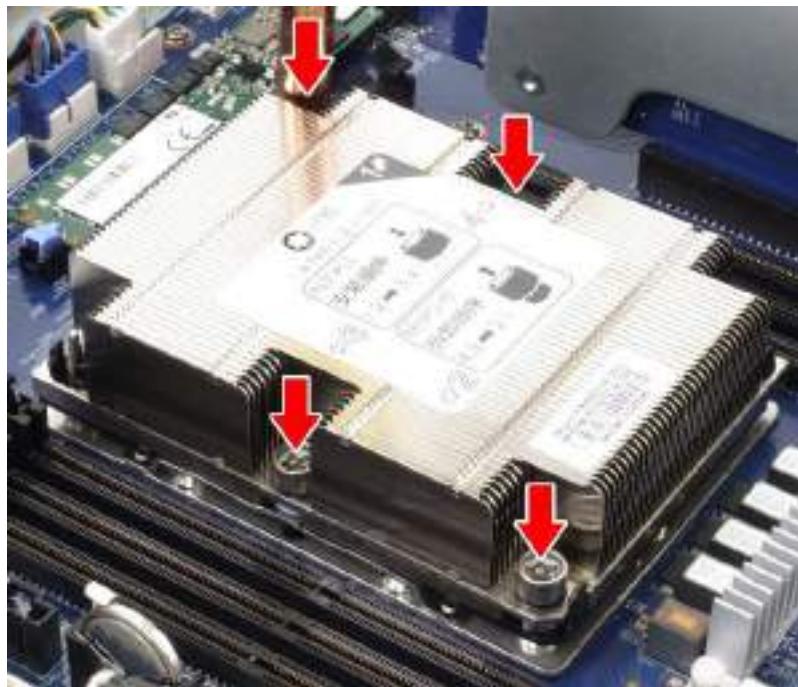


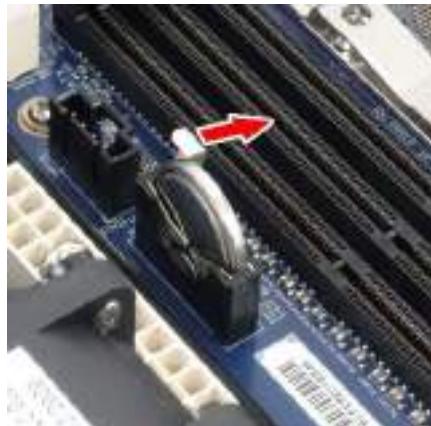
Figure 53 Tighten all the heat sink captive nuts

## Batteries

There are 2 batteries in the system. One in the middle beneath the air duct, and another on the side near the PCIe module. The procedure to replace them are the same.

### Remove Batteries

Push to tilt the battery holder latch.



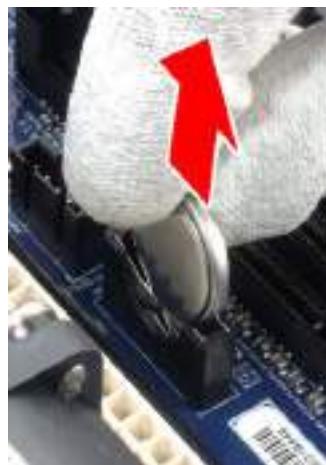
Mid battery



Side battery

Figure 54 Push Battery Holder Latch

2: Lift to remove the battery.



Mid battery



Side battery

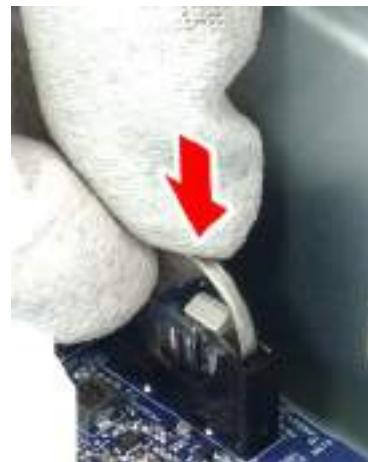
Figure 55 Lift Battery

## Install Batteries

1: Lower to insert the battery into the battery holder.



Mid battery



Side battery

Figure 56 Insert Battery

2: Push the battery holder latch to latch the battery.



Mid battery



Side battery

Figure 57 Latch Battery

## PCIe Riser Cage

There is a PCIe cage on the rear of the chassis that holds a PCIe riser. The middle air duct is also attached to the PCIe cage when installed. When the air duct is removed, follow the instructions below to replace the PCIe components

### Remove PCIe Cage

1: Push the clip button (1) to release the PCIe-to-mainboard connector and pull to remove it (2).

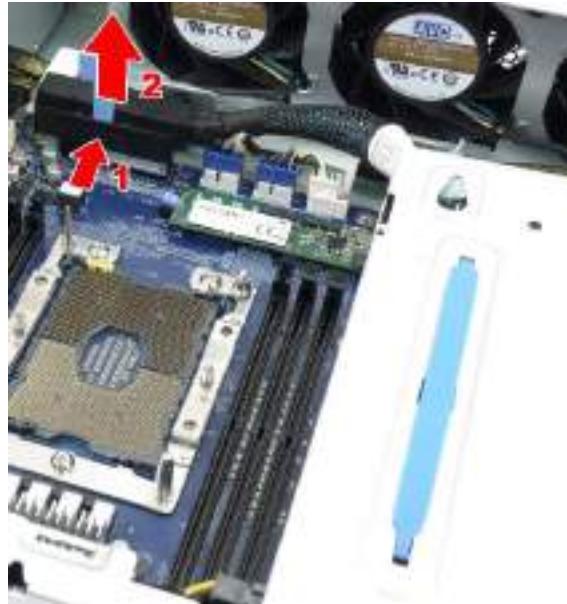


Figure 58 Remove PCIe-to-Mainboard Connector

2: Remove the PCIe-to-PDB (power distribution board) connector.

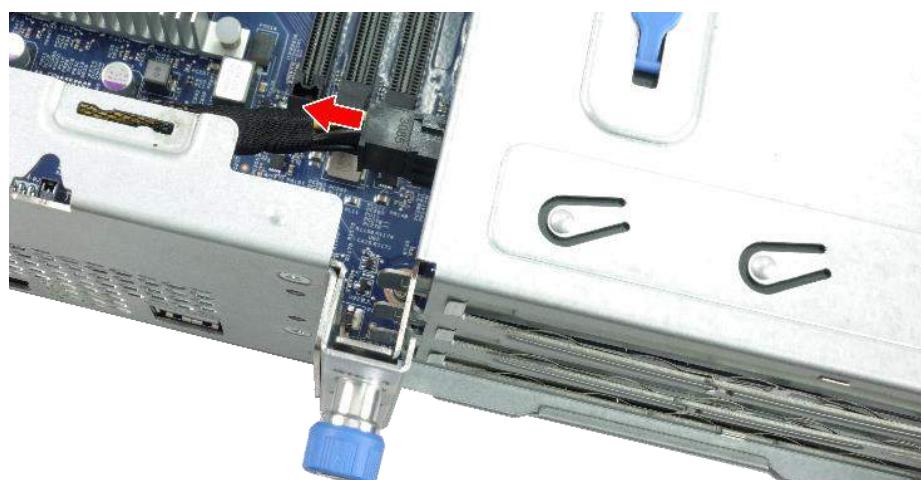


Figure 59 Remove PCIe-to-PDB Connector

3: Loosen the thumbscrews on the PCIe cage.

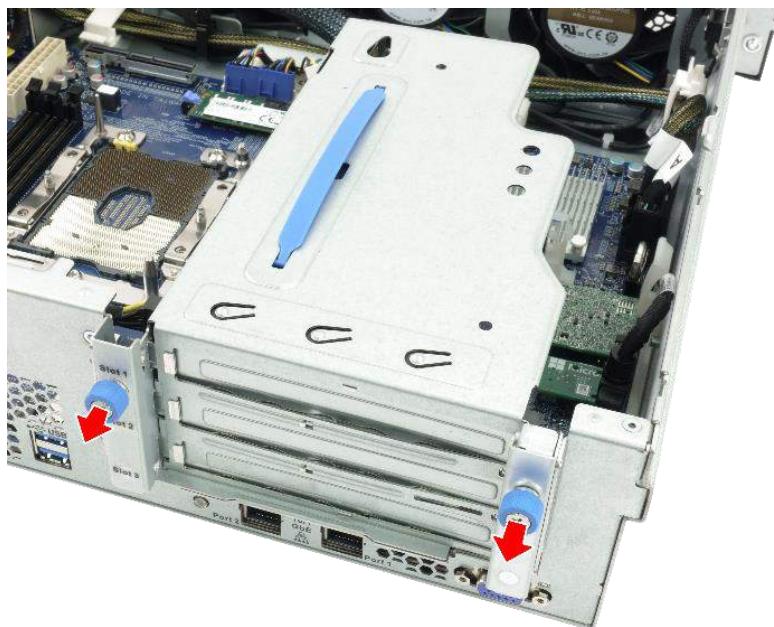


Figure 60 Loosen Thumbscrews

4: Lift to remove the PCIe cage.



Figure 61 Remove PCIe Cage

### (Optional) Add PCIe Components

The PCIe riser includes 3 interface slots for the PCIe cards and 3 window slots.



Figure 62 Displaying 3 PCIe interface slots

Before installing the interface slots, you need to remove 3 placeholder covers.

1: Loosen and remove the screws of the 3 placeholder covers.



Figure 63 PCIe Cage Window Slots Cover

It is recommended that you install each individual card from the top-most card slot (the slot

closest to the top metallic part).

2: Insert the first card (NIC Card) into the interface slot closest to the metallic cover.

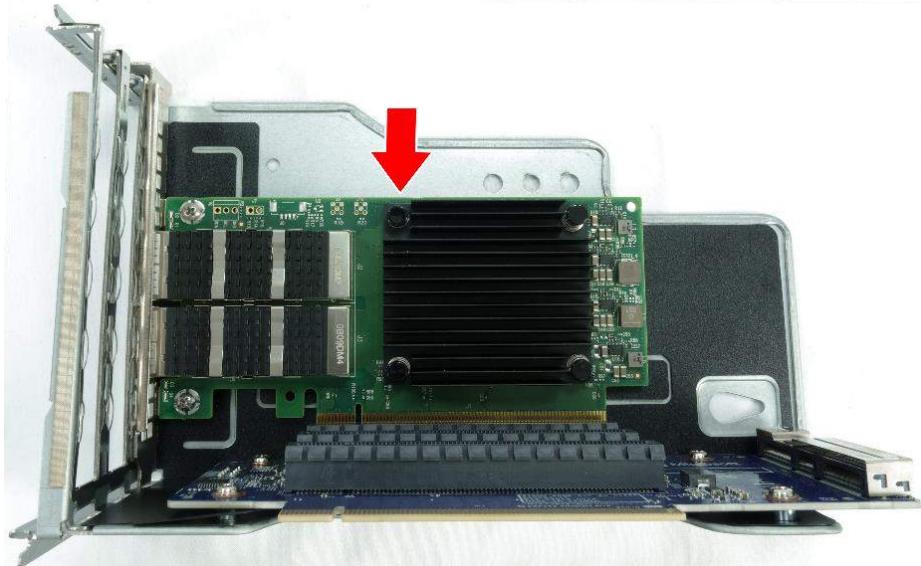


Figure 64 Insert First PCIe Card

3: Insert the second card (Wi-Fi Card).



Figure 65 Insert Second PCIe Card 1



Figure 66 Insert Second PCIe Card 2

4: Insert the third card (the T4 card).

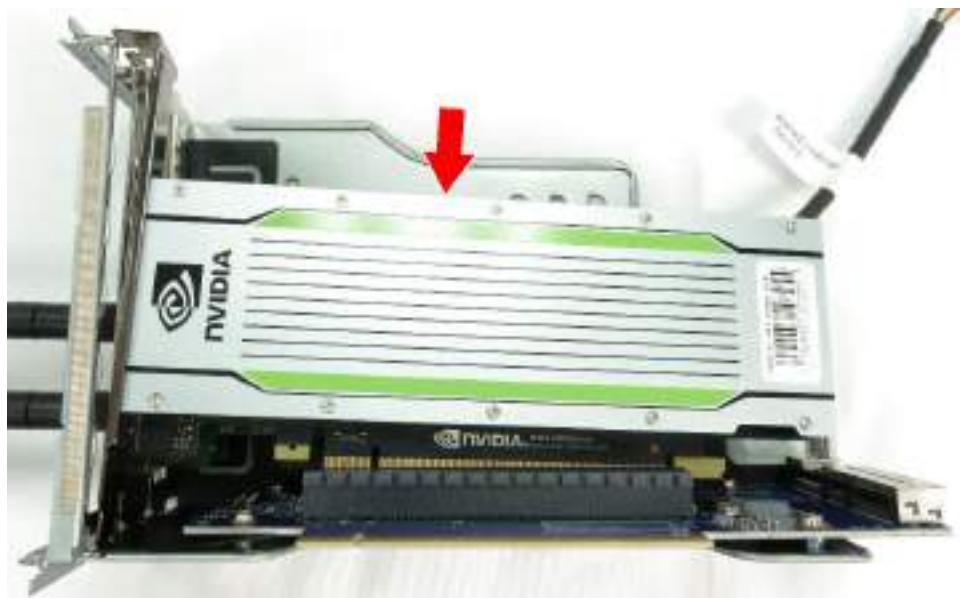


Figure 67 Insert Third PCIe Card

5: Insert and tighten the screws to secure the 3 PCIe cards to the window slot.

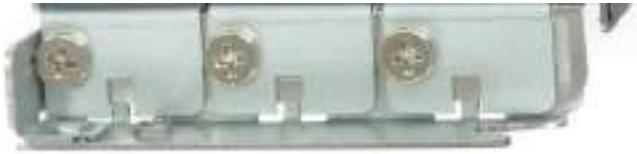


Figure 68 Secure PCIe Cards to Window Slots

## Install PCIe Cage

1: Lower the PCIe cage. Insert the edge connector of the riser card to its designated slot.

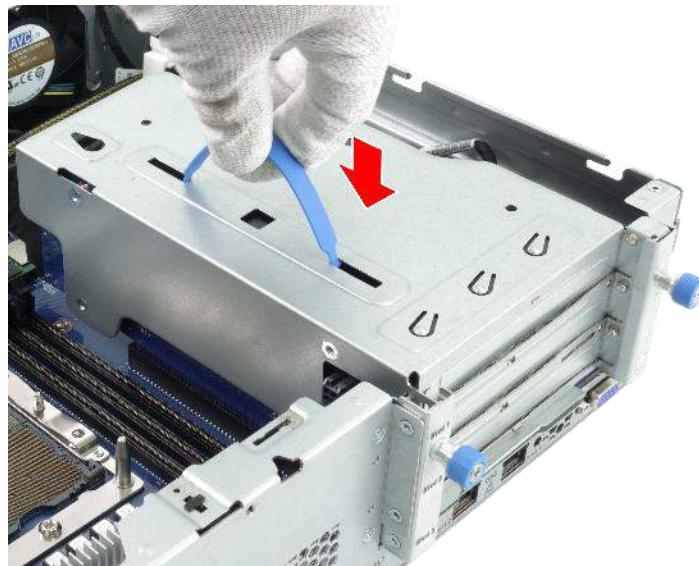


Figure 69 Install PCIe Cage

2: Tighten the thumbscrews to secure the PCIe cage to the mainboard.



Figure 70 Tighten Thumbscrews

3: Connect the PCIe-to-PDB (power distribution board) connector.

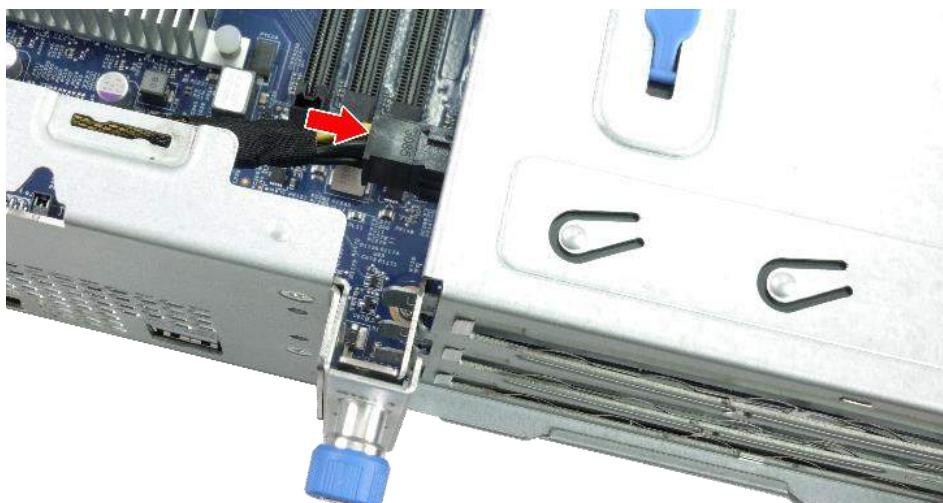


Figure 71 Connect PCIe-to-PDB Connector

4: Connect the PCIe-to-mainboard connector.

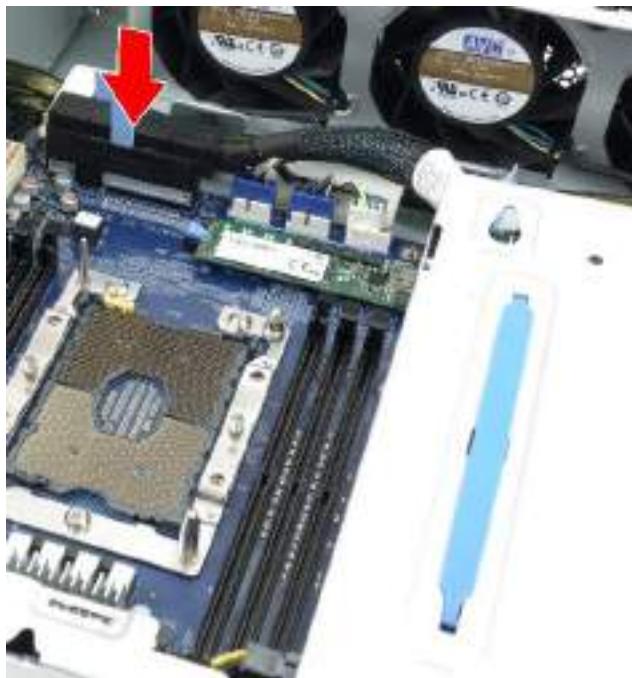


Figure 72 Connect PCIe-to-Mainboard Connector

5: If you have installed a Wi-Fi card, make sure you connect the card's connector.

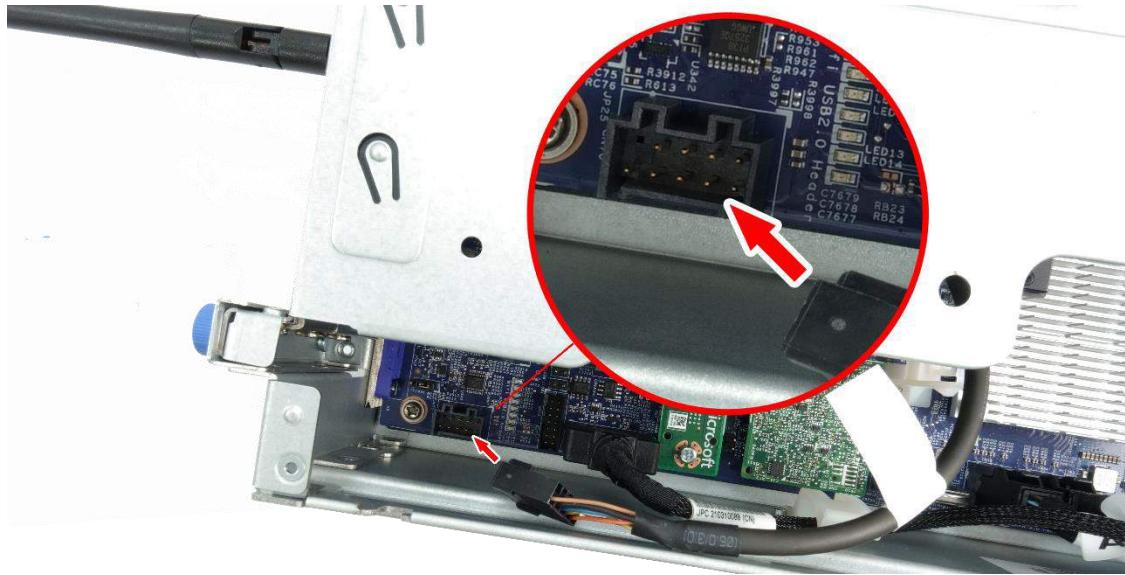


Figure 73 Connect Wi-Fi Card Connector

## Side Fans

There are 2 side fans in the system beneath the left air duct. When the air ducts are removed, follow the instructions below to replace it.

### Remove Side Fans

1: Lift to remove the fan cable connectors from the mainboard.

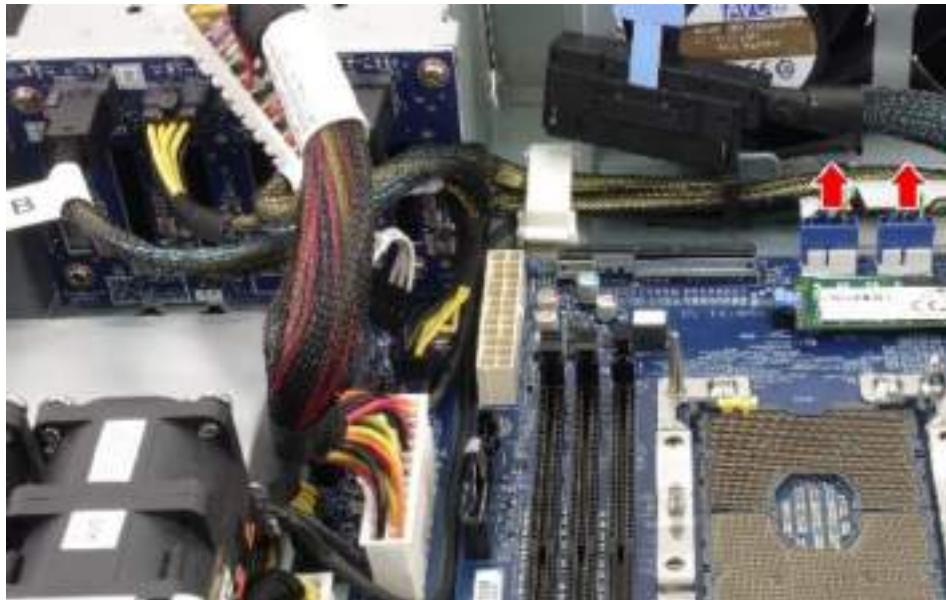


Figure 74 Disconnect Side Fan Connectors

2: Pull open the cable management module to release the (fan) cables.

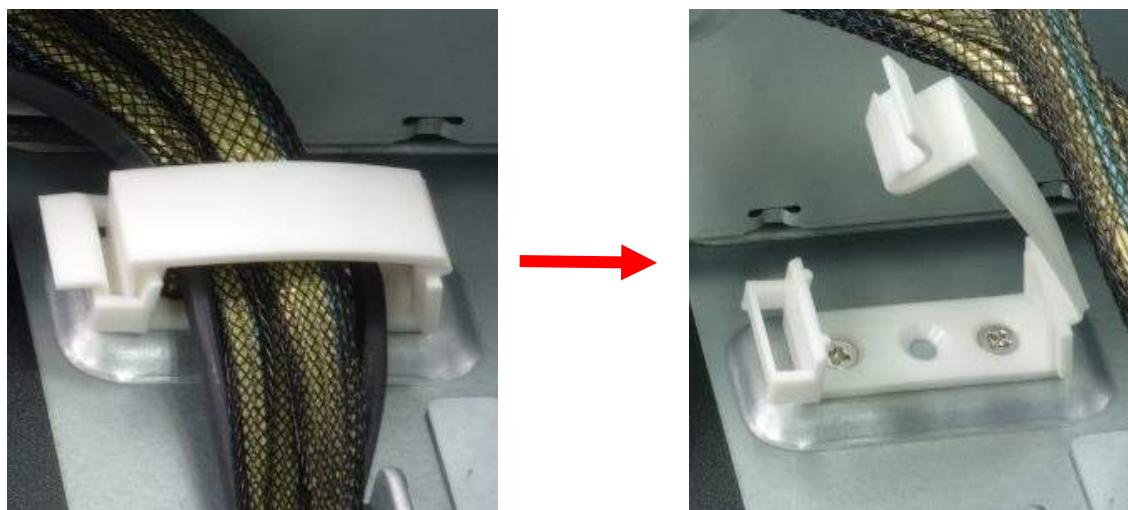


Figure 75 Release Side Fan Connector Cables

3: Lift to remove the fan.



Figure 76 Remove Side Fan

4: Repeat to remove the other fan.

### Install Side Fans

1: Lower the side fans.



Figure 77 Lower Side Fan

2: Lower and insert the fan cables.



Figure 78 Connect Side Fan Connectors

3: Manage the (fan) cables into the cable management modules and close them.

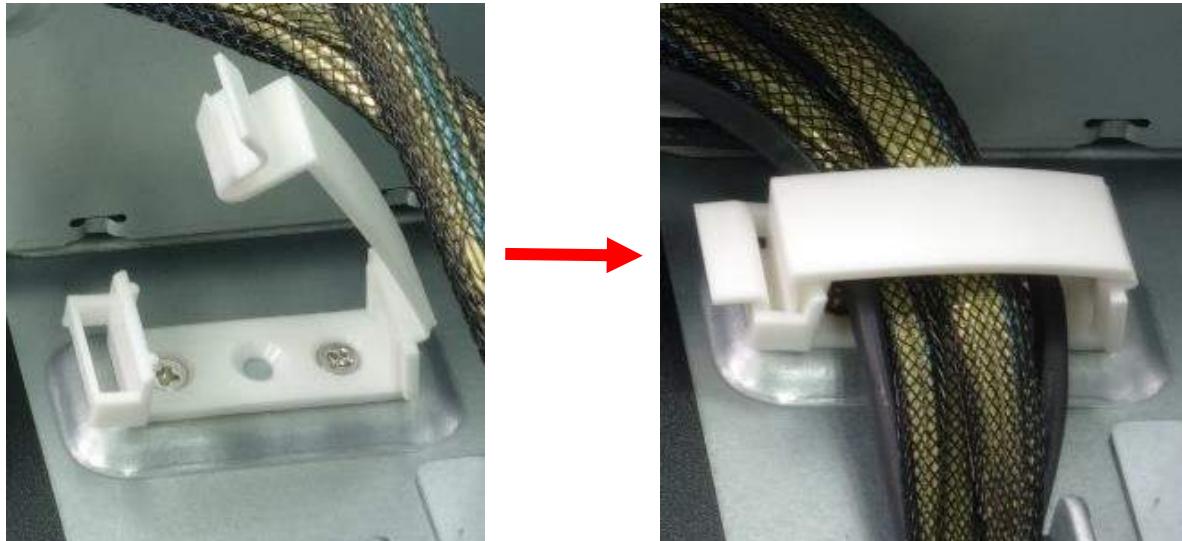


Figure 79 Manage (Fan) Cables

## Front Fans

There are 3 front fans. When the air ducts are removed, follow the instructions below to replace it.

### Remove Front Fans

1: Lift to remove the fan cable connectors (refer to mainboard component to see which connectors are the connectors of the front fans) from the mainboard.

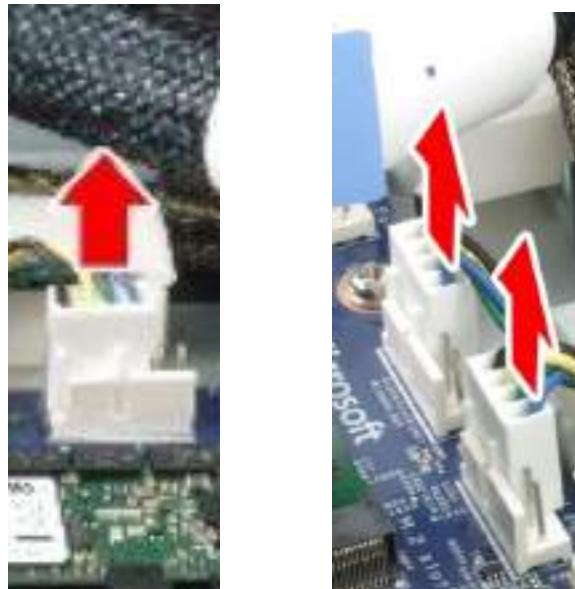


Figure 80 Disconnect Front Fan Connectors

2: Pull open the cable management module to release the (fan) cables.

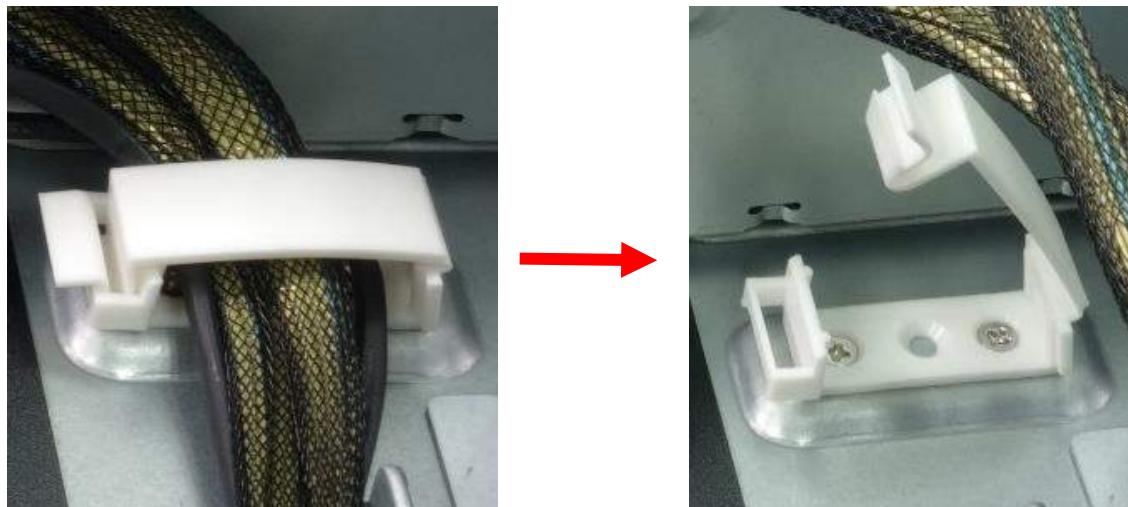


Figure 81 Release Fan Connector Cables

3: Lift to remove the fan.



Figure 82 Remove Front Fan

4: Repeat to remove the other fan.

### Install Front Fans

1: Insert the fan cable into the fan cage and pull out the other side as shown in the diagram below.



Figure 83 Insert Front Fan Cable

2: Lower and insert the front fans.



Figure 84 Insert Front Fan

3: Lower and insert to connect the fan connectors.

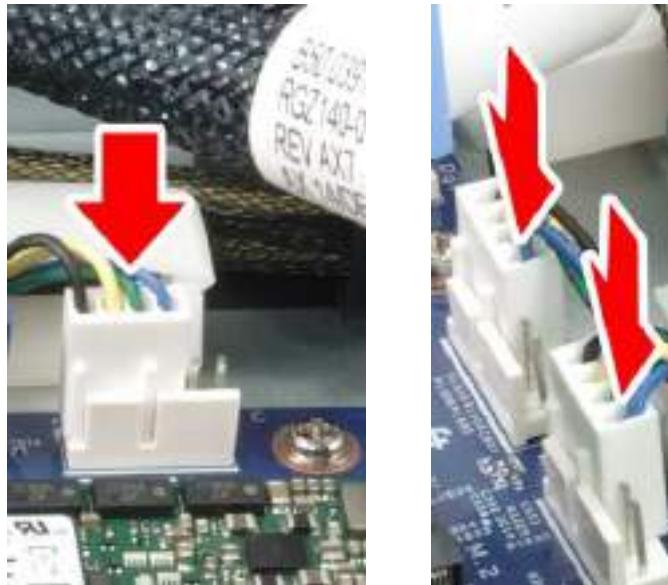


Figure 85 Connect Front Fan Connectors

4: Manage the (fan) cables into the cable management modules and close them.

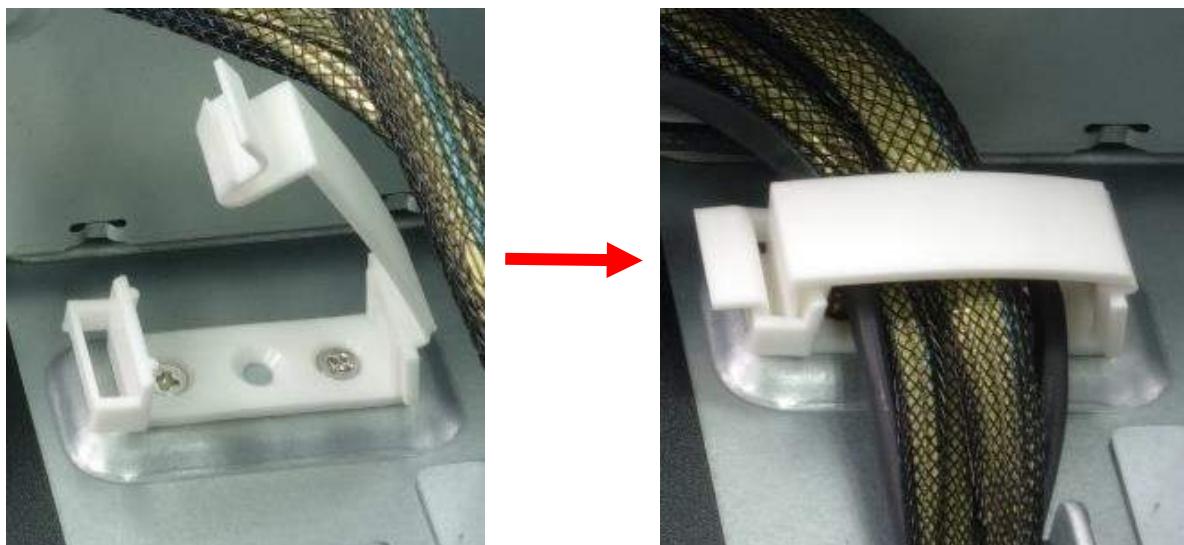


Figure 86 Manage (Fan) Cables

## Intrusion Switch

There is an intrusion switch beside the front fan. Follow the instructions below to replace it.

### Remove Front Fans

1: Lift to remove the intrusion switch connector.



Figure 87 Disconnect Intrusion Switch Connector

2: Pull open the cable management module to release the (intrusion switch) cable.

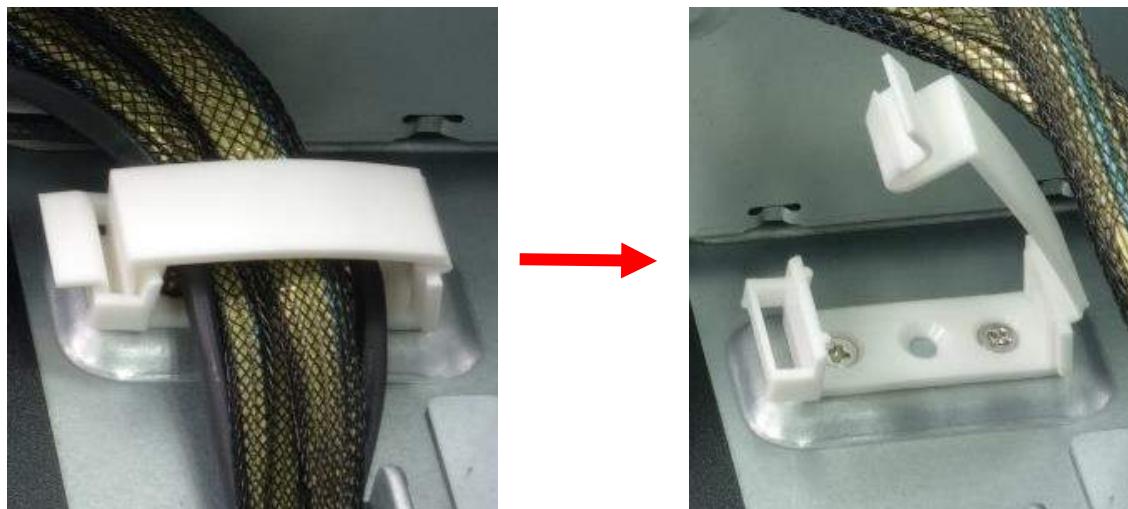


Figure 88 Release Intrusion Switch Cable

3: Loosen to remove the screws securing the intrusion switch to the wall of the chassis.



Figure 89 Remove Screws to Remove Intrusion Switch

### Install Intrusion Switch

1: Position the intrusion switch, insert and tighten the screws to secure the intrusion switch to the chassis.



Figure 90 Position and Secure Intrusion Switch

2: Lower and insert the fan cables.



Figure 91 Connect Intrusion Switch Connector

4: Manage the (intrusion switch) cables into the cable management modules and close them.

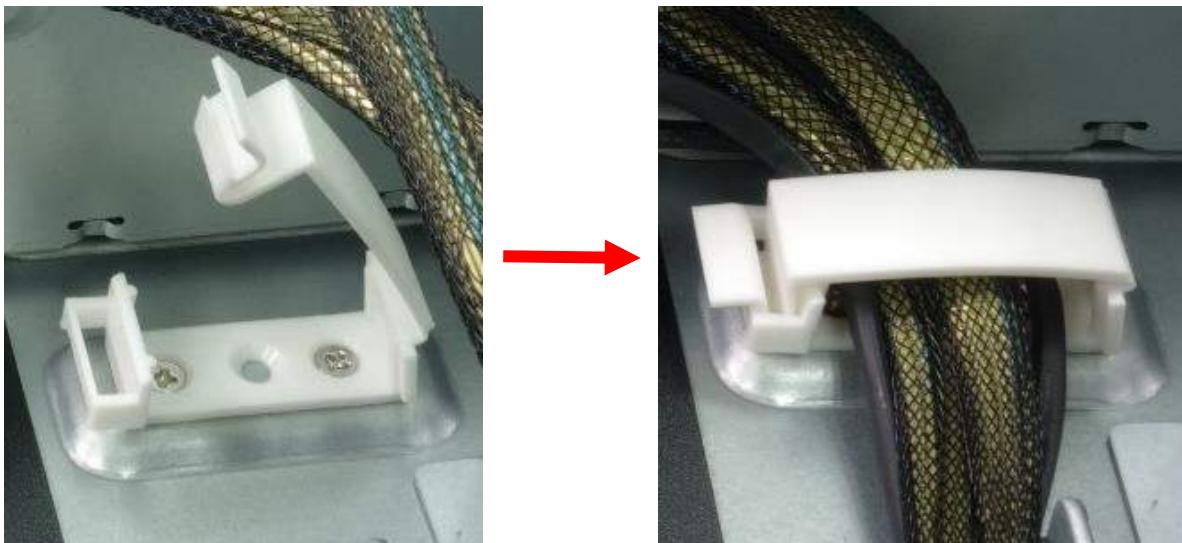


Figure 92 Manage (Intrusion Switch) Cables

## Power Distribution Board (PDB)

When the side air duct is removed, you can see the power distribution board (PDB). When the cables of the side fans are out of the way (or removed) and when the PSU is removed, follow the instructions below to replace the PDB.

### Remove PDB

1: Remove all the connectors on the PDB. The connectors connected to the PDB will require you to press the connector holders before pulling them off the sockets.

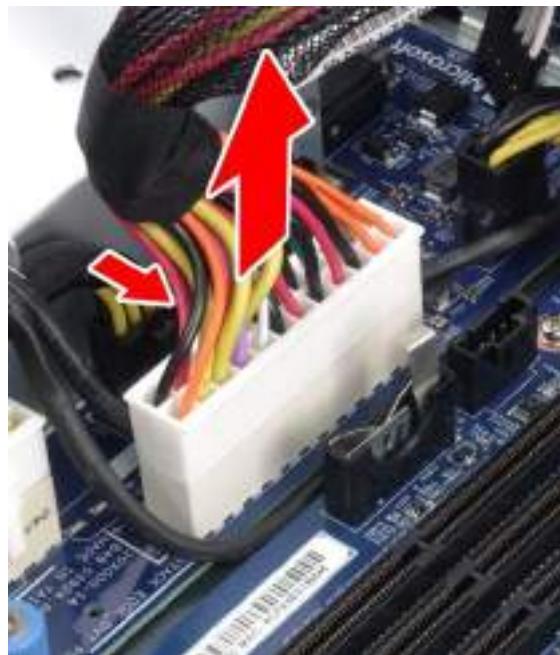


Figure 93 Remove Mainboard-to-Power Connector from the PDB



Figure 94 Remove SATA BP Board Connector

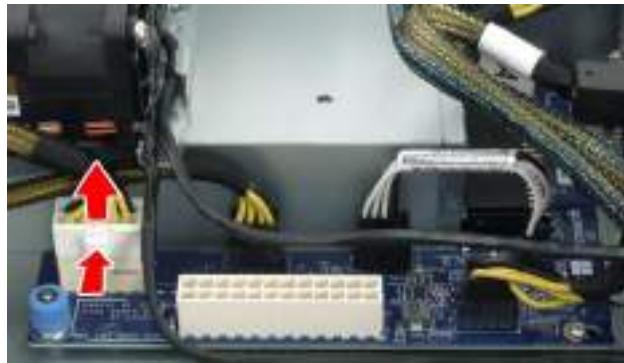


Figure 95 Remove CPU Power Connector

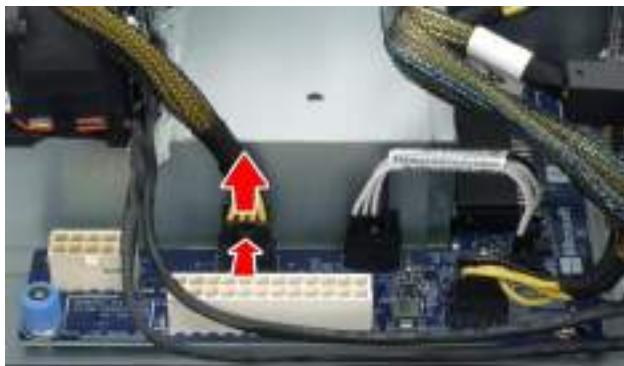


Figure 96 Remove PCIe Riser Power Connector

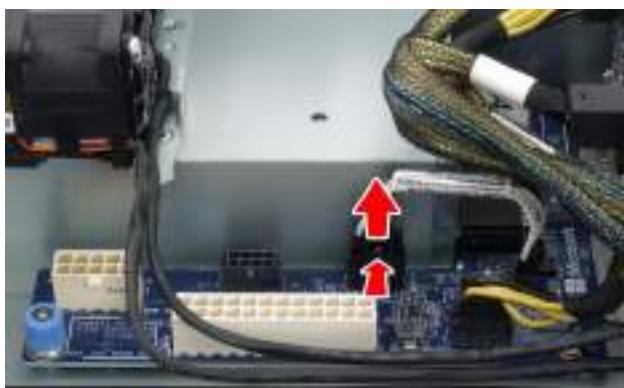


Figure 97 Remove PSU Control Connector

2: Loosen the thumbscrew (1) and slide the PDB towards the front of the chassis (2) to disengage the standoffs.



Figure 98 Release PDB



3: Lift to remove the PDB.

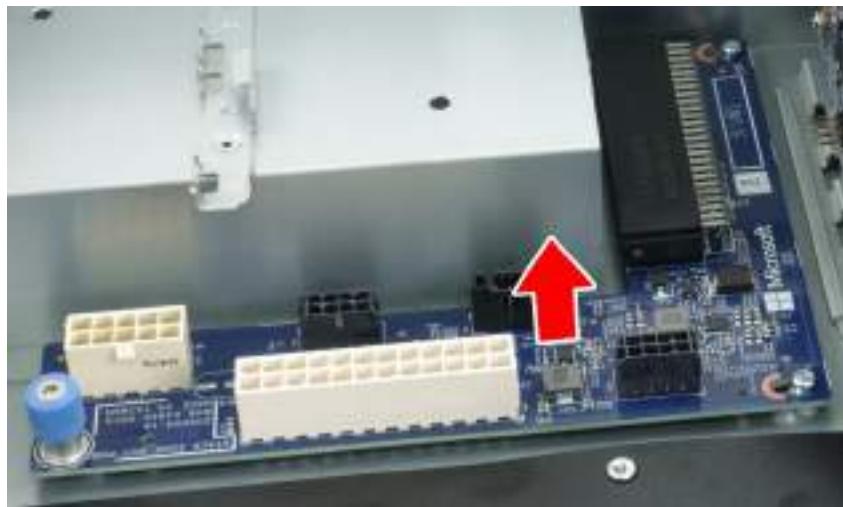


Figure 99 Remove PDB

## Install PDB

1: Lower the PDB into the chassis (1) and slide the board towards the rear of the chassis (2) to engage the standoffs.

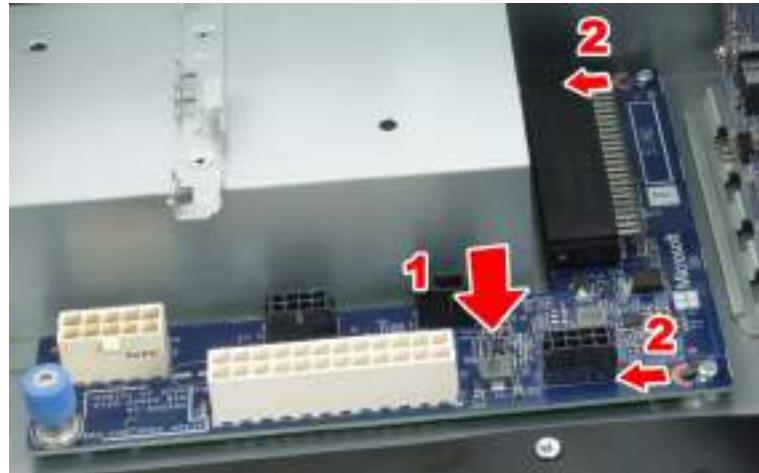
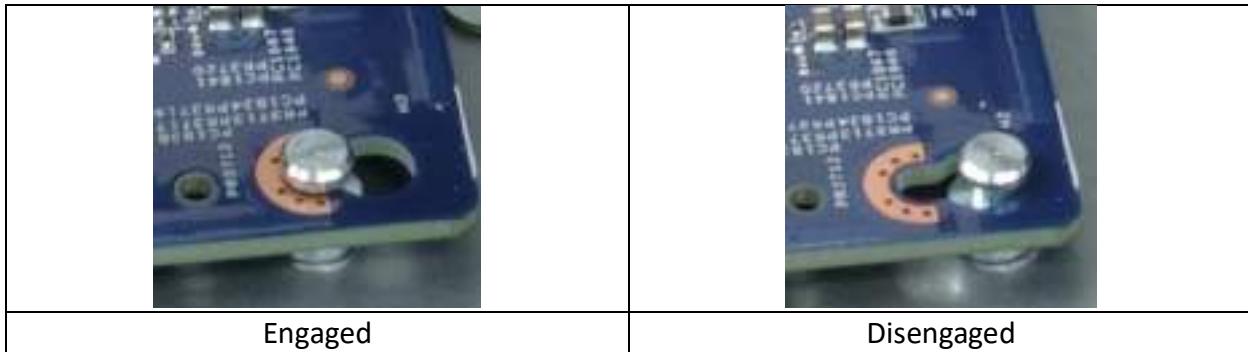


Figure 100 Lower PDB and Engage Standoffs



2: Tighten the thumbscrew to secure the PDB to the chassis.

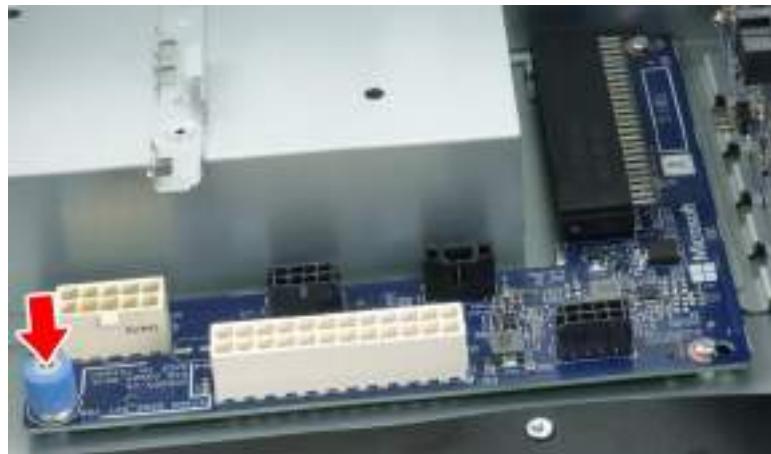


Figure 101 Tighten PDB Thumbscrew

3: Connect the designated connectors.



Figure 102 Install CPU Power Connector

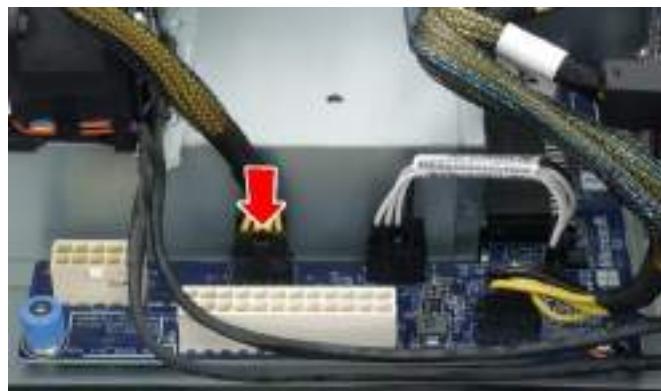


Figure 103 Install PCIe Power Connector

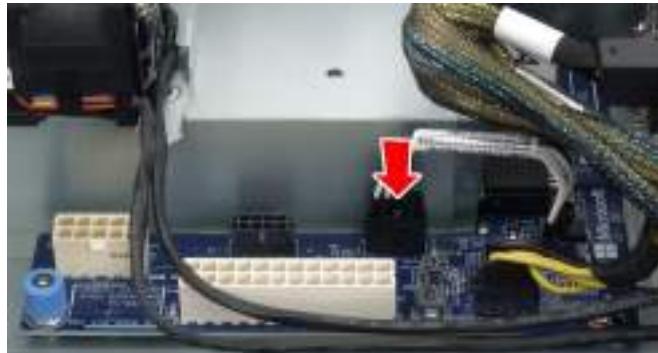


Figure 104 Install PSU Control Connector



Figure 105 Install SATA BP Board Connector

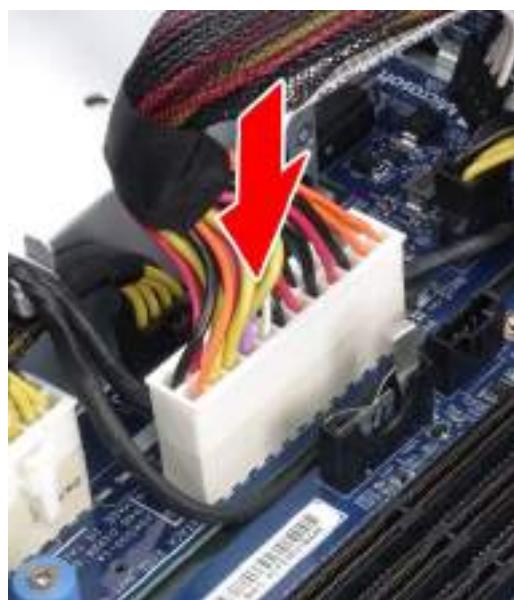


Figure 106 Install Mainboard-to-Power Connector

## M.2 SSD

When the air ducts are removed, you can see the M.2 SSD. Follow the instructions below to replace it.

### Remove M.2 SSD

1: Pull the spring latch to release the M.2 SSD module.



Figure 107 Pull Spring Latch of M.2 SSD Module

2: Pull to remove the M.2 SSD module from the mainboard.



Figure 108 Remove M.2 SSD

## Install M.2 SSD

1: Insert the M.2 SSD module into the M.2 SSD slot.



Figure 109 Insert M.2 SSD

2: Pull the spring latch and press the M.2 SSD module down before releasing the spring latch.



Figure 110 Install M.2 SSD

## Cerberus Card

When the PCIe cage is removed, you can see the Cerberus Card. Follow the instructions below to replace it.

### Remove Cerberus Card

1: Loosen and remove the screw securing the Cerberus card to the mainboard.



Figure 111 Remove Cerberus Card Screw

2: Pull to remove the Cerberus card from the mainboard.

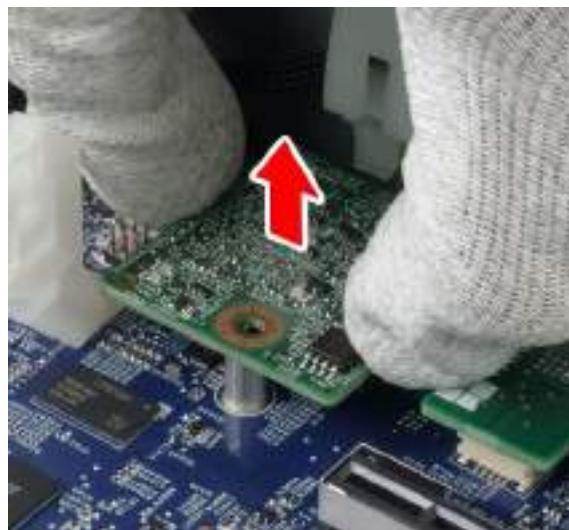


Figure 112 Remove Cerberus Card

## Install Cerberus Card

1: Insert the Cerberus card.

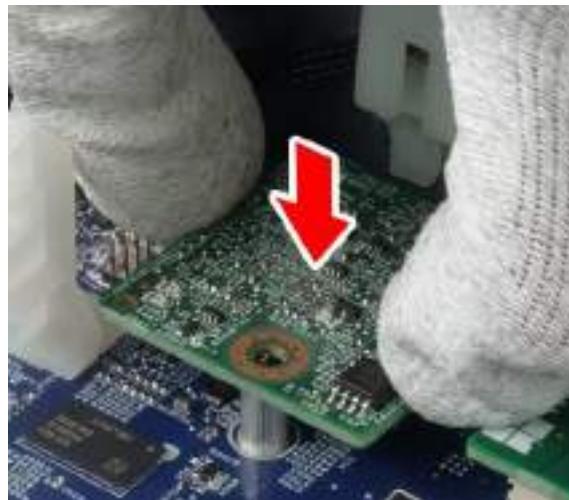


Figure 113 Insert Cerberus Card

2: Attach the screw and tighten it to secure the Cerberus card.

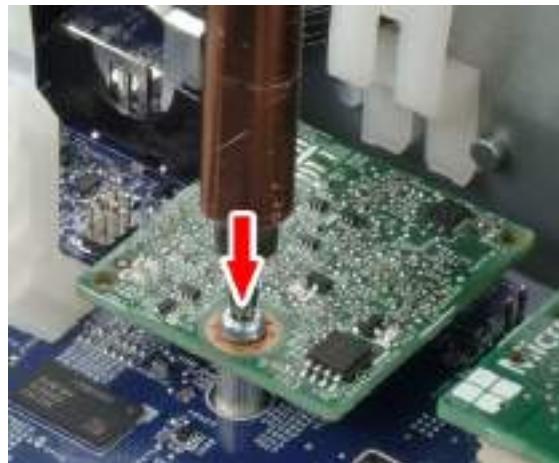


Figure 114 Secure Cerberus Card

## TPM Card

When the PCIe cage is removed, you can see the TPM Card. Follow the instructions below to replace it.

### Remove TPM Card

1: Loosen and remove the screw securing the TPM to the mainboard.

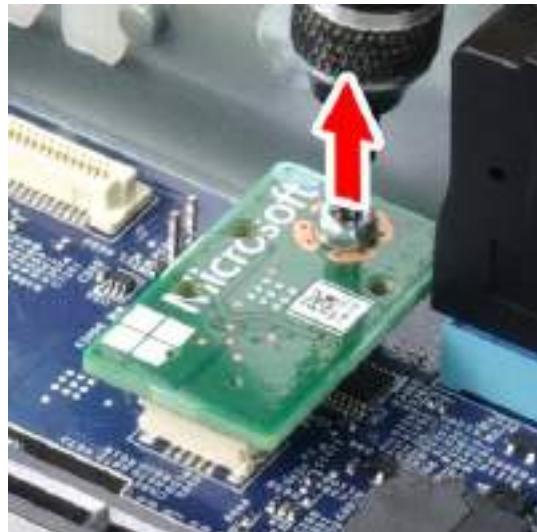


Figure 115 Remove TPM Card Screw

Pull to remove the TPM from the mainboard.

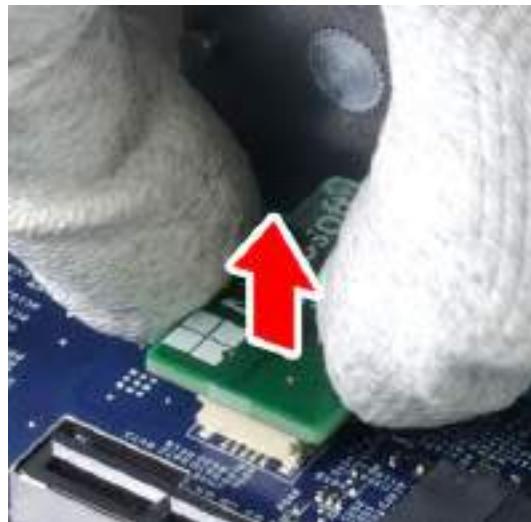


Figure 116 Remove TPM Card

## Install TPM Card

1: Insert the TPM.

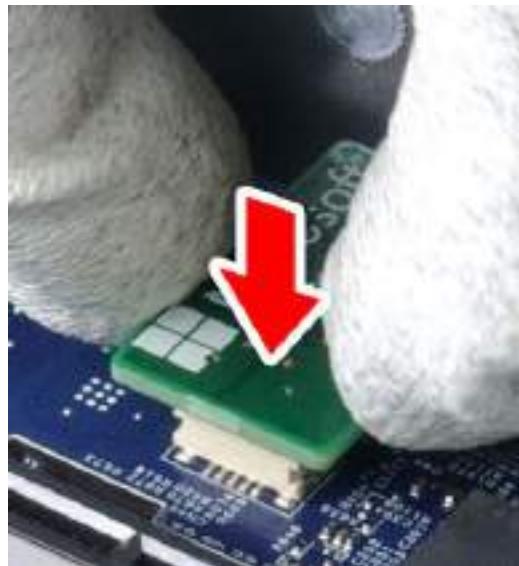


Figure 117 Insert TPM Card

2: Attach the screw and tighten it to secure the TPM.



Figure 118 Secure TPM Card

## Front IO (FIO) Board

When the PCIe cage is removed, you have a clearer view of the FIO-to-MB connector. Follow the instructions below to replace the FIO board.

### Remove FIO Board

1: Pull to remove the FIO-to-MB connector from the mainboard.



Figure 119 Remove FIO-to-MB Connector

2: Pull open the cable management module to release the FIO board connector cable.

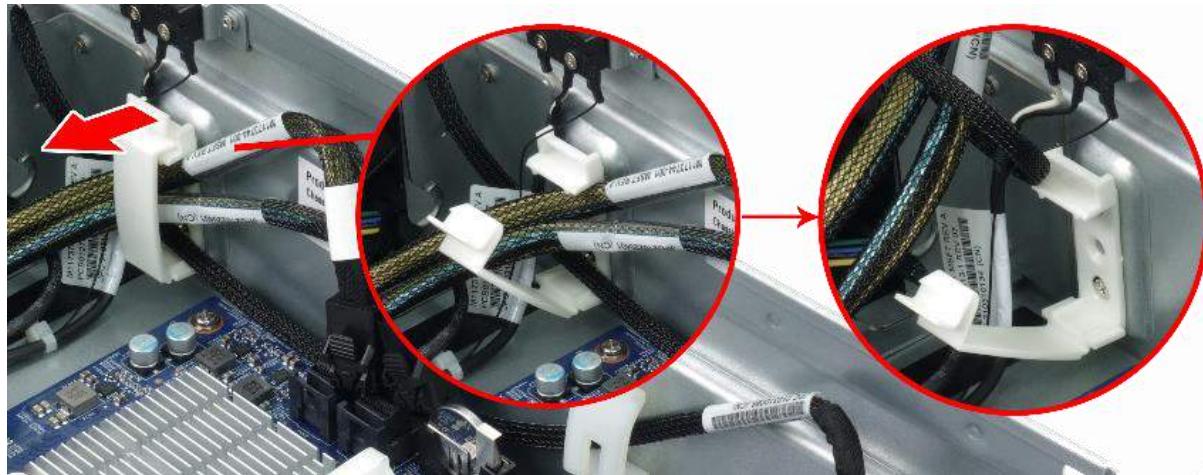


Figure 120 Release Cable Management to Release FIO Connector Cable

3: Loosen and remove the screws securing the left ear module to the chassis.



Figure 121 Remove Left Ear Module Screws

4: Loosen and remove the screws securing the bracket to the left ear module to expose the FIO board.



Figure 122 Remove FIO Bracket Screws

5: Loosen and remove the screws securing the FIO board to the left ear module.



Figure 123 Remove FIO Board Screws

6: Pull to remove the FIO board connector cable while releasing the FIO board.



Figure 124 Release FIO Board

## Install FIO Board

1: Connect the FIO board connector cable.



Figure 125 Connect FIO Board Connector Cable to FIO Board

2: Attach and tighten the screws securing the FIO board to the left ear module.



Figure 126 Secure FIO Board to Left Ear Module

3: Attach and tighten the screws securing the bracket to the left ear module.



Figure 127 Secure FIO Bracket Screws

4: Attach and tighten the screws securing the left ear module to the chassis.



Figure 128 Secure Left Ear Module Screws

5: Bundle the cables into the designated cable management module and close the module.

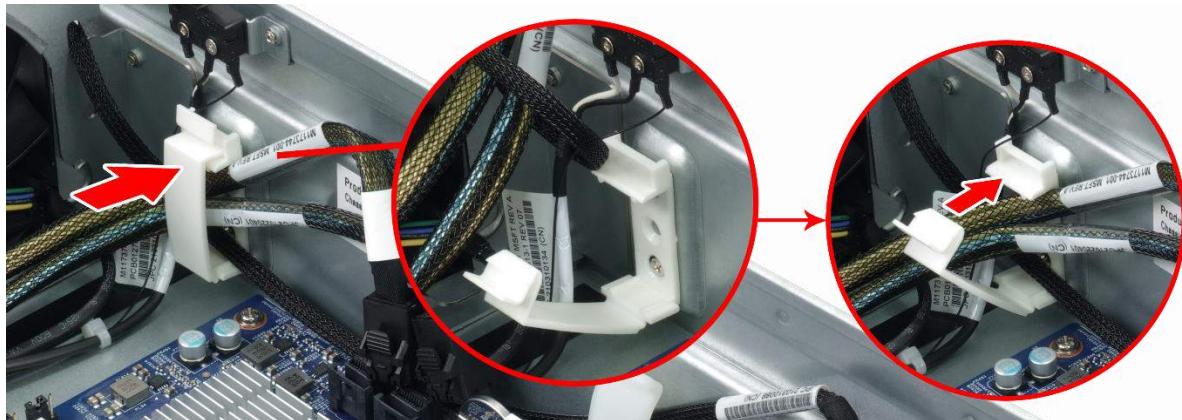


Figure 129 Manage the FIO Board Connector Cable

6: Insert the FIO-to-MB connector to the mainboard.



Figure 130 Insert the FIO-to-MB Connector

## Mainboard

When you have removed the PCIe cage and FIO board, follow the instructions below to replace the mainboard.

### Remove Mainboard

1: Remove the rest of the connectors connected to the mainboard.

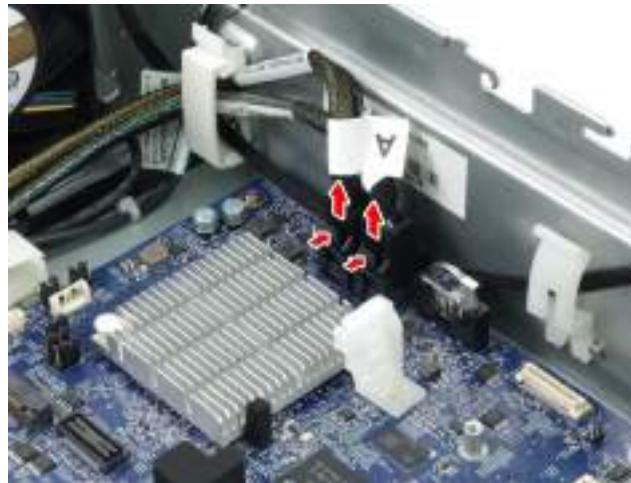


Figure 131 Remove SATA Connectors from Mainboard



Figure 132 Remove Fan Connectors and Intrusion Switch Connector from Mainboard

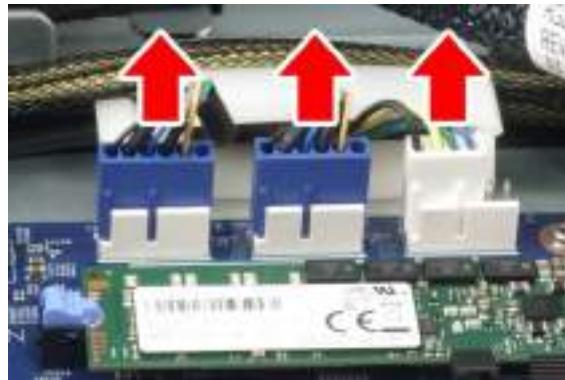


Figure 133 Remove Fan Connectors from Mainboard

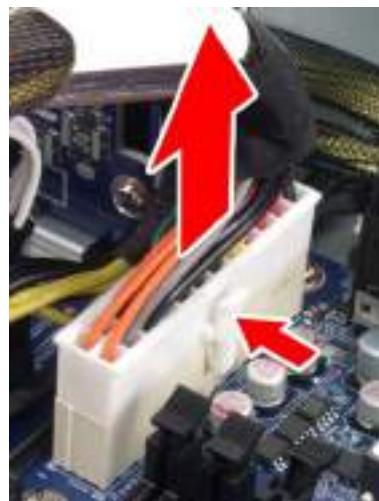


Figure 134 Remove 24-Pin Mainboard-to-Power Connector from Mainboard

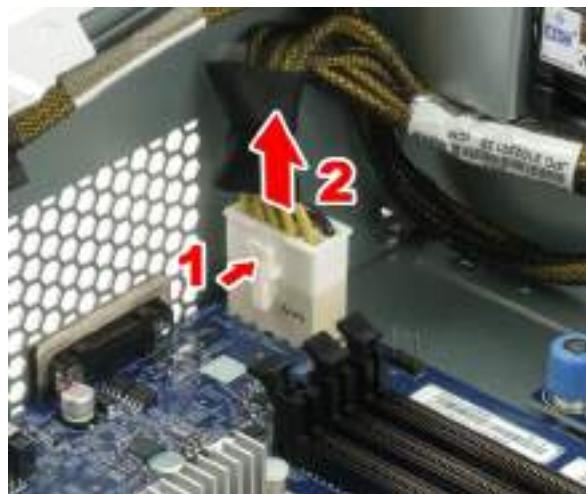


Figure 135 Remove 10-Pin Mainboard-to-Power Connector from Mainboard

2: Loosen and remove the screws securing the mainboard to the chassis and lift to remove the mainboard.

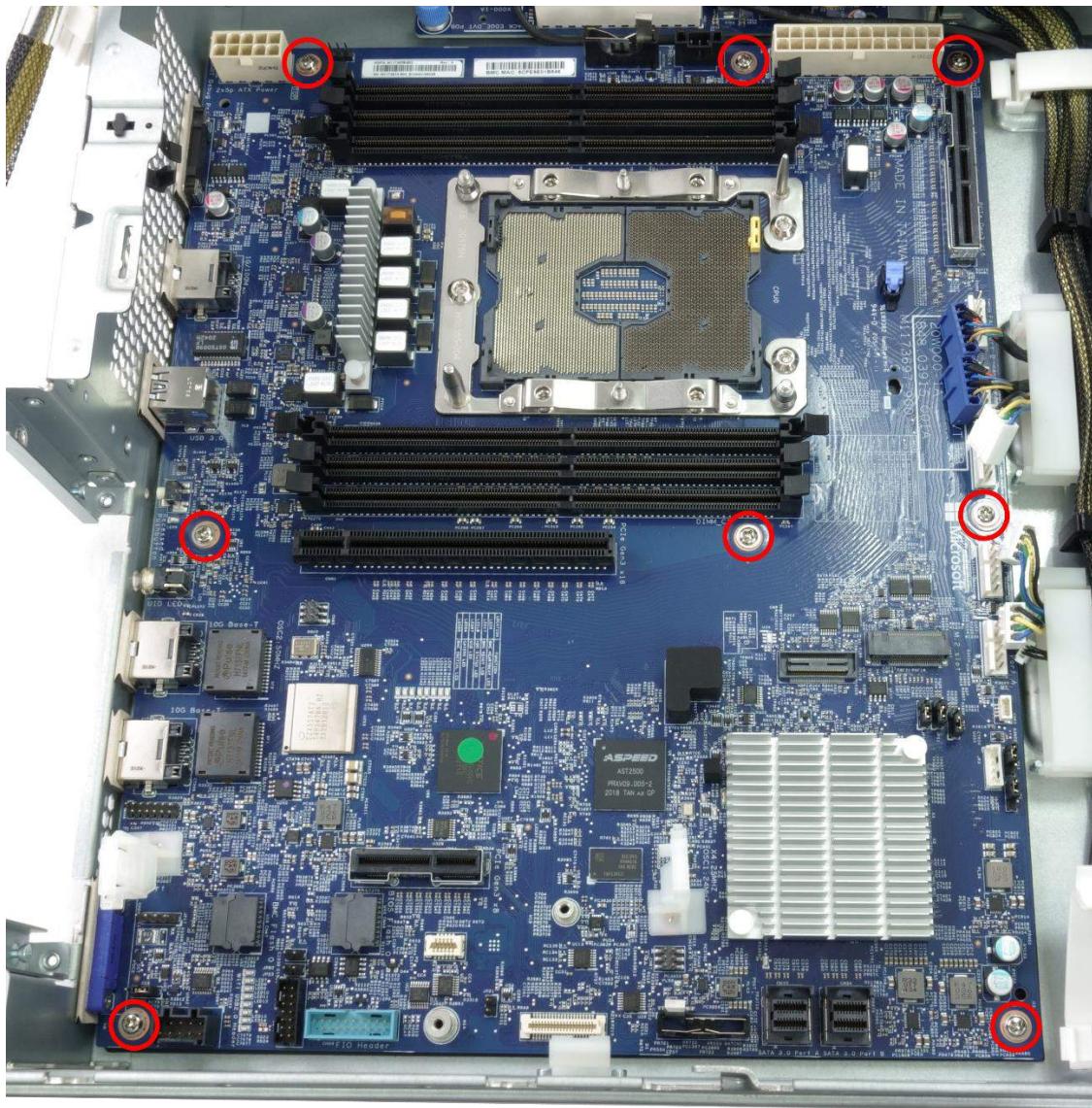


Figure 136 Remove Mainboard Screws and Remove Mainboard

## Install Mainboard

1: Lower the mainboard into the chassis, insert and tighten the screws to secure the mainboard to the chassis.

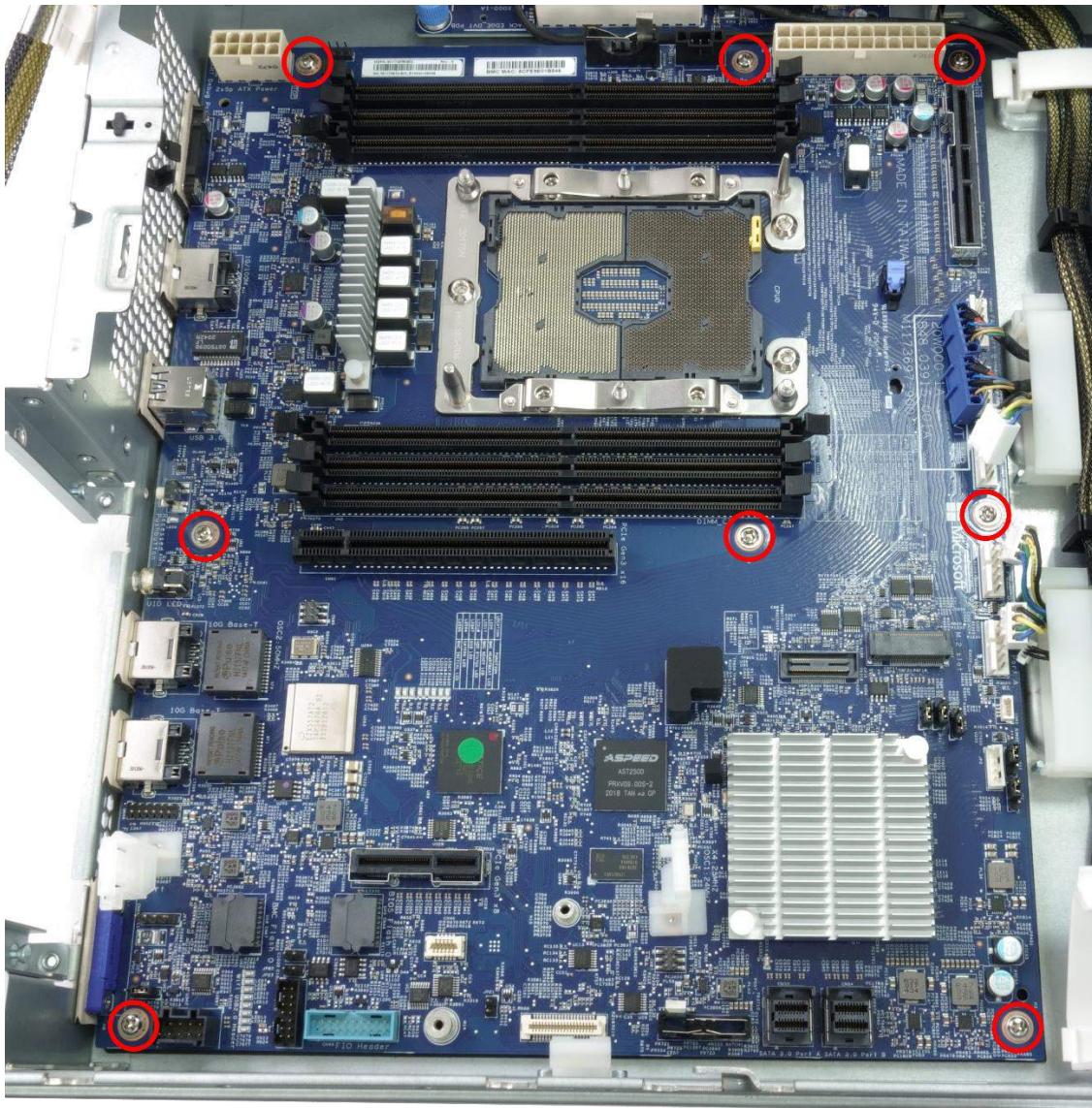


Figure 137 Lower Mainboard, Insert and Tighten Mainboard Screws.

2: Connect the designated connectors.

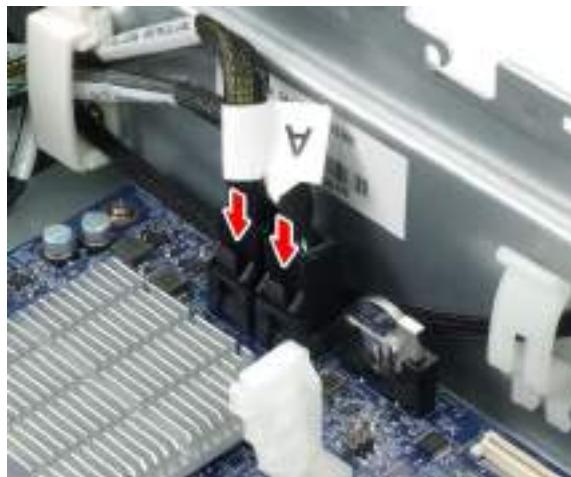


Figure 138 Install SATA Connectors onto Mainboard

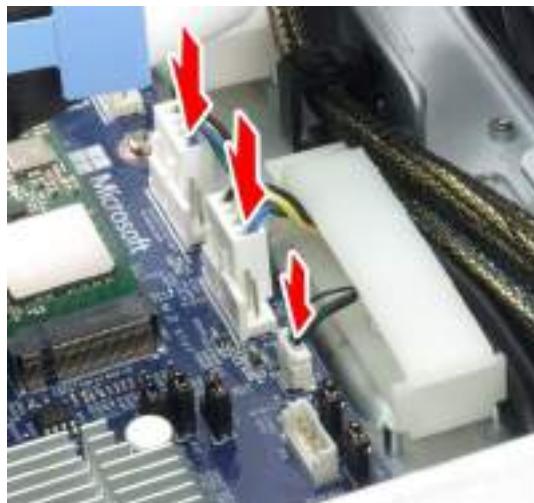


Figure 139 Install Fan Connectors and Intrusion Switch Connector onto Mainboard

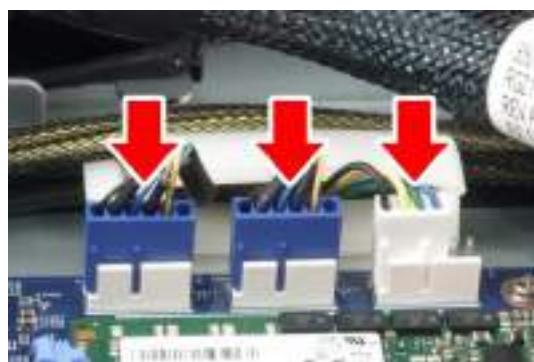


Figure 140 Install Fan Connectors onto Mainboard

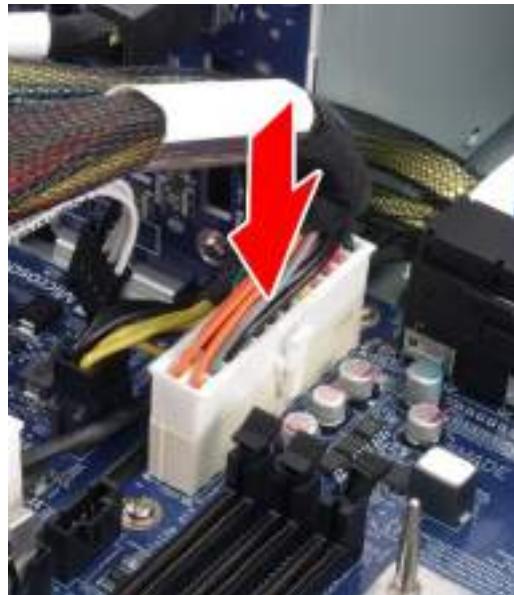


Figure 141 Install 24-Pin Mainboard-to-Power Connector onto Mainboard

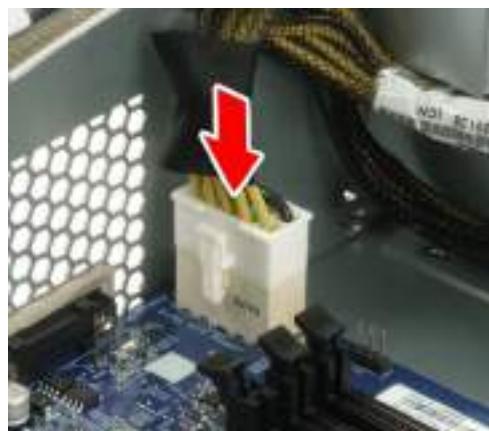


Figure 142 Install 10-Pin Mainboard-to-Power Connector onto Mainboard