WEEE DISASSEMBLY INSTRUCTIONS

SUPERMICRO SYS-221GE-NR ENCLOSURE

Abstract
This document provides clear guidance for end-of-life recyclers on how to identify and disassemble reportable materials in compliance with the Waste Electrical and Electronic Equipment (WEEE) directive.

Table of Contents

1. Product Views

Front view

Power Supply
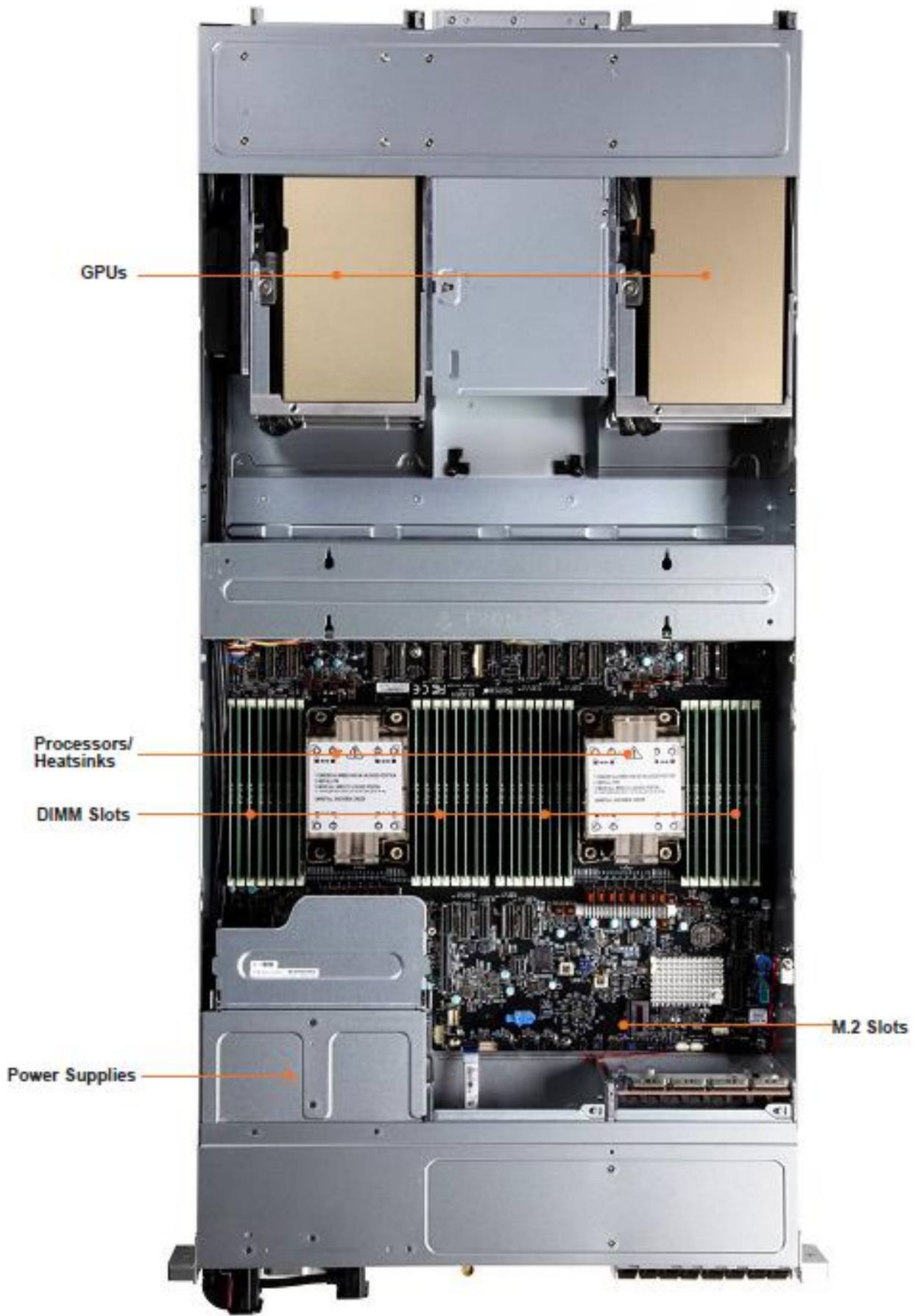
Rear View

GPUs

Processors/
Heatsinks

DIMM Slots

M.2 Slots

Power Supplies

2.   Reportable Materials on SYS-221GE-NR

According to Article 8(2) and Annex VII of WEEE directive 2012/19/EU, below materials and components should be selectively treated.

Description	Notes	No.	Quantity
Printed Circuit Boards (PCB) or Printed Circuit Assemblies (PCA)	With a surface greater than 10 sq cm (Depending on the system configuration)	3.5, 4.2, 5.1, 7.2, 8.1, 9.1,11.1, 12.1, 13.1	56
Batteries	All types, including standard alkaline and lithium coin or button style batteries	13.2	1
Mercury-containing components	For example, mercury in lamps, display backlights, scanner lamps, switches, batteries		
Liquid Crystal Displays (LCD) with a surface greater than 100 sq cm	Includes background illuminated displays with gas discharge lamps		
Cathode Ray Tubes (CRT)			
Capacitors / condensers (Containing PCB/PCT)			
Electrolytic Capacitors / Condensers measuring greater than 2.5 cm in diameter or height	Depending on the power supply model	3.6	2
External electrical cables and cords		1.1	2
Gas Discharge Lamps			
Plastics containing Brominated Flame Retardants			
Components and parts containing toner and ink, including liquids, semi-liquids (gel/paste), and toner	Include the cartridges, print heads, tubes, vent chambers, and service stations.		
Components and waste containing asbestos			
Components, parts, and materials containing refractory ceramic fibers			
Components, parts, and materials containing radioactive substances			

3.   Disassemble Instructions

The intent of this document is to provide guidance to recyclers on the presence of materials and components at the product / family level, as required by the EU WEEE Directive 2012/10/EU. This document should also help direct recyclers to proper methods for removing parts and general product disassembly instructions.
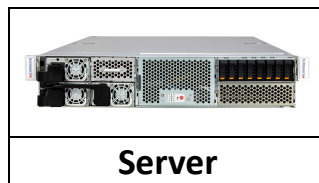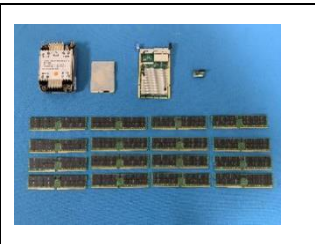
This chapter consists of three subsections:

Recommended disassembly tools, disassembled flowchart, and step-by-step disassembly instructions to direct recycler proper methods to treat.
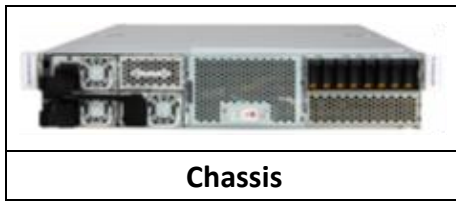
3.1 Recommended Disassembly Tools

Disassembly tool	Cross screwdriver	
	Flathead screwdriver	

3.2 Disassembled flowchart

Server

Chassis	Power Supplies	RAM, CPU, Heatsink	Power Cords

Chassis

Backplane	Fans	Screws	Motherboard*1 set
Battery*1 set	Cables	Add-on card	Add-on card* 7
Add-on card	Backplane		

Power Supply

Power Enclosure*2	Screws and Standoff*2 Set	Power Supply Module*2

Storage Card and CPU
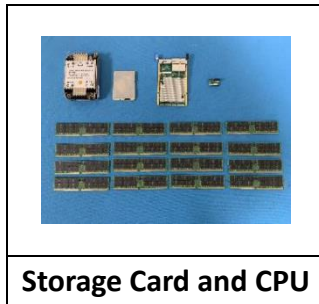
Heat Sink*2 set	Processor*2 set	M.2
DIMM *8 set	Add on Card (Network)*3	GPU Card*3

3.3 Step-by-Step Disassembly Instructions

1. Removing Cable and Chassis Cover

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the power cords from the power supply modules.
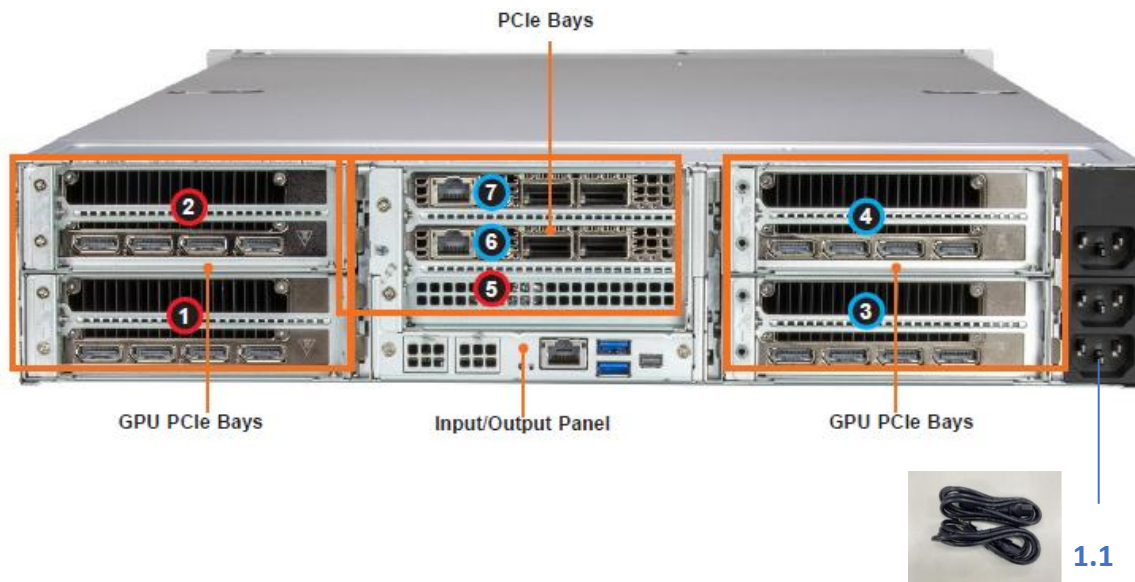3. Remove all cables/ unit from the server IO port.

4. Check whether optional screws are used on the side of the cover. If so, remove them.
5. Press the release buttons and slide the cover toward the front and off.

Caution: Except for short periods of time, do not operate the server without the cover in place.

The chassis cover must be in place to allow for proper airflow and to prevent overheating.
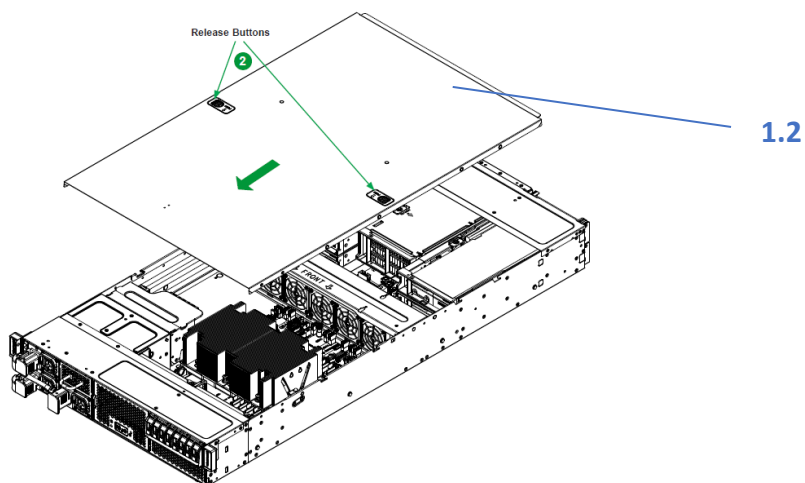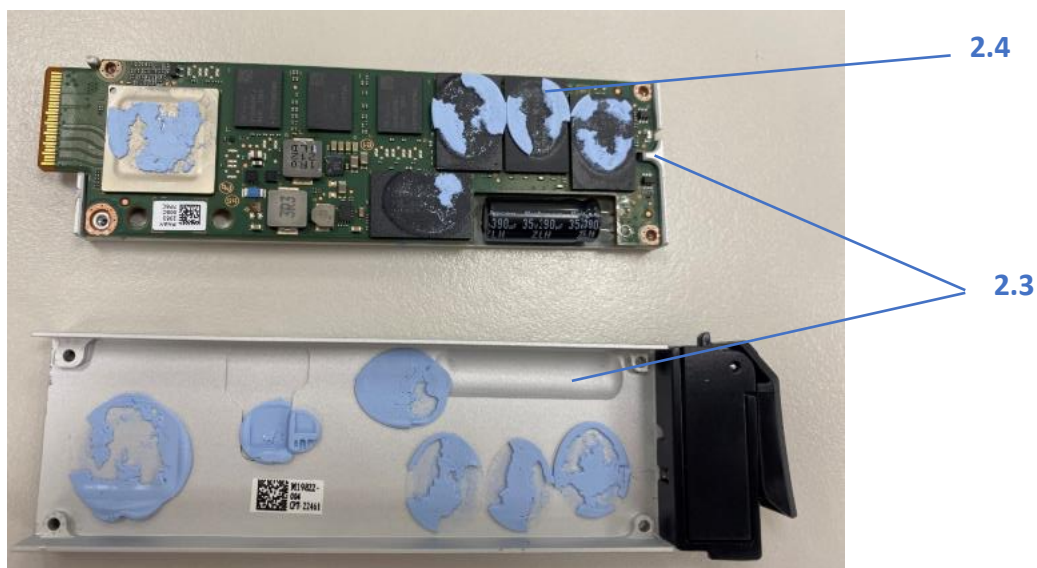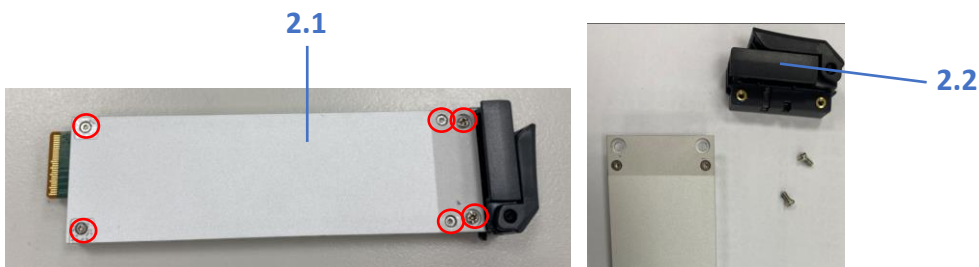

No.	Description
1.1	Power Cable
1.2	Chassis Cover

2. Removing Hard Disk Drive (HDD) / Solid State Drive (SDD)

1. Release lath to extend the drive carrier handle, pull the drive out of the chassis.

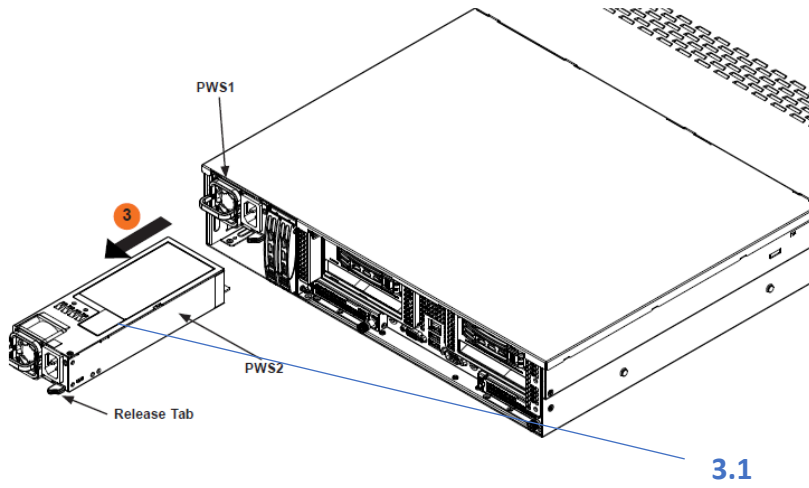2. Remove the screw, lift the lath and top cover and take the PCB from enclosure.

No.	Description
2.1	HDD/ SSD
2.2	Lath
2.3	Enclosure
2.4	Hard/ SSD Drive PCB

3. Removing Power Supply
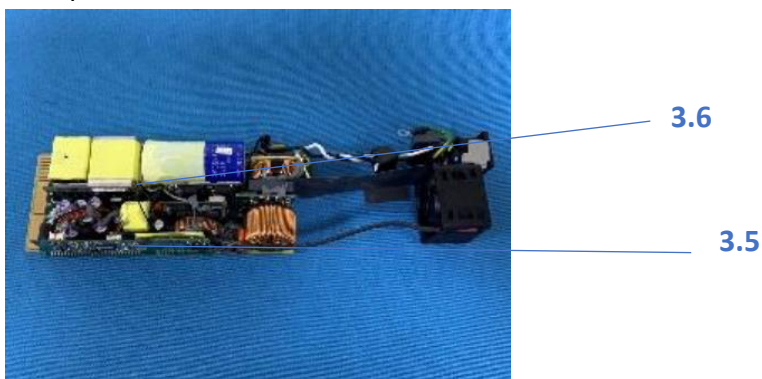
1. Ensure the system is unplugged and powered down.

2. Release the locking clip to unlock the power supply module.

3. Pull out the locking lever and remove the unit.

PWS1

3

PWS2

Release Tab

3.1

4. Remove the screw from the enclosure

3.2

SUPERMICRO
PWS-860P-1R2

3.3

3.4

4. Cut the power leads connected to the fan and lift the main board from the chassis

3.6

3.5

5. Use a flathead screwdriver to cut the capacitor adhesive and pin solder.

Pin

Adhesive

No.	Description
3.1	Power Supply
3.2	Power Enclosure
3.3	Fan
3.4	Fan Cable
3.5	Power Module PCB
3.6	Capacitor

4. Removing Power Distributor

1. Disconnect the power cords from the power supply modules.
2. Unplug the power distributor from the motherboard and backplane.
3. Remove 4 screws and lift out the power distributor from the chassis
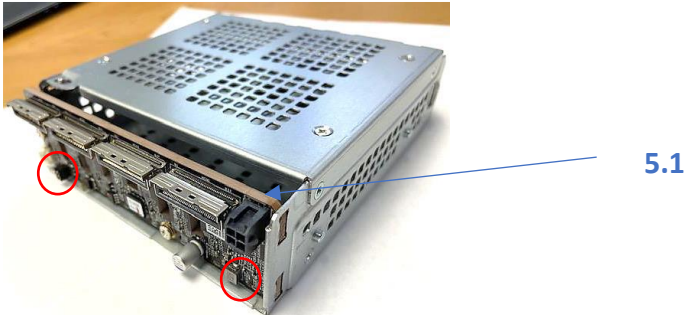4. Remove power distributor screw and standoffs then take three PCBs from the power distributor.

4.1
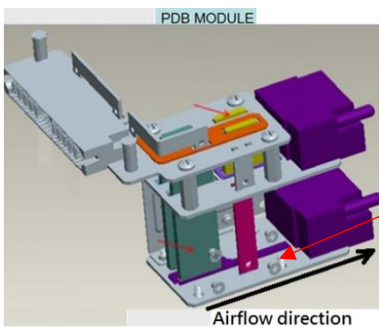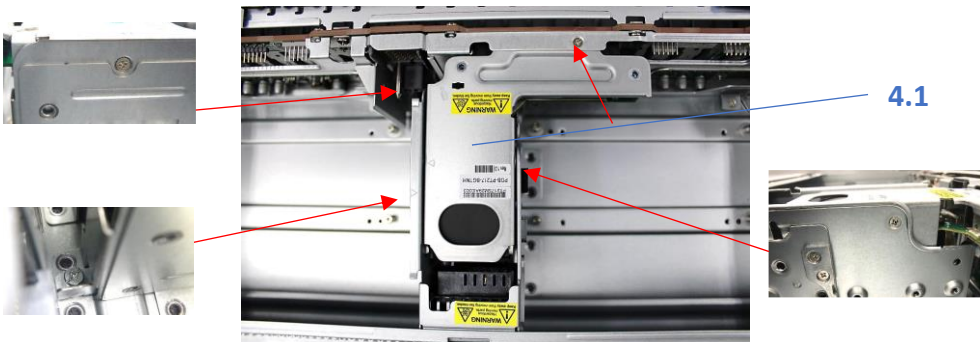
Remove screws and standoff

4.2
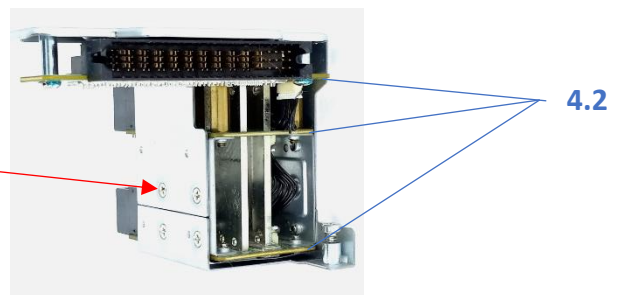
No.	Description
4.1	Power Distributor
4.2	Power Distributor PCBs

5. Removing Backplane

1. Unscrew the screws (circled in red) holding the Power Distributor (PDB) bracket from the chassis.

5.1

No.	Description
5.1	Power Distributor Backplane

6. Removing Fan

1. Lift the fan bracket from the top of the fans.
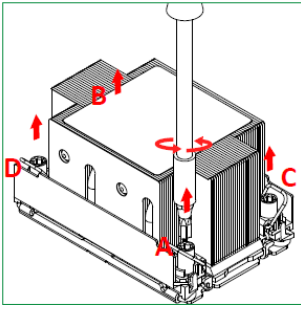2. Lift the fan from the chassis. There are no screws.
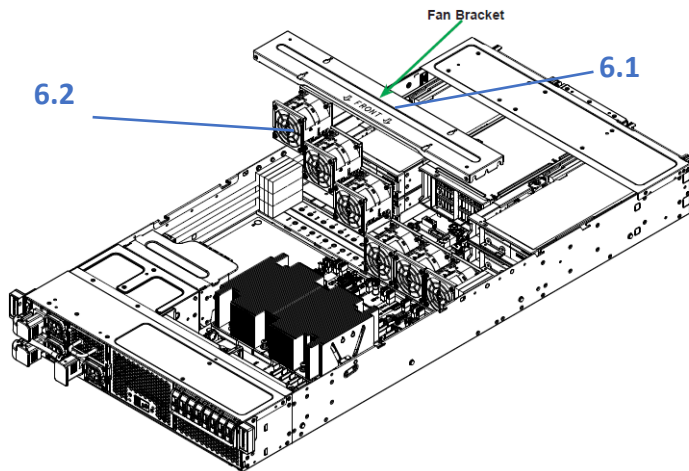
| No.	Description
6.1	Cooling Cover
6.2	Cooling Fans

7. Removing Processor

1. Removing the PHM (Processor Heatsink Module) from the motherboard, first shut down the system and unplug the AC power cord from all power supplies
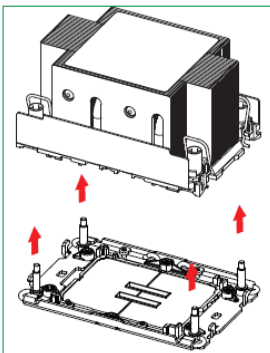
2. Use a T30-bit screwdriver to loosen the four peek nuts on the heatsink in the sequence of A, B, C, and D


3. Once the peek nuts have been loosened from the CPU socket, press the rotating wires inward to unlatch the PHM from the socket, as shown below
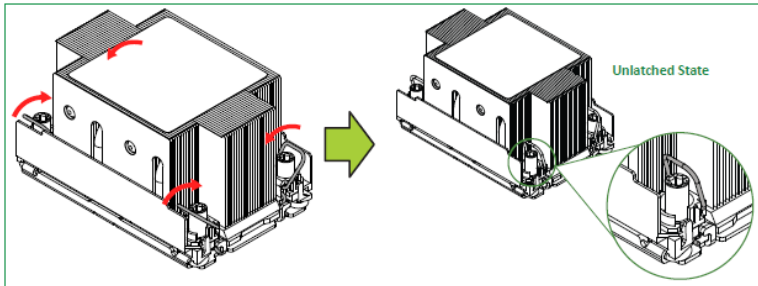

4. Gently lift the PHM upward to remove it from the CPU socket

5. Use your hand to detach the four plastic clips (marked a, b, c, d) on the processor carrier assembly from the four corners of the heatsink (marked A, B, C, D), as shown below


SP XCC   HBM   SP MCC
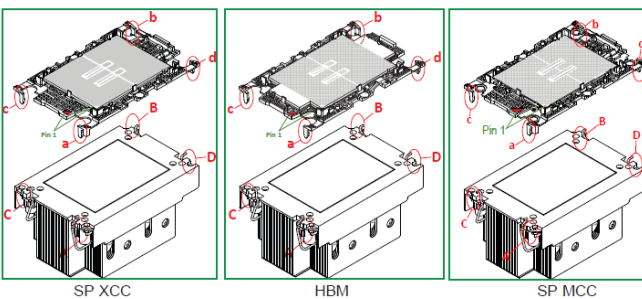
6. When all plastic clips have been detached from the heatsink, remove the processor carrier assembly from the heatsink

SP XCC | HBM | SP MCC
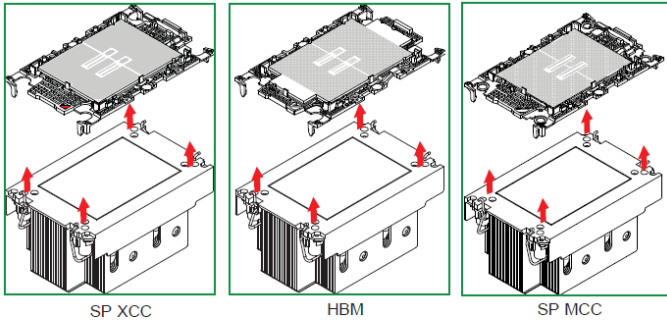
7. Unlock the lever from its locked position and push it upwards to disengage the processor from the processor carrier, as shown below right

7.1
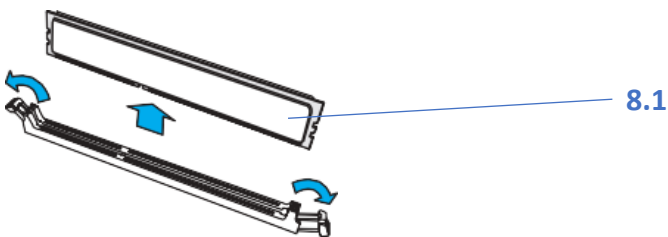
CPU Carrier Assembly (carrier E1A)

CPU Carrier Assembly (carrier E1B)
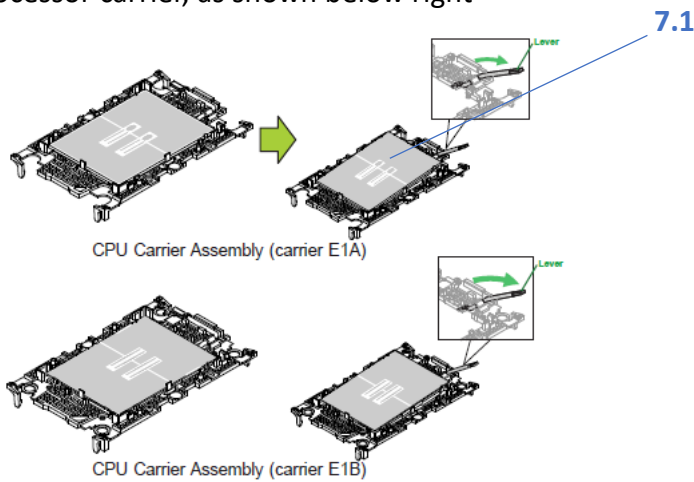
8. Once the processor has been loosened from the carrier, carefully remove the processor from the carrier

7.2

SP XCC | HBM | SP MCC
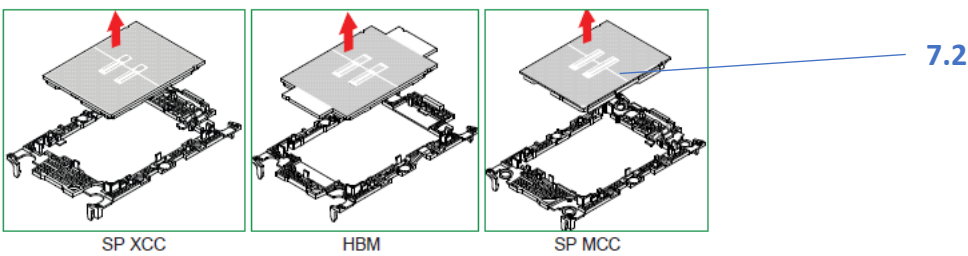
Note: Please handle the processor with care to avoid damaging it or its pins

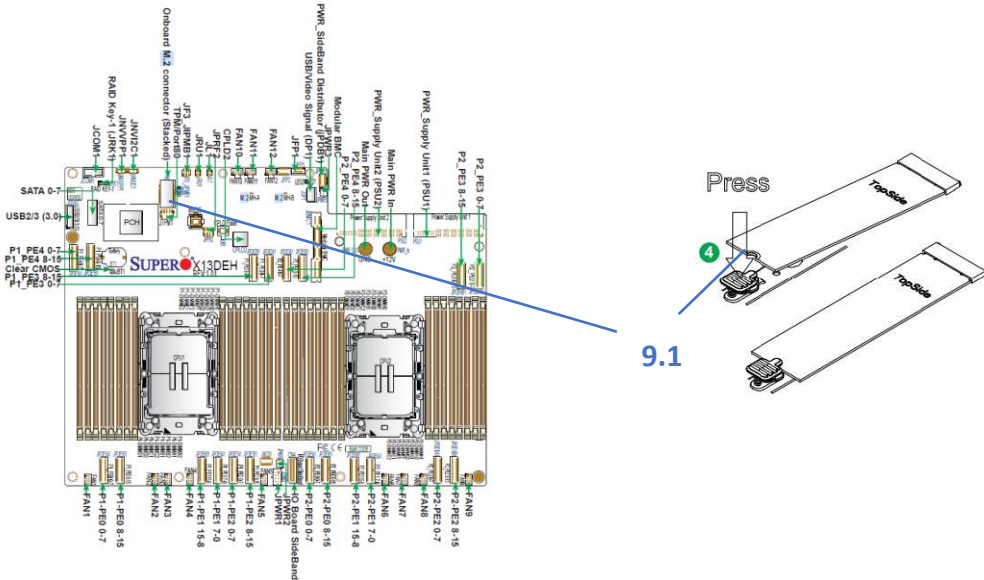| No.	Description
7.1	Heat Sink
7.2	Processor

8. Removing DIMM

8.1

1. Hand press both release tabs on the ends of the DIMM module to unlock it
2. Once the DIMM module is loose, remove it from the memory slot

No.	Description
8.1	DIMM

9 Removing the M.2 from the Motherboard

1. Turn the clip and release the M.2.

2. Gently pull the M.2 out of the socket.

9.1

No.	Description
9.1	M.2

10. Removing the Air shroud

1. Lift and remove the air shroud from the chassis.

10.1
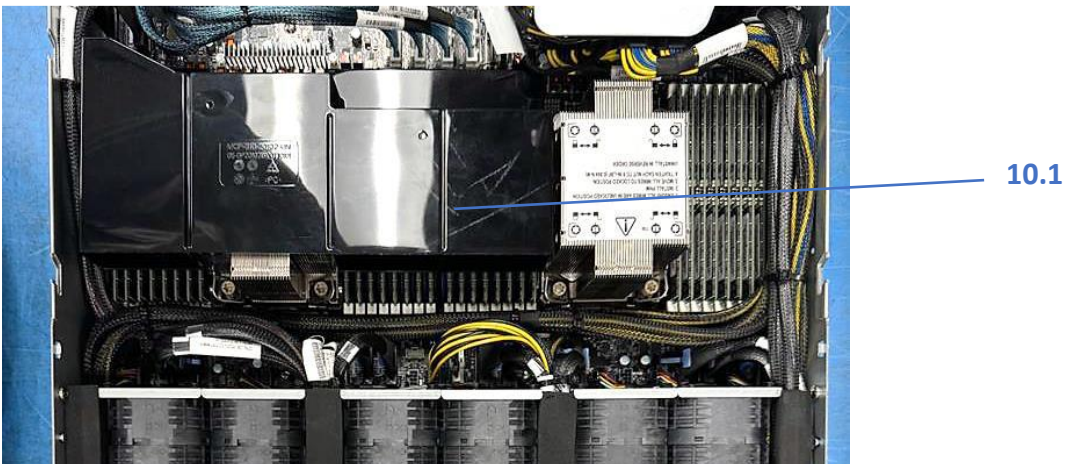
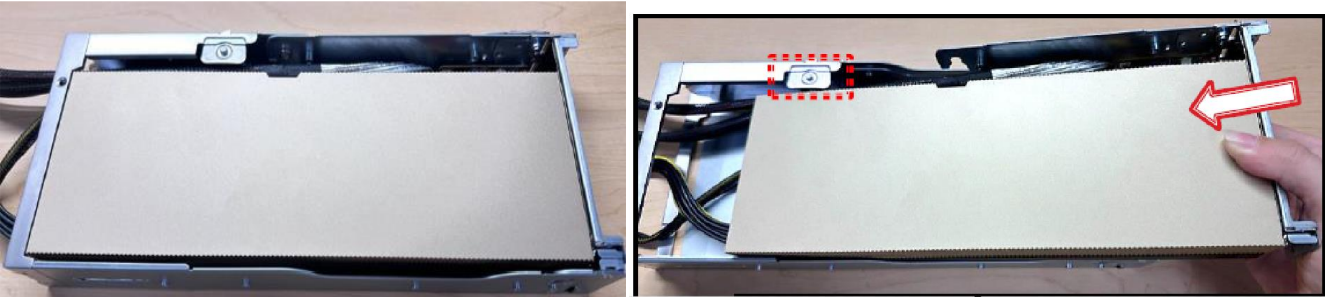| No.	Description
10.1	Air Shroud

11. Removing GPU Card

1. Remove the GPU bracket with 4x screws (2x screws are flat head, 2x screws are pan head).
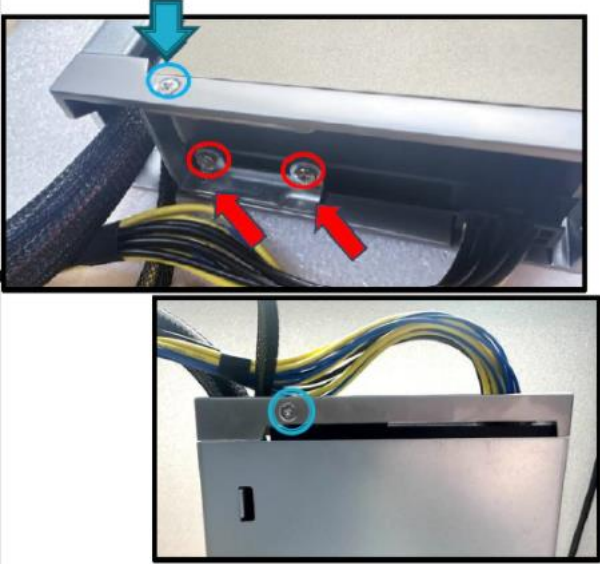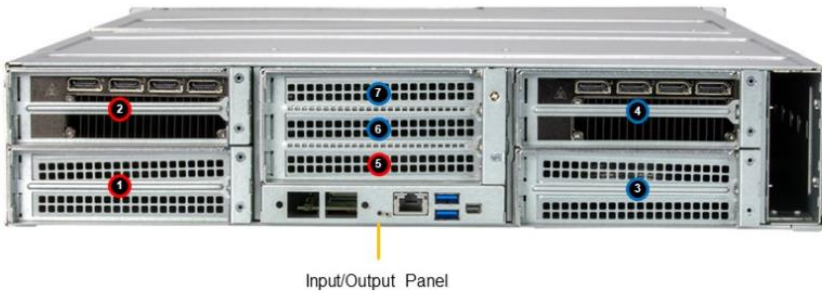

2. lift the GPU from GPU tray.

3. Remove the screw and pull up the GPU from bracket.
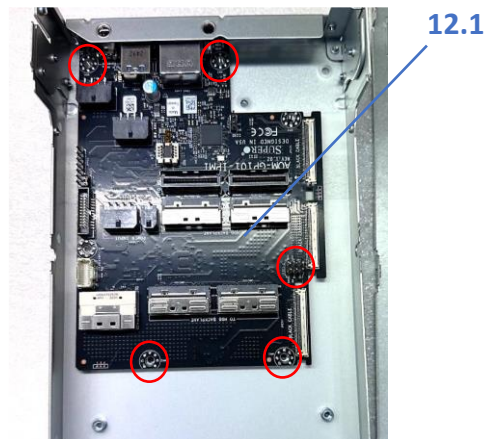

11.1

No.	Description
11.1	GPU Card

12. Removing Advanced I/O (AIOM) Network Card

1. Remove the screw from bracket and lift the network card.

Input/Output Panel

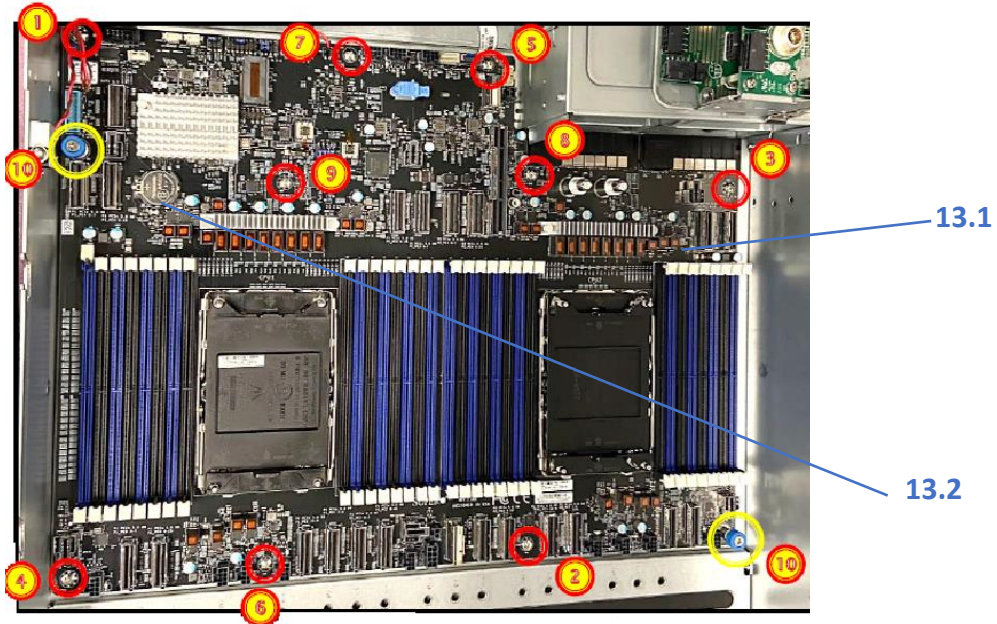|	Slot Description
① ②	PCIe 5.0 x16 FHFL GPU
③ ④	PCIe 5.0 x16 FHFL GPU
⑤	PCIe 5.0 x16 Networking/DPU
⑥ ⑦	PCIe 5.0 x16 Networking/DPU

CPU1 ■ CPU2 ■

12.1

No.	Description
12.1	Network card

13. Removing Motherboard

1. Unscrew the screws (circled in red) on the motherboard and lift the motherboard out of the chassis.

2. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.

No.	Description
13.1	Motherboard
13.2	Battery
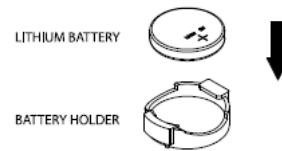
When the all the steps are complete, the chassis enclosure can be recycled.