P/N: 15G065456000AK V1.0

Quick Installation Guide

GNRAP2D24G-2L+

www.asrockrack.com

GNRAP2D24G-2L+

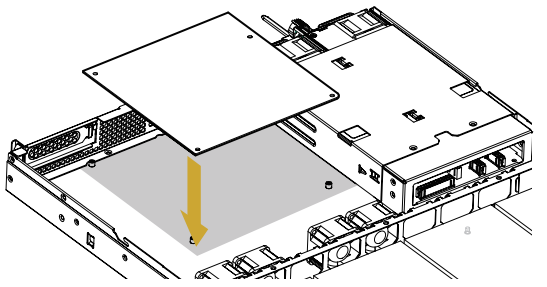
The server board User's Manual is available for download from the ASRock Rack's official website at http://www.asrockrack.com.

Take note of the following precautions before installing server board components or change any server board settings.

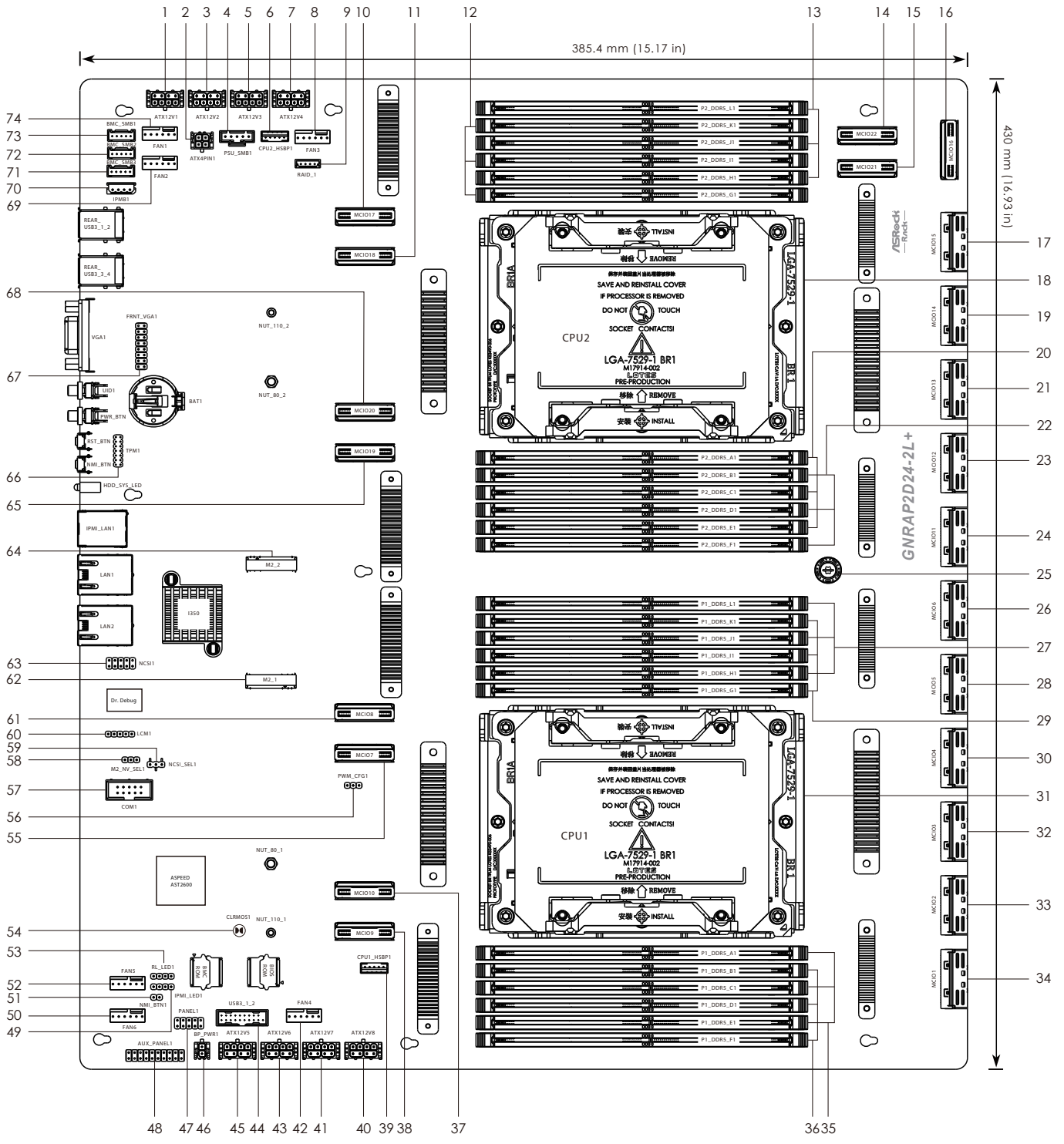
1. Unplug the power cord from the wall socket before touching any components.
2. To avoid damaging the server board's components due to static electricity, NEVER place the server board directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before handling the components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever uninstall any component, place it on a grounded anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the server board to the chassis, please do not over-tighten the screws! Doing so may damage the server board.

1 Install Server Board

1. Insert the server board into the chassis.
2. Affix the screws clockwise into the mounting holes in all of the corners of the server board.
   Do not over-tighten the screws

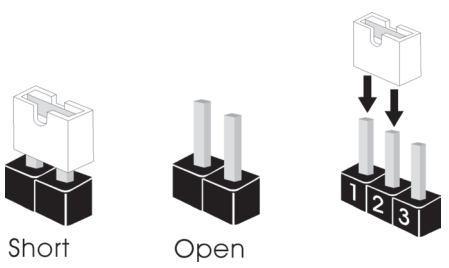


2 Motherboard Layout



No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	Micro-Fit Power Connector (ATX4PIN1)
3	ATX 12V Power Connector (ATX12V2)
4	PSU SMBus Header (PSU_SMB1)
5	ATX 12V Power Connector (ATX12V3)
6	Backplane PCI Express Hot-Plug Connector (CPU2_HSBP1)
7	ATX 12V Power Connector (ATX12V4)
8	System Fan Header (FAN3)
9	Virtual RAID On CPU Header (RAID_1)
10	Mini Cool Edge IO Connector (MCIO17)
11	Mini Cool Edge IO Connector (MCIO18)
12	3 DDR5 DIMM Slots (P2_DDR5_G1/I1/K1)
13	3 DDR5 DIMM Slots (P2_DDR5_H1/J1/L1)
14	Mini Cool Edge IO Connector (MCIO22)
15	Mini Cool Edge IO Connector (MCIO21)
16	Mini Cool Edge IO Connector (MCIO16)
17	Mini Cool Edge IO Connector (MCIO15)
18	Socket BR (LGA 7529) (CPU2)
19	Mini Cool Edge IO Connector (MCIO14)
20	3 DDR5 DIMM Slots (P2_DDR5_A1/C1/E1)
21	Mini Cool Edge IO Connector (MCIO13)
22	3 DDR5 DIMM Slots (P2_DDR5_B1/D1/F1)
23	Mini Cool Edge IO Connector (MCIO12)
24	Mini Cool Edge IO Connector (MCIO11)
25	Thumbscrew
26	Mini Cool Edge IO Connector (MCIO6)
27	3 DDR5 DIMM Slots (P1_DDR5_H1/J1/L1)
28	Mini Cool Edge IO Connector (MCIO5)
29	3 DDR5 DIMM Slots (P1_DDR5_G1/I1/K1)
30	Mini Cool Edge IO Connector (MCIO4)
31	Socket BR (LGA 7529) (CPU1)
32	Mini Cool Edge IO Connector (MCIO3)
33	Mini Cool Edge IO Connector (MCIO2)
34	Mini Cool Edge IO Connector (MCIO1)
35	3 DDR5 DIMM Slots (P1_DDR5_A1/C1/E1)
36	3 DDR5 DIMM Slots (P1_DDR5_B1/D1/F1)
37	Mini Cool Edge IO Connector (MCIO10)
38	Mini Cool Edge IO Connector (MCIO9)
39	Backplane PCI Express Hot-Plug Connector (CPU1_HSBP1)
40	ATX 12V Power Connector (ATX12V8)
41	ATX 12V Power Connector (ATX12V7)
42	System Fan Header (FAN4)
43	ATX 12V Power Connector (ATX12V6)
44	USB 3.2 Gen1 Header (USB3_1_2)
45	ATX 12V Power Connector (ATX12V5)
46	HDD Backplane Power Connector (BP_PWR1)
47	System Panel Header (PANEL1)
48	Auxiliary Panel Header (AUX_PANEL1)
49	IPMI LAN LED Header (IPMI_LED1)
50	System Fan Header (FAN6)
51	Non Maskable Interrupt Button (NMI_BTN1)
52	System Fan Header (FAN5)
53	Rear Panel LAN LED (RL_LED1)
54	Clear CMOS Pad (CLRMOS1)
55	Mini Cool Edge IO Connector (MCIO7)
56	PWM Configuration Header (PWM_CFG1)
57	COM Port Header (COM1)
58	M.2 Signal Source Selection Jumper (M2_NV_SEL1)

3 Jumper Settings



When the jumper cap is placed on the pins, the jumper is "Short". If no jumper cap is placed on the pins, the jumper is "Open".

The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when a jumper cap is placed on these 2 pins.

No.	Description
59	NCSI Mode Jumper (NCSI_SEL1)
60	Liquid Crystal Module Header (LCM1)
61	Mini Cool Edge IO Connector (MCIO8)
62	M.2 Socket (M2_1) (Type 2280/22110)
63	Network Controller Sideband Interface Header (NCSI1)
64	M.2 Socket (M2_2) (Type 2280/22110)
65	Mini Cool Edge IO Connector (MCIO19)
66	SPI TPM Header (TPM1)
67	Front VGA Header (FRNT_VGA1)
68	Mini Cool Edge IO Connector (MCIO20)
69	System Fan Header (FAN2)
70	Intelligent Platform Management Bus Header (IPMB1)
71	BMC SMBus Header (BMC_SMB3)
72	BMC SMBus Header (BMC_SMB2)
73	BMC SMBus Header (BMC_SMB1)
74	System Fan Header (FAN1)

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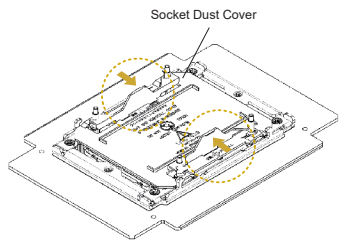
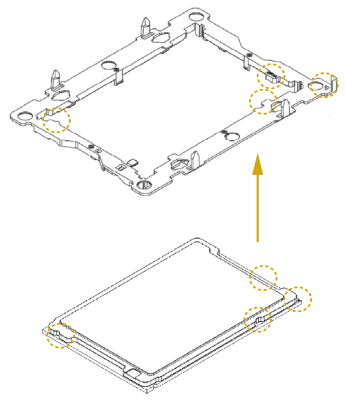
4 Install Processor and Heatsink

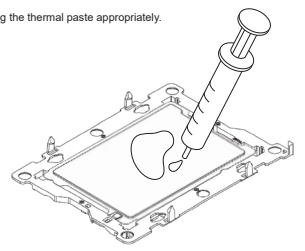
1 Removing the socket dust cover.



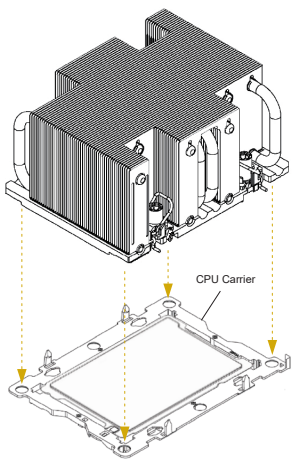
2 Installing the processor to the carrier and locking it in place.



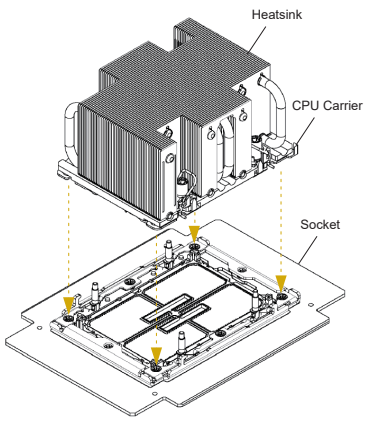
3 Applying the thermal paste appropriately.



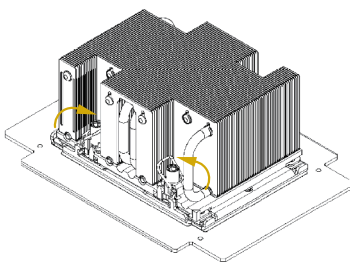
4 Installing the heatsink to CPU carrier.



5 Installing the PHM to the socket.



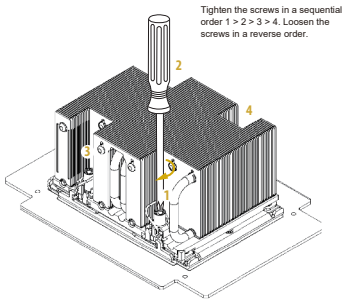
6 Latching the PHM.



7 Securing the screws.

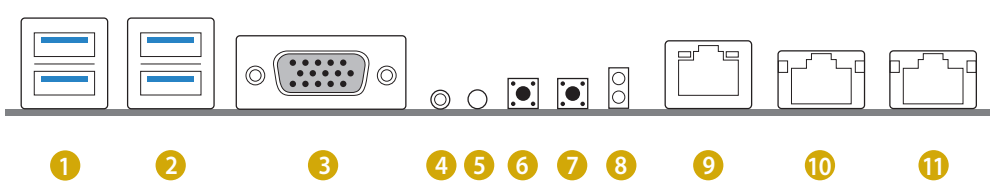
Set the torque wrench to 6-12 in-lb.
One fourth a turn each time.

Tighten the screws in a sequential order 1 > 2 > 3 > 4. Loosen the screws in a reverse order.



**We recommend using the CPU Installation tool to avoid CPU pin-bent problem.*

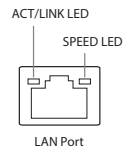
5 I/O Panel



No.	Description	No.	Description
1	USB 3.2 Gen1 Ports (USB3_1_2)	7	NMI Button (NMI_BTN)
2	USB 3.2 Gen1 Ports (USB3_3_4)	8	HDD/System Fault LED (HDD_SYS_LED)
3	VGA Header (VGA1)	9	IPMI LAN Header (IPMI_LAN1)
4	UID Switch/LED (UID1)	10	1G LAN RJ-45 Port (LAN1, shared NIC)
5	Power Switch/LED (PWR_BTN)	11	1G LAN RJ-45 Port (LAN2)
6	Reset Button (RST_BTN)		

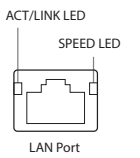
6 LAN Port LED Indications

IPMI LAN Port



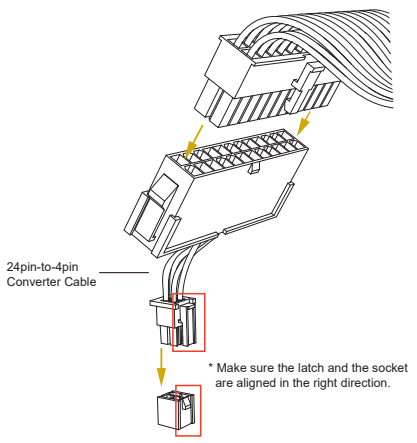
Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	Off	10 Mbps connection or no link
Blinking Yellow	Data activity	Orange	100 Mbps connection
On	Link	Green	1 Gbps connection

1G LAN Port

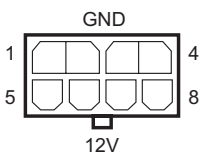


Activity / Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	Off	10 Mbps connection or no link
Blinking Yellow	Data activity	Orange	100 Mbps connection
On	Link	Green	1 Gbps connection

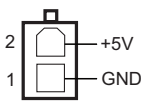
7 Install Power Cables



ATX12V

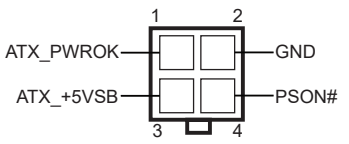


BP_PWR



ATX4PIN1

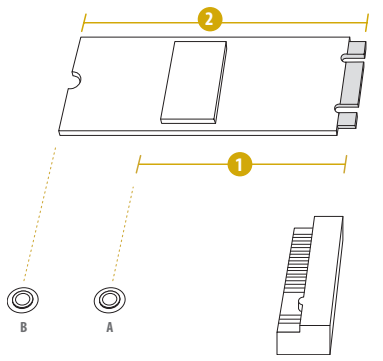
Micro-Fit Power Connector



8 Install M.2 SSD Module

1 Find the corresponding nut location to be used.

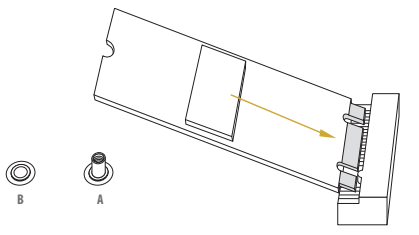
No.	1	2
Nut Location	A (NUT_80_1/2)	B (NUT_110_1/2)
PCB Length	8 cm	11 cm
Module Type	Type 2280	Type 22110



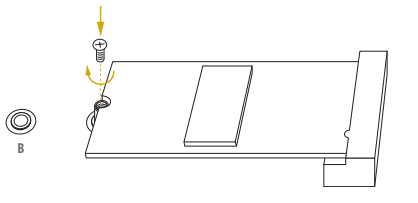
2 Move the standoff based on the module type and length.

3 Peel off the yellow protective film on the nut. Hand tighten the standoff into the desired location.

4 Gently insert the M.2 module into the slot.

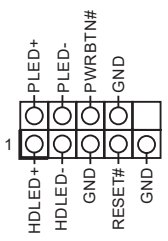


5 Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw.

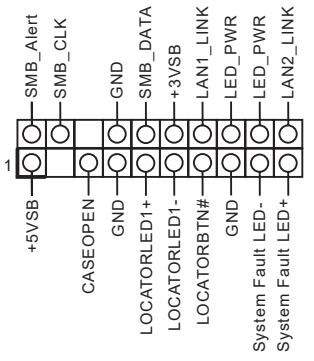


9 Headers

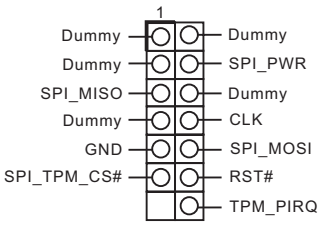
System Panel



Auxiliary Panel

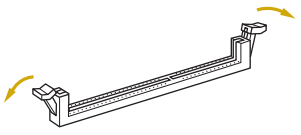


SPI TPM Header

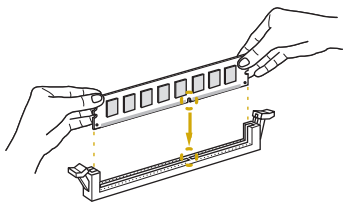


10 Install Memory

1 Unlock a DIMM slot by pressing the module clips outward.



2 Insert the memory module.



3 Lock the clips.