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Nuvo-10208GC Series Quick Installation Guide

Warning

- Only qualified service personnel should install and service this product to avoid injury.
- Observe all ESD procedures during installation to avoid damaging the equipment.

❶ Preparing tools

Unpack the equipment and make sure the following tools are available and delivered contents are correct before you begin the installation procedure.

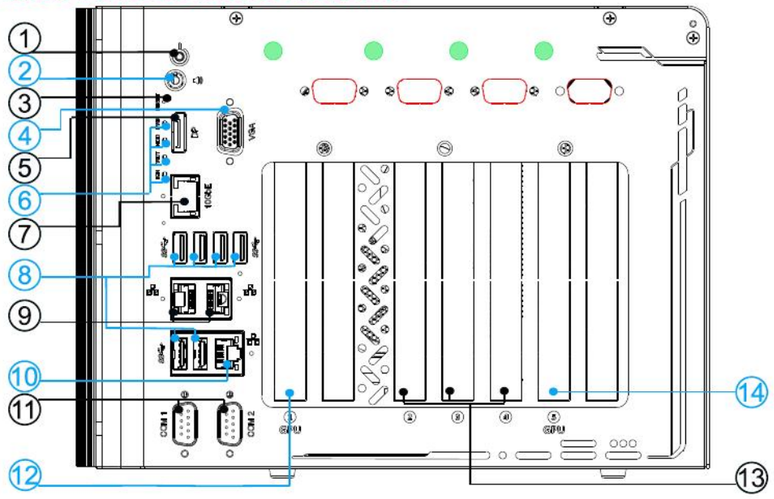
1-1. User-provided tools

- Anti-static wrist wrap

1-2. Packing List

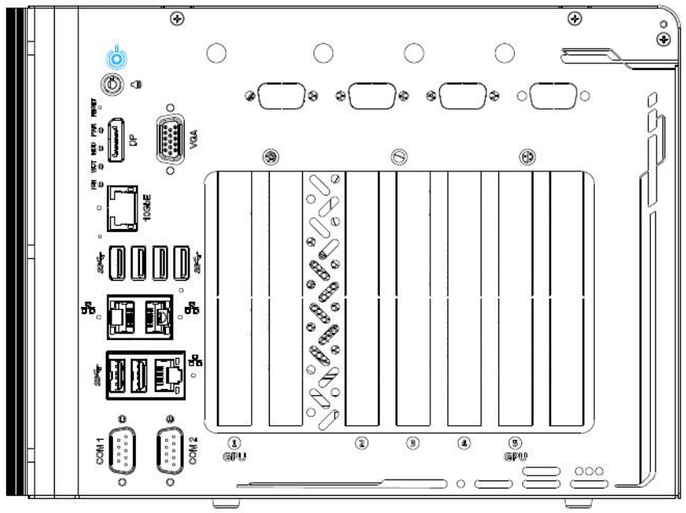
Item	Description	Quantity
01	Nuvo-10208GC system	1
02	Drivers & utilities disc	1
03	4-pin pluggable terminal block	1
04	3-pin pluggable terminal block	1
05	GPU bracket	2
06	Dampening bracket	2
07	Screw package	1

❷ Nuvo-10208GC Series Front Panel



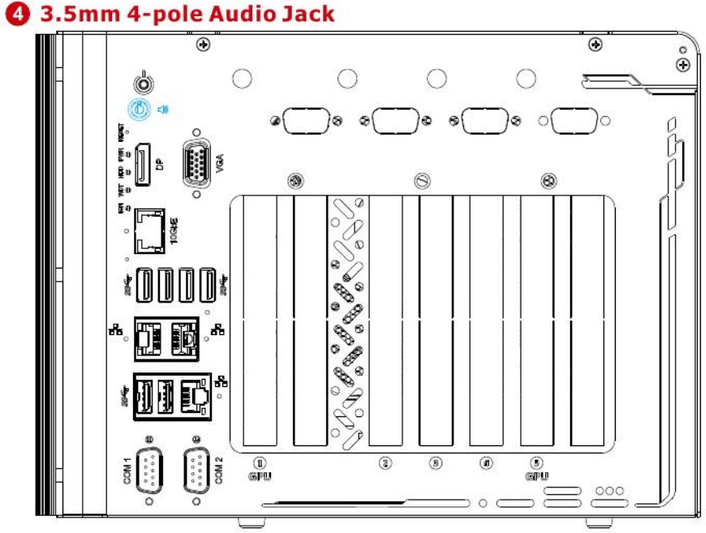
No.	Item	Description
1	Power button	Use this button to turn on or shutdown the system.
2	4-pole 3.5mm speaker-out/ microphone-in jack	3.5mm jack for speaker-output and microphone-input.
3	Reset button	Use this button to manual reset the system.
4	VGA port	VGA output supports resolution up to 1920x1200@60Hz
5	DisplayPort	Support display resolutions up to 4096 x 2304. Compatible with HDMI/ DVI via respective adapter/ cable (resolution may vary).
6	LED indicator	From top to bottom, the four system LEDs are PWR (system power), HDD (hard disk drive), WDT (watchdog timer) and IGN (ignition control).
7	10Gb Ethernet	The optional 10Gb Ethernet port is backward compatible with 5GBASE-T, 2.5GBASE-T, and 1Gb Ethernet protocols.
8	USB 3.1 Gen2 port	USB3.1 Gen 2 port (SuperSpeed+) offers up to 10Gbps, twice the bandwidth over existing SuperSpeed USB3.1 Gen. 1 connection. It is also backwards compatible with USB3.0 and USB2.0
9	2.5Gb Ethernet port	2x 2.5Gb Ethernet ports by Intel I226-IT
10	1Gb Ethernet port	1x 1Gb Ethernet port by Intel I219-LM
11	COM port	The software-selectable RS-232/422/485 ports. The operation mode of COM1 and COM2 can be set in BIOS.
12	GPU slot	Secondary PCIe x16 slot @ Gen4, 8-lanes expansion slot
13	PCIe slots	3x PCIe x8 slots @ Gen3, 4-lanes expansion slot
14	GPU slot	Primary PCIe x16 slot @ Gen4, 8-lanes expansion slot
		Reserved antenna opening
		Reserved DB9 connector opening

❸ Power Button



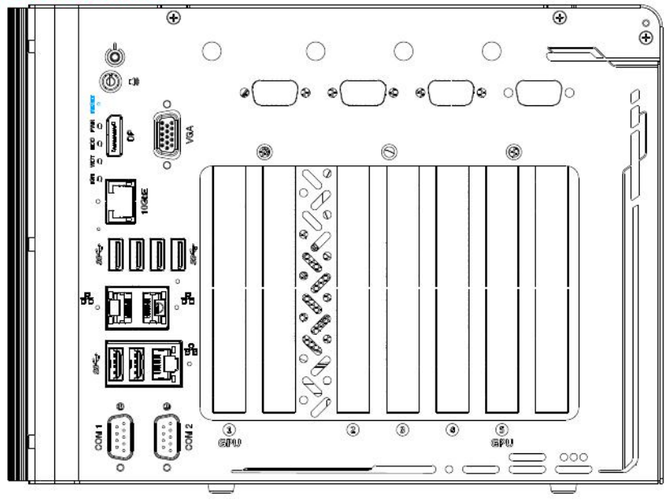
The power button is a non-latched switch for ATX mode on/off operation. To turn on the system, press the power button and the PWR LED should light-up green. To turn off the system, issuing a shutdown command in OS is preferred, or you can simply press the power button. To force shutdown when the system freezes, press and hold the power button for 5 seconds. Please note that there is a 5-second interval between on/off operations (i.e. once the system is turned off, there is a 5-second wait before you can power-on the system).

❹ 3.5mm 4-pole Audio Jack



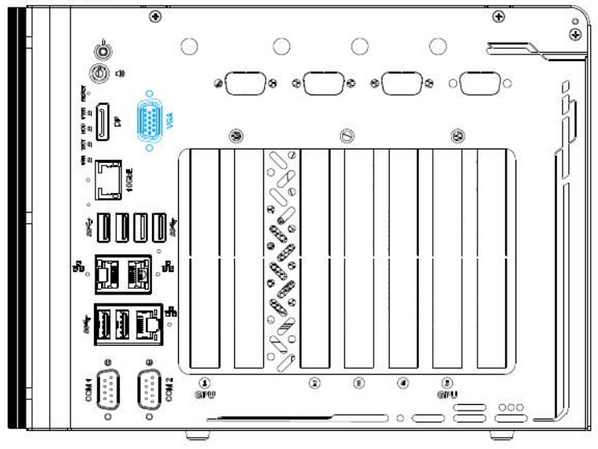
The system audio function uses high definition audio. There is a female 4-pole audio jack for headphone (speaker) output and microphone input. To utilize the audio function in Windows, you need to install corresponding drivers for both Intel chipset and audio device drivers.

❺ Reset Button



The reset button is used to manually reset the system in case of system halt or malfunction. To avoid unexpected reset, the button is purposely placed behind the panel. To reset, please use a pin-like object (eg. tip of a pen) to access the reset button

6 VGA Port

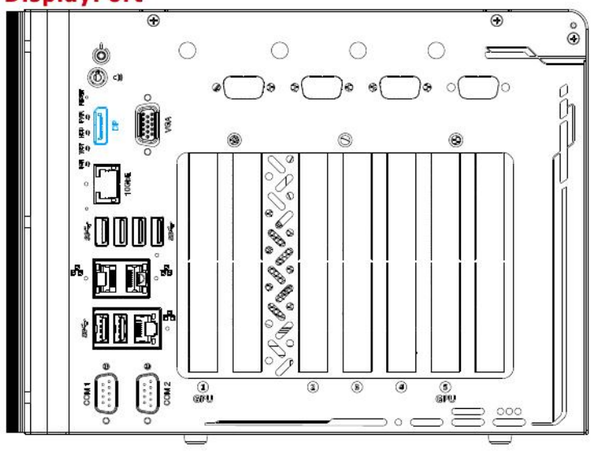


VGA connector is the most common video display connection. The VGA output supports up to 1920x1200@60Hz resolution. The system supports dual independent display outputs by connecting display devices to VGA, and DisplayPort. To support multiple display outputs and achieve best VGA output resolution in Windows, you need to install corresponding graphics drivers.

Note

Please make sure your VGA cable includes SDA and SCL (DDC clock and data) signals for correct communication with monitor to get resolution/timing information. A cable without SDA/SCL can cause blank screen on your VGA monitor due to incorrect resolution/ timing output.

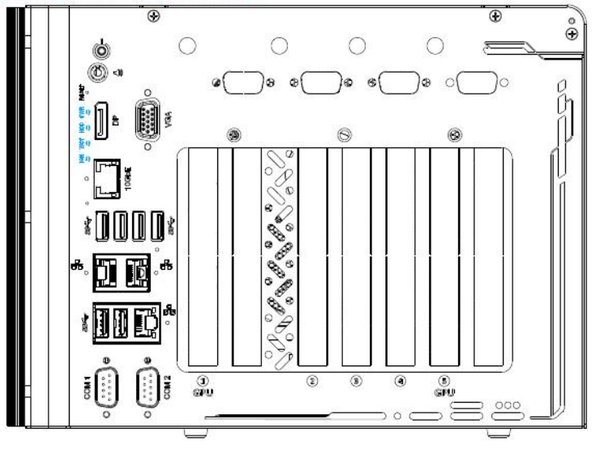
7 DisplayPort



The DisplayPort (DP) output is a digital display interface that mainly connect video source and carry audio to a display device. When connecting a DP, it can deliver up to 4K UHD (4096 x 2304) in resolution. The system is designed to support passive DP adapter/ cable. You can connect to other display devices using DP-to-HDMI cable or DP-to-DVI cable.

The system supports dual independent display outputs by connecting display devices to VGA and DisplayPort connection. To support multiple display outputs and achieve best DisplayPort output resolution in Windows, you need to install corresponding graphics drivers.

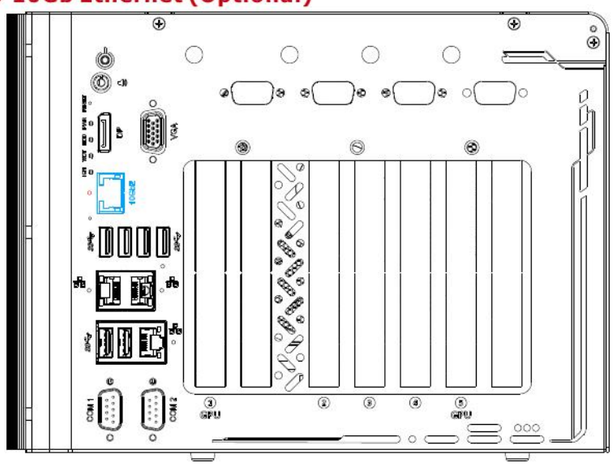
8 Status LED Indicators



There are four LED indicators on the front panel: PWR, HDD, WDT and IGN. The descriptions of these four LEDs are listed in the following table.

Indicator	Color	Description
PWR	Green	Power indictor, lid when system is on.
HDD	Red	Hard drive indicator, flashing when hard disk drive is active.
WDT	Yellow	Watchdog timer LED, flashing when WDT is active.
IGN	Yellow	Ignition signal indicator, lid when IGN is high (12V/ 24V).

9 10Gb Ethernet (Optional)



The optional high-speed data transmission 10G Ethernet port is backward compatible with 5GBASE-T and 2.5GBASE-T to work with NBASE-T industrial cameras. Indicated in **red**is a screw-lock hole for the corresponding Ethernet port.

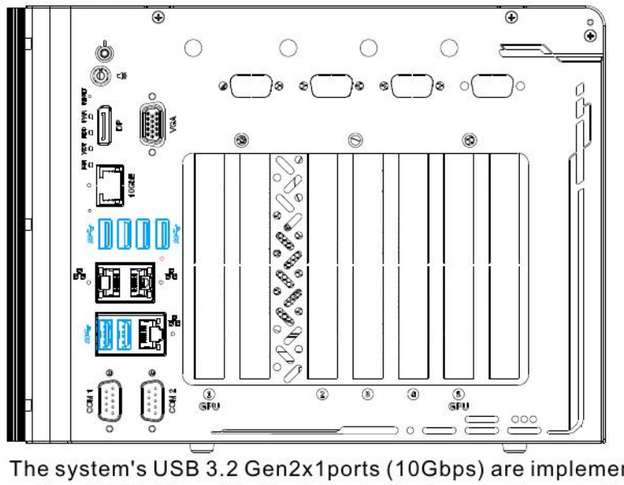
Speed LED (Top)

LED Color	Status	Description
Green or Orange	Orange	10/ 100/ 1000/ 2500/ 5000 Mbps
	Green	10000 Mbps

Active/Link LED (Bottom)

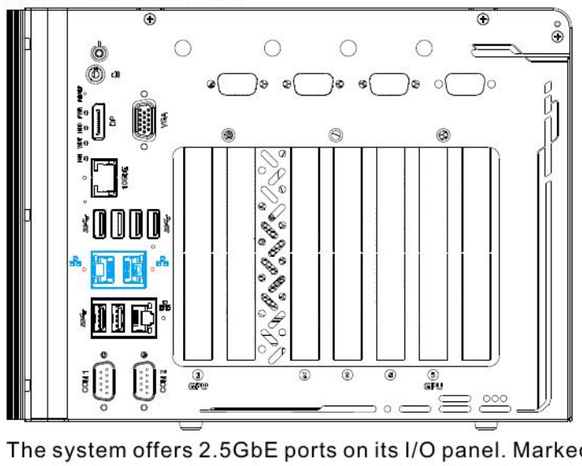
LED Color	Status	Description
Orange	Off	Ethernet port is disconnected
	On	Ethernet port is connected and no data transmission
	Flashing	Ethernet port is connected and data is transmitting/receiving

10 USB3. 1 Gen2



The system's USB 3.2 Gen2x1ports (10Gbps) are implemented via native xHCI (eXtensible Host Controller Interface) controller and are backward compatible with USB3.2 Gen.1, USB 2.0, USB 1.1 and USB 1.0 devices. UFEI USB is also supported so you can use USB keyboard/ mouse in UEFI shell environment. Indicated in **red** is a screw-lock hole for the corresponding USB port.
xHCI driver is supported natively in Windows 10, therefore you do not need to install the xHCI driver prior to utilizing USB functions.

11 2. 5Gb Ethernet Port



The system offers 2.5GbE ports on its I/O panel. Marked in red are screw-lock mechanism for rugged connectivity. Each port has dedicated PCI Express link for maximum performance. When an Ethernet connection is established, the LED indicators on the RJ45 connector represents the following connection statuses:

Speed LED (Top)

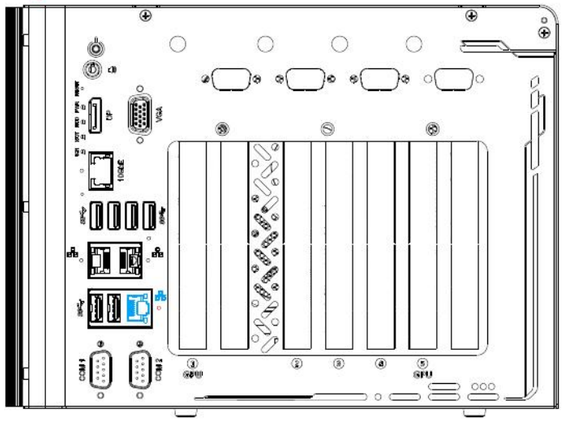
LED Color	Status	Description
Green or Orange	Off	10 Mbps
	Green	100 Mbps
	Orange	1000/ 2500 Mbps

Active/Link LED (Bottom)

LED Color	Status	Description
Green	Off	Ethernet port is disconnected
	On	Ethernet port is connected and no data transmission
	Flashing	Ethernet port is connected and data is transmitting/receiving

To utilize the Ethernet ports in Windows, you need to install corresponding driver for the Ethernet controller.

12 Gigabit Ethernet Port



The systemhas a GbE port and supports Wake-on-LAN. It is implemented with Intel® I219-LM controller with a dedicated PCI Express link for maximum performance. The LED indicators on the RJ45 connector represents the following connection statuses:

Active/Link LED (Top)

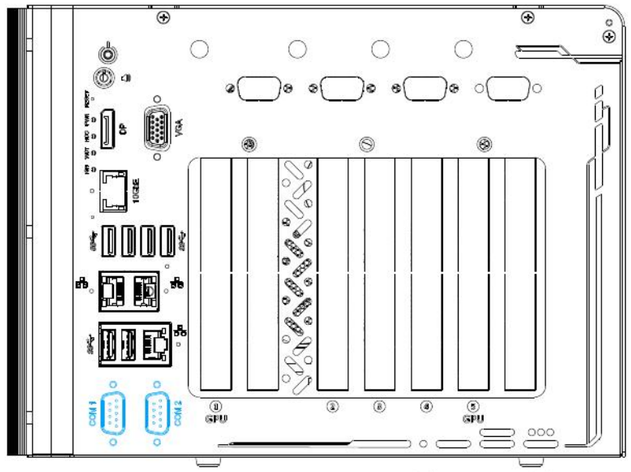
LED Color	Status	Description
Green	Off	Ethernet port is disconnected
	On	Ethernet port is connected and no data transmission
	Flashing	Ethernet port is connected and data is transmitting/receiving

Speed LED (Bottom)

LED Color	Status	Description
Green or Orange	Off	10 Mbps
	Green	100 Mbps
	Orange	1000 Mbps

Drivers must be installed to utilize the GbE port in Windows environment.

13 COM Port

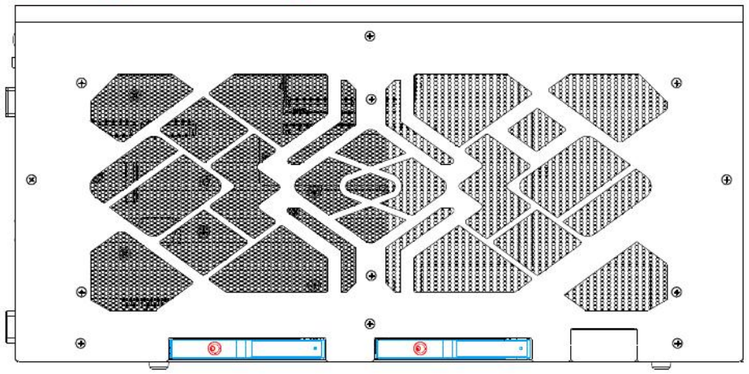


Providing up to 115200 bps baud rate, COM1 and COM2 are software-configurable RS-232/422/485 ports. The operation mode can be set in BIOS setup utility. The following table describes the pin definition of COM ports.

COM Port Pin Definition

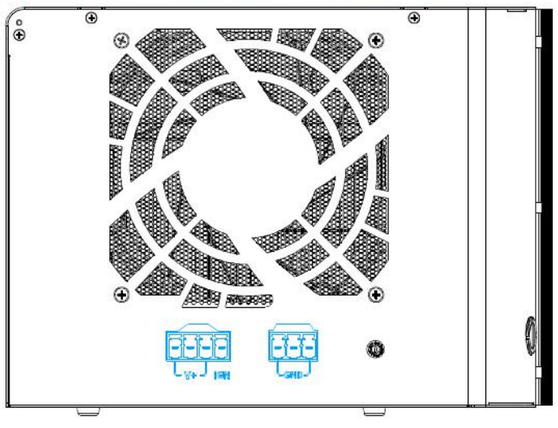
	COM1 & COM2		
Pin#	RS-232 Mode	RS-422 Mode	RS-485 Mode
1	DCD		
2	RX	422 TXD+	485 TXD+/RXD+
3	TX	422 RXD+	
4	DTR	422 RXD-	
5	GND	GND	GND
6	DSR		
7	RTS		
8	CTS	422 TXD-	485 TXD-/RXD-
9	RI		

14 2. 5" SSD/HDD Hot-swappable Slot



The system has two external 2.5" HDD/ SSD hot-swappable slots. Designed for easy access, the HDD/ SSD slots are secured by a lock (indicated in red) and it supports RAID modes 0/ 1 configurations.

15 Ignition/ 4-pin/ 3-pin Terminal Block



The system accepts DC power input from 8 to 48V via dual 4-pin/3-pin pluggable terminal block. The terminal block can also accept ignition signal input (IGN) for in-vehicle applications.

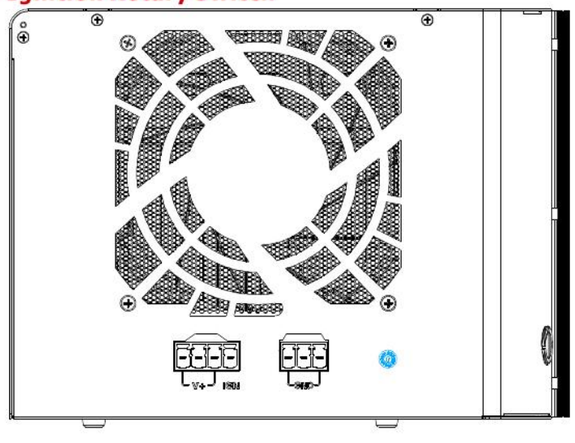
Note

System power requirements under load:
Under 100W load - required DC input is 8V to 48V
Between100W to 480W(single GPU) - required DC input is 12V to 48V
Between 480W 1000W (dual GPUs) - required DC input is 24V to 48V

Warning

Please make sure the voltage of DC power is correct before you connect it to the system. Supplying a voltage over 48V will damage the system.

16 Ignition Rotary Switch



To have ignition power control for in-vehicle usage, you need to supply IGN signal to the system. The IGN input is located on the 4-pin pluggable terminal block (shared with DC power input). Below is the typical wiring configuration for in-vehicle applications.

1. Connect car Battery+ line (12V for sedan, 24V for bus/truck) to V+.
2. Connect car Batter-/ GND line to GND.
3. Connect ACC line to IGN.

Warning

Please make sure the voltage of DC power is correct before you connect it to the system. Supplying a voltage over 48V will damage the system.

Ignition Control Operation Modes

The ignition power control switch features multiple modes for pre and post ignition settings. Please use a flathead screwdriver to adjust the position of the ignition power control switch.

Mode	Power-on Delay	Power-off Delay	Hard-off Timeout
0 (ATX mode)	N/A	N/A	N/A
1 (ATX mode + power-on cycle when boot fails)	N/A	N/A	N/A
2	160ms	160ms	10 minutes
3	10 seconds	10 seconds	10 minutes
4	10 seconds	1 minute	10 minutes
5	10 seconds	5 minutes	10 minutes
6	30 seconds	1 minute	10 minutes
7	30 seconds	5 minutes	10 minutes
8	30 seconds	10 minutes	10 minutes
9	3 minutes	1 minute	10 minutes
10 (A)	3 minutes	10 minutes	10 minutes
11 (B)	3 minutes	30 minutes	10 minutes
12 (C)	10 minutes	30 minutes	10 minutes
13 (D)	30 seconds	2 hours	10 minutes
14 (E)	3 minutes	2 hours	10 minutes
15 (F)	Reserved		

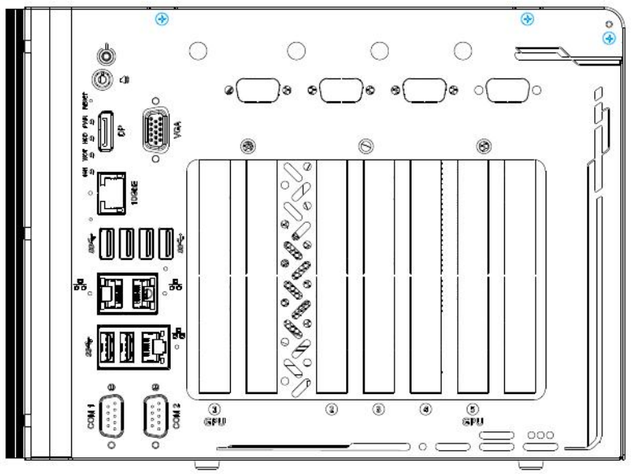
17 Graphics Card Installation

Note

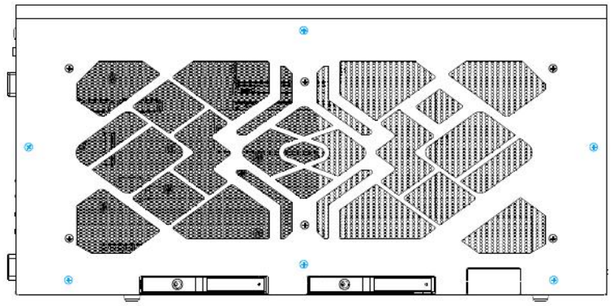
We will be using the MSI RTX 4080 Ventus 3x for demonstration purposes. Due to the variety of RTX 4080 graphics cards on the market, it is recommended that you contact your sales representative or Neousys Technology if you are unsure which brand/ model to purchase.

To access the internal PCIe slots, please remove the screws indicated on each panel to remove the enclosure.

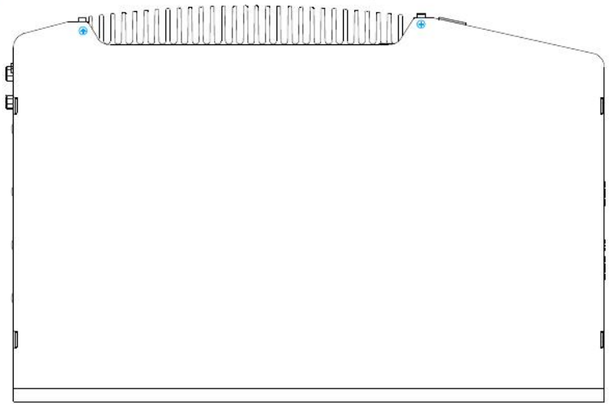
a Remove the screws indicated on the I/O panel.



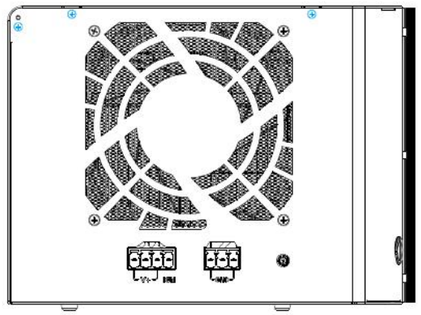
b Remove the screws indicated on the side panel.



c Remove the screws indicated on top of the enclosure.



d Remove the screws indicated at the rear of the enclosure.



e Remove the L-shaped panel.

f Remove the GPU chassis bracket by removing the four screws.

g Install the graphics bracket to the back end of the graphics card by securing the screws indicated.

Repeat the bracket installation for the other graphics card if you are installing dual GPUs.

h Plug in the provided graphics card power cable onto the daughter board.

The longer power cable is designed for the default graphics card installation (PCIe slot furthest away from the motherboard).

i Please note that the GPU power supply needs to match to the slot you are installing the graphics card(s) into.

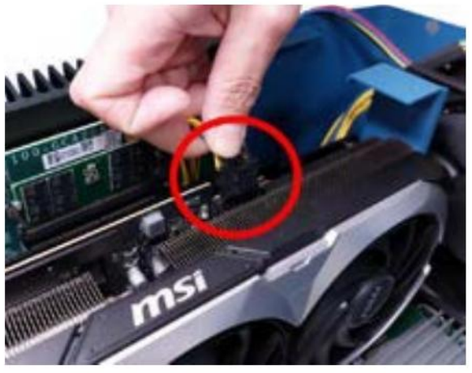
j Lower and insert the graphics card gold fingers into the PCIe slot.

Install into the PCIe slot furthest away from the motherboard if you are only installing one graphics card.

k Secure the graphics card I/O panel.

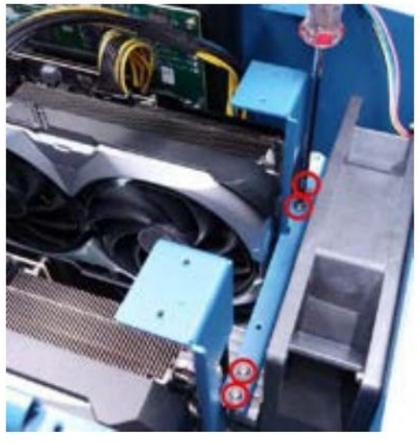
l Lower the second graphics card and secure the I/O panel.

m Plug in the power cable(s) onto the graphics card(s).

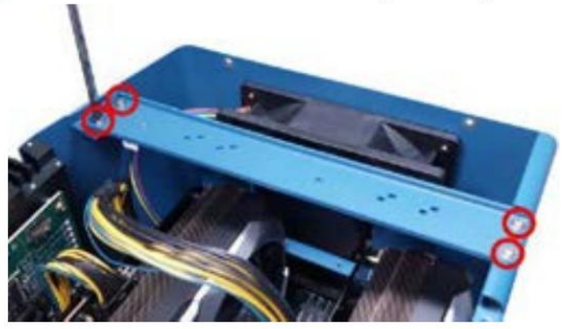


n If you are installing dual GPUs, install the cross bar that is positioned at the back of the GPU bracket.

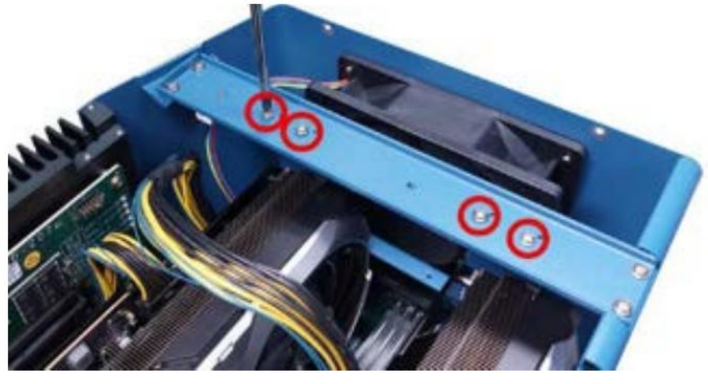
The cross bar does not need to be installed if you are installing only one GPU card.



o Reinstall the chassis GPU bracket by securing the four screws.

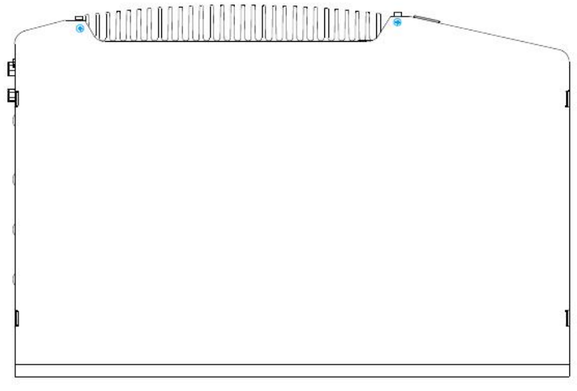


p Secure the GPU bracket onto the chassis GPU bracket by securing the two screws for each GPU bracket.

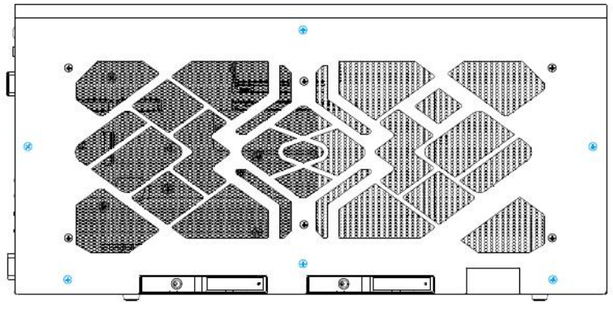


q Place the L-shaped panel back onto the enclosure..

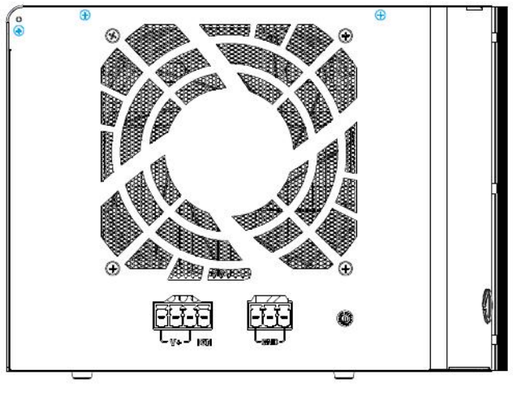
r Secure the screws indicated on top of the enclosure.



s Secure the screws indicated on the side panel.



t Secure the screws indicated at the rear of the enclosure.



u Secure the screws indicated on the I/O panel to complete the graphics card installation process.