

**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.

**1 Preparing tools**

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

**NOTE** Refer to the *Unpacking List* for the exact amount of items included in the package.

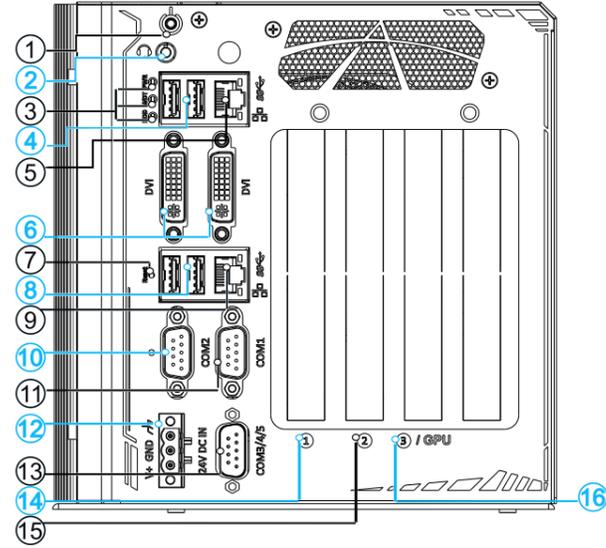
**1-1. User-provided tools**

- Hex bolt screwdriver
- Phillips screwdriver
- Anti-static wrist wrap

**1-2. Nuvo-8240GC Packing List**

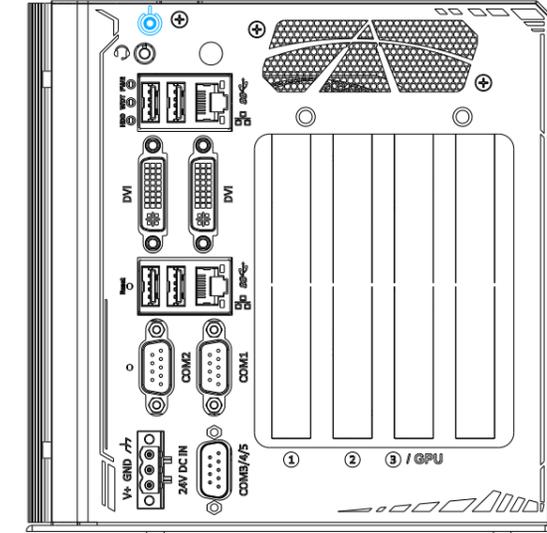
Item	Description	Quantity
01	Nuvo-8111GC system	1
02	CPU bracket	1
03	Neusys drivers & utilities DVD	1
04	3-pin terminal block	2
05	HDD thermal pad for 2.5" HDD/ SSD (if HDD not installed)	2
06	Screw pack	1

**2 I/O Panel**



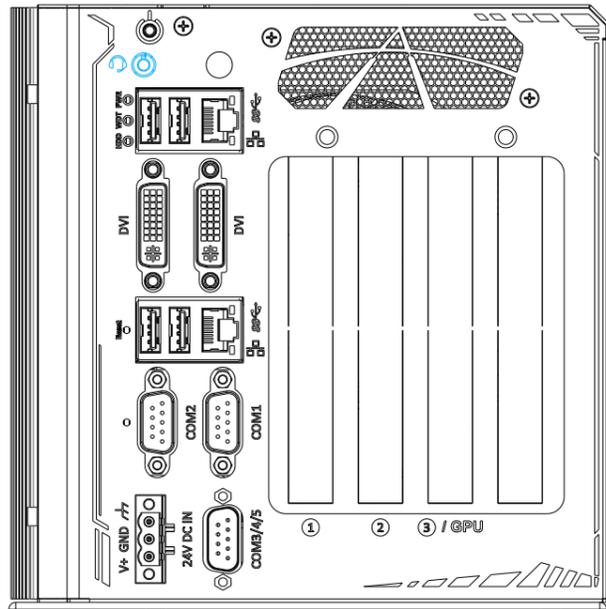
No.	Description	No.	Description
01	Power button	09	Ethernet ports
02	3.5mm speaker/ microphone jack	10	COM 2
03	LED indicator	11	COM 1
04	USB3.1 Gen1 ports	12	3-pin terminal block
05	Ethernet ports	13	COM ports 3/ 4/ 5
06	DVI ports	14	PCIe/ PCI expansion slot
07	Reset button	15	PCI expansion slot
08	USB3.1 Gen1 ports	16	x16 PCIe expansion slot

**3 Power Button**



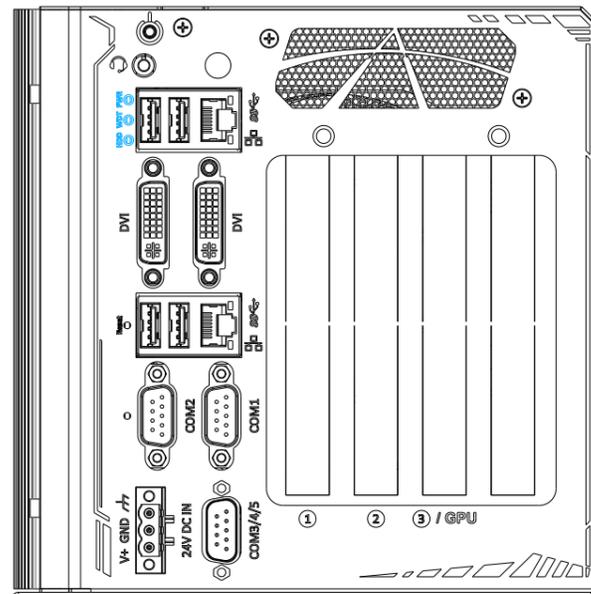
The power button is a non-latched switch for ATX mode on/off operation. To turn on the system, press the power button and the PWR LED should light-up green. To turn off the system, issuing a shutdown command in OS is preferred, or you can simply press the power button. To force shutdown when the system 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).

**4 3.5mm speaker/ microphone jack**



The system audio function uses high definition audio chip. 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® C246 chipset and audio device drivers.

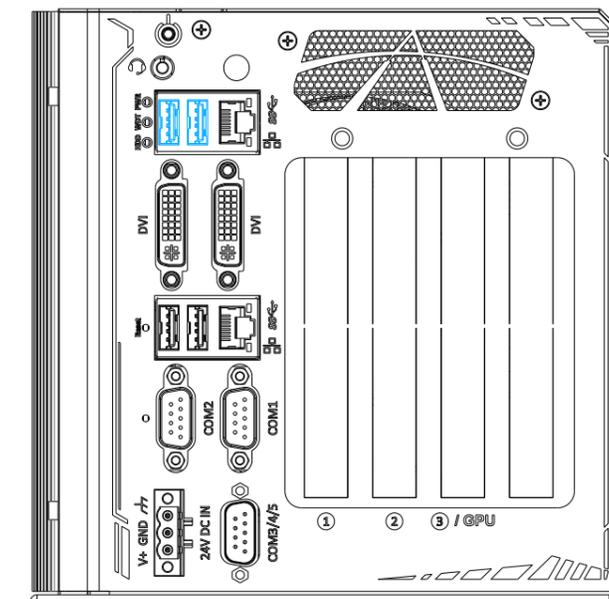
**5 LED indicator**



There are three LED indicators on the I/O panel. From top to bottom, they are power (PWR), Watchdog timer (WDT) and hard disk drive activity (HDD). The descriptions of these three LEDs are listed in the following table.

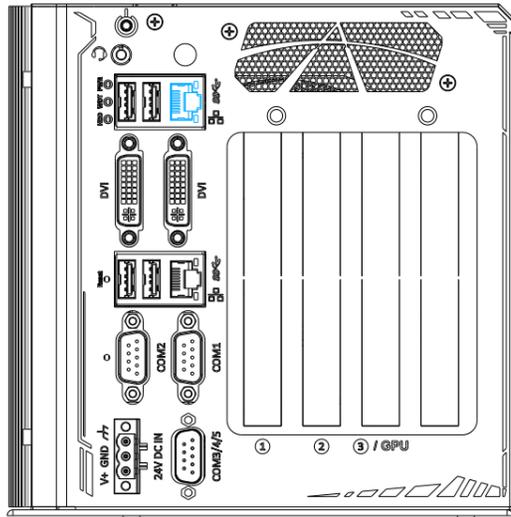
Indicator	Color	Description
PWR	Green	Power indicator, light when system is on.
WDT	Yellow	Watchdog timer LED, flashing when WDT is active.
HDD	Red	Hard drive indicator, flashing when hard disk drive is active.

**6 USB3.1 Gen1**



The system's USB 3.0 Gen 1 ports (5Gbps) are implemented via a xHCI (eXtensible Host Controller Interface) controller and are backward compatible with USB 2.0, USB 1.1 and USB 1.0 devices. Legacy USB is also supported so you can use USB keyboard/mouse in DOS environment. xHCI driver is supported natively in Windows 10, therefore you do not need to install xHCI driver in prior to utilize USB functions.

### 7 I210 Gigabit Ethernet Port



This Gigabit Ethernet port is implemented using Intel® I210-IT controller. The Ethernet port has one dedicated PCI Express link for maximum performance. Please refer to the table below for LED connection statuses.

#### Active/Link LED

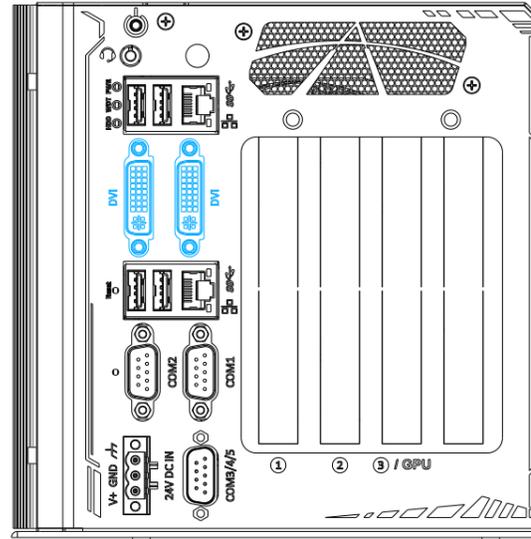
LED Color	Status	Description
Green	Off	Ethernet port is disconnected
	On	Ethernet port is connected and no data transmission
	Flashing	Ethernet port is connected and data is transmitting/receiving

#### Speed LED

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

To utilize the GbE port in Windows, you need to install corresponding driver for Intel® I210-IT/ I219-LM GbE controller.

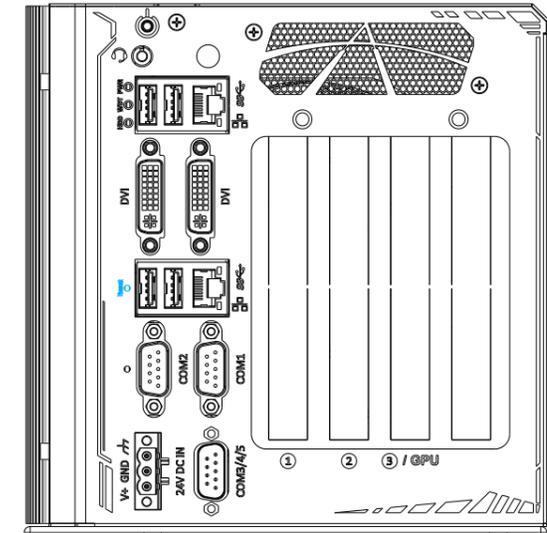
### 8 DVI Port



DVI-D transmits graphics data in digital format and therefore can deliver better image quality at high resolution. The DVI connector on the front panel can either output DVI signals or other digital signals (via an adapter/ cable) depending on the display device connected. It supports resolutions up to 1920x1200@60Hz.

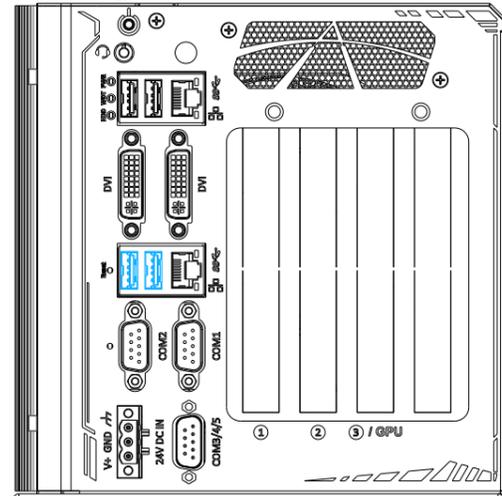
The system supports dual independent display outputs by connecting display devices to the two DVI ports. To support multiple display outputs and achieve best DVI output resolution in Windows, you need to install corresponding graphics driver. Please refer to section OS Support and Driver Installation for details.

### 9 Reset Button



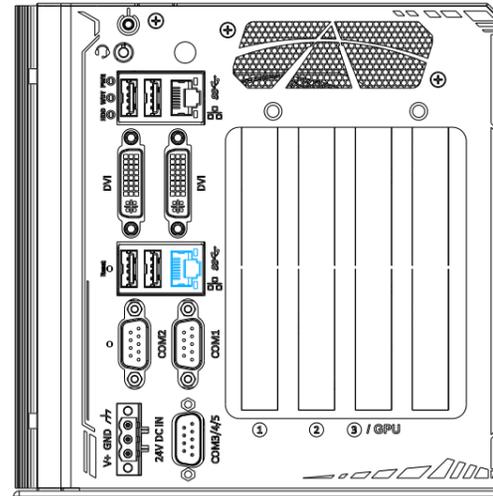
The reset button is used to manually reset the system in case of system halt or malfunction. To avoid unexpected reset, the button is purposely placed behind the panel. To reset, please use a pin-like object (eg. tip of a pen) to access the reset button.

### 10 I210 Gigabit Ethernet Port



The system's USB 3.0 Gen 1 ports (5Gbps) are implemented via xHCI (eXtensible Host Controller Interface) controller and are backward compatible with USB 2.0, USB 1.1 and USB 1.0 devices. Legacy USB is also supported so you can use USB keyboard/mouse in DOS environment. xHCI driver is supported natively in Windows 10, therefore you do not need to install xHCI driver in prior to utilize USB functions.

### 11 I219 Gigabit Ethernet Port



This Gigabit Ethernet port is implemented using Intel® I219-LM controller that supports Wake-on-LAN and is also compatible with Intel® AMT (Active Management Technology) to support advanced features such as remote SOL desktop and remote on/ off control. Each port has one dedicated PCI Express link for maximum performance. Please refer to the table below for LED connection statuses.

#### Active/Link LED

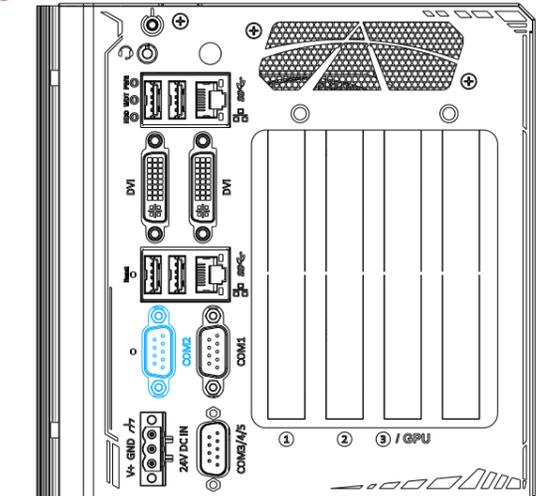
LED Color	Status	Description
Green	Off	Ethernet port is disconnected
	On	Ethernet port is connected and no data transmission
	Flashing	Ethernet port is connected and data is transmitting/receiving

#### Speed LED

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

To utilize the GbE port in Windows, you need to install corresponding driver for Intel® I210-IT/ I219-LM GbE controller.

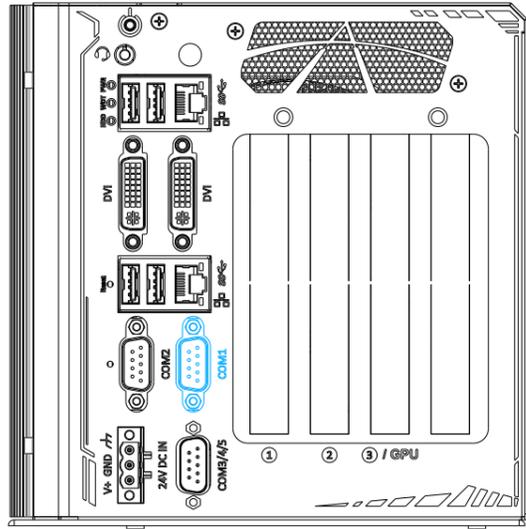
### 12 COM2 Port



COM2 is a software-configurable RS-422/ 485 port. The operation mode of COM2 can be set in BIOS setup utility. Please note that there is no termination for RS-422/ 485. The following table describes the pin definition of COM port.

Pin#	COM2	
	RS-422 Mode	RS-485 Mode
1		
2	422 TXD+	485 TXD+/RXD+
3	422 RXD+	
4	422 RXD-	
5	GND	GND
6		
7		
8	422 TXD-	485 TXD-/RXD-
9		

### 13 COM1 Port



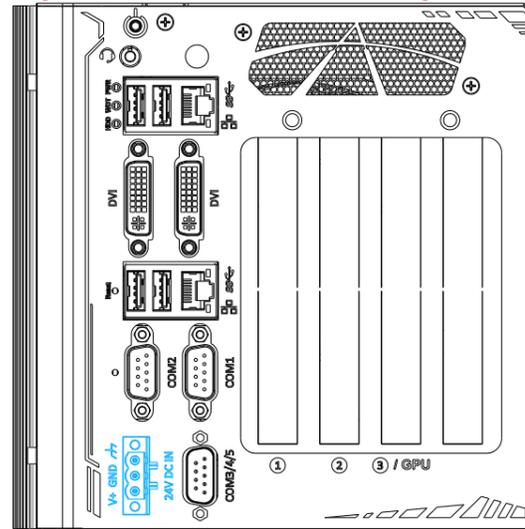
The COM1 port is implemented using industrial-grade ITE8786 Super IO chip (-40 to 85°C) and provide up to 115200 bps baud rate. It is a software-configurable RS-232/422/485 port. The operation mode of can be set in BIOS setup utility. The following table describes the pin definition of the COM port.



#### COM Port Pin Definition

Pin#	COM1		
	RS-232 Mode	RS-422 Mode	RS-485 Mode (Two-wire 485)
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 3-pin Terminal Block for DC Input



The system accepts a 24V DC power input via 3-pin pluggable terminal block, which is fit for field usage where DC power is provided. And the screw clamping connection of the terminal block gives a very reliable way of wiring DC power.

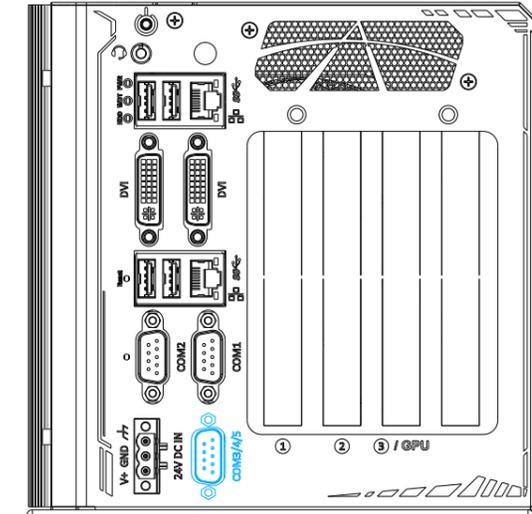
Symbol	Description
	Chassis ground (connected to the earth ground)
<b>GND</b>	Negative polarity (ground) of DC input
<b>V+</b>	Positive polarity of DC input



**WARNING**

Please make sure the voltage of DC power is correct before you connect it to the system.  
Supplying a voltage over 24V will damage the system.

### 15 COM3/ 4/ 5 Port



COM3, COM4 and COM5 are 3-wire RS-232 ports share single DB9 connector. You can directly connect this to one external device with 3-wire RS-232 interface, or use an optional 1-to-3 Y-cable to have three DB9 connectors for more devices. The following table describes the pin definition of the DB9 connector as well as the Y-cable.



Pin#	COM3/ 4/ 5 DB9		
	COM3	COM4	COM5
1			
2	RX		
3	TX		
4		TX	
5	GND	GND	GND
6		RX	
7			TX
8			RX
9			

Pin#	Y-Cable DB9
	COM3 (A)
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	
9	