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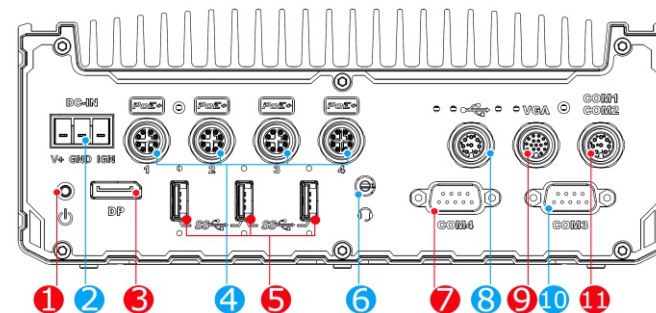
Unpack the equipment and make sure the following tools are available and delivered contents are correct before you begin the installation procedure.

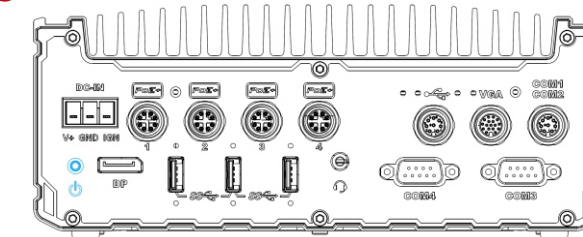1-1. User-provided tools
- Anti-static wrist wrap

1-2. Packing List

Item	Description	Quantity
01	SEMIL-1300 series system	1
02	Drivers & utilities disc	1

❷ Overview

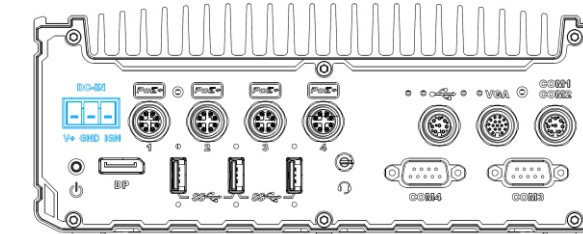| No.	Item	Description
1	Power button	Use this button to turn on or shutdown the system.
2	3-pin terminal block (DC/ ignition input)	Compatible with DC power input from 8~48V, the terminal block is also used for ignition signal input.
3	DisplayPort	Support display resolutions up to 4096 x 2304. Compatible with HDMI/ DVI via respective adapter cable (resolution may vary)
4	PoE+ GbE port	The M12 X-coded Power over Ethernet (PoE) ports provide both data connection and electric power to devices (eg. IP camera).
5	USB3.1 Gen 1	USB3.1 Gen 1 offers up to 5Gbps of data-throughput performance
6	3.5mm 4-pole audio jack	The 4-pole 3.5mm jack accepts microphone voice input and headphone speaker sound output.
7	COM 4	A DB9 RS-232 COM port
8	USB 2.0	The M12 A-coded USB 2.0 port offers two USB 2.0 connection
9	VGA	VGA output supports resolution up to 1920x1200@60Hz
10	COM 3	A 3-wire DB9 software-programmable RS-232/ 422/ 485 port
11	COM 1 & 2	The M12 A-coded connector offers two RS-232 ports

❸ Power Button

The power button is a non-latched switch for ATX mode on/off operation. To turn on the system, simply press the power button. 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.
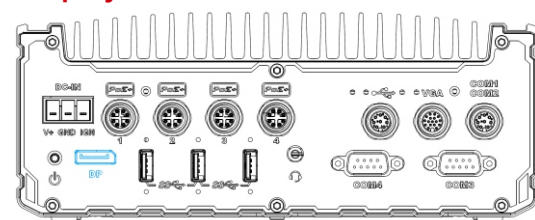
❹ 3-pin Terminal Block for DC and Ignition Input

The system accepts a wide range of DC power input from 8 to 48V via a 3-pin pluggable terminal block, which is fit for field usage where DC power is usually provided. The terminal block can also accept ignition signal input (IGN) for in-vehicle applications.

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.

❺ DisplayPort

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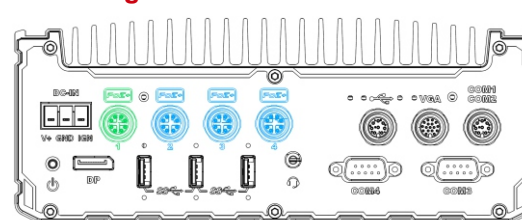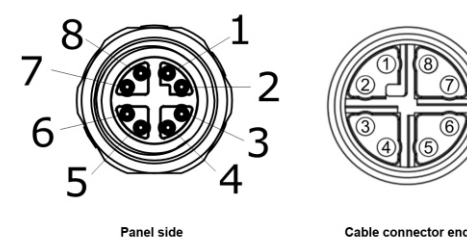

DP-to-HDMI   DP-to-DVI

The system supports triple independent display outputs by connecting display devices to VGA, DVI and DisplayPort. To support multiple display outputs and achieve best DisplayPort output resolution in Windows, you need to install corresponding graphics drivers.
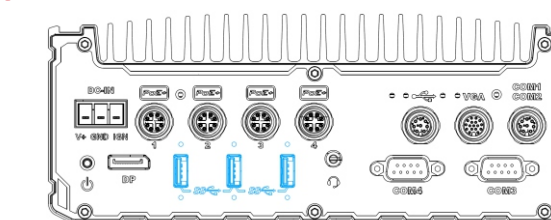
❻ PoE+ Gigabit Ethernet Port

The system offers four PoE+ GbE ports via M12 X-coded connectors on the front panel. The port marked in green is implemented using Intel® I219-LM controller that supports Wake-on-LAN and is also compatible with Intel AMT (Active Management Technology).
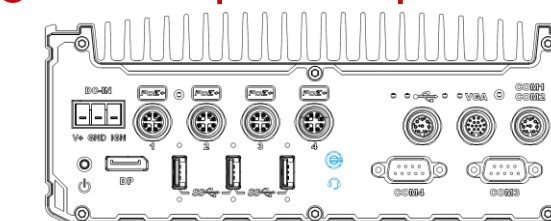
Connector Pin Definition

Panel side   Cable connector end

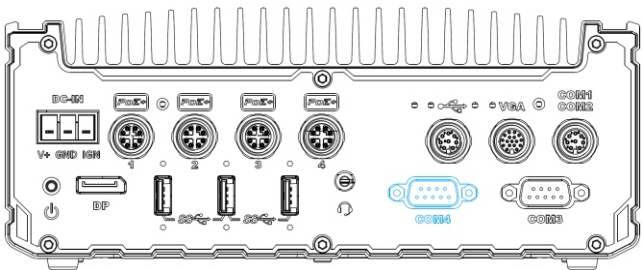| Signal	M12 panel side	M12 cable connector end	Wire color
LAN P0	1	1	Yellow
LAN N0	2	2	Yellow
LAN P1	3	3	Green
LAN N1	4	4	Green
LAN P3	5	5	Orange
LAN N3	6	6	Orange
LAN N2	7	7	Blue
LAN P2	8	8	Blue

❼ USB3.1 Gen 1 Port

The system's USB 3.1 Gen 1 ports (5Gbps) come with screw-lock mechanisms and are implemented via native xHCI (eXtensible Host Controller Interface) controller. They 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
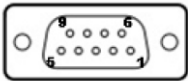
❽ 3.5mm Headphone/ Microphone Jack

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 motherboard chipset and audio.
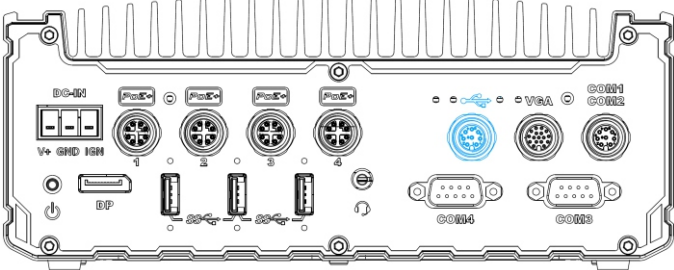
❾ COM Port 4

The COM 4 port is implemented using industrial-grade ITE8786 Super IO chip (-40 to 85°C) and provides up to 115200 bps baud rate.
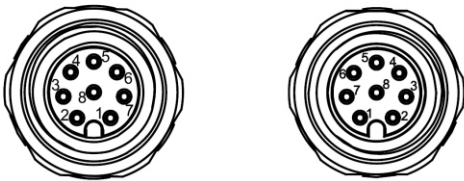
COM Port Pin Definition

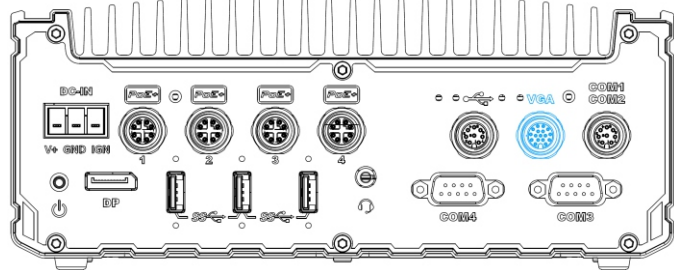|	COM4
Pin#	RS-232 Mode
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

❿ M12 USB2.0 Port

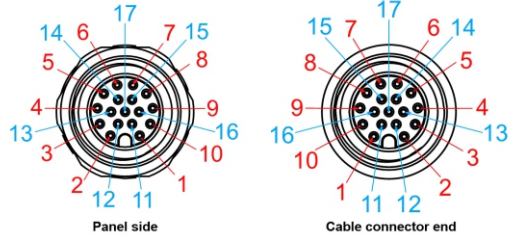The M12 A-coded connector provides two USB2.0 connections and is implemented via native xHCI (eXtensible Host Controller Interface) controller. … devices. Legacy USB support … ouse in DOS environment.

Connector Pin Definition

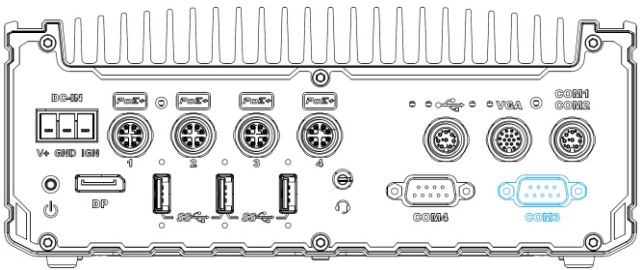| Signal	M12 panel side	M12 cable connector end	Wire color
D1+	1	1	
D1-	2	2	
VCC_USB	3	3	
GND	4	4	
GND	5	5	
VCC_USB	6	6	
D2-	7	7	
D2+	8	8	

⓫ VGA

VGA connector is the most common video display connection. The VGA output supports up to 1920x1200@60Hz resolution.

Connector Pin Definition

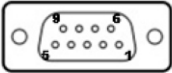| Signal	M12 panel side	M12 cable connector end	Wire color
Red	1	1	
GREEN	9	9	
BLUE	7	7	
GND	6	6	
GND	8	8	
GND	10	10	
GND	12	12	
GND	13	13	
GND	14	14	
GND	11	11	
GND	16	16	
GND	15	15	
P5V_VGA	17	17	
VGA_SDA	5	5	
HSYNC_CN	3	3	
VSYNC_CN	2	2	
VGA_SCL	4	4	

⓬ COM Port 3

COM port 3 is implemented using industrial-grade ITE8786 Super IO chip (-40 to 85°C) and provide up to 115200 bps baud rate to communicate with external devices.
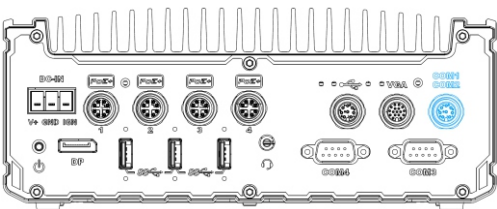The port is a software-configurable RS-232/422/485 port. The operation mode can be set in BIOS setup utility.
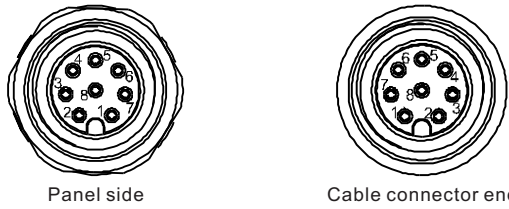
COM Port Pin Definition

	COM3		
Pin#	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		

⓭ COM Port 1/2

The system provides COM1 and COM2 ports via an M12 A-coded connector for communicating with external devices. These COM ports are 3-wire RS-232 specifications and provide up to 115200 bps baud rate

Pin Definition

Signal	M12 panel side	M12 cable connector end	Wire color
TXD1	1	1	
RXD1	2	2	
NC	3	3	x
PWR_IGN	4	4	
GND	5	5	
NC	6	6	x
RXD2	7	7	
TXD2	8	8	