

DC-1300

Intel® Alder Lake-N Processor Entry Performance and Compact Rugged Embedded Computer

RUGGED · COMPACT · STACKABLE

DC-1300, an Intel Alder Lake-N Core i3/N97 Computer



Overview

[CONTACT](#)

The DC-1300 is the entry-level option in the DIAMOND product line specially designed for basic industrial applications. It supports an Intel® Core™ i3 or N97 (Alder Lake-N) processor and maximum expansion flexibility in a compact design, providing a robust and reliable solution for space-constrained industrial automation applications.

Key Features

- Onboard Intel® Alder Lake-N Processor N97 and Core™ i3-N305 Processor
- 1 x DDR5 SO-DIMM Sockets, Supports up to 4800MHz 16GB Memory
- 1x M.2 Key B Type 3052/3042 Socket for 5G Module Expansion
- 1x M.2 key B Type 2242 Socket for I/O Module Expansion
- CMI Technology for Optional I/O Module Expansions
- CFM Technology for Power Ignition Sensing Function

Certifications



EN 61000-6-2



EN 61000-6-4



MIL-STD-810H

4.5X Performance

The Intel® Core™ i3-N305 processor (Alder Lake-N) option boasts 4.5 times the computing performance of the previous generation model, and features a DDR5 memory slot and multiple storage options (2.5" HDD/SSD, Half-Slim SSD, M.2 SSD, etc.) to flexibly meet various application needs.

Intel Alder Lake-N Platform



Compact Design for Flexible Installation

The compact size of only 185 x 131 x 56.5 mm is suitable for space-constrained installs and it supports various installation methods, including wall mount, side mount and DIN-Rail.

Complete Wireless Solution

A full range of wireless transmission options, including GSM, GNSS and Wi-Fi, are supported through the built-in SIM card slot, M.2 Key B slot, or M.2 Key E slot (using an adapter to convert from M.2 Key B).



Rich Expandability

The new Stackable Expansion Box (SEB) adds support for more I/O, CANbus, and Fieldbus modules via the DC-1300's dual M.2 B Key slots, while CMI/CFM technology enables extra I/O (COM, DIO, display), and IGN functions.

International Certification

Industrial-grade protection supports wide temperatures (-40 to 70°C) and wide voltages (9-48 VDC), and passes the EMC standard for industrial environments (IEC 61000-6-2/61000-6-4). US military standard (MIL-STD-810H) ensure reliable operation across various application scenarios.



EN 61000-6-2



EN 61000-6-4



Specifications

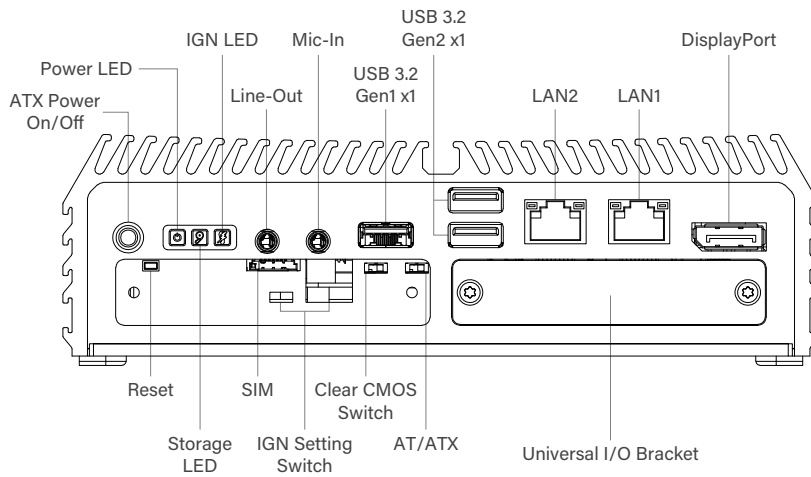
Model Name	DC-1300
System	
Processor	<ul style="list-style-type: none"> Onboard Intel® Alder Lake-N Series Processor: <ul style="list-style-type: none"> Intel® Core™ i3-N305 8 Cores Up to 3.80 GHz, TDP 15W Intel® Processor N97 4 Cores Up to 3.60 GHz, TDP 12W
Memory	<ul style="list-style-type: none"> 1x DDR5 4800 MHz SO-DIMM Socket, Supports Un-buffered and non-ECC Type, Up to 16GB
BIOS	<ul style="list-style-type: none"> AMI
Graphics	
Graphics Engine	<ul style="list-style-type: none"> Integrated Intel® UHD Graphics
Maximum Display Output	<ul style="list-style-type: none"> Supports Two Independent Display (Onboard 1x DisplayPort + Optional CMI 1x Display)
DP	<ul style="list-style-type: none"> 1x DisplayPort Connector (4096 x 2304 @60Hz) * Verified maximum resolution: 3840 x 2160 @ 60Hz
Audio	
Audio Codec	<ul style="list-style-type: none"> Realtek® ALC888, High Definition Audio
Line-out	<ul style="list-style-type: none"> 1x Line-out, Phone Jack 3.5mm
Mic-in	<ul style="list-style-type: none"> 1x Mic-in, Phone Jack 3.5mm
I/O	
LAN	<ul style="list-style-type: none"> 2x 2.5GbE LAN, RJ45 <ul style="list-style-type: none"> GbE1: Intel® I225 GbE2: Intel® I225
USB	<ul style="list-style-type: none"> 2 x USB 3.2 Gen2x1 (10Gbps), Type A 1 x USB 3.2 Gen1x1 (5Gbps), Type A 1 x USB 2.0 (480Mbps), Type A
COM	<ul style="list-style-type: none"> 2x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
Storage	
SSD/HDD	<ul style="list-style-type: none"> 1x 2.5" SATA HDD/SSD or 1x Half-Slim SSD (SATA 3.0)
M.2 SSD	<ul style="list-style-type: none"> 1x M.2 SSD Shared by M.2 Key B Type 3042/3052 Socket, Support SATA SSD (SATA3.0)
Expansion	
M.2 B Key Socket	<ul style="list-style-type: none"> 1x M.2 Key B Type 3042/3052 Socket (PCIe Gen 3x1/ USB3.2 Gen2 x1 / SATA), Support 5G/Storage/Add-on Card Expansion 1x M.2 Key B Type 2242 (PCIe Gen 3x1), Support Add-on Card Expansion
SIM Socket	<ul style="list-style-type: none"> 1x Front Accessible Dual Nano SIM Socket
CMI (Combined Multiple I/O) Interface	<ul style="list-style-type: none"> 1x CMI Interface for optional Display or I/O Module Expansion 1x CMI Interface for optional I/O Module Expansion
CFM (Control Function Module) Interface	<ul style="list-style-type: none"> 1x CFM Interface for optional IGN Module Expansion
Other Function	
Clear CMOS Switch	<ul style="list-style-type: none"> 1x Clear CMOS Switch
Reset Button	<ul style="list-style-type: none"> 1x Reset Button
Instant Reboot	<ul style="list-style-type: none"> Support 0.2sec Instant Reboot Technology
Watchdog Timer	<ul style="list-style-type: none"> Software Programmable Supports 256 Levels System Reset
Status LED Indicator	<ul style="list-style-type: none"> Power LED, Storage LED, IGN LED

Antenna Holes	<ul style="list-style-type: none"> • 2x Antenna Holes
Power	
Power Button	<ul style="list-style-type: none"> • 1x ATX Power On/Off Button
Power Mode Switch	<ul style="list-style-type: none"> • 1x AT/ATX Mode Switch
Power Input	<ul style="list-style-type: none"> • 9 - 48VDC, 3-pin Terminal Block
Remote Power On/Off	<ul style="list-style-type: none"> • 1x Remote Power On/Off, 2-pin Terminal Block
Max. Power Consumption	<ul style="list-style-type: none"> • i3-N305 CPU: 49.4W • N97 CPU: 35.9W - Test conducted with CPU, 1x RAM, and 1x storage - 100% load during burn-in testing
Inrush Current (Peak)	<ul style="list-style-type: none"> • i3-N305 CPU: 4.572 A@12V • N97 CPU: 4.475 A@12V
Remote Power LED	<ul style="list-style-type: none"> • 1x Remote Power LED, 2-pin Terminal Block
Physical	
Dimension(W x D x H)	<ul style="list-style-type: none"> • 185 x 131 x 56.5 mm
Weight Information	<ul style="list-style-type: none"> • 1.5 Kg
Mechanical Construction	<ul style="list-style-type: none"> • Extruded Aluminum with Heavy Duty Metal
Mounting	<ul style="list-style-type: none"> • Wall / Side / DIN-RAIL / VESA Mount
Physical Design	<ul style="list-style-type: none"> • Fanless Design • Cableless Design • Jumper-less Design • Unibody Design
Reliability & Protection	
Reverse Power Input Protection	<ul style="list-style-type: none"> • Yes
Over Voltage Protection	<ul style="list-style-type: none"> • Protection Range: 51~58V • Protection Type: shut down operating voltage, re-power on at the preset level to recover
Over Current Protection	<ul style="list-style-type: none"> • 15A
MTBF	<ul style="list-style-type: none"> • 520,224 Hours - Database: Telcordia SR-332 Issue 3, Method 1, Case 3
Operating System	
Windows	<ul style="list-style-type: none"> • Windows®11, Windows®10
Linux	<ul style="list-style-type: none"> • Ubuntu Desktop 22.04 LTS

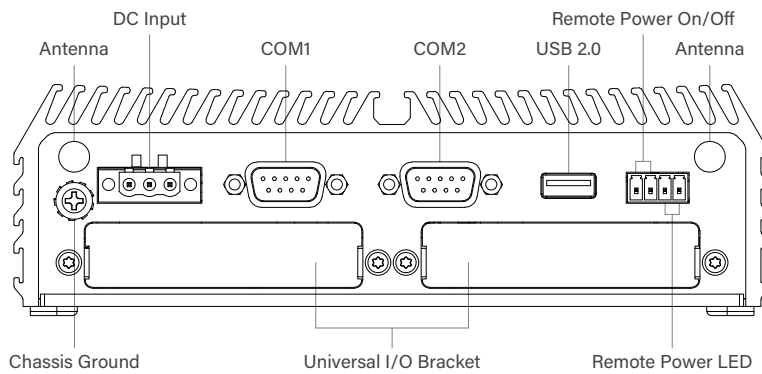
Environment	
Operating Temperature	<ul style="list-style-type: none"> • 12W TDP Processor: -40°C to 70°C • 15W TDP Processor: -40°C to 60°C * PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling) * With extended temperature peripherals; Ambient with air flow * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14
Storage Temperature	<ul style="list-style-type: none"> • -40°C to 70°C
Relative Humidity	<ul style="list-style-type: none"> • 12W TDP Processor: 95% RH @ 70°C (Non-condensing) • 15W TDP Processor: 95% RH @ 60°C (Non-condensing)
Shock	<ul style="list-style-type: none"> • MIL-STD-810H
Vibration	<ul style="list-style-type: none"> • MIL-STD-810H
EMC	<ul style="list-style-type: none"> • CE, UKCA, FCC, ICES-003 Class A
EMI	<ul style="list-style-type: none"> • CISPR 32 Conducted & Radiated: Class A • EN/BS EN 55032 Conducted & Radiated: Class A • EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A • EN/BS EN61000-3-3 Voltage fluctuations & flicker • FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	<ul style="list-style-type: none"> • EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV • EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 10 V/m • EN/IEC 61000-4-4 EFT: AC Power: 2 kV; DC Power: 1 kV; Signal: 1 kV • EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV • EN/IEC 61000-4-6 CS: 10V (*Compliant with the standard when utilizing shielded ethernet cable.) • EN/IEC 61000-4-8 PFMF: 50 Hz, 30A/m • EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 1 cycles at 60 Hz
Industrial Environment	<ul style="list-style-type: none"> • EMC : - EN/BS/IEC 61000-6-4: 2019 Class A - EN/BS/IEC 61000-6-2: 2019

External Layout

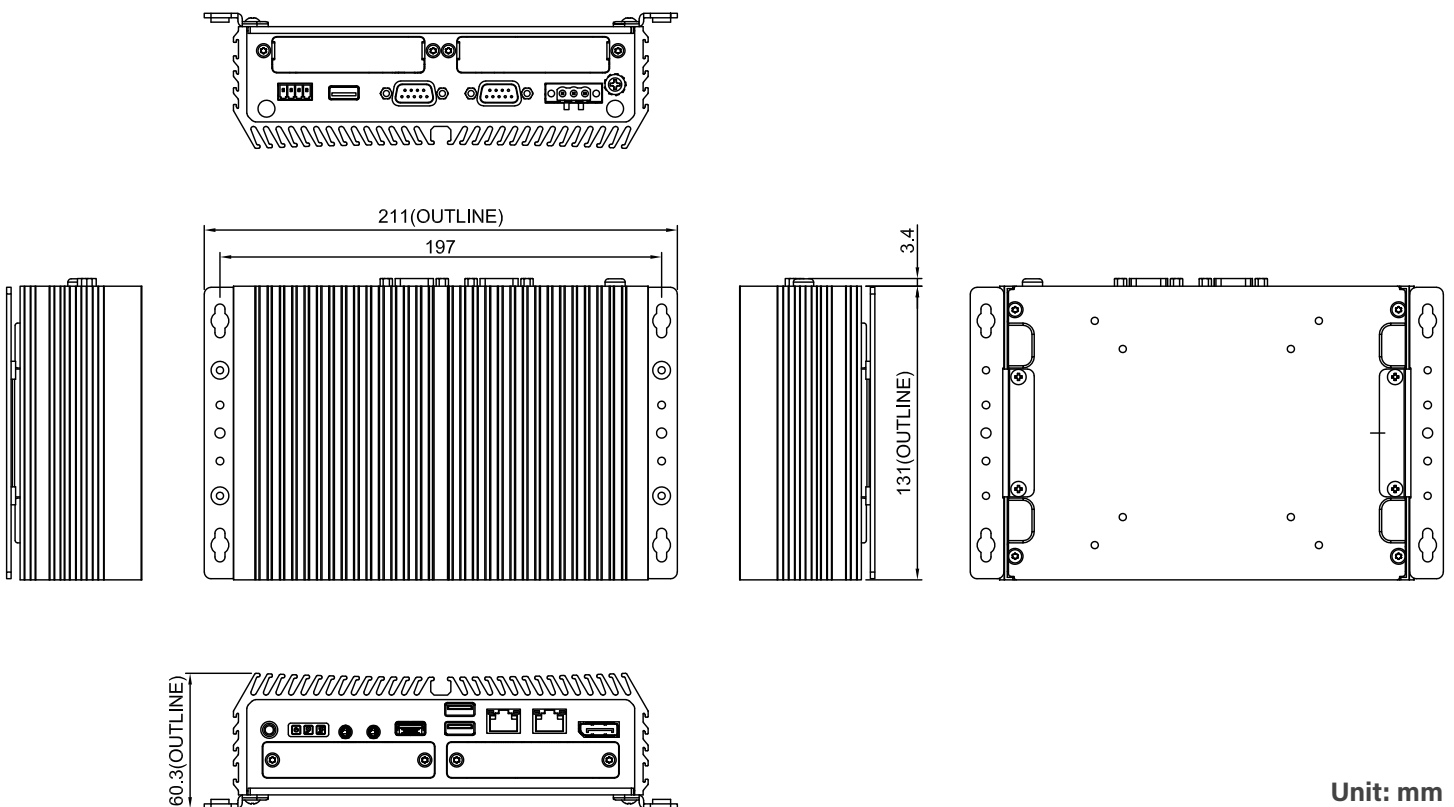
Front I/O



Rear I/O



Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
DC-1300-i3-R10	Intel® Core™ i3-N305 Entry Performance and Compact Rugged Embedded Computer
DC-1300-N97-R10	Intel® Processor N97 Entry Performance and Compact Rugged Embedded Computer

Package Checklist

• DC-1300 Embedded Computer x1	• Power Terminal Block Connector x1
• CPU Thermal Pad x1	• Remote Power On/Off + Remote Power LED Connector x1
• Screw Pack x1	• M.2 Key B Type 3052 to 3042 Adapter Bracket x1
• Wall Mounting Kit x1	

Optional Stackable Expansion Box

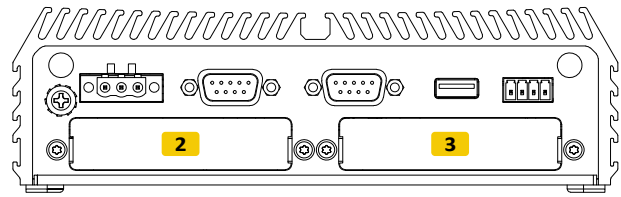
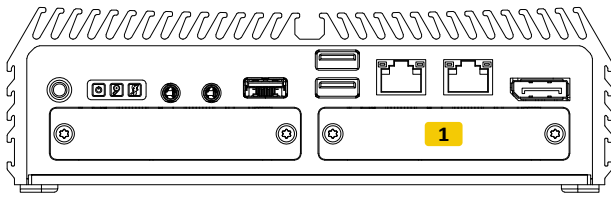
Model No.	Description
SEB-DC01-R10	Stackable Expansion Box with 4x Expansion Area for DC Series








Optional Modules and Accessories

Model No.	Description
CMI-VGA01	CMI Module with 1x VGA Port
CMI-DVI01	CMI Module with 1x DVI-D Connector
CMI-HD02	CMI Module with 1x HDMI Port
CMI-DP03-R10	CMI Module with 1x DisplayPort
CMI-COM03	CMI Module with 2x RS232/422/485 Ports (Support 5V/12V), 2x DB9 Connector
CMI-DIO03	CMI Module with 8x DIO (4in 4out) Ports, 1x 10 Pin Terminal Block
CFM-IGN02	CFM Module with Power Ignition Sensing Function, Select 12V/24V
MEC-LAN-2002i	M.2 2242/2260/2280 2-port 10/100/1000 isolated Ethernet board (-40°C~+85°C), 2x RJ45 Connector
MEC-LAN-2002i-S	M.2 2242/2260/2280 2-port 10/100/1000 isolated Ethernet board (0°C~+70°C), 2x RJ45 Connector
MEC-USB-2002	M.2 2242/2260/2280 2-port USB 3.2 board (0°C~+70°C), 2x USB Type A Connector
MEC-USB-2002C	M.2 2242/2260/2280 2-port USB 3.2 board (0°C~+70°C), 2x USB Type C Connector
MEC-CAN-2812i	M.2 2242/2260/2280 (B+M key) 2x isolated CAN bus 2.0B board (-40°C~+85°C), 2x DB9 Connector
MEC-CAN-2814i	M.2 2242/2260/2280 (B+M key) quad isolated CAN bus 2.0B board (-40°C~+85°C), 4x DB9 Connector
UB1103	Universal Bracket with 2x DB9 Cutout for CMI-COM & MEC-CAN Expansion
UB1106-R10	Universal Bracket with 1x DP Cutout for CMI-DP Expansion
UB1107	Universal Bracket with 1x DVI Cutout for CMI-DVI Expansion
UB1108	Universal Bracket with 1x HDMI Cutout for CMI-HDMI Expansion

UB1111	Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion
UB1114-R10	Universal Bracket with 2x USB Type A Cutout for MEC-USB Expansion
UB1115	Universal Bracket with 1x 10 Pin Terminal Block Cutout for CMI-DIO Expansion
UB1116	Universal Bracket with 1x DB9 Cutout for CMI-VGA Expansion
UB1131-R10	Universal Bracket with 2x Antenna Cutout
UB1133-R10	Universal Bracket with 2x USB Type C Cutout for MEC-USB Expansion
AC-BE01-R10	M.2 Key B Type 2242 to M.2 Key E Type 2230 Adapter Card
SIDE03	Side Mount Kit for DC Series, with KMRH-K175 for DIN-Rail Mount
DIN01	DIN-RAIL Mount Kit, KMRH-K175
VESA-DC	DC series VESA Mount Kit
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W with 3pin Terminal Block Plug and Tubes, Level VI
GST120A24-CIN	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug and Tubes, Level VI

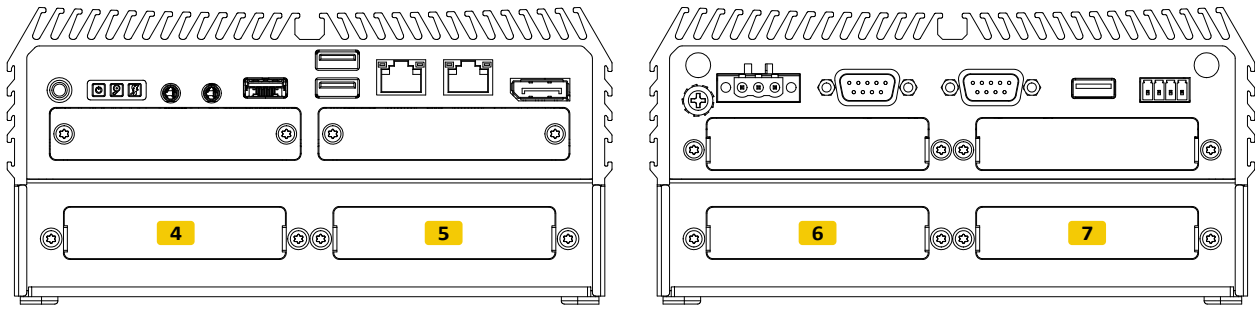
Optional Module Configuration for DC-1300





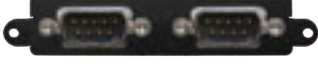




Model No.	Description	1	2	3
 <p>CMI-VGA01-R10/UB1116</p>	CMI Module with 1x VGA Port / Universal Bracket with 1x DB9 Cutout for CMI-VGA Expansion	-	-	V
 <p>CMI-DVI01-R10/UB1107</p>	CMI Module with 1x DVI-D Connector / Universal Bracket with 1x DVI Cutout for CMI-DVI Expansion	-	-	V
 <p>CMI-HD02-R10/UB1108</p>	CMI Module with 1x HDMI Port / Universal Bracket with 1x HDMI Cutout for CMI-HDMI Expansion	-	-	V
 <p>CMI-DP03-R10/UB1106-R10</p>	CMI Module with 1x DisplayPort / Universal Bracket with 1x DP Cutout for CMI-DP Expansion	-	-	V
 <p>CMI-COM03-R10/UB1103</p>	CMI Module with 2x RS232/422/485 Ports (Support 5V/12V), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM & MEC-CAN Expansion	-	V	V
 <p>CMI-DIO03-R10/UB1115</p>	CMI Module with 8x DIO (4in 4out) Ports, 1x 10 Pin Terminal Block / Universal Bracket with 1x 10 Pin Terminal Block Cutout for CMI-DIO Expansion	-	V	V
 <p>UB1131-R10</p>	Universal Bracket with 2x Antenna Cutout	-	V	V

V : Compatible

Optional Module Configuration for Stackable Expansion Box



Model No.	Description	4	5	6	7
 <p>MEC-LAN-2002i/UB1111</p>	M.2 2242/2260/2280 2-port 10/100/1000 isolated Ethernet board (-40°C~+85°C), 2x RJ45 Connector / Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion	V	V	V	V
 <p>MEC-LAN-2002i-S/UB1111</p>	M.2 2242/2260/2280 2-port 10/100/1000 isolated Ethernet board (0°C~+70°C), 2x RJ45 Connector / Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion	V	V	V	V
 <p>MEC-USB-2002/UB1114-R10</p>	M.2 2242/2260/2280 2-port USB 3.2 board (0°C~+70°C), 2x USB Type A Connector / Universal Bracket with 2x USB Type A Cutout for MEC-USB Expansion	V	V	V	V
 <p>MEC-USB-2002C/UB1133-R10</p>	M.2 2242/2260/2280 2-port USB 3.2 board (0°C~+70°C), 2x USB Type C Connector / Universal Bracket with 2x USB Type C Cutout for MEC-USB Expansion	V	V	V	V
 <p>MEC-CAN-2812i/UB1103</p>	M.2 2242/2260/2280 (B+M key) 2x isolated CAN bus 2.0B board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM & MEC-CAN Expansion	V	V	V	V
 <p>MEC-CAN-2814i/UB1103</p>	M.2 2242/2260/2280 (B+M key) quad isolated CAN bus 2.0B board (-40°C~+85°C), 4x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM & MEC-CAN Expansion	V	V	V	V
 <p>UB1131-R10</p>	Universal Bracket with 2x Antenna Cutout	V	V	V	V

V : Compatible