

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 Core™ i3-N305, Processor N97 and Atom® x7425E Processor
- 1 x DDR5 SO-DIMM Sockets, Supports up to 4800MHz 16GB Memory
- 1x M.2 Key B Type 3052/3042 Socket for 5G/GNSS 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
- Safety Standard: UL, cUL, CB, IEC, EN 62368-1

Certifications



EN 61000-6-2



EN 61000-6-4



MIL-STD-810H



EN 62368-1



UL US LISTED

CB

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

I3-N305 | 15W

+4.5X 

N97 | 12W

N4200 | 6W



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



MIL-STD-810H



-40 ~ 70°C
-40 ~ 158°F



9 - 48VDC

Specifications

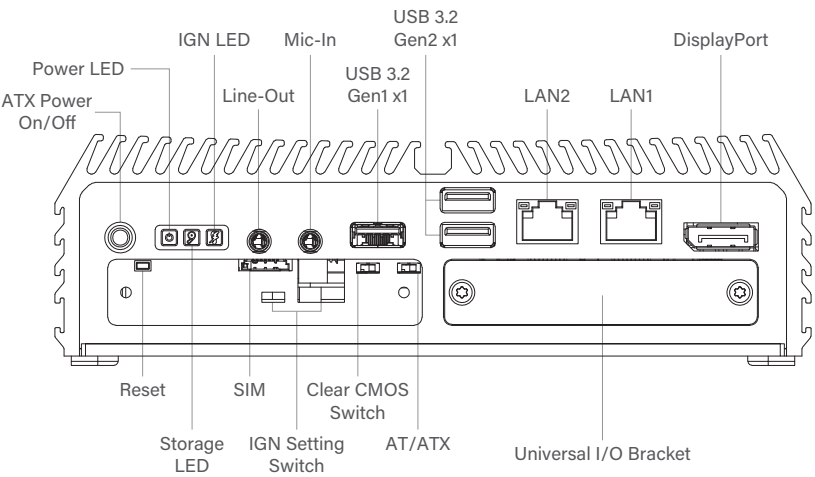
Model Name	DC-1300
System	
Processor	- Onboard Intel® Alder Lake-N Series Processor: - Intel® Core™ i3-N305 8 Cores Up to 3.80 GHz, TDP 15W - Intel® Processor N97 4 Cores Up to 3.60 GHz, TDP 12W - Intel Atom® x7425E 4 Cores Up to 3.40 GHz, TDP 12W
Memory	1x DDR5 4800 MHz SO-DIMM Socket, Supports Un-buffered and non-ECC Type, Up to 16GB
BIOS	AMI
Graphics	
Graphics Engine	Integrated Intel® UHD Graphics
Maximum Display Output	Supports Two Independent Display (Onboard 1x DisplayPort + Optional CMI 1x Display)
DP	1x DisplayPort Connector (4096 x 2304 @60Hz) * Verified maximum resolution: 3840 x 2160 @ 60Hz
Audio	
Audio Codec	Realtek® ALC888, High Definition Audio
Line-out	1x Line-out, Phone Jack 3.5mm
Mic-in	1x Mic-in, Phone Jack 3.5mm
I/O	
LAN	2x 2.5GbE LAN, RJ45 - GbE1: Intel® I226 - GbE2: Intel® I226
USB	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	2x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
Storage / Expansion	
2.5" Storage	1x 2.5" SATA HDD/SSD or 1x Half-Slim SSD (SATA 3.0)
M.2 Key B Socket	1x M.2 Key B Type 3042/3052 Socket (PCIe Gen 3x1/ USB3.2 Gen2 x1 / SATA), Support 5G/Storage/GNSS/Add-on Card Expansion 1x M.2 Key B Type 2242 (PCIe Gen 3x1 / USB2.0), Support Storage/GNSS/Add-on Card Expansion
SIM Socket	1x Front Accessible Dual Nano SIM Socket
CMI (Combined Multiple I/O) Interface	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	1x CFM Interface for optional IGN Module Expansion
Other Function	
Clear CMOS Switch	1x Clear CMOS Switch
Reset Button	1x Reset Button
Watchdog Timer	Software Programmable Supports 256 Levels System Reset
Status LED Indicator	Power LED, Storage LED, IGN LED
Antenna Holes	2x Antenna Holes

Power	
Power Button	1x ATX Power On/Off Button
Power Mode Switch	1x AT/ATX Mode Switch
Power Input	9 - 48VDC, 3-pin Terminal Block
Remote Power On/Off	1x Remote Power On/Off, 2-pin Terminal Block
Max. Power Consumption	- 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)	- i3-N305 CPU: 4.572 A@12V - N97 CPU: 4.475 A@12V
Remote Power LED	1x Remote Power LED, 2-pin Terminal Block
Physical	
Dimension(W x D x H)	185 x 131 x 56.5 mm
Weight Information	1.5 Kg
Mechanical Construction	Extruded Aluminum with Heavy Duty Metal
Mounting	Wall / Side / DIN-RAIL / VESA Mount
Physical Design	- Fanless Design - Cableless Design - Jumper-less Design - Unibody Design
Reliability & Protection	
Reverse Power Input Protection	Yes
Over Voltage Protection	- Protection Range: 51~58V - Protection Type: shut down operating voltage, re-power on at the preset level to recover
Over Current Protection	15A
MTBF	520,224 Hours - Database: Telcordia SR-332 Issue 3, Method 1, Case 3
Operating System	
Windows	Windows®11, Windows®10
Linux	Ubuntu Desktop 22.04 LTS
Environment	
Operating Temperature	12W TDP Processor: -40°C to 70°C (-40°F to 158°F) 15W TDP Processor: -40°C to 60°C (-40°F to 140°F) 15W TDP Processor: -40°C to 65°C (-40°F to 149°F) with External Fan Kit * PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling) * With extended temperature peripherals and 1.2 m/s ambient airflow * According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Relative Humidity	12W TDP Processor: 95% RH @ 70°C (Non-condensing) 15W TDP Processor: 95% RH @ 60°C (Non-condensing)
Shock	MIL-STD-810H
Vibration	MIL-STD-810H
EMC	CE, UKCA, FCC, ICES-003 Class A

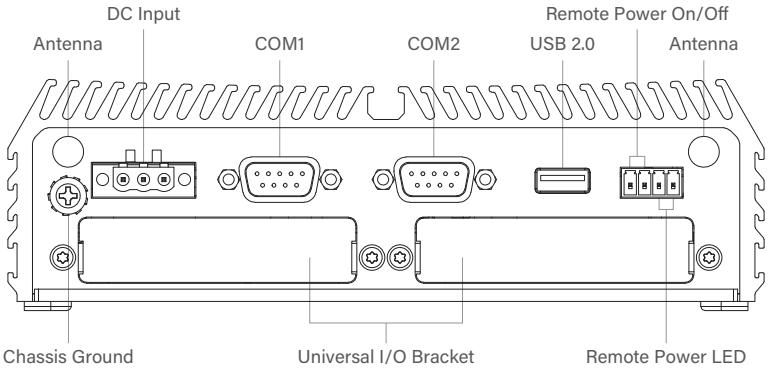
EMI	• CISPR 32 Conducted & Radiated: Class A • EN/BS EN 55032 Conducted & Radiated: Class A • EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A • EN/BS EN61000-3-3 Voltage fluctuations & flicker • FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	• EN/IEC 61000-4-2 ESD: Contact: 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	• EMC : - EN/BS/IEC 61000-6-4: 2019 Class A - EN/BS/IEC 61000-6-2: 2019
Safety	• UL, cUL, CB, IEC, EN 62368-1

External Layout

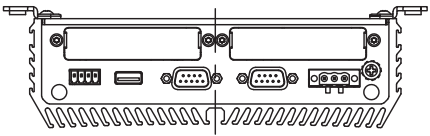
Front I/O



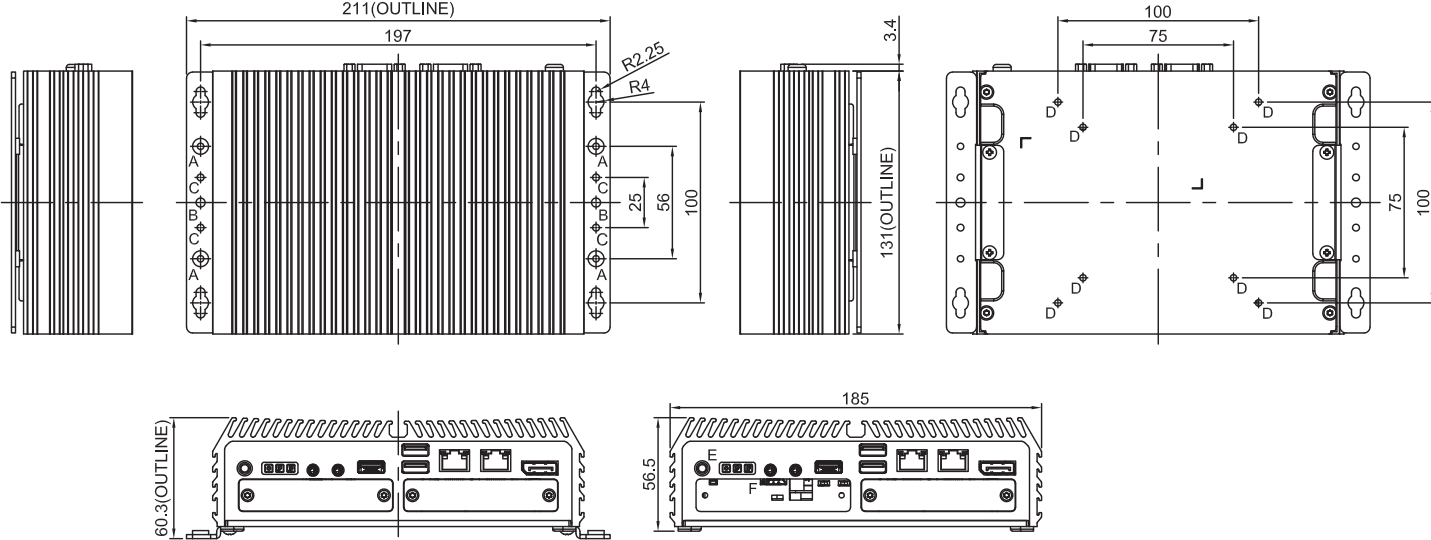
Rear I/O



Dimensions



NOTE:
1.A:4-M4 NUT
2.B:2- ϕ 4.5 Hole
3.C:4- ϕ 3.5 Hole
4.D:8-M4 VESA Screw Hole



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
DC-1300-x7425E-R10	Intel® Atom® x7425E 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

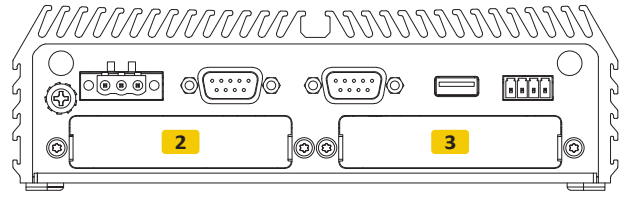
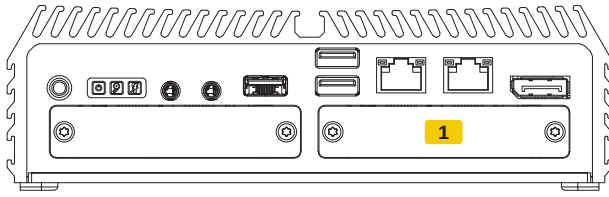
Model No.	Description
SEB-DC01-R10	Stackable Expansion Box with 4x Expansion Area for DC Series

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
CMI-FAN01-R10	CMI Module with 1x 4-pin Fan Connector
CFM-IGN02	CFM Module with Power Ignition Sensing Function, Select 12V/24V
MEC-LAN-2002i	M.2 2242/2260/2280 (B+M key) 2-port 10/100/1000 isolated Ethernet board(-40°C~+85°C), 2x RJ45 Connector
MEC-LAN-2002i-S	M.2 2242/2260/2280 (B+M key) 2-port 10/100/1000 isolated Ethernet board(0°C~+70°C), 2x RJ45 Connector
MEC-USB-2002	M.2 2242/2260/2280 (B+M key) 2-port USB 3.2 board(0°C~+70°C), 2x USB Type A Connector
MEC-USB-2002C	M.2 2242/2260/2280 (B+M key) 2-port USB 3.2 board(0°C~+70°C), 2x USB Type C Connector
MEC-COM-2012	M.2 2242/2260/2280 (B+M key) 2-port RS-232 serial board (-40°C~+85°C), 2x DB9 Connector
MEC-COM-2032i	M.2 2242/2260/2280 (B+M key) 2-port RS-232/422/485 isolated serial board (-40°C~+85°C), 2x DB9 Connector
MEC-CAN-2812i	M.2 2242/2260/2280 (B+M key) dual 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

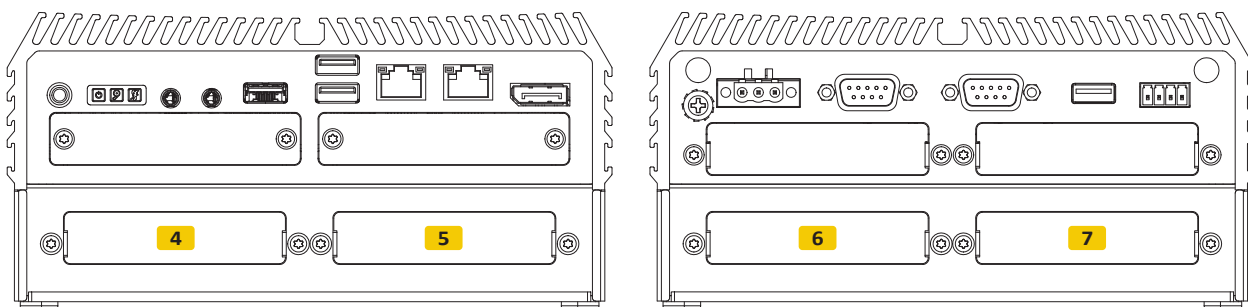
UB1103	Universal Bracket with 2x DB9 Cutout for CMI-COM, MEC-COM & MEC-CAN Expansion
UB1106-R10	Universal Bracket with 1x DP Cutout for CMI-DP Expansion
UB1107	Universal Bracket with 1x DVI Cutout for CMI-DVI Expansion
UB1108	Universal Bracket with 1x HDMI Cutout for CMI-HDMI Expansion
UB1111	Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion
UB1115	Universal Bracket with 1x 10 Pin Terminal Block Cutout for CMI-DIO Expansion
UB1116	Universal Bracket with 1x VGA Cutout for CMI-VGA Expansion
UB1129	Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion (DC Series Rear Bezel)
UB1131-R10	Universal Bracket with 2x Antenna Cutout
UB1133-R10	Universal Bracket with 2x USB Type C Cutout for MEC-USB Expansion
UB1134-R10	Universal Bracket with 2x USB Type A Cutout for MEC-USB (M.2 interface) Expansion
UB1135-R10	Universal Bracket with 1x 4-Pin Terminal Block Cutout for CMI-FAN Expansion
UB1911-R10	Universal Bracket with 2x RJ45 Cutout for MEC-LAN Expansion (DC Series Front Bezel)
FAN-EX105-R10	External Fan with 4pin Terminal Block Plug and Mounting Bracket, Support Smart Fan
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

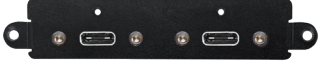
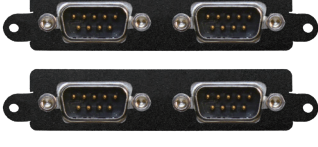
Optional Module Configuration for DC-1300



Model No.	Description	1	2	3
MEC-LAN-2002i/UB1911-R10 	M.2 2242/2260/2280 (B+M key) 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 (DC Series Front Bezel)	V	-	-
MEC-LAN-2002i-S/UB1911-R10 	M.2 2242/2260/2280 (B+M key) 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 (DC Series Front Bezel)	V	-	-
MEC-LAN-2002i/UB1129 	M.2 2242/2260/2280 (B+M key) 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 (DC Series Rear Bezel) * Only compatible with Half-Slim and M.2 SSDs when MEC-LAN is installed at the Rear Bezel.	-	-	V
MEC-LAN-2002i-S/UB1129 	M.2 2242/2260/2280 (B+M key) 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 (DC Series Rear Bezel) * Only compatible with Half-Slim and M.2 SSDs when MEC-LAN is installed at the Rear Bezel.	-	-	V
CMI-VGA01/UB1116 	CMI Module with 1x VGA Port / Universal Bracket with 1x VGA Cutout for CMI-VGA Expansion	-	-	V
CMI-DVI01/UB1107 	CMI Module with 1x DVI-D Connector / Universal Bracket with 1x DVI Cutout for CMI-DVI Expansion	-	-	V
CMI-HD02/UB1108 	CMI Module with 1x HDMI Port / Universal Bracket with 1x HDMI Cutout for CMI-HDMI Expansion	-	-	V
CMI-DP03-R10/UB1106-R10 	CMI Module with 1x DisplayPort / Universal Bracket with 1x DP Cutout for CMI-DP Expansion	-	-	V
CMI-COM03/UB1103 	CMI Module with 2x RS232/422/485 Ports (Support 5V/12V), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM, MEC-COM & MEC-CAN Expansion	-	V	V
CMI-DIO03/UB1115 	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
CMI-FAN01-R10/UB1135-R10 	CMI Module with 1x 4-pin Fan Connector / Universal Bracket with 1x 4-Pin Terminal Block Cutout for CMI-FAN Expansion	-	V	-
UB1131-R10 	Universal Bracket with 2x Antenna Cutout	-	V	V

Optional Module Configuration for Stackable Expansion Box



Model No.	Description	4	5	6	7
 MEC-LAN-2002i/UB1111	M.2 2242/2260/2280 (B+M key) 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
 MEC-LAN-2002i-S/UB1111	M.2 2242/2260/2280 (B+M key) 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
 MEC-USB-2002/UB1134-R10	M.2 2242/2260/2280 (B+M key) 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 (M.2 interface) Expansion * Only compatible with Half-Slim and M.2 SSDs when MEC-USB is installed.	V	V	V	V
 MEC-USB-2002C/UB1133-R10	M.2 2242/2260/2280 (B+M key) 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 * Only compatible with Half-Slim and M.2 SSDs when MEC-USB is installed.	V	V	V	V
 MEC-COM-2012/UB1103	M.2 2242/2260/2280 (B+M key) 2-port RS-232 serial board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM, MEC-COM & MEC-CAN Expansion	V	V	V	V
 MEC-COM-2032i/UB1103	M.2 2242/2260/2280 (B+M key) 2-port RS-232/422/485 isolated serial board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM, MEC-COM & MEC-CAN Expansion	V	V	V	V
 MEC-CAN-2812i/UB1103	M.2 2242/2260/2280 (B+M key) dual isolated CAN bus 2.0B board (-40°C~+85°C), 2x DB9 Connector / Universal Bracket with 2x DB9 Cutout for CMI-COM, MEC-COM & MEC-CAN Expansion	V	V	V	V
 MEC-CAN-2814i/UB1103	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-COM & MEC-CAN Expansion	V		V	
 UB1131-R10	Universal Bracket with 2x Antenna Cutout	V	V	V	V

V : Compatible