

P2002 Series

Intel® 6th Generation Core™ U Series (Skylake) Fanless Computer with CFM and CDS Interface



Overview

[CONTACT](#)

Cincoze P2002 Series is a high performance fanless embedded and display computer powered by Intel® 6th generation Core™ U series processor with only 15 watts power consumption. The advanced graphics engine support triple independent display with 1x VGA, 1x DVI-D and 1x CDS interface. P2002 Series provides great connectivity with rich I/O including 2x GbE LAN, 5x USB and 6x COM ports. P2002 Series also supports 3 types of storage devices including 2.5" SATA HDD, CFast and mSATA. The accessible design of these storage devices allows quick data access and easy maintenance. P2002 Series supports CFM Technology which allows you to extend PoE (max 25.5W) and IGN function with additional modules. And thanks to Cincoze's exclusive CDS Technology, P2002 Series also acts as an engine of panel PC for CV-100 Series. P2002 Series is truly a rugged computing system by supporting wide operating temperature from -25°C to 70°C, wide range DC power input from 9V to 48V, high tolerance of shock and vibration, various kinds of industrial protection and the integrated SuperCap for battery maintenance- free, those features allow P2002 to be easily deployed in harsh environment and critical applications.

Key Features

- Onboard Intel® 6th Generation Core™ U Series Processor (15W)
- 2x DDR4 SO-DIMM Socket, Support Up to 2133MHz, 32 GB
- Support Triple Independent Display(VGA/DVI-D/CDS)
- 2x 2.5" SATA HDD Bay, 1x mSATA and 1x CFast Socket
- 2x Full Size Mini-PCIe Socket
- Expandable PCI/PCIe Feature (For P2002E only)
- CFM Technology for Power Ignition Sensing & PoE Function (25.5W)
- Rich I/O (2x GbE LAN, 5x USB, 6x COM, 16x Isolated DIO)
- Support 0.2 sec Instant Reboot Technology
- Supports Cincoze Patent CDS Technology (Patent No. M482908)
- Wide Operating Temperature (-25°C to 70°C)

Certifications



CDS Technology

P1101 is a slim embedded fanless computer. Based on Intel® Atom® / Pentium® processor, the system can operate up to triple independent displays and support 4K2K display resolution.

CFM Technology

P1101 provides extensive I/O, Mini-PCIe slot, 2.5" SATA drive bay, mSATA, and SIM card slot. It also supports power ignition sensing and PoE by adding ready-to-use CFM modules.

Instant Reboot

CDS (Convertible Display Systems) is a Cincoze patented technology, which features with modular design, configured on demand, scalability, transformability and Plug & Play.

SuperCap

SuperCap is extremely high volume capacitor, which can be recharged automatically when power is connected (without power Min. 50 days /Max. 70 days), you never need to change CMOS battery, and it makes P2002 a truly reliable and maintenance-free system.

P2002 Series Specifications

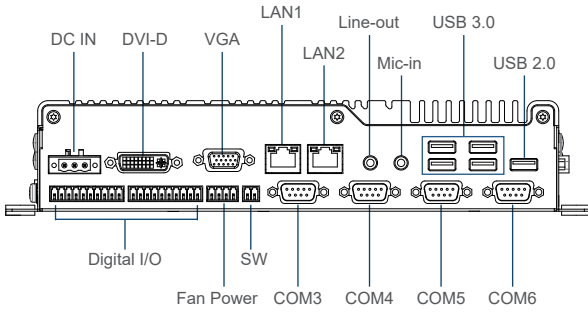
| Model Name | P2002 | P2002E |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| System | | |
| Processor | <ul style="list-style-type: none"> Onboard 6th Intel® Core™ U processors (Skylake) <ul style="list-style-type: none"> Intel® Core™ i5-6300U processor (3M Cache, up to 3.00 GHz) Intel® Core™ i3-6100U processor (3M Cache, 2.30 GHz) TDP: 15 W | |
| Memory | <ul style="list-style-type: none"> 2x DDR4 2133 MHz 260-Pin SO-DIMM Socket Support Un-buffered and Non-ECC Type up to 32 GB | |
| BIOS | <ul style="list-style-type: none"> AMI 64Mbit SPI BIOS | |
| Graphics | | |
| Graphics Engine | <ul style="list-style-type: none"> Integrated Intel® UHD Graphics 520 | |
| Maximum Display Output | <ul style="list-style-type: none"> Supports Triple Independent Display | |
| CDS | <ul style="list-style-type: none"> 1x CDS Connector for Cincoze Display Module | |
| VGA | <ul style="list-style-type: none"> 1x VGA Connector(1920 x 1080 @60Hz), DB-15 | |
| DVI-D | <ul style="list-style-type: none"> 1x DVI-D Connector (1920 x 1080 @ 60Hz) | |
| Audio | | |
| Audio Codec | <ul style="list-style-type: none"> Realtek® ALC888, High-Definition Audio | |
| Speaker-out | <ul style="list-style-type: none"> 1x Speaker-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 GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45 <ul style="list-style-type: none"> GbE1: Intel® I219LM GbE2: Intel® I210 | |
| USB | <ul style="list-style-type: none"> 4x USB 3.2 Gen1 (Type A), 1x USB 2.0 (Type A) | |
| Serial Port | <ul style="list-style-type: none"> 6x RS-232/422/485 with Auto Flow Control Support 5V/12V, DB9 | |
| DIO | <ul style="list-style-type: none"> 16x Isolated Digital I/O (8in/8out), 10-Pin Terminal Block | |
| Storage | | |
| SSD/HDD | <ul style="list-style-type: none"> 2x 2.5" HDD/SSD Bay, Support RAID 0/1 (Gen3) | |
| mSATA | <ul style="list-style-type: none"> 2x mSATA (One Shared by Mini-PCIe Socket) (Gen2) | |
| CFast | <ul style="list-style-type: none"> 1x CFast Socket (Gen 3) | |
| Expansion | | |
| Mini PCI Express | <ul style="list-style-type: none"> 2x Full-size Mini-PCIe Sockets | |
| PCI Express | <ul style="list-style-type: none"> 1x PCI or 1x PCIe x4 Expansion slot (with Optional Riser Card) maximum dimension of add-on card:100mm x 200mm (H x L) | |
| SIM Socket | <ul style="list-style-type: none"> 1 x Front Accessible SIM Socket | |
| Universal Bracket | <ul style="list-style-type: none"> 1x Universal I/O Bracket | |
| CFM (Control Function Module) Interface | <ul style="list-style-type: none"> 2x CFM Interface for optional CFM-IGN or CFM-PoE (max 25.5W) Module Expansion | |
| CDS (Convertible Display System) Technology | <ul style="list-style-type: none"> 1x Convertible Display System (CDS) Interface, Compact PCI Connector | |

| Other Function | |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Instant Reboot | • Support 0.2sec Instant Reboot technology |
| Watchdog Timer | • Software Programmable Supports 256 Levels System Reset |
| Internal Speaker | • AMP 2W + 2W |
| OSD Function | • LCD On/Off, Brightness Up, Brightness Down |
| Reset Button | • 1x Reset Button |
| External Fan Connector | • 1x External Fan Connector, 4-pin Terminal Block |
| Power | |
| Power Button | • 1x ATX Power On/Off Switch |
| Power Mode Switch | • 1x AT/ATX Mode Switch |
| Power Input | • 1x 3-pin Terminal Block Connector with Power Input 9~48VDC |
| Power Adapter (Optional) | • 1x Optional AC/DC 12V/5A 60W or 24V/5A 120W • 1x Optional AC/DC 24V/9.2A 220W (For P2002E only) |
| Remote Power On/Off | • 1x Remote Power On/Off Connector, 2-pin Terminal Block |
| Physical | |
| Dimension(W x D x H) | • 254.5 x 220 x 54mm • 254.5 x 220 x 72 mm |
| Weight Information | • 2.92 kg • 3.18 kg |
| Mechanical Construction | • Extruded Aluminum with Heavy Duty Metal |
| Mounting | • Wall / VESA / CDS |
| Physical Design | • Fanless Design • Jumper-less Design |
| Reliability & Protection | |
| Reverse Power Input | • Yes |
| Over Voltage Protection | • Protection Range: 51~58V • Protection Type: shut down operating voltage, re-power on at the present level to recover |
| Over Current Protection | • 15A |
| CMOS Battery Backup | • SuperCap Integrated for CMOS Battery Maintenance-free Operation |
| Operating System | |
| Microsoft® Windows® | • Windows® 10, Windows® 8.1, Windows® 7 |
| Linux | • Linux® Kernel 4.4 |
| Environment | |
| Operating Temperature | • Ambient with Air Flow: -25°C to 70°C (with Extended Temperature Peripherals) |
| Storage Temperature | • -40°C to 85C |
| Relative humidity | • 95% RH @ 40°C (Non-condensing) |
| Shock | • Operating, 50 Grms, Half-sine 11ms Duration (w/ SSD, according to IEC60068-2-27) |
| Vibration | • Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64) |
| EMC | • CE, UKCA, FCC, ICES-003 Class A |

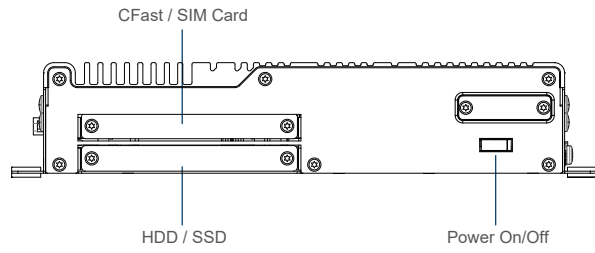
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| EMI | <ul style="list-style-type: none"> • CISPR 32 Conducted & Radiated: Class A • EN/BS EN 55032 Conducted & Radiated: Class A • EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A • EN/BS EN61000-3-3 Voltage fluctuations & flicker • FCC 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: 3 V/m • EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV • EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV • EN/IEC 61000-4-6 CS: 3V • EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m • EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz |

P2002 External Layout

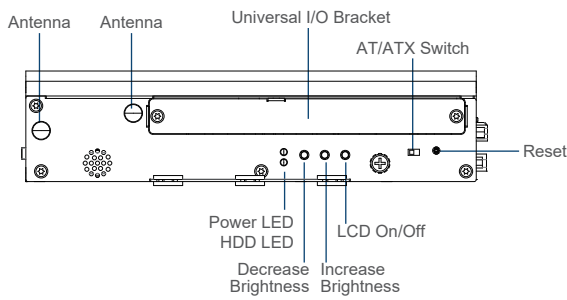
Front I/O



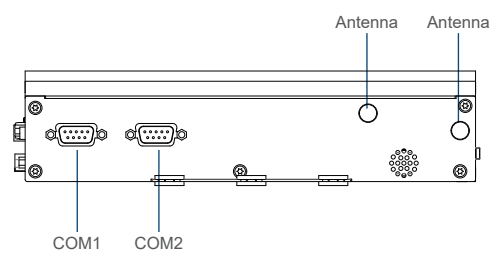
Rear I/O



Left I/O

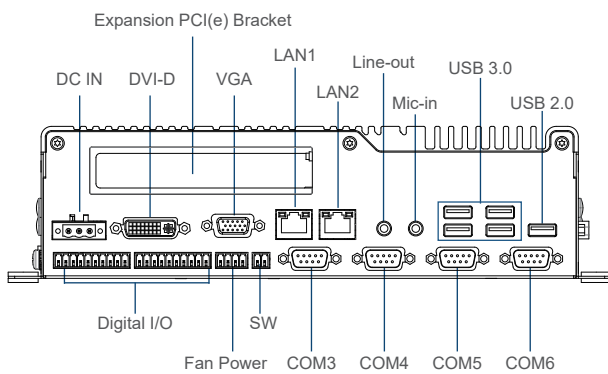


Right I/O

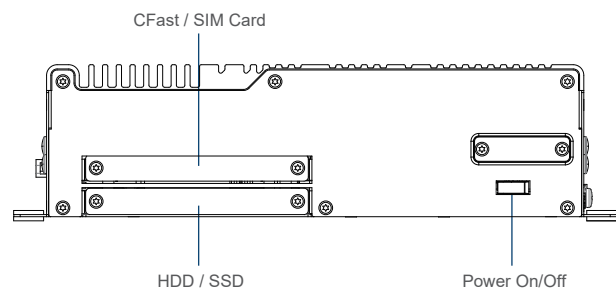


P2002E External Layout

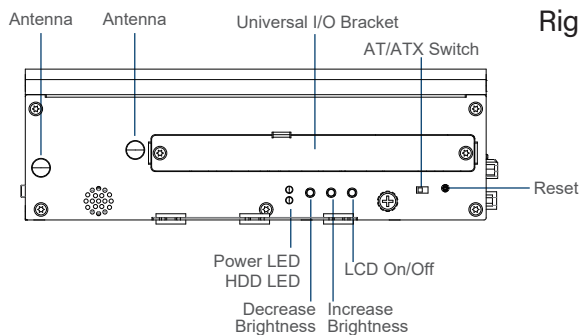
Front I/O



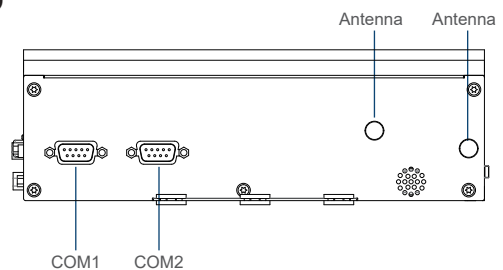
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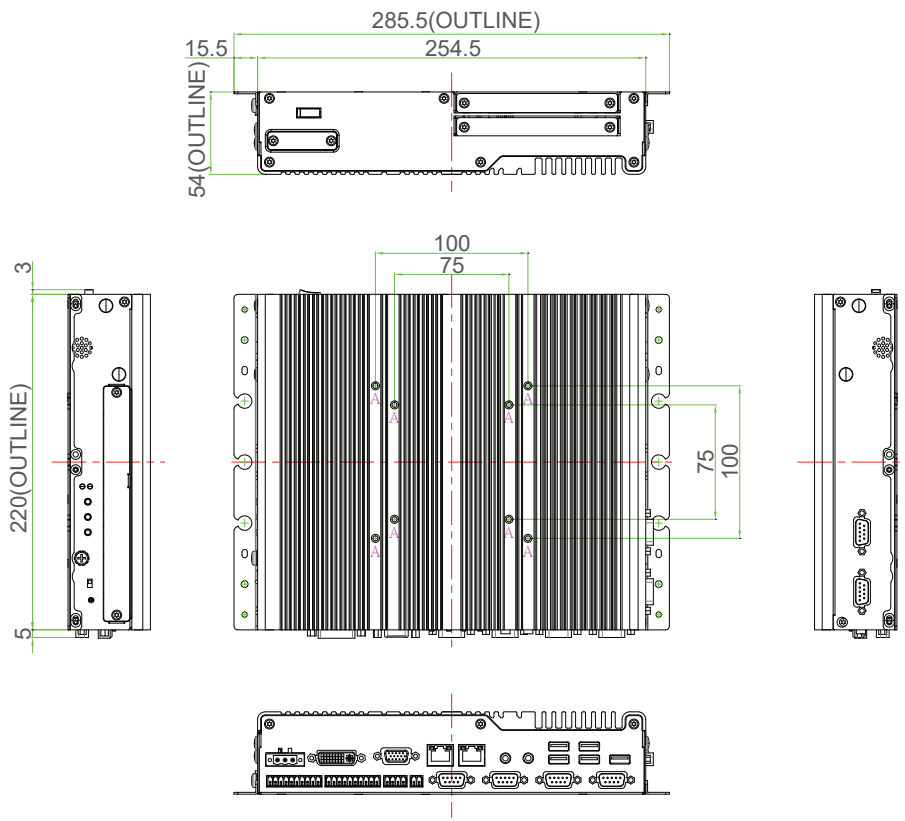
Left I/O



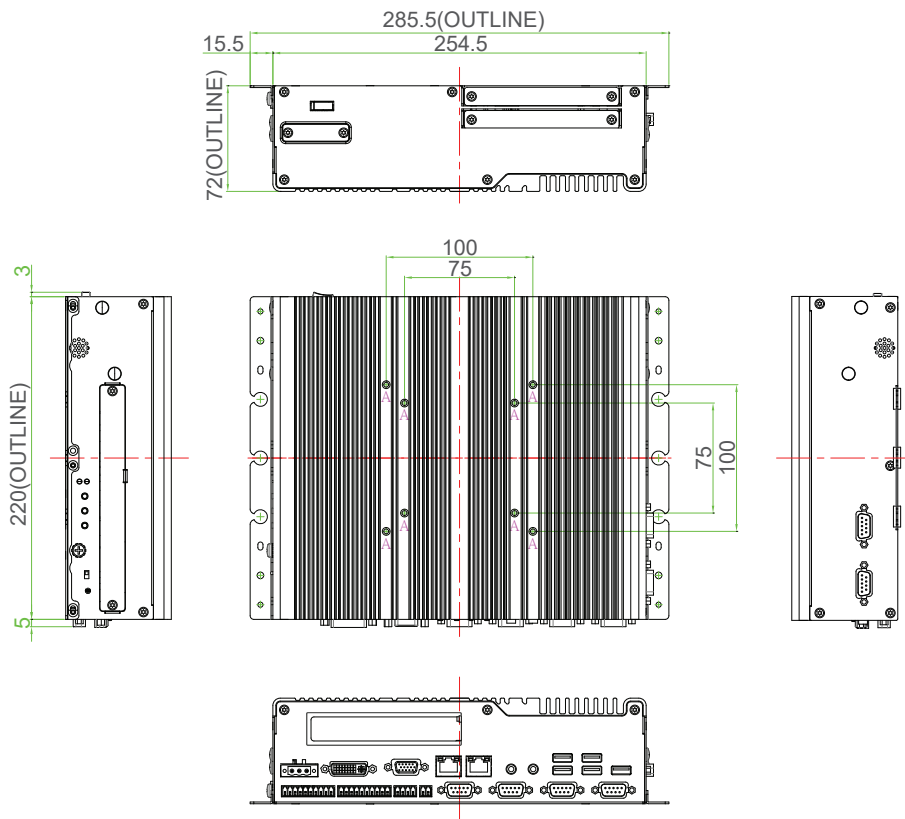
Right I/O



P2002 Dimensions



P2002E Dimensions



Unit: mm

Ordering Information

Available Models

| Model No. | Description |
|------------------|-----------------------------------------------------------------------------------------------------------|
| P2002-i5-R10 | Intel® 6th Gen. Core™ i5-6300U Fanless Computer With CFM and CDS Interface |
| P2002-i3-R10 | Intel® 6th Gen. Core™ i3-6100U Fanless Computer With CFM and CDS Interface |
| P2002E-i5-R10 | Intel® 6th Gen. Core™ i5-6300U Expandable Fanless Computer With CFM and CDS Interface |
| P2002E-i5-E4-R10 | Intel® 6th Gen. Core™ i5-6300U Expandable Fanless Computer With CFM and CDS Interface, 1x PCIe4 Expansion |
| P2002E-i5-PI-R10 | Intel® 6th Gen. Core™ i5-6300U Expandable Fanless Computer With CFM and CDS Interface, 1x PCI Expansion |
| P2002E-i3-R10 | Intel® 6th Gen. Core™ i3-6300U Expandable Fanless Computer With CFM and CDS Interface |
| P2002E-i3-E4-R10 | Intel® 6th Gen. Core™ i3-6300U Expandable Fanless Computer With CFM and CDS Interface, 1x PCIe4 Expansion |
| P2002E-i3-PI-R10 | Intel® 6th Gen. Core™ i3-6300U Expandable Fanless Computer With CFM and CDS Interface, 1x PCI Expansion |

Package Checklist

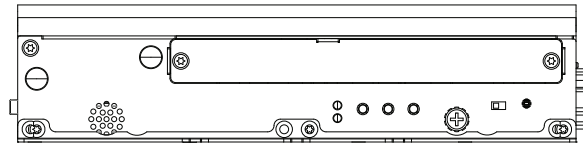
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|--------------------------------------|----------------------------------------------------|
| • P2002 Series Embedded Computer x 1 | • DIO Terminal Block Connector x 2 |
| • Wall / CDS Mounting Kit x 1 | • Remote Power On/Off Terminal Block Connector x 1 |
| • Power Terminal Block Connector x 1 | • Screw Pack x 1 |
| • Fan Terminal Block Connector x 1 | |

Optional Modules and Accessories

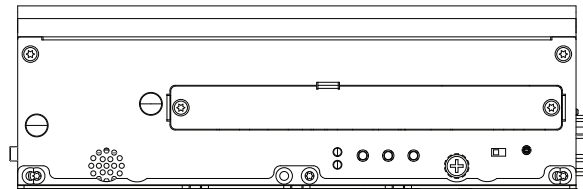
| Model No. | Description |
|-----------------|--------------------------------------------------------------------------------------------------------------------|
| CFM-IGN100 | CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable (41 x 35 mm) |
| CFM-PoE100 | CFM Module with PoE Control Function, Individual Port 25.5W (50 x 44 x 15 mm)(For P2002 only) |
| CFM-PoE101 | CFM Module with PoE Control Function, Individual Port 25.5W (50 x 44 x 33 mm) (For P2002E only) |
| RC-E4-01 | Riser Card with 1x PCIe4 Slot (For P2002E only) |
| RC-PI-01 | Riser Card with 1x PCI Slot (For P2002E only) |
| MEC-COM-M212 | Mini-PCIe Module with 2x COM Ports |
| MEC-COM-M334 | Mini-PCIe Module with 4x RS-232/422/485 Serial Ports |
| MEC-LAN-M102-30 | Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable |
| MEC-USB-M102-30 | Mini-PCIe Module with 2x USB 3.2 Gen1 Ports, 1x 30cm cable |
| UB0503 | 1x Universal Bracket with 2x DB9 Cutout (154 x 17 mm) |
| UB0504 | 1x Universal Bracket with 4x DB9 Cutout (154 x 17 mm) |
| UB0511 | 1x Universal Bracket with 2x RJ45 Cutout (154 x 17 mm) |
| UB0514 | 1x Universal Bracket with 2x USB Cutout (154 x 17 mm) |
| GST220A24-CIN | Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, GST220A24-CIN (For P2002E only) |
| GST120A24-CIN | Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp(-30°C ~ +70°C), level VI |
| GST60A12-CIN1 | Adapter AC/DC 12V 5A 60W, GST60A12-CIN1, wide temp(-30°C ~ +70°C) |





Optional Module Configuration

P2002



P2002E



| Model No. | Description | P2002 | P2002E |
|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------|--------|
| MEC-COM-M212/UB0503  | Mini-PCIe Module with 2x COM Ports, 1x Universal Bracket with 2x DB9 Cutout (154 x 17 mm) | V | V |
| MEC-COM-M334/UB0504  | Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 1x Universal Bracket with 4x DB9 Cutout (154 x 17 mm) | V | V |
| MEC-LAN-M102-30/UB0511  | Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable, 1x Universal Bracket with 2x RJ45 Cutout (154 x 17 mm) | V | V |
| MEC-USB-M102-30/UB0514  | Mini-PCIe Module with 2x USB 3.0 Ports, 1x Universal Bracket with 2x USB Cutout (154 x 17 mm) | V | V |

V : Compatible