# P2202 Series

12th Gen. Intel® Core™ i5-1245UE / i3-1215UE Embedded Computer with CDS Technology



## UNLEASH LEADING-EDGE PERFORMANCE PANEL PC

P2202 Series | Powered by the Latest Intel Alder Lake-P Platform

## Overview

CONTACT

The P2202 series are ultra-slim high-performance embedded computers designed for industrial IoT edge computing. High-performance and flexible expansion are the standout features, with rich native I/O interfaces, Mini PCIe and M.2 Key E Type 2230 expansion slots, and PCIe expansion (Model: P2202E). The thinnest model is only 41.5 mm, a perfect fit for installation in small spaces.

The main highlight of the P2202 series is the 12th Gen Intel® (Alder Lake-P) processors. The P2202 series can be used as a standalone embedded computer or, by using the exclusive CDS patented technology to connect a display module, used as an industrial panel PC, sunlight readable panel PC, or open frame panel PC to meet any display computing needs.

### Key Features

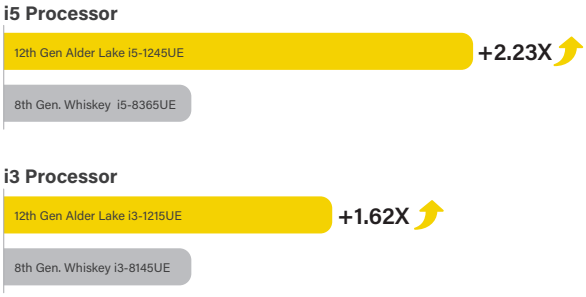
- Onboard Intel® Alder Lake-P U-Series Core™ Processor
- 2 x DDR5 SO-DIMM Socket, Supports up to 4800MHz 64GB Memory
- Quad Independent Display (CDS / HDMI® / DP / VGA)
- 1x M.2 Key E Type 2230 Socket for Storage/Wireless/Bluetooth/Intel CNVi Module Expansion
- Supports Cincoze Patent CDS Technology (Patent No. M482908)
- CFM Technology for Power Ignition Sensing & PoE Function
- Wide Operating Temperature -40°C to 70°C (-40°F to 158°F)

### Certifications

EN 61000-6-2 EN 61000-6-4 EN 62368-1 cULus LISTED CB

## AI & Multi-tasking Performance

The P2202 series is equipped with the 12th Gen Intel® Core™ i5/i3 U-series (Alder Lake-P) processor based on the Intel® 7 process. The U-series has a low power consumption of only 15W, boasts excellent performance with up to 10 cores (2P+8E), and includes the built-in Intel® Iris Xe graphics to easily handle image classification inference performance in AI deep learning.







## Slim Design

## For Space-constrained Environments

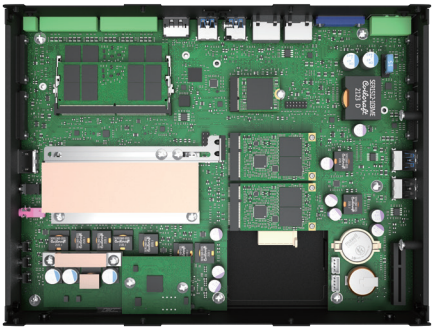
The P2202 series has a compact, ultra-thin design with dimensions of only 254.5 x 190 x 41.5 mm (Model: P2202), allowing flexible installation in various narrow application environments such as equipment machines, control cabinets, or AMRs. They are suitable for production data collection and processing in smart factories and mobile equipment.

## One Computer / Two Purposes

The P2202 series is not only an embedded computer. Using the Cincoze patented Convertible Display System technology an industrial display module (CV-100 series), sunlight readable display module (CS-100), or open frame display module (CO-100) can be added to form panel PCs with different characteristics.

Patent No. M482908





## Flexible Expansion For Any Application

Mini PCIe and M.2 Key E slots can support a variety of wireless connections (WiFi, 4G, GNSS, and Bluetooth), providing a full range of data transmission options for mobile devices. The PCIe x4 slot (P2202E model only) can accommodate 75W add-on cards (I/O expansion cards, frame grabber cards, and others). The P2202 series meets different application needs with its diverse expandability.

## Industrial EMC Protection

To enhance stability when installed in high-vibration equipment control cabinets and mobile robots, the P2202 series has passed different vibration and shock reliability tests, such as random vibration (5G), sinusoidal vibration (1G), and shock resistance (50G). It also complies with the industrial-grade EMC standards for industrial environments (EN 61000-6-4 and EN 61000-6-2).






## Specifications

| Model Name | P2202 | P2202E |
|---|---|---|
| **System** | | |
| Processor | ▪ Onboard 12th Generation Intel® Alder Lake-P U-Series CPU:<br>- Intel® Core™ i5-1245UE 10 Cores Up to 4.40 GHz, TDP 15W<br>- Intel® Core™ i3-1215UE 6 Cores Up to 4.40 GHz, TDP 15W | |
| Memory | ▪ 2x DDR5 4800MHz SO-DIMM Socket<br>Supports Un-buffered and non-ECC Type, Up to 64GB | |
| BIOS | ▪ AMI BIOS | |
| **Graphics** | | |
| Graphics Engine | ▪ Integrated Intel® Iris® Xe Graphics: Core™ i5-1245UE<br>▪ Integrated Intel® UHD Graphics: Core™ i3-1215UE | |
| Maximum Display Output | ▪ Supports Quad Independent Display | |
| CDS | ▪ 1x CDS Connector (1920 x 1080 @60Hz) | |
| DP | ▪ 1x DisplayPort Connector (4096 x 2304 @60Hz)<br>* Verified maximum resolution: 3840 x 2160 @ 60Hz | |
| HDMI® | ▪ 1x HDMI® Connector (3840 x 2160 @30Hz) | |
| VGA | ▪ 1x VGA Connector (1920 x 1200 @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 1GbE LAN, RJ45<br>- GbE1: Intel® I219<br>- GbE2: Intel® I210 | |
| COM | ▪ 4x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9 | |
| USB | ▪ 3 x USB 3.2 Gen2x1 (10Gbps), Type A<br>▪ 1 x USB 2.0 (480Mbps), Type A | |
| DIO | ▪ 16x Isolated Digital I/O (8in/8out), 20-Pin Terminal Block | |
| **Storage** | | |
| SSD/HDD | ▪ 2x 2.5" SATA HDD/SSD Bay (SATA3.0) | |
| RAID | ▪ Support RAID 0/1 | |
| **Expansion** | | |
| Mini PCI Express | ▪ 2x Full-size Mini-PCIe Socket | |
| PCI Express | | ▪ 1x PCI or 1x PCIe x4 Expansion slot (with Optional Riser Card)<br>* Supports maximum dimensions of add-on card (H x L) :<br>111 x 169mm |
| SIM Socket | ▪ 1x SIM Socket | |
| M.2 | ▪ 1x M.2 Key E Type 2230 Socket (PCIe Gen 3x2 / USB2.0), Support Storage/Wireless/Bluetooth/Intel CNVi Module Expansion | |
| CFM (Control Function Module) Interface | ▪ 1x CFM Interface for optional IGN Module Expansion<br>▪ 1x CFM Interface for optional PoE Module Expansion | |

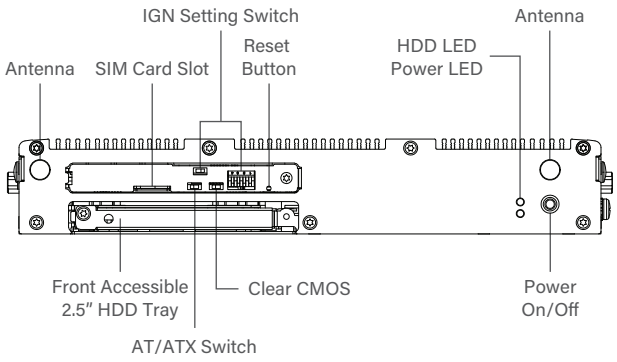
| | | |
|---|---|---|
| CDS (Convertible Display System) Interface | ▪ 1x CDS Interface for Convertible Display Module | |
| **Other Function** | | |
| Clear CMOS Switch | ▪ 1x Clear CMOS Switch | |
| Reset Button | ▪ 1x Reset Button | |
| Watchdog Timer | ▪ Software Programmable Supports 256 Levels System Reset | |
| OSD Button | ▪ LCD On/Off, Brightness Up, Brightness Down | |
| Internal Speaker | ▪ AMP 2W + 2W | |
| Status LED Indicator | ▪ Power LED, HDD LED | |
| **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 | ▪ i5-1245UE CPU: 95.06W<br>- Test conducted with CPU, 1x RAM, and 1x storage<br>- 100% load during burn-in testing | |
| Inrush Current (Peak) | ▪ i5-1245UE CPU: 5.381 A@24V | |
| **Operating System** | | |
| Windows | ▪ Windows®11, Windows®10 | |
| Linux | ▪ Ubuntu Desktop 22.04 LTS | |
| **Physical** | | |
| Dimension( W x D x H ) | ▪ 254.5 x 190 x 41.5 mm | ▪ 254.5 x 190 x 61 mm |
| Weight Information | ▪ 2.22 kg | ▪ 2.74 kg |
| Mechanical Construction | ▪ Extruded Aluminum with Heavy Duty Metal | |
| Mounting | ▪ Wall / VESA / CDS / DIN Rail | |
| Physical Design | ▪ Fanless Design<br>▪ Jumper-less Design | |
| **Reliability & Protection** | | |
| Reliability & Protection | ▪ Yes | |
| Reverse Power Input Protection | ▪ Protection Range: 51~58V<br>▪ Protection Type: shut down operating voltage, re-power on at the preset level to recover | |
| Over Current Protection | ▪ 15A | |
| CMOS Battery Backup | ▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation | |
| MTBF | ▪ 216,747 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3 | |
| **Environment** | | |
| Operating Temperature | ▪ i3-1215UE : -40°C to 70°C<br>▪ i5-1245UE : -20°C to 70°C<br>* With extended temperature peripherals; Ambient with air flow<br>* 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 | ▪ 95%RH @ 70°C (non-Condensing) | |

| | |
|---|---|
| Shock | ▪ Operating, 50 Grms (w/ SSD, according to IEC60068-2-27) |
| Vibration | ▪ Operating, 1 Grms, 10-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-6)<br>▪ Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64) |
| EMC | ▪ CE, UKCA, FCC, ICES-003 Class A<br>▪ EN IEC 61000-6-4, EN IEC 61000-6-2(24VDC Input Only) |
| EMI | ▪ CISPR 32 Conducted & Radiated: Class A<br>▪ EN/BS EN 55032 Conducted & Radiated: Class A<br>▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions:  Class A<br>▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker<br>▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A |
| EMS | ▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 10 V/m<br>▪ EN/IEC 61000-4-4 EFT: AC Power: 2 kV; DC Power: 1 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-6 CS: 10V<br>▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 30A/m<br>▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 1 cycles at 60 Hz |
| Safety | ▪ UL, cUL, CB, IEC/EN 62368-1 |

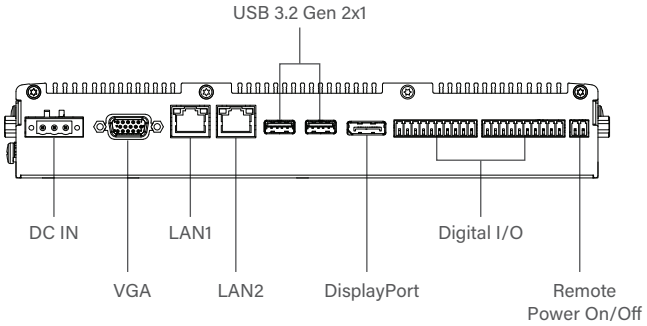
The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

## P2202 External Layout

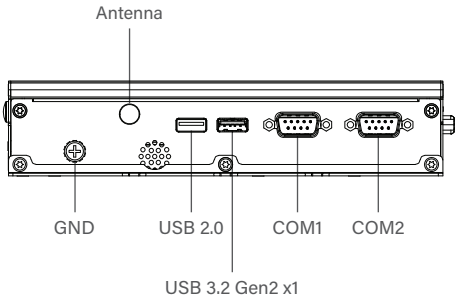
### Front I/O



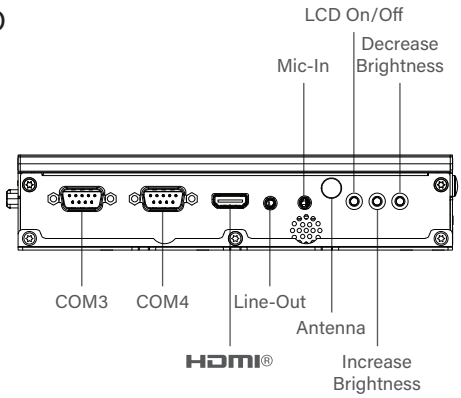

### Rear I/O




### Left I/O

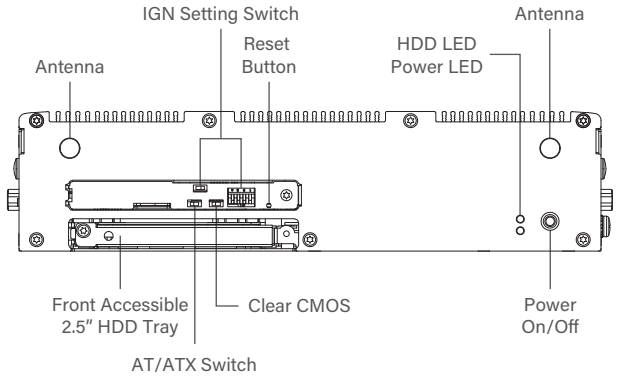



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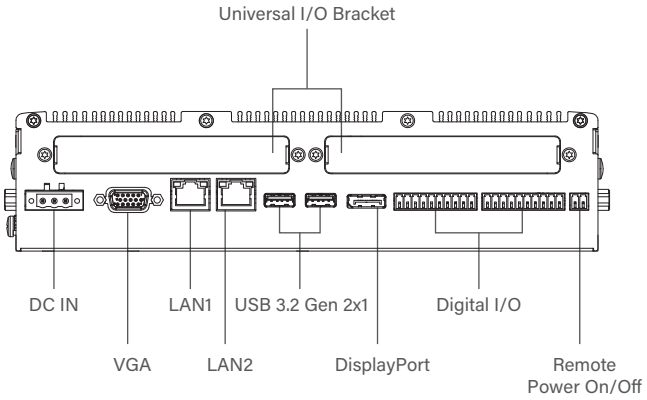



## P2202E External Layout

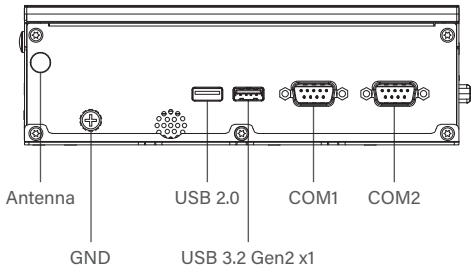
### Front I/O



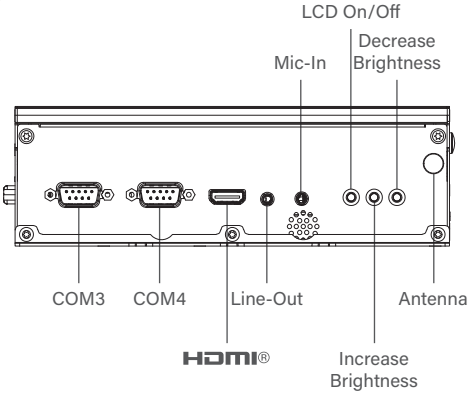

### Rear I/O



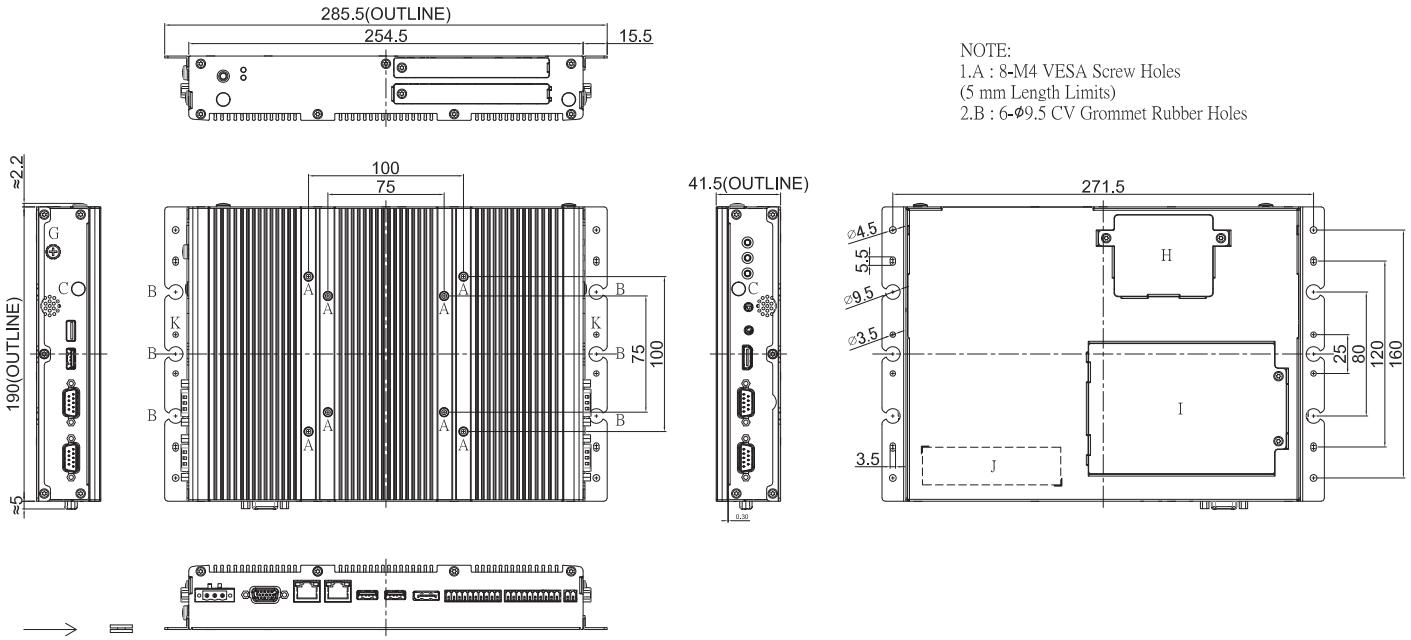

### Left I/O




### Right I/O

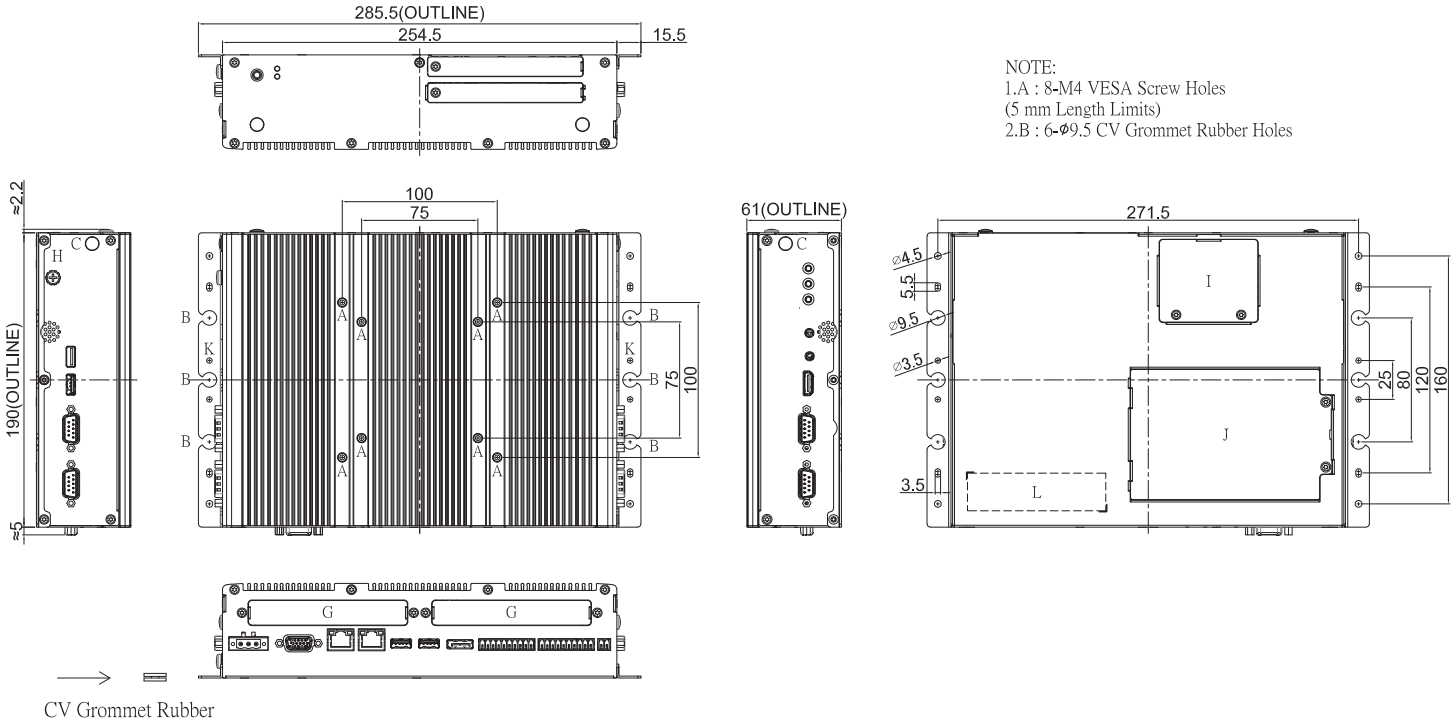


## P2202 Dimensions




**Unit: mm**

## P2202E Dimensions




**Unit: mm**

# Ordering Information

## Available Models

| Model No. | Description |
|---|---|
| P2202-i5-R11 | 12th Gen. Intel® Core™ i5-1245UE Slim Embedded Computer with CDS Technology |
| P2202E-i5-R11 | 12th Gen. Intel® Core™ i5-1245UE Expandable Embedded Computer with CDS Technology |
| P2202-i3-R10 | 12th Gen. Intel® Core™ i3-1215UE Slim Embedded Computer with CDS Technology |
| P2202E-i3-R10 | 12th Gen. Intel® Core™ i3-1215UE Expandable Embedded Computer with CDS Technology |

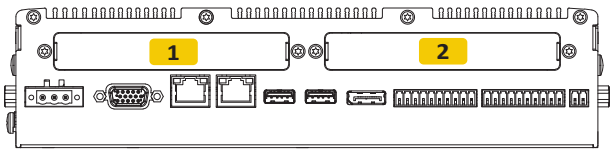
## Package Checklist

| | |
|---|---|
| ▪ P2202 Series Embedded Computer x1 | ▪ Thermal Pad x1 |
| ▪ Power Terminal Block x1 | ▪ Screw Pack x5 |
| ▪ Remote Power On/Off Terminal Block Connector x1 | ▪ Wall Mounting Kit x1 |
| ▪ DIO Terminal Block Connector x2 | ▪ DIN Rail Mounting Kit x1 |
| ▪ PCI / PCIe Card Installation Kit x1 (For P2202E Only) | |

## Optional Modules and Accessories

| Model No. | Description |
|---|---|
| CFM-IGN101 | CFM Module with Power Ignition Sensing Control Function, 12V/24V Voltage Detection Selectable |
| CFM-PoE04 | CFM Module with PoE Control Function, Individual Port 25.5W (For P2202 Only) |
| CFM-PoE05 | CFM Module with PoE Control Function, Individual Port 25.5W (For P2202E Only) |
| RC-E4-02 | Riser Card with 1x PCIe x4 Slot (For P2202E Only) |
| RC-PI-02 | Riser Card with 1x PCI Slot (For P2202E Only) |
| MEC-COM-M212-TDB9 | Mini-PCIe Module with 2x RS-232 Ports, 1x Thin DB9 Cable (For P2202E Only) |
| MEC-COM-M334-TDB9 | Mini-PCIe Module with 4x RS-232/422/485 Ports, 2x Thin DB9 Cable (For P2202E Only) |
| MEC-USB-M102-30 | Mini-PCIe Module with 2x USB 3.0 Ports, 1x 30cm cable (For P2202E Only) |
| MEC-LAN-M102-30 | Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable (For P2202E Only) |
| UB1203 | 1x Universal Bracket with 2x DB9 Cutout (For P2202E Only) |
| UB1211 | 1x Universal Bracket with 2x RJ45 Cutout (For P2202E Only) |
| UB1214 | 1x Universal Bracket with 2x USB Cutout (For P2202E Only) |
| GST120A24-CIN | Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug and Tubes, Level VI |
| GST220A24-CIN | Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, level VI |
| GST360A24-CIN | Adapter AC/DC 24V 15A 360W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, Level VI |

## Optional Module Configuration (For P2202E only)




| Model No. | Description | 1 | 2 |
|---|---|---|---|
| MEC-COM-M212-TDB9/UB1203  | Mini-PCIe Module with 2x RS-232 Ports, 1x Thin DB9 Cable / 1x Universal Bracket with 2x DB9 Cutout | V | V |
| MEC-COM-M334-TDB9/UB1203  | Mini-PCIe Module with 4x RS-232/422/485 Serial Ports/ 2x Universal Bracket each with 2x DB9 Cutout | V | V |
| MEC-LAN-M102-30/UB1211  | Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout | V | V |
| MEC-USB-M102-30/UB1214  | Mini-PCIe Module with 2x USB 3.2 Gen1 Ports, 1x 30cm cable / 1x Universal Bracket with 2x USB Cutout | V | V |

V : Compatible

Updated: Sep. 30, 2026.

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