



## **P2202 – Intel® 12th Gen. Alder Lake-P U-Series Core™ Slim Embedded Computer with CDS Technology**

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.

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.

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**

<b>CPU</b>	Intel® Core™ i5-1245UE or Intel® Core™ i3-1215UE
<b>Memory Type</b>	DDR5 4800MHz SO-DIMM Supports Un-buffered and non-ECC
<b>Memory Slots</b>	2
<b>Maximum Memory Supported</b>	64GB
<b>Integrated Graphics</b>	Integrated Intel® Iris® Xe Graphics: Core™ i5-1245U or Integrated Intel® UHD Graphics: Core™ i3-1215UE
<b>Audio</b>	Realtek® ALC888, High Definition Audio

<b>LAN Ports</b>	2 x 1GbE LAN (GbE1: Intel® I219, GbE2: Intel® I210)
<b>Serial ATA (SATA)</b>	2 x 2.5" SATA HDD/SSD Bay (SATA3.0)
<b>RAID</b>	Supports RAID 0/1
<b>Watchdog Timer</b>	Software Programmable Supports 256 Levels System Reset
<b>I/O</b>	4 x RS-232/422/485, 3 x USB 3.2 Gen2x1, 1 x USB 2.0, 16 x Isolated Digital I/O, 1 x Remote Power, 1 x Clear CMOS, 1 x Reset Button, 1 x Power Button, 1 x OSD Button, Power/HDD LEDs
<b>M.2 Expansion</b>	1 x M.2 Key E Type 2230 Socket, Supports Intel CNVi/Wireless Module
<b>Other Expansion</b>	2 x Full-size Mini-PCIe Socket, 1 x SIM Socket, 1 x CFM Interface for optional IGN Module, 1 x CFM Interface for optional PoE Module, 1 x CDS Interface for Convertible Display Module, (Note: P2202E model only) 1 x PCI or 1 x PCIe x4 Expansion slot (with Optional Riser Card) *maximum dimensions of (H x L) : 111 x 169mm
<b>Internal Speaker</b>	AMP 2W + 2W
<b>Power Requirement</b>	9 – 48VDC, 3-pin Terminal Block
<b>Dimensions</b>	254.5 x 190 x 41.5 mm, 254.5 x 190 x 61 mm (P2202E)
<b>Mounting</b>	Wall / VESA / CDS / DIN Rail
<b>Weight</b>	2.22 kg (4.9 lbs), 2.74 kg (6 lbs) (P2202E)
<b>Operating Temperature</b>	-40°C to 70°C (-40 ~ 158°F), *With extended temperature peripherals; Ambient with air flow, *According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14
<b>Storage Temperature</b>	-40 ~ 70°C (-40 ~ 158°F)
<b>Relative Humidity</b>	95% RH @ 70°C (non-Condensing)
<b>Max. Power Consumption</b>	i5-1245UE CPU: 95.06W (Test conducted with CPU, 1x RAM, and 1x storage) (100% load during burn-in testing)
<b>Inrush Current (Peak)</b>	i5-1245UE CPU: 5.381 A @ 24V
<b>Shock</b>	Operating, 50 Grms (w/ SSD, according to IEC60068-2-27)
<b>Vibration</b>	Operating, 1 Grms, 10-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-6), Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)

**EMC** CE, UKCA, FCC, ICES-003 Class A, EN IEC 61000-6-4, EN IEC 61000-6-2 (24VDC Input Only)

**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, EN/IEC 61000-4-8 PFMF: 50 Hz, 30A/m, EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 1 cycles at 60 Hz

**Safety** UL, cUL, CB, IEC/EN 62368-1

**OS Software Supported** Windows 11, Windows 10, Ubuntu 22.04

**Global P/N / SKU** 1708611

## Ordering Options

P2202-i3-R10 (SKU# 1708611A):

Intel® Core™ i3-1215UE Slim Embedded Computer with CDS Technology P2202-i5-R10 (SKU# 1708611B):

Intel® Core™ i5-1245UE Slim Embedded Computer with CDS Technology P2202E-i3-R10 (SKU# 1708611C):

Intel® Core™ i3-1215UE Expandable Embedded Computer with CDS Technology P2202E-i5-R10 (SKU# 1708611D):

Intel® Core™ i5-1245UE Expandable Embedded Computer with CDS Technology