CV-221C/P2202 Series

21.5" FHD 16:9 Slim Bezel Panel PC with 12th Gen. Intel® Core™ Processor Embedded Computer, Projected Capacitive Touch, and AG Coating



Slim · Modular · Durable

CV-200/P2000 Series — Modernized Industrial Panel PCs

Overview

CONTACT

The CV-200 / P2202 series is a high-performance slim-bezel modular industrial panel PC, powered by Intel® Alder Lake-P U-series Core® processors for stable computing and flexible integration. Featuring ultra-slim bezels, rich I/O (1GbE LAN, USB 3.2, COM, DIO), Mini PCIe and M.2 Key E 2230 slots, and optional CFM modules for PoE or IGN, it supports a wide range of industrial applications. With Cincoze CDS technology, future upgrades are simple. Available in 10"–21.5" Full HD sizes with rugged industrial design, it's ideal for HMIs and production process visualization.

Key Features

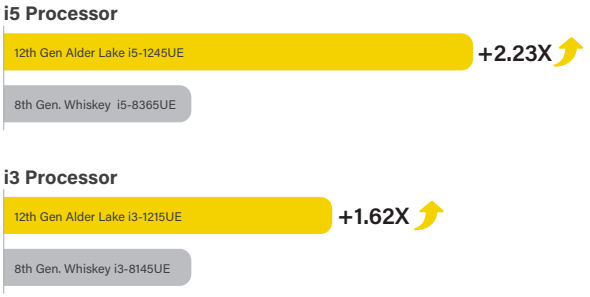
- 21.5" Full HD LCD (1920 x 1080) with 16:9 Aspect Ratio
- Projected Capacitive Touch with Anti-Glare Coating.
- Wide Viewing Angle of 178°/178°
- Onboard Intel® Alder Lake-P U-Series Core™ Processor
- 2 x DDR5 SO-DIMM Socket, Supports up to 4800MHz 64GB Memory
- Quad Independent Display (CDS / HDMI® / DP / VGA)
- 1x M.2 Key E Type 2230 Socket for Storage/Wireless/Bluetooth/Intel CNVi Module Expansion
- Front Panel IP66 Compliant

Certifications

IP66

Excellent Computing Performance

The CV-200/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.



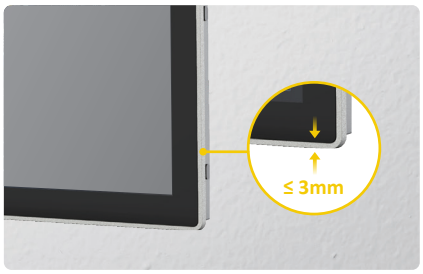


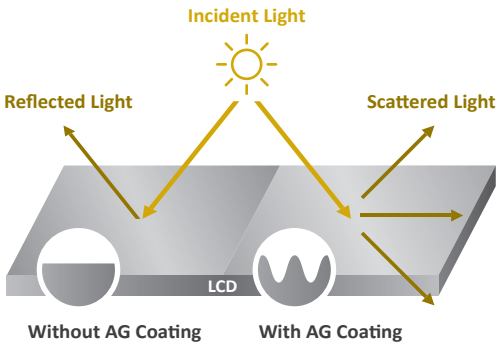
CDS Patented Technology

Cincoze Convertible Display System (CDS) patented technology makes field-side maintenance and future upgrades easier. Replacing a display or improving system performance only requires replacing a single component, which significantly cuts upgrade costs.

Ultra-Slim Bezel

With an ultra-slim bezel of ≤ 3 mm (varies by display size), the CV-200 minimizes physical constraints for compact installations. It's ideal for space-limited enclosures and applications requiring efficient integration with a streamlined appearance.



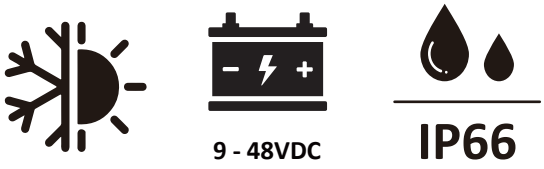


Reliable Touch Performance

All models support P-Cap touch, anti-glare (AG) coating, and wet tracking technology, ensuring stable operation and clear visibility even in humid environments or under bright indoor lighting.

Rugged, Safe, & More Reliable

To face harsh and rugged usage environments, the CV-200/P2202 series has a series of industrial-grade protections, including a wide operating temperature range, a wide range DC power input (9 to 48VDC), and a dustproof/water resistant IP66 front panel, which is beneficial for applications such as field-side HMI or production process visualization.



CV-221C Specifications

Model Name	CV-221C
Display	
LCD Size	▪ 21.5" (16:9)
Max. Resolution	▪ 1920x1080
Brightness (cd/m2)	▪ 300
Contrast Ratio	▪ 5000 : 1
LCD Color	▪ 16.7M
Pixel Pitch (mm)	▪ 0.24825 (H) x 0.24825 (V)
Viewing Angle (H-V)	▪ 178 / 178
Backlight LED Life Time	▪ 50,000 hrs (LED Backlight)
Touch Screen	
Touch Type	▪ Projected Capacitive
Anti-Glare	▪ V
Wet Touch Tracking	▪ V
Physical	
Dimension (W x D x H)	▪ 522.4 x 318.3 x 63.4 mm
Weight Information	▪ 5.28 kg
Mechanical Construction	▪ Die-Casting Flat Surface
Power	
Power Consumption	▪ 24.8 W (Max.)
Environment	
Front Panel Protection	▪ IP 66 Compliant
Operating Temperature	▪ 0°C - 60°C (32°F to 140°F) - With Industrial Grade peripherals; Ambient with air flow
Storage Temperature	▪ -20°C - 60°C (-4°F to 140°F)
Relative Humidity	▪ 90% RH @ 40°C (non-condensing)
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 50121-3-2 Conducted & Radiated: Class A ▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A ▪ EN/BS EN 61000-3-3 Voltage fluctuations & flicker ▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	▪ EN/IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV ▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 20 V/m ▪ EN/IEC 61000-4-4 EFT: AC Power: 2 kV; DC Power: 1 kV; Signal: 2 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 cable.) ▪ EN/IEC 61000-4-8 PFMF: 50/60 Hz, 30A/m ▪ EN/IEC 61000-4-11 (50/60 Hz): Voltage dips duration up to 25/30 cycles; interruptions up to 250/300 cycles.
Industrial Environment	▪ EMC: - EN/BS/IEC 61000-6-4: 2019 Class A - EN/BS/IEC 61000-6-2: 2019

Railway	▪ EMC: EN 50155: 2021 Clause 4.4.6, 13.4.9 (w/ M1101 only) - EN 50121-1 : 2017 - EN 50121-3-2: 2016 + A1: 2019

P2202 Specifications

Model Name	P2202	P2202E
System		
Processor	▪ Onboard 12th Generation Intel® Alder Lake-P U-Series CPU: - Intel® Core™ i5-1245UE 10 Cores Up to 4.40 GHz, TDP 15W - Intel® Core™ i3-1215UE 6 Cores Up to 4.40 GHz, TDP 15W	
Memory	▪ 2x DDR5 4800MHz SO-DIMM Socket Supports Un-buffered and non-ECC Type, Up to 64GB	
BIOS	▪ AMI BIOS	
Graphics		
Graphics Engine	▪ Integrated Intel® Iris® Xe Graphics: Core™ i5-1245UE ▪ 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) * 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 - GbE1: Intel® I219 - 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 ▪ 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) * Supports maximum dimensions of add-on card (H x L) : 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 ▪ 1x CFM Interface for optional PoE Module Expansion	

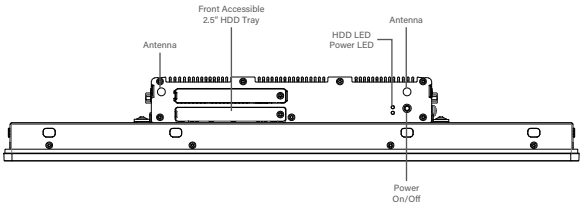
CDS (Convertible Display System) Interface	▪ 1x CDS Interface for Convertible Display Module	
Other Function		
Clear CMOS Switch	▪ 1x Clear CMOS Switch	
Reset Button	▪ 1x Reset Button	
Watchdog Timer	▪ Software Programmable Supports 256 Levels System Reset	
OSD Button	▪ LCD On/Off, Brightness Up, Brightness 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 - Test conducted with CPU, 1x RAM, and 1x storage - 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 ▪ Jumper-less Design	
Reliability & Protection		
Reliability & Protection	▪ Yes	
Reverse Power Input Protection	▪ Protection Range: 51~58V ▪ 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 ▪ i5-1245UE : -20°C to 70°C * With extended temperature peripherals; Ambient with air flow * 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) ▪ 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

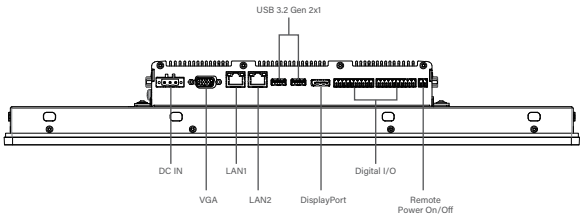
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CV-221C/P2202 External Layout

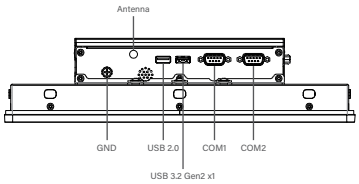
Front I/O



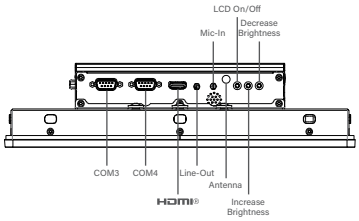
Rear I/O



Left I/O

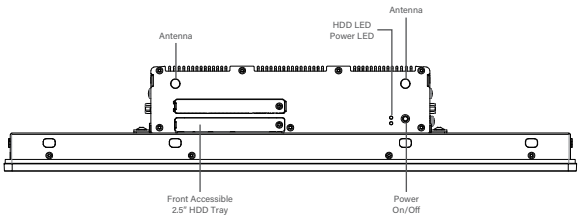


Right I/O

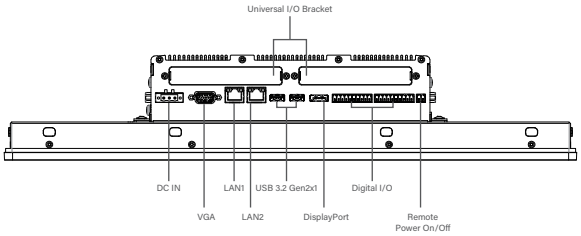


CV-221C/P2202E External Layout

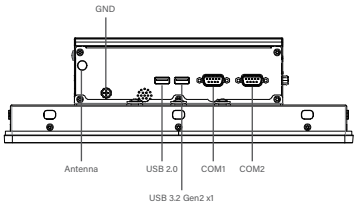
Front I/O



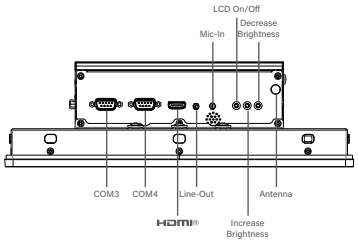
Rear I/O



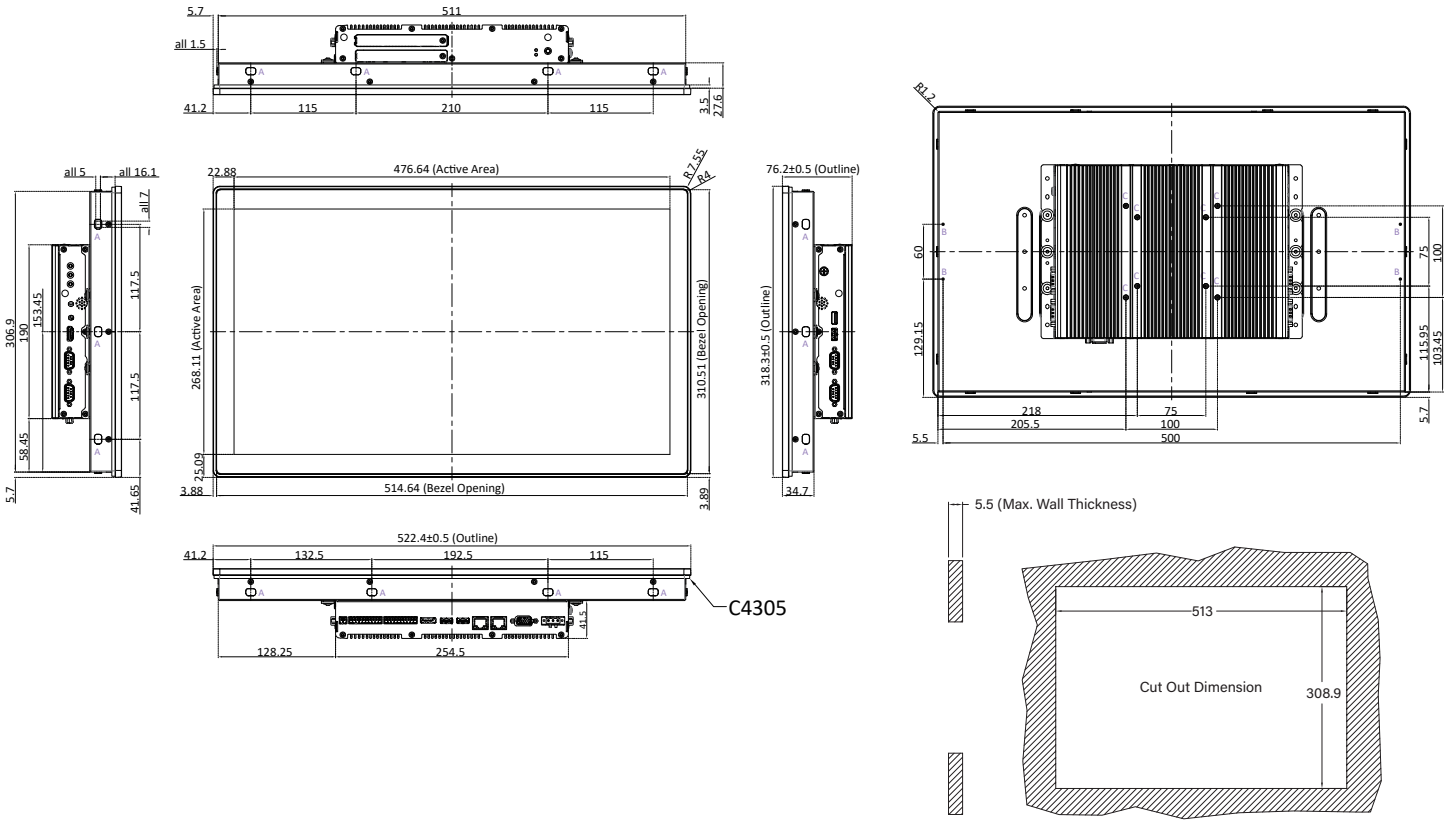
Left I/O



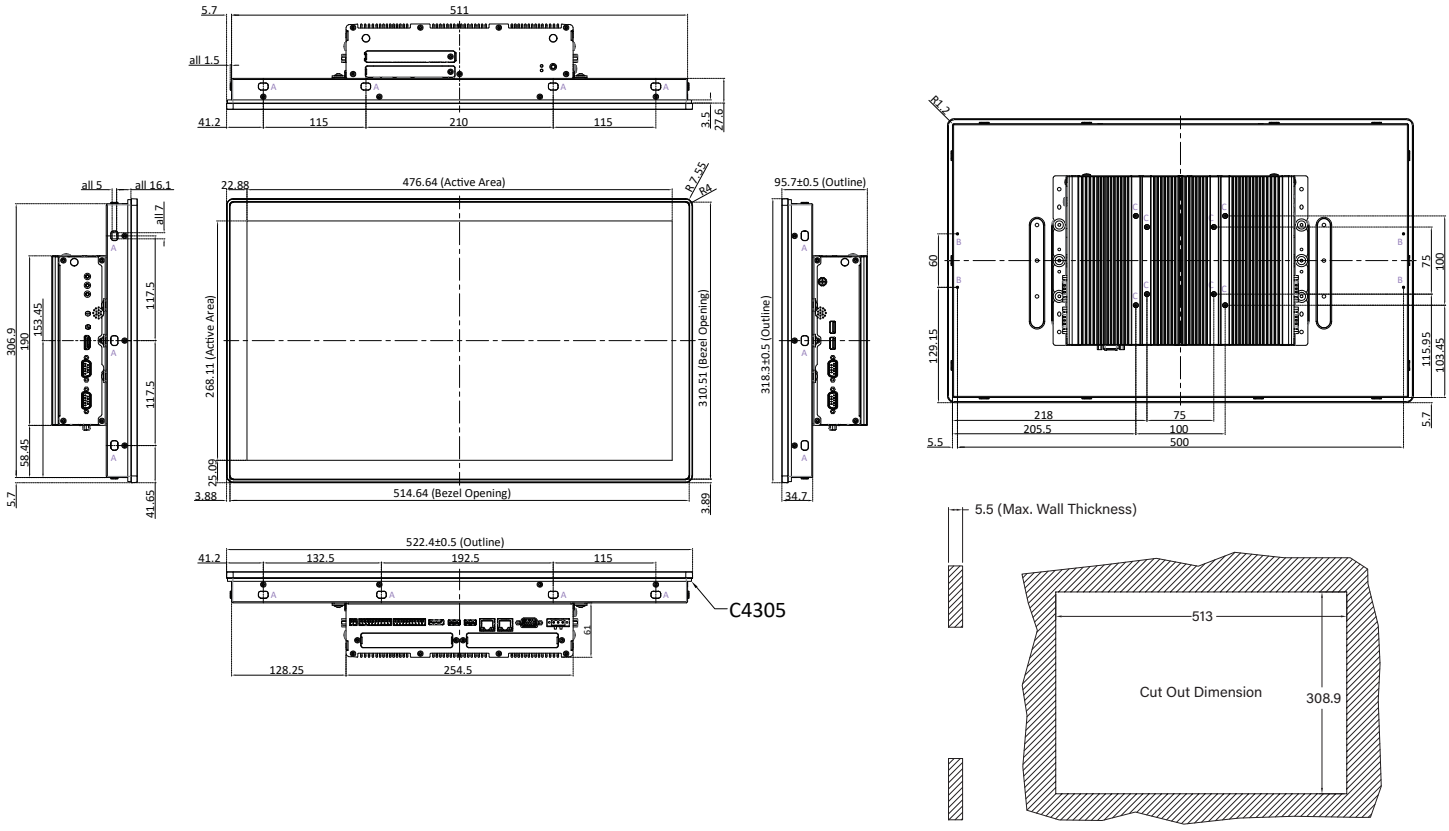
Right I/O



CV-221C/P2202 Dimensions



CV-221C/P2202E Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
CV-221C-R10/P2202-i5-R11	21.5" FHD 16:9 Slim Bezel Panel PC with 12th Gen. Intel® Core™ i5-1245UE Processor Embedded Computer, Projected Capacitive Touch, and AG Coating
CV-221C-R10/P2202E-i5-R11	21.5" FHD 16:9 Slim Bezel Panel PC with 12th Gen. Intel® Core™ i5-1245UE Processor Expandable Embedded Computer, Projected Capacitive Touch, and AG Coating
CV-221C-R10/P2202-i3-R10	21.5" FHD 16:9 Slim Bezel Panel PC with 12th Gen. Intel® Core™ i3-1215UE Processor Embedded Computer, Projected Capacitive Touch, and AG Coating
CV-221C-R10/P2202E-i3-R10	21.5" FHD 16:9 Slim Bezel Panel PC with 12th Gen. Intel® Core™ i3-1215UE Processor Expandable Embedded Computer, Projected Capacitive Touch, and AG Coating

Model Configuration

	CV-221C	P2202(i3/i5)	P2202E(i3/i5)
CV-221C/P2202	V	V	--
CV-221C/P2202E	V	--	V

V : Compatible

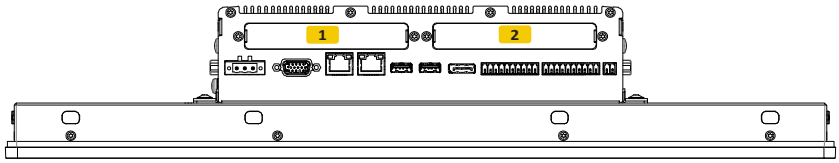
Package Checklist

▪ CV-221C/P2202 Series Panel PC x1	▪ Thermal Pad x1
▪ Power Terminal Block x1	▪ Screws Pack x5
▪ Remote Power On/Off Terminal Block Connector x1	▪ Panel Mounting Kit x14
▪ DIO Terminal Block Connector x2	▪ DIN Rail Mounting Kit x1
▪ PCI / PCIe Card Installation Kit x 1 (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)
URM01	Universal 19" Rack Mount Kit for Industrial Panel PC & Industrial Monitor
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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