CV-221C/P1301 Series

21.5" FHD 16:9 Slim Bezel Panel PC with Intel® Embedded Computer, Projected Capacitive Touch, and AG Coating

Slim · Modular · Durable

CV-200/P1000 Series — Modernized Industrial Panel PCs

Overview

CONTACT

The CV-200 / P1301 series is an entry-level slim-bezel modular industrial panel PC, powered by Intel® Alder Lake-N processors, offering both stable performance and system integration flexibility. The series supports Full HD resolution and is available in sizes from 10" to 21.5", allowing flexible configurations to meet different applications. In terms of expandability, it provides a rich set of native I/O interfaces and supports M.2 Key E 2230 and M.2 Key B 3052 expansion slots to accommodate wireless communication and mobility applications. Its industrial-grade rugged design makes it ideal for HMIs, production process visualization, and a wide range of industrial applications.

Key Features

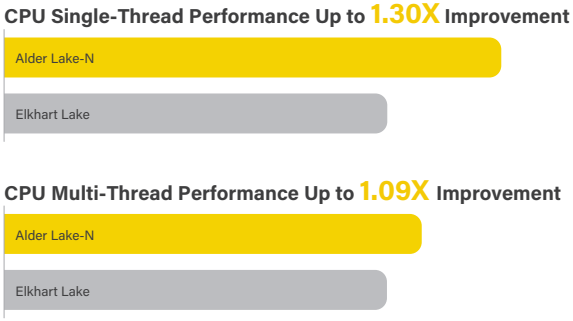
- 21.5" Full HD LCD (1920 x 1080) with 16:9 Aspect Ratio
- Projected Capacitive Touch with Anti-Glare Coating.
- Wide Viewing Angle of 178°/178°
- Onboard Intel® Alder Lake-N Core™ i3-N305, Processor N97 and Atom® x7425E Processor
- Supports Triple Independent Display
- 1x M.2 Key E Type 2230 Socket for Wireless/Bluetooth/Intel CNVi Module Expansion
- 1x M.2 Key B Type 3042/3052 Socket for 5G/GNSS/Storage/Add-on Card Expansion
- Designed with Rugged Aluminum Die-casting Front Bezel
- Front Panel IP66 Compliant

Certifications

IP66

AI & Multitasking Performance

The CV-200/P1301 series is equipped with an Intel Alder Lake-N quad-core processor based on the Intel® 7 process. Compared with the previous generation Elkhart Lake platform, the CPU single-thread performance is improved by up to 130%, and the multi-thread performance is improved by 109%. The built-in UHD graphics chip improves AI inference, with 6.85 times the object recognition performance.

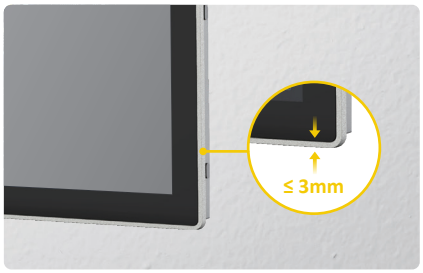


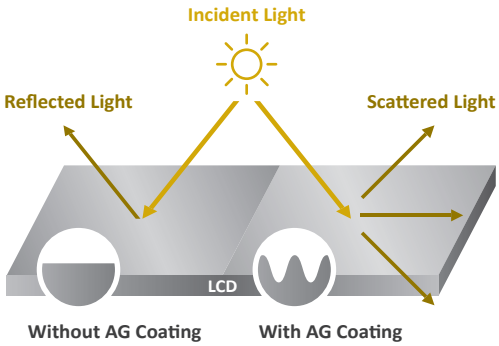
Convenient Upgrades & Repairs

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 module, 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.



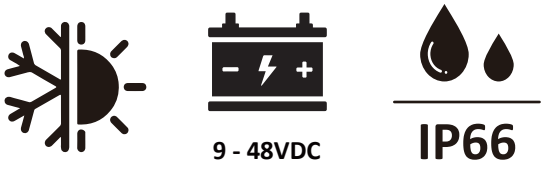


Reliable Touch Performance

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.

Wide Temps, Safe, & More Reliable

To face harsh and rugged usage environments, the CV-200/P1301 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

P1301 Specifications

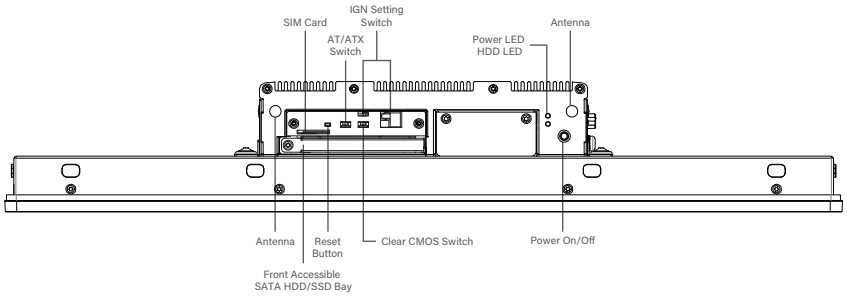
Model Name	P1301
System	
Processor	▪ Onboard Intel® Alder Lake-N Series Processor: - Intel® Core™ i3-N305 8 Cores Up to 3.80 GHz, TDP 15W - Intel® Processor N97 4 Cores Up to 3.60 GHz, TDP 12W - Intel Atom® x7425E 4 Cores Up to 3.40 GHz, TDP 12W
Memory	▪ 1x DDR5 4800MHz SO-DIMM Socket Supports Un-buffered and Non-ECC Type, Up to 16GB
BIOS	▪ AMI BIOS
Graphics	
Graphics Engine	▪ Integrated Intel® UHD Graphics
Maximum Display Output	▪ Supports Triple 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
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 2.5GbE LAN, RJ45 - GbE1 / GbE2: Intel® I226
COM	▪ 2x RS-232/422/485 with Auto Flow Control Support 5V/12V, DB9
USB	▪ 3 x USB 3.2 Gen2x1 (10Gbps), Type A ▪ 1 x USB 2.0 (480Mbps), Type A
DIO	▪ 8x Isolated Digital I/O (4in/4out), 10-Pin Terminal Block
Storage / Expansion	
2.5" SSD/HDD	▪ 1x 2.5" Front Accessible SATA HDD/SSD Bay
M.2 Key E Socket	▪ 1x M.2 Key E Type 2230 Socket (PCIe Gen 3x1 / USB2.0), Support Wireless/Bluetooth/Intel CNVi Module Expansion
M.2 Key B Socket	▪ 1x M.2 Key B Type 3042/3052 Socket (PCIe Gen 3x1 / USB3.2 Gen2 x1 / SATA), Support 5G/GNSS/Storage/Add-on Card Expansion
SIM Socket	▪ 1x Front Accessible SIM Socket
CFM (Control Function Module) Interface	▪ 1x CFM Interface for optional IGN Module Expansion ▪ 1x CFM Interface for optional PoE 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
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
Remote Power LED	▪ 1x Remote Power LED, 2-pin Terminal Block
Max. Power Consumption	▪ i3-N305 CPU: 48.59W ▪ N97 CPU: 34.04W - Test conducted with CPU, 1x RAM, and 1x storage - 100% load during burn-in testing
Inrush Current (Peak)	▪ i3-N305 CPU: 5.538 A@12V ▪ N97 CPU: 5.242 A@12V
Operating System	
Microsoft® Windows®	▪ Windows®11, Windows®10
Linux	▪ Ubuntu Desktop 22.04 LTS
Physical	
Dimension (W x D x H)	▪ 204.5 x 149 x 46.5mm
Weight	▪ 1.57 kg
Mechanical Construction	▪ Extruded Aluminum with Heavy Duty Metal
Mounting	▪ Wall / VESA / CDS / DIN Rail
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 preset level to recover
Over Current Protection	▪ 15A
CMOS Battery Backup	▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation
MTBF	▪ 306,338 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3
Environment	
Operating Temperature	▪ Intel® Processor N97: -20°C to 70°C (-4°F to 158°F) ▪ Intel Atom® x7425E : -40°C to 70°C (-40°F to 158°F) ▪ Intel® Core™ i3-N305: -20°C to 60°C (-4°F to 140°F) * PassMark Burn-In Test: 100% CPU, 2D/3D Graphics (without thermal throttling) * 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	▪ Intel® Processor N97 / Atom® x7425E: 95%RH @ 70°C (non-Condensing) ▪ Intel® Core™ i3-N305: 95%RH @ 60°C (non-Condensing)
Shock	▪ Operating, 50 Grms, Half-sine 11 ms Duration (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 ▪ EN61000-6-4, EN61000-6-2 @ DC-input 24V

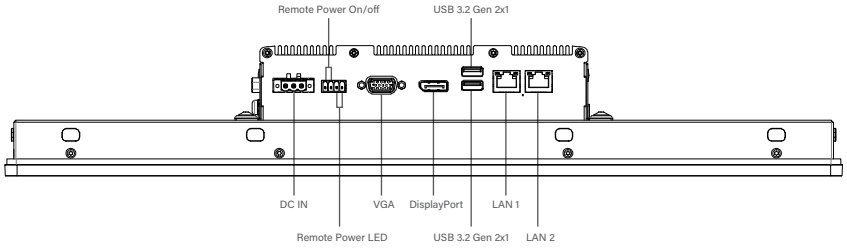
EMI	▪ CISPR 32 Conducted & Radiated: Class A ▪ EN/BS EN 55032 Conducted & Radiated: Class A ▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A ▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker ▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	▪ EN/IEC 61000-4-2 ESD: Contact: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

CV-221C/P1301 External Layout

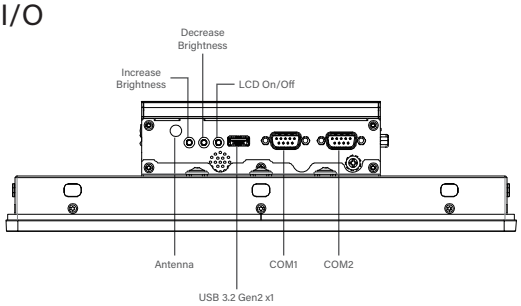
Front I/O



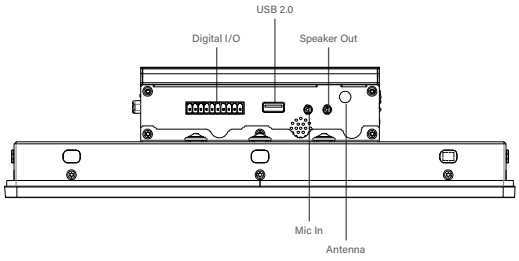
Rear I/O



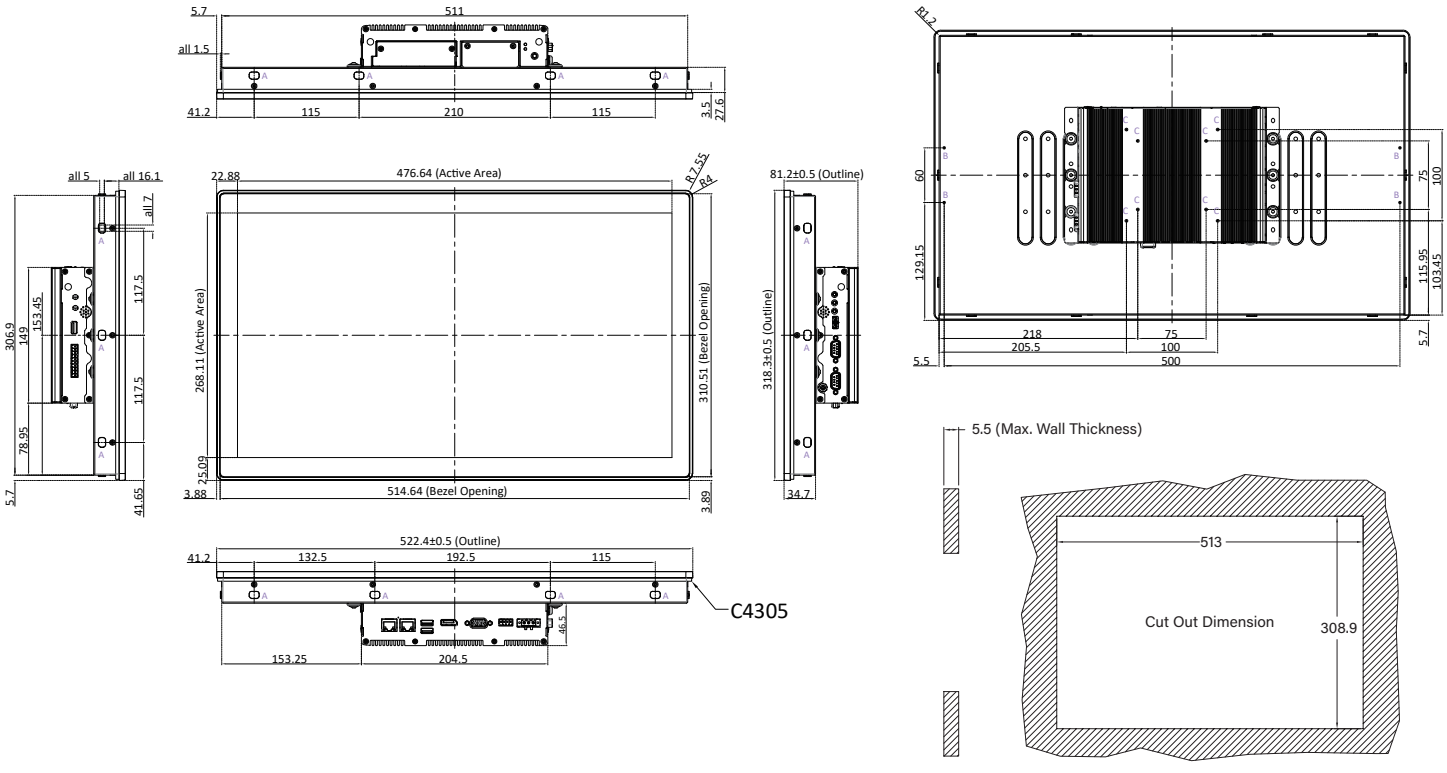
Left I/O



Right I/O



CV-221C/P1301 Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
CV-221C-R10/P1301-N97-R11	21.5" FHD 16:9 Slim Bezel Panel PC with Intel® Processor N97 Quad-Core Embedded Computer, Projected Capacitive Touch, and AG Coating
CV-221C-R10/P1301-X7425E-R10	21.5" FHD 16:9 Slim Bezel Panel PC with Intel® Atom® x7425E Quad-Core Embedded Computer, Projected Capacitive Touch, and AG Coating
CV-221C-R10/P1301-i3-R11	21.5" FHD 16:9 Slim Bezel Panel PC with Intel® Core i3-N305 Octa-Core Embedded Computer, Projected Capacitive Touch, and AG Coating

Model Configuration

	CV-221C	P1301-N97	P1301-X7425E	P1301-i3
CV-221C/P1301-N97	V	V	--	--
CV-221C/P1301-X7425E	V	--	V	--
CV-221C/P1301-i3	V	--	--	V

V : Compatible

Package Checklist

▪ CV-221C/P1301 Series Panel PC x1	▪ Power Terminal Block Connector x 1
▪ Thermal Pad (for CPU Thermal Block) x 1	▪ Remote Function Terminal Block Connector x 1
▪ Screw Pack x 2	▪ DIO Terminal Block Connector x 1
▪ Panel Mounting Kit x 14	▪ M.2 Key B Type 3052 to 3042 Adapter Bracket x 1

Optional Modules and Accessories

Model No.	Description
CFM-IGN101	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable (43 x 36 mm)
CFM-PoE02	CFM Module with PoE Control Function, Individual Port 25.5W
URM01	Universal 19" Rack Mount Kit for Industrial Panel PC & Industrial Monitor
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp (-30°C ~ +70°C), Level VI
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, Level VI

Updated: Jun. 12, 2026.