

# CO-W121C/P1301 Series

21.5" TFT-LCD Full HD 16:9 Open Frame Panel PC with Intel® Alder Lake-N Platform, Slim Embedded Computer & P-Cap. Touch



## ALL-NEW OPEN FRAME PANEL PC

| CO-100/P1000 Series Fits Any Machine Perfectly |

### Overview

[CONTACT](#)

Cincoze open frame industrial panel PC series (CO-100/P1301) is equipped with an Intel® Alder Lake-N processor, rich I/O interfaces (2.5 GbE LAN, USB3.2 Gen2x1, COM, DIO, etc.), and flexible expansion. The biggest highlight is its adjustable mounting bracket design (Patent No.: D224544, D224545, I802427) that allows flexible adjustment and multi-stage locking to greatly improve the convenience of installation in cabinets of various materials and thicknesses, effectively reducing the degree of customization required by equipment manufacturers when integrating with equipment. Its rugged design takes into account the application requirements for field-side HMI in harsh industrial environments.

### Key Features

- 21.5" TFT-LCD with Projected Capacitive Touch
- Onboard Intel® Alder Lake-N Core™ i3-N305, Processor N97 and Atom® x7425E Processor
- 1x DDR5 SO-DIMM Socket, Supports up to 4800MHz & 16GB Memory
- 1x M.2 Key E Type 2230 Socket for Wireless/Intel CNVi Module Expansion
- 1x M.2 Key B Type 3042/3052 Socket for 5G/Storage/Add-on Card Expansion
- Front Panel IP65 Compliant
- Designed with Adjustable Mounting Bracket
- Supports Flat / Standard / VESA / Rack Mount
- Supports Cincoze Patent CDS Technology (Patent No. M482908)

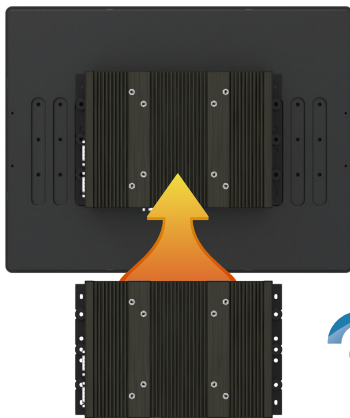
### AI & Multitasking Performance

The CO-100/P1301 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.

#### CPU Single-Thread Performance Up to **1.30X** Improvement



#### CPU Multi-Thread Performance Up to **1.09X** Improvement



### 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 component, which significantly cuts upgrade costs.

Patent No. M482908

### Easy to Install

The exclusive adjustable mounting bracket has thickness adjustment options and supports multiple locking methods (panel and boss types), providing a simpler and more convenient integration for industrial machines using flat mount and standard mount.

Patent No.: D224544, D224545, I802427



### Integrated Structure

The flexible and reliable design of the open-frame architecture panel PC enables deployment in equipment machines, and after removing the mounting bracket can be installed directly using the VESA mount for standalone use, or installed in a 19" rack for display function.

### Wide Temps, Safe & More Reliable

The CO-100/P1301 series features a series of industrial-grade protections, such as a fanless design, wide operating temperature range (0°C to 60°C), wide range DC power input (9 to 48VDC), and IP65 dustproof/water resistant front panel for field-side HMI applications in harsh industrial environments.



**CO-W121C Specifications**

Model Name	CO-W121C
<b>Display</b>	
LCD Size	• 21.5" (16:9)
Resolution	• 1920 x 1080
Brightness	• 300 cd/m2
Contrast Ratio	• 5000 : 1
LCD Color	• 16.7M
Pixel Pitch	• 0.24825 (H) x 0.24825 (V) mm
Viewing Angle	• 178 (H) / 178 (V)
Backlight MTBF	• 50,000 hrs
<b>Touch Screen</b>	
Touchscreen Type	• Projected Capacitive Touch
<b>Physical</b>	
Dimension (W x D x H)	• 550 x 343.7 x 63.3
Weight	• 7.16 kg
Construction	• One-piece and Slim Bezel Design
Mounting Type	• Flat / Standard / VESA / Rack Mount
Mounting Bracket	• Pre-installed Mounting Bracket with Adjustable Design ( Support 11 different stages of adjustment )
<b>Power</b>	
Power Consumption	• 24.8W (Max.)
<b>Protection</b>	
Ingress Protection	• Front Panel IP65 Compliant * According to IEC60529
<b>Environment</b>	
Operating Temperature	• Ambient with Air flow: 0°C to 60°C (with Industrial Grade Peripherals)
Storage Temperature	• -20°C to 60°C
Humidity	• 80% RH @ 50°C (Non-condensing)
EMC	• CE, UKCA, FCC, ICES-003 Class A
EMI	<ul style="list-style-type: none"> <li>• CISPR 32 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN 55032 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A</li> <li>• EN/BS EN61000-3-3 Voltage fluctuations &amp; flicker</li> <li>• FCC 47 CFR Part 15B, ICES-003 Conducted &amp; Radiated: Class A</li> </ul>
EMS	<ul style="list-style-type: none"> <li>• EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV</li> <li>• EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m</li> <li>• EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV</li> <li>• EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV</li> <li>• EN/IEC 61000-4-6 CS: 3V</li> <li>• EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m</li> <li>• EN/IEC 61000-4-11 Voltage Dips &amp; Voltage Interruptions: 0.5 cycles at 50 Hz</li> </ul>
Safety	• UL, cUL, CB, IEC, EN 62368-1

## P1301 Specifications

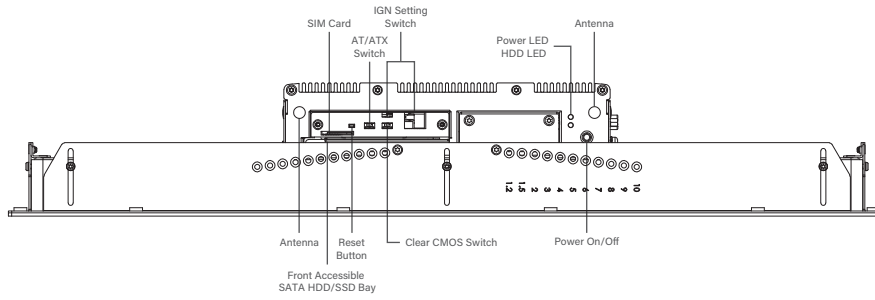
Model Name	P1301
<b>System</b>	
Processor	<ul style="list-style-type: none"> <li>Onboard Intel® Alder Lake-N Series Processor:               <ul style="list-style-type: none"> <li>Intel® Core™ i3-N305 8 Cores Up to 3.80 GHz, TDP 15W</li> <li>Intel® Processor N97 4 Cores Up to 3.60 GHz, TDP 12W</li> <li>Intel Atom® x7425E 4 Cores Up to 3.40 GHz, TDP 12W</li> </ul> </li> </ul>
Memory	<ul style="list-style-type: none"> <li>1x DDR5 4800MHz SO-DIMM Socket</li> <li>Supports Un-buffered and Non-ECC Type, Up to 16GB</li> </ul>
BIOS	<ul style="list-style-type: none"> <li>AMI BIOS</li> </ul>
<b>Graphics</b>	
Graphics Engine	<ul style="list-style-type: none"> <li>Integrated Intel® UHD Graphics</li> </ul>
Maximum Display Output	<ul style="list-style-type: none"> <li>Supports Triple Independent Display</li> </ul>
CDS	<ul style="list-style-type: none"> <li>1x CDS Connector (1920 x 1080 @60Hz)</li> </ul>
DP	<ul style="list-style-type: none"> <li>1x DisplayPort Connector (4096 x 2304 @60Hz)</li> <li>* Verified maximum resolution: 3840 x 2160 @ 60Hz</li> </ul>
VGA	<ul style="list-style-type: none"> <li>1x VGA Connector (1920 x 1200 @60Hz)</li> </ul>
<b>Audio</b>	
Audio Codec	Realtek® ALC888, High Definition Audio
Line-out	<ul style="list-style-type: none"> <li>1x Line-out, Phone Jack 3.5mm</li> </ul>
Mic-in	<ul style="list-style-type: none"> <li>1x Mic-in, Phone Jack 3.5mm</li> </ul>
<b>I/O</b>	
LAN	<ul style="list-style-type: none"> <li>2x 2.5GbE LAN, RJ45</li> <li>- GbE1 / GbE2: Intel® I225</li> </ul>
COM	<ul style="list-style-type: none"> <li>2x RS-232/422/485 with Auto Flow Control Support 5V/12V, DB9</li> </ul>
USB	<ul style="list-style-type: none"> <li>3 x USB 3.2 Gen2x1 (10Gbps), Type A</li> <li>1 x USB 2.0 (480Mbps), Type A</li> </ul>
DIO	<ul style="list-style-type: none"> <li>8x Isolated Digital I/O (4in/4out), 10-Pin Terminal Block</li> </ul>
<b>Storage</b>	
SSD/HDD	<ul style="list-style-type: none"> <li>1x 2.5" Front Accessible SATA HDD/SSD Bay</li> </ul>
M.2 SSD	<ul style="list-style-type: none"> <li>1 x M.2 SSD Shared by M.2 Key B Socket</li> </ul>
<b>Expansion</b>	
M.2 Key E Socket	<ul style="list-style-type: none"> <li>1x M.2 Key E Type 2230 Socket (PCIe Gen 3x1 / USB2.0), Support Wireless/Intel CNVi Module Expansion</li> </ul>
M.2 Key B Socket	<ul style="list-style-type: none"> <li>1x M.2 Key B Type 3042/3052 Socket (PCIe Gen 3x1 / USB3.2 Gen2 x1 / SATA ), Support 5G/Storage/Add-on Card Expansion</li> </ul>
SIM Socket	<ul style="list-style-type: none"> <li>1x Front Accessible SIM Socket</li> </ul>
CFM (Control Function Module) Interface	<ul style="list-style-type: none"> <li>1x CFM Interface for optional IGN Module Expansion</li> <li>1x CFM Interface for optional PoE Module Expansion</li> </ul>
<b>Other Function</b>	
Clear CMOS Switch	<ul style="list-style-type: none"> <li>1x Clear CMOS Switch</li> </ul>
Reset Button	<ul style="list-style-type: none"> <li>1x Reset Button</li> </ul>
Instant Reboot	<ul style="list-style-type: none"> <li>Support 0.2sec Instant Reboot Technology</li> </ul>

Watchdog Timer	<ul style="list-style-type: none"> <li>• Software Programmable Supports 256 Levels System Reset</li> </ul>
OSD Button	<ul style="list-style-type: none"> <li>• LCD On/Off, Brightness Up, Brightness Down</li> </ul>
Internal Speaker	<ul style="list-style-type: none"> <li>• AMP 2W + 2W</li> </ul>
Status LED Indicator	<ul style="list-style-type: none"> <li>• Power LED, HDD LED</li> </ul>
<b>Power</b>	
Power Button	<ul style="list-style-type: none"> <li>• 1x ATX Power On/Off Button</li> </ul>
Power Mode Switch	<ul style="list-style-type: none"> <li>• 1x AT/ATX Mode Switch</li> </ul>
Power Input	<ul style="list-style-type: none"> <li>• 9 - 48VDC, 3-pin Terminal Block</li> </ul>
Remote Power On/Off	<ul style="list-style-type: none"> <li>• 1x Remote Power On/Off, 2-pin Terminal Block</li> </ul>
Remote Power LED	<ul style="list-style-type: none"> <li>• 1x Remote Power LED, 2-pin Terminal Block</li> </ul>
<b>Operating System</b>	
Microsoft® Windows®	<ul style="list-style-type: none"> <li>• Windows®11, Windows®10</li> </ul>
Linux	<ul style="list-style-type: none"> <li>• Ubuntu 22.04</li> </ul>
<b>Physical</b>	
Dimension ( W x D x H )	<ul style="list-style-type: none"> <li>• 204.5 x 149 x 46.5mm</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• 1.57 kg</li> </ul>
Mechanical Construction	<ul style="list-style-type: none"> <li>• Extruded Aluminum with Heavy Duty Metal</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Wall / VESA / CDS / DIN Rail</li> </ul>
Physical Design	<ul style="list-style-type: none"> <li>• Fanless Design</li> <li>• Jumper-less Design</li> </ul>
<b>Reliability &amp; Protection</b>	
Reverse Power Input	<ul style="list-style-type: none"> <li>• Yes</li> </ul>
Over Voltage Protection	<ul style="list-style-type: none"> <li>• Protection Range: 51~58V</li> <li>• Protection Type: shut down operating voltage, re-power on at the preset level to recover</li> </ul>
Over Current Protection	<ul style="list-style-type: none"> <li>• 15A</li> </ul>
CMOS Battery Backup	<ul style="list-style-type: none"> <li>• SuperCap Integrated for CMOS Battery Maintenance-free Operation</li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• 306,338 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3</li> </ul>
<b>Environment</b>	
Operating Temperature	<ul style="list-style-type: none"> <li>• Intel® Processor N97 / Atom® x7425E: -40°C to 70°C</li> <li>• Intel® Core™ i3-N305: -40°C to 60°C</li> <li>* PassMark Burn-In Test: 100% CPU, 2D/3D Graphics (without thermal throttling)</li> <li>* With extended temperature peripherals; Ambient with air flow</li> <li>* According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• -40°C to 70°C</li> </ul>
Relative Humidity	<ul style="list-style-type: none"> <li>• Intel® Processor N97 / Atom® x7425E: 95%RH @ 70°C (non-Condensing)</li> <li>• Intel® Core™ i3-N305: 95%RH @ 60°C (non-Condensing)</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• Operating, 50 Grms, Half-sine 11 ms Duration (w/ SSD, according to IEC60068-2-27)</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• Operating, 1 Grms, 10-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-6)</li> <li>• Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)</li> </ul>
EMC	<ul style="list-style-type: none"> <li>• CE, UKCA, FCC, ICES-003 Class A</li> <li>• EN61000-6-4, EN61000-6-2 @ DC-input 24V</li> </ul>

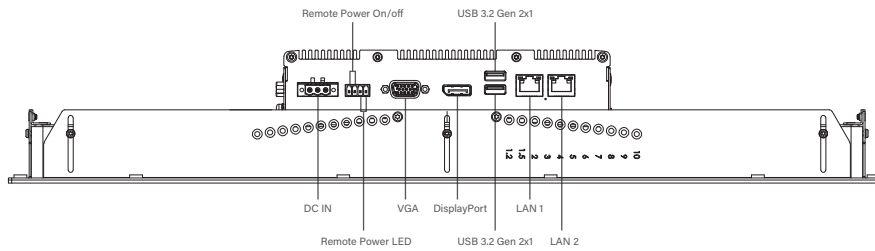
EMI	<ul style="list-style-type: none"> <li>• CISPR 32 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN 55032 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A</li> <li>• EN/BS EN61000-3-3 Voltage fluctuations &amp; flicker</li> <li>• FCC 47 CFR Part 15B, ICES-003 Conducted &amp; Radiated: Class A</li> </ul>
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Safety	<ul style="list-style-type: none"> <li>• UL, cUL, CB, IEC, EN 62368-1</li> </ul>

**CO-W121C/P1301 External Layout**

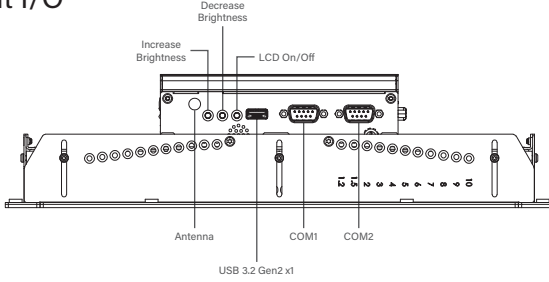
**Front I/O**



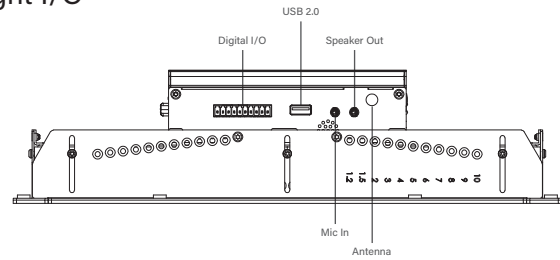
**Rear I/O**



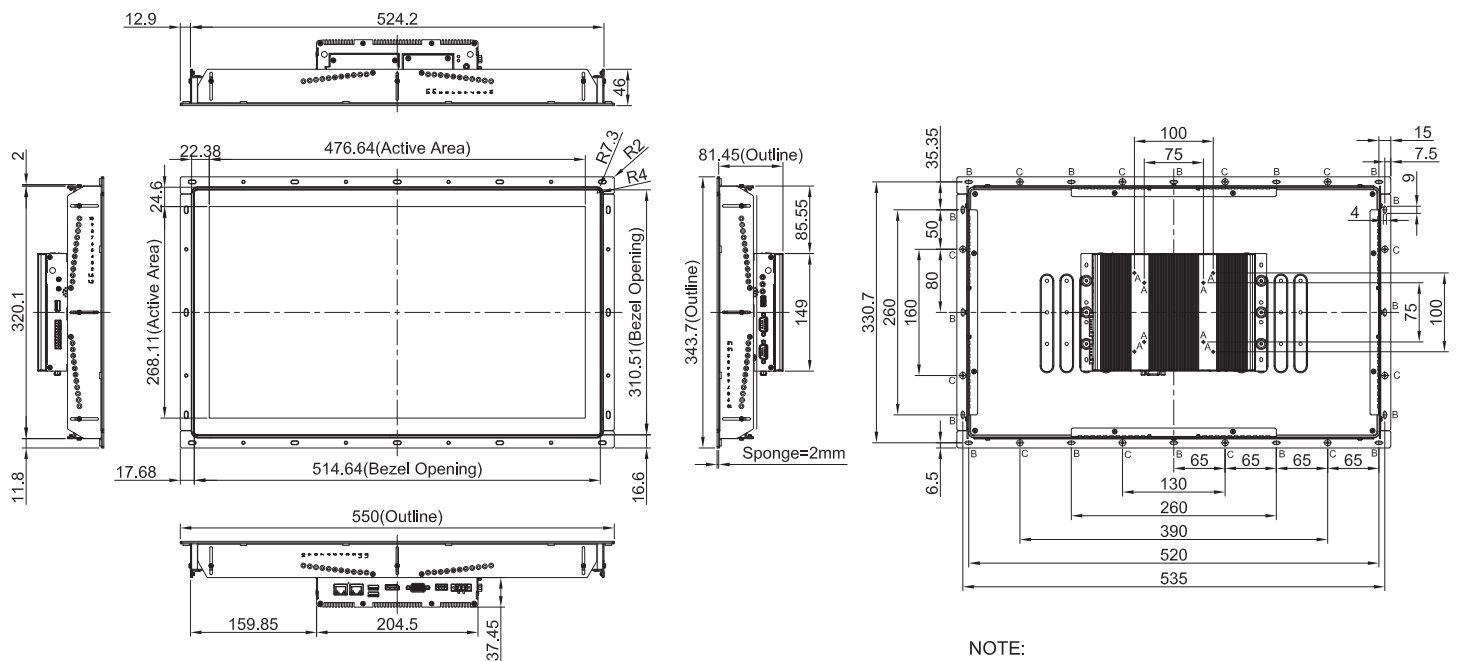
**Left I/O**



**Right I/O**



**CO-W121C/P1301 Dimensions**



NOTE:  
 1.A=8\_M4 VESA Screw Hole(5mm Length Limits)  
 2.B=16\_9\*4 Oblong Hole3.C=8\_4.D=12\_M5 Screw  
 3.C=12\_M4 Screw Hole

**Unit: mm**

## Ordering Information

### Available Models

Model No.	Description
CO-W121C-R10/P1301-N97-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Panel PC with Intel® Processor N97 Quad Core Slim Embedded Computer and P-Cap. Touch
CO-W121C-R10/P1301-X7425E-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Panel PC with Intel® Atom® x7425E Quad Core Slim Embedded Computer and P-Cap. Touch
CO-W121C-R10/P1301-i3-R10	21.5" TFT-LCD Full HD 16:9 Open Frame Panel PC with Intel® Core i3-N305 Octa Core Slim Embedded Computer and P-Cap. Touch

### Model Configuration

	CO-W121C	P1301-N97	P1301-X7425E	P1301-i3
CO-W121C/P1301-N97	V	V	--	--
CO-W121C/P1301-X7425E	V	--	V	--
CO-W121C/P1301-i3	V	--	--	V

V : Compatible

### Package Checklist

• CO-W121C/P1301 Series Panel PC x 1	• 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
• 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
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W, GST60A12-CIN1, wide temp(-30°C ~ +70°C)
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp (-30°C ~ +70°C), level VI