

# P1201

Intel® Elkhart Lake Atom® x6000E Series Processor Slim Embedded Computer with CDS Technology

## A SLIM AND POWER EFFICIENT COMPUTER

For Embedded and Panel-PC Application

P1201



### Overview

The P1201 is an Intel® Elkhart Lake Atom® processor-equipped, ultra-thin, fanless embedded computer for IoT edge computing. It offers flexible expansion with a rich assortment of native I/O ports, Mini PCIe and M.2 Key E Type 2230 slots, and an exclusive CFM slot to add functions such as PoE or IGN. The chassis measures only 41.5 mm, making it suitable for installation in narrow space-limited applications.

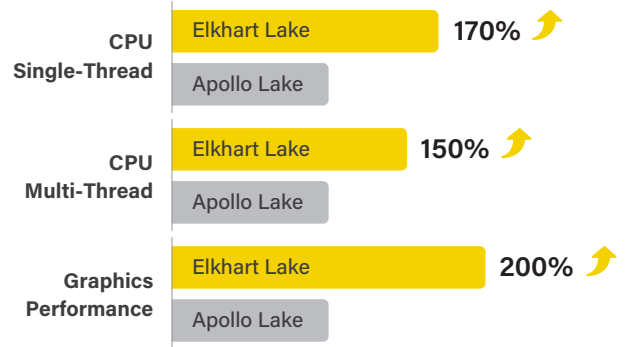
“One computer / Two purposes” is the P1201’s crowning feature. The patented Convertible Display System (CDS) enables the addition of one of a selection of display modules to convert the P1201 from an embedded computer to an industrial panel PC, sunlight-readable panel PC, or open-frame panel PC, satisfying diverse display computing needs.

- Intel® Elkhart Lake Atom® x6425E/x6211E Processor
- 1x DDR4 SO-DIMM
- 1x M.2 Key E Type 2230 Socket for Intel® CNVi/Wireless Module
- CFM Technology for Power Ignition Sensing Function and PoE Function
- Cincoze Patent CDS Technology Support (Patent No. M482908)
- EMC Emission / Immunity Standard for Industrial Environment : EN61000-6-4, EN61000-6-2
- Safety Certification: UL, cUL, CB 62368-1



### Next-gen Performance

The P1201 supports up to an Intel® Atom® x6425E (Elkhart Lake) 4-core processor, with 1.7 times the single-thread performance, 1.5 times the multi-thread performance, and double the graphics performance of the previous-generation Apollo Lake processor. Up to 32 GB of 3200 MHz DDR4 is supported.



### Ultra-thin Chassis and Easy Installation

The P1201 has an ultra-thin and compact design, only 204.5 × 149 × 41.5 (mm), enabling smart factories to collect and process data in space-limited applications such as equipment machines, control cabinets, AGVs, and more.

### One Computer / Two Purposes

The P1201 is an embedded computer that can become a panel PC using Cincoze's patented Convertible Display System (CDS) interface to attach an industrial display module (CV-100 series), sunlight-readable display module (CS-100 series), or open-frame display module (CO-100 series) to create a panel PC with specific characteristics.

Patent No. M482908



### Full Wireless Connectivity

The P1201 supports all the wireless transmission methods, including an M.2 Key E module with high-speed WiFi 6 for fast data transfer and Bluetooth for peripheral connections, and a GPS and 4G Mini PCIe module. These options cover most wireless transmission needs.

### Vibration Resistance and Industrial EMC Protection

The P1201 is vibration resistant and incorporates EMC protections to ensure stable and continuous operation in equipment, control cabinets, and mobile equipment. The P1201 passes various vibration and shock reliability tests, including random vibration (5G), sinusoidal vibration (1.5G), and shock resistance (50G), meeting the harsh industrial EMC testing standards (EN 61000-6-2 and EN 61000-6-4), UL certification product safety standard, and high-standard industrial-grade protections.



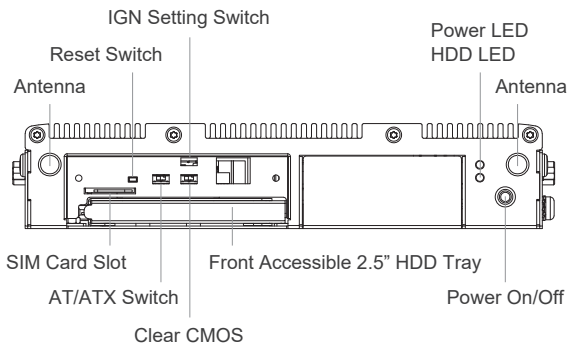
## Specifications

Model Name	P1201
<b>System</b>	
Processor	<ul style="list-style-type: none"> <li>• Intel® Atom® x6425E Processor (1.5M Cache, up to 3.00 GHz, 12W)</li> <li>• Intel® Atom® x6211E Processor (1.5M Cache, up to 3.00 GHz, 6W)</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• 1x DDR4 SO-DIMM Socket</li> <li>• Supports DDR4 3200MHz Memory Up to 32GB (un-buffered and non-ECC)</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, According to CPU Specifications)</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	<ul style="list-style-type: none"> <li>• Realtek® ALC888, High Definition Audio</li> </ul>
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 1GbE LAN, RJ45</li> <li>- GbE1: Intel® I210</li> <li>- GbE2: Intel® I210</li> </ul>
COM	<ul style="list-style-type: none"> <li>• 3x RS-232/422/485 with Auto Flow Control, DB9</li> </ul>
USB	<ul style="list-style-type: none"> <li>• 3x 10Gbps USB 3.2 Gen2, Type A</li> <li>• 1x 480Mbps USB 2.0, Type A</li> </ul>
DIO	<ul style="list-style-type: none"> <li>• 8x Isolated DIO (4x DI/4x DO), 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 Drive Bay ( SATA3.0 )</li> </ul>
mSATA	<ul style="list-style-type: none"> <li>• 1x mSATA Socket (SATA 3.0, shared by Mini-PCIe socket)</li> </ul>
<b>Expansion</b>	
Mini PCI Express	<ul style="list-style-type: none"> <li>• 1x Full-size Mini-PCIe Socket</li> </ul>
SIM Socket	<ul style="list-style-type: none"> <li>• 1x SIM Socket</li> </ul>
M.2	<ul style="list-style-type: none"> <li>• 1x M.2 Key E Type 2230 Socket, Support Intel® CNVi/Wireless Module</li> </ul>
CFM (Control Function Module) Interface	<ul style="list-style-type: none"> <li>• 1x CFM IGN Interface for optional CFM-IGN Module Expansion</li> <li>• 1x CFM PoE Interface for optional CFM-PoE Module Expansion</li> </ul>
CDS (Convertible Display System) Interface	<ul style="list-style-type: none"> <li>• 1x CDS Interface for Convertible Display Module</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>

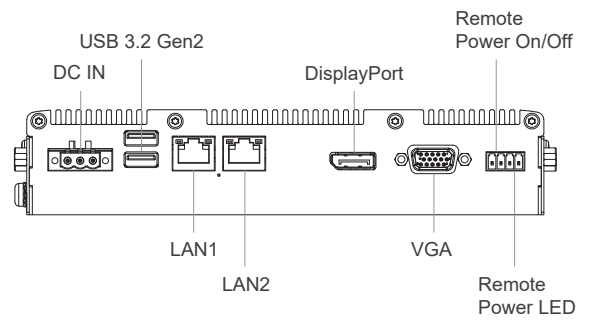
Instant Reboot	<ul style="list-style-type: none"> <li>• Support 0.2sec Instant Reboot Technology</li> </ul>
Watchdog Timer	<ul style="list-style-type: none"> <li>• Software Programmable Supports 256 Levels System Reset</li> </ul>
OSD Button	<ul style="list-style-type: none"> <li>• LCD On/Off, Brightness 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, Temperature 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>	
Windows	<ul style="list-style-type: none"> <li>• Windows® 10</li> </ul>
Linux	<ul style="list-style-type: none"> <li>• Supports by project</li> </ul>
<b>Physical</b>	
Dimension ( W x D x H )	<ul style="list-style-type: none"> <li>• 204.5 x 149 x 41.5 mm</li> </ul>
Weight Information	<ul style="list-style-type: none"> <li>• 1.54 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 Protection	<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>• 283,091 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3</li> </ul>
<b>Environment</b>	
Operating Temperature	<ul style="list-style-type: none"> <li>• -40°C to 70°C</li> <li>* PassMark BurnInTest: 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 85°C</li> </ul>
Relative Humidity	<ul style="list-style-type: none"> <li>• 95%RH @ 70°C (non-Condensing)</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• Operating, 50 Grms (w/ SSD, according to IEC60068-2-27)</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)</li> <li>• Operating, 1 Grms, 10-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-6)</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 (24VDC Input Only)</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• UL, cUL, CB, IEC/EN 62368-1</li> </ul>

## External Layout

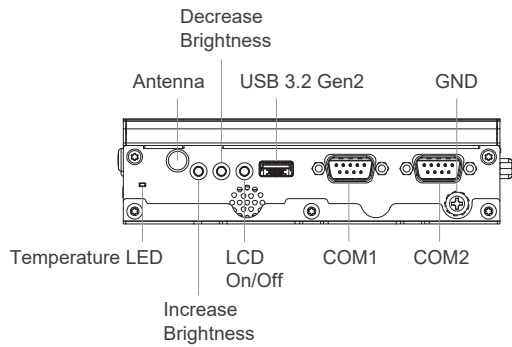
Front I/O



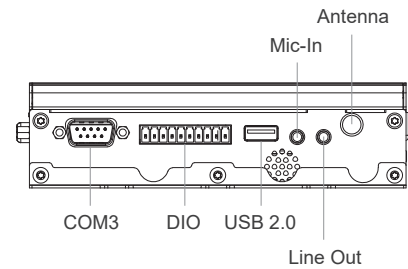
Rear I/O



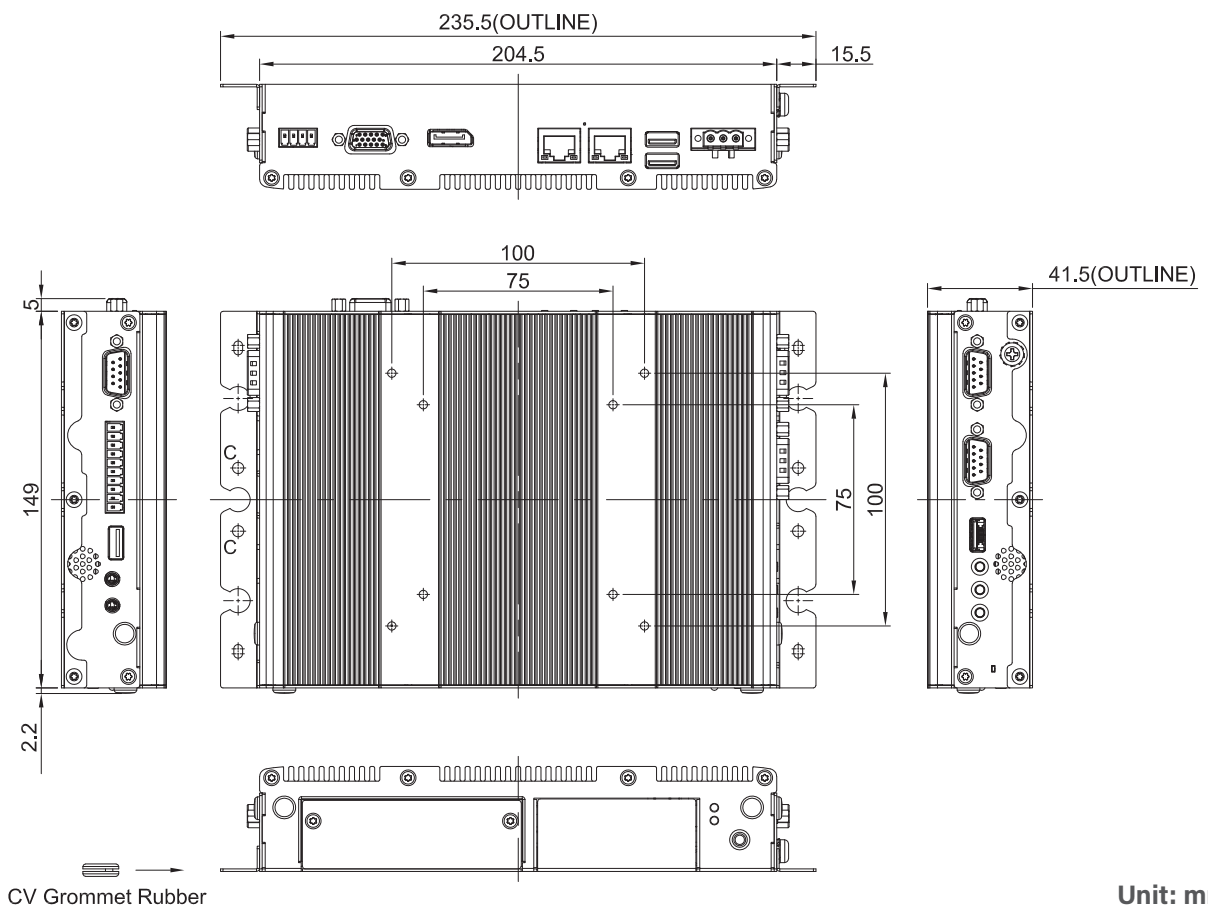
Left I/O



Right I/O



## Dimensions



Unit: mm

## Ordering Information

### Available Models

Model No.	Description
P1201-X6425E-R10	Intel® Atom® x6425E Quad Core Slim Embedded Computer with CDS Technology
P1201-X6211E-R10	Intel® Atom® x6211E Dual Core Slim Embedded Computer with CDS Technology

### Package Checklist

• P1201 Slim Embedded Computer x1	• Power Terminal Block Connector x1
• Thermal Pad (for CPU Thermal Block) x 1	• Remote Function Terminal Block Connector x1
• Wall Mounting Kit x1	• DIN Rail Mounting Kit x1
• Screw Pack x1	• DIO Terminal Block Connector x 1

### Optional Modules and Accessories

Model No.	Description
CFM-PoE02	CFM Module with PoE Control Function, Individual Port 25.5W
CFM-IGN101	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable (43 x 36 mm)
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W, GST60A12-CIN1, wide temp(-30°C ~ +70°C)
GST120A24-CIN	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug and Tubes, Level VI