# CV-115/P1201 Series

15" TFT-LCD Modular Panel PC with Intel® Elkhart Lake Atom® x6000E Series Processor



POWER EFFICIENT INDUSTRIAL PANEL PC

| CV-100/P1000 Series |

## Overview

CONTACT

The CV-100/P1201 series is a modular industrial panel PC with an Intel® Atom® (Elkhart Lake) processor. Available in a selection of screen sizes, the CV-100/P1201 has flexible expansion options, including rich native I/O interfaces (GbE LAN, USB 3.2, COM, and DIO), Mini PCIe and M.2 Key E Type 2230 expansion slots, and exclusive CFM expansion to add functions such as PoE and IGN. Cincoze's exclusive patented Convertible Display System (CDS) technology enables further flexible future computer performance upgrades and screen replacements. The robust CV-100/P1201 series is well suited for equipment HMI and production process visualization applications.

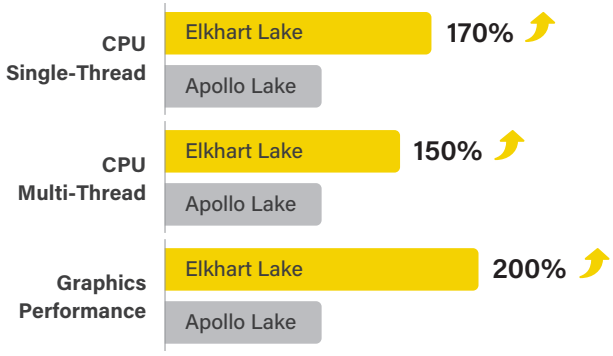
### Key Features

- 15" TFT XGA 4:3 LCD with Resistive / P-CAP / P-CAP (AG)
- Intel® Elkhart Lake Atom® x6425E/x6211E Processor
- 1x DDR4 SO-DIMM
- Designed with Rugged Aluminum Die-casting Front Bezel
- Support Panel / VESA / Rack Mount
- Front Panel IP65 Compliant
- Wide Operating Temperature
- Cincoze Patent CDS Technology Support

### Certifications

## Next-gen Performance

The CV-100/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.







## Patented CDS Technology

Convertible Display System (CDS), the patented technology that connects the CV-100 display module to the P1201 embedded computer, has the advantages of easy maintenance in the field and easy future upgrades because the screen size can be changed and performance can be improved by only replacing a single part, rather than the whole system, saving on upgrade costs.

Patent No. M482908

## Comprehensive Range of Sizes

The CV-100/P1201 series has a diverse selection of screen sizes (8.4" to 24"), aspect ratios (4:3, 5:4, 16:9), and touch technologies (multi-point capacitive, single-point resistive) available to suit various application needs.






## Robust, Safe, Reliable

The CV-100/P1201 series has industrial-grade protections, including wide operating temperature, wide-range DC power input (9 to 48 VDC), and IP65 front panel dust and water resistance, to face harsh and dangerous use environments such as on-site HMI and production process visualization. The CV-100/P1201 (19"-24" only) has separately passed product safety standards (UL certification) for information and communication technology and audio-visual equipment in the United States, an assurance of product safety.

## CV-115 Series Specifications

| Model Name | CV-115R | CV-115C | CV-115C-AG |
|---|---|---|---|
| **Display** | | | |
| LCD Size | ▪ 15" (4:3) | | |
| Max. Resolution | ▪ 1024 x 768 | | |
| Brightness (cd/m2) | ▪ 350 | | |
| Contrast Ratio | ▪ 800 : 1 | | |
| LCD Color | ▪ 16.2M | | |
| Pixel Pitch (mm) | ▪ 0.297 (H) x 0.297 (V) | | |
| Viewing Angle (H-V) | ▪ 160 / 150 | | |
| Backlight LED Life Time | ▪ 50,000 hrs (LED Backlight) | | |
| **Touch Screen** | | | |
| Touch Type | ▪ Resistive 5-wire | ▪ Projected Capacitive | ▪ Projected Capacitive |
| Anti-Glare | | | v |
| Wet Touch Tracking | | v | v |
| **Physical** | | | |
| Dimension ( W x D x H ) | ▪ 408 x 312.4 x 59.2 mm | | |
| Weight Information | ▪ 4.36 kg | | |
| Mechanical Construction | ▪ Die-Casting Flat Surface | | |
| **Power** | | | |
| Power Consumption | ▪ 8W (Max.) | ▪ 7.95W (Max.) | ▪ 7.95W (Max.) |
| **Environment** | | | |
| Front Panel Protection | ▪ IP 65 Compliant | | |
| Operating Temperature | ▪ 0°C to 65°C (32°F to 149°F)<br>(With Industrial Grade peripherals; Ambient with air flow) | | |
| Storage Temperature | ▪ -20°C to 65°C (-4°F to 149°F) | | |
| Relative Humidity | ▪ 90% RH @ 40°C (Non-condensing) | | |
| EMC | ▪ CE, UKCA, FCC, ICES-003 Class A | | |
| EMI | ▪ CISPR 32 Conducted & Radiated: Class A<br>▪ EN/BS EN 55032 Conducted & Radiated: Class A<br>▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A<br>▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker<br>▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A | | |
| EMS | ▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m<br>▪ EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV<br>▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-6 CS: 3V<br>▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m<br>▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz | | |
| Safety | ▪ UL, cUL, CB, IEC, EN 62368-1 | | |

## P1201 Specifications

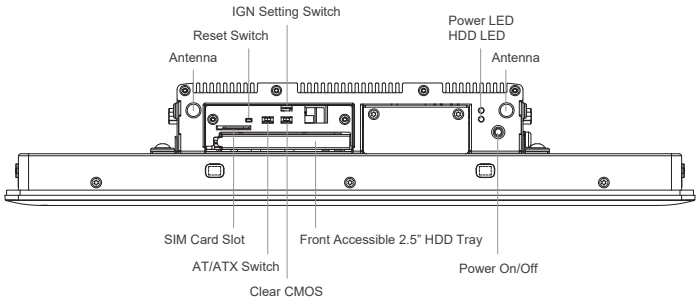
| Model Name | P1201 |
|---|---|
| **System** | |
| Processor | ▪ Intel® Atom® x6425E Processor (1.5M Cache, up to 3.00 GHz, 12W)<br>▪ Intel® Atom® x6211E Processor (1.5M Cache, up to 3.00 GHz, 6W) |
| Memory | ▪ 1x DDR4 SO-DIMM Socket<br>▪ Supports DDR4 3200MHz Memory Up to 32GB (un-buffered and non-ECC) |
| 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,According to CPU Specifications)<br>* 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 1GbE LAN, RJ45<br>- GbE1: Intel® I210<br>- GbE2: Intel® I210 |
| COM | ▪ 3x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9 |
| USB | ▪ 3x 10Gbps USB 3.2 Gen2, Type A<br>▪ 1x 480Mbps USB 2.0, Type A |
| DIO | ▪ 8x Isolated DIO (4x DI/4x DO), 10-Pin Terminal Block |
| **Storage** | |
| SSD/HDD | ▪ 1x 2.5" Front Accessible SATA HDD/SSD Drive Bay ( SATA3.0 ) |
| mSATA | ▪ 1x mSATA Socket (SATA 3.0, shared by Mini-PCIe socket) |
| **Expansion** | |
| Mini PCI Express | ▪ 1x Full-size Mini-PCIe Socket |
| SIM Socket | ▪ 1x SIM Socket |
| M.2 | ▪ 1x M.2 Key E Type 2230 Socket, Support Wireless Module |
| CFM (Control Function Module) Interface | ▪ 1x CFM IGN Interface for optional CFM-IGN Module Expansion<br>▪ 1x CFM PoE Interface for optional CFM-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, Temperature 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 |
| **Operating System** | |
| Windows | ▪ Windows® 10 |
| Linux | ▪ Supports by project |
| **Physical** | |
| Dimension ( W x D x H ) | ▪ 204.5 x 149 x 41.5 mm |
| Weight Information | ▪ 1.54 kg |
| Mechanical Construction | ▪ Extruded Aluminum with Heavy Duty Metal |
| Mounting | ▪ Wall / VESA / CDS / DIN Rail |
| Physical Design | ▪ Fanless Design<br>▪ Jumper-less Design |
| **Reliability & Protection** | |
| Reverse Power Input Protection | ▪ Yes |
| Over Voltage Protection | ▪ Protection Range: 51~58V<br>▪ 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 | ▪ 283,091 Hours - Database: Telcordia SR-332 Issue3, Method 1, Case 3 |
| **Environment** | |
| Operating Temperature | ▪ -40°C to 70°C<br>* PassMark BurnInTest: 100% CPU, 2D/3D Graphics (without thermal throttling)<br>* With extended temperature peripherals; Ambient with air flow<br>* According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14 |
| Storage Temperature | ▪ -40°C to 85°C |
| Relative Humidity | ▪ 95%RH @ 70°C (non-Condensing) |
| Shock | ▪ Operating, 50 Grms (w/ SSD, according to IEC60068-2-27) |
| Vibration | ▪ Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)<br>▪ Operating, 1 Grms, 10-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-6) |
| EMC | ▪ CE, UKCA, FCC, ICES-003 Class A<br>▪ EN IEC 61000-6-4, EN IEC 61000-6-2(24VDC Input Only) |

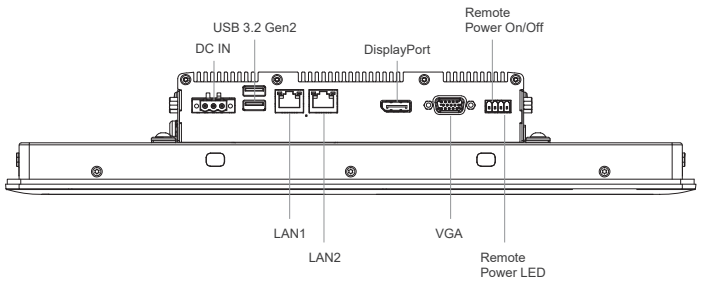
| | |
|---|---|
| EMI | ▪ CISPR 32 Conducted & Radiated: Class A<br>▪ EN/BS EN 55032 Conducted & Radiated: Class A<br>▪ EN/BS EN IEC 61000-3-2 Harmonic current emissions:  Class A<br>▪ EN/BS EN61000-3-3 Voltage fluctuations & flicker<br>▪ FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A |
| EMS | ▪ EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>▪ EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 10 V/m<br>▪ EN/IEC 61000-4-4 EFT: AC Power: 2 kV; DC Power: 1 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV<br>▪ EN/IEC 61000-4-6 CS: 10V<br>▪ EN/IEC 61000-4-8 PFMF: 50 Hz, 30A/m<br>▪ EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 1 cycles at 60 Hz |
| Safety | ▪ UL, cUL, CB, IEC/EN 62368-1 |

## CV-115/P1201 External Layout

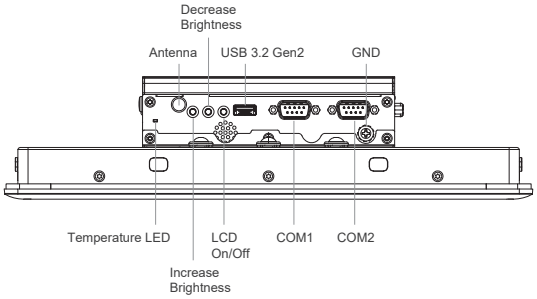
### Front I/O



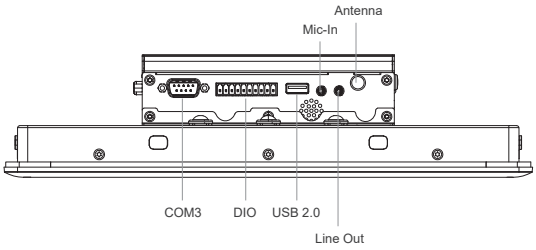

### Rear I/O



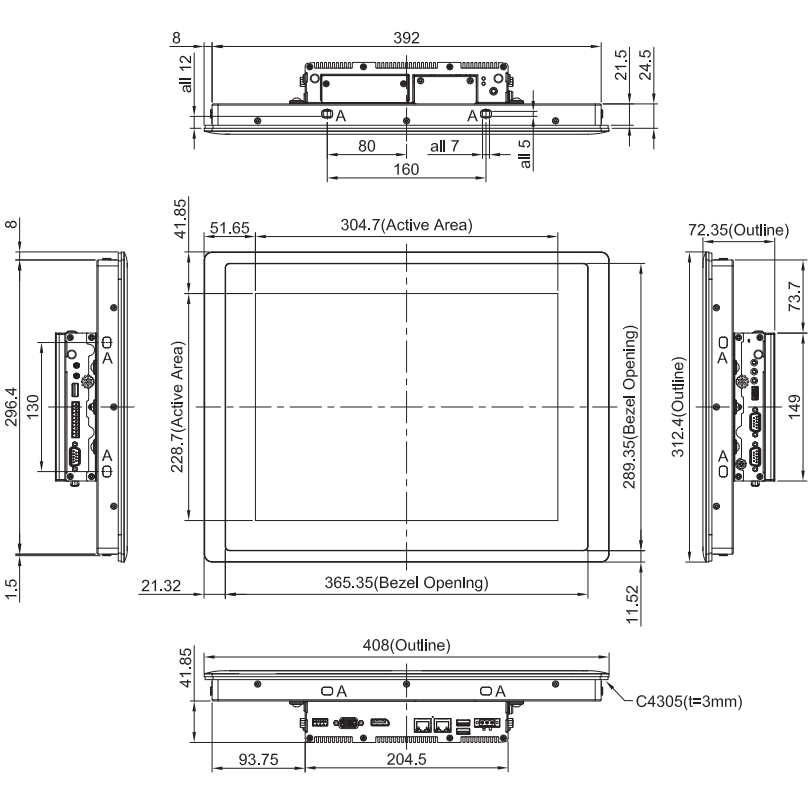

### Left I/O

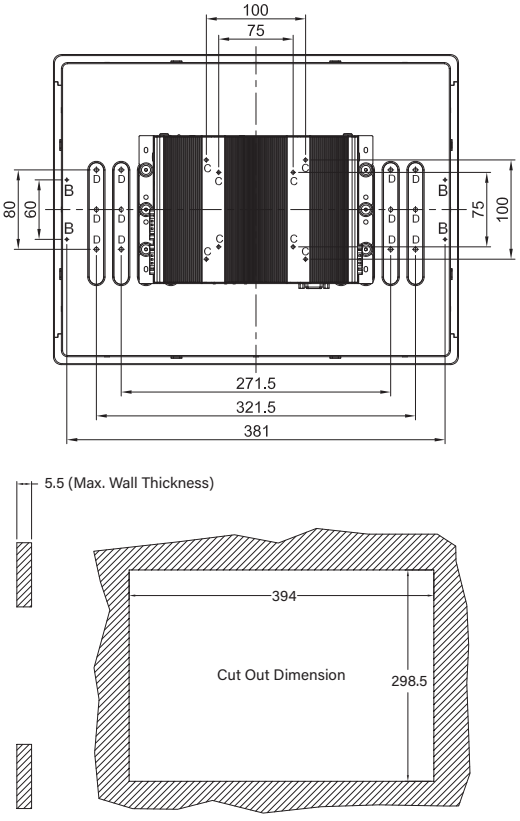



### Right I/O




## CV-115/P1201 Dimensions




Unit: mm

# Ordering Information

## Available Models

| Model No. | Description |
|---|---|
| CV-115R-R10/P1201-X6425E-R11 | 15" TFT-LCD XGA 4:3 Panel PC with Intel Atom x6425E Quad Core Processor and Resistive 5-wire Touch |
| CV-115C-R11/P1201-X6425E-R11 | 15" TFT-LCD XGA 4:3 Panel PC with Intel Atom x6425E Quad Core Processor and P-Cap. Touch |
| CV-115C-AG-R11/P1201-X6425E-R11 | 15" TFT-LCD XGA 4:3 Panel PC with Intel® Atom™ x6425E Quad-Core Processor, P-Cap Touch, and Anti-Glare Coating |
| CV-115R-R10/P1201-X6211E-R11 | 15" TFT-LCD XGA 4:3 Panel PC with Intel Atom x6211E Dual Core Processor and Resistive 5-wire Touch |
| CV-115C-R11/P1201-X6211E-R11 | 15" TFT-LCD XGA 4:3 Panel PC with Intel Atom x6211E Dual Core Processor and P-Cap. Touch |
| CV-115C-AG-R11/P1201-X6211E-R11 | 15" TFT-LCD XGA 4:3 Panel PC with Intel® Atom™ x6211E Dual-Core Processor, P-Cap Touch, and Anti-Glare Coating |

## Model Configuration

| | CV-115R | CV-115C | CV-115C-AG | P1201-X6425E | P1201-X6211E |
|---|---|---|---|---|---|
| CV-115R/P1201-X6425E | V | -- | -- | V | -- |
| CV-115C/P1201-X6425E | -- | V | -- | V | -- |
| CV-115C-AG/P1201-X6425E | -- | -- | V | V | -- |
| CV-115R/P1201-X6211E | V | -- | -- | -- | V |
| CV-115C/P1201-X6211E | -- | V | -- | -- | V |
| CV-115C-AG/P1201-X6211E | -- | -- | V | -- | V |

V : Compatible

## Package Checklist

- CV-115/P1201 Series Panel PC x 1
- Power Terminal Block Connector (Female) x 1
- Thermal Pad (for CPU Thermal Block) x 1
- Screw Pack x 1
- DIO Terminal Block Connector (Female) x 1
- Remote Power On/Off Terminal Block Connector x 1
- Panel Mounting Kit x 8

## 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) |
| 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 |

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