

# P2002E

## 6th Generation Intel® Core™ U Series (Skylake) Expandable Fanless Computer with CFM and CDS Interface



- Onboard Intel® 6th Generation Core™ U Series Processor (15W)
- 2x DDR4 SO-DIMM Socket, Support Up to 32 GB
- Advanced Graphics Engine Support Triple Independent Display
- 2x 2.5" SATA HDD Bay, 1x mSATA and 1x CFAST Socket
- 2x Full Size Mini-PCIe Socket
- 1x PCI or 1x PCIe4 Expansion Slot
- Support CFM (Control Function Module) Technology
- Support 2x PoE+, Offers Up to 25.5W Per Port (with optional CFM module)
- Support Ignition Sensing Function (IGN) (with optional CFM module)
- Rich I/O (2x GbE LAN, 6x COM, 5x USB, 16x Isolated DIO)
- Support Instant Reboot Technology
- Support CDS Technology for Convertible Panel PC
- Wide Operating Temperature (-25°C to 70°C)



### Overview

Cincoze P2002E is a high performance fanless embedded and display computer powered by Intel® 6th generation Core™ U series processor with only 15 watt power consumption. The advanced graphics engine support triple independent display with 1x VGA, 1x DVI-D and 1x CDS interface. P2002E provides great connectivity with rich I/O including 2x GbE LAN, 5x USB and 6x COM ports. P2002E also supports 3 types of storage devices including 2.5" SATA HDD, CFAST and mSATA. The accessible design of these storage devices allows quick data access and easy maintenance.

P2002E supports CFM Technology which allows you to extend PoE and IGN function with additional modules.

And thanks to Cincoze's exclusive CDS Technology, P2002E also acts as an engine of panel PC for CV-100 Series. P2002E is truly a rugged computing system by supporting wide operating temperature from -25°C to 70°C, wide range DC power input from 9V to 48V, high tolerance of shock and vibration, various kinds of industrial protection and the integrated SuperCap for battery maintenance-free, those features allow P2002E to be easily deployed in harsh environment and critical applications.

### Highlights

#### CDS Technology

CDS (Convertible Display Systems) is patented technology from Cincoze, which is a revolutionary panel PC solution that offers features of modular design, configured on demand, scalability, transformability and Plug & Play.

#### CFM Technology

CFM (Control Function Module) is a technology created by Cincoze, it enables function enhancement by adding specific function daughter board. CFM Technology allows P2002 to support PoE and IGN function for various applications.

#### Instant Reboot

P2002 supports 0.2 second instant reboot for critical application.

#### SuperCap

SuperCap is extremely high volume capacitor, which can be recharged automatically when power is connected (without power Min. 50 days /Max. 70 days), you never need to change CMOS battery, and it makes P2002 a truly reliable and maintenance-free system.

## Specifications

### Processor System

- Onboard 6th Intel® Core™ U processors (Skylake)
  - Intel® Core™ i5-6300U processor (3M Cache, up to 3.00 GHz)
  - Intel® Core™ i3-6100U processor (3M Cache, 2.30 GHz)
  - TDP: 15 W
  - BIOS: AMI 64Mbit SPI BIOS

### Memory

- 2x DDR4 260-pin SO-DIMM socket, support up to 32 GB (2133MHz, un-buffered and non-ECC type)

### Graphics

- Intel® HD Graphics 520
- Triple independent display with 1x VGA, 1x DVI-D and 1x CDS interface

### Audio

- Realtek® ALC888-GR
- High Definition Audio

### I/O Interface

- 1x VGA (Up to 1920 x 1080 @ 60Hz), DB-15
- 1x DVI-D (Up to 1920 x 1080 @ 60Hz)
- 1x CDS Interface, Compact PCI Connector
- 2x GbE LAN (Support WoL, Teaming, Jumbo Frame and PXE), RJ45
  - GbE1: Intel I219-LM
  - GbE2: Intel I210
- 2x PoE+ (with Optional CFM PoE Module)
  - Comply with IEEE 802.3at, Offers Up to 25.5W Per Port
- 6x RS-232/422/485 with Auto Flow Control (Support 5V/12V), DB9
- 4x USB 3.0, Type-A
- 1x USB 2.0, Type-A
- 16x Isolated DIO (8x DI/8x DO), 20-Pin Terminal Block
- 1x Line-out & 1x Mic-in, Phone Jack 3.5mm
- 1x Power On/Off Switch
- 1x Reset Button
- 1x AT/ATX Switch
- 1x Remote Power On/Off Connector, 2-Pin Terminal Block
- 1x External FAN Connector, 4-Pin Terminal Block

### Storage

- 2x 2.5" SATA HDD/SSD Bay, Support RAID 0/1 (Gen3)
- 2x mSATA (One Shared by Mini-PCIe Socket) (Gen2)
- 1x CFast Socket (Gen3)

### Expansion

- 1x CFM PoE interface
- 1x CFM IGN interface
- 2x Full-size Mini-PCIe Socket
- 1x PCI or 1x PCIe4 Expansion slot
  - Optional Riser Card: 1x PCI, 1x PCIe4
  - Support maximum dimension of add-on card (H x L): 100mm x 200mm
- 1x Universal I/O Bracket
- 1x SIM Socket
- 4x Antenna Hole

### Other Function

- Support CDS Technology
- Support CFM Technology
- Support Instant Reboot Technology (0.2 sec)
- Support Power Ignition Sensing (IGN)
- Support OSD Function
  - (LCD On/Off, Brightness Up, Brightness Down for CDS Display Module)
- Internal Speaker AMP 2W + 2W
- SuperCap Integrated
- Watchdog Timer:
  - Software Programmable Supports 256 Levels System Reset

### Power Requirement

- Support AT/ATX Power Mode
- Power Input Voltage 9~48VDC
- One 3-pin Terminal Block Connector
- Power Adapter AC/DC 12V/5A 60W, 24V/5A 120W or 24V/9.2A 220W (Optional)

### Physical

- Dimension (WxDxH): 254.5 x 220 x 72 mm
- Weight: 3.18 kg
- Extruded Aluminum with Heavy Duty Metal
- Support Wall / VESA / CDS Mounting
- Fanless Design
- Jumper-less Design

### Protection

- Reverse Power Input Protection
- 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
- ESD Protection: +/-8kV (air), +/-4kV (contact)
- Surge Protection: 2kV

### Operating System

- Windows® 10
- Windows® 8.1
- Windows® 7
- Linux® Kernel 4.4

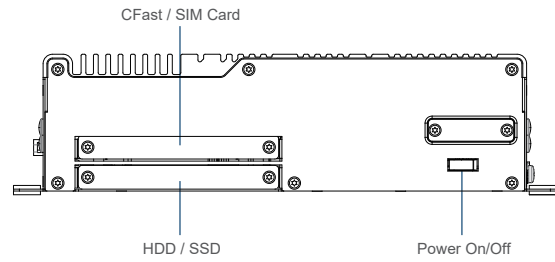
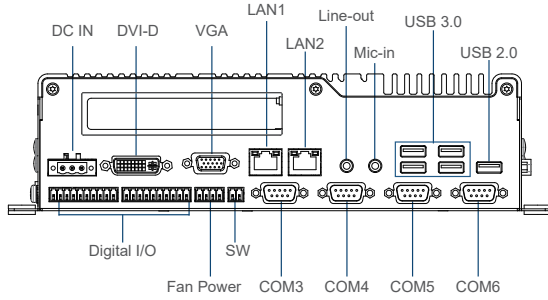
### Environment

- Operating Temperature: -25°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
- Relative Humidity: 95% RH @ 40°C (Non-condensing)
- Shock: Operating, 50 Grms, Half-sine 11 ms Duration
  - (with SSD, according to IEC60068-2-27)
- Vibration: Operating, 5 Grms, 5-500 Hz, 3 Axes
  - (with SSD, according to IEC60068-2-64)
- EMC: CE, FCC Class A

**External Layout**

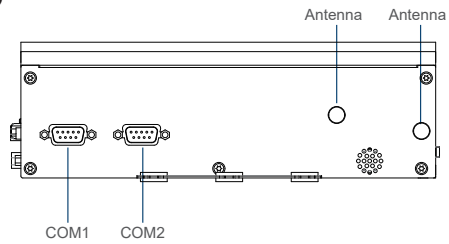
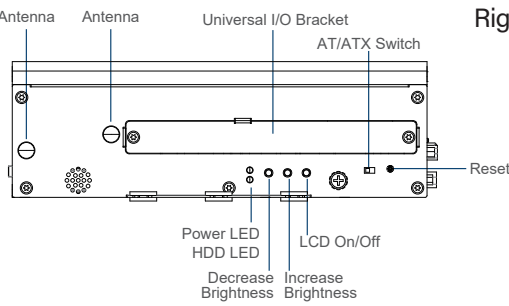
Front I/O

Rear I/O

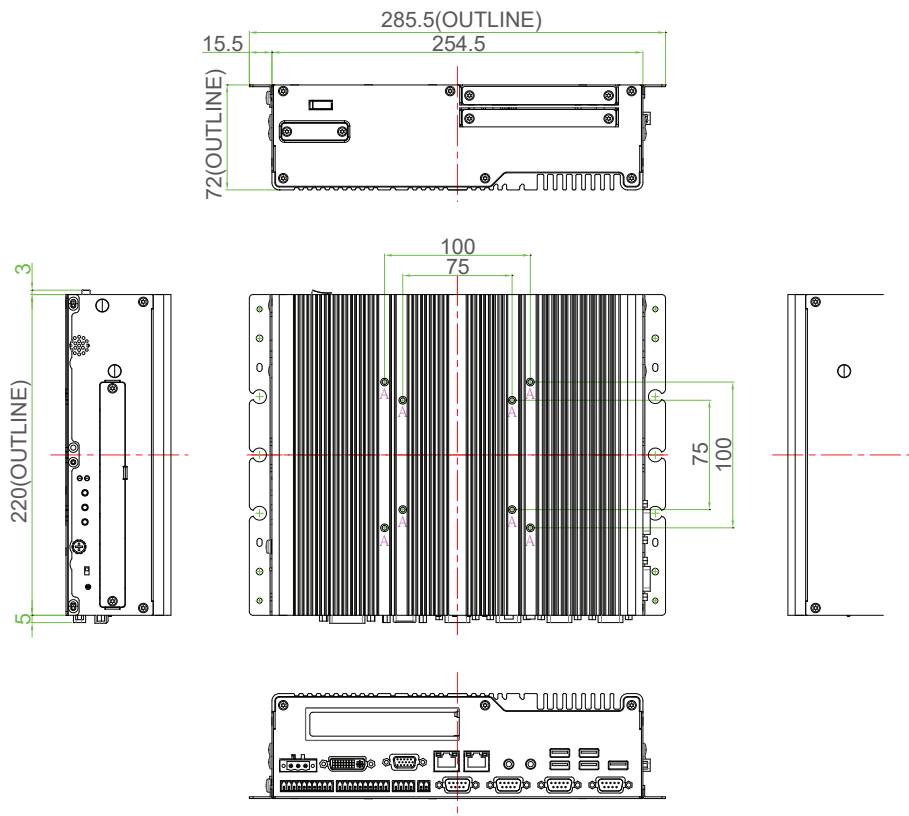


Left I/O

Right I/O



**Dimensions**



Unit: mm

## Ordering Information

### Available Models

Model No.	Description
P2002E-i5-R10	Intel® 6th Gen. Core i5-6300U Expandable Fanless Computer with CFM and CDS Interface
P2002E-i5-E4-R10	Intel® 6th Gen. Core i5-6300U Expandable Fanless Computer with CFM and CDS Interface, 1x PCIe4 Expansion
P2002E-i5-PI-R10	Intel® 6th Gen. Core i5-6300U Expandable Fanless Computer with CFM and CDS Interface, 1x PCI Expansion
P2002E-i3-R10	Intel® 6th Gen. Core i3-6300U Expandable Fanless Computer with CFM and CDS Interface
P2002E-i3-E4-R10	Intel® 6th Gen. Core i3-6300U Expandable Fanless Computer with CFM and CDS Interface, 1x PCIe4 Expansion
P2002E-i3-PI-R10	Intel® 6th Gen. Core i3-6300U Expandable Fanless Computer with CFM and CDS Interface, 1x PCI Expansion

### Package Checklist

- P2002E System x 1
- Utility DVD Driver x 1
- Screw Pack x 1
- Wall / CDS Mounting Kit x 1
- Power Terminal Block Connector x 1
- Fan Terminal Block Connector x 1
- DIO Terminal Block Connector x 2
- Remote Power On/Off Terminal Block Connector x 1

### Optional Modules & Accessories

Model No.	Description
CFM-IGN100	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable (41 x 35 mm)
CFM-PoE101	CFM Module with PoE Control Function, Individual Port 25.5W (50 x 44 x 33 mm)
MEC-COM-M212/UB0503	Mini-PCIe Module with 2x COM Ports, 1x Universal Bracket (154 x 17 mm)
MEC-COM-M334/UB0504	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports, 1x Universal Bracket (154 x 17 mm)
MEC-FIR-M003/UB0501	Mini-PCIe Module with 1x 1394A Port, 2x 1394B Ports, 1x Universal Bracket (154 x 17 mm)
MEC-LAN-M102-30/UB0511	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable / 1x Universal Bracket with 2x RJ45 Cutout for P2000 Series
MEC-USB-M002/UB0514	Mini-PCIe Module with 2x USB 3.0 Ports, 1x Universal Bracket (154 x 17 mm)
RC-E4-01	Riser Card with 1x PCIe4 Slot
RC-PI-01	Riser Card with 1x PCI Slot
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, GST220A24-CIN
GST120A24-CIN	Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp(-30°C ~ +70°C), level VI
GST60A12-CIN1	Adapter AC/DC 12V 5A 60W, GST60A12-CIN1, wide temp(-30°C ~ +70°C)
SL2-SL3	US 2 heads power cord, US B type to IEC C13, SVT 18AWG/3C Black 1.8M
SL6-SL3	EU 2 heads power cord, EU G type to IEC C13, H05VV-F 0.75mm2/3G Black 1.8M
QP026-SL3	UK 2 heads power cord, UK I type to IEC C13, H05VV-F 0.75mm2/3G Black 1.8M

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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