

P2002 Series

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



- Onboard Intel® 6th Generation Core™ U Series Processor (15W)
- 2x DDR4 SO-DIMM Socket, Support Up to 2133MHz, 32 GB
- Support Triple Independent Display(VGA/DVI-D/CDS)
- 2x 2.5" SATA HDD Bay, 1x mSATA and 1x CFAST Socket
- 2x Full Size Mini-PCIe Socket
- Expandable PCI/PCIe Feature (For P2002E only)
- CFM Technology for Power Ignition Sensing & PoE Function (25.5W)
- Rich I/O (2x GbE LAN, 5x USB, 6x COM, 16x Isolated DIO)
- Support 0.2 sec Instant Reboot Technology
- Supports Cincoze Patent CDS Technology (Patent No. M482908)
- Wide Operating Temperature (-25°C to 70°C)



Overview

Cincoze P2002 Series is a high performance fanless embedded and display computer powered by Intel® 6th generation Core™ U series processor with only 15 watts power consumption. The advanced graphics engine support triple independent display with 1x VGA, 1x DVI-D and 1x CDS interface. P2002 Series provides great connectivity with rich I/O including 2x GbE LAN, 5x USB and 6x COM ports. P2002 Series 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.

P2002 Series supports CFM Technology which allows you to extend PoE (max 25.5W) and IGN function with additional modules. And thanks to Cincoze's exclusive CDS Technology, P2002 Series also acts as an engine of panel PC for CV-100 Series. P2002 Series 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 P2002 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.

P2002 Series Specifications

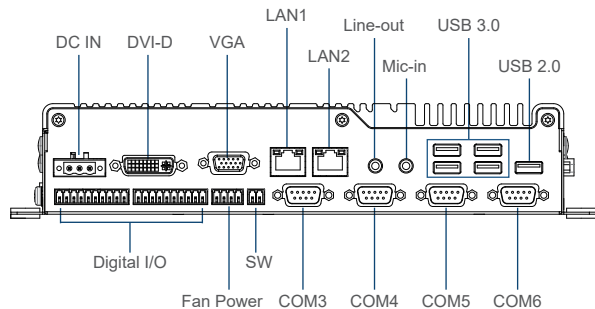
Model Name	P2002		P2002E
System			
Processor	- Onboard 6th Intel® Core™ U processors (Skylake) - Intel® Core™ i5-6300U processor (3M Cache, up to 3.00 GHz) - Intel® Core™ i3-6100U processor (3M Cache, 2.30 GHz) - TDP: 15 W		
Memory	2x DDR4 2133 MHz 260-Pin SO-DIMM Socket - Support Un-buffered and Non-ECC Type up to 32 GB		
BIOS	AMI 64Mbit SPI BIOS		
Graphics			
Graphics Engine	Integrated Intel® UHD Graphics 520		
Maximum Display Output	Supports Triple Independent Display		
CDS	1x CDS Connector for Cincoze Display Module		
VGA	1x VGA Connector(1920 x 1080 @60Hz), DB-15		
DVI-D	1x DVI-D Connector (1920 x 1080 @ 60Hz)		
Audio			
Audio Codec	Realtek® ALC888, High-Definition Audio		
Speaker-out	1x Speaker-out, Phone Jack 3.5mm		
Mic-in	1x Mic-in, Phone Jack 3.5mm		
I/O			
LAN	2x GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45 - GbE1: Intel® I219LM - GbE2: Intel® I210		
USB	4x USB 3.2 Gen1 (Type A), 1x USB 2.0 (Type A)		
Serial Port	6x RS-232/422/485 with Auto Flow Control Support 5V/12V, DB9		
DIO	16x Isolated Digital I/O (8in/8out), 10-Pin Terminal Block		
Storage			
SSD/HDD	2x 2.5" HDD/SSD Bay, Support RAID 0/1 (Gen3)		
mSATA	2x mSATA (One Shared by Mini-PCIe Socket) (Gen2)		
CFast	1x CFast Socket (Gen 3)		
Expansion			
Mini PCI Express	2x Full-size Mini-PCIe Sockets		
PCI Express		1x PCI or 1x PCIe x4 Expansion slot (with Optional Riser Card) - maximum dimension of add-on card:100mm x 200mm (H x L)	
SIM Socket	1 x Front Accessible SIM Socket		
Universal Bracket	1x Universal I/O Bracket		
CFM (Control Function Module) Interface	2x CFM Interface for optional CFM-IGN or CFM-PoE (max 25.5W) Module Expansion		
CDS (Convertible Display System) Technology	1x Convertible Display System (CDS) Interface, Compact PCI Connector		

Other Function		
Instant Reboot	▪ Support 0.2sec Instant Reboot technology	
Watchdog Timer	▪ Software Programmable Supports 256 Levels System Reset	
Internal Speaker	▪ AMP 2W + 2W	
OSD Function	▪ LCD On/Off, Brightness Up, Brightness Down	
Reset Button	▪ 1x Reset Button	
External Fan Connector	▪ 1x External Fan Connector, 4-pin Terminal Block	
Power		
Power Button	▪ 1x ATX Power On/Off Switch	
Power Mode Switch	▪ 1x AT/ATX Mode Switch	
Power Input	▪ 1x 3-pin Terminal Block Connector with Power Input 9~48VDC	
Power Adapter (Optional)	▪ 1x Optional AC/DC 12V/5A 60W or 24V/5A 120W ▪ 1x Optional AC/DC 24V/9.2A 220W (For P2002E only)	
Remote Power On/Off	▪ 1x Remote Power On/Off Connector, 2-pin Terminal Block	
Physical		
Dimension(W x D x H)	▪ 254.5 x 220 x 54mm	▪ 254.5 x 220 x 72 mm
Weight Information	▪ 2.92 kg	▪ 3.18 kg
Mechanical Construction	▪ Extruded Aluminum with Heavy Duty Metal	
Mounting	▪ Wall / VESA / CDS	
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 present level to recover	
Over Current Protection	▪ 15A	
CMOS Battery Backup	▪ SuperCap Integrated for CMOS Battery Maintenance-free Operation	
Operating System		
Microsoft® Windows®	▪ Windows® 10, Windows® 8.1, Windows® 7	
Linux	▪ Linux® Kernel 4.4	
Environment		
Operating Temperature	▪ Ambient with Air Flow: -25°C to 70°C (with Extended Temperature Peripherals)	
Storage Temperature	▪ -40°C to 85C	
Relative humidity	▪ 95% RH @ 40°C (Non-condensing)	
Shock	▪ Operating, 50 Grms, Half-sine 11ms Duration (w/ SSD, according to IEC60068-2-27)	
Vibration	▪ Operating, 5 Grms, 5-500 Hz, 3 Axes (w/ SSD, according to IEC60068-2-64)	
EMC	▪ CE, UKCA, FCC, ICES-003 Class A	

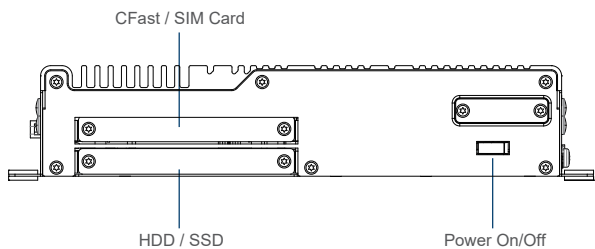
EMI	• CISPR 32 Conducted & Radiated: Class A • EN/BS EN 55032 Conducted & Radiated: Class A • EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A • EN/BS EN61000-3-3 Voltage fluctuations & flicker • FCC 47 CFR Part 15B, ICES-003 Conducted & Radiated: Class A
EMS	• EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV • EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m • EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV • EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV • EN/IEC 61000-4-6 CS: 3V • EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m • EN/IEC 61000-4-11 Voltage Dips & Voltage Interruptions: 0.5 cycles at 50 Hz

P2002 External Layout

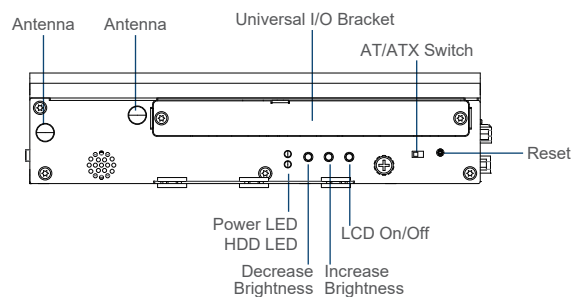
Front I/O



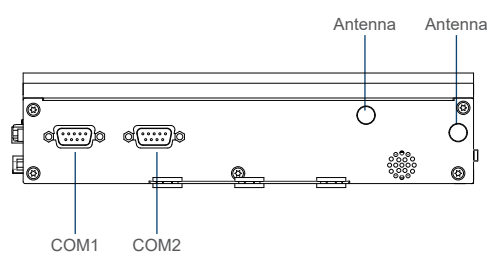
Rear I/O



Left I/O

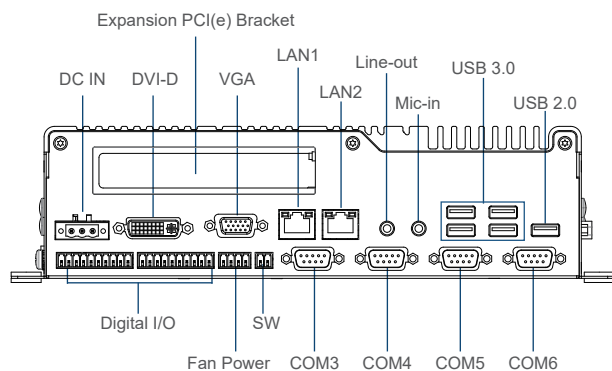


Right I/O

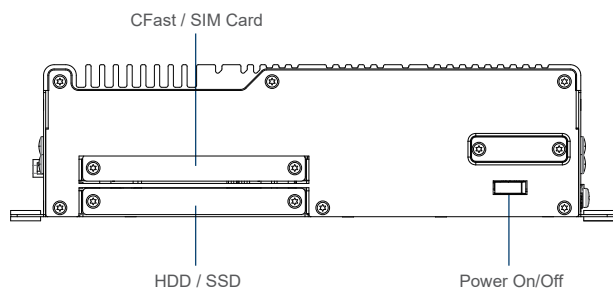


P2002E External Layout

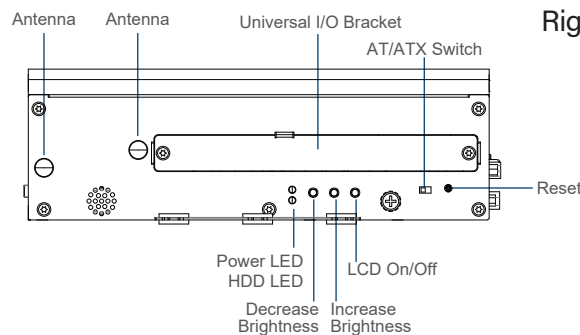
Front I/O



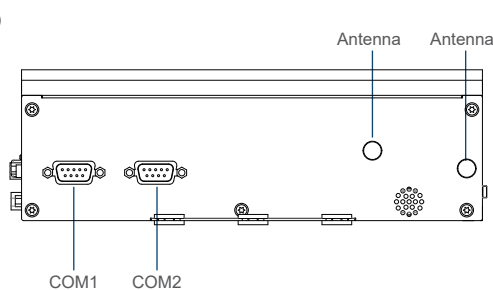
Rear I/O



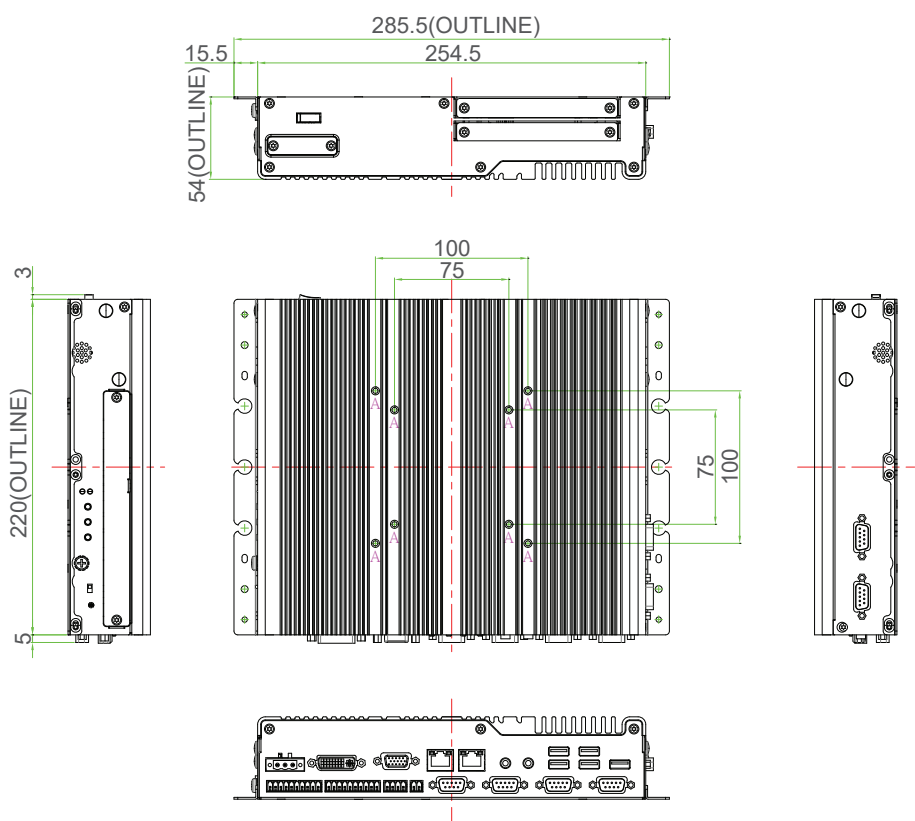
Left I/O



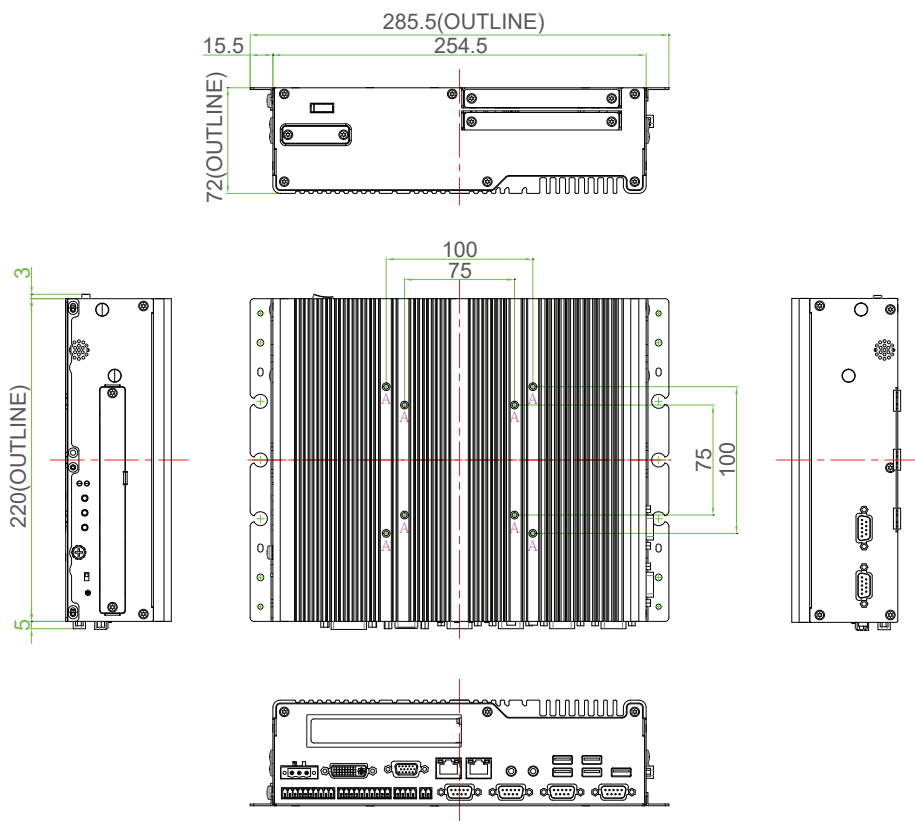
Right I/O



P2002 Dimensions



P2002E Dimensions



Unit: mm

Ordering Information

Available Models

Model No.	Description
P2002-i5-R10	Intel® 6th Gen. Core™ i5-6300U Fanless Computer With CFM and CDS Interface
P2002-i3-R10	Intel® 6th Gen. Core™ i3-6100U Fanless Computer With CFM and CDS Interface
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

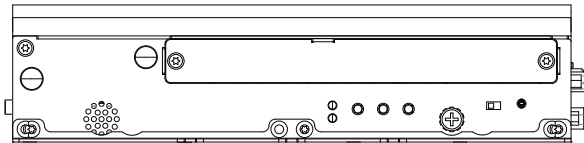
• P2002 Series Embedded Computer x 1	• DIO Terminal Block Connector x 2
• Wall / CDS Mounting Kit x 1	• Remote Power On/Off Terminal Block Connector x 1
• Power Terminal Block Connector x 1	• Screw Pack x 1
• Fan Terminal Block Connector x 1	

Optional Modules and Accessories

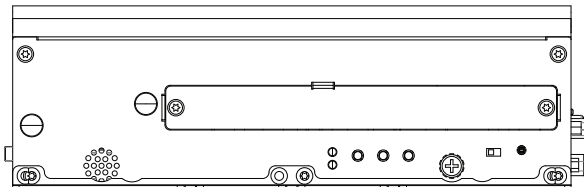
Model No.	Description
CFM-IGN100	CFM Module with Power Ignition Sensing Control Function, 12V/24V Selectable (41 x 35 mm)
CFM-PoE100	CFM Module with PoE Control Function, Individual Port 25.5W (50 x 44 x 15 mm)(For P2002 only)
CFM-PoE101	CFM Module with PoE Control Function, Individual Port 25.5W (50 x 44 x 33 mm) (For P2002E only)
RC-E4-01	Riser Card with 1x PCIe4 Slot (For P2002E only)
RC-PI-01	Riser Card with 1x PCI Slot (For P2002E only)
MEC-COM-M212	Mini-PCIe Module with 2x COM Ports
MEC-COM-M334	Mini-PCIe Module with 4x RS-232/422/485 Serial Ports
MEC-LAN-M102-30	Mini-PCIe Module with 2x LAN Ports, 2x 30cm cable
MEC-USB-M102-30	Mini-PCIe Module with 2x USB 3.2 Gen1 Ports, 1x 30cm cable
UB0503	1x Universal Bracket with 2x DB9 Cutout (154 x 17 mm)
UB0504	1x Universal Bracket with 4x DB9 Cutout (154 x 17 mm)
UB0511	1x Universal Bracket with 2x RJ45 Cutout (154 x 17 mm)
UB0514	1x Universal Bracket with 2x USB Cutout (154 x 17 mm)
GST220A24-CIN	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch, with TUBES, GST220A24-CIN (For P2002E only)
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)

Optional Module Configuration

P2002



P2002E



Model No.	Description	P2002	P2002E
MEC-COM-M212/UB0503 	Mini-PCle Module with 2x COM Ports, 1x Universal Bracket with 2x DB9 Cutout (154 x 17 mm)	V	V
MEC-COM-M334/UB0504 	Mini-PCle Module with 4x RS-232/422/485 Serial Ports, 1x Universal Bracket with 4x DB9 Cutout (154 x 17 mm)	V	V
MEC-LAN-M102-30/UB0511 	Mini-PCle Module with 2x LAN Ports, 2x 30cm cable, 1x Universal Bracket with 2x RJ45 Cutout (154 x 17 mm)	V	V
MEC-USB-M102-30/UB0514 	Mini-PCle Module with 2x USB 3.0 Ports, 1x Universal Bracket with 2x USB Cutout (154 x 17 mm)	V	V

V : Compatible