

# DC-1200

## Intel® Pentium® N4200 Processor Compact Fanless Embedded Computer



- Onboard Intel® Pentium® N4200 Processor
- Supports Triple Independent Display
- Supports CMI Interface for I/O Expandability
- Supports PoE+ and Power Ignition Function (with optional CFM modules)
- 1x 2.5" SATA Drive Bay, 1x mSATA Socket
- 2x Full Size Mini-PCIe Socket, 2x SIM Card Socket
- Compact Size (185 x 131 x 56.5 mm)
- Wide Operating Temperature -40°C to 70°C
- E-Mark (E13, No. 10R-0515075), LVD EN62368-1

### Overview

Based on Intel® Pentium® N4200 quad-core processor, the DC-1200 is a fanless embedded computer offering an incredible size-performance ratio for the most challenging environments. Despite its compact size, the DC-1200 incorporates extensive connectivities including serial ports, USB 3.0, GbE LAN, full-size Mini-PCIe slot, dual SIM sockets, DVI-D, and DisplayPort. The system also provides 2.5" SATA drive bay and mSATA socket for extensive storage requirements.

Furthermore, it is much easier to utilize Cincoze' ready-to-use CMI& CFM modules for extension of digital I/O, serial ports, power ignition sensing, Power over Ethernet (PoE) even the third output of video for a variety of applications.

Featuring with rigorous industrial protections, wide temperature range, and wide range DC power input, the DC-1200 offers a powerful, expandable computing platform to ensure long-lasting performance and reduce maintenance costs.

### Highlights



#### Highly Efficient & Compact

The DC-1200 is powered by Intel® Pentium® N4200 (4 core, 2.5 GHz) and constructed with a compact size aluminum housing. It can be easily installed into a control cabinet or any other space-limited environments.



#### In-Vehicle Computer

Capable of 12V/24V DC power input, wide operating temperature, shock/vibration resistant, power ignition sensing, and E-mark certified, this robust fanless computer is specifically designed for demanding in-vehicle applications.



#### Flexible & Modular Design

Based on Cincoze' exclusive CMI (Combined Multiple I/O) and CFM (Control Function Module) technologies, the DC-1200 can be easily configured to increase specified functions and a variety of I/O modules.

## Specifications

### Processor

- Onboard Intel® Pentium® N4200 Quad Core Processor, up to 2.50 GHz

### BIOS

- AMI BIOS, 8MB SPI Flash ROM built on board

### Memory

- 1x DDR3L 1333/1600/1866 MHz 204-Pin SO-DIMM Socket
- Supports up to 8GB (un-buffered and non-ECC)

### Graphics

- Integrated Intel® HD Graphics 505
- Supports Triple Independent Display (DVI-D, DisplayPort and one output from optional CMI module)

### Audio Codec

- Realtek® ALC888-GR

### External I/O Interface

- 1x DVI-D (1920 x 1080 @60Hz)
- 1x DisplayPort Connector (4096 x 2160 @ 60Hz, According to CPU Specifications)
  - \* Verified maximum resolution: 3840x2160.
- 2x GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45
  - GbE1: Intel® I210
  - GbE2: Intel® I210
- 4x USB 3.2 Gen1 (TypeA)
- 2x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9
- 1x Line-out & 1x Mic-in, Phone Jack 3.5mm
- 1x ATX Power On/Off Button
- 1x Reset Button
- 1x AT/ATX Mode Switch
- 1x Clear CMOS Switch
- 1x Remote Power On/Off Connector, 2-pin Terminal Block
- 1x Ignition DIP Switch (12V/24V, need to work with CFM module)

### Storage

- 1x mSATA Socket (SATA 3.0, Shared by Mini-PCIe Socket)
- 1x 2.5" HDD/SSD Drive Bay (SATA 3.0)

### Expansion

- 2x Full-size Mini-PCIe Socket
- 2x Control Function Module (CFM) Interface
- 2x Combined Multiple I/O (CMI) Interface
- 2x SIM Card Socket for Signal Redundancy
- 2x Antenna Hole

### Other Functions

- Watchdog Timer: Software Programmable Supports 256 Levels System Reset
- SuperCap Integrated for CMOS Battery Maintenance-free Operation
- Supports Instant Reboot Technology (0.2 sec)

### Power Requirement

- Supports AT/ATX Power Type
- Power Input Voltage 9~48VDC
- 1x 3-pin Terminal Block
- Power Adapter AC/DC 12V/5A 60W or 24V/5A 120W (Optional)

### Physical

- Dimensions (WxDxH, mm): 185 x 131 x 56.5 mm
- Weight: 1.42 kg
- Construction: Extruded Aluminum with Heavy Duty Metal
- Mounting: Wall / VESA / Din Rail (Optional: Side + Din Rail Mounting Kit)
- Unibody Chassis
- Fanless Design
- Jumper-less Design
- Cable-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: 2 kV

### Operating System

- Windows® 10
- Linux: Supports by project

### Environment

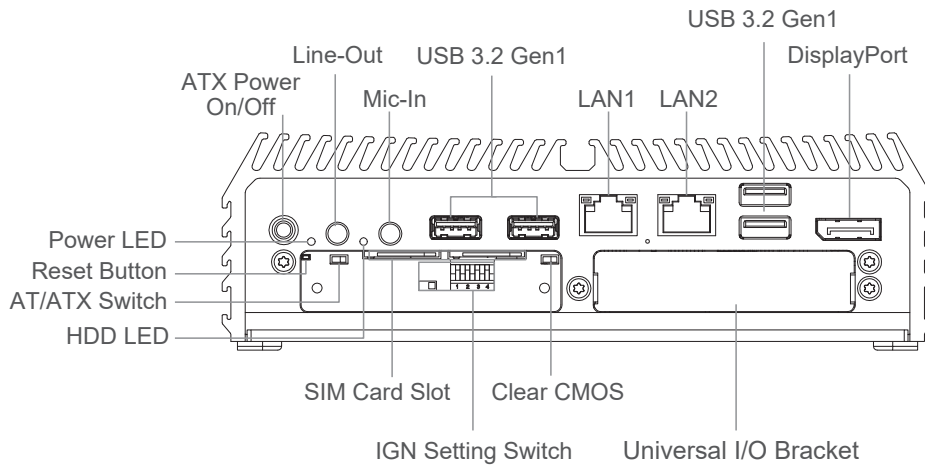
- Operating Temperature: -40°C to 70°C
  - \* With extended temperature peripherals; Ambient with air flow
  - \* According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14
- Storage Temperature: -40°C to 85°C
- Relative Humidity: 95%RH @ 70°C (non-Condensing)
- Shock: Operating, 50 Grms, Half-sine 11 ms Duration
  - \* w/ SSD, according to IEC60068-2-27
- Vibration: Operating, 5 Grms, 5-500 Hz, 3 Axes
  - \* w/ SSD, according to IEC60068-2-64
- MTBF: 479,119 Hours

### Certification

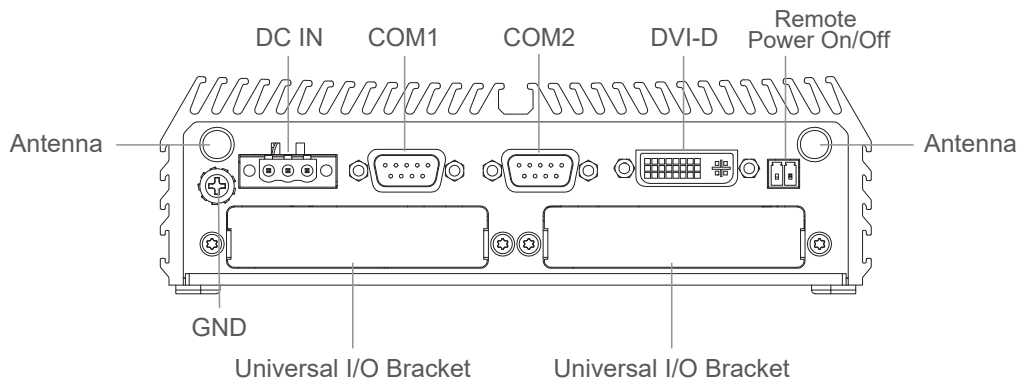
- EMC : CE, UKCA, FCC, ICES-003 Class A, E-mark(E13, No. 10R-0515075)
- Safety : LVD IEC/EN 62368-1

**External Layout**

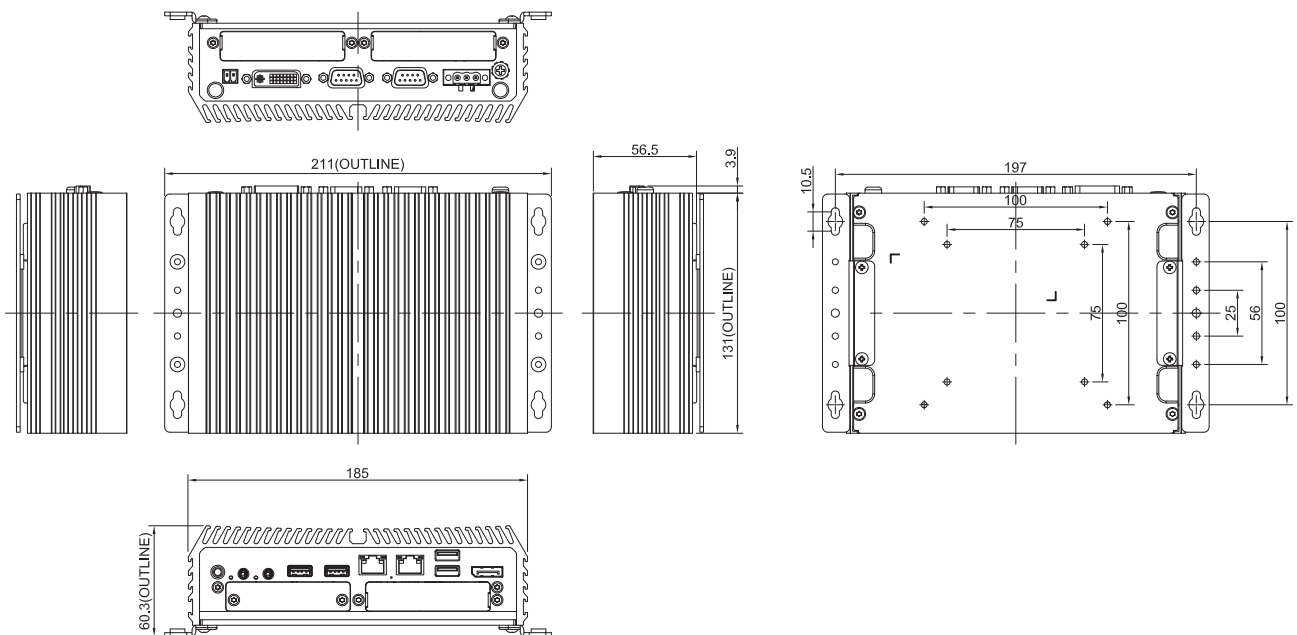
Front I/O



Rear I/O



**Dimensions**



Unit: mm

## Ordering Information

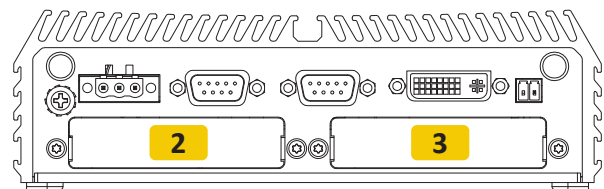
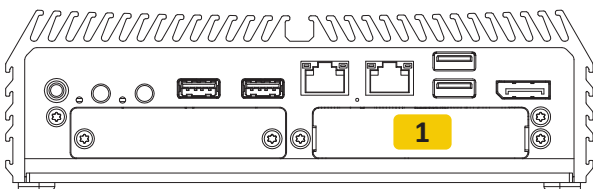
### Available Models






| Model No.       | Description   |
|-----------------|---|
| DC-1200-N42-R10 | Intel® Pentium® Processor N4200 Compact Size Fanless Computer |

### Package Checklist




|   |  |
|---|--|
| • DC-1200 Compact Size Fanless Embedded Computer x1 | • Utility DVD Driver x1                          |
| • Thermal Pad (for CPU Thermal Block) x1            | • Power Terminal Block Connector x1              |
| • Screw Pack x1                                     | • Remote Power On/Off Terminal Block Connectorx1 |
| • Wall Mounting Kit x1                              | • DIN Rail Mounting Kit x1                       |

### Optional I/O Modules



| Model No.   | Description   | 1  | 2  | 3 |
|---|---|----|----|---|
| CMI-DVI01/UB1107<br> | CMI Module with 1x DVI-D Connector for DC-1200,1x Universal Bracket with 1x DVI-D Cutout for DC-1200              | -- | -- | V |
| CMI-VGA01/UB1116<br> | CMI Module with 1x VGA Port for DC-1200, 1x Universal Bracket with 1x VGA Cutout for DC-1200                      | -- | -- | V |
| CMI-HD02/UB1108<br>  | CMI Module with 1x HDMI Port for DC-1200,1x Universal Bracket with 1x HDMI Cutout for DC-1200                     | -- | -- | V |
| CMI-COM03/UB1103<br> | CMI Module with 2x RS232/422/485 (Support 5V/12V) for DC-1200,1x Universal Bracket with 2x DB9 Cutout for DC-1200 | -- | V  | V |
| CMI-DIO03/UB1115<br> | CMI Module with 8x Optical Isolated DIO (4 in/4 out) for DC-1200,1x Universal Bracket with DIO Cutout for DC-1200 | -- | V  | V |

## Optional Module Configuration

| Model No.   | Description  | 1  | 2  | 3  |
|---|--|----|----|----|
| MEC-COM-M212-TDB9/UB1103<br> | Mini-PCIe Module with 2x COM Ports, 1x Universal Bracket with 2x DB9 Cutout for DC-1200  | V  | -- | -- |
| MEC-LAN-M102-15/UB1111<br>   | Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket with 2x RJ45 Cutout for DC-1200 Front Bezel  | V  | -- | -- |
| MEC-LAN-M102-15/UB1129<br>   | Mini-PCIe Module with 2x LAN Ports / 1x Universal Bracket with 2x RJ45 Cutout for DC-1200 Rear Bezel.<br>* Only compatible with half slim SSD and mSATA when MEC-LAN is installed at Rear Bezel. | -- | -- | V  |

V : Compatible

## Optional Function Modules

| Model No. | Description   |
|-----------|---|
| CFM-IGN02 | CFM Module with Power Ignition Sensing Control Function, Select 12V/24V |
| CFM-PoE02 | CFM Module with PoE Control Function, Individual Port 25.5W             |

## Optional Accessories

| Model No.     | Description  |
|---------------|--|
| SIDE03        | Side Mount Kit for DC-1200 Series, with KMRH-K175 for DIN-Rail option                  |
| GST60A12-CIN1 | Adapter AC/DC 12V 5A 60W, GST60A12-CIN, wide temp(-30°C ~ +70°C), level VI             |
| GST120A24-CIN | Adapter AC/DC 24V 5A 120W, GST120A24-CIN, wide temp(-30°C ~ +70°C), level VI           |
| SL2-SL3       | US 2 heads power cord, US B type to IEC C13, SVT 18AWG/3C Black 1.8M SL -2+SL -3       |
| SL6-SL3       | EU 2 heads power cord, EU G type to IEC C13, H05VV-F 0.75mm2/3G Black 1.8M SL -6+SL -3 |
| QP026-SL3     | UK 2 heads power cord, UK I type to IEC C13, H05VV-F 0.75mm2/3G Black 1.8M QP026+SL -3 |