

# DC-1200

Intel® Pentium® N4200 Processor Compact Fanless Embedded Computer



## Overview

[CONTACT](#)

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.

### Key Features

- 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

### Certifications



### 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

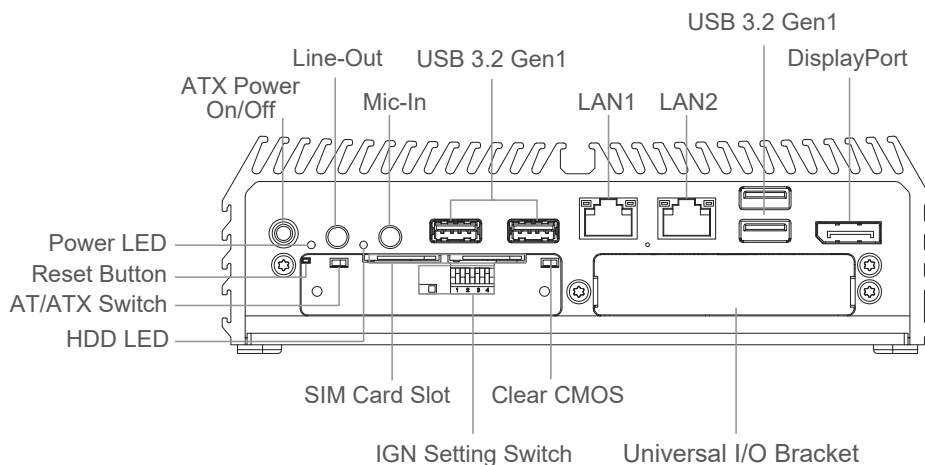
Model Name	DC-1200
<b>System</b>	
Processor	• Onboard Intel® Pentium® N4200 Quad Core Processor, up to 2.50 GHz
BIOS	• AMI BIOS, 8MB SPI Flash ROM built on board
Memory	• 1x DDR3L 1333/1600/1866 MHz 204-Pin SO-DIMM Socket • Supports up to 8GB (un-buffered and non-ECC)
<b>Graphics</b>	
Graphics Engine	• Integrated Intel® HD Graphics 505 • Supports Triple Independent Display (DVI-D, DisplayPort and one output from optional CMI module)
<b>Audio</b>	
Audio Codec	• Realtek® ALC888-GR
<b>I/O</b>	
Connector	• 1x DVI-D (1920 x 1080 @60Hz)
DisplayPort	• 1x DisplayPort Connector (4096 x 2160 @ 60Hz, According to CPU Specifications) * Verified maximum resolution: 3840x2160.
LAN	• 2x GbE LAN (Supports WoL, Teaming, Jumbo Frame & PXE), RJ45 - GbE1: Intel® I210 - GbE2: Intel® I210
USB	• 4x USB 3.2 Gen1 (TypeA)
Flow Control	• 2x RS-232/422/485 with Auto Flow Control (Supports 5V/12V), DB9
Mic-in	• 1x Line-out & 1x Mic-in, Phone Jack 3.5mm
Power On/Off Button	• 1x ATX Power On/Off Button
Reset Button	• 1x Reset Button
Mode Switch	• 1x AT/ATX Mode Switch
CMOS Switch	• 1x Clear CMOS Switch
Remote Power On/Off Connector	• 1x Remote Power On/Off Connector, 2-pin Terminal Block
DIP Switch	• 1x Ignition DIP Switch (12V/24V, need to work with CFM module)
<b>Storage</b>	
SSD / HDD	• 1x mSATA Socket (SATA 3.0, Shared by Mini-PCIe Socket)
mSATA	• 1x 2.5" HDD/SSD Drive Bay (SATA 3.0)
<b>Expansion</b>	
Mini PCIe	• 2x Full-size Mini-PCIe Socket
SIM Socket	• 2x SIM Card Socket for Signal Redundancy
CFM (Control Function Module) Interface	• 2x Control Function Module (CFM) Interface
CMI (Combined Multiple I/O) Interface	• 2x Combined Multiple I/O (CMI) Interface
Antenna Hole	• 2x Antenna Hole

<b>Other Function</b>	
WatchDog Timer	• Software Programmable Supports 256 Levels System Reset
CMOS Battery	• SuperCap Integrated for CMOS Battery Maintenance-free Operation
Instant Reboot	• Supports Instant Reboot Technology (0.2 sec)
<b>Power Requirement</b>	
Power Type	• Supports AT/ATX Power Type
Power Input	• Power Input Voltage 9~48VDC
Terminal Block	• 1x 3-pin Terminal Block
Power Adapter	• Power Adapter AC/DC 12V/5A 60W or 24V/5A 120W (Optional)
<b>Physical</b>	
Dimension ( W x D x H )	• 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)
Physical Design	<ul style="list-style-type: none"> <li>• Unibody Chassis</li> <li>• Fanless Design</li> <li>• Jumper-less Design</li> <li>• Cable-less Design</li> </ul>
<b>Protection</b>	
Reverse Power Input Protection	• Yes
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	• 15A
<b>Operating System</b>	
Windows	• Windows® 10
Linux	• Supports by project
<b>Environment</b>	
Operating Temperature	<ul style="list-style-type: none"> <li>• -40°C to 70°C</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	• -40°C to 85°C
Relative Humidity	• 95% RH @ 40°C (Non-condensing)
Shock	<ul style="list-style-type: none"> <li>• Operating, 50 Grms, Half-sine 11 ms Duration</li> <li>* 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</li> <li>* w/ SSD, according to IEC60068-2-64</li> </ul>
MTBF	• 479,119 Hours
EMC	<ul style="list-style-type: none"> <li>• CE, UKCA, FCC, ICES-003 Class A</li> <li>• E-mark</li> </ul>
EMI	<ul style="list-style-type: none"> <li>• CISPR 32 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN 50121-3-2 Conducted &amp; Radiated: Class A</li> <li>• EN/BS EN IEC 61000-3-2 Harmonic current emissions: Class A</li> <li>• EN/BS EN61000-3-3 Voltage fluctuations &amp; flicker</li> <li>• FCC 47 CFR Part 15B, ICES-003 Conducted &amp; Radiated: Class A</li> </ul>

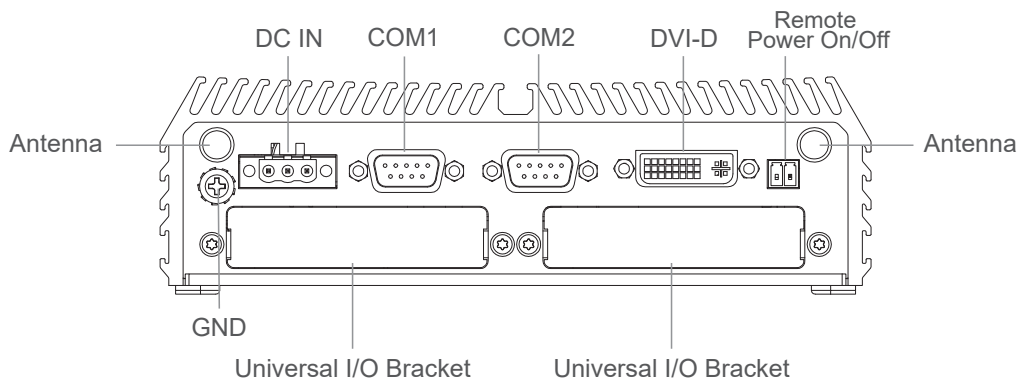
<p>EMS</p>	<ul style="list-style-type: none"> <li>• EN/IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV</li> <li>• EN/IEC 61000-4-3 RS: 80 MHz to 1000 MHz: 3 V/m</li> <li>• EN/IEC 61000-4-4 EFT: AC Power: 1 kV; DC Power: 0.5 kV; Signal: 0.5 kV</li> <li>• EN/IEC 61000-4-5 Surges: AC Power: 2 kV; Signal: 1 kV</li> <li>• EN/IEC 61000-4-6 CS: 3V</li> <li>• EN/IEC 61000-4-8 PFMF: 50 Hz, 1A/m</li> <li>• EN/IEC 61000-4-11 Voltage Dips &amp; Voltage Interruptions: 0.5 cycles at 50 Hz</li> </ul>
<p>Safety</p>	<ul style="list-style-type: none"> <li>• LVD IEC/EN 62368-1</li> </ul>

**External Layout**

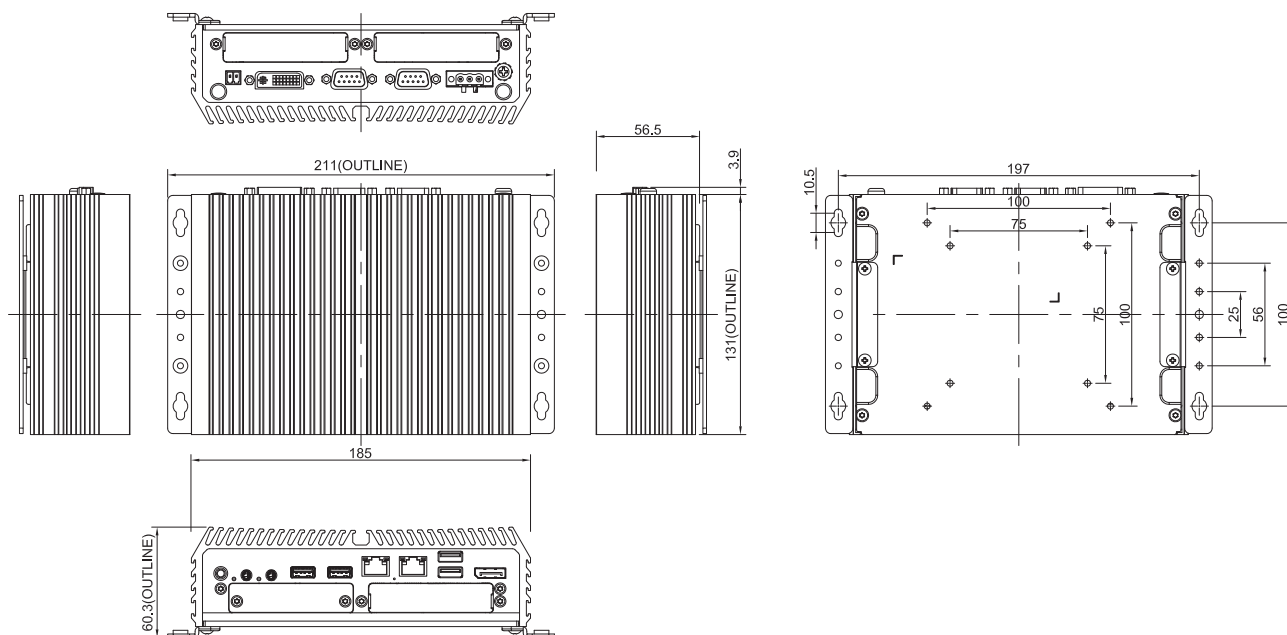
Front I/O



Rear I/O



**Dimensions**



Unit: mm

## Ordering Information

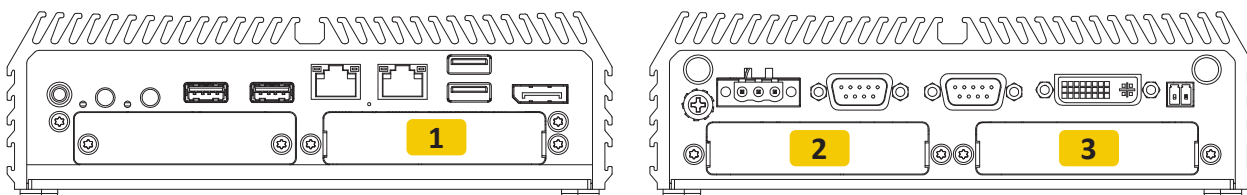
### Available Models






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	• Power Terminal Block Connector x1
• Thermal Pad (for CPU Thermal Block) x1	• Remote Power On/Off Terminal Block Connectorx1
• Screw Pack x1	• DIN Rail Mounting Kit x1
• Wall Mounting Kit x1	




### Optional I/O Modules



Model No.	Description	1	2	3
 CMI-DVI01/UB1107	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	CMI Module with 1x VGA Port for DC-1200, 1x Universal Bracket with 1x VGA Cutout for DC-1200	-	-	V
 CMI-HD02/UB1108	CMI Module with 1x HDMI Port for DC-1200,1x Universal Bracket with 1x HDMI Cutout for DC-1200	-	-	V
 CMI-COM03/UB1103	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	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

V : Compatible

## Optional Module Configuration

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

V : Compatible

### Available Models

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